

IDENTIFICATION

PRODUCT CODE: AC-F055D-MC
PRODUCT NAME: CXQUBD0 DECX11 CROSS REF MAN
PRODUCT DATE: JUNE 1983
MAINTAINER: DEC/X11 SUPPORT GROUP

INFORMATION IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY DIGITAL EQUIPMENT CORPORATION. DIGITAL EQUIPMENT CORPORATION ASSUMES NO RESPONSIBILITY FOR ANY ERRORS THAT MAY APPEAR IN THIS DOCUMENT.

NO RESPONSIBILITY IS ASSUMED FOR THE USE OR RELIABILITY OF SOFTWARE ON EQUIPMENT THAT IS NOT SUPPLIED BY DIGITAL OR ITS AFFILIATED COMPANIES.

COPYRIGHT (C): 1973, 1983 BY DIGITAL EQUIPMENT CORPORATION

THE FOLLOWING ARE TRADEMARKS OF DIGITAL EQUIPMENT CORPORATION:

DIGITAL	PDP	UNIBUS	MASSBUS
DEC	DECUS	DECTAPE	DECX/11

1.0	DEC/X11 NAMING CONVENTIONS	4
1.1	Monitor Naming	4
1.2	Device/Option Module Naming	4
1.3	File Naming	5
2.0	REVIEW OF BUILD PROCEDURE	6
2.1	RTE Pre-Build Requirements	6
2.1.1	Preparing The System Configuration Worksheet	6
2.2	Selecting An RTE File Name	8
2.3	Selecting The Monitor Program	8
2.4	Selecting The Device/Option Modules	9
3.0	CROSS-REFERENCE DATA	10
3.1	SUMMARY OF DEC/X11 MONITOR CAPABILITIES	10
3.1.1	DEC/X11 Monitor Capabilities Summary	12
4.0	HARDWARE AND TEST MODULE CROSS-REFERENCE	14
4.1	Device Option List	14
5.0	DEC/X11 DEVICE/OPTION MODULE ABSTRACTS	18
5.1	Abstracts List	19
6.0	RUNNING DEC/X11 IN SPECIAL ENVIRONMENTS	97
6.1	Running RTE In XXDP+ Chain Mode	97
6.2	Running RTE Under APT Control	99
6.2.1	Configuring For APT	99
6.2.2	APT Interface Locations	100
6.3	Error Reporting Under APT	101

PREFACE

DEC/X11 Cross-Reference Manual provides the user with all the cross-reference material necessary to build Runtime Exerciser (RTE) programs for PDP-11 systems. A sample build of an RTE is included at the end of this document.

- . Chapter 1 reviews the DEC/X11 build procedure and includes conventions and procedures for choosing or naming the various components of DEC/X11 software. A sample configuration worksheet is included, and use of the cross-reference data is explained.
- . Chapter 2 contains the cross-reference data, including a summary of monitor capabilities, a cross-reference of device/option names to test module names, and complete abstracts for all modules (including tested devices, default and required parameters, and criteria for switch register settings).
- . Chapter 3 contains information on running DECX in two special environments, XXDP+ Chain Mode and APT.

Users of the DEC/X11 Cross-Reference Manual should be familiar with the information contained in the following documents.

DEC/X11 User's Manual (Order No. AC-F053?-MC)

XXDP+ User's Manual (Order No. AC-F348?-MC)

INTRODUCTION

This chapter outlines the DEC/X11 software naming conventions and reviews the RTE build procedure, guiding the user in the step-by-step preparation of a system configuration worksheet, including instructions for use of the cross-reference data presented in Chapter 2.

1.0 DEC/X11 NAMING CONVENTIONS

The naming of DEC/X11 software must comply with the conventions and standards outlined in the following sections.

1.1 Monitor Naming

Each monitor name consists of a single alphabetic character (i.e., A, B, C, etc.). All valid monitors are listed in Table 2-1.

1.2 Device/Option Module Naming

Each module name consists of four alphabetic characters of the following description:

Module Name: ddmv

dd - Two-character device/option name

m - Module identifier (to distinguish this module from others that may exist for the same device/option)

v - Revision level

1.3 File Naming

Each file name consists of a six-character descriptor and a three-character file extension code. File names appear on both paper tape and mass media for file identification (e.g., monitor, library, RTE module, etc.).

File Name: sddmvp.ext

S - Software identifier

X - DEC/X11 software

E - RTE

C - Configurator

M - Map

ddmv - Module name (see section 1.2)

p - Patch level (0-9, A-Z)

.ext - File extension code

.OBJ - Object file .LIB - Library file .BIN
or .BIC - RTE file (.BIC for XXDP+ Chain
Mode)

1.4

Package Code Naming

The package code identifies a diagnostic software package as DEC/X11 software.

Package Code: ZZ-CXddmvp

ZZ - Diagnostic software identifier

C - PDP-11 CPU identifier

X - DEC/X11 software identifier

ddmv - Module name (see section 1.2)

p - Patch level (0-9, A-Z)

2.0 REVIEW OF BUILD PROCEDURE

This section reviews the basic build requirements, which are also described in the DEC/X11 User's Manual. A sample configuration is used to guide the user on a step-by-step basis through the procedures for completing a system configuration worksheet with all the necessary cross-reference data.

2.1 RTE Pre-Build Requirements

Before beginning, the user should refer to relevant hardware documentation and list the major components, options, and parameters of the system to be tested, including the following items:

- . The PDP-11 CPU type and memory size
- . All available CPU memory options (KE, cache memory, etc.)
- . All available devices and options (clock, floating point hardware, etc.)
- . All device parameters (DVA, VCT, baud rates, etc.)

With this data, the user is ready to cross-reference the known hardware data with the DEC/X11 software data contained in Chapter 2 and prepare a DEC/X11 system configuration worksheet.

2.1.1 Preparing The System Configuration Worksheet -

In Figure 1-1, a completed worksheet is shown for a pre-defined RTE file (EXERR1.BIN), in which the hardware data is cross-referenced to define the monitor, device/option modules, and parameters for the build.

The worksheet entries reflect the following system configuration:

1. A PDP-11/34 CPU with 64K of memory
2. A full range of memory options (KT, cache memory, parity checking, ECC)
3. Ten device/options.

With this list of known data, the user is ready to select the RTE file name, the monitor program, and the test module names.

DEC/X11 System Configuration Worksheet

Selected DEC/X11 Monitor For Listed

CPU and CPU options: C

FILE: EXERR1.BIN DATE: 20 SEPT 78

DEVICE	MOD	R	DVA	VCT	BR1	BR2	DVC	SR1	SR2	SR3	SR4
-----	---	-	---	---	---	---	---	---	---	---	---
KW11-L	KWA	?	177546*	100*	6*	0*	1*	4			
LS11/LV01	LPA	?	177514*	200*	4*	0*	1*	10000			
RX11/RX01	RXA	?	177170*	264*	5*	0*	2*				
TMB11/TS03	TMA	?	172520*	224*	5*	0*	1*				
RK11-D/RK05	RKA	?	177400*	220*	5*	0*	1*				
RK611/RK06	RKB	?	177400*	210*	5*	0*	1*				
EIS	CPB	?									
11/34 Instr.	CPA	?									
FP11-A	FPB	?									

* Software default values

? Current revision levels of option modules

Figure 1-1. Sample Configuration Worksheet

2.2 Selecting An RTE File Name

In the sample worksheet, the user has chosen an RTE file name in accordance with the naming conventions outlined in section 1.3.

Sample RTE File Name: EXERR1.BIN

E - DEC/X11 software identifier for an RTE

XERR - RTE module name

1 - Current patch level

.BIN - File extension code

The next step in the preparation of a worksheet is the selection of an appropriate monitor.

2.3 Selecting The Monitor Program

In the sample worksheet, the user has selected Monitor C, based on CPU type, memory size, and the types of memory options available.

The data on which the selection of Monitor C was based is the following:

1. A PDP-11/34 CPU
2. A memory size of 64K
3. Available memory options:
 - . Memory Management (KT)
 - . Cache memory
 - . Memory parity checking and ECC

To make the appropriate monitor determination, users should refer to Table 2-1, where the capabilities of each monitor are clearly delineated.

2.4 Selecting The Device/Option Modules

The final step in the preparation of the worksheet is the listing of all device names, module names, and parameters. First the user should list the device/option names in the left-most column.

Next, the second column can be filled with the appropriate DEC/X11 test module names by referring to section 4.1, where device/option names are cross-referenced to their corresponding test module names.

Thus, in the example, device and module names are associated as follows:

DEVICE	MOD
-----	---
KW11-L	KWA
LS11/LV01	LPA
etc.	etc.
:	:
:	:

Using the DEC/X11 module names, the user can reference the device/option module abstracts (section 5.1) to derive the module revision level (column "R"), the default or required parameters, and the switch register settings (which permit the specification of additional capabilities, such as the provision of a line clock test message at a pre-defined time).

As an example, in the sample worksheet, switch register 1 is coded as follows:

SRI	MEANING
---	-----
4	Permits test message every 15 minutes.
010000	Indicates 80-column, 64-character printer, and two passes between pauses.

The user should be aware that parameter values specified in section 5.1 are subject to change and should be checked against any current hardware documentation.

3.0 CROSS-REFERENCE DATA

This chapter contains three types of cross-reference data:

- . A table of monitor capabilities (section 3.1)
- . A cross-reference of hardware device/option modules to their corresponding DEC/X11 test modules (section 4.1)
- . Abstracts of all device/option modules (arranged alphabetically by the DEC/X11 test module names derived in section 1.2), including parameters and switch register settings (section 5.1).

3.1 SUMMARY OF DEC/X11 MONITOR CAPABILITIES

There are six basic monitor types (A,B,C,D,E,Q) available to DEC/X11 users. However, monitors B, C, D,E, and Q have been expanded to accommodate APT processing, and as such have been renamed (F,G,H,I,R). (Monitors F, G, H, I and R must be used only with APT systems.)

Thus, there is a total of twelve monitors available to DEC/X11 users, as summarized below.

- A,B - Non-KT (memory management) single-processor monitors (up to 28K words).
- C,D - Single-processor monitors with KT (up to 124K words).
- E - Single-processor monitors with KT (up to 2048K words).
- Q - 22 bit LSI bus structure (up to 2048K words).
- F - Non-KT APT single-processor monitor (up to 28K words).
- G,H - APT single-processor monitors with KT (up to 124K words).
- I - APT single-processor monitors with KT (up to 2048K words).
- R - APT 22 bit LSI bus structure (up to 2048K words).

In order to cross-reference a PDP-11 processor to an appropriate monitor, the user must be familiar with the hardware configuration and know the following characteristics:

1. PDP-11 CPU type (e.g., 11/23, 11/34, 11/44, 11/60, 11/70)
2. Available memory size in these ranges:
 - (a) Up to 28K words
 - (b) Up to 124K words
 - (c) Up to 2048K words
3. Available memory options (e.g., Memory Management (KT), cache memory, memory parity checking, ECC).
4. Available devices and options (e.g., line printer, line clock, etc.).
5. Special operations (e.g., error logging, 22-bit addressing, etc.).

Since one or more of these characteristics may provide the key to monitor selection, each monitor is listed with its capabilities in TABLE 2-1. An "x" indicates which commands and capabilities are supported by each monitor. (For details on the use of the commands, refer to the DEC/X11 User's Manual).

3.1.1 DEC/X11 Monitor Capabilities Summary -

COMMANDS & CAPABILITIES	A	B(F)	C(G)	D(H)	E(I)	Q(R)
COFF (CACHE MEMORY OFF)			X	X	X	
CON (CACHE MEMORY ON)			X	X	X	
DES (DESELECT MODULE)	X	X	X	X	X	X
EXAM (EXAMINE LOCATION)		X	X	X	X	X
EXIT (EXIT TO MONITOR)			X	X	X	X
FILL (FILL CHAR./COUNT)	X	X	X	X	X	X
LPOFF (LINE PRINTER OFF)		X	X	X	X	X
LPON (LINE PRINTER ON)		X	X	X	X	X
MAP (OUTPUT MAP)		X	X	X	X	X
MOD (MODIFY LOCATION)	X	X	X	X	X	X
MOFF (UNIBUS MAP OFF)					X	
MON (UNIBUS MAP ON)					X	
22ON (22 BIT ADDRESSING ON)						X
22OFF (22 BIT ADDRESSING OFF)						X
POFF (PARITY CHECKING OFF)		X	X	X	X	X
PON (PARITY CHECKING ON)		X	X	X	X	X
ROTOFF (BUFFER ROTATION OFF)		X	X	X	X	X
ROTON (BUFFER ROTATION ON)		X	X	X	X	X
RUN (START RUN MODE)	X	X	X	X	X	X
RUNL (START RUN LOCKED MODE)			X	X	X	X
SEL (SELECT MODULE)	X	X	X	X	X	X
SUM (OUTPUT SUMMARY)	X	X	X	X	X	X
SWR (MODIFY SWITCH REG.)	X	X	X	X	X	X

COMMANDS & CAPABILITIES	A	B(F)	C(G)	D(H)	E(I)	Q(R)
NPR TRANSFERS IN 28K WORDS	x	x	x	x	x	x
NPR TRANSFERS IN 124K WORDS			x	x	x	x
NPR TRANSFERS IN 2048K WORDS					x	x
MEMORY MANAGEMENT (KT)			x	x	x	x
BAD VECTOR SERVICE			x	x	x	x
SYSTEM CLOCK		x	x	x	x	x
RTE RELOCATION			x	x	x	x
11/60 ERROR LOGGING				x		
11/44 ERROR LOGGING					x	
11/70 ERROR LOGGING					x	
22-BIT ADDRESSING					x	x

Table 2-1 (cont). DEC/X11 Monitor Capabilities Summary

NOTES: 1. NPR = Non-processor request.

2. POFF and PON control ECC as well as parity. The following table summarizes the POFF and PON error trapping and correcting capabilities for PDP-11/60's and other CPUs.

	PDP-11/60			All other CPU's		
	Single- Bit Error Trapping	Double- Bit Error Trapping	Single- Bit Error Correction	Single- Bit Error Trapping	Double- Bit Error Trapping	Single- Bit Error Correction
POFF	No	No	Yes	No	No	Yes
PON	No	Yes	Yes	Yes	Yes	No

4.0 HARDWARE AND TEST MODULE CROSS-REFERENCE

This section provides an alphabetized listing of hardware device/option names, cross referenced to their corresponding DEC/11 test module names. Once the name of a test module has been found, it can be used to find an alphabetically arranged abstract of the module, which provides a complete summary of its use (see section 2.3).

4.1 Device Option List

DEVICE/OPTION -----	TEST MODULE -----
AA11/VT01-A	AAA
AA11-K	AAB
AAV-11	AAC
AD01-D	ADA
AD11-K	ADB
ADV-11	ADC
AFC11	AFA
AR-11	ARA
BDV11/KDF11-B	BMD
BM792-YA	BMC
BM873-YA, YB, YC, YD	BMC
BM873-YF	BME
M873-YH	BMF
BM873-YJ	BMG
BM873-SC, SE, SF	BMC
BUS EXERCISER (Q-BUS)	BTC
BUS EXERCISER (UNIBUS)	BTA, BTB
CB-11 (SCAN)	CBA
CB-11 (DISTRIBUTE)	CBB
CB-11	CBC
CD-11	CDA
C.I.S (11/24, 11/44)	CIA
CM-11	CRA
CMS-11K	CMA
CMR-11	CMJ
CR-11	CRA
DC-11	DCA
DH-11	DHA
DJ-11	DJA
DL-11	DLA
DL-11E	DLB
DM11-BA	DMS
DM11-BB	DMB
DMC-11	DMC

Device/Option -----	Test Module -----
DMP-11(MASTER)	DMD
DMP-11(SLAVE)	DME
DMR-11	DMR
DN11	DNA
DP11	DPA
DPV11	DPV
DQ11	DQA
DR11-A	DRA
DR11-B	DRB
DR11-C,DR11-K	DRC
DR11-K	DRD
DR11-L,DR11-M	DRE
DR11-W	DRW
DR70	DRK
DRV11-B	DRF
DRV11-J	DRJ
DTE20	DTA
DU11	DUA
DUP11	DPB
DV11	DVA
DX11	DXA
DZ11	DZA
DZV11	DZB
E.I.S	CPB
FIS(40,LSI)	FPA
FP11-A,B,C,11/60	FPB
FP11-C(40/45)	FPA
GROSS TIMING	KWF
GT40	GTA
IBV11-A	IBA
ICR-11	ICB
ICS-11	ICA
INSTRUCTIONS	CPA
KE11	KEA
KG11	KGA
KIT11D	BBA
KL11	KLA
KMC11	KMC
KMC11-B	KMA
KUV11-AA	KUA
KW11-C	KWG
KW11-K	KWD
KW11-L	KWA
KW11-P	KWB
KW11-W	KWC
KWV11-K	KWE
LK-11	LKA
LP11	LPA

Device/Option -----	Test Module -----
LP20/LP05/LP10	LPF
LPAl1	LPH
LPD	LPE
LPS11/LPS-AD/NP	LPD
LPS11/LPS-KW	LPB
LPS11/LPS-VC	LPC
M7855 BUS TESTER	BEA
M7942-YB	BMI
M9301-YA,B,C,D,E,F,H,J	BMI
M9301-SA,SB	BMC
M9311	BMI
M9312	BMH
M9400	BMC
YA,YC,YH,YK,YN	BMI
ML11-A	MLA
MNCAD	MNA
MNCDA	MND
MNCDI	MDB
MNCDO	MNE
MNCKW	MNC
MR11	BMC
NC11A	NCA
NCV-11A	NCB
PA611 READER	PAA
PA611 PUNCH	PAB
PC11	PCC
PCL-11	PLA
PCS-11	PCS
RA80/UDA50	DUB
RC11/RS64	RCA
RF11	RFA
RH01	RHA
RH11/RH70 SGL PT DSK	RPB
RK11/RK02,03,04,05	RKA
RK611/RK06,07	RKB
RKV11	RKA
RL11/RL01	RLA
RM02/03 RH11/70	RMA
RM03/RH11	RMB
RM02,3,5 RH11/70	RMC
RM02,03,05	RMD
RM80	RNA
RP04,05,06	RMD
RP11	RPA
RS03,RS04/RH11	RSA

Device/Option -----	Test Module -----
RX01	RXA
RX02	RXB
TA11	TAA
TC11	TCA
TM02, TM03	TMB
TE16, TU16, TU16-EK, TU77	
TM11	TMA
TM78	TMD
TR79F	TRA
TS04	TSA
TU58	TUA
UDA-50/RA80	DUB
UDC11	UDA
VS11, VSV11	VSC
VS60	VSA
VSV01	VSF
VT20	VTA
VT20 on DH11	VTB
VTV30-K	VTC
VT30-H	VTV
VTV30-J/H	VTV
XY11	XYA
YA, YB, YC, YF, YH	BMC

5.0 DEC/X11 DEVICE/OPTION MODULE ABSTRACTS

The following pages contain abstracts for all DEC/X11 device/option modules, alphabetically arranged by test module name, as derived from the cross-reference information in section 2.2.

Since the information included in the abstracts is subject to change, the user should check it against current hardware documentation whenever possible.

5.1 Abstracts List

MODULE NAME: AAA
REVISION LEVEL: D
MODULE TYPE: IOMOD
I.D. NUM.: 43
DEVICES TESTED: AA11 CONTROLLER AND A VT01-A DISPLAY
DEFAULT PARAMETERS: DVA-176756 VCT-140 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: AAB
REVISION LEVEL: B
MODULE TYPE: IOMOD
I.D. NUM.: 123
DEVICES TESTED: AA11-K SCOPE CONTROLLER
DEFAULT PARAMETERS: DVA-170416 VCT-360 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: AAC
REVISION LEVEL: B
MODULE TYPE: BKMOD
I.D. NUM.: 140
DEVICES TESTED: AAV11 INTERFACE
DEFAULT PARAMETERS: DVA-170440 VCT-N/A BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: LSI-11
MEANING OF SR1: NONE

MODULE NAME: ADA
REVISION LEVEL: E
MODULE TYPE: IOMOD
I.D. NUM.: 44
DEVICES TESTED: ONE AD01-D A/D CONVERTER
DEFAULT PARAMETERS: DVA-176770 VCT-130 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: MODIFY SR1 AS PER CONVERTER BIT LENGTH
SR1 = 0: DEFAULT - 10 BITS (SPREAD OF 1)
SR1 = 1: 11 OR 12 BITS (SPREAD OF 2)
SR1 = 2: 14 BITS (SPREAD OF 8)

MODULE NAME: ADB
REVISION LEVEL: B
MODULE TYPE: IOMOD
I.D. NUM.: 103
DEVICES TESTED: AD11-K
DEFAULT PARAMETERS: DVA-170400 VCT-340 BR1-6
BR2-4 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE IF SR1 = 1
MEANING OF SR1: BIT0 = 1 ENABLES USE OF KW11-K CLOCK
(KWD MODULE MUST NOT BE SELECTED).
BIT1 = 1 ENABLES TESTING OF CHANNELS
OTHER THAN 0 FOR STABLE INPUT
TESTING.
BIT2 = 1 ENABLES TESTING OF CHANNELS
OTHER THAN 0 FOR NOISE TESTING.

NOTE: IF SR1 BITS 1 OR 2 EQUAL 1, SPECIAL SETUP IS REQUIRED.

MODULE NAME: ADC
REVISION LEVEL: B
MODULE TYPE: IOMOD
I.D. NUM.: 120
DEVICES TESTED: ADV11, AXV11
DEFAULT PARAMETERS: DVA-170400 VCT-400 BR1-6
BR2-4 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE IF SR1=1
MEANING OF SR1: BIT0 = 1 ENABLES CLOCK OPTIONS
(KWE MODULE SHOULD BE DESELECTED)
BIT1 = 1 ALLOWS SAMPLING OTHER CHANNELS
BIT2 = 1 ALLOWS NOISE TESTING FOR OTHER
CHANNELS

NOTE: IF SR1 BITS 1 OR 2 EQUAL 1, SPECIAL SET UP IS REQUIRED

MODULE NAME: AFA
REVISION LEVEL: E
MODULE TYPE: IOMOD
I.D. NUM.: 51
DEVICES TESTED: AFC11 CONVERTER, ALL 8 CHANNELS OF
ANALOG MULTIPLEXER
DEFAULT PARAMETERS: DVA-172570 VCT-134 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: ARA
REVISION LEVEL: B
MODULE TYPE: IOMOD
I.D. NUM.: 133
DEVICES TESTED: AR-11 A/D CONVERTER
DEFAULT PARAMETERS: DVA-1 VCT-1 BR1-6
BR2-4 DVC-1 SR1-0
REQUIRED PARAMETERS: ADDRESS AND VECTOR MUST BE SPECIFIED
MEANING OF SR1: NONE

MODULE NAME: BBA
REVISION LEVEL: B
MODULE TYPE: IOMOD
I.D. NUM.: 62
DEVICES TESTED: KIT11D
DEFAULT PARAMETERS: DVA-1 VCT-1 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: ADDRESS AND VECTOR
MEANING OF SR1: NONE

MODULE NAME: BEA
REVISION LEVEL: B
MODULE TYPE: IOMOD
I.D. NUM.: 73
DEVICES TESTED: M7855 BUS-TESTERS
DEFAULT PARAMETERS: DVA-170000 VCT-510 BR1-7
BR2-6 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: BMC

REVISION LEVEL: N

MODULE TYPE: BKMOD

I.D. NUM.: 13

DEVICES TESTED: BOOTSTRAP ROMS (SPECIFIED BY SR1,
BELOW).

DEFAULT PARAMETERS: DVA-0 VCT-0 BR1-0
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: DVA-ADDR OF FIRST REQUESTED ROM
SR1-INDICATES TYPE OF ROM

MEANING OF SR1: SET CORRESPONDING BITS IN SR1 TO A "1"
FOR THE DESIRED ROM.

GROUP A (BIT 15 MUST BE A ZERO)

BIT0 = YA
BIT1 = YB
BIT2 = MR11
BIT3 = YC
BIT4 = YF
BIT5 = YH
BIT6 = BM873 YA
BIT7 = BM873 YB
BIT8 = BM873 YC
BIT9 = BM873 YD
BIT10 = M9301 YA
BIT11 = M9301 YB
BIT12 = M9301 YC
BIT13 = BM792 YL
BIT14 = M9400 (NOT YH)

GROUP B (BIT 15 MUST BE A ONE)

BIT0 = BM873 SF
BIT1 = BM873 SE
BIT2 = BM873 SC
BIT3 = M9301 SB
BIT4 = M9301 SA
BIT5 = M9301 YD
BIT6 = M9400 YH
BIT7 = M9301 YF
BIT8 = M9301 YH
BIT9 = M9301 YE
BIT10 = M9301 YJ
BIT11 = OPEN
BIT12 = OPEN
BIT13 = OPEN
BIT14 = OPEN

MODULE NAME: BMD
REVISION LEVEL: E
MODULE TYPE: BKMOD
I.D. NUM.: 143
DEVICES TESTED: LSI-11/03, 11/23, 11/23B BDV11,KDF11B
ROMS/EPROMS
DEFAULT PARAMETERS: DVA-177520 VCT-0 BR1-0
BR2-0 DVC-1 SR1-0
ROM ADDRESS: 173000
REQUIRED PARAMETERS: NONE
MEANING OF SR1: BIT0 = 0 TEST 11/03, 11/23
BIT0 = 1 TEST 11/23B

MODULE NAME: BME
REVISION LEVEL: B
MODULE TYPE: BKMOD
I.D. NUM.: 154
DEVICES TESTED: BM873-YF BOOTSTRAP
DEFAULT PARAMETERS: DVA-173000 VCT-0 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: BMF
REVISION LEVEL: B
MODULE TYPE: BKMOD
I.D. NUM.: 155
DEVICES TESTED: BM873-YH
DEFAULT PARAMETERS: DVA-173000 VCT-0 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: BMG
REVISION LEVEL: B
MODULE TYPE: BKMOD
I.D. NUM.: 156
DEVICES TESTED: BM873-YJ
DEFAULT PARAMETERS: DVA-173000 VCT-0 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: BMH

REVISION LEVEL: B

MODULE TYPE: BKMOD

I.D. NUM.: 164

DEVICES TESTED: M9312

DEFAULT PARAMETERS: DVA-0 VCT-0 BR1-0
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: SR1 SETTINGS

MEANING OF SR1: SR1 SETTING FOR CROM:
SR1 = 0 DIAGNOSTIC ROM (ADDR: 173000)
SR1 = 1 BOOT ROM IN E-35 (ADDR: 173000)
SR1 = 2 BOOT ROM IN E-33 (ADDR: 173200)
SR1 = 3 BOOT ROM IN E-34 (ADDR: 173400)
SR1 = 4 BOOT ROM IN E-32 (ADDR: 173600)

MODULE NAME: BMI

REVISION LEVEL: A

MODULE TYPE: BKMOD

I.D. NUM.: 114

DEVICES TESTED: BOOTSTRAP ROM'S AS SPECIFIED IN SR1

DEFAULT PARAMETERS: DVA-0 VCT-0 BR1-0
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: SR1 SETTING

MEANING OF SR1: SR1 IS OCTAL NUMBER REPRESENTING DESIRED
ROM TYPE:

1	M9301-YA	10	M9400-YH (YK)
2	M9301-YB	11	M9311
3	M9301-YC	12	M9301
4	M9400-YA (YC)	13	M9301-YE
5	M9301-YF	14	M9301-YJ
6	M7942-YF	15	M9400-YN
7	M9301-YD		

MODULE TESTS ROM BY CALCULATING AND CHECKING CRC AND LPC.

MODULE NAME: BTA
REVISION LEVEL: B
MODULE TYPE: IOMODR
I.D. NUM.: 131
DEVICES TESTED: BUS TESTER A
DEFAULT PARAMETERS: DVA-170000 VCT-510 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: BTB
REVISION LEVEL: B
MODULE TYPE: IOMODR
I.D. NUM.: 56
DEVICES TESTED: BUS TESTER B
DEFAULT PARAMETERS: DVA-170020 VCT-520 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: BTC
REVISION LEVEL: A
MODULE TYPE: IOMODX
I.D. NUM.: 117
DEVICES TESTED: BUS TESTER C (Q BUS TESTER)
DEFAULT PARAMETERS: DVA-170020 VCT-520 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: CBA
REVISION LEVEL: E
MODULE TYPE: BKMOD
I.D. NUM.: 33
DEVICES TESTED: CB11 SCAN
DEFAULT PARAMETERS: DVA-0 VCT-0 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: DVA- STARTING ADDR OF SCAN GROUP TO BE
TESTED.
SR1- NUMBER OF SCAN MODULES IN GROUP.
MEANING OF SR1: SR1 IS SET TO THE OCTAL NUMBER OF SCAN
MODULES IN THE TEST GROUP (MUST BE AT
CONSECUTIVE ADDRESSES).

MODULE NAME: CBB
REVISION LEVEL: E
MODULE TYPE: BKMOD
I.D. NUM.: 34
DEVICES TESTED: CB11 DISTRIBUTE
DEFAULT PARAMETERS: DVA-0 VCT-0 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: DVA- ADDR OF FIRST CB11 DISTRIBUTE TO BE
TESTED.
SR1- OCTAL NUMBER OF DISTRIBUTE
MODULES TO BE TESTED.
MEANING OF SR1: SR1 MUST BE SET TO OCTAL NUMBER OF
DISTRIBUTE MODULES TO BE TESTED
(MUST BE SEQUENTIAL).

MODULE NAME: CBC
REVISION LEVEL: F
MODULE TYPE: IOMOD
I.D. NUM.: 35
DEVICES TESTED: CB11-HA
DEFAULT PARAMETERS: DVA-164000 VCT-774 BR1-7
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: CDA
REVISION LEVEL: G
MODULE TYPE: IOMOD
I.D. NUM.: 14
DEVICES TESTED: CD11 CONTROLLER AND 1 CARD READER
DEFAULT PARAMETERS: DVA-172460 VCT-230 BR1-6
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: CIA
REVISION LEVEL: A
MODULE TYPE: BKMOD
I.D. NUM.: 1
DEVICES TESTED: CIS IN 11/24 AND 11/44
DEFAULT PARAMETERS: DVA-0 VCT-0 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: CMA
REVISION LEVEL: B
MODULE TYPE: IOMOD
I.D. NUM: 80
DEVICES TESTED: CMS11-K READER/INTERFACEAMETERS:
DEFAULT PARAMETERS: DVA-177160 VCT-230 BR1-6
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: CMJ
REVISION LEVEL: A
MODULE TYPE: IOMOD
ID. NUM.: 85
DEVICES TESTED: CMR11
DEFAULT PARAMETERS: DVA-170000 VCT-170 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: BIT15 = 1 DON'T DROP MODULE IF RETRY
COUNT IS EXCEEDED
BIT15 = 0 DROP MODULE IF RETRY COUNT
IS EXCEEDED
MEANING OF SR2: BIT0 = 1 INHIBIT CMR ALARM REPORT
BIT0 = 0 ENABLE CMR ALARM REPORT

MODULE NAME: CPA
REVISION LEVEL: G
MODULE TYPE: BKMOD
I.D. NUM.: 113
DEVICES TESTED: STRAIGHT LINE INSTRUCTION SET FOR PDP-11
DEFAULT PARAMETERS: DVA-0 VCT-0 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: CPB
REVISION LEVEL: J
MODULE TYPE: BKMOD
I.D. NUM.: 2
DEVICES TESTED: EIS IN 11/40, 11/44, AND 11/45
DEFAULT PARAMETERS: DVA-0 VCT-0 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: SR1 MUST BE SPECIFIED.
MEANING OF SR1: SR1 = 0 11/40, 11/45 FULL EIS
SR1 = 1 11/40 WITHOUT EIS
SR1 = 4 ALL EIS, USE MFPS
SR1 = 5 NO EIS, USE MFPS

MODULE NAME: CRA
REVISION LEVEL: G
MODULE TYPE: IOMOD
I.D. NUM.: 15
DEVICES TESTED: CM11/CR11 CONTROLLER AND 1 CARD READER
DEFAULT PARAMETERS: DVA-177160 VCT-230 BR1-6
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: DCA
REVISION LEVEL: G
MODULE TYPE: IOMOD
I.D. NUM.: 24
DEVICES TESTED: DC11 ASYNCHRONOUS LINE INTERFACE
DEFAULT PARAMETERS: DVA-174000 VCT-300 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: DHA

REVISION LEVEL: L

MODULE TYPE: IOMOD

I.D. NUM: 25

DEVICES TESTED: DH11 16-LINE PROGRAMMABLE
ASYNCHRONOUS MULTIPLEXER

DEFAULT PARAMETERS: DVA-1 VCT-1 BR1-5
BR2-5 DVC-1 SR1-0

REQUIRED PARAMETERS: ADDRESS AND VECTOR

MEANING OF SR1: BAUD RATE SELECTED (0=9600 DEFAULT)

MODULE NAME: DJA
REVISION LEVEL: L
MODULE TYPE: IOMOD
I.D. NUM: 36
DEVICES TESTED: DJ11 16-LINE ASYNCHRONOUS
SERIAL LINE MULTIPLEXER
DEFAULT PARAMETERS: DVA-1 VCT-1 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: ADDRESS AND VECTOR
MEANING OF SR1:
SR1 = 4 5 BIT CHARACTER
SR1 = 2 6 BIT CHARACTER
SR1 = 1 7 BIT CHARACTER
SR1 = 0 8 BIT CHARACTER

CHECK HARDWARE STRAPPING TO DETERMINE
SR1. SET ITERATION COUNT - USED TO
ADJUST PASS TIME FOR BAUD RATE.

SR1 =	40	75 BAUD (BIT5)
SR1 =	100	110 BAUD (BIT6)
SR1 =	200	134.5 BAUD (BIT7)
SR1 =	400	150 BAUD (BIT8)
SR1 =	1000	300 BAUD (BIT9)
SR1 =	2000	600 BAUD (BIT10)
SR1 =	4000	1200 BAUD (BIT11)
SR1 =	10000	1800 BAUD (BIT12)
SR1 =	20000	2400 BAUD (BIT13)
SR1 =	40000	4800 BAUD (BIT14)
SR1 =	100000	9600 BAUD (BIT15 OR NO BITS)

MODULE NAME: DLA

REVISION LEVEL: J

MODULE TYPE: IOMOD

I.D. NUM.: 26

DEVICES TESTED: UP TO 16 DL11/DLV11 ASYNCHRONOUS
INTERFACE LINES

DEFAULT PARAMETERS: DVA-176500 VCT-1 BR1-4
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: VECTOR

MEANING OF SR1:

BIT0	BIT1	CHAR SIZE
----	----	-----
0	0	8-BIT CHAR.
0	1	7-BIT CHAR.
1	0	6-BIT CHAR.
1	1	5-BIT CHAR.

BAUD RATE	BIT SET
-----	-----
9600	NONE
7200	BIT2
4800	BIT3
2400	BIT4
1800	BIT5
1200	BIT6
600	BIT7
300	BIT8
200	BIT9
150	BIT10
134.5	BIT11
110	BIT12
75	BIT13
50	BIT14

NOTE: DLV11 CONNECTOR MUST BE INSTALLED

MODULE NAME: DLB
REVISION LEVEL: B
MODULE TYPE: IOMOD
I.D. NUM.: 161
DEVICES TESTED: DL11-E ASYNCHRONOUS COMMUNICATION
INTERFACE
DEFAULT PARAMETERS: DVA-175610 VCT-300 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: TO EXERCISE THOSE STATIC TESTS REQUIRING
THE USE OF THE H315 MODEM TEST CONNECTOR
(MODEM CONTROL LOGIC), BIT 15 OF SR1
MUST BE SET TO A "1".

NOTE: IF SR1 BIT15=1 AND THE MODEM TEST CONNECTOR IS NOT INSTALLED,
FALSE ERRORS WILL BE REPORTED.

MODULE NAME: DMB
REVISION LEVEL: I
MODULE TYPE: IOMOD
I.D. NUM.: 27
DEVICES TESTED: DM11-BB 16-LINE DATASET CONTROL
MULTIPLEXER
DEFAULT PARAMETERS: DVA-1 VCT-1 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: VECTOR AND ADDRESS
MEANING OF SR1: SR1 = 0 2 WORD DISPLACEMENT BETWEEN VECTORS
SR1 = 1 8 WORD DISPLACEMENT BETWEEN VECTORS
SR1 = 2 16 WORD DISPLACEMENT BETWEEN VECTORS

MODULE NAME: DMC
REVISION LEVEL: B
MODULE TYPE: IOMOD
I.D. NUM.: 127
DEVICES TESTED: DMC11 SYNCHRONOUS INTERFACE
DEFAULT PARAMETERS: DVA-1 VCT-1 BR1-5
BR2-5 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: BIT0 = 0 LINE LOOP MODE;
NO SETUP NECESSARY.
BIT0 = 1 DMC RUNNING;
INSTALL TURN-AROUND CONNECTOR

MODULE NAME: DMD
REVISION LEVEL: D
MODULE TYPE: IOMDOX
I.D. NUM: 86
DEVICES TESTED: DMP/DMV11
DEFAULT PARAMETERS: DVA-160170 VCT-300 BR1-5
BR2-5 DVC-1 SR1-0
REQUIRED PARAMETERS: SEE MODULE DOCUMENTATION FOR
SR1 THRU SR4 SELECTIONS.

MODULE NAME: DME
REVISION LEVEL: B
MODULE TYPE: IOMODX
I.D. NUM: 87
DEVICES TESTED: DMP11
DEFAULT PARAMETERS: DVA-160170 VCT-300 BR1-5
BR2-5 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: SEE MODULE DOCUMENTATION FOR
SR2 SELECTIONS.

MODULE NAME: DMR
REVISION LEVEL: B
MODULE TYPE: IOMOD
I.D. NUM: 166
DEVICES TESTED: DMR11
DEFAULT PARAMETERS: DVA-1 VCT-1 BR1-5
BR2-5 DVC-1 SR1-0
REQUIRED PARAMETERS: ADDRESS AND VECTORB
MEANING OF SR1: SEE MODULE DOCUMENTAION FOR
SR1 THRU SR4.

MODULE NAME: DMS
REVISION LEVEL: A
MODULE TYPE: IOMOD
I.D. NUM: 116
DEVICES TESTED: DM11-BA 8 LINE MUX
DEFAULT PARAMETERS: DVA-1 VCT-1 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: SR1 = 0 2 WORD VECTOR DISPLACEMENT
SR1 = 1 8 WORD VECTOR DISPLACEMENT
SR1 = 2 16 WORD VECTOR DISPLACEMENT

MODULE NAME: DNA
REVISION LEVEL: H
MODULE TYPE: IOMOD
I.D. NUM.: 37
DEVICES TESTED: DN11 AUTOMATIC CALLING UNIT
DEFAULT PARAMETERS: DVA-175200 VCT-1 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: VECTOR
MEANING OF SR1: NONE

MODULE NAME: DPA
REVISION LEVEL: E
MODULE TYPE: IOMOD
I.D. NUM.: 30
DEVICES TESTED: DP11 SYNCHRONOUS INTERFACE
DEFAULT PARAMETERS: DVA-174770 VCT-440 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: DPB
REVISION LEVEL: B
MODULE TYPE: IOMOD
I.D. NUM.: 70
DEVICES TESTED: DUP SYNCHRONOUS INTERFACE
DEFAULT PARAMETERS: DVA-1 VCT-1 BR1-5
BR2-5 DVC-1 SR1-0
REQUIRED PARAMETERS: ADDRESS AND VECTOR
MEANING OF SR1: NONE

MODULE NAME: DPV

REVISION LEVEL: A

MODULE TYPE: IOMOD

I.D. NUM: 151

DEVICES TESTED: DPV11

DEFAULT PARAMETERS: DVA-1 VCT-1 BR1-5
BR2-5

REQUIRED PARAMETERS: ADDRESS AND VECTOR

MEANING OF SR1: BIT0 = 0 BIT ORIENTED PROTOCOL
BIT0 = 1 BYTE ORIENTED PROTOCOL
BIT1 = 0 INTERNAL LOOPBACK
(MAINTENANCE MODE)
BIT1 = 1 EXTERNAL LOOPBACK (ONBOARD
CONNECTOR - H3260,RS432)

MODULE NAME: DQA

REVISION LEVEL: I

MODULE TYPE: IOMOD

I.D. NUM.: 31

DEVICES TESTED: DQ11 NPR COMMUNICATION DEVICE

DEFAULT PARAMETERS: DVA-1 VCT-1 BR1-5
BR2-5 DVC-1 SR1-0

REQUIRED PARAMETERS: NONE

MEANING OF SR1: NONE

MODULE NAME: DRA
REVISION LEVEL: D
MODULE TYPE: IOMOD
I.D. NUM.: 55
DEVICES TESTED: DR11-A I/O REG TRANSFER DEVICE
DEFAULT PARAMETERS: DVA-167770 VCT-410 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: DRB
REVISION LEVEL: I
MODULE TYPE: IOMOD
I.D. NUM.: 132
DEVICES TESTED: DR11-B DIRECT MEMORY ACCESS INTERFACE
DEFAULT-PARAMETERS: DVA-172410 VCT-124 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: DRC
REVISION LEVEL: I
MODULE TYPE: IOMOD
I.D. NUM.: 57
DEVICES TESTED: DR11-C GENERAL DEVICE INTERFACE
DEFAULT PARAMETERS: DVA-167770 VCT-1 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: VECTOR
MEANING OF SR1: NONE

MODULE NAME: DRD
REVISION NAME: C
MODULE TYPE: IOMOD
I.D. NUM.: 65
DEVICES TESTED: DR11-K GENERAL DEVICE INTERFACE
DEFAULT PARAMETERS: DVA-167770 VCT-1 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: VECTOR
MEANING OF SR1: NONE

MODULE NAME: DRE
REVISION LEVEL: C
MODULE TYPE: IOMOD
I.D. NUM.: 72
DEVICES TESTED: DR11M OUTPUT, DR11L INPUT INTERFACES
DEFAULT PARAMETERS: DVA-0 VCT-1 BR1-4
BR2-4 DVC-1 SR1-0
REQUIRED PARAMETERS: DVA MUST BE SUPPLIED
VCT, DVC, ADDR2, VECT2, SR1
MEANING OF SR1: INDICATES DEVICES CABLED TOGETHER.

MODULE NAME: DRF
REVISION LEVEL: D
MODULE TYPE: IOMODX
I.D. NUM.: 121
DEVICES TESTED: DRV11-B INTERFACES
DEFAULT PARAMETERS: DVA-172410 VCT-124 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: DRJ
REVISION LEVEL: A
MODULE TYPE: IOMOD
I.D. NUM: 90
DEVICES TESTED: DRJ11-J
DEFAULT PARAMETERS: DVA-164160 VCT-300 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: DRK
REVISION LEVEL: A
MODULE TYPE: IOMODX
I.D. NUM: 81
DEVICES TESTED: DR70
DEFAULT PARAMETERS: DVA-1767000 VCT-254 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: DRW
REVISION LEVEL: C
MODULE TYPE: IOMOD
I.D. NUM.: 165
DEVICES TESTED: DR11-W
DEFAULT PARAMETERS: DVA-172410 VCT-124 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: DTA
REVISION LEVEL: D
MODULE TYPE: IOMOD
I.D. NUM.: 157
DEVICES TESTED: DTE20
DEFAULT PARAMETERS: DVA-174400 VCT-774 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: DUA

REVISION LEVEL: I

MODULE TYPE: IOMOD

I.D. NUM.: 32

DEVICES TESTED: DUL1 SYNCHRONOUS, ASYNCHRONOUS INTERFACE

DEFAULT PARAMETERS: DVA-1 VCT-1 BR1-5
BR2-5 DVC-1 SR1-0

REQUIRED PARAMETERS: ADDRESS AND VECTOR

MEANING OF SR1: BIT0 = 0 SYNCHRONOUS TEST
BIT0 = 1 ASYNCHRONOUS (ISOCRONOUS) TEST

MODULE NAME: DUB

REVISION LEVEL: C

MODULE TYPE: IOMOD

I.D. NUM.: 104

DEVICES TESTED: UDA-50, RA80

DEFAULT PARAMETERS: DVA-172150 VCT-154 BR1-5
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: NONE

MEANING OF SR1:

- BIT1 = 1 ALLOW DISK TRANSFERS
- BIT1 = 0 NO DISK TRANSFERS
- BIT2 = 1 DO NOT REPORT ERRORS AS THEY OCCUR
- BIT2 = 0 REPORT ERRORS AS THEY OCCUR
- BIT3 = 1 DO NOT PRINT ERROR SUMMARY AT EOP
- BIT3 = 0 PRINT ERROR SUMMARY AT EOP
- BIT9 = 1 RUN DUAL PORT MODE (VALID IF SR1 BIT1 IS SET)
- BIT9 = 0 DO NOT RUN DUAL PORT MODE
- BIT10 = 1 SELECT RANDOM BLOCK ADDRESSING. (VALID IF SR1 BIT1 IS SET)
- BIT10 = 0 SELECT SEQUENTIAL BLOCK ADDRESSING
- BIT11 = 1 BYPASS DATA COMPARE
- BIT11 = 0 DO DATA COMPARE

MEANING OF SR2: BITS 0-5 - BURST RATE.

MODULE NAME: DVA
REVISION LEVEL B
MODULE TYPE: IOMOD
I.D. NUM.: 74
DEVICES TESTED: UP TO 4 DV11 SYNCHRONOUS INTERFACES
DEFAULT PARAMETERS: DVA-175000 VCT-310 BR1-5
BR2-5 DVC-1 SR1-0
REQUIRED PARAMETERS: SYNC MUST BE SET TO "377" FOR TESTING
OF ASYNC LINE CARDS
MEANING OF SR1: NONE

MODULE NAME: DXA
REVISION LEVEL: G
MODULE TYPE: IOMODR
I.D. NUM.: 40
DEVICES TESTED: DX11 TESTS UP TO 2 DX11B'S
IN OFF-LINE MODE
DEFAULT PARAMETERS: DVA-176200 VCT-1 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: VECTOR
MEANING OF SR1: NONE

MODULE NAME: DZA
REVISION LEVEL: E
MODULE TYPE: IOMOD
I.D. NUM.: 77
DEVICES TESTED: DZ11
DEFAULT PARAMETERS: DVA-1 VCT-1 BR1-5
BR2-5 DVC-1 SR1-0
REQUIRED PARAMETERS: DVA, VCT
MEANING OF SR1: SPECIFIES BAUD RATE.
DEFAULT IS 0 = 9600

MODULE NAME: DZB
REVISION LEVEL: C
MODULE TYPE: IOMOD
I.D. NUM.: 142
DEVICES TESTED: DZV11
DEFAULT PARAMETERS: DVA-1 VCT-1 BR1-4
BR2-4 DVC-1 SR1-0
REQUIRED PARAMETERS: DVA, VCT
MEANING OF SR1: SPECIFIES BAUD RATE.
DEFAULT IS 0 = 9600

MODULE NAME: FPA
REVISION LEVEL: G
MODULE TYPE: BKMOD
I.D. NUM.: 16
DEVICES TESTED: 11/45, 11/70, FP11-A OR LSI-11 FIS
DEFAULT PARAMETERS: DVA-0 VCT-0 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: SET SR1
MEANING OF SR1: BIT0=0 11/45,11/70 FP11-C
BIT0=1 11/40 OR LSI-11 FIS

MODULE NAME: FPB
REVISION LEVEL: E
MODULE TYPE: IOMOD
I.D. NUM: 100
DEVICES TESTED: FP11-B OR FP11-C
DEFAULT PARAMETERS: DVA-0 VCT-244 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: GTA
REVISION LEVEL: E
MODULE TYPE: IOMODR
I.D. NUM.: 45
DEVICES TESTED: GT40
DEFAULT PARAMETERS: DVA-172000 VCT-320 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: IBA
REVISION LEVEL: D
MODULE TYPE: IOMOD
I.D. NUM.: 141
DEVICES TESTED: IBV11-A INSTRUMENTATION INTERFACE (IBBUS)
DEFAULT PARAMETERS: DVA-160150, VCT-640, BR1-6
BR2-6 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: BIT0 = 0 RANDOM PATTERN TRANSFERS
BIT0 = 1 COMPLEMENT PATTERN TRANSFERS

MODULE NAME: ICA
REVISION LEVEL: D
MODULE TYPE: IOMOD
I.D. NUM.: 135
DEVICES TESTED: ICS-11
DEFAULT PARAMETERS: DVA-771776 VCT-234 BR1-6
BR2-6 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: ICB
REVISION LEVEL: C
MODULE TYPE: IOMOD
I.D. NUM.: 71
DEVICES TESTED: ICR-11 CONTROLLER
DEFAULT PARAMETERS: DVA-171776 VCT-234 BR1-6
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: KEA
REVISION LEVEL: D
MODULE TYPE: BKMOD
I.D. NUM.: 17
DEVICES TESTED: KE11 OPTION ON NON-11/40, 45, AND 70
DEFAULT PARAMETERS: DVA-177300 VCT-0 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: KGA
REVISION LEVEL: D
MODULE TYPE: BKMOD
I.D. NUM.: 41
DEVICES TESTED: KG11 OPTION
DEFAULT PARAMETERS: DVA-170700 VCT-000 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: KLA
REVISION LEVEL: E
MODULE TYPE: IOMOD
I.D. NUM.: 42
DEVICES TESTED: KL11 FULL DUPLEX ASYNCHRONOUS LINE
(UP TO 16)
DEFAULT PARAMETERS: DVA-174000 VCT-300 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: KMA
REVISION LEVEL: A
MODULE TYPE: IOMOD
I.D. NUM: 82
DEVICES TESTED: KMC11-B
DEFAULT PARAMETERS: DVA-1 VCT-1 BR1-5
BR2-5 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: BITS 0 - 5 NPR/BR RATE MULTIPLIER
BITS 6 - 11 NPR RATE MULTIPLIER
BIT 12 = 1 RECEIVE ONLY
BIT 13 = 1 TRANSMIT ONLY
BIT 14 = 1 NPRATE = RTMULV
NPR/BR = SZMULV
BIT 15 = 1 NPRATE = RTMULV * SR1 <6:11>
NPR/VR = SZMULV * SR1 <0:5>
BITS 14&15 = 0 DEFAULT RATE
BITS 14&15 = 1 ILLEGAL

* NOTE: SR1 MAY BE SET UP AT CONFIGURATION TIME, OR RUN TIME WITH THE
"MOD" COMMAND.

MODULE NAME: KMC

REVISION LEVEL: B

MODULE TYPE: IOMOD

I.D. NUM.: 136

DEVICES TESTED: KMC-11

DEFAULT PARAMETERS: DVA-1 VCT-1 BR1-5
BR2-5 DVC-1 SR1-0

REQUIRED PARAMETERS: NONE

MEANING OF SR1:

- BITS 0 - 5 NPR/BR RATE MULTIPLIER
- BITS 6 - 11 NPR RATE MULTIPLIER
- BIT12 = 1 RECEIVE ONLY
- BIT13 = 1 TRANSMIT ONLY
- BIT14 = 1 MULTIPLY LOW DEFAULT NPR AND
NPR/BR VALUES BY SR1
MULTIPLIER VALUES (BITS 6-11
AND 0-5) TO OBTAIN NPR
AND NPR/BR RATES.
- BIT15 = 1 USE LOW DEFAULT VALUES FOR
NPR AND NPR/BR RATES (DO NOT
MULTIPLY BY SR1 VALUE).
- BIT14,BIT15 = 0: USE HIGH DEFAULT VALUES
FOR NPR AND NPR/BR RATES.

MODULE NAME: KUA
REVISION LEVEL: B
MODULE TYPE: NBKMOD
I.D. NUM.: 163
DEVICES TESTED: KUV11-AA
DEFAULT PARAMETERS: DVA-177540 VCT-1 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: BIT0 = 0 LOAD MICRO CODE FOR CPB AND
FPB REGARDLESS OF KUV11-AA RAM
TEST RESULTS.
BIT0 = 1 DO NOT LOAD MICRO-CODE IF RAM
TEST FAILS.
BIT1 = 0 TYPE ERROR MESSAGE FOR EACH
RAM-TEST ERROR ENCOUNTERED.
BIT1 = 1 TYPE ONLY A SUMMARY OF RAM-TEST
ERRORS AT END OF TEST.

MODULE NAME: KWA
REVISION LEVEL: G
MODULE TYPE: IOMOD
I.D. NUM.: 11
DEVICES TESTED: KW11-L LINE CLOCK
DEFAULT PARAMETERS: DVA-177546 VCT-100 BR1-6
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: SR1 = 0 NO TIME MSG./60HZ
SR1 = 1 NO TIME MSG./50HZ
SR1 = 2 TIME MSG. EVERY 5 MIN., 60 HZ
SR1 = 3 TIME MSG. EVERY 5 MIN., 50 HZ
SR1 = 4 TIME MSG. EVERY 15 MIN., 60 HZ
SR1 = 5 TIME MSG. EVERY 15 MIN., 50 HZ
SR1 = 6 TIME MSG. EVERY 60 MIN., 60 HZ
SR1 = 7 TIME MSG. EVERY 50 MIN., 50 HZ

MODULE NAME: KWB

REVISION LEVEL: K

MODULE TYPE: IOMOD

I.D. NUM.: 12

DEVICES TESTED: KW11-P PROGRAMMABLE CLOCK

DEFAULT PARAMETERS: DVA-172540 VCT-104 BR1-6
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: NONE

MEANING OF SR1:

SR1 = 0	NO TIME MSG./60 HZ
SR1 = 1	NO TIME MSG./50 HZ
SR1 = 2	TIME MSG. EVERY 5 MIN., 60 HZ
SR1 = 3	TIME MSG. EVERY 5 MIN., 60 HZ
SR1 = 4	TIME MSG. EVERY 15 MIN., 60 HZ
SR1 = 5	TIME MSG. EVERY 15 MIN., 50 HZ
SR1 = 6	TIME MSG. EVERY 60 MIN., 60 HZ
SR1 = 7	TIME MSG. EVERY 60 MIN., 50 HZ
SR1 = 10	RUN AT LINE FREQ. ONLY
SR1 = 20	RUN AT 10K HZ FREQ. ONLY
SR1 = 30	RUN AT 100K HZ FREQ. ONLY

NOTE: SR1 VALUE 0 THRU 7 CAN BE USED WITH SR1 VALUES 10, 20, AND 30 TO OBTAIN MESSAGE PRINTOUT AT A FIXED FREQUENCY.

MODULE NAME: KWC

REVISION LEVEL: B

MODULE TYPE: IOMOD

I.D. NUM.: 134

DEVICES TESTED: KW11-W WATCHDOG TIMER

DEFAULT PARAMETERS: DVA-172400 VCT-1 BR-7
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: VECTOR ADDRESS

MEANING OF SR1: NONE

MODULE NAME: KWD

REVISION LEVEL: B

MODULE TYPE: IOMOD

I.D. NUM.: 102

DEVICES TESTED: KW11-K

DEFAULT PARAMETERS: DVA-170404 VCT-344 BR1-6
BR2-6 DVC-1 SR1-0

REQUIRED PARAMETERS: NONE

MEANING OF SR1: USED FOR SELECTIVE TESTING OF PARTICULAR
FREQUENCIES. (SET TO 0 TO ENABLE, 1 TO
DISABLE)

BIT	FREQUENCY
---	-----
0	1MHZ
1	100KHZ
2	10KHZ
3	1KHZ
4	100HZ
5	RANDOM (OVERRIDES ANY DISABLE SETTINGS)
6	LINE FREQUENCY
7	OVERFLOW B (OVERRIDES ANY DISABLE SETTINGS)

MODULE NAME: KWE

REVISION LEVEL: B

MODULE TYPE: IOMOD

I.D. NUM.: 122

DEVICES TESTED: KVV11K

DEFAULT PARAMETERS: DVA-170420, VCT-440, BR1-6
BR2-6 DVC-1 SR1-0

REQUIRED PARAMETERS: NONE

MEANING OF SR1: USED FOR SELECTIVE TESTING
OF PARTICULAR FREQUENCIES.
(SET TO 0 TO ENABLE, 1 TO DISABLE)

BIT	FREQUENCY
---	-----
0	1MHZ
1	100KHZ
2	10KHZ
3	1KHZ
4	100HZ
5	RANDOM
6	LINE FREQUENCY

MODULE NAME: KWF

REVISION LEVEL: B

MODULE TYPE: NBKMOD

I.D. NUM.: 162

DEVICES TESTED: KW11-L ON 2040 PDP-11 CONSOLE

DEFAULT PARAMETERS: DVA-177546, VCT-100, BR1-6
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: . NONE

MEANING OF SR1: AVERAGE TIMER COUNT
SR1 = 0 MODULE USES DEFAULT TIMER COUNT
OF 000037 (KD11-A CPU)
SR1 NOT 0 MODULE USES CONTENTS OF SR1
AS TIMER COUNT

MODULE NAME: KWG
REVISION LEVEL: A
MODULE TYPE: IOMOD
I.D. NUM: 91
DEVICES TESTED: CSS KW11-C
DEFAULT PARAMETERS: DVA-160200 VCT-300 BR1-6
BR2-6 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: LKA
REVISION LEVEL: B
MODULE TYPE: IOMOD
I.D. NUM.: 101
DEVICES TESTED: LK11
DEFAULT PARAMETERS: DVA-160060 VCT-360 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: LPA

REVISION LEVEL: F

MODULE TYPE: IOMOD

I.D. NUM.: 3

DEVICES TESTED: 1 LP11 CONTROLLER AND ANY
LP11 LINEPRINTER

DEFAULT PARAMETERS: DVA-177514 VCT-200 BR1-4
BR2-0 DVC-1 SR1-0
SR2-0

REQUIRED PARAMETERS: NONE

MEANING OF SR1: THE 16 SR1 BITS HAVE THE
FOLLOWING FUNCTIONS:

X PPP PPP PPP XXX AAA

AAA = (0) FOR 80 COLUMNS, 64 CHARACTERS
(1) FOR 80 COLUMNS, 96 CHARACTERS
(2) FOR 132 COLUMNS, 64 CHARACTERS
(3) FOR 132 COLUMNS, 96 CHARACTERS

PPP PPP PPP = RELATIVE PAUSE SIZE PER
PASS; I.E., AS EACH BIT OF THE RELATIVE
PAUSE SIZE (PPP PPP PPP) IS SET, FROM
LSB TO MSB, THE NUMBER OF LINES TO BE
PRINTED IS REDUCED BY ONE HALF.

(000) = ALL LINES (ALSO IF SR2 NE 0)
(001) = 100(8) LINES PRINTED
(002) = 040(8) LINES PRINTED
(004) = 020(8) LINES PRINTED
.
.
.
(100) = 001(8) LINES PRINTED

X AND XXX ARE UNUSED BITS

MEANING OF SR2: . NON-ZERO TO ELIMINATE PAUSE FUNCTION.
SET TO NON-ZERO IF LINE PRINTER IS LP04
(NO PAUSE ALLOWED).

MODULE NAME: LPB
REVISION LEVEL: F
MODULE TYPE: IOMOD
I.D. NUM.: 46
DEVICES TESTED: LPS11 CONTROLLER AND 1 LPSKW CLOCK
DEFAULT PARAMETERS: DVA-170404 VCT-1 BR1-6
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: VECTOR ADDRESS MUST BE SUPPLIED
MEANING OF SR1: NONE

MODULE NAME: LPC
REVISION LEVEL: E
MODULE TYPE: IOMOD
I.D. NUM.: 47
DEVICES TESTED: LPS11 CONTROLLER AND 1 LPS-VC SCOPE
CONTROL
DEFAULT PARAMETERS: DVA-170416 VCT-001 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: VECTOR ADDRESS MUST BE SUPPLIED
MEANING OF SR1: NONE

MODULE NAME: LPD
REVISION LEVEL: F
MODULE TYPE: IOMOD
I.D. NUM.: 50
DEVICES TESTED: LPS11 INTERFACE AND 1 LPSAD OR LPS-N?
CONTROLLER
DEFAULT PARAMETERS: DVA-170400 VCT-1 BR1-6
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: ADDRESS AND VECTOR
MEANING OF SR1: BIT15 = 1 DMA CONVERSIONS (LPSADNP)
BIT15 = 0 BR CONVERSIONS (LPSAD12)

MODULE NAME: LPE
REVISION LEVEL: D
MODULE TYPE: IOMOD
I.D. NUM.: 63
DEVICES TESTED: LPD PHOTO-COMP INTERFACES
DEFAULT PARAMETERS: DVA-172710 VCT-320 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: LPF

REVISION LEVEL: B

MODULE TYPE: IOMOD

I.D. NUM.: 160

DEVICES TESTED: LP20/LP05/LP10

DEFAULT PARAMETERS: DVA-175400 VCT-754 BR1-4
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: SR1 SETUP

MEANING OF SR1: SR1(LO BYTE): BIT02 SPECIFIES THE TYPE
OF CHARACTER SET. IF IT IS A "1" IT
INDICATES A 64-CHARACTER SET. ANY OTHER
COMBINATION IN THE LO BYTE SIGNIFIES A
96-CHARACTER SET.

SR1(HI BYTE): SPECIFIES PRINTING OPTIONS:
SR1+1 = 0 PRINT ON FIRST PASS ONLY
SR1+1 = 1 NEVER PRINT
SR1+1 = 2 PRINT ON ALL PASSES

MODULE NAME: LPH

REVISION LEVEL: D

MODULE TYPE: IOMOD

I.D. NUM.: 152

DEVICES TESTED: LPA11-XX A/D INTERFACE

DEFAULT PARAMETERS: DVA-170460 VCT-300 BR1-6
BR2-6 DVC-1 SR1-0

REQUIRED PARAMETERS: LPA11-XX(KMC-11, M8200-YC, M8254, CLOCK)
REMOVE OUTPUTS FROM DR11K'S IF CONFIGURED
(VIA SR1).
IF LPH IS INCLUDED IN YOUR RUNTIME
EXERCISER, THEN LPI OR LPG MUST BE
INCLUDED.

MEANING OF SR1: STATES WHAT DEVICES ARE ON THE I/O BUS.
SET THE BITS FOR THE DEVICES CONFIGURED.

DEVICE	BIT
-----	---
1ST AD11K	0
1ST KW11K	1
1SR DR11K	2
1ST AA11K	3
2ND AD11K	4
2ND DR11K	5
N/A	6
3RD DR11K	7
4TH DR11K	8
5TH DR11K	9
AR11K	10
LPS-11	11
LPSAD (LPS A/D)	12
LPSKW (LPS REAL TIME CLOCK)	13
LPSVC (LPS D/A)	14
LPSDR (LPS DIGITAL J/O)	15

MODULE NAME: MLA

REVISION LEVEL: A

MODULE TYPE: IOMODX

I.D. NUM: 150

DEVICES TESTED: ML11-A

DEFAULT PARAMETERS: DVA-172000 VCT-204 BR1-5
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: NONE

MEANING OF SR1:

- BIT0 = 0 RETRY LIMIT EXCEEDED, ABORT
FUNCTION CONTINUE TEST
- BIT0 = 1 RETRY LIMIT EXCEEDED, FATAL
ERROR, DROP DRIVE
- BIT1 = 0 ACCESS SEQUENTIAL SECTOR
ADDRESSES
- BIT1 = 1 ACCESS RANDOM SECTOR
ADDRESSES
- BIT2 = 0 COUNT/REPORT DATA LATES
- BIT2 = 1 COUNT DATA LATES

MODULE NAME: MNA

REVISION LEVEL: A

MODULE TYPE: IOMOD

I.D. NUM.: 92

DEVICES TESTED: MNCAD (A/D) MINC MODULE

DEFAULT PARAMETERS: DVA-171000 VCT-400 BR1-6
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: NONE

MEANING OF SR1:

BIT0 = 0 INHIBIT USE OF MNCKW OPTION.
BIT0 = 1 ENABLE USE OF MNCKW OPTION.
"MNC" MUST BE DESELECTED IF
CONFIGURED AND ONLY ONE MNCAD
AND ONLY 1 MNCAD WILL BE RUN.

BIT1 = 0 INHIBIT SAMPLING ADDITIONAL
CHANNELS FOR STABLE INPUT.
BIT1 = 1 ENABLE SAMPLING CHANNEL ZERO
THRU CHANNEL SPECIFIED IN
LOCATION CLSTCH FOR STABLE
INPUT (+1-) TOLERANCE
SPECIFIED BY OFFAL.

BIT2 = 0 USE CHANNEL ZERO ONLY FOR
NOISE TESTING.
BIT2 = 1 USE CHANNEL ZERO THRU CHANNEL
SPECIFIED IN NLSTCH FOR NOISE
TESTING.

OPTIONS: LOCATIONS IN MODULE FOR SPECIFYING LIMITS:
ARMLIM: SPECIFIES RMS NOISE LIMIT.
APKLIM: SPECIFIES PEAK NOISE LIMIT.

MODULE NAME: MNB

REVISION LEVEL: A

MODULE TYPE: IOMOD

I.D. NUM.: 93

DEVICES TESTED: MNCDI (DIGITAL IN) MINC MODULE

DEFAULT PARAMETERS: DVA-171160 VCT-130 BR1-4
BR1-0 DVC-1 SR1-0

REQUIRED PARAMETERS: IF SR1=1 THEN:
\$BASE1 = MNCDO ADDRESS
\$VECT1 = MNCDO VECTOR

DEVICE SETUP: FRONT PANEL SWITCHES MUST BE DOWN.
IF SR1=1, THEN THE WRAP-AROUND CABLE
MUST BE INSTALLED TO THE MNCDO DEVICE,
THE MNCDO DEVICE, AND MNE MUST BE
DESELECTED IF IT IS CONFIGURED.

MEANING OF SR1: BIT0 = 0 RUN MNCDI LOGIC TEST.
BIT0 = 1 RUN MNCDI LOGIC TEST, MNCDO
LOGIC TEST, AND MNCDO TO MNCDI
WRAPAROUND CONTROL AND DATA TESTS.

MODULE NAME: MNC

REVISION LEVEL: A

MODULE TYPE: IOMOD

I.D. NUM.: 94

DEVICES TESTED: MNCKW (CLOCK) MINC MODULE

DEFAULT PARAMETERS: DVA-171020 VCT-440 BR1-4
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: NONE

DEVICE SETUP: THE FRONT PANEL SWITCHES MUST SELECT
THE SCHMITT TRIGGER INPUT. (PULL OUT
"ST1" AND "ST2" AND ROTATE TO THE END.)

MEANING OF SR1: SELECTS TEST FREQUENCIES. A '1'
DISABLES TESTING.

BIT0 = 1MHZ
BIT1 = 100KHZ
BIT2 = 10KHZ
BIT3 = 1KHZ
BIT4 = 100HZ
BIT5 = RANDOM FREQUENCY (OVERRIDES
DESELECTION OF ANY FREQUENCY)

MODULE NAME: MND
REVISION LEVEL: A
MODULE TYPE: BKMOD
I.D. NUM.: 95
DEVICES TESTED: MNCDA (D/A) MINC MODULE
DEFAULT PARAMETERS: DVA-171060 VCT-0 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: MNE
REVISION LEVEL: A
MODULE TYPE: IOMOD
I.D. NUM.: 96
DEVICES TESTED: MNCDO (DIGITAL OUT) MINC MODULE
DEFAULT PARAMETERS: DVA-171260 VCT-340 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: NCA
REVISION LEVEL: D
MODULE TYPE: IOMODR
I.D. NUM.: 66
DEVICES TESTED: NC-11A INTERFACE
DEFAULT PARAMETERS: DVA-164000 VCT-270 BR1-7
BR2-0 DVC-1 SR1-0
MEANING OF SR1: BIT0 = 1 INHIBIT WORD INCREMENT MODE
BIT1 = 1 INHIBIT ODD BYTE
INCREMENT MODE
BIT2 = 1 INHIBIT EVEN BYTE
INCREMENT MODE
BIT3 = 1 INHIBIT LIST MODE

MODULE NAME: NCB
REVISION LEVEL: A
MODULE TYPE: IOMODX
I.D. NUM.: 97
DEVICES TESTED: NCV-11A INTERFACE
DEFAULT PARAMETERS: DVA-172760 VCT-370 BR1-6
BR2-0 DVC-1 SR1-0
MEANING OF SR1: BIT0 = 1 INHIBIT MATRIX WORD
INCREMENT MODE
BIT1 = 1 INHIBIT LIST MODE

MODULE NAME: PAA
REVISION LEVEL: F
MODULE TYPE: IOMOD
I.D. NUM.: 53
DEVICES TESTED: UP TO 16 PA611 TYPESET READERS
DEFAULT PARAMETERS: DVA-172600 VCT-300 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: PAB
REVISION LEVEL: G
MODULE TYPE: IOMOD
I.D. NUM.: 54
DEVICES TESTED: UP TO 16 PA611 TYPESET PUNCHES
DEFAULT PARAMETERS: DVA-172700 VCT-0 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: VECTOR ADDRESS MUST BE SUPPLIED
MEANING OF SR1: BITS 0 - 7:
IF SET = DISABLE PUNCHING CHANNEL.
IF CLEAR = ALLOW PUNCHING CHANNEL.

MODULE NAME: PCC
REVISION LEVEL: E
MODULE TYPE: IOMOD
I.D. NUM.: 20
DEVICES TESTED: ONE PC11 READER AND PUNCH
DEFAULT PARAMETERS: DVA-177550 VCT-070 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: SET SR1
MEANING OF SR1: SR1 = 0 READER ONLY
SR1 = 1 PUNCH ONLY
SR1 = 2 READER AND PUNCH

MODULE NAME: PCS
REVISION LEVEL: B
MODULE TYPE: IOMOD
I.D. NUM.: 147
DEVICES TESTED: PCS CONTROLLER AND FILE BOX
IOCM CONTROL MODULE WITH FILE BOX
DEFAULT PARAMETERS: DVA-171376 VCT-234 BR1-0
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE

MODULE NAME: PLA
REVISION LEVEL: B
MODULE TYPE: IOMODX
I.D. NUM.: 106
DEVICES TESTED: PCL11 INTER-PROCESSOR
COMMUNICATION DEVICE.
DEFAULT PARAMETERS: DVA-164200 VCT-170 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: SETUP OF SR1
MEANING OF SR1: BIT15 = 0 IF RETRY LIMIT EXCEEDED, RESET
RETRY LIMIT AND CONTINUE.
BIT15 = 1 IF RETRY LIMIT EXCEEDED,
ASSUME HARD ERROR AND DROP
MODULE.
BITS 0 - 7 CONTAIN RECEIVER TDM BUS
ADDRESS (RECEIVER NUMBER).
THIS IS AN OCTAL NUMBER
BETWEEN 1 AND 37.

MODULE NAME: RCA
REVISION LEVEL: D
MODULE TYPE: IOMODX
I.D. NUM.: 21
DEVICES TESTED: RC11 CONTROLLER AND UP TO 4 RS64 DISKS
DEFAULT PARAMETERS: DVA-177440 VCT-210 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: RFA
REVISION LEVEL: G
MODULE TYPE: IOMODX
I.D. NUM.: 4
DEVICES TESTED: RF11 CONTROLLER AND UP TO 8 RS11 DISKS
DEFAULT PARAMETERS: DVA-177460 VCT-204 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: BIT0 = 0 DRIVE DROPPED IF RETRY COUNT
EXCEEDED ON HARD ERROR.
BIT0 = 1 FUNCTION ABORTED IF RETRY LIMIT
EXCEEDED ON HARD ERROR.
BIT1 = 0 DRIVE DROPPED IF RETRY COUNT
EXCEEDED ON SOFT ERROR.
BIT1 = 1 FUNCTION ABORTED IF RETRY LIMIT
EXCEEDED ON SOFT ERROR.
BIT2 = 0 DON'T TYPE DATA LATE ERRORS.
BIT2 = 1 TYPE DATA LATE ERRORS.

MODULE NAME: RHA
REVISION LEVEL: A
MODULE TYPE: SBKMOD
I.D. NUM: 105
DEVICES TESTED: CSS RH01
DEFAULT PARAMETERS: NONE
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: RKA

REVISION LEVEL: G

MODULE TYPE: IOMODX

I.D. NUM.: 5

DEVICES TESTED: RK11 CONTROLLER AND UP TO 8 DISK DRIVES
OF FOLLOWING TYPE: RK02,RK03,RK04,RK05

DEFAULT PARAMETERS: DVA-177400 VCT-220 BR1-5
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: NONE

MEANING OF SR1: BIT0 = 0 FUNCTION ABORTED IF RETRY
EXCEEDED ON HARD OR SOFT ERROR.
BIT0 = 1 DRIVE DROPPED IF RETRY COUNT
EXCEEDED ON HARD OR SOFT ERROR.
BIT2 = 0 WILL NOT TYPE OUT DATA LATE
ERRORS, BUT WILL KEEP TRACK OF
THE NUMBER OF DATA LATE ERRORS
BIT2 = 1 TYPE OUT DATA LATE ERRORS AND
KEEP TRACK OF THE NUMBER OF
DATA LATE ERRORS IN "DLTCNT".

MODULE NAME: RKB

REVISION LEVEL: H

MODULE TYPE: IOMODX

I.D. NUM.: 124

DEVICES TESTED: 1 TO 8 RK06/7 DRIVES ON 1 (OR 2 DUAL
PORT) RK611 CONTROLLER(S)

DEFAULT PARAMETERS: DVA-177400 VCT-210 BR1-5
BR2-0 DVC-1 SR0-0

REQUIRED PARAMETERS: FOR DUAL-PORT OPERATION, DVA AND VCT
ADDRESSES FOR THE SECOND RK611

MEANING OF SR1:

BIT0 = 1 IF THE RETRY LIMIT IS EXCEEDED
ON ANY FUNCTION, A HARD ERROR IS ASSUMED
AND THE DRIVE IS DROPPED.
BIT0 = 0 IF THE RETRY LIMIT IS EXCEEDED,
THE FUNCTION IS ABORTED AND THE
TESTING CONTINUES.

BIT 1? BIT6 = 1 INCREMENT DISK ADDRESS EACH
CYCLE (SEQUENTIAL SEEKS).

BIT6 = 0 GENERATE RANDOM DISK ADDRESS FOR
EACH CYCLE.

BIT2 = 1 TYPE OUT ADDRESS OF ALL BADSPOTS
NOT IN MODULE TABLE, AND ADD
TO TABLE.

BIT2 = 0 ADD NEW BADSPOTS TO MODULE
TABLE, BUT DO NOT TYPE OUT.

MODULE NAME: RLA

REVISION LEVEL: G

MODULE TYPE: IOMODX

I.D. NUM.: 146

DEVICES TESTED: RL11,RLV11,RLV12,RL01,RL02

DEFAULT PARAMETERS: DVA-174400 VCT-160 BR1-5
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: NONE

MEANING OF SR1:

- BIT0 = 1 DROP DRIVE ON ERROR.
- BIT0 = 0 CONTINUE TESTING ON ERROR.
- BIT1 = 1 WRITE/READ DATA AT A RANDOM
- BIT1 = 0 WRITE/READ DATA AT INCREMENTAL
SECTOR.
- BIT2 = 1 DO NOT PRINT SOFT ERRORS.
- BIT2 = 0 PRINT SOFT ERRORS.
- BIT3 = 1 CONTROLLER IS AN RLV12
- BIT3 = 0 CONTROLLER IS AN RL11/RLV11

MODULE NAME: RMC

REVISION LEVEL: A

MODULE TYPE: IOMODX

I.D. NUM: 107

DEVICES TESTED: RH11/70 RM02,3,5

DEFAULT PARAMETERS: DVA-176700 VCT-254 BR1-5
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: NONE

MEANING OF SR1: BIT02 = 1 COUNT DATA LATE ERRORS
BIT02 = 0 COUNT AND PRINT DATA LATE ERRORS
BIT04 = 1 PORT B SELECTED
BIT04 = 0 PORT A SELECTED
BIT10 = 1 RANDOM BLOCK ADDRESSING
BIT10 = 0 SEQUENTIAL BLOCK ADDRESSING
BIT12 = 1 DUAL PORT
BIT12 = 0 SINGLE PORT
BIT15 = 1 32 REGISTERS ON RH70
BIT15 = 0 22 REGISTERS ON RH70

MODULE NAME: RMD

REVISION LEVEL: B

MODULE TYPE: IOMODX

I.D. NUM.: 153

DEVICES TESTED: RP04/5/6 RM02/3/5

DEFAULT PARAMETERS: DVA-176700 VCT-254 BR1-5
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: NONE

MEANING OF SR1: BIT2 = 1 TYPE OUT DATA LATE ERRORS.
BIT2 = 0 DO NOT TYPE OUT DATA LATE ERRORS.
BIT4 = 1 TESTS PORT-A OF DUAL PORTED DRIVES.
BIT4 = 0 TESTS PORT-B OF DUAL PORTED DRIVES.
BIT5 = 1 DISABLE RANDOM SEEKS.
BIT5 = 0 ENABLE RANDOM SEEKS.
BIT6 = 1 TYPE OUT BADSPOTS NOT IN
BADSPOT TABLE.
BIT6 = 0 DO NOT TYPE OUT BADSPOTS.
BIT7 = 1 CONTROLLER IS AN RH70.
BIT7 = 0 CONTROLLER IS AN RH11.

MODULE NAME:	RNA
REVISION LEVEL:	B
MODULE TYPE:	IOMODX
I.D. NUM:	112
DEVICES TESTED:	RM80
DEFAULT PARAMETERS:	DVA-1767000 VCT-254 BR1-5 BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS:	NONE
MEANING OF SR1:	BIT0 = 1 ACCESS ANY CYLINDER ADDRESS BIT0 = 0 ACCESS FE CYLINDER ADDRESS ONLY BIT2 = 1 COUNT DATE LATES BIT2 = 0 COUNT/REPORT DATA LATES BIT4 = 1 SELECT PORT "B" BIT4 = 0 SELECT PORT "A" BIT10 = 1 RANDOM BLOCK ADDRESSING BIT10 = 0 SEQUENTIAL BLOCK ADDRESSING BIT12 = 1 DUAL PORT BIT12 = 0 SINGLE PORT BIT15 = 1 32 REGISTER RH70 BIT15 = 0 22 REGISTER RH70

* NOTE: BIT4 HAS NO MEANING IN SINGLE PORT OPERATION.

MODULE NAME: RPA

REVISION LEVEL: M

MODULE TYPE: IOMODX

I.D. NUM.: 6

DEVICES TESTED: RP11 CONTROLLER AND UP TO 8 DRIVES

DEFAULT PARAMETERS: DVA-176710 VCT-254 BR1-5
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: BIT0 = 1 IF HIGH DENSITY
BIT1 = 0 DROPS MODULE AFTER 3
UNRECOVERABLE ERRORS.
BIT1 = 1 GOES ON TO NEXT BLOCK AFTER AN
UNRECOVERABLE ERROR.
BIT2 = 0 WILL TYPE OUT DATA LATE ERRORS,
BUT KEEPS A TOTAL COUNT IN
LOCATION DLTCNT.
BIT2 = 1 WILL NOT TYPE OUT DATA LATE
ERRORS AND WILL NOT KEEP COUNT
OF THEM. THERE IS A TABLE AT
LOCATION "BADLOC" IN WHICH UP TO
20 CYLINDER-TRACK COMBINATIONS
MAY BE ENTERED. FOR ANY CYL-TRK
LISTED IN THAT TABLE, THERE WILL
BE NO ERRORS REGISTERED. THIS IS
INTENDED FOR USE WITH PACKS WITH
KNOWN BADSPOTS. REFER TO THE
LISTING AT LOCATION BADLOC FOR
DIRECTIONS ON HOW TO ENTER DISK
ADDRESSES INTO THE TABLE.

NOTE: ANY ADDRESS ENTERED IN THIS TABLE WILL APPLY TO ALL DISKS UNDER TEST

MODULE NAME: RPB

REVISION LEVEL: I

MODULE TYPE: IOMODX

I.D. NUM: 60

DEVICES TESTED: RH11/70 SGL PT DSK

DEFAULT PARAMETERS: DVA-176700 VCT-254 BR1-5
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: NONE

MEANING OF SR1:

- BIT0 = 1 REPORT HARD ERROR, DROP DRIVE
WHEN RETRY LIMIT EXCEEDED.
- BIT0 = 0 ABORT FUNCTION, CONTINUE TESTING
IF RETRY LIMIT EXCEEDED.
- BIT2 = 1 COUNT, DON'T REPORT DATA LATE
ERRORS.
- BIT2 = 0 COUNT, REPORT DATA LATE ERRORS
- BIT5 = 1 18 BIT FORMAT.
- BIT5 = 0 NORMAL FORMAT.

MODULE NAME: RSA
REVISION LEVEL: J
MODULE TYPE: IOMODX
I.D. NUM.: 61
DEVICES TESTED: ONE RH11 CONTROLLER AND UP TO 8 RS03 AND RS04 DISKS
DEFAULT PARAMETERS: DVA-172040 VCT-204 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: BIT0 = 0 ABORTS FUNCTION ON RETRY
LIMIT EXCEEDED
BIT0 = 1 DRIVE DROPPED ON RETRY
LIMIT EXCEEDED
BIT2 = 0 WILL TYPE OUT DATA-LATE ERRORS
BIT2 = 1 WILL NOT TYPE OUT DATA-LATE
ERRORS

MODULE NAME: RXA
REVISION LEVEL: E
MODULE TYPE: IOMOD
I.D. NUM.: 67
DEVICES TESTED: RX01 FLOPPY DISK
DEFAULT PARAMETERS: DVA-177170 VCT-264 BR1-5
BR2-0 DVC-2 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: BIT0 = 0 IF RETRY LIMIT IS EXCEEDED,
CONTINUE WITH NEXT TEST.
BIT0 = 1 IF RETRY LIMIT IS EXCEEDED ON
ANY FUNCTION, REPORT A HARD
ERROR AND DROP MODULE.
BIT1 = 0 USE ALTERNATING DATA PATTERNS
OF ONES AND ZEROS.
BIT1 = 1 USE DECREMENTING DATA PATTERNS

MODULE NAME: RXB
REVISION LEVEL: C
MODULE TYPE: IOMODX
I.D. NUM.: 137
DEVICES TESTED: RX02 FLOPPY DISK
DEFAULT PARAMETERS: DVA-177170 VCT-264 BR1-5
BR2-0 DVC-2 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: BIT0 = 0 IF RETRY LIMIT IS EXCEEDED,
CONTINUE TESTING.
BIT0 = 1 IF RETRY LIMIT IS EXCEEDED ON
ANY FUNCTION, REPORT A HARD
ERROR AND DROP MODULE.

MODULE NAME: TAA
REVISION LEVEL: D
MODULE TYPE: IOMOD
I.D. NUM.: 7
DEVICES TESTED: TAl1 CONTROLLER AND 2 CASSETTE DRIVES
DEFAULT PARAMETERS: DVA-177500 VCT-260 BR1-6
BR2-0 DVC-2 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: TCA
REVISION LEVEL: G
MODULE TYPE: IOMODX
I.D. NUM.: 10
DEVICES TESTED: TC11 DECTAPE CONTROLLER AND UP TO 8 DECTAPE DRIVES
DEFAULT PARAMETERS: DVA-177340 VCT-214 BR1-6
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: BIT0 = 0 LETS MODULE SKIP FORWARD AFTER RETRY LIMIT REACHED.
BIT0 = 1 CAUSES DEVICE TO BE DROPPED IF RETRY LIMIT REACHED.

MODULE NAME: TMA
REVISION LEVEL: J
MODULE TYPE: IOMODX
I.D. NUM.: 22
DEVICES TESTED: TM11 CONTROLLER AND UP TO 8 DRIVES
DEFAULT PARAMETERS: DVA-172520 VCT-224 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: BIT0 = 0 CONTINUE IF RETRY LIMIT IS EXCEEDED.
BIT0 = 1 DROP MODULE IF RETRY LIMIT IS EXCEEDED.

MODULE NAME: TMB

REVISION LEVEL: M

MODULE TYPE: IOMODX

I.D. NUM.: 130

DEVICES TESTED: TM02/TM03 CONTROLLER AND UP TO 8 TU16
OR TEL6 (UP TO 4 TU77)

DEFAULT PARAMETERS: DVA-172440 VCT-224 BR1-5
BR2-0 DVC-1 SR1-0

REQUIRED PARAMETERS: NONE

MEANING OF SR1:

- BIT0 = 0 ABORT IF RETRY LIMIT IS EXCEEDED.
- BIT0 = 1 SLAVE IS DROPPED IF RETRY LIMIT EXCEEDED.
- BIT1 = 0 ALL SLAVES AUTOMATICALLY FOUND.
- BIT1 = 1 SLAVES MUST BE SELECTED BY OPERATOR.
- BIT2 = 0 SOFT ERROR IF RETRY LIMIT EXCEEDED.
- BIT2 = 1 PRINT SOFT ERROR ON OCCURRENCE
- BIT3 = 0 USE DEFAULT RETRY LIMIT
- BIT3 = 1 USE ALTERNATE RETRY LIMIT
- BIT4 = 0 PRINT SOFT ERROR SUMMARY AT EOT
- BIT4 = 1 SUPPRESS SOFT ERROR SUMMARY PRINTOUT
- BIT5 = 0 ALTERNATE DENSITY ONLY AT BOT
- BIT5 = 1 ALTERNATE DENSITY EACH CYCLE
- BIT6 = 0 TEST 1600 BPI
- BIT6 = 1 DO NOT TEST 1600 BPI
- BIT7 = 0 TEST 800 BPI
- BIT7 = 1 DO NOT TEST 800 BPI

MODULE NAME: TMD
REVISION LEVEL: A
MODULE TYPE: IOMODX
I.D. NUM: 110
DEVICES TESTED: TM78 MAG TAPE
DEFAULT PARAMETERS: DVA-172400 VCT-224 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: BIT0 = 0 DATA COMPARE
BIT0 = 1 NO DATA COMPARE
BIT1 = 0 RUN ALL DEVICES
BIT1 = 1 RUN SELECTED DEVICES
BIT2 = 0 REPORT ERRORS
BIT2 = 1 NO ERROR REPORT
BIT3 = 0 ERROR SUMMARY - EOT
BIT3 = 1 NO ERROR SUMMARY - EOT
BIT4 = 0 GCR (6250 BPI)
BIT4 = 1 NO GCR
BIT5 = 0 PE (1600 BPI)
BIT5 = 1 NO PE

MODULE NAME: TRA
REVISION LEVEL: D
MODULE TYPE: IOMOD
I.D. NUM.: 125
DEVICES TESTED: TR79F TAPE DRIVES
DEFAULT PARAMETERS: DVA-164000 VEC-170 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: BIT0 = 1 DROPS DRIVE EXCEEDING
RETRY LIMIT
BIT0 = 0 FUNCTION STOPPED, TESTING
CONTINUES IF RETRY LIMIT
EXCEEDED.

MODULE NAME: TSA
REVISION LEVEL: A
MODULE TYPE: IOMODX
I.D. NUM.: 167
DEVICES TESTED: TS11/TS04 TAPE SUBSYSTEM
DEFAULT PARAMETERS: DVA-172520 VCT-224 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: BIT0 = 0 IF AN UNRECOVERABLE ERROR OCCURS
ON ANY FUNCTION, THE FUNCTION IS
ABORTED AND TESTING CONTINUES
BIT0 = 1 IF AN UNRECOVERABLE ERROR OCCURS
ON ANY FUNCTION, THE DEVICES
DROPPED FROM THE TEST CYCLE
BIT1 = 0 ALL RECOVERABLE ERRORS
ARE REPORTED
BIT1 = 1 RECOVERABLE ERRORS ARE
NOT REPORTED

MODULE NAME: TUA
REVISION LEVEL: C
MODULE TYPE: SBKMOD
I.D. NUM: 115
DEVICES TESTED: TU58 CONTROLLER WITH 1 OR 2 DRIVES
DEFAULT PARAMETERS: DVA-176500 VCT-300 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

NOTE: DVC = 1 TEST DRIVE 0
DVC = 2 TEST DRIVE 1
DVC = 3 TEST DRIVES 0 AND 1

MODULE NAME: UDA
REVISION LEVEL: D
MODULE TYPE: IOMOD
I.D. NUM.: 52
DEVICES TESTED: UDC11 CONTROLLER (MAINTENANCE MODE)
DEFAULT PARAMETERS: DVA-171774 VCT-234 BR1-6
BR2-4 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: VSA
REVISION LEVEL: C
MODULE TYPE: IOMODP
I.D. NUM.: 75
DEVICES TESTED: DECGRAPHIC-11 DISPLAY SYSTEM AND VS60
CONSOLE
DEFAULT PARAMETERS: DVA-172000 VCT-320 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: SR1 = 0 EXECUTE VS60 INSTRUCTIONS
SR1 = 1 EXECUTE NOP'S FOR HIGHEST
NPR RATE

MODULE NAME: VSB
REVISION LEVEL: B
MODULE TYPE: IOMOD
I.D. NUM: 76
DEVICES TESTED: VSV01 DISPLAY SYSTEM
DEFAULT PARAMETERS: DVA-172600 VCT-360 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NUMBER OF BIT MAPS IN LOCATION DVID1
MEANING OF SR1: NONE

MODULE NAME: VSC
REVISION LEVEL: B
MODULE TYPE: IOMOD
I.D. NUM: 83
DEVICES TESTED: CSS VSV11/VS11 GRAPHIC SYS
DEFAULT PARAMETERS: DVA-172010 VCT-320 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: SR1 = 0 TEST PATTERN ONLY
SR1 = 1 DISPLAY BOUNCING BALL AND BELL
SR1 = 2 TEST PATTERN ONLY
SR1 = 3 TEST PATTERN, BOUNCING BALL
AND BELL (TWO CHANNELS)
SR1 = 4 TEST PATTERN ONLY
SR1 = 5 PATTERN AND BOUNCING BALL
SR1 = 6 TEST PATTERN ONLY
SR1 = 7 TEST PATTERN AND BOUNCING BALL
(TWO CHANNELS)

MODULE NAME: VTA
REVISION LEVEL: B
MODULE TYPE: IOMOD
I.D. NUM.: 64
DEVICES TESTED: VT20 SYSTEMS
DEFAULT PARAMETERS: DVA-175610 VCT-340 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: VTB
REVISION LEVEL: B
MODULE TYPE: IOMODX
I.D. NUM.: 126
DEVICES TESTED: VT20'S ON DH11
DEFAULT PARAMETERS: DVA-160020 VCT-350 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: BAUD RATES IN L0BR TO L17BR IF NOT 9600
MEANING OF SR1: NONE

MODULE NAME: VTC
REVISION LEVEL: A
MODULE TYPE: BKMOD
I.D. NUM: 111
DEVICES TESTED: VTV30-K
DEFAULT PARAMETERS: DVA-174000
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: VTV
REVISION LEVEL: A
MODULE TYPE: IOMOD
I.D. NUM: 170
DEVICES TESTED: VTV30-H/J
DEFAULT PARAMETERS: DVA-164000 VCT-170 BR1-4
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: SR1 = 0 6X6 CHARACTER MATRIX
SR1 = 1 8X8 CHARACTER MATRIX

MODULE NAME: XYA
REVISION LEVEL: D
MODULE TYPE: IOMOD
I.D. NUM.: 23
DEVICES TESTED: ONE XY11 PLOTTER
DEFAULT PARAMETERS: DVA-172554 VCT-120 BR1-5
BR2-0 DVC-1 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

MODULE NAME: XYB
REVISION LEVEL: A
MODULE TYPE: IOMOD
I.D. NUM: 84
DEVICES TESTED: CSS XY311
DEFAULT PARAMETERS: DVA-172554 VCT-120 BR1-4
BR2-0 DVC-0 SR1-0
REQUIRED PARAMETERS: NONE
MEANING OF SR1: NONE

6.0 RUNNING DEC/X11 IN SPECIAL ENVIRONMENTS

There are two special environments under which a DEC/X11 exerciser program may be run in which operational differences will be encountered:

1. Running an RTE as a chain file under the control of an XXDP+ monitor.
2. Running an RTE under control of an APT monitor.

Both situations are described in the following sections.

6.1 Running RTE In XXDP+ Chain Mode

When a DEC/X11 Runtime Exerciser (RTE) program (filename.BIC) is included in an XXDP+ Chain file (filename.CCC), the loading, starting, and execution of the RTE incurs the following changes.

1. When the XXDP+ monitor is loaded and Chain Mode is initiated (via .C filename), the RTE file is eventually automatically executed (i.e., a RUN command is not required).
2. When an RTE is running in Chain Mode, all RTE keyboard commands operate in the manner described for stand-alone operation.
3. As with all programs run in Chain Mode, the RTE must periodically return to the XXDP+ monitor. However, a return occurs only when the RTE is in the lowest portion of memory (whether or not due to relocation) and a system end-of-pass occurs (i.e., all I/O option modules complete an end-of-pass). When the proper number of returns has been made (as defined by an XXDP+ pass count), the XXDP+ monitor terminates execution of the RTE and initiates execution of the next program in the chain file.

In sum, a return to the monitor is caused under the following conditions:

- (a) If Memory Management (KT) is not present, the RTE cannot be relocated and therefore remains in the lowest portion of memory. Thus, a system end-of-pass causes a return to the XXDP+ monitor.

- (b) If KT is present on the system, the RTE relocates through memory as described in the DEC/X11 User's Manual, i.e., via both constant and random (if selected) relocation. Cycling under Chain Mode occurs in 28K segments instead of the normal 4K segments. When the RTE is in the lowest portion of memory and a system end-of-pass occurs, the RTE returns to the XXDP+ monitor.
- 4. If the RTE file is running when a Control C (C) is entered, the RTE stops and Command Mode (CMD>) is entered. This does not affect the XXDP+ pass count. Thus, when a RUN command is subsequently entered, the RTE is restarted and the incrementation of the pass count continues until the value specified in the chain file is reached. At that point, the XXDP+ monitor terminates execution of the RTE and the next program in the chain is loaded.

6.2 Running RTE Under APT Control

When a DEC/X11 Runtime Exerciser (RTE) is created for use under APT control, the following initial build requirements and operational differences must be considered.

6.2.1 Configuring For APT -

When an RTE is initially configured for use under APT control, the following requirements must be met.

1. When the Configuration Table (C-Table) is constructed, all required background modules (BKMODs) must be entered last. This is necessary because BKMODs are the slowest group of modules to be sorted by the DEC/X11 monitor. Thus, proper configuration ensures that no discrepancies will occur when a comparison is made between the module-map listing (in the E-Table) and the actual position of the modules in the module listing.
2. When a DEC/X11 APT monitor name (i.e., F,G,H,I,R) is entered in the C-Table, the name must reflect the APT equivalent of the basic DEC/X11 monitor (i.e., B,C,D,E,Q). A DEC/X11 APT monitor should be selected according to the following specifications.
 - . Monitor F is for non-KT systems (e.g., 11/03,11/04,etc.).
 - . Monitor G is for KT and 18 bit systems (e.g., 11/23,11/34, etc.) (excluding 11/60 and 11/70).
 - . Monitor H is for 11/60 systems.
 - . Monitor I is for 11/70 systems.
 - . Monitor R is for 11/23B systems.

6.2.2 APT Interface Locations -

The following interface differences are encountered when running an RTE under APT control.

1. APT Parameter Block Word 4: This location contains a value that defaults the runtime of the longest test to 15 minutes.
2. APT Parameter Block Word 5: This location contains a value that defaults the runtime of the first test to two minutes.
3. APT Mailbox Word 4: This location contains the module pass count. The contents of the location are incremented every time the slowest of the resident and selected IOMODs completes an end-of-pass. BKMODs do not affect the incrementation of the counter as long as IOMODs are resident and selected. However, if BKMODs are the only resident or selected modules, each BKMOD module increments the counter when it completes an end-of-pass.
4. APT E-Table Word 1: The lower byte of this word defaults to 001 to define APT Mode, as opposed to stand-alone. The upper byte defaults to a value of 200, which causes the program to act on the assumption that a UUT Console Terminal is available.
5. APT E-Table Word 3: The lower-byte of this word defaults to a Soft Error Limit value of 37 octal, while the upper-byte defaults to a Hard Error Limit of 001. These values respectively indicate that the occurrence of 37 soft errors or 1 hard error within a module will result in the reporting of a fatal error to APT. Either byte can be adjusted up to the maximum of 37 octal. However, the hard error limit should exceed only 1 during debugging, since a higher limit would change the pass/fail criteria of the RTE.
6. APT Module Map: Each byte in the module map provides an octal device count entry for each module. If the byte is 0, the module is deselected. The formatting of a device count is described in the DEC/X11 User's Manual, several examples of device count entries are shown below.
 - . A 000 entry deselects the module. . A 001 entry selects the module to test device zero. . A 002 entry selects the module to test device one. . A 003 entry selects the module to test devices zero and one.

In order to monitor or modify any of the words described above, the user can derive an appropriate absolute address by adding the value contained in location 44 to the value associated below with the word to be changed.

```

APT Parameter Block Word 4:  004
APT Parameter Block Word 5:  006
APT Mailbox Word 4:          022
APT E-Table Word 1:         034
APT E-Table Word 3:         040
APT Module Map:             100

```

Example: Find the absolute address of APT Mailbox Word 4 (location 44=5764 octal).

```

5764 = Contents of location 44
+#22 = APT Mailbox Word 4 value
----
6006 = Absolute address of APT Mailbox Word 4

```

6.3 Error Reporting Under APT

When a module detects a fatal error, four of the five module-name characters (excluding the revision letter) are reported to APT. For example, if module RKBA1 detects a fatal error, RKBA is reported to APT.

If the monitor detects a fatal error, a special four-letter code (MOxx) is reported to APT. The first two letters of the code (MO) indicate monitor detection, while the remaining two (xx) define the type of fatal error detected.

```

If xx = CQ  Control queue overflow error
        TQ  Type queue overflow error
        PE  Parity error (memory, cache, or ECC)
        ME  Memory error
        KT  Memory management (KT) trap error
        SE  System error (trap through location 04 or 10)

```

If a console terminal device is available, all error messages are output to the console device. This includes any fatal error message, which also evokes the output of a run summary prior to terminating the RTE.