

ARMY  
NAVY  
AIR FORCE

TM 11-5895-856-34-16  
EE640-CA-MMI-160/E154 CPU  
TO 31 W2-2T-122-16

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**TECHNICAL MANUAL**

**DIRECT SUPPORT AND GENERAL SUPPORT  
MAINTENANCE MANUAL  
FOR  
CENTRAL, MESSAGE SWITCHING, AUTOMATIC  
AN/TYC-39(V)1  
AND  
CENTRAL OFFICE, TELEPHONE, AUTOMATIC  
AN/TTC-39(V)2**

**AUTOMATIC DATA PROCESSING  
ASSEMBLIES**

**This copy is a reprint which includes current pages from Change 1.**

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**DEPARTMENTS OF THE ARMY, NAVY AND AIR FORCE**

**22 SEPTEMBER 1983**



**5**

**SAFETY STEPS TO FOLLOW IF SOMEONE IS THE VICTIM OF ELECTRICAL SHOCK**

**1**

**DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL**

**2**

**IF POSSIBLE, TURN OFF THE ELECTRICAL POWER**

**3**

**IF YOU CANNOT TURN OFF THE ELECTRICAL POWER, PULL, PUSH, OR LIFT THE PERSON TO SAFETY USING A WOODEN POLE OR A ROPE OR SOME OTHER INSULATING MATERIAL**

**4**

**SEND FOR HELP AS SOON AS POSSIBLE**

**5**

**AFTER THE INJURED PERSON IS FREE OF CONTACT WITH THE SOURCE OF ELECTRICAL SHOCK, MOVE THE PERSON A SHORT DISTANCE AWAY AND IMMEDIATELY START ARTIFICIAL RESUSCITATION**

CHANGE

DEPARTMENTS OF THE ARMY,  
THE NAVY AND THE AIR FORCE  
Washington, DC, 17 May 1985

No. 1

**Direct Support and General Support  
Maintenance Manual  
for  
CENTRAL, MESSAGE SWITCHING, AUTOMATIC  
AN/TYC-39(V)1  
AND  
CENTRAL OFFICE, TELEPHONE, AUTOMATIC  
AN/TTC-39(V)2  
AUTOMATIC DATA PROCESSING  
ASSEMBLIES**

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16, 22 September 1983, is changed as follows:

1. Remove old pages and Insert new pages as indicated below.
2. New or changed material is indicated by a vertical bar in the margin of the page.
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a and b .....	a and b
79 and 80 .....	79 and 80

4. File this change sheet in the front of the publication for reference purposes.

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DISTRIBUTION:

To be Distributed in accordance with DA Form 12-51-R, Direct Support and General Support Maintenance requirements for AN/TTC-39(V) and AN/TYC-39(V).



**WARNING**

**HIGH VOLTAGE**

**is used in the operation of this equipment.**

**DEATH ON CONTACT**

may result if personnel fail to observe safety precautions. Learn the areas containing high voltage in each piece of equipment. Be careful not to contact high-voltage connections when installing or operating this equipment. Before working inside the equipment, turn power off and ground points of high potential before touching them.

**WARNING**

**USE OF CLEANING SOLVENT**

Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE (NSN 6850-00-105-3084). Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame, the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate if the solvent is taken internally, consult a physician immediately.

INSERT LATEST CHANGED PAGES. DESTROY SUPERSEDED PAGES

**LIST OF EFFECTIVE PAGES**

NOTE: The portion of the text affected by the changes is indicated by a vertical line in the outer margins of the page. Changes to illustrations are indicated by miniature pointing hands. Changes to wiring diagrams are indicated by shaded areas.

by

Dates of issue for original and changed pages are:

Original .....0 .....22 Sept 83  
 Change .....1 .....17 May 85

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 404 CONSISTING OF THE FOLLOWING:

Page	*Change No.
Cover .....	0
Safety Steps .....	0
a.....	0
b.....	1
i-ii .....	0
 (149017-860)	
1-79.....	0
80.....	1
81-389.....	0
Error Report Forms.....	0
Promulgation Page.....	0

\*Zero in this column indicates an original page.

TECHNICAL MANUAL  
NO 11-5895-856-34-16  
TECHNICAL MANUAL  
EE640-CA-MMI-160/E154 CPU  
TECHNICAL ORDER  
1983  
TO 31W2-2T-122-16

DEPARTMENTS OF THE ARMY  
THE NAVY, AND  
THE AIR FORCE

Washington, DC, 22 September 1983

**DIRECT SUPPORT AND GENERAL SUPPORT  
MAINTENANCE MANUAL  
FOR  
CENTRAL, MESSAGE SWITCHING, AUTOMATIC  
AN/TYC-39(V)1  
AND  
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AN/TTC-39(V)2**

**AUTOMATIC DATA PROCESSING ASSEMBLIES**

**REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703.

For Air Force, submit AFTO Form 22 (Technical Order System Publication Improvement Report and Reply) in accordance with paragraph 6-5, Section VI, T.O.00-5-1. Forward direct to prime ALC/MST.

For Navy, mail comments to the Commander, Naval Electronics Systems Command, ATTN: ELEX 8122, Washington, DC 20360.

In either case, a reply will be furnished direct to you.

**TABLE OF CONTENTS**

**VOLUME 16 TM 11-5895-856-34-16**

Card Cage Assembly "B", Interface Control Unit- R H., Wire List, Logic (149017-860)

This volume is part of a 24-volume set covering the direct support and general support maintenance of the automatic data processing assemblies. This volume contains the logic wire list for the right-hand card cage assembly "B" of the interface control unit, drawing number 149017-860. Refer to volume 1 of this series (TM 11-5895-856-34-1) for an explanation of how to use this wire list as well as other lists contained in the set.

**NOTE**

The pages in volumes 2 through 24 of TM 11-5895-856-34 have been numbered in a special manner. Pages within these volumes are found by keying to two page identifiers: the drawing number and the page number. To find the page that you desire within the volume, follow the steps listed below:

1. Find the applicable wire run list in the table of contents and note the applicable drawing number.
2. Look through the pages of the volume until you find the particular drawing number of the wire run list that you seek. This will insure that you are in the correct wire run section.
3. Go through these pages until you find the page number you are looking for within this particular wire run list.

Remember, pages in the volumes cited above are found by keying to the drawing number applicable to a particular wire run list, as well as, a page number. Make sure you are on the correct page by checking both page identifiers.

**CARD CAGE ASSEMBLY "B", INTERFACE CONTROL UNIT  
- RIGHT HAND  
LOGIC WIRE LIST  
149017-860**

**NOTES:** UNLESS OTHERWISE SPECIFIED

1. REFERENCE TO SHEET 3 FOR DEFINITION OF FIELDS.
2. REFERENCE TO SHEET 4 FOR CONFIGURATIONS OF SHIELD AND WIRE TERMINATIONS.
3. REFERENCE TO SHEET 5 OF STRING LIST FOR WIRE CODE DEFINITIONS.
4. REFERENCE TO SHEET 6 OF STRING LIST FOR WIRE PARTS LIST.
5. ALL ABBREVIATIONS PER MIL-STD-12.
6. THROUGHOUT THE BODY OF THIS DOCUMENT THE UNIT NAME IS REFERRED TO AS: CARD CAGE ASSY B, IFCU.

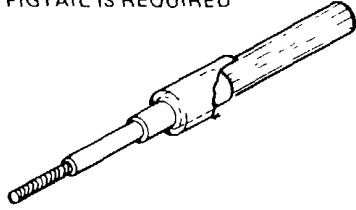
**H78 STRING AND CONNECTOR LIST, DEFINITION OF FIELDS**

1. **Record Number**-A unique Data Processing number which associates information pertaining to a wire "FROM" Connector, "TO" Connector, Wire Code, etc. This number is the wire ID when that field is blank.
2. **Prefix**-An assembly alphanumeric to be used when a wire terminates in two assemblies. This number will be the reference designation as required by USAS Y32.16-1968.
3. **Connector**-Any type of terminating point, plug, receptacle, etc. Designations are in accordance with USAS Y32.16-1968.
4. **Pin**-Exact terminating point of the respective connector. Designations are unique:
  - A. SHXXXX indicates the junction of a shield and a pigtail, the four digits to the right are the wire identity of the shielded wire.
  - B. JCT indicates a common point of two or more shield pigtails.
  - C. Jacket: the terminology used when describing the line that defines the identification of a shielded wire.
5. **Sh Fg**-References a graphic representation showing how a shielded wire or coax is to be terminated. A number in this field indicates the level of automatic wire wrapping.
6. **Multi Group**-Associates wires of a group such as "twisted wire" or "shielded wire". Jacket, pigtails and center conductors will be shown as a common group.
7. **Wire Code**-A three-digit code for wire type and gauge or bus bar.
8. **Wire Color**-Standard RETMA color code.
  - A. Base Stripe Tracer.
  - B. Stripe, Tracer 1 and Tracer 2 if the digit to the left is other than 9 and the two positions to the right are not blank and not equal. The Base Color is understood to be white.
9. **Wire Ident**-A number used for reference to differentiate one wire from another. This number will be used to identify the wire when specified in the wire list sleeve code field.
10. **Spc Inst**-A code which indicates that a wire must be given special attention as follows:
  - A. Direct routing, no service loops, no harnessing.
  - B. See general notes or instruction pages.
  - C. See general notes or instruction pages.
  - D. See general notes or instruction pages.
  - E. See general notes or instruction pages.
  - F. See signal description.
  - G. This connection does not go directly to the "TO" connector, but intersects a line going to the "TO" connector.
  - H. See special routing page.
  - I. Junction point for multilayer laminated board (MLB) connection.
  - J. Denotes a bus reference point.
  - K. Blank out "TO" connector and pin.
  - L. Will cause a signal name of three characters or less to be entered in the stung list.
  - M. Will cause a record to be omitted from the string list. (This record will print in the connector list).
  - N. Will suppress printing the wire identity in the harness string and double entry list.
  - P. Will cause the equation to be used as the signal name for sorting purposes only In the string list.

**H78 STRING AND CONNECTOR LIST, DEFINITION OF FIELDS-Continued**

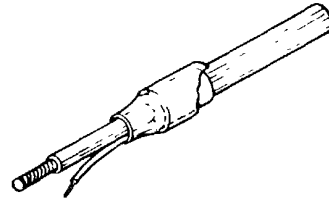
- Q. Will cause an equation record to be omitted from logic listing.
  - R. Will suppress printing the "FROM/TO" pin numbers the string and connector lists.
  - S. Do not move record number to the ident field for an ADD transaction in the harness string and double entry only (Use only when adding a file.)
  - T. Twist wire code.
  - U. Not available.
  - V. See general notes or instruction pages.
  - W. Fixed wire length submitted.
  - X. Sequence of string is to be left as is.
  - Y. See general notes or instruction pages.
  - Z. Will suppress punting of the "FROM" pin.
10. **Misc**-Unless otherwise noted, the number 1 indicates a prepared connector.
  11. **Signal**-An alphanumeric signal name, mnemonic where feasible, which identifies one specific function from another.  
 SPP-Denotes an available termination.  
 SPF-Denotes an unwired termination which has an assigned function.  
 SPW-Denotes a nonfunctional wire which is terminated at one or both ends.  
 SPO-Denotes a spare output of a circuit.  
 DNW-Indicates that a termination may not be wired.  
 SPA-Denotes an unassigned circuit, as one of a group on a printed circuit board.  
 SPI-Denotes a spare input of a circuit.  
 SPG-Denotes an unassigned logic gate, as one of a group on a printed circuit board.  
 SPR-Denotes a spare resistor.  
 SPD-Denotes an unassigned input diode of an assigned logic gate.
  12. **Seq No.**-A number which, in conjunction with SIGNAL, allows a signal string to be consistently punted in a given order.
  13. **Equation**-A mnemonic name assigned to each gate of an element.
  14. **Term**-An "OR" function composed of one or more factors.
  15. **Factor**-A specific input to a logical gate or active element.
  16. **Ckt or Chip Type**-Denotes a specific circuit board type.
  17. **Group**-Denotes a specific circuit on a printed circuit board.
  18. **Load or Power Plane**-Denotes the current draw in millilamps by a specific circuit or voltage.
  19. **AND Test Point**-Denotes the input test point for a specific circuit on a printed circuit board.
  20. **OR Test Point**-Denotes the output test point for a specific circuit on a circuit board.
  21. **Signal Description**-A written description or name of a signal or voltage.
  22. **ECO No.**-A letter number combination to show the Engineering Change Order level of that particular wire list record.

SHIELD TERMINATION FOR SHIELDED,  
SINGLE AND MULTIPLE CONDUCTORS,  
NO PIGTAIL IS REQUIRED



SHIELD FIGURE B

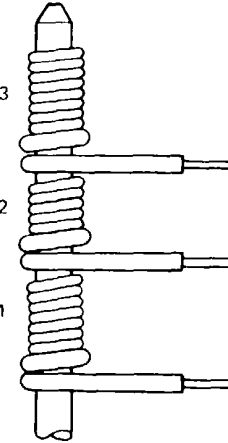
SHIELD TERMINATION FOR SHIELDED,  
SINGLE AND MULTIPLE CONDUCTORS,  
FRONT PIGTAIL IS REQUIRED



SHIELD FIGURE NO 3

SHIELD FIGURE NO 2

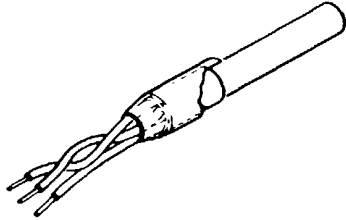
SHIELD FIGURE NO 1



SHIELD FIGURE NUMBER  
INDICATES LEVEL OF WIRE WRAP

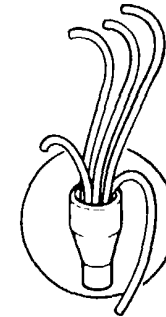
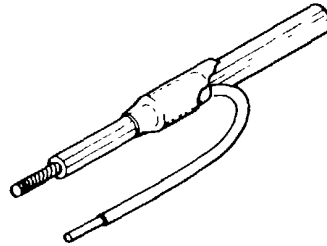
SHIELD FIGURE G

SHIELDED CABLE TERMINATION WITH DRAIN WIRE



SHIELD FIGURE C

SHIELD TERMINATION FOR SHIELDED,  
SINGLE AND MULTIPLE CONDUCTORS,  
A REAR PIGTAIL IS REQUIRED

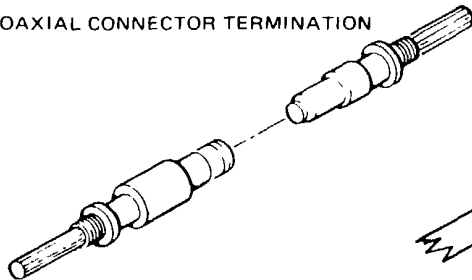


SHIELD FIGURE X

SHIELDED WIRE  
PIGTAILS-HYBRID

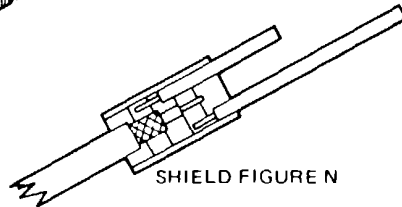
SHIELD FIGURE Z

COAXIAL CONNECTOR TERMINATION



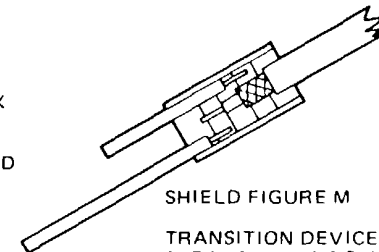
SHIELD FIGURE N

TRANSITION DEVICE WITH  
SOLID WIRE PIGTAILS



SHIELD FIGURE M

TRANSITION DEVICE WITH  
STRANDED WIRE PIGTAILS





DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DADD00  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 5

CONNECTOR	CIRCUIT TYPE	GRD	TEST POINTS AND/OR	EQUATION	TERM	DESIG	FACTOR	COMMENT
KA211	TQ2	E3	30B	DADD00	00	=		
KA211	TQ2	E3	28B	(57)	01		DRDNCA DMAACP 53 28B 55 29B	ADD CONTROL + WRITE
KA106	TQ2	F1	37B	DBCK0A	00	=		
KA106	TQ2	F1	38B	(75)	01		DBFCLO DBFUL0 77 38B 79 39B	
KA106	TQ2	F2	34A	DBCK1A	00	=		
KA106	TQ2	F2	36A	(72)	01		DBFCLO DBFUL0 71 36A 73 36B	
KA106	TQ2	F3	35A	DBCK2A	00	=		
KA106	TQ2	F3	34B	(69)	01		DBFCLO DBFUL0 65 34B 74 35B	
KA106	TQ2	F4	39A	DBCK3A	00	=		
KA106	TQ2	F4	37A	(80)	01		DBFCLO DBFUL0 76 37A 78 38A	
KA111	TQ2	F1	37B	DBCK4A	00	=		
KA111	TQ2	F1	38B	(75)	01		DBFCLO DBFUL0 77 38B 79 39B	
KA324	TLD	D2	21A	DBERRD4	00	=		
KA324	TLD	D2	22A	(46)	01		DBTSPQ DBERRO 48 22A 50 23A	BOOTSTRAP ERROR
KA312	TD4	D2	24B	DBERRO	00	=		
KA312	TD4	D2	23B	(45)	01		DRPERP DCYERP DRPEEA DRCLEA 43 23B 46 21A 48 22A 50 23A	
KA337	TH1	F5	36A	DBFCLA	00	=		
KA337	TH1	F5	37A	(78)	01		DBFCLO 76 37A	
KA211	TQ2	E4	33B	DBFCLO	00	=		
KA211	TQ2	E4	31B	(63)	01		DBFC1A DBFC2A 59 31B 61 32B	CLK BUFFER REG
KA333	TQ2	F3	35A	DBFC1A	00	=		
KA333	TQ2	F3	34B	(69)	01		DTNCBQ DBFC30 65 34B 74 35B	NOR 8 MHZ CLK
KA224	TQ2	A1	05A	DBFC2A	00	=		
KA224	TQ2	A1	06A	(06)	01		DBFC40 DRCL30 08 06A 10 07A	

DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DBFC30  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39C1FC7 DATE 09-03-82 PAGE 6

CONNECTOR	CPU	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA224	TQ2	A2	02B	DBFC30	00	=		CONTROL FOR 8 MHZ
KA224	TQ2	A2	04A	(01)	01		DMCK2A DMCK4A 04 04A 05 03B	
KA223	TQ2	F3	35A	DBFC40	00	=		
KA223	TQ2	F3	34B	(69)	01		DBFC5A DBFC6A 65 34B 74 35B	
KA328	TD4	B2	10B	DBFC5A	00	=		BUFFER FULL . SR EMPTY . WRITE
KA328	TD4	B2	09A	(21)	01		DBFULQ DSFULP DWRN00 DBFC80 14 09A 18 10A 19 09B 20 11A	. CORRECT TIME
KA312	TD4	C2	16B	DBFC6A	00	=		
KA312	TD4	C2	15A	(33)	01		DRB260 DRCM30 DRWDE5T DBFULP 30 15A 31 15B 34 16A 36 17A	
KA224	TQ2	B1	12A	DBFC80	00	=		DISC ENB* + DISC ENB.W21*.B33
KA224	TQ2	B1	13A	(22)	01		DRRENQ DBFC9A 24 13A 26 14A	
KA219	TT3	D2	23B	DBFC9A	00	=		DIC ENB . W21* .B33
KA219	TT3	D2	22B	(43)	01		DRB06Q DRRENQ DRWDE4T 41 22B 46 21A 48 22A	
				DBFUDI	00	=		
KA309	TDD	HI	22A	( )	01		SPI064 48 22A	
				DBFUDN	00	=		
KA309	TDD	HN	21A	( )	01		DYNC8P 46 21A	
KA309	TDD	HP	24B	DBFUDP	00	=		
KA309	TDD	HP	23A	(45)	01		DBFULP 50 23A	
KA309	TDD	HQ	23B	DBFUDQ	00	=		
KA309	TDD	HQ	22B	(43)	01		SPI061 41 22B	
				DBFULI	00	=		
KA210	TDD	EI	19A	( )	01		DBFULQ 40 19A	
				DBFULN	00	=		
KA210	TDD	EN	20A	( )	01		DBFCLA 42 20A	

DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DBFULP  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 7

CONNECTOR	TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA210	TDD	EP	17B	DBFULP	00	=		
KA210	TDD	EP	18A	(35)	01		DBFU1A 38 18A	
KA210	TDD	EQ	18B	DBFULQ	00	=		BUFFER FULL -CONTROL FF
KA210	TDD	EQ	19B	(37)	01		SPI010 39 19B	
KA211	TQ2	F1	37B	DBFUL0	00	=		SET BUFFER FULL COND.
KA211	TQ2	F1	38B	(75)	01		DBFC6A DMCK2A 77 38B 79 39B	
KA215	THI	C6	18B	DBFU1A	00	=		
KA215	THI	C6	19B	(42)	01		DBFU10 39 19B	
KA223	TQ2	D1	24A	DBFU10	00	=		A POLARITY BIT AND WORD
KA223	TQ2	D1	25A	(52)	01		DXRS2B DBTSPP 54 25A 56 26A	CLOCK
KA237	MUX	E1	34B	DBIS0TA	00	=		INPUT BUFF REG BIT 00
KA237	MUX	E1	32A	(73)	01		DD000Q DSR000E DGND5A DRCM30 69 32A 71 33B 68 33A 66 32B	
KA237	MUX	E2	37B	DBIS0TB	00	=		INPUT BUFF REG BIT 01
KA237	MUX	E2	35B	(79)	01		DD010Q DSR001E 75 35B 77 36B	
KA237	MUX	E3	36A	DBIS0TC	00	=		INPUT BUFF REG BIT 02
KA237	MUX	E3	34A	(74)	01		DD020Q DSR002E 70 34A 72 35A	
KA237	MUX	E4	38B	DBIS0TD	00	=		INPUT BUFF REG BIT 03
KA237	MUX	E4	37A	(80)	01		DD030Q DSR003E 76 37A 78 38A	
KA236	MUX	D1	27B	DBIS1TA	00	=		INPUT BUFF REG BIT 04
KA236	MUX	D1	25B	(55)	01		DD040Q DSR010E DGND5A DRCM30 51 25B 53 26B 52 25A 49 24B	
KA236	MUX	D2	31B	DBIS1TB	00	=		INPUT BUFF REG BIT 05
KA236	MUX	D2	29B	(61)	01		DD050Q DSR011E 57 29B 59 30B	
KA236	MUX	D3	28A	DBIS1TC	00	=		INPUT BUFF REG BIT 06
KA236	MUX	D3	26A	(60)	01		DD060Q DSR012E 54 26A 56 28B	

DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DBISITD  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 8

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMINAL	DESIGNATOR	FACTOR	COMMENT
KA236	MUX	D4	31A	DBIS1TD	00	=		INPUT BUFF REG BIT 07
KA236	MUX	D4	29A	(63)	01		DD070Q DSR013E 62 29A 64 30A	
KA236	MUX	E1	34B	DBIS2TA	00	=		INPUT BUFF REG BIT 08
KA236	MUX	E1	32A	(73)	01		DD080Q DSR020E DGND5A DRCM30 69 32A 71 33B 68 33A 66 32B	
KA236	MUX	E2	37B	DBIS2TB	00	=		INPUT BUFF REG BIT 09
KA236	MUX	E2	35B	(79)	01		DD090Q DSR021E 75 35B 77 36B	
KA236	MUX	E3	36A	DBIS2TC	00	=		INPUT BUFF REG BIT 10
KA236	MUX	E3	34A	(74)	01		DD100Q DSR022E 70 34A 72 35A	
KA236	MUX	E4	38B	DBIS2TD	00	=		INPUT BUFF REG BIT 11
KA236	MUX	E4	37A	(80)	01		DD110Q DSR023E 76 37A 78 38A	
KA235	MUX	D1	27B	DBIS3TA	00	=		INPUT BUFF REG BIT 12
KA235	MUX	D1	25B	(55)	01		DD120Q DSR030E DGND5A DRCM30 51 25B 53 26B 52 25A 49 24B	
KA235	MUX	D2	31B	DBIS3TB	00	=		INPUT BUFF REG BIT 13
KA235	MUX	D2	29B	(61)	01		DD130Q DSR031E 57 29B 59 30B	
KA235	MUX	D3	28A	DBIS3TC	00	=		INPUT BUFF REG BIT 14
KA235	MUX	D3	26A	(60)	01		DD140Q DSR032E 54 26A 56 28B	
KA235	MUX	D4	31A	DBIS3TD	00	=		INPUT BUFF REG BIT 15
KA235	MUX	D4	29A	(63)	01		DD150Q DSR033E 62 29A 64 30A	
KA235	MUX	E1	34B	DBIS4TA	00	=		INPUT BUFF REG BIT 16
KA235	MUX	E1	32A	(73)	01		DD160Q DSR040E DGND5A DRCM30 69 32A 71 33B 68 33A 66 32B	
KA235	MUX	E2	37B	DBIS4TB	00	=		INPUT BUFF REG BIT 17
KA235	MUX	E2	35B	(79)	01		DD170Q DSR041E 75 35B 77 36B	
KA235	MUX	E3	36A	DBIS4TC	00	=		INPUT BUFF REG BIT 18
KA235	MUX	E3	34A	(74)	01		DD180Q DSR042E 70 34A 72 35A	



DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DBIS7TD  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA320	MUX	E4	38B	DBIS7TD	00	=		INPUT BUFF REG BIT 31
KA320	MUX	E4	37A	(80)	01		DD310Q DSR073E 76 37A 78 38A	
KA213	THI	F1	38B	DBLC00	00	=		LOAD BUFFER REG BYTE 0
KA213	THI	F1	39B	(80)	01		DX000A 79 39B	
KA213	THI	F2	36B	DBLC10	00	=		LOAD BUFFER REG BYTE 1
KA213	THI	F2	37B	(71)	01		DX00DIA 73 37B	
KA213	THI	F3	34B	DBLC20	00	=		LOAD BUFFER REG BYTE 2
KA213	THI	F3	35B	(70)	01		DX00DZA 69 35B	
KA213	THI	F4	34A	DBLC30	00	=		LOAD BUFFER REG BYTE 3
KA213	THI	F4	35A	(72)	01		DX00D3A 74 35A	
KA218	T58	C1	17B	DBL00A	00	=		MEM WORD COUNT IS 0
KA218	T58	C1	15A	(35)	01		DMBL05U DMBL15U DMBL21U DMBL22U DMBL23U DRE0B5U SPI002 SPI011 30 15A 31 15B 34 16A 36 17A 37 18B 38 18A 40 19A 42 20A	
				DBL00I	00	=		
KA309	TDD	BI	03B	( )	01		DRE0B5U 05 03B	
				DBL00N	00	=		
KA309	TDD	BN	02B	( )	01		DREC60 01 02B	
KA309	TDD	BP	04B	DBL00P	00	=		
KA309	TDD	BP	04A	(09)	01		DMARIA 04 04A	
KA309	TDD	BQ	03A	DBL00Q	00	=		BLOCK LEG. 0
KA309	TDD	BQ	02A	(07)	01		SPI061 03 02A	
KA213	THI	A6	06B	DBL000	00	=		
KA213	THI	A6	07B	(10)	01		DBL00A 15 07B	
KA224	TQ2	B2	09A	DBMRA0	00	=		QFR RESET + I/O RESET
KA224	TQ2	B2	10A	(14)	01		DXRS2B DX00RA 18 10A 20 11A	

DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DBMR1A  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 11

CONNECTOR	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIG. NATOR	FACTOR	COMMENT
KA213	THI A1	06A	DBMR1A	00	R		
KA213	THI A1	07A	(13)	01		DBMRAO 11 07A	
KA213	THI A2	04A	DBMR2A	00	=		
KA213	THI A2	05A	(08)	01		DBMRAO 06 05A	
KA213	THI A3	03A	DBMR3A	00	=		
KA213	THI A3	02A	(03)	01		DBMRAO 04 02A	
KA213	THI A4	02B	DBMR4A	00	=		
KA213	THI A4	03B	(01)	01		DBMRAO 05 03B	
KA213	THI A5	04B	DBMR5A	00	=		
KA213	THI A5	05B	(07)	01		DBMRAO 09 05B	
KA309	TDD CI	13A	DBREQI	00	=		
			( )	01		DCND6A 24 13A	
KA309	TDD CN	14A	DBREQN	00	=		
			( )	01		DXEA00 26 14A	
KA309	TDD CP	11B	DBREQP	00	=		
KA309	TDD CP	12A	(23)	01		DXR52B 22 12A	
KA309	TDD CQ	12B	DBREQQ	00	=		
KA309	TDD CQ	13B	(25)	01		DBSWRA 27 13B	
KA219	TT3 D3	27B	DBSWRA	00	=		
KA219	TT3 D3	24B	(51)	01		DBTSPQ DBW320 DERROA 45 24B 47 25B 49 26B	BOOTSTRAP REQ TIME
KA210	TDD FI	16A	DBTSPi	00	=		
			( )	01		SPI002 34 16A	
KA210	TDD FN	15A	DBTSPN	00	=		
			( )	01		SPI003 30 15A	

DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DBTSPP  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39C1FC7 DATE 09-03-82 PAGE 12

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA210	TDD	FP	16B	DBTSPP	00	=		
KA210	TDD	FP	17A	(33)	01		DBTS1A 36 17A	
KA210	TDD	FQ	15B	DBTSPPQ	00	=		BOOTSTRAP
KA210	TDD	FQ	14B	(31)	01		DBTSSA 29 14B	
KA211	TQ2	F2	34A	DBTSSA	00	=		DEV. BOOTSTRAP CODE
KA211	TQ2	F2	36A	(72)	01		DXDV18 DXRA40 71 36A 73 36B	
KA213	THI	C3	15A	DBTS1A	00	=		
KA213	THI	C3	16A	(34)	01		DBTS10 36 16A	
KA211	TQ2	F3	35A	DBTS10	00	=		MR + BTSP FOR
KA211	TQ2	F3	34B	(69)	01		DXRS2B DRRE3A 65 34B 74 35B	
KA213	THI	C4	14B	DBUSYA	00	=		RASC BUSY
KA213	THI	C4	15B	(30)	01		DBUSY0 29 15B	
KA328	TD4	C2	16B	DBUSY0	00	=		RASC BUSY
KA328	TD4	C2	15A	(33)	01		DLPTOP DBTSPP DTCW3A DTCCHP 30 15A 31 15B 34 16A 36 17A	
KA214	TT3	E2	29B	DBUSZ0	00	=		
KA214	TT3	E2	28B	(55)	01		DBUSYA DWENAP DRENAP 53 28B 60 28A 62 29A	
KA212	TT3	B2	09B	DBW32A	00	=		
KA212	TT3	B2	09A	(19)	01		DRB06Q DRWDE5T DRCL30 14 09A 17 08B 18 10A	
KA213	THI	C5	16B	DBW320	00	=		
KA213	THI	C5	17B	(31)	01		DBW32A 33 17B	
				DBOPOI	00	=		
KA232	TDD	A1	06A	( )	01		DDOPOQ 08 06A	
				DBOPON	00	=		
KA232	TDD	AN	07A	( )	01		DBFC1A 10 07A	



DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DB0P0P  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 13

CONNECTOR	GROUP	POINT	TEST POINTS AND OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA232	TDD	AP	05B	DBGPOP	00	=		
KA232	TDD	AP	05A	(11)	01		DBMRIA 06 05A	
KA232	TDD	AQ	06B	DBCP00	00	=		BUFFER REG PARITY
KA232	TDD	AQ	07B	(13)	01		DWRZOP 15 07B	
KA231	TQ2	C3	16B	DB001A	00	=		LOAD BUFFER REG BIT 00
KA231	TQ2	C3	14B	(33)	01		DXROCS DBLC00 29 14B 31 15B	
KA234	TDD	AI	06A	DB000I	00	=		OR DATA REG
				( )	01		DBIS0YA 08 06A	
KA234	TDD	AN	07A	DB000N	00	=		
				( )	01		DBCK0A 10 07A	
KA234	TDD	AP	05B	DB000P	00	=		
KA234	TDD	AP	05A	(11)	01		DBMRIA 06 05A	
KA234	TDD	AQ	06B	DB000Q	00	=		BUFFER REG BIT 00
KA234	TDD	AQ	07B	(13)	01		DB001A 15 07B	INPUT I/O
KA231	TQ2	C4	19B	DB011A	00	=		LOAD BUFFER REG BIT 01
KA231	TQ2	C4	17B	(39)	01		DXR1CS DBLC00 35 17B 37 18B	
KA234	TDD	BI	03B	DB010I	00	=		DATA REG
				( )	01		DBIS0TB 05 03B	
KA234	TDD	BN	02B	DB010N	00	=		
				( )	01		DBCK0A 01 02B	
KA234	TDD	BP	04B	DB010P	00	=		
KA234	TDD	BP	04A	(09)	01		DBMRIA 04 04A	
KA234	TDD	BQ	03A	DB010Q	00	=		BUFFER REG BIT 01
KA234	TDD	BQ	02A	(07)	01		DB011A 03 02A	INPUT I/O

DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DB02IA  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 14

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMINAL	DESIGNATOR	FACTOR	COMMENT
KA231	TQ2	D1	24A	DB021A	00	=		LOAD BUFFER REG BIT 02
KA231	TQ2	D1	25A	(52)	01		DXR2CS DBLC00 54 25A 56 26A	
				DB020I	00	=		
KA234	TDD	CI	13A	( )	01		DBIS0TC 24 13A	DATA REG
				DB020N	00	=		
KA234	TDD	CN	14A	( )	01		DBCK0A 26 14A	
KA234	TDD	CP	11B	DB020P	00	=		
KA234	TDD	CP	12A	(23)	01		DBMR1A 22 12A	
KA234	TDD	CQ	12B	DB020Q	00	=		BUFFER REG BIT 01
KA234	TDD	CQ	13B	(25)	01		DB021A 27 13B	INPUT I/O
KA231	TQ2	D2	21A	DB031A	00	=		LOAD BUFFER REG BIT 03
KA231	TQ2	D2	22A	(46)	01		DXR3CS DBLC00 48 22A 50 23A	
				DB030I	00	=		
KA234	TDD	DI	10A	( )	01		DBIS0TD 18 10A	OR DATA REG
				DB030N	00	=		
KA234	TDD	DN	09A	( )	01		DBCK0A 14 09A	
KA234	TDD	DP	10B	DB030P	00	=		
KA234	TDD	DP	11A	(21)	01		DBMR1A 20 11A	
KA234	TDD	DQ	09B	DB030Q	00	=		BUFFER REG BIT 03
KA234	TDD	DQ	08B	(19)	01		DB031A 17 08B	INPUT I/O
KA231	TQ2	D3	24B	DB041A	00	=		LOAD BUFFER REG BIT 04
KA231	TQ2	D3	22B	(45)	01		DXR4CS DBLC00 41 22B 43 23B	
				DB040I	00	=		
KA234	TDD	EI	19A	( )	01		DBIS1TA 40 19A	DATA REG

DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DB040N  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 15

CONNECTOR	CIRCUIT POINT	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA234	TDD	EN	20A	DB040N ( )	00	01	DBCK0A 42 20A	
KA234	TDD	EP	17B	DB040P (35 )	00	=		
KA234	TDD	EP	18A		01		DBMR1A 38 18A	
KA234	TDD	EQ	18B	DB040Q (37 )	00	=		BUFFER REG BIT 04
KA234	TDD	EQ	19B		01		DB041A 39 19B	INPUT I/O
KA231	TQ2	D4	27B	DB051A (51 )	00	=		LOAD BUFFER REG BIT 05
KA231	TQ2	D4	25B		01		DXR5CS DBLC00 47 25B 49 26B	
KA234	TDD	FI	16A	DB050I ( )	00	=		
					01		DBIS1TB 34 16A	DATA REG
KA234	TDD	FN	15A	DB050N ( )	00	=		
					01		DBCK0A 30 15A	
KA234	TDD	FP	16B	DB050P (33 )	00	=		
KA234	TDD	FP	17A		01		DBMR1A 36 17A	
KA234	TDD	FQ	15B	DB050Q (31 )	00	=		BUFFER REG BIT 05
KA234	TDD	FQ	14B		01		DB051A 29 14B	INPUT I/O
KA231	TQ2	E1	31A	DB061A (66 )	00	=		LOAD BUFFER REG BIT 06
KA231	TQ2	E1	32A		01		DXR6CS DBLC00 68 32A 70 33A	
KA234	TDD	GI	25A	DB060I ( )	00	=		
					01		DBIS1TC 54 25A	OR DATA REG
KA234	TDD	GN	26A	DB060N ( )	00	=		
					01		DBCK0A 56 26A	
KA234	TDD	GP	25B	DB060P (47 )	00	=		
KA234	TDD	GP	24A		01		DBMR2A 52 24A	

DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DB0600  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 16

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMIN	DESIGNATOR	FACTOR	COMMENT
KA234	TDD	GQ	26B	DB060Q	00	=		BUFFER REG BIT 06
KA234	TDD	GQ	27B	(49)	01		DB061A 51 27B	INPUT I/O
KA231	TQ2	E2	28A	DB071A	00	=		LOAD BUFFER REG BIT 07
KA231	TQ2	E2	29A	(60)	01		DXR7CS DBLC00 62 29A 64 30A	
KA234	TDD	HI	22A	DB070I	00	=		DATA REG
KA234	TDD	HI	22A	( )	01		DBIS1TD 48 22A	
KA234	TDD	HN	21A	DB070N	00	=		
KA234	TDD	HN	21A	( )	01		DBCK4A 46 21A	
KA234	TDD	HP	24B	DB070P	00	=		
KA234	TDD	HP	23A	(45)	01		DBMR2A 50 23A	
KA234	TDD	HQ	23B	DB070Q	00	=		BUFFER REG BIT 07
KA234	TDD	HQ	22B	(43)	01		DB071A 41 22B	INPUT I/O
KA231	TQ2	E3	30B	DB081A	00	=		LOAD BUFFER REG BIT 08
KA231	TQ2	E3	28B	(57)	01		DXR0CS DBLC10 53 28B 55 29B	
KA234	TDD	JI	32A	DB080I	00	=		DATA REG
KA234	TDD	JI	32A	( )	01		DBIS2TA 68 32A	
KA234	TDD	JN	33A	DB080N	00	=		
KA234	TDD	JN	33A	( )	01		DBCK1A 70 33A	
KA234	TDD	JP	31B	DB080P	00	=		
KA234	TDD	JP	31A	(59)	01		DBMR2A 66 31A	
KA234	TDD	JQ	32B	DB080Q	00	=		BUFFER REG BIT 08
KA234	TDD	JQ	33B	(61)	01		DB081A 63 33B	INPUT I/O
KA231	TQ2	E4	33B	DB091A	00	=		LOAD BUFFER REG BIT 09
KA231	TQ2	E4	31B	(63)	01		DXR1CS DBLC10 59 31B 61 32B	

DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DB0901  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 17

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA234	TDD	KI	29A	DB090I ( )	00 = 01		DBIS2TB 62 29A	OR DATA REG
KA234	TDD	KN	28A	DB090N ( )	00 = 01		DBCK1A 60 28A	
KA234	TDD	KP	30B	DB090P (57 )	00 = 01		DBMR2A 64 30A	
KA234	TDD	KQ	29B	DB090Q (55 )	00 = 01		DB09IA 53 28B	BUFFER REG BIT 09 INPUT I/O
KA231	TQ2	F1	37B	DB10IA (75 )	00 = 01		DXR2CS DBLC10 77 38B 79 39B	LOAD BUFFER REG BIT 10
KA234	TDD	LI	38B	DB100I ( )	00 = 01		DBIS2TC 77 38B	DATA REG
KA234	TDD	LN	39B	DB100N ( )	00 = 01		DBCK1A 79 39B	
KA234	TDD	LP	37A	DB100P (76 )	00 = 01		DBMR2A 75 37B	
KA234	TDD	LQ	38A	DB100Q (78 )	00 = 01		DB10IA 80 39A	BUFFER REG BIT 10 INPUT I/O
KA231	TQ2	F2	34A	DB11IA (72 )	00 = 01		DXR3CS DBLC10 71 36A 73 36B	LOAD BUFFER REG BIT 11
KA234	TDD	MI	36A	DB110I ( )	00 = 01		DBIS2TD 71 36A	DATA REG
KA234	TDD	MN	34A	DB110N ( )	00 = 01		DBCK1A 72 34A	

DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DB110P  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39C1FC7 DATE 09-03-82 PAGE 18

CONNECTOR	GROUP TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA234	TDD	MP	35A	DB110P	00	=		
KA234	TDD	MP	36B	(69 )	01		DBMR2A 73 36B	
KA234	TDD	MQ	35B	DB110Q	00	=		BUFFER REG BIT 11
KA234	TDD	MQ	34B	(74 )	01		DB111A 65 34B	INPUT I/O
KA231	TQ2	F3	35A	DB121A	00	=		LOAD BUFFER REG BIT 12
KA231	TQ2	F3	34B	(69 )	01		DXR4CS DBLC10 65 34B 74 35B	
				DB120I	00	=		
KA233	TDD	A1	06A	( )	01		DB1S31A 08 06A	DR DATA REG
				DB120N	00	=		
KA233	TDD	AN	07A	( )	01		DBCK1A 10 07A	
KA233	TDD	AP	05B	DB120P	00	=		
KA233	TDD	AP	05A	(11 )	01		DBMR2A 06 05A	
KA233	TDD	AQ	06B	DB120Q	00	=		BUFFER REG BIT 12
KA233	TDD	AQ	07B	(13 )	01		DB121A 15 07B	INPUT I/O
KA231	TQ2	F4	39A	DB131A	00	=		LOAD BUFFER REG BIT 13
KA231	TQ2	F4	37A	(80 )	01		DXR5CS DBLC10 76 37A 78 38A	
				DB130I	00	=		
KA233	TDD	B1	03B	( )	01		DB1S31B 05 03B	DATA REG
				DB130N	00	=		
KA233	TDD	BN	02B	( )	01		DBCK1A 01 02B	
KA233	TDD	BP	04B	DB130P	00	=		
KA233	TDD	BP	04A	(09 )	01		DBMR3A 04 04A	
KA233	TDD	BQ	03A	DB130Q	00	=		BUFFER REG BIT 13
KA233	TDD	BQ	02A	(07 )	01		DB131A 03 02A	INPUT I/O

DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DB14IA  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 19

CONNECTOR	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA230	TQ2 D1 24A	DB14IA	00 =			
KA230	TQ2 D1 25A	(52)	01		DXR6CS DBLC10 54 25A 56 26A	LOAD BUFFER REG BIT 14
		DB140I	00 =			
KA233	TDD CI 13A	( )	01		DBIS3TC 24 13A	DATA REG
		DB140N	00 =			
KA233	TDD CN 14A	( )	01		DBCK1A 26 14A	
KA233	TDD CP 11B	DB140P	00 =			
KA233	TDD CP 12A	(23)	01		DBMR3A 22 12A	
KA233	TDD CQ 12B	DB140Q	00 =			BUFFER REG BIT 14
KA233	TDD CQ 13B	(25)	01		DB14IA 27 13B	INPUT I/O
KA230	TQ2 D2 21A	DB15IA	00 =			LOAD BUFFER REG BIT 15
KA230	TQ2 D2 22A	(46)	01		DXR7CS DBLC10 48 22A 50 23A	
		DB150I	00 =			
KA233	TDD DI 10A	( )	01		DBIS3TD 18 10A	OR DATA REG
		DB150N	00 =			
KA233	TDD DN 09A	( )	01		DBCK4A 14 09A	
KA233	TDD DP 10B	DB150P	00 =			
KA233	TDD DP 11A	(21)	01		DBMR3A 20 11A	
KA233	TDD DQ 09B	DB150Q	00 =			BUFFER REG BIT 15
KA233	TDD DQ 08B	(19)	01		DB15IA 17 08B	INPUT I/O
KA230	TQ2 D3 24B	DB16IA	00 =			LOAD BUFFER REG BIT 16
KA230	TQ2 D3 22B	(45)	01		DXR0CS DBLC20 41 22B 43 23B	
		DB160I	00 =			
KA233	TDD EI 19A	( )	01		DBIS4TA 40 19A	DATA REG

DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DB160ON  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 20

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA233	TDD	EN	20A	DB160N ( )	00 = 01		DBCK2A 42 20A	
KA233	TDD	EP	17B	DB160P (35 )	00 = 01		DBMR3A 38 18A	
KA233	TDD	EQ	18B	DB160Q (37 )	00 = 01		DB161A 39 19B	BUFFER REG BIT 16 INPUT I/O
KA230	TQ2	D4	27B	DB171A (51 )	00 = 01		DXR1CS DBLC20 47 25B 49 26B	LOAD BUFFER REG BIT 17
KA233	TDD	FI	16A	DB170I ( )	00 = 01		DB1S4TB 34 16A	DATA REG
KA233	TDD	FN	15A	DB170N ( )	00 = 01		DBCK2A 30 15A	
KA233	TDD	FP	16B	DB170P (33 )	00 = 01		DBMR3A 36 17A	
KA233	TDD	FQ	15B	DB170Q (31 )	00 = 01		DB171A 29 14B	BUFFER REG BIT 17 INPUT I/O
KA230	TQ2	E1	31A	DB181A (66 )	00 = 01		DXR2CS DBLC20 68 32A 70 33A	LOAD BUFFER REG BIT 18
KA233	TDD	GI	25A	DB180I ( )	00 = 01		DB1S4TC 54 25A	OR DATA REG
KA233	TDD	GN	26A	DB180N ( )	00 = 01		DBCK2A 56 26A	
KA233	TDD	GP	25B	DB180P (47 )	00 = 01		DBMR3A 52 24A	



DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DB1800  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 21

CONNECTOR	GROUP	TEST POINTS AND DR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA233	TDD	GQ 26B	DB180Q	00	=		
KA233	TDD	GQ 27B	(49)	01		DB181A 51 27B	BUFFER REG BIT 18 INPUT I/O
KA230	TQ2	E2 28A	DB191A	00	=		
KA230	TQ2	E2 29A	(60)	01		DXR3CS DBLC20 62 29A 64 30A	LOAD BUFFER REG BIT 19
KA233	TDD	HI 22A	DB190I	00	=		
			( )	01		DBIS4TD 48 22A	DATA REG
KA233	TDD	HN 21A	DB190N	00	=		
			( )	01		DBCK2A 46 21A	
KA233	TDD	HP 24B	DB190P	00	=		
KA233	TDD	HP 23A	(45)	01		DBMR4A 50 23A	
KA233	TDD	HQ 23B	DB190Q	00	=		
KA233	TDD	HQ 22B	(43)	01		DB191A 41 22B	BUFFER REG BIT 19 INPUT I/O
KA230	TQ2	E3 30B	DB201A	00	=		
KA230	TQ2	E3 28B	(57)	01		DXR4CS DBLC20 53 28B 55 29B	LOAD BUFFER REG BIT 20
KA233	TDD	JI 32A	DB200I	00	=		
			( )	01		DBIS5YA 68 32A	DATA REG
KA233	TDD	JN 33A	DB200N	00	=		
			( )	01		DBCK2A 70 33A	
KA233	TDD	JP 31B	DB200P	00	=		
KA233	TDD	JP 31A	(59)	01		DBMR4A 66 31A	
KA233	TDD	JQ 32B	DB200Q	00	=		
KA233	TDD	JQ 33B	(61)	01		DB201A 63 33B	BUFFER REG BIT 20 INPUT I/O
KA230	TQ2	E4 33B	DB211A	00	=		
KA230	TQ2	E4 31B	(63)	01		DXR5CS DBLC20 59 31B 61 32B	LOAD BUFFER REG BIT 21

DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DB210I  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 22

CONNECTOR	TERMINAL	GROUP	TEST POINTS AND OR	EQUATION	TEST TERM	ORIGIN DATA	FACTOR	COMMENT
KA233	TDD	KI	29A	DB210I ( )	00 = 01		DBIS5TB 62 29A	OR DATA REG
KA233	TDD	KN	28A	DB210N ( )	00 = 01		DBCK2A 60 28A	
KA233	TDD	KP	30B	DB210P (57 )	00 = 01		DBMR4A 64 30A	
KA233	TDD	KQ	29B	DB210Q (55 )	00 = 01			BUFFER REG BIT 21 INPUT I/O
KA230	TQ2	F1	37B	DB221A (75 )	00 = 01		DXR6CS DBLC20 77 38B 79 39B	LOAD BUFFER REG BIT 22
KA233	TDD	LI	38B	DB220I ( )	00 = 01		DBIS5TC 77 38B	DATA REG
KA233	TDD	LN	39B	DB220N ( )	00 = 01		DBCK2A 79 39B	
KA233	TDD	LP	37A	DB220P (76 )	00 = 01		DBMR4A 75 37B	
KA233	TDD	LQ	38A	DB220Q (78 )	00 = 01		DB221A 80 39A	BUFFER REG BIT 22 INPUT I/O
KA230	TQ2	F2	34A	DB231A (72 )	00 = 01		DXR7CS DBLC20 71 36A 73 36B	LOAD BUFFER REG BIT 23
KA233	TDD	MI	36A	DB230I ( )	00 = 01		DBIS5TD 71 36A	DATA REG
KA233	TDD	MN	34A	DB230N ( )	00 = 01		DBCK4A 72 34A	

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149017-860  
CARD CAGE ASSY, I/O UNIT

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX DB230P  
FILE IDENT T39BIUX2 DATE 09-03-82 PAGE 23

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	REG. VALUE	FACTOR	COMMENT
KA233	TDD	MP	35A	DB230P	00	=		
KA233	TDD	MP	36B	(69)	01		DBMR4A 73 36B	
KA233	TDD	MQ	35B	DB230Q	00	=		
KA233	TDD	MQ	34B	(74)	01		DB23IA 65 34B	BUFFER REG BIT 23 INPUT I/O
KA230	TQ2	F3	35A	DB24IA	00	=		
KA230	TQ2	F3	34B	(69)	01		DXR0CS DBLC30 65 34B 74 35B	LOAD BUFFER REG BIT 24
				DB24OI	00	=		
KA232	TDD	BI	03B	( )	01		DBIS6TA 05 03B	OR DATA REG
				DB24ON	00	=		
KA232	TDD	BN	02B	( )	01		DBCK3A 01 02B	
KA232	TDD	BP	04B	DB24OP	00	=		
KA232	TDD	BP	04A	(09)	01		DBMR4A 04 04A	
KA232	TDD	BQ	03A	DB24OQ	00	=		
KA232	TDD	BQ	02A	(07)	01		DB24IA 03 02A	BUFFER REG BIT 24 INPUT I/O
KA230	TQ2	F4	39A	DB25IA	00	=		
KA230	TQ2	F4	37A	(80)	01		DXR1CS DBLC30 76 37A 78 38A	LOAD BUFFER REG BIT 25
				DB25OI	00	=		
KA232	TDD	CI	13A	( )	01		DBIS6TB 24 13A	DATA REG
				DB25ON	00	=		
KA232	TDD	CN	14A	( )	01		DBCK3A 26 14A	
KA232	TDD	CP	11B	DB25OP	00	=		
KA232	TDD	CP	12A	(23)	01		DBMR5A 22 12A	
KA232	TDD	CQ	12B	DB25OQ	00	=		
KA232	TDD	CQ	13B	(25)	01		DB25IA 27 13B	BUFFER REG BIT 25 INPUT I/O

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149017-860  
CARD CAGE ASSY, I/O UNIT

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX DB26IA  
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CONNECTOR	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA223	TQ2	A1 05A	DB261A	00	=		LOAD BUFFER REG BIT 26
KA223	TQ2	A1 06A	( 06 )	01	=	DXR2C5 DBLC30 08 06A 10 07A	
			DB260I	00	=		
KA232	TDD	DI 10A	( )	01	=	DBIS6TC 18 10A	DATA REG
			DB260N	00	=		
KA232	TDD	DN 09A	( )	01	=	DBCK3A 14 09A	
KA232	TDD	DP 10B	DB260P	00	=		
KA232	TDD	DP 11A	( 21 )	01	=	DBMR5A 20 11A	
KA232	TDD	DQ 09B	DB260Q	00	=		BUFFER REG BIT 26
KA232	TDD	DQ 08B	( 19 )	01	=	DB261A 17 08B	INPUT I/O
KA223	TQ2	A2 02B	DB271A	00	=		LOAD BUFFER REG BIT 27
KA223	TQ2	A2 04A	( 01 )	01	=	DXR3C5 DBLC30 04 04A 05 03B	
			DB270I	00	=		
KA232	TDD	EI 19A	( )	01	=	DBIS6TD 40 19A	OR DATA REG
			DB270N	00	=		
KA232	TDD	EN 20A	( )	01	=	DBCK3A 42 20A	
KA232	TDD	EP 17B	DB270P	00	=		
KA232	TDD	EP 18A	( 35 )	01	=	DBMR5A 38 18A	
KA232	TDD	EQ 18B	DB270Q	00	=		BUFFER REG BIT 27
KA232	TDD	EQ 19B	( 37 )	01	=	DB271A 39 19B	INPUT I/O
KA223	TQ2	A3 04B	DB281A	00	=		LOAD BUFFER REG BIT 28
KA223	TQ2	A3 02A	( 09 )	01	=	DXR4C5 DBLC30 03 02A 07 03A	
			DB280I	00	=		
KA232	TDD	FI 16A	( )	01	=	DBIS7TA 34 16A	DATA REG

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CARD CAGE ASSY, I/O UNIT

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
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REV G  
DATE 09-03-82  
INDEX DB280N  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA232	TDD	FN	15A	DB280N ( )	00 = 01	DBCK3A 30 15A	
KA232	TDD	FP	16B	DB280P (33 )	00 = 01	DBMR5A 36 17A	
KA232	TDD	FQ	15B	DB280Q (31 )	00 = 01	DB28IA 29 14B	BUFFER REG BIT 28 INPUT I/O
KA223	TQ2	A4	07B	DB29IA (15 )	00 = 01	DXR5CS DBLC30 11 05B 13 06B	LOAD BUFFER REG BIT 29
KA232	TDD	GI	25A	DB29OI ( )	00 = 01	DBIS7TB 54 25A	DATA REG
KA232	TDD	GN	26A	DB29ON ( )	00 = 01	DBCK3A 56 26A	
KA232	TDD	GP	25B	DB29OP (47 )	00 = 01	DBMR5A 52 24A	
KA232	TDD	GQ	26B	DB29OQ (49 )	00 = 01	DB29IA 51 27B	BUFFER REG BIT 29 INPUT I/O
KA223	TQ2	B1	12A	DB30IA (22 )	00 = 01	DXR6CS DBLC30 24 13A 26 14A	LOAD BUFFER REG BIT 30
KA232	TDD	HI	22A	DB30OI ( )	00 = 01	DBIS7TC 48 22A	OR DATA REG
KA232	TDD	HN	21A	DB30ON ( )	00 = 01	DBCK3A 46 21A	
KA232	TDD	HP	24B	DB30OP (45 )	00 = 01	DBMR5A 50 23A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX DB3000  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA232	TDD	HQ	23B	DB300Q	00	=		BUFFER REG BIT 30
KA232	TDD	HQ	22B	(43)	01		DB301A 41 22B	INPUT I/O
KA223	TQ2	B2	09A	DB311A	00	=		LOAD BUFFER REG BIT 31
KA223	TQ2	B2	10A	(14)	01		DXR7CS DBLC30 18 10A 20 11A	
KA232	TDD	JI	32A	DB310I	00	=		DATA REG
KA232	TDD	JI	32A	( )	01		DB1S7TD 68 32A	
KA232	TDD	JN	33A	DB310N	00	=		
KA232	TDD	JN	33A	( )	01		DBCK4A 70 33A	
KA232	TDD	JP	31B	DB310P	00	=		
KA232	TDD	JP	31A	(59)	01		DBMR5A 66 31A	
KA232	TDD	JQ	32B	DB310Q	00	=		BUFFER REG BIT 31
KA232	TDD	JQ	33B	(61)	01		DB311A 63 33B	INPUT I/O
KA312	TD4	C1	17B	DCCLRA	00	=		CLEAR CL CLIC R.RD
KA312	TD4	C1	18B	(35)	01		DRB07Q DRCL10 DRW0A DRRWZ0 37 18B 38 18A 40 19A 42 20A	
KA333	TQ2	A1	05A	DCDAAA	00	=		DCDCAB BUSS 3 DISC CLK
KA333	TQ2	A1	06A	(06)	01		DRCL30 DSRC00 08 06A 10 07A	
KA333	TQ2	A2	02B	DCDABA	00	=		DCDCAB BUSS
KA333	TQ2	A2	04A	(01)	01		DRCL30 DSRC00 04 04A 05 03B	
KA333	TQ2	A3	04B	DCDACA	00	=		DCDCAB BUSS
KA333	TQ2	A3	02A	(09)	01		DRCL30 DSRC00 03 02A 07 03A	
KA333	TQ2	B1	12A	DCDADA	00	=		DCDCBB BUSS
KA333	TQ2	B1	13A	(22)	01		DRCL30 DSRC00 24 13A 26 14A	
KA333	TQ2	B2	09A	DCDAEA	00	=		DCDCBB BUSS
KA333	TQ2	B2	10A	(14)	01		DRCL30 DSRC00 18 10A 20 11A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX DCDCAB  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA333	TQ2	A1	05A	DCDCAB ( )	00 =	01	DCDAAA DCDABA DCDACA 06 05A 01 02B 09 04B	
KA333	TQ2	B1	12A	DCDCBB ( )	00 =	01	DCDADA DCDAEA 22 12A 14 09A	
KA215	THI	E1	32A	DCDMAA (66 )	00 =	01	DCDMAO 64 33A	DCDMRB BUSS
KA212	TT3	D1	23A	DCDMAO (50 )	00 =	01	DCCLRA DCWCRA DRSC1A 52 24A 54 25A 56 26A	WD21. BIT 32. CLK 3
KA215	THI	E2	30A	DCDMBA (63 )	00 =	01	DCDMAO 61 31A	DCDMRB BUSS
KA215	THI	E3	28A	DCDMCA (60 )	00 =	01	DCDMAO 62 29A	DCDMRB BUSS
KA215	THI	E4	28B	DCDMEA (56 )	00 =	01	DCDMAO 55 29B	DCDMSB BUSS
KA215	THI	E5	30B	DCDMFA (57 )	00 =	01	DCDMAO 59 31B	DCDMSB BUSS
KA215	THI	E1	32A	DCDMRB ( )	00 =	01	DCDMAA 66 32A	
KA215	THI	E2	30A	( )	02 +		DCDMBA 63 30A	
KA215	THI	E3	28A	( )	03 +		DCDMCA 60 28A	
KA215	THI	E4	28B	DCDMSB ( )	00 =	01	DCDMEA DCDMFA 56 28B 57 30B	
KA332	EOR	A1	04B	DCDDOER (05 )	00 =	01	DC000Q DSR000E 03 03B 01 02B	MOD 2 SUM BIT 00 SHIFT REG .CYCLIC REG

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CARD CAGE ASSY, I/O UNIT

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX DCD01ER  
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CONNECTOR	TEST POINT CIRCUIT NO.	TEST POINT NO.	TEST POINT AND/OR	EQUATION	TERM	DESIG NATOR	FACTOR	COMMENT
KA332	EOR	A2	07B	DCD01ER	00	=	MOD 2 SUM	BIT 01
KA332	EUR	A2	06B	(11)	01		DC010Q DSR001E 09 06B 07 05B	
KA332	EOR	A3	07A	DCD02ER	00	=	MOD 2 SUM	BIT 02
KA332	EUR	A3	06A	(13)	01		DC020Q DSR002E 14 06A 10 05A	
KA332	EOR	A4	04A	DCD03ER	00	=	MOD 2 SUM	BIT 03
KA332	EUR	A4	03A	(08)	01		DC030Q DSR003E 06 03A 04 02A	SHIFT REG . CYCLIC REG
KA332	EOR	B1	10B	DCD04ER	00	=	MOD 2 SUM	BIT 04
KA332	EUR	B1	09B	(19)	01		DC040Q DSR010E 17 09B 15 08B	
KA332	EOR	B2	13B	DCD05ER	00	=	MOD 2 SUM	BIT 05
KA332	EUR	B2	12B	(27)	01		DC050Q DSR011E 23 12B 21 11B	
KA332	EOR	B3	14A	DCD06ER	00	=	MOD 2 SUM	BIT 06
KA332	EUR	B3	13A	(25)	01		DC060Q DSR012E 26 13A 24 12A	SHIFT REG . CYCLIC REG
KA332	EOR	B4	11A	DCD07ER	00	=	MOD 2 SUM	BIT 07
KA332	EUR	B4	10A	(22)	01		DC070Q DSR013E 20 10A 18 09A	
KA332	EOR	C1	16B	DCD08ER	00	=	MOD 2 SUM	BIT 08
KA332	EUR	C1	15B	(33)	01		DC080Q DSR020E 31 15B 29 14B	
KA332	EOR	C2	19B	DCD09ER	00	=	MOD 2 SUM	BIT 09
KA332	EUR	C2	18B	(39)	01		DC090Q DSR021E 37 18B 35 17B	SHIFT REG . CYCLIC REG
KA332	EOR	C3	20A	DCD10ER	00	=	MOD 2 SUM	BIT 10
KA332	EUR	C3	19A	(42)	01		DC100Q DSR022E 40 19A 38 18A	
KA332	EOR	C4	17A	DCD11ER	00	=	MOD 2 SUM	BIT 11
KA332	EUR	C4	16A	(36)	01		DC110Q DSR023E 34 16A 30 15A	SHIFT REG . CYCLIC REG
KA332	EOR	D1	24B	DCD12ER	00	=	MOD 2 SUM	BIT 12
KA332	EUR	D1	23B	(45)	01		DC120Q DSR030E 43 23B 41 22B	



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39BIUX2  
REV G  
DATE 09-03-82  
INDEX DCD13ER  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA332	EOR	D2	27B	DCD13ER	00	=		MOD 2 SUM BIT 13
KA332	EOR	D2	26B	(51)	01		DC130Q DSR031E 49 26B 47 25B	
KA332	EOR	D3	26A	DCD14ER	00	=		MOD 2 SUM BIT 14
KA332	EOR	D3	25A	(56)	01		DC140Q DSR032E 54 25A 52 24A	SHIFT REG . CYCLIC REG
KA332	EOR	D4	23A	DCD15ER	00	=		MOD 2 SUM BIT 15
KA332	EOR	D4	22A	(50)	01		DC150Q DSR033E 48 22A 46 21A	
KA332	EOR	E1	30B	DCD16ER	00	=		MOD 2 SUM BIT 16
KA332	EOR	E1	29B	(59)	01		DC160Q DSR040E 55 29B 53 28B	
KA332	EOR	E2	33B	DCD17ER	00	=		MOD 2 SUM BIT 17
KA332	EOR	E2	32B	(65)	01		DC170Q DSR041E 63 32B 61 31B	SHIFT REG . CYCLIC REG
KA332	EOR	E3	33A	DCD18ER	00	=		MOD 2 SUM BIT 18
KA332	EOR	E3	32A	(68)	01		DC180Q DSR042E 66 32A 64 31A	
KA332	EOR	E4	30A	DCD19ER	00	=		MOD 2 SUM BIT 19
KA332	EOR	E4	29A	(62)	01		DC190Q DSR043E 60 29A 57 28A	
KA332	EOR	F1	36B	DCD20ER	00	=		MOD 2 SUM BIT 20
KA332	EOR	F1	35B	(73)	01		DC200Q DSR050E 71 35B 69 34B	SHIFT REG . CYCLIC REG
KA332	EOR	F2	39B	DCD21ER	00	=		MOD 2 SUM BIT 21
KA332	EOR	F2	38B	(79)	01		DC210Q DSR051E 77 38B 75 37B	
KA332	EOR	F3	39A	DCD22ER	00	=		MOD 2 SUM BIT 22
KA332	EOR	F3	38A	(80)	01		DC220Q DSR052E 78 38A 76 37A	SHIFT REG . CYCLIC REG
KA332	EOR	F4	36A	DCD23ER	00	=		MOD 2 SUM BIT 23
KA332	EOR	F4	35A	(74)	01		DC230Q DSR053E 72 35A 70 34A	
KA331	EOR	A1	04B	DCD24ER	00	=		MOD 2 SUM BIT 24
KA331	EOR	A1	03B	(05)	01		DC240Q DSR060E 03 03B 01 02B	

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CARD CAGE ASSY, I/O UNIT

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX DCD25ER  
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CONNECTOR	CPU UNIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA331	EOR	A2	07B	DCD25ER	00	=		MOD 2 SUM BIT 25
KA331	EUR	A2	06B	(11)	01		DC250Q DSR061E 09 06B 07 05B	SHIFT REG . CYCLIC REG
KA331	EOR	A3	07A	DCD26ER	00	=		MOD 2 SUM BIT 26
KA331	EUR	A3	06A	(13)	01		DC260Q DSR062E 14 06A 10 05A	
KA331	EOR	A4	04A	DCD27ER	00	=		MOD 2 SUM BIT 27
KA331	EUR	A4	03A	(08)	01		DC270Q DSR063E 06 03A 04 02A	
KA331	EOR	B1	10B	DCD28ER	00	=		MOD 2 SUM BIT 28
KA331	EUR	B1	09B	(19)	01		DC280Q DSR070E 17 09B 15 08B	SHIFT REG . CYCLIC REG
KA331	EOR	B2	13B	DCD29ER	00	=		MOD 2 SUM BIT 29
KA331	EUR	B2	12B	(27)	01		DC290Q DSR071E 23 12B 21 11B	
KA331	EOR	B3	14A	DCD30ER	00	=		MOD 2 SUM BIT 30
KA331	EUR	B3	13A	(25)	01		DC300Q DSR072E 26 13A 24 12A	
KA331	EOR	B4	11A	DCD31ER	00	=		MOD 2 SUM BIT 31
KA331	EUR	B4	10A	(22)	01		DC310Q DSR073E 20 10A 18 09A	SHIFT REG . CYCLIC REG
KA337	THI	C6	18B	DCERA0	00	=		
KA337	THI	C6	19B	(42)	01		DCERA0 39 19B	
KA327	TSB	A1	05B	DCERA0	00	=		CYC REG BYTE 1 *S 0
KA327	TSB	A1	02B	(11)	01		DC000P DC010P DC020P DC030P DC040P DC050P DC060P DC070P 01 02B 04 04A 05 03B 06 05A 07 03A 08 06A 10 07A 13 06B	
KA337	THI	C2	17A	DCERBA	00	=		
KA337	THI	C2	18A	(37)	01		DCERB0 35 18A	
KA327	TSB	B1	11B	DCERB0	00	=		CYC REG BYTE 2 *S 0
KA327	TSB	B1	09A	(23)	01		DC080P DC090P DC100P DC110P DC120P DC130P DC140P DC150P 14 09A 18 10A 19 09B 20 11A 22 12A 24 13A 25 12B 26 14A	CYC REG BYTE 2 *S 0
KA337	THI	C3	15A	DCERCA	00	=		
KA337	THI	C3	16A	(34)	01		DCERC0 36 16A	

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149017-860  
CARD CAGE ASSY, I/O UNIT

LOGIC

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR										COMMENT
KA327	TS8	C1	17B	DCERC0	00	=	CYC REG BYTE 3 *S 0										
KA327	TS8	C1	15A	(35)	01		DC160P	DC170P	DC180P	DC190P	DC200P	DC210P	DC220P	DC230P	CYC REG BYTE 3 *S 0		
							30 15A	31 15B	34 16A	36 17A	37 18B	38 18A	40 19A	42 20A			
KA337	TH1	C4	14B	DCERDA	00	=											
KA337	TH1	C4	15B	(30)	01		DCERDO										
							29 15B										
KA327	TS8	D1	25B	DCERDO	00	=	CYC REG BYTE 4 *S 0										
KA327	TS8	D1	23B	(47)	01		DC240P	DC250P	DC260P	DC270P	DC280P	DC290P	DC300P	DC310P	CYC REG BYTE 4 *S 0		
							43 23B	46 21A	48 22A	49 26B	50 23A	52 24A	54 25A	56 26A			
KA328	TD4	A1	05B	DCERRO	00	=	CYCLIC WORD NOT ZERO										
KA328	TD4	A1	05A	(11)	01		DCERAA	DCERBA	DCERCA	DCERDA							
							06 05A	08 06A	10 07A	13 06B							
KA219	TT3	F3	39A	DCYE1A	00	=											
KA219	TT3	F3	35A	(80)	01		DCYERQ	DRIGEA	SPI007								
							69 35A	76 37A	78 38A								
KA328	TD4	A2	04B	DCWCRA	00	=	CLEAR CYCLIC REG. WRITE										
KA328	TD4	A2	02B	(09)	01		DSRC00	DRCL10	DRW210	DWR000							
							01 02B	04 04A	05 03B	07 03A							
KA305	TDD	GI	25A	DCYERI	00	=											
				( )	01		DCERRO										
							54 25A										
KA305	TDD	GN	26A	DCYERN	00	=											
				( )	01		DCYE1A										
							56 26A										
KA305	TDD	GP	25B	DCYERP	00	=											
KA305	TDD	GP	24A	(47)	01		DCYRTA										
							52 24A										
KA305	TDD	GQ	26B	DCYERQ	00	=	CYCLIC ERROR										
KA305	TDD	GQ	27B	(49)	01		SPI021										
							51 27B										
KA214	TT3	D1	23A	DCYE1A	00	=											
KA214	TT3	D1	24A	(50)	01		DRRWZ0	DRWCLQ	DCYERP								
							52 24A	54 25A	56 26A								
KA337	TH1	D1	25A	DCYRTA	00	=	RESET CYCLIC ERR										
KA337	TH1	D1	26A	(54)	01		DSTAT0										
							52 26A										

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149017-860  
CARD CAGE ASSY, I/O UNIT

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX DCYT00  
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CONNECTOR	CIRCUIT TYPE	PROJ	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA337	THI	D2	23A	DCYT00	00	=		
KA337	THI	D2	24A	(49)	01		DRCHD41 47 24A	CYCLE TEST
KA336	TDD	A1	06A	DC000I	00	=		
				( )	01		DCD00ER 08 06A	
KA336	TDD	AN	07A	DC000N	00	=		
				( )	01		DCDCAB 10 07A	
KA336	TDD	AP	05B	DC000P	00	=		
KA336	TDD	AP	05A	(11)	01		DCDMRB 06 05A	
KA336	TDD	AQ	06B	DC000Q	00	=		CYCLIC REG BIT 00
KA336	TDD	AQ	07B	(13)	01		SPI028 15 07B	
KA336	TDD	BI	03B	DC010I	00	=		
				( )	01		DCD01ER 05 03B	
KA336	TDD	BN	02B	DC010N	00	=		
				( )	01		DCDCAB 01 02B	
KA336	TDD	BP	04B	DC010P	00	=		
KA336	TDD	BP	04A	(09)	01		DCDMRB 04 04A	
KA336	TDD	BQ	03A	DC010Q	00	=		CYCLIC REG BIT 01
KA336	TDD	BQ	02A	(07)	01		SPI027 03 02A	
KA336	TDD	CI	13A	DC020I	00	=		
				( )	01		DCD02ER 24 13A	
KA336	TDD	CN	14A	DC020N	00	=		
				( )	01		DCDCAB 26 14A	
KA336	TDD	CP	11B	DC020P	00	=		
KA336	TDD	CP	12A	(23)	01		DCDMRB 22 12A	

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149017-860  
CARD CAGE ASSY, I/O UNIT

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX DC0200  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA336	TDD CQ		12B	DC020Q	00	=		
KA336	TDD CQ		13B	(25)	01		SPI028 27 13B	CYCLIC REG BIT 02
				DC030I	00	=		
KA336	TDD DI		10A	( )	01		DCD03ER 18 10A	
				DC030N	00	=		
KA336	TDD DN		09A	( )	01		DCDCAB 14 09A	
KA336	TDD DP		10B	DC030P	00	=		
KA336	TDD DP		11A	(21)	01		DCDHRB 20 11A	
				DC030Q	00	=		
KA336	TDD DQ		09B	(19)	01		SPI027 17 08B	CYCLIC REG BIT 03
KA336	TDD DQ		08B					
				DC040I	00	=		
KA336	TDD EI		19A	( )	01		DCD04ER 40 19A	
				DC040N	00	=		
KA336	TDD EN		20A	( )	01		DCDCAB 42 20A	
KA336	TDD EP		17B	DC040P	00	=		
KA336	TDD EP		18A	(35)	01		DCDHRB 38 18A	
				DC040Q	00	=		
KA336	TDD EQ		18B	(37)	01		SPI028 39 19B	CYCLIC REG BIT 04
KA336	TDD EQ		19B					
				DC050I	00	=		
KA336	TDD FI		16A	( )	01		DCD05ER 34 16A	
				DC050N	00	=		
KA336	TDD FN		15A	( )	01		DCDCAB 30 15A	
KA336	TDD FP		16B	DC050P	00	=		
KA336	TDD FP		17A	(33)	01		DCDHRB 36 17A	

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CARD CAGE ASSY, I/O UNIT

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CYC TYPE	GROUP	TEST POINTS AND/OR	EQUATION	Y TEN	DESIG NATION	FACTOR	COMMENT
KA336	TDD	FQ	15B	DC050Q	00	=		CYCLIC REG BIT 05
KA336	TDD	FQ	14B	(31)	01		SPI027 29 14B	
				DC060I	00	=		
KA336	TDD	GI	25A	( )	01		DCD06ER 54 25A	
				DC060N	00	=		
KA336	TDD	GN	26A	( )	01		DCDCAB 56 26A	
KA336	TDD	GP	25B	DC060P	00	=		
KA336	TDD	GP	24A	(47)	01		DCDMRB 52 24A	
KA336	TDD	GQ	26B	DC060Q	00	=		CYCLIC REG BIT 06
KA336	TDD	GQ	27B	(49)	01		SPI028 51 27B	
				DC070I	00	=		
KA336	TDD	HI	22A	( )	01		DCD07ER 48 22A	
				DC070N	00	=		
KA336	TDD	HN	21A	( )	01		DCDCAB 46 21A	
KA336	TDD	HP	24B	DC070P	00	=		
KA336	TDD	HP	23A	(45)	01		DCDMRB 50 23A	
KA336	TDD	HQ	23B	DC070Q	00	=		CYCLIC REG BIT 07
KA336	TDD	HQ	22B	(43)	01		SPI027 41 22B	
				DC080I	00	=		
KA336	TDD	JI	32A	( )	01		DCD08ER 68 32A	
				DC080N	00	=		
KA336	TDD	JN	33A	( )	01		DCDCAB 70 33A	
KA336	TDD	JP	31B	DC080P	00	=		
KA336	TDD	JP	31A	(50)	01		DCDMRB 66 31A	

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CARD CAGE ASSY, I/O UNIT

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CAGE TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA336	TDD	JQ	32B	DC080Q	00	=		
KA336	TDD	JQ	33B	(61)	01		SPI028 63 33B	CYCLIC REG BIT 08
				DC090I	00	=		
KA336	TDD	KI	29A	( )	01		DCD09ER 62 29A	
				DC090N	00	=		
KA336	TDD	KN	28A	( )	01		DCDCAB 60 28A	
KA336	TDD	KP	30B	DC090P	00	=		
KA336	TDD	KP	30A	(57)	01		DCDMRB 64 30A	
KA336	TDD	KQ	29B	DC090Q	00	=		
KA336	TDD	KQ	28B	(55)	01		SPI027 53 28B	CYCLIC REG BIT 09
				DC100I	00	=		
KA336	TDD	LI	38B	( )	01		DCD10ER 77 38B	
				DC100N	00	=		
KA336	TDD	LN	39B	( )	01		DCDCAB 79 39B	
KA336	TDD	LP	37A	DC100P	00	=		
KA336	TDD	LP	37B	(76)	01		DCDMRB 75 37B	
KA336	TDD	LQ	38A	DC100Q	00	=		
KA336	TDD	LQ	39A	(78)	01		SPI028 80 39A	CYCLIC REG BIT 10
				DC110I	00	=		
KA336	TDD	MI	36A	( )	01		DCD11ER 71 36A	
				DC110N	00	=		
KA336	TDD	MN	34A	( )	01		DCDCAB 72 34A	
KA336	TDD	MP	35A	DC110P	00	=		
KA336	TDD	MP	36B	(69)	01		DCDMRB 73 36B	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA336	TDD	MQ	35B	DC110Q	00	=		
KA336	TDD	MQ	34B	(74)	01		SPI027 65 34B	CYCLIC REG BIT 11
KA335	TDD	AI	06A	DC120I	00	=		
				( )	01		DCD12ER 08 06A	
KA335	TDD	AN	07A	DC120N	00	=		
				( )	01		DCDCAB 10 07A	
KA335	TDD	AP	05B	DC120P	00	=		
KA335	TDD	AP	05A	(11)	01		DCDMRB 06 05A	
KA335	TDD	AQ	06B	DC120Q	00	=		
KA335	TDD	AQ	07B	(13)	01		SPI028 15 07B	CYCLIC REG BIT 12
KA335	TDD	BI	03B	DC130I	00	=		
				( )	01		DCD13ER 05 03B	
KA335	TDD	BN	02B	DC130N	00	=		
				( )	01		DCDCAB 01 02B	
KA335	TDD	BP	04B	DC130P	00	=		
KA335	TDD	BP	04A	(09)	01		DCDMRB 04 04A	
KA335	TDD	BQ	03A	DC130Q	00	=		
KA335	TDD	BQ	02A	(07)	01		SPI027 03 02A	CYCLIC REG BIT 13
KA335	TDD	CI	13A	DC140I	00	=		
				( )	01		DCD14ER 24 13A	
KA335	TDD	CN	14A	DC140N	00	=		
				( )	01		DCDCAB 26 14A	
KA335	TDD	CP	11B	DC140P	00	=		
KA335	TDD	CP	12A	(23)	01		DCDMRB 22 12A	



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	REG. PREFIX	FACTOR	COMMENT
KA335	TDD	CQ	12B	DC140Q	00	=		
KA335	TDD	CQ	13B	(25)	01		SPI028 27 13B	CYCLIC REG BIT 14
KA335	TDD	DI	10A	DC150I	00	=		
				( )	01		DCD15ER 18 10A	
KA335	TDD	DN	09A	DC150N	00	=		
				( )	01		DCDCAB 14 09A	
KA335	TDD	DP	10B	DC150P	00	=		
KA335	TDD	DP	11A	(21)	01		DCDMRB 20 11A	
KA335	TDD	DQ	09B	DC150C	00	=		
KA335	TDD	DQ	08B	(19)	01		SPI027 17 08B	CYCLIC REG BIT 15
KA335	TDD	EI	19A	DC160I	00	=		
				( )	01		DCD16ER 40 19A	
KA335	TDD	EN	20A	DC160N	00	=		
				( )	01		DCDCAB 42 20A	
KA335	TDD	EP	17B	DC160P	00	=		
KA335	TDD	EP	18A	(35)	01		DCDMRB 38 18A	
KA335	TDD	EQ	18B	DC160Q	00	=		
KA335	TDD	EQ	19B	(37)	01		SPI028 39 19B	CYCLIC REG BIT 16
KA335	TDD	FI	16A	DC170I	00	=		
				( )	01		DCD17ER 34 16A	
KA335	TDD	FN	15A	DC170N	00	=		
				( )	01		DCDCAB 30 15A	
KA335	TDD	FP	16B	DC170P	00	=		
KA335	TDD	FP	17A	(33)	01		DCDMRB 36 17A	

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149017-860  
CARD CAGE ASSY, I/O UNIT

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TEST TENT	DESIG- NATOR	FACTOR	COMMENT
KA335	TDD	FQ	15B	DC170Q	00	=		
KA335	TDD	FQ	14B	(31)	01		SP1027 29 14B	CYCLIC REG BIT 17
				DC180I	00	=		
KA335	TDD	GI	25A	( )	01		DCD18ER 54 25A	
				DC180N	00	=		
KA335	TDD	GN	26A	( )	01		DCDCBB 56 26A	
KA335	TDD	GP	25B	DC180P	00	=		
KA335	TDD	GP	24A	(47)	01		DCDMSB 52 24A	
KA335	TDD	GQ	26B	DC180Q	00	=		
KA335	TDD	GQ	27B	(49)	01		SP1028 51 27B	CYCLIC REG BIT 18
				DC190I	00	=		
KA335	TDD	HI	22A	( )	01		DCD19ER 48 22A	
				DC190N	00	=		
KA335	TDD	HN	21A	( )	01		DCDCBB 46 21A	
KA335	TDD	HP	24B	DC190P	00	=		
KA335	TDD	HP	23A	(45)	01		DCDMSB 50 23A	
KA335	TDD	HQ	23B	DC190Q	00	=		
KA335	TDD	HQ	22B	(43)	01		SP1027 41 22B	CYCLIC REG BIT 19
				DC200I	00	=		
KA335	TDD	JI	32A	( )	01		DCD20ER 68 32A	
				DC200N	00	=		
KA335	TDD	JN	33A	( )	01		DCDCBB 70 33A	
KA335	TDD	JP	31B	DC200P	00	=		
KA335	TDD	JP	31A	(59)	01		DCDMSB 66 31A	

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CARD CAGE ASSY, I/O UNIT

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATION	FACTOR	COMMENT
KA335	TDD	JQ	32B	DC200Q	00 =		
KA335	TDD	JQ	33B	(61)	01	SPI028 63 33B	CYCLIC REG BIT 20
				DC210I	00 =		
KA335	TDD	KI	29A	( )	01	DCD21ER 62 29A	
				DC210N	00 =		
KA335	TDD	KN	28A	( )	01	DCDCBB 60 28A	
KA335	TDD	KP	30B	DC210P	00 =		
KA335	TDD	KP	30A	(57)	01	DCDMSB 64 30A	
KA335	TDD	KQ	29B	DC210Q	00 =		
KA335	TDD	KQ	28B	(55)	01	SPI027 53 28B	CYCLIC REG BIT 21
				DC220I	00 =		
KA335	TDD	LI	38B	( )	01	DCD22ER 77 38B	
				DC220N	00 =		
KA335	TDD	LN	39B	( )	01	DCDCBB 79 39B	
KA335	TDD	LP	37A	DC220P	00 =		
KA335	TDD	LP	37B	(76)	01	DCDMSB 75 37B	
KA335	TDD	LQ	38A	DC220Q	00 =		
KA335	TDD	LQ	39A	(78)	01	SPI028 80 39A	CYCLIC REG BIT 22
				DC230I	00 =		
KA335	TDD	MI	36A	( )	01	DCD23ER 71 36A	
				DC230N	00 =		
KA335	TDD	MN	34A	( )	01	DCDCBB 72 34A	
KA335	TDD	MP	35A	DC230P	00 =		
KA335	TDD	MP	36B	(69)	01	DCDMSB 73 36B	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	TEST POINT GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA335	TDD	MQ 35B	DC2300	00 =			CYCLIC REG BIT 23
KA335	TDD	MQ 34B	( 74 )	01		SPI027 65 34B	
			DC240I	00 =			
KA334	TDD	AI 06A	( )	01		DCD24ER 08 06A	
			DC240N	00 =			
KA334	TDD	AN 07A	( )	01		DCDCBB 10 07A	
			DC240P	00 =			
KA334	TDD	AP 05B	( 11 )	01		DCDMSB 06 05A	
			DC240Q	00 =			CYCLIC REG BIT 24
KA334	TDD	AQ 07B	( 13 )	01		SPI028 15 07B	
			DC250I	00 =			
KA334	TDD	BI 03B	( )	01		DCD25ER 05 03B	
			DC250N	00 =			
KA334	TDD	BN 02B	( )	01		DCDCBB 01 02B	
			DC250P	00 =			
KA334	TDD	BP 04B	( 09 )	01		DCDMSB 04 04A	
			DC250C	00 =			CYCLIC REG BIT 25
KA334	TDD	BQ 02A	( 07 )	01		SPI027 03 02A	
			DC260I	00 =			
KA334	TDD	CI 13A	( )	01		DCD26ER 24 13A	
			DC260N	00 =			
KA334	TDD	CN 14A	( )	01		DCDCBB 26 14A	
			DC260P	00 =			
KA334	TDD	CP 11B	( 23 )	01		DCDMSB 22 12A	
KA334	TDD	CP 12A	( 23 )	01		DCDMSB 22 12A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA334	TDD CQ	12B		DC260Q	00 =			CYCLIC REG BIT 26
KA334	TDD CQ	13B		(25)	01		SPI028 27 13B	
KA334	TDD DI	10A		DC270I	00 =			
				( )	01		DCD27ER 18 10A	
KA334	TDD DN	09A		DC270N	00 =			
				( )	01		DCDCBB 14 09A	
KA334	TDD DP	10B		DC270P	00 =			
KA334	TDD DP	11A		(21)	01		DCDMSB 20 11A	
KA334	TDD DQ	09B		DC270Q	00 =			CYCLIC REG BIT 27
KA334	TDD DQ	08B		(19)	01		SPI027 17 08B	
KA334	TDD EI	19A		DC280I	00 =			
				( )	01		DCD28ER 40 19A	
KA334	TDD EN	20A		DC280N	00 =			
				( )	01		DCDCBB 42 20A	
KA334	TDD EP	17B		DC280P	00 =			
KA334	TDD EP	18A		(35)	01		DCDMSB 38 18A	
KA334	TDD EQ	18B		DC280Q	00 =			CYCLIC REG BIT 28
KA334	TDD EQ	19B		(37)	01		SPI028 39 19B	
KA334	TDD FI	16A		DC290I	00 =			
				( )	01		DCD29ER 34 16A	
KA334	TDD FN	15A		DC290N	00 =			
				( )	01		DCDCBB 30 15A	
KA334	TDD FP	16B		DC290P	00 =			
KA334	TDD FP	17A		(33)	01		DCDMSB 36 17A	

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CARD CAGE ASSY, I/O UNIT

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	UNIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TER J	DESIGNATOR	FACTOR	COMMENT
KA334	TDD	FQ	15B	DC290Q	00 =			
KA334	TDD	FQ	14B	(31)	01		SPI027 29 14B	CYCLIC REG BIT 29
				DC300I	00 =			
KA334	TDD	GI	25A	( )	01		DCD30ER 54 25A	
				DC300N	00 =			
KA334	TDD	GN	26A	( )	01		DCDCBB 56 26A	
KA334	TDD	GP	25B	DC300P	00 =			
KA334	TDD	GP	24A	(47)	01		DCDMSB 52 24A	
KA334	TDD	GQ	26B	DC300Q	00 =			CYCLIC REG BIT 30
KA334	TDD	GQ	27B	(49)	01		SPI028 51 27B	
				DC310I	00 =			
KA334	TDD	HI	22A	( )	01		DCD31ER 48 22A	
				DC310N	00 =			
KA334	TDD	HN	21A	( )	01		DCDCBB 46 21A	
KA334	TDD	HP	24B	DC310P	00 =			
KA334	TDD	HP	23A	(45)	01		DCDMSB 50 23A	
KA334	TDD	HQ	23B	DC310Q	00 =			CYCLIC REG BIT 31
KA334	TDD	HQ	22B	(43)	01		SPI027 41 22B	
				DDATHI	00 =			
KA309	TDD	JI	32A	( )	01		DD100Q 68 32A	
				DDATHN	00 =			
KA309	TDD	JN	33A	( )	01		DRSCIA 70 33A	
KA309	TDD	JP	31B	DDATHP	00 =			
KA309	TDD	JP	31A	(59)	01		DDATIO 66 31A	

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149017-860  
CARD CAGE ASSY, I/O UNIT

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA309	TDD	JQ	32B	DDATHQ	00 =		
KA309	TDD	JQ	33B	(61)	01	SPI061 63 33B	
KA112	TT3	B3	13B	DDATIO	00 =		
KA112	TT3	B3	10B	(27)	01	DTCWFP DRCMD3T DRCMD5T 21 10B 23 11B 25 12B	
KA230	TQ2	C1	18A	DDCK0A	00 =		CLK DATA REG BYTE 1
KA230	TQ2	C1	19A	(38)	01	DMCK40 DTNC8Q 40 19A 42 20A	
KA230	TQ2	C2	15A	DDCK1A	00 =		CLK DATA REG BYTE 2
KA230	TQ2	C2	16A	(30)	01	DMCK40 DTNC8Q 34 16A 36 17A	
KA230	TQ2	C3	16B	DDCK2A	00 =		CLK DATA REG BYTE 2
KA230	TQ2	C3	14B	(33)	01	DMCK40 DTNC8Q 29 14B 31 15B	
KA230	TQ2	C4	19B	DDCK3A	00 =		CLK DATA REG BYTE 3
KA230	TQ2	C4	17B	(39)	01	DMCK40 DTNC8Q 35 17B 37 18B	
KA230	TQ2	A3	04B	DDCK4A	00 =		
KA230	TQ2	A3	02A	(09)	01	DMCK40 DTNC8Q 03 02A 07 03A	
KA337	THI	A1	06A	DDCLOA	00 =		INVERTER OUTPUT BUSS
KA337	THI	A1	07A	(13)	01	DDCLO0 11 07A	
KA230	TQ2	A4	07B	DDCLO0	00 =		CLEAR DATA REG
KA230	TQ2	A4	05B	(15)	01	DMT16A DMRS2A 11 05B 13 06B	*
KA337	THI	A2	04A	DDCL1A	00 =		INVERTER OUTPUT BUSS
KA337	THI	A2	05A	(08)	01	DDCLO0 06 05A	
KA337	THI	A3	03A	DDCL2A	00 =		INVERTER OUTPUT BUSS
KA337	THI	A3	02A	(03)	01	DDCLO0 04 02A	
KA337	THI	A4	02B	DDCL3A	00 =		INVERTER OUTPUT BUSS
KA337	THI	A4	03B	(01)	01	DDCLO0 05 03B	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA337	THI	A5	04B	DDCL4A	00	=		INVERTER OUTPUT BUSS
KA337	THI	A5	05B	(07)	01		DDCL00 09 05B	
KA333	TQ2	A4	07B	DDPECA	00	=		READ . BIT 32
KA333	TQ2	A4	05B	(15)	01		DDPECPR DMATOP 11 05B 13 06B	
KA226	PAR	C1	20A	DDPECPR	00	=		PARITY CHECK ERROR - CHECKER
KA226	PAR	C1	15B	(42)	01		DDPICPR DDP2CPR DDP3CPR DDP4CPR SPI013 SPI004 SPI003 SPI012 31 15B 33 16B 35 17B 37 18B 38 18A 36 17A 34 16A 30 15A	
KA226	PAR	C1	19B	( )	02	+	DDOP00 39 19B	
KA226	PAR	D1	26A	DDPOPPR	00	=		WORD PARITY BIT - GENERATED
KA226	PAR	D1	23B	(56)	01		DDPICPR DDP2CPR DDP3CPR DDP4CPR SPI013 SPI004 SPI003 SPI012 43 23B 45 24B 47 25B 49 26B 52 24A 50 23A 48 22A 46 21A	
KA226	PAR	D1	27B	( )	02	+	DGND6A 51 27B	
KA225	PAR	A1	07A	DDPICPR	00	=		CHECK PARITY BITS 00-07
KA225	PAR	A1	03B	(13)	01		DD0000 DD0100 DD0200 DD0300 DD0400 DD0500 DD0600 DD0700 03 03B 05 04B 07 05B 09 06B 10 05A 08 04A 06 03A 04 02A	
KA225	PAR	A1	07B	( )	02	+	DGND6A 11 07B	
KA225	PAR	B1	14A	DDP2CPR	00	=		CHECK PARITY BITS 08-15
KA225	PAR	B1	09B	(25)	01		DD0800 DD0900 DD1000 DD1100 DD1200 DD1300 DD1400 DD1500 17 09B 19 10B 21 11B 23 12B 24 12A 22 11A 20 10A 18 09A	
KA225	PAR	B1	13B	( )	02	+	DGND6A 27 13B	
KA225	PAR	C1	20A	DDP3CPR	00	=		CHECK PARITY BITS 16-23
KA225	PAR	C1	15B	(42)	01		DD1600 DD1700 DD1800 DD1900 DD2000 DD2100 DD2200 DD2300 31 15B 33 16B 35 17B 37 18B 38 18A 36 17A 34 16A 30 15A	
KA225	PAR	C1	19B	( )	02	+	DGND6A 39 19B	
KA225	PAR	D1	26A	DDP4CPR	00	=		CHECK PARITY BITS 24-31
KA225	PAR	D1	23B	(56)	01		DD2400 DD2500 DD2600 DD2700 DD2800 DD2900 DD3000 DD3100 43 23B 45 24B 47 25B 49 26B 52 24A 50 23A 48 22A 46 21A	
KA225	PAR	D1	27B	( )	02	+	DGND6A 51 27B	
KA231	TQ2	A1	05A	DDSY2A	00	=		2ND SYNC
KA231	TQ2	A1	06A	(06)	01		DD08CTB DMAACP 08 06A 10 07A	



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA230	TQ2	B1	12A	DDSY2B ( )	00	=		
					01	=	DDSY20 22 12A	
KA230	TQ2	B2	09A	( )	02	+	DDSY30 14 09A	
KA230	TQ2	B3	10B	( )	03	+	DDSY40 21 10B	
KA230	TQ2	B4	13B	( )	04	+	DDSY50 27 13B	
KA230	TQ2	B1	12A	DDSY20 (22 )	00	=		DDSY2B BUSS
KA230	TQ2	B1	13A	( )	01	=	DDSY2A SPI013 24 13A 26 14A	
KA230	TQ2	B2	09A	DDSY30 (14 )	00	=		DDSY2B BUSS
KA230	TQ2	B2	10A	( )	01	=	DDSY2A SPI013 18 10A 20 11A	
KA230	TQ2	B3	10B	DDSY40 (21 )	00	=		DDSY2B BUSS
KA230	TQ2	B3	08B	( )	01	=	DDSY2A SPI013 17 08B 19 09B	
KA230	TQ2	B4	13B	DDSY50 (27 )	00	=		DDSY2B BUSS
KA230	TQ2	B4	11B	( )	01	=	DDSY2A SPI013 23 11B 25 12B	
				DDOP0I ( )	00	=		
KA229	TDD	A1	06A	( )	01	=	DD08CTA 08 06A	
				DDOP0N ( )	00	=		
KA229	TDD	AN	07A	( )	01	=	DDSY2B 10 07A	
KA229	TDD	AP	05B	DDOP0P (11 )	00	=		
KA229	TDD	AP	05A	( )	01	=	DDCL2A 06 05A	
KA229	TDD	AQ	06B	DDOP0Q (13 )	00	=		RECV'D DATA PARITY
KA229	TDD	AQ	07B	( )	01	=	SPI013 15 07B	
KA240	MUX	A1	02A	DD00A1X (04 )	00	=		B TO 1 MUX INPUTS BIT 00
KA240	MUX	A1	02B	( )	01	=	SPI004 DGND8A DRDN00 SPI005 SPI018 SPI019 DD0000 SPI012 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	
KA240	MUX	A2	03A	DD00A2X (06 )	00	=		B TO 1 MUX SELECT AND ENABLE
KA240	MUX	A2	06A	( )	01	=	DTCW10 DTCW1A DMAACP DGND9A 14 06A 10 05A 08 04A 13 07A	BIT 00

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DEFINITION	FACTOR	COMMENT
KA240	MUX	D1	27B	DD00CTA	00	=		RECEIVERS A AND B MUX BIT 00
KA240	MUX	D1	25B	(55 )	01		DYA000X DYB000X DGND6A DXASLA 51 25B 53 26B 52 25A 49 24B	
KA240	MUX	D2	31B	DD00CTB	00	=		RECEIVERS A AND B MUX BIT 01
KA240	MUX	D2	29B	(61 )	01		DYA010X DYB010X 57 29B 59 30B	
KA240	MUX	D3	28A	DD00CTC	00	=		RECEIVERS A AND B MUX BIT 02
KA240	MUX	D3	26A	(60 )	01		DYA020X DYB020X 54 26A 56 28B	
KA240	MUX	D4	31A	DD00CTD	00	=		RECEIVERS A AND B MUX BIT 03
KA240	MUX	D4	29A	(63 )	01		DYA030X DYB030X 62 29A 64 30A	
KA338	TQ2	A1	05A	DD00QA	00	=		PRESET INPUT - MEM DATA AND SYNC 2 BIT 00
KA338	TQ2	A1	06A	(06 )	01		DD00CTA D05Y2B 08 06A 10 07A	
KA230	TQ2	A1	05A	DD00SA	00	=		STROBE COMP A
KA230	TQ2	A1	06A	(06 )	01		DXASLOX DADD00 08 06A 10 07A	
				DD000I	00	=		
KA227	TDD	A1	06A	( )	01		DB000Q 08 06A	
				DD000N	00	=		
KA227	TDD	AN	07A	( )	01		D0CK0A 10 07A	
KA227	TDD	AP	05B	DD000P	00	=		CLEAR FOR MEM COUNTER = 0 OR RESET BIT 00
KA227	TDD	AP	05A	(11 )	01		DDCL0A 06 05A	
KA227	TDD	AQ	06B	DD000Q	00	=		PRESET FOR WRITE BIT 00
KA227	TDD	AQ	07B	(13 )	01		DD00QA 15 07B	
KA240	MUX	B1	10A	DD01A1X	00	=		8 TO 1 MUX INPUTS BIT 01
KA240	MUX	B1	09B	(20 )	01		SPI005 DGND8A DRDN00 SPI019 SPI012 SPI01E DD0100 SPI004 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	
KA240	MUX	B2	11A	DD01A2X	00	=		8 TO 1 MUX SELECT AND ENABLE BIT 01
KA240	MUX	B2	14A	(22 )	01		DTCW10 DTCW1A DMAACP DGND9A 27 14A 26 13A 24 12A 30 15A	

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LOGIC

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA240	MUX	E1	34B	DD01CTA	00	=		RECEIVERS A AND B MUX BIT 04
KA240	MUX	E1	32A	(73)	01		DYA040X DYB040X DGND6A DXASLA 69 32A 71 33B 68 33A 66 32B	
KA240	MUX	E2	37B	DD01CTB	00	=		RECEIVERS A AND B MUX BIT 05
KA240	MUX	E2	35B	(79)	01		DYA050X DYB050X 75 35B 77 36B	
KA240	MUX	E3	36A	DD01CTC	00	=		RECEIVERS A AND B MUX BIT 06
KA240	MUX	E3	34A	(74)	01		DYA060X DYB060X 70 34A 72 35A	
KA240	MUX	E4	38B	DD01CTD	00	=		RECEIVERS A AND B MUX BIT 07
KA240	MUX	E4	37A	(80)	01		DYA070X DYB070X 76 37A 78 38A	
KA338	TQ2	A2	02B	DD01QA	00	=		PRESET INPUT - MEM DATA AND
KA338	TQ2	A2	04A	(01)	01		DD00CTB DDSY2B 04 04A 05 03B	SYNC 2 BIT 01
KA230	TQ2	A2	02B	DD01SA	00	=		STROBE COMP B
KA230	TQ2	A2	04A	(01)	01		DXBSLOX DAD000 04 04A 05 03B	
KA227	TDD	BI	03B	DD01OI	00	=		
				( )	01		DB010Q 05 03B	
KA227	TDD	BN	02B	DD01ON	00	=		
				( )	01		D0CK0A 01 02B	
KA227	TDD	BP	04B	DD01OP	00	=		CLEAR FOR MEM COUNTER = 0 OR
KA227	TDD	BP	04A	(09)	01		DDCL0A 04 04A	RESET BIT 01
KA227	TDD	BQ	03A	DD01OQ	00	=		PRESET FOR WRITE BIT 01
KA227	TDD	BQ	02A	(07)	01		DD01QA 03 02A	
KA240	MUX	C1	17A	DD02A1X	00	=		8 TO 1 MUX INPUTS BIT 02
KA240	MUX	C1	16B	(36)	01		SPI005 DGND9A DGNDAA SPI012 SPI004 SPI018 DD020Q SPI019 35 16B 37 17B 39 18B 41 19B 43 22B 45 23B 47 23A 50 24A	
KA240	MUX	C2	19A	DD02A2X	00	=		8 TO 1 MUX SELECT AND ENABLE
KA240	MUX	C2	21A	(38)	01		DTCW10 DTCW1A DMAACP DGND8A 46 21A 42 20A 40 19A 48 22A	BIT 02

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA343	MUX	D1	27B	DD02CTA	00	=		RECEIVERS A AND B MUX BIT 08
KA343	MUX	D1	25B	(55)	01		DYA080X DYB080X DGND7A DXASLA 51 25B 53 26B 52 25A 49 24B	
KA343	MUX	D2	31B	DD02CTB	00	=		RECEIVERS A AND B MUX BIT 09
KA343	MUX	D2	29B	(61)	01		DYA090X DYB090X 57 29B 59 30B	
KA343	MUX	D3	28A	DD02CTC	00	=		RECEIVERS A AND B MUX BIT 10
KA343	MUX	D3	26A	(60)	01		DYA100X DYB100X 54 26A 56 28B	
KA343	MUX	D4	31A	DD02CTD	00	=		RECEIVERS A AND B MUX BIT 11
KA343	MUX	D4	29A	(63)	01		DYA110X DYB110X 62 29A 64 30A	
KA338	TQ2	A3	04B	DD02QA	00	=		PRESET INPUT - MEM DATA AND
KA338	TQ2	A3	02A	(09)	01		DD00CTC DDSY28 03 02A 07 03A	SYNC 2 BIT 02
				DD020I	00	=		
KA227	TDD	CI	13A	( )	01		DB020Q 24 13A	
				DD020N	00	=		
KA227	TDD	CN	14A	( )	01		DDCK0A 26 14A	
KA227	TDD	CP	11B	DD020P	00	=		CLEAR FOR MEM COUNTER = 0 OR
KA227	TDD	CP	12A	(23)	01		DDCL0A 22 12A	RESET BIT 02
KA227	TDD	CQ	12B	DD020Q	00	=		PRESET FOR WRITE BIT 02
KA227	TDD	CQ	13B	(25)	01		DD020A 27 13B	
KA343	MUX	A1	02A	DD03A1X	00	=		8 TO 1 MUX INPUTS BIT 03
KA343	MUX	A1	02B	(04)	01		SPI032 DGND9A DGNDAA SPI029 SPI030 SPI031 DD030Q SPI023 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	
KA343	MUX	A2	03A	DD03A2X	00	=		8 TO 1 MUX SELECT AND ENABLE
KA343	MUX	A2	06A	(06)	01		DTCW10 DTCW1A DMAACP DGND8A 14 06A 10 05A 08 04A 13 07A	BIT 03
KA343	MUX	E1	34B	DD03CTA	00	=		RECEIVERS A AND B MUX BIT 12
KA343	MUX	E1	32A	(73)	01		DYA120X DYB120X DGND7A DXASLA 69 32A 71 33B 68 33A 66 32B	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	C C C C	NO	1221 P O W E R	ED. BY OR	FE	TYPE	FACTOR	COMMENT
KA343	MUX	E2	375	DD03C1B	00	=		RECEIVERS A AND B MUX BIT 19
KA343	MUX	E2	355	179 1	01		DYAL30X DYB130X 75 35B 77 36B	
KA343	MUX	E3	36A	DD03C1C	00	=		RECEIVERS A AND B MUX BIT 14
KA343	MUX	E3	34A	174 3	01		DYAL40X DYB140X 70 34A 72 35A	
KA343	MUX	E4	38B	DD03C1D	00	=		RECEIVERS A AND B MUX BIT 15
KA343	MUX	E4	37A	180 1	01		DYAL50X DYB150X 76 37A 78 38A	
KA33B	TQ2	A4	D7B	DD03QA	00	=		PRESET INPUT - MEM DATA AND
KA33B	TQ2	A4	D5B	715 1	01		DD03CTD D03Y2B 12 05B 13 06B	SYNC 2 BIT 03
				DD030F	00	=		
KA227	TOD	D1	10A	1	01		DD030Q 18 10A	
				DD030M	00	=		
KA227	TOD	DW	09A	1	01		DD030A 14 09A	
KA227	TOD	0P	10B	DD030P	00	=		CLEAR FOR MEM COUNTER = 0 OK
KA227	TOD	0P	11A	121 1	01		DD0304 20 11A	RESET BIT 03
KA227	TOD	DQ	09B	DD030Q	00	=		PRESET FOR WRITE BIT 03
KA227	TOD	DQ	08B	119 1	01		DD030A 17 08B	
KA343	MUX	B2	10A	DD04A1X	00	=		D TO I MUX INPUTS BIT 04
KA343	MUX	B1	09A	120 1	01		SPI030 DGND01 DGND0A SPI020 SPT032 SPT031 DD0400 SPI023 19 09B 21 10B 23 11B 25 12B 27 13B 31 14B 33 15A	
KA343	MUX	B2	11A	DD04A2X	00	=		B TO I MUX SELECT AND ENABLE
KA343	MUX	B2	14B	122 3	01		DYCM10 DYM1A DMAACP DGND0A 27 14A 28 15A 24 12A 3D 15A	BIT 04
KA239	MUX	D1	27B	DD04CTA	00	=		RECEIVERS A AND B MUX BIT 16
KA239	MUX	D1	25B	155 1	01		DYAL60X DYB160X DGND0A DXA81A 51 25B 53 26B 52 25A 49 24B	
KA239	MUX	D2	31B	DD04CTB	00	=		RECEIVERS A AND B MUX BIT 17
KA239	MUX	D2	29B	161 1	01		DYAL70X DYB170X 57 29B 59 30B	

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CONNECTOR	GROUP	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA338	TQ2	B3	10B	DD06QA	00	=		PRESET INPUT - MEM DATA AND
KA338	TQ2	B3	08B	(21)	01		DD01CTC DDSY2B 17 08B 19 09B	SYNC 2 BIT 06
				DD0601	00	=		
KA227	TDD	GI	25A	( )	01		DB060Q 54 25A	
				DD060N	00	=		
KA227	TDD	GN	26A	( )	01		DDCK0A 56 26A	
KA227	TDD	GP	25B	DD060P	00	=		CLEAR FOR MEM COUNTER = 0 OR
KA227	TDD	GP	24A	(47)	01		DDCL0A 52 24A	RESET BIT 06
KA227	TDD	GQ	26B	DD060Q	00	=		PRESET FOR WRITE BIT 06
KA227	TDD	GQ	27B	(49)	01		DD06QA 51 27B	
KA239	MUX	B1	10A	DD07A1X	00	=		8 TO 1 MUX INPUTS BIT 07
KA239	MUX	B1	09B	(20)	01		SPI005 DGND9A DGNDAA SPI004 SPI019 SPI018 DD0700 SPI012 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	
KA239	MUX	B2	11A	DD07A2X	00	=		8 TO 1 MUX SELECT AND ENABLE
KA239	MUX	B2	14A	(22)	01		DTCW10 DTCW1A DMAACA DGNDBA 27 14A 26 13A 24 12A 30 15A	BIT 07
KA238	MUX	E1	34B	DD07CTA	00	=		RECEIVERS A AND B MUX BIT 28
KA238	MUX	E1	32A	(73)	01		DYA280X DYB280X DGND7A DXASLA 69 32A 71 33B 68 33A 66 32B	
KA238	MUX	E2	37B	DD07CTB	00	=		RECEIVERS A AND B MUX BIT 29
KA238	MUX	E2	35B	(79)	01		DYA290X DYB290X 75 35B 77 36B	
KA238	MUX	E3	36A	DD07CTC	00	=		RECEIVERS A AND B MUX BIT 30
KA238	MUX	E3	34A	(74)	01		DYA300X DYB300X 70 34A 72 35A	
KA238	MUX	E4	38B	DD07CTD	00	=		RECEIVERS A AND B MUX BIT 31
KA238	MUX	E4	37A	(80)	01		DYA310X DYB310X 76 37A 78 38A	
KA338	TQ2	B4	13B	DD07QA	00	=		PRESET INPUT - MEM DATA AND
KA338	TQ2	B4	11B	(27)	01		DD01CTD DDSY2B 23 11B 25 12B	SYNC 2 BIT 07

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, I/O UNIT

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39BIUX2  
REV G  
DATE 09-03-82  
INDEX DD05CTD  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
			AND	OR					
KA239	MUX	E4	38B		DD05CTD	00	=	RECEIVERS	A AND B MUX BIT 23
KA239	MUX	E4	37A		(60)	01		DYA230X DYB230X 76 37A 78 38A	
KA338	TQ2	B2	09A		DD05QA	00	=	PRESET INPUT - MEM DATA AND	
KA338	TQ2	B2	10A		(14)	01		DD01CTB DDSY2B 18 10A 20 11A	SYNC 2 BIT 05
KA227	TDD	FI	16A		DD050I	00	=	DB050Q 34 16A	
KA227	TDD	FN	15A		( )	01		DD050N 30 15A	
KA227	TDD	FP	16B		DD050P	00	=	CLEAR FOR MEM COUNTER = 0 OR	
KA227	TDD	FP	17A		(33)	01		DDCLOA 36 17A	RESET BIT 05
KA227	TDD	FQ	15B		DD050Q	00	=	PRESET FOR WRITE BIT 05	
KA227	TDD	FQ	14B		(31)	01		DD05QA 29 14B	
KA239	MUX	A1	02A		DD06A1X	00	=	B TO I MUX INPUTS BIT 06	
KA239	MUX	A1	02B		(04)	01		SPI019 DGND9A DGNDAA SPI018 SPI005 SPI004 DD0600 SPI012 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	
KA239	MUX	A2	03A		DD06A2X	00	=	B TO I MUX SELECT AND ENABLE	
KA239	MUX	A2	06A		(06)	01		DTCW10 DTCW1A DMAACP DGNDBA 14 06A 10 05A 08 04A 13 07A	BIT 06
KA238	MUX	D1	27B		DD06CTA	00	=	RECEIVERS	A AND B MUX BIT 24
KA238	MUX	D1	25B		(55)	01		DYA240X DYB240X DGND7A DXASLA 51 25B 53 26B 52 25A 49 24B	
KA238	MUX	D2	31B		DD06CTB	00	=	RECEIVERS	A AND B MUX BIT 25
KA238	MUX	D2	29B		(61)	01		DYA250X DYB250X 57 29B 59 30B	
KA238	MUX	D3	28A		DD06CTC	00	=	RECEIVERS	A AND B MUX BIT 26
KA238	MUX	D3	26A		(60)	01		DYA260X DYB260X 54 26A 56 28B	
KA238	MUX	D4	31A		DD06CTD	00	=	RECEIVERS	A AND B MUX BIT 27
KA238	MUX	D4	29A		(63)	01		DYA270X DYB270X 62 29A 64 30A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, I/O UNIT

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39BIUX2  
REV G  
DATE 09-03-82  
INDEX DD060A  
PAGE 52

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA338	TQ2	B3	10B	DD06QA	00	=		PRESET INPUT - MEM DATA AND
KA338	TQ2	B3	08B	(21)	01		DD01CTC DDSY2B 17 08B 19 09B	SYNC 2 BIT 06
				DD0601	00	=		
KA227	TDD	GI	25A	( )	01		DB060Q 54 25A	
				DD060N	00	=		
KA227	TDD	GN	26A	( )	01		DDCR0A 56 26A	
KA227	TDD	GP	25B	DD060P	00	=		CLEAR FOR MEM COUNTER = 0 OR
KA227	TDD	GP	24A	(47)	01		DDCLOA 52 24A	RESET BIT 06
KA227	TDD	GQ	26B	DD060Q	00	=		PRESET FOR WRITE BIT 06
KA227	TDD	GQ	27B	(49)	01		DD06QA 51 27B	
KA239	MUX	B1	10A	DD07A1X	00	=		8 TO 1 MUX INPUTS BIT 07
KA239	MUX	B1	09B	(20)	01		SPI005 DGND9A DGNDAA SPI004 SPI019 SPI018 DD070Q SPI012 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	
KA239	MUX	B2	11A	DD07A2X	00	=		8 TO 1 MUX SELECT AND ENABLE
KA239	MUX	B2	14A	(22)	01		DTCW10 DTCW1A DMAACA DGNDBA 27 14A 26 13A 24 12A 30 15A	BIT 07
KA238	MUX	E1	34B	DD07CTA	00	=		RECEIVERS A AND B MUX BIT 28
KA238	MUX	E1	32A	(73)	01		DYA280X DYB280X DGND7A DXASLA 69 32A 71 33B 68 33A 66 32B	
KA238	MUX	E2	37B	DD07CTB	00	=		RECEIVERS A AND B MUX BIT 29
KA238	MUX	E2	35B	(79)	01		DYA290X DYB290X 75 35B 77 36B	
KA238	MUX	E3	36A	DD07CTC	00	=		RECEIVERS A AND B MUX BIT 30
KA238	MUX	E3	34A	(74)	01		DYA300X DYB300X 70 34A 72 35A	
KA238	MUX	E4	38B	DD07CTD	00	=		RECEIVERS A AND B MUX BIT 31
KA238	MUX	E4	37A	(80)	01		DYA310X DYB310X 76 37A 78 38A	
KA338	TQ2	B4	13B	DD07QA	00	=		PRESET INPUT - MEM DATA AND
KA338	TQ2	B4	11B	(27)	01		DD01CTD DDSY2B 23 11B 25 12B	SYNC 2 BIT 07



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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DD0070I  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA227	TDD	HI	22A	DD070I ( )	00	=	DB070Q 48 22A	
KA227	TDD	HN	21A	DD070N ( )	00	=	DDCK4A 46 21A	
KA227	TDD	HP	24B	DD070P	00	=		CLEAR FOR MEM COUNTER = 0 OR
KA227	TDD	HP	23A	(45 )	01	=	DDCL1A 50 23A	RESET BIT 07
KA227	TDD	HQ	23B	DD070Q	00	=		PRESET FOR WRITE BIT 07
KA227	TDD	HQ	22B	(43 )	01	=	DD07QA 41 22B	
KA239	MUX	C1	17A	DD08A1X	00	=		8 TO 1 MUX INPUTS BIT 08
KA239	MUX	C1	16B	(36 )	01	=	SPI004 DGND9A DGNDAA SPI005 SPI018 SPI019 DD080Q SPI012 35 16B 37 17B 39 18B 41 19B 43 22B 45 23B 47 23A 50 24A	
KA239	MUX	C2	18A	DD08A2X	00	=		8 TO 1 MUX SELECT AND ENABLE
KA239	MUX	C2	21A	(38 )	01	=	DTCW10 DTCW1A DMAACA DGNDBA 46 21A 42 20A 40 19A 48 22A	BIT 08
KA237	MUX	D1	27B	DD08CTA	00	=		RECEIVERS A AND B MUX BIT
KA237	MUX	D1	25B	(55 )	01	=	DYA0POX DYBOPOX DGND7A DXASLA 51 25B 53 26B 52 25A 49 24B	PARITY
KA237	MUX	D2	31B	DD08CTB	00	=		SYN2 FROM SEI MEM
KA237	MUX	D2	29B	(61 )	01	=	DMAS2TX DMBS2TX 57 29B 59 30B	
KA237	MUX	D3	28A	DD08CTC	00	=		
KA237	MUX	D3	26A	(60 )	01	=	SPI019 SPI012 54 26A 56 28B	
KA237	MUX	D4	31A	DD08CTD	00	=		
KA237	MUX	D4	29A	(63 )	01	=	SPI018 SPI004 62 29A 64 30A	
KA338	TQ2	C1	18A	DD08QA	00	=		PRESET INPUT - MEM DATA AND
KA338	TQ2	C1	19A	(38 )	01	=	DD02CTA DDSY2B 40 19A 42 20A	SYNC 2 BIT 08
KA227	TDD	JI	32A	DD080I ( )	00	=	DB080Q 68 32A	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

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REV E INDEX DD080N  
 DATE 09-03-82 PAGE 54

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
				DD080N	00 =			
KA227	TDD	JN	33A	( )	01		DDCKIA 70 33A	
KA227	TDD	JP	31B	DD080P	00 =			CLEAR FOR MEM COUNTER = 0 OR
KA227	TDD	JP	31A	(59 )	01		DDCLIA 66 31A	RESET BIT 06
KA227	TDD	JQ	32B	DD080Q	00 =			PRESET FOR WRITE BIT 08
KA227	TDD	JQ	33B	(61 )	01		DD08QA 63 33B	
KA342	MUX	A1	02A	DD09A1X	00 =			8 TO 1 MUX INPUTS BIT 09
KA342	MUX	A1	02B	(04 )	01		SPI023 DGND9A DGNDAA SPI031 SPI030 SPI029 DD090Q SPI032 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	
KA342	MUX	A2	03A	DD09A2X	00 =			8 TO 1 MUX SELECT AND ENABLE
KA342	MUX	A2	06A	(06 )	01		DYCW10 DYCWA DMAACA DGND8A 14 06A 10 05A 08 04A 13 07A	BIT 09
KA338	TQ2	C2	15A	DD09QA	00 =			PRESET INPUT - MEM DATA AND
KA338	TQ2	C2	16A	(30 )	01		DD02CTB D05Y2B 34 16A 36 17A	SYNC 2 BIT 09
				DD090I	00 =			
KA227	TDD	KI	29A	( )	01		DB090Q 62 29A	
				DD090N	00 =			
KA227	TDD	KN	28A	( )	01		DDCKIA 60 28A	
KA227	TDD	KP	30B	DD090P	00 =			CLEAR FOR MEM COUNTER = 0 OR
KA227	TDD	KP	30A	(57 )	01		DDCLIA 64 30A	RESET BIT 09
KA227	TDD	KQ	29B	DD090Q	00 =			PRESET FOR WRITE BIT 09
KA227	TDD	KQ	28B	(55 )	01		DD09QA 53 28B	
KA342	MUX	B1	10A	DD10A1X	00 =			8 TO 1 MUX INPUTS BIT 10
KA342	MUX	B1	09B	(20 )	01		SPI031 DGND9A DGNDAA SPI023 SPI032 SPI030 DD100Q SPI029 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	
KA342	MUX	B2	11A	DD10A2X	00 =			8 TO 1 MUX SELECT AND ENABLE
KA342	MUX	B2	14A	(22 )	01		DYCW10 DYCWA DMAACA DGND8A 27 14A 26 13A 24 12A 30 15A	BIT 10

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DD100A  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
			AND	OR					
KA338	TQ2	C3	16B		DD10QA	00	=		PRESET INPUT - MEM DATA AND
KA338	TQ2	C3	14B		(33)	01	=	DD02CTC DDSY2B 29 14B 31 15B	SYNC 2 BIT 10
KA227	TDD	LI	38B		DD100I	00	=	DB100Q 77 38B	
KA227	TDD	LN	39B		DD100N	00	=	DDCK1A 79 39B	
KA227	TDD	LP	37A		DD100P	00	=		CLEAR FOR MEM COUNTER = 0 OR
KA227	TDD	LP	37B		(76)	01	=	DDCL1A 75 37B	RESET BIT 10
KA227	TDD	LQ	38A		DD100Q	00	=		PRESET FOR WRITE BIT 10
KA227	TDD	LQ	39A		(78)	01	=	DD10QA 80 39A	
KA342	MUX	C1	17A		DD11A1X	00	=		8 TO 1 MUX INPUTS BIT 11
KA342	MUX	C1	16B		(36)	01	=	SPI03D DGND9A DGNDAA SPI03I SPI023 SPI029 DD110Q SPI032 35 16B 37 17B 39 18B 41 19B 43 22B 45 23B 47 23A 50 24A	
KA342	MUX	C2	18A		DD11A2X	00	=		8 TO 1 MUX SELECT AND ENABLE
KA342	MUX	C2	21A		(38)	01	=	DTCW1C DTCW1A DMAACA DGND8A 46 21A 42 20A 40 19A 48 22A	BIT 11
KA338	TQ2	C4	19B		DD11QA	00	=		PRESET INPUT - MEM DATA AND
KA338	TQ2	C4	17B		(39)	01	=	DD02CTD DDSY2B 35 17B 37 18B	SYNC 2 BIT 11
KA227	TDD	MI	36A		DD110I	00	=	DB110Q 71 36A	
KA227	TDD	MN	34A		DD110N	00	=	DDCK1A 72 34A	
KA227	TDD	MP	35A		DD110P	00	=		CLEAR FOR MEM COUNTER = 0 OR
KA227	TDD	MP	36B		(69)	01	=	DDCL1A 73 36B	RESET BIT 11
KA227	TDD	HQ	35B		DD110Q	00	=		PRESET FOR WRITE BIT 11
KA227	TDD	HQ	34B		(74)	01	=	DD11QA 65 34B	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DD12A1X  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	YEN	DESIGNATOR	FACTOR	COMMENT
KA238	MUX	A1	02A	DD12A1X	00	=		8 TO 1 MUX INPUTS BIT 12
KA238	MUX	A1	02B	(04)	01		SPI012 DGND9A DGNDAA SPI019 SPI004 SPI018 DD120Q SPI005 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	
KA238	MUX	A2	03A	DD12A2X	00	=		8 TO 1 MUX SELECT AND ENABLE
KA238	MUX	A2	06A	(06)	01		DTCW10 DTCW1A DMAACA DGND8A 14 06A 10 05A 08 04A 13 07A	BIT 12
KA338	TQ2	D1	24A	DD12QA	0C	=		PRESET INPUT - MEM DATA AND
KA338	TQ2	D1	25A	(52)	01		DD03CTA DDSY2B 54 25A 56 26A	SYNC 2 BIT 12
				DD120I	0G	=		
KA228	TDD	A1	06A	( )	01		DB120Q 08 06A	
				DD120N	00	=		
KA228	TDD	AN	07A	( )	01		DDCK1A 10 07A	
KA228	TDD	AP	05B	DD120P	00	=		CLEAR FOR MEM COUNTER = 0 OR
KA228	TDD	AP	05A	(11)	01		DDCL1A 06 05A	RESET BIT 12
KA228	TDD	AQ	06B	DD120Q	00	=		PRESET FOR WRITE BIT 12
KA228	TDD	AQ	07B	(13)	01		DD12QA 15 07B	
KA238	MUX	B1	10A	DD13A1X	00	=		8 TO 1 MUX INPUTS BIT 13
KA238	MUX	B1	09B	(20)	01		SPI004 DGND3A DGNDAA SPI019 SPI018 SPI012 DD130Q SPI005 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	
KA238	MUX	B2	11A	DD13A2X	00	=		8 TO 1 MUX SELECT AND ENABLE
KA238	MUX	B2	14A	(22)	01		DTCW10 DTCW1A DMAACA DGND8A 27 14A 26 13A 24 12A 30 15A	BIT 13
KA338	TQ2	D2	21A	DD13QA	00	=		PRESET INPUT - MEM DATA AND
KA338	TQ2	D2	22A	(46)	01		DD03CTB DDSY2B 48 22A 50 23A	SYNC 2 BIT 13
				DD130I	00	=		
KA228	TDD	B1	03B	( )	01		DB130Q 05 03B	
				DD130N	00	=		
KA228	TDD	BN	02B	( )	01		DDCK1A 01 02B	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DD130P  
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CONNECTOR	CIRCUIT TYPE	GROUP	TFST POINTS AND OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA228	TDD	BP	04B	DD130P	00	=		CLEAR FOR MEM COUNTER = 0 OR
KA228	TDD	BP	04A	(09)	01		DDCLIA 04 04A	RESET BIT 13
KA228	TDD	BQ	03A	DD130Q	00	=		PRESET FOR WRITE BIT 13
KA228	TDD	BQ	02A	(07)	01		DD13QA 03 02A	
KA238	MUX	C1	17A	DD14A1X	00	=		8 TO 1 MUX INPUTS BIT 14
KA238	MUX	C1	16B	(36)	01		SPI012 DMMC41U DMAA41U SPI005 SPI004 SPI018 DD1400 SPI019 35 16B 37 17B 39 18B 41 19B 43 22B 45 23B 47 23A 50 24A	
KA238	MUX	C2	18A	DD14A2X	00	=		8 TO 1 MUX SELECT AND ENABLE BIT 14
KA238	MUX	C2	21A	(38)	01		DTCW20 DTCW2A DMAACA DGNDCA 46 21A 42 20A 40 19A 48 22A	
KA338	TQ2	D3	24B	DD14QA	00	=		PRESET INPUT - MEM DATA AND SYNC 2 BIT 14
KA338	TQ2	D3	22B	(45)	01		DD03CTC DDSY2B 41 22B 43 23B	
				DD1401	00	=		
KA228	TDD	C1	13A	( )	01		DB1400 24 13A	
				DD140N	00	=		
KA228	TDD	CN	14A	( )	01		DDCK1A 26 14A	
KA228	TDD	CP	11B	DD140P	00	=		CLEAR FOR MEM COUNTER = 0 OR
KA228	TDD	CP	12A	(23)	01		DDCL2A 22 12A	RESET BIT 14
KA228	TDD	CQ	12B	DD140Q	00	=		PRESET FOR WRITE BIT 14
KA228	TDD	CQ	13B	(25)	01		DD14QA 27 13B	
KA341	MUX	A1	02A	DD15A1X	00	=		8 TO 1 MUX INPUTS BIT 15
KA341	MUX	A1	02B	(04)	01		SPI032 DMMC34U DMAA34U SPI031 SPI023 SPI029 DD1500 SPI030 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	
KA341	MUX	A2	03A	DD15A2X	00	=		8 TO 1 MUX SELECT AND ENABLE BIT 15
KA341	MUX	A2	06A	(06)	01		DTCW20 DTCW2A DMAACA DGNDCA 14 06A 10 05A 08 04A 13 07A	
KA338	TQ2	D4	27B	DD15QA	00	=		PRESET INPUT - MEM DATA AND SYNC 2 BIT 15
KA338	TQ2	D4	25B	(51)	01		DD03CTD DDSY2B 47 25B 49 26B	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

UNIT ASSEMBLY NO. 149017  
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 DATE 09-03-82 PAGE 58

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TERM	SERIAL	RATIO	FACTOR	COMMENT
			AND	OR						
KA228	TDD	DI	10A		DD150I ( )	00 01	=			
									DB150Q 18 10A	
KA228	TDD	DN	09A		DD150N ( )	00 01	=			
									DDCK4A 14 09A	
KA228	TDD	DP	10B		DD150P (21 )	00 01	=			CLEAR FOR MEM COUNTER = 0 OR RESET BIT 15
									DDCL2A 20 11A	
KA228	TDD	DQ	09B		DD150Q (19 )	00 01	=			PRESET FOR WRITE BIT 15
									DD150A 17 08B	
KA341	MUX	B1	10A		DD16A1X (20 )	00 01	=			8 TO 1 MUX INPUTS BIT 16
									SPI032 DMHC33U DMAA33U SPI029 SPI030 SPI023 DD1600 SPI031 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	
KA341	MUX	B2	11A		DD16A2X (22 )	00 01	=			8 TO 1 MUX SELECT AND ENABLE BIT 16
									DTCW20 DTCW2A DMAACA DGNDCA 27 14A 26 13A 24 12A 30 15A	
KA338	TQ2	E1	31A		DD16QA (66 )	00 01	=			PRESET INPUT - MEM DATA AND SYNC 2 BIT 16
									DD04CTA DDSY2B 68 32A 70 33A	
KA228	TDD	E1	19A		DD160I ( )	00 01	=			
									DB160Q 40 19A	
KA228	TDD	EN	20A		DD160N ( )	00 01	=			
									DDCK2A 42 20A	
KA228	TDD	EP	17B		DD160P (35 )	00 01	=			CLEAR FOR MEM COUNTER = 0 OR RESET BIT 16
									DDCL2A 38 18A	
KA228	TDD	EQ	19B		DD160Q (37 )	00 01	=			PRESET FOR WRITE BIT 16
									DD16QA 39 19B	
KA341	MUX	C1	17A		DD17A1X (36 )	00 01	=			8 TO 1 MUX INPUTS BIT 17
									SPI023 DMHC32U DMAA32U SPI030 SPI032 SPI031 DD1700 SPI029 35 16B 37 17B 39 18B 41 19B 43 22B 45 23B 47 23A 50 24A	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DD17A2X  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA341	MUX	C2	18A	DD17A2X	00 =		8 TO 1 MUX SELECT AND ENABLE
KA341	MUX	C2	21A	(38)	01	DTCW20 DTCW2A DMAACA DGNDCA 46 21A 42 20A 40 19A 48 22A	BIT 17
KA338	TQ2	E2	28A	DD17QA	00 =		PRESET INPUT - MEM DATA AND
KA338	TQ2	E2	29A	(60)	01	DD04CTB DDSY28 62 29A 64 30A	SYNC 2 BIT 17
				DD170I	00 =		
KA228	TDD	FI	16A	( )	01	DB170Q 34 16A	
				DD170N	00 =		
KA228	TDD	FN	15A	( )	01	DDCK2A 30 15A	
KA228	TDD	FP	16B	DD170P	00 =		CLEAR FOR MEM COUNTER = 0 OR
KA228	TDD	FP	17A	(33)	01	DDCL2A 36 17A	RESET BIT 17
KA228	TDD	FQ	15B	DD170Q	00 =		PRESET FOR WRITE BIT 17
KA228	TDD	FQ	14B	(31)	01	DD17QA 29 14B	
KA237	MUX	A1	02A	DD18A1X	00 =		8 TO 1 MUX INPUTS BIT 18
KA237	MUX	A1	02B	(04)	01	SPI019 DMHC31U DMAA31U SPI004 SPI005 SPI018 DD180Q SPI012 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	
KA237	MUX	A2	03A	DD18A2X	00 =		8 TO 1 MUX SELECT AND ENABLE
KA237	MUX	A2	06A	(06)	01	DTCW20 DTCW2A DMAADA DGNDCA 14 06A 10 05A 08 04A 13 07A	BIT 18
KA338	TQ2	E3	30B	DD18QA	00 =		PRESET INPUT - MEM DATA AND
KA338	TQ2	E3	28B	(57)	01	DD04CTC DDSY28 53 28B 55 29B	SYNC 2 BIT 18
				DD180I	00 =		
KA228	TDD	GI	25A	( )	01	DB180Q 54 25A	
				DD180N	00 =		
KA228	TDD	GN	26A	( )	01	DDCK2A 56 26A	
KA228	TDD	GP	25B	DD180P	00 =		CLEAR FOR MEM COUNTER = 0 OR
KA228	TDD	GP	24A	(47)	01	DDCL2A 52 24A	RESET BIT 18

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CONNECTOR	SW PLAN	GROUP	TEST POINTS AND/OR	EQUATION	REF NUM	DESIG NATION	FACTOR	COMMENT
KA228	TDD	GQ	26B	DD180Q	00	=		PRESET FOR WRITE BIT 18
KA228	TDD	GQ	27B	(149)	01		DD18QA 51 27B	
KA237	MUX	B1	10A	DD19A1X	00	=		8 TO 1 MUX INPUTS BIT 19
KA237	MUX	B1	09B	(20)	01		SPI018 DMHC24U DMAA24U SPI019 SPI012 SPI005 DD190Q SPI004 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	
KA237	MUX	B2	11A	DD19A2X	00	=		8 TO 1 MUX SELECT AND ENABLE BIT 19
KA237	MUX	B2	14A	(22)	01		DTCW20 DTCW2A DMAADA DGNDC A 27 14A 26 13A 24 12A 30 15A	
KA338	TQ2	E4	33B	DD19QA	00	=		PRESET INPUT - MEM DATA AND SYNC 2 BIT 19
KA338	TQ2	E4	31B	(63)	01		DD04CTD DDSY2B 59 31B 61 32B	
				DD190I	00	=		
KA228	TDD	HI	22A	( )	01		DB190Q 48 22A	
				DD190N	00	=		
KA228	TDD	HN	21A	( )	01		DDCK2A 46 21A	
KA228	TDD	HP	24B	DD190P	00	=		CLEAR FOR MEM COUNTER = 0 OR RESET BIT 19
KA228	TDD	HP	23A	(45)	01		DDCL2A 50 23A	
KA228	TDD	HQ	23B	DD190Q	00	=		PRESET FOR WRITE BIT 19
KA228	TDD	HQ	22B	(43)	01		DD19QA 41 22B	
KA237	MUX	C1	17A	DD20A1X	00	=		8 TO 1 MUX INPUTS BIT 20
KA237	MUX	C1	16B	(36)	01		SPI005 DMHC23U DMAA23U SPI019 SPI012 SPI004 DD2000 SPI018 35 16B 37 17B 39 18B 41 19B 43 22B 45 23B 47 23A 50 24A	
KA237	MUX	C2	18A	DD20A2X	00	=		8 TO 1 MUX SELECT AND ENABLE BIT 20
KA237	MUX	C2	21A	(38)	01		DTCW20 DTCW2A DMAADA DGNDC A 46 21A 42 20A 40 19A 48 22A	
KA338	TQ2	F1	37B	DD20QA	00	=		PRESET INPUT - MEM DATA AND SYNC 2 BIT 20
KA338	TQ2	F1	38B	(75)	01		DD05CTA DDSY2B 77 38B 79 39B	
				DD200I	00	=		
KA228	TDD	JI	32A	( )	01		DB200Q 68 32A	



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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA228	TDD	JN	33A	DD200N ( )	00 01	H	DDCK2A 70 33A	
KA228	TDD	JP	31B	DD200P (59 )	00 01	=		CLEAR FOR MEM COUNTER = 0 OR RESET BIT 20
KA228	TDD	JQ	32B	DD200Q (61 )	00 01	=		PRESET FOR WRITE BIT 20
KA340	MUX	A1	02A	DD21A1X (04 )	00 01	=		8 TO 1 MUX INPUTS BIT 21
KA340	MUX	A1	02B				SPI023 DMMC22U DMAA22U SPI032 SPI030 SPI029 DD2100 SPI031 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	
KA340	MUX	A2	03A	DD21A2X (06 )	00 01	=		8 TO 1 MUX SELECT AND ENABLE BIT 21
KA340	MUX	A2	06A				DTCW20 DTCW2A DMAADA DGNOCA 14 06A 10 05A 08 04A 13 07A	
KA338	TQ2	F2	34A	DD21QA (72 )	00 01	=		PRESET INPUT - MEM DATA AND SYNC 2 BIT 21
KA338	TQ2	F2	36A				DD05CTB DDSY2B 71 36A 73 36B	
KA228	TDD	KI	29A	DD210I ( )	00 01	=		
KA228	TDD	KN	28A	DD210N ( )	00 01	=		
KA228	TDD	KP	30B	DD210P (57 )	00 01	=		CLEAR FOR MEM COUNTER = 0 OR RESET BIT 21
KA228	TDD	KQ	29B	DD210Q (55 )	00 01	=		PRESET FOR WRITE BIT 21
KA228	TDD	KQ	28B				DD21QA 53 28B	
KA340	MUX	B1	10A	DD22A1X (20 )	00 01	=		8 TO 1 MUX INPUTS BIT 22
KA340	MUX	B1	09B				SPI031 DMMC21U DMAA21U SPI030 SPI029 SPI032 DD2200 SPI023 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	
KA340	MUX	B2	11A	DD22A2X (22 )	00 01	=		8 TO 1 MUX SELECT AND ENABLE BIT 22
KA340	MUX	B2	14A				DTCW20 DTCW2A DMAADA DGNOCA 27 14A 26 13A 24 12A 30 15A	

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CONNECTOR	GROUP	TEST POINTS AND OR	EQUATION	TEST	DESIGNATION	FACTOR	COMMENT
KA338	TQ2	F3 35A	DD22QA	00 =			PRESET INPUT - MEM DATA AND
KA338	TQ2	F3 34B	(69 )	01	DD05CTC DDSY2B 65 34B 74 35B		SYNC 2 BIT 22
			DD220I	00 =			
KA228	TDD	LI 38B	( )	01	DB220Q 77 38B		
			DD220N	00 =			
KA228	TDD	LN 39B	( )	01	DDCK2A 79 39B		
KA228	TDD	LP 37A	DD220P	00 =			CLEAR FOR MEM COUNTER = 0 OR
KA228	TDD	LP 37B	(76 )	01	DDCL3A 75 37B		RESET BIT 22
KA228	TDD	LQ 38A	DD220Q	00 =			PRESET FOR WRITE BIT 22
KA228	TDD	LQ 39A	(78 )	01	DD22QA 80 39A		
KA340	MUX	C1 17A	DD23A1X	00 =			8 TO 1 MUX INPUTS BIT 23
KA340	MUX	C1 16B	(36 )	01	SPI032 DMHC14U DMAA14U SPI031 SPI030 SPI029 DD230Q SPI023 35 16B 37 17B 39 18B 41 19B 43 22B 45 23B 47 23A 50 24A		
KA340	MUX	C2 18A	DD23A2X	00 =			8 TO 1 MUX SELECT AND ENABLE
KA340	MUX	C2 21A	(38 )	01	DYCW20 DYCW2A DMAADA DGN0CA 46 21A 42 20A 40 19A 48 22A		BIT 23
KA338	TQ2	F4 39A	DD230A	00 =			PRESET INPUT - MEM DATA AND
KA338	TQ2	F4 37A	(80 )	01	DD05CTD DDSY2B 76 37A 78 38A		SYNC 2 BIT 23
			DD230I	00 =			
KA228	TDD	MI 36A	( )	01	DB230Q 71 36A		
			DD230N	00 =			
KA228	TDD	MN 34A	( )	01	DDCK4A 72 34A		
KA228	TDD	MP 35A	DD230P	00 =			CLEAR FOR MEM COUNTER = 0 OR
KA228	TDD	MP 36B	(69 )	01	DDCL3A 73 36B		RESET BIT 23
KA228	TDD	HQ 35B	DD230Q	00 =			PRESET FOR WRITE BIT 23
KA228	TDD	HQ 34B	(74 )	01	DD23QA 65 34B		

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TERM DENOTATION	FACTOR	COMMENT
			AND	OR				
KA236	MUX	A1	02A		DD24A1X	00 =		8 TO 1 MUX INPUTS BIT 24
KA236	MUX	A1	02B		(04)	01	SPI013 DMMC13U DMAA13U SPI005 SPI012 SPI003 DD2400 SPI004 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	
KA236	MUX	A2	03A		DD24A2X	00 =		8 TO 1 MUX SELECT AND ENABLE
KA236	MUX	A2	03A		(06)	01	DTCW20 DTCW2A DMAADA DGNDCA 14 06A 10 05A 08 04A 13 07A	BIT 24
KA231	TQ2	A3	04B		DD24QA	00 =		PRESET INPUT - MEM DATA AND
KA231	TQ2	A3	02A		(09)	01	DD06CTA DDSY2B 03 02A 07 03A	SYNC 2 BIT 24
					DD240I	00 =		
KA229	TDD	B1	03B		( )	01	DB240Q 05 03B	
					DD240N	00 =		
KA229	TDD	BN	02B		( )	01	DOCK3A 01 02B	
KA229	TDD	BP	04B		DD240P	00 =		CLEAR FOR MEM COUNTER = 0 OR
KA229	TDD	BP	04A		(09)	01	DOCL3A 04 04A	RESET BIT 24
KA229	TDD	BQ	03A		DD240Q	00 =		PRESET FOR WRITE BIT 24
KA229	TDD	BQ	02A		(07)	01	DD24QA 03 02A	
KA236	MUX	B1	10A		DD25A1X	00 =		8 TO 1 MUX INPUTS BIT 25
KA236	MUX	B1	09B		(20)	01	SPI003 DMMC12U DMAA12U SPI012 SPI004 SPI005 DD250Q SPI013 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	
KA236	MUX	B2	11A		DD25A2X	00 =		8 TO 1 MUX SELECT AND ENABLE
KA236	MUX	B2	14A		(22)	01	DTCWFQ DTCWFP DMAADA DGNDCA 27 14A 26 13A 24 12A 30 15A	BIT 25
KA231	TQ2	A4	07B		DD25QA	00 =		PRESET INPUT - MEM DATA AND
KA231	TQ2	A4	05B		(15)	01	DD06CTB DDSY2B 11 05B 13 06B	SYNC 2 BIT 25
					DD250I	00 =		
KA229	TDD	CY	13A		( )	01	DB250Q 24 13A	
					DD250N	00 =		
KA229	TDD	CN	14A		( )	01	DOCK3A 26 14A	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA229	TDD	CP	11B	DD250P	00	=		CLEAR FOR MEM COUNTER = 0 OR
KA229	TDD	CP	12A	(23)	01		DDCL3A 22 12A	RESET BIT 25
KA229	TDD	CQ	12B	DD250Q	00	=		PRESET FOR WRITE BIT 25
KA229	TDD	CQ	13B	(25)	01		DD25QA 27 13B	
KA236	MUX	C1	17A	DD26A1X	00	=		8 TO 1 MUX INPUTS BIT 26
KA236	MUX	C1	16B	(36)	01		SPI004 DMCI1U DMAA11U SPI013 SPI018 SPI012 DD2600 SPI005 35 16B 37 17B 39 18B 41 19B 43 22B 45 23B 47 23A 50 24A	
KA236	MUX	C2	18A	DD26A2X	00	=		8 TO 1 MUX SELECT AND ENABLE
KA236	MUX	C2	21A	(38)	01		DTCW20 DTCW2A DMAADA DGNDCA 46 21A 42 20A 40 19A 48 22A	BIT 26
KA231	TQ2	B1	12A	DD26QA	00	=		PRESET INPUT - MEM DATA AND
KA231	TQ2	B1	13A	(22)	01		DD06CTC DDSY2B 24 13A 26 14A	SYNC 2 BIT 26
				DD260I	00	=		
KA229	TDD	DI	10A	( )	01		DB260Q 18 10A	
				DD260N	00	=		
KA229	TDD	DN	09A	( )	01		DDCK3A 14 09A	
KA229	TDD	DP	10B	DD260P	00	=		CLEAR FOR MEM COUNTER = 0 OR
KA229	TDD	DP	11A	(21)	01		DDCL4A 20 11A	RESET BIT 26
KA229	TDD	DQ	09B	DD260Q	00	=		PRESET FOR WRITE BIT 26
KA229	TDD	DQ	08B	(19)	01		DD26QA 17 08B	
KA339	MUX	A1	02A	DD27A1X	00	=		8 TO 1 MUX INPUTS BIT 27
KA339	MUX	A1	02B	(04)	01		SPI018 DMCO4U DMAA04U SPI031 SPI029 SPI030 DD2700 SPI023 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	
KA339	MUX	A2	03A	DD27A2X	00	=		8 TO 1 MUX SELECT AND ENABLE
KA339	MUX	A2	06A	(06)	01		DTGW20 DTCW2A DMAADA DGNDCA 14 06A 10 05A 08 04A 13 07A	BIT 27
KA231	TQ2	B2	09A	DD27QA	00	=		PRESET INPUT - MEM DATA AND
KA231	TQ2	B2	10A	(14)	01		DD06CTD DDSY2B 18 10A 20 11A	SYNC 2 BIT 27

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CONNECTOR	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIG	FACTOR	COMMENT
			DD270I	00 =			
KA229	TDD	EI 19A	( )	01		DB270Q 40 19A	
			DD270N	00 =			
KA229	TDD	EN 20A	( )	01		DDCK3A 42 20A	
KA229	TDD	EP 17B	DD270P	00 =			CLEAR FOR MEM COUNTER = 0 OR
KA229	TDD	EP 18A	(35 )	01		DDCL4A 38 18A	RESET BIT 27
KA229	TDD	EQ 18B	DD270Q	00 =			PRESET FOR WRITE BIT 27
KA229	TDD	EQ 19B	(37 )	01		DD27QA 39 19B	
KA339	MUX	B1 10A	DD28A1X	00 =			8 TO 1 MUX INPUTS BIT 28
KA339	MUX	B1 09B	(20 )	01		SPI023 DMMC03U DMAA03U SPI029 SPI031 SPI030 DD280Q SPI032 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	
KA339	MUX	B2 11A	DD28A2X	00 =			8 TO 1 MUX SELECT AND ENABLE
KA339	MUX	B2 14A	(22 )	01		DTCW30 DTCW3A DMAA0A DGNDIA 27 14A 26 13A 24 12A 30 15A	BIT 28
KA231	TQ2	B3 10B	DD28QA	00 =			SYNC 2 BIT 28
KA231	TQ2	B3 08B	(21 )	01		DD07CTA DDSY2B 17 08B 19 09B	SYNC 2 BIT 28
			DD280I	00 =			
KA229	TDD	FI 16A	( )	01		DB280Q 34 16A	
			DD280N	00 =			
KA229	TDD	FN 15A	( )	01		DDCK3A 30 15A	
KA229	TDD	FP 16B	DD280P	00 =			CLEAR FOR MEM COUNTER = 0 OR
KA229	TDD	FP 17A	(33 )	01		DDCL4A 36 17A	RESET BIT 28
KA229	TDD	FQ 15B	DD280Q	00 =			PRESET FOR WRITE BIT 28
KA229	TDD	FQ 14B	(31 )	01		DD28QA 29 14B	
KA339	MUX	C1 17A	DD29A1X	00 =			8 TO 1 MUX INPUTS BIT 29
KA339	MUX	C1 16B	(36 )	01		SPI031 DMMC02U DMAA02U SPI030 SPI032 SPI029 DD2900 SPI023 35 16B 37 17B 39 18B 41 19B 43 22B 45 23B 47 23A 50 24A	

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CONNECTOR	CAGE TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM NATOR	DESIG NATOR	FACTOR	COMMENT
KA339	MUX	C2	18A	DD29A2X	00	=		8 TO 1 MUX SELECT AND ENABLE
KA339	MUX	C2	21A	(38)	01		DTCW30 DTCW3A DMAADA DGND1A 46 21A 42 20A 40 19A 48 22A	BIT 29
KA231	TQ2	B4	13B	DD29QA	00	=		PRESET INPUT - MEM DATA AND
KA231	TQ2	B4	11B	(27)	01		DD07CTB DD5Y2B 23 11B 25 12B	SYNC 2 BIT 29
KA229	TDD	GI	25A	DD290I	00	=		
KA229	TDD	GI	25A	( )	01		DB290Q 54 25A	
KA229	TDD	GN	26A	DD290N	00	=		
KA229	TDD	GN	26A	( )	01		DDCK3A 56 26A	
KA229	TDD	GP	25B	DD290P	00	=		CLEAR FOR MEM COUNTER = 0 OR
KA229	TDD	GP	24A	(47)	01		DDCL4A 52 24A	RESET BIT 29
KA229	TDD	GQ	26B	DD290Q	00	=		PRESET FOR WRITE BIT 29
KA229	TDD	GQ	27B	(49)	01		DD29QA 51 27B	
KA235	MUX	A1	02A	DD30A1X	00	=		8 TO 1 MUX INPUTS BIT 30
KA235	MUX	A1	02B	(04)	01		SPI013 DMHC01U DMAA01U SPI003 SPI005 SPI004 DD300Q SPI012 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	
KA235	MUX	A2	03A	DD30A2X	00	=		8 TO 1 MUX SELECT AND ENABLE
KA235	MUX	A2	06A	(06)	01		DTCW30 DTCW3A DMAADA DGND3A 14 06A 10 05A 08 04A 13 07A	BIT 30
KA231	TQ2	C1	18A	DD300A	00	=		PRESET INPUT - MEM DATA AND
KA231	TQ2	C1	19A	(38)	01		DD07CTC DD5Y2B 40 19A 42 20A	SYNC 2 BIT 30
KA229	TDD	HI	22A	DD300I	00	=		
KA229	TDD	HI	22A	( )	01		DB300Q 48 22A	
KA229	TDD	HN	21A	DD300N	00	=		
KA229	TDD	HN	21A	( )	01		DDCK3A 46 21A	
KA229	TDD	HP	24B	DD300P	00	=		CLEAR FOR MEM COUNTER = 0 OR
KA229	TDD	HP	23A	(45)	01		DDCL4A 50 23A	RESET BIT 30

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA229	TDD	HQ	23B	DD300Q	00	R		PRESET FOR WRITE BIT 30
KA229	TDD	HQ	22B	(43)	01		DD30QA 41 22B	
KA235	MUX	B1	10A	DD31A1X	00	=		8 TO 1 MUX INPUTS BIT 31
KA235	MUX	B1	09B	(20)	01		SPI004 DGND9A DGNDAA SPI013 SPI005 SPI003 DD3100 SPI012 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	
KA235	MUX	B2	11A	DD31A2X	00	=		8 TO 1 MUX SELECT AND ENABLE
KA235	MUX	B2	14A	(22)	01		DTCW30 DTCW3A DMAADA DGND3A 27 14A 26 13A 24 12A 30 15A	BIT 31
KA231	TQ2	C2	15A	DD31QA	00	=		PRESET INPUT - MEM DATA AND
KA231	TQ2	C2	16A	(30)	01		DD07CTD DDSY2B 34 16A 36 17A	SYNC 2 BIT 31
				DD310I	00	=		
KA229	TDD	J1	32A	( )	01		DD310Q 68 32A	
				DD310N	00	=		
KA229	TDD	JN	33A	( )	01		DDCK4A 70 33A	
KA229	TDD	JP	31B	DD310P	00	=		CLEAR FOR MEM COUNTER = 0 OR
KA229	TDD	JP	31A	(59)	01		DDCL4A 66 31A	RESET BIT 31
KA229	TDD	JQ	32B	DD310Q	00	=		PRESET FOR WRITE BIT 31
KA229	TDD	JQ	33B	(61)	01		DD31QA 63 33B	
KA213	THI	C6	18B	DERR0A	00	=		
KA213	THI	C6	19B	(42)	01		DERR00 39 19B	
KA218	TS8	D1	25B	DERR00	00	=		
KA218	TS8	D1	23B	(47)	01		DMPE0P DRSERP DRAILP DRCILP DRSNRP DRPE1A DCTE1A DMT0VA 43 23B 46 21A 48 22A 49 26B 50 23A 52 24A 54 25A 56 26A	
KA311	TT3	D3	27B	DERR1A	00	=		
KA311	TT3	D3	24B	(51)	01		DERR00 SPI022 DERSDP 45 24B 47 25B 49 26B	
				DERSDI	00	=		
KA210	TDD	L1	38B	( )	01		DGND8A 77 38B	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	INDICATOR	FACTOR	COMMENT
KA210	TDD	LN	39B	DERSDN ( )	00	H		
					01		DERROA 79 39B	
KA210	TDD	LP	37A	DERSDP	00	=		
KA210	TDD	LP	37B	(76 )	01		DXRS2B 75 37B	
KA210	TDD	LQ	38A	DERSDQ	00	H		
KA210	TDD	LQ	39A	(78 )	01		DERSIA 80 39A	
KA333	TQ2	B3	10B	DERS1A	00	H		
KA333	TQ2	B3	08B	(21 )	01		DERROO DXRRCO 17 08B 19 09B	
KA241	ACF	A1	05A	DEVIND	00	=		
KA241	ACF	A1	03A	(11 )	01		DEVINH SPI012 07 03A 09 04A	
KA337	THI	D3	21A	DGNDA	00	=		
KA337	THI	D3	22A	(48 )	01		SPI02B 50 22A	
KA337	THI	D4	22B	DGNDBA	00	=		
KA337	THI	D4	23B	(46 )	01		SPI02B 41 23B	
KA337	THI	D5	24B	DGNDCA	00	=		
KA337	THI	D5	25B	(43 )	01		SPI02B 45 25B	
KA213	THI	B1	13A	DGNDOA	00	=		
KA213	THI	B1	14A	(24 )	01		SPI010 22 14A	
KA213	THI	B2	11A	DGND1A	00	=		
KA213	THI	B2	12A	(25 )	01		SPI010 23 12A	
KA213	THI	B3	09A	DGND2A	00	=		
KA213	THI	B3	10A	(18 )	01		SPI010 20 10A	
KA213	THI	B4	08B	DGND3A	00	=		
KA213	THI	B4	09B	(14 )	01		SPI010 17 09B	



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DGND4A  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM DESIGNATION	FACTOR	COMMENT
XA213	THI	B5	10B	DGND4A	00 =		
XA213	THI	B5	11B	(19)	01	SPI010 21 11B	
XA213	THI	B6	12B	DGND5A	00 =		
XA213	THI	B6	13B	(26)	01	SPI010 27 13B	
XA337	THI	D6	26B	DGND6A	00 =		
XA337	THI	D6	27B	(53)	01	SPI028 51 27B	
XA337	THI	E1	32A	DGND7A	00 =		
XA337	THI	E1	33A	(66)	01	SPI028 64 33A	
XA213	THI	C1	19A	DGND8A	00 =		
XA213	THI	C1	20A	(40)	01	SPI010 38 20A	
XA337	THI	E2	30A	DGND9A	00 =		
XA337	THI	E2	31A	(63)	01	SPI028 61 31A	
XA213	THI	C2	17A	DICLAA	00 =		INDEX CLK NOT
XA213	THI	C2	18A	(37)	01	DICLAOX 35 18A	
XA244	DCF	B5	16A	DICLAD4	00 =		INDEX CLOCK
XA244	DCF	B5	13A	(41)	01	SPI019 36 13A	
XA244	DCF	B6	15A	DICLAOX	00 =		
XA244	DCF	B6	14A	(40)	01	SPI006 38 14A	
XA213	THI	D1	25A	DITRCA	00 =		
XA213	THI	D1	26A	(54)	01	DITRCO 52 26A	
XA224	TQ2	B3	10B	DITRCO	00 =		
XA224	TQ2	B3	08B	(21)	01	DITOCA DIT2CA 17 08B 19 09B	
XA224	TQ2	C1	18A	DITROA	00 =		ITR CODE 01
XA224	TQ2	C1	19A	(38)	01	DITR1Q DITROP 40 19A 42 20A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DITROI  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
				DITROI	00 =			
KA209	TDD	H1	22A	( )	01		DITROO 48 22A	
				DITRON	00 =			
KA209	TDD	HN	21A	( )	01		DXXDSP 46 21A	
KA209	TDD	HP	24B	DITROP	00 =			
KA209	TDD	HP	23A	(45 )	01		DITRCA 50 23A	
KA209	TDD	HQ	23B	DITROQ	00 =			ITR COUNTER MSB
KA209	TDD	HQ	22B	(43 )	01		DITISA 41 22B	
KA213	THI	D2	23A	DITROO	00 =			
KA213	THI	D2	24A	(49 )	01		DITROA 47 24A	
				DITRII	00 =			
KA210	TDD	H1	22A	( )	01		DITROP 48 22A	
				DITRIN	00 =			
KA210	TDD	HN	21A	( )	01		DXXDSP 46 21A	
KA210	TDD	HP	24B	DITRIP	00 =			
KA210	TDD	HP	23A	(45 )	01		DITICA 50 23A	
KA210	TDD	HQ	23B	DITRIQ	00 =			
KA210	TDD	HQ	22B	(43 )	01		DITISA 41 22B	
KA212	TT3	B3	13B	DITOCA	00 =			CLEAR ITR COUNTER BIT 0
KA212	TT3	B3	10B	(27 )	01		DXDVX0 DXRA70 DXR2CR 21 10B 23 11B 25 12B	
KA213	THI	F6	38A	DITOP0	00 =			
KA213	THI	F6	39A	(77 )	01		DITROP 75 39A	
KA215	THI	B6	12B	DITOR0	00 =			RESET MEM STATE COUNTER
KA215	THI	B6	13B	(26 )	01		DITROP 27 13B	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA328	TD4	C1	17B	DIT0SA	00	=		SET ITR COUNTER BIT 0
KA328	TD4	C1	18B	(35)	01		DXDVXO DXRA70 DXR2CS DXR3CS 37 18B 38 18A 40 19A 42 20A	
KA212	TT3	C1	17A	DIT1CA	00	=		CLEAR ITR COUNTER BIT 1
KA212	TT3	C1	18A	(36)	01		DXDVXO DXRA70 DXR3CR 38 18A 40 19A 42 20A	
KA104	THI	D5	24B	DIT1RO	00	=		
KA104	THI	D5	25B	(43)	01		DITR1P 45 25B	
KA328	TD4	D1	25B	DIT1SA	00	=		SET ITR COUNTER BIT 1
KA328	TD4	D1	26B	(47)	01		DXDVXO DXRA70 DXR3CS SPI063 49 26B 52 24A 54 25A 56 26A	
KA333	TQ2	C3	16B	DIT2CA	00	=		
KA333	TQ2	C3	14B	(33)	01		DITR0Q DITR1P 29 14B 31 15B	
KA211	TQ2	F4	39A	DLPTSA	00	=		DEV LOOP TEST
KA211	TQ2	F4	37A	(80)	01		DXDV1B DXR09D 76 37A 78 38A	
				DLPT0I	00	=		
KA208	TDD	A1	06A	( )	01		DGND8A 08 06A	
				DLPT0N	00	=		
KA208	TDD	AN	07A	( )	01		DXXDDP 10 07A	
KA208	TDD	AP	05B	DLPT0P	00	=		
KA208	TDD	AP	05A	(11)	01		DXRS2B 06 05A	
KA208	TDD	AQ	06B	DLPT0Q	00	=		LOOP TEST
KA208	TDD	AQ	07B	(13)	01		DLPTSA 15 07B	
KA313	DBC	E1	34A	DLTAK1U	00	=		
KA313	DBC	E1	33B	(70)	01		SPI020 SPI023 SPI005 SPI018 SPI022 71 33B 73 34B 75 35B 77 36B 80 38B	
KA313	DBC	E2	35A	DLTAK2U	00	=		
KA313	DBC	E2	32A	(72)	01		DXIMBQ 69 32A	

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TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DLTAK3U  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA313	DBC	E3	36A	DLTAK3U	00	=		
KA313	DBC	E3	37B	(74)	01		DLTK1A 79 37B	
KA313	DBC	E4	37A	DLTAK4U	00	=		
KA313	DBC	E4	38A	(76)	01		SPT027 78 38A	
KA313	DBC	E5	33A	DLTAK5U	00	=		
KA313	DBC	E5	32B	(68)	01		DLTKRA 66 32B	
KA224	TQ2	C2	15A	DLTE0A	00	=		
KA224	TQ2	C2	16A	(30)	01		DXEA00 DLPT00 34 16A 36 17A	LOOP TEST . ADD. ENB TIME
KA337	THI	E6	32B	DLTKRA	00	=		
KA337	THI	E6	33B	(68)	01		DLTKR0 65 33B	
KA112	TT3	C1	17A	DLTKR0	00	=		
KA112	TT3	C1	18A	(36)	01		DBTSSA DTCW3A SPI061 38 18A 40 19A 42 20A	
KA112	TT3	B2	09B	DLTK1A	00	=		
KA112	TT3	B2	09A	(19)	01		DLTAK5U SPI064 SPI061 14 09A 17 08B 18 10A	
KA211	TQ2	D4	27B	DLTK10	00	=		
KA211	TQ2	D4	25B	(51)	01		DLTK1A 47 25B	WRITE +WRITE MAINT. MST 4
KA337	THI	E3	28A	DMAACA	00	=		
KA337	THI	E3	29A	(60)	01		DMAACQ 62 29A	ADD CONTROL OVERL *0
				DMAACI	00	=		
KA232	TDD	LI	38B	( )	01		DGND4A 77 38B	
				DMAACN	00	=		
KA232	TDD	LN	39B	( )	01		OSYN2A 79 39B	
KA232	TDD	LP	37A	DMAACP	00	=		
KA232	TDD	LP	37B	(76)	01		DMMRSP 75 37B	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017  
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 INDEX DMAAC0  
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CONNECTOR	CPU	GROUP	TEST POINTS		EQUATION	TERM	LOGIC	RATIO	FACTOR	COMMENT
			AND	OR						
KA232	TDD	LQ	38A		DMAACQ	00	=			ADD CONTROL
KA232	TDD	LQ	39A		(78 )	01		DMRESA 80 39A		
KA337	THI	E4	28B		DMAADA	00	=			ADD CONTROL OVER 1'D
KA337	THI	E4	29B		(56 )	01		DMAACQ 55 29B		
KA222	DBC	E1	34A		DMAA01U	00	=			MEM WORD ADD LSB BIT 30
KA222	DBC	E1	33B		(70 )	01		DD300Q DD290Q DD280Q DD270Q DMALCA 71 33B 73 34B 75 35B 77 36B 80 38B		
KA222	DBC	E2	35A		DMAA02U	00	=			MEM WORD ADD BIT 29
KA222	DBC	E2	32A		(72 )	01		DMACKA 69 32A		
KA222	DBC	E3	36A		DMAA03U	00	=			MEM WORD ADD BIT 28
KA222	DBC	E3	37B		(74 )	01		SPI013 79 37B		
KA222	DBC	E4	37A		DMAA04U	00	=			MEM WORD ADD BIT 27
KA222	DBC	E4	38A		(76 )	01		SPI016 78 38A		
KA222	DBC	E5	33A		DMAA05U	00	=			COUNT FULL BIT 27-30
KA222	DBC	E5	32B		(68 )	01		DMARIA 66 32B		
KA221	DBC	C1	18A		DMAA11U	00	=			MEM WORD ADD BIT 26
KA221	DBC	C1	18B		(38 )	01		DD260Q DD250Q DD240Q DD230Q DMALCA 39 18B 41 19B 43 22B 45 23B 50 24A		
KA221	DBC	C2	19A		DMAA12U	00	=			MEM WORD ADD BIT 25
KA221	DBC	C2	17B		(40 )	01		DMACKA 37 17B		
KA221	DBC	C3	20A		DMAA13U	00	=			MEM WORD ADD BIT 24
KA221	DBC	C3	23A		(42 )	01		DMAA05U 47 23A		
KA221	DBC	C4	21A		DMAA14U	00	=			MEM WORD ADD BIT 23
KA221	DBC	C4	22A		(46 )	01		SPI011 48 22A		
KA221	DBC	C5	17A		DMAA15U	00	=			COUNT FULL BIT 23-30
KA221	DBC	C5	16B		(36 )	01		DMARIA 35 16B		

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA220	DBC	C1	18A	DMAA21U	00	=		MEM WORD ADD BIT 22
KA220	DBC	C1	18B	(38)	01		DD2200 DD2100 DD2000 DD1900 DMALCA 39 18B 41 19B 43 22B 45 23B 50 24A	
KA220	DBC	C2	19A	DMAA22U	00	=		MEM WORD ADD BIT 21
KA220	DBC	C2	17B	(40)	01		DMACKA 37 17B	
KA220	DBC	C3	20A	DMAA23U	00	=		MEM WORD ADD BIT 20
KA220	DBC	C3	23A	(42)	01		DMAA05U 47 23A	
KA220	DBC	C4	21A	DMAA24U	00	=		MEM WORD ADD BIT 19
KA220	DBC	C4	22A	(46)	01		DMAA15U 48 22A	
KA220	DBC	C5	17A	DMAA25U	00	=		COUNT FULL BIT 19-30
KA220	DBC	C5	16B	(36)	01		DMARIA 35 16B	
KA221	DBC	D1	26A	DMAA31U	00	=		MEM WORD ADD BIT 18
KA221	DBC	D1	26B	(54)	01		DD1800 DD1700 DD1600 DD1500 DMALCA 53 26B 55 27B 57 29B 59 30B 63 31A	
KA221	DBC	D2	28B	DMAA32U	00	=		MEM WORD ADD BIT 17
KA221	DBC	D2	25B	(56)	01		DMACKA 51 25B	
KA221	DBC	D3	28A	DMAA33U	00	=		MEM WORD ADD BIT 16
KA221	DBC	D3	31B	(60)	01		DMAA05U 61 31B	
KA221	DBC	D4	29A	DMAA34U	00	=		MEM WORD ADD BIT 15
KA221	DBC	D4	30A	(62)	01		DMAA25U 64 30A	
KA221	DBC	D5	25A	DMAA35U	00	=		COUNT FULL BIT 15-30
KA221	DBC	D5	24B	(52)	01		DMARIA 49 24B	
KA217	DBC	D1	26A	DMAA41U	00	=		MSB MEM ADD REG
KA217	DBC	D1	26B	(54)	01		DD1400 DGND0A DGND1A DGND2A DMALCA 53 26B 55 27B 57 29B 59 30B 63 31A	
KA217	DBC	D2	28B	DMAA42U	00	=		
KA217	DBC	D2	25B	(56)	01		DMACKA 51 25B	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
			AND	OR					
KA217	DBC	D3	28A		DMAA43U	00	=		
KA217	DBC	D3	31B		(60 )	01		DMAA05U 61 31B	
KA217	DBC	D4	29A		DMAA44U	00	=		
KA217	DBC	D4	30A		(62 )	01		DMAA35U 64 30A	
KA217	DBC	D5	25A		DMAA45U	00	=		
KA217	DBC	D5	24B		(52 )	01		DMARIA 49 24B	
KA337	THI	E5	30B		DMACKA	00	=		CLK MEM CONT. WORD
KA337	THI	E5	31B		(57 )	01		DMACKO 59 31B	
KA223	TQ2	E2	28A		DMACKO	00	=		
KA223	TQ2	E2	29A		(60 )	01		DMAC1A DMAC2A 62 29A 64 30A	
KA333	TQ2	D3	24B		DMAC1A	00	=		CLK LOAD MCW
KA333	TQ2	D3	22B		(45 )	01		DTCW30 DTST20 41 22B 43 23B	
KA311	TT3	E3	33B		DMAC2A	00	=		CONTROL CLK FOR CW AND CC FF
KA311	TT3	E3	30B		(63 )	01		DTCCMQ DTST20 DERROA 57 30B 59 31B 61 32B	
KA337	THI	F1	38B		DMALCA	00	=		LOAD CONTROL MEM CONT WORD
KA337	THI	F1	39B		(80 )	01		DTCWFQ 79 39B	
KA337	THI	F2	36B		DMARIA	00	=		RESET MEM ADD REG
KA337	THI	F2	37B		(71 )	01		DMAR10 73 37B	
KA223	TQ2	E3	30B		DMAR10	00	=		
KA223	TQ2	E3	28B		(57 )	01		DXRS1B DMRE1A 53 28B 55 29B	
KA241	ACF	B1			DMA51GX	00	=		
KA241	ACF	B1	06A		(31 )	01		DMSYNQ ODDIA 13 06A 17 07A	
KA241	ACF	B2			DMA51HX	00	=		
KA241	ACF	B2	22A		(29 )	01		DXASLOX 41 22A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIG. FACTOR	FACTOR	COMMENT
KA241	ACF B3	35B	DMAS1TX	00	=		
KA241	ACF B3	34B	(69)	01		SPI032 66 34B	MEM PORT A SYNC1
KA241	ACF C1		DMAS2GX	00	=		
KA241	ACF C1	06A	(23)	01		DMSYNQ DDDIA 13 06A 17 07A	
KA241	ACF C2		DMAS2HX	00	=		
KA241	ACF C2	20A	(25)	01		DGND5A 39 20A	
KA241	ACF C3	32A	DMAS2TX	00	=		
KA241	ACF C3	34A	(65)	01		SPI007 64 34A	MEM PORT A SYNC 2
			DMATDI	00	=		
KA334	TDD LI	38B	( )	01		DB130Q 77 38B	
			DMATDN	00	=		
KA334	TDD LN	39B	( )	01		DTCWFA 79 39B	
KA334	TDD LP	37A	DMATDP	00	=		
KA334	TDD LP	37B	(76)	01		DXRS2B 75 37B	
KA334	TDD LQ	38A	DMATDQ	00	=		
KA334	TDD LQ	39A	(78)	01		SPI028 80 39A	TEST DATA PATH F.F.
KA337	THI F3	34B	DMBCKA	00	=		
KA337	THI F3	35B	(70)	01		DMACKO 69 35B	CLK MEM BLK LENGTH
KA218	TSB F1	37A	DMBLOA	00	=		
KA218	TSB F1	36A	(76)	01		DMBL05U DMBL15U DMBL21U DMBL22U DMBL23U SPI003 SPI002 SPI011 71 36A 72 34A 73 36B 74 35B 75 37B 77 38B 78 38A 79 39B	MEM WORD COUNT ALL ONES
KA337	THI F4	34A	DMBL00	00	=		
KA337	THI F4	35A	(72)	01		DMBL0A 74 35A	
KA221	DBC E1	34A	DMBL01U	00	=		
KA221	DBC E1	33B	(70)	01		DD100P DDO90P DD080P DD070P DMALCA 71 33B 73 34B 75 35B 77 36B 80 38B	MEM BLOCK LENGTH BIT 10 LSB



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST DESIGNATION	FACTOR	COMMENT
KA221	DBC	E2	35A	DMBLO2U	00 =		BIT 09
KA221	DBC	E2	32A	(72)	01	DMBCKA 69 32A	
KA221	DBC	E3	36A	DMBLO3U	00 =		BIT 08
KA221	DBC	E3	37B	(74)	01	SPI016 79 37B	
KA221	DBC	E4	37A	DMBLO4U	00 =		BIT 07
KA221	DBC	E4	38A	(76)	01	SPI011 78 38A	
KA221	DBC	E5	33A	DMBLO5U	00 =		BIT 07-09 ALL ONES
KA221	DBC	E5	32B	(68)	01	DMARIA 66 32B	
KA220	DBC	E1	34A	DMBL11U	00 =		BIT 06 MEM BLOCK LENGTH
KA220	DBC	E1	33B	(70)	01	DD060P DD050P DD040P DD030P DMALCA 71 33B 73 34B 75 35B 77 36B 80 38B	
KA220	DBC	E2	35A	DMBL12U	00 =		BIT 05
KA220	DBC	E2	32A	(72)	01	DMBCKA 69 32A	
KA220	DBC	E3	36A	DMBL13U	00 =		BIT 04
KA220	DBC	E3	37B	(74)	01	DMBLO5U 79 37B	
KA220	DBC	E4	37A	DMBL14U	00 =		BIT 03
KA220	DBC	E4	38A	(76)	01	SPI011 78 38A	
KA220	DBC	E5	33A	DMBL15U	00 =		BITS 03-10 ALL ONES
KA220	DBC	E5	32B	(68)	01	DMARIA 66 32B	
KA216	DBC	E1	34A	DMBL21U	00 =		BIT 02 MEM BLOCK LENGTH
KA216	DBC	E1	33B	(70)	01	DD020P DD010P DD000P SPI010 DRACLA 71 33B 73 34B 75 35B 77 36B 80 38B	
KA216	DBC	E2	35A	DMBL22U	00 =		BIT 01
KA216	DBC	E2	32A	(72)	01	DMBCKA 69 32A	
KA216	DBC	E3	36A	DMBL23U	00 =		BIT 00 MSB BL
KA216	DBC	E3	37B	(74)	01	DMBL15U 79 37B	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TEST DESIGNATOR	FACTOR	COMMENT
KA216	DBC	E4	37A	DMBL24U	00 =		SPARE - UNUSED
KA216	DBC	E4	38A	(76 )	01	DMBL05U 78 38A	
KA216	DBC	E5	33A	DMBL25U	00 =		UNUSED
KA216	DBC	E5	32B	(68 )	01	DMARIA 66 32B	
KA241	ACF	D1		DMBS1GX	00 =		
KA241	ACF	D1	06A	(59 )	01	DMSYNO DDDIA 13 06A 17 07A	
KA241	ACF	D2		DMBS1HX	00 =		
KA241	ACF	D2	18A	(57 )	01	DXBSLOX 37 18A	
KA241	ACF	D3	38B	DMBS1TX	00 =		MEM PORT B SYNC 1
KA241	ACF	D3	36B	(73 )	01	SPI032 71 36B	
KA241	ACF	E1		DMBS2GX	00 =		
KA241	ACF	E1	06A	(51 )	01	DMSYNO DDDIA 13 06A 17 07A	
KA241	ACF	E2		DMBS2HX	00 =		
KA241	ACF	E2	23A	(49 )	01	DGND3A 43 23A	
KA241	ACF	E3	38A	DMBS2TX	00 =		MEM PORT B SYNC 2
KA241	ACF	E3	36A	(72 )	01	SPI007 68 36A	
KA215	THI	A1	06A	DMB01A	00 =		
KA215	THI	A1	07A	(13 )	01	DMBL01U 11 07A	
KA215	THI	A2	04A	DMB02A	00 =		
KA215	THI	A2	05A	(08 )	01	DMBL02U 06 05A	
KA215	THI	A3	03A	DMB03A	00 =		
KA215	THI	A3	02A	(03 )	01	DMBL03U 04 02A	
KA215	THI	A4	02B	DMB04A	00 =		
KA215	THI	A4	03B	(01 )	01	DMBL04U 05 03B	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DMB11A  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TERM	DENOTATOR	FACTOR	COMMENT
			AND	OR					
KA215	THI	A5	04B		DMB11A	00	=		
KA215	THI	A5	05B		(07)	01		DMB11U 09 05B	
KA215	THI	A6	06B		DMB12A	00	=		
KA215	THI	A6	07B		(10)	01		DMB12U 15 07B	
KA215	THI	B1	13A		DMB13A	00	=		
KA215	THI	B1	14A		(24)	01		DMB13U 22 14A	
KA215	THI	B2	11A		DMB14A	00	=		
KA215	THI	B2	12A		(25)	01		DMB14U 23 12A	
KA215	THI	B3	09A		DMB21A	00	=		
KA215	THI	B3	10A		(18)	01		DMB21U 20 10A	
KA215	THI	B4	08B		DMB22A	00	=		
KA215	THI	B4	09B		(14)	01		DMB22U 17 09B	
KA215	THI	B5	10B		DMB23A	00	=		
KA215	THI	B5	11B		(19)	01		DMB23U 21 11B	
KA219	TT3	B3	13B		DMCK10	00	=		ENABLE CLOCK FOR MEM FULL
KA219	TT3	B3	10B		(27)	01		DMCK2A DMCK3A DMCK4A 21 10B 23 11B 25 12B	F.F.
KA212	TT3	A1	04A		DMCK2A	00	=		WRITE : XFER DATA TO BUFFER
KA212	TT3	A1	05A		(04)	01		DWRN10 DBFUDQ DMFULQ 06 05A 08 06A 10 07A	
KA223	TQ2	F1	37B		DMCK3A	00	=		
KA223	TQ2	F1	38B		(75)	01		DRDN00 DMREQP 77 38B 79 39B	
KA108	TD4	C1	17B		DMCK4A	00	=		
KA108	TD4	C1	18B		(35)	01		DRDN00 DMFULP DBFULQ DMCK50 37 18B 38 18A 40 19A 42 20A	
KA309	Y00	E1	19A		DMCK4I	00	=		
					( )	01		SPI064 40 19A	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DMCK4N  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 80

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMINAL	DESIGNATION	FACTOR	COMMENT
KA309	TDD	EN	20A	DMCK4N ( )	00 = 01		SPI062 42 20A	
KA309	TDD	EP	17B	DMCK4P ( )	00 =			
KA309	TDD	EP	18A	( )	01		DMSC00 38 18A	
KA309	TDD	EQ	18B	DMCK4Q ( )	00 =		SPO	
KA309	TDD	EQ	19B	( )	01		DMCK4A 39 19B	
KA333	TQ2	E2	28A	DMCK4O ( )	00 =			
KA333	TQ2	E2	29A	( )	01		DMCK4A SPI028 62 29A 64 30A	
KA333	TQ2	E4	33B	DMCK5O ( )	00 =			CYCLE COMPLETE . 8 MHZ
KA333	TQ2	E4	31B	( )	01		DMST1A DMCK6A 59 31B 61 32B	
KA302	TQ2	F4	39A	DMCK6A ( )	00 =			
KA302	TQ2	F4	37A	( )	01		DBL000 DTST40 76 37A 78 38A	
KA223	TQ2	F2	34A	DMCLKA ( )	00 =			CLK FOR MEM COMMAND ADD REG.
KA223	TQ2	F2	36A	( )	01		DYCW30 DMCLL0 71 36A 73 36B	
KA219	TT3	C2	15B	DMCLL0 ( )	00 =			CLK TO UPDATE MEM ADD REG.
KA219	TT3	C2	14B	( )	01		DTST2A DTST4A DTCWFA 29 14B 30 15A 34 16A	LE ST 2 + ST 4
KA210	TDD	AI	06A	DMCL8I ( )	00 = 01		DTNC8A 08 06A	
KA210	TDD	AN	07A	DMCL8N ( )	00 = 01		DTI618 10 07A	
KA210	TDD	AP	05B	DMCL8P ( )	00 =			
KA210	TDD	AP	05A	( )	01		DMSTPP 06 05A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DMCL80  
 FILE IDENT T39CFC7 DATE 09-03-82 PAGE 81

CONNECTOR	UNIT FLASK	GROUP	TEST POINTS AND OR	EQUATION	TERM	LOGIC NATION	FACTOR	COMMENT
KA210	TDD	AQ	06B	DMCL80	00	=		GEN 8 MHZ MEMORY CLOCK
KA210	TDD	AQ	07B	(13)	01		SPIO10 15 07B	
KA215	THI	C2	17A	DMCPCA	00	=		CLK FOR CYCLE COMPLETE FF
KA215	THI	C2	18A	(37)	01		DMCPC0 35 18A	
KA224	TQ2	A3	04B	DMCPC0	00	=		
KA224	TQ2	A3	02A	(09)	01		DMCP1A DMFC2A 03 02A 07 03A	
				DMCPLI	00	=		
KA210	TDD	BI	03B	( )	01		DMCY10 05 03B	
				DMCPLN	00	=		
KA210	TDD	BN	02B	( )	01		DMCPCA 01 02B	
KA210	TDD	BP	04B	DMCPLP	00	=		
KA210	TDD	BP	04A	(09)	01		DXRS1B 04 04A	
KA210	TDD	BQ	03A	DMCPLQ	00	=		MEM CYCLE COMPLETE
KA210	TDD	BQ	02A	(07)	01		SPI002 03 02A	
KA333	TQ2	E3	30B	DMCP1A	00	=		SELECT NORMAL 8 MHZ
KA333	TQ2	E3	28B	(57)	01		DMCPLQ DTCL80 53 28B 55 29B	
KA219	TT3	C3	19B	DMCY1A	00	=		WRITE . NO P.E.- INDICATE DAT
KA219	TT3	C3	18B	(39)	01		DMSP30 DDPECA DMST50 33 16B 35 17B 37 18B	A REG. FULL
KA223	TQ2	D4	27B	DMCY10	00	=		CONTROL CYCIC REG CLK
KA223	TQ2	D4	25B	(51)	01		DMCY1A DMCY2A 47 25B 49 26B	
KA214	TT3	C2	15B	DMCY2A	00	=		
KA214	TT3	C2	14B	(31)	01		DRCM30 DMST50 SPI061 29 14B 30 15A 34 16A	
KA223	TQ2	E1	31A	DMFCKA	00	=		BIT 32+ FIRST WD SECTOR BIT 0
KA223	TQ2	E1	32A	(66)	01		DMFCK0 DTCW3A 68 32A 70 33A	

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LOGIC

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REV E INDEX DMFCK0  
 DATE 09-03-82 PAGE 82

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA211	TQ2	D3	24B	DMFCK0	00	=		
KA211	TQ2	D3	22B	(45 )	01	=	DMFC1A DMFC2A 41 22B 43 23B	
KA333	TQ2	F1	37B	DMFC1A	00	=		NORMAL 8MHZ CLK
KA333	TQ2	F1	38B	(75 )	01	=	DYNC80 DMCK10 77 38B 79 39B	
KA333	TQ2	F2	34A	DMFC2A	00	=		SEL. MEM 8MHZ CLK
KA333	TQ2	F2	36A	(72 )	01	=	DMCL8Q DMCY10 71 36A 73 36B	
				DMFULI	00	=		
KA210	TDD	CI	13A	( )	01	=	DMFUL0 24 13A	
				DMFULN	00	=		
KA210	TDD	CI	14A	( )	01	=	DMFCRA 26 14A	
KA210	TDD	CP	11B	DMFULP	00	=		
KA210	TDD	CP	12A	(23 )	01	=	DXRS1B 22 12A	
KA210	TDD	CQ	12B	DMFULQ	00	=		MEM DATA REG FULL
KA210	TDD	CQ	13B	(25 )	01	=	SPI006 27 13B	
KA112	TT3	E1	30A	DMFULC	00	=		
KA112	TT3	E1	31A	(64 )	01	=	DMCK4A DMCY1A DMCK4P 66 31A 68 32A 70 33A	
KA211	TQ2	A2	02B	DMPE0	00	=		I/O + MEM PE
KA211	TQ2	A2	04A	(01 )	01	=	DMPE0P SPI009 04 04A 05 03B	
KA112	TT3	E3	33B	DMMCPA	00	=		
KA112	TT3	E3	30B	(63 )	01	=	DXRA60 DXDEVS DXXB20 57 30B 59 31B 61 32B	
KA220	DBC	D1	26A	DMMC01U	00	=		CMD MEM ADD BIT 30 LSB
KA220	DBC	D1	26B	(54 )	01	=	DB300Q DB290Q DB280Q DB270Q DMMCPA 53 26B 55 27B 57 29B 59 30B 63 31A	
KA220	DBC	D2	28B	DMMC02U	00	=		CMD MEM ADD BIT 29
KA220	DBC	D2	25B	(56 )	01	=	DMCLKA 51 25B	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DMMC03U  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 83

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA220	DBC	D3	28A	DMMC03U	00	=		CMD MEM ADD BIT 28
KA220	DBC	D3	31B	(160 )	01		SPI011 61 31B	
KA220	DBC	D4	29A	DMMC04U	00	=		CMD MEM ADD BIT 27
KA220	DBC	D4	30A	(62 )	01		SPI016 64 30A	
KA220	DBC	D5	25A	DMMC05U	00	=		COUNT FULL
KA220	DBC	D5	24B	(52 )	01		DMMR1A 49 24B	
KA217	DBC	C1	18A	DMMC11U	00	=		CMD MEM ADD BIT 26
KA217	DBC	C1	18B	(38 )	01		DB260Q DB250Q DB240Q DB230Q DMCPA 39 18B 41 19B 43 22B 45 23B 50 24A	
KA217	DBC	C2	19A	DMMC12U	00	=		CMD MEM ADD BIT 25
KA217	DBC	C2	17B	(40 )	01		DMCLKA 37 17B	
KA217	DBC	C3	20A	DMMC13U	00	=		CMD MEM ADD BIT 24
KA217	DBC	C3	23A	(42 )	01		DMMC05U 47 23A	
KA217	DBC	C4	21A	DMMC14U	00	=		CMD MEM ADD BIT 23
KA217	DBC	C4	22A	(46 )	01		SPI010 48 22A	
KA217	DBC	C5	17A	DMMC15U	00	=		COUNT FULL
KA217	DBC	C5	16B	(36 )	01		DMMR1A 35 16B	
KA216	DBC	C1	18A	DMMC21U	00	=		CMD MEM ADD BIT 22
KA216	DBC	C1	18B	(38 )	01		DB220Q DB210Q DB200Q DB190Q DMCPA 39 18B 41 19B 43 22B 45 23B 50 24A	
KA216	DBC	C2	19A	DMMC22U	00	=		CMD MEM ADD BIT 21
KA216	DBC	C2	17B	(40 )	01		DMCLKA 37 17B	
KA216	DBC	C3	20A	DMMC23U	00	=		CMD MEM ADD BIT 20
KA216	DBC	C3	23A	(42 )	01		DMMC05U 47 23A	
KA216	DBC	C4	21A	DMMC24U	00	=		CMD MEM ADD BIT 19
KA216	DBC	C4	22A	(46 )	01		DMMC15U 48 22A	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DMMC25U  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	3 TERM	DESIGNATOR	FACTOR	COMMENT
KA216	DBC	C5	17A	DMMC25U	00	=		COUNT FULL
KA216	DBC	C5	16B	(36 )	01		DMMRIA 35 16B	
KA217	DBC	E1	34A	DMMC31U	00	=		CMD MEM ADD BIT 18
KA217	DBC	E1	33B	(70 )	01		DB180Q DB170Q DB160Q DB150Q DMMCPA 71 33B 73 34B 75 35B 77 36B 80 38B	
KA217	DBC	E2	35A	DMMC32U	00	=		CMD MEM ADD BIT 17
KA217	DBC	E2	32A	(72 )	01		DMCLKA 69 32A	
KA217	DBC	E3	36A	DMMC33U	00	=		CMD MEM ADD BIT 16
KA217	DBC	E3	37B	(74 )	01		DMMC05U 79 37B	
KA217	DBC	E4	37A	DMMC34U	00	=		CMD MEM ADD BIT 15
KA217	DBC	E4	38A	(76 )	01		DMMC25U 78 38A	
KA217	DBC	E5	33A	DMMC35U	00	=		COUNT FULL
KA217	DBC	E5	32B	(68 )	01		DMMRIA 66 32B	
KA216	DBC	D1	26A	DMMC41U	00	=		MSB MEM CONTROL WORD
KA216	DBC	D1	26B	(54 )	01		DB140Q DGND0A DGND1A DGND2A DMMCPA 53 26B 55 27B 57 29B 59 30B 63 31A	
KA216	DBC	D2	28B	DMMC42U	00	=		
KA216	DBC	D2	25B	(56 )	01		DMCLKA 51 25B	
KA216	DBC	D3	28A	DMMC43U	00	=		
KA216	DBC	D3	31B	(60 )	01		DMMC05U 61 31B	
KA216	DBC	D4	29A	DMMC44U	00	=		
KA216	DBC	D4	30A	(62 )	01		DMMC35U 64 30A	
KA216	DBC	D5	25A	DMMC45U	00	=		
KA216	DBC	D5	24B	(52 )	01		DMMRIA 49 24B	
				DMMRSI	00	=		
KA209	TDD	D1	10A	( )	01		DMRSTO 18 10A	



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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

UNIT ASSEMBLY NO. 149017  
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REV E INDEX DMMRSN  
 DATE 09-03-82 PAGE 85

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OP	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA209	TDD	DN	09A	DMMRSN ( )	00	=	DT161B 14 09A	
KA209	TDD	DP	10B	DMMRSP (21 )	00	=		
KA209	TDD	DP	11A		01		SP1002 20 11A	
KA209	TDD	DQ	09B	DMMRSQ (19 )	00	=		GEN. MEM RESET
KA209	TDD	DQ	08B		01		DMTIOP 17 08B	
KA210	TDD	DI	10A	DMMRTI ( )	00	=	DGND0A 18 10A	
KA210	TDD	DN	09A	DMMRTN ( )	00	=	DMT16A 14 09A	
KA210	TDD	DP	10B	DMMRTP (21 )	00	=		
KA210	TDD	DP	11A		01		SP1002 20 11A	
KA210	TDD	DQ	09B	DMMRTQ (19 )	00	=		MEMORY RESET FF - ONE
KA210	TDD	DQ	08B		01		DXRS2B 17 08B	MEMORY RESET FF - ONE
KA215	THI	C5	16B	DMMR1A (31 )	00	=		RESET MEM ADD CONTROL
KA215	THI	C5	17B		01		DMMR10 33 17B	
KA211	TQ2	A4	07B	DMMR10 (15 )	00	=		
KA211	TQ2	A4	05B		01		DXRS1B DXODRA 11 05B 13 06B	
KA209	TDD	AI	06A	DMPEOI ( )	00	=	DDPECPR 08 06A	
KA209	TDD	AN	07A	DMPEON ( )	00	=	DTCK4A 10 07A	
KA209	TDD	AP	05B	DMPEOP (11 )	00	=		
KA209	TDD	AP	05A		01		DSTATA 06 05A	





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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

UNIT ASSEMBLY NO. 149017  
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REV E INDEX DMSC1N  
 DATE 09-03-82 PAGE 88

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA334	TDD	KN	28A	DMSC1N ( )	00 = 01		DMCLBP 60 28A	
KA334	TDD	KP	30B	DMSC1P (57 )	00 = 01		DMREBQ 64 30A	
KA334	TDD	KQ	29B	DMSC1Q (55 )	00 = 01		SPT027 53 28B	MEM STATE COUNTER
KA209	TDD	EI	19A	DMSC2I ( )	00 = 01		DMSC1Q 40 19A	
KA209	TDD	EN	20A	DMSC2N ( )	00 = 01		DMCLBP 42 20A	
KA209	TDD	EP	17B	DMSC2P (35 )	00 = 01		DMREBQ 38 18A	
KA209	TDD	EQ	18B	DMSC2Q (37 )	00 = 01		SPT010 39 19B	MEM STATE COUNTER MSB
KA224	TQ2	A4	07B	DMSP30 (15 )	00 = 01		DTCW3A DWRNOA 11 05B 13 06B	
KA219	TI3	A3	07B	DMSTHA (15 )	00 = 01		DMSTPQ DSYN2A DMSTOA 09 04B 11 05B 13 06B	CLK 1
KA211	TQ2	B4	13B	DMSTIA (27 )	00 = 01		DMST00 DMREBQ 23 11B 25 12B	
KA110	TH1	A1	06A	DMSTPA (13 )	00 = 01		DMSTPO 11 07A	
KA209	TDD	FI	16A	DMSTPI ( )	00 = 01		SPT002 34 16A	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

UNIT ASSEMBLY NO. 149017  
 FILE IDENT T39C1FC7

REV E INDEX DMSTPN  
 DATE 09-03-82 PAGE 89

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
				DMSTPN	00 =			
KA209	TDD	FN	15A	( )	01		DMCL8P 30 15A	
KA209	TDD	FP	16B	DMSTPP	00 =			
KA209	TDD	FP	17A	(33 )	01		DMSTQD 36 17A	
KA209	TDD	FQ	15B	DMSTPQ	00 =			CONTROL MEM STATE COUNTER
KA209	TDD	FQ	14B	(31 )	01		SPI003 29 14B	
KA212	TT3	B1	11A	DMSTP0	00 =			
KA212	TT3	B1	12A	(20 )	01		DMSTRA DMSTHA DMSTIA 22 12A 24 13A 26 14A	
				DMSTQ1	00 =			
KA309	TDD	LI	38B	( )	01		0GND0A 77 38B	
				DMSTQN	00 =			
KA309	TDD	LN	39B	( )	01		DTNC8P 79 39B	
KA309	TDD	LP	37A	DMSTQP	00 =			
KA309	TDD	LP	37B	(76 )	01		DMRSP 75 37B	
KA309	TDD	LQ	38A	DMSTQQ	00 =			
KA309	TDD	LQ	39A	(78 )	01		DMSTPA 80 39A	
KA112	TT3	F3	39A	DMSTQ0	00 =			
KA112	TT3	F3	35A	(80 )	01		DMSTPA DMSTQP SPI061 69 35A 76 37A 78 38A	
KA211	TQ2	C1	18A	DMSTRA	00 =			MEM READ. MEM STATE 3
KA211	TQ2	C1	19A	(38 )	01		DMSP30 DMST30 40 19A 42 20A	
KA211	TQ2	C2	15A	DMSTOA	00 =			MEM STATE 0
KA211	TQ2	C2	16A	(30 )	01		DMSC0P DMSC2P 34 16A 36 17A	
KA215	THI	F1	38B	DMST00	00 =			
KA215	THI	F1	39B	(80 )	01		DMSTOA 79 39B	

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LOGIC

UNIT ASSEMBLY NO. 149017  
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REV E INDEX DMST1A  
 DATE 09-03-82 PAGE 90

CONNECTOR	GROUP	TEST POINTS AND/OR	EQUATION	TEST DESIGNATION	FACTOR	COMMENT
KA211	TQ2	C3 16B	DMST1A	00 =		MEM STATE 1
KA211	TQ2	C3 14B	(33)	01	DMSC0Q DMSC1P 29 14B 31 15B	
KA215	THI	F2 36B	DMST10	00 =		
KA215	THI	F2 37B	(71)	01	DMST1A 73 37B	
KA211	TQ2	C4 19B	DMST3A	00 =		MEM STATE 3
KA211	TQ2	C4 17B	(39)	01	DMSC0Q DMSC2Q 35 17B 37 18B	
KA215	THI	F3 34B	DMST30	00 =		
KA215	THI	F3 35B	(70)	01	DMST3A 69 35B	
KA211	TQ2	D1 24A	DMST4A	00 =		MEM STATE 4
KA211	TQ2	D1 25A	(52)	01	DMSC1Q DMSC0P 54 25A 56 26A	
KA215	THI	F4 34A	DMST40	00 =		
KA215	THI	F4 35A	(72)	01	DMST4A 74 35A	
KA211	TQ2	D2 21A	DMST5A	00 =		MEM STATE 5
KA211	TQ2	D2 22A	(66)	01	DMSC2Q DMSC1P 48 22A 50 23A	
KA215	THI	F5 36A	DMST50	00 =		
KA215	THI	F5 37A	(78)	01	DMST5A 76 37A	
KA232	TDD	MI 36A	DMSYNI	00 =		
			( )	01	SPI008 71 36A	
KA232	TDD	MN 34A	DMSYNN	00 =		
			( )	01	DMSYNO 72 34A	
KA232	TDD	MP 35A	DMSYNP	00 =		
KA232	TDD	MP 36B	(69)	01	DMS11A 73 36B	
KA232	TDD	MQ 35B	DMSYNQ	00 =		MEM SYNC GEN - 180 NS
KA232	TDD	MQ 34B	(74)	01	SPI013 65 34B	

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CONNECTOR	TRAC TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM DESIG- NATION	FACTOR	COMMENT
KA219	TT3	D1	23A	DMSYN0	00 =		
KA219	TT3	D1	24A	(50)	01	DMSY1A DMSYNP DMSY2A 52 24A 54 25A 56 26A	
				DMSY0I	00 =		
KA209	TDD	GI	25A	( )	01	DMSY1P 54 25A	
				DMSY0N	00 =		
KA209	TDD	GN	26A	( )	01	DT165A 56 26A	
KA209	TDD	GP	25B	DMSY0P	00 =		
KA209	TDD	GP	24A	(47)	01	DMSYNQ 52 24A	
KA209	TDD	GQ	26B	DMSY0Q	00 =		BIT 0 MEM SYNC COUNTER
KA209	TDD	GQ	27B	(49)	01	SPI010 51 27B	
				DMSY1I	00 =		
KA210	TDD	GI	25A	( )	01	DMSY0Q 54 25A	
				DMSY1N	00 =		
KA210	TDD	GN	26A	( )	01	DT165A 56 26A	
KA210	TDD	GP	25B	DMSY1P	00 =		
KA210	TDD	GP	24A	(47)	01	DMSYNQ 52 24A	
KA210	TDD	GQ	26B	DMSY1Q	00 =		BIT 0 MEM SYNC COUNTER
KA210	TDD	GQ	27B	(49)	01	SPI010 51 27B	
KA112	TT3	D1	23A	DMSY2A	00 =		
KA112	TT3	D1	24A	(50)	01	DMST40 DRDNO0 DTCW3A 52 24A 54 25A 56 26A	
KA211	TQ2	E1	31A	DMS11A	00 =		MEM BITCOUNT IS 11
KA211	TQ2	E1	32A	(66)	01	DMSY0P DMSY1Q 68 32A 70 33A	
KA205	DBC	E1	34A	DMTIM1U	00 =		MEM. TIMEOUT COUNT
KA205	DBC	E1	33B	(70)	01	SPI003 SPI009 SPI002 SPI004 SPI005 71 33B 73 34B 75 35B 77 36B 80 38B	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA205	DBC	E2	35A	DMTIM2U	00	=		MEM. TIMEOUT COUNT
KA205	DBC	E2	32A	(72)	01		Y04MHK 69 32A	TRACK
KA205	DBC	E3	36A	DMTIM3U	00	=		MEM. TIMEOUT COUNT
KA205	DBC	E3	37B	(74)	01		DMTIOP 79 37B	
KA205	DBC	E4	37A	DMTIM4U	00	=		MEM. TIMEOUT COUNT
KA205	DBC	E4	38A	(76)	01		SPI001 78 38A	
KA205	DBC	E5	33A	DMTIM5U	00	=		MEM. TIMEOUT COUNT
KA205	DBC	E5	32B	(68)	01		DMSTOA 66 32B	
KA222	DBC	D1	26A	DMTIN1U'	00	=		
KA222	DBC	D1	26B	(54)	01		SPI003 SPI005 SPI004 SPI012 SPI011 53 26B 55 27B 57 29B 59 30B 63 31A	
KA222	DBC	D2	28B	DMTIN2U	00	=		
KA222	DBC	D2	25B	(56)	01		Y04MHK 51 25B	
KA222	DBC	D3	28A	DMTIN3U	00	=		
KA222	DBC	D3	31B	(60)	01		DMTIM5U 61 31B	
KA222	DBC	D4	29A	DMTIN4U	00	=		MEM. TIMEOUT CIR MSB
KA222	DBC	D4	30A	(62)	01		SPI013 64 30A	
KA222	DBC	D5	25A	DMTIN5U	00	=		
KA222	DBC	D5	24B	(52)	01		DMSTOA 49 24B	
KA208	TDD	GI	25A	DMTIOI	00	=		
KA208	TDD	GI		( )	01		SPI062 54 25A	
KA208	TDD	GN	26A	DMTION	00	=		
KA208	TDD	GN		( )	01		SPI063 56 26A	
KA208	TDD	GP	25B	DMTIOP	00	=		
KA208	TDD	GP	24A	(47)	01		DCVRTA 52 24A	



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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA208	T9D	GQ	26B	DMT10Q	00	=		MEM. TIMEOUT
KA208	TDD	GQ	27B	(49)	01		DMT15A 51 27B	DET.F/F UPDATES TA IF WRITE
KA215	THI	D5	24B	DMT15A	00	=		MEMORY TIMEOUT
KA215	THI	D5	25B	(43)	01		DMT15U 45 25B	
KA213	THI	D5	24B	DMT0VA	00	=		
KA213	THI	D5	25B	(43)	01		DMT0VO 45 25B	
KA223	TQ2	D2	21A	DMT0VO	00	=		MEM. I/O OR OVRLOAD
KA223	TQ2	D2	22A	(46)	01		DMT0P DOVERP 48 22A 50 23A	
KA211	TQ2	E2	28A	DMT16A	00	=		CLK FOR MEM RESET FF
KA211	TQ2	E2	29A	(60)	01		DMMRSQ T16MHA 62 29A 64 30A	
KA324	TLD	D1	24A	DPWR0D4	00	=		PWR ON
KA324	TLD	D1	25A	(32)	01		SP1025 SP1026 54 25A 56 26A	
KA337	THI	B1	13A	DRACLA	00	=		PL RASC CONTROL WORD
KA337	THI	B1	14A	(24)	01		DTCWFQ 22 14A	
KA244	DCF	A1	02B	DRACLDX	00	=		CLEAR RAS ERRORS
KA244	DCF	A1	05A	(37)	01		DEVIND4 06 05A	
KA244	DCF	A2	03B	DRACLOX	00	=		
KA244	DCF	A2	04B	(59)	01		DRACRO 11 04B	
KA219	TT3	A1	04A	DRACRA	00	=		CLR RAS ERRORS ITROO
KA219	TT3	A1	05A	(04)	01		DRACIO DITROP DITRIP 06 05A 08 06A 10 07A	
KA111	TQ2	C2	15A	DRACRO	00	=		DISC ERROR
KA111	TQ2	C2	16A	(30)	01		DRACRA DXINHR 34 16A 36 17A	
KA110	THI	F1	38B	DRAC10	00	=		
KA110	THI	F1	39B	(80)	01		DX081A 79 39B	

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TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DRAILI  
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CONNECTOR	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIG	FACTOR	COMMENT
KA229	TDD	K1 29A	DRAILI ( )	00 =	01	DRAILO 62 29A	
KA229	TDD	KN 28A	DRAILN ( )	00 =	01	DTCW4A 60 28A	
KA229	TDD	KP 30B	DRAILP ( )	00 =	01	DSTAT4 64 30A	
KA229	TDD	KQ 29B	DRAILQ ( )	00 =	01	SPI013 53 28B	ILL SECTOR ADDRESS
KA219	TT3	A2 03A	DRAILO ( )	00 =	01	DRAI1A DRAI2A DRAI9A 01 02B 03 02A 05 03B	ILL ADD
KA224	TQ2	F4 39A	DRAIOA ( )	00 =	01	SPI014 DRAI00 76 37A 78 38A	
KA314	TQ2	C3 16B	DRAIOO ( )	00 =	01	DRSA6A DBL00A 29 14B 31 15B	
KA223	TQ2	B3 10B	DRAI1A ( )	00 =	01	DRSA13U DRSA12U 17 08B 19 09B	SECTOR GREATER THAN 96
KA223	TQ2	B4 13B	DRAI2A ( )	00 =	01	DSATCO DRSA01U 23 11B 25 12B	SECTOR ADD GREATER THAN 90
KA218	TS8	A1 05B	DRAI3A ( )	00 =	01	DRAI5A DRSA0A DRSA1A DRSA2A DRSA3A DRSA4A DRSA5A DRAIOA 01 02B 04 04A 05 03B 06 05A 07 03A 08 06A 10 07A 13 06B	MAINT SECTOR CMD . SA IS 00
KA223	TQ2	C4 19B	DRAI4A ( )	00 =	01	DRWMT0 DRAI3A 35 17B 37 18B	MAINT CMD SECTOR IS NOT 0
KA104	THI	C4 14B	DRAI5A ( )	00 =	01	DRAI50 29 15B	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
XA102	TSB	C1	17B	DRA150	00 =		
XA102	TSB	C1	15A	(35)	01	DRE0B5U DMBL23U DMBL22U DMBL21U DMBL14U DMBL13U DMBL12U DRA16A 30 15A 31 15B 34 16A 36 17A 37 18B 38 18A 40 19A 42 20A	BLK LNTH > 21
KA333	TQ2	D1	24A	DRA16A	00 =		
KA333	TQ2	D1	25A	(52)	01	DMB11A DRA170 54 25A 56 26A	MR + DEV COMM
KA303	TQ2	E4	33B	DRA170	00 =		
KA303	TQ2	E4	31B	(63)	01	DMB104U DRA18A 59 31B 61 32B	
KA333	TQ2	D2	21A	DRA18A	00 =		
KA333	TQ2	D2	22A	(46)	01	DMB03A DMB02A 48 22A 50 23A	BIT 33. CLK 0
XA108	TD4	F2	35A	DRA19A	00 =		
XA108	TD4	F2	36A	(69)	01	DRSA13U DRSA11U DRSA04U DRSA03U 71 36A 72 34A 73 36B 74 35B	
KA223	TQ2	C3	16B	DRAST0	00 =		
KA223	TQ2	C3	14B	(33)	01	DRAT30X DRAT20X 29 14B 31 15B	H IS CABLE UNTERMINATED
KA244	DCF	A5	08B	DRAS0DX	00 =		
KA244	DCF	A5	05A	(14)	01	DEVIND4 06 05A	SELECT RAS 0 NOT
KA337	THI	B2	11A	DRAS00	00 =		
KA337	THI	B2	12A	(25)	01	DSELRQ 23 12A	SELECT RAS 0
KA244	DCF	A6	07A	DRAS00X	00 =		
KA244	DCF	A6	06A	(10)	01	DSELRQ 08 06A	
XA111	TQ2	D2	21A	DRAS1A	00 =		
KA111	TQ2	D2	22A	(46)	01	DSELRQ SPI062 48 22A 50 23A	
KA244	DCF	A7	02A	DRAS1DX	00 =		
KA244	DCF	A7	05A	(01)	01	DEVIND4 06 05A	SELECT RAS 1 NOT
KA337	THI	B3	09A	DRAS10	00 =		
KA337	THI	B3	10A	(18)	01	DRAS1A 20 10A	SELECT RAS 1

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA244	DCF	A8	03A	DRAS10X	00	=		
KA244	DCF	A8	04A	(03 )	01		DRAS1A 04 04A	
KA244	DCF	B1	10B	DRAT2DX4	00	=		TER CAP
KA244	DCF	B1	13A	(27 )	01		SPI019 36 13A	
KA244	DCF	B2	11B	DRAT20X	00	=		
KA244	DCF	B2	12B	(29 )	01		SPI012 31 12B	
KA244	DCF	B3	15B	DRAT3DX4	00	=		TER CAP
KA244	DCF	B3	13A	(37 )	01		SPI019 36 13A	
KA244	DCF	B4	14B	DRAT30X	00	=		
KA244	DCF	B4	13B	(35 )	01		SPI004 33 13B	
KA112	TT3	A3	07B	DRA0AA	00	=		
KA112	TT3	A3	04B	(15 )	01		DRA0A0X SPI064 SPI061 09 04B 11 05B 13 06B	
KA244	DCF	C1	25B	DRA0ADX4	00	=		RAS 0 READY
KA244	DCF	C1	29A	(46 )	01		SPI019 52 29A	
KA244	DCF	C2	26B	DRA0A0X	00	=		
KA244	DCF	C2	27B	(47 )	01		SPI020 49 27B	
KA110	THI	B4	08B	DRA1AA	00	=		SET RAS ERROR
KA110	THI	B4	09B	(14 )	01		DRA1A0X 17 09B	
KA244	DCF	C3	30B	DRA1ADX4	00	=		RAS 1 READY
KA244	DCF	C3	29A	(55 )	01		SPI019 52 29A	
KA244	DCF	C4	29B	DRA1A0X	00	=		
KA244	DCF	C4	28B	(56 )	01		SPI004 51 28B	
KA110	THI	F5	36A	DRA2AA	00	=		
KA110	THI	F5	37A	(78 )	01		DRA2A0X 76 37A	

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 UNIT ASSEMBLY NO. 149017 REV E INDEX DRS2SDX4  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
XA244	DCF	C5	31B	DRA2ADX4	00	=		RAS 2 READY
XA244	DCF	C5	29A	(60 )	01		SPI019 52 29A	
XA244	DCF	C6	31A	DRA2A0X	00	=		
XA244	DCF	C6	30A	(57 )	01		SPI006 54 30A	
XA224	TQ2	E2	28A	DRA3AA	00	=		TRACK COUNTER MSB
XA224	TQ2	E2	29A	(60 )	01		DRA3A0X SPI062 62 29A 64 30A	
XA244	DCF	C7	25A	DRA3ADX4	00	=		RAS 3 READY
XA244	DCF	C7	29A	(43 )	01		SPI019 52 29A	
XA244	DCF	C8	26A	DRA3A0X	00	=		
XA244	DCF	C8	28A	(48 )	01		SPI008 50 28A	
XA315	MUX	E1	34B	DRBCKTA	00	=		CLK FOR BIT AND WORD COUNTER
XA315	MUX	E1	32A	(73 )	01		DRWCLOX DRCA3P DGND8A DWR00A 69 32A 71 33B 68 33A 66 32B	0 POLARITY
XA315	MUX	E2	37B	DRBCKTB	00	=		
XA315	MUX	E2	35B	(79 )	01		DRWCLOX DRCA3P 75 35B 77 36B	
XA315	MUX	E3	36A	DRBCKTC	00	=		
XA315	MUX	E3	34A	(74 )	01		SPI023 SPI018 70 34A 72 35A	
XA315	MUX	E4	38B	DRBCKTD	00	=		
XA315	MUX	E4	37A	(80 )	01		SPI005 SPI006 76 37A 78 38A	
XA222	DBC	C1	18A	DRBC01U	00	=		BIT COUNT 2
XA222	DBC	C1	18B	(38 )	01		SPI005 SPI016 SPI003 SPI004 SPI012 39 18B 41 19B 43 22B 45 23B 50 24A	
XA222	DBC	C2	19A	DRBC02U	00	=		BIT COUNT 4
XA222	DBC	C2	17B	(40 )	01		DRBCKTA 37 17B	
XA222	DBC	C3	20A	DRBC03U	00	=		BIT COUNT 8
XA222	DBC	C3	23A	(42 )	01		SPI011 47 23A	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST	DESIGNATOR	FACTOR	COMMENT
KA222	DBC	C4	21A	DRBC04U	00	=		BIT COUNT 16
KA222	DBC	C4	22A	(46)	01		DRB00Q 48 22A	
KA222	DBC	C5	17A	DRBC05U	00	=		BIT COUNT 31
KA222	DBC	C5	16B	(36)	01		DRBMRA 35 16B	
KA337	THI	B4	08B	DRBMRA	00	=		MASTER RESET BIT COUNTER
KA337	THI	B4	09B	(14)	01		DRBMRO 17 09B	
KA111	TQ2	F3	35A	DRBMRO	00	=		MASTER RESET + DEV STOP
KA111	TQ2	F3	34B	(69)	01		DRBM1A DRB06P 65 34B 74 35B	
KA311	TT3	F3	39A	DRBM1A	00	=		(RD + RD MAINT) W21* .B33
KA311	TT3	F3	35A	(80)	01		SPI024 DRENAP DWENAP 69 35A 76 37A 78 38A	
KA337	THI	B5	10B	DRB00A	00	=		
KA337	THI	B5	11B	(19)	01		DRB00Q 21 11B	
				DRB00I	00	=		
KA229	TDD	LI	38B	( )	01		DRB00A 77 38B	
				DRB00N	00	=		
KA229	TDD	LN	39B	( )	01		DRBCKTA 79 39B	
KA229	TDD	LP	37A	DRB00P	00	=		
KA229	TDD	LP	37B	(76)	01		DRBMRA 75 37B	
KA229	TDD	LQ	38A	DRB00Q	00	=		BIT 0 OF WORD COUNT
KA229	TDD	LQ	39A	(78)	01		SPI013 80 39A	
				DRB06I	00	=		
KA229	TDD	MI	36A	( )	01		DRBC05U 71 36A	
				DRB06N	00	=		
KA229	TDD	MN	34A	( )	01		DRBCKTA 72 34A	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA229	TDD	MP	35A	DRB06P	00	=		
KA229	TDD	MP	36B	(169)	01		DRBM1A 73 36B	
KA229	TDD	HQ	35B	DRB06Q	00	=		
KA229	TDD	HQ	34B	(174)	01		SPI012 65 34B	BIT 32 OF WORD
KA232	TDD	KI	29A	DRB07I	00	=		
				( )	01		DRB260 62 29A	
KA232	TDD	KN	28A	DRB07N	00	=		
				( )	01		DRBCKTA 60 28A	
KA232	TDD	KP	30B	DRB07P	00	=		
KA232	TDD	KP	30A	(157)	01		SPI013 64 30A	
KA232	TDD	KQ	29B	DRB07Q	00	=		
KA232	TDD	KQ	28B	(155)	01		DRBM1A 53 28B	BIT 0 OF WORD
KA337	THI	B6	12B	DRB160	00	=		
KA337	THI	B6	13B	(126)	01		DRB06P 27 13B	BIT 32 OVERLOAD
KA337	THI	C1	19A	DRB260	00	=		
KA337	THI	C1	20A	(140)	01		DRB06P 38 20A	BIT 32 OVERLOAD
KA214	TT3	E1	30A	DRB36A	00	=		
KA214	TT3	E1	31A	(164)	01		DRB260 DRCA3Q SPI062 66 31A 68 32A 70 33A	
KA209	TDD	LI	38B	DRCA1I	00	=		
				( )	01		DRCA2P 77 38B	
KA209	TDD	LN	39B	DRCA1N	00	=		
				( )	01		DT161B 79 39B	
KA209	TDD	LP	37A	DRCA1P	00	=		
KA209	TDD	LP	37B	(176)	01		DRCLSQ 75 37B	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMIN	DESIGNATOR	FACTOR	COMMENT
KA209	TDD	LQ	38A	DRCA1Q	00 =			I/O COUNTER -RAS
KA209	TDD	LQ	39A	( 78 )	01	SPI010 80 39A		
				DRCA2I	00 =			
KA208	TDD	LI	38B	( )	01	DRCA1Q 77 38B		
				DRCA2N	00 =			
KA208	TDD	LN	39B	( )	01	DT161B 79 39B		
KA208	TDD	LP	37A	DRCA2P	00 =			
KA208	TDD	LP	37B	( 76 )	01	DRCLSQ 75 37B		
KA208	TDD	LQ	38A	DRCA2Q	00 =			I/O COUNTER - RAS - BIT 2
KA208	TDD	LQ	39A	( 78 )	01	SPI010 80 39A		
				DRCA3I	00 =			
KA208	TDD	LI	13A	( )	01	DRCLSQ 24 13A		
				DRCA3N	00 =			
KA208	TDD	CN	14A	( )	01	DT161B 26 14A		
KA208	TDD	CP	11B	DRCA3P	00 =			
KA208	TDD	CP	12A	( 23 )	01	SPI001 22 12A		
KA208	TDD	CQ	12B	DRCA3Q	00 =			EXTENDED I/O COUNT -RAS
KA208	TDD	CQ	13B	( 25 )	01	SPI009 27 13B		
				DRCCOI	00 =			
KA208	TDD	FI	16A	( )	01	DD000Q 34 16A		
				DRCCON	00 =			
KA208	TDD	FN	15A	( )	01	DRSC1A 30 15A		
KA208	TDD	FP	16B	DRCCOP	00 =			
KA208	TDD	FP	17A	( 33 )	01	DXR51B 36 17A		



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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TRM	DESIGNATION	FACTOR	COMMENT
KA208	TDD	FQ	15B	DRCCOQ	00 =			
KA208	TDD	FQ	14B	(31)	01	SPI002 29 14B		CMD CHAINING BIT
				DRCILI	00 =			
KA208	TDD	BI	03B	( )	01	DRCILO 05 03B		
				DRCILN	00 =			
KA208	TDD	BN	02B	( )	01	DTCW4A 01 02B		
KA208	TDD	BP	04B	DRCILP	00 =			
KA208	TDD	BP	04A	(09)	01	DSTATA 04 04A		
KA208	TDD	BQ	03A	DRCILQ	00 =			ILL CMD FF
KA208	TDD	BQ	02A	(07)	01	SPI003 03 02A		
KA328	TD4	D2	24B	DRCILO	00 =			ILL CMD FIELD
KA328	TD4	D2	23B	(45)	01	DRCMD0T DRCMD6T DRCH4A DRAI4A 43 23B 46 21A 48 22A 50 23A		
KA213	THI	D3	21A	DRCLEA	00 =			
KA213	THI	D3	22A	(48)	01	DRCLEOX 50 22A		
KA243	DCF	C1	25B	DRCLEDX4	00 =			
KA243	DCF	C1	29A	(46)	01	SPI019 52 29A		
KA243	DCF	C2	26B	DRCLEOX	00 =			RAS CLOCK ERROR
KA243	DCF	C2	27B	(47)	01	SPI012 49 27B		
				DRCLSI	00 =			
KA210	TDD	JT	32A	( )	01	SPI010 68 32A		
				DRCLSN	00 =			
KA210	TDD	JN	33A	( )	01	DRWCLOX 70 33A		
KA210	TDD	JP	31B	DRCLSP	00 =			
KA210	TDD	JP	31A	(59)	01	DRCA3P 66 31A		

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DRCLS0  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIG-NATOR	FACTOR	COMMENT
KA210	TDD	JQ	32B	DRCLSQ	00	=		
KA210	TDD	JQ	33B	(61)	01		DRCL4A 63 33B	OPERATION COMPLETE
KA214	TT3	A1	04A	DRCL0A	00	=		
KA214	TT3	A1	05A	(04)	01		DRCA1P DRCA2P DRCA3P 06 05A 08 06A 10 07A	
KA223	TQ2	F4	39A	DRCL00	00	=		
KA223	TQ2	F4	37A	(80)	01		DRCL0A SPI013 76 37A 78 38A	
KA224	TQ2	C4	19B	DRCL1A	00	=		I/O CLK 1 - PAS
KA224	TQ2	C4	17B	(39)	01		DRCA1Q DRCA2P 35 17B 37 18B	
KA111	TQ2	A1	05A	DRCL10	00	=		
KA111	TQ2	A1	06A	(06)	01		DRCL1A SPI001 08 06A 10 07A	
KA224	TQ2	D1	24A	DRCL2A	00	=		I/O CLK 2 - PAS
KA224	TQ2	D1	25A	(52)	01		DRCA1Q DRCA2Q 54 25A 56 26A	
KA111	TQ2	A2	02B	DRCL20	00	=		
KA111	TQ2	A2	04A	(01)	01		DRCL2A SPI001 04 04A 05 03B	
KA224	TQ2	D2	21A	DRCL3A	00	=		I/O CLK 3
KA224	TQ2	D2	22A	(46)	01		DRCA1P DRCA2Q 48 22A 50 23A	
KA111	TQ2	A3	04B	DRCL30	00	=		I/O CLK 3
KA111	TQ2	A3	02A	(09)	01		DRCL3A SPI001 03 02A 07 03A	
KA108	TD4	A2	04B	DRCL4A	00	=		
KA108	TD4	A2	02B	(09)	01		DRCL50 DSFULP DRCL00 DRREN 01 02B 04 04A 05 03B 07 03A	
KA333	TQ2	F4	39A	DRCL50	00	=		
KA333	TQ2	F4	37A	(80)	01		DRCL6A DRCL7A 76 37A 78 38A	
KA312	TD4	E2	30B	DRCL6A	00	=		
KA312	TD4	E2	29B	(57)	01		DTCCM Q DWRZ0Q DWRZ00 SPI018 55 29B 60 28A 62 29A 64 30A	

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CONNECTOR	GROUP TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIG- NATOR	FACTOR	COMMENT
XA214	TT3	02	23B	DRCL7A	00 =		WRITE+WRITE MAINT
XA214	TT3	02	22B	(43)	01	DRFULQ DWRN10 SPI061 41 22B 46 21A 48 22A	
XA205	DBC	A1	04A	DRCMD0T	00 =		UNUSED
XA205	DBC	A1	02A	(08)	01	DRCMF1U 04 02A	
XA205	DBC	A2	05A	DRCMD1T	00 =		WRITE MAINT SECTORCOMMAND
XA205	DBC	A2	03A	(10)	01	DRCMF2U 06 03A	A POLARITY
XA205	DBC	A3	06A	DRCMD2T	00 =		WRITE ZEROS COMMAND - A
XA205	DBC	A3	02B	(14)	01	DRCMF3U 03 02B	
XA205	DBC	A4	07A	DRCMD3T	00 =		WRITE COMMAND -A
XA205	DBC	A4	03B	(13)	01	DRCMF4U 05 03B	
XA205	DBC	A5	08B	DRCMD4T	00 =		CYCLE TEST COMMAND -A
XA205	DBC	A5		(17)	01	SPA 4T	
XA205	DBC	A6	04B	DRCMD5T	00 =		READ COMMAND - A
XA205	DBC	A6		(07)	01	SPA 5T	
XA205	DBC	A7	05B	DRCMD6T	00 =		UNUSED COMMAND -A
XA205	DBC	A7		(09)	01	SPA 6T	
XA205	DBC	A8	06B	DRCMD7T	00 =		READ MAINT SECTOR COMMAND -A
XA205	DBC	A8		(11)	01	SPA 7T	
XA205	DBC	A9	07B	DRCMD8T	00 =		UNUSED
XA205	DBC	A9		(15)	01	SPA 8T	
XA205	DBC	A0	09A	DRCMD9T	00 =		UNUSED
XA205	DBC	A0		(18)	01	SPA 9T	
XA206	DBC	C1	18A	DRCMF1U	00 =		BIT 05 LSB RASC CMD FIELD
XA206	DBC	C1	18B	(38)	01	DD050Q DD040Q DD030Q DD020Q DGND8A 39 18B 41 19B 43 22B 45 23B 50 24A	

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TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DRCMF20  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TRN	DESIGNATION	FACTOR	COMMENT
KA206	DBC	C2	19A	DRCMF2U	00 =			
KA206	DBC	C2	17B	(40 )	01		PRSC6A 37 17B	BIT 04
KA206	DBC	C3	20A	DRCMF3U	00 =			
KA206	DBC	C3	23A	(42 )	01		DGND5A 47 23A	BIT 03
KA206	DBC	C4	21A	DRCMF4U	00 =			
KA206	DBC	C4	22A	(46 )	01		DGND6A 48 22A	BIT 02 MSB RASC CMD FIELD
KA206	DBC	C5	17A	DRCMF5U	00 =			
KA206	DBC	C5	16B	(36 )	01		DXRS1B 35 16B	UNUSED
KA106	TQ2	E2	28A	DRCM30	00 =			
KA106	TQ2	E2	29A	(60 )	01		DRDNOA DBTSPP 62 29A 64 30A	READ + BISP
KA213	THI	D4	22B	DRCM4A	00 =			
KA213	THI	D4	23B	(46 )	01		DRCMF4U 41 23B	
KA243	DCF	C3	30B	DRDIADX4	00 =			
KA243	DCF	C3	29A	(55 )	01		SPI019 52 29A	READ DATA
KA243	DCF	C4	29B	DRDIA0X	00 =			
KA243	DCF	C4	28B	(56 )	01		SPI004 51 28B	
KA214	TT3	D3	27B	DRDNCA	00 =			
KA214	TT3	D3	24B	(51 )	01		DRDN00 DTCWFP SPI061 45 24B 47 25B 49 26B	
KA213	THI	D6	26B	DRDNOA	00 =			
KA213	THI	D6	27B	(53 )	01		DRDN00 51 27B	
KA111	TQ2	A4	07B	DRDN00	00 =			
KA111	TQ2	A4	05B	(15 )	01		DRCMD5T DRCMD7T 11 05B 13 06B	READ + READ MAINT
KA111	TQ2	B1	12A	DRDWTO	00 =			
KA111	TQ2	B1	13A	(22 )	01		DRDNOA DWRNOA 24 13A 26 14A	RD + RD MAIN + WR + WR MAIN

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA212	TT3	C2	15B	DRD000	00	=		READ + READ MAINT + CYCLE TES
KA212	TT3	C2	14B	(31)	01		DRCMD4T DRCMD5T DRCMD7T 29 14B 30 15A 34 16A	T
KA213	THI	E1	32A	DREB1A	00	=		
KA213	THI	E1	33A	(66)	01		DRE0B1U 64 33A	
KA213	THI	E2	30A	DREB2A	00	=		
KA213	THI	E2	31A	(63)	01		DRE0B2U 61 31A	
KA213	THI	E3	28A	DREB3A	00	=		
KA213	THI	E3	29A	(60)	01		DRE0B3U 62 29A	
KA103	TQ2	F4	39A	DREB4A	00	=		
KA103	TQ2	F4	37A	(80)	01		DRE0B4U SPI001 76 37A 78 38A	
KA104	THI	A6	06B	DRECKA	00	=		
KA104	THI	A6	07B	(10)	01		DRECKO 15 07B	
KA111	TQ2	B2	09A	DRECKO	00	=		
KA111	TQ2	B2	10A	(14)	01		DREC6A DRSC1A 18 10A 20 11A	
KA104	THI	A3	03A	DREC1A	00	=		CLR READ ENABLE
KA104	THI	A3	02A	(03)	01		DREC1O 04 02A	
KA111	TQ2	B3	10B	DREC1O	00	=		
KA111	TQ2	B3	08B	(21)	01		DRWCLP DXRS1B 17 08B 19 09B	
KA212	TT3	C3	19B	DREC6A	00	=		
KA212	TT3	C3	16B	(39)	01		DMBL00 DTST40 DTCCMO 33 16B 35 17B 37 18B	
KA337	THI	F6	38A	DREC6O	00	=		
KA337	THI	F6	39A	(77)	01		DREC6A 75 39A	
KA223	TQ2	C2	15A	DRED1A	00	=		SELECT RAS 1
KA223	TQ2	C2	16A	(30)	01		DSACAQ DRED3O 34 16A 36 17A	

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REV E INDEX DRED30  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA231	TQ2	A2	02B	DRED30	00 =		NOT SYNC 2
KA231	TQ2	A2	04A	(101)	01	DRED4A DBTSPP 04 04A 05 03B	
KA223	TQ2	C1	18A	DRED4A	00 =		SELECT RAS 0
KA223	TQ2	C1	19A	(38)	01	DTCCMQ DRD000 40 19A 42 20A	
KA244	DCF	A3	07B	DRENADX	00 =		READ ENABLE
KA244	DCF	A3	05A	(17)	01	DEVIND4 06 05A	
				DRENAI	00 =		
KA209	TDD	C1	13A	( )	01	DRENAQ 24 13A	
				DRENAN	00 =		
KA209	TDD	CN	14A	( )	01	DSCLK0 26 14A	
KA209	TDD	CP	11B	DRENAP	00 =		
KA209	TDD	CP	12A	(23)	01	DRECI A 22 12A	
KA209	TDD	CQ	12B	DRENAQ	00 =		READ ENABLE
KA209	TDD	CQ	13B	(25)	01	SPI010 27 13B	
KA111	TQ2	B4	13B	DRENAC	00 =		SET READ ENABLE
KA111	TQ2	B4	11B	(27)	01	DREDIA SPI001 23 11B 25 12B	
KA244	DCF	A4	06B	DRENAOX	00 =		
KA244	DCF	A4	05B	(15)	01	DRENAQ 13 05B	
KA111	TQ2	C1	18A	DREND0	00 =		RAS END
KA111	TQ2	C1	19A	(38)	01	DRENIA SPI001 40 19A 42 20A	
KA218	TS8	E1	31B	DREN1A	00 =		TRACK 1024 . SECTOR 90 . WD21
KA218	TS8	E1	29B	(59)	01	DSATCO DRW210 DRB06Q DRTA21U DRTA22U DRTA05U DRTA15U DRCA30 55 29B 60 28A 61 32B 62 29A 64 30A 66 31A 68 32A 70 33A	. BIT 32
KA314	TQ2	B4	13B	DRRERO	00 =		
KA314	TQ2	B4	11B	(27)	01	DRCILP DRAILP 23 11B 25 12B	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA206	DBC	D1	26A	DRE0B1U	00	=		BIT 09 EOB COUNTER LSB
KA206	DBC	D1	26B	(154)	01		DD090P DD080P DD070P DD060P DRACLA 53 26B 55 27B 57 29B 59 30B 63 31A	
KA206	DBC	D2	28B	DRE0B2U	00	=		BIT 08 2ND LSB
KA206	DBC	D2	25B	(156)	01		DRECKA 51 25B	
KA206	DBC	D3	28A	DRE0B3U	00	=		BIT 07 2ND MSB EOB COUNTER
KA206	DBC	D3	31B	(160)	01		DBL00A 61 31B	
KA206	DBC	D4	29A	DRE0B4U	00	=		BIT 06 MSB EOB COUNTER
KA206	DBC	D4	30A	(162)	01		SPI062 64 30A	
KA206	DBC	D5	25A	DRE0B5U	00	=		EOB COUNTER IS ALL ONES
KA206	DBC	D5	24B	(152)	01		DMARIA 49 24B	
KA214	TT3	F2	35B	DRIGEA	00	=		
KA214	TT3	F2	34B	(174)	01		DYCFWP DRIGEQ DTBUSO 65 34B 71 36A 72 34A	
				DRIGET	00	=		
KA209	TDD	KI	29A	( )	01		DD010Q 62 29A	
				DRIGEN	00	=		
KA209	TDD	KN	28A	( )	01		DRSC1A 60 28A	
KA209	TDD	KP	30B	DRIGEP	00	=		
KA209	TDD	KP	30A	(157)	01		DXRS1B 64 30A	
KA209	TDD	KQ	29B	DRIGEQ	00	=		IGNORE RAS PARITY OR CYCLIC
KA209	TDD	KQ	28B	(155)	01		SPI002 53 28B	ERROR
KA212	TT3	D2	23B	DRLS0A	00	=		
KA212	TT3	D2	22B	(143)	01		DRW210 DRB160 DSATCO 41 22B 46 21A 48 22A	
				DRLS0I	00	=		
KA209	TDD	BI	03B	( )	01		DRLS40 05 03B	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA209	TDD	BN	02B	DRLSON ( )	00 01	=	DRCA3P 01 02B	
KA209	TDD	BP	04B	DRLSOP (09 )	00 01	=	DRLS1A 04 04A	
KA209	TDD	BQ	03A	DRLSOQ (07 )	00 01	=	SPT009 03 02A	MEM REQ. FF
KA104	THI	A4	02B	DRLS00 (01 )	00 01	=	DRLS0A 05 03B	CLK - SECTOR CLK .SECTOR 0
KA215	THI	D3	21A	DRLS1A (48 )	00 01	=	DRLS10 50 22A	LOW MEM RUN - HIGH MEM STOP
KA112	TT3	D2	23B	DRLS10 (43 )	00 01	=	DRLS2A DRLS3A DXRS2B 41 22B 46 21A 48 22A	
KA333	TQ2	C2	15A	DRLS2A (30 )	00 01	=	DRRW20 DSA000 34 16A 36 17A	
KA333	TQ2	D4	27B	DRLS3A (51 )	00 01	=	DWR000 DRTCK0 47 25B 49 26B	CLK UPDATE MCM
KA214	TT3	C1	17A	DRLS40 (36 )	00 01	=	DRLS0A DRLSOP SPT061 38 18A 40 19A 42 20A	
KA308	TD4	F1	37A	DRMRZA (76 )	00 01	=	DCTE1A DRPE1A DRLSOQ DSA0XA 75 37B 77 38B 78 38A 79 39B	
KA213	THI	F5	36A	DRMR1A (78 )	00 01	=	DRMR10 76 37A	RESET SECT ADD
KA111	TQ2	D1	24A	DRMR10 (52 )	00 01	=	DXRS2B DRMRZA 54 25A 56 26A	



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CONNECTION	TYPE	LOCUS	PCB POINTS	EQUATION	TYPE	LOGIC	FACTOR	COMMENT
KA104	THE	B2	11A	DRPARA	00	01		
KA104	THE	B2	12A	DRPARA	01	01	DRPARA 23 12A	
KA331	EDR	C1	14B	DRPARA	00	01		
KA331	EDR	C1	15B	DRPARA	01	01	DRPARA DRDEAGX 22 25B 29 14B	
KA207	TDD	FT	16A	DRPARA	00	01		
KA207	TDD	FT	16A	DRPARA	01	01	DRPARA 34 16A	
KA207	TDD	FW	15A	DRPARA	00	01		
KA207	TDD	FW	15A	DRPARA	01	01	DRPARA 30 15A	
KA207	TDD	FP	16B	DRPARA	00	01		
KA207	TDD	FP	17A	DRPARA	01	01	DRSSKA 36 17A	
KA207	TDD	FD	15B	DRPARA	00	01		READ PARITY
KA207	TDD	FU	14B	DRPARA	01	01	SP1002 29 14B	
KA219	TT3	E2	29B	DRPARA	00	01		READ-CLK PARITY
KA219	TT3	E2	28B	DRPARA	01	01	DRWZD DRCA1P DRCA2D 53 28B 60 28A 62 29A	
KA106	TQ2	A3	04A	DRPEEA	00	01		CLK TRACK ADD
KA106	TQ2	A3	02A	DRPEEA	01	01	DRPEEA DRJCEA 03 02A 07 03A	
KA243	DCF	C5	31B	DRPEEA	00	01		RAM PARITY ERROR
KA243	DCF	C5	29A	DRPEEA	01	01	SP1019 52 29A	
KA243	DCF	C6	32A	DRPEEA	00	01		
KA243	DCF	C6	30A	DRPEEA	01	01	SP1006 54 30A	
KA328	TQ4	E2	30B	DRPERA	00	01		READ PARITY ERR - IGNORE PAR.
KA328	TQ4	E2	29B	DRPERA	01	01	DRB060 SP1025 DRWZD DRPARA 55 29B 60 28A 62 29A 64 30A	NOT
KA208	TDD	J1	32A	DRPERA	00	01		
KA208	TDD	J1	32A	DRPERA	01	01	DRPERA 66 32A	

END

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA208	TDD	JN	33A	DRPERN ( )	00 = 01		DRPCKA 70 33A	
KA208	TDD	JP	31B	DRPERP (59 )	00 = 01		DCYRTA 66 31A	
KA208	TDD	JQ	32B	DRPERQ (61 )	00 = 01		SPI06Z 63 33B	READ PARITY ERROR
KA112	TT3	C3	19B	DRPERO (39 )	00 = 01		DRPERA DRPERP SPI061 33 16B 35 17B 37 18B	
KA223	TQ2	D3	24B	DRPE1A (45 )	00 = 01		DRPERQ DRICEA 41 22B 43 23B	PRTY ERR NOT IGNORE DA TA BIT
KA208	TDD	KI	29A	DRRENI ( )	00 = 01		DRRENO 62 29A	
KA208	TDD	KN	28A	DRRENN ( )	00 = 01		DYSTOA 60 28A	
KA208	TDD	KP	30B	DRRENP (57 )	00 = 01		DRRE1A 64 30A	
KA208	TDD	KQ	29B	DRRENO (55 )	00 = 01		DRRESA 53 28B	DISC ENABLED
KA111	TQ2	D3	24B	DRRENO (45 )	00 = 01		DRRENP DRRE9A 41 22B 43 23B	SET DISC ENABLE FF
KA212	TT3	D3	27B	DRRESA (51 )	00 = 01		DRRSSO DWRNGO DWENAP 45 24B 47 25B 49 26B	
KA110	THI	A3	03A	DRRE1A (03 )	00 = 01		DRRE1O 04 02A	RESET DISC ENABLE

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA109	TSB	A1	05B	DRRE10	00	=		
KA109	TSB	A1	02B	(11)	01		DERROA DXRSOB DSTOPA DRPEEA DRRE2A DRCLEA DRRE3A DTSE3A 01 02B 04 04A 05 03B 06 05A 07 03A 08 06A 10 07A 13 06B	
KA108	TD4	A1	05B	DRRE2A	00	=		READ + WRITE . MCW=0 . W 21 .
KA108	TD4	A1	05A	(11)	01		DROWTO DBL00Q DTST50 SPI001 06 05A 08 06A 10 07A 13 06B	B 33
KA111	TQ2	D4	27B	DRRE3A	00	=		EOB . BOOTSTRAP
KA111	TQ2	D4	25B	(51)	01		DBTSPQ DXEBOQ 47 25B 49 26B	
KA224	TQ2	D4	27B	DRRE9A	00	=		NOT CW ACCESS + NOT WRITE
KA224	TQ2	D4	25B	(51)	01		DWRNOA DTW3A 47 25B 49 26B	
KA111	TQ2	E1	31A	DRRS0	00	=		PRESET DISC ENABLE
KA111	TQ2	E1	32A	(66)	01		DRRS1A DRRS2A 68 32A 70 33A	
KA224	TQ2	E1	31A	DRRS1A	00	=		SR FULL . MWC IS ZERO
KA224	TQ2	E1	32A	(66)	01		DSFULQ DBL00Q 68 32A 70 33A	
KA219	TT3	B2	09B	DRRS2A	00	=		CYC ERR . READ . NOT IGNOR ERR
KA219	TT3	B2	09A	(19)	01		DSFULQ DBFULQ DRCA3P 14 09A 17 08B 18 10A	
KA212	TT3	E1	30A	DRRWZ0	00	=		
KA212	TT3	E1	31A	(64)	01		DRDNOA DRCMD4T DBTSPP 66 31A 68 32A 70 33A	
KA110	TH1	A4	02B	DRSA0A	00	=		SECTOR ADD LINE 0
KA110	TH1	A4	03B	(01)	01		DRSA01U 05 03B	
KA204	DBC	E1	34A	DRSA01U	00	=		
KA204	DBC	E1	33B	(70)	01		DD310Q DD300Q DD290Q DD280Q DRACLA 71 33B 73 34B 75 35B 77 36B 80 38B	
KA204	DBC	E2	35A	DRSA02U	00	=		
KA204	DBC	E2	32A	(72)	01		DRSCFA 69 32A	
KA204	DBC	F3	36A	DRSA03U	00	=		
KA204	DBC	F3	37B	(74)	01		SPI009 79 37B	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DRSA04U  
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CONNECTOR	CIRCUIT NAME	GROUP	TEST POINTS AND OR	EQUATION	TERM DESIGNATION	FACTOR	COMMENT
KA204	DBC	E4	37A	DRSA04U	00 =		
KA204	DBC	E4	38A	(76 )	01	SPI016 78 38A	
KA204	DBC	E5	33A	DRSA05U	00 =		
KA204	DBC	E5	32B	(68 )	01	DRMR1A 66 32B	
KA224	TQ2	E4	33B	DRSA1A	00 =		RESET SECT ADD
KA224	TQ2	E4	31B	(63 )	01	DRSA02U SPI013 59 31B 61 32B	
KA205	DBC	C1	18A	DRSA11U	00 =		BIT 27 SECTOR ADD 3RD MSB
KA205	DBC	C1	18B	(38 )	01	DD270Q DD260Q DD250Q SPI009 DRACLA 39 18B 41 19B 43 22B 45 23B 50 24A	
KA205	DBC	C2	19A	DRSA12U	00 =		BIT 26 S.A. 2ND MSB
KA205	DBC	C2	17B	(40 )	01	DRSCKA 37 17B	
KA205	DBC	C3	20A	DRSA13U	00 =		BIT 25 S.A. MSB
KA205	DBC	C3	23A	(42 )	01	DRSA05U 47 23A	
KA205	DBC	C4	21A	DRSA14U	00 =		UNUSED
KA205	DBC	C4	22A	(46 )	01	SPI016 48 22A	
KA205	DBC	C5	17A	DRSA15U	00 =		UNUSED
KA205	DBC	C5	16B	(36 )	01	DRMR1A 35 16B	
KA110	THI	A5	04B	DRSA2A	00 =		SECTOR ADD LINE 2
KA110	THI	A5	05B	(07 )	01	DRSA03U 09 05B	
KA110	THI	A6	06B	DRSA3A	00 =		SECTOR ADD LINE 3
KA110	THI	A6	07B	(10 )	01	DRSA04U 15 07B	
KA110	THI	B1	13A	DRSA4A	00 =		SECTOR ADD LINE 4
KA110	THI	B1	14A	(24 )	01	DRSA11U 22 14A	
KA110	THI	B2	11A	DRSA5A	00 =		SECTOR ADD LINE 5
KA110	THI	B2	12A	(25 )	01	DRSA12U 23 12A	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DRSA6A  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM DESIGNATION	FACTOR	COMMENT
KA110	THI	B3	09A	DRSA6A	00 =		
KA110	THI	B3	10A	(18)	01	DRSA13U 20 10A	SECTOR ADD LINE 6
KA111	TQ2	E2	28A	DRSCKA	00 =		
KA111	TQ2	E2	29A	(16)	01	DRSCKO SPI001 62 29A 64 30A	SECTOR ADD CLK
KA212	TT3	E2	29B	DRSCKO	00 =		
KA212	TT3	E2	28B	(15)	01	DRSC6A DRSC2A DRSC3A 53 28B 60 28A 62 29A	SECT CLK - LOAD + COUNT + MAIN. SKIP
KA224	TQ2	E3	30B	DRSC1A	00 =		
KA224	TQ2	E3	28B	(17)	01	DTCW30 DTST30 53 28B 55 29B	LOAD RASC WORD
KA102	TS6	D1	25B	DRSC2A	00 =		
KA102	TS6	D1	23B	(14)	01	DRB160 DRCA3Q DSATCA DRW210 SPI063 SPI062 SPI004 SPI008 43 23B 46 21A 48 22A 49 26B 50 23A 52 24A 54 25A 56 26A	
KA219	TT3	E3	33B	DRSC3A	00 =		
KA219	TT3	E3	30B	(13)	01	DSA000 DSCLKO DRSC40 57 30B 59 31B 61 32B	
KA108	TD4	B1	11B	DRSC40	00 =		
KA108	TD4	B1	12A	(23)	01	DRCMD2T DRCMD3T DRCMD5T DBTSPP 27 12A 24 13A 25 12B 26 14A	WRITE ZEROS + WRITE + READ
KA106	TQ2	B4	13B	DRSC5A	00 =		
KA106	TQ2	B4	11B	(12)	01	DSA000 DRSC40 23 11B 25 12B	
KA112	TT3	A1	04A	DRSC6A	00 =		
KA112	TT3	A1	05A	(04)	01	DTCW30 DTST30 DDATHP 06 05A 08 06A 10 07A	
KA305	TDD	HT	22A	DRSERI	00 =		
KA305	TDD	HT		( )	01	DRSERO 48 22A	
KA305	TDD	HN	21A	DRSERN	00 =		
KA305	TDD	HN		( )	01	DYXRCQ 46 21A	
KA305	TDD	HP	24B	DRSERP	00 =		
KA305	TDD	HP	23A	(45)	01	DCYRTA 50 23A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DRSERQ  
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CONNECTOR	GROUP LETTER	GROUP NO.	TEST POINTS AND OR	EQUATION	TERN	DEFINITION	FACTOR	COMMENT
KA305	TDD	HQ	23B	DRSERQ	00	=		
KA305	TDD	HQ	22B	(43)	01		SPI020 41 22B	
KA111	TQ2	E3	30B	DRSERO	00	=		SELECTED RAS ERROR
KA111	TQ2	E3	28B	(57)	01		DRPEEA DRCLEA 53 28B 55 29B	
KA105	TT3	F2	35B	DRSESA	00	=		
KA105	TT3	F2	34B	(74)	01		DRSERO DRSERP DBTSPP 65 34B 71 36A 72 34A	
KA110	THI	B5	10B	DRSLCA	00	=		
KA110	THI	B5	11B	(19)	01		DRSLCO 21 11B	
KA108	TD4	B2	10B	DRSLCO	00	=		RAS SELECT IS READY
KA108	TD4	B2	09A	(21)	01		DRSLOA DRSLIA DRSL2A DRSL3A 14 09A 18 10A 19 09B 20 11A	
KA105	TT3	A1	04A	DRSLOA	00	=		
KA105	TT3	A1	05A	(04)	01		DRA0AA DRAS00 DRT22A 06 05A 08 06A 10 07A	
KA105	TT3	B2	09B	DRSL1A	00	=		
KA105	TT3	B2	09A	(19)	01		DRA1AA DRAS00 DRTA22U 14 09A 17 08B 18 10A	
KA105	TT3	C3	19B	DRSL2A	00	=		
KA105	TT3	C3	16B	(39)	01		DRA2AA DRAS10 DRT22A 33 16B 35 17B 37 18B	
KA105	TT3	F3	39A	DRSL3A	00	=		
KA105	TT3	F3	35A	(80)	01		DRA3AA DRAS10 DRTA22U 69 35A 76 37A 78 38A	
KA111	TQ2	E4	33B	DRSNRA	00	=		
KA111	TQ2	E4	31B	(63)	01		DRRENQ DRSLCO 59 31B 61 32B	
KA207	TDD	HI	22A	DRSNRI	00	=		
KA207	TDD	HI	22A	( )	01		SPI002 48 22A	
KA207	TDD	HN	21A	DRSNRN	00	=		
KA207	TDD	HN	21A	( )	01		SPI003 46 21A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DRSNRP  
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CONNECTOR	UNIT GROUP	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIG NATOR	FACTOR	COMMENT
KA207	TDD	HP	24B	DRSNRP	00	=		
KA207	TDD	HP	23A	(45 )	01		DSTATA 50 23A	
KA207	TDD	HQ	23B	DRSNRQ	00	=		SELECTED RAS NOT READY
KA207	TDD	HQ	22B	(43 )	01		DRSNRA 41 22B	
KA110	THI	B6	12B	DRSSKA	00	=		CLK TO CLR STATUS REG
KA110	THI	B6	13B	(26 )	01		DRSSKO 27 13B	
KA106	TQ2	A1	05A	DRSSKO	00	=		CLK CONTROL SR FULL
KA106	TQ2	A1	06A	(06 )	01		DRB36A DCYRTA 08 06A 10 07A	
KA205	DBC	D1	26A	DRTA01U	00	=		BIT 24 TRACK ADD LSB
KA205	DBC	D1	26B	(54 )	01		DD240Q DD230Q DD220Q DD210Q DTCWFP 53 26B 55 27B 57 29B 59 30B 63 31A	
KA205	DBC	D2	28B	DRTA02U	00	=		BIT 23 T.A. 2ND LSB
KA205	DBC	D2	25B	(56 )	01		DRYCKA 51 25B	
KA205	DBC	D3	28A	DRYA03U	00	=		BIT 22 T.A. 3RD LSB
KA205	DBC	D3	31B	(60 )	01		SPI009 61 31B	
KA205	DBC	D4	29A	DRTA04U	00	=		BIT 21 T.A. 4TH LSB
KA205	DBC	D4	30A	(62 )	01		SPI003 64 30A	
KA205	DBC	D5	25A	DRTA05U	00	=		T.A. 4TH LSB ALL ONES
KA205	DBC	D5	24B	(52 )	01		DBYSSA 49 24B	
KA204	DBC	C1	18A	DRTA11U	00	=		BIT 20 T.A. 5TH LSB
KA204	DBC	C1	18B	(38 )	01		DD200Q DD190Q DD180Q DD170Q DTCWFP 39 18B 41 19B 43 22B 45 23B 50 24A	
KA204	DBC	C2	19A	DRTA12U	00	=		BIT 19 T.A. 5TH MSB
KA204	DBC	C2	17B	(40 )	01		DRYCKA 37 17B	
KA204	DBC	C3	20A	DRTA13U	00	=		BIT 18 T.A. 4TH MSB
KA204	DBC	C3	23A	(42 )	01		DRTA05U 47 23A	

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TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DRTA14U  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA204	DBC	C4	21A	DRTA14U	00	H		BIT 17 T.A. 3RD MSB
KA204	DBC	C4	22A	(46 )	01		SPI009 48 22A	
KA204	DBC	C5	17A	DRTA15U	00	H		T.A. 3RD MSD TO LSB ALL ONES
KA204	DBC	C5	16B	(36 )	01		DBTSSA 35 16B	
KA206	DBC	E1	34A	DRTA21U	00	=		SECTOR ADD LSB BIT 31
KA206	DBC	E1	33B	(70 )	01		DDI60Q DDI50Q DDI40Q DDI30Q DTCWFP 71 33B 73 34B 75 35B 77 36B 80 38B	
KA206	DBC	E2	35A	DRTA22U	00	=		BIT 30 2ND LSB
KA206	DBC	E2	37A	(72 )	01		DRTCKA 69 32A	
KA206	DBC	E3	36A	DRTA23U	00	=		BIT 29 3RD LSB
KA206	DBC	E3	37B	(74 )	01		DRTA15U 79 37B	
KA206	DBC	E4	37A	DRTA24U	00	=		BIT 28 4TH LSB
KA206	DBC	E4	38A	(76 )	01		DRTA05U 78 38A	
KA206	DBC	E5	33A	DRTA25U	00	=		SECTOR ADD 4 LSB ONES
KA206	DBC	E5	32B	(68 )	01		DBTSSA 66 32B	
KA104	THI	A5	04B	DRTCKA	00	=		
KA104	THI	A5	05B	(07 )	01		DRTCKO 09 05B	
KA212	TT3	E3	33B	DRTCKO	00	=		
KA212	TT3	E3	30B	(63 )	01		DRSE6A DRTCKA DRTCKA 57 30B 59 31B 61 32B	
KA219	TT3	F1	36B	DRTCKA	00	=		CLK TA AT SECTOR WRITE
KA219	TT3	F1	37B	(73 )	01		DRLSQQ DWR000 DSCLKO 75 37B 77 38B 79 39B	
KA102	TSB	E1	31B	DRTCKA	00	=		
KA102	TSB	E1	29B	(59 )	01		DRLSQQ SPI063 DRCA3Q DRRWZO SPI062 SPI006 SPI005 SPI008 55 29B 60 28A 61 32B 62 29A 64 30A 66 31A 68 32A 70 33A	
KA106	TQ2	A4	07B	DRTCKA	00	=		BITSP. ADD ENR TIME
KA106	TQ2	A4	05B	(15 )	01		DXEA00 DBREQQ 11 05B 13 06B	



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIG	PICT	FACTOR	COMMENT
KA110	THI	C3	15A	DRT22A	00	=			
KA110	TRI	C3	16A	(34)	01			DRTA22U 36 16A	
KA243	DCF	C7	25A	DRWCLDX4	00	=			READ/WRITE CLOCKS
KA243	DCF	C7	29A	(43)	01			SPI019 52 29A	
				DRWCLI	00	=			
KA207	TDD	D1	10A	( )	01			DRW210 18 10A	
				DRWCLN	00	=			
KA207	TDD	DN	09A	( )	01			DRB06P 14 09A	
KA207	TDD	DP	10B	DRWCLP	00	=			
KA207	TDD	DP	11A	(21)	01			DRWDEBT 20 11A	
KA207	TDD	DQ	09B	DRWCLQ	00	=			WORD 21.CLK-CLEAR WORD COUNT
KA207	TDD	DQ	08B	(19)	01			SPI002 17 08B	
KA243	DCF	C8	26A	DRWCLOX	00	=			
KA243	DCF	C8	28A	(48)	01			SPI008 50 28A	
KA204	DBC	D1	26A	DRWCO1U	00	=			WORD COUNT BIT 0
KA204	DBC	D1	26B	(54)	01			SPI009 SPI004 SPI005 SPI002 SPI003 53 26B 55 27B 57 29B 59 30B 63 31A	
KA204	DBC	D2	28B	DRWCO2U	00	=			W.C. BIT 1
KA204	DBC	D2	25B	(56)	01			DRBCKTB 51 25B	
KA204	DBC	D3	28A	DRWCO3U	00	=			W.C. BIT 2
KA204	DBC	D3	31B	(60)	01			SPI016 61 31B	
KA204	DBC	D4	29A	DRWCO4U	00	=			W.C. BIT 3
KA204	DBC	D4	30A	(62)	01			DRB160 64 30A	
KA204	DBC	D5	25A	DRWCO5U	00	=			WORD COUNT IS 15
KA204	DBC	D5	24B	(52)	01			DRWMRA 49 24B	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TER 2	DESIGNATION	FACTOR	COMMENT
KA110	THI	C1	19A	DRWC4A	00	=		
KA110	THI	C1	20A	(40)	01		DRWC04U 38 20A	RESET TA
KA104	THI	F6	38A	DRWC5A	00	=		
KA104	THI	F6	39A	(77)	01		DRWC05U 75 39A	
KA206	DBC	A1	04A	DRWDE0T	00	=		
KA206	DBC	A1	02A	(08)	01		DRWC01U 04 02A	WORD 16 + 24
KA206	DBC	A2	05A	DRWDE1T	00	=		
KA206	DBC	A2	03A	(10)	01		DRWC02U 06 03A	WORD 17 + 25
KA206	DBC	A3	06A	DRWDE2T	00	=		
KA206	DBC	A3	02B	(14)	01		DRWC03U 03 02B	WORD 18 + 26
KA206	DBC	A4	07A	DRWDE3T	00	=		
KA206	DBC	A4	03B	(13)	01		DRWI6P 05 03B	WORD 19 + 27
KA206	DBC	A5	08B	DRWDE4T	00	=		
KA206	DBC	A5		(17)	01		SPA 4T	WORD 20 + 28
KA206	DBC	A6	04B	DRWDE5T	00	=		
KA206	DBC	A6		(07)	01		SPA 5T	WORD 21 + 29
KA206	DBC	A7	05B	DRWDE6T	00	=		
KA206	DBC	A7		(09)	01		SPA 6T	WORD 22 + 30
KA206	DBC	A8	06B	DRWDE7T	00	=		
KA206	DBC	A8		(11)	01		SPA 7T	WORD 23 + 31
KA206	DBC	A9	07B	DRWDE8T	00	=		
KA206	DBC	A9		(15)	01		SPA 8T	WORD 0 + 8
KA206	DBC	A0	09A	DRWDE9T	00	=		
KA206	DBC	A0		(18)	01		SPA 9T	WORD 1 + 9

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATION	FACTOR	COMMENT
KA215	THI	C3	15A	DRWD0A	00 =		
KA215	THI	C3	16A	(34)	01 =	DRWD00 36 16A	WORD 0
KA214	TT3	C3	19B	DRWD00	00 =		
KA214	TT3	C3	16B	(39)	01 =	DRWD00 DRWC4A SPT061 33 16B 35 17B 37 18B	
KA110	THI	C4	14B	DRWMRA	00 =		RESET WORD COUNTER
KA110	THI	C4	15B	(30)	01 =	DRWMRO 29 15B	
KA106	TQ2	B1	12A	DRWMRO	00 =		
KA106	TQ2	B1	13A	(22)	01 =	DRBM1A DRWCLP 24 13A 26 14A	
KA106	TQ2	B2	09A	DRWMT0	00 =		READ MAIN + WRITE MAIN
KA106	TQ2	B2	10A	(14)	01 =	DRCMD01T DRCMD07T 18 10A 20 11A	
KA110	THI	C5	16B	DRW000	00 =		WORD 0 + 8
KA110	THI	C5	17B	(31)	01 =	DRWDE8T 33 17B	
				DRW16I	00 =		
KA207	TDD	CI	13A	( )	01 =	DRW160 24 13A	
				DRW16N	00 =		
KA207	TDD	CN	14A	( )	01 =	DRBCKTB 26 14A	
KA207	TDD	CP	11B	DRW16P	00 =		
KA207	TDD	CP	12A	(23)	01 =	DRWMRA 22 12A	
KA207	TDD	CQ	12B	DRW16Q	00 =		WORD COUNT 16
KA207	TDD	CQ	13B	(25)	01 =	SPT009 27 13B	
KA333	TQ2	E1	31A	DRW160	00 =		RESET MEM ADD REG
KA333	TQ2	E1	32A	(66)	01 =	DRWC5A DRW16P 68 32A 70 33A	
KA110	THI	C6	18B	DRW200	00 =		WORD 20
KA110	THI	C6	19B	(42)	01 =	DRWDE4T 39 19B	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TEST	DESIG-NATOR	FACTOR	COMMENT
			AND	OR					
KA110	THI	D1	25A		DRW210	00	=	WORD 21	
KA110	THI	D1	26A		(54)	01		DRWDEST 52 26A	
KA214	TT3	B3	13B		DRW32A	00	=	WORD 21, BIT 32	
KA214	TT3	B3	10B		(27)	01		DRWDEST DRBI60 SPI061 21 10B 23 11B 25 12B	
KA224	TQ2	C3	16B		DRW320	00	=	DISC STATE 0	
KA224	TQ2	C3	14B		(33)	01		DRW32A SPI062 29 14B 31 15B	
KA312	TD4	E1	31B		DROPCA	00	=		
KA312	TD4	E1	32B		(59)	01		DTST50 DTCCMO DRACLA DBYSPP 61 32B 66 31A 68 32A 70 33A	
					DROPC1	00	=		
KA209	TDD	J1	32A		( )	01		DRCCOP 68 32A	
					DROPCN	00	=		
KA209	TDD	JN	33A		( )	01		DTCC5A 70 33A	
KA209	TDD	JP	31B		DROPCP	00	=		
KA209	TDD	JP	31A		(59)	01		DROPRA 66 31A	
KA209	TCD	JQ	32B		DROPCC	00	=	CONTROL RAS INPUT COUNTER	
KA209	TDD	JQ	33B		(61)	01		SPI010 63 33B	
KA337	THI	A6	06B		DROPRA	00	=	MEM. PARITY ERROR	
KA337	THI	A6	07B		(10)	01		DROPRO 15 07B	CHECKER
KA333	TQ2	C1	18A		DROPRO	00	=		
KA333	TQ2	C1	19A		(38)	01		DERROA DSTATA 40 19A 42 20A	
KA308	T04	F2	35A		DROPIA	00	=		
KA308	T04	F2	36A		(69)	01		DTST50 DTCCMO DRCCOP SPI018 71 36A 72 34A 73 36B 74 35B	
KA109	TS8	B1	11B		DSACAA	00	=	SECTOR COMPARES - SELECTED	
KA109	TS8	B1	09A		(23)	01		DSAC0ER DSAC1ER DSAC2ER DSAC3ER DSAC4ER DSAC5ER DSAC6ER DRSLCA 14 09A 18 10A 19 09B 20 11A 22 12A 24 13A 25 12B 26 14A	AND READY

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DSACAI  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA207	TDD	LI	38B	DSACAI ( )	00 = 01	DSACAO 77 38B	
KA207	TDD	LN	39B	DSACAN ( )	00 = 01	DSASAOX 79 39B	
KA207	TDD	LP	37A	DSACAP (76 )	00 = 01	DSACIA 75 37B	
KA207	TDD	LQ	38A	DSACAQ (78 )	00 = 01	SPI009 80 39A	SECTOR COMPARES
KA110	THI	D2	23A	DSACAO (49 )	00 = 01	DSACAA 47 24A	
KA331	EOR	C2	19B	DSACOER (39 )	00 = 01	DSAD0A DRSA01U 37 18B 35 17B	COMP S.A. LINE 0
KA110	THI	D3	21A	DSAC1A (48 )	00 = 01	DSAC10 50 22A	RESET SECTOR COMPARE
KA331	EOR	C3	20A	DSAC1ER (42 )	00 = 01	DSAD1A DRSA02U 40 19A 38 18A	COMP S.A. LINE 1
KA105	TT3	A3	07B	DSAC10 (15 )	00 = 01	DRWCLP DSAC2A DRSC5A 09 04B 11 05B 13 06B	ENABLE FOR CYCLIC WORD
KA303	TQ2	E2	28A	DSAC2A (60 )	00 = 01	DSAC20 62 29A	ERROR NOT BOOTSTRAP -
KA331	EOR	C4	17A	DSAC2ER (36 )	00 = 01	DSAD2A DRSA03U 34 16A 30 15A	COMP S.A. LINE 2
KA112	TT3	B1	11A	DSAC20 (20 )	00 = 01	DLTK10 DRRENQ SPI061 22 12A 24 13A 26 14A	

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TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DSAC3ER  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA331	EOR	D1	24B	DSAC3ER	00	=		COMP S.A. LINE 3
KA331	EOR	D1	23B	(45)	01		DSAD3A DRS A04U 43 23B 41 22B	
KA331	EOR	D2	27B	DSAC4ER	00	=		COMP S.A. LINE 4
KA331	EOR	D2	26B	(51)	01		DSAD4A DRS A11U 49 26B 47 25B	
KA331	EOR	D3	26A	DSAC5ER	00	=		COMP S.A. LINE 5
KA331	EOR	D3	25A	(56)	01		DSAD5A DRS A12U 54 25A 52 24A	
KA331	EOR	D4	23A	DSAC6ER	00	=		COMP S.A. LINE 6
KA331	EOR	D4	22A	(50)	01		DSAD6A DRS A13U 48 22A 46 21A	
KA110	THI	D4	22B	DSAD0A	00	=		SECTOR ADD LINE 0 - A
KA110	THI	D4	23B	(46)	01		DSA000X 41 23B	
KA110	THI	D5	24B	DSAD1A	00	=		SECTOR ADD LINE 1
KA110	THI	D5	25B	(43)	01		DSA010X 45 25B	
KA110	THI	D6	26B	DSAD2A	00	=		S.A. LINE 2
KA110	THI	D6	27B	(53)	01		DSA020X 51 27B	
KA110	THI	E1	32A	DSAD3A	00	=		S.A. LINE 3
KA110	THI	E1	33A	(66)	01		DSA030X 64 33A	
KA110	THI	E2	30A	DSAD4A	00	=		S.A. LINE 4
KA110	THI	E2	31A	(63)	01		DSA040X 61 31A	
KA110	THI	E3	28A	DSAD5A	00	=		S.A. LINE 5
KA110	THI	E3	29A	(60)	01		DSA050X 62 29A	
KA110	THI	E4	28B	DSAD6A	00	=		S.A. LINE 6
KA110	THI	E4	29B	(56)	01		DSA060X 55 29B	
KA345	OCF	B1	10B	DSASADX4	00	=		SECTOR ADDRESS STROBE
KA345	OCF	B1	13A	(27)	01		SPI029 36 13A	

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TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017  
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 REV E  
 INDEX DSASA0X  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TERM	DESIG. NOTATION	FACTOR	COMMENT
			AND	OR					
KA345	DCF	B2	11B		DSASA0X	00	=		
KA345	DCF	B2	12B		(29 )	01		SPI030 31 12B	
KA328	TD4	F1	37A		DSATCA	00	=		SECTOR 90
KA328	TD4	F1	37B		(76 )	01		DRSA13U DRSA11U DRSA04U DRSA02U 75 37B 77 38B 78 38A 79 39B	
KA110	THI	E5	30B		DSATCO	00	=		
KA110	THI	E5	31B		(57 )	01		DSATCA 59 31B	
KA109	TSB	C1	17B		DSA0XA	00	=		SECTOR ADDR 0 + 1
KA109	TSB	C1	15A		(35 )	01		DRSA1A DRSA2A DRSA3A DRSA4A DRSA5A DRSA6A DRACLA SPI001 30 15A 31 15B 34 16A 36 17A 37 18B 38 18A 40 19A 42 20A	
KA110	THI	A2	04A		DSA0X0	00	=		
KA110	THI	A2	05A		(08 )	01		DSA0XA 06 05A	
KA106	TQ2	A2	02B		DSA00A	00	=		
KA106	TQ2	A2	04A		(01 )	01		DSA0X0 DRSA0A 04 04A 05 03B	
KA345	DCF	B3	15B		DSA000X4	00	=		
KA345	DCF	B3	13A		(27 )	01		SPI029 36 13A	
KA110	THI	E6	32B		DSA000	00	=		SECTOR 0
KA110	THI	E6	33B		(68 )	01		DSA00A 65 33B	
KA345	DCF	B4	14B		DSA000X	00	=		SECTOR ADD. LSB
KA345	DCF	B4	13B		(55 )	01		SPI023 33 13B	
KA345	DCF	B5	16A		DSA010X4	00	=		SECTOR ADD. LSB
KA345	DCF	B5	13A		(41 )	01		SPI029 36 13A	
KA345	DCF	B6	15A		DSA010X	00	=		
KA345	DCF	B6	14A		(40 )	01		SPI006 38 14A	
KA345	DCF	B7	10A		DSA020X4	00	=		
KA345	DCF	B7	13A		(23 )	01		SPI029 36 13A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DSA020X  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST POINT	DESIGNATOR	FACTOR	COMMENT
KA345	DCF	B8	11A	DSA020X	00	=		
KA345	UCF	B8	12A	(30)	01		SPI008 34 12A	
KA345	DCF	C1	25B	DSA03DX4	00	=		
KA345	UCF	C1	29A	(46)	01		SPI029 52 29A	
KA345	DCF	C2	26B	DSA030X	00	=		
KA345	UCF	C2	27B	(47)	01		SPI030 49 27B	
KA345	DCF	C3	30B	DSA04DX4	00	=		
KA345	UCF	C3	29A	(55)	01		SPI029 52 29A	
KA345	DCF	C4	29B	DSA040X	00	=		
KA345	UCF	C4	28B	(56)	01		SPI023 51 28B	
KA345	DCF	C5	31B	DSA05DX4	00	=		
KA345	UCF	C5	29A	(60)	01		SPI029 52 29A	
KA345	DCF	C6	31A	DSA050X	00	=		
KA345	UCF	C6	30A	(57)	01		SPI006 54 30A	
KA345	DCF	C7	25A	DSA06DX4	00	=		
KA345	UCF	C7	29A	(43)	01		SPI029 52 29A	
KA345	DCF	C8	26A	DSA060X	00	=		
KA345	UCF	C8	28A	(48)	01		SPI008 50 28A	
KA224	TQ2	F1	37B	DSCLAA	00	=		SECTOR CLK NOT
KA224	TQ2	F1	38B	(75)	01		DSCLA0X SPI013 77 38B 79 39B	
KA345	DCF	D1	32B	DSCLADX4	00	=		SECTOR CLOCK
KA345	UCF	D1	36A	(65)	01		SPI029 72 36A	
KA345	DCF	D2	33B	DSCLA0X	00	=		
KA345	UCF	D2	34B	(69)	01		SPI030 71 34B	



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST POINTS	DESIGNATION	FACTOR	COMMENT
KA106	TQ2	C1	18A	DSCLK0	00 =			
KA106	TQ2	C1	19A	(38)	01	DSCLAA DICLAA 40 19A 42 20A	SECTOR + INDEX CLOCK	
KA111	TQ2	C3	16B	DSELAA	00 =			
KA111	TQ2	C3	14B	(33)	01	DSELA0 SPI063 29 14B 31 15B	TRACK COUNTER MSB	
KA112	TT3	C2	15B	DSELA0	00 =			
KA112	TT3	C2	14B	(31)	01	DYSC4A DSCLAA DICLAA 29 14B 30 15A 34 16A		
KA309	TDD	MI	36A	DSELRI	00 =			
KA309	TDD	MI		( )	01	DRYA23U 71 36A		
KA309	TDD	MN	34A	DSELRN	00 =			
KA309	TDD	MN		( )	01	DSELAA 72 34A		
KA309	TDD	MP	35A	DSELRP	00 =			
KA309	TDD	MP	36B	(69)	01	DBTSSA 73 36B		
KA309	TDD	MQ	35B	DSELRQ	00 =			
KA309	TDD	MQ	34B	(74)	01	SPI061 65 34B		
KA207	TDD	AI	06A	DSFULI	00 =			
KA207	TDD	AI		( )	01	DSR0C0 08 06A		
KA207	TDD	AN	07A	DSFULN	00 =			
KA207	TDD	AN		( )	01	DSRFCA 10 07A		
KA207	TDD	AP	05B	DSFULP	00 =			
KA207	TDD	AP	05A	(11)	01	DSFURA 06 05A		
KA207	TDD	AQ	06B	DSFULQ	00 =			
KA207	TDD	AQ	07B	(13)	01	SPI009 15 07B	SR FULL - WRITE ONLY	
KA215	THI	C4	14B	DSFURA	00 =			
KA215	THI	C4	15B	(30)	01	DSFURO 29 15B	CLK MEM FULL FF	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	3 TERM	DESIGNATOR	FACTOR	COMMENT
KA211	TQ2	A3	04B	DSFURO	00	=		
KA211	TQ2	A3	02A	(09)	01		DXRSIB DSRLCA 03 02A 07 03A	LOAD MEM ADD CONTROL
KA108	TD4	D1	25B	DSRCKA	00	=		
KA108	TD4	D1	26B	(47)	01		DRCA1P DRCA2Q DSRCA0A DWRB0A 49 26B 52 24A 54 25A 56 26A	SHIFT REG CLK - NO INHIBIT
KA111	TQ2	F2	34A	DSRCKO	00	=		
KA111	TQ2	F2	36A	(72)	01		DSRCKA DSRLCA 71 36A 73 36B	SHIFT REG CLK
KA110	TH1	F3	34B	DSRCA0A	00	=		
KA110	TH1	F3	35B	(70)	01		DSRCA0B 69 35B	
KA103	TQ2	F3	35A	DSRCA0B	00	=		
KA103	TQ2	F3	34B	(69)	01		DWRB0P DSRLCA 65 34B 74 35B	BIT 32 + LAST WD
KA224	TQ2	D3	24B	DSRLCA	00	=		
KA224	TQ2	D3	22B	(45)	01		DWRB0P DWR000 41 22B 43 23B	RESET AFTER CHECK
KA106	TQ2	D1	24A	DSRFCA	00	=		
KA106	TQ2	D1	25A	(52)	01		DRCL30 DSRCA0 54 25A 56 26A	
KA108	TD4	E2	30B	DSRLCA	00	=		
KA108	TD4	E2	29B	(57)	01		DSRCA0 DRCA10 DWR000 DRCA2Q 55 29B 60 28A 62 29A 64 30A	WRITE -MEM COMPLETE -WAIT END SECTOR
KA342	MUX	D1	27B	DSRMOTA	00	=		
KA342	MUX	D1	25B	(55)	01		DB000Q DC000Q DWRZRO DSR130 51 25B 53 26B 52 25A 49 24B	BIT 0 BUFF REG + CYCLIC REG
KA342	MUX	D2	31B	DSRMOTB	00	=		
KA342	MUX	D2	29B	(61)	01		DB010Q DC010Q 57 29B 59 30B	BIT 1
KA342	MUX	D3	28A	DSRMOTC	00	=		
KA342	MUX	D3	26A	(60)	01		DB020Q DC020Q 54 26A 56 28B	BIT 2 BUFF + SHIFT REG
KA342	MUX	D4	31A	DSRMOTD	00	=		
KA342	MUX	D4	29A	(63)	01		DB030Q DC030Q 62 29A 64 30A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DSRM1TA  
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CONNECTOR	FUNCTION	GROUP	TEST POINTS AND OR	EQUATION	TERM	REG OR	FACTOR	COMMENT
KA342	MUX	E1	34B	DSRM1TA	00	=		
KA342	MUX	E1	32A	(73)	01		DB040Q DC040Q DWRZRO DSR130 69 32A 71 33B 68 33A 66 32B	BIT 4 BUFF REG + SHIFT REG
KA342	MUX	E2	37B	DSRM1TB	00	=		
KA342	MUX	E2	35B	(79)	01		DB050Q DC050Q 75 35B 77 36B	
KA342	MUX	E3	36A	DSRM1TC	00	=		
KA342	MUX	E3	34A	(74)	01		DB060Q DC060Q 70 34A 72 35A	
KA342	MUX	E4	38B	DSRM1TD	00	=		
KA342	MUX	E4	37A	(80)	01		DB070Q DC070Q 76 37A 78 38A	
KA341	MUX	D1	27B	DSRM2TA	00	=		
KA341	MUX	D1	25B	(55)	01		DB080Q DC080Q DWRZRO DSR130 51 25B 53 26B 52 25A 49 24B	BIT 8 BUFF + SHIFT REG
KA341	MUX	D2	31B	DSRM2TB	00	=		
KA341	MUX	D2	29B	(61)	01		DB090Q DC090Q 57 29B 59 30B	
KA341	MUX	D3	28A	DSRM2TC	00	=		
KA341	MUX	D3	26A	(60)	01		DB100Q DC100Q 54 26A 56 28B	
KA341	MUX	D4	31A	DSRM2TD	00	=		
KA341	MUX	D4	29A	(63)	01		DB110Q DC110Q 62 29A 64 30A	
KA341	MUX	E1	34B	DSRM3TA	00	=		
KA341	MUX	E1	32A	(73)	01		DB120Q DC120Q DWRZRO DSR130 69 32A 71 33B 68 33A 66 32B	BIT 12 BUFF REG + SHIFT REG
KA341	MUX	E2	37B	DSRM3TB	00	=		
KA341	MUX	E2	35B	(79)	01		DB130Q DC130Q 75 35B 77 36B	
KA341	MUX	E3	36A	DSRM3TC	00	=		
KA341	MUX	E3	34A	(74)	01		DB140Q DC140Q 70 34A 72 35A	
KA341	MUX	E4	38B	DSRM3TD	00	=		
KA341	MUX	E4	37A	(80)	01		DB150Q DC150Q 76 37A 78 38A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DSRM4TA  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TRN	DESIGNATOR	FACTOR	COMMENT
KA340	MUX	D1	27B	DSRM4TA	00	=		BIT 16 BUFF + SHIFT REG
KA340	MUX	D1	25B	(55)	01		DB160Q DC160Q DWRZRO DSR130 51 25B 53 26B 52 25A 49 24B	
KA340	MUX	D2	31B	DSRM4TB	00	=		
KA340	MUX	D2	29B	(61)	01		DB170Q DC170Q 57 29B 59 30B	
KA340	MUX	D3	28A	DSRM4TC	00	=		
KA340	MUX	D3	26A	(60)	01		DB180Q DC180Q 54 26A 56 28B	
KA340	MUX	D4	31A	DSRM4TD	00	=		
KA340	MUX	D4	29A	(63)	01		DB190Q DC190Q 62 29A 64 30A	
KA340	MUX	E1	34B	DSRM5TA	00	=		BIT 20 BUFF + SHIFT REG
KA340	MUX	E1	32A	(73)	01		DB200Q DC200Q DWRZRO DSR130 69 32A 71 33B 68 33A 66 32B	
KA340	MUX	E2	37B	DSRM5TB	00	=		
KA340	MUX	E2	35B	(79)	01		DB210Q DC210Q 75 35B 77 36B	
KA340	MUX	E3	36A	DSRM5TC	00	=		
KA340	MUX	E3	34A	(74)	01		DB220Q DC220Q 70 34A 72 35A	
KA340	MUX	E4	38B	DSRM5TD	00	=		
KA340	MUX	E4	37A	(80)	01		DB230Q DC230Q 76 37A 78 38A	
KA339	MUX	D1	27B	DSRM6TA	00	=		BIT 24 BUFF + SHIFT REG
KA339	MUX	D1	25B	(55)	01		DB240Q DC240Q DWRZRO DSR130 51 25B 53 26B 52 25A 49 24B	
KA339	MUX	D2	31B	DSRM6TB	00	=		
KA339	MUX	D2	29B	(61)	01		DB250Q DC250Q 57 29B 59 30B	
KA339	MUX	D3	28A	DSRM6TC	00	=		
KA339	MUX	D3	26A	(60)	01		DB260Q DC260Q 54 26A 56 28B	
KA339	MUX	D4	31A	DSRM6TD	00	=		
KA339	MUX	D4	29A	(63)	01		DB270Q DC270Q 62 29A 64 30A	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA339	MUX	E1	34B	DSRM7TA	00 =		
KA339	MUX	E1	32A	(73)	01	DB280Q DC280Q DWR2R0 DSR130 69 32A 71 33B 68 33A 66 32B	BIT 32 BUFF + SHIFT REG
KA339	MUX	E2	37B	DSRM7TB	00 =		
KA339	MUX	E2	35B	(79)	01	DB290Q DC290Q 75 35B 77 36B	
KA339	MUX	E3	36A	DSRM7TC	00 =		
KA339	MUX	E3	34A	(74)	01	DB300Q DC300Q 70 34A 72 35A	
KA339	MUX	E4	38B	DSRM7TD	00 =		
KA339	MUX	E4	37A	(80)	01	DB310Q DC310Q 76 37A 78 38A	
KA212	TT3	F2	35B	DSROCA	00 =		
KA212	TT3	F2	34B	(74)	01	DWRN00 DSR1C0 SPI062 65 34B 71 36A 72 34A	L-P.L. SR ; H-SR SHIFT CONTR OL
KA110	THI	F4	34A	DSROCO	00 =		
KA110	THI	F4	35A	(72)	01	DSROCA 74 35A	SET SR FULL FF
KA112	TT3	F1	36B	DSROPA	00 =		
KA112	TT3	F1	37B	(73)	01	DSRC00 DRCL20 SPI061 75 37B 77 38B 79 39B	
				DSROPI	00 =		
KA207	TDD	MI	36A	( )	01	DB0P0Q 71 36A	
				DSROPN	00 =		
KA207	TDD	MN	34A	( )	01	DSROPA 72 34A	
KA207	TDD	MP	35A	DSROPP	00 =		
KA207	TDD	MP	36B	(69)	01	DXRS2B 73 36B	
KA207	TDD	MQ	35B	DSROPQ	00 =		
KA207	TDD	MQ	34B	(74)	01	SPI002 65 34B	SHIFT REG PARITY- WRITE
KA330	TS4	A1	05B	DSR000E	00 =		
KA330	TS4	A1	03B	(07)	01	DSRM0TA DRDIAOX 03 03B 05 04B	DATA BIT 0 AND SHIFT INPUT

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DSR001E  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TER J	DESIG NATOR	FACTOR	COMMENT
KA330	TS4	A2	07B	DSR001E	00	=		DATA BIT 1 AND SHIFT CONTROL
KA330	TS4	A2	02B	(11)	01		DSRM0TB DSR00A 01 02B 08 04A	
KA330	TS4	A3	07A	DSR002E	00	=		DATA BIT 2 AND LOAD CONTROL
KA330	TS4	A3	02A	(13)	01		DSRM0YC SPI026 04 02A 14 06A	
KA330	TS4	A4	05A	DSR003E	00	=		DATA BIT 3 AND CLOCK
KA330	TS4	A4	03A	(10)	01		DSRM0YD DSR0K0 06 03A 09 06B	
KA329	TS4	A1	05B	DSR010E	00	=		DATA BIT 4 & SHIFT INPUT
KA329	TS4	A1	03B	(07)	01		DSRM1YA DSR003E 03 03B 05 04B	
KA329	TS4	A2	07B	DSR011E	00	=		DATA BIT 5 AND SHIFT CONTROL
KA329	TS4	A2	02B	(11)	01		DSRM1YB DSR00A 01 02B 08 04A	
KA329	TS4	A3	07A	DSR012E	00	=		DATA BIT 6 AND LOAD CONTROL
KA329	TS4	A3	02A	(13)	01		DSRM1YC SPI026 04 02A 14 06A	
KA329	TS4	A4	05A	DSR013E	00	=		DATA BIT 7 AND CLOCK
KA329	TS4	A4	03A	(10)	01		DSRM1YD DSR0K0 06 03A 09 06B	
KA330	TS4	B1	11B	DSR020E	00	=		DATA BIT 8 AND SHIFT DATA
KA330	TS4	B1	09B	(21)	01		DSRM2YA DSR013E 17 09B 19 10B	
KA330	TS4	B2	13B	DSR021E	00	=		DATA BIT 9 AND SHIFT CONTROL
KA330	TS4	B2	08B	(27)	01		DSRM2YB DSR00A 15 08B 22 11A	
KA330	TS4	B3	14A	DSR022E	00	=		DATA BIT 10 AND LOAD CONTROL
KA330	TS4	B3	09A	(25)	01		DSRM2YC SPI026 18 09A 26 13A	
KA330	TS4	B4	12A	DSR023E	00	=		DATA BIT 11 AND CLOCK
KA330	TS4	B4	10A	(24)	01		DSRM2YD DSR0K0 20 10A 23 12B	
KA329	TS4	B1	11B	DSR030E	00	=		DATA BIT 12 AND SHIFT DATA
KA329	TS4	B1	09B	(21)	01		DSRM3YA DSR023E 17 09B 19 10B	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DSR031E  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 131

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
XA329	TS4	B2	13B	DSR031E	00	=		DATA BIT 13 AND SHIFT CONTR
XA329	TS4	B2	08B	(27)	01		DSRM3TB DSRCOA 15 08B 22 11A	
XA329	TS4	B3	14A	DSR032E	00	=		DATA BIT 14 AND LOAD CONTROL
XA329	TS4	B3	09A	(25)	01		DSRM3TC SPI026 18 09A 26 13A	
XA329	TS4	B4	12A	DSR033E	00	=		DATA BIT 15 AND CLOCK
XA329	TS4	B4	10A	(24)	01		DSRM3TD DSRCK0 20 10A 23 12B	
XA330	TS4	C1	17B	DSR040E	00	=		BIT 16 AND SHIFT INPUT
XA330	TS4	C1	15B	(35)	01		DSRM4TA DSR033E 31 15B 33 16B	
XA330	TS4	C2	19B	DSR041E	00	=		BIT 17 AND SHIFT CONTROL
XA330	TS4	C2	14B	(39)	01		DSRM4TB DSRCOA 29 14B 36 17A	
XA330	TS4	C3	20A	DSR042E	00	=		BIT 18 AND LOAD CONTROL
XA330	TS4	C3	15A	(42)	01		DSRM4TC SPI026 30 15A 40 19A	
XA330	TS4	C4	18A	DSR043E	00	=		BIT 19 AND CLOCK
XA330	TS4	C4	16A	(38)	01		DSRM4TD DSRCK0 34 16A 37 18B	
XA329	TS4	C1	17B	DSR050E	00	=		BIT 20 AND SHIFT INPUT
XA329	TS4	C1	15B	(35)	01		DSRM5TA DSR043E 31 15B 33 16B	
XA329	TS4	C2	19B	DSR051E	00	=		BIT 21 AND SHIFT CONTROL
XA329	TS4	C2	14B	(39)	01		DSRM5TB DSRCOA 29 14B 36 17A	
XA329	TS4	C3	20A	DSR052E	00	=		BIT 22 AND LOAD CONTROL
XA329	TS4	C3	15A	(42)	01		DSRM5TC SPI026 30 15A 40 19A	
XA329	TS4	C4	18A	DSR053E	00	=		BIT 23 AND CLOCK
XA329	TS4	C4	16A	(38)	01		DSRM5TD DSRCK0 34 16A 37 18B	
XA330	TS4	D1	25B	DSR060F	00	=		BIT 24 AND SHIFT INPUT
XA330	TS4	D1	23B	(47)	01		DSRM6TA DSR053E 43 23B 45 24B	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DSR061E  
 FILE IDENT T39C1FC7 DATE 09-03-82 PAGE 132

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TRYS	DESIGNATOR	FACTOR	COMMENT
KA330	TS4	D2	27B	DSR061E	00 =			BIT 25 AND SHIFT CONTROL
KA330	TS4	D2	22B	(51)	01		DSRM6TB DSR06A 41 22B 50 23A	
KA330	TS4	D3	26A	DSR062E	00 =			BIT 26 AND LOAD CONTROL
KA330	TS4	D3	21A	(56)	01		DSRM6TC SPI026 46 21A 54 25A	
KA330	TS4	D4	24A	DSR063E	00 =			BIT 27 AND CLOCK
KA330	TS4	D4	22A	(52)	01		DSRM6TD DSR060 48 22A 49 26B	
KA329	TS4	D1	25B	DSR070E	00 =			BIT 28 AND SHIFT INPUT
KA329	TS4	D1	23B	(47)	01		DSRM7TA DSR063E 43 23B 45 24B	
KA329	TS4	D2	27B	DSR071E	00 =			BIT 29 AND SHIFT CONTROL
KA329	TS4	D2	22B	(51)	01		DSRM7TB DSR06A 41 22B 50 23A	
KA329	TS4	D3	26A	DSR072E	00 =			BIT 30 AND LOAD CONTROL
KA329	TS4	D3	21A	(56)	01		DSRM7TC SPI026 46 21A 54 25A	
KA329	TS4	D4	24A	DSR073E	00 =			BIT 31 AND CLOCK
KA329	TS4	D4	22A	(52)	01		DSRM7TD DSR060 48 22A 49 26B	
KA219	TT3	F2	35B	DSR1C0	00 =			TIMES TO SET SR FULL
KA219	TT3	F2	34B	(74)	01		DSR11A DSR12A DSR13A 65 34B 71 36A 72 34A	
KA211	TQ2	B3	10B	DSR11A	00 =			
KA211	TQ2	B3	08B	(21)	01		DBFULQ DRREN 17 08B 19 09B	
KA105	TT3	A2	03A	DSR12A	00 =			BUF FULL BIT 33
KA105	TT3	A2	02B	(07)	01		DBFULQ DRB260 DRWDE4T 01 02B 03 02A 05 03B	
KA214	TT3	E3	33B	DSR13A	00 =			
KA214	TT3	E3	30B	(63)	01		DRB160 DWR000 DRW200 57 30B 59 31B 61 32B	
KA104	THI	D6	26B	DSR130	00 =			SET SELECT CYCLIC REG
KA104	THI	D6	27B	(53)	01		DSR13A 51 27B	



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TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DSTATA  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 133

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
XA110	THI	F6	38A	DSTATA	00	=		CLEAR STATUS REG
XA110	THI	F6	39A	(77)	01		DSTATO 75 39A	
XA106	TQ2	D2	21A	DSTATO	00	=		I/O RESET + INIT. DMA
XA106	TQ2	D2	22A	(46)	01		DXRS1B DTCWFA 48 22A 50 23A	
XA106	TQ2	D3	24B	DSTOPA	00	=		DEV STOP CMD
XA106	TQ2	D3	22B	(45)	01		DXDVX0 DXR96G 41 22B 43 23B	
				DST1MI	00	=		
KA208	TDD	MI	36A	( )	01		SPI063 71 36A	
				DST1MN	00	=		
KA208	TDD	MN	34A	( )	01		DST10 72 34A	
KA208	TDD	MP	35A	DST1MP	00	=		
KA208	TDD	MP	36B	(69)	01		DMST1A 73 36B	
KA208	TDD	MQ	35B	DST1MQ	00	=		WRITE PARTIY
KA208	TDD	MQ	34B	(74)	01		SPI002 65 34B	
KA214	TI3	A2	03A	DST5MA	00	=		STATE,IST DIA PATH
KA214	TI3	A2	02B	(07)	01		DTS20Q DTS10P DMATDP 01 02B 03 02A 05 03B	
KA110	THI	C2	17A	DST5M0	00	=		
KA110	THI	C2	18A	(37)	01		DST5MA 35 18A	
KA106	TQ2	D4	27B	DSYN1A	00	=		RETURN IND VALID QFR BYTE
KA106	TQ2	D4	25B	(51)	01		DXDV1B DVCMD0 47 25B 49 26B	
KA106	TQ2	C3	16B	DSYN2A	00	=		
KA106	TQ2	C3	14B	(33)	01		DQ08CTB SPI002 29 14B 31 15B	
				DTACMB	00	=		
KA321	DCF	C5	31B	( )	01		DXACMDX 60 31B	PORT A COMMAND DRV
KA446	DCF	C5	31B	( )	02	+	TXACMDX 60 31B	PORT A CMD DRVR

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DTAENB  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 134

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA321	DCF	C7	25A	DTAENB ( )	00 =	01	DXAENDX 43 25A	
KA446	DCF	C7	25A	( )	02 +		TXAENDX 43 25A	PORT A ENBL DRVR
KA321	DCF	C3	30B	DTAINB ( )	00 =	01	DXAINDX .5 30B	PORT A IND DRV
KA446	DCF	C3	30B	( )	02 +		TXAINDX 55 30B	PORT A IND DRVR
KA321	DCF	C1	25B	DTAPCB ( )	00 =	01	DXAPCDX 46 25B	PORT A DATA LINE
KA446	DCF	C1	25B	( )	02 +		TXAPCDX 46 25B	PORT A DATA LINE
KA321	DCF	A1	02B	DTA0CB ( )	00 =	01	DXA0CDX 07 02B	PORT A DATA LINE
KA446	DCF	A1	02B	( )	02 +		TXA0CDX 07 02B	PORT A DATA LINE
KA243	DCF	A1	02B	DTA01DX (07 )	00 =	01	0GND3A 06 05A	TRACK ADD LSB
KA243	DCF	A1	05A	(07 )	01			
KA243	DCF	A2	03B	DTA010X (09 )	00 =	01	DRTA01U 11 04B	
KA243	DCF	A2	04B	(09 )	01			
KA243	DCF	A3	07B	DTA02DX (17 )	00 =	01	0GND3A 06 05A	
KA243	DCF	A3	05A	(17 )	01			
KA243	DCF	A4	06B	DTA020X (15 )	00 =	01	DRTA02U 13 05B	
KA243	DCF	A4	05B	(15 )	01			
KA243	DCF	A5	08B	DTA03DX (14 )	00 =	01	0GND3A 06 05A	
KA243	DCF	A5	05A	(14 )	01			
KA243	DCF	A6	07A	DTA030X (10 )	00 =	01	DRTA03U 08 06A	
KA243	DCF	A6	06A	(10 )	01			

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DTA04DX  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 135

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA243	DCF	A7	02A	DTA04DX	00 =		
KA243	DCF	A7	05A	(01 )	01	DGND3A 06 05A	TRACK ADD 4TH LSB
KA243	DCF	A8	03A	DTA040X	00 =		
KA243	DCF	A8	04A	(03 )	01	DRTA04U 04 04A	
KA243	DCF	B1	10B	DTA05DX	00 =		
KA243	DCF	B1	13A	(27 )	01	DGND3A 36 13A	
KA243	DCF	B2	11B	DTA050X	00 =		
KA243	DCF	B2	12B	(29 )	01	DRTA11U 31 12B	
KA243	DCF	B3	15B	DTA06DX	00 =		
KA243	DCF	B3	13A	(37 )	01	DGND3A 36 13A	
KA243	DCF	B4	14B	DTA060X	00 =		
KA243	DCF	B4	13B	(35 )	01	DRTA12U 33 13B	
KA243	DCF	B5	16A	DTA07DX	00 =		
KA243	DCF	B5	13A	(41 )	01	DGND3A 36 13A	
KA243	DCF	B6	15A	DTA070X	00 =		
KA243	DCF	B6	14A	(40 )	01	DRTA13U 38 14A	
KA243	DCF	B7	10A	DTA08DX	00 =		
KA243	DCF	B7	13A	(23 )	01	DGND3A 36 13A	
KA243	DCF	B8	11A	DTA080X	00 =		
KA243	DCF	B8	12A	(30 )	01	DRTA14U 34 12A	
KA243	DCF	D1	32B	DTA09DX	00 =		
KA243	DCF	D1	36A	(65 )	01	DGND3A 72 36A	
KA243	DCF	D2	33B	DTA090X	00 =		
KA243	DCF	D2	34B	(69 )	01	DRTA21U 71 34B	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DTA1CB  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 136

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
				DTA1CB	00 =		
KA321	DCF	A3	07B	( )	01	DXA1CDX 17 07B	PORT A DATA LINE
KA446	DCF	A3	07B	( )	02 +	TXA1CDX 17 07B	PORT A DATA LINE
KA243	DCF	D3	37B	DTA10DX	00 =		TRACK ADD. MSB
KA243	DCF	D3	36A	(78 )	01	DGND3A 72 36A	
KA243	DCF	D4	36B	DTA100X	00 =		
KA243	DCF	D4	35B	(75 )	01	DRYA22U 73 35B	
				DTA2CB	00 =		
KA321	DCF	A5	08B	( )	01	DXA2CDX 14 08B	PORT A DATA LINE
KA446	DCF	A5	08B	( )	02 +	TXA2CDX 14 08B	PORT A DATA LINE
				DTA3CB	00 =		
KA321	DCF	A7	02A	( )	01	DXA3CDX 01 02A	PORT A DATA LINE
KA446	DCF	A7	02A	( )	02 +	TXA3CDX 01 02A	PORT A DATA LINE
				DTA4CB	00 =		
KA321	DCF	B1	10B	( )	01	DXA4CDX 27 10B	PORT A DATA LINE
KA446	DCF	B1	10B	( )	02 +	TXA4CDX 27 10B	PORT A DATA LINE
				DTA5CB	00 =		
KA321	DCF	B3	15B	( )	01	DXA5CDX 37 15B	PORT A DATA LINE
KA446	DCF	B3	15B	( )	02 +	TXA5CDX 37 15B	PORT A DATA LINE
				DTA6CB	00 =		
KA321	DCF	B5	16A	( )	01	DXA6CDX 41 16A	PORT A DATA LINE
KA446	DCF	B5	16A	( )	02 +	TXA6CDX 41 16A	PORT A DATA LINE
				DTA7CB	00 =		
KA321	DCF	B7	10A	( )	01	DXA7CDX 23 10A	PORT A DATA LINE
KA446	DCF	B7	10A	( )	02 +	TXA7CDX 23 10A	PORT A DATA LINE

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DTBCMB  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 137

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
				DTBCMB	00 =			
KA322	DCF	C5	31B	( )	01		DXBCMDX 60 31B	
KA445	DCF	C5	31B	( )	02 +		TXBCMDX 60 31B	PORT B CMD DRVR
				DTBENB	00 =			
KA322	DCF	C7	25A	( )	01		DXBENDX 43 25A	PORT B ENABLE DRV
KA445	DCF	C7	25A	( )	02 +		TXBENDX 43 25A	PORT B ENBL DRVR
				DTBINB	00 =			
KA322	DCF	C3	30B	( )	01		DXBINDX 55 30B	PORT B IND DRV
KA445	DCF	C3	30B	( )	02 +		TXBINDX 55 30B	PORT B IND DRVR
				DIBPCB	00 =			
KA322	DCF	C1	25B	( )	01		DXBPCDX 46 25B	PORT B DATA LINE
KA445	DCF	C1	25B	( )	02 +		TXBPCDX 46 25B	PORT B DATA LINE
KA105	TT3	B1	11A	DTBUSO	00 =			BUSY - BTSP + CONTROL WORD
KA105	TT3	B1	12A	(20)	01		DBTSP DTCW5P DTCCMP 22 12A 24 13A 26 14A	FETCH + CMD CHAINING
				DTB0CB	00 =			
KA322	DCF	A1	02B	( )	01		DXB0CDX 07 02B	PORT B DATA LINE
KA445	DCF	A1	02B	( )	02 +		TXB0CDX 07 02B	PORT B DATA LINE
				DTB1CB	00 =			
KA322	DCF	A3	07B	( )	01		DXB1CDX 17 07B	PORT B DATA LINE
KA445	DCF	A3	07B	( )	02 +		TXB1CDX 17 07B	PORT B DATA LINE
				DTB2CB	00 =			
KA322	DCF	A5	08B	( )	01		DXB2CDX 14 08B	PORT B DATA LINE
KA445	DCF	A5	08B	( )	02 +		TXB2CDX 14 08B	PORT B DATA LINE
				DTB3CB	00 =			
KA322	DCF	A7	02A	( )	01		DXB3CDX 01 02A	PORT B DATA LINE
KA445	DCF	A7	02A	( )	02 +		TXB3CDX 01 02A	PORT B DATA LINE

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DTB4CB  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 138

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA322	DCF	B1	10B	DTB4CB ( )	00 = 01		DXB4CDX 27 10B	PORT B DATA LINE
KA445	DCF	B1	10B	( )	02 +		TXB4CDX 27 10B	PORT B DATA LINE
KA322	DCF	B3	15B	DTB5CB ( )	00 = 01		DXB5CDX 37 15B	PORT B DATA LINE
KA445	DCF	B3	15B	( )	02 +		TXB5CDX 37 15B	PORT B DATA LINE
KA322	DCF	B5	16A	DTB6CB ( )	00 = 01		DXB6CDX 41 16A	PORT B DATA LINE
KA445	DCF	B5	16A	( )	02 +		TXB6CDX 41 16A	PORT B DATA LINE
KA322	DCF	B7	10A	DTB7CB ( )	00 = 01		DXB7CDX 23 10A	
KA445	DCF	B7	10A	( )	02 +		TXB7CDX 23 10A	PORT B DATA LINE
KA104	THI	A1	06A	DTCCLA (13 )	00 = 01		DTCCLO 11 07A	
KA104	THI	A1	07A					
KA328	TD4	F2	35A	DTCCLO (69 )	00 = 01		DXR50B DSTOPA DERROA SPI027 71 36A 72 34A 73 36B 74 35B	
KA328	TD4	F2	36A					
KA207	TDD	B1	03B	DTCCMI ( )	00 = 01		DTCCSO 05 03B	
KA207	TDD	BN	02B	DTCCMN ( )	00 = 01		DTCWKA 01 02B	
KA207	TDD	BP	04B	DTCCMP (09 )	00 = 01		DTCCLA 04 04A	
KA207	TDD	BQ	03A	DTCCMQ (07 )	00 = 01		SPI003 03 02A	COMMAND CHAINING FF
KA207	TDD	BQ	02A					

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DTCCSA  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 139

CONNECTOR	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA108	TD4	D2 24B	DTCCSA	00 =		SET COMMAND CHAINING FF
KA108	TD4	D2 23B	(45)	01	DMATDP DTCW30 DERROA SPI020 43 23B 46 21A 48 22A 50 23A	
KA215	THI	D1 25A	DTCCSO	00 =		
KA215	THI	D1 26A	(54)	01	DTCCSA 52 26A	
KA106	TQ2	E1 31A	DTCC5A	00 =		CMD CHAIN . ST 5
KA106	TQ2	E1 32A	(66)	01	DTCCMQ DTST50 68 32A 70 33A	
KA219	TT3	C1 17A	DTCF1A	00 =		
KA219	TT3	C1 18A	(36)	01	DRACLA DRCCOQ DERROA 38 18A 40 19A 42 20A	
KA104	THI	B1 13A	DTCF10	00 =		
KA104	THI	B1 14A	(24)	01	DTCF1A 22 14A	
KA311	TT3	E2 29B	DTCK4A	00 =		READ ST5 MEM.
KA311	TT3	E2 28B	(55)	01	DMSP30 DMST50 DMATDP 53 28B 60 28A 62 29A	TEST
KA104	THI	A2 04A	DTCL8A	00 =		
KA104	THI	A2 05A	(08)	01	DTCL8Q 06 05A	
			DTCL8I	00 =		
KA210	TDD	MI 36A	( )	01	DTCL8A 71 36A	
			DTCL8N	00 =		
KA210	TDD	MN 34A	( )	01	DT161B 72 34A	
KA210	TDD	MP 35A	DTCL8P	00 =		
KA210	TDD	MP 36B	(69)	01	DTCS1P 73 36B	
KA210	TDD	MQ 35B	DTCL8Q	00 =		8 MHZ CLK - MAIN CLK FOR
KA210	TDD	MQ 34B	(74)	01	SPI010 65 34B	CONTROL
			DTCS1I	00 =		
KA207	TDD	JI 32A	( )	01	SPI009 66 32A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DTCSTN  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 140

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA207	TDD	JN	33A	DTCSTN ( )	00 = 01		DTCLBP 70 33A	
KA207	TDD	JP	31B	DTCSTP (59 )	00 = 01		DTSTPO 66 31A	
KA207	TDD	JQ	32B	DTCSTQ (61 )	00 = 01		SPT002 63 33B	STOP CLK CONTROL - SET STOP CLK
KA103	TQ2	A1	05A	DTCWFA (06 )	00 = 01		DXRA60 DXDV18 08 06A 10 07A	DEV INIT. DMA
KA210	TDD	KI	29A	DTCWFI ( )	00 = 01		DTCF10 62 29A	
KA210	TDD	KN	28A	DTCWFN ( )	00 = 01		DTCWKA 60 28A	
KA210	TDD	KP	30B	DTCWFP (57 )	00 = 01		DTCCLA 64 30A	
KA210	TDD	KQ	29B	DTCWFQ (55 )	00 = 01		DTCWFA 53 28B	CONTROL WORD ACCESS
KA106	TQ2	C2	15A	DTCWKA (30 )	00 = 01		DTST50 DT1CM0 34 16A 36 17A	
KA213	THI	E4	28B	DTCW1A (56 )	00 = 01		DTCWFQ 55 29B	OVERLOAD DTCWFQ
KA213	THI	E6	32B	DTCW10 (68 )	00 = 01		DTCWFP 65 33B	OVERLOAD DTCWFP
KA213	THI	E5	30B	DTCW2A (57 )	00 = 01		DTCWFQ 59 31B	



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LOGIC

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 UNIT ASSEMBLY NO. 149017 REV E INDEX DTCW20  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	KEY	DESIGNATION	FACTOR	COMMENT
KA215	THI	D6	26B	DTCW20	00 =			
KA215	THI	D6	27B	(53 )	01		DTCWFP 51 27B	
KA215	THI	E6	32B	DTCW3A	00 =			
KA215	THI	E6	33B	(68 )	01		DTCWFP 65 33B	
KA215	THI	F6	38A	DTCW30	00 =			
KA215	THI	F6	39A	(77 )	01		DTCWFP 75 39A	
KA103	TQ2	A2	02B	DTCW4A	00 =			ST 4 . CONT WORD ACCESS
KA103	TQ2	A2	04A	(01 )	01		DTCW30 04 04A 05 03B	
				DTCW51	00 =			
KA309	TDD	KI	29A	( )	01		SP1064 62 29A	
				DTCW5N	00 =			
KA309	TDD	KN	28A	( )	01		DTCWFP 60 28A	
KA309	TDD	KP	30B	DTCW5P	00 =			
KA309	TDD	KP	30A	(57 )	01		DTCWFP 64 30A	
KA309	TDD	KQ	29B	DTCW5Q	00 =			
KA309	TDD	KQ	28B	(55 )	01		SP1061 53 28B	
KA104	THI	B3	09A	DTNC8A	00 =			
KA104	THI	B3	10A	(18 )	01		DTNC8Q 20 10A	
				DTNC8I	00 =			
KA207	TDD	E1	19A	( )	01		DTNC8A 40 19A	
				DTNC8N	00 =			
KA207	TDD	EN	20A	( )	01		DTNC8Q 42 20A	
KA207	TDD	EP	17B	DTNC8P	00 =			
KA207	TDD	EP	18A	(35 )	01		DXRS1B 38 18A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017  
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CONNECTOR	GROUP	TEST POINTS AND/OR	EQUATION	TEST POINTS AND/OR	TECH	ORIGINATOR	FACTOR	COMMENT
KA207	TDD	EQ 18B	DTNC8Q		00	=		NORMAL B MHZ
KA207	TDD	EQ 19B	(37)		01		SPI009 39 19B	
KA219	TT3	B1 11A	DTSC4A		00	=		WRITE + WD 21+ .BIT CONTROL
KA219	TT3	B1 12A	(20)		01		DTST40 DTCW30 SP1003 22 12A 24 13A 26 14A	
KA103	TQ2	A3 04B	DTSE1A		00	=		( ST 1 + ST 3).MEM COMPLETE
KA103	TQ2	A3 02A	(09)		01		DTST80 DMCPLQ 03 02A 07 03A	
KA102	TS8	B1 11B	DTSE2A		00	=		RLSE STATE CTR-WRITE NO
KA102	TS8	B1 09A	(23)		01		DTST40 DWR000 DRB260 DRW210 DBFULP DRCL30 DBL000 DMFULP 14 09A 18 10A 19 09B 20 11A 22 12A 24 13A 25 12B 26 14A	DATA SECTOR END
KA103	TQ2	A4 07B	DTSE3A		00	=		ST1.(CT.END DISC +CT.ERROR+ WZ.END DISC)
KA103	TQ2	A4 05B	(15)		01		DTST10 DTS310 11 05B 13 06B	
KA108	TD4	E1 31B	DTSE4A		00	=		WRITE + WRITE MAIN LAST BIT
KA108	TD4	E1 32B	(59)		01		DTST40 DSASA0X DRENAP DRW00 61 32B 66 31A 68 32A 70 33A	
KA328	TD4	E1 31B	DTSE5A		00	=		RESET BIT COUNTER-BIT 32+ MR
KA328	TD4	E1 32B	(59)		01		DTST40 DBL00A DTSE6A SPI009 61 32B 66 31A 68 32A 70 33A	+ ERROR + DP COMP.
KA224	TQ2	F2 34A	DTSE6A		00	=		
KA224	TQ2	F2 36A	(72)		01		DMFULQ DWRN10 71 36A 73 36B	
KA333	TQ2	C4 19B	DTSE7A		00	=		HOLD CLK IF WRITE ENBL
KA333	TQ2	C4 17B	(39)		01		DTST30 DWENAP 35 17B 37 18B	
KA103	TQ2	B1 12A	DTSH0A		00	=		
KA103	TQ2	B1 13A	(22)		01		DTBUS0 DTST00 24 13A 26 14A	
KA103	TQ2	B2 09A	DTSH1A		00	=		STOP CLK CONTROL WORD ACCESS
KA103	TQ2	B2 10A	(14)		01		DTST20 DTCWFQ 18 10A 20 11A	
KA212	TT3	F3 39A	DTSH2A		00	=		READ XFER BUFFER TO DATA REG
KA212	TT3	F3 35A	(80)		01		DTST30 DTCW3A DRDWT0 69 35A 76 37A 78 38A	

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CONNECTOR	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA109	TS8	E1 31B	DTSH3A	00	=		HOLD CLOCK STOP
KA109	TS8	E1 29B	(59)	01		DTCSTQ DTSE1A DTSE2A DTSE3A DTSE4A DERRDA DTST0A DTSE5A 55 29B 60 28A 61 32B 62 29A 64 30A 66 31A 68 32A 70 33A	
KA102	TS8	F1 37A	DTSH4A	00	=		
KA102	TS8	F1 36A	(76)	01		DRCMDZT DBL000 DWENAQ DBFULP DMFULP DRCL10 SPI002 DRB260 71 36A 72 34A 73 36B 74 35B 75 37B 77 38B 78 38A 79 39B	
KA106	TQ2	E3 30B	DTSTB0	00	=		ST1 + ST 2
KA106	TQ2	E3 28B	(57)	01		DTST1A DTSE7A 53 28B 55 29B	
KA108	TD4	C2 16B	DTSTP0	00	=		
KA108	TD4	C2 15A	(33)	01		DYSH0A DTSH1A DTSH2A DTSH3A 30 15A 31 15B 34 16A 36 17A	
KA103	TQ2	B3 10B	DTST0A	00	=		STATE 0
KA103	TQ2	B3 08B	(21)	01		DYS00P DTS20P 17 08B 19 09B	
KA104	THI	B4 08B	DTST00	00	=		
KA104	THI	B4 09B	(14)	01		DTST0A 17 09B	
KA103	TQ2	B4 13B	DTST1A	00	=		STATE 1
KA103	TQ2	B4 11B	(27)	01		DYS00Q DTS10P 23 11B 25 12B	
KA104	THI	B5 10B	DTST10	00	=		
KA104	THI	B5 11B	(19)	01		DTST1A 21 11B	
KA103	TQ2	C1 18A	DTST2A	00	=		STATE 2
KA103	TQ2	C1 19A	(38)	01		DTST0Q DTS20P 40 19A 42 20A	
KA104	THI	B6 12B	DTST20	00	=		
KA104	THI	B6 13B	(26)	01		DTST2A 27 13B	
KA103	TQ2	C2 15A	DTST3A	00	=		STATE 3
KA103	TQ2	C2 16A	(30)	01		DTS20Q DYS00Q 34 16A 36 17A	
KA104	THI	C1 19A	DTST30	00	=		
KA104	THI	C1 20A	(40)	01		DTST3A 38 20A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	GROUP	GROUP	TEST POINTS AND/OR	EQUATION	TERMINAL	DESIGNATION	FACTOR	COMMENT
KA103	TQ2	C3	16B	DTST4A	00	=	STATE 4	
KA103	TQ2	C3	14B	(33)	01		DTS00P DTS10Q 29 14B 31 15B	
KA104	THI	C2	17A	DTST40	00	=		
KA104	THI	C2	18A	(37)	01		DTST4A 35 18A	
KA103	TQ2	C4	19B	DTST5A	00	=	STATE 5	
KA103	TQ2	C4	17B	(39)	01		DTS20Q DTS10P 35 17B 37 18B	
KA104	THI	C3	15A	DTST50	00	=		
KA104	THI	C3	16A	(34)	01		DTST5A 36 16A	
KA110	THI	F2	36B	DTSZEA	00	=	REST SR FULL	
KA110	THI	F2	37B	(71)	01		DTSZEO 73 37B	
KA314	TQ2	A4	07B	DTSZEO	00	=	REST MEM SYNC FF	
KA314	TQ2	A4	05B	(15)	01		DXRSZR DTSE3A 11 05B 13 06B	
				DTS00I	00	=		
KA209	TDD	MI	36A	( )	01		DTS20P 71 36A	
				DTS00N	00	=		
KA209	TDD	MN	34A	( )	01		DTCL8P 72 34A	
KA209	TDD	MP	35A	DTS00P	00	=		
KA209	TDD	MP	36B	(69)	01		DTBUSO 73 36B	
KA209	TDD	MQ	35B	DTS00Q	00	=	LSB STATE COUNTER	
KA209	TDD	MQ	34B	(74)	01		SPI002 65 34B	
				DTS10I	00	=		
KA207	TDD	KI	29A	( )	01		DTS00Q 62 29A	
				DTS10N	00	=		
KA207	TDD	KN	28A	( )	01		DTCL8P 60 28A	

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TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DTS10P  
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CONNECTOR	GROUP TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA207	TDD	KP	30B	DTS10P	00	=		
KA207	TDD	KP	30A	(57)	01		DTB050 64 30A	
KA207	TDD	KQ	29B	DTS10Q	00	=		STATE COUNTER - 2ND LSB
KA207	TDD	KQ	28B	(55)	01		SPI003 53 28B	
KA208	TDD	HI	22A	DTS20I	00	=		
KA208	TDD	HI	22A	( )	01		DTS10Q 48 22A	
KA208	TDD	HN	21A	DTS20N	00	=		
KA208	TDD	HN	21A	( )	01		DYCLBP 46 21A	
KA208	TDD	HP	24B	DTS20P	00	=		
KA208	TDD	HP	23A	(45)	01		DTB050 50 23A	
KA208	TDD	HQ	23B	DTS20Q	00	=		STATE COUNTER-MSB
KA208	TDD	HQ	22B	(43)	01		SPI002 41 22B	
KA105	TT3	B3	13B	DTS310	00	=		
KA105	TT3	B3	10B	(27)	01		DYS32A SPI062 DTS34A 21 10B 23 11B 25 12B	
KA103	TQ2	D1	24A	DTS32A	00	=		CYCLE TEST, DISC END
KA103	TQ2	D1	25A	(52)	01		DCY100 DREND0 54 25A 56 26A	
KA103	TQ2	D2	21A	DTS34A	00	=		WRITE ZEROS, RAS END
KA103	TQ2	D2	22A	(46)	01		DREND0 DWRZ00 48 22A 50 23A	
KA102	YS8	A1	05B	DT1C00	00	=		
KA102	YS8	A1	02B	(11)	01		DT1C2A DRCMD4T DRCMD7T DRACLA DERROA SPI001 SPI003 SPI002 01 02B 04 04A 05 03B 06 05A 07 03A 08 06A 10 07A 13 06B	
KA103	TQ2	D3	24B	DT1C2A	00	=		BL IS ZERO (READ + WRITE)
KA103	TQ2	D3	22B	(45)	01		DRDWT0 DBL000 41 22B 43 23B	
KA103	TQ2	E2	28A	DT160B	00	=		
KA103	TQ2	E2	28A	( )	02	+	DT162A 60 28A	
KA103	TQ2	E3	30B	( )	03	+	DT163A 57 30B	

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TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA103	TQ2	E1	31A	DT161A	00	=		
KA103	TQ2	E1	32A	(66)	01		SPI001 T16MHA 68 32A 70 33A	DT160B BUSS
KA103	TQ2	E1	31A	( )	01		DT161A 66 31A	
KA103	TQ2	E4	33B	( )	04	+	DT164A 63 33B	
KA103	TQ2	E2	28A	DT162A	00	=		DT160B BUSS
KA103	TQ2	E2	29A	(60)	01		SPI001 T16MHA 62 29A 64 30A	
KA103	TQ2	E3	30B	DT163A	00	=		DT160B BUSS
KA103	TQ2	E3	28B	(57)	01		SPI001 T16MHA 53 28B 55 29B	
KA103	TQ2	E4	33B	DT164A	00	=		DT160B BUSS
KA103	TQ2	E4	31B	(63)	01		SPI001 T16MHA 59 31B 61 32B	
KA104	THI	C5	16B	DT165A	00	=		16 MHZ CLOCK UNLOAD
KA104	THI	C5	17B	(31)	01		T16MHA 33 17B	
KA109	TSB	F1	37A	DVCM00	00	=		VALID CMD
KA109	TSB	F1	36A	(76)	01		DXR095T DXRAF4T DXR097T DXR096T DXRBF6T DXRAF7T SPI002 SPI001 71 36A 72 34A 73 36B 74 35B 75 37B 77 38B 78 38A 79 39B	
KA309	TDD	A1	06A	DWB23I	00	=		
KA309	TDD	A1	06A	( )	01		DRB06Q 08 06A	
KA309	TDD	AN	07A	DWB32N	00	=		
KA309	TDD	AN	07A	( )	01		ORCL3A 10 07A	
KA309	TDD	AP	05B	DWB32P	00	=		
KA309	TDD	AP	05A	(11)	01		DRB1A 06 05A	
KA309	TDD	AQ	06B	DWB32Q	00	=		BIT 32 DELAY ED
KA309	TDD	AQ	07B	(13)	01		SPI061 15 07B	
KA243	DCF	D5	38B	DWDOADX	00	=		WRITE DATA
KA243	DCF	D5	36A	(80)	01		DCND3A 72 36A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIG. NOTOR	FACTOR	COMMENT
KA243	DCF	D6	38A	DWD0A0X	00	=		
KA243	DCF	D6	37A	(76 )	01		DWD010 74 37A	
KA103	TQ2	D4	27B	DWD010	00	=		WRITE DATA
KA103	TQ2	D4	25B	(51 )	01		DWD02A DWD03A 47 25B 49 26B	
KA106	TQ2	E4	33B	DWD02A	00	=		WRITE NORMAL
KA106	TQ2	E4	31B	(63 )	01		DWB32P DSR073E 59 31B 61 32B	
KA111	TQ2	F4	39A	DWD03A	00	=		WRITE PARITY
KA111	TQ2	F4	37A	(80 )	01		DWB32Q DWOPB0 76 37A 78 38A	BIT 32 DELAY ED
KA243	OCF	D7	33A	DWENADY	00	=		
KA243	OCF	D7	36A	(61 )	01		DGN03A 72 36A	
				DWENAI	00	=		
KA207	TDD	G1	25A	( )	01		DWENAO 54 25A	
				DWENAN	00	=		
KA207	TDD	GN	26A	( )	01		DSCLK0 56 26A	
KA207	TDD	GP	25B	DWENAP	00	=		
KA207	TDD	GP	24A	(47 )	01		DWEN3A 52 24A	
KA207	TDD	GQ	26B	DWENAC	00	=		WRITE ENABLE
KA207	TDD	GQ	27B	(49 )	01		SPI009 51 27B	
KA106	TQ2	B3	10B	DWENAO	00	=		
KA106	TQ2	B3	08B	(21 )	01		DWEN2A DWEN1A 17 08B 19 09B	
KA243	DCF	D8	34A	DWENADY	00	=		WRITE ENABLE
KA243	DCF	D8	35A	(68 )	01		DWENAQ 70 35A	
KA105	TT3	C1	17A	DWEN1A	00	=		ENABLE FOR WRITE ZEROS
KA105	TT3	C1	18A	(36 )	01		DTCCMQ DSACAQ DWRZ00 38 18A 40 19A 42 20A	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST DESIGNATOR	FACTOR	COMMENT
KA108	TD4	F1	37A	DWEN2A	00 =		ENABLE WRITE MAINT + NORM.
KA108	TD4	F1	37B	(76 )	01	DTCCMQ OSACAQ DWRN10 DRRENQ 75 37B 77 38B 78 38A 79 39B	
KA214	TT3	F3	39A	DWEN3A	00 =		
KA214	TT3	F3	35A	(80 )	01	DWEN30 SPI064 SPI061 69 35A 76 37A 78 38A	
KA112	TT3	A2	03A	DWEN30	00 =		
KA112	TT3	A2	02B	(07 )	01	DXRS1B DWEN4A SPI061 01 02B 03 02A 05 03B	
KA212	TT3	F1	36B	DWEN4A	00 =		
KA212	TT3	F1	37B	(73 )	01	DTCW30 DTST20 DDATHQ 75 37B 77 38B 79 39B	
KA331	EOR	E1	30B	DWPARER	00 =		WRITE PARITYSUMER
KA331	EOR	E1	29B	(59 )	01	DWOPGQ OSRO73E 55 29B 53 28B	
KA333	TQ2	B4	13B	DWRBOA	00 =		
KA333	TQ2	B4	11B	(27 )	01	DRB07Q DWR000 23 11B 25 12B	
KA104	THI	C6	18B	DWRNOA	00 =		WRITE
KA104	THI	C6	19B	(42 )	01	DWRN10 39 19B	
KA103	TQ2	F1	37B	DWRN00	00 =		WRITE + WRITE MAIN.
KA103	TQ2	F1	38B	(75 )	01	DRCMD1T DRCMD3T 77 38B 79 39B	
KA103	TQ2	F2	34A	DWRN10	00 =		WRITE MAINT + NORMAL
KA103	TQ2	F2	36A	(72 )	01	DRCMD1T DRCMD3T 71 36A 73 36B	
KA224	TQ2	F3	35A	DWRZRA	00 =		
KA224	TQ2	F3	34B	(69 )	01	DWRZ0Q DRWDE4T 65 34B 74 35B	
KA215	THI	D4	22B	DWRZRO	00 =		
KA215	THI	D4	23B	(46 )	01	DWRZRA 41 23B	
				DWRZOI	00 =		
KA208	TDD	E1	19A	( )	01	DWRZ00 40 19A	



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LOGIC

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
				DWRZON	00 =		
KA208	TDD	EN	20A	( )	01	DTCCMQ 42 20A	
KA208	TDD	EP	17B	DWRZOP	00 =		
KA208	TDD	EP	18A	(35 )	01	DTSZEA 38 18A	
KA208	TDD	EQ	19B	DWRZOQ	00 =		
KA208	TDD	EQ	19B	(37 )	01	DTSH4A 39 19B	
KA104	THI	D1	25A	DWRZ00	00 =		WRITE ZEROS
KA104	THI	D1	25A	(54 )	01	DRCMDZT 52 26A	
KA337	THI	C5	16B	DWR00A	00 =		
KA337	THI	C5	17B	(31 )	01	DWR000 33 17B	
KA105	TT3	C2	15B	DWR000	00 =		WRITE + WRITE ZEROS + WRITE
KA105	TT3	C2	14B	(31 )	01	DRCMD1Y DRCMD2Y DRCMD3T 29 14B 30 15A 34 16A	MAINT
				DWOPBI	00 =		
KA309	TDD	D1	10A	( )	01	DWOPGQ 18 10A	
				DWOPBN	00 =		
KA309	TDD	DN	09A	( )	01	DRCL3A 14 09A	
KA309	TDD	DQ	09B	DWOPBQ	00 =		
KA309	TDD	DQ	08B	(19 )	01	SP1061 17 08B	
				DWOPGI	00 =		
KA334	TDD	J1	32A	( )	01	DWPARER 68 32A	
				DWOPGN	00 =		
KA334	TDD	JN	33A	( )	01	DWOPNA 70 33A	
KA334	TDD	JP	31B	DWOPGP	00 =		
KA334	TDD	JP	31A	(59 )	01	DWOPRA 66 31A	

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LOGIC

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMINAL	DESIGNATOR	FACTOR	COMMENT
KA334	TDD	JQ	32B	DWOPGQ	00	=		WRITE PARITY GENR
KA334	TDD	JQ	33B	(61)	01		DWOPSA 63 33B	
KA214	TT3	B1	11A	DWOPNA	00	=		
KA214	TT3	B1	12A	(20)	01		DRCL20 DRW210 DWRBOA 22 12A 24 13A 26 14A	
KA214	TT3	B2	09B	DWOPRA	00	=		WRT.WRD 21*BIT32MP
KA214	TT3	B2	09A	(19)	01		DRCL20 DRW320 DSROPP 14 09A 17 08B 18 10A	
KA214	TT3	A3	07B	DWOPSA	00	=		I/O CLK 1. BIT 00
KA214	TT3	A3	04B	(15)	01		DRCL10 DRB07Q SPI061 09 04B 11 05B 13 06B	
				DXACMB4	00	=		
KA323	TLD	C2	15A	( )	01		DXACMD 30 15A	
KA324	TLD	C2	15A	( )	02	+	DXBCMD 30 15A	
KA323	TLD	C2	15A	DXACMD	00	=		DXACMB4 BUSS
KA323	TLD	C2	16A	(30)	01		DXAIFO DXACMOX 34 16A 36 17A	
KA321	DCF	C5	31B	DXACMDX	00	=		DTACMB BUSS
KA321	DCF	C5	29A	(60)	01		DXADEA 52 29A	
KA321	DCF	C6	31A	DXACMOX	00	=		
KA321	DCF	C6	30A	(57)	01		DXGNIA 54 30A	
KA104	THI	E1	32A	DXADEA	00	=		
KA104	THI	E1	33A	(66)	01		TXADE04 64 33A	(DXADE04)
KA301	TQ2	E3	30B	DXADRO	00	=		I/O ADDRESS FOR THIS CONTRLER
KA301	TQ2	E3	28B	(57)	01		DXAD0A DXAD1A 53 28B 55 29B	
KA303	TQ2	F3	35A	DXAD0A	00	=		ADDRESS 0 DECODE
KA303	TQ2	F3	34B	(69)	01		DXR4CS TXADE04 65 34B 74 35B	
KA303	TQ2	F4	39A	DXAD1A	00	=		ADDRESS 1 DECODE
KA303	TQ2	F4	37A	(80)	01		DXR5CS DXADEA 76 37A 78 38A	

DRAWING NUMBER 149017-860  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXAENB4  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 151

CONNECTOR	CAPACIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIG NATOR	FACTOR	COMMENT
KA323	TLD	C3	16B	DXAENB4 ( )	01	=	DXAEND 33 16B	
KA324	TLD	C3	16B	( )	02	+	DXBEND 33 16B	
KA323	TLD	C3	16B	DXAEND	00	=		DXAENB4 BUSS
KA323	TLD	C3	14B	(33 )	01	=	DXAIFO DXAENOX 29 14B 31 15B	
KA321	DCF	C7	25A	DXAENDX	00	=		DTAENB BUSS
KA321	DCF	C7	29A	(43 )	01	=	DXAOEA 52 29A	
KA321	DCF	C8	26A	DXAENOX	00	=		
KA321	DCF	C8	28A	(48 )	01	=	DXGNIA 50 28A	
KA302	TQ2	F1	37B	DXAIEA	00	=		PORT A INPUT ENABLE
KA302	TQ2	F1	38B	(75 )	01	=	DXASLOX DXXDRA 77 38B 79 39B	
KA104	THI	E2	30A	DXAIEO	00	=		
KA104	THI	E2	31A	(63 )	01	=	DXAIEA 61 31A	
KA104	THI	E3	28A	DXAIFO	00	=		
KA104	THI	E3	29A	(60 )	01	=	DXAIEA 62 29A	
KA321	DCF	C3	30B	DXAINDX	00	=		DTAINB BUSS
KA321	DCF	C3	29A	(55 )	01	=	DXAOEA 52 29A	
KA321	DCF	C4	29B	DXAINOX	00	=		
KA321	DCF	C4	28B	(56 )	01	=	DXOBIO 51 28B	
				DXAPCB4	00	=		
KA323	TLD	C1	18A	( )	01	=	DXAPCD 38 18A	
KA324	TLD	C1	18A	( )	02	+	DXBPCD 38 18A	
KA323	TLD	C1	18A	DXAPCD	00	=		DXAPCB4 BUSS
KA323	TLD	C1	19A	(38 )	01	=	DXAIFO DXAPCOX 40 19A 42 20A	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXAPCDX  
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CONNECTOR	CAGE TYPE	GROUP	TEST POINTS AND OP	EQUATION	TERMINAL	DESIGNATION	FACTOR	COMMENT
KA321	DCF	C1	25B	DXAPCDX	00 =			
KA321	DCF	C1	29A	(46)	01		DXA0EA 52 29A	DTAPCB BUSS
KA321	DCF	C2	26B	DXAPCOX	00 =			
KA321	DCF	C2	27B	(47)	01		DXDSBPR 49 27B	
KA308	TD4	B1	11B	DXARQA	00 =			
KA308	TD4	B1	12A	(23)	01		DXASLOX DXINHR DEVINH DXXROO 22 12A 24 13A 25 12B 26 14A	
KA104	THI	F1	38B	DXARQO	00 =			
KA104	THI	F1	39B	(80)	01		DXARQA 79 39B	
KA105	TT3	D3	27B	DXARSA	00 =			PORT A RESET
KA105	TT3	D3	24B	(51)	01		DXACMOX DXAENOX DXASLOX 45 24B 47 25B 49 26B	
KA323	TLD	D1	24A	DXAR4D1	00 =			
KA323	TLD	D1	25A	(52)	01		TXADE04 DXARQO 54 25A 56 26A	
KA323	TLD	D2	21A	DXAR5D1	00 =			
KA323	TLD	D2	22A	(46)	01		DXA0EA DXARQO 48 22A 50 23A	
KA301	TQ2	E1	31A	DXASLA	00 =			
KA301	TQ2	E1	32A	(66)	01		DXASLOX SPI019 68 32A 70 33A	
KA321	DCF	D5	38B	DXASLDX4	00 =			PORT A SELECT DR1/RCVR
KA321	DCF	D5	36A	(80)	01		SPI025 72 36A	
KA321	DCF	D6	38A	DXASLOX	00 =			
KA321	DCF	D6	37A	(76)	01		SPI005 74 37A	
KA322	DCF	D5	38B	DXASTDX4	00 =			
KA322	DCF	D5	36A	(80)	01		DXGNIA 72 36A	
KA322	DCF	D6	38A	DXASTOX	00 =			
KA322	DCF	D6	37A	(76)	01		DXASLOX 74 37A	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXA0CB4  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
				DXA0CB4	00	H		
KA323	TLD	A1	05A	( )	01		DXA0CD 06 05A	
KA324	TLD	A1	05A	( )	02	+	DXB0CD 06 05A	
KA323	TLD	A1	05A	DXA0CC	00	=		DXA0CB4 BUSS
KA323	TLD	A1	06A	(06 )	01		DXA1E0 DXA0C0X 08 06A 10 07A	
KA321	DCF	A1	02B	DXA0CDX	00	=		DTA0CB BUSS
KA321	UCF	A1	05A	(07 )	01		DXA0EA 06 05A	
KA321	DCF	A2	03B	DXA0C0X	00	=		
KA321	DCF	A2	04B	(09 )	01		DXS031U 11 04B	
KA308	TD4	A1	05B	DXA0EA	00	=		PORT A OUTPUT ENABLE
KA308	TD4	A1	05A	(11 )	01		DXASLOX DXINHR DEVINH DXXC50 06 05A 08 06A 10 07A 13 06B	
				DXA1CB4	00	=		
KA323	TLD	A2	02B	( )	01		DXA1CD 01 02B	
KA324	TLD	A2	02B	( )	02	+	DXB1CD 01 02B	
KA323	TLD	A2	02B	DXA1CD	00	=		DXA1CB4 BUSS
KA323	TLD	A2	04A	(01 )	01		DXA1E0 DXA1C0X 04 04A 05 03B	
KA321	DCF	A3	07B	DXA1CDX	00	=		DTA1CB BUSS
KA321	DCF	A3	05A	(17 )	01		DXA0EA 06 05A	
KA321	DCF	A4	06B	DXA1C0X	00	=		
KA321	DCF	A4	05B	(15 )	01		DXS032U 13 05B	
				DXA2CB4	00	=		
KA323	TLD	A3	04B	( )	01		DXA2CD 09 04B	
KA324	TLD	A3	04B	( )	02	+	DXB2CD 09 04B	
KA323	TLD	A3	04B	DXA2CD	00	=		DXA2CB4 BUSS
KA323	TLD	A3	02A	(09 )	01		DXA1E0 DXA2C0X 03 02A 07 03A	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXA2CDX  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMINAL	DESIGNATOR	FACTOR	COMMENT
KA321	DCF	A5	08B	DXA2CDX	00	=		
KA321	DCF	A5	05A	(14)	01		DXA0EA 06 05A	DTA2CB BUSS
KA321	DCF	A6	07A	DXA2COX	00	=		
KA321	DCF	A6	06A	(10)	01		DXS033U 08 06A	
				DXA3CB4	00	=		
KA323	TLD	A4	07B	( )	01		DXA3CD 15 07B	
KA324	TLD	A4	07B	( )	02	+	DXB3CD 15 07B	
KA323	TLD	A4	07B	DXA3CD	00	=		DXA3CB4 BUSS
KA323	TLD	A4	05B	(15)	01		DXA1E0 DXA3COX 11 05B 13 06B	
KA321	DCF	A7	02A	DXA3CDX	00	=		DTA3CB BUSS
KA321	DCF	A7	05A	(01)	01		DXA0EA 06 05A	
KA321	DCF	A8	03A	DXA3COX	00	=		
KA321	DCF	A8	04A	(03)	01		DXS034U 04 04A	
				DXA4CB4	00	=		
KA323	TLD	B1	12A	( )	01		DXA4CD 22 12A	
KA324	TLD	B1	12A	( )	02	+	DXB4CD 22 12A	
KA323	TLD	B1	12A	DXA4CD	00	=		DXA4CB4 BUSS
KA323	TLD	B1	13A	(22)	01		DXA1E0 DXA4COX 24 13A 26 14A	
KA321	DCF	B1	10B	DXA4CDX	00	=		DTA4CB BUSS
KA321	DCF	B1	13A	(27)	01		DXA0EA 36 13A	
KA321	DCF	B2	11B	DXA4COX	00	=		
KA321	DCF	B2	12B	(29)	01		DXS471U 31 12B	
				DXA5CB4	00	=		
KA323	TLD	B2	09A	( )	01		DXA5CD 14 09A	
KA324	TLD	B2	09A	( )	02	+	DXB5CD 14 09A	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXA5CD  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA323	TLD	B2	09A	DXA5CD	00	=		
KA323	TLD	B2	10A	(14)	01		DXA1E0 DXA5COX 18 10A 20 11A	DXA5CB4 BUSS
KA321	DCF	B3	15B	DXA5CDX	00	=		
KA321	DCF	B3	13A	(17)	01		DXA0EA 36 13A	DTA5CB BUSS
KA321	DCF	B4	14B	DXA5COX	00	=		
KA321	DCF	B4	13B	(15)	01		DXS472U 33 13B	
				DXA6CB4	00	=		
KA323	TLD	B3	10B	( )	01		DXA6CD 21 10B	
KA324	TLD	B3	10B	( )	02	+	DXB6CD 21 10B	
KA323	TLD	B3	10B	DXA6CD	00	=		DXA6CB4 BUSS
KA323	TLD	B3	08B	(21)	01		DXA1E0 DXA6COX 17 08B 19 09B	
KA321	DCF	B5	16A	DXA6CDX	00	=		
KA321	DCF	B5	13A	(41)	01		DXA0EA 36 13A	DTA6CB BUSS
KA321	DCF	B6	15A	DXA6COX	00	=		
KA321	DCF	B6	14A	(40)	01		DXS473U 38 14A	
				DXA7CB4	00	=		
KA323	TLD	B4	13B	( )	01		DXA7CD 27 13B	
KA324	TLD	B4	13B	( )	02	+	DXB7CD 27 13B	
KA323	TLD	B4	13B	DXA7CD	00	=		DXA7CB4 BUSS
KA323	TLD	B4	11B	(27)	01		DXA1E0 DXA7COX 23 11B 25 12B	
KA321	DCF	B7	10A	DXA7CDX	00	=		
KA321	DCF	B7	13A	(23)	01		DXA0EA 36 13A	DTA7CB BUSS
KA321	DCF	B8	11A	DXA7COX	00	=		
KA321	DCF	B8	12A	(30)	01		DXS474U 34 12A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXBCMD  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA324	TLD	C2	15A	DXBCMD	00	=		
KA324	TLD	C2	16A	(30)	01		DXBIFO DXBCMOX 34 16A 36 17A	DXACMB4 BUSS
KA322	DCF	C5	31B	DXBCMDX	00	=		
KA322	DCF	C5	29A	(60)	01		DXBOEA 52 29A	DTBCMB BUSS
KA322	DCF	C6	31A	DXBCMOX	00	=		
KA322	DCF	C6	30A	(57)	01		DXGNIA 54 30A	
KA324	TLD	C3	16B	DXBEND	00	=		
KA324	TLD	C3	14B	(33)	01		DXBIFO DXBENOX 29 14B 31 15B	DXAENB4 BUSS
KA322	DCF	C7	25A	DXBENDX	00	=		
KA322	DCF	C7	29A	(43)	01		DXBOEA 52 29A	DTBENB BUSS
KA322	DCF	C8	26A	DXBENOX	00	=		
KA322	DCF	C8	28A	(48)	01		DXGNIA 50 28A	
KA302	TQ2	F2	34A	DXBIEA	00	=		
KA302	TQ2	F2	36A	(72)	01		DXBSLOX DXXDRA 71 36A 73 36B	PORT B INPUT ENABLE
KA104	THI	E4	28B	DXBIEO	00	=		
KA104	THI	E4	29B	(56)	01		DXBIEA 55 29B	
KA104	THI	E5	30B	DXBIFO	00	=		
KA104	THI	E5	31B	(57)	01		DXBIEA 59 31B	
KA322	DCF	C3	30B	DXBINDX	00	=		
KA322	DCF	C3	29A	(55)	01		DXBOEA 52 29A	DTBINB BUSS
KA322	DCF	C4	29B	DXBINOX	00	=		
KA322	DCF	C4	28B	(56)	01		DXDBIO 51 28B	
KA324	TLD	C1	18A	DXBPCD	00	=		
KA324	TLD	C1	19A	(38)	01		DXBIFO DXBPCOX 40 19A 42 20A	DXAPCB4 BUSS



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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIG	DATE	FACTOR	COMMENT
KA322	DCF	C1 25B	DXBPCDX	00	=			
KA322	DCF	C1 29A	(46)	01			DXBOEA 52 29A	DT8PCB BUSS
KA322	DCF	C2 26B	DXBPCOX	00	=			
KA322	DCF	C2 27B	(47)	01			DXDSBPR 49 27B	
KA308	TD4	B2 10B	DXBRQA	00	=			
KA308	TD4	B2 09A	(21)	01			DXBSLOX DXINHR DEVINH DXARQ 14 09A 18 10A 19 09B 20 11A	
KA104	THI	F2 36B	DXBRQ0	00	=			
KA104	THI	F2 37B	(71)	01			DXBRQA 73 37B	
KA105	TT3	E1 30A	DX9RSA	00	=			PORT B RESET
KA105	TT3	E1 31A	(64)	01			DXBCMOX DXBENOX DXBSLOX 66 31A 68 32A 70 33A	
KA323	TLD	D3 24B	DXBR4D1	00	=			
KA323	TLD	D3 22B	(45)	01			DXADE04 DXBRQ0 41 22B 43 23B	(DXADE04)
KA323	TLD	D4 27B	DXBR5D1	00	=			
KA323	TLD	D4 25B	(51)	01			DXADEA DXBRQ0 47 25B 49 26B	
KA301	TQ2	E2 28A	DXBSLA	00	=			
KA301	TQ2	E2 29A	(60)	01			DXBSLOX SPI019 62 29A 64 30A	
KA321	DCF	D7 33A	DXBSLDX4	00	=			PORT B SELECT DRI/RCVR
KA321	DCF	D7 36A	(61)	01			SPI025 72 36A	
KA321	DCF	D8 34A	DXBSLOX	00	=			
KA321	DCF	D8 35A	(68)	01			SPI007 70 35A	
KA322	DCF	D7 33A	DXBSTDX4	00	=			
KA322	DCF	D7 36A	(61)	01			DXGNIA 72 36A	
KA322	DCF	D3 34A	DXBSTOX	00	=			
KA322	DCF	D8 35A	(68)	01			DXBSLOX 70 35A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXBOCD  
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CONNECTOR	PLUG GROUP	GROUP	TEST POINTS AND/OR	EQUATION	TER MIN	DESIG NATION	FACTOR	COMMENT
KA324	TLD	A1	05A	DXBOCD	00 =			
KA324	TLD	A1	06A	(06)	01		DXBIE0 DXBOCOX 08 06A 10 07A	DXA0CB4 BUSS
KA322	DCF	A1	02B	DXBOCDX	00 =			
KA322	DCF	A1	05A	(07)	01		DXBOEA 06 05A	DTB0CB BUSS
KA322	DCF	A2	03B	DXBOCOX	00 =			
KA322	DCF	A2	04B	(09)	01		DXS031U 11 04B	
KA308	TD4	A2	04B	DXBOEA	00 =			
KA308	TD4	A2	02B	(09)	01		DXBSLOX DXINHR DEVINH DXXC50 01 02B 04 04A 05 03B 07 03A	PORT B OUTPUT ENABLE
KA324	TLD	A2	02B	DXB1CD	00 =			
KA324	TLD	A2	04A	(01)	01		DXBIE0 DXB1COX 04 04A 05 03B	DXA1CB4 BUSS
KA322	DCF	A3	07B	DXB1CDX	00 =			
KA322	DCF	A3	05A	(17)	01		DXBOEA 06 05A	DTB1CB BUSS
KA322	DCF	A4	06B	DXB1COX	00 =			
KA322	DCF	A4	05B	(15)	01		DXS032U 13 05B	
KA324	TLD	A3	04B	DXB2CD	00 =			
KA324	TLD	A3	02A	(09)	01		DXBIE0 DXB2COX 03 02A 07 03A	DXA2CB4 BUSS
KA322	DCF	A5	08B	DXB2CDX	00 =			
KA322	DCF	A5	05A	(14)	01		DXBOEA 06 05A	DTB2CB BUSS
KA322	DCF	A6	07A	DXB2COX	00 =			
KA322	DCF	A6	06A	(10)	01		DXS033U 08 06A	
KA324	TLD	A4	07B	DXB3CD	00 =			
KA324	TLD	A4	05B	(15)	01		DXBIE0 DXB3COX 11 05B 13 06B	DXA3CB4 BUSS
KA322	DCF	A7	02A	DXB3CDX	00 =			
KA322	DCF	A7	05A	(01)	01		DXBOEA 06 05A	DTB3CB BUSS

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXB3COX  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA322	DCF	A8	03A	DXB3COX	00	=		
KA322	DCF	A8	04A	(03 )	01	=	DXS034U 04 04A	
KA324	TLD	B1	12A	DXB4CD	00	=		DXA4CB4 BUSS
KA324	TLD	B1	13A	(22 )	01	=	DXB1E0 DXB4COX 24 13A 26 14A	
KA322	DCF	B1	10B	DXB4CDX	00	=		DTB4CB BUSS
KA322	DCF	B1	13A	(27 )	01	=	DXB0EA 36 13A	
KA322	DCF	B2	11B	DXB4COX	00	=		
KA322	DCF	B2	12B	(29 )	01	=	DXS471U 31 12B	
KA324	TLD	B2	09A	DXB5CD	00	=		DXA5CB4 BUSS
KA324	TLD	B2	10A	(14 )	01	=	DXB1E0 DXB5COX 18 10A 20 11A	
KA322	DCF	B3	15B	DXB5CDX	00	=		DTB5CB BUSS
KA322	DCF	B3	13A	(37 )	01	=	DXB0EA 36 13A	
KA322	DCF	B4	14B	DXB5COX	00	=		
KA322	DCF	B4	13B	(35 )	01	=	DXS472U 33 13B	
KA324	TLD	B3	10B	DXB6CD	00	=		DXA6CB4 BUSS
KA324	TLD	B3	08B	(21 )	01	=	DXB1E0 DXB6COX 17 08B 19 09B	
KA322	DCF	B5	16A	DXB6CDX	00	=		DTB6CB BUSS
KA322	DCF	B5	13A	(41 )	01	=	DXB0EA 36 13A	
KA322	DCF	B6	15A	DXB6COX	00	=		
KA322	DCF	B6	14A	(40 )	01	=	DXS473U 38 14A	
KA324	TLD	B4	13B	DXB7CD	00	=		DXA7CB4 BUSS
KA324	TLD	B4	11B	(27 )	01	=	DXB1E0 DXB7COX 23 11B 25 12B	
KA322	DCF	B7	10A	DXB7CDX	00	=		DTB7CB BUSS
KA322	DCF	B7	13A	(23 )	01	=	DXB0EA 36 13A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXB7COX  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST POINT	DESIGNATION	FACTOR	COMMENT
KA322	DCF	B8	11A	DXB7COX	00	=		
KA322	DCF	B8	12A	(30)	01		DXS474U 34 12A	
KA308	TD4	E1	31B	DXCA0A	00	=		
KA308	TD4	E1	32B	(59)	01		DXADRO DXRCMS DXX050 DXROPA 61 32B 66 31A 68 32A 70 33A	
KA304	TS8	D1	25B	DXCA1A	00	=		
KA304	TS8	D1	23B	(47)	01		DXCMAS DXXB10 DXXAOP DXXA1Q DXRPCS DXR0CS DXR1CR DXR2CR 43 23B 46 21A 48 22A 49 26B 50 23A 52 24A 54 25A 56 26A	
KA314	TQ2	E1	31A	DXCA10	00	=		
KA314	TQ2	E1	32A	(66)	01		DXCA1A SPT024 68 32A 70 33A	
KA308	TD4	E2	30B	DXCMAR	00	=		
KA308	TD4	E2	29B	(57)	01		DXCMAS DXXB2A DXX04A DXRS0B 55 29B 60 28A 62 29A 64 30A	
KA310	TQ2	E1	31A	DXCMAS	00	=		ADDRESS STORE F/F
KA310	TQ2	E1	32A	(66)	01		DXCMAR DXCA0A 68 32A 70 33A	
KA310	TQ2	B3	10B	DXCP1A	00	=		CLOCK PHASE 1
KA310	TQ2	B3	08B	(21)	01		DX1MAP DX1M6Q 17 08B 19 09B	
KA104	THI	D2	23A	DXCP10	00	=		
KA104	THI	D2	24A	(49)	01		DXCP1A 47 24A	
KA310	TQ2	B4	13B	DXCP3A	00	=		CLOCK PHASE 3
KA310	TQ2	B4	11B	(27)	01		DX1MAQ DX1MBP 23 11B 25 12B	
KA104	THI	D3	21A	DXCP30	00	=		
KA104	THI	D3	22A	(48)	01		DXCP3A 50 22A	
KA311	TT3	E1	30A	DXDBIA	00	=		
KA311	TT3	E1	31A	(64)	01		DXXDSQ DXXDOP DXXD1Q 66 31A 68 32A 70 33A	
KA105	TT3	F1	36B	DXDB10	00	=		
KA105	TT3	F1	37B	(73)	01		DXXCIF DXXDIP DXDBIA 75 37B 77 38B 79 39B	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXDB0TA  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST Y	DESIGNATION	FACTOR	COMMENT
KA316	MUX	D1	27B	DXDB0TA	00	=		
KA316	MUX	D1	25B	(55)	01		DMIPEQ DXD00TA DXXC1Q DXXD1P 51 25B 53 26B 52 25A 49 24B	
KA316	MUX	D2	31B	DXDB0TB	00	=		
KA316	MUX	D2	29B	(61)	01		DHT0VQ DXD00TB 57 29B 59 30B	
KA316	MUX	D3	28A	DXDB0TC	00	=		
KA316	MUX	D3	26A	(60)	01		DREKRO DXD00TC 54 26A 56 28B	
KA316	MUX	D4	31A	DXDB0TD	00	=		
KA316	MUX	D4	29A	(63)	01		DKPERQ DXD00TD 62 29A 64 30A	
KA316	MUX	E1	34B	DXDB4TA	00	=		
KA316	MUX	E1	32A	(73)	01		DCYERQ DXD01TA DXXC1Q DXXD1P 69 32A 71 33B 68 33A 66 32B	
KA316	MUX	E2	37B	DXDB4TB	00	=		
KA316	MUX	E2	35B	(79)	01		DKSERQ DXD01TB 75 35B 77 36B	
KA316	MUX	E3	36A	DXDB4TC	00	=		
KA316	MUX	E3	34A	(74)	01		DR0PCQ DXD01TC 70 34A 72 35A	
KA316	MUX	E4	38B	DXDB4TD	00	=		
KA316	MUX	E4	37A	(80)	01		DRSNRQ DXD01TD 76 37A 78 38A	
KA315	MUX	A1	02A	DXDC01X	00	=		
KA315	MUX	A1	02B	(04)	01		DB000Q DB080Q DB240Q DB160Q DITORO DRASTO DTA010X DTA090X 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	MUX INPUT BIT 0 BYTES 0-3 DATA + ITR 0
KA315	MUX	A2	03A	DXDC02X	00	=		
KA315	MUX	A2	06A	(06)	01		DXXD0Q DXXD1Q DXXDDP DGND1A 14 06A 10 05A 08 04A 13 07A	
KA315	MUX	B1	10A	DXDC11X	00	=		
KA315	MUX	B1	09B	(20)	01		DB010Q DB090Q DB250Q DB170Q DITR1Q DRA0A0X DRSA13U DTA080X 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	MUX INPUT BIT 1 BYTES 0-3 DATA + ITR 0
KA315	MUX	B2	11A	DXDC12X	00	=		
KA315	MUX	B2	14A	(22)	01		DXXD0Q DXXD1Q DXXDDP DGND1A 27 14A 26 13A 24 12A 30 15A	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMINAL	DESIGNATOR	FACTOR	COMMENT
KA315	MUX	C1	17A	DXDC21X	00	=	MUX INPUT	BIT 2 BYTES 0-3
KA315	MUX	C1	16B	(36)	01		DB020Q DB100Q DB260Q DB180Q DREB4A DRA1A0X DRSA12U DTA070X 35 16B 37 17B 39 18B 41 19B 43 22B 45 23B 47 23A 50 24A	DATA + ITR 0
KA315	MUX	C2	18A	DXDC22X	00	=		
KA315	MUX	C2	21A	(38)	01		DXXD0Q DXXD1Q DXXDDP DGND1A 46 21A 42 20A 40 19A 48 22A	
KA316	MUX	A1	02A	DXDC31X	00	=	MUX INPUT	BIT 3 BYTES 0-3
KA316	MUX	A1	02B	(04)	01		DB030Q DB110Q DB270Q DB190Q DREB3A DRA2A0X DRSA11U DTA060X 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	DATA + ITR 0
KA316	MUX	A2	03A	DXDC32X	00	=		
KA316	MUX	A2	06A	(06)	01		DXXD0Q DXXD1Q DXXDDP DGND1A 14 06A 10 05A 08 04A 13 07A	
KA316	MUX	B1	10A	DXDC41X	00	=	MUX INPUT	BIT 4 BYTES 0-3
KA316	MUX	B1	09B	(20)	01		DB040Q DB120Q DB280Q DB200Q DREB2A DRA3A0X DRSA04U DTA050X 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	DATA + ITR 0
KA316	MUX	B2	11A	DXDC42X	00	=		
KA316	MUX	B2	14A	(22)	01		DXXD0Q DXXD1Q DXXDDP DGND1A 27 14A 26 13A 24 12A 30 15A	
KA316	MUX	C1	17A	DXDC51X	00	=	MUX INPUT	BIT 5 BYTES 0-3
KA316	MUX	C1	16B	(36)	01		DB050Q DB130Q DB290Q DB210Q DREB1A DRAS1DX DRSA03U DTA040X 35 16B 37 17B 39 18B 41 19B 43 22B 45 23B 47 23A 50 24A	DATA + ITR 0
KA316	MUX	C2	18A	DXDC52X	00	=		
KA316	MUX	C2	21A	(38)	01		DXXD0Q DXXD1Q DXXDDP DGND1A 46 21A 42 20A 40 19A 48 22A	
KA317	MUX	A1	02A	DXDC61X	00	=	MUX INPUT	BIT 6 BYTES 0-3
KA317	MUX	A1	02B	(04)	01		DB060Q DB140Q DB300Q D9220Q DRCL0X DRAS0DX DRSA02U DTA030X 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	DATA + ITR 0
KA317	MUX	A2	03A	DXDC62X	00	=		
KA317	MUX	A2	06A	(06)	01		DXXD0Q DXXD1Q DXXDDP DGND1A 14 06A 10 05A 08 04A 13 07A	
KA317	MUX	B1	10A	DXDC71X	00	=	MUX INPUT	BIT 7 BYTES 0-3
KA317	MUX	B1	09B	(20)	01		DB070Q DB150Q DB310Q DB230Q DRPE0X DTA100X DRSA01U DTA020X 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	DATA + ITR 0
KA317	MUX	B2	11A	DXDC72X	00	=		
KA317	MUX	B2	14A	(22)	01		DXXD0Q DXXD1Q DXXDDP DGND1A 27 14A 26 13A 24 12A 30 15A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	MUX	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA320	MUX	A1	02A	DXDD01X	00	=		MUX INPUT BIT 0 BYTES 0-3
KA320	MUX	A1	02B	(04)	01		DIT0R0 DMB11A DMAA13U DMAA33U DIT0P0 DCYT00 DMMC13U DMMC33U 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	ITR 1 + ITR 2
KA320	MUX	A2	03A	DXDD02X	00	=		
KA320	MUX	A2	06A	(06)	01		DXXD0Q DXXDIQ DITR0Q DGND3A 14 06A 10 05A 08 04A 13 07A	
KA320	MUX	B1	10A	DXDD11X	00	=		MUX INPUT BIT 1 BYTES 0-3
KA320	MUX	B1	09B	(20)	01		DITR1Q DMB04A DMAA12U DMAA32U DIT1R0 DWR000 DMMC12U DMMC32U 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	ITR 1 + ITR 2
KA320	MUX	B2	11A	DXDD12X	00	=		
KA320	MUX	B2	14A	(22)	01		DXXD0Q DXXDIQ DITR0Q DGND3A 27 14A 26 13A 24 12A 30 15A	
KA320	MUX	C1	17A	DXDD21X	00	=		MUX INPUT BIT 2 BYTES 0-3
KA320	MUX	C1	16B	(36)	01		DMB23A DMB03A DMAA11U DMAA31U DRC1LQ DR0N00 DMMC11U DMMC31U 35 16B 37 17B 39 18B 41 19B 43 22B 45 23B 47 23A 50 24A	ITR 1 + ITR 2
KA320	MUX	C2	18A	DXDD22X	00	=		
KA320	MUX	C2	21A	(38)	01		DXXD0Q DXXDIQ DITR0Q DGND3A 46 21A 42 20A 40 19A 48 22A	
KA319	MUX	A1	02A	DXDD31X	00	=		MUX INPUT BIT 3 BYTES 0-3
KA319	MUX	A1	02B	(04)	01		DMB22A DMB02A DMAA04U DMAA24U DTCWFO DMT100 DMMC04U DMMC24U 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	ITR 1 + ITR 2
KA319	MUX	A2	03A	DXDD32X	00	=		
KA319	MUX	A2	06A	(06)	01		DXXD0Q DXXDIQ DITR0Q DGND2A 14 06A 10 05A 08 04A 13 07A	
KA319	MUX	B1	10A	DXDD41X	00	=		MUX INPUT BIT 4 BYTES 0-3
KA319	MUX	B1	09B	(20)	01		DMB21A DMB01A DMAA03U DMAA23U DTCCMQ D0VERQ DMMC03U DMMC23U 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	ITR 1 + ITR 2
KA319	MUX	B2	11A	DXDD42X	00	=		
KA319	MUX	B2	14A	(22)	01		DXXD0Q DXXDIQ DITR0Q DGND2A 27 14A 26 13A 24 12A 30 15A	
KA319	MUX	C1	17A	DXDD51X	00	=		MUX INPUT BIT 5 BYTES 0-3
KA319	MUX	C1	16B	(36)	01		DMB14A DMA1DQ DMAA02U DMAA22U D0US20 DRA1LQ DMMC02U DMMC22U 35 16B 37 17B 39 18B 41 19B 43 22B 45 23B 47 23A 50 24A	ITR 1 + ITR 2
KA319	MUX	C2	18A	DXDD52X	00	=		
KA319	MUX	C2	21A	(38)	01		DXXD0Q DXXDIQ DITR0Q DGND4A 46 21A 42 20A 40 19A 48 22A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	TYPE	POINT	TEST POINTS AND OR	EQUATION	TEST	LOGIC	FACTOR	COMMENT
KA318	MUX	A1	02A	DXDD61X	00	=		
KA318	MUX	A1	02B	(04)	01		DMB13A DMAA41U DMAA01U DMAA21U DRIGE0 DMMC41U DMMC01U DMMC21U 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	MUX INPUT BIT 6 BYTES 0-3 ITR 1 + ITR 2
KA318	MUX	A2	03A	DXDD62X	00	=		
KA318	MUX	A2	06A	(06)	01		DXX000 DXXD10 DITR00 DGND2A 14 06A 10 05A 08 04A 13 07A	
KA318	MUX	B1	10A	DXDD71X	00	=		
KA318	MUX	B1	09B	(20)	01		DMB12A DMAA34U DGND3A DMAA14U DLPT00 DMMC34U DXIOPQ DMMC14U 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	MUX INPUT BIT 7 BYTES 0-3 ITR 1 + ITR 2
KA318	MUX	B2	11A	DXDD72X	00	=		
KA318	MUX	B2	14A	(22)	01		DXX000 DXXD10 DITR00 DGND2A 27 14A 26 13A 24 12A 30 15A	
KA104	THI	F5	36A	DXDEVA	00	=		
KA104	THI	F5	37A	(78)	01		DXR3CS 76 37A	
KA312	TD4	B2	10B	DXDEVR	00	=		
KA312	TD4	B2	09A	(21)	01		DXDEVS DXXB0A DXXB3A DXRS0B 14 09A 18 10A 19 09B 20 11A	
KA314	TQ2	E4	33B	DXDEVS	00	=		DEVICE COMMAND STORE F/F
KA314	TQ2	E4	31B	(63)	01		DXDEVR DXDVOA 59 31B 61 32B	
KA314	TQ2	E2	28A	DXDEVO	00	=		
KA314	TQ2	E2	29A	(60)	01		DXDEVA SPI024 62 29A 64 30A	
KA219	TT3	E1	30A	DXOIRA	00	=		COMP. COMP. CHAIN. READ
KA219	TT3	E1	31A	(64)	01		DXXDIQ DXXCS0 SPI001 66 31A 68 32A 70 33A	BIT 33
KA226	PAR	B1	14A	DXOSBPR	00	=		
KA226	PAR	B1	09B	(25)	01		DXS031U DXS032U DXS033U DXS034U DXS471U DXS472U DXS473U DXS474U 17 09B 19 10B 21 11B 23 12B 24 12A 22 11A 20 10A 18 09A	
KA226	PAR	B1	13B	( )	02	+	DXXCIQ 27 13B	
KA314	TQ2	A1	05A	DXOVCO	00	=		
KA314	TQ2	A1	06A	(06)	01		DXR090T SPI024 08 06A 10 07A	
KA312	TD4	B1	11B	DXOVSR	00	=		
KA312	TD4	B1	12A	(23)	01		DXOVSS DXXB0A DXXB3A DXRS0B 22 12A 24 13A 25 12B 26 14A	



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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TERM	DEFINITION	FACTOR	COMMENT
			AND	OR					
KA314	TQ2	E3	30B		DXDVSS	00	=		DEV COMMAND STOP STORE F/F
KA314	TQ2	E3	28B		(57)	01		DXDVSR DXDV5A 53 28B 55 29B	
KA304	TS8	F1	37A		DXDVXA	00	=		DEV CMD WITH BUSY NOT IN
KA304	TS8	F1	36A		(76)	01		DXDVSS DXXB20 DXXA0P DXXA1Q DXROPA SPI020 SPI021 SPI018 71 36A 72 34A 73 36B 74 35B 75 37B 77 38B 78 38A 79 39B	EQUATION
KA303	TQ2	E1	31A		DXDVX0	00	=		
KA303	TQ2	E1	32A		(166)	01		DXDVXA SPI021 68 32A 70 33A	
KA312	TD4	A1	05B		DXDV0A	00	=		
KA312	TD4	A1	05A		(11)	01		DXCA10 DXDEV0 DXDVCO DBUSYA 06 05A 08 06A 10 07A 13 06B	
KA304	TS8	C1	17B		DXDV1A	00	=		
KA304	TS8	C1	15A		(35)	01		DXDEVS DXXB20 DXXA0P DXXA1Q DXROPA SPI021 SPI020 SPI018 30 15A 31 15B 34 16A 36 17A 37 18B 38 18A 40 19A 42 20A	
					DXDV1B	00	=		
KA303	TQ2	D1	24A		( )	01		DXDV10 52 24A	
KA303	TQ2	D2	21A		( )	02	+	DXDV20 46 21A	
KA303	TQ2	D3	24B		( )	03	+	DXDV30 45 24B	
KA303	TQ2	D4	27B		( )	04	+	DXDV40 51 27B	
KA303	TQ2	D1	24A		DXDV10	00	=		DXDV1B BUSS
KA303	TQ2	D1	25A		(52)	01		DXDV1A SPI021 54 25A 56 26A	
KA303	TQ2	D2	21A		DXDV20	00	=		DXDV1B BUSS
KA303	TQ2	D2	22A		(46)	01		DXDV1A SPI021 48 22A 50 23A	
KA303	TQ2	D3	24B		DXDV30	00	=		DXDV1B BUSS
KA303	TQ2	D3	22B		(45)	01		DXDV1A SPI021 41 22B 43 23B	
KA303	TQ2	D4	27B		DXDV40	00	=		DXDV1B BUSS
KA303	TQ2	D4	25B		(51)	01		DXDV1A SPI021 47 25B 49 26B	
KA311	TT3	A1	04A		DXDV5A	00	=		
KA311	TT3	A1	05A		(04)	01		DXCA10 DXDEV0 DXDVCO 06 05A 08 06A 10 07A	

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LOGIC

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CONNECTOR	UNIT	POINT	TEST POINTS AND/OR	EQUATION	TEST	TEST DATA	FACTOR	COMMENT
KA317	MUX	D1	27B	DXD00TA	00	=	MUX-DATA	ITR 0 + ITR 1 ITR 2
KA317	MUX	D1	25B	(55 )	01		DXDC01X DXDD01X DXGN5A DXXD50 51 25B 53 26B 52 25A 49 24B	BIT 0
KA317	MUX	D2	31B	DXD00TB	00	=	MUX-DATA	ITR 0 + ITR 1 ITR 2
KA317	MUX	D2	29B	(61 )	01		DXDC11X DXDD11X 57 29B 59 30B	BIT 1
KA317	MUX	D3	28A	DXD00TC	00	=	MUX-DATA	ITR 0 + ITR 1 ITR 2
KA317	MUX	D3	26A	(60 )	01		DXDC21X DXDD21X 54 26A 56 28B	BIT 2
KA317	MUX	D4	31A	DXD00TD	00	=	MUX-DATA	ITR 0 + ITR 1 ITR 2
KA317	MUX	D4	29A	(63 )	01		DXDC31X DXDD31X 62 29A 64 30A	BIT 3
KA315	MUX	D1	27B	DXD01TA	00	=	MUX-DATA	ITR 0 + ITR 1 ITR 2
KA315	MUX	D1	25B	(55 )	01		DXDC41X DXD041X DXGN5A DXXD50 51 25B 53 26B 52 25A 49 24B	BIT 4
KA315	MUX	D2	31B	DXD01TB	00	=	MUX-DATA	ITR 0 + ITR 1 ITR 2
KA315	MUX	D2	29B	(61 )	01		DXDC51X DXDD51X 57 29B 59 30B	BIT 5
KA315	MUX	D3	28A	DXD01TC	00	=	MUX-DATA	ITR 0 + ITR 1 ITR 2
KA315	MUX	D3	26A	(60 )	01		DXDC61X DXDD61X 54 26A 56 28B	BIT 6
KA315	MUX	D4	31A	DXD01TD	00	=	MUX-DATA	ITR 0 + ITR 1 ITR 2
KA315	MUX	D4	29A	(63 )	01		DXDC71X DXDD71X 62 29A 64 30A	BIT 7
KA308	TD4	D1	25B	DXEAOA	00	=		
KA308	TD4	D1	26B	(47 )	01		DXADRO DXRENS DXX050 DXROPA 49 26B 52 24A 54 25A 56 26A	
KA310	TQ2	C1	18A	DXEAOO	00	=		
KA310	TQ2	C1	19A	(38 )	01		DXEAOA SPI022 40 19A 42 20A	
KA311	TT3	A3	07B	DXEBOA	00	=		
KA311	TT3	A3	04B	(15 )	01		DXCA10 DXDEVA DXE0B0 09 04B 11 05B 13 06B	
KA305	YDD	E1	19A	DXEBOI	00	=		
KA305	YDD	E1	19A	( )	01		DXGN1A 40 19A	

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LOGIC

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CONNECTOR	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA305	TDD	EN 20A	DXEBON ( )	00	=		
				01		DXEB1A 42 20A	
KA305	TDD	EP 17B	DXEBOP ( )	00	=		
KA305	TDD	EP 18A	(35 )	01		DXRS0B 38 18A	
KA305	TDD	EQ 18B	DXE90Q ( )	00	=		EOB SYNC COUNTER BIT 0
KA305	TDD	EQ 19B	(37 )	01		DXE90A 39 19B	
KA314	TQ2	C2 15A	DXEB1A ( )	00	=		
KA314	TQ2	C2 16A	(30 )	01		DXEB1Q DXCP30 34 16A 36 17A	
			DXEB1I ( )	00	=		
KA306	TDD	GI 25A	( )	01		DXEB0Q 54 25A	
			DXEB1N ( )	00	=		
KA306	TDD	GN 26A	( )	01		DXCP10 56 26A	
KA306	TDD	GP 25B	DXEB1P ( )	00	=		
KA306	TDD	GP 24A	(47 )	01		DXRS0B 52 24A	
KA306	TDD	GQ 26B	DXEB1Q ( )	00	=		EOB SYNC COUNTER BIT 1
KA306	TDD	GQ 27B	(49 )	01		SPI021 51 27B	
KA308	TD4	D2 24B	DXENAR ( )	00	=		
KA308	TD4	D2 23B	(45 )	01		DXENAS DXXB5A DXX04A DXRS0B 43 23B 46 21A 48 22A 50 23A	
KA310	TQ2	D1 24A	DXENAS ( )	00	=		ENABLE STORE F/F
KA310	TQ2	D1 25A	(52 )	01		DXENAR DXEAOA 54 25A 56 26A	
KA314	TQ2	A3 04B	DXE0B0 ( )	00	=		EOB PULSE
KA314	TQ2	A3 02A	(09 )	01		DXR092Y SPI024 03 02A 07 03A	
KA301	TQ2	D1 24A	DXGN1A ( )	00	=		
KA301	TQ2	D1 25A	(52 )	01		SPI020 SPI019 54 25A 56 26A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA301	TQ2	D2	21A	DXGN4A	00 =		
KA301	TQ2	D2	22A	(46)	01	SPI019 SPI020 48 22A 50 23A	
KA301	TQ2	D3	24B	DXGN5A	00 =		
KA301	TQ2	D3	22B	(45)	01	SPI020 SPT019 41 22B 43 23B	
KA301	TQ2	D4	27B	DXGN6A	00 =		
KA301	TQ2	D4	25B	(51)	01	SPI020 SPI019 47 25B 49 26B	
KA314	TQ2	A2	02B	DXHST0	00 =		
KA314	TQ2	A2	04A	(01)	01	DXR091T SPI024 04 04A 05 03B	
KA311	TT3	B1	11A	DXH50A	00 =		
KA311	TT3	B1	12A	(25)	01	DXCA10 DXDEVA DXHST0 22 12A 24 13A 26 14A	
KA314	TQ2	F4	39A	DXINHR	00 =		
KA314	TQ2	F4	37A	(80)	01	DXINHS DXINOA 76 37A 78 38A	
KA311	TT3	F1	36B	DXINHS	00 =		OFF LINE STORE F/F
KA311	TT3	F1	37B	(73)	01	DXINHR DXONLO DXRS0B 75 37B 77 38B 79 39B	
KA311	TT3	F2	35B	DXINOA	00 =		
KA311	TT3	F2	34B	(74)	01	DXRS0B DXCMAS DXONLO 65 34B 71 36A 72 34A	
KA314	TQ2	B1	12A	DXIRCO	00 =		
KA314	TQ2	B1	13A	(22)	01	DXR094T SPI024 24 13A 26 14A	
KA311	TT3	A2	03A	DXIROA	00 =		
KA311	TT3	A2	02B	(07)	01	DXCA10 DXDEVA DXIRCO 01 02B 03 02A 05 03B	
				DXIROI	00 =		
KA305	TDD	DI	10A	( )	01	DXGNIA 18 10A	
				DXIRON	00 =		
KA305	TDD	DN	09A	( )	01	DXIRIA 14 09A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXIR0P  
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CONNECTOR	CIRCUIT TYPE	PORT	TEST POINTS AND/OR	EQUATION	TERMINAL	DESIGNATOR	FACTOR	COMMENT
KA305	TDD	DP	10B	DXIR0P	00	=		
KA305	TDD	DP	11A	(21)	01		DXRSUB 20 11A	
KA305	TDD	DQ	09B	DXIROQ	00	=		ITR SYNC COUNTER BIT 0
KA305	TDD	DQ	08B	(19)	01		DXIROA 17 08B	
KA314	TQ2	CI	18A	DXIR1A	00	=		
KA314	TQ2	CI	19A	(38)	01		DXIRIQ DXCP30 40 19A 42 20A	
KA307	TDD	HI	22A	DXIR1I	00	=		
KA307	TDD	HI		( )	01		DXIROO 48 22A	
KA307	TDD	HN	21A	DXIR1N	00	=		
KA307	TDD	HN		( )	01		DXCP10 46 21A	
KA307	TDD	HP	24B	DXIR1P	00	=		
KA307	TDD	HP	23A	(45)	01		DXRSUB 50 23A	
KA307	TDD	HQ	23B	DXIR1Q	00	=		ITR SYNC COUNTER BIT 1
KA307	TDD	HQ	22B	(43)	01		SPI020 41 22B	
KA305	TDD	FI	15A	DXI0P1	00	=		
KA305	TDD	FI		( )	01		SPI021 34 16A	
KA305	TDD	FN	15A	DXI0PN	00	=		
KA305	TDD	FN		( )	01		SPI020 30 15A	
KA305	TDD	FP	16B	DXI0PP	00	=		
KA305	TDD	FP	17A	(33)	01		DBTATA 36 17A	
KA305	TDD	FQ	15B	DXI0PQ	00	=		I/O PARITY ERROR - OER
KA305	TDD	FQ	14B	(31)	01		DX0DEA 29 14B	
KA314	TQ2	D4	27B	DXPRSA	00	=		
KA314	TQ2	D4	25B	(51)	01		DXPR50X SPI024 47 25B 49 26B	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TEST	DESIG. FACTOR	FACTOR	COMMENT
			AND	OR					
KA321	DCF	D3	37B		DXPRSDX4	00	II		
KA321	DCF	D3	36A		(78 )	01		SPI025 72 36A	PORT RESET DRI/RCVR
KA321	DCF	D4	36B		DXPRSOX	00	=		
KA321	DCF	D4	35B		(75 )	01		SPI018 73 35B	
KA313	DBC	B1	12A		DXRAF0T	00	=		
KA313	DBC	B1	10A		(24 )	01		DXR7CS 20 10A	
KA313	DBC	B2	13A		DXRAF1T	00	=		
KA313	DBC	B2	11A		(26 )	01		DXR6CS 22 11A	
KA313	DBC	B3	14A		DXRAF2T	00	=		
KA313	DBC	B3	09B		(27 )	01		DXR5CS 19 09B	
KA313	DBC	B4	15A		DXRAF3T	00	=		
KA313	DBC	B4	10B		(30 )	01		DXR4CR 21 10B	
KA313	DBC	B5	16A		DXRAF4T	00	=		
KA313	DBC	B5			(33 )	01		SPA 4T	
KA313	DBC	B6	11B		DXRAF5T	00	=		
KA313	DBC	B6			(23 )	01		SPA 5T	
KA313	DBC	B7	12B		DXRAF6T	00	=		
KA313	DBC	B7			(25 )	01		SPD SPA 6T	
KA313	DBC	B8	13B		DXRAF7T	00	=		
KA313	DBC	B8			(29 )	01		SPA 7T	
KA313	DBC	B9	14B		DXRAF8T	00	=		
KA313	DBC	B9			(31 )	01		SPA 8T	
KA313	DBC	B0	15B		DXRAF9T	00	=		
KA313	DBC	B0			(34 )	01		SPA 9T	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA104	THI	F3	34B	DXRA40	00	=		
KA104	THI	F3	35B	(70)	01		DXRAF4T 69 35B	CODE FOR DEV BOOTSTRAP
KA104	THI	F4	34A	DXRA60	00	=		
KA104	THI	F4	35A	(72)	01		DXRBF6T 74 35A	DECODE FOR D.M.A.-DEV CODE
KA314	TQ2	F2	34A	DXRA70	00	=		
KA314	TQ2	F2	36A	(72)	01		DXRAF7T SPI024 71 36A 73 36B	DEV CODE LOAD ITR COUNTER
KA220	DBC	B1	12A	DXRBF0T	00	=		
KA220	DBC	B1	10A	(24)	01		DXR7CS 20 10A	
KA220	DBC	B2	13A	DXRBF1T	00	=		
KA220	DBC	B2	11A	(26)	01		DXR6CS 22 11A	
KA220	DBC	B3	14A	DXRBF2T	00	=		
KA220	DBC	B3	09B	(27)	01		DXR5CS 19 09B	
KA220	DBC	B4	15A	DXRBF3T	00	=		
KA220	DBC	B4	10B	(30)	01		DXR4CR 21 10B	
KA220	DBC	B5	16A	DXRBF4T	00	=		
KA220	DBC	B5		(33)	01		SPA 4T	
KA220	DBC	B6	11B	DXRBF5T	00	=		
KA220	DBC	B6		(23)	01		SPA 5T	
KA220	DBC	B7	12B	DXRBF6T	00	=		
KA220	DBC	B7		(25)	01		SPA 6T	
KA220	DBC	B8	13B	DXRBF7T	00	=		
KA220	DBC	B8		(29)	01		SPA 7T	
KA220	DBC	B9	14B	DXRBF8T	00	=		
KA220	DBC	B9		(31)	01		SPA 8T	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXRBF9T  
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CONNECTOR	GROUP	TEST POINTS AND/OR	EQUATION	TERM	ORIGINATOR	FACTOR	COMMENT
KA220	DBC	B0 15B	DXRBF9T	00	=		
KA220	DBC	B0	(34)	01	=	SPA 9T	
KA302	TQ2	C2 15A	DXRCMR	00	=		
KA302	TQ2	C2 16A	(30)	01	=	DXRCMS DXRRSA 34 16A 36 17A	
KA301	TQ2	C2 15A	DXRCMS	00	=		I/O INPUT REG COMMAND BIT
KA301	TQ2	C2 16A	(30)	01	=	DXRCMR DXACMB4 34 16A 36 17A	
KA302	TQ2	C3 16B	DXRENR	00	=		
KA302	TQ2	C3 14B	(33)	01	=	DXRENS DXRRSA 29 14B 31 15B	
KA301	TQ2	C3 16B	DXRENS	00	=		I/O INPUT REG ENABLE BIT
KA301	TQ2	C3 14B	(33)	01	=	DXRENR DXAENB4 29 14B 31 15B	
KA302	TQ2	C1 18A	DXRPCR	00	=		
KA302	TQ2	C1 19A	(38)	01	=	DXRPCS DXRRSA 40 19A 42 20A	
KA301	TQ2	C1 18A	DXRPCS	00	=		I/O INPUT REG PARITY BIT
KA301	TQ2	C1 19A	(38)	01	=	DXRPCR DXAPCB4 40 19A 42 20A	
KA301	TQ2	C4 19B	DXRRSA	00	=		I/O INPUT REG RESET
KA301	TQ2	C4 17B	(39)	01	=	DXRRS0 SPI019 35 17B 37 18B	
KA302	TQ2	C4 19B	DXRRS0	00	=		
KA302	TQ2	C4 17B	(39)	01	=	DXXA6A DXRS0B 35 17B 37 18B	
KA301	TQ2	F4 39A	DXRSAA	00	=		DXRS2B BUSS
KA301	TQ2	F4 37A	(80)	01	=	DXRS00 SPI019 76 37A 78 38A	
KA310	TQ2	E2 28A	DXPS0A	00	=		DXRS0B BUSS
KA310	TQ2	E2 29A	(60)	01	=	DXRS00 SPI022 62 29A 64 30A	
KA310	TQ2	E2 28A	( )	01	=	DXRS0A 60 28A	
KA310	TQ2	E3 30B	( )	02	+	DXRS1A 57 30B	
KA310	TQ2	E4 33B	( )	03	+	DXRS2A 63 33B	



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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM. DESIGNATOR	FACTOR	COMMENT
KA304	TSB	B1	11B	DXRS00	00 =		CONTROLLER MASTER RESET
KA304	TSB	B1	09A	(23)	01	DXSYIA DXARSA DXBRSA DXPRSA DEVINH SPI018 SPI021 SPI020 14 09A 18 10A 19 09B 20 11A 22 12A 24 13A 25 12B 26 14A	
KA310	TQ2	E3	30B	DXRS1A	00 =		DXRS0B BUSS
KA310	TQ2	E3	28B	(157)	01	DXRS00 SPI022 53 28B 55 29B	
				DXRS1B	00 =		
KA310	TQ2	F1	37B	( )	01	DXRS3A 75 37B	
KA310	TQ2	F2	34A	( )	02 +	DXRS4A 72 34A	
KA310	TQ2	F3	35A	( )	03 +	DXRS5A 69 35A	
KA310	TQ2	F4	39A	( )	04 +	DXRS6A 80 39A	
KA310	TQ2	E4	33B	DXRS2A	00 =		DXRS0B BUSS
KA310	TQ2	E4	31B	(63)	01	DXRS00 SPI022 59 31B 61 32B	
				DXRS2B	00 =		
KA301	TQ2	F1	37B	( )	01	DXRSYA 75 37B	
KA301	TQ2	F2	34A	( )	02 +	DXRSBA 72 34A	
KA301	TQ2	F3	35A	( )	03 +	DXRS9A 69 35A	
KA301	TQ2	F4	39A	( )	04 +	DXRSAA 80 39A	
KA310	TQ2	F1	37B	DXRS3A	00 =		DXRS1B BUSS
KA310	TQ2	F1	38B	(75)	01	DXRS00 SPI022 77 38B 79 39B	
KA310	TQ2	F2	34A	DXRS4A	00 =		DXRS1B BUSS
KA310	TQ2	F2	36A	(72)	01	DXRS00 SPI022 71 36A 73 36B	
KA310	TQ2	F3	35A	DXRS5A	00 =		DXRS1B BUSS
KA310	TQ2	F3	34B	(69)	01	DXRS00 SPI022 65 34B 74 35B	
KA310	TQ2	F4	39A	DXRS6A	00 =		DXRS1B BUSS
KA310	TQ2	F4	37A	(80)	01	DXRS00 SPI022 76 37A 78 38A	

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LOGIC

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESC NATOR	FACTOR	COMMENT
KA301	TQ2	F1	37B	DXRS7A	00	=		
KA301	TQ2	F1	38B	(75 )	01		DXRS00 SPI019 77 38B 79 39B	DXRS2B BUSS
KA301	TQ2	F2	34A	DXRS8A	00	=		
KA301	TQ2	F2	36A	(72 )	01		DXRS00 SPI019 71 36A 73 36B	DXRS2B BUSS
KA301	TQ2	F3	35A	DXRS9A	00	=		
KA301	TQ2	F3	34B	(69 )	01		DXRS00 SPI019 65 34B 74 35B	DXRS2B BUSS
KA302	TQ2	A1	05A	DXROCR	00	=		
KA302	TQ2	A1	06A	(06 )	01		DXROCS DXRISA 08 06A 10 07A	
KA301	TQ2	A1	05A	DXROCS	00	=		I/O INPUT REG DATA BIT 0
KA301	TQ2	A1	06A	(06 )	01		DXROCR DXA0CB4 08 06A 10 07A	
KA310	TQ2	A2	02B	DXROPA	00	=		
KA310	TQ2	A2	04A	(01 )	01		DXROPPR SPI022 04 04A 05 03B	
KA226	PAR	A1	07A	DXROPPR	00	=		
KA226	PAR	A1	03B	(13 )	01		DXROCS DXR1CS DXR2CS DXR3CS DXR4CS DXR5CS DXR6CS DXR7CS 03 03B 05 04B 07 05B 09 06B 10 05A 08 04A 06 03A 04 02A	
KA226	PAR	A1	07B	( )	02	+	DXRPCS 11 07B	
KA314	TQ2	F3	35A	DXR090	00	=		CODE FOR LOOP TEST
KA314	TQ2	F3	34B	(69 )	01		DXR095T SPI024 65 34B 74 35B	
KA313	DBC	A1	04A	DXR090T	00	=		
KA313	DBC	A1	02A	(08 )	01		DXR7CS 04 02A	
KA313	DBC	A2	05A	DXR091T	00	=		
KA313	DBC	A2	03A	(10 )	01		DXR6CS 06 03A	
KA313	DBC	A3	06A	DXR092T	00	=		
KA313	DBC	A3	02B	(14 )	01		DXR5CS 03 02B	
KA313	DBC	A4	07A	DXR093T	00	=		
KA313	DBC	A4	03B	(13 )	01		DXR4CS 05 03B	

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LOGIC

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CONNECTOR	TERMINAL	GROUP	TEST POINTS AND OR	EQUATION	TEST POINT	DESIGN POINT	FACTOR	COMMENT
KA313	DBC	A5	08B	DXR094T	00	=		
KA313	DBC	A5		(17)	01		SPA 4T	
KA313	DBC	A5	04B	DXR095T	00	=		
KA313	DBC	A5		(07)	01		SPA 5T	
KA313	DBC	A7	05B	DXR096T	00	=		
KA313	DBC	A7		(09)	01		SPA 6T	
KA313	DBC	A8	06B	DXR097T	00	=		
KA313	DBC	A8		(11)	01		SPA 7T	
KA313	DBC	A9	07B	DXR098T	00	=		
KA313	DBC	A9		(15)	01		SPA 8T	
KA313	DBC	A0	09A	DXR099T	00	=		
KA313	DBC	A0		(18)	01		SPA 9T	
KA302	TQ2	A2	02B	DXR1CR	00	=		
KA302	TQ2	A2	04A	(01)	01		DXR1CS DXR1SA 04 04A 05 03B	
KA301	TQ2	A2	02B	DXR1CS	00	=		I/O INPUT REG DATA BIT 1
KA301	TQ2	A2	04A	(01)	01		DXR1CR DXA1CB4 04 04A 05 03B	
KA302	TQ2	A3	04B	DXR2CR	00	=		
KA302	TQ2	A3	02A	(09)	01		DXR2CS DXR2SA 03 02A 07 03A	
KA301	TQ2	A3	04B	DXR2CS	00	=		I/O INPUT REG DATA BIT 2
KA301	TQ2	A3	02A	(09)	01		DXR2CR DXA2CB4 03 02A 07 03A	
KA302	TQ2	A4	07B	DXR3CR	00	=		
KA302	TQ2	A4	05B	(15)	01		DXR3CS DXR3SA 11 05B 13 06B	
KA301	TQ2	A4	07B	DXR3CS	00	=		I/O INPUT REG DATA BIT 3
KA301	TQ2	A4	05B	(15)	01		DXR3CR DXA3CB4 11 05B 13 06B	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST	DESIGNATOR	FACTOR	COMMENT
KA302	TQ2	B1	12A	DXR4CR	00	=		
KA302	TQ2	B1	13A	(22)	01		DXR4CS DXPRSA 24 13A 26 14A	
KA301	TQ2	B1	12A	DXR4CS	00	=		I/O INPUT REG DATA BIT 4
KA301	TQ2	B1	13A	(22)	01		DXR4CR DXA4CB4 24 13A 26 14A	
KA302	TQ2	B2	09A	DXR5CR	00	=		
KA302	TQ2	B2	10A	(14)	01		DXR5CS DXRRSA 18 10A 20 11A	
KA301	TQ2	B2	09A	DXR5CS	00	=		I/O INPUT REG DATA BIT 5
KA301	TQ2	B2	10A	(14)	01		DXR5CR DXA5CB4 18 10A 20 11A	
KA302	TQ2	B3	10B	DXR6CR	00	=		
KA302	TQ2	B3	08B	(21)	01		DXR6CS DXRRSA 17 08B 19 09B	
KA301	TQ2	B3	10B	DXR6CS	00	=		I/O INPUT REG DATA BIT 6
KA301	TQ2	B3	08B	(21)	01		DXR6CR DXA6CB4 17 08B 19 09B	
KA302	TQ2	B4	13B	DXR7CR	00	=		
KA302	TQ2	B4	11B	(27)	01		DXR7CS DXRRSA 23 11B 25 12B	
KA301	TQ2	B4	13B	DXR7CS	00	=		I/O INPUT REG DATA BIT 7
KA301	TQ2	B4	11B	(27)	01		DXR7CR DXA7CB4 23 11B 25 12B	
KA301	TQ2	E4	33B	DXR960	00	=		CODE FOR DEV STOP
KA301	TQ2	E4	31B	(63)	01		DXR096T SPI019 59 31B 61 32B	
KA314	TQ2	D2	21A	DXSK0A	00	=		
KA314	TQ2	D2	22A	(46)	01		DXXC2Q DXXC3P 48 22A 50 23A	
KA310	TQ2	C3	16B	DXSK00	00	=		STATUS REG CLOCK BITS 0 TO 3
KA310	TQ2	C3	14B	(33)	01		DXSK0A SPI022 29 14B 31 15B	
KA314	TQ2	B2	09A	DXSST0	00	=		
KA314	TQ2	B2	10A	(14)	01		DXR097T SPI024 18 10A 20 11A	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXSS0A  
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CONNECTOR	UNIT CPU	GROUP	TEST POINTS AND/OR	EQUATION	TERM	LOGIC STATE	FACTOR	COMMENT
KA304	TS8	E1	31B	DXSS0A	00	=		
KA304	TS8	E1	29B	(59)	01		DXDVSS DXXB20 DXXA0P DXXA1Q DXSSTO DXROPA SPI021 SPI020 55 29B 60 28A 61 32B 62 29A 64 30A 66 31A 68 32A 70 33A	
				DXST01	00	=		
KA305	TDD	LI	38B	( )	01		DXGNIA 77 38B	
				DXST0N	00	=		
KA305	TDD	LN	39B	( )	01		DXST1A 79 39B	
KA305	TDD	LP	37A	DXSTOP	00	=		
KA305	TDD	LP	37B	(76)	01		SPI021 75 37B	
KA305	TDD	LQ	38A	DXST0Q	00	=		STOP SYNC COUNTER BIT 0
KA305	TDD	LQ	39A	(78)	01		DXST2A 80 39A	
KA303	TQ2	F1	37B	DXST1A	00	=		
KA303	TQ2	F1	38B	(75)	01		DXST1Q DXCP30 77 38B 79 39B	
				DXST1I	00	=		
KA306	TDD	LI	38B	( )	01		DXST0Q 77 38B	
				DXST1N	00	=		
KA306	TDD	LN	39B	( )	01		DXCP10 79 39B	
KA306	TDD	LP	37A	DXST1P	00	=		
KA306	TDD	LP	37B	(76)	01		SPI021 75 37B	
KA306	TDD	LQ	38A	DXST1Q	00	=		STOP SYNC COUNTER BIT 1
KA306	TDD	LQ	39A	(78)	01		SPI020 80 39A	
KA303	TQ2	F2	36A	DXST2A	00	=		
KA303	TQ2	F2	36A	(72)	01		DXST20 SPI021 71 36A 73 36B	
KA310	TQ2	D4	27B	DXST20	00	=		
KA310	TQ2	D4	25B	(51)	01		DXHS0A DXSS0A 47 25B 49 26B	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXS031U  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 178

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA313	DBC	C1	18A	DXS031U	00	=		
KA313	DBC	C1	18B	(38)	01		DXDB0TA DXDB0TB DXDB0TC DXDB0TD DXGN4A 39 18B 41 19B 43 22B 45 23B 50 24A	
KA313	DBC	C2	19A	DXS032U	00	=		
KA313	DBC	C2	17B	(40)	01		DXSK00 37 17B	
KA313	DBC	C3	20A	DXS033U	00	=		
KA313	DBC	C3	23A	(42)	01		DXGN5A 47 23A	
KA313	DBC	C4	21A	DXS034U	00	=		
KA313	DBC	C4	22A	(46)	01		DXGN6A 48 22A	
KA313	DBC	C5	17A	DXS035U	00	=		
KA313	DBC	C5	16B	(36)	01		SPI022 35 16B	
KA313	DBC	D1	26A	DXS471U	00	=		
KA313	DBC	D1	26B	(54)	01		DXDB4TA DXDB4TB DXDB4TC DXDB4TD DXGN4A 53 26B 55 27B 57 29B 59 30B 63 31A	
KA313	DBC	D2	28B	DXS472U	00	=		
KA313	DBC	D2	25B	(56)	01		DXSK00 51 25B	
KA313	DBC	D3	28A	DXS473U	00	=		
KA313	DBC	D3	31B	(60)	01		DXGN5A 61 31B	
KA313	DBC	D4	29A	DXS474U	00	=		
KA313	DBC	D4	30A	(62)	01		DXGN6A 64 30A	
KA313	DBC	D5	25A	DXS475U	00	=		
KA313	DBC	D5	24B	(52)	01		SPI022 49 24B	
KA310	TQ2	A4	07B	DXXACA	00	=		
KA310	TQ2	A4	05B	(15)	01		DXXACO SPI022 11 05B 13 06B	
				DXXACI	00	=		
KA305	TDD	M1	36A	( )	01		SPI020 71 36A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXXACN  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATION	FACTOR	COMMENT
				DXXACN	00 =		
KA305	TDD	MN	34A	( )	01	DXXA3P 72 34A	
KA305	TDD	MP	35A	DXXACP	00 =		
KA305	TDD	MP	36B	(69 )	01	DXXADA 73 36B	
KA305	TDD	HQ	35B	DXXACQ	00 =		I/O STATE COUNTER CONTROL F/F
KA305	TDD	HQ	34B	(74 )	01	DXRS0B 55 34B	
KA304	TS8	A1	05B	DXXACO	00 =		
KA304	TS8	A1	02B	(11 )	01	DXR0CR DXR1CR DXR2CR DXR3CR DXR4CR DXR5CR DXR6CR DXR7CR 01 02B 04 04A 05 03B 06 05A 07 03A 08 06A 10 07A 13 06B	
KA310	TQ2	B1	12A	DXXADA	00 =		I/O STATE COUNTER START
KA310	TQ2	B1	13A	(22 )	01	DXXAD0 SPI022 24 13A 26 14A	
KA308	TD4	C1	17B	DXXADG	00 =		
KA308	TD4	C1	18B	(35 )	01	DXRCMR DXRENR DXRPCR DXXACA 37 18B 38 18A 40 19A 42 20A	
				DXXA0I	00 =		
KA307	TDD	A1	06A	( )	01	DXXA3P 08 06A	
				DXXA0N	00 =		
KA307	TDD	AN	07A	( )	01	DT160B 10 07A	
KA307	TDD	AP	05B	DXXA0P	00 =		
KA307	TDD	AP	05A	(11 )	01	DXXACP 06 05A	
KA307	TDD	AQ	06B	DXXA0Q	00 =		I/O STATE COUNTER BIT 0
KA307	TDD	AQ	07B	(13 )	01	SPI021 15 07B	
				DXXA1I	00 =		
KA306	TDD	A1	06A	( )	01	DXXA0Q 08 06A	
				DXXA1N	00 =		
KA306	TDD	AN	07A	( )	01	DT160B 10 07A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXXA1P  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA306	TDD	AP	05B	DXXA1P	00	N		
KA306	TDD	AP	05A	(11)	01		DXXACP 06 05A	
KA306	TDD	AQ	06B	DXXA1Q	00	N		I/O STATE COUNTER BIT 1
KA306	TDD	AQ	07B	(13)	01		SPI021 15 07B	
KA307	TDD	BI	03B	DXXA2I	00	N		
KA307	TDD	BI	03B	( )	01		DXXA1Q 05 03B	
KA307	TDD	BN	02B	DXXA2N	00	=		
KA307	TDD	BN	02B	( )	01		DT161B 01 02B	
KA307	TDD	BP	04B	DXXA2P	00	=		
KA307	TDD	BP	04A	(09)	01		DXXACP 04 04A	
KA307	TDD	BQ	03A	DXXA2C	00	=		I/O STATE COUNTER BIT 2
KA307	TDD	BQ	02A	(07)	01		SPI020 03 02A	
KA306	TDD	BI	03B	DXXA3I	00	=		
KA306	TDD	BI	03B	( )	01		DXXA2Q 05 03B	
KA306	TDD	BN	02B	DXXA3N	00	=		
KA306	TDD	BN	02B	( )	01		DT161B 01 02B	
KA306	TDD	BP	04B	DXXA3P	00	=		
KA306	TDD	BP	04A	(09)	01		DXXACP 04 04A	
KA306	TDD	BQ	03A	DXXA3Q	00	=		I/O STATE COUNTER BIT 3
KA306	TDD	BQ	02A	(07)	01		SPI020 03 02A	
KA303	TQ2	A1	05A	DXXA4A	00	=		I/O STATE COUNTER STATE 4
KA303	TQ2	A1	06A	(06)	01		DXXA0Q DXXA3Q 08 06A 10 07A	
KA302	TQ2	D1	24A	DXXA40	00	=		
KA302	TQ2	D1	25A	(52)	01		DXXA4A SPI019 54 25A 56 26A	



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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXXA5A  
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CONNECTOR	CIRCUIT TYPE	BOARD	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA303	TQ2	A2	02B	DXXA5A	00	=		
KA303	TQ2	A2	04A	(01)	01		DXXA0P DXXA1Q 04 04A 05 03B	I/O STATE COUNTER STATE 5
KA302	TQ2	D2	21A	DXXA50	00	=		
KA302	TQ2	D2	22A	(46)	01		DXXA5A SPI019 4R 22A 50 23A	
KA303	TQ2	A3	04B	DXXA6A	00	=		
KA303	TQ2	A3	02A	(09)	01		DXXA1P DXXA2Q 03 02A 07 03A	I/O STATE COUNTER STATE 6
KA310	TQ2	A3	04B	DXXBCA	00	=		
KA310	TQ2	A3	02A	(09)	01		DXXBC0 SPI022 03 02A 07 03A	I/O BYTE COUNTER RESET
KA105	TT3	E3	33B	DXXBC0	00	=		
KA105	TT3	E3	30B	(63)	01		DXXCHR DXXRNR DXXS0B 57 30B 59 31B 61 32B	
KA104	THI	D4	22B	DXXBKC	00	=		
KA104	THI	D4	23B	(46)	01		DXXA3Q 41 23B	I/O BYTE COUNTER CLOCK
KA303	TQ2	A4	07B	DXXB0A	00	=		
KA303	TQ2	A4	05B	(15)	01		DXXB0P DXXB2P 11 05B 13 06B	I/O BYTE COUNTER STATE 0
KA305	TDD	CI	13A	DXXB0I	00	=		
KA305	TDD	CI		( )	01		DXXB2P 24 13A	
KA305	TDD	LN	14A	DXXB0N	00	=		
KA305	TDD	LN		( )	01		DXXB00 26 14A	
KA305	TDD	CP	11B	DXXB0P	00	=		
KA305	TDD	CP	12A	(23)	01		DXXBCA 22 12A	
KA305	TDD	CQ	12B	DXXB0Q	00	=		
KA305	TDD	CQ	13B	(25)	01		SPI021 27 13B	I/O BYTE COUNTER BIT 0
KA302	TQ2	D3	24B	DXXB00	00	=		
KA302	TQ2	D3	22B	(45)	01		DXXB0A SPI021 41 22B 43 23B	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXXB1A  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	Z	TER	DESIG	FACTOR	COMMENT
KA303	TQ2	B1	12A	DXXB1A	00	=			I/O BYTE COUNTER STATE 1
KA303	TQ2	B1	13A	(22)	01			DXXB0Q DXXB1P 24 13A 26 14A	
				DXXB1I	00	=			
KA306	TDD	FI	16A	( )	01			DXXB0Q 34 16A	
				DXXB1N	00	=			
KA306	TDD	FN	15A	( )	01			DXXBKO 30 15A	
KA306	TDD	FP	16B	DXXB1P	00	=			
KA306	TDD	FP	17A	(33)	01			DXXBCA 36 17A	
KA306	TDD	FQ	15B	DXXB1Q	00	=			I/O BYTE COUNTER BIT 1
KA306	TDD	FQ	14B	(31)	01			SPI021 29 14B	
KA302	TQ2	D4	27B	DXXB1Q	00	=			
KA302	TQ2	D4	25B	(51)	01			DXXB1A SPI021 47 25B 49 26B	
KA303	TQ2	B2	09A	DXXB2A	00	=			I/O BYTE COUNTER STATE 2
KA303	TQ2	B2	10A	(14)	01			DXXB1Q DXXB2P 18 10A 20 11A	
				DXXB2I	00	=			
KA307	TDD	FI	16A	( )	01			DXXB1Q 34 16A	
				DXXB2N	00	=			
KA307	TDD	FN	15A	( )	01			DXXBKO 30 15A	
KA307	TDD	FP	16B	DXXB2P	00	=			
KA307	TDD	FP	17A	(33)	01			DXXBCA 36 17A	
KA307	TDD	FQ	15B	DXXB2Q	00	=			INPUT INTERRUPT CONTROL F/E
KA307	TDD	FQ	14B	(31)	01			SPI022 29 14B	
KA302	TQ2	E1	31A	DXX32Q	00	=			
KA302	TQ2	E1	32A	(66)	01			DXXB2A SPI021 68 32A 70 33A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXXB3A  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA303	TQ2	B3	10B	DXXB3A	00	=		I/O BYTE COUNTER STATE 3
KA303	TQ2	B3	08B	(21)	01		DXXB0Q DXXB2Q 17 08B 19 09B	
KA302	TQ2	E2	28A	DXXB30	00	=		
KA302	TQ2	E2	29A	(60)	01		DXXB3A SPI021 62 29A 64 30A	
KA303	TQ2	B4	13B	DXXB4A	00	=		I/O BYTE COUNTER STATE 4
KA303	TQ2	B4	11B	(27)	01		DXXB0P DXXBIQ 23 11B 25 12B	I/O BYTE COUNTER STATE 4
KA302	TQ2	E3	30B	DXXB40	00	=		
KA302	TQ2	E3	28B	(57)	01		DXXB4A SPI021 53 28B 55 29B	
KA303	TQ2	C1	18A	DXXB5A	00	=		I/O BYTE COUNTER STATE 5
KA303	TQ2	C1	19A	(38)	01		DXXB1P DXXB2Q 40 19A 42 20A	
KA302	TQ2	E4	33B	DXXB50	00	=		
KA302	TQ2	E4	31B	(63)	01		DXXB5A SPI021 59 31B 61 32B	
KA303	TQ2	E3	30B	DXXCIA	00	=		
KA303	TQ2	E3	28B	(57)	01		DXXC10 SPI021 53 28B 55 29B	
				DXXCII	00	=		
KA306	TDD	MI	36A	( )	01		DXCN4A 71 36A	
				DXXCIN	00	=		
KA306	TDD	MN	34A	( )	01		DXXC4P 72 34A	
KA306	TDD	MP	35A	DXXCIP	00	=		
KA306	TDD	MP	36B	(69)	01		DXRS0B 73 36B	
KA306	TDD	MQ	35B	DXXCIQ	00	=		DEV/OPR INDICATOR CONTROL E/E
KA306	TDD	MQ	34B	(74)	01		DXXCIA 65 34B	
KA312	TD4	F1	37A	DXXC10	00	=		INDICATOR INPUTS
KA312	TD4	F1	37B	(76)	01		DSYN1A DXSS0A DX0D3A DSTOPA 75 37B 77 38B 78 38A 79 39B	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017  
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 REV E INDEX DXXCRO  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	ORIGINATOR	FACTOR	COMMENT
KA312	TD4	F2	35A	DXXCRO	00	=		
KA312	TD4	F2	36A	(69)	01		DXXCIP DXXDDP DXXDIP DXXDSP 71 36A 72 34A 73 36B 74 35B	
KA314	TQ2	D3	24B	DXXCSA	00	=		INPUT STROBE COUNT 5 TO 7
KA314	TQ2	D3	22B	(45)	01		DXXC2Q DXXC4Q 41 22B 43 23B	
KA310	TQ2	D2	21A	DXXCSO	00	=		
KA310	TQ2	D2	22A	(46)	01		DXXCSA SPI022 48 22A 50 23A	
				DXXCOI	00	=		
KA307	TDD	CI	13A	( )	01		DXXC4P 24 13A	
				DXXCON	00	=		
KA307	TDD	CN	14A	( )	01		DT160B 26 14A	
				DXXCOP	00	=		
KA307	TDD	CP	11B	(23)	01		DXXCRO 22 12A	
				DXXCOQ	00	=		INPUT STROBE COUNTER BIT 0
KA307	TDD	CQ	12B	(25)	01		SPI021 27 13B	
				DXXCI	00	=		
KA306	TDD	CI	13A	( )	01		DXXCOQ 24 13A	
				DXXCIN	00	=		
KA306	TDD	CN	14A	( )	01		DT160B 26 14A	
				DXXC1P	00	=		
KA306	TDD	CP	11B	(23)	01		DXXCRO 22 12A	
				DXXC1Q	00	=		INPUT STROBE COUNTER BIT 1
KA306	TDD	CQ	12B	(25)	01		SPI021 27 13B	
				DXXC2I	00	=		
KA307	TDD	DI	10A	( )	01		DXXC1Q 18 10A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXXC2N  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATION	FACTOR	COMMENT
KA307	TDD	DN	09A	DXXC2N ( )	00 = 01	DT160B 14 09A	
KA307	TDD	DP	10B	DXXC2P (21 )	00 = 01	DXXCRO 20 11A	
KA307	TDD	DQ	09B	DXXC2Q (19 )	00 = 01	SPI020 17 08B	INPUT STROBE COUNTER BIT 2
KA306	TDD	DI	10A	DXXC3I ( )	00 = 01	DXXC2Q 18 10A	
KA306	TDD	DN	09A	DXXC3N ( )	00 = 01	DT160B 14 09A	
KA306	TDD	DP	10B	DXXC3P (21 )	00 = 01	DXXCRO 20 11A	
KA306	TDD	DQ	09B	DXXC3C (19 )	00 = 01	SPI020 17 08B	INPUT STROBE COUNTER BIT 3
KA305	TDD	AI	06A	DXXC4I ( )	00 = 01	DXXC3Q 08 06A	
KA305	TDD	AN	07A	DXXC4N ( )	00 = 01	DT160B 10 07A	
KA305	TDD	AP	05B	DXXC4P (11 )	00 = 01	DXXCRO 06 05A	
KA305	TDD	AQ	06B	DXXC4Q (13 )	00 = 01	SPI021 15 07B	INPUT STROBE COUNTER BIT 4
KA310	TQ2	C2	15A	DXXD0A (30 )	00 = 01	DXXD00 SPI022 34 16A 36 17A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX DXX0DI  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
				DXXDDI	00 =		
KA306	TDD	E1	19A	( )	01	DXGN4A 40 19A	
				DXXDDN	00 =		
KA306	TDD	EN	20A	( )	01	DXXDIP 42 20A	
KA306	TDD	EP	17B	DXXDDP	00 =		
KA306	TDD	EP	18A	(35 )	01	DXRS0B 38 18A	
KA306	TDD	EQ	18B	DXXDDQ	00 =		INPUT DATA CONTROL F/E
KA306	TDD	EQ	19B	(37 )	01	DXXDDA 39 19B	
KA314	TQ2	C4	19B	DXXDDO	00 =		
KA314	TQ2	C4	17B	(39 )	01	ORTDEA DLTEOA 35 17B 37 18B	
KA314	TQ2	D1	24A	DXXDIA	00 =		
KA314	TQ2	D1	25A	(52 )	01	DXXDIS DXEAOO 54 25A 56 26A	
				DXXDII	00 =		
KA307	TDD	G1	25A	( )	01	DXGN4A 54 25A	
				DXXDIN	00 =		
KA307	TDD	GN	26A	( )	01	DXXDIP 56 26A	
KA307	TDD	GP	25B	DXXDIP	00 =		
KA307	TDD	GP	24A	(47 )	01	DXRS0B 52 24A	
KA307	TDD	GQ	26B	DXXDIQ	00 =		I/O BYTE COUNTER BIT 2
KA307	TDD	GQ	27B	(49 )	01	DXXDIA 51 27B	
KA311	TT3	O2	23B	DXXDIR	00 =		
KA311	TT3	O2	22B	(43 )	01	DXXDIS DXDIRA DXINHR 41 22B 46 21A 48 22A	
KA312	T04	O1	25B	DXXDIS	00 =		
KA312	T04	O1	26B	(47 )	01	DXXDIR DROPIA DERRIA DRSESA 49 26B 52 24A 54 25A 56 26A	

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LOGIC

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA310	TQ2	A1	05A	DXXDRA	00	=		
KA310	TQ2	A1	06A	(06)	01	=	DXXDRO SPI022 08 06A 10 07A	
KA105	TT3	E2	29B	DXXDRO	00	=		
KA105	TT3	E2	28B	(55)	01	=	DXXDDP DXXDIP DXXDSP 53 28B 60 28A 62 29A	
KA302	TQ2	F3	35A	DXXDSA	00	=		ITR 01 + ITR 02
KA302	TQ2	F3	34B	(69)	01	=	DXIRIQ DXXDSQ 65 34B 74 35B	
				DXXDSI	00	=		
KA307	TDD	MI	36A	( )	01	=	DXGN4A 71 36A	
				DXXDSN	00	=		
KA307	TDD	MN	34A	( )	01	=	DXXDIP 72 34A	
KA307	TDD	MP	35A	DXXDSP	00	=		
KA307	TDD	MP	36B	(69)	01	=	DXRS08 73 36B	
KA307	TDD	MQ	35B	DXXDSQ	00	=		INPUT STATUS CONTROL F/F
KA307	TDD	MQ	34B	(74)	01	=	DXIRIA 65 34B	
KA104	THI	E6	32B	DXXDSO	00	=		
KA104	THI	E6	33B	(68)	01	=	DXXDSA 65 33B	
				DXXDOI	00	=		
KA307	TDD	EI	19A	( )	01	=	DXXDIP 40 19A	
				DXXDON	00	=		
KA307	TDD	EN	20A	( )	01	=	DXXC3P 42 20A	
KA307	TDD	EP	17B	DXXDOP	00	=		
KA307	TDD	EP	18A	(35)	01	=	DXXCRO 38 18A	
KA307	TDD	EQ	18B	DXXDOQ	00	=		INPUT BYTE COUNTER BIT 0
KA307	TDD	EQ	19B	(37)	01	=	SPI022 39 19B	





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LOGIC

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND DR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA305	TDD	JI	32A	DXXREI ( )	00 = 01	DXGN4A 68 32A		
KA305	TDD	JN	33A	DXXREN ( )	00 = 01	DXEA0A 70 33A		
KA305	TDD	JP	31B	DXXREP (59 )	00 = 01	DXRS0B 66 31A		
KA305	TDD	JQ	32B	DXXREQ (61 )	00 = 01	DXXR0P 63 33B	REQUEST ENABLE F/F	
KA306	TDD	KI	29A	DXXROI ( )	00 = 01	DXXR2P 62 29A		
KA306	TDD	KN	28A	DXXRON ( )	00 = 01	DT160B 60 28A		
KA306	TDD	KP	30B	DXXROP (57 )	00 = 01	DXXRCQ 64 30A		
KA306	TDD	KQ	29B	DXXROQ (55 )	00 = 01	SP101B 53 28B	REQUEST STROBE COUNTER BIT 0	
KA305	TDD	KI	29A	DXXRII ( )	00 = 01	DXXR0Q 62 29A		
KA305	TDD	KN	28A	DXXRIN ( )	00 = 01	DT160B 60 28A		
KA305	TDD	KP	30B	DXXRIP (57 )	00 = 01	DXXRCQ 64 30A		
KA305	TDD	KQ	29B	DXXRIQ (55 )	00 = 01	SP102I 53 28B	REQUEST STROBE COUNTER BIT 1	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA307	TDD	LI	38B	DXXR2I ( )	00	=	DXXR1Q 77 38B	
KA307	TDD	LN	39B	DXXR2N ( )	00	=	DI160B 79 39B	
KA307	TDD	LP	37A	DXXR2P (76 )	00	=	DXXRCQ 75 37B	
KA307	TDD	LQ	38A	DXXR2Q (78 )	00	=	SPI022 80 39A	REQUEST STROBE COUNTER BIT 2
KA303	TQ2	C2	15A	DXX04A (30 )	00	=	DXXB00 DXXA40 34 16A 36 17A	
KA308	TD4	C2	16B	DXX05A (33 )	00	=	DXXB0P DXXB2P DXXA0P DXXA1Q 30 15A 31 15B 34 16A 36 17A	
KA303	TQ2	C3	16B	DXX050 (33 )	00	=	DXX05A SPI021 29 14B 31 15B	I/O BYTE COUNT=0, STATE=5
KA311	TT3	B3	13B	DX0DEA (27 )	00	=	DX0FRS DX0PPR DXXA50 21 10B 23 11B 25 12B	QFR RECEIVE DATA PARITY ERROR
KA310	TQ2	B2	09A	DX0DRA (14 )	00	=	DX0FRS DXXB10 18 10A 20 11A	QFR RESET STROBE
KA311	TT3	C1	17A	DX0D0A (36 )	00	=	DX0FRS DXXB20 DXXA50 38 18A 40 19A 42 20A	QFR RECEIVE DATA STROBE BYTE 0
KA311	TT3	C2	15B	DX0D1A (31 )	00	=	DX0FRS DXXB30 DXXA50 29 14B 30 15A 34 16A	QFR RECEIVE DATA STROBE BYTE 1
KA311	TT3	C3	19B	DX0D2A (39 )	00	=	DX0FRS DXXB40 DXXA50 33 16B 35 17B 37 18B	QFR RECEIVE DATA STROBE BYTE 2

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA311	TT3	D1	23A	DX003A	00	=		
KA311	TT3	D1	24A	(50)	01		DX0FRS DXXB50 DXXA50 52 24A 54 25A 56 26A	OFR RECEIVE DATA STRBE BYTE 3
KA311	TT3	B2	09B	DX0FRR	00	=		
KA311	TT3	B2	09A	(19)	01		DX0FRS DXXB0A DXRS0B 14 09A 17 08B 18 10A	
KA314	TQ2	F1	37B	DX0FRS	00	=		
KA314	TQ2	F1	38B	(75)	01		DX0FRR DXOR0A 77 38B 79 39B	OFR COMMAND STORE F/F
KA314	TQ2	B3	10B	DX0FR0	00	=		
KA314	TQ2	B3	08B	(21)	01		DXR098T SPI024 17 08B 19 09B	
KA303	TQ2	C4	19B	DXONL0	00	=		
KA303	TQ2	C4	17B	(39)	01		DXASLA DXBSLA 35 17B 37 18B	
KA312	TD4	A2	04B	DXOR0A	00	=		
KA312	TD4	A2	02B	(09)	01		DXCA10 DXDEVA DXOFRO 0B0SYA 01 02B 04 04A 05 03B 07 03A	
KA307	TDD	J1	32A	DX1MA1	00	=		
KA307	TDD	J1		( )	01		DX1MBP 68 37A	
KA307	TDD	JN	33A	DX1MAN	00	=		
KA307	TDD	JN		( )	01		T04MHJ 70 33A	
KA307	TDD	JP	31B	DX1MAP	00	=		
KA307	TDD	JP	31A	(59)	01		SPI022 66 31A	
KA307	TDD	JQ	32B	DX1MAC	00	=		
KA307	TDD	JQ	33B	(61)	01		SPI020 63 33B	SYNC CLOCK BIT 0
KA306	TDD	J1	32A	DX1MB1	00	=		
KA306	TDD	J1		( )	01		DX1MAQ 68 32A	
KA306	TDD	JN	33A	DX1MBN	00	=		
KA306	TDD	JN		( )	01		T04MHJ 70 33A	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	LOGIC INATOR	FACTOR	COMMENT
KA306	TDD	JP	31B	DX1MBP	00	0		
KA306	TDD	JP	31A	(59 )	01		SPI021 66 31A	
KA306	TDD	JQ	32B	DX1MBQ	00	=		SYNC CLOCK BIT 1
KA306	TDD	JQ	33B	(61 )	01		SPI020 63 33B	
KA246	DCF	A1	02B	DYAACDX4	00	=		ADD CONTROL DRIVER PORT A
KA246	DCF	A1	05A	(07 )	01		DD00SA 06 05A	
KA246	DCF	A2	03B	DYAACOX	00	=		
KA246	DCF	A2	04B	(09 )	01		DYAACO 11 04B	
KA246	DCF	A3	07B	DYAOPDX4	00	=		DRIVER OUTPUT - COMPUTER A BIT PARITY
KA246	DCF	A3	05A	(17 )	01		DD00SA 06 05A	
KA246	DCF	A4	06B	DYAOPDX	00	=		RECEIVER OUTPUT - COMPUTER A BIT PARITY
KA246	DCF	A4	05B	(15 )	01		DD00PPR 13 05B	
KA246	DCF	A5	08B	DYA00DX4	00	=		DRIVER OUTPUT - COMPUTER A BIT 00
KA246	DCF	A5	05A	(14 )	01		DD00SA 06 05A	
KA246	DCF	A6	07A	DYA000Y	00	=		RECEIVER BIT 0 COMP A
KA246	DCF	A6	06A	(10 )	01		DD00A1X 08 06A	
KA246	DCF	A7	02A	DYA01DX4	00	=		DRIVER OUTPUT - COMPUTER A BIT 01
KA246	DCF	A7	05A	(01 )	01		DD00SA 06 05A	
KA246	DCF	A8	03A	DYA010X	00	=		
KA246	DCF	A8	04A	(03 )	01		DD01A1X 04 04A	
KA246	DCF	B1	10B	DYA02DX4	00	=		DRIVER OUTPUT - COMPUTER A BIT 02
KA246	DCF	B1	13A	(27 )	01		DD00SA 36 13A	
KA246	DCF	B2	11B	DYA020X	00	=		RECEIVER OUTPUT - COMPUTER A BIT 02
KA246	DCF	B2	12B	(29 )	01		DD02A1X 31 12B	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA246	DCF	B3	15B	DYA03DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA246	DCF	B3	13A	(137)	01		DD005A 36 13A	BIT 03
KA246	DCF	B4	14B	DYA030X	00	=		RECEIVER OUTPUT - COMPUTER A
KA246	DCF	B4	13B	(135)	01		DD03A1X 33 13B	BIT 03
KA246	DCF	B5	16A	DYA04DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA246	DCF	B5	13A	(141)	01		DD005A 36 13A	BIT 04
KA246	DCF	B6	15A	DYA040X	00	=		RECEIVER OUTPUT - COMPUTER A
KA246	DCF	B6	14A	(140)	01		DD04A1X 38 14A	BIT 04
KA246	DCF	B7	10A	DYA05DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA246	DCF	B7	13A	(123)	01		DD005A 36 13A	BIT 05
KA246	DCF	B8	11A	DYA050X	00	=		RECEIVER OUTPUT - COMPUTER A
KA246	DCF	B8	12A	(130)	01		DD05A1X 34 12A	BIT 05
KA246	DCF	C1	25B	DYA06DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA246	DCF	C1	29A	(146)	01		DD005A 52 29A	BIT 06
KA246	DCF	C2	26B	DYA060X	00	=		RECEIVER OUTPUT - COMPUTER A
KA246	DCF	C2	27B	(147)	01		DD06A1X 49 27B	BIT 06
KA246	DCF	C3	30B	DYA07DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA246	DCF	C3	29A	(155)	01		DD005A 52 29A	BIT 07
KA246	DCF	C4	29B	DYA070X	00	=		RECEIVER OUTPUT - COMPUTER A
KA246	DCF	C4	28B	(156)	01		DD07A1X 51 28B	BIT 07
KA246	DCF	C5	31B	DYA08DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA246	DCF	C5	29A	(160)	01		DD005A 52 29A	BIT 08
KA246	DCF	C6	31A	DYA080X	00	=		RECEIVER OUTPUT - COMPUTER A
KA246	DCF	C6	30A	(157)	01		DD08A1X 54 30A	BIT 08

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMS	DESIGNATOR	FACTOR	COMMENT
KA246	DCF	C7	25A	DYA09DX4	00 =			DRIVER OUTPUT - COMPUTER A
KA246	DCF	C7	29A	(43 )	01		0000SA 52 29A	BIT 09
KA246	DCF	C8	26A	DYA090X	00 =			RECEIVER OUTPUT - COMPUTER A
KA246	DCF	C8	28A	(48 )	01		0009A1X 50 28A	BIT 09
KA246	DCF	D1	32B	DYA10DX4	00 =			DRIVER OUTPUT - COMPUTER A
KA246	DCF	D1	36A	(65 )	01		0000SA 72 36A	BIT 10
KA246	DCF	D2	33B	DYA100X	00 =			RECEIVER OUTPUT - COMPUTER A
KA246	DCF	D2	34B	(69 )	01		0010A1X 71 34B	BIT 10
KA246	DCF	D3	37B	DYA11DX4	00 =			DRIVER OUTPUT - COMPUTER A
KA246	DCF	D3	36A	(78 )	01		0000SA 72 36A	BIT 11
KA246	DCF	D4	36B	DYA110X	00 =			RECEIVER OUTPUT - COMPUTER A
KA246	DCF	D4	35B	(75 )	01		0011A1X 73 35B	BIT 11
KA246	DCF	D5	38B	DYA12DX4	00 =			DRIVER OUTPUT - COMPUTER A
KA246	DCF	D5	36A	(80 )	01		0000SA 72 36A	BIT 12
KA246	DCF	D6	38A	DYA120X	00 =			RECEIVER OUTPUT - COMPUTER A
KA246	DCF	D6	37A	(76 )	01		0012A1X 74 37A	BIT 12
KA246	DCF	D7	33A	DYA13DX4	00 =			DRIVER OUTPUT - COMPUTER A
KA246	DCF	D7	36A	(61 )	01		0000SA 72 36A	BIT 13
KA246	DCF	D8	34A	DYA130X	00 =			RECEIVER OUTPUT - COMPUTER A
KA246	DCF	D8	35A	(68 )	01		0013A1X 70 35A	BIT 13
KA245	DCF	A1	02B	DYA14DX4	00 =			DRIVER OUTPUT - COMPUTER A
KA245	DCF	A1	05A	(07 )	01		0000SA 06 05A	BIT 14
KA245	DCF	A2	03B	DYA14CX	00 =			RECEIVER OUTPUT - COMPUTER A
KA245	DCF	A2	04B	(09 )	01		0014A1X 11 04B	BIT 14

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA245	DCF	A3	07B	DYA15CX4	00	=		DRIVER OUTPUT - COMPUTER A
KA245	DCF	A3	05A	(17)	01		DD005A 06 05A	BIT 15
KA245	DCF	A4	06B	DYA15CX	00	=		RECEIVER OUTPUT - COMPUTER A
KA245	DCF	A4	05B	(15)	01		DD15A1X 13 05B	BIT 15
KA245	DCF	A5	08B	DYA16DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA245	DCF	A5	05A	(14)	01		DD005A 06 05A	BIT 16
KA245	DCF	A6	07A	DYA160X	00	=		RECEIVER OUTPUT - COMPUTER A
KA245	DCF	A6	06A	(10)	01		DD16A1X 08 06A	BIT 16
KA245	DCF	A7	02A	DYA17DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA245	DCF	A7	05A	(01)	01		DD005A 06 05A	BIT 17
KA245	DCF	A8	03A	DYA170X	00	=		RECEIVER OUTPUT - COMPUTER A
KA245	DCF	A8	04A	(03)	01		DD17A1X 04 04A	BIT 17
KA245	DCF	B1	10B	DYA18DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA245	DCF	B1	13A	(27)	01		DD005A 36 13A	BIT 18
KA245	DCF	B2	11B	DYA180X	00	=		RECEIVER OUTPUT - COMPUTER A
KA245	DCF	B2	12B	(29)	01		DD18A1X 31 12B	BIT 18
KA245	DCF	B3	15B	DYA19DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA245	DCF	B3	13A	(37)	01		DD005A 36 13A	BIT 19
KA245	DCF	B4	14B	DYA190X	00	=		RECEIVER OUTPUT - COMPUTER A
KA245	DCF	B4	13B	(35)	01		DD19A1X 33 13B	BIT 19
KA245	DCF	B5	16A	DYA20DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA245	DCF	B5	13A	(41)	01		DD005A 36 13A	BIT 20
KA245	DCF	B6	15A	DYA200X	00	=		RECEIVER OUTPUT - COMPUTER A
KA245	DCF	B6	14A	(40)	01		DD20A1X 38 14A	BIT 20

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TEST	DESIGNATOR	FACTOR	COMMENT
KA245	DCF	B7	10A	DYA21DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA245	DCF	B7	13A	(23)	01		DD00SA 36 13A	BIT 21
KA245	DCF	B8	11A	DYA210X	00	=		RECEIVER OUTPUT - COMPUTER A
KA245	DCF	B8	12A	(30)	01		DD21A1X 34 12A	BIT 21
KA245	DCF	C1	25B	DYA22DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA245	DCF	C1	29A	(46)	01		DD00SA 52 29A	BIT 22
KA245	DCF	C2	26B	DYA220X	00	=		RECEIVER OUTPUT - COMPUTER A
KA245	DCF	C2	27B	(47)	01		DD22A1X 49 27B	BIT 22
KA245	DCF	C3	30B	DYA23DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA245	DCF	C3	29A	(55)	01		DD00SA 52 29A	BIT 23
KA245	DCF	C4	29B	DYA230X	00	=		RECEIVER OUTPUT - COMPUTER A
KA245	DCF	C4	28B	(56)	01		DD23A1X 51 28B	BIT 23
KA245	DCF	C5	31B	DYA24DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA245	DCF	C5	29A	(60)	01		DD00SA 52 29A	BIT 24
KA245	DCF	C6	31A	DYA240X	00	=		RECEIVER OUTPUT - COMPUTER A
KA245	DCF	C6	30A	(57)	01		DD24A1X 54 30A	BIT 24
KA245	DCF	C7	25A	DYA25DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA245	DCF	C7	29A	(43)	01		DD00SA 52 29A	BIT 25
KA245	DCF	C8	26A	DYA250X	00	=		RECEIVER OUTPUT - COMPUTER A
KA245	DCF	C8	28A	(48)	01		DD25A1X 50 28A	BIT 25
KA245	DCF	D1	32B	DYA26DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA245	DCF	D1	36A	(65)	01		DD00SA 72 36A	BIT 26
KA245	DCF	D2	33B	DYA260X	00	=		RECEIVER OUTPUT - COMPUTER A
KA245	DCF	D2	34B	(69)	01		DD26A1X 71 34B	BIT 26



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KA245	DCF	D3	37B	DYA27DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA245	DCF	U3	36A	(78)	01		DD00SA 72 36A	BIT 27
KA245	DCF	U4	36B	DYA27DX4	00	=		RECEIVER OUTPUT - COMPUTER A
KA245	DCF	U4	35B	(75)	01		DD27A1X 73 35B	BIT 27
KA245	DCF	U5	38B	DYA28DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA245	DCF	U5	36A	(80)	01		DD00SA 72 36A	BIT 28
KA245	DCF	U6	38A	DYA28DX4	00	=		RECEIVER OUTPUT - COMPUTER A
KA245	DCF	U6	37A	(76)	01		DD28A1X 74 37A	BIT 28
KA245	DCF	U7	33A	DYA29DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA245	DCF	U7	36A	(61)	01		DD00SA 72 36A	BIT 29
KA245	DCF	U8	34A	DYA29DX4	00	=		RECEIVER OUTPUT - COMPUTER A
KA245	DCF	U8	35A	(68)	01		DD29A1X 70 35A	BIT 29
KA244	DCF	U1	32B	DYA30DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA244	DCF	U1	36A	(65)	01		DD00SA 72 36A	BIT 30
KA244	DCF	U2	33B	DYA30DX4	00	=		RECEIVER OUTPUT - COMPUTER A
KA244	DCF	U2	34B	(69)	01		DD30A1X 71 34B	BIT 30
KA244	DCF	U3	37B	DYA31DX4	00	=		DRIVER OUTPUT - COMPUTER A
KA244	DCF	U3	36A	(78)	01		DD00SA 72 36A	BIT 31
KA244	DCF	U4	36B	DYA31DX4	00	=		RECEIVER OUTPUT - COMPUTER A
KA244	DCF	U4	35B	(75)	01		DD31A1X 73 35B	BIT 31
KA347	DCF	A1	02B	DYBACDX4	00	=		ADD CONTROL DRIVER PORT B
KA347	DCF	A1	05A	(07)	01		DD01SA 06 05A	
KA347	DCF	A2	03B	DYBACDX4	00	=		
KA347	DCF	A2	04B	(09)	01		DMAACQ 11 04B	



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LOGIC

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CONNECTOR	WPCUT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMIN DESIG- NATION	FACTOR	COMMENT
KA347	DCF	B7	10A	DYB05DX4	00 =		DRIVER OUTPUT - COMPUTER B
KA347	DCF	B7	13A	(23 )	01	DD01SA 36 13A	BIT 05
KA347	DCF	B8	11A	DYB050X	00 =		RECEIVER OUTPUT - COMPUTER B
KA347	DCF	B8	12A	(30 )	01	DD05A1X 34 12A	BIT 05
KA347	DCF	C1	25B	DYB06DX4	00 =		DRIVER OUTPUT - COMPUTER B
KA347	DCF	C1	29A	(46 )	01	DD01SA 52 29A	BIT 06
KA347	DCF	C2	26B	DYB060X	00 =		RECEIVER OUTPUT - COMPUTER B
KA347	DCF	C2	27B	(47 )	01	DD06A1X 49 27B	BIT 06
KA347	DCF	C3	30B	DYB07DX4	00 =		DRIVER OUTPUT - COMPUTER B
KA347	DCF	C3	29A	(55 )	01	DD01SA 52 29A	BIT 07
KA347	DCF	C4	29B	DYB070X	00 =		RECEIVER OUTPUT - COMPUTER B
KA347	DCF	C4	28B	(56 )	01	DD07A1X 51 28B	BIT 07
KA347	DCF	C5	31B	DYB08DX4	00 =		DRIVER OUTPUT - COMPUTER B
KA347	DCF	C5	29A	(60 )	01	DD01SA 52 29A	BIT 08
KA347	DCF	C6	31A	DYB080X	00 =		RECEIVER OUTPUT - COMPUTER B
KA347	DCF	C6	30A	(57 )	01	DD08A1X 54 30A	BIT 08
KA347	DCF	C7	25A	DYB09DX4	00 =		DRIVER OUTPUT - COMPUTER B
KA347	DCF	C7	29A	(43 )	01	DD01SA 52 29A	BIT 09
KA347	DCF	C8	26A	DYB090X	00 =		RECEIVER OUTPUT - COMPUTER B
KA347	DCF	C8	28A	(48 )	01	DD09A1X 50 28A	BIT 09
KA347	DCF	D1	32B	DYB10DX4	00 =		DRIVER OUTPUT - COMPUTER B
KA347	DCF	D1	36A	(65 )	01	DD01SA 72 36A	BIT 10
KA347	DCF	D2	33B	DYB100X	00 =		RECEIVER OUTPUT - COMPUTER B
KA347	DCF	D2	34B	(69 )	01	DD10A1X 71 34B	BIT 10

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	ENCL. TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM DESIGNATION	FACTOR	COMMENT
KA347	DCF	D3	37B	DYB11DX4	00 =		DRIVER OUTPUT - COMPUTER B
KA347	DCF	D3	36A	(78 )	01	DD01SA 72 36A	BIT 11
KA347	DCF	D4	36B	DYB110X	00 =		RECEIVER OUTPUT - COMPUTER B
KA347	DCF	D4	35B	(75 )	01	DD11A1X 73 35B	BIT 11
KA347	DCF	D5	38B	DYB12DX4	00 =		DRIVER OUTPUT - COMPUTER B
KA347	DCF	D5	36A	(80 )	01	DD01SA 72 36A	BIT 12
KA347	DCF	D6	38A	DYB120X	00 =		RECEIVER OUTPUT - COMPUTER B
KA347	DCF	D6	37A	(76 )	01	DD12A1X 74 37A	BIT 12
KA347	DCF	D7	33A	DYB13DX4	00 =		DRIVER OUTPUT - COMPUTER B
KA347	DCF	D7	36A	(61 )	01	DD01SA 72 36A	BIT 13
KA347	DCF	D8	34A	DYB130X	00 =		RECEIVER OUTPUT - COMPUTER B
KA347	DCF	D8	35A	(68 )	01	DD13A1X 70 35A	BIT 13
KA346	DCF	A1	02B	DYB14DX4	00 =		DRIVER OUTPUT - COMPUTER B
KA346	DCF	A1	05A	(07 )	01	DD01SA 06 05A	BIT 14
KA346	DCF	A2	03B	DYB140X	00 =		RECEIVER OUTPUT - COMPUTER B
KA346	DCF	A2	04B	(09 )	01	DD14A1X 11 04B	BIT 14
KA346	DCF	A3	07B	DYB15DX4	00 =		DRIVER OUTPUT - COMPUTER B
KA346	DCF	A3	05A	(17 )	01	DD01SA 06 05A	BIT 15
KA346	DCF	A4	06B	DYB150X	00 =		RECEIVER OUTPUT - COMPUTER B
KA346	DCF	A4	05B	(15 )	01	DD15A1X 13 05B	BIT 15
KA346	DCF	A5	08B	DYB16DX4	00 =		DRIVER OUTPUT - COMPUTER B
KA346	DCF	A5	05A	(14 )	01	DD01SA 06 05A	BIT 16
KA346	DCF	A6	07A	DYB160X	00 =		RECEIVER OUTPUT - COMPUTER B
KA346	DCF	A6	06A	(10 )	01	DD16A1X 08 06A	BIT 16

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA346	DCF	A7	02A	DYB17DX4	00	N		DRIVER OUTPUT - COMPUTER B
KA346	DCF	A7	05A	(01 )	01		DD01SA C6 05A	BIT 17
KA346	DCF	A8	03A	DYB170X	00	N		RECEIVER OUTPUT - COMPUTER B
KA346	DCF	A8	04A	(03 )	01		DD17A1X 04 04A	BIT 17
KA346	DCF	B1	10B	DYB18DX4	00	=		DRIVER OUTPUT - COMPUTER B
KA346	DCF	B1	13A	(12 )	01		DD01SA 36 13A	BIT 18
KA346	DCF	B2	11B	DYB180X	00	=		RECEIVER OUTPUT - COMPUTER B
KA346	DCF	B2	12B	(29 )	01		DD18A1X 31 12B	BIT 18
KA346	DCF	B3	15B	DYB19DX4	00	=		DRIVER OUTPUT - COMPUTER B
KA346	DCF	B3	13A	(37 )	01		DD01SA 36 13A	BIT 19
KA346	DCF	B4	14B	DYB190X	00	=		RECEIVER OUTPUT - COMPUTER B
KA346	DCF	B4	13B	(35 )	01		DD19A1X 33 13B	BIT 19
KA346	DCF	B5	16A	DYB20DX4	00	=		DRIVER OUTPUT - COMPUTER B
KA346	DCF	B5	13A	(41 )	01		DD01SA 36 13A	BIT 20
KA346	DCF	B6	15A	DYB200X	00	=		RECEIVER OUTPUT - COMPUTER B
KA346	DCF	B6	14A	(40 )	01		DD20A1X 38 14A	BIT 20
KA346	DCF	B7	10A	DYB21DX4	00	=		DRIVER OUTPUT - COMPUTER B
KA346	DCF	B7	13A	(23 )	01		DD01SA 36 13A	BIT 21
KA346	DCF	B8	11A	DYB210X	00	=		RECEIVER OUTPUT - COMPUTER B
KA346	DCF	B8	12A	(30 )	01		DD21A1X 34 12A	BIT 21
KA346	DCF	C1	25B	DYB22DX4	00	=		DRIVER OUTPUT - COMPUTER B
KA346	DCF	C1	29A	(46 )	01		DD01SA 52 29A	BIT 22
KA346	DCF	C2	26B	DYB220X	00	=		RECEIVER OUTPUT - COMPUTER B
KA346	DCF	C2	27B	(47 )	01		DD22A1X 49 27B	BIT 22

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMINATION	DESIGNATION	FACTOR	COMMENT
KA346	DCF	C3	30B	DYB23DX4	00 =			DRIVER OUTPUT - COMPUTER B
KA346	DCF	C3	29A	(55)	01	DD01SA 52 29A		BIT 23
KA346	DCF	C4	29B	DYB230X	00 =			RECEIVER OUTPUT - COMPUTER B
KA346	DCF	C4	28B	(56)	01	DD23A1X 51 28B		BIT 23
KA346	DCF	C5	31B	DYB24DX4	00 =			DRIVER OUTPUT - COMPUTER B
KA346	DCF	C5	29A	(60)	01	DD01SA 52 29A		BIT 24
KA346	DCF	C6	31A	DYB240X	00 =			RECEIVER OUTPUT - COMPUTER B
KA346	DCF	C6	30A	(57)	01	DD24A1X 54 30A		BIT 24
KA346	DCF	C7	25A	DYB25DX4	00 =			DRIVER OUTPUT - COMPUTER B
KA346	DCF	C7	29A	(43)	01	DD01SA 52 29A		BIT 25
KA346	DCF	C8	26A	DYB250X	00 =			RECEIVER OUTPUT - COMPUTER B
KA346	DCF	C8	28A	(48)	01	DD25A1X 50 28A		BIT 25
KA346	DCF	D1	32B	DYB26DX4	00 =			DRIVER OUTPUT - COMPUTER B
KA346	DCF	D1	36A	(65)	01	DD01SA 72 36A		BIT 26
KA346	DCF	D2	33B	DYB260X	00 =			RECEIVER OUTPUT - COMPUTER B
KA346	DCF	D2	34B	(69)	01	DD26A1X 71 34B		BIT 26
KA346	DCF	D3	37B	DYB27DX4	00 =			DRIVER OUTPUT - COMPUTER B
KA346	DCF	D3	36A	(78)	01	DD01SA 72 36A		BIT 27
KA346	DCF	D4	36B	DYB270X	00 =			RECEIVER OUTPUT - COMPUTER B
KA346	DCF	D4	35B	(75)	01	DD27A1X 73 35B		BIT 27
KA346	DCF	D5	38B	DYB28DX4	00 =			DRIVER OUTPUT - COMPUTER B
KA346	DCF	D5	36A	(80)	01	DD01SA 72 36A		BIT 28
KA346	DCF	D6	38A	DYB280X	00 =			RECEIVER OUTPUT - COMPUTER B
KA346	DCF	D6	37A	(76)	01	DD28A1X 74 37A		BIT 28

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERN	DESIG. FACTOR	FACTOR	COMMENT
KA346	DCF	D7	33A	DYB29DX4	00	=		DRIVER OUTPUT - COMPUTER B
KA346	DCF	D7	36A	(51)	01		DD0ISA 72 36A	BIT 29
KA346	DCF	D8	34A	DYB29GX	00	=		RECEIVER OUTPUT - COMPUTER B
KA346	DCF	D8	35A	(68)	01		DD29A1X 70 35A	BIT 29
KA345	BCF	A1	02B	DYB30DX4	00	=		DRIVER OUTPUT - COMPUTER B
KA345	DCF	A1	05A	(07)	01		DD0ISA 06 05A	BIT 30
KA345	DCF	A2	03B	DYB300X	00	=		RECEIVER OUTPUT - COMPUTER B
KA345	DCF	A2	04B	(09)	01		DD30A1X 11 04B	BIT 30
KA345	DCF	A3	07B	DYB31DX4	00	=		DRIVER OUTPUT - COMPUTER B
KA345	DCF	A3	05A	(17)	01		DD0ISA 06 05A	BIT 31
KA345	DCF	A4	06B	DYB310X	00	=		RECEIVER OUTPUT - COMPUTER B
KA345	DCF	A4	05B	(15)	01		DD31A1X 13 05B	BIT 31
KA224	TQ2	B4	13B	DOVERA	00	=		
KA224	TQ2	B4	11B	(27)	01		DOVERO DWRZOP 23 11B 25 12B	
				DOVERI	00	=		
KA306	TDD	HI	22A	( )	01		SP1020 48 22A	
				DOVERN	00	=		
KA306	TDD	HN	21A	( )	01		SP1018 46 21A	
KA306	TDD	HP	24B	DOVERP	00	=		
KA306	TDD	HP	23A	(45)	01		OSTATA 50 23A	
KA306	TDD	HQ	23B	DOVERQ	00	=		ERROR - OVERFLOW
KA306	TDD	HQ	22B	(43)	01		DOVERA 41 22B	
KA106	TQ2	C4	19B	DOVERO	00	=		
KA106	TQ2	C4	17B	(39)	01		DOVE1A DOVE2A 35 17B 37 18B	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OP	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA105	TT3	D1	23A	DOVE1A	00	=		WRITE DISC - OVERFLOW ERROR
KA105	TT3	D1	24A	(50)	01		DWRN00 DBFULP DBW320 52 24A 54 25A 56 26A	
KA105	TT3	D2	23B	DOVE2A	00	=		READ DISC - OVERFLOW ERROR
KA105	TT3	D2	27B	(43)	01		DRDN00 DBFULQ DBW320 41 22B 46 21A 48 22A	
KA511	TQ2	B2	09A	TADSAA	00	=		
KA511	TQ2	B2	10A	(14)	01		TADSAOX SPI051 18 10A 20 11A	
KA545	DCF	C3	30B	TADSADX4	00	=		FILE PROTECT 2 RECEIVER
KA545	DCF	C3	29A	(55)	01		SPI059 52 29A	
KA545	DCF	C4	29B	TADSAOX	00	=		
KA545	DCF	C4	28B	(56)	01		SPI060 51 28B	
KA545	DCF	D3	37B	TADSBDX4	00	=		REWINDING 2 RECEIVER
KA545	DCF	D3	36A	(78)	01		SPI059 72 36A	
KA545	DCF	D4	36B	TADSB0X	00	=		
KA545	DCF	D4	35B	(75)	01		SPI060 73 35B	
KA545	DCF	A3	07B	TADSCDX4	00	=		BOT 2 RECEIVER
KA545	DCF	A3	05A	(17)	01		SPI059 06 05A	
KA545	DCF	A4	06B	TADSCOX	00	=		
KA545	DCF	A4	05B	(15)	01		SPI060 13 05B	
KA545	DCF	B3	15B	TADSDDX4	00	=		EOT 2 RECEIVER
KA545	DCF	B3	13A	(37)	01		SPI059 36 13A	
KA545	DCF	B4	14B	TADSDOX	00	=		
KA545	DCF	B4	13B	(35)	01		SPI060 33 13B	
KA421	MUX	C1	17A	TADSW1X	00	=		BOT MULTIPLEXER
KA421	MUX	C1	16B	(36)	01		TADSAA TADSO0 TADS10 SPI040 TADSAOX SPI039 SPI038 SPI035 35 16B 37 17B 39 18B 41 19B 43 22B 45 23B 47 23A 50 24A	



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CONNECTOR	GROUP	GROUP	TEST POINTS AND/OR	EQUATION	TERMS	DESIGNATOR	FACTOR	COMMENT
KA421	MUX	C2	18A	TADSW2X	00 =			
KA421	MUX	C2	21A	(38 )	01		TADS80X TADSCOX TADS00X TXGN6A 46 21A 42 20A 40 19A 48 22A	
KA422	MUX	C1	17A	TADSX1X	00 =			
KA422	MUX	C1	16B	(36 )	01		TE0T10X TADSD0X UE0T30X SPI035 UE0T40X 35 16B 37 17B 39 18B 41 19B 43 22B	E0T MULTIPLEXER
KA422	MUX	C2	18A	TADSX2X	00 =			
KA422	MUX	C2	21A	(38 )	01		TTS2BS TTS3BS TTS4BS TXGN6A 46 21A 42 20A 40 19A 48 22A	
KA517	TQ2	D1	24A	TADS00	00 =			
KA517	TQ2	D1	25A	(52 )	01		TADSAA SPI052 54 25A 56 26A	
KA543	TLD	E1	31A	TADS1D4	00 =			
KA543	TLD	E1	32A	(66 )	01		TTS1BR SPI059 68 32A 70 33A	MTT 1 ADDRESS SELECT
KA517	TQ2	D2	21A	TADS10	00 =			
KA517	TQ2	D2	22A	(46 )	01		TADSAA SPI052 48 22A 50 23A	
KA543	TLD	E2	28A	TADS2D4	00 =			
KA543	TLD	E2	29A	(60 )	01		TTS2BR SPI059 62 29A 64 30A	
KA543	TLD	E3	30B	TADS3D4	00 =			
KA543	TLD	E3	28B	(57 )	01		TTS3BR SPI059 53 28B 55 29B	
KA543	TLD	E4	33B	TADS4D4	00 =			
KA543	TLD	E4	31B	(63 )	01		TTS4BR SPI059 59 31B 61 32B	MTT 4 ADDRESS SELECT
KA519	TQ2	C1	18A	TBCP00	00 =			
KA519	TQ2	C1	19A	(38 )	01		TRWCOA TLPT1A 40 19A 42 20A	BUFFER REG CLOCK BITS 0 TO 3
KA519	TQ2	C2	15A	TBCP10	00 =			
KA519	TQ2	C2	16A	(30 )	01		TRWCOA TLPT1A 34 16A 36 17A	
KA519	TQ2	C3	16B	TBCP20	00 =			
KA519	TQ2	C3	14B	(33 )	01		TRWCOA TLPT1A 29 14B 31 15B	

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CONNECTOR	TEST POINT AND/OR	GROUP	EQUATION	TEST POINTS AND/OR	Y	DESIGNATION	FACTOR	COMMENT
KA519	TQ2	C4	19B	TBCP30	00	=		
KA519	TQ2	C4	17B	(39)	01		TRWCOA TLPT1A 35 17B 37 18B	
KA519	TQ2	D1	24A	TBCP40	00	=		
KA519	TQ2	D1	25A	(52)	01		TRWCOA TLPT1A 54 25A 56 26A	
KA519	TQ2	D2	21A	TBCP50	00	=		
KA519	TQ2	D2	22A	(46)	01		TRWCOA TLPT1A 48 22A 50 23A	
KA519	TQ2	D3	24B	TBCP60	00	=		
KA519	TQ2	D3	22B	(45)	01		TRWCOA TLPT1A 41 22B 43 23B	
KA519	TQ2	D4	27B	TBCP70	00	=		
KA519	TQ2	D4	25B	(51)	01		TRWCOA TLPT1A 47 25B 49 26B	BUFFER REG CLOCK BITS 28 TO 31
KA502	TS8	B1	11B	TBSY0A	00	=		
KA502	TS8	B1	09A	(23)	01		TSNC1S TRDY10X TADSW2X TBSY2A TFPE2A TCILKO TSCK1B SPI049 14 09A 18 10A 19 09B 20 11A 22 12A 24 13A 25 12B 26 14A	NEW COMMAND BUSY INHIBIT
KA505	TQ2	A2	02B	TBSY2A	00	=		
KA505	TQ2	A2	04A	(01)	01		TDIRSP TBOTOS 04 04A 05 03B	
KA523	TQ2	C2	15A	TBUSYA	00	=		
KA523	TQ2	C2	16A	(30)	01		TBUSY0 SPI053 34 16A 36 17A	
KA410	T04	C1	17B	TBUSYR	00	=		
KA410	T04	C1	18B	(35)	01		TBUSYS TINT1A TINT5A TXRS1B 37 18B 38 18A 40 19A 42 20A	
KA412	TQ2	C4	19B	TBUSYS	00	=		
KA412	TQ2	C4	17B	(39)	01		TBUSYR TBSY0A 35 17B 37 18B	TAPE MOTION BUSY F/F
KA522	TQ2	C2	15A	TBUSY0	00	=		
KA522	TQ2	C2	16A	(30)	01		TBUSYR TCSDOR 34 16A 36 17A	
KA523	TQ2	D3	24B	TBOTCA	00	=		
KA523	TQ2	D3	22B	(45)	01		TBOT10X SPI053 41 22B 43 23B	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TERM.	REGIS. NATION	FACTOR	COMMENT
			AND	OR					
KA523	TQ2	C1	18A		TBCT0A	00	=		
KA523	TQ2	C1	19A		(38)	01		TBOT10X TSCL3B 40 19A 42 20A	
KA523	TQ2	C3	16B		TBOT0R	00	=		
KA523	TQ2	C3	14B		(33)	01		TBOT0S TBOT1A 29 14B 31 15B	
KA522	TQ2	C3	16B		TBOT0S	00	=		BEGIN OF TAPE(BOT)E/F
KA522	TQ2	C3	14B		(33)	01		TBOT0R TBOT0A 29 14B 31 15B	
KA525	TD4	C1	17B		TBOT1A	00	=		
KA525	TD4	C1	18B		(35)	01		TBOTCA TSTPOR TBOT1R TSCL3B 37 18B 38 18A 40 19A 42 20A	
KA545	DCF	A1	02B		TBOT10X4	00	=		BOT 1 RECEIVER
KA545	DCF	A1	05A		(07)	01		SPI059 06 05A	
KA524	TT3	D1	23A		TBOT1R	00	=		
KA524	TT3	D1	24A		(50)	01		TBOT1S TBOT3A TBOT0S 52 24A 54 25A 56 26A	
KA522	TQ2	D1	24A		TBOT1S	00	=		BOT COUNTER BIT 1
KA522	TQ2	D1	25A		(52)	01		TBOT1R TBOT2A 54 25A 56 26A	
KA545	DCF	A2	03B		TBOT10X	00	=		
KA545	DCF	A2	04B		(09)	01		SPI058 11 04B	
KA524	TT3	C1	17A		TBOT2A	00	=		
KA524	TT3	C1	18A		(36)	01		TBOT0S TBOT2R TSCL1B 38 18A 40 19A 42 20A	
KA523	TQ2	C4	19B		TBOT2R	00	=		
KA523	TQ2	C4	17B		(39)	01		TBOT2S TBOT0S 35 17B 37 18B	
KA522	TQ2	C4	19B		TBOT2S	00	=		BOT COUNTER BIT 2
KA522	TQ2	C4	17B		(39)	01		TBOT2R TBOT4A 35 17B 37 18B	
KA523	TQ2	D2	21A		TBOT3A	00	=		BUFFER REG BIT 8
KA523	TQ2	D2	22A		(46)	01		TBOT2S TSCL1B 4R 22A 50 23A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV E INDEX TBOT4A  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIG. FACTOR	FACTOR	COMMENT
KA523	TQ2	D1	24A	TBOT4A	00 =			
KA523	TQ2	D1	25A	(52)	01		TBOT1S TSCL3B 54 25A 56 26A	
				TB008I	00 =			
KA533	TDD	EI	19A	( )	01		TD0080 40 19A	
				TB008N	00 =			
KA533	TDD	EN	20A	( )	01		TBCP00 42 20A	
KA533	TDD	EP	17B	TB008P	00 =			
KA533	TDD	EP	18A	(35)	01		SPI056 38 18A	
KA533	TDD	EQ	18B	TB008Q	00 =			BUFFER REG BIT 0
KA533	TDD	EQ	19B	(37)	01		SPI055 39 19B	
				TB018I	00 =			
KA533	TDD	FI	16A	( )	01		TD018Q 34 16A	
				TB018N	00 =			
KA533	TDD	FN	15A	( )	01		TBCP00 30 15A	
KA533	TDD	FP	16B	TB018P	00 =			
KA533	TDD	FP	17A	(33)	01		SPI054 36 17A	
KA533	TDD	FQ	15B	TB018Q	00 =			
KA533	TDD	FQ	14B	(31)	01		SPI040 29 14B	
				TB028I	00 =			
KA533	TDD	GI	25A	( )	01		TD028Q 54 25A	
				TB028N	00 =			
KA533	TDD	GN	26A	( )	01		TBCP00 56 26A	
KA533	TDD	GP	25B	TB028P	00 =			
KA533	TDD	GP	24A	(47)	01		SPI056 52 24A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
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DATE 09-03-82  
INDEX TBO2BQ  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR		EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA533	TDD	GQ	26B		TB02BQ	00	=		
KA533	TDD	GQ	27B	(49)		01		SPI055 51 27B	
					TB03BI	00	=		
KA533	TDD	HI	22A	( )		01		TD03BQ 48 22A	
					TB03BN	00	=		
KA533	TDD	HN	21A	( )		01		TBCP00 46 21A	
KA533	TDD	HP	24B		TB03BP	00	=		
KA533	TDD	HP	23A	(45)		01		SPI054 50 23A	
KA533	TDD	HQ	23B		TB03BQ	00	=		
KA533	TDD	HQ	22B	(43)		01		SPI040 41 22B	
					TB04BI	00	=		
KA533	TDD	JI	32A	( )		01		TD04BQ 68 32A	
					TB04BN	00	=		
KA533	TDD	JN	33A	( )		01		TBCP10 70 33A	
KA533	TDD	JP	31B		TB04BP	00	=		
KA533	TDD	JP	31A	(59)		01		SPI056 66 31A	
KA533	TDD	JQ	32B		TB04BQ	00	=		
KA533	TDD	JQ	33B	(61)		01		SPI055 63 33B	
					TB05BI	00	=		
KA533	TDD	KI	29A	( )		01		TD05BQ 62 29A	
					TB05BN	00	=		
KA533	TDD	KN	28A	( )		01		TBCP10 60 28A	
KA533	TDD	KP	30B		TB05BP	00	=		
KA533	TDD	KP	30A	(57)		01		SPI054 64 30A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B, FCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	J	TER	DISC	DISC	FACTOR	COMMENT
KA533	TDD	KQ	29B	TB05BQ	00	=				
KA533	TDD	KQ	28B	(55)	01				SPT040 53 28B	
				TB06BI	00	=				
KA533	TDD	LY	38B	( )	01				TD06BQ 77 38B	
				TB06BN	00	=				
KA533	TDD	LN	39B	( )	01				TBCP10 79 39B	
KA533	TDD	LP	37A	TB06BP	00	=				
KA533	TDD	LP	37B	(76)	01				SPT056 75 37B	
KA533	TDD	LQ	38A	TB06BQ	00	=				
KA533	TDD	LQ	39A	(78)	01				SPT055 80 39A	
				TB07BI	00	=				
KA533	TDD	MI	36A	( )	01				TD07BQ 71 36A	
				TB07BN	00	=				
KA533	TDD	MN	34A	( )	01				TBCP10 72 34A	
KA533	TDD	MP	35A	TB07BP	00	=				
KA533	TDD	MP	36B	(69)	01				SPT054 73 36B	
KA533	TDD	MQ	35B	TB07BQ	00	=				BUFFER REG BII 7
KA533	TDD	MQ	34B	(74)	01				SPT040 65 34B	
				TB08BI	00	=				
KA534	TDD	AI	06A	( )	01				TD08BQ 08 06A	
				TB08BN	00	=				
KA534	TDD	AN	07A	( )	01				TBCP20 10 07A	
KA534	TDD	AP	05B	TB08BP	00	=				
KA534	TDD	AP	05A	(11)	01				SPT056 06 05A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMINAL	DESIGNATOR	FACTOR	COMMENT
KA534	TDD	AQ	06B	T308BQ	00	=		
KA534	TDD	AQ	07B	(13)	01		SP1055 15 07B	
				T809BI	00	=		
KA534	TDD	BI	03B	( )	01		T809BQ 05 03B	
				T809BN	00	=		
KA534	TDD	BN	02B	( )	01		T8CP20 01 02B	
KA534	TDD	BP	04B	T809BP	00	=		
KA534	TDD	BP	04A	(09)	01		SP1054 04 04A	
KA534	TDD	BQ	03A	T809BQ	00	=		
KA534	TDD	BQ	02A	(07)	01		SP1040 03 02A	
				T810BI	00	=		
KA534	TDD	CI	13A	( )	01		T810BQ 24 13A	
				T810BN	00	=		
KA534	TDD	CN	14A	( )	01		T8CP20 26 14A	
KA534	TDD	CP	11B	T810BP	00	=		
KA534	TDD	CP	12A	(23)	01		SP1056 22 12A	
KA534	TDD	CQ	12B	T810BQ	00	=		
KA534	TDD	CQ	13B	(25)	01		SP1055 27 13B	
				T811BI	00	=		
KA534	TDD	DI	10A	( )	01		T811BQ 18 10A	
				T811BN	00	=		
KA534	TDD	DN	09A	( )	01		T8CP20 14 09A	
KA534	TDD	DP	10B	T811BP	00	=		
KA534	TDD	DP	11A	(21)	01		SP1054 20 11A	

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UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
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DATE 09-03-82  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	Y TERM	DESIGNATOR	FACTOR	COMMENT
KA534	TDD	DQ	09B	T811BQ	00	=		
KA534	TDD	DQ	08B	(19)	01		SPT040 17 08B	
				T812B1	00	=		
KA534	TDD	EI	19A	( )	01		TD12BQ 40 19A	
				T812BN	00	=		
KA534	TDD	EN	20A	( )	01		T8CP30 42 20A	
KA534	TDD	EP	17B	T812BP	00	=		
KA534	TDD	EP	18A	(35)	01		SP1056 38 18A	
KA534	TDD	EQ	18B	T812BQ	00	=		
KA534	TDD	EQ	19B	(37)	01		SP1055 39 19B	
				T813B1	00	=		
KA534	TDD	FI	16A	( )	01		TD13BQ 34 16A	
				T813BN	00	=		
KA534	TDD	FN	15A	( )	01		T8CP30 30 15A	
KA534	TDD	FP	16B	T813BP	00	=		
KA534	TDD	FP	17A	(33)	01		SP1054 36 17A	
KA534	TDD	FQ	15B	T813BQ	00	=		
KA534	TDD	FQ	14B	(31)	01		SP1040 29 14B	
				T814B1	00	=		
KA534	TDD	GI	25A	( )	01		TD14BQ 54 25A	
				T814BN	00	=		
KA534	TDD	GN	26A	( )	01		T8CP30 56 26A	
KA534	TDD	GP	25B	T814BP	00	=		
KA534	TDD	GP	24A	(47)	01		SP1056 52 24A	



DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
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INDEX TBI4BQ  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TEST DESIGNATION	FACTOR	COMMENT
KA534	TDD	GQ	26B	TB148Q	00 =		
KA534	TDD	GQ	27B	(49)	01	SPI055 51 27B	
KA534	TDD	HI	22A	TB158I	00 =		
				( )	01	TD158Q 48 22A	
KA534	TDD	HN	21A	TB158N	00 =		
				( )	01	TBCP30 46 21A	
KA534	TDD	HP	24B	TB158P	00 =		
KA534	TDD	HP	23A	(45)	01	SPI054 50 23A	
KA534	TDD	HQ	23B	TB158Q	00 =		BUFFER REG BIT 15
KA534	TDD	HQ	22B	(43)	01	SPI040 41 22B	
KA534	TDD	JI	32A	TB168I	00 =		
				( )	01	TD168Q 68 32A	
KA534	TDD	JN	33A	TB168N	00 =		
				( )	01	TBCP40 70 33A	
KA534	TDD	JP	31B	TB168P	00 =		
KA534	TDD	JP	31A	(59)	01	SPI056 66 31A	
KA534	TDD	JQ	32B	TB168Q	00 =		BUFFER REG BIT 16
KA534	TDD	JQ	33B	(51)	01	SPI055 63 33B	
KA534	TDD	KI	29A	TB178I	00 =		
				( )	01	TD178Q 62 29A	
KA534	TDD	KN	28A	TB178N	00 =		
				( )	01	TBCP40 60 28A	
KA534	TDD	KP	30B	TB178P	00 =		
KA534	TDD	KP	30A	(57)	01	SPI054 64 30A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
REV E  
INDEX TB17BQ  
DATE 09-03-82  
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CONNECTOR	CIRCUIT GROUP	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIG RELATION	FACTOR	COMMENT
KA534	TDD	KQ	29B	TB17BQ	00	=		
KA534	TDD	KQ	28B	(55)	01		SPI040 53 28B	
KA534	TDD	LI	38B	TB18BI	00	=		
				( )	01		TD18BQ 77 38B	
KA534	TDD	LN	39B	TB18BN	00	=		
				( )	01		TBCP40 79 39B	
KA534	TDD	LP	37A	TB18BP	00	=		
KA534	TDD	LP	37B	(76)	01		SPI056 75 37B	
KA534	TDD	LQ	39A	TB18BQ	00	=		
KA534	TDD	LQ	39A	(78)	01		SPI055 80 39A	
KA534	TDD	MI	36A	TB19BI	00	=		
				( )	01		TD19BQ 71 36A	
KA534	TDD	MN	34A	TB19BN	00	=		
				( )	01		TBCP40 72 34A	
KA534	TDD	MP	35A	TB19BP	00	=		
KA534	TDD	MP	36B	(69)	01		SPI054 73 36B	
KA534	TDD	MQ	35B	TB19BQ	00	=		
KA534	TDD	MQ	34B	(74)	01		SPI040 65 34B	
KA535	TDD	AI	06A	TB20BI	00	=		
				( )	01		TD20BQ 08 06A	
KA535	TDD	AN	07A	TB20BN	00	=		
				( )	01		TBCP50 10 07A	
KA535	TDD	AP	05B	TB20BP	00	=		
KA535	TDD	AP	05A	(11)	01		SPI056 06 05A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
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INDEX TB20BQ  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TERM	DESIG. NOTATION	FACTOR	COMMENT
			AND	OR					
KA535	TDD	AQ	06B		TB20BQ	00	=		
KA535	TDD	AU	07B		(13)	01		SP1055 15 07B	
					TB21BI	00	=		
KA535	TDD	BI	03B		( )	01		TG21B0 05 03B	
					TB219N	00	=		
KA535	TDD	BN	02B		( )	01		TBCP50 01 02B	
KA535	TDD	BP	04B		TB21BP	00	=		
KA535	TDD	BP	04A		(09)	01		SP1054 04 04A	
KA535	TDD	BQ	03A		TB21BQ	00	=		
KA535	TDD	BQ	02A		(07)	01		SP1040 03 02A	
					TB22BI	00	=		
KA535	TDD	CI	13A		( )	01		TD22BQ 24 13A	
					TB22BN	00	=		
KA535	TDD	CN	14A		( )	01		TBCP50 26 14A	
KA535	TDD	CP	11B		TB22BP	00	=		
KA535	TDD	CP	12A		(23)	01		SP1056 22 12A	
KA535	TDD	CQ	12B		TB22BQ	00	=		
KA535	TDD	CQ	13B		(25)	01		SP1055 27 13B	
					TB23BI	00	=		
KA535	TDD	DI	10A		( )	01		T023BQ 18 10A	
					TB23BN	00	=		
KA535	TDD	DN	09A		( )	01		TBCP50 14 09A	
KA535	TDD	DP	10B		TB23BP	00	=		
KA535	TDD	DP	11A		(21)	01		SP1054 20 11A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
REV E  
DATE 09-03-82  
INDEX TB23BQ  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TRAY	DESIGNATOR	FACTOR	COMMENT
KA535	TDD	DQ	109B	TB23BQ	00	=		
KA535	TDD	DQ	108B	(19)	01	=	SP1040 17 08B	BUFFER REG BIT 23
KA535	TDD	EI	19A	TB24BI	00	=		
				( )	01	=	TD24BQ 40 19A	
KA535	TDD	EN	20A	TB24BN	00	=		
				( )	01	=	TBCP60 42 20A	
KA535	TDD	EP	17B	TB24BP	00	=		
KA535	TDD	EP	18A	(35)	01	=	SP1056 38 18A	
KA535	TDD	EQ	18B	TB24BQ	00	=		
KA535	TDD	EQ	19B	(37)	01	=	SP1055 39 19B	BUFFER REG BIT 24
KA535	TDD	FI	16A	TB25BI	00	=		
				( )	01	=	TD25BQ 34 16A	
KA535	TDD	FN	15A	TB25BN	00	=		
				( )	01	=	TBCP60 30 15A	
KA535	TDD	FP	16B	TB25BP	00	=		
KA535	TDD	FP	17A	(33)	01	=	SP1054 36 17A	
KA535	TDD	FQ	15B	TB25BQ	00	=		
KA535	TDD	FQ	14B	(31)	01	=	SP1040 29 14B	
KA535	TDD	GI	25A	TB26BI	00	=		
				( )	01	=	TD26BQ 54 25A	
KA535	TDD	GN	26A	TB26BN	00	=		
				( )	01	=	TBCP60 56 26A	
KA535	TDD	GP	25B	TB26BP	00	=		
KA535	TDD	GP	24A	(47)	01	=	SP1056 52 24A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
REV E  
DATE 09-03-82  
INDEX TB26BQ  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM NO.	TEST POINT DEFINITION	FACTOR	COMMENT
KA535	TDD	GQ	26B	TB26BQ	00	=		
KA535	TDD	GQ	27B	(49)	01		SPI055 51 27B	
				TB27BI	00	=		
KA535	TDD	HI	22A	( )	01		TD27BQ 48 22A	
				TB27BN	00	=		
KA535	TDD	HN	21A	( )	01		YBCP60 46 21A	
KA535	TDD	HP	24B	TB27BP	00	=		
KA535	TDD	HP	23A	(45)	01		SPI054 50 23A	
KA535	TDD	HQ	23B	TB27BQ	00	=		
KA535	TDD	HQ	22B	(43)	01		SPI040 41 22B	
				TB28BI	00	=		
KA535	TDD	JI	32A	( )	01		TD28BQ 68 32A	
				TB28BN	00	=		
KA535	TDD	JN	33A	( )	01		YBCP70 70 33A	
KA535	TDD	JP	31B	TB28BP	00	=		
KA535	TDD	JP	31A	(59)	01		SPI056 66 31A	
KA535	TDD	JQ	32B	TB28BQ	00	=		
KA535	TDD	JQ	33B	(61)	01		SPI055 63 33B	
				TB29BI	00	=		
KA535	TDD	KI	29A	( )	01		TD29BQ 62 29A	
				TB29BN	00	=		
KA535	TDD	KN	28A	( )	01		YBCP70 60 28A	
KA535	TDD	KP	30B	TB29BP	00	=		
KA535	TDD	KP	30A	(57)	01		SPI054 64 30A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
REV E  
DATE 09-03-82  
INDEX TB29BQ  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIG. NOTATION	FACTOR	COMMENT
KA535	TDD	KQ	29B	TB29BQ	00	=		
KA535	TDD	KQ	28B	(55)	01		SPI040 53 28B	
				TB308I	00	=		
KA535	TDD	LY	38B	( )	01		TD308Q 77 38B	
				TB308N	00	=		
KA535	TDD	LN	39B	( )	01		TBCP70 79 39B	
KA535	TDD	LP	37A	TB308P	00	=		
KA535	TDD	LP	37B	(76)	01		SPI056 75 37B	
KA535	TDD	LQ	38A	TB308Q	00	=		
KA535	TDD	LQ	39A	(78)	01		SPI055 80 39A	
				TB318I	00	=		
KA535	TDD	MI	36A	( )	01		TD318Q 77 36A	
				TB318N	00	=		
KA535	TDD	MN	34A	( )	01		TBCP70 72 34A	
KA535	TDD	MP	35A	TB318P	00	=		
KA535	TDD	MP	36B	(69)	01		SPI054 73 36B	
KA535	TDD	MQ	35B	TB318Q	00	=		BUFFER REG. BIT 31
KA535	TDD	MQ	34B	(74)	01		SPI040 65 34B	
KA411	TQ2	A1	05A	TCCP00	00	=		MAIN TIMING COUNTER CLK 00-04
KA411	TQ2	A1	06A	(06)	01		TXCP3A T009SA 08 06A 10 07A	
KA412	TQ2	A1	05A	TCCP10	00	=		
KA412	TQ2	A1	06A	(06)	01		TC048P SPI036 08 06A 10 07A	
KA411	TQ2	A2	02B	TCCP20	00	=		
KA411	TQ2	A2	04A	(01)	01		TC148P SPI033 04 04A 05 03B	

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149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39CIFC7  
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DATE 09-03-82  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATION	FACTOR	COMMENT
KA412	TQ2	A2	02B	TCCP30	00 =		
KA412	TQ2	A2	04A	(01)	01	YC248P SPI036 04 04A 05 03B	
KA411	TQ2	A3	04B	TCCP40	00 =		
KA411	TQ2	A3	02A	(09)	01	YC348P SPI033 03 02A 07 03A	
KA412	TQ2	A3	04B	TCCP50	00 =		
KA412	TQ2	A3	02A	(09)	01	YC448P SPI036 03 02A 07 03A	
KA411	TQ2	A4	07B	TCCP60	00 =		MAIN TIMING COUNTER CLK 60-64
KA411	TQ2	A4	05B	(15)	01	YC548P SPI033 11 05B 13 06B	
KA411	TQ2	B1	12A	TCCP70	00 =		WRITE TIMING COUNTER CLK 0-4
KA411	TQ2	B1	13A	(72)	01	YXCP3A SPI033 24 13A 26 14A	
KA412	TQ2	B1	12A	TCCP80	00 =		
KA412	TQ2	B1	13A	(22)	01	YC748P SPI036 24 13A 26 14A	
KA411	TQ2	B2	09A	TCCP90	00 =		WRITE TIMING COUNTER CLK 90/1
KA411	TQ2	B2	10A	(14)	01	YC848P SPI033 18 10A 20 11A	
KA444	TLD	C4	19B	TCILKD4	00 =		CABLE INTERLOCK DRIVER
KA444	TLD	C4	17B	(39)	01	SPI044 SPI048 35 17B 37 18B	
KA412	TQ2	D4	27B	TCILKO	00 =		CABLE INTERLOCK RECEIVER
KA412	TQ2	D4	25B	(51)	01	YCILKA4 SPI036 47 25B 49 26B	
KA510	TT3	F1	36B	TCRSCA	00 =		
KA510	TT3	F1	37B	(73)	01	TKA01G TKA02P TSCL3B 75 37B 77 38B 79 39B	
KA412	TQ2	B2	09A	TCRSOA	00 =		TCRSOB BUSS
KA412	TQ2	B2	10A	(14)	01	TCRS00 SPI036 18 10A 20 11A	
KA412	TQ2	B2	09A	TCRSOB	00 =		
KA412	TQ2	B2	09A	( )	01	TCRSOA 14 09A	
KA412	TQ2	B3	10B	( )	02 +	TCRS1A 21 10B	
KA412	TQ2	B4	13B	( )	03 +	TCRS2A 27 13B	

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UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	3 TERM	DESIGNATION	FACTOR	COMMENT
KA418	TS8	A1	05B	TCRS00	00 =			MAIN TIMING COUNTER RESET
KA418	TS8	A1	02B	(11)	01		YSPRA YSTRRA YFSTRA TLAORA TCRSCA TWRGRA TXRS1B TSTR3A 01 02B 04 04A 05 03B 06 05A 07 03A 08 06A 10 07A 13 06B	
KA412	TQ2	B3	10B	TCRS1A	00 =			TCRS0B BUSS
KA412	TQ2	B3	08B	(21)	01		TCRS00 SPI036 17 08B 19 09B	
KA412	TQ2	B4	13B	TCRS2A	00 =			TCRS0B BUSS
KA412	TQ2	B4	11B	(27)	01		TCRS00 SPI036 23 11B 25 12B	
KA412	TQ2	C1	18A	TCRS7A	00 =			
KA412	TQ2	C1	19A	(38)	01		TCRS70 SPI036 40 19A 42 20A	
KA410	TD4	A1	05B	TCRS70	00 =			WRITE TIMING COUNTER RESET
KA410	TD4	A1	05A	(11)	01		YWRRA YLACRA TWRGRA TXRS1B 06 05A 08 06A 10 07A 13 06B	
KA523	TQ2	A1	05A	TCSDRA	00 =			
KA523	TQ2	A1	06A	(06)	01		TCSD00 SPI053 08 06A 10 07A	
KA524	TT3	A1	04A	TCSDRO	00 =			INPUT DELAY COUNTER RESET
KA524	TT3	A1	05A	(04)	01		TCSD0P TTSC00 TRW0CA 06 05A 08 06A 10 07A	
KA525	TD4	A2	04B	TCSD0A	00 =			START NEW TAPE MOTION COMMAND
KA525	TD4	A2	02B	(09)	01		TCSD00 TCSD1P TCSD2Q TSCL1B 01 02B 04 04A 05 03B 07 03A	
KA417	TDD	LI	38B	TCSD0I	00 =			
KA417	TDD	LI	38B	( )	01		SPI037 77 38B	
KA417	TDD	LN	39B	TCSD0N	00 =			
KA417	TDD	LN	39B	( )	01		TCSD2P 79 39B	
KA417	TDD	LP	37A	TCSD0P	00 =			
KA417	TDD	LP	37B	(76)	01		TSYN1A 75 37B	
KA417	TDD	LQ	38A	TCSD0Q	00 =			INPUT DELAY CONTROL F/F
KA417	TDD	LQ	39A	(78)	01		TXRS2B 80 39A	



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149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA524	TT3	A2	03A	TCSD0R	00	*		
KA524	TT3	A2	02B	(07 )	01		TCSD0S YSNCIA TXRS2B 01 02B 03 Q2A 05 03B	
KA523	TQ2	A2	02B	TCSD0S	00	=		INPUT DELAY BUSY F/F
KA523	TQ2	A2	04A	(01 )	01		TCSD0R YSYNIA 04 04A 05 03B	
KA527	TS8	CI	17B	TCSD00	00	=		
KA527	TS8	CI	15A	(35 )	01		TREWIP TREWDP TSPACP TREADP TWRITP TWRTEP TSPAFP THISPP 30 15A 31 15B 34 16A 36 17A 37 18B 38 18A 40 19A 42 20A	
				TCSD1I	00	=		
KA417	TDD	J1	32A	( )	01		TCSD2P 68 32A	
				TCSD1N	00	=		
KA417	TDD	JN	33A	( )	01		TSCK3B 70 33A	
KA417	TDD	JP	31B	TCSD1P	00	=		
KA417	TDD	JP	31A	(59 )	01		TCSDRA 66 31A	
KA417	TDD	JQ	32B	TCSD1Q	00	=		
KA417	TDD	JQ	33B	(61 )	01		SPI03B 63 33B	
KA407	TQ2	B3	10B	TCSD10	00	=		
KA407	TQ2	B3	08B	(21 )	01		TREWIP TREWOP 17 08B 19 09B	
KA525	TD4	B1	11B	TCSD2A	00	=		
KA525	TD4	B1	12A	(23 )	01		TREWOP TCSD1P TCSD2Q TSCL1B 22 12A 24 13A 25 12B 26 14A	
				TCSD2I	00	=		
KA415	TDD	K1	29A	( )	01		TCSD1Q 62 29A	
				TCSD2N	00	=		
KA415	TDD	KN	28A	( )	01		TSCK3B 60 28A	
KA415	TDD	KP	30B	TCSD2P	00	=		
KA415	TDD	KP	30A	(57 )	01		TCSDRA 64 30A	

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CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DEREG-NATOR	FACTOR	COMMENT
KA415	TDD	KQ	29B	TCSD2Q	00	=		
KA415	YDD	KQ	28B	(55)	01		SPI034 53 28B	INPUT DELAY COUNTER BIT 2
KA523	TQ2	F1	37B	TCSD20	00	=		
KA523	YQ2	F1	38B	(75)	01		TCSD2A SPI053 77 38B 79 39B	
KA418	TS8	B1	11B	TCZROA	00	=		MAIN TIMING COUNTER IS ZERO
KA418	YS8	B1	09A	(23)	01		TC00BQ TC04BQ TC10BQ TC14BQ TC20BQ TC24BQ TCZRI0 SPI039 14 09A 18 10A 19 09B 20 11A 22 12A 24 13A 25 12B 26 14A	
KA412	TQ2	C2	15A	TCZR00	00	=		
KA412	YQ2	C2	16A	(30)	01		TCZROA SPI036 34 16A 36 17A	
KA418	TS8	C1	17B	TCZR1A	00	=		
KA418	YS8	C1	15A	(35)	01		TC30BQ TC34BQ TC40BQ TC44BQ TC50BQ TC54BQ TC60BQ TC64BQ 30 15A 31 15B 34 16A 36 17A 37 18B 38 18A 40 19A 42 20A	
KA412	YQ2	C3	16B	TCZR10	00	=		
KA412	YQ2	C3	14B	(33)	01		TCZR1A SPI036 29 14B 31 15B	
KA521	TS8	A1	05B	TCZR7A	00	=		WRITE TIMING COUNTER IS ZERO
KA521	YS8	A1	02B	(11)	01		TC70BQ TC74BQ TC80BQ TC84BQ TC90BQ TC91BQ SPI053 SPI050 01 02B 04 04A 05 03B 06 05A 07 03A 08 06A 10 07A 13 06B	
KA520	YQ2	B3	10B	TCZR70	00	=		
KA520	YQ2	B3	08B	(21)	01		TCZR7A SPI052 17 08B 19 09B	
				TC00B1	00	=		
KA413	YDD	AI	06A	( )	01		TC04BP 08 06A	
				TC00B8	00	=		
KA413	YDD	AN	07A	( )	01		TCCP00 10 07A	
KA413	YDD	AP	05B	TC00BP	00	=		
KA413	YDD	AP	05A	(11)	01		SPI036 06 05A	
KA413	YDD	AQ	06B	TC00BQ	00	=		
KA413	YDD	AQ	07B	(13)	01		TCRS08 15 07B	

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149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
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CONNECTOR	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA414	TDD AI 06A		TC01BI ( )	00 = 01		YCO08Q 08 06A	
KA414	TDD AN 07A		TC01BN ( )	00 = 01		YCCP00 10 07A	
KA414	TDD AP 05B		TC01BP (11 )	00 = 01		SPI036 06 05A	
KA414	TDD AQ 06B		TC01BQ (13 )	00 = 01		YCRS08 15 07B	
KA415	TDD AI 06A		TC02BI ( )	00 = 01		YCO18Q 08 06A	
KA415	TDD AN 07A		TC02BN ( )	00 = 01		YCCP00 10 07A	
KA415	TDD AP 05B		TC02BP (11 )	00 = 01		SPI037 06 05A	
KA415	TDD AQ 06B		TC02BQ (13 )	00 = 01		YCRS08 15 07B	
KA416	TDD AI 06A		TC03BI ( )	00 = 01		YCO28Q 08 06A	
KA416	TDD AN 07A		TC03BN ( )	00 = 01		YCCP00 10 07A	
KA416	TDD AP 05B		TC03BP (11 )	00 = 01		SPI037 06 05A	
KA416	TDD AQ 06B		TC03BQ (13 )	00 = 01		YCRS08 15 07B	

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149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TECH	DESIGNATOR	FACTOR	COMMENT
				TC04BI	00 =			
KA417	TDD	AI	06A	( )	01		TC03BQ 08 06A	
				TC04BN	00 =			
KA417	TDD	AN	07A	( )	01		TCCP00 10 07A	
KA417	TDD	AP	05B	TC04BP	00 =			
KA417	TDD	AP	05A	(11)	01		SPI037 06 05A	
KA417	TDD	AQ	06B	TC04BQ	00 =			MAIN TIMING COUNTER 1 OUS
KA417	TDD	AQ	07B	(13)	01		TCR50B 15 07B	
				TC10BI	00 =			
KA413	TDD	BI	03B	( )	01		TC14BP 05 03B	
				TC10BN	00 =			
KA413	TDD	BN	02B	( )	01		TCCP10 01 02B	
KA413	TDD	BP	04B	TC10BP	00 =			
KA413	TDD	BP	04A	(09)	01		SPI034 04 04A	
KA413	TDD	BQ	03A	TC10BQ	00 =			
KA413	TDD	BQ	02A	(07)	01		TCR50B 03 02A	
				TC11BI	00 =			
KA414	TDD	BI	03B	( )	01		TC10BQ 05 03B	
				TC11BN	00 =			
KA414	TDD	BN	02B	( )	01		TCCP10 01 02B	
KA414	TDD	BP	04B	TC11BP	00 =			
KA414	TDD	BP	04A	(09)	01		SPI034 04 04A	
KA414	TDD	BQ	03A	TC11BQ	00 =			
KA414	TDD	BQ	02A	(07)	01		TCR50B 03 02A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
				TC12BI	00	=		
KA415	TDD	BI	03B	( )	01		TC118Q 05 03B	
				TC12BN	00	=		
KA415	TDD	BN	02B	( )	01		TCCP1C 01 02B	
KA415	TDD	BP	04B	TC126P	00	=		
KA415	TDD	BP	04A	(09 )	01		SPI034 04 04A	
				TC12BQ	00	=		
KA415	TDD	BQ	03A	(07 )	01		TCSR0B 03 02A	
				TC13BI	00	=		
KA416	TDD	BI	03B	( )	01		TC128Q 05 03B	
				TC13BN	00	=		
KA416	TDD	BN	02B	( )	01		TCCP1D 01 02B	
KA416	TDD	BP	04B	TC138P	00	=		
KA416	TDD	BP	04A	(09 )	01		SPI034 04 04A	
				TC13BQ	00	=		
KA416	TDD	BQ	03A	(07 )	01		TCSR0B 03 02A	
				TC148I	00	=		
KA417	TDD	BI	03B	( )	01		TC138Q 05 03B	
				TC148N	00	=		
KA417	TDD	BN	02B	( )	01		TCCP1D 01 02B	
KA417	TDD	BP	04B	TC148P	00	=		
KA417	TDD	BP	04A	(09 )	01		SPI038 04 04A	
				TC148Q	00	=		
KA417	TDD	BQ	03A	(07 )	01		TCSR0B 03 02A	MAIN TIMING COUNTER 1 00US

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CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA413	TDD	CI	13A	TC208I ( )	00 =		TC248P 24 13A	
KA413	TDD	CN	14A	TC208N ( )	00 =		YCCP20 26 14A	
KA413	TDD	CP	11B	TC208P (23 )	00 =			
KA413	TDD	CP	12A		01		SP1036 22 12A	
KA413	TDD	CQ	12B	TC208Q (25 )	00 =			
KA413	TDD	CQ	13B		01		YCR50B 27 13B	
KA414	TDD	CI	13A	TC218I ( )	00 =		TC208Q 24 13A	
KA414	TDD	CN	14A	TC218N ( )	00 =		YCCP20 26 14A	
KA414	TDD	CP	11B	TC218P (23 )	00 =			
KA414	TDD	CP	12A		01		SP1037 22 12A	
KA414	TDD	CQ	12B	TC218Q (25 )	00 =			
KA414	TDD	CQ	13B		01		YCR50B 27 13B	
KA415	TDD	CI	13A	TC228I ( )	00 =		TC218Q 24 13A	
KA415	TDD	CN	14A	TC228N ( )	00 =		YCCP20 26 14A	
KA415	TDD	CP	11B	TC228P (23 )	00 =			
KA415	TDD	CP	12A		01		SP1037 22 12A	
KA415	TDD	CQ	12B	TC228Q (25 )	00 =			
KA415	TDD	CQ	13B		01		YCR50B 27 13B	

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149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
			AND	OR					
					TC23BI	00 =			
KA416	TDD	CI	13A		( )	01	TC228Q 24 13A		
					TC23BN	00 =			
KA416	TDD	CN	14A		( )	01	TC22P20 26 14A		
KA416	TDD	CP	11B		TC23BP	00 =			
KA416	TDD	CP	12A		(23 )	01	SPI037 22 12A		
KA416	TDD	CQ	12B		TC23BQ	00 =			
KA416	TDD	CQ	13B		(25 )	01	TCRS0B 27 13B		
					TC24BI	00 =			
KA417	TDD	CI	13A		( )	01	TC23BQ 24 13A		
					TC24BN	00 =			
KA417	TDD	CN	14A		( )	01	TC22P20 26 14A		
KA417	TDD	CP	11B		TC24BP	00 =			
KA417	TDD	CP	12A		(23 )	01	SPI037 22 12A		
KA417	TDD	CQ	12B		TC24BQ	00 =			
KA417	TDD	CQ	13B		(25 )	01	TCRS0B 27 13B	MAIN TIMING COUNTER IMS	
					TC30BI	00 =			
KA413	TDD	DI	10A		( )	01	TC34BP 18 10A		
					TC30BN	00 =			
KA413	TDD	DN	09A		( )	01	TC22P30 14 09A		
KA413	TDD	DP	10B		TC30BP	00 =	SPO		
KA413	TDD	DP	11A		(21 )	01	SPI034 20 11A		
KA413	TDD	DQ	09B		TC30BQ	00 =			
KA413	TDD	DQ	08B		(19 )	01	TCRS0B 17 08B		

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CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
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CONNECTOR	TEST POINT	GROUP	TEST POINTS AND OR	EQUATION	TERMINATION	ORIGIN	FACTOR	COMMENT
KA414	TDD	DI	10A	TC318I ( )	00 = 01		TC308Q 18 10A	
KA414	TDD	DN	09A	TC318N ( )	00 = 01		TCCP30 14 09A	
KA414	TDD	DP	10B	TC318P (21 )	00 = 01		SPI034 20 11A	
KA414	TDD	DQ	09B	TC318Q (19 )	00 = 01		TCSR0B 17 08B	
KA415	TDD	DI	10A	TC328I ( )	00 = 01		TC318Q 18 10A	
KA415	TDD	DN	09A	TC328N ( )	00 = 01		TCCP30 14 09A	
KA415	TDD	DP	10B	TC328P (21 )	00 = 01		SPI034 20 11A	
KA415	TDD	DQ	09B	TC328Q (19 )	00 = 01		TCSR0B 17 08B	
KA416	TDD	DI	10A	TC338I ( )	00 = 01		TC328Q 18 10A	
KA416	TDD	DN	09A	TC338N ( )	00 = 01		TCCP30 14 09A	
KA416	TDD	DP	10B	TC338P (21 )	00 = 01		SPI034 20 11A	
KA416	TDD	DQ	09B	TC338Q (19 )	00 = 01		TCSR0B 17 08B	



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMINAL	DESIGNATOR	FACTOR	COMMENT
KA417	TDD	DI	10A	TC348I	00 =			
				( )	01		TC338Q 18 10A	
				TC348N	00 =			
KA417	TDD	DN	09A	( )	01		TC338P 14 09A	
KA417	TDD	DP	10B	TC348P	00 =			
KA417	TDD	DP	11A	(21 )	01		SPI038 20 11A	
KA417	TDD	DQ	09B	TC348Q	00 =			
KA417	TDD	DQ	08B	(19 )	01		TCRS08 17 08B	MAIN TIMING COUNTER I OMS
				TC408I	00 =			
KA413	TDD	EI	19A	( )	01		TC448P 40 19A	
				TC408N	00 =			
KA413	TDD	EN	20A	( )	01		TC338Q 42 20A	
KA413	TDD	EP	17B	TC408P	00 =			
KA413	TDD	EP	18A	(35 )	01		SPI036 38 18A	
KA413	TDD	EQ	18B	TC408Q	00 =			
KA413	TDD	EQ	19B	(37 )	01		TCRS08 39 19B	
				TC418I	00 =			
KA414	TDD	EI	19A	( )	01		TC408Q 40 19A	
				TC418N	00 =			
KA414	TDD	EN	20A	( )	01		TC338Q 42 20A	
KA414	TDD	EP	17B	TC418P	00 =			
KA414	TDD	EP	18A	(35 )	01		SPI037 38 18A	
KA414	TDD	EQ	18B	TC418Q	00 =			
KA414	TDD	EQ	19B	(37 )	01		TCRS08 39 19B	

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149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
REV E  
DATE 09-03-82  
INDEX TC42BI  
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CONNECTOR	TEST POINT GROUP	TEST POINTS AND/OR	EQUATION	J E W	DESIGNATION	FACTOR	COMMENT
KA415	TDD EI 19A		TC42BI ( )	00 = 01		TC41BQ 40 19A	
KA415	TDD EN 20A		TC42BN ( )	00 = 01		TCCP40 42 20A	
KA415	TDD EP 17B		TC42BP (35 )	00 = 01		SPIO37 38 18A	
KA415	TDD EQ 18B		TC42BQ (37 )	00 = 01		TCSR08 39 19B	
KA416	TDD EI 19A		TC43BI ( )	00 = 01		TC42BQ 40 19A	
KA416	TDD EN 20A		TC43BN ( )	00 = 01		TCCP40 42 20A	
KA416	TDD EP 17B		TC43BP (35 )	00 = 01		SPIO37 38 18A	
KA416	TDD EQ 18B		TC43BQ (37 )	00 = 01		TCSR08 39 19B	
KA417	TDD EI 19A		TC44BI ( )	00 = 01		TC43BQ 40 19A	
KA417	TDD EN 20A		TC44BN ( )	00 = 01		TCCP40 42 20A	
KA417	TDD EP 17B		TC44BP (35 )	00 = 01		SPIO37 38 18A	
KA417	TDD EQ 18B		TC44BQ (37 )	00 = 01		TCSR08 39 19B	MAIN TIMING COUNTER 1 00MS



DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
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CONNECTOR	CIRCUIT GROUP	GROUP	TEST POINTS AND OR	EQUATION	TEST POINT	TEST POINT	FACTOR	COMMENT
				TC53BI	00	=		
KA416	TDD	FI	16A	( )	01		TC528Q 34 16A	
				TC53BN	00	=		
KA416	TDD	FN	15A	( )	01		TCCP50 30 15A	
KA416	TDD	FP	16B	TC53BP	00	=		
KA416	TDD	FP	17A	(33 )	01		SPT034 36 17A	
KA416	TDD	FQ	15B	TC53BQ	00	=		
KA416	TDD	FQ	14B	(31 )	01		TCR50B 29 14B	
				TC54BI	00	=		
KA417	TDD	FI	16A	( )	01		TC53BQ 34 16A	
				TC54BN	00	=		
KA417	TDD	FN	15A	( )	01		TCCP50 30 15A	
KA417	TDD	FP	16B	TC54BP	00	=		
KA417	TDD	FP	17A	(33 )	01		SPT03B 36 17A	
KA417	TDD	FQ	15B	TC54BQ	00	=		
KA417	TDD	FQ	14B	(31 )	01		TCR50B 29 14B	
				TC60BI	00	=		
KA413	TDD	GI	25A	( )	01		TC648P 54 25A	
				TC60BN	00	=		
KA413	TDD	GN	26A	( )	01		TCCP60 56 26A	
KA413	TDD	GP	25B	TC60BP	00	=		
KA413	TDD	GP	24A	(47 )	01		SPT036 52 24A	
KA413	TDD	GQ	26B	TC60BQ	00	=		
KA413	TDD	GQ	27B	(49 )	01		TCR50B 51 27B	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIG. FACTOR	FACTOR	COMMENT
				TC53BI	00 =			
KA416	TDD	FI	16A	( )	01		TC52BQ 34 16A	
				TC53BN	00 =			
KA416	TDD	FN	15A	( )	01		TC53P50 30 15A	
KA416	TDD	FP	16B	TC53BP	00 =			
KA416	TDD	FP	17A	(33 )	01		SPI034 36 17A	
KA416	TDD	FQ	15B	TC53BQ	00 =			
KA416	TDD	FQ	14B	(31 )	01		TC53S0B 29 14B	
				TC54BI	00 =			
KA417	TDD	FI	16A	( )	01		TC53BQ 34 16A	
				TC54BN	00 =			
KA417	TDD	FN	15A	( )	01		TC53P50 30 15A	
KA417	TDD	FP	16B	TC54BP	00 =			
KA417	TDD	FP	17A	(33 )	01		SPI038 36 17A	
KA417	TDD	FQ	15B	TC54BQ	00 =			
KA417	TDD	FQ	14B	(31 )	01		TC53S0B 29 14B	
				TC60BI	00 =			
KA413	TDD	GI	25A	( )	01		TC648P 54 25A	
				TC60BN	00 =			
KA413	TDD	GN	26A	( )	01		TC53P60 56 26A	
KA413	TDD	GP	25B	TC60BP	00 =			
KA413	TDD	GP	24A	(47 )	01		SPI036 52 24A	
KA413	TDD	GQ	26B	TC60BQ	00 =			
KA413	TDD	GQ	27B	(49 )	01		TC53S0B 51 27B	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TC61BI  
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CONNECTOR	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
			TC61BI	00 =			
KA414	TDD	GI 25A	( )	01	TC60BQ	54 25A	
			TC61BN	00 =			
KA414	TDD	GN 26A	( )	01	TCCP60	56 26A	
KA414	TDD	GP 25B	TC61BP	00 =			
KA414	TDD	GP 24A	(47 )	01	SPI037	52 24A	
KA414	TDD	GQ 26B	TC61BQ	00 =			
KA414	TDD	GQ 27B	(49 )	01	TCR50B	51 27B	
			TC62BI	00 =			
KA415	TDD	GI 25A	( )	01	TC61BQ	54 25A	
			TC62BN	00 =			
KA415	TDD	GN 26A	( )	01	TCCP60	56 26A	
KA415	TDD	GP 25B	TC62BP	00 =			
KA415	TDD	GP 24A	(47 )	01	SPI037	52 24A	
KA415	TDD	GQ 26B	TC62BQ	00 =			
KA415	TDD	GQ 27B	(49 )	01	TCR50B	51 27B	
			TC63BI	00 =			
KA416	TDD	GI 25A	( )	01	TC62BQ	54 25A	
			TC63BN	00 =			
KA416	TDD	GN 26A	( )	01	TCCP60	56 26A	
KA416	TDD	GP 25B	TC63BP	00 =			
KA416	TDD	GP 24A	(47 )	01	SPI037	52 24A	
KA416	TDD	GQ 26B	TC63BQ	00 =			
KA416	TDD	GQ 27B	(49 )	01	TCR50B	51 27B	

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CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST	DESIGNATOR	FACTOR	COMMENT
KA417	YDD	GT	25A	TC64BI ( )	00 = 01		TC63BQ 54 25A	
KA417	YDD	GN	26A	TC64BN ( )	00 = 01		TCCP60 56 26A	
KA417	TDD	GP	25B	TC64BP (47 )	00 = 01		SP1037 52 24A	
KA417	TDD	GQ	26B	TC64BQ (49 )	00 = 01			MAIN TIMING COUNTER 1 OS
KA417	TDD	GQ	27B				TCRS0B 51 27B	
KA413	TDD	HI	22A	TC70BI ( )	00 = 01		TC74BP 48 22A	
KA413	TDD	HN	21A	TC70BN ( )	00 = 01		TCCP70 46 21A	
KA413	TDD	HP	24B	TC70BP (45 )	00 = 01		SP1034 50 23A	
KA413	TDD	HQ	23B	TC70BQ (43 )	00 = 01		TCRS7A 41 22B	
KA414	TDD	HI	22A	TC71BI ( )	00 = 01		TC70BQ 48 22A	
KA414	TDD	HN	21A	TC71BN ( )	00 = 01		TCCP70 46 21A	
KA414	TDD	HP	24B	TC71BP (45 )	00 = 01		SP1034 50 23A	
KA414	TDD	HQ	23B	TC71BQ (43 )	00 = 01		TCRS7A 41 22B	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUAT ON	TEST POINT	ORIGINATOR	FACTOR	COMMENT
				TC72BI	00 =			
KA415	TDD	HJ	22A	( )	01		TC71BQ 48 22A	
				TC72BN	00 =			
KA415	TDD	HN	21A	( )	01		TCCP70 46 21A	
KA415	TDD	HP	24B		00 =			
KA415	TDD	HP	23A	(45 )	01		SPI034 50 23A	
KA415	TDD	HQ	23B		00 =			
KA415	TDD	HQ	22B	(43 )	01		TCRS7A 41 22B	
				TC73BI	00 =			
KA416	TDD	HI	22A	( )	01		TC72BQ 48 22A	
				TC73BN	00 =			
KA416	TDD	HN	21A	( )	01		TCCP70 46 21A	
KA416	TDD	HP	24B		00 =			
KA416	TDD	HP	23A	(45 )	01		SPI034 50 23A	
KA416	TDD	HQ	23B		00 =			
KA416	TDD	HQ	22B	(43 )	01		TCRS7A 41 22B	
				TC74BI	00 =			
KA417	TDD	HI	22A	( )	01		TC73BQ 48 22A	
				TC74BN	00 =			
KA417	TDD	HN	21A	( )	01		TCCP70 46 21A	
KA417	TDD	HP	24B		00 =			
KA417	TDD	HP	23A	(45 )	01		SPI038 50 23A	
KA417	TDD	HQ	23B		00 =			
KA417	TDD	HQ	22B	(43 )	01		TCRS7A 41 22B	
								WRITE TIMING COUNTER 1 OUS



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
				TC80BI	00 =			
KA413	TDD	J1	32A	( )	01		TC848P 68 32A	
				TC80BN	00 =			
KA413	TDD	JN	33A	( )	01		YCCP80 70 33A	
KA413	TDD	JP	31B	TC80BP	00 =			
KA413	TDD	JP	31A	(59 )	01		SPI036 65 31A	
KA413	TDD	JQ	32B	TC80BQ	00 =			
KA413	TDD	JQ	33B	(61 )	01		YCR57A 63 33B	
				TC81BI	00 =			
KA414	TDD	J1	32A	( )	01		TC80BQ 68 32A	
				TC81BN	00 =			
KA414	TDD	JN	33A	( )	01		YCCP80 70 33A	
KA414	TDD	JP	31B	TC81BP	00 =			
KA414	TDD	JP	31A	(59 )	01		SPI037 66 31A	
KA414	TDD	JQ	32B	TC81BQ	00 =			
KA414	TDD	JQ	33B	(61 )	01		YCR57A 63 33B	
				TC82BI	00 =			
KA415	TDD	J1	32A	( )	01		TC81BQ 68 32A	
				TC82BN	00 =			
KA415	TDD	JN	33A	( )	01		YCCP80 70 33A	
KA415	TDD	JP	31B	TC82BP	00 =			
KA415	TDD	JP	31A	(59 )	01		SPI037 66 31A	
KA415	TDD	JQ	32B	TC82BQ	00 =			
KA415	TDD	JQ	33B	(61 )	01		YCR57A 63 33B	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST POINTS	DESIGNATION	FACTOR	COMMENT
KA416	TDD	JJ	32A	TC83BI	00 = ( )	01	TC82BQ 68 32A	
KA416	TDD	JN	33A	TC838N	00 = ( )	01	YCCP80 70 33A	
KA416	TDD	JP	31B	TC838P	00 = (59 )	01	SP1037 66 31A	
KA416	TDD	JQ	32B	TC838Q	00 = (61 )	01	YCR57A 63 33B	
KA417	TDD	MI	36A	TC848I	00 = ( )	01	TC838Q 71 36A	
KA417	TDD	MN	34A	TC848N	00 = ( )	01	YCCP80 72 34A	
KA417	TDD	MP	35A	TC848P	00 = (69 )	01	SP1037 73 36B	
KA417	TDD	MQ	35B	TC848Q	00 = (74 )	01	YCR57A 65 34B	INPUT DELAY COUNTER BIT 1
KA413	TDD	XI	29A	TC908I	00 = ( )	01	YCR91BP 62 29A	
KA413	TDD	XN	28A	TC908N	00 = ( )	01	YCCP90 60 28A	
KA413	TDD	KP	30B	TC908P	00 = (57 )	01	SP1034 64 30A	
KA413	TDD	KQ	29B	TC908Q	00 = (55 )	01	YCR57A 53 28B	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA414	TDD	KI	29A	TC91BI ( )	00 = 01	TC90BQ 62 29A	
KA414	TDD	KN	28A	TC91BN ( )	00 = 01	TCCP90 60 28A	
KA414	TDD	KP	30B	TC91BP (57 )	00 = 01	SPI034 64 30A	
KA414	TDD	KQ	29B	TC91BQ (55 )	00 = 01	TCRS7A 53 28B	WRITE TIMING COUNTER 40 OUS
KA520	TQ2	C1	18A	TDCP00 (38 )	00 = 01	TXED0A TXOD0A 40 19A 42 20A	INPUT DATA REG CLKBITS 0-3
KA520	TQ2	C2	15A	TDCP10 (30 )	00 = 01	TXED0A TXOD0A 34 16A 36 17A	
KA520	TQ2	C3	16B	TDCP20 (33 )	00 = 01	TXED1A TXOD1A 29 14B 31 15B	
KA520	TQ2	C4	19B	TDCP30 (39 )	00 = 01	TXED1A TXOD1A 35 17B 37 18B	
KA520	TQ2	D1	24A	TDCP40 (52 )	00 = 01	TXED2A TXOD2A 54 25A 56 26A	
KA520	TQ2	D2	21A	TDCP50 (46 )	00 = 01	TXED2A TXOD2A 48 22A 50 23A	
KA520	TQ2	D3	24B	TDCP60 (45 )	00 = 01	TXED3A TXOD3A 41 22B 43 23B	
KA520	TQ2	D4	27B	TDCP70 (51 )	00 = 01	TXED3A TXOD3A 47 25B 49 26B	INPUT DATA REG CLKBITS 28-31

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CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TDIRCD4  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	ORIGINATOR	FACTOR	COMMENT
KA543	TLD	D4	27B	TDIRCD4	00	=		DIRECTION DRIVER
KA543	TLD	D4	25B	(51)	01	=	TDIRIS SPI059 47 25B 49 26B	
KA406	TQ2	C1	18A	TDIRIR	00	=		
KA406	TQ2	C1	19A	(38)	01	=	TDIRIS TDY1A 40 19A 42 20A	
KA407	TQ2	C1	19A	TDIRIS	00	=		OLD DIRECTION F/F
KA407	TQ2	C1	19A	(38)	01	=	TDIRIR TDY1A 40 19A 42 20A	
KA541	TDD	C1	13A	TDIRSI	00	=		
KA541	TDD	C1	13A	( )	01	=	TXR4CS 24 13A	
KA541	TDD	CW	14A	TDIRSM	00	=		
KA541	TDD	CW	14A	( )	01	=	TXDVIB 26 14A	
KA541	TDD	CP	11B	TDIRSP	00	=		
KA541	TDD	CP	12A	(23)	01	=	TXDCAB 22 12A	
KA541	TDD	CQ	12B	TDIRSQ	00	=		NEW DIRECTION F/F
KA541	TDD	CQ	13B	(25)	01	=	SPI057 27 13B	
KA406	TQ2	D1	24A	TDR10A	00	=		
KA406	TQ2	D1	25A	(52)	01	=	TDIRSQ TSTP25 54 25A 56 26A	
KA408	TQ2	D4	27B	TDR11A	00	=		
KA408	TQ2	D4	25B	(51)	01	=	TDIRSP TSTP25 47 25B 49 26B	
KA437	TS8	F1	37A	TDRSCA	00	=		CLEAR INPUT DATA REG 4TH BYTE
KA437	TS8	F1	36A	(76)	01	=	TYTCCO TKB00P TKB01P TKA01Q TKA02P TSCL3B SPI038 SPI043 71 36A 72 34A 73 36B 74 35B 75 37B 77 38B 78 38A 79 39B	
KA406	TQ2	E3	30B	TDRS0A	00	=		
KA406	TQ2	E3	28B	(57)	01	=	TDRS00 SPI033 53 28B 55 29B	
KA518	TY3	B2	09B	TDRS00	00	=		
KA518	TY3	B2	09A	(19)	01	=	TDRSCA TXODRA TXRS2B 14 09A 17 08B 18 10A	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMS	DESIGNATION	FACTOR	COMMENT
KA520	TQ2	E2	28A	TDRS1A	00 =			
KA520	TQ2	E2	29A	(60 )	01		TDR500 SPI052 62 29A 64 30A	
KA520	TQ2	E3	30B	TDRS2A	00 =			
KA520	TQ2	E3	28B	(57 )	01		TDR500 SPI053 53 28B 55 29B	
KA520	TQ2	E4	33B	TDRS3A	00 =			
KA520	TQ2	E4	31B	(63 )	01		TDR500 SPI053 59 31B 61 32B	
KA520	TQ2	F1	37B	TDRS4A	00 =			
KA520	TQ2	F1	38B	(75 )	01		TDR500 SPI053 77 38B 79 39B	
KA520	TQ2	F2	34A	TDRS5A	00 =			
KA520	TQ2	F2	36A	(72 )	01		TDR500 SPI053 71 36A 73 36B	
KA520	TQ2	F3	35A	TDRS6A	00 =			
KA520	TQ2	F3	34B	(69 )	01		TDR500 SPI053 65 34B 74 35B	
KA520	TQ2	F4	39A	TDRS7A	00 =			
KA520	TQ2	F4	37A	(80 )	01		TDR500 SPI053 76 37A 78 38A	
KA407	TQ2	C4	19B	TDSC0A	00 =			
KA407	TQ2	C4	17B	(39 )	01		TDSC1ER TDSC2ER 35 17B 37 18B	
KA406	TQ2	C4	19B	TDSC00	00 =			
KA406	TQ2	C4	17B	(39 )	01		TDSC0A SPI033 35 17B 37 18B	
KA540	EOR	B1	10B	TDSC1ER	00 =			
KA540	EOR	B1	09B	(19 )	01		TDIRSQ TDIRR 17 09B 15 08B	
KA540	EOR	B2	13B	TDSC2ER	00 =			
KA540	EOR	B2	12B	(27 )	01		TSPNSQ TSPNIR 23 12B 21 11B	
KA528	TDD	AI	06A	TDD0BI	00 =			
				( )	01		TXROC5 OR 06A	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST	DESIGNATOR	FACTOR	COMMENT
				TDO0BN	00 =			
KA528	TDD	AN	07A	( )	01		TDCP00 10 07A	
KA528	TDD	AP	05B	TDO0BP	00 =			
KA528	TDD	AP	05A	(11 )	01		TDR50A 06 05A	
KA528	TDD	AQ	06B	TDC0BQ	00 =			INPUT DATA REG BIT0
KA528	TDD	AQ	07B	(13 )	01		TRO0CA 15 07B	
				TDO1BI	00 =			
KA528	TDD	BI	03B	( )	01		TXR1CS 05 03B	
				TDO1BN	00 =			
KA528	TDD	BN	02B	( )	01		TDCP00 01 02B	
KA528	TDD	BP	04B	TDO1BP	00 =			
KA528	TDD	BP	04A	(09 )	01		TDR50A 04 04A	
KA528	TDD	BQ	03A	TDO1BQ	00 =			
KA528	TDD	BQ	02A	(07 )	01		TRO1CA 03 02A	
				TDC2BI	00 =			
KA528	TDD	CI	13A	( )	01		TXR2CS 24 13A	
				TDC2BN	00 =			
KA528	TDD	CN	14A	( )	01		TDCP00 26 14A	
KA528	TDD	CP	11B	TDC2BP	00 =			
KA528	TDD	CP	12A	(23 )	01		TDR50A 22 12A	
KA528	TDD	CQ	12B	TDC2BQ	00 =			
KA528	TDD	CQ	13B	(25 )	01		TRO2CA 27 13B	
				TDC3BI	00 =			
KA528	TDD	OI	10A	( )	01		TXR3CS 18 10A	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TDO3BN  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIG. NATOR	FACTOR	COMMENT
				TDC3BN	00	=		
KA528	TDD	DN	09A	( )	01		TDCP00 14 09A	
KA528	TDD	DP	10B	TDO3BP	00	=		
KA528	TDD	DP	11A	(21 )	01		TDR50A 20 11A	
KA528	TDD	DQ	09B	TDO3BQ	00	=		
KA528	TDD	DQ	08B	(19 )	01		TR03CA 17 08B	
				TDO4BI	00	=		
KA528	TDD	EI	19A	( )	01		TXR4CS 40 19A	
				TDO4BN	00	=		
KA528	TDD	EN	20A	( )	01		TDCP10 42 20A	
KA528	TDD	EP	17B	TDO4BP	00	=		
KA528	TDD	EP	18A	(35 )	01		TDR51A 38 18A	
KA528	TDD	EQ	18B	TDO4BQ	00	=		
KA528	TDD	EQ	19B	(37 )	01		TR04CA 39 19B	
				TDO5BI	00	=		
KA528	TDD	FI	16A	( )	01		TXR5CS 34 16A	
				TDO5BN	00	=		
KA528	TDD	FN	15A	( )	01		TDCP10 30 15A	
KA528	TDD	FP	16B	TDO5BP	00	=		
KA528	TDD	FP	17A	(33 )	01		TDR51A 36 17A	
KA528	TDD	FQ	15B	TDO5BQ	00	=		
KA528	TDD	FQ	14B	(31 )	01		TR05CA 29 14B	
				TDO6BI	00	=		
KA528	TDD	GI	25A	( )	01		TXR6CS 54 25A	

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UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
				TD068N	00 =			
KA528	TDD	GN	26A	( )	01		YDCPI0 56 26A	
KA528	TDD	GP	25B	TD068P	00 =			
KA528	TDD	GP	24A	(47 )	01		TDRSIA 52 24A	
KA528	TDD	GQ	26B	TD068Q	00 =			
KA528	TDD	GQ	27B	(49 )	01		YR06CA 51 27B	
				TD078I	00 =			
KA528	TDD	HI	22A	( )	01		YXR7CS 48 22A	
				TD078N	00 =			
KA528	TDD	HN	21A	( )	01		YDCPI0 46 21A	
KA528	TDD	HP	24B	TD078P	00 =			
KA528	TDD	HP	23A	(45 )	01		TDRSIA 50 23A	
KA528	TDD	HQ	23B	TD078Q	00 =			INPUT DATA REG BIT7
KA528	TDD	HQ	22B	(43 )	01		YR07CA 41 22B	
				TD088I	00 =			
KA528	TDD	JI	32A	( )	01		YXR0CS 68 32A	
				TD088N	00 =			
KA528	TDD	JN	33A	( )	01		YDCP20 70 33A	
KA528	TDD	JP	31B	TD088P	00 =			
KA528	TDD	JP	31A	(59 )	01		TDRS2A 66 31A	
KA528	TDD	JQ	32B	TD088Q	00 =			INPUT DATA REG BITA
KA528	TDD	JQ	33B	(61 )	01		YR08CA 63 33B	
				TD098I	00 =			
KA528	TDD	KI	29A	( )	01		YXRICS 62 29A	



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TD09BN  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIC NATOR	FACTOR	COMMENT
				TD098N	00 =			
KA528	TDD	KN	28A	( )	01		TDCP20 60 28A	
KA528	TDD	KP	30B	TD098P	00 =			
KA528	TDD	KP	30A	(57 )	01		TDRS2A 64 30A	
KA528	TDD	KQ	29B	TD098Q	00 =			
KA528	TDD	KQ	28B	(55 )	01		TR09CA 53 28B	
				TD108I	00 =			
KA528	TDD	LI	38B	( )	01		TXR2CS 77 38B	
				TD108N	00 =			
KA528	TDD	LN	39B	( )	01		TDCP20 79 39B	
KA528	TDD	LP	37A	TD108P	00 =			
KA528	TDD	LP	37B	(76 )	01		TDRS2A 75 37B	
KA528	TDD	LQ	38A	TD108Q	00 =			
KA528	TDD	LQ	39A	(78 )	01		YR10CA 80 39A	
				TD118I	00 =			
KA528	TDD	MI	36A	( )	01		TXR3CS 71 36A	
				TD118N	00 =			
KA528	TDD	MN	34A	( )	01		TDCP20 72 34A	
KA528	TDD	MP	35A	TD118P	00 =			
KA528	TDD	MP	36B	(69 )	01		TDRS2A 73 36B	
KA528	TDD	MQ	35B	TD118Q	00 =			
KA528	TDD	MQ	34B	(74 )	01		YR11CA 65 34B	
				TD128I	00 =			
KA529	TDD	AI	06A	( )	01		TXR4CS 08 06A	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
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DATE 09-03-82  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
				TD128N	00 =			
KA529	TDD	AN	07A	( )	01		TDCP30 10 07A	
KA529	TDD	AP	05B	TD128P	00 =			
KA529	TDD	AP	05A	(11 )	01		TDR53A 06 05A	
KA529	TDD	AQ	06B	TD128Q	00 =			
KA529	TDD	AQ	07B	(13 )	01		TR12CA 15 07B	
				TD138I	00 =			
KA529	TDD	BI	03B	( )	01		TXR5CS 05 03B	
				TD138N	00 =			
KA529	TDD	BN	02B	( )	01		TDCP30 01 02B	
KA529	TDD	BP	04B	TD138P	00 =			
KA529	TDD	BP	04A	(09 )	01		TDR53A 04 04A	
KA529	TDD	BQ	03A	TD138Q	00 =			
KA529	TDD	BQ	02A	(07 )	01		TR13CA 03 02A	
				TD148I	00 =			
KA529	TDD	CI	13A	( )	01		TXR6CS 24 13A	
				TD148N	00 =			
KA529	TDD	CN	14A	( )	01		TDCP30 26 14A	
KA529	TDD	CP	11B	TD148P	00 =			
KA529	TDD	CP	12A	(23 )	01		TDR53A 22 12A	
KA529	TDD	CQ	12B	TD148Q	00 =			
KA529	TDD	CQ	13B	(25 )	01		TR14CA 27 13B	
				TD158I	00 =			
KA529	TDD	DI	10A	( )	01		TXR7CS 18 10A	



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	ORIGINATOR	FACTOR	COMMENT
				TD188N	00	=		
KA529	TDD	GN	26A	( )	01	=	TD188N 56 26A	
KA529	TDD	GP	25B	TD188P	00	=		
KA529	TDD	GP	24A	(47 )	01	=	TD188P 52 24A	
KA529	TDD	GQ	26B	TD188Q	00	=		
KA529	TDD	GQ	27B	(49 )	01	=	TD188Q 51 27B	
				TD198I	00	=		
KA529	TDD	HI	22A	( )	01	=	TD198I 48 22A	
				TD198N	00	=		
KA529	TDD	HN	21A	( )	01	=	TD198N 46 21A	
KA529	TDD	HP	24B	TD198P	00	=		
KA529	TDD	HP	23A	(45 )	01	=	TD198P 50 23A	
KA529	TDD	HQ	23B	TD198Q	00	=		
KA529	TDD	HQ	22B	(43 )	01	=	TD198Q 41 22B	
				TD208I	00	=		
KA529	TDD	JI	32A	( )	01	=	TD208I 68 32A	
				TD208N	00	=		
KA529	TDD	JN	33A	( )	01	=	TD208N 70 33A	
KA529	TDD	JP	31B	TD208P	00	=		
KA529	TDD	JP	31A	(59 )	01	=	TD208P 66 31A	
KA529	TDD	JQ	32B	TD208Q	00	=		
KA529	TDD	JQ	33B	(61 )	01	=	TD208Q 63 33B	
				TD218I	00	=		
KA529	TDD	KI	29A	( )	01	=	TD218I 62 29A	

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CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIG. FACTOR	FACTOR	COMMENT
				TD21BN	00 =			
KA529	TDD	KN	28A	( )	01		TDCP50 60 28A	
KA529	TDD	KP	30B	TD218P	00 =			
KA529	TDD	KP	30A	(57 )	01		TDR55A 64 30A	
KA529	TDD	KQ	29B	TD218Q	00 =			
KA529	TDD	KQ	28B	(55 )	01		TR21CA 53 28B	
				TD228I	00 =			
KA529	TDD	LI	38B	( )	01		YXR6CS 77 38B	
				TD228N	00 =			
KA529	TDD	LN	39B	( )	01		TDCP50 79 39B	
KA529	TDD	LP	37A	TD228P	00 =			
KA529	TDD	LP	37B	(76 )	01		TDR55A 75 37B	
KA529	TDD	LQ	38A	TD228Q	00 =			
KA529	TDD	LQ	39A	(78 )	01		YR22CA 80 39A	
				TD238I	00 =			
KA529	TDD	MI	36A	( )	01		YXR7CS 71 36A	
				TD238N	00 =			
KA529	TDD	MN	34A	( )	01		TDCP50 72 34A	
KA529	TDD	MP	35A	TD238P	00 =			
KA529	TDD	MP	36B	(69 )	01		TDR55A 73 36B	
KA529	TDD	MQ	35B	TD238Q	00 =			
KA529	TDD	MQ	34B	(74 )	01		YR23CA 65 34B	INPUT DATA REG BIT23
				TD248I	00 =			
KA530	TDD	AI	06A	( )	01		YXROCS 08 06A	

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CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TD24BN  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND DR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
				TD248N	00 =			
KA530	TDD	AN	07A	( )	01		YDCP60 10 07A	
KA530	TDD	AP	05B	TD248P	00 =			
KA530	TDD	AP	05A	(11 )	01		YDRS6A 06 05A	
KA530	TDD	AQ	06B	TD248Q	00 =			INPUT DATA REG BIT24
KA530	TDD	AQ	07B	(13 )	01		YR24CA 13 07B	
				TD258I	00 =			
KA530	TDD	BI	03B	( )	01		YXR1CS 05 03B	
				TD258N	00 =			
KA530	TDD	BN	02B	( )	01		YDCP60 01 02B	
KA530	TDD	BP	04B	TD258P	00 =			READ/NO INTERRUPT COMMAND E/F
KA530	TDD	BP	04A	(09 )	01		YDRS6A 04 04A	
KA530	TDD	BQ	03A	TD258Q	00 =			
KA530	TDD	BQ	02A	(07 )	01		YR25CA 03 02A	
				TD268I	00 =			
KA530	TDD	CI	13A	( )	01		YXR2CS 24 13A	
				TD268N	00 =			
KA530	TDD	CN	14A	( )	01		YDCP60 26 14A	
KA530	TDD	CP	11B	TD268P	00 =			
KA530	TDD	CP	12A	(23 )	01		YDRS6A 22 12A	
KA530	TDD	CQ	12B	TD268Q	00 =			
KA530	TDD	CQ	13B	(25 )	01		YR26CA 27 13B	
				TD278I	00 =			
KA530	TDD	DI	10A	( )	01		YXR3CS 18 10A	



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TD30BN  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIG. FACTOR	FACTOR	COMMENT
				TD30BN	00 =			
KA530	TDD	GN	25A	( )	01		YDCP70 56 26A	
KA530	TDD	GP	25B	TD30BP	00 =			
KA530	TDD	GP	24A	(47)	01		YDRS7A 52 24A	
KA530	TDD	GQ	26B	TD30BQ	00 =			
KA530	TDD	GQ	27B	(49)	01		YR30CA 51 27B	
				TD31BI	00 =			
KA530	TDD	HI	22A	( )	01		YXR7CS 48 22A	
				TD31BN	00 =			
KA530	TDD	HN	21A	( )	01		YDCP70 46 21A	
KA530	TDD	HP	24B	TD31BP	00 =			
KA530	TDD	HP	23A	(45)	01		YDRS7A 50 23A	
KA530	TDD	HQ	23B	TD31BQ	00 =			INPUT DATA REG 81131
KA530	TDD	HQ	22B	(43)	01		YR31CA 41 22B	
KA527	TS8	A1	05B	TEB2RA	00 =			END OF BLOCK COUNTER IS ZERO
KA527	TS8	A1	02B	(11)	01		YEB0BP YEB1BP YEB2BP YEB3BP YEB4BP YEB5BP SPI050 SPI053 01 02B 04 04A 05 03B 06 05A 07 03A 08 06A 10 07A 13 06B	
KA428	TQ2	E1	31A	TEB2RO	00 =			
KA428	TQ2	E1	32A	(66)	01		YEB2RA SPI042 68 32A 70 33A	
				TEB0BI	00 =			
KA436	TDD	GI	25A	( )	01		YEB09ER 54 25A	
				TEB0BN	00 =			
KA436	TDD	GN	26A	( )	01		YEB1B0 56 26A	
KA436	TDD	GP	25B	TEB0BP	00 =			
KA436	TDD	GP	24A	(47)	01		YEB0RA 52 24A	



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TRM	DESIGNATION	FACTOR	COMMENT
KA436	TDD	GQ	26B	TEB09Q	00	=		EOB COUNTER BIT 0
KA436	TDD	GQ	27B	(49)	01		TEB05A 51 27B	
KA527	TS8	B1	11B	TEB0DA	00	=		
KA527	TS8	B1	09A	(23)	01		TXDEVS TXXB20 TXRAF7T TXRAF3T TXRAF5T SPI053 TXXA00 TXXA3Q 14 09A 18 10A 19 09B 20 11A 22 12A 24 13A 25 12B 26 14A	
KA428	TQ2	C1	18A	TEB0RA	00	=		
KA428	TQ2	C1	19A	(38)	01		TEB0R0 SPI039 40 19A 42 20A	
KA431	TT3	C1	17A	TEB0R0	00	=		EOB COUNTER BIT 0 RESET
KA431	TT3	C1	18A	(35)	01		TEB0DA SPI045 TXRS0B 38 18A 40 19A 42 20A	
KA431	TT3	D2	23B	TEB05A	00	=		EOB COUNTER BIT 0 SET
KA431	TT3	D2	22B	(43)	01		TYAS10 TXR0CS TXDV1B 41 22B 46 21A 48 22A	
KA540	EOR	F4	36A	TEB09ER	00	=		
KA540	EOR	F4	35A	(74)	01		TEB0BQ TXDEVR 72 35A 70 34A	
				TEB181	00	=		
KA435	TDD	HI	22A	( )	01		TEB19ER 48 22A	
				TEB18N	00	=		
KA435	TDD	HN	21A	( )	01		TEB2BQ 46 21A	
KA435	TDD	HP	24B	TEB18P	00	=		
KA435	TDD	HP	23A	(45)	01		TEB1RA 50 23A	
KA435	TDD	HQ	23B	TEB1BQ	00	=		
KA435	TDD	HQ	22B	(43)	01		TEB15A 41 22B	
KA428	TQ2	C2	15A	TEB1RA	00	=		
KA428	TQ2	C2	16A	(30)	01		TEB1R0 SPI042 34 16A 36 17A	
KA431	TT3	C2	15B	TEB1R0	00	=		
KA431	TT3	C2	14B	(31)	01		TEB0DA SPI045 TXRS0B 29 14B 30 15A 34 16A	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DENIG NATION	FACTOR	COMMENT
KA431	TT3	E2	29B	TEB1SA	00 =		
KA431	TT3	E2	28B	(55)	01	TTAS10 TXR1CS TXDV1B 53 28B 60 28A 62 29A	
KA540	EOR	A2	07B	TEB19ER	00 =		
KA540	EOR	A2	06B	(11)	01	TEB1BQ TXDEVR 09 06B 07 05B	
KA434	TDD	JI	32A	TEB2BI	00 =		
				( )	01	TEB29ER 68 32A	
KA434	TDD	JN	33A	TEB2BN	00 =		
				( )	01	TEB3BQ 70 33A	
KA434	TDD	JP	31B	TEB2BP	00 =		
KA434	TDD	JP	31A	(59)	01	TEB2RA 66 31A	
KA434	TDD	JQ	32B	TEB2BQ	00 =		
KA434	TDD	JQ	33B	(61)	01	TEB2SA 63 33B	
KA428	TQ2	C3	16B	TEB2RA	00 =		
KA428	TQ2	C3	14B	(33)	01	TEB2RO SPI042 29 14B 31 15B	
KA431	TT3	C3	19B	TEB2RO	00 =		
KA431	TT3	C3	16B	(39)	01	TEB0DA SPI045 TXR5OB 33 16B 35 17B 37 18B	
KA431	TT3	E3	33B	TEB2SA	00 =		
KA431	TT3	E3	30B	(63)	01	TTAS10 TXR2CS TXDV1B 57 30B 59 31B 61 32B	
KA540	EOR	A3	07A	TEB29ER	00 =		
KA540	EOR	A3	06A	(13)	01	TEB2BQ TXDEVR 14 06A 10 05A	
KA436	TDD	HI	22A	TEB3BI	00 =		
				( )	01	TEB39ER 48 22A	
KA436	TDD	HN	21A	TEB3BN	00 =		
				( )	01	TEB4BQ 46 31A	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM NO	DESIG NATOR	FACTOR	COMMENT
KA436	TDD	HP	24B	TEB3BF	00	=		
KA436	TDD	HP	23A	(45)	01		TEB3RA 50 23A	
KA436	TDD	HQ	23B	TEB3BQ	00	=		
KA436	TDD	HQ	22B	(43)	01		TEB3SA 41 22B	
KA428	TQ2	C4	19B	TEB3RA	00	=		
KA428	TQ2	C4	17B	(39)	01		TEB3RO SPI042 35 17B 37 18B	
KA431	TT3	D1	23A	TEB3RO	00	=		
KA431	TT3	D1	24A	(50)	01		TEB00A SPI045 TXRS0B 52 24A 54 25A 56 26A	
KA431	TT3	F1	36B	TEB3SA	00	=		
KA431	TT3	F1	37B	(73)	01		TTA510 TXR3CS TXDV1B 75 37B 77 38B 79 39B	
KA540	EOR	A4	04A	TEB39ER	00	=		
KA540	EOR	A4	03A	(08)	01		TEB3BQ TXDEVR 06 03A 04 02A	
				TEB4BI	00	=		
KA435	TDD	J1	32A	( )	01		TEB49ER 68 32A	
				TEB4BN	00	=		
KA435	TDD	JN	33A	( )	01		TEB5BQ 70 33A	
KA435	TDD	JP	31B	TEB4BP	00	=		
KA435	TDD	JP	31A	(59)	01		TEB4RA 66 31A	
KA435	TDD	JQ	32B	TEB4BQ	00	=		
KA435	TDD	JQ	33B	(61)	01		TEB4SA 63 33B	
KA439	TQ2	E2	28A	TEB4RA	00	=		
KA439	TQ2	E2	29A	(60)	01		TEB4RO SPI043 62 29A 64 30A	
KA426	TQ2	F3	35A	TEB4RO	00	=		
KA426	TQ2	F3	34B	(69)	01		TEB5RA TXRS2B 65 34B 74 35B	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA432	TQ2	D3	24B	TEB4SA	00 =			
KA432	TQ2	D3	22B	(45)	01		TEB4S0 TXDV1B 41 22B 43 23B	
KA428	TQ2	E3	30B	TEB4SC	00 =			
KA428	TQ2	E3	28B	(57)	01		YXR2CR TXRAF5T 53 28B 55 29B	
KA540	EOR	A1	04B	TEB49ER	00 =			
KA540	EOR	A1	03B	(05)	01		TEB48Q TXDEVK 03 03B 01 02B	
				TEB5B1	00 =			
KA434	TDD	K1	29A	( )	01		TEB590 62 29A	
				TEB58N	00 =			
KA434	TDD	KN	28A	( )	01		TEB5KA 60 28A	
KA434	TDD	KP	30B	TEB5BP	00 =			
KA434	TDD	KP	30A	(57)	01		TEB4RA 64 30A	
KA434	TDD	KQ	29B	TEB5BQ	00 =			EOB COUNTER BIT 5
KA434	TDD	KQ	28B	(55)	01		TEB5SA 53 28B	
KA409	TT3	A3	07B	TEB5KA	00 =			EOB COUNTER CLOCK
KA409	TT3	A3	04B	(15)	01		TXEBIQ TEBZRA TXCP30 09 04B 11 05B 13 06B	
KA430	TT3	B3	13B	TEB5RA	00 =			
KA430	TT3	B3	10B	(27)	01		TXDEV5 TXXB1P SP1046 21 10B 23 11B 25 12B	
KA426	TQ2	F2	34A	TEB5SA	00 =			
KA426	TQ2	F2	36A	(72)	01		TEB5S0 TXDV1B 71 36A 73 36B	
KA428	TQ2	E4	33B	TEB5S0	00 =			
KA428	TQ2	E4	31B	(63)	01		YXR3CR TXRAF5T 59 31B 61 32B	
KA428	TQ2	D3	24B	TEB590	00 =			
KA428	TQ2	D3	22B	(45)	01		TEB58Q SPI042 41 22B 43 23B	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERN	DESIGNATION	FACTOR	COMMENT
KA522	TQ2	D3	24B	TEOTCA	00	=		
KA522	TQ2	D3	22B	(45)	01		TEOT10X SPI053 41 22B 43 23B	
				TEOTX1X	00	=		
KA422	MUX	C1	23B	( )	01		SPI038 45 23B	
KA522	TQ2	C1	18A	TE0TOA	00	=		
KA522	TQ2	C1	19A	(38)	01		TEOT10X TSCL3B 40 19A 42 20A	
KA522	TQ2	B3	10B	TEOTOR	00	=		
KA522	TQ2	B3	08B	(21)	01		TEOT05 TEOT1A 17 08B 19 09B	
KA523	TQ2	B3	10B	TEOT05	00	=		END OF TAPE (EOT) F/F
KA523	TQ2	B3	08B	(21)	01		TEOTOR TEOT0A 17 08B 19 09B	
KA525	TD4	B2	10B	TEOT1A	00	=		
KA525	TD4	B2	09A	(21)	01		TEOTCA TSTPOR UEDT1R TSCL3B 14 09A 18 10A 19 09B 20 11A	
KA545	DCF	B1	10B	TEOT1DX4	00	=		EOT 1 RECEIVER
KA545	DCF	B1	13A	(27)	01		SPI059 36 13A	
KA545	DCF	B2	11B	TEOT10X	00	=		
KA545	DCF	B2	12B	(29)	01		SPI058 31 12B	
KA515	TD4	B2	10B	TFPE1A	00	=		
KA515	TD4	B2	09A	(21)	01		TWENCO TWDBSA TSNC2S TSCK3B 14 09A 18 10A 19 09B 20 11A	
KA519	TQ2	B3	10B	TFPE2A	00	=		
KA519	TQ2	B3	08B	(21)	01		TWENCO TWDBSA 17 08B 19 09B	
KA545	DCF	C1	25B	TFPR1DX4	00	=		FILE PROTECT 1 RECEIVER
KA545	DCF	C1	29A	(46)	01		SPI059 52 29A	
KA545	DCF	C2	26B	TFPR10X	00	=		
KA545	DCF	C2	27B	(47)	01		SPI058 49 27B	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA406	TQ2	F4	39A	TFSTRA	00	=		
KA406	TQ2	F4	37A	(80)	01		YFST0S YFST1R 76 37A 78 38A	
KA418	T58	F1	37A	TFST0A	00	=		FLYING START
KA418	T58	F1	36A	(76)	01		TSNC2S YBUSYS SPI033 T0SC00 TSTPOR TSTP1R TSTP2R TSCK3B 71 36A 72 34A 73 36B 74 35B 75 37B 77 38B 78 38A 79 39B	
KA409	TT3	D1	23A	TFSTOR	00	=		
KA409	TT3	D1	24A	(50)	01		YFST0S YFST1A YBUSYS 52 24A 54 25A 56 26A	
KA410	T04	E2	30B	TFST0S	00	=		FLYING START COUNTER BIT 0
KA410	T04	E2	29B	(57)	01		YFSTOR YFST0A YNSGKA SPI017 55 29B 60 28A 62 29A 64 30A	
KA408	TQ2	E3	30B	TFST1A	00	=		
KA408	TQ2	E3	28B	(57)	01		YFST2S YSCK3B 53 28B 55 29B	
KA408	TQ2	F2	34A	TFST1R	00	=		
KA408	TQ2	F2	35A	(72)	01		YFST1S YFST0S 71 36A 73 36B	
KA407	TQ2	F2	34A	TFST1S	00	=		FLYING START COUNTER BIT 1
KA407	TQ2	F2	35A	(72)	01		YFST1R YFST2A 71 36A 73 36B	
KA409	TT3	D2	23B	TFST2A	00	=		
KA409	TT3	D2	22B	(43)	01		YFST0S YCZROO TSCK1B 41 22B 46 21A 48 22A	
KA409	TT3	F3	39A	TFST2R	00	=		
KA409	TT3	F3	35A	(80)	01		YFST2S YFST3A TXRS1B 69 35A 76 37A 78 38A	
KA407	TQ2	F3	35A	TFST2S	00	=		FLYING START COUNTER BIT 2
KA407	TQ2	F3	34B	(69)	01		YFST2R YFST4A 65 34B 74 35B	
KA406	TQ2	F2	34A	TFST3A	00	=		
KA406	TQ2	F2	36A	(72)	01		YFST1R TSCK1B 71 36A 73 36B	
KA409	TT3	D3	27B	TFST4A	00	=		
KA409	TT3	D3	24B	(51)	01		YFST1S T033M0 TSCK1B 45 24B 47 25B 49 26B	

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149017-860  
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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI 160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA508	TD4	C2	16B	TFST6A	00	=		
KA508	TD4	C2	15A	(33)	01	=	THISPQ TWRG2S TSCK3B SPT051 30 15A 31 15B 34 16A 36 17A	
				THISPI	00	=		
KA425	TDD	E1	19A	( )	01	=	THIS10 40 19A	
				THISPN	00	=		
KA425	TDD	EN	20A	( )	01	=	TX0V1B 42 20A	
KA425	TDD	EP	17B	THISPP	00	=		
KA425	TDD	EP	18A	(35)	01	=	TRDCAB 38 18A	
KA425	TDD	EQ	18B	THISPQ	00	=		NEW SPEED E/E
KA425	TDD	EQ	19B	(37)	01	=	SPI039 39 19B	
KA426	TQ2	D1	24A	THIS10	00	=		
KA426	TQ2	D1	25A	(52)	01	=	TXR092T TXRAF2T 54 25A 56 26A	
KA524	TT3	E2	29B	THSPRA	00	=		
KA524	TT3	E2	28B	(55)	01	=	T030M0 THSPRQ TSCL1B 53 28B 60 28A 62 29A	
				THSPRI	00	=		
KA514	TDD	K1	29A	( )	01	=	TXGN2A 62 29A	
				THSPRN	00	=		
KA514	TDD	KN	28A	( )	01	=	THSPRA 60 28A	
KA514	TDD	KP	30B	THSPRP	00	=		
KA514	TDD	KP	30A	(57)	01	=	TBUSYS 64 30A	
KA514	TDD	KQ	29B	THSPRQ	00	=		
KA514	TDD	KQ	28B	(55)	01	=	TFST6A 53 28B	
KA505	TQ2	F4	39A	TINT1A	00	=		
KA505	TQ2	F4	37A	(80)	01	=	TINT10 SPI049 76 37A 78 38A	

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CONNECTOR	CIRCUIT POINT	GROUP	TEST POINTS AND OR	EQUATION	TERM DESIGNATION	FACTOR	COMMENT
KA503	TS8	F1	37A	TINT10	00 =		COMMAND END AND INTERRUPT
KA503	TS8	F1	36A	(76)	01	YSC1A TRWS2A TNSGDA TNSGHA TNSGAA TRWS4A TNDASA SPI044 71 36A 72 34A 73 36B 74 35B 75 37B 77 38B 78 38A 79 39B	
KA508	TD4	F2	35A	TINT2A	00 =		
KA508	TD4	F2	36A	(69)	01	YINT10 YREDBP YREWDP YIASLP 71 36A 72 34A 73 36B 74 35B	
KA509	TT3	D2	23B	TINT5A	00 =		
KA509	TT3	D2	22B	(43)	01	YINT50 YCSD0Q YRW14A 41 22B 46 21A 48 22A	
KA506	TQ2	B4	13B	TINT50	00 =		BOT OR EOT END AND INTERRUPT
KA506	TQ2	B4	11B	(27)	01	YINT7A YINT9A 23 11B 25 12B	
KA502	TS8	F1	37A	TINT6A	00 =		
KA502	TS8	F1	36A	(76)	01	YINT50 YCSD0Q YRW14A YREDBP YREWDP YIASLP TLAD2R SPI049 71 36A 72 34A 73 36B 74 35B 75 37B 77 38B 78 38A 79 39B	
KA509	TT3	E2	29B	TINT9A	00 =		
KA509	TT3	E2	28B	(55)	01	YBOTIS YDIRIR YSCL3B 53 28B 60 28A 62 29A	
				TKA00I	00 =		
KA513	TDD	G1	25A	( )	01	SPI051 54 25A	
				TKA00N	00 =		
KA513	TDD	GN	26A	( )	01	YKA02P 56 26A	
KA513	TDD	GP	25B	TKA00P	00 =		
KA513	TDD	GP	24A	(47)	01	YKRS0A 52 24A	
KA513	TDD	GQ	26B	TKA00Q	00 =		BYTE TIMING COUNT CONTROL F/F
KA513	TDD	GQ	27B	(49)	01	YXRS1B 51 27B	
				TKA01I	00 =		
KA514	TDD	G1	25A	( )	01	YKA02P 54 25A	
				TKA01N	00 =		
KA514	TDD	GN	26A	( )	01	YSCL1B 56 26A	



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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149019  
FILE IDENT T39C1FC7  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERMINAL	DESIGNATION	FACTOR	COMMENT
KA514	TDD	GP	25B	TKA01P	00	=		
KA514	TDD	GP	24A	(47)	01		TKA00P 52 24A	
KA514	TDD	GQ	26B	TKA01Q	00	=		BYTE TIMING COUNTER BIT 1
KA514	TDD	GQ	27B	(49)	01		SPI051 51 27B	
KA412	TQ2	F1	37B	TKA01O	00	=		
KA412	TQ2	F1	38B	(75)	01		TKA01P SPI036 77 38B 79 39B	
				TKA02I	00	=		
KA526	TDD	JI	32A	( )	01		TKA01Q 68 32A	
				TKA02N	00	=		
KA526	TDD	JN	33A	( )	01		TSCL1B 70 33A	
KA526	TDD	JP	31B	TKA02P	00	=		
KA526	TDD	JP	31A	(59)	01		TKA00P 66 31A	
KA526	TDD	JQ	32B	TKA02Q	00	=		BUFFER TIMING COUNTER BIT 2
KA526	TDD	JQ	33B	(61)	01		SPI050 63 33B	
KA505	TQ2	E3	30B	TKBCPO	00	=		
KA505	TQ2	E3	28B	(57)	01		TKA02Q TNSG1R 53 28B 55 29B	
KA505	TQ2	E2	28A	TKBRSA	00	=		
KA505	TQ2	E2	29A	(60)	01		TKBR50 SPI049 62 29A 64 30A	
KA508	TD4	E2	30B	TKBR50	00	=		
KA508	TD4	E2	29B	(57)	01		TRENOA TNSGOA TNSG5A TXRS2B 55 29B 60 28A 62 29A 64 30A	
				TKB00I	00	=		
KA513	TDD	HI	22A	( )	01		TKB01P 48 22A	
				TKB00N	00	=		
KA513	TDD	HN	21A	( )	01		TKBCPO 46 21A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
			AND	OR					
KA513	TDD	HP	24B		TKB00P	00	=		
KA513	TDD	HP	23A		(45)	01	=	TKBRSA 50 23A	
KA513	TDD	HQ	23B		TKB00Q	00	=		BYTE COUNTER BIT 0
KA513	TDD	HQ	22B		(43)	01	=	SPI050 41 22B	
					TKB01I	00	=		
KA514	TDD	HI	22A		( )	01	=	TKB00Q 48 22A	
					TKB01N	00	=		
KA514	TDD	HN	21A		( )	01	=	TKBCPO 46 21A	
KA514	TDD	HP	24B		TKB01P	00	=		
KA514	TDD	HP	23A		(45)	01	=	TKBRSA 50 23A	
KA514	TDD	HQ	23B		TKB01C	00	=		BYTE COUNTER BIT 1
KA514	TDD	HQ	22B		(43)	01	=	SPI050 41 22B	
					TKC00I	00	=		
KA514	TDD	JI	32A		( )	01	=	TKC02P 68 32A	
					TKC00N	00	=		
KA514	TDD	JN	33A		( )	01	=	TKBCPO 70 33A	
KA514	TDD	JP	31B		TKC00P	00	=		
KA514	TDD	JP	31A		(59)	01	=	TKBRSA 66 31A	
KA514	TDD	JQ	32B		TKC00Q	00	=		FIRST BYTE COUNTERBIT 0
KA514	TDD	JQ	33B		(61)	01	=	SPI051 63 33B	
					TKC01I	00	=		
KA513	TDD	JI	32A		( )	01	=	TKC00Q 68 32A	
					TKC01N	00	=		
KA513	TDD	JN	33A		( )	01	=	TKBCPO 70 33A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA513	TDD	JP	31B	TKC01P	00 =			
KA513	TDD	JP	31A	(59)	01		TKBRSA 66 31A	
KA513	TDD	JQ	32B	TKC01Q	00 =			FIRST BYTE COUNTERBIT 1
KA513	TDD	JQ	33B	(61)	01		SPI051 63 33B	
KA513	TDD	KI	29A	TKC02I	00 =			
KA513	TDD	KI		( )	01		TKC290 62 29A	
KA513	TDD	KN	28A	TKC02N	00 =			
KA513	TDD	KN		( )	01		TKBCPO 60 28A	
KA513	TDD	KP	30B	TKC02P	00 =			
KA513	TDD	KP	30A	(57)	01		TKBRSA 64 30A	
KA513	TDD	KQ	29B	TKC02Q	00 =			FIRST BYTE COUNTERBIT 2
KA513	TDD	KQ	28B	(55)	01		SPI050 53 28B	
KA412	TQ2	F2	34A	TKC29A	00 =			
KA412	TQ2	F2	36A	(72)	01		TKC01P TKC02Q 71 36A 73 36B	
KA406	TQ2	D3	24B	TKC290	00 =			
KA406	TQ2	D3	22B	(45)	01		TKC01P TKC29A 41 22B 43 23B	
KA505	TQ2	D4	27B	TKRS0A	00 =			START BYTE TIMING COUNTER
KA505	TQ2	D4	25B	(51)	01		TKRS00 SPI049 47 25B 49 26B	
KA506	TQ2	D1	24A	TKRS00	00 =			
KA506	TQ2	D1	25A	(52)	01		TT08BP TKRS1A 54 25A 56 26A	
KA505	TQ2	D2	21A	TKRS1A	00 =			
KA505	TQ2	D2	22A	(46)	01		TKRS10 SPI049 48 22A 50 23A	
KA503	TS8	E1	31B	TKRS10	00 =			
KA503	TS8	E1	29B	(59)	01		TT008P TT018P TT028P TT038P TT048P TT058P TT068P TT078P 55 29B 60 28A 61 32B 62 29A 64 30A 66 31A 68 32A 70 33A	

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CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA407	TQ2	F4	39A	TLADRA	00	=		
KA407	TQ2	F4	37A	(180 )	01		YLAD0S YLAD1R 76 37A 78 38A	
KA509	TT3	F1	36B	TLAD0A	00	=		
KA509	TT3	F1	37B	(173 )	01		YLAD0S YCZRO0 YSCK1B 75 37B 77 38B 79 39B	
KA509	TT3	F2	35B	TLAD0R	00	=		
KA509	TT3	F2	34B	(174 )	01		YLAD0S YLAD1A YXRS2B 65 34B 71 36A 72 34A	
KA510	TT3	F2	35B	TLAD0S	00	=		LOOK AHEAD DELAY COUNT BIT 0
KA510	TT3	F2	34B	(174 )	01		TLAD0R YINT1A YINT5A 65 34B 71 36A 72 34A	
KA506	TQ2	C4	19B	TLAD1A	00	=		
KA506	TQ2	C4	17B	(139 )	01		YLAD2S YSCL3B 35 17B 37 18B	
KA506	TQ2	C2	15A	TLAD1R	00	=		
KA506	TQ2	C2	16A	(130 )	01		YLAD1S YLAD0S 34 16A 36 17A	
KA505	TQ2	C3	16B	TLAD1S	00	=		LOOK AHEAD DELAY COUNT BIT 1
KA505	TQ2	C3	14B	(133 )	01		YLAD1R YLAD0A 29 14B 31 15B	
KA509	TT3	D1	23A	TLAD2A	00	=		
KA509	TT3	D1	24A	(150 )	01		YLAD1S Y003M0 YSCK1B 52 24A 54 25A 56 26A	
KA506	TQ2	A1	05A	TLAD2R	00	=		
KA506	TQ2	A1	06A	(106 )	01		YLAD2S YSNC1A 08 06A 10 07A	
KA518	TT3	E3	33B	TLAD2S	00	=		LOOK AHEAD DELAY COUNT BIT 2
KA518	TT3	E3	30B	(163 )	01		YLAD2R YLAD2A YXRS1B 57 30B 59 31B 61 32B	
KA505	TQ2	C4	19B	TLAD3A	00	=		
KA505	TQ2	C4	17B	(139 )	01		YLAD1R YSCK1B 35 17B 37 18B	
KA509	TT3	C1	17A	TLAD3R	00	=		
KA509	TT3	C1	18A	(136 )	01		YLAD3S YLAD3A YXRS1B 38 18A 40 19A 42 20A	

DRAWING NUMBER  
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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149019  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA506	TQ2	A2	02B	TLAD3S	00	=		LOOK AHEAD DELAY COUNT BIT 3
KA506	TQ2	A2	04A	(01)	01	=	TLAD3R TLAD2A 04 04A 05 03B	
KA515	TD4	A1	05B	TLCC0A	00	=		
KA515	TD4	A1	05A	(11)	01	=	TWRITQ TXE81Q TEBZRO TSCK3B 06 05A 08 06A 10 07A 13 06B	
KA518	TT3	C1	17A	TLCC0R	00	=		
KA518	TT3	C1	18A	(36)	01	=	YLCC0S TLCC1A TXRS2B 38 18A 40 19A 42 20A	
KA517	TQ2	D3	24B	TLCC0S	00	=		WRITE LRC CHAR COUNT BIT 0
KA517	TQ2	D3	22B	(45)	01	=	YLCC0R TLCC0A 41 22B 43 23B	
KA512	TQ2	B4	13B	TLCC1A	00	=		
KA512	TQ2	B4	11B	(27)	01	=	YLCC3S TSCK3B 23 11B 25 12B	
KA524	TT3	E3	33B	TLCC1R	00	=		
KA524	TT3	E3	30B	(63)	01	=	YLCC1S TLCC1A TXRS2B 57 30B 59 31B 61 32B	
KA525	TD4	E2	30B	TLCC1S	00	=		WRITE LRC CHAR COUNT BIT 1
KA525	TD4	E2	29B	(57)	01	=	YLCC1R TLCC2A SPI053 SPI052 55 29B 60 28A 62 29A 64 30A	
KA515	TD4	F2	35A	TLCC2A	00	=		
KA515	TD4	F2	35A	(69)	01	=	YLCC0S TWRG1R TWR1OR TSCL3B 71 36A 72 34A 73 36B 74 35B	
KA511	TQ2	E4	33B	TLCC2R	00	=		
KA511	TQ2	E4	31B	(63)	01	=	YLCC2S YLCC1S 59 31B 61 32B	
KA512	TQ2	E3	30B	TLCC2S	00	=		WRITE LRC CHAR COUNT BIT 2
KA512	TQ2	E3	28B	(57)	01	=	YLCC2R TLCC4A 53 28B 55 29B	
KA512	TQ2	E4	33B	TLCC3A	00	=		
KA512	TQ2	E4	31B	(63)	01	=	YLCC2R TSCK1B 59 31B 61 32B	
KA510	TT3	E1	30A	TLCC3R	00	=		
KA510	TT3	E1	31A	(64)	01	=	YLCC3S TLCC3A TXRS2B 66 31A 68 32A 70 33A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149019 REV E INDEX TLCC3S  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA511	TQ2	E3	30B	TLCC3S	00 =		WRITE LRC CHAR COUNT BIT 3
KA511	TQ2	E3	28B	(57 )	01	TLCC3R TLCC6A 53 28B 55 29B	
KA518	TT3	D2	23B	TLCC4A	00 =		
KA518	TT3	D2	22B	(43 )	01	TLCC1S YCZR70 YSCL1B 41 22B 46 21A 48 22A	
KA518	TT3	D3	27B	TLCC6A	00 =		
KA518	TT3	D3	24B	(51 )	01	TLCC2S Y399U0 YSCL1B 45 24B 47 25B 49 26B	
KA524	TT3	B1	11A	TLPTBR	00 =		
KA524	TT3	B1	12A	(20 )	01	TLPTBS YXXDDP YXRS2B 22 12A 24 13A 26 14A	
KA523	TQ2	B1	12A	TLPTBS	00 =		LOOP TEST BUSY F/E
KA523	TQ2	B1	13A	(22 )	01	TLPTBR YX003A 24 13A 26 14A	
KA413	TDD	MI	36A	TLPTOI	00 =		
KA413	TDD	MI		( )	01	YXGN4A 71 36A	
KA413	TDD	MN	34A	TLPTON	00 =		
KA413	TDD	MN		( )	01	YLPY1A 72 34A	
KA413	TDD	MP	35A	TLPTOP	00 =		
KA413	TDD	MP	36B	(69 )	01	YXRS2B 73 36B	
KA413	TDD	MQ	35B	TLPTOQ	00 =		LOOP TEST COUNT BIT 0
KA413	TDD	MQ	34B	(74 )	01	YX003A 65 34B	
KA522	TQ2	D2	21A	TLPT1A	00 =		
KA522	TQ2	D2	22A	(46 )	01	TLPT1Q YXCP30 48 22A 50 23A	
KA414	TDD	MI	36A	TLPT1I	00 =		
KA414	TDD	MI		( )	01	YLPY0Q 71 36A	
KA414	TDD	MN	34A	TLPT1N	00 =		
KA414	TDD	MN		( )	01	YXCP10 72 34A	

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CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TERM	LOGIC OPERATOR	FACTOR	COMMENT
			AND OR						
KA414	TDD	MP	35A		TLPT1P	00	=		
KA414	TDD	MP	36B		(69)	01		TXRS2B 73 36B	
KA414	TDD	MQ	35B		TLPT1Q	00	=		LOOP TEST COUNT BIT 1
KA414	TDD	MQ	34B		(74)	01		SPT037 65 34B	
KA415	TDD	MI	36A		TLPT2I	00	=		
KA415	TDD	MI			( )	01		TXGN4A 71 36A	
KA415	TDD	MN	34A		TLPT2N	00	=		
KA415	TDD	MN			( )	01		TLPT5A 72 34A	
KA415	TDD	MP	35A		TLPT2P	00	=		
KA415	TDD	MP	36B		(69)	01		TXRS2B 73 36B	
KA415	TDD	MQ	35B		TLPT2Q	00	=		LOOP TEST COUNT BIT 2
KA415	TDD	MQ	34B		(74)	01		TLPT1A 65 34B	
KA416	TDD	MI	36A		TLPT3I	00	=		
KA416	TDD	MI			( )	01		TLPT2Q 71 36A	
KA416	TDD	MN	34A		TLPT3N	00	=		
KA416	TDD	MN			( )	01		TXCP10 72 34A	
KA416	TDD	MP	35A		TLPT3P	00	=		
KA416	TDD	MP	36B		(69)	01		TXRS2B 73 36B	
KA416	TDD	MQ	35B		TLPT3Q	00	=		LOOP TEST COUNT BIT 3
KA416	TDD	MQ	34B		(74)	01		SPT037 65 34B	
KA524	TT3	A3	07B		TLPT4R	00	=		
KA524	TT3	A3	04B		(15)	01		TLPT4S TXDDP TXRS2B 09 04B 11 05B 13 06B	
KA523	TQ2	A3	04B		TLPT4S	00	=		LOOP TEST COUNT BIT 4
KA523	TQ2	A3	02A		(09)	01		TLPT4R TLPT5A 03 02A 07 03A	

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149017-860  
CARD CAGE ASSY B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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LOGIC

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CONNECTOR	TEST POINT	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA432	TQ2	B4	13B	TLPT5A	00	=		
KA432	TQ2	B4	11B	(27)	01		TLPT30 YXCP30 23 11B 25 12B	
KA507	TS8	D1	25B	TLRCAA	00	=		
KA507	TS8	D1	23B	(47)	01		TLRC00 YLRC10 YLRC20 YLRC30 YLRC40 YLRC50 YLRC60 YLRC70 43 23B 46 21A 48 22A 49 26B 50 23A 52 24A 54 25A 56 26A	
KA407	TQ2	E3	30B	TLRCA0	00	=		
KA407	TQ2	E3	28B	(57)	01		TLRCAA SPI033 53 28B 55 29B	
KA408	TQ2	E4	33B	TLRCBA	00	=		LRC REG ALL ONE
KA408	TQ2	E4	31B	(63)	01		TLRCPQ YLRCA0 59 31B 61 32B	
KA505	TQ2	C1	18A	TLRCB0	00	=		
KA505	TQ2	C1	19A	(38)	01		TLRCBA SPI049 40 19A 42 20A	
KA518	TT3	D1	23A	TLRCCA	00	=		
KA518	TT3	D1	24A	(50)	01		TLRCC0 YSNC1S TSCL1B 52 24A 54 25A 56 26A	
KA515	TD4	A2	04B	TLRCC0	00	=		
KA515	TD4	A2	02B	(09)	01		TREADP TSPACP TWENCA TSPAFP 01 02B 04 04A 05 03B 07 03A	
KA540	E0R	D4	23A	TLRCPER	00	=		
KA540	E0R	D4	22A	(50)	01		TLRCPQ SPI057 48 22A 46 21A	
KA541	TDD	D1	10A	TLRCPI	00	=		
KA541	TDD	D1	10A	( )	01		TLRCPER 18 10A	
KA541	TDD	DN	09A	TLRCPN	00	=		
KA541	TDD	DN	09A	( )	01		TT0PBQ 14 09A	
KA541	TDD	DP	10B	TLRCPP	00	=		
KA541	TDD	DP	11A	(21)	01		SPI058 20 11A	
KA541	TDD	DQ	09B	TLRCPQ	00	=		LRC REG BIT P
KA541	TDD	DQ	08B	(19)	01		TLRCSA 17 08B	



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA512	TQ2	F1	37B	TLRCRA	00	=		
KA512	TQ2	F1	38B	(75)	01		TLCC15 TLCC2R 77 38B 79 39B	
KA517	TQ2	C1	18A	TLRCSA	00	=		
KA517	TQ2	C1	19A	(38)	01		TLRCSO SPI052 40 19A 42 20A	
KA516	TQ2	D2	21A	TLRCSO	00	=		
KA516	TQ2	D2	22A	(46)	01		TLRCCA TXRS1B 48 22A 50 23A	
KA540	EOR	E1	30B	TLRCOER	00	=		
KA540	EOR	E1	29B	(59)	01		TLRCOO SPI057 55 29B 53 28B	
				TLRCOI	00	=		
KA541	TDD	E1	19A	( )	01		TLRCOER 40 19A	
				TLRCOM	00	=		
KA541	TDD	EN	20A	( )	01		TYO0B0 42 20A	
KA541	TDD	EP	17B	TLRCOP	00	=		
KA541	TDD	EP	18A	(35)	01		SPI057 38 18A	
KA541	TDD	EQ	18B	TLRCOQ	00	=		
KA541	TDD	EQ	19B	(37)	01		TLRCSA 39 19B	LRC REG BIT 0
KA540	EOR	E2	33B	TLRC1ER	00	=		
KA540	EOR	E2	32B	(65)	01		TLRC1Q SPI057 63 32B 61 31B	
				TLRC1I	00	=		
KA541	TDD	FI	16A	( )	01		TLRC1ER 34 16A	
				TLRC1N	00	=		
KA541	TDD	FN	15A	( )	01		TYO1B0 30 15A	
KA541	TDD	FP	16B	TLRC1P	00	=		
KA541	TDD	FP	17A	(33)	01		SPI058 36 17A	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERN	DESIGNATOR	FACTOR	COMMENT
KA541	TDD	FQ	15B	TLRC1Q	00	=		LRC REG BIT 1
KA541	TDD	FQ	14B	(31)	01		TLRCSA 29 14B	
KA540	EOR	E3	33A	TLRC2ER	00	=		
KA540	EOR	E3	32A	(188)	01		TLRC2Q SPI057 66 32A 64 31A	
KA541	TDD	GI	25A	TLRC2I	00	=		
				( )	01		TLRC2ER 54 25A	
KA541	TDD	GN	26A	TLRC2N	00	=		
				( )	01		TT02BQ 56 26A	
KA541	TDD	GP	25B	TLRC2P	00	=		
KA541	TDD	GP	24A	(47)	01		SPI057 52 24A	
KA541	TDD	GQ	26B	TLRC2Q	00	=		LRC REG BIT 2
KA541	TDD	GQ	27B	(49)	01		TLRCSA 51 27B	
KA540	EOR	E4	30A	TLRC3ER	00	=		
KA540	EOR	E4	29A	(62)	01		TLRC3Q SPI057 60 29A 57 28A	
KA541	TDD	HI	22A	TLRC3I	00	=		
				( )	01		TLRC3ER 48 22A	
KA541	TDD	HN	21A	TLRC3N	00	=		
				( )	01		TT03BQ 46 21A	
KA541	TDD	HP	24B	TLRC3P	00	=		
KA541	TDD	HP	23A	(45)	01		SPI058 50 23A	
KA541	TDD	HQ	23B	TLRC3Q	00	=		LRC REG BIT 3
KA541	TDD	HQ	22B	(43)	01		TLRCSA 41 22B	
KA540	EOR	FI	36B	TLRC4ER	00	=		
KA540	EOR	FI	35B	(73)	01		TLRC4Q SPI057 71 35B 69 34B	

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CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERN	DEFINITION	FACTOR	COMMENT
KAS41	TDD	JI	32A	TLRC4I ( )	00 = 01		TLRC4ER 68 32A	
KAS41	TDD	JN	33A	TLRC4N ( )	00 = 01		TT04B0 70 33A	
KAS41	TDD	JP	31B	TLRC4P (59 )	00 = 01		SPI057 66 31A	
KAS41	TDD	JQ	32B	TLRC4Q (61 )	00 = 01		TLRC5A 63 33B	LRC REG BIT 4
KAS40	EOR	F2	39B	TLRC5ER (79 )	00 = 01		TLRC5Q SPI057 77 38B 75 37B	
KAS41	TDD	KI	29A	TLRC5I ( )	00 = 01		TLRC5ER 62 29A	
KAS41	TDD	KN	28A	TLRC5N ( )	00 = 01		TT05B0 60 28A	
KAS41	TDD	KP	30B	TLRC5P (57 )	00 = 01		SPI058 64 30A	
KAS41	TDD	KQ	29B	TLRC5Q (55 )	00 = 01		TLRC5A 53 28B	LRC REG BIT 5
KAS40	EOR	F3	39A	TLRC6ER (80 )	00 = 01		TLRC6Q SPI057 78 38A 76 37A	
KAS41	TDD	LI	38B	TLRC6I ( )	00 = 01		TLRC6ER 77 38B	
KAS41	TDD	LN	39B	TLRC6N ( )	00 = 01		TT06B0 79 39B	

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CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA541	TDD	LP	37A	TLRC6P	00	=		
KA541	TDD	LP	37B	(76)	01		SPI057 75 37B	
KA541	TDD	LQ	38A	TLRC6Q	00	=		LRC REG BIT 6
KA541	TDD	LQ	39A	(78)	01		TLRCSA 80 39A	
KA541	TDD	MI	36A	TLRC7I	00	=		
				( )	01		TLRC7O 71 36A	
KA541	TDD	MI	34A	TLRC7N	00	=		
				( )	01		TT07BQ 72 34A	
KA541	TDD	MP	35A	TLRC7P	00	=		
KA541	TDD	MP	36B	(69)	01		SPI058 73 36B	
KA541	TDD	HQ	35B	TLRC7Q	00	=		LRC REG BIT 7
KA541	TDD	HQ	34B	(74)	01		TLRCSA 65 34B	
KA428	TQ2	D1	24A	TLRC7O	00	=		
KA428	TQ2	D1	25A	(52)	01		TLRC7O SPI042 54 25A 56 26A	
KA516	TQ2	E2	28A	TLTE0A	00	=		
KA516	TQ2	E2	29A	(60)	01		TLPT4S TXEA00 62 29A 64 30A	
KA515	TD4	E2	30B	TMCPOA	00	=		
KA515	TD4	E2	29B	(57)	01		TS29CP TM03BQ TM04BQ TSCL3B 55 29B 60 28A 62 29A 64 30A	
KA517	TQ2	E2	28A	TMCP00	00	=		
KA517	TQ2	E2	29A	(60)	01		TMCPOA SPI052 62 29A 64 30A	
KA517	TQ2	E1	31A	TMR50A	00	=		
KA517	TQ2	E1	32A	(66)	01		TMR500 SPI052 68 32A 70 33A	
KA524	TT3	E1	30A	TMR500	00	=		
KA524	TT3	E1	31A	(64)	01		TRENOA TX003A TXRS1B 66 31A 68 32A 70 33A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	TEST POINT	FACTOR	COMMENT
				TMWCBI	00	=		
KA514	TDD	FI	16A	( )	01		TM02BQ 34 16A	
				TMWCBN	00	=		
KA514	TDD	FN	15A	( )	01		TMCP00 30 15A	
KA514	TDD	FP	16B		00	=		
KA514	TDD	FP	17A	(33 )	01		TMRS0A 36 17A	
KA514	TDD	FQ	15B		00	=		
KA514	TDD	FQ	14B	(31 )	01		SPT050 29 14B	BUFFER REG FULL F/F
KA511	TQ2	A4	07B		00	=		
KA511	TQ2	A4	05B	(15 )	01		TM02BQ TM04BQ 11 05B 13 06B	
				TM00BI	00	=		
KA513	TDD	E1	19A	( )	01		TXGNIA 40 19A	
				TM00BN	00	=		
KA513	TDD	EN	20A	( )	01		TM0CPA 42 20A	
KA513	TDD	EP	17B		00	=		
KA513	TDD	EP	18A	(35 )	01		TXRS1B 38 18A	
KA513	TDD	EQ	18B		00	=		
KA513	TDD	EQ	19B	(37 )	01		TM00SA 39 19B	BUFFER INPUT CONTROL F/F
KA512	TQ2	A2	02B		00	=		
KA512	TQ2	A2	04A	(01 )	01		TM00S0 SPT051 04 04A 05 03B	
KA511	TQ2	A2	02B		00	=		
KA511	TQ2	A2	04A	(01 )	01		TRMR0A TWRQ5A 04 04A 05 03B	
				TM01BI	00	=		
KA513	TDD	FI	16A	( )	01		TXGNIA 34 16A	

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CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TERM	DESIG NATOR	FACTOR	COMMENT
			AND	OR					
					TM01BN	00 =			
KA513	TDD	FN	15A		( )	01	TMICPA 3G 15A		
KA513	TDD	FP	16B		TM01BP	00 =			
KA513	TDD	FP	17A		(33 )	01	TXRSIB 36 17A		
KA513	TDD	FQ	15B		TM01BQ	00 =			
KA513	TDD	FQ	14B		(31 )	01	YMOISA 29 14B	BUFFER OUTPUT CONTROL F/F	
KA512	TQ2	A3	04B		TM01SA	00 =			
KA512	TQ2	A3	02A		(09 )	01	YMOISO SPI051 03 02A 07 03A		
KA511	TQ2	A3	04B		TM01SO	00 =			
KA511	TQ2	A3	02A		(09 )	01	YREQ2A YWR12A 03 02A 07 03A		
					TM02B1	00 =			
KA526	TDD	MI	36A		( )	01	YMO0BQ 71 36A		
					TM02BN	00 =			
KA526	TDD	MN	34A		( )	01	YMO3BQ 72 34A		
KA526	TDD	MP	35A		TM02BP	00 =			
KA526	TDD	MP	36B		(69 )	01	SPI053 73 36B		
KA526	TDD	MQ	35B		TM02BQ	00 =			
KA526	TDD	MQ	34B		(74 )	01	SPI050 65 34B	BYTE TIMING COUNTER BIT 2	
					TM03B1	00 =			
KA514	TDD	E1	19A		( )	01	YMO4BP 40 19A		
					TM03BN	00 =			
KA514	TDD	EN	20A		( )	01	YSCLIB 42 20A		
KA514	TDD	EP	17B		TM03BP	00 =			
KA514	TDD	EP	18A		(35 )	01	YMO3RA 38 18A		

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149019  
FILE IDENT T39C1FC7  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA514	TDD	EQ	18B	TM03BQ	00	=		BUFFER TIMING COUNTER BIT 3
KA514	TDD	EQ	19B	(37)	01		SPI051 39 19B	
KA511	TQ2	B1	12A	TM03RA	00	=		
KA511	TQ2	B1	13A	(22)	01		TM00BP TM01BP 24 13A 26 14A	
				TM04BI	00	=		
KA526	TDD	KI	29A	( )	01		TM03BQ 62 29A	
				TM04BN	00	=		
KA526	TDD	KN	28A	( )	01		YSCL1B 60 28A	
KA526	TDD	KP	30B	TM04BP	00	=		
KA526	TDD	KP	30A	(57)	01		TM03RA 64 30A	
KA526	TDD	KQ	29B	TM04BQ	00	=		BUFFER TIMING COUNTER BIT 4
KA526	TDD	KQ	28B	(55)	01		SPI054 53 28B	
KA512	TQ2	A4	07B	TM1CPA	00	=		
KA512	TQ2	A4	05B	(15)	01		TM02BP TM04BQ 11 05B 13 06B	
KA509	TT3	D3	27B	TNDASA	00	=		NO DATA ERROR
KA509	TT3	D3	24B	(51)	01		TNDA10 TRW14A TNDA3A 45 24B 47 25B 49 26B	
KA515	TD4	D2	24B	TNDA1A	00	=		
KA515	TD4	D2	23B	(45)	01		TWR10S TMSGOR TC41BP TSCL3B 43 23B 46 21A 48 22A 50 23A	
KA512	TQ2	D3	24B	TNDA10	00	=		
KA512	TQ2	D3	22B	(45)	01		TNDA1A TNDA2A 41 22B 43 23B	
KA503	TS8	B1	11B	TNDA2A	00	=		
KA503	TS8	B1	09A	(23)	01		TSTR2S TSPNSQ TC60BP TWRIEP TSCK3B SPI035 SPI044 SPI049 14 09A 18 10A 19 09B 20 11A 22 12A 24 13A 25 12B 26 14A	
KA409	TT3	E1	30A	TNDA3A	00	=		
KA409	TT3	E1	31A	(64)	01		TSPACQ TXASLA TXBSLA 66 31A 68 32A 70 33A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149019  
FILE IDENT T39C1FC7  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA509	TT3	B3	13B	TNSGAA	00 =		SPACE REC/FILE, HIPT
KA509	TT3	B3	10B	(27)	01	TNSGA0 TNSG2S TSCK3B 21 10B 23 11B 25 12B	
KA505	TQ2	F2	34A	TNSGA0	00 =		
KA505	TQ2	F2	38A	(72)	01	TREADP TWRTP 71 36A 73 36B	
KA510	TT3	B2	09B	TNSGCA	00 =		SPACE RECORD REQUEST/START
KA510	TT3	B2	09A	(19)	01	TSPACQ TNSG2S TSCK3B 14 09A 17 08B 18 10A	
KA410	TD4	F1	37A	TNSGDA	00 =		
KA410	TD4	F1	37B	(76)	01	TNSGDO TXEBIQ YEBZRO TSCK3B 75 37B 77 38B 78 38A 79 39B	
KA508	TD4	A1	05B	TNSGDO	00 =		
KA508	TD4	A1	05A	(11)	01	TSPACP TSPAFP THISPP SPI051 06 05A 08 06A 10 07A 13 06B	
KA508	TD4	A2	04B	TNSGEA	00 =		SPACE FILE REQUEST
KA508	TD4	A2	02B	(09)	01	TSPAFQ TYMDCO TNSG2S TSCK3B 01 02B 04 04A 05 03B 07 03A	
KA508	TD4	D2	24B	TNSGIA	00 =		TAPE MARK DETECTED
KA508	TD4	D2	23B	(45)	01	TYMDCO TNSG2S TSCL3B SPI051 43 23B 46 21A 48 22A 50 23A	
KA508	TD4	B2	10B	TNSGJA	00 =		LRG PARITY ERROR DETECTED
KA508	TD4	B2	09A	(21)	01	TDIRYS YLRCBA TNSG2S TSCK3B 14 09A 18 10A 19 09B 20 11A	
KA510	TT3	B3	13B	TNSGKA	00 =		SPACE FILE START
KA510	TT3	B3	10B	(27)	01	TNSGK0 TNSG2S TSCK3B 21 10B 23 11B 25 12B	
KA505	TQ2	D1	24A	TNSGKO	00 =		
KA505	TQ2	D1	25A	(52)	01	TSPAFP TSPACP 54 25A 56 26A	
KA509	TT3	F3	39A	TNSGMA	00 =		ERASE STOP
KA509	TT3	F3	35A	(80)	01	TWRTEQ TWRG2S TSCL3B 69 35A 76 37A 78 38A	
KA503	TSB	A1	05B	TNSGOA	00 =		SET CHARACTER DETECT
KA503	TSB	A1	02B	(11)	01	TKCOOP TKC02P TKA010 TKA02P TSCK3B SPI049 SPI044 SPI035 01 02B 04 04A 05 03B 06 05A 07 03A 08 06A 10 07A 13 06B	



TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16

DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149019 REV E INDEX TNSGOR  
 UNIT ASSEMBLY NAME CARD CAGE ASSY B, IFCU FILE IDENT T39C1FC7 DATE 09-03-82 PAGE 276

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA508	TD4	D1	25B	TNSGOR	00 =		
KA508	TD4	D1	26B	(47)	01	TNSG05 TNSG1A TRENOS TXRS2B 49 26B 52 24A 54 25A 56 26A	
KA512	TQ2	D1	24A	TNSG05	00 =		GAP DETECT COUNTERBIT 0
KA512	TQ2	D1	25A	(52)	01	TNSGOR TNSGOA 54 25A 56 26A	
KA509	TT3	C2	15B	TNSG1A	00 =		
KA509	TT3	C2	14B	(31)	01	TNSG1S TSCK3B SPI051 29 14B 30 15A 34 16A	
KA508	TD4	C1	17B	TNSG1R	00 =		
KA508	TD4	C1	18B	(35)	01	TNSG1S TNSG3A TRENOS TXRS1B 37 18B 38 18A 40 19A 42 20A	
KA512	TQ2	D2	21A	TNSG1S	00 =		GAP DETECT COUNTERBIT 1
KA512	TQ2	D2	22A	(46)	01	TNSG1R TNSG2A 48 22A 50 23A	
KA508	TD4	B1	11B	TNSG2A	00 =		
KA508	TD4	B1	12A	(23)	01	TNSG05 TSPNIS TO80UO TSCK1B 22 12A 24 13A 25 12B 26 14A	
KA509	TT3	B1	11A	TNSG2R	00 =		
KA509	TT3	B1	12A	(20)	01	TNSG2S TNSG5A TXRS1B 22 12A 24 13A 26 14A	
KA512	TQ2	C3	16B	TNSG2S	00 =		GAP DETECT COUNTERBIT 2
KA512	TQ2	C3	14B	(33)	01	TNSG2R TNSG4A 29 14B 31 15B	
KA511	TQ2	D2	21A	TNSG3A	00 =		
KA511	TQ2	D2	22A	(46)	01	TNSG2S TSCK3B 48 22A 50 23A	
KA509	TT3	B2	09B	TNSG3R	00 =		
KA509	TT3	B2	09A	(19)	01	TNSG3S TNSG7A TXRS1B 14 09A 17 08B 18 10A	
KA506	TQ2	F4	39A	TNSG3S	00 =		GAP DETECT COUNTERBIT 3
KA506	TQ2	F4	37A	(80)	01	TNSG3R TNSG6A 76 37A 78 38A	
KA510	TT3	B1	11A	TNSG4A	00 =		
KA510	TT3	B1	12A	(20)	01	TNSG1S T002M0 TSCK1B 22 12A 24 13A 26 14A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149019  
FILE IDENT T39CIFC7  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA512	TQ2	C4	19B	TNSG5A	00	=		
KA512	TQ2	C4	17B	(39)	01		TNSG3S YSCL1B 35 17B 37 18B	
KA511	TQ2	C3	16B	TNSG6A	00	=		
KA511	TQ2	C3	14B	(33)	01		TNSG2S YSCK3B 29 14B 31 15B	
KA511	TQ2	C4	19B	TNSG7A	00	=		
KA511	TQ2	C4	17B	(39)	01		TNSG2R YSCK3B 35 17B 37 18B	
KA519	TQ2	E1	31A	TRCP00	00	=		OUTPUT DATA REG CLK BITS 0-3
KA519	TQ2	E1	32A	(66)	01		TRRC0A YLPT5A 68 32A 70 33A	
KA519	TQ2	E2	28A	TRCP10	00	=		
KA519	TQ2	E2	29A	(60)	01		TRRC0A YLPT5A 62 29A 64 30A	
KA519	TQ2	E3	30B	TRCP20	00	=		
KA519	TQ2	E3	28B	(57)	01		TRRC0A YLPT5A 53 28B 55 29B	
KA519	TQ2	E4	33B	TRCP30	00	=		
KA519	TQ2	E4	31B	(63)	01		TRRC0A YLPT5A 59 31B 61 32B	
KA519	TQ2	F1	37B	TRCP40	00	=		
KA519	TQ2	F1	38B	(75)	01		TRRC0A YLPT5A 77 38B 79 39B	
KA519	TQ2	F2	34A	TRCP50	00	=		
KA519	TQ2	F2	36A	(72)	01		TRRC0A YLPT5A 71 36A 73 36B	
KA519	TQ2	F3	35A	TRCP60	00	=		
KA519	TQ2	F3	34B	(69)	01		TRRC0A YLPT5A 65 34B 74 35B	
KA519	TQ2	F4	39A	TRCP70	00	=		OUTPUT DATA REG CLK BIT 28-31
KA519	TQ2	F4	37A	(80)	01		TRRC0A YLPT5A 76 37A 78 38A	
KA516	TQ2	D1	24A	TRDBCA	00	=		
KA516	TQ2	D1	25A	(52)	01		TRDBCOX SPI052 54 25A 56 26A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149019 REV E INDEX TRDBCX4  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TEST	DEFINITION	FACTOR	COMMENT
KA546	DCF	C3	30B	TRDBCX4	00	=		READ CLOCK RECEIVER
KA546	DCF	C3	29A	(55)	01		SPI059 52 29A	
KA546	DCF	C4	29B	TRDBCX4	00	=		
KA546	DCF	C4	28B	(56)	01		SPI060 51 28B	
KA543	TLD	D1	24A	TRDBED4	00	=		READ ENABLE DRIVER
KA543	TLD	D1	23A	(52)	01		TRENOS SPI059 54 25A 56 26A	
KA546	DCF	C1	25B	TRDBPD4	00	=		TAPE DATA P RECEIVER
KA546	DCF	C1	29A	(46)	01		SPI059 52 29A	
KA546	DCF	C2	26B	TRDBPO4	00	=		
KA546	DCF	C2	27B	(47)	01		SPI058 49 27B	
KA546	DCF	A1	02B	TRDBOD4	00	=		TAPE DATA O RECEIVER
KA546	DCF	A1	05A	(07)	01		SPI059 06 05A	
KA546	DCF	A2	03B	TRDBO4	00	=		
KA546	DCF	A2	04B	(09)	01		SPI058 11 04B	
KA546	DCF	A3	07B	TRDB1D4	00	=		TAPE DATA I RECEIVER
KA546	DCF	A3	05A	(17)	01		SPI059 06 05A	
KA546	DCF	A4	06B	TRDB104	00	=		
KA546	DCF	A4	05B	(15)	01		SPI060 13 05B	
KA546	DCF	A5	08B	TRDB2D4	00	=		TAPE DATA 2 RECEIVER
KA546	DCF	A5	05A	(14)	01		SPI059 06 05A	
KA546	DCF	A6	07A	TRDB204	00	=		
KA546	DCF	A6	06A	(10)	01		SPI045 08 06A	
KA546	DCF	A7	02A	TRDB3D4	00	=		TAPE DATA 3 RECEIVER
KA546	DCF	A7	05A	(01)	01		SPI059 06 05A	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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UNIT ASSEMBLY NAME CARD CAGE ASSY B, IFCU

LOGIC

UNIT ASSEMBLY NO. 149017  
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REV E INDEX TRDB30X  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA546	DCF	A8	03A	TRDB30X	00	K		
KA546	DCF	A8	04A	(03)	01		SPI047 04 04A	
KA546	DCF	B1	10B	TRDB4DX4	00	=		TAPE DATA 4 RECEIVER
KA546	DCF	B1	13A	(27)	01		SPI059 36 13A	
KA546	DCF	B2	11B	TRDB40X	00	=		
KA546	DCF	B2	12B	(29)	01		SPI058 31 12B	
KA546	DCF	B3	15B	TRDB5DX4	00	=		TAPE DATA 5 RECEIVER
KA546	DCF	B3	13A	(37)	01		SPI059 36 13A	
KA546	DCF	B4	14B	TRDB50X	00	=		
KA546	DCF	B4	13B	(35)	01		SPI060 33 13B	
KA546	DCF	B5	16A	TRDB6DX4	00	=		TAPE DATA 6 RECEIVER
KA546	DCF	B5	13A	(41)	01		SPI059 36 13A	
KA546	DCF	B6	15A	TRDB60X	00	=		
KA546	DCF	B6	14A	(40)	01		SPI045 38 14A	
KA546	DCF	B7	10A	TRDB7DX4	00	=		TAPE DATA 7 RECEIVER
KA546	DCF	B7	13A	(23)	01		SPI059 36 13A	
KA546	DCF	B8	11A	TRDB70X	00	=		
KA546	DCF	B8	12A	(30)	01		SPI047 34 12A	
				TRDCAB	00	=		
KA412	TQ2	D1	24A	( )	01		TRDCCA 52 24A	
KA412	TQ2	D2	21A	( )	02	+	TRDCDA 46 21A	
KA412	TQ2	D1	24A	TRDCCA	00	=		TRDCAB BUSS
KA412	TQ2	D1	25A	(52)	01		TRDCC0 SPI036 54 25A 56 26A	
KA439	TQ2	E4	33B	TRDCC0	00	=		
KA439	TQ2	E4	31B	(63)	01		TXRS08 SPI043 59 31B 61 32B	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149019 REV E INDEX TRDCDA  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA412	TQ2	D2	21A	TRDCDA	00 =			
KA412	TQ2	D2	22A	(46)	01		TRDCC0 SPI036 48 22A 50 23A	TRDCAB BUSS
KA522	TQ2	F3	35A	TRDY1A	00 =			
KA522	TQ2	F3	34B	(69)	01		YADSW2X TRDY10X 65 34B 74 35B	
KA546	DCF	D1	32B	TRDY10X4	00 =			
KA546	DCF	D1	36A	(65)	01		SPI059 72 36A	READY 1 RECEIVER
KA546	DCF	D2	33B	TRDY10X	00 =			
KA546	DCF	D2	34B	(69)	01		SPI058 71 34B	
				TREADI	00 =			
KA425	TDD	J1	32A	( )	01		YRED10 68 32A	
				TREADH	00 =			
KA425	TDD	JN	33A	( )	01		YXDVI8 70 33A	
KA425	TDD	JP	31B	TREADF	00 =			
KA425	TDD	JP	31A	(59)	01		TRDCAB 66 31A	
KA425	TDD	JQ	32B	TREADQ	00 =			
KA425	TDD	JQ	33B	(61)	01		SPI039 63 33B	READ/INTERRUPT COMMAND F/E
				TREDB I	00 =			
KA425	TDD	KI	29A	( )	01		YRED20 62 29A	
				TREDBN	00 =			
KA425	TDD	KN	28A	( )	01		YXDVI8 60 28A	
KA425	TDD	KP	30B	TREDBP	00 =			
KA425	TDD	KP	30A	(57)	01		TRDCAB 64 30A	
KA425	TDD	KQ	29B	TREDBC	00 =			
KA425	TDD	KQ	28B	(55)	01		SPI038 53 28B	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149019  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TERM	DENIG-NATOR	FACTOR	COMMENT
			AND	OR					
KA426	TQ2	D3	24B		TRED10	00	=		
KA426	TQ2	D3	22B		(45 )	01		YXRAF3Y YXRAF4Y 41 22B 43 23B	
KA426	TQ2	C2	15A		TRED20	00	=		
KA426	TQ2	C2	16A		(30 )	01		YXRAF4Y SPI039 34 16A 36 17A	
KA508	TD4	F1	37A		TREG00	00	=		ERASE STOP
KA508	TD4	F1	37B		(76 )	01		TREG1A YREG2A YREG3A Y009SA 75 37B 77 38B 78 38A 79 39B	
KA506	TQ2	E2	28A		TREG1A	00	=		
KA506	TQ2	E2	29A		(60 )	01		TEBZRO YC40BP 62 29A 64 30A	
KA506	TQ2	E3	30B		TREG2A	00	=		
KA506	TQ2	E3	28B		(57 )	01		TEB4BP YC52BP 53 28B 55 29B	
KA506	TQ2	F1	37B		TREG3A	00	=		
KA506	TQ2	F1	38B		(75 )	01		TEB5BP YC54BP 77 38B 79 39B	
KA516	TQ2	F4	39A		TRENOA	00	=		
KA516	TQ2	F4	37A		(80 )	01		TSPNIS YSTR90 76 37A 78 38A	
KA518	TT3	E1	30A		TRENOR	00	=		
KA518	TT3	E1	31A		(64 )	01		TREN0S YLAD0R TXRS1B 66 31A 68 32A 70 33A	
KA517	TQ2	F2	34A		TRENOS	00	=		READ REG READ ENABLE F/F
KA517	TQ2	F2	36A		(72 )	01		TRENOR TRENOA 71 36A 73 36B	
KA515	TD4	F1	37A		TREN1A	00	=		
KA515	TD4	F1	37B		(76 )	01		TREADQ TXEB1Q TEBZRO TSCL3B 75 37B 77 38B 78 38A 79 39B	
KA521	TS8	F1	37A		TREN1R	00	=		
KA521	TS8	F1	36A		(76 )	01		TREN1S TREN1A TB0TOR SPI054 TS29CP TNSG1R TXRS1B TNSGMA 71 36A 72 34A 73 36B 74 35B 75 37B 77 38B 78 38A 79 39B	
KA517	TQ2	F3	35A		TREN1S	00	=		FORWARD READ ENABLE F/F
KA517	TQ2	F3	34B		(69 )	01		TREN1R TREN2A 65 34B 74 35B	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149019  
FILE IDENT T39C1FC7  
REV E  
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CONNECTOR	TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST	DESIGNATION	FACTOR	COMMENT
KA518	TT3	F2	35B	TREN2A	00	=		
KA518	TT3	F2	34B	(74)	01		TSPNIS TDIRIS TSTR90 65 34B 71 36A 72 34A	
KA507	TS8	F1	37A	TREN2R	00	=		
KA507	TS8	F1	36A	(76)	01		TREN2S TREN1A TNSG5A TXXDIA TXRS2B TREN3A SPI035 SPI051 71 36A 72 34A 73 36B 74 35B 75 37B 77 38B 78 38A 79 39B	
KA506	TQ2	F2	34A	TREN2S	00	=		
KA506	TQ2	F2	36A	(72)	01		TREN2R TREN2A 71 36A 73 36B	
KA517	TQ2	F4	39A	TREN3A	00	=		
KA517	TQ2	F4	37A	(80)	01		TREDBQ T52890 76 37A 78 38A	
KA506	TQ2	D2	21A	TREQCA	00	=		
KA506	TQ2	D2	22A	(46)	01		TXXDDQ TXXCS0 48 22A 50 23A	
				TREQCI	00	=		
KA425	TDD	MI	36A	( )	01		SPI03B 71 36A	
				TREQCN	00	=		
KA425	TDD	MN	34A	( )	01		TREQ3A 72 34A	
KA425	TDD	MP	35A	TREQCP	00	=		
KA425	TDD	MP	36B	(69)	01		TREQRA 73 36B	
KA425	TDD	HQ	35B	TREQCQ	00	=		READ REQUEST DELAYCONTROL FF
KA425	TDD	HQ	34B	(74)	01		TXRS2B 65 34B	
KA506	TQ2	D3	24B	TREQDA	00	=		
KA506	TQ2	D3	22B	(45)	01		TXXDIQ TXXCS0 41 22B 43 23B	
KA506	TQ2	D4	27B	TREQRA	00	=		
KA506	TQ2	D4	25B	(51)	01		TREQRO SPI049 47 25B 49 26B	
KA505	TQ2	E4	33B	TREQRO	00	=		
KA505	TQ2	E4	31B	(63)	01		TREQCA TREQDA 59 31B 61 32B	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149019  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA504	TS8	F1	37A	TREQOA	00	=		
KA504	TS8	F1	36A	(76)	01		TREQIR YRENZ5 TREADQ YWCBQ TSCK1B SPI035 SPI044 SPI049 71 36A 72 34A 73 36B 74 35B 75 37B 77 38B 78 38A 79 39B	
				TREQO1	00	=		
KA513	TDD	CI	13A	( )	01		TREQIP 24 13A	
				TREQON	00	=		
KA513	TDD	CN	14A	( )	01		TSCL1B 26 14A	
KA513	TDD	CP	11B	TREQOP	00	=		
KA513	TDD	CP	12A	(23)	01		TREQCP 22 12A	
KA513	TDD	CQ	12B	TREQOQ	00	=		READ REQUEST DELAYBIT 0
KA513	TDD	CQ	13B	(25)	01		SPT051 27 13B	
KA510	TT3	E2	29B	TREQOR	00	=		
KA510	TT3	E2	28B	(55)	01		TREQOS YREQIA YXRS26 53 28B 60 28A 62 29A	
KA506	TQ2	E1	31A	TREQOS	00	=		
KA506	TQ2	E1	32A	(66)	01		TREQOR TREQOA 68 32A 70 33A	
KA506	TQ2	F3	35A	TREQ1A	00	=		
KA506	TQ2	F3	34B	(69)	01		TREQ1S TSCK1B 65 34B 74 35B	
				TREQ1I	00	=		
KA514	TDD	CI	13A	( )	01		TREQOQ 24 13A	
				TREQ1N	00	=		
KA514	TDD	CN	14A	( )	01		TSCL1B 26 14A	
KA514	TDD	CP	11B	TREQ1P	00	=		
KA514	TDD	CP	12A	(24)	01		TREQCP 22 12A	
KA514	TDD	CQ	12B	TREQ1Q	00	=		
KA514	TDD	CQ	13B	(25)	01		SPT051 27 13B	



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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149019  
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CONNECTOR	GROUP	TEST POINTS AND/OR	EQUATION	ITEM	DESIG. NOTATION	FACTOR	COMMENT
KA510	TT3	E3 33B	TREQ1R	00 =			
KA510	TY3	E3 30B	(63 )	01		TREQ1S TREQ3A TXRS28 57 30B 59 31B 61 32B	
KA512	TQ2	C2 15A	TREQ1S	00 =			
KA512	TQ2	C2 16A	(30 )	01		TREQ1R TREQ2A 34 16A 36 17A	
KA505	TQ2	B4 13B	TREQ2A	00 =			
KA505	TQ2	B4 11B	(27 )	01		TREQ0S TSCK3B 23 11B 25 12B	
KA513	TDD	LY 38B	TREQ2I	00 =			
KA513	TDD	LY 38B	( )	01		TREQ0A 77 38B	
KA513	TDD	LN 39B	TREQ2N	00 =			
KA513	TDD	LN 39B	( )	01		TREQ1P 79 39B	
KA513	TDD	LP 37A	TREQ2P	00 =			
KA513	TDD	LP 37B	(76 )	01		TREQCP 75 37B	
KA513	TDD	LQ 38A	TREQ2Q	00 =			
KA513	TDD	LQ 39A	(78 )	01		SPI050 80 39A	
KA525	TD4	A1 05B	TREQ3A	00 =			
KA525	TD4	A1 05A	(11 )	01		TREQ2O TREQ3P TREQ4Q TSCL3B 06 05A 08 06A 10 07A 13 06B	
KA514	TDD	DI 10A	TREQ3I	00 =			
KA514	TDD	DI 10A	( )	01		TREQ4P 18 10A	
KA514	TDD	DN 09A	TREQ3N	00 =			
KA514	TDD	DN 09A	( )	01		TREQ2P 14 09A	
KA514	TDD	DP 10B	TREQ3P	00 =			
KA514	TDD	DP 11A	(21 )	01		TREQCP 20 11A	
KA514	TDD	DQ 09B	TREQ3O	00 =			
KA514	TDD	DQ 08B	(19 )	01		SPI050 17 08B	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	GROUP TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIG NATOR	FACTOR	COMMENT
KA507	TSB	E1	31B	TREQ4A	00	=		
KA507	TSB	E1	29B	(59)	01		TREQ1S TREN2S TMO2BP TMO3BP TMO4BQ TS29CP TSCL3B SPI051 55 29B 60 28A 61 32B 62 29A 64 30A 66 31A 68 32A 70 33A	
				TREQ4I	00	=		
KA526	TDD	LI	38B	( )	01		TREQ3Q 77 38B	
				TREQ4N	00	=		
KA526	TDD	LN	39B	( )	01		TREQ2P 79 39B	
				TREQ4P	00	=		
KA526	TDD	LP	37A	(76)	01		TREQCP 75 37B	
				TREQ4Q	00	=		
KA526	TDD	LQ	38A	(78)	01		SPI053 80 39A	READ REQUEST DELAYBIT 4
				TREQ5A	00	=		
KA524	TT3	F2	35B	(74)	01		TREQ2Q SPI055 SPI056 65 34B 71 36A 72 34A	
				TREWCA	00	=		
KA506	TQ2	E4	31B	(63)	01		TRSD10 TRUNCO 59 31B 61 32B	
				TREWCD4	00	=		
KA543	TLD	D3	24B	(45)	01		TRUNAS TREWCO 41 22B 43 23B	REWIND DRIVER
				TREWCO	00	=		
KA511	TQ2	D1	25A	(52)	01		SPI051 TREWCA 54 25A 56 26A	
				TREWDI	00	=		
KA425	TDD	BI	03B	( )	01		TREW2Q 05 03B	
				TREWDN	00	=		
KA425	TDD	BN	02B	( )	01		TRDVB 01 02B	
				TREWDP	00	=		
KA425	TDD	BP	04A	(69)	01		TRDCAB 04 04A	

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149017-860  
CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA425	TDD	BQ	03A	TREWDQ	00	H		REWIND/NO INTERRUPT CMND F/F
KA425	TDD	BQ	02A	(07)	01		SPI039 03 02A	
KA413	TDD	LI	38B	TREWII	00	=		
				( )	01		YXIRCO 77 38B	
KA413	TDD	LN	39B	TREWIN	00	=		
				( )	01		TXDV18 79 39B	
KA413	TDD	LP	37A	TREWIP	00	=		
KA413	TDD	LP	37B	(76)	01		YRDCAB 75 37B	
KA413	TDD	LQ	38A	TREWIQ	00	=		REWIND/INTERRUPT COMMAND F/F
KA413	TDD	LQ	39A	(78)	01		SPI036 80 39A	
KA545	DCF	D1	32B	TREWDX4	00	=		REWINDING   RECEIVER
KA545	DCF	DI	36A	(65)	01		SPI059 72 36A	
KA425	TDD	AI	06A	TREWII	00	=		
				( )	01		YRW190 08 06A	
KA425	TDD	AN	07A	TREWIN	00	=		
				( )	01		TXDV18 10 07A	
KA425	TDD	AP	05B	TREWIP	00	=		
KA425	TDD	AP	05A	(11)	01		YRW12A 06 05A	
KA425	TDD	AQ	06B	TREWIQ	00	=		REWINDING   REMEMBER F/F
KA425	TDD	AQ	07B	(13)	01		YXRS18 15 07B	
KA545	DCF	D2	33B	TREW10X	00	=		
KA545	DCF	D2	34B	(69)	01		SPI058 71 34B	
KA414	TDD	LI	38B	TREW2I	00	=		
				( )	01		YRW290 77 38B	

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CARD CAGE ASSY B, IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
				TREW2M	00	=		
KA414	TDD	LN	39B	( )	01	=	TXDV1B 79 39B	
KA414	TDD	LP	37A	TREW2P	00	=		
KA414	TDD	LP	37B	(76 )	01	=	TRW22A 75 37B	
KA414	TDD	LQ	38A	TREW2Q	00	=		REWINDING 2 REMEMBER F/F
KA414	TDD	LQ	39A	(78 )	01	=	TXRS2B 80 39A	
KA426	TQ2	B2	09A	TREW2O	00	=		
KA426	TQ2	B2	10A	(14 )	01	=	TXR095T SPI030 18 10A 20 11A	
KA439	TQ2	E3	30B	TREW3A	00	=		
KA439	TQ2	E3	28B	(57 )	01	=	TREW3O SPI043 53 28B 55 29B	
				TREW3I	00	=		
KA415	TDD	LI	38B	( )	01	=	TRW39O 77 38B	
				TREW3N	00	=		
KA415	TDD	LN	39B	( )	01	=	TXDV1B 79 39B	
KA415	TDD	LP	37A	TREW3P	00	=		
KA415	TDD	LP	37B	(76 )	01	=	TRW32A 75 37B	
KA415	TDD	LQ	38A	TREW3Q	00	=		REWINDING 3 REMEMBER F/F
KA415	TDD	LQ	39A	(78 )	01	=	TXRS2B 80 39A	
KA429	TD4	E2	30B	TREW3O	00	=		
KA429	TD4	E2	29B	(57 )	01	=	TXR094T TXR095T TXR092T TXRAF2T 55 29B 60 28A 62 29A 64 30A	
				TREW4I	00	=		
KA416	TDD	LI	38B	( )	01	=	TRW49O 77 38B	
				TREW4N	00	=		
KA416	TDD	LN	39B	( )	01	=	TXDV1B 79 39B	

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149017-860  
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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA416	TDD	LP	37A	TREW4P	00	=		
KA416	TDD	LP	37B	(76)	01		TRW42A 75 37B	
KA416	TDD	LQ	38A	TREW4Q	00	=		REWINDING & REMEMBER F/F
KA416	TDD	LQ	39A	(78)	01		YXRS2B 80 39A	
KA502	TS8	D1	25B	TRMROA	00	=		INPUT REQUEST TO BUFFER
KA502	TS8	D1	23B	(47)	01		TRTDCO TRENIS TKBOOP TKBO1Q TKA01P TKA02Q TSCL3B SPI049 43 23B 46 21A 48 22A 49 26B 50 23A 52 24A 54 25A 56 26A	
KA521	TS8	E1	31B	TRRCOA	00	=		TRANSFER BUFFER TO OUTPUT
KA521	TS8	E1	29B	(59)	01		YWTSTP YS29CP YMO2BP YMO3BP YMO4BQ TSCL3B SPI050 SPI053 55 29B 60 28A 61 32B 62 29A 64 30A 66 31A 68 32A 70 33A	
KA516	TQ2	B1	12A	TRRSOA	00	=		OUTPUT DATA REG EVEN RESET
KA516	TQ2	B1	13A	(22)	01		YEB4R0 SPI051 24 13A 26 14A	
KA516	TQ2	C1	18A	TRRS1A	00	=		OUTPUT DATA REG ODD RESET
KA516	TQ2	C1	19A	(38)	01		YEB4R0 SPI052 40 19A 42 20A	
KA516	TQ2	B2	09A	TRRS2A	00	=		
KA516	TQ2	B2	10A	(14)	01		YEB4R0 SPI051 18 10A 20 11A	
KA516	TQ2	C2	15A	TRRS3A	00	=		
KA516	TQ2	C2	16A	(30)	01		YEB4R0 SPI052 34 16A 36 17A	
KA516	TQ2	B3	10B	TRRS4A	00	=		
KA516	TQ2	B3	08B	(21)	01		YEB4R0 SPI051 17 08B 19 09B	
KA516	TQ2	C3	16B	TRRS5A	00	=		
KA516	TQ2	C3	14B	(33)	01		YEB4R0 SPI052 29 14B 31 15B	
KA516	TQ2	B4	13B	TRRS6A	00	=		
KA516	TQ2	B4	11B	(27)	01		YEB4R0 SPI051 23 11B 25 12B	
KA516	TQ2	C4	19B	TRRS7A	00	=		
KA516	TQ2	C4	17B	(39)	01		YEB4R0 SPI052 35 17B 37 18B	

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149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TEST YEN	DESIG. NOTATION	FACTOR	COMMENT
KA516	TQ2	A1	05A	TRST0A	00	=		OUTPUT DATA REG EVEN SET
KA516	TQ2	A1	06A	(06)	01		TRST00 SPI051 08 06A 10 07A	
KA517	TQ2	A1	05A	TRST00	00	=		
KA517	TQ2	A1	06A	(06)	01		TWR16A SPI052 08 06A 10 07A	
KA516	TQ2	A2	02B	TRST1A	00	=		OUTPUT DATA REG ODD SET
KA516	TQ2	A2	04A	(01)	01		TRST10 SPI051 04 04A 05 03B	
KA517	TQ2	A2	02B	TRST10	00	=		
KA517	TQ2	A2	04A	(01)	01		TWR17A SPI052 04 04A 05 03B	
KA516	TQ2	A3	04B	TRST4A	00	=		
KA516	TQ2	A3	02A	(09)	01		TRST00 SPI051 03 02A 07 03A	
KA516	TQ2	A4	07B	TRST5A	00	=		
KA516	TQ2	A4	05B	(15)	01		TRST10 SPI051 11 05B 13 06B	
KA412	TQ2	E1	31A	TRTDC0	00	=		
KA412	TQ2	E1	32A	(66)	01		TREADP SPI036 68 32A 70 33A	
KA431	TT3	B2	09B	TRTDEA	00	=		
KA431	TT3	B2	09A	(19)	01		TREADQ TREN2S TXEA00 14 09A 17 08B 18 10A	
KA503	TS8	C1	17B	TRTDPA	00	=		SET LATERAL PARITYERROR
KA503	TS8	C1	15A	(35)	01		TRENIS TTOPBPR TKA010 TKA020 TSCL38 SPI049 SPI044 SPI035 30 15A 31 15B 34 16A 36 17A 37 18B 38 18A 40 19A 42 20A	
KA504	TS8	A1	05B	TRTDOA	00	=		TRANSFER BYTE 0
KA504	TS8	A1	02B	(11)	01		TRTDC0 TRENIS TKB00P TKB01P TKA010 TKA020 TSCK38 SPI049 01 02B 04 04A 05 03B 06 05A 07 03A 08 06A 10 07A 13 06B	
KA505	TQ2	F3	35A	TRTDO0	00	=		
KA505	TQ2	F3	34B	(69)	01		TRTDOA SPI049 65 34B 74 35B	
KA504	TS8	B1	11B	TRTD1A	00	=		TRANSFER BYTE 1
KA504	TS8	B1	09A	(23)	01		TRTDC0 TRENIS TKB00Q TKB01P TKA010 TKA020 TSCK38 SPI049 14 09A 18 10A 19 09B 20 11A 22 12A 24 13A 25 12B 26 14A	

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149017-860  
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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CPU TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST ITEM	DESIG- NATION	FACTOR	COMMENT
KA412	TQ2	E2	28A	TRTD10	00	=		
KA412	TQ2	E2	29A	(60)	01		TRTD1A SPI036 62 29A 64 30A	
KA504	TS8	C1	17B	TRTD2A	00	=		TRANSFER BYTE 2
KA504	TS8	C1	15A	(35)	01		TRTD0 TREN1S TKB00Q TKB01Q TKA01Q TKA02Q TSCL3B SPI049 30 15A 31 15B 34 16A 36 17A 37 18B 38 18A 40 19A 42 20A	
KA412	TQ2	E3	30B	TRTD20	00	=		
KA412	TQ2	E3	28B	(57)	01		TRTD2A SPI036 53 28B 55 29B	
KA504	TS8	D1	25B	TRTD3A	00	=		TRANSFER BYTE 3
KA504	TS8	D1	23B	(47)	01		TRTD0 TREN1S TKB00P TKB01Q TKA01Q TKA02Q TSCK3B SPI049 43 23B 46 21A 48 22A 49 26B 50 23A 52 24A 54 25A 56 26A	
KA412	TQ2	E4	33B	TRTD30	00	=		
KA412	TQ2	E4	31B	(63)	01		TRTD3A SPI036 59 31B 61 32B	
KA521	TS8	B1	11B	TRTOCA	00	=		READ COMMAND IOU TIMEOUT
KA521	TS8	B1	09A	(23)	01		TREADQ TXONLO TREN1S TMWC0Q TMO2BQ TMO3BQ TMO4BP TSCL3B 14 09A 18 10A 19 09B 20 11A 22 12A 24 13A 25 12B 26 14A	
KA502	TS8	A1	05B	TRUNAR	00	=		
KA502	TS8	A1	02B	(11)	01		TRUNAS TSTP6A SPI041 TRUN3A TXRS1B SPI049 SPI035 SPI044 01 02B 04 04A 05 03B 06 05A 07 03A 08 06A 10 07A 13 06B	
KA505	TQ2	A3	04B	TRUNAS	00	=		MOTOR RUN CONTROL E/F
KA505	TQ2	A3	02A	(09)	01		TRUNAR TSTR2A 03 02A 07 03A	
KA519	TQ2	B4	13B	TRUNCA	00	=		
KA519	TQ2	B4	11B	(27)	01		TDIRIR TSPNIR 23 11B 25 12B	
KA543	TLD	D2	21A	TRUNCD4	00	=		RUN DRIVER
KA543	TLD	D2	22A	(46)	01		TRUNAS TREWCA 48 22A 50 23A	
KA520	TQ2	B4	13B	TRUNCO	00	=		
KA520	TQ2	B4	11B	(27)	01		TRUNCA SPI052 23 11B 25 12B	
KA408	TQ2	D1	24A	TRUN3A	00	=		
KA408	TQ2	D1	25A	(52)	01		TDIRIR TB0T10X 54 25A 56 26A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA521	TS8	C1	17B	TRWCOA	00	=		
KA521	TS8	C1	15A	(35)	01		WRITE INTO BUFFER REG TS29CP TM02B0 TM03BP TM04BQ TSCL3B SPI035 SPI053 SPI050 30 15A 31 15B 34 16A 36 17A 37 18B 38 18A 40 19A 42 20A	
KA406	TQ2	B4	13B	TRWSOA	00	=		
KA406	TQ2	B4	11B	(27)	01		TRWS05 TSCK3B 23 11B 25 12B	
KA409	TT3	A1	04A	TRWSOR	00	=		
KA409	TT3	A1	05A	(04)	01		TRWS05 YRWS1A YXRS1B 06 05A 08 06A 10 07A	
KA407	TQ2	A3	04B	TRWS05	00	=		REWIND COUNTER BIT0
KA407	TQ2	A3	02A	(09)	01		TRWSOR YSTR6A 03 02A 07 03A	
KA406	TQ2	A4	07B	TRWS1A	00	=		
KA406	TQ2	A4	05B	(15)	01		TRWS15 TSCK1B 11 05B 13 06B	
KA409	TT3	A2	03A	TRWS1R	00	=		
KA409	TT3	A2	02B	(07)	01		TRWS15 TRWS3A YXRS1B 01 02B 03 02A 05 03B	
KA407	TQ2	A4	07B	TRWS1S	00	=		REWIND COUNTER BIT1
KA407	TQ2	A4	05B	(15)	01		TRWS1R TRWS0A 11 05B 13 06B	
KA409	TT3	B2	09B	TRWS2A	00	=		
KA409	TT3	B2	09A	(19)	01		TREWDQ TRWS05 TSCK3B 14 09A 17 08B 18 10A	
KA406	TQ2	A3	04B	TRWS3A	00	=		
KA406	TQ2	A3	02A	(09)	01		TRWSOR TSCK3B 03 02A 07 03A	
KA410	TD4	B2	10B	TRWS4A	00	=		
KA410	TD4	B2	09A	(21)	01		YCS10 TRW0CA TRWS05 TSCK3B 14 09A 18 10A 19 09B 20 11A	
KA523	TQ2	A4	07B	TRW0CA	00	=		
KA523	TQ2	A4	05B	(15)	01		TREW10X SPI053 11 05B 13 06B	
KA523	TQ2	E1	31A	TRW10A	00	=		
KA523	TQ2	E1	32A	(66)	01		TT18S TREW1Q 68 32A 7C 33A	



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	Y TERM	DESIGNATION	FACTOR	COMMENT
KA522	TQ2	E1	31A	TRW12A	00 =			
KA522	TQ2	E1	32A	(66)	01		YYS18S TCSD20 68 32A 70 33A	
KA523	TQ2	D4	27B	TRW14A	00 =			
KA523	TQ2	D4	25B	(51)	01		TRW140 SPI053 47 25B 49 26B	
KA525	TD4	D1	25B	TRW140	00 =			
KA525	TD4	D1	26B	(47)	01		TRW10A TRW20A TRW30A TRW40A 49 26B 52 24A 54 25A 56 26A	
KA536	TQ2	E1	31A	TRW19A	00 =			
KA536	TQ2	E1	32A	(66)	01		YYS190 TREW20 68 32A 70 33A	
KA537	TQ2	E1	31A	TRW190	00 =			
KA537	TQ2	E1	32A	(66)	01		TRW19A TREW1P 68 32A 70 33A	
KA523	TQ2	E2	28A	TRW20A	00 =			
KA523	TQ2	E2	29A	(60)	01		YYS28S TREW2Q 62 29A 64 30A	
KA522	TQ2	E2	28A	TRW22A	00 =			
KA522	TQ2	E2	29A	(60)	01		YYS28S TCSD20 62 29A 64 30A	
KA536	TQ2	E2	28A	TRW29A	00 =			
KA536	TQ2	E2	29A	(60)	01		YYS290 TREW2Q 62 29A 64 30A	
KA537	TQ2	E2	28A	TRW290	00 =			
KA537	TQ2	E2	29A	(60)	01		TRW29A TREW2P 62 29A 64 30A	
KA523	TQ2	E3	30B	TRW30A	00 =			
KA523	TQ2	E3	28B	(57)	01		YYS38S TREW3Q 53 28B 55 29B	
KA522	TQ2	E3	30B	TRW32A	00 =			
KA522	TQ2	E3	28B	(57)	01		YYS38S TCSD20 53 28B 55 29B	
KA536	TQ2	E3	30B	TRW39A	00 =			
KA536	TQ2	E3	28B	(57)	01		YYS390 TREW2Q 53 28B 55 29B	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TRW390  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA537	TQ2	E3	30B	TRW390	00	=		
KA537	TQ2	E3	28B	(57)	01		TRW39A YREW3P 53 28B 55 29B	
KA523	TQ2	E4	33B	TRW40A	00	=		
KA523	TQ2	E4	31B	(63)	01		TTS48S YREW4Q 59 31B 61 32B	
KA522	TQ2	E4	33B	TRW42A	00	=		
KA522	TQ2	E4	31B	(63)	01		TTS48S YCSD2Q 59 31B 61 32B	
KA536	TQ2	E4	33B	TRW49A	00	=		
KA536	TQ2	E4	31B	(63)	01		TTS49Q YREW2Q 59 31B 61 32B	
KA537	TQ2	E4	33B	TRW49Q	00	=		
KA537	TQ2	E4	31B	(63)	01		TRW49A YREW4P 59 31B 61 32B	
KA530	TDD	J1	32A	TRO0BI	00	=		
KA530	TDD	J1		( )	01		YB00BQ 68 32A	
KA530	TDD	JN	33A	TRO0BN	00	=		
KA530	TDD	JN		( )	01		TRCP0Q 70 33A	
KA530	TDD	JP	31B	TRO0BP	00	=		
KA530	TDD	JP	31A	(59)	01		YRR5QA 66 31A	
KA530	TDD	JQ	32B	TRO0BQ	00	=		
KA530	TDD	JQ	33B	(61)	01		TRSTQA 63 33B	OUTPUT DATA REG BIT 0
KA536	TQ2	A1	05A	TRO0CA	00	=		
KA536	TQ2	A1	06A	(06)	01		YTD0BQ YRTDQ 08 06A 10 07A	
KA530	TDD	KI	29A	TRO1BI	00	=		
KA530	TDD	KI		( )	01		YB01BQ 62 29A	
KA530	TDD	KN	28A	TRO1BN	00	=		
KA530	TDD	KN		( )	01		TRCP0Q 60 28A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TR01BP  
FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 294

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST Y	DESIGNATION	FACTOR	COMMENT
KA530	TDD	KP	30B	TR01BP	00 =			
KA530	TDD	KP	30A	(57)	01		TRRSIA 64 30A	
KA530	TDD	KQ	29B	TR01BQ	00 =			
KA530	TDD	KQ	28B	(55)	01		TRSTIA 53 28B	
KA536	TQ2	A2	02B	TR01CA	00 =			
KA536	TQ2	A2	04A	(01)	01		TT01BQ TRTD00 04 04A 05 03B	
KA530	TDD	LI	38B	TR02BI	00 =			
KA530	TDD	LI	38B	( )	01		YB02BQ 77 38B	
KA530	TDD	LN	39B	TR02BN	00 =			
KA530	TDD	LN	39B	( )	01		TRCP00 79 39B	
KA530	TDD	LP	37A	TR02BP	00 =			
KA530	TDD	LP	37B	(78)	01		TRRS0A 75 37B	
KA530	TDD	LQ	38A	TR02BQ	00 =			
KA530	TDD	LQ	39A	(78)	01		TRSY0A 80 39A	
KA536	TQ2	A3	04B	TR02CA	00 =			
KA536	TQ2	A3	02A	(09)	01		TT02BQ TRTD00 03 02A 07 03A	
KA530	TDD	MI	36A	TR03BI	00 =			
KA530	TDD	MI	36A	( )	01		YB03BQ 71 36A	
KA530	TDD	MN	34A	TR03BN	00 =			
KA530	TDD	MN	34A	( )	01		TRCP00 72 34A	
KA530	TDD	MP	35A	TR03BP	00 =			
KA530	TDD	MP	36B	(69)	01		TRRSIA 73 36B	
KA530	TDD	MQ	35B	TRG3BQ	00 =			
KA530	TDD	MQ	34B	(74)	01		TRSTIA 65 34B	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TR03CA  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DEFINITION	FACTOR	COMMENT
KA536	TQ2	A4	07B	TR03CA	00 =			
KA536	TQ2	A4	05B	(15)	01		TT03BQ TRTD00 11 05B 13 06B	
				TR048I	00 =			
KA531	TDD	A1	05A	( )	01		TB048Q 08 06A	
				TR048N	00 =			
KA531	TDD	AN	07A	( )	01		TRCP10 10 07A	
KA531	TDD	AP	05B	TR048P	00 =			
KA531	TDD	AP	05A	(11)	01		TRR50A 06 05A	
KA531	TDD	AQ	06B	TR048Q	00 =			
KA531	TDD	AQ	07B	(13)	01		TR5T0A 15 07B	
KA536	TQ2	B1	12A	TR04CA	00 =			
KA536	TQ2	B1	13A	(22)	01		TT048Q TRTD00 24 13A 26 14A	
				TR058I	00 =			
KA531	TDD	B1	03B	( )	01		TB058Q 05 03B	
				TR058N	00 =			
KA531	TDD	BN	02B	( )	01		TRCP10 01 02B	
KA531	TDD	BP	04B	TR058P	00 =			
KA531	TDD	BP	04A	(09)	01		TRR51A 04 04A	
KA531	TDD	BQ	03A	TR058Q	00 =			
KA531	TDD	BQ	02A	(07)	01		TR5T1A 03 02A	
KA536	TQ2	B2	09A	TR05CA	00 =			
KA536	TQ2	B2	10A	(14)	01		TT058Q TRTD00 18 10A 20 11A	
				TR068I	00 =			
KA531	TDD	CI	13A	( )	01		TB068Q 24 13A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
REV G  
DATE 09-03-82  
INDEX TR06BN  
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CONNECTOR	TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	ORIGINATOR	FACTOR	COMMENT
				TRQ68N	00 =			
KA531	YDD	CN	14A	( )	01		TRCP10 26 14A	
KA531	TDD	CP	11B	TR068P	00 =			
KA531	YDD	CP	12A	(23 )	01		YRR5DA 22 12A	
KA531	TDD	CQ	12B	TR068Q	00 =			
KA531	YDD	CQ	13B	(25 )	01		YKST0A 27 13B	
KA536	TQ2	B3	10B	TR06CA	00 =			
KA536	TQ2	B3	08B	(21 )	01		Y1068Q TRTD00 17 08B 19 09B	
				TR07B1	00 =			
KA531	YDD	DI	10A	( )	01		YB07BQ 1E 10A	
				TR07BN	00 =			
KA531	YDD	DN	09A	( )	01		TRCP10 14 09A	
KA531	TDD	DP	10B	TR07BP	00 =			
KA531	YDD	DP	11A	(21 )	01		YRR51A 20 11A	
KA531	TDD	DQ	09B	TRC7BQ	00 =			OUTPUT DATA REG BII 7
KA531	YDD	DQ	08B	(19 )	01		YRSY1A 17 08B	
KA536	TQ2	B4	13B	TR07CA	00 =			
KA536	TQ2	B4	11B	(27 )	01		Y107BQ TRTD00 23 11B 25 12B	
				TR08B1	00 =			
KA531	YDD	E1	19A	( )	01		YE08BQ 40 19A	
				TR08BN	00 =			
KA531	YDD	EN	20A	( )	01		TRCP20 42 20A	
KA531	TDD	EP	17B	TR08BP	00 =			
KA531	YDD	EP	18A	(35 )	01		YRR52A 38 18A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TR08BQ  
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CONNECTOR	TYPE	GROUP	TEST POINTS AND OR	EQUATION	TEST	DEFINITION	FACTOR	COMMENT
KA531	TDD	EQ	18B	TR08BQ	00 =			
KA531	TDD	EQ	19B	(37)	01	YRSTOA 39 19B	OUTPUT DATA REG BIT 8	
KA536	TQ2	C1	18A	TR08CA	00 =			
KA536	TQ2	C1	19A	(38)	01	YY00BQ YRFD10 40 19A 42 20A		
				TR09BI	00 =			
KA531	TDD	FI	18A	( )	01	YB09BQ 34 16A		
				TR09BN	00 =			
KA531	TDD	FN	15A	( )	01	YRCP2G 30 15A		
KA531	TDD	FP	16B	TR09BP	00 =			
KA531	TDD	FP	17A	(33)	01	YRRS3A 36 17A		
KA531	TDD	FQ	15B	TR09BQ	00 =			
KA531	TDD	FQ	14B	(31)	01	YRST1A 29 14B		
KA536	TQ2	C2	15A	TR09CA	00 =			
KA536	TQ2	C2	16A	(30)	01	YY01BQ YRFD10 34 16A 36 17A		
				TR10BI	00 =			
KA531	TDD	GI	25A	( )	01	YB10BQ 54 25A		
				TR10BN	00 =			
KA531	TDD	GN	26A	( )	01	YRCP2O 56 26A		
KA531	TDD	GP	25B	TR10BP	00 =			
KA531	TDD	GP	24A	(47)	01	YRRS2A 52 24A		
KA531	TDD	GQ	26B	TR10BQ	00 =			
KA531	TDD	GQ	27B	(49)	01	YRSTOA 51 27B		
KA536	TQ2	C3	16B	TR10CA	00 =			
KA536	TQ2	C3	14B	(33)	01	YY02BQ YRFD10 29 14B 31 15B		

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39CIFC7  
REV G  
DATE 09-03-82  
INDEX TR11BI  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA531	TDD	HI	22A	TR11B1 ( )	00 = 01		YB11BQ 48 22A	
KA531	TDD	HN	21A	TR11BN ( )	00 = 01		YRCP20 46 21A	
KA531	TDD	HP	24B	TR11BP (45 )	00 = 01		YRR53A 50 23A	
KA531	TDD	HQ	23B	TR11BQ (43 )	00 = 01		YRSY1A 41 22B	
KA536	TQ2	C4	19B	TR11CA (39 )	00 = 01		YY03BQ YRTD10 35 17B 37 18B	
KA531	TDD	JI	32A	TR12B1 ( )	00 = 01		YB12BQ 68 32A	
KA531	TDD	JN	33A	TR12BN ( )	00 = 01		YRCP30 70 33A	
KA531	TDD	JP	31B	TR12BP (59 )	00 = 01		YRRS2A 66 31A	
KA531	TDD	JQ	32B	TR12BQ (61 )	00 = 01		YRST0A 63 33B	
KA536	TQ2	D1	24A	TR12CA (52 )	00 = 01		YY04BQ YRTD10 54 25A 56 26A	
KA531	TDD	KI	29A	TR13B1 ( )	00 = 01		YB13BQ 62 29A	
KA531	TDD	KN	28A	TR13BN ( )	00 = 01		YRCP30 60 28A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
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CONNECTOR	TEST POINT NAME	GROUP	TEST POINTS AND/OR	EQUATION	TERMINAL	DESIGNATOR	FACTOR	COMMENT
KA531	TDD KP 30B			TR138P	00	=		
KA531	TDD KP 30A			(57)	01		TRRS3A 64 30A	
KA531	TDD KQ 29B			TR138Q	00	=		
KA531	TDD KQ 28B			(55)	01		TRST1A 53 28B	
KA536	TQ2 D2 21A			TR13CA	00	=		
KA536	TQ2 D2 22A			(46)	01		TY058Q TRTD10 48 22A 50 23A	
				TR14BI	00	=		
KA531	TDD LI 38B			( )	01		TB14BQ 77 38B	
				TR14BN	00	=		
KA531	TDD LN 39B			( )	01		TRCP30 79 39B	
KA531	TDD LP 37A			TR148P	00	=		
KA531	TDD LP 37B			(76)	01		TRRS2A 75 37B	OUTPUT DATA REG BIT 15
KA531	TDD LQ 38A			TR14BQ	00	=		
KA531	TDD LQ 39A			(78)	01		TRST0A 80 39A	
KA536	TQ2 D3 24B			TR14CA	00	=		
KA536	TQ2 D3 22B			(45)	01		TY068Q TRTD10 41 22B 43 23B	
				TR158I	00	=		
KA531	TDD MI 36A			( )	01		TB158Q 71 36A	
				TR158N	00	=		
KA531	TDD MN 34A			( )	01		TRCP30 72 34A	
KA531	TDD MP 35A			TR158P	00	=		
KA531	TDD MP 36B			(69)	01		TRRS3A 73 36B	
KA531	TDD MQ 35B			TR158Q	00	=		
KA531	TDD MQ 34B			(74)	01		TRST1A 65 34B	



DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TR15CA  
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CONNECTOR	GROUP TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM NO.	DESIG- NATOR	FACTOR	COMMENT
KA536	TQ2	D4	27B	TR15CA	00	=		
KA536	TQ2	D4	25B	(51)	01		YT07BQ TRTD10 47 25B 49 26B	
				TR168I	00	=		
KA532	TDD	AI	06A	( )	01		TB168Q 08 06A	
				TR168N	00	=		
KA532	TDD	AN	07A	( )	01		TRCP40 10 07A	
KA532	TDD	AP	05B	TR168P	00	=		
KA532	TDD	AP	05A	(II)	01		TRRS4A 06 05A	
KA532	TDD	AQ	06B	TR169Q	00	=		OUTPUT DATA REG. BIT 16
KA532	TDD	AQ	07B	(13)	01		TRST4A 15 07B	
KA537	TQ2	A1	05A	TR16CA	00	=		
KA537	TQ2	A1	06A	(06)	01		YT008Q TRTD20 08 06A 10 07A	
				TR178I	00	=		
KA532	TDD	BI	03B	( )	01		TB178Q 05 03B	
				TR178N	00	=		
KA532	TDD	BN	02B	( )	01		TRCP40 01 02B	
KA532	TDD	BP	04B	TR178P	00	=		
KA532	TDD	BP	04A	(09)	01		TRRS5A 04 04A	
KA532	TDD	BQ	03A	TR178Q	00	=		
KA532	TDD	BQ	02A	(07)	01		TRST5A 03 02A	
KA537	TQ2	A2	02B	TR17CA	00	=		
KA537	TQ2	A2	04A	(01)	01		YT018Q TRTD20 04 04A 05 03B	
				TR188I	00	=		
KA532	TDD	CI	13A	( )	01		TB188Q 24 13A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TR18BN  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA532	TDD	CN	14A	TR18BN ( )	00 = 01	TRCP40 26 14A	
KA532	TDD	CP	11B	TR18BP (23 )	00 = 01	TRRS4A 22 12A	
KA532	TDD	CQ	12B	TR18BQ (25 )	00 = 01	TRST4A 27 13B	
KA537	TQ2	A3	04B	TR18CA (09 )	00 = 01	TT02BQ TRTD20 03 02A 07 03A	
KA532	TDD	DI	10A	TR19BI ( )	00 = 01	TR19BQ 18 10A	
KA532	TDD	DN	09A	TR19BN ( )	00 = 01	TRCP40 14 09A	
KA532	TDD	DP	10B	TR19BP (21 )	00 = 01	TRRS5A 20 11A	
KA532	TDD	DQ	09B	TR19BQ (19 )	00 = 01	TRST5A 17 08B	
KA537	TQ2	A4	07B	TR19CA (15 )	00 = 01	TT03BQ TRTD20 11 05B 13 06B	
KA532	TDD	EI	19A	TR20BI ( )	00 = 01	TR20BQ 40 19A	
KA532	TDD	EN	20A	TR20BN ( )	00 = 01	TRCP50 42 20A	
KA532	TDD	EP	17B	TR20BP (35 )	00 = 01	TRRS4A 38 18A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TR20BQ  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST DESIGNATOR	FACTOR	COMMENT
KA532	TDD	EQ	18B	TR20BQ	00 =		
KA532	TDD	EQ	19B	(37)	01	TRST4A 39 19B	
KA537	TQ2	B1	12A	TR20CA	00 =		
KA537	TQ2	B1	13A	(22)	01	TT04BQ TRTD20 24 13A 26 14A	
				TR218I	00 =		
KA532	TDD	FI	16A	( )	01	TB218Q 34 16A	
				TR218N	00 =		
KA532	TDD	FN	15A	( )	01	TRCP50 30 15A	
KA532	TDD	FP	16B	TR218P	00 =		
KA532	TDD	FP	17A	(33)	01	TRRS5A 36 17A	
KA532	TDD	FQ	15B	TR218Q	00 =		
KA532	TDD	FQ	14B	(31)	01	TRST5A 29 14B	
KA537	TQ2	B2	09A	TR21CA	00 =		
KA537	TQ2	B2	10A	(14)	01	TT05BQ TRTD20 18 10A 20 11A	
				TR228I	00 =		
KA532	TDD	GI	25A	( )	01	TB228Q 54 25A	
				TR228N	00 =		
KA532	TDD	GN	26A	( )	01	TRCP50 56 26A	
KA532	TDD	GP	25B	TR228P	00 =		
KA532	TDD	GP	24A	(47)	01	TRRS4A 52 24A	
KA532	TDD	GQ	26B	TR229C	00 =		
KA532	TDD	GQ	27B	(49)	01	TRST4A 51 27B	
KA537	TQ2	B3	10B	TR22CA	00 =		
KA537	TQ2	B3	08B	(21)	01	TT06BQ TRTD20 17 08B 19 09B	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39CIFC7  
REV G  
DATE 09-03-82  
INDEX TR23BI  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
				TR23BI	00 =			
KA532	TDD	HI	22A	( )	01		TR23BQ 48 22A	
				TR23BN	00 =			
KA532	TDD	HN	21A	( )	01		TRCP50 46 21A	
KA532	TDD	HP	24B	TR23BP	00 =			
KA532	TDD	HP	23A	(45 )	01		TRRS5A 50 23A	
KA532	TDD	HQ	23B	TR23BQ	00 =			OUTPUT DATA REG BIT 23
KA532	TDD	HQ	22B	(43 )	01		TRST5A 41 22B	
KA537	TQ2	B4	13B	TR23CA	00 =			
KA537	TQ2	B4	11B	(27 )	01		TR07BQ TRT020 23 11B 25 12B	
				TR24BI	00 =			
KA532	TDD	JI	32A	( )	01		TR24BQ 68 32A	
				TR24BN	00 =			
KA532	TDD	JN	33A	( )	01		TRCP60 70 33A	
KA532	TDD	JP	31B	TR24BP	00 =			
KA532	TDD	JP	31A	(59 )	01		TRRS6A 66 31A	
KA532	TDD	JQ	32B	TR24BQ	00 =			OUTPUT DATA REG BIT 24
KA532	TDD	JQ	33B	(61 )	01		TRST4A 63 33B	
KA537	TQ2	CI	18A	TR24CA	00 =			
KA537	TQ2	CI	19A	(38 )	01		TR00BQ TRT030 40 19A 42 20A	
				TR25BI	00 =			
KA532	TDD	KI	29A	( )	01		TR25BQ 62 29A	
				TR25BN	00 =			
KA532	TDD	KN	28A	( )	01		TRCP60 60 28A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	Z TERM	DESIG NATOR	FACTOR	COMMENT
KA532	TDD	KP	30B	TR25BP	00	=		
KA532	TDD	KP	30A	(57)	01		TRR57A 64 30A	
KA532	TDD	KQ	29B	TR25BQ	00	=		
KA532	TDD	KQ	28B	(55)	01		TRR55A 53 28B	
KA537	TQ2	C2	15A	TR25CA	00	=		
KA537	TQ2	C2	16A	(30)	01		TY01BQ TRTD30 34 16A 36 17A	
				TR268I	00	=		
KA532	TDD	LI	38B	( )	01		TRR268Q 77 38B	
				TR268N	00	=		
KA532	TDD	LN	39B	( )	01		TRRCP60 79 39B	
KA532	TDD	LP	37A	TR268P	00	=		
KA532	TDD	LP	37B	(76)	01		TRR56A 75 37B	
KA532	TDD	LQ	38A	TR268Q	00	=		
KA532	TDD	LQ	39A	(78)	01		TRR54A 80 39A	
KA537	TQ2	C3	16B	TR26CA	00	=		
KA537	TQ2	C3	14B	(33)	01		TY02BQ TRTD30 29 14B 31 15B	
				TR278I	00	=		
KA532	TDD	HI	36A	( )	01		TRR278Q 71 36A	
				TR278N	00	=		
KA532	TDD	MN	34A	( )	01		TRRCP60 72 34A	
KA532	TDD	MP	35A	TR278P	00	=		
KA532	TDD	MP	36B	(69)	01		TRR57A 73 36B	
KA532	TDD	MQ	35B	TR278Q	00	=		
KA532	TDD	MQ	34B	(74)	01		TRR55A 65 34B	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA537	TQ2	C4	19B	TR27CA	00	=		
KA537	TQ2	C4	17B	(19)	01		TT03BQ YRTD30 35 17B 37 18B	
				TR288I	00	=		
KA533	TDD	A1	05A	( )	01		TB288Q 08 06A	
				TR288N	00	=		
KA533	TDD	AN	07A	( )	01		TRCP70 10 07A	
KA533	TDD	AP	05B	TR288P	00	=		
KA533	TDD	AP	05A	(11)	01		TRRS6A 06 05A	
KA533	TDD	AQ	06B	TR288Q	00	=		
KA533	TDD	AQ	07B	(13)	01		TRST4A 15 07B	
KA537	TQ2	D1	24A	TR28CA	00	=		
KA537	TQ2	01	25A	(52)	01		TT04BQ YRTD30 54 25A 56 26A	
				TR298I	00	=		
KA533	TDD	B1	03B	( )	01		TB298Q 05 03B	
				TR298N	00	=		
KA533	TDD	BN	02B	( )	01		TRCP70 01 02B	
KA533	TDD	BP	04B	TR298P	00	=		
KA533	TDD	BP	04A	(09)	01		TRRS7A 04 04A	
KA533	TDD	BQ	03A	TR298Q	00	=		
KA533	TDD	BQ	02A	(07)	01		TRST5A 03 02A	
KA537	TQ2	D2	21A	TR29CA	00	=		
KA537	TQ2	02	22A	(46)	01		TT05BQ YRTD30 48 22A 50 23A	
				TR308I	00	=		
KA533	TDD	CI	13A	( )	01		TB308Q 24 13A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	TRCU	TRCU	TRCU	TEST POINTS AND OR	EQUATION	YEN	DESIGNATION	FACTOR	COMMENT
KA533	TDD	CN	14A		TR308N ( )	00 =		TRCP70 26 14A	
KA533	TDD	CP	11B		TR308P (23 )	00 =		TRRS6A 22 12A	
KA533	TDD	CP	12A			01			
KA533	TDD	CQ	12B		TR308Q (25 )	00 =		TRST4A 27 13B	
KA533	TDD	CQ	13B			01			
KA537	TQ2	D3	24B		TR30CA (45 )	00 =		TY068Q TYD30 41 22B 43 23B	
KA537	TQ2	D3	22B			01			
KA533	TDD	DI	10A		TR31BI ( )	00 =		YB31BQ 18, 10A	
KA533	TDD	DI	10A			01			
KA533	TDD	DN	09A		TR31BN ( )	00 =		TRCP70 14 09A	
KA533	TDD	DN	09A			01			
KA533	TDD	DP	10B		TR31BP (21 )	00 =		TRRS7A 20 11A	
KA533	TDD	DP	11A			01			
KA533	TDD	DO	09B		TR31BQ (19 )	00 =		OUTPUT DATA REG BII 31 TRST5A 17 08B	
KA533	TDD	DO	08B			01			
KA537	TQ2	D4	27B		TR31CA (51 )	00 =		TY078Q TYD30 47 25B 49 26B	
KA537	TQ2	D4	25B			01			
KA503	TS8	D1	25B		TSB2YO (47 )	00 =		CONTROLLER BUSY TCS00R TSNCOR TINT2A TINT6A TXXDIR TLPTBR SPI044 SPI049 43 23B 46 21A 48 22A 49 26B 50 23A 52 24A 54 25A 56 26A	
KA503	TS8	D1	23B			01			
KA509	TT3	E3	33B		TSC11A (63 )	00 =		TSNC2S TBU5YR TSCL3B 57 30B 59 31B 61 32B	
KA509	TT3	E3	30B			01			
KA411	TQ2	C1	18A		TSCK1B ( )	00 =		TSCK10 38 18A	PHASE 1 OF 2 PHASECLOCK
KA411	TQ2	C2	15A			02 +		TSCL10 30 15A	
KA411	TQ2	C3	16B			03 +		TSCM10 33 16B	

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CONNECTOR	TEST POINT	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA411	TQ2	C4	19B	( )	04	+	TSCK10 39 19B	
KA411	TQ2	C1	18A	TSCK10	00	=		TSCK10 BUSS
KA411	TQ2	C1	19A	(38)	01	=	TXCP1A SPI033 40 19A 42 20A	
KA411	TQ2	E1	31A	TSCK3B	00	=		PHASE 3 OF 2 PHASECLOCK
KA411	TQ2	E2	28A	( )	02	+	TSCK30 65 31A TSCL30 60 28A	
KA411	TQ2	E3	30B	( )	03	+	TSCK30 57 30B	
KA411	TQ2	E4	33B	( )	04	+	TSCK30 63 33B	
KA411	TQ2	E1	31A	TSCK30	00	=		TSCK30 BUSS
KA411	TQ2	E1	32A	(66)	01	=	TXCP3A SPI033 68 32A 70 33A	
KA411	TQ2	D1	24A	TSCL1B	00	=		
KA411	TQ2	D2	21A	( )	02	+	TSCL10 52 24A TSCK10 46 21A	
KA411	TQ2	D3	24B	( )	03	+	TSCK10 45 24B	
KA411	TQ2	D4	27B	( )	04	+	TSCK10 51 27B	
KA411	TQ2	C2	15A	TSCL1C	00	=		TSCK10 BUSS
KA411	TQ2	C2	16A	(30)	01	=	TXCP1A SPI033 34 16A 36 17A	
KA411	TQ2	F1	37B	TSCL3B	00	=		
KA411	TQ2	F2	34A	( )	02	+	TSCK30 75 37B TSCK30 72 34A	
KA411	TQ2	F3	35A	( )	03	+	TSCK30 69 35A	
KA411	TQ2	F4	39A	( )	04	+	TSCK30 80 39A	
KA411	TQ2	E2	28A	TSCK30	00	=		TSCK30 BUSS
KA411	TQ2	E2	29A	(60)	01	=	TXCP3A SPI033 62 29A 64 30A	



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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA411	TQ2	C3	16B	TSCM10	00	=		TSCK1B BUSS
KA411	TQ2	C3	14B	(33)	01		TXCP1A SPI033 29 14B 31 15B	
KA411	TQ2	E3	30B	TSCM30	00	=		TSCK3B BUSS
KA411	TQ2	E3	28B	(57)	01		TXCP3A SPI033 53 28B 55 29B	
KA411	TQ2	C4	19B	TSCN10	00	=		TSCK1B BUSS
KA411	TQ2	C4	17B	(39)	01		TXCP1A SPI033 35 17B 37 18B	
KA411	TQ2	E4	33B	TSCN30	00	=		TSCK3B BUSS
KA411	TQ2	E4	31B	(63)	01		TXCP3A SPI033 59 31B 61 32B	
KA411	TQ2	D1	24A	TSCP10	00	=		TSCL1B BUSS
KA411	TQ2	D1	25A	(52)	01		TXCP1A SPI033 54 25A 56 26A	
KA411	TQ2	F1	37B	TSCP30	00	=		TSCL3B BUSS
KA411	TQ2	F1	38B	(75)	01		TXCP3A SPI036 77 38B 79 39B	
KA411	TQ2	D2	21A	TSC010	00	=		TSCL1B BUSS
KA411	TQ2	D2	22A	(46)	01		TXCP1A SPI033 48 22A 50 23A	
KA411	TQ2	F2	34A	TSC030	00	=		TSCL3B BUSS
KA411	TQ2	F2	36A	(72)	01		TXCP3A SPI036 71 36A 73 36B	
KA411	TQ2	D3	24B	TSCR10	00	=		TSCL1B BUSS
KA411	TQ2	D3	22B	(45)	01		TXCP1A SPI033 41 22B 43 23B	
KA411	TQ2	F3	35A	TSCR30	00	=		TSCL3B BUSS
KA411	TQ2	F3	34B	(69)	01		TXCP3A SPI036 65 34B 74 35B	
KA411	TQ2	D4	27B	TSCS10	00	=		TSCL1B BUSS
KA411	TQ2	D4	25B	(51)	01		TXCP1A SPI033 47 25B 49 26B	
KA411	TQ2	F4	39A	TSCS30	00	=		TSCL3B BUSS
KA411	TQ2	F4	37A	(80)	01		TXCP3A SPI036 76 37A 78 38A	

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LOGIC

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CONNECTOR	GROUP TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIG. RATOR	FACTOR	COMMENT
KA502	TS8	C1	17B	TSNC0A	00	=		
KA502	TS8	C1	15A	(135)	01		YSNC05 YSNC2R TBUSYR TLAD2S TSCL3B SPI035 SPI049 SPJ044 30 15A 31 15B 34 16A 36 17A 37 18B 38 18A 40 19A 42 20A	
KA410	TD4	D1	25B	TSNC0R	00	=		
KA410	TD4	D1	26B	(147)	01		YSNC05 YINT1A YINT5A YXRS1B 49 26B 52 24A 54 25A 56 26A	
KA412	TQ2	D3	24B	TSNC0S	00	=		INPUT SYNC COUNTERBIT 0
KA412	TQ2	D3	22B	(145)	01		YSNC0R YCS00A 41 22B 43 23B	
KA511	TQ2	A1	05A	TSNC1A	00	=		
KA511	TQ2	A1	06A	(106)	01		YSNC2S YSCK3B 09 06A 10 07A	
KA506	TQ2	B1	12A	TSNC1R	00	=		
KA506	TQ2	B1	13A	(122)	01		YSNC1S YSNC1A 24 13A 26 14A	
KA505	TQ2	B1	12A	TSNC1S	00	=		INPUT SYNC COUNTERBIT 1
KA505	TQ2	B1	13A	(122)	01		YSNC1R YSNC0A 24 13A 26 14A	
KA506	TQ2	B2	09A	TSNC2A	00	=		
KA506	TQ2	B2	10A	(114)	01		YSNC1S YSCK1B 18 10A 20 11A	
KA506	TQ2	B3	10B	TSNC2R	00	=		
KA506	TQ2	B3	08B	(121)	01		YSNC2S YSNC3A 17 08B 19 09B	
KA505	TQ2	B3	10B	TSNC2S	00	=		INPUT SYNC COUNTERBIT 2
KA505	TQ2	B3	08B	(121)	01		YSNC2R YSNC2A 17 08B 19 09B	
KA505	TQ2	B2	09A	TSNC3A	00	=		
KA505	TQ2	B2	10A	(114)	01		YSNC1R YSCK1B 18 10A 20 11A	
KA425	TDD	C1	13A	TSPACI	00	=		
KA425	TDD	C1	13A	( )	01		YSPA10 24 13A	
KA425	TDD	CN	14A	TSPACN	00	=		
KA425	TDD	CN	14A	( )	01		YXDV1B 26 14A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
XA425	TDD	CP	11B	TSPACP	00	=		
XA425	TDD	CP	12A	(23)	01		TRDCAB 22 12A	
XA425	TDD	CQ	12B	TSPACQ	00	=		SPACE FOR/REV COMMAND F/E
XA425	TDD	CQ	13B	(25)	01		SPI039 27 13B	
XA425	TDD	DI	10A	TSPAFI	00	=		
XA425	TDD	DI	10A	( )	01		TSPA20 18 10A	
XA425	TDD	DN	09A	TSPAFN	00	=		
XA425	TDD	DN	09A	( )	01		TXDV1B 14 09A	
XA425	TDD	DP	10B	TSPAFP	00	=		
XA425	TDD	DP	11A	(21)	01		TRDCAB 20 11A	
XA425	TDD	DQ	09B	TSPAFQ	00	=		SPACE FILE FOR COMMAND F/E
XA425	TDD	DQ	08B	(19)	01		SPI038 17 08B	
XA426	TQ2	D2	21A	TSPA10	00	=		
XA426	TQ2	D2	22A	(46)	01		TXR090T TXR098T 48 22A 50 23A	
XA426	TQ2	C1	18A	TSPA20	00	=		
XA426	TQ2	C1	19A	(38)	01		TXR099T SPI039 40 19A 42 20A	
XA543	TLD	F1	37B	TSPDCD*	00	=		SPEED DRIVER
XA543	TLD	F1	38B	(75)	01		TSPNIS SPI059 77 38B 79 39B	
XA406	TQ2	D2	21A	TSP10A	00	=		
XA406	TQ2	D2	22A	(46)	01		TSPNSQ TSTP2S 48 22A 50 23A	
XA407	TQ2	D4	27B	TSP11A	00	=		
XA407	TQ2	D4	25B	(51)	01		TSPNSP TSTP2S 47 25B 49 26B	
XA406	TQ2	C2	15A	TSPNIR	00	=		
XA406	TQ2	C2	16A	(30)	01		TSPNIS TSP11A 34 16A 36 17A	

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149017-860  
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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	ENCUT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM INDICATOR	FACTOR	COMMENT
KA407	TQ2	C2	15A	TSPNIS	00 =		
KA407	TQ2	C2	16A	(30)	01	TSPNIR TSP10A 34 16A 36 17A	OLD SPEED F/F (7.5OR 60IPS)
				TSPNSI	00 =		
KA542	TDD	CI	13A	( )	01	TREW3A 24 13A	
				TSPNSN	00 =		
KA542	TDD	CN	14A	( )	01	TXDVB 26 14A	
KA542	TDD	CP	11B	TSPNSP	00 =		
KA542	TDD	CP	12A	(23)	01	TRDCAB 22 12A	
KA542	TDD	CQ	12B	TSPNSQ	00 =		
KA542	TDD	CQ	13B	(25)	01	SP1059 27 13B	NEW SPEED
KA406	TQ2	C3	16B	TSR50A	00 =		
KA406	TQ2	C3	14B	(33)	01	TSR500 SPI033 29 14B 31 15B	
KA409	TT3	C3	19B	TSR500	00 =		
KA409	TT3	C3	16B	(39)	01	TSNC2A TXRS1B SPI033 33 16B 35 17B 37 18B	
KA407	TQ2	C3	16B	TSRS1A	00 =		
KA407	TQ2	C3	14B	(33)	01	TSR500 SPI033 29 14B 31 15B	
KA407	TQ2	E2	28A	TSTPRA	00 =		
KA407	TQ2	E2	29A	(60)	01	TSTP05 YSTP1R 62 29A 64 30A	
KA510	TY3	CI	17A	TSTPOR	00 =		
KA510	TY3	CI	18A	(36)	01	TSTP05 TSTP1A TXRS1B 38 18A 40 19A 42 20A	
KA410	TD4	E1	31B	TSTP05	00 =		
KA410	TD4	E1	32B	(59)	01	TSTPOR YINT5A TSTP2A TSTP4A 61 32B 66 31A 68 32A 70 33A	STOP DELAY BIT 0
KA408	TQ2	E1	31A	TSTP1A	00 =		
KA408	TQ2	E1	32A	(66)	01	TSTP25 TSCK3B 68 32A 70 33A	

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LOGIC

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIG. HAYOR	FACTOR	COMMENT
KA408	TQ2	E2	28A	TSTP1R	00	=		
KA408	TQ2	E2	29A	(60)	01		TSTP1S TSTPOS 62 29A 64 30A	
KA407	TQ2	E1	31A	TSTP1S	00	=		STOP DELAY BIT 1
KA407	TQ2	E1	32A	(66)	01		TSTP1R TSTP6A 68 32A 70 33A	
KA409	TT3	E2	29B	TSTP2A	00	=		
KA409	TT3	E2	28B	(55)	01		Y1AD3S YSNCR YSCK3B 53 28B 60 28A 62 29A	
KA408	TQ2	F1	37B	TSTP2R	00	=		
KA408	TQ2	F1	38B	(75)	01		YSTP2S YSTR2A 77 38B 79 39B	
KA409	TT3	F2	33B	TSTP2S	00	=		STOP DELAY BIT 2
KA409	TT3	F2	34B	(74)	01		YSTP2R YSTP8A YXR51B 65 34B 71 36A 72 34A	
KA433	TD4	F1	37A	TSTP4A	00	=		
KA433	TD4	F1	37B	(76)	01		YSNC2S YBUSYS YDSC0A TSCL3B 75 37B 77 38B 78 38A 79 39B	
KA409	TT3	E3	33B	TSTP6A	00	=		
KA409	TT3	E3	30B	(83)	01		YSTPOS YCZROO YSCK1B 57 30B 59 31B 61 32B	
KA431	TT3	F2	35B	TSTP8A	00	=		
KA431	TT3	F2	34B	(74)	01		YSTP1S YSTP90 TSCL1B 65 34B 71 36A 72 34A	
KA408	TQ2	F3	35A	TSTP9A	00	=		
KA408	TQ2	F3	34B	(69)	01		YSPNYS Y082H0 65 34B 74 35B	
KA432	TQ2	C4	19B	TSTP90	00	=		
KA432	TQ2	C4	17B	(39)	01		YSTP9A YC51B0 35 17B 37 18B	
KA409	TT3	C2	15B	TSTRCO	00	=		
KA409	TT3	C2	14B	(31)	01		YSTPOR YSTP1R TSTP2R 29 14B 30 15A 34 16A	
KA509	TT3	A3	07B	TSTRRA	00	=		
KA509	TT3	A3	04B	(15)	01		YSTR1R YSTROS YSTPOR 09 04B 11 05B 13 06B	

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149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39CIFC7  
REV G  
DATE 09-03-82  
INDEX TSTR0A  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA525	TD4	C2	16B	TSTR0A	00	=		
KA525	TD4	C2	15A	(33)	01		TSNC2R YBUSYS TSTRCO TSCL3B 30 15A 31 15B 34 16A 36 17A	
KA409	TT3	F1	36B	TSTR0R	00	=		
KA409	TT3	F1	37B	(73)	01		TSTR0S YSTR1A YBUSYS 75 37B 77 38B 79 39B	
KA406	TQ2	D4	27B	TSTR0S	00	=		START DELAY BIT 0
KA406	TQ2	D4	25B	(51)	01		TSTR0R YSTR0A 47 25B 49 26B	
KA406	TQ2	F3	35A	TSTR1A	00	=		
KA406	TQ2	F3	34B	(69)	01		TSTR2S YSCK3B 65 34B 74 35B	
KA409	TT3	B1	11A	TSTR1R	00	=		
KA409	TT3	B1	12A	(20)	01		TSTR1S YSTR0S YSTPOR 22 12A 24 13A 26 14A	
KA408	TQ2	B1	12A	TSTR1S	00	=		START DELAY BIT 1
KA408	TQ2	B1	13A	(22)	01		TSTR1R YSTR2A 24 13A 26 14A	
KA410	TD4	B1	11B	TSTR2A	00	=		
KA410	TD4	B1	12A	(23)	01		TSTR0S YSTPOR TCZROO YSCK1B 22 12A 24 13A 25 12B 26 14A	
KA431	TT3	F3	39A	TSTR2R	00	=		
KA431	TT3	F3	35A	(80)	01		TSTR2S YSTP6A TXRSOB 69 35A 76 37A 78 38A	
KA409	TT3	C1	17A	TSTR2S	00	=		START DELAY BIT 2
KA409	TT3	C1	18A	(36)	01		TSTR2R YSTR4A YSTR6A 38 18A 40 19A 42 20A	
KA406	TQ2	E1	31A	TSTR3A	00	=		
KA406	TQ2	E1	32A	(66)	01		TSTR1S YB0T0S 68 32A 70 33A	
KA406	TQ2	E2	28A	TSTR3R	00	=		
KA406	TQ2	E2	29A	(60)	01		TSTR3S YSTR1S 62 29A 64 30A	
KA407	TQ2	D1	24A	TSTR3S	00	=		START DELAY BIT 3
KA407	TQ2	D1	25A	(52)	01		TSTR3R YSTR3A 54 25A 56 26A	

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149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA410	TD4	C2	16B	TSTR4A	00	=		
KA410	TD4	C2	15A	(33)	01		TSTR3S TBOTOR TSTR80 TSCK1B 30 15A 31 15B 34 16A 36 17A	
KA408	TQ2	F4	39A	TSTR5A	00	=		
KA408	TQ2	F4	37A	(80)	01		T033M0 TSPNIS 76 37A 78 38A	
KA410	TD4	D2	24B	TSTR6A	00	=		
KA410	TD4	D2	23B	(45)	01		TSTR1S TSTR3R TSTR60 TSCK1B 43 23B 46 21A 48 22A 50 23A	
KA407	TQ2	E4	33B	TSTR60	00	=		
KA407	TQ2	E4	31B	(63)	01		TSTR5A T066MA 59 31B 61 32B	
KA407	TQ2	D2	21A	TSTR7A	00	=		
KA407	TQ2	D2	22A	(46)	01		T200M0 TWRITP 48 22A 50 23A	
KA408	TQ2	D2	21A	TSTR80	00	=		
KA408	TQ2	D2	22A	(46)	01		TSTR7A T300MA 48 22A 50 23A	
KA525	TD4	E1	31B	TSTR90	00	=		WRITE COUNT 78US
KA525	TD4	E1	32B	(59)	01		TSTR4A TSTR6A TFST4A THSPRA 61 32B 66 31A 68 32A 70 33A	
KA418	TS8	D1	25B	TSYN1A	00	=		MOTION COMMAND START
KA418	TS8	D1	23B	(47)	01		TXDV1B TXR091T TXR093T TXR096T TXR097T SPI03R SPI039 SPI035 43 23B 46 21A 48 22A 49 26B 50 23A 52 24A 54 25A 56 26A	
KA526	TDD	AI	06A	TS14B1	00	=		
				( )	01		SPI053 08 06A	
KA526	TDD	AN	07A	TS14B8	00	=		
				( )	01		SPI050 10 07A	
KA526	TDD	AP	05B	TS14BP	00	=		
KA526	TDD	AP	05A	(11)	01		TSR50A 06 05A	
KA526	TDD	AQ	06B	TS14BQ	00	=		TAPE MARK DETECTED/F
KA526	TDD	AQ	07B	(13)	01		TNSGTA 15 07B	

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149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TS1590  
FILE IDENT T39C1FC7 DATE 09-03-82 PAGE 315

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERMIN	DESIGNATION	FACTOR	COMMENT
KA406	TQ2	B3	10B	TS1590	00 =			
KA406	TQ2	B3	08B	(21 )	01		TCYLRO SPI033 17 08B 19 09B	
				TS23BI	00 =			
KA526	TDD	BI	03B	( )	01		SPI035 05 03B	
				TS23BL	00 =			
KA526	TDD	BN	02B	( )	01		SPI040 01 02B	
KA526	TDD	BP	04B	TS23BP	00 =			
KA526	TDD	BP	04A	(09 )	01		TSR50A 04 04A	
KA526	TDD	BQ	03A	TS23BQ	00 =			COMPUTER DATA PARITY ERROR
KA526	TDD	BQ	02A	(07 )	01		TS23SA 03 02A	
KA407	TQ2	F1	37B	TS23SA	00 =			
KA407	TQ2	F1	38B	(75 )	01		TS23S0 SPI033 77 38B 79 39B	
KA406	TQ2	F1	37B	TS23S0	00 =			
KA406	TQ2	F1	38B	(75 )	01		TXDPEA TX00EA 77 38B 79 39B	
				TS26CI	00 =			
KA526	TDD	EI	19A	( )	01		SPI053 40 19A	
				TS26CN	00 =			
KA526	TDD	EN	20A	( )	01		SPI050 42 20A	
KA526	TDD	EP	17B	TS26CP	00 =			
KA526	TDD	EP	18A	(35 )	01		TSR51A 38 18A	
KA526	TDD	EQ	18B	TS26CQ	00 =			FILE PROTECT ERROR
KA526	TDD	EQ	19B	(37 )	01		TFPE1A 39 19B	
KA409	IT3	B3	13B	TS2890	00 =			
KA409	IT3	B3	10B	(27 )	01		TS23BP TS30BP TS31BP 21 10B 23 11B 25 12B	



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM NO.	DESIGN NATOR	FACTOR	COMMENT
KA526	TDD	FI	16A	TS29CI ( )	00 = 01		SPI035 34 16A	
KA526	TDD	FN	15A	TS29CN ( )	00 = 01		SPI040 30 15A	
KA526	TDD	FP	16B	TS29CP (33 )	00 = 01		YRS1A 36 17A	
KA526	TDD	FQ	15B	TS29CQ (31 )	00 = 01			TIMING ERROR
KA526	TDD	FQ	14B				YS29SA 29 14B	
KA506	TQ2	A4	07B	TS29SA (15 )	00 = 01		YS29S0 SPI049 11 05B 13 06B	
KA505	TQ2	A4	07B	TS29S0 (15 )	00 = 01		YR10CA YW10CA 11 05B 13 06B	
KA526	TDD	CI	13A	TS308I ( )	00 = 01		SPI053 24 13A	
KA526	TDD	CN	14A	TS308N ( )	00 = 01		SPI050 26 14A	
KA526	TDD	CP	11B	TS308P (23 )	00 = 01		YRS0A 22 12A	
KA526	TDD	CQ	12B	TS308Q (25 )	00 = 01		YNSGJA 27 13B	LONGITUDINAL PARITY ERROR
KA526	TDD	GI	25A	TS30CI ( )	00 = 01		SPI053 54 25A	
KA526	TDD	GN	26A	TS30CN ( )	00 = 01		SPI050 56 26A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA526	TDD	GP	25B	TS30CP	00 =			
KA526	TDD	GP	24A	(47)	01	TSRSIA 52 24A		
KA526	TDD	GQ	26B	TS30CQ	00 =			
KA526	TDD	GQ	27B	(49)	01	INDASA 51 27B		NO DATA ERROR
KA526	TDD	DI	10A	TS318I	00 =			
				( )	01	SPI035 18 10A		
KA526	TDD	DN	09A	TS318N	00 =			
				( )	01	SPI040 14 09A		
KA526	TDD	DP	10B	TS318P	00 =			
KA526	TDD	DP	11A	(21)	01	TSRS0A 20 11A		
KA526	TDD	DQ	09B	TS318Q	00 =			
KA526	TDD	DQ	08B	(19)	01	TRT0PA 17 08B		LATERAL PARITY ERROR
KA526	TDD	HI	22A	TS31CI	00 =			
				( )	01	SPI035 48 22A		
KA526	TDD	HN	21A	TS31CN	00 =			
				( )	01	SPI040 46 21A		
KA526	TDD	HP	24B	TS31CP	00 =			
KA526	TDD	HP	23A	(45)	01	TSRSIA 50 23A		
KA526	TDD	HQ	23B	TS31CQ	00 =			
KA526	TDD	HQ	22B	(43)	01	TRWS4A 41 22B		MOTOR ERROR
KA432	TQ2	B3	10B	TTASLA	00 =			
KA432	TQ2	B3	08B	(21)	01	TTASIO TXDV1B 17 08B 19 09B		
KA539	TDD	BI	03B	TTASLI	00 =			
				( )	01	TTASIO 05 03B		

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA539	TDD	BN	02B	TTASLN ( )	00 = 01	TXDV1B 01 02B	
KA539	TDD	BP	04B	TTASLP (09 )	00 = 01	TRDCAB 04 04A	
KA539	TDD	BQ	03A	TTASLQ (07 )	00 = 01	SPI057 03 02A	LOAD FOB COUNTER COMMAND F/F
KA426	TQ2	A4	07B	TTAS10 (15 )	00 = 01	TXR093Y SPI039 11 05B 13 06B	
KA517	TQ2	B1	12A	TTCPO0 (22 )	00 = 01	TRDBCA SPI052 24 13A 26 14A	
KA517	TQ2	B2	09A	TTCPI0 (14 )	00 = 01	TRDBCA SPI052 18 10A 20 11A	
KA510	TT3	F3	39A	TTMDC A (80 )	00 = 01	SPI035 TKC00P TKC01Q 69 35A 76 37A 78 38A	
KA505	TQ2	C2	15A	TTMDCO (30 )	00 = 01	TTMDC A SPI049 34 16A 36 17A	
KA524	TT3	F3	39A	TTRSC A (80 )	00 = 01	TKA01P TKA02Q TSCL3B 69 35A 76 37A 78 38A	
KA517	TQ2	B3	10B	TTRS0 A (21 )	00 = 01	TTRS00 SPI052 17 08B 19 09B	
KA518	TT3	B3	13B	TTRS00 (27 )	00 = 01	TTRSC A TRENOS TWRIEP 21 10B 23 11B 25 12B	
KA517	TQ2	B4	13B	TTRS1 A (27 )	00 = 01	TTRS00 SPI052 23 11B 25 12B	

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149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA410	T04	A2	04B	TTSC00	00	=		
KA410	T04	A2	02B	(09 )	01		TTSC1A TTSC2A TTSC3A TTSC4A 01 02B 04 04A 05 03B 07 03A	
KA408	TQ2	A1	05A	TTSC1A	00	=		
KA408	TQ2	A1	06A	(06 )	01		TTS1BQ TTS1BS 08 06A 10 07A	
KA408	TQ2	A2	02B	TTSC2A	00	=		
KA408	TQ2	A2	04A	(01 )	01		TTS2BQ TTS2BS 04 04A 05 03B	
KA408	TQ2	A3	04B	TTSC3A	00	=		
KA408	TQ2	A3	02A	(09 )	01		TTS3BQ TTS3BS 03 02A 07 03A	
KA408	TQ2	A4	07B	TTSC4A	00	=		
KA408	TQ2	A4	05B	(15 )	01		TTS4BQ TTS4BS 11 05B 13 06B	
KA407	TQ2	B4	13B	TTSC90	00	=		
KA407	TQ2	B4	11B	(27 )	01		TSTP2R SPI033 23 11B 25 12B	
				TTS1B1	00	=		
KA541	T00	A1	06A	( )	01		TTS190 08 06A	
				TTS1B8	00	=		
KA541	T00	AN	07A	( )	01		TXDV1B 10 07A	
KA541	T00	AP	05B	TTT1BP	00	=		
KA541	T00	AP	04A	(11 )	01		YXRS0B 06 05A	
KA541	T00	AQ	06B	TTT1BQ	00	=		
KA541	T00	AQ	07B	(13 )	01		SPI057 15 07B	TRANSPORT   SELECTED NEW
KA406	TQ2	A1	05A	TTT1BR	00	=		
KA406	TQ2	A1	06A	(06 )	01		TTS1BS TTS11A 08 06A 10 07A	
KA407	TQ2	A1	05A	TTT1BS	00	=		
KA407	TQ2	A1	06A	(06 )	01		TTS1BR TTS10A 08 06A 10 07A	TRANSPORT   SELECTED OLD

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149017-860  
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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	VER 3	DESIGNATOR	FACTOR	COMMENT
KA408	TQ2	B2	09A	TTS10A	00 =			
KA408	TQ2	B2	10A	(14)	01		YTS1BQ YTSC90 18 10A 20 11A	
KA408	TQ2	B3	10B	TTS11A	00 =			
KA408	TQ2	B3	08B	(21)	01		YTS1BP YTSC9C 17 08B 19 09B	
KA536	TQ2	F1	37B	TTS19A	00 =			
KA536	TQ2	F1	38B	(75)	01		YXR0CR YXR1CR 77 38B 79 39B	
KA537	TQ2	F1	37B	TTS190	00 =			
KA537	TQ2	F1	38B	(75)	01		YTS19A SPI056 77 38B 79 39B	
				TTS28I	00 =			
KA541	TDD	B1	03B	( )	01		YTS290 05 03B	
				TTS28N	00 =			
KA541	TDB	8N	02B	( )	01		YXDVI8 01 02B	
KA541	TDD	8P	04B	TTS28P	00 =			
KA541	TDD	8P	04A	(09)	01		YXRS08 04 04A	
KA541	TDD	BQ	03A	TTS28Q	00 =			TRANSPORT 2 SELECTED NEW
KA541	TDD	BQ	02A	(07)	01		SP1055 03 02A	
KA406	TQ2	A2	02B	TTS28R	00 =			
KA406	TQ2	A2	04A	(01)	01		YTS28S YTS21A 04 04A 05 03B	
KA407	TQ2	A2	02B	TTS28S	00 =			TRANSPORT 2 SELECTED OLD
KA407	TQ2	A2	04A	(01)	01		YTS28R YTS20A 04 04A 05 03B	
KA408	TQ2	B4	13B	TTS20A	00 =			
KA408	TQ2	B4	11B	(27)	01		YTS28Q YTSC90 23 11B 25 12B	
KA408	TQ2	C1	18A	TTS21A	00 =			
KA408	TQ2	C1	19A	(38)	01		YTS28P YTSC90 40 19A 42 20A	



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	YEN	DESIGNATOR	FACTOR	COMMENT
				TTS4BI	00 =			
KA542	TDD	BI	03B	( )	01		TTS490 05 03B	
				TTS4BN	00 =			
KA542	TDD	BN	02B	( )	01		TXOV1B 01 02B	
KA542	TDD	BP	04B	TTS4BP	00 =			
KA542	TDD	BP	04A	(09 )	01		TXRS0B 04 04A	
KA542	TDD	BQ	03A	TTS4BQ	00 =			TRANSPORT & SELECTED NEW
KA542	TDD	BQ	02A	(07 )	01		SPI058 03 02A	
KA406	TQ2	B2	09A	TTS4BR	00 =			
KA406	TQ2	B2	10A	(14 )	01		TTS4BS TTS41A 18 10A 20 11A	
KA407	TQ2	B2	09A	TTS4BS	00 =			TRANSPORT & SELECTED OLD
KA407	TQ2	B2	10A	(14 )	01		TTS4BR TTS40A 18 10A 20 11A	
KA408	TQ2	C4	19B	TTS40A	00 =			
KA408	TQ2	C4	17B	(39 )	01		TTS4BQ TTSC90 35 17B 37 18B	
KA408	TQ2	D3	24B	TTS41A	00 =			
KA408	TQ2	D3	22B	(45 )	01		TTS4BP TTSC90 41 22B 43 23B	
KA536	TQ2	F4	39A	TTS49A	00 =			
KA536	TQ2	F4	37A	(80 )	01		TXR0C5 TXR1C5 76 37A 78 38A	
KA537	TQ2	F4	39A	TTS490	00 =			
KA537	TQ2	F4	37A	(80 )	01		TTS49A SPI056 76 37A 78 38A	
				TTOPBI	00 =			
KA542	TDD	DI	10A	( )	01		TRDBPOX 18 10A	
				TTOPBN	00 =			
KA542	TDD	DN	09A	( )	01		TTCP00 14 09A	

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CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	UNIT CASE	GROUP	TEST POINTS AND/OR	EQUATION	TEST TERM	TEST DATA	FACTOR	COMMENT
KA542	TDD	DP	10B	TT0PBP	00	=		
KA542	TDD	DP	11A	(21)	01		TTR50A 20 11A	
KA438	PAR	F1	39A	TT0P8PR	00	=		READ REGISTER PARITY CHECKER
KA438	PAR	F1	35B	(80)	01		TT008Q TT018Q TT028Q TT038Q TT048Q TT058Q TT068Q TT078Q 71 35B 73 36B 75 37B 77 38B 76 37A 74 36A 72 35A 70 34A	
KA438	PAR	F1	39B	( )	02	+	TT0P8Q 79 39B	
KA542	TDD	DQ	09B	TT0P8Q	00	=		READ REG BIT P
KA542	TDD	DQ	08B	(19)	01		SPI058 17 08B	
KA542	TDD	EI	19A	TT008J	00	=		
KA542	TDD	EI	19A	( )	01		TRD800X 40 19A	
KA542	TDD	EN	20A	TT008N	00	=		
KA542	TDD	EN	20A	( )	01		TTCP00 42 20A	
KA542	TDD	EP	17B	TT008P	00	=		
KA542	TDD	EP	18A	(35)	01		TTR50A 38 18A	
KA542	TDD	EQ	18B	TT008Q	00	=		READ REG BIT 0
KA542	TDD	EQ	19B	(37)	01		SPI059 39 19B	
KA542	TDD	F1	16A	TT018I	00	=		
KA542	TDD	F1	16A	( )	01		TRD810X 34 16A	
KA542	TDD	FN	15A	TT018N	00	=		
KA542	TDD	FN	15A	( )	01		TTCP00 30 15A	
KA542	TDD	FP	16B	TT018P	00	=		
KA542	TDD	FP	17A	(33)	01		TTR50A 36 17A	
KA542	TDD	FQ	15B	TT018Q	00	=		READ REG BIT 1
KA542	TDD	FQ	14B	(31)	01		SPI058 29 14B	
KA542	TDD	GI	25A	TT028I	00	=		
KA542	TDD	GI	25A	( )	01		TRD820X 54 25A	



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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	UNIT CAGE	GROUP	TEST POINTS AND/OR	EQUATION	TEST TERM	REGIO DATA	FACTOR	COMMENT
KA542	TDD	DP	10B	TTOPBP	00	=		
KA542	TDD	DP	11A	(21)	01		TTR50A 20 11A	
KA438	PAR	F1	39A	TTOPBPR	00	=		READ REGISTER PARITY CHECKER
KA438	PAR	F1	35B	(80)	01		TT00BQ TT01BQ TT02BQ TT03BQ TT04BQ TT05BQ TT06BQ TT07BQ 71 35B 73 36B 75 37B 77 38B 76 37A 74 36A 72 35A 70 34A	
KA438	PAR	F1	39B	( )	02	+	TTOPBQ 79 39B	
KA542	TDD	DQ	09B	TTOPBQ	00	=		READ REG BIT P
KA542	TDD	DQ	08B	(19)	01		SPI058 17 08B	
KA542	TDD	EI	19A	TT00BJ	00	=		
KA542	TDD	EI	19A	( )	01		TRDB00X 40 19A	
KA542	TDD	EN	20A	TT00BN	00	=		
KA542	TDD	EN	20A	( )	01		TTCP00 42 20A	
KA542	TDD	EP	17B	TT00BP	00	=		
KA542	TDD	EP	18A	(35)	01		TTR50A 38 18A	
KA542	TDD	EQ	18B	TT00BQ	00	=		READ REG BIT 0
KA542	TDD	EQ	19B	(37)	01		SPI059 39 19B	
KA542	TDD	F1	16A	TT01BI	00	=		
KA542	TDD	F1	16A	( )	01		TRDB10X 34 16A	
KA542	TDD	FN	15A	TT01BN	00	=		
KA542	TDD	FN	15A	( )	01		TTCP00 30 15A	
KA542	TDD	FP	16B	TT01BP	00	=		
KA542	TDD	FP	17A	(33)	01		TTR50A 36 17A	
KA542	TDD	FQ	15B	TT01BQ	00	=		READ REG BIT 1
KA542	TDD	FQ	14B	(31)	01		SPI058 29 14B	
KA542	TDD	GI	25A	TT02BI	00	=		
KA542	TDD	GI	25A	( )	01		TRDB20X 54 25A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TT05BN  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA542	TDD	KN	28A	TT05BN ( )	00 = 01	TTCP10 60 28A	
KA542	TDD	KP	30B	TT05BP ( )	00 =		
KA542	TDD	KP	30A	(57 )	01	TTT5A 64 30A	
KA542	TDD	KQ	29B	TT05BQ ( )	00 =		READ REG BIT 5
KA542	TDD	KQ	28B	(55 )	01	SP1058 53 28B	
KA542	TDD	LI	38B	TT06BI ( )	00 = 01	TRD860X 77 38B	
KA542	TDD	LN	39B	TT06BN ( )	00 = 01	TTCP10 79 39B	
KA542	TDD	LP	37A	TT06BP ( )	00 =		
KA542	TDD	LP	37B	(76 )	01	TTT5A 75 37B	
KA542	TDD	LQ	38A	TT06BQ ( )	00 =		READ REG BIT 6
KA542	TDD	LQ	39A	(78 )	01	SP1059 80 39A	
KA542	TDD	MI	36A	TT07BI ( )	00 = 01	TRD870X 71 36A	
KA542	TDD	MN	34A	TT07BN ( )	00 = 01	TTCP10 72 34A	
KA542	TDD	MP	35A	TT07BP ( )	00 =		
KA542	TDD	MP	36B	(69 )	01	TTT5A 73 36B	
KA542	TDD	MQ	35B	TT07BQ ( )	00 =		READ REG BIT 7
KA542	TDD	MQ	34B	(74 )	01	SP1058 65 34B	
KA509	TT3	C3	19B	TWDBCA ( )	00 =		
KA509	TT3	C3	16B	(39 )	01	TWDEPR TC71BQ TC72BP 33 16B 35 17B 37 18B	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TWDBCD4  
FILE IDENT T39C1FC7 DATE 09-03-82 PAGE 326

CONNECTOR	CIRCUIT TYPE	BOARD	TEST POINTS AND/OR	EQUATION	TEST POINTS	DESIGNATION	FACTOR	COMMENT
KAS43	TLD	C2	15A	TWDBCD4	00 =			
KAS43	TLD	C2	16A	(130)	01		TWDBCO TWRI2S 34 16A 36 17A	WRITE STROBE DRIVER
KAS11	TQ2	D3	24B	TWDBCO	00 =			
KAS11	TQ2	D3	22B	(45)	01		TWDBCA SPI051 41 22B 43 23B	
KAS43	TLD	C3	16B	TWDBED4	00 =			
KAS43	TLD	C3	14B	(33)	01		TWEN30 SPI059 29 14B 31 15B	WRITE ENABLE DRIVER
				TWDBPB4	00 =			
KAS43	TLD	C1	18A	( )	01		TWDBPD 38 18A	WRITE DATA P DRIVERS
KA443	TLD	D4	27B	( )	02 +		UWLCPD 51 27B	
KAS43	TLD	C1	18A	TWDBPD	00 =			TWDBPB4 BUSS
KAS43	TLD	C1	19A	(38)	01		TW07BPR TWDDFO 40 19A 42 20A	
KAS17	TQ2	D4	27B	TWDBSA	00 =			
KAS17	TQ2	D4	25B	(51)	01		TFPRIOX SPI052 47 25B 49 26B	
				TWDBOB4	00 =			
KAS43	TLD	A1	05A	( )	01		TWDBOD 06 05A	WRITE DATA O DRIVERS
KA443	TLD	E1	31A	( )	02 +		UWLCOB 66 31A	
KAS43	TLD	A1	05A	TWDBOD	00 =			TWDBOB4 BUSS
KAS43	TLD	A1	06A	(06)	01		TW00DTA TWDDFO 08 06A 10 07A	
				TWDB1B4	00 =			
KAS43	TLD	A2	02B	( )	01		TWDB1D 01 02B	
KA443	TLD	E2	28A	( )	02 +		UWLCOB 60 28A	
KAS43	TLD	A2	02B	TWDB1D	00 =			WRITE DATA 1 DRIVERS
KAS43	TLD	A2	04A	(01)	01		TW00DTB TWDDFO 04 04A 05 03B	
				TWDB2B4	00 =			
KAS43	TLD	A3	04B	( )	01		TWDB2D 09 04B	WRITE DATA 2 DRIVERS
KA443	TLD	E3	30B	( )	02 +		UWLCOB 57 30B	

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149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
REV G  
DATE 09-03-82  
INDEX TWDB2D  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TRM	DESIGNATOR	FACTOR	COMMENT
KA543	TLD	A3	04B	TWDB2D	00	=		
KA543	TLD	A3	02A	(09)	01		TWDB2B4 TW00DYC TW0DE0 03 02A 07 03A	BUSS
				TWDB3B4	00	=		
KA543	TLD	A4	07B	( )	01		TWDB3D 15 07B	WRITE DATA 3 DRIVERS
KA443	TLD	E4	33B	( )	02	+	UWLC3D 63 33B	
KA543	TLD	A4	07B	TWDB3D	00	=		
KA543	TLD	A4	05B	(15)	01		TWDB3B4 TW00DYD TW0DE0 11 05B 13 06B	BUSS
				TWDB4B4	00	=		
KA543	TLD	B1	12A	( )	01		TWDB4D 22 12A	WRITE DATA 4 DRIVERS
KA443	TLD	F1	37B	( )	02	+	UWLC4D 75 37B	
KA543	TLD	B1	12A	TWDB4D	00	=		
KA543	EXT	B1	13A	(22)	01		TWDB4B4 TW04DYA TW0DF0 24 13A 26 14A	BUSS
				TWDB5B4	00	=		
KA543	TLD	B2	09A	( )	01		TWDB5D 14 09A	WRITE DATA 5 DRIVERS
KA443	TLD	F2	34A	( )	02	+	UWLC5D 72 34A	
KA543	TLD	B2	09A	TWDB5D	00	=		
KA543	TLD	B2	10A	(14)	01		TWDB5B4 TW04DTB TW0DF0 18 10A 20 11A	BUSS
				TWDB6B4	00	=		
KA543	TLD	B3	10B	( )	01		TWDB6D 21 10B	
KA443	TLD	F3	35A	( )	02	+	UWLC6D 69 35A	
KA543	TLD	B3	10B	TWDB6D	00	=		
KA543	TLD	B3	08B	(21)	01		TWDB6B4 TW04DYC TW0DF0 17 08B 19 09B	WRITE DATA 6 DRIVERS
				TWDB7B4	00	=		
KA543	TLD	B4	13B	( )	01		TWDB7D 27 13B	WRITE DATA 7 DRIVERS
KA443	TLD	F4	39A	( )	02	+	UWLC7D 80 39A	

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149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA543	TLD	B4	13B	TWDB7D	00	=		
KA543	TLD	B4	11B	(27)	01		TW04DYD TW0DF0 23 11B 25 12B	TWDB7B4 BUSS
KA518	TT3	C2	15B	TWDEA	00	=		
KA518	TT3	C2	14B	(31)	01		TWDEPR TC70BQ TC73BP 29 14B 30 15A 34 16A	
KA438	PAR	E1	33A	TWDEPR	00	=		WRITE STROBE GENERATED
KA438	PAR	E1	29B	(68)	01		SPI045 SPI046 SPI047 TC83BQ TC84BQ SPI044 SPI035 SPI043 55 29B 59 30B 61 31B 63 32B 64 31A 62 30A 60 29A 57 28A	
KA438	PAR	E1	33B	( )	02	+	SPI040 65 33B	
KA511	TQ2	F1	37B	TWDE0	00	=		
KA511	TQ2	F1	38B	(75)	01		TWDEA SPI051 77 38B 79 39B	
KA511	TQ2	F2	34A	TWDF0	00	=		
KA511	TQ2	F2	36A	(72)	01		TWDEA SPI051 71 36A 73 36B	
KA506	TQ2	C1	18A	TWENCA	00	=		
KA506	TQ2	C1	19A	(38)	01		TWENCO SPI049 40 19A 42 20A	
KA516	TQ2	F1	37B	TWENCO	00	=		
KA516	TQ2	F1	38B	(75)	01		TWRITP TWRIEP 77 38B 79 39B	
KA515	TD4	B1	11B	TWENOA	00	=		
KA515	TD4	B1	12A	(23)	01		TWENCO TFPR10X TSNC1S TSCL1B 22 12A 24 13A 25 12B 26 14A	
KA507	TS8	A1	05B	TWENOR	00	=		
KA507	TS8	A1	02B	(11)	01		TWENOS TWEN1A TFPR10X TRDY10X TXRS1B SPI049 SPI035 SPI050 01 02B 04 04A 05 03B 06 05A 07 03A 08 06A 10 07A 13 06B	
KA512	TQ2	A1	05A	TWENOS	00	=		WRITE ENABLE E/F
KA512	TQ2	A1	06A	(06)	01		TWENOR TWENOA 08 06A 10 07A	
KA524	TT3	C2	15B	TWEN1A	00	=		
KA524	TT3	C2	14B	(31)	01		TWENCA TSNC1S TSCL1B 29 14B 30 15A 34 16A	
KA524	TT3	C3	19B	TWEN2A	00	=		
KA524	TT3	C3	16B	(39)	01		TWENCO TFPR10X TSNC1S 33 16B 35 17B 37 18B	

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149017-860  
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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMINAL	DESIGNATION	FACTOR	COMMENT
KA520	TQ2	E1	31A	TWEN30	00	=		
KA520	TQ2	E1	32A	(66)	01		TWEN2A TWENOR 68 32A 70 33A	
KA543	TLD	C4	19B	TWLRCDA	00	=		
KA543	TLD	C4	17B	(39)	01		TWLRCO SPI059 35 17B 37 18B	
KA525	TD4	F1	37A	TWLRCO	00	=		
KA525	TD4	F1	37B	(76)	01		TWENOS YSNC2R TLCC3R SPI045 75 37B 77 38B 78 38A 79 39B	
KA512	TQ2	F2	34A	TWPEOA	00	=		
KA512	TQ2	F2	36A	(72)	01		TWRITQ TWPEOO 71 36A 73 36B	
KA511	TQ2	F3	35A	TWPEOO	00	=		
KA511	TQ2	F3	34B	(69)	01		YRDPAA YNSGJA 65 34B 74 35B	
KA522	TQ2	D4	27B	TWRGRA	00	=		
KA522	TQ2	D4	25B	(51)	01		TWRGOS TWRGIR 47 25B 49 26B	
KA516	TQ2	E3	30B	TWRGOA	00	=		
KA516	TQ2	E3	28B	(57)	01		TWRG00 YSTR90 53 28B 55 29B	
KA515	TD4	D1	25B	TWRGOR	00	=		
KA515	TD4	D1	26B	(47)	01		TWRGOS TWRG1A UINT7A TXRS1B 49 26B 52 24A 54 25A 56 26A	
KA517	TQ2	E3	30B	TWRGOS	00	=		WRITE DELAY BIT 0
KA517	TQ2	E3	28B	(57)	01		TWRGOR TWRGOA 53 28B 55 29B	
KA524	TT3	D3	27B	TWRG00	00	=		
KA524	TT3	D3	24B	(51)	01		TWRITP TWRIEP THISPP 45 24B 47 25B 49 26B	
KA516	TQ2	F3	35A	TWRG1A	00	=		
KA516	TQ2	F3	34B	(69)	01		TWRG2S YSCL3B 65 34B 74 35B	
KA516	TQ2	E4	33B	TWRG1R	00	=		
KA516	TQ2	E4	31B	(63)	01		TWRG1S TWRGOS 59 31B 61 32B	

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UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMINAL	DESIGNATOR	FACTOR	COMMENT
KA517	TQ2	E4	33B	TWRG1S	00	=		
KA517	TQ2	E4	31B	(63)	01		TWRG1R TWRG2A 59 31B 61 32B	WRITE DELAY BIT 1
KA515	TD4	E1	31B	TWRG2A	00	=		
KA515	TD4	E1	32B	(59)	01		TWRG0S TCZROO TCZR70 TSCL1B 61 32B 66 31A 68 32A 70 33A	
KA518	TT3	F1	36B	TWRG2R	00	=		
KA518	TT3	F1	37B	(73)	01		TWRG2S TWRG3A TXRS1B 75 37B 77 38B 79 39B	
KA410	TD4	F2	35A	TWRG2S	00	=		
KA410	TD4	F2	36A	(69)	01		TWRG2R TWRG4A TWRG6A TWRG8A 71 36A 72 34A 73 36B 74 35B	WRITE DELAY BIT 2
KA517	TQ2	F1	37B	TWRG3A	00	=		
KA517	TQ2	F1	38B	(75)	01		TWRG1R TSCL1B 77 38B 79 39B	
KA515	TD4	C2	16B	TWRG4A	00	=		
KA515	TD4	C2	15A	(33)	01		TWISPO TWRG1S TOBOUD TSCL1B 30 15A 31 15B 34 16A 36 17A	
KA515	TD4	C1	17B	TWRG6A	00	=		
KA515	TD4	C1	18B	(35)	01		TWRITO TWRG1S TC40BP TSCL1B 37 18B 38 18A 40 19A 42 20A	
KA524	TT3	D2	23B	TWRG8A	00	=		
KA524	TT3	D2	22B	(43)	01		TWRG1S TREGOO TSCL1B 41 22B 46 21A 48 22A	
KA425	TDD	FI	16A	TWR1E1	00	=		
KA425	TDD	FI	16A	( )	01		TWRT20 34 16A	
KA425	TDD	FN	15A	TWR1E1N	00	=		
KA425	TDD	FN	15A	( )	01		TXDV1B 30 15A	
KA425	TDD	FP	16B	TWR1E1P	00	=		
KA425	TDD	FP	17A	(33)	01		TTRDCAB 36 17A	
KA425	TDD	FQ	15B	TWR1E1Q	00	=		
KA425	TDD	FQ	14B	(31)	01		SPI038 29 14B	ERASE COMMAND F/F

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149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA505	TQ2	E1	31A	TWRIRA	00	=		
KA505	TQ2	E1	32A	(166)	01		TWRIIS TWRI2R 68 32A 70 33A	
				TWRITI	00	=		
KA425	T00	HI	22A	( )	01		TWRI10 48 22A	
				TWRITN	00	=		
KA425	T00	HN	21A	( )	01		TXDVIB 46 21A	
KA425	T00	HP	24B	TWRITP	00	=		
KA425	T00	HP	23A	(145)	01		TRDCAB 50 23A	
KA425	T00	HQ	23B	TWRITQ	00	=		WRITE COMMAND E/F
KA425	T00	HQ	22B	(143)	01		SPI038 41 22B	
KA428	TQ2	D2	21A	TWRITO	00	=		
KA428	TQ2	D2	22A	(146)	01		TWRITP SPI042 48 22A 50 23A	
KA507	TS8	B1	11B	TWRIOR	00	=		
KA507	TS8	B1	09A	(23)	01		TWRI0S TREN1S TWRI1A SPI051 TXDPEA TXRS1B SPI050 SPI049 14 09A 18 10A 19 09B 20 11A 22 12A 24 13A 25 12B 26 14A	
KA512	TQ2	B1	12A	TWRI0S	00	=		WRITE COUNTER BIT 0
KA512	TQ2	B1	13A	(22)	01		TWRIOR TWRG6A 24 13A 26 14A	
KA504	TS8	E1	31B	TWRI1A	00	=		
KA504	TS8	E1	29B	(159)	01		TLCC0S TWRG2R TMWCBP TWRI1R TSCK1B SPI035 SPI044 SPI049 55 29B 60 28A 61 32B 62 29A 64 30A 66 31A 68 32A 70 33A	
KA510	TT3	D1	23A	TWRI1R	00	=		
KA510	TT3	D1	24A	(50)	01		TWRI1S TWRI3A TWRI0S 52 24A 54 25A 56 26A	
KA511	TQ2	D4	27B	TWRI1S	00	=		WRITE COUNTER BIT 1
KA511	TQ2	D4	25B	(51)	01		TWRI1R TWRI2A 47 25B 49 26B	
KA508	TD4	E1	31B	TWRI2A	00	=		
KA508	TD4	E1	32B	(59)	01		TWRI0S TWRI2R TWRI3R TSCL3B 61 32B 66 31A 68 32A 70 33A	



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149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	3 TERM	DESIGNATION	FACTOR	COMMENT
KA512	TQ2	E1	31A	TWRI2R	00 =			
KA512	TQ2	E1	32A	(66)	01		TWRI2S TWRI1S 68 32A 70 33A	
KA511	TQ2	E1	31A	TWRI2S	00 =			WRITE COUNTER BIT 2
KA511	TQ2	E1	32A	(66)	01		TWRI2R TWRI4A 68 32A 70 33A	
KA512	TQ2	D4	27B	TWRI3A	00 =			
KA512	TQ2	D4	25B	(51)	01		TWRI3S TSCK3B 47 25B 49 26B	
KA510	TT3	D3	27B	TWRI3R	00 =			
KA510	TT3	D3	24B	(51)	01		TWRI3S TWRI5A TXRS2B 45 24B 47 25B 49 26B	
KA505	TQ2	D3	24B	TWRI3S	00 =			WRITE COUNTER BIT 3
KA505	TQ2	D3	22B	(45)	01		TWRI3R TWRI6A 41 22B 43 23B	
KA518	TT3	C3	19B	TWRI4A	00 =			
KA518	TT3	C3	16B	(39)	01		TWRI1S TCZR70 TSCL1B 33 16B 35 17B 37 18B	
KA511	TQ2	E2	28A	TWRI5A	00 =			
KA511	TQ2	E2	29A	(60)	01		TWRI2R TSCK1B 62 29A 64 30A	
KA510	TT3	D2	23B	TWRI6A	00 =			
KA510	TT3	D2	22B	(43)	01		TWRI2S T198U0 TSCK1B 41 22B 46 21A 48 22A	
KA425	TDD	LI	38B	TWRQCI	00 =			
KA425	TDD	LI	38B	( )	01		SPI0?? 77 38B	
KA425	TDD	LN	39B	TWRQCN	00 =			
KA425	TDD	LN	39B	( )	01		TWRQ4P 79 39B	
KA425	TDD	LP	37A	TWRQCP	00 =			
KA425	TDD	LP	37B	(76)	01		TWRQ5A 75 37B	
KA425	TDD	LQ	38A	TWRQCC	00 =			WRITE REQUEST DELAY CONTROL
KA425	TDD	LQ	39A	(78)	01		TXRS2B 80 39A	

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149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
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INDEX TWRQ0A  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGN FACTOR	FACTOR	COMMENT
KAS07	TSB	CI	17B	TWRQ0A	00	=		
KAS07	TSB	CI	15A	(35)	01		TWR1Q TLECCOR TWR03P TWR04Q TSCL3B TWR00P TWR01P TWR02Q 30 15A 31 15B 34 16A 36 17A 37 18B 38 18A 40 19A 42 20A	
				TWRQ0I	00	=		
KAS14	TDD	AI	06A	( )	01		TWRQIP 08 06A	
				TWRQON	00	=		
KAS14	TDD	AN	07A	( )	01		TSCK1B 10 07A	
KAS14	TDD	AP	05B	TWRQOP	00	=		
KAS14	TDD	AP	05A	(11)	01		TWRQCP 06 05A	
KAS14	TDD	AQ	06B	TWRQOQ	00	=		WRITE REQUEST DELAY BIT 0
KAS14	TDD	AQ	07B	(13)	01		SPI051 15 07B	
KAS10	TT3	A1	04A	TWRQOR	00	=		
KAS10	TT3	A1	05A	(04)	01		TWRQ0S TWRQ1A TXRS1B 06 05A 08 06A 10 07A	
KAS09	TT3	A1	04A	TWRQ0S	00	=		
KAS09	TT3	A1	05A	(04)	01		TWRQOR TWRQ6A TWRQ0A 06 05A 08 06A 10 07A	
KAS11	TQ2	B3	10B	TWRQ1A	00	=		
KAS11	TQ2	B3	08B	(21)	01		TWRQ1S TSCK3B 17 08B 19 09B	
				TWRQ1I	00	=		
KAS13	TDD	AI	06A	( )	01		TWRQOQ 08 06A	
				TWRQ1N	00	=		
KAS13	TDD	AN	07A	( )	01		TSCK1B 10 07A	
KAS13	TDD	AP	05B	TWRQ1P	00	=		
KAS13	TDD	AP	05A	(11)	01		TWRQCP 06 05A	
KAS13	TDD	AQ	06B	TWRQ1Q	00	=		
KAS13	TDD	AQ	07B	(13)	01		SPI051 15 07B	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
REV G  
DATE 09-03-82  
INDEX TWRQ1R  
PAGE 334

CONNECTOR	TEST POINT	TEST POINT AND OR	EQUATION	TEST	TEST	FACTOR	COMMENT
KA510	TT3	A2 03A	TWRQ1R	00	=		
KA510	TT3	A2 02B	(07)	01		TWRQ1S TWRQ3A TXRS1B 01 02B 03 02A 05 03B	
KA516	TQ2	E1 31A	TWRQ1S	00	=		
KA516	TQ2	E1 32A	(66)	01		TWRQ1R TWRQ2A 6B 32A 70 33A	
KA512	TQ2	B2 09A	TWRQ2A	00	=		
KA512	TQ2	B2 10A	(14)	01		TWRQ0S TSCL1B 1B 10A 20 11A	
KA514	TDD	LI 38B	TWRQ2I	00	=		
KA514	TDD	LI 38B	( )	01		TWRQ9A 77 38B	
KA514	TDD	LN 39B	TWRQ2N	00	=		
KA514	TDD	LN 39B	( )	01		TWRQ1P 79 39B	
KA514	TDD	LP 37A	TWRQ2P	00	=		
KA514	TDD	LP 37B	(76)	01		TWRQCP 75 37B	
KA514	TDD	LQ 38A	TWRQ2Q	00	=		
KA514	TDD	LQ 39A	(78)	01		SPI050 80 39A	
KA510	TT3	C2 15B	TWRQ2R	00	=		
KA510	TT3	C2 14B	(31)	01		TWRQ2S TWRQ5A TMR50A 29 14B 30 15A 34 16A	
KA511	TQ2	C1 18A	TWRQ2S	00	=		
KA511	TQ2	C1 19A	(38)	01		TWRQ2R TXED3A 40 19A 42 20A	
KA512	TQ2	B3 10B	TWRQ3A	00	=		
KA512	TQ2	B3 08B	(21)	01		TWRQ0R TSCL1B 17 08B 19 09B	
KA513	TDD	BY 03B	TWRQ3I	00	=		
KA513	TDD	BY 03B	( )	01		TWRQ4P 05 03B	
KA513	TDD	BN 02B	TWRQ3N	00	=		
KA513	TDD	BN 02B	( )	01		TWRQ2P 01 02B	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
REV G  
DATE 09-03-82  
INDEX TWRQ3P  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS		EQUATION	TERM	DESIG- NATOR	FACTOR	COMMENT
			AND	OR					
KA513	TDD	BP	04B		TWRQ3P	00	=		
KA513	TDD	BP	04A		(09 )	01		TWRQCP 04 04A	
KA513	TDD	BQ	03A		TWRQ3Q	00	=		
KA513	TDD	BQ	02A		(07 )	01		SPI050 03 02A	
KA510	TT3	C3	19B		TWRQ3R	00	=		
KA510	TT3	C3	16B		(30 )	01		TWRQ3S TWRQ7A TWR50A 33 16B 35 17B 37 18B	
KA512	TQ2	C1	18A		TWRQ3S	00	=		
KA512	TQ2	C1	19A		(38 )	01		TWRQ3R TWRQ4A 40 19A 42 20A	
KA510	TT3	A3	07B		TWRQ4A	00	=		
KA510	TT3	A3	04B		(15 )	01		TWRQ2S TWR0BP TSCK1B 09 04B 11 05B 13 06B	
					TWRQ4I	00	=		
KA436	TDD	FI	16A		( )	01		TWRQ3Q 34 16A	
					TWRQ4N	00	=		
KA436	TDD	FN	15A		( )	01		TWRQ2P 30 15A	
KA436	TDD	FP	16B		TWRQ4P	00	=		
KA436	TDD	FP	17A		(33 )	01		TWRQCP 36 17A	
KA436	TDD	FQ	15B		TWRQ4Q	00	=		
KA436	TDD	FQ	14B		(31 )	01		SPI043 29 14B	WRITE REQUEST DELAY BIT 4
KA509	TT3	A2	03A		TWRQ5A	00	=		
KA509	TT3	A2	02B		(07 )	01		TWRQ3S TSCK3B SPI051 01 02B 03 02A 05 03B	
KA511	TQ2	B4	13B		TWRQ6A	00	=		
KA511	TQ2	B4	11B		(27 )	01		TWR1TQ TSTR90 23 11B 25 12B	
KA511	TQ2	C2	15A		TWRQ7A	00	=		
KA511	TQ2	C2	16A		(30 )	01		TWRQ2R TSCL1B 34 16A 36 17A	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39CIFC7  
REV G  
DATE 09-03-82  
INDEX TWRQ9A  
PAGE 336

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA505	TQ2	F1	37B	TWRQ9A	00	=		
KA505	TQ2	F1	38B	(75)	01		TWRQ2Q SPI049 77 38B 79 39B	
KA426	TQ2	D4	27B	TWRT10	00	=		
KA426	TQ2	D4	25B	(51)	01		TXRAF7T TXRAF5T 47 25B 49 26B	
KA426	TQ2	C4	19B	TWRT20	00	=		
KA426	TQ2	C4	17B	(39)	01		TXRAF6T SPI039 35 17B 37 18B	
KA426	TQ2	C3	16B	TWRT30	00	=		
KA426	TQ2	C3	14B	(33)	01		TXRAF5T SPI039 29 14B 31 15B	
KA518	TT3	A1	04A	TWRT6A	00	=		
KA518	TT3	A1	05A	(04)	01		TWRT30 TXR2CS TXDV18 06 05A 08 06A 10 07A	
KA518	TT3	A2	03A	TWRT7A	00	=		
KA518	TT3	A2	02B	(07)	01		TWRT30 TXR3CS TXDV18 01 02B 03 02A 05 03B	
				TWTSTI	00	=		
KA425	TDD	GT	25A	( )	01		TWRT30 54 25A	
				TWTSTN	00	=		
KA425	TDD	GN	26A	( )	01		TXDV18 56 26A	
KA425	TDD	GP	25B	TWTSTP	00	=		
KA425	TDD	GP	24A	(47)	01		TRDCAB 52 24A	
KA425	TDD	GQ	26B	TWTSTQ	00	=		
KA425	TDD	GQ	27B	(49)	01		SPI039 51 27B	WRITE TEST COMMAND/F
KA521	TS8	D1	25B	TWTOCA	00	=		
KA521	TS8	D1	23B	(47)	01		TWRT1Q TXONLQ TLCCOR TMWCBP TMO2BP TMO3BQ TMO4BP TSCL3B 43 23B 46 21A 48 22A 49 26B 50 23A 52 24A 54 25A 56 26A	WRITE COMMAND IOU TIMEOUT
KA423	MUX	D1	27B	TWOODTA	00	=		
KA423	MUX	D1	25B	(55)	01		TW010TA TW020TA TWRI2R TC90BP 51 25B 53 26B 52 25A 49 24B	WRITE DATA BIT 0 MULTIPLEXER

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
REV G  
DATE 09-03-82  
INDEX TW00DTB  
PAGE 337

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERN	DESIGNATOR	FACTOR	COMMENT
KA423	MUX	D2	31B	TW00DTB	00	=		
KA423	MUX	D2	29B	(61)	01		TW01DTB TW02DTB 57 29B 59 30B	
KA423	MUX	D3	28A	TW00DTC	00	=		
KA423	MUX	D3	26A	(60)	01		TW01DTC TW02DTC 54 26A 56 28B	
KA423	MUX	D4	31A	TW00DTD	00	=		
KA423	MUX	D4	29A	(63)	01		TW01DTD TW02DTD 62 29A 64 30A	
KA421	MUX	E1	34B	TW01DTA	00	=		
KA421	MUX	E1	32A	(73)	01		TR00BQ TR08BQ TXGN6A TC84BP 69 32A 71 33B 68 33A 66 32B	
KA421	MUX	E2	37B	TW01DTB	00	=		
KA421	MUX	E2	35B	(79)	01		TR01BQ TR09BQ 75 35B 77 36B	
KA421	MUX	E3	36A	TW01DTC	00	=		
KA421	MUX	E3	34A	(74)	01		TR02BQ TR10BQ 70 34A 72 35A	
KA421	MUX	E4	38B	TW01DTD	00	=		
KA421	MUX	E4	37A	(80)	01		TR03BQ TR11BQ 76 37A 78 38A	
KA422	MUX	E1	34B	TW02DTA	00	=		
KA422	MUX	E1	32A	(73)	01		TR16BQ TR24BQ TXGN6A TC84BP 69 32A 71 33B 68 33A 66 32B	
KA422	MUX	E2	37B	TW02DTB	00	=		
KA422	MUX	E2	35B	(79)	01		TR17BQ TR25BQ 75 35B 77 36B	
KA422	MUX	E3	36A	TW02DTC	00	=		
KA422	MUX	E3	34A	(74)	01		TR18BQ TR26BQ 70 34A 72 35A	
KA422	MUX	E4	38B	TW02DTD	00	=		
KA422	MUX	E4	37A	(80)	01		TR19BQ TR27BQ 76 37A 78 38A	
KA422	MUX	D1	27B	TW04DTA	00	=		WRITE DATA BIT 4 MULTIPLEXER
KA422	MUX	D1	25B	(55)	01		TW05DTA TW06DTA TWRI2R TC90BP 51 25B 53 26B 52 25A 49 24B	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TW04DTB  
FILE IDENT T39C1FC7 DATE 09-03-82 PAGE 338

CONNECTOR	TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA422	MUX	D2	31B	TW04DT3	00 =		
KA422	MUX	D2	29B	(61)	01	TW050TB TW060TB 57 29B 59 30B	
KA422	MUX	D3	28A	TW04DTC	00 =		
KA422	MUX	D3	26A	(60)	01	TW050TC TW060TC 54 26A 56 28B	
KA422	MUX	D4	31A	TW04DTD	00 =		
KA422	MUX	D4	29A	(63)	01	TW050TD TW060TD 62 29A 64 30A	
KA423	MUX	E1	34B	TW050TA	00 =		
KA423	MUX	E1	32A	(73)	01	TR04BQ TR12BQ TXGN6A TC84BP 69 32A 71 33B 68 33A 66 32B	
KA423	MUX	E2	37B	TW050TB	00 =		
KA423	MUX	E2	35B	(79)	01	TR05BQ TR13BQ 75 35B 77 36B	
KA423	MUX	E3	36A	TW050TC	00 =		
KA423	MUX	E3	34A	(74)	01	TR06BQ TR14BQ 70 34A 72 35A	
KA423	MUX	E4	38B	TW050TD	00 =		
KA423	MUX	E4	37A	(80)	01	TR07BQ TR15BQ 76 37A 78 38A	
KA424	MUX	E1	34B	TW060TA	00 =		
KA424	MUX	E1	32A	(73)	01	TR20BQ TR28BQ TXGN6A TC84BP 69 32A 71 33B 68 33A 66 32B	
KA424	MUX	E2	37B	TW060TB	00 =		
KA424	MUX	E2	35B	(79)	01	TR21BQ TR29BQ 75 35B 77 36B	
KA424	MUX	E3	36A	TW060TC	00 =		
KA424	MUX	E3	34A	(74)	01	TR22BQ TR30BQ 70 34A 72 35A	
KA424	MUX	E4	38B	TW060TD	00 =		
KA424	MUX	E4	37A	(80)	01	TR23BQ TR31BQ 76 37A 78 38A	
KA438	PAR	C1	20A	TW078PR	00 =		WRITE DATA PARITY GENERATOR
KA438	PAR	C1	15B	(42)	01	TW000TA TW000TB TW000TC TW000TD TW040TA TW040TB TW040TC TW040TD 31 15B 33 16B 35 17B 37 18B 38 18A 36 17A 34 16A 30 15A	
KA438	PAR	C1	19B	( )	02 +	TWRI2R 39 19B	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
REV G  
DATE 09-03-82  
INDEX TXACMB4  
PAGE 339

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
				TXACMB4	00	=		
KA444	TLD	C2	15A	( )	01	=	TXACMD 30 15A	
KA443	TLD	C2	15A	( )	02	+	TXBCMD 30 15A	
KA444	TLD	C2	15A	TXACMD	00	=		TXACMB4 BUSS
KA444	TLD	C2	16A	(30 )	01	=	TXAIFO TXACHOX 34 16A 36 17A	
KA446	DCF	C5	31B	TXACMOX	00	=		DTACMB BUSS
KA446	DCF	C5	29A	(60 )	01	=	TXADEA 52 29A	
KA446	DCF	C6	31A	TXACMOX	00	=		
KA446	DCF	C6	30A	(57 )	01	=	TXGNIA 54 30A	
KA441	TQ2	E4	33B	TXADEA	00	=		
KA441	TQ2	E4	31B	(63 )	01	=	TXADE04 SPT048 59 31B 61 32B	
KA441	TQ2	E3	30B	TXADRO	00	=		I/O ADDRESS FOR THIS CONTROLLER
KA441	TQ2	E3	28B	(57 )	01	=	TXAD0A TXAD1A 53 28B 55 29B	
KA439	TQ2	F3	35A	TXAD0A	00	=		ADDRESS 0 DECODE
KA439	TQ2	F3	34B	(69 )	01	=	TXROCS TXADE04 65 34B 74 35B	
KA439	TQ2	F4	39A	TXAD1A	00	=		ADDRESS 1 DECODE
KA439	TQ2	F4	37A	(80 )	01	=	TXR1CS TXADEA 76 37A 78 38A	
				TXAENB4	00	=		
KA444	TLD	C3	16B	( )	01	=	TXAEND 33 16B	
KA443	TLD	C3	16B	( )	02	+	TXBEND 33 16B	
KA444	TLD	C3	16B	TXAEND	00	=		TXAENB4 BUSS
KA444	TLD	C3	14B	(33 )	01	=	TXAIFO TXAENOX 29 14B 31 15B	
KA446	DCF	C7	25A	TXAENDX	00	=		DTAENB BUSS
KA446	DCF	C7	29A	(43 )	01	=	TXADEA 52 29A	



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UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39CIFC7  
REV G  
DATE 09-03-82  
INDEX TXAEN0X  
PAGE 340

CONNECTOR	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA446	DCF	C8 26A	TXAEN0X	00	=		
KA446	DCF	C8 28A	(48)	01		TXGNIA 50 28A	
KA440	TQ2	F1 37B	TXAIEA	00	=		PORT A INPUT ENABLE
KA440	TQ2	F1 38B	(75)	01		TXASLOX TXXDRA 77 38B 79 39B	
KA441	TQ2	F1 37B	TXAIE0	00	=		
KA441	TQ2	F1 38B	(75)	01		TXAIEA SPI048 77 38B 79 39B	
KA441	TQ2	F2 34A	TXAIFO	00	=		
KA441	TQ2	F2 36A	(72)	01		TXAIEA SPI048 71 36A 73 36B	
KA446	DCF	C3 30B	TXAINDX	00	=		DTAINB BUSS
KA446	DCF	C3 29A	(55)	01		TXAOEA 52 29A	
KA446	DCF	C4 29B	TXAINOX	00	=		
KA446	DCF	C4 28B	(56)	01		TXDBIO 51 28B	
			TXAPCB4	00	=		
KA444	TLD	C1 18A	( )	01		TXAPCD 38 18A	
KA443	TLD	C1 18A	( )	02	+	TXBPCD 38 18A	
KA444	TLD	C1 18A	TXAPCD	00	=		TXAPCB4 BUSS
KA444	TLD	C1 19A	(38)	01		TXAIFO TXAPCOX 40 19A 42 20A	
KA446	DCF	C1 25B	TXAPCDX	00	=		DTAPCB BUSS
KA446	DCF	C1 29A	(46)	01		TXAOEA 52 29A	
KA446	DCF	C2 26B	TXAPCOX	00	=		
KA446	DCF	C2 27B	(47)	01		TXDSBPR 49 27B	
KA433	TD4	B1 11B	TXARQA	00	=		
KA433	TD4	B1 12A	(23)	01		TXASLOX TXINHR DEVINH TXXROO 22 12A 24 13A 25 12B 26 14A	
KA440	TQ2	F3 35A	TXARQ0	00	=		
KA440	TQ2	F3 34B	(69)	01		TXARQA SPI048 65 34B 74 35B	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TXARSA  
FILE IDENT T39C1FC7 DATE 09-03-82 PAGE 341

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMINAL DESIGNATION	FACTOR	COMMENT
KA431	TT3	A1	04A	TXARSA	00 =		
KA431	TT3	A1	05A	(04)	01	TXACMOX TXAENOX TXASLOX 06 05A 08 06A 10 07A	PORT A RESET
KA444	TLD	D1	24A	TXAR0D1	00 =		
KA444	TLD	D1	25A	(52)	01	TXADE04 TXARQ0 54 25A 56 26A	
KA444	TLD	D2	21A	TXAR1D1	00 =		
KA444	TLD	D2	22A	(46)	01	TXADEA TXARQ0 48 22A 50 23A	
KA441	TQ2	E1	31A	TXASLA	00 =		
KA441	TQ2	E1	32A	(66)	01	TXASLOX SPI04B 68 32A 70 33A	
KA446	DCF	D5	38B	TXASLDX4	00 =		
KA446	DCF	D5	36A	(80)	01	SPI049 72 36A	PORT A SELECT DRI/RCVR
KA446	DCF	D6	38A	TXASLOX	00 =		
KA446	DCF	D6	37A	(76)	01	SPI045 74 37A	
KA445	DCF	D5	38B	TXASTDX4	00 =		
KA445	DCF	D5	36A	(80)	01	TXGNIA 72 36A	PORT A STATUS DRI/RCVR
KA445	DCF	D6	38A	TXASTOX	00 =		
KA445	DCF	D6	37A	(76)	01	TXASLOX 74 37A	
KA444	TLD	A1	05A	TXAOCB4	00 =		
KA444	TLD	A1	05A	( )	01	TXA0CD 06 05A	
KA443	TLD	A1	05A	( )	02 +	TXB0CD 06 05A	
KA444	TLD	A1	05A	TXA0CD	00 =		TXA0CB4 BUSS
KA444	TLD	A1	06A	(06)	01	TXAIE0 TXA0COX 08 06A 10 07A	
KA446	DCF	A1	02B	TXA0CDX	00 =		DTA0CB BUSS
KA446	DCF	A1	05A	(07)	01	TXADEA 06 05A	
KA446	DCF	A2	03B	TXA0COX	00 =		
KA446	DCF	A2	04B	(09)	01	TXS031U 11 04B	

DRAWING NUMBER  
UNIT ASSEMBLY NAME

149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017  
FILE IDENT T39C1FC7  
REV G  
DATE 09-03-82  
INDEX TXA0EA  
PAGE 342

CONNECTOR	CIRCUIT TYPE	A GROUP	TEST POINTS AND/OR	EQUATION	Z TERM	DESIGNATOR	FACTOR	COMMENT
KA433	TD4	A1	05B	TXA0EA	00 =			
KA433	TD4	A1	05A	(11)	01		TXASLOX TXINHR DEVINH TXXC50 06 05A 08 06A 10 07A 13 06B	PORT A OUTPUT ENABLE
				TXA1CB4	00 =			
KA444	TLD	A2	02B	( )	01		TXA1CD 01 02B	
KA443	TLD	A2	02B	( )	02 +		TXB1CD 01 02B	
KA444	TLD	A2	02B	TXA1CD	00 =			TXA1CB4 BUSS
KA444	TLD	A2	04A	(01)	01		TXA1EO TXA1COX 04 04A 05 03B	
KA446	DCF	A3	07B	TXA1CDX	00 =			DTA1CB BUSS
KA446	DCF	A3	05A	(17)	01		TXA0EA 06 05A	
KA446	DCF	A4	06B	TXA1COX	00 =			
KA446	DCF	A4	05B	(15)	01		TXS032U 13 05B	
				TXA2CB4	00 =			
KA444	TLD	A3	04B	( )	01		TXA2CD 09 04B	
KA443	TLD	A3	04B	( )	02 +		TXB2CD 09 04B	
KA444	TLD	A3	04B	TXA2CD	00 =			TXA2CB4 BUSS
KA444	TLD	A3	02A	(09)	01		TXA1EO TXA2COX 03 02A 07 03A	
KA446	DCF	A5	08B	TXA2CDX	00 =			DTA2CB BUSS
KA446	DCF	A5	05A	(14)	01		TXA0EA 06 05A	
KA446	DCF	A6	07A	TXA2COX	00 =			
KA446	DCF	A6	06A	(10)	01		TXS033U 08 06A	
				TXA3CB4	00 =			
KA444	TLD	A4	07B	( )	01		TXA3CD 15 07B	
KA443	TLD	A4	07B	( )	02 +		TXB3CD 15 07B	
KA444	TLD	A4	07B	TXA3CD	00 =			TXA3CB4 BUSS
KA444	TLD	A4	05B	(15)	01		TXA1EO TXA3COX 11 05B 13 06B	

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149017-860  
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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TXA3CDX  
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CONNECTOR	TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	ORIG. PART	FACTOR	COMMENT
KA446	DCF	A7	02A	TXA3CDX	00	=		
KA446	DCF	A7	05A	(01)	01		TXA0EA 06 05A	DTA3CB BUSS
KA446	DCF	A8	03A	TXA3COX	00	=		
KA446	DCF	A8	04A	(03)	01		TXS034U 04 04A	
				TXA4CB4	00	=		
KA444	TLD	B1	12A	( )	01		TXA4CD 22 12A	
KA443	TLD	B1	12A	( )	02	+	TXB4CD 22 12A	
KA444	TLD	B1	12A	TXA4CD	00	=		TXA4CB4 BUSS
KA444	TLD	B1	13A	(22)	01		TXA1E0 TXA4CDX 24 13A 26 14A	
KA446	DCF	B1	10B	TXA4CDX	00	=		DTA4CB BUSS
KA446	DCF	B1	13A	(27)	01		TXA0EA 36 13A	
KA446	DCF	B2	11B	TXA4COX	00	=		
KA446	DCF	B2	12B	(29)	01		TXS471U 31 12B	
				TXA5CB4	00	=		
KA444	TLD	B2	09A	( )	01		TXA5CD 14 09A	
KA443	TLD	B2	09A	( )	02	+	TXB5CD 14 09A	
KA444	TLD	B2	09A	TXA5CD	00	=		TXA5CB4 BUSS
KA444	TLD	B2	10A	(14)	01		TXA1E0 TXA5COX 18 10A 20 11A	
KA446	DCF	B3	15B	TXA5CDX	00	=		DTA5CB BUSS
KA446	DCF	B3	13A	(37)	01		TXA0EA 36 13A	
KA446	DCF	B4	14B	TXA5COX	00	=		
KA446	DCF	B4	13B	(35)	01		TXS472U 33 13B	
				TXA6CB4	00	=		
KA444	TLD	B3	10B	( )	01		TXA6CD 21 10B	
KA443	TLD	B3	10B	( )	02	+	TXB6CD 21 10B	

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149017-860  
CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
UNIT ASSEMBLY NO. 149017 REV G INDEX TXA6CD  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OP	EQUATION	TERM	DESIG- NATOR	FACTOR	COMMENT
KA444	TLD	B3	10B	TXA6CD	00	=	TXA6CB4	BUSS
KA444	TLD	B3	08B	(21 )	01		TXAIEO TXA6COX 17 08B 19 09B	
KA446	DCF	B5	16A	TXA6CDX	00	=	DTA6CB BUSS	
KA446	DCF	B5	13A	(41 )	01		TXA0EA 36 13A	
KA446	DCF	B6	15A	TXA6COX	00	=		
KA446	BCF	B6	14A	(40 )	01		TXS473U 38 14A	
				TXA7CB4	00	=		
KA444	TLD	B4	13B	( )	01		TXA7CD 27 13B	
KA443	TLD	B4	13B	( )	02	+	TXB7CD 27 13B	
KA444	TLD	B4	13B	TXA7CD	00	=	TXA7CB4	BUSS
KA444	TLD	B4	11B	(27 )	01		TXAIEO TXA7COX 23 11B 25 12B	
KA446	DCF	B7	10A	TXA7CDX	00	=	DTA7CB BUSS	
KA446	DCF	B7	13A	(23 )	01		TXA0EA 36 13A	
KA446	DCF	B8	11A	TXA7COX	00	=		
KA446	DCF	B8	12A	(30 )	01		TXS474U 34 12A	
KA443	TLD	C2	15A	TXBCMD	00	=	TXACMB4	BUSS
KA443	TLD	C2	16A	(30 )	01		TXBIFO TXBCMOX 34 16A 36 17A	
KA445	DCF	C5	31B	TXBCMDX	00	=	DTBCMB BUSS	
KA445	DCF	C5	29A	(60 )	01		TXB0EA 52 29A	
KA445	DCF	C6	31A	TXBCMGX	00	=		
KA445	DCF	C6	30A	(57 )	01		TXGN1A 54 30A	
KA443	TLD	C3	16B	TXBEND	00	=	TXAENB4	BUSS
KA443	TLD	C3	14B	(33 )	01		TXBIFO TXBENOX 29 14B 31 15B	
KA445	DCF	C7	25A	TXBENDX	00	=	DTBENB BUSS	
KA445	DCF	C7	29A	(43 )	01		TXB0EA 52 29A	

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LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA445	DCF	C8	26A	TXBENOX	00	H		
KA445	DCF	C8	28A	(48)	01		TXGNIA 50 28A	
KA440	TQ2	F2	34A	TXBIEA	00	=		PORT B INPUT ENABLE
KA440	TQ2	F2	36A	(72)	01		TXBSLOX TXXDRA 71 36A 73 36B	
KA441	TQ2	F3	35A	TXPIEO	00	=		
KA441	TQ2	F3	34B	(69)	01		TXBIEA SPI048 65 34B 74 35B	
KA441	TQ2	F4	39A	TXBIFO	00	=		
KA441	TQ2	F4	37A	(80)	01		TXBIEA SPI048 76 37A 78 38A	
KA445	DCF	C3	30B	TXBINDX	00	=		DTBINB BUSS
KA445	DCF	C3	29A	(55)	01		TXBOEA 52 29A	
KA445	DCF	C4	29B	TXBINOX	00	=		
KA445	DCF	C4	28B	(56)	01		TXDBYO 51 28B	
KA443	TLD	C1	18A	TXBPCD	00	=		TXAPCB4 BUSS
KA443	TLD	C1	19A	(38)	01		TXBIFO TXBPCOX 40 19A 42 20A	
KA445	DCF	C1	25B	TXBPCDX	00	=		DTBPCB BUSS
KA445	DCF	C1	29A	(46)	01		TXBOEA 52 29A	
KA445	DCF	C2	26B	TXBPCOX	00	=		
KA445	DCF	C2	27B	(47)	01		TXDSBPR 49 27B	
KA433	TD4	B2	10B	TXBRQA	00	=		
KA433	TD4	B2	09A	(21)	01		TXBSLOX TXINHR DEVINH TXXROQ 14 09A 18 10A 19 09B 20 11A	
KA440	TQ2	F4	39A	TXBRQO	00	=		
KA440	TQ2	F4	37A	(80)	01		TXBRQA SPI048 76 37A 78 38A	
KA431	TT3	A2	03A	TXBRSA	00	=		PORT B RESET
KA431	TT3	A2	02B	(07)	01		TXBCMOX TXBENOX TXBSLOX 01 02B 03 02A 05 03B	

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LOGIC

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CONNECTOR	CPCU TYPE	GROUP	TEST POINTS AND OR	EQUATION	J Y W	DESIG NATION	FACTOR	COMMENT
KA444	TLD	D3	24B	TXBR0D1	00	=		
KA444	TLD	D3	22B	(45)	01		TXADE04 TXBRQ0 41 22B 43 23B	
KA444	TLD	D4	27B	TXBR1D1	00	=		
KA444	TLD	D4	25B	(51)	01		TXADEA TXBRQ0 47 25B 49 26B	
KA441	TQ2	E2	28A	TXBSLA	00	=		
KA441	TQ2	E2	29A	(60)	01		TXBSLOX SPI04B 62 29A 64 30A	
KA446	DCF	D7	33A	TXBSL0X4	00	=		PORT B SELECT DRI/RCVR
KA446	DCF	D7	36A	(61)	01		SPI049 72 36A	
KA446	DCF	D8	34A	TXBSLOX	00	=		
KA446	DCF	D8	35A	(68)	01		SPI047 70 35A	
KA445	DCF	D7	33A	TXBST0X4	00	=		PORT B STATUS DRI/RCVR
KA445	DCF	D7	36A	(61)	01		TXGN1A 72 36A	
KA445	DCF	D8	34A	TXBST0X	00	=		
KA445	DCF	D8	35A	(68)	01		TXBSLOX 70 35A	
KA443	TLD	A1	05A	TXBOC0	00	=		TXA0CB4 BUSS
KA443	TLD	A1	06A	(06)	01		TXBIE0 TXBOCOX 08 06A 10 07A	
KA445	DCF	A1	02B	TXBOCDX	00	=		DTBOCB BUSS
KA445	DCF	A1	05A	(07)	01		TXB0EA 06 05A	
KA445	DCF	A2	03B	TXBOCOX	00	=		
KA445	DCF	A2	04B	(09)	01		TXS031U 11 04B	
KA433	TD4	A2	04B	TXB0EA	00	=		PORT B OUTPUT ENABLE
KA433	TD4	A2	02B	(09)	01		TXBSLOX TXINHR DEVINH TXXC50 01 02B 04 04A 05 03B 07 03A	
KA443	TLD	A2	02B	TXB1C0	00	=		TXA1CB4 BUSS
KA443	TLD	A2	04A	(01)	01		TXBIE0 TXB1COX 04 04A 05 03B	

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CARD CAGE ASSY, B,IFCU

LOGIC

TM 11-5895-856-34-16/EE640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA445	DCF	A3	07B	TXB1CDX	00	=		
KA445	DCF	A3	05A	(17)	01		TXB0EA 06 05A	DTB1CB BUSS
KA445	DCF	A4	06B	TXB1COX	00	=		
KA445	DCF	A4	05B	(15)	01		TXS032U 13 05B	
KA443	TLD	A3	04B	TXB2CD	00	=		
KA443	TLD	A3	02A	(09)	01		TXBTEC TXB2COX 03 02A 07 03A	TXA2CB4 BUSS
KA445	DCF	A5	08B	TXB2CDX	00	=		
KA445	DCF	A5	05A	(14)	01		TXB0EA 06 05A	DTB2CB BUSS
KA445	DCF	A6	07A	TXB2COX	00	=		
KA445	DCF	A6	06A	(10)	01		TXS033U 08 06A	
KA443	TLD	A4	07B	TXB3CD	00	=		
KA443	TLD	A4	05B	(15)	01		TXBTEC TXB3COX 11 05B 13 06B	TXA3CB4 BUSS
KA445	DCF	A7	02A	TXB3CDX	00	=		
KA445	DCF	A7	05A	(01)	01		TXB0EA 06 05A	DTB3CB BUSS
KA445	DCF	A8	03A	TXB3COX	00	=		
KA445	DCF	A8	04A	(03)	01		TXS034U 04 04A	
KA443	TLD	B1	12A	TXB4CD	00	=		
KA443	TLD	B1	13A	(22)	01		TXBTEC TXB4COX 24 13A 26 14A	TXA4CB4 BUSS
KA445	DCF	B1	10B	TXB4CDX	00	=		
KA445	DCF	B1	13A	(27)	01		TXB0EA 36 13A	DTB4CB BUSS
KA445	DCF	B2	11B	TXB4COX	00	=		
KA445	DCF	B2	12B	(29)	01		TXS471U 31 12B	
KA443	TLD	B2	09A	TXB5CD	00	=		
KA443	TLD	B2	10A	(14)	01		TXBTEC TXB5COX 18 10A 20 11A	TXA5CB4 BUSS



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LOGIC

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CONNECTOR	CNC'T TYPE	POS OR	TEST POINTS AND OR	EQUATION	F VER	DESIG NATION	FACTOR	COMMENT
KA445	DCF	B3	15B	TXB5COX	00	=		
KA445	DCF	B3	13A	(37)	01		TXB0EA 36 13A	DTB5CB BUSS
KA445	DCF	B4	14B	TXB5COX	00	=		
KA445	DCF	B4	13B	(35)	01		TXS472U 33 13B	
KA443	TLD	B3	10B	TXB6CD	00	=		TXA6CB4 BUSS
KA443	TLD	B3	08B	(21)	01		TXB1E0 TXB6COX 17 08B 19 09B	
KA445	DCF	B5	16A	TXB6CDX	00	=		DTB6CB BUSS
KA445	DCF	B5	13A	(41)	01		TXB0EA 36 13A	
KA445	DCF	B6	15A	TXB6COX	00	=		
KA445	DCF	B6	14A	(40)	01		TXS473U 38 14A	
KA443	TLD	B4	13B	TXB7CD	00	=		TXA7CB4 BUSS
KA443	TLD	B4	11B	(27)	01		TXB7E0 TXB7COX 23 11B 25 12B	
KA445	DCF	B7	10A	TXB7CDX	00	=		DTB7CB BUSS
KA445	DCF	B7	13A	(23)	01		TXB0EA 36 13A	
KA445	DCF	B8	11A	TXB7COX	00	=		
KA445	DCF	B8	12A	(30)	01		TXS474U 34 12A	
KA433	TD4	E1	31B	TXCA0A	00	=		
KA433	TD4	E1	32B	(59)	01		TXADRO TXRCMS TXX050 TXROPA 61 32B 66 31A 68 32A 70 33A	
KA437	TSB	D1	25B	TXCA1A	00	=		
KA437	TSB	D1	23B	(47)	01		TXCMAS TXXB10 TXXA0P TXXA1Q TXRPCS TXROCS TXR1CR TXR2CR 43 23B 46 21A 48 22A 49 26B 50 23A 52 24A 54 25A 56 26A	
KA426	TQ2	E1	31A	TXCA10	00	=		
KA426	TQ2	E1	32A	(66)	01		TXCA1A SPI039 68 32A 70 33A	
KA433	TD4	E2	30B	TXCMAR	00	=		
KA433	TD4	E2	29B	(57)	01		TXCMAS TXXB2A TXX04A TXRS0B 55 29B 60 28A 62 29A 64 30A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA432	TQ2	E1	31A	TXCMAS	00	=		ADDRESS STORE F/F
KA432	TQ2	E1	32A	(66)	01		TXCMAR TXCA0A 68 32A 70 33A	
KA412	TQ2	F3	35A	TXCP1A	00	=		CLOCK PHASE 1
KA412	TQ2	F3	34B	(69)	01		TXIMAP TXIMBQ 65 34B 74 35B	
KA411	TQ2	B3	10B	TXCP10	00	=		
KA411	TQ2	B3	08B	(21)	01		TXCP1A SPI033 17 08B 19 09B	
KA412	TQ2	F4	39A	TXCP3A	00	=		CLOCK PHASE 3
KA412	TQ2	F4	37A	(60)	01		TXIMAQ TXIMBP 76 37A 78 38A	
KA411	TQ2	B4	13B	TXCP30	00	=		
KA411	TQ2	B4	11B	(27)	01		TXCP3A SPI033 23 11B 25 12B	
KA430	TT3	E1	30A	TXDB1A	00	=		
KA430	TT3	E1	31A	(64)	01		TXXDSQ TXXDOP TXXDIO 66 31A 68 32A 70 33A	
KA431	TT3	E1	30A	TXDB10	00	=		
KA431	TT3	E1	31A	(64)	01		TXXCIP TXXDIP TXDB1A 66 31A 68 32A 70 33A	
KA424	MUX	D1	27B	TXDB0TA	00	=		INPUT MULTIPLEXER BITS 0-3
KA424	MUX	D1	25B	(55)	01		TB0T10X TXDB01X TXXCIQ TXXDIP 51 25B 53 26B 52 25A 49 24B	
KA424	MUX	D2	31B	TXDB0TB	00	=		
KA424	MUX	D2	29B	(61)	01		TE0T10X TXDB11X 57 29B 59 30B	
KA424	MUX	D3	28A	TXDB0TC	00	=		
KA424	MUX	D3	26A	(60)	01		TS26CQ TXDB21X 54 26A 56 28B	
KA424	MUX	D4	31A	TXDB0TD	00	=		
KA424	MUX	D4	29A	(63)	01		TRDY1A TXDB31X 62 29A 64 30A	
KA421	MUX	A1	02A	TXDB01X	00	=		INPUT MIX BIT 0
KA421	MUX	A1	02B	(04)	01		TRO0BQ TR24BQ TR08BQ TR16BQ TTS1BS TTS4BS TTS2BS TTS3BS 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 02A 17 08B	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA421	MUX	A2	03A	TXDB02X	00 =		
KA421	MUX	A2	06A	(06)	01	TXXD1Q TXXD0Q TXXD5Q TXGN5A 14 06A 10 05A 08 04A 13 07A	
KA421	MUX	B1	10A	TXDB11X	00 =		
KA421	MUX	B1	09B	(20)	01	TR01BQ TR25BQ TR09BQ TR17BQ TRDY10X URDY40X URDY20X URDY30X 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	
KA421	MUX	B2	11A	TXDB12X	00 =		
KA421	MUX	B2	14A	(22)	01	TXXD1Q TXXD0Q TXXD5Q TXGN5A 27 14A 26 13A 24 12A 30 15A	
KA422	MUX	A1	02A	TXDB21X	00 =		
KA422	MUX	A1	02B	(04)	01	TR02BQ TR26BQ TR10BQ TR18BQ TWDBSA UFPR40X TADSA0X UFPR30X 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	
KA422	MUX	A2	03A	TXDB22X	00 =		
KA422	MUX	A2	06A	(06)	01	TXXD1Q TXXD0Q TXXD5Q TXGN5A 14 06A 10 05A 08 04A 13 07A	
KA422	MUX	B1	10A	TXDB31X	00 =		
KA422	MUX	B1	09B	(20)	01	TR03BQ TR27BQ TR11BQ TR19BQ TREW10X UREW40X TADSBOX UREW30X 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	
KA422	MUX	B2	11A	TXDB32X	00 =		
KA422	MUX	B2	14A	(22)	01	TXXD1Q TXXD0Q TXXD5Q TXGN5A 27 14A 26 13A 24 12A 30 15A	
KA421	MUX	D1	27B	TXDB4TA	00 =		INPUT MULTIPLEXER BITS 4-7
KA421	MUX	D1	25B	(55)	01	TS2890 TXDB41X TXXC1Q TXXDIP 51 25B 53 26B 52 25A 49 24B	
KA421	MUX	D2	31B	TXDB4TB	00 =		
KA421	MUX	D2	29B	(61)	01	TS29CQ TXDB51X 57 29B 59 30B	
KA421	MUX	D3	28A	TXDB4TC	00 =		
KA421	MUX	D3	26A	(60)	01	TS30CQ TXDB61X 54 26A 56 28B	
KA421	MUX	D4	31A	TXDB4TD	00 =		
KA421	MUX	D4	29A	(63)	01	TS31CQ TXDB71X 62 29A 64 30A	
KA423	MUX	A1	02A	TXDB41X	00 =		
KA423	MUX	A1	02B	(04)	01	TR04BQ TR28BQ TR12BQ TR20BQ TBOT10X UBOT40X TADSCOX UBOT30X 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	

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LOGIC

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CONNECTOR	GROUP	POINT AND/OR	EQUATION	TERM	REMARKS	FACTOR	COMMENT
KA423	MUX	A2 03A	TXDB42X	00	=		
KA423	MUX	A2 06A	(06 )	01		TXXD1Q YXXD0Q YXXD5Q YXGN5A 14 06A 10 05A 08 04A 13 07A	
KA423	MUX	B1 10A	TXDB51X	00	=		
KA423	MUX	B1 09B	(20 )	01		TR05BQ TR29BQ TRI38Q TR21BQ TE0T10X UE0T40X TADSD0X UE0T30X 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	
KA423	MUX	B2 11A	TXDB52X	00	=		
KA423	MUX	B2 14A	(22 )	01		TXXD1Q YXXD0Q YXXD5Q YXGN5A 27 14A 26 13A 24 12A 30 15A	
KA424	MUX	A1 02A	TXDB61X	00	=		
KA424	MUX	A1 02B	(04 )	01		TR06BQ TR30BQ TR14BQ TR22BQ YXGN1A TS30BQ TS14BQ TS8ZY0 03 02B 05 03B 07 04B 09 05B 11 06B 15 07B 18 09A 17 08B	
KA424	MUX	A2 03A	TXDB62X	00	=		
KA424	MUX	A2 06A	(06 )	01		TXXD1Q YXXD0Q YXXD5Q YXGN5A 14 06A 10 05A 08 04A 13 07A	
KA424	MUX	B1 10A	TXDB71X	00	=		
KA424	MUX	B1 09B	(20 )	01		TR07BQ TR31BQ TR15BQ TR23BQ YXGN1A TS31BQ TS15BQ TS23BQ 19 09B 21 10B 23 11B 25 12B 29 13B 31 14B 34 15B 33 16A	INPUT MUX BIT 7
KA424	MUX	B2 11A	TXDB72X	00	=		
KA424	MUX	B2 14A	(22 )	01		TXXD1Q YXXD0Q YXXD5Q YXGN5A 27 14A 26 13A 24 12A 30 15A	
KA439	TQ2	E1 31A	TXDEVA	00	=		
KA439	TQ2	E1 37A	(65 )	01		TXR3C5 SPI043 68 32A 70 33A	*
KA429	TD4	B2 10B	TXDEVR	00	=		
KA429	TD4	B2 09A	(21 )	01		TXDEVS TXXB0A TXXB3A TXRS0B 14 09A 18 10A 19 09B 20 11A	
KA426	TQ2	E4 33B	TXDEVS	00	=		
KA426	TQ2	E4 31B	(63 )	01		TXDEVR TXDVOA 59 31B 61 32B	DEVICE COMMAND STORE F/F
KA426	TQ2	E2 28A	TXDEVO	00	=		
KA426	TQ2	E2 29A	(60 )	01		TXDEVA SPI039 62 29A 64 30A	
KA428	TQ2	E2 28A	TXDIRA	00	=		
KA428	TQ2	E2 29A	(60 )	01		TXXD1Q TXXC50 62 29A 64 30A	

DRAWING NUMBER 149017-860  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX TXDPEA  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 352

CONNECTOR	TEST POINT	GROUP	TEST POINTS AND/OR	EQUATION	TEST TERM	DESIGNATION	FACTOR	COMMENT
KA429	TD4	E1	31B	TXDPEA	00	=		RECEIVE DATA PARITY ERROR
KA429	TD4	E1	32B	(59)	01		TXRIT0 TXENAS TXROPPR TXXA50 61 32B 66 31A 68 32A 70 33A	
KA438	PAR	B1	14A	TXDSBPR	00	=		
KA438	PAR	B1	09B	(25)	01		TXS031U TXS032U TXS033U TXS034U TXS471U TXS472U TXS473U TXS474U 17 09B 19 10B 21 11B 23 12B 24 12A 22 11A 20 10A 1B 09A	
KA438	PAR	B1	13B	( )	02	+	TXXC10 27 13B	
KA426	TQ2	A1	05A	TXDVCO	00	=		
KA426	TQ2	A1	06A	(06)	01		TXR090T SPI039 08 06A 10 07A	
KA429	TD4	B1	11B	TXDVSR	00	=		
KA429	TD4	B1	12A	(23)	01		TXDVSS TXXB0A TXXB3A TXRS0B 22 12A 24 13A 25 12B 26 14A	
KA426	TQ2	E3	30B	TXDVSS	00	=		DEV COMMAND STOP STORE F/F
KA426	TQ2	E3	28B	(57)	01		TXDVSR TXDV5A 53 28B 55 29B	
KA429	TD4	A1	05B	TXDV0A	00	=		
KA429	TD4	A1	05A	(11)	01		TXCA10 TXDEV0 TXOVCO TBUSYA 06 05A 08 06A 10 07A 13 06B	
KA437	TS8	C1	17B	TXQV1A	00	=		
KA437	TS8	C1	15A	(35)	01		TXDEV5 TXXB20 TXXA0P TXXA10 TXROPA TXR097T SPI038 SPI043 30 15A 31 15B 34 16A 36 17A 37 18B 38 18A 40 19A 42 20A	
				TXDV1B	00	=		
KA439	TQ2	D1	24A	( )	01		TXDV10 52 24A	
KA439	TQ2	D2	21A	( )	02	+	TXDV20 46 21A	
KA439	TQ2	D3	24B	( )	03	+	TXDV30 45 24B	
KA439	TQ2	D4	27B	( )	04	+	TXDV40 51 27B	
KA439	TQ2	D1	24A	TXDV10	00	=		TXDV1B BUSS
KA439	TQ2	D1	25A	(52)	01		TXDV1A SPI043 54 25A 56 26A	
KA439	TQ2	D2	21A	TXDV20	00	=		TXDV1B BUSS
KA439	TQ2	D2	22A	(46)	01		TXDV1A SPI043 48 22A 50 23A	

DRAWING NUMBER 149017-860  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX TXDV30  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 353

CONNECTOR	CPCUT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERMIN NUM	DESIGNATION	FACTOR	COMMENT
KA439	TQ2	D3	24B	TXDV30	00 =			
KA439	TQ2	D3	22B	(145)	01		TXDV1A SPI043 41 22B 43 23B	TXDV1B BUSS
KA439	TQ2	D4	27B	TXDV40	00 =			
KA439	TQ2	D4	25B	(151)	01		TXDV1A SPI043 47 25B 49 26B	TXDV1B BUSS
KA430	TT3	A1	04A	TXDV5A	00 =			
KA430	TT3	A1	05A	(104)	01		TXCA10 TXDEVO TXOVCO 06 05A 08 06A 10 07A	
KA433	TD4	D1	25B	TXEA0A	00 =			
KA433	TD4	D1	26B	(147)	01		TXADRO TXRENS TXX050 TXR0PA 49 26B 52 24A 54 25A 56 26A	
KA432	TQ2	C1	18A	TXEA00	00 =			
KA432	TQ2	C1	19A	(138)	01		TXEA0A SPI042 40 19A 42 20A	
KA430	TT3	A3	07B	TXEBOA	00 =			
KA430	TT3	A3	04B	(115)	01		TXCA10 TXDEVA TXE080 09 04B 11 05B 13 06B	
KA436	TDD	E1	19A	TXEBCI	00 =			
KA436	TDD	E1	19A	( )	01		TXGNIA 46 19A	
KA436	TDD	EN	20A	TXEBON	00 =			
KA436	TDD	EN	20A	( )	01		TXEBIA 42 20A	
KA436	TDD	EP	17B	TXEBOP	00 =			
KA436	TDD	EP	18A	(135)	01		TXRS0B 38 18A	
KA436	TDD	EQ	18B	TXEBOQ	00 =			
KA436	TDD	EQ	19B	(137)	01		TXE80A 39 19B	EOB SYNC COUNTER BIT 0
KA428	TQ2	A2	02B	TXEB1A	00 =			
KA428	TQ2	A2	04A	(101)	01		TXEB1Q TXCP30 04 04A 05 03B	
KA435	TDD	G1	25A	TXEB1I	00 =			
KA435	TDD	G1	25A	( )	01		TXEBOQ 54 25A	

DRAWING NUMBER 149017-860  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

UNIT ASSEMBLY NO. 149017  
 FILE IDENT T39CIFC7

REV E INDEX TXEB1N  
 DATE 09-03-82 PAGE 354

CONNECTOR	GROUP	POINT AND OR	EQUATION	TER	REL	FACTOR	COMMENT
KA435	TDD	GN 26A	TXEB1N ( )	00 =	01	TXCP10 56 26A	
KA435	TDD	GP 25B	TXEB1P ( )	00 =	01	TXRS0B 52 24A	
KA435	TDD	GP 24A	(47)	00 =	01	SPI043 51 27B	EOB SYNC COUNTER BIT 1
KA429	TD4	C1 17B	TXED3A (35)	00 =	01	TWR1T0 TXENAS TXXB10 TXXA50 37 18B 38 18A 40 19A 42 20A	RECEIVE DATA STROBE BYTE 0
KA429	TD4	C2 16B	TXED1A (33)	00 =	01	TWR1T0 TXENAS TXXB20 TXXA50 30 15A 31 15B 34 16A 36 17A	RECEIVE DATA STROBE BYTE 1
KA429	TD4	D1 25B	TXED2A (47)	00 =	01	TWR1T0 TXENAS TXXB30 TXXA50 49 26B 52 24A 54 25A 56 26A	RECEIVE DATA STROBE BYTE 2
KA429	TD4	D2 24B	TXED3A (45)	00 =	01	TWR1T0 TXENAS TXXB40 TXXA50 43 23B 46 21A 48 22A 50 23A	RECEIVE DATA STROBE BYTE 3
KA433	TD4	D2 24B	TXENAR (45)	00 =	01	TXENAS TXXB5A TXX04A TXRS0B 43 23B 46 21A 48 22A 50 23A	
KA432	TQ2	D1 24A	TXENAS (52)	00 =	01	TXENAR TXEA0A 54 25A 56 26A	ENABLE STORE F/F
KA426	TQ2	A3 04B	TXE0B0 (09)	00 =	01	TXR092T SPI039 03 02A 07 03A	
KA441	TQ2	D1 24A	TXGN1A (52)	00 =	01	SPI044 SPI048 54 25A 56 26A	
KA506	TQ2	C3 16B	TXGN2A (33)	00 =	01	SPI049 SPI050 29 14B 31 15B	

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UNIT ASSEMBLY NO. 149017  
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REV E INDEX TXGN4A  
 DATE 09-03-82 PAGE 355

CONNECTOR	PLUG TYPE	GROUP	TEST POINTS AND	EQUATION	TERM NO	TEST POINT	FACTOR	COMMENT
KA441	TQ2	D2	21A	TXGN4A	00	=		
KA441	TQ2	D2	22A	(46)	01		YOSCEA4 SPI048 43 22A 50 23A	
KA441	TQ2	D3	24B	TXGN5A	00	=		
KA441	TQ2	D3	22B	(45)	01		SPI048 SPI044 41 22B 43 23B	
KA441	TQ2	D4	27B	TXGN6A	00	=		
KA441	TQ2	D4	25B	(51)	01		SPI048 SPI044 47 25B 49 26B	
KA426	TQ2	A2	02B	TXHSTO	00	=		
KA426	TQ2	A2	04A	(01)	01		TXR091Y SPI039 04 04A 05 03B	
KA430	TT3	B1	11A	TXH50A	00	=		
KA430	TT3	B1	12A	(20)	01		TXCA10 TXDEVA TXHSTO 22 12A 24 13A 26 14A	
KA426	TQ2	F4	39A	TXINHR	00	=		
KA426	TQ2	F4	37A	(80)	01		TXINHS TXIN0A 76 37A 78 38A	
KA430	TT3	F1	36B	TXINHS	00	=		
KA430	TT3	F1	37B	(73)	01		TXINHR TXONLO TXRS0B 75 37B 77 38B 79 39B	OFF LINE STORE F/F
KA430	TT3	F2	35B	TXIN0A	00	=		
KA430	TT3	F2	34B	(74)	01		TXRS0B TXRCMS TXONLO 65 34B 71 36A 72 34A	
KA426	TQ2	B1	12A	TXIRCO	00	=		
KA426	TQ2	B1	13A	(22)	01		TXR094Y SPI039 24 13A 26 14A	
KA430	TT3	A2	03A	TXIROA	00	=		
KA430	TT3	A2	02B	(07)	01		TXCA10 TXDEVA TXIRCO 01 02B 03 02A 05 03B	
				TXIROI	00	=		
KA436	YDD	DI	10A	( )	01		TXGNIA 18 10A	
				TXIRON	00	=		
KA436	YDD	DN	09A	( )	01		TXIRIA 14 09A	



DRAWING NUMBER 149017-860  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX TXIR0P  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 356

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
KA436	TDD	DP	10B	TXIR0P	00	=		
KA436	TDD	DP	11A	(21)	01		TXR50B 20 11A	
KA436	TDD	DQ	09B	TXIR0Q	00	=		ITR SYNC COUNTER BIT 0
KA436	TDD	DQ	08B	(19)	01		TXIR0A 17 08B	
KA428	TQ2	A1	05A	TXIR1A	00	=		
KA428	TQ2	A1	06A	(06)	01		TXIR1Q TXCP30 08 06A 10 07A	
				TXIR1I	00	=		
KA434	TDD	HI	22A	( )	01		TXIR0Q 48 22A	
				TXIR1N	00	=		
KA434	TDD	HN	21A	( )	01		TXCP1D 46 21A	
KA434	TDD	HP	24B	TXIR1P	00	=		
KA434	TDD	HP	23A	(45)	01		TXR50B 50 23A	
KA434	TDD	HQ	23B	TXIR1Q	00	=		ITR SYNC COUNTER BIT 1
KA434	TDD	HQ	22B	(43)	01		SPI03B 41 22B	
KA428	TQ2	B4	13B	TXPRSA	00	=		
KA428	TQ2	B4	11B	(27)	01		TXPR5OX SPI039 23 11B 25 12B	
KA446	DCF	D3	37B	TXPRSDX4	00	=		PORT RESET DR1/RCVR
KA446	DCF	D3	36A	(78)	01		SPI049 72 36A	
KA446	DCF	D4	36B	TXPR5OX	00	=		
KA446	DCF	D4	35B	(75)	01		SPI040 73 35B	
KA427	DBC	B1	12A	TXRAFOT	00	=		DEV COMMAND DECODER A TO F
KA427	DBC	B1	10A	(24)	01		TXR7C5 20 10A	
KA427	DBC	B2	13A	TXRAF1T	00	=		
KA427	DBC	B2	11A	(26)	01		TXR6C5 22 11A	

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 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX TXRAF2T  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 357

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA427	DBC	B3	14A	TXRAF2T	00	=		
KA427	DBC	B3	09B	(27)	01		TXR5CS 19 09B	
KA427	DBC	B4	15A	TXRAF3T	00	=		
KA427	DBC	B4	10B	(30)	01		TXR4CR 21 10B	
KA427	DBC	B5	16A	TXRAF4T	00	=		
KA427	DBC	B5		(33)	01		SPA 4T	
KA427	DBC	B6	11B	TXRAF5T	00	=		
KA427	DBC	B6		(23)	01		SPA 5T	
KA427	DBC	B7	12B	TXRAF6T	00	=		
KA427	DBC	B7		(25)	01		SPA 6T	
KA427	DBC	B8	13B	TXRAF7T	00	=		
KA427	DBC	B8		(29)	01		SPA 7T	
KA427	DBC	B9	14B	TXRAF8T	00	=		
KA427	DBC	B9		(31)	01		SPA 8T	
KA427	DBC	B0	15B	TXRAF9T	00	=		
KA427	DBC	B0		(34)	01		SPA 9T	
KA440	TQ2	C2	15A	TXRCMR	00	=		
KA440	TQ2	C2	16A	(30)	01		TXRCMS TXRRSA 34 16A 36 17A	
KA441	TQ2	C2	15A	TXRCMS	00	=		
KA441	TQ2	C2	16A	(30)	01		TXRCMR TXACMB4 34 16A 36 17A	I/O INPUT REG COMMAND BIT
KA440	TQ2	C3	16B	TXRENR	00	=		
KA440	TQ2	C3	14B	(33)	01		TXRENS TXRRSA 29 14B 31 15B	
KA441	TQ2	C3	16B	TXRENS	00	=		
KA441	TQ2	C3	14B	(33)	01		TXRENR TXAENB4 29 14B 31 15B	I/O INPUT REG ENABLE BIT

DRAWING NUMBER 149017-860  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017  
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 REV E  
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 INDEX TXRPCR  
 PAGE 358

CONNECTOR	GROUP	POINT AND OR	EQUATION	TEST	LOG	FACTOR	COMMENT
KA440	TQ2	C1 18A	TXRPCR	00 =			
KA440	TQ2	C1 19A	(38)	01		TXRPCS TXRSA 40 19A 42 20A	
KA441	TQ2	C1 18A	TXRPCS	00 =			I/O INPUT REG PARITY BIT
KA441	TQ2	C1 19A	(38)	01		TXRPCR TXAPCB4 40 19A 42 20A	
KA441	TQ2	C4 19B	TXRSA	00 =			I/O INPUT REG RESET
KA441	TQ2	C4 17B	(39)	01		TXRSO SPI048 35 17B 37 18B	
KA440	TQ2	C4 19B	TXRSO	00 =			
KA440	TQ2	C4 17B	(39)	01		TXXA6A TXRSOB 35 17B 37 18B	
KA428	TQ2	F4 39A	TXRSAA	00 =			TXRS2A BUSS
KA428	TQ2	F4 37A	(80)	01		TXRSO SPI042 76 37A 78 38A	
KA432	TQ2	E2 28A	TXRSOA	00 =			TXRSOB BUSS
KA432	TQ2	E2 29A	(60)	01		TXRSO SPI042 62 29A 64 30A	
			TXRSOB	00 =			
KA432	TQ2	E2 28A	( )	01		TXRSOA 60 28A	
KA432	TQ2	E3 30B	( )	02 +		TXRS1A 57 30B	
KA432	TQ2	E4 33B	( )	03 +		TXRS2A 63 33B	
KA437	TS8	B1 11B	TXRSO	00 =			CONTROLLER MASTER RESET
KA437	TS8	B1 09A	(23)	01		TXS1A TXRSA TXBRS TXPRSA DEVINH SPI035 SPI038 SPI043 14 09A 18 10A 19 09B 20 11A 22 12A 24 13A 25 12B 26 14A	
KA432	TQ2	E3 30B	TXRS1A	00 =			TXRSOB BUSS
KA432	TQ2	E3 28B	(57)	01		TXRSO SPI042 53 28B 55 29B	
			TXRS1B	00 =			
KA432	TQ2	F1 37B	( )	01		TXRS3A 75 37B	
KA432	TQ2	F2 34A	( )	02 +		TXRS4A 72 34A	
KA432	TQ2	F3 35A	( )	03 +		TXRS5A 69 35A	
KA432	TQ2	F4 39A	( )	04 +		TXRS6A 80 39A	

DRAWING NUMBER 149017-860  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX TXRS2A  
 FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 359

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA432	TQ2	E4	33B	TXRS2A	00 =		
KA432	TQ2	E4	31B	(63 )	01	TXRS00 SPI042 59 31B 61 32B	TXRS0B BUSS
				TXRS2B	00 =		
KA428	TQ2	F1	37B	( )	01	TXRS7A 75 37B	
KA428	TQ2	F2	34A	( )	02 +	TXRS8A 72 34A	
KA428	TQ2	F3	35A	( )	03 +	TXRS9A 69 35A	
KA428	TQ2	F4	39A	( )	04 +	TXRSAA 80 39A	
KA432	TQ2	F1	37B	TXRS3A	00 =		TXRS1B BUSS
KA432	TQ2	F1	38B	(75 )	01	TXRS00 SPI042 77 38B 79 39B	
KA432	TQ2	F2	34A	TXRS4A	00 =		TXRS1B BUSS
KA432	TQ2	F2	36A	(72 )	01	TXRS00 SPI042 71 36A 73 36B	
KA432	TQ2	F3	35A	TXRS5A	00 =		TXRS1B BUSS
KA432	TQ2	F3	34B	(69 )	01	TXRS00 SPI042 65 34B 74 35B	
KA432	TQ2	F4	39A	TXRS6A	00 =		TXRS1B BUSS
KA432	TQ2	F4	37A	(80 )	01	TXRS00 SPI042 76 37A 78 38A	
KA428	TQ2	F1	37B	TXRS7A	00 =		TXRS2B BUSS
KA428	TQ2	F1	38B	(75 )	01	TXRS00 SPI042 77 38B 79 39B	
KA428	TQ2	F2	34A	TXRS8A	00 =		TXRS2B BUSS
KA428	TQ2	F2	36A	(72 )	01	TXRS00 SPI042 71 36A 73 36B	
KA428	TQ2	F3	35A	TXRS9A	00 =		TXRS2B BUSS
KA428	TQ2	F3	34B	(69 )	01	TXRS00 SPI042 65 34B 74 35B	
KA440	TQ2	A1	05A	TXROCR	00 =		
KA440	TQ2	A1	06A	(06 )	01	TXROCS TXRRA 08 06A 10 07A	
KA441	TQ2	A1	05A	TXROCS	00 =		I/O INPUT REG DATA BIT 0
KA441	TQ2	A1	06A	(06 )	01	TXROCR TXAOCB4 08 06A 10 07A	

DRAWING NUMBER 149017-860  
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B,IFCU

LOGIC

UNIT ASSEMBLY NO. 149017  
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REV E INDEX TXR0PA  
 DATE 09-03-82 PAGE 360

CONNECTOR	TEST POINT GROUP	TEST POINTS AND/OR	EQUATION	TEST DESIGNATION	FACTOR	COMMENT
KA432	TQ2	A2 02B	TXR0PA	00 =		
KA432	YQ2	A2 04A	(01)	01	TXR0PPR SPI042 04 04A 05 03B	
KA438	PAR	A1 07A	TXR0PPR	00 =		INPUT REG PARITY CHECKER
KA438	PAR	A1 03B	(13)	01	TXR0CS TXR1CS TXR2CS TXR3CS TXR4CS TXR5CS TXR6CS TXR7CS 03 03B 05 04B 07 05B 09 06B 10 05A 08 04A 06 03A 04 02A	
KA438	PAR	A1 07B	( )	02 +	TXRPCS 11 07B	
KA427	DBC	A1 04A	TXR090T	00 =		DEV COMMAND DECODER 0 TO 9
KA427	DBC	A1 02A	(08)	01	TXR7CS 04 02A	
KA427	DBC	A2 05A	TXR091T	00 =		
KA427	DBC	A2 03A	(10)	01	TXR6CS 06 03A	
KA427	DBC	A3 06A	TXR092T	00 =		
KA427	DBC	A3 02B	(14)	01	TXR5CS 03 02B	
KA427	DBC	A4 07A	TXR093T	00 =		
KA427	DBC	A4 03B	(13)	01	TXR4CS 05 03B	
KA427	DBC	A5 08B	TXR094T	00 =		
KA427	DBC	A5	(17)	01	SPA 4T	
KA427	DBC	A6 04B	TXR095T	00 =		
KA427	DBC	A6	(07)	01	SPA 5T	
KA427	DBC	A7 05B	TXR096T	00 =		
KA427	DBC	A7	(09)	01	SPA 6T	
KA427	DBC	A8 06B	TXR097T	00 =		
KA427	DBC	A8	(11)	01	SPA 7T	
KA427	DBC	A9 07B	TXR098T	00 =		
KA427	DBC	A9	(15)	01	SPA 8T	
KA427	DBC	A0 09A	TXR099T	00 =		
KA427	DBC	A0	(18)	01	SPA 9T	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA440	TQ2	A2	02B	TXR1CR	00		
KA440	TQ2	A2	04A	(01)	01	TXR1CS TXRRSA 04 04A 05 03B	
KA441	TQ2	A2	02B	TXR1CS	00		I/O INPUT REG DATA BIT 1
KA441	TQ2	A2	04A	(01)	01	TXR1CR TXA1CB4 04 04A 05 03B	
KA440	TQ2	A3	04B	TXR2CR	00		
KA440	TQ2	A3	02A	(09)	01	TXR2CS TXRRSA 03 02A 07 03A	
KA441	TQ2	A3	04B	TXR2CS	00		I/O INPUT REG DATA BIT 2
KA441	TQ2	A3	02A	(09)	01	TXR2CR TXA2CB4 03 02A 07 03A	
KA440	TQ2	A4	07B	TXR3CR	00		
KA440	TQ2	A4	05B	(15)	01	TXR3CS TXRRSA 11 05B 13 06B	
KA441	TQ2	A4	07B	TXR3CS	00		I/O INPUT REG DATA BIT 3
KA441	TQ2	A4	05B	(15)	01	TXR3CR TXA3CB4 11 05B 13 06B	
KA440	TQ2	B1	12A	TXR4CR	00		
KA440	TQ2	B1	13A	(22)	01	TXR4CS TXRRSA 24 13A 26 14A	
KA441	TQ2	B1	12A	TXR4CS	00		I/O INPUT REG DATA BIT 4
KA441	TQ2	B1	13A	(22)	01	TXR4CR TXA4CB4 24 13A 26 14A	
KA440	TQ2	B2	09A	TXR5CR	00		
KA440	TQ2	B2	10A	(14)	01	TXR5CS TXRRSA 18 10A 20 11A	
KA441	TQ2	B2	09A	TXR5CS	00		I/O INPUT REG DATA BIT 5
KA441	TQ2	B2	10A	(14)	01	TXR5CR TXA5CB4 18 10A 20 11A	
KA440	TQ2	B3	10B	TXR6CR	00		
KA440	TQ2	B3	08B	(21)	01	TXR6CS TXRRSA 17 08B 19 09B	
KA441	TQ2	B3	10B	TXR6CS	00		I/O INPUT REG DATA BIT 6
KA441	TQ2	B3	08B	(21)	01	TXR6CR TXA6CB4 17 08B 19 09B	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA440	TQ2	B4	13B	TXR7CR	00 =		
KA440	TQ2	B4	11B	(27)	01	TXR7CS TXR7SA 23 11B 25 12B	
KA441	TQ2	B4	13B	TXR7CS	00 =		I/O INPUT REG DATA BIT 7
KA441	TQ2	B4	11B	(27)	01	TXR7CR TXA7CB4 23 11B 25 12B	
KA428	TQ2	B2	09A	TXSK0A	00 =		
KA428	TQ2	B2	10A	(14)	01	TXXC2Q TXXC3P 18 10A 20 11A	
KA432	TQ2	C3	16B	TXSK00	00 =		STATUS REG CLOCK BITS 0 TO 3
KA432	TQ2	C3	14B	(13)	01	TXSK0A SPI042 29 14B 31 15B	
KA426	TQ2	B3	10B	TXSSTO	00 =		
KA426	TQ2	B3	08B	(21)	01	TXR097T SPI039 17 08B 19 09B	
KA437	TSB	E1	31B	TXSS0A	00 =		
KA437	TSB	E1	29B	(19)	01	TXDV5S TXXB20 TXXAOP TXXA1Q TXSSTO TXROPA SPI043 SPI038 55 29B 60 28A 61 32B 62 29A 64 30A 66 31A 68 32A 70 33A	
KA436	TDD	LI	38B	TXST01	00 =		
KA436	TDD	LI		( )	01	TXGN1A 77 38B	
KA436	TDD	LN	39B	TXST0N	00 =		
KA436	TDD	LN		( )	01	TXST1A 79 39B	
KA436	TDD	LP	37A	TXSTOP	00 =		
KA436	TDD	LP	37B	(76)	01	SPI043 75 37B	
KA436	TDD	LQ	38A	TXST0Q	00 =		STOP SYNC COUNTER BIT 0
KA436	TDD	LQ	39A	(78)	01	TXST2A 80 39A	
KA439	TQ2	F1	37B	TXST1A	00 =		
KA439	TQ2	F1	38B	(75)	01	TXST1Q TXCP30 77 38B 79 39B	
KA435	TDD	LI	38B	TXST1I	00 =		
KA435	TDD	LI		( )	01	TXST0Q 77 38B	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST TERMINAL	DESIGNATION	FACTOR	COMMENT
KA435	TDD	LN	39B	TXST1N ( )	00 = 01		TXCP10 79 39B	
KA435	TDD	LP	37A	TXST1P (76 )	00 = 01		SPI043 75 37B	
KA435	TDD	LQ	38A	TXST1Q (78 )	00 = 01		SPI038 80 39A	STOP SYNC COUNTER BIT 1
KA439	TQ2	F2	34A	TXST2A (72 )	00 = 01		TXST20 SPI043 71 36A 73 36B	
KA432	TQ2	D4	27B	TXST20 (51 )	00 = 01		TXHS0A TXSS0A 47 25B 49 26B	
KA427	DBC	C1	18A	TXS031U (38 )	00 = 01		TXDB07A TXDB07B TXDB07C TXDB07D TXGN4A 39 18B 41 19B 43 22B 45 23B 50 24A	IQU INPUT DATA REGBITS 0-3
KA427	DBC	C2	19A	TXS032U (40 )	00 = 01		TXSK00 37 17B	
KA427	DBC	C3	20A	TXS033U (42 )	00 = 01		TXGN5A 47 23A	
KA427	DBC	C4	21A	TXS034U (46 )	00 = 01		TXGN6A 48 22A	
KA427	DBC	C5	17A	TXS035U (36 )	00 = 01		SPI039 35 16B	
KA427	DBC	D1	26A	TXS471U (54 )	00 = 01		TXDB47A TXDB47B TXDB47C TXDB47D TXGN4A 53 26B 55 27B 57 29B 59 30B 63 31A	IQU INPUT DATA REGBITS 4-7
KA427	DBC	D2	28B	TXS472U (56 )	00 = 01		TXSK00 51 25B	



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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND DR	EQUATION	Z	Y	DESIGNATION	FACTOR	COMMENT
KA427	DBC	D3	28A	TXS473U	00	=			
KA427	DBC	03	31B	(60)	01			TXGN5A 61 31B	
KA427	DBC	D4	29A	TXS474U	00	=			
KA427	DBC	04	30A	(62)	01			TXGN6A 64 30A	
KA427	DBC	D5	25A	TXS475U	00	=			
KA427	DBC	05	24B	(52)	01			SPI039 49 24B	
KA432	TQ2	A4	07B	TXXACA	00	=			
KA432	TQ2	A4	05B	(15)	01			TXXAC0 SPI042 11 05B 13 06B	
				TXXAC1	00	=			
KA436	TDD	MI	36A	( )	01			SPI038 71 36A	
				TXXACN	00	=			
KA436	TDD	MN	34A	( )	01			TXXA3P 72 34A	
KA436	TDD	MP	35A	TXXACP	00	=			
KA436	TDD	MP	36B	(69)	01			TXXADA 73 36B	
KA436	TDD	MQ	35B	TXXACQ	00	=			I/O STATE COUNTER CONTROL F/F
KA436	TDD	MQ	34B	(74)	01			TXRS08 65 34B	
KA437	TSB	A1	05B	TXXAC0	00	=			
KA437	TSB	A1	02B	(11)	01			TXR0CR TXR1CR TXR2CR TXR3CR TXR4CR TXR5CR TXR6CR TXR7CR 01 02B 04 04A 05 03B 06 05A 07 03A 08 06A 10 07A 13 06B	
KA432	TQ2	B1	12A	TXXADA	00	=			I/O STATE COUNTER START
KA432	TQ2	B1	13A	(22)	01			TXXAD0 SPI042 24 13A 26 14A	
KA433	TD4	C1	17B	TXXAD0	00	=			
KA433	TD4	C1	18B	(35)	01			TXRCMR TXREN R TXRPCR TXXACA 37 18B 38 18A 40 19A 42 20A	
				TXXA0I	00	=			
KA434	TDD	AJ	06A	( )	01			TXXA3P 08 06A	

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LOGIC

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
				TXXA0N	00 =			
KA434	TDD	AN	07A	( )	01	Y16MH0 10 07A		
KA434	TDD	AP	05B	TXXA0P	00 =			
KA434	TDD	AP	05A	(11 )	01	YXXACP 06 05A		
KA434	TDD	AQ	06B	TXXA0Q	00 =		I/O STATE COUNTER BIT 0	
KA434	TDD	AQ	07B	(13 )	01	SPI042 15 07B		
				TXXA1I	00 =			
KA435	TDD	AI	06A	( )	01	YXXA0Q 08 06A		
				TXXA1N	00 =			
KA435	TDD	AN	07A	( )	01	Y16MH0 10 07A		
KA435	TDD	AP	05B	TXXA1P	00 =			
KA435	TDD	AP	05A	(11 )	01	YXXACP 06 05A		
KA435	TDD	AQ	06B	TXXA1Q	00 =		I/O STATE COUNTER BIT 1	
KA435	TDD	AQ	07B	(13 )	01	SPI043 15 07B		
				TXXA2I	00 =			
KA434	TDD	BI	03B	( )	01	YXXA1Q 05 03B		
				TXXA2N	00 =			
KA434	TDD	BN	02B	( )	01	Y16MH0 01 02B		
KA434	TDD	BP	04B	TXXA2P	00 =			
KA434	TDD	BP	04A	(09 )	01	YXXACP 04 04A		
KA434	TDD	BQ	03A	TXXA2Q	00 =		I/O STATE COUNTER BIT 2	
KA434	TDD	BQ	02A	(07 )	01	SPI038 03 02A		
				TXXA3I	00 =			
KA435	TDD	BI	03B	( )	01	YXXA2Q 05 03B		

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LOGIC

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CONNECTOR	GROUP	POINT	TEST POINTS AND OR	EQUATION	TEST	STATUS	FACTOR	COMMENT
KA435	TDD	BN	02B	TXXA3N ( )	00	=	T16MM0 01 02B	
KA435	TDD	BP	04B	TXXA3P (09 )	00	=	TXXACP 04 04A	
KA435	TDD	BQ	03A	TXXA3Q (07 )	00	=	SPI03B 03 02A	I/O STATE COUNTER BIT 3
KA439	TQ2	A1	05A	TXXA4A (06 )	00	=	TXXA0Q TXXA3Q 08 06A 10 07A	I/O STATE COUNTER STATE 4
KA440	TQ2	D1	24A	TXXA4D (52 )	00	=	TXXA4A SPI043 54 25A 56 26A	
KA439	TQ2	A2	02B	TXXA5A (01 )	00	=	TXXA0P TXXA1Q 04 04A 05 03B	I/O STATE COUNTER STATE 5
KA440	TQ2	D2	21A	TXXA5D (46 )	00	=	TXXA5A SPI043 48 22A 50 23A	
KA439	TQ2	A3	04B	TXXA6A (09 )	00	=	TXXA1P TXXA2Q 03 02A 07 03A	I/O STATE COUNTER STATE 6
KA432	TQ2	A3	04B	TXXBCA (09 )	00	=	TXXBCD SPI042 03 02A 07 03A	I/O BYTE COUNTER RESET
KA431	TT3	B1	11A	TXXBCD (20 )	00	=	TXXCMR TXXREN TXXRSOB 22 12A 24 13A 26 14A	
KA406	TQ2	E4	33B	TXXBKD (63 )	00	=	TXXA3Q SPI033 59 31B 61 32B	I/O BYTE COUNTER CLOCK
KA439	TQ2	A4	07B	TXXBDA (15 )	00	=	TXXBOP TXXB2P 11 05B 13 06B	I/O BYTE COUNTER STATE 0

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	GROUP	TEST POINTS AND/OR	EQUATION	TERM	ORIGINATOR	FACTOR	COMMENT
KA436	TDD	CI 13A	TXXB0I ( )	00 01	=	TXXB2P 24 13A	
KA436	TDD	CM 14A	TXXB0N ( )	00 01	=	TXXB00 26 14A	
KA436	TDD	CP 11B	TXXB0P (23 )	00	=		
KA436	TDD	CP 12A		01	=	TXXBCA 22 12A	
KA436	TDD	CQ 12B	TXXB0Q (25 )	00	=		I/O BYTE COUNTER BIT 0
KA436	TDD	CQ 13B		01	=	SPI043 27 13B	
KA440	TQ2	D3 24B	TXXB00 (45 )	00	=		
KA440	TQ2	D3 22B		01	=	TXXB0A SPI043 41 22B 43 23B	
KA439	TQ2	B1 12A	TXXB1A (22 )	00	=		I/O BYTE COUNTER STATE 1
KA439	TQ2	B1 13A		01	=	TXXB0Q TXXB1P 24 13A 26 14A	
KA435	TDD	FI 16A	TXXB1I ( )	00 01	=	TXXB0Q 34 16A	
KA435	TDD	FN 15A	TXXB1N ( )	00 01	=	TXXB00 30 15A	
KA435	TDD	FP 16B	TXXB1P (35 )	00	=		
KA435	TDD	FP 17A		01	=	TXXBCA 36 17A	
KA435	TDD	FQ 15B	TXXB1Q (31 )	00	=		I/O BYTE COUNTER BIT 1
KA435	TDD	FQ 14B		01	=	SPI043 29 14B	
KA440	TQ2	D4 27B	TXXB10 (51 )	00	=		
KA440	TQ2	D4 25B		01	=	TXXB1A SPI043 47 25B 49 26B	
KA439	TQ2	B2 09A	TXXB2A (14 )	00	=		I/O BYTE COUNTER STATE 2
KA439	TQ2	B2 10A		01	=	TXXB1Q TXXB2P 18 10A 20 11A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERN	DESIGNATOR	FACTOR	COMMENT
KA434	T00	CI	25A	TXXB2I ( )	00 = 01		TXXB1Q 54 25A	
KA434	T00	GN	26A	TXXB2N ( )	00 = 01		TXXBK0 56 26A	
KA434	T00	GP	25B	TXXB2P	00 =			
KA434	T00	GP	24A	(47 )	01		TXXBCA 52 24A	
KA434	T00	GQ	26B	TXXB2Q	00 =			I/O BYTE COUNTER BIT 2
KA434	T00	GQ	27B	(49 )	01		SPI043 51 27B	
KA440	TQ2	E1	31A	TXXB20	00 =			
KA440	TQ2	E1	32A	(65 )	01		TXXB2A SPI043 68 32A 70 33A	
KA439	TQ2	B3	10B	TXXB3A	00 =			I/O BYTE COUNTER STATE 3
KA439	TQ2	B3	08B	(21 )	01		TXXB00 TXXB2Q 17 08B 19 09B	
KA440	TQ2	E2	28A	TXXB30	00 =			
KA440	TQ2	E2	29A	(60 )	01		TXXB3A SPI048 62 29A 64 30A	
KA439	TQ2	B4	13B	TXXB4A	00 =			I/O BYTE COUNTER STATE 4
KA439	TQ2	B4	11B	(27 )	01		TXXB0P TXXB1Q 23 11B 25 12B	I/O BYTE COUNTER STATE 4
KA440	TQ2	E3	30B	TXXB40	00 =			
KA440	TQ2	E3	28B	(57 )	01		TXXB4A SPI048 53 28B 55 29B	
KA439	TQ2	C1	18A	TXXB5A	00 =			I/O BYTE COUNTER STATE 5
KA439	TQ2	C1	19A	(38 )	01		TXXB1P TXXB2Q 40 19A 42 20A	
KA440	TQ2	E4	33B	TXXB50	00 =			
KA440	TQ2	E4	31B	(63 )	01		TXXB5A SPI048 59 31B 61 32B	
KA428	TQ2	D4	27B	TXXC1A	00 =			
KA428	TQ2	D4	25B	(51 )	01		TXXC10 SPI042 47 25B 49 26B	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	ORIG. FACTOR	FACTOR	COMMENT
KA435	TDD	MI	36A	TXXCII ( )	00 = 01		TXCN4A 71 36A	
KA435	TDD	MN	34A	TXXCIN ( )	00 = 01		TXXC4P 72 34A	
KA435	TDD	MP	35A	TXXCIP (69 )	00 = 01		TXRS0B 73 36B	
KA435	TDD	MQ	35B	TXXCIQ (74 )	00 = 01			DEV/OFB INDICATOR CONTROL F/F
KA435	TDD	MQ	34B				TXXCIA 65 34B	
KA429	T04	F1	37A	TXXCIO (76 )	00 = 01			INDICATOR INPUTS
KA429	T04	F1	37B				TSYNIA TTASLA TXSS0A TX0D3A 75 37B 77 38B 78 38A 79 39B	
KA429	T04	F2	35A	TXXCRO (69 )	00 = 01		TXXCIP TXXODP TXXDIP TXXDSP 71 36A 72 34A 73 36B 74 35B	
KA428	TQ2	B3	10B	TXXCSA (21 )	00 = 01			INPUT STROBE COUNT 5 TO 7
KA428	TQ2	B3	08B				TXXC2Q TXXC4Q 17 08B 19 09B	
KA432	TQ2	D2	21A	TXXCSO (46 )	00 = 01		TXXC5A SPI042 4B 22A 50 23A	
KA434	TDD	FI	16A	TXXCOI ( )	00 = 01		TXXC4P 34 16A	
KA434	TDD	FN	15A	TXXCON ( )	00 = 01		T16M10 30 15A	
KA434	TDD	FP	16B	TXXCOP (33 )	00 = 01		TXXCRO 36 17A	
KA434	TDD	FQ	15B	TXXCOQ (31 )	00 = 01		SPI042 29 14B	
KA434	TDD	FQ	14B					

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LOGIC

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CONNECTOR	PLUG TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	INDIC NATOR	FACTOR	COMMENT
KA435	TDD	CI	13A	TXXC1I ( )	00 01	=	TXXC0Q 24 13A	
KA435	TDD	CN	14A	TXXC1N ( )	00 01	=	T16M10 26 14A	
KA435	TDD	CP	11B	TXXC1P	00	=		
KA435	TDD	CP	12A	(23 )	01		TXXCRO 22 12A	
KA435	TDD	CQ	12B	TXXC1Q	00	=		INPUT STROBE COUNTER BIT 1
KA435	TDD	CQ	13B	(25 )	01		SPT043 27 13B	
KA434	TDD	DI	10A	TXXC2I ( )	00 01	=	TXXC1Q 18 10A	
KA434	TDD	DN	09A	TXXC2N ( )	00 01	=	T16M10 14 09A	
KA434	TDD	DP	10B	TXXC2P	00	=		
KA434	TDD	DP	11A	(21 )	01		TXXCRO 20 11A	
KA434	TDD	DQ	09B	TXXC2Q	00	=		INPUT STROBE COUNTER BIT 2
KA434	TDD	DQ	08B	(19 )	01		SPI038 17 08B	
KA435	TDD	DI	10A	TXXC3I ( )	00 01	=	TXXC2Q 18 10A	
KA435	TDD	DN	09A	TXXC3N ( )	00 01	=	T16M10 14 09A	
KA435	TDD	DP	10B	TXXC3P	00	=		
KA435	TDD	DP	11A	(21 )	01		TXXCRO 20 11A	
KA435	TDD	DQ	09B	TXXC3Q	00	=		INPUT STROBE COUNTER BIT 3
KA435	TDD	DQ	08B	(19 )	01		SPI038 17 08B	

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LOGIC

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
				TXXC4I	00 =			
KA539	TDD	DI	10A	( )	01		TXXC3Q 18 10A	
				TXXC4N	00 =			
KA539	TDD	DN	09A	( )	01		Y16H10 14 09A	
KA539	TDD	DP	10B	TXXC4P	00 =			
KA539	TDD	DP	11A	(21 )	01		TXXCRO 20 11A	
KA539	TDD	DQ	09B	TXXC4Q	00 =			INPUT STROBE COUNTER BIT 4
KA539	TDD	DQ	08B	(19 )	01		SPI057 17 08B	
KA432	TQ2	C2	15A	TXXDDA	00 =			
KA432	TQ2	C2	16A	(30 )	01		TXXDD0 SPI042 34 16A 36 17A	
				TXXDDI	00 =			
KA435	TDD	E1	19A	( )	01		TXGN4A 40 19A	
				TXXDDN	00 =			
KA435	TDD	EN	20A	( )	01		TXXDYP 42 20A	
KA435	TDD	EP	17B	TXXDDP	00 =			
KA435	TDD	EP	18A	(35 )	01		TXRS0B 38 18A	
KA435	TDD	EQ	18B	TXXDDQ	00 =			INPUT DATA CONTROL F/F
KA435	TDD	EQ	19B	(37 )	01		TXXDAA 39 19B	
KA428	TQ2	A4	07B	TXXDD0	00 =			
KA428	TQ2	A4	05B	(15 )	01		TRTDEA YLTE0A 11 05B 13 06B	
KA428	TQ2	B1	12A	TXXDIA	00 =			
KA428	TQ2	B1	13A	(22 )	01		TXXDIS TXEADD 24 13A 26 14A	
				TXXDII	00 =			
KA434	TDD	CI	13A	( )	01		TXGN4A 24 13A	



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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	3 TER M	DESIGNATION	FACTOR	COMMENT
KA434	TDD	CN	14A	TXXDIN ( )	00 = 01		TXXD1P 26 14A	
KA434	TDD	CP	11B	TXXDIP (23 )	00 = 01		TXRSOB 22 17A	
KA434	TDD	CQ	12B	TXXD10 (25 )	00 = 01		TXXDIA 27 13B	INPUT STROBE COUNTER BIT 0
KA431	TT3	D3	27B	TXXDIR (51 )	00 = 01		TXXDIS TXDIRA TXINHR 45 24B 47 25B 49 26B	
KA430	TT3	D3	24B	TXXDIS (51 )	00 = 01		TXXDIR TINT2A TINT6A 45 24B 47 25B 49 26B	
KA432	TQ2	A1	05A	TXXDRA (06 )	00 = 01		TXXDRO SPI042 08 06A 10 07A	
KA431	TT3	A3	07B	TXXDRO (15 )	00 = 01		TXXDOP TXXDIP TXXDSP 09 04B 11 05B 13 06B	
KA434	TDD	HI	36A	TXXDSI ( )	00 = 01		TXGN4A 71 36A	
KA434	TDD	MN	34A	TXXDSN ( )	00 = 01		TXXD1P 72 34A	
KA434	TDD	MP	35A	TXXDSP (69 )	00 = 01		TXRSOB 73 36B	
KA434	TDD	HQ	35B	TXXDSQ (74 )	00 = 01		TXIRIA 65 34B	INPUT STATUS CONTROL E/F
KA434	TDD	EI	19A	TXXDOI ( )	00 = 01		TXXD1P 40 19A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX TXXDON  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DESIGNATOR	FACTOR	COMMENT
KA434	TDD	EN	20A	TXXDON ( )	00 = 01	TXXC3P 42 20A	
KA434	TDD	EP	17B	TXXDOP (35 )	00 = 01	TXXCRO 38 18A	
KA434	TDD	EQ	18B	TXXD0Q (37 )	00 = 01	SPI043 39 19B	INPUT BYTE COUNTER BIT 0
KA436	TDD	BI	03B	TXXD1I ( )	00 = 01	TXXD0Q 05 03B	
KA436	TDD	BN	02B	TXXD1N ( )	00 = 01	TXXC3P 01 02B	
KA436	TDD	BP	04B	TXXD1P (09 )	00 = 01	TXXCRO 04 04A	
KA436	TDD	BQ	03A	TXXD1Q (07 )	00 = 01	TXXDIA 03 02A	INPUT BYTE COUNTER BIT 1
KA428	TQ2	A3	04B	TXXRCA (09 )	00 = 01	TXXRCO TXXREP 03 02A 07 03A	
KA539	TDD	A1	06A	TXXRCI ( )	00 = 01	TXGN4A 08 06A	
KA539	TDD	AN	07A	TXXRCN ( )	00 = 01	TXXR2P 10 07A	
KA539	TDD	AP	05B	TXXRCP (11 )	00 = 01	TXR50B 06 05A	
KA539	TDD	AQ	06B	TXXRCQ (13 )	00 = 01	TXXRCA 15 07B	REQUEST CONTROL F/F

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
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CONNECTOR	ENCL. TYPE	BOARD	TEST POINTS AND/OR	EQUATION	YES	DESIGNATION	FACTOR	COMMENT
KA418	TSB	E1	31B	TXXRCO	00 =			
KA418	TSB	E1	29B	(59)	01		TREQ4A TWRQ1A TLPT5A TNSGCA TNSGEA TFST6A TINT2A TINT6A 55 29B 60 28A 61 32B 62 29A 64 30A 66 31A 68 32A 70 33A	REQUEST INPUTS
				TXXREI	00 =			
KA436	TDD	JI	32A	( )	01		TXGN4A 68 32A	
				TXXREN	00 =			
KA436	TDD	JN	33A	( )	01		TXEA0A 70 33A	
KA436	TDD	JP	31B	TXXREP	00 =			
KA436	TDD	JP	31A	(59)	01		TXRS0B 66 31A	
KA436	TDD	JQ	32B	TXXREQ	00 =			REQUEST ENABLE E/E
KA436	TDD	JQ	33B	(61)	01		TXXR0P 63 33B	
				TXXROI	00 =			
KA435	TDD	KI	29A	( )	01		TXXR2P 62 29A	
				TXXRON	00 =			
KA435	TDD	KN	28A	( )	01		T16MH0 60 28A	
KA435	TDD	KP	30B	TXXROP	00 =			
KA435	TDD	KP	30A	(57)	01		TXXR0Q 64 30A	
KA435	TDD	KQ	29B	TXXROQ	00 =			REQUEST STROBE COUNTER BIT 0
KA435	TDD	KQ	28B	(55)	01		SPI043 53 28B	
				TXXRII	00 =			
KA436	TDD	KI	29A	( )	01		TXXR0Q 62 29A	
				TXXR1N	00 =			
KA436	TDD	KN	28A	( )	01		T16MH0 60 28A	
KA436	TDD	KP	30B	TXXR1P	00 =			
KA436	TDD	KP	30A	(57)	01		TXXR0Q 64 30A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017 REV E INDEX TXXR1Q  
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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM DENOMINATOR	FACTOR	COMMENT
KA436	TDD	KQ	29B	TXXR1Q	00 =		REQUEST STROBE COUNTER BIT 1
KA436	TDD	KQ	28B	(55)	01	SPI043 53 28B	
				TXXR2I	00 =		
KA434	TDD	LI	38B	( )	01	TXXR1Q 77 38B	
				TXXR2N	00 =		
KA434	TDD	LN	39B	( )	01	T16MHO 79 39B	
KA434	TDD	LP	37A	TXXR2P	00 =		
KA434	TDD	LP	37B	(76)	01	TXXRCC 75 37B	
KA434	TDD	LQ	38A	TXXR2Q	00 =		REQUEST STROBE COUNTER BIT 2
KA434	TDD	LQ	39A	(78)	01	SPI043 80 39A	
KA439	TQ2	C2	15A	TXX04A	00 =		
KA439	TQ2	C2	16A	(30)	01	TXX800 TXXA40 34 16A 36 17A	
KA433	TD4	C2	16B	TXX05A	00 =		
KA433	TD4	C2	15A	(33)	01	TXX80P TXX82P TXXA0P TXXA1Q 30 15A 31 15B 34 16A 36 17A	
KA439	TQ2	C3	16B	TXX050	00 =		I/O BYTE COUNT=0, STATE=5
KA439	TQ2	C3	14B	(33)	01	TXX05A SPI043 29 14B 31 15B	
KA431	TT3	B3	13B	TX00EA	00 =		OFR RECEIVE DATA PARITY ERROR
KA431	TT3	B3	10B	(27)	01	TX0FRS TX0PPR TXXA50 21 10B 23 11B 25 12B	
KA432	TQ2	B2	09A	TX00RA	00 =		OFR RESET STROBE
KA432	TQ2	B2	10A	(14)	01	TX0FRS TXXB10 18 10A 20 11A	
KA430	TT3	C1	17A	TX000A	00 =		OFR RECEIVE DATA STROBE BYTE 0
KA430	TT3	C1	18A	(36)	01	TX0FRS TXXB20 TXXA50 38 18A 40 19A 42 20A	
KA430	TT3	C2	15B	TX001A	00 =		OFR RECEIVE DATA STROBE BYTE 1
KA430	TT3	C2	14B	(31)	01	TX0FRS TXXB30 TXXA50 29 14B 30 15A 34 16A	

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LOGIC

TM 11-5895-856-34-16/E640-CA-MMI-160/E154 CPU/TO 31W2-2T-122-16  
 UNIT ASSEMBLY NO. 149017  
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CONNECTOR	TEST POINT	GROUP	TEST POINTS AND/OR	EQUATION	TEST TERM	DESIGNATION	FACTOR	COMMENT
KA430	TT3	C3	19B	TX002A	00	=		
KA430	TT3	C3	16B	(39)	01		TX0FRS TXXB40 TXXA50 33 16B 35 17B 37 18B	OFR RECEIVE DATA STRBE BYTE 2
KA430	TT3	D1	23A	TX0D3A	00	=		
KA430	TT3	D1	24A	(30)	01		TX0FRS TXXB50 TXXA50 52 24A 54 25A 56 26A	OFR RECEIVE DATA STRBE BYTE 3
KA430	TT3	B2	09B	TX0FRR	00	=		
KA430	TT3	B2	09A	(19)	01		TX0FRS TXXB0A TXRS0B 14 09A 17 08B 18 10A	
KA426	TQ2	F1	37B	TX0FRS	00	=		
KA426	TQ2	F1	38B	(75)	01		TX0FRR TX0ROA 77 38B 79 39B	OFR COMMAND STORE F/F
KA426	TQ2	B4	13B	TX0FRO	00	=		
KA426	TQ2	B4	11B	(27)	01		TXR09BT SPI039 23 11B 25 12B	
KA439	TQ2	C4	19B	TX0NLO	00	=		
KA439	TQ2	C4	17B	(39)	01		TXASLA TXBSLA 35 17B 37 18B	
KA429	TD4	A2	04B	TX0ROA	00	=		
KA429	TD4	A2	02B	(09)	01		TXCA10 TXDEVA TX0FRO TBUSYA 01 02B 04 04A 05 03B 07 03A	
				TX1MAI	00	=		
KA416	TDD	KI	29A	( )	01		TX1MBP 62 29A	
				TX1MAN	00	=		
KA416	TDD	KN	28A	( )	01		T04MHJ 60 28A	
KA416	TDD	KP	30B	TX1MAP	00	=		
KA416	TDD	KP	30A	(57)	01		SPI038 64 30A	
KA416	TDD	KQ	29B	TX1MAC	00	=		
KA416	TDD	KQ	28B	(55)	01		SPI035 53 28B	SYNC CLOCK BIT 0
				TX1MBI	00	=		
KA417	TDD	KI	29A	( )	01		TX1MAQ 62 29A	

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CONNECTOR	UNIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATION	FACTOR	COMMENT
KA417	TDD	KV	28A	TX1MBN ( )	00	=	T04MHJ 60 28A	
KA417	TDD	KP	30B	TX1MBP (57 )	00	≠	SPI038 64 30A	
KA417	TDD	KQ	29B	TX1MBQ (55 )	00	=		SYNC CLOCK BIT 1
KA417	TDD	KQ	28B		01		SPI035 53 28B	
KA519	TQ2	A3	04B	T002MA (09 )	00	=		MAIN COUNT 100MS
KA519	TQ2	A3	02A		01		TC31BP TC32BQ 03 02A 07 03A	
KA520	TQ2	B1	12A	T002M0 (22 )	00	=		
KA520	TQ2	B1	13A		01		T002MA SPI045 24 13A 26 14A	
KA519	TQ2	A1	05A	T003MA (06 )	00	=		MAIN COUNT 3MS
KA519	TQ2	A1	06A		01		TC32BP TC33BQ 08 06A 10 07A	
KA520	TQ2	A1	05A	T003M0 (06 )	00	=		
KA520	TQ2	A1	06A		01		T003MA SPI052 08 06A 10 07A	
KA412	TQ2	A4	07B	T009SA (15 )	00	=		MAIN COUNT 9S
KA412	TQ2	A4	05B		01		TC63BQ TC64BP 11 05B 13 06B	
KA519	TQ2	A2	02B	T030MA (01 )	00	=		MAIN COUNT 50MS
KA519	TQ2	A2	04A		01		TC42BP TC43BQ 04 04A 05 03B	
KA520	TQ2	A2	02B	T030M0 (01 )	00	=		
KA520	TQ2	A2	04A		01		T030MA SPI052 04 04A 05 03B	
KA433	TD4	F2	35A	T033MA (69 )	00	=		MAIN COUNT 62MS
KA433	TD4	F2	36A		01		TC42BP TC32BP TC33BQ SPI042 71 36A 72 34A 73 36B 74 35B	
KA520	TQ2	A3	04B	T033M0 (09 )	00	=		
KA520	TQ2	A3	02A		01		T033MA SPI052 03 02A 07 03A	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
XA525	TD4	D2	24B	T066MA	00	=		WRITE COUNT 37US
XA525	TD4	D2	23B	(45)	01		YC40BQ TC41BP TC30BQ 43 23B 46 21A 48 22A	
XA519	TQ2	B2	09A	T080UA	00	=		MAIN COUNT 30US
XA519	TQ2	B2	10A	(14)	01		TC14BP TC13BQ 18 10A 20 11A	
XA520	TQ2	B2	09A	T080UO	00	=		
XA520	TQ2	B2	10A	(14)	01		T080UA SPI052 18 10A 20 11A	
XA525	TD4	F2	35A	T082MA	00	=		MAIN COUNT 15MS
XA525	TD4	F2	38A	(69)	01		TC42BQ TC31BQ TC43BP SPI046 71 36A 72 34A 73 36B 74 35B	
XA522	TQ2	F2	34A	T082MO	00	=		
XA522	TQ2	F2	38A	(72)	01		T082MA SPI053 71 36A 73 36B	
XA527	TS8	F1	37A	T198UA	00	=		WRITE COUNT 15BUS
XA527	TS8	F1	38A	(76)	01		TC90BP TC91BQ TC83BQ TC84BP TC72BQ TC73BP SPI056 SPI055 71 36A 72 34A 73 36B 74 35B 75 37B 77 38B 78 38A 79 39B	
XA522	TQ2	F1	37B	T198UO	00	=		
XA522	TQ2	F1	38B	(75)	01		T198UA SPI053 77 38B 79 39B	
XA407	TQ2	D3	24B	T200MA	00	=		MAIN COUNT 500MS
XA407	TQ2	D3	22B	(45)	01		TC51BP TC52BQ 41 22B 43 23B	
XA520	TQ2	A4	07B	T200MO	00	=		
XA520	TQ2	A4	05B	(15)	01		T200MA SPI052 11 05B 13 06B	
XA519	TQ2	A4	07B	T300MA	00	=		MAIN COUNT 300MS
XA519	TQ2	A4	05B	(15)	01		TC52BP TC53BQ 11 05B 13 06B	
XA527	TS8	E1	31B	T399UA	00	=		WRITE COUNT 319US
XA527	TS8	E1	29B	(59)	01		TC90BQ TC91BP TC83BQ TC84BP TC73BQ TC74BP SPI055 SPI053 55 29B 60 28A 61 32B 62 29A 64 30A 66 31A 68 32A 70 33A	
XA523	TQ2	F3	35A	T399UO	00	=		
XA523	TQ2	F3	34B	(69)	01		T399UA SPI053 65 34B 74 35B	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERN	DESIGNATOR	FACTOR	COMMENT
XA505	TQ2	A1	05A	UBSY1A	00	=		
XA505	TQ2	A1	08A	(76)	01		TDYRSQ YEOTOS 08 06A 10 07A	
XA545	DCF	A5	08B	UBOT3DX4	00	=		BOT 3 RECEIVER
XA545	DCF	A5	09A	(14)	01		SPI059 06 05A	
XA545	DCF	A6	07A	UBOT30X	00	=		
XA545	DCF	A6	08A	(10)	01		SPI045 08 06A	
XA545	DCF	A7	02A	UBOT4DX4	00	=		BOT 4 RECEIVER
XA545	DCF	A7	03A	(01)	01		SPI059 06 05A	
XA545	DCF	A8	03A	UBOT40X	00	=		
XA545	DCF	A8	04A	(03)	01		SPI047 04 04A	
XA430	TT3	D2	23B	UEBOCA	00	=		
XA430	TT3	D2	22B	(43)	01		TTAS10 TXR0CR TXDV1B 41 22B 46 21A 48 22A	
XA430	TT3	E2	29B	UEB1CA	00	=		
XA430	TT3	E2	28B	(55)	01		TTAS10 TXR1CR TXDV1B 53 28B 60 28A 62 29A	
XA430	TT3	E3	33B	UEB2CA	00	=		
XA430	TT3	E3	30B	(63)	01		TTAS10 TXR2CR TXDV1B 57 30B 59 31B 61 32B	
XA430	TT3	F3	39A	UEB3CA	00	=		
XA430	TT3	F3	35A	(80)	01		TTAS10 TXR3CR TXDV1B 69 35A 76 37A 78 38A	
XA524	TT3	B2	09B	UEOT1R	00	=		
XA524	TT3	B2	09A	(19)	01		UEOT1S UEOT3A YEOTOS 14 09A 17 08B 18 10A	
XA523	TQ2	B2	09A	UEOT1S	00	=		FOT COUNTER BIT 1
XA523	TQ2	B2	10A	(14)	01		UEOT1R UEOT2A 18 10A 20 11A	
XA524	TT3	B3	13B	UEOT2A	00	=		
XA524	TT3	B3	10B	(27)	01		YEOTOS UEOT2R TSCL1B 21 10B 23 11B 25 12B	



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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERN	REGUL	FACTOR	COMMENT
XA522	TQ2	B4	13B	UEOT2R	00	=		
XA522	TQ2	B4	11B	(27)	01		UEOT2S TEOTOS 23 11B 25 12B	
XA523	TQ2	B4	13B	UEOT2S	00	=		EOT COUNTER BIT 2
XA523	TQ2	B4	11B	(27)	01		UEOT2R UEOT4A 23 11B 25 12B	
XA522	TQ2	B1	12A	UEOT3A	00	=		
XA522	TQ2	B1	13A	(22)	01		UEOT2S TSCL19 24 13A 26 14A	
XA545	DCF	B5	16A	UEOT3DX4	00	=		EOT 3 RECEIVER
XA545	DCF	B5	13A	(41)	01		SPI059 36 13A	
XA545	DCF	B6	15A	UEOT30X	00	=		
XA545	DCF	B6	14A	(40)	01		SPI045 38 14A	
XA522	TQ2	B2	09A	UEOT4A	00	=		
XA522	TQ2	B2	10A	(14)	01		UEOT1S TSCL3B 18 10A 20 11A	
XA545	DCF	B7	10A	UEOT4DX4	00	=		EOT 4 RECEIVER
XA545	DCF	B7	13A	(23)	01		SPI059 36 13A	
XA545	DCF	B8	11A	UEOT40X	00	=		
XA545	DCF	B8	12A	(30)	01		SPI047 34 12A	
XA424	MUX	C1	17A	UFPRX1X	00	=		FILE PROTECT MULTIPLEXER
XA424	MUX	C1	16B	(36)	01		YFPR10X TADSA0X UFPR30X SPI038 UFPR40X SPI039 SPI040 SPI035 35 16B 37 17B 39 18B 41 19B 43 22B 45 23B 47 23A 50 24A	
XA424	MUX	C2	18A	UFPRX2X	00	=		
XA424	MUX	C2	21A	(38)	01		YTS2BS TTS3BS TTS4BS TXGN6A 46 21A 42 20A 40 19A 48 22A	
XA545	DCF	C5	31B	UFPR3DX4	00	=		FILE PROTECT 3 RECEIVER
XA545	DCF	C5	29A	(60)	01		SPI059 52 29A	
XA545	DCF	C6	31A	UFPR30X	00	=		
XA545	DCF	C6	30A	(57)	01		SPI045 54 30A	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	TEST POINT	FACTOR	COMMENT
XA545	DCF	C7	25A	UFPR4DX4	00	=		FILE PROTECT 4 RECEIVER
XA545	DCF	C7	29A	(43)	01		SPI059 52 29A	
XA545	DCF	C8	26A	UFPR40X	00	=		
XA545	DCF	C8	28A	(48)	01		SPI047 50 28A	
XA509	TT3	E1	30A	UINT7A	00	=		
XA509	TT3	E1	31A	(64)	01		TXGN2A YDIRIS YSCL3B 66 31A 68 32A 70 33A	
XA446	DCF	D1	32B	UMALFDX	00	=		MALFUNCTION RECEIVER
XA446	DCF	D1	36A	(65)	01		SPI049 72 36A	
XA446	DCF	D2	33B	UMALFOX	00	=		
XA446	DCF	D2	34B	(69)	01		SPI044 71 34B	
XA546	DCF	C5	31B	URB5DX4	00	=		READ STATUS RECEIVER
XA546	DCF	C5	29A	(60)	01		SPI059 52 29A	
XA546	DCF	C6	31A	URB50X	00	=		
XA546	DCF	C6	30A	(57)	01		SPI045 54 30A	
XA423	MUX	C1	17A	URDYX1X	00	=		READY MULTIPLEXER
XA423	MUX	C1	16B	(36)	01		TRDY10X URDY20X URDY30X SPI035 URDY40X SPI040 SPI038 SPI039 35 16B 37 17B 39 18B 41 19B 43 22B 45 23B 47 23A 50 24A	
XA423	MUX	C2	18A	URDYX2Y	00	=		
XA423	MUX	C2	21A	(38)	01		YYS28S YYS38S YYS48S TXGN6A 46 21A 42 20A 40 19A 48 22A	
XA546	DCF	D3	37B	URDY2DX4	00	=		READY 2 RECEIVER
XA546	DCF	D3	36A	(78)	01		SPI059 72 36A	
XA546	DCF	D4	36B	URDY20X	00	=		
XA546	DCF	D4	35B	(75)	01		SPI060 73 35B	
XA546	DCF	D5	38B	URDY3DX4	00	=		READY 3 RECEIVER
XA546	DCF	D5	36A	(80)	01		SPI059 72 36A	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
XA546	DCF	D6	38A	URDY30X	00	*		
XA546	DCF	D6	37A	(76)	01		SPI045 74 37A	
XA546	DCF	D7	33A	URDY4DX4	00	=		READY 4 RECEIVER
XA546	DCF	D7	36A	(61)	01		SPI059 72 36A	
XA546	DCF	D8	34A	URDY40X	00	=		
XA546	DCF	D8	35A	(68)	01		SPI047 70 35A	
XA545	DCF	D5	38B	UREW3DX4	00	=		REWINDING 3 RECEIVER
XA545	DCF	D5	36A	(80)	01		SPI059 72 36A	
XA545	DCF	D6	38A	UREW30X	00	=		
XA545	DCF	D6	37A	(76)	01		SPI045 74 37A	
XA545	DCF	D7	33A	UREW4DX4	00	=		REWINDING 4 RECEIVER
XA545	DCF	D7	36A	(61)	01		SPI059 72 36A	
XA545	DCF	D8	34A	UREW40X	00	=		
XA545	DCF	D8	35A	(68)	01		SPI047 70 35A	
XA517	TQ2	A3	04B	URRS00	00	=		
XA517	TQ2	A3	02A	(09)	01		UWRT8A TXRS2B 03 02A 07 03A	
XA517	TQ2	A4	07B	URRS10	00	=		
XA517	TQ2	A4	05B	(15)	01		UWRT9A TXRS2B 11 05B 13 06B	
XA506	TQ2	A3	04B	URUN1A	00	=		
XA506	TQ2	A3	02A	(09)	01		YDIRIS YEOT10X 03 02A 07 03A	
XA522	TQ2	A1	05A	URW1CA	00	=		
XA522	TQ2	A1	06A	(06)	01		YTS1BS YREW10X 08 06A 10 07A	
XA522	TQ2	A2	02B	URW2CA	00	=		
XA522	TQ2	A2	04A	(01)	01		YTS2BS YADS80X 04 04A 05 03B	

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CONNECTOR	CONNECTOR TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIGNATOR	FACTOR	COMMENT
XA522	TQ2	A3	04B	URW3CA	00	=		
XA522	TQ2	A3	02A	(09 )	01		YTS3BS UREW3OX 03 02A 07 03A	
XA522	TQ2	A4	07B	URW4CA	00	=		
XA522	TQ2	A4	05B	(15 )	01		YTS4BS UREW4OX 11 05B 13 06B	
XA511	TQ2	F4	39A	USTP50	00	=		
XA511	TQ2	F4	37A	(80 )	01		YSNC0S YBUSYS 76 37A 78 38A	
XA546	DCF	C7	25A	UWDBSDX4	00	=		WRITE STATUS RECEIVER
XA546	DCF	C7	29A	(43 )	01		SPI059 52 29A	
XA546	DCF	C8	26A	UWDBSOX	00	=		
XA546	DCF	C8	28A	(48 )	01		SPI047 50 28A	
XA512	TQ2	F3	35A	UWDDG0	00	=		
XA512	TQ2	F3	34B	(69 )	01		UW4BCA UW5BCA 65 34B 74 35B	
XA512	TQ2	F4	39A	UWDDH0	00	=		
XA512	TQ2	F4	37A	(80 )	01		UW4BCA UW5BCA 76 37A 78 38A	
XA443	FLD	D4	27B	UWLCPD	00	=		TWDBPB4 BUSS
XA443	FLD	D4	25B	(51 )	01		UWDDH0 UWLCPQ 47 25B 49 26B	
XA540	EOR	B3	14A	UWLCPER	00	=		
XA540	EOR	B3	13A	(25 )	01		YW07BPR UWLCPQ 26 13A 24 12A	
				UWLCPI	00	=		
XA539	TDD	CI	13A	( )	01		UWLCPER 24 13A	
				UWLCPN	00	=		
XA539	TDD	CN	14A	( )	01		UWLK00 26 14A	
XA539	TDD	CP	11B	UWLCPP	00	=		
XA539	TDD	CP	12A	(23 )	01		SPI065 22 12A	

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CONNECTOR	ENCLAVE TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TEST TERM	DESIGNATION	FACTOR	COMMENT
XA539	TDD	CQ	12B	UWLCPO	00 =			
XA539	TDD	CQ	13B	(25)	01		UWLSOA 27 13B	
XA443	TLD	E1	31A	UWLCOD	00 =			
XA443	TLD	E1	32A	(66)	01		UWDDGO UWLCOQ 68 32A 70 33A	TWDB084 BUSS
XA540	EOR	B4	11A	UWLCOER	00 =			
XA540	EOR	B4	10A	(22)	01		YWOODTA UWLCOQ 20 10A 18 09A	
				UWLCOI	00 =			
XA539	TDD	E1	19A	( )	01		UWLCOER 40 19A	
				UWLCON	00 =			
XA539	TDD	EN	20A	( )	01		UWLKOO 42 20A	
XA539	TDD	EP	17B	UWLCOP	00 =			
XA539	TDD	EP	18A	(35)	01		SPI065 38 18A	
XA539	TDD	EQ	18B	UWLCOQ	00 =			
XA539	TDD	EQ	19B	(37)	01		UWLSOA 39 19B	
XA443	TLD	E2	28A	UWLCID	00 =			
XA443	TLD	E2	29A	(60)	01		UWDDGO UWLCIQ 62 29A 64 30A	TWDB184 BUSS
XA540	EOR	C1	16B	UWLCIER	00 =			
XA540	EOR	C1	15B	(33)	01		YWOODTB UWLCIQ 31 15B 29 14B	
				UWLCII	00 =			
XA539	TDD	FI	16A	( )	01		UWLCIER 34 16A	
				UWLCIN	00 =			
XA539	TDD	FN	15A	( )	01		UWLKOO 30 15A	
XA539	TDD	FP	16B	UWLCIP	00 =			
XA539	TDD	FP	17A	(33)	01		SPI065 36 17A	

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CONNECTOR	UNITE TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIG NATOR	FACTOR	COMMENT
XA539	TDD	FQ	15B	UWLC1Q	00	=		
XA539	TDD	FQ	14B	(31)	01		UWLS0A 29 14B	
XA443	TLD	E3	30B	UWLC2D	00	=		
XA443	TLD	E3	28B	(57)	01		UWDDG0 UWLC2Q 53 28B 55 29B	TWDB2B4 BUSS
XA540	EOR	C2	19B	UWLC2ER	00	=		
XA540	EOR	C2	18B	(39)	01		TWDDYC UWLC2Q 37 18B 35 17B	
				UWLC2I	00	=		
XA539	TDD	G1	25A	( )	01		UWLC2ER 54 25A	
				UWLC2N	00	=		
XA539	TDD	GN	26A	( )	01		UWLR00 56 26A	
XA539	TDD	GP	25B	UWLC2P	00	=		
XA539	TDD	GP	24A	(47)	01		SPI065 52 24A	
XA539	TDD	GQ	26B	UWLC2Q	00	=		
XA539	TDD	GQ	27B	(49)	01		UWLS0A 51 27B	
XA443	TLD	E4	33B	UWLC3D	00	=		
XA443	TLD	E4	31B	(63)	01		UWDDG0 UWLC3Q 59 31B 61 32B	TWDB3B4 BUSS
XA540	EOR	C3	20A	UWLC3ER	00	=		
XA540	EOR	C3	19A	(42)	01		TWDDYD UWLC3Q 40 19A 38 18A	
				UWLC3I	00	=		
XA539	TDD	HI	22A	( )	01		UWLC3ER 48 22A	
				UWLC3N	00	=		
XA539	TDD	HN	21A	( )	01		UWLR00 46 21A	
XA539	TDD	HP	24B	UWLC3P	00	=		
XA539	TDD	HP	23A	(45)	01		SPI065 50 23A	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	REGIO DATA	FACTOR	COMMENT
XA539	TDD	HQ	23B	UWLC3Q	00	=		
XA539	TDD	HQ	22B	(43)	01		UWLSOA 41 22B	
XA443	TLD	F1	37B	UWLC4D	00	=		TWDB4B4 BUSS
XA443	TLD	F1	38B	(75)	01		UWDDHO UWLC4Q 77 38B 79 39B	
XA540	EOR	C4	17A	UWLC4ER	00	=		
XA540	EOR	C4	16A	(36)	01		TW04DTA UWLC4Q 34 16A 30 15A	
				UWLC4I	00	=		
XA539	TDD	J1	32A	( )	01		UWLC4ER 68 32A	
				UWLC4N	00	=		
XA539	TDD	JN	33A	( )	01		UWLC4I 70 33A	
XA539	TDD	JP	31B	UWLC4P	00	=		
XA539	TDD	JP	31A	(59)	01		SPI065 66 31A	
XA539	TDD	JQ	32B	UWLC4Q	00	=		
XA539	TDD	JQ	33B	(61)	01		UWLSOA 63 33B	
XA443	TLD	F2	34A	UWLC5D	00	=		TWDB5B4 BUSS
XA443	TLD	F2	36A	(72)	01		UWDDHO UWLC5Q 71 36A 73 36B	
XA540	EOR	D1	24B	UWLC5ER	00	=		
XA540	EOR	D1	23B	(45)	01		TW04DTB UWLC5Q 43 23B 41 22B	
				UWLC5I	00	=		
XA539	TDD	K1	29A	( )	01		UWLC5ER 62 29A	
				UWLC5N	00	=		
XA539	TDD	KN	28A	( )	01		UWLC4I 60 28A	
XA539	TDD	KP	30B	UWLC5P	00	=		
XA539	TDD	KP	30A	(57)	01		SPI065 64 30A	

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CONNECTOR	CIRCUIT TYPE	REG	TEST POINTS AND/OR	EQUATION	TERN	DESIGNATOR	FACTOR	COMMENT
XA539	TDD	KQ	29B	UWLC5Q	00	=		
XA539	YDD	KC	28B	(55)	01		UWLS0A 53 28B	
XA443	TLD	F3	35A	UWLC6D	00	=		
XA443	TLD	F3	34B	(69)	01		UWDDH0 UWLC6Q 65 34B 74 35B	TWDB6B4 BUSS
XA540	EOR	D2	27B	UWLC6ER	00	=		
XA540	EOR	D2	26B	(51)	01		TW040TC UWLC6Q 49 26B 47 25B	
				UWLC6I	00	=		
XA539	TDD	LI	38B	( )	01		UWLC6ER 77 38B	
				UWLC6N	00	=		
XA539	TDD	LN	39B	( )	01		UWLR10 79 39B	
XA539	TDD	LP	37A	UWLC6P	00	=		
XA539	TDD	LP	37B	(76)	01		SPI065 75 37B	
XA539	TDD	LQ	38A	UWLC6Q	00	=		
XA539	TDD	LQ	39A	(78)	01		UWLS0A 80 39A	
XA443	TLD	F4	39A	UWLC7D	00	=		
XA443	TLD	F4	37A	(80)	01		UWDDH0 UWLC7Q 76 37A 78 38A	TWDB7B4 BUSS
XA540	EOR	D3	26A	UWLC7ER	00	=		
XA540	EOR	D3	25A	(56)	01		TW040TD UWLC7Q 54 25A 52 24A	
				UWLC7I	00	=		
XA539	TDD	MI	36A	( )	01		UWLC7ER 71 36A	
				UWLC7N	00	=		
XA539	TDD	MN	34A	( )	01		UWLR10 72 34A	
XA539	TDD	MP	35A	UWLC7P	00	=		
XA539	TDD	MP	36B	(69)	01		SPI065 73 36B	



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CONNECTOR	TEST POINT	GROUP	TEST POINTS AND/OR	EQUATION	TEST	DESIGNATION	FACTOR	COMMENT
XA539	TDD	MQ	35B	UWLC7Q	00 =			
XA539	TDD	MQ	34B	(74)	01		UWLSOA 65 34B	
XA516	TQ2	D4	27B	UWLKOA	00 =			
XA516	TQ2	D4	25B	(51)	01		TWR12S TWDBCO 47 25B 49 26B	
XA517	TQ2	C3	14B	UWLK00	00 =			
XA517	TQ2	C3	14B	(33)	01		UWLKOA SPI052 29 14B 31 15B	
XA517	TQ2	C4	19B	UWLK10	00 =			
XA517	TQ2	C4	17B	(39)	01		UWLKOA SPI052 35 17B 37 18B	
XA517	TQ2	C2	15A	UWLSOA	00 =			
XA517	TQ2	C2	16A	(30)	01		UWLS00 SPI052 34 16A 36 17A	
XA516	TQ2	D3	24B	UWLS00	00 =			
XA516	TQ2	D3	22B	(45)	01		TWENOA SPI052 41 22B 43 23B	
XA518	TT3	F3	39A	UWRICO	00 =			
XA518	TT3	F3	35A	(80)	01		TWR12R UWR10A TLCC1R 69 35A 76 37A 78 38A	
XA512	TQ2	E2	28A	UWR10A	00 =			
XA512	TQ2	E2	29A	(60)	01		TWR1TQ TWRG1S 62 29A 64 30A	
XA518	TT3	A3	07B	UWRT8A	00 =			
XA518	TT3	A3	04B	(15)	01		TWRT30 TXR2CR TXDV1B 09 04B 11 05B 13 06B	
XA518	TT3	B1	11A	UWRT9A	00 =			
XA518	TT3	B1	12A	(20)	01		TWRT30 TXR3CR TXDV1B 22 12A 24 13A 26 14A	
XA518	TT3	E2	29B	UW4BCA	00 =			
XA518	TT3	E2	28B	(55)	01		TWR1TQ TWRG1S TXGN2A 53 28B 60 28A 62 29A	
XA524	TT3	F1	36B	UW5BCA	00 =			
XA524	TT3	F1	37B	(73)	01		TWR1TQ TLCC2S TXGN2A 75 37B 77 38B 79 39B	

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM DESIGNATION	FACTOR	COMMENT
XA525	T04	D2	23A	U037UA ( )	00 = 01	TC31BP 50 23A	
XA522	TQ2	F4	39A	U078U0 (80 )	00 = 01	SPI065 SPI053 76 37A 78 38A	
XA502	TS8	E1	31B	U1658A (59 )	00 = 01	WRITE COUNT 36-38US TC90BP TC91BQ TC80BP TC84BP TC70BQ TC73BP SPI044 SPI049 55 29B 60 28A 61 32B 62 29A 64 30A 66 31A 68 32A 70 33A	
XA523	TQ2	F4	39A	U16580 (80 )	00 = 01	U1658A SPI053 76 37A 78 38A	
XA527	TS8	D1	25B	U3618A (47 )	00 = 01	WRITE COUNT 16-18US TC90BQ TC91BP TC80BP TC81BQ TC70BQ TC73BP SPI053 SPI055 43 23B 46 21A 48 22A 49 26B 50 23A 52 24A 54 25A 56 26A	
XA523	TQ2	F2	34A	U36180 (72 )	00 = 01	U3618A SPI053 71 36A 73 36B	

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