

**TECHNICAL MANUAL**

**GENERAL SUPPORT  
MAINTENANCE MANUAL  
(CARD TEST AND REPAIR)**

**RADAR SET  
AN/TPQ-36  
(NSN 5840-01-043-4257)  
AND  
RADAR SET  
AN/TPQ-37(V)  
(NSN 5840-01-043-4258)**

This copy is a reprint which includes current  
pages from Changes I

**WARNING PAGE**

**WARNING**

**Solvents used in card repair are flammable. Keep away from heat or open flame. Vapors may be harmful; use with adequate ventilation. Avoid prolonged breathing of vapor. Avoid eye contact. Do not take internally.**

**WARNING**

**To prevent serious burns, use asbestos gloves when handling hot items.**

CHANGE

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington, DC, 11 May 1984

NO. 1

**GENERAL SUPPORT MAINTENANCE MANUAL  
(Card Test and Repair)  
FOR  
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AN/TPQ-36  
(NSN 5840-01-043-4257)  
AND  
RADAR SET  
AN/TPQ-37(V)  
(NSN 5840-01-043-4258)**

TM 11-5840-363-40, 24 August 1982, is changed as follows:

1. New or changed material is indicated by a vertical bar in the margin of the page.
2. Added or revised illustrations are indicated by a vertical bar in the margin adjacent to the revised area.
3. Remove old pages and insert new pages as indicated below:

Remove	Insert
i thru vi . . . . .	i thru vi
3-15 and 3-16 . . . . .	3-15 and 3-16
None . . . . .	3-41 and 3-42
4-1 thru 4-12 . . . . .	4-1 thru 4-12
4-13 thru 4-18. . . . .	4-13 thru 4-18
4-19 thru 4-26. . . . .	4-19 thru 4-26
4-31 thru 4-242 . . . . .	4-31 thru 4-242
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A-1/(A-2 blank). . . . .	A-1/(A-2 blank)
B-1 and B-2. . . . .	B-1 and B-2
Index-1 thru Index-3/(Index-4 blank). . . . .	Index-1 thru Index-3/(Index-4 blank)

4. File this change page in front of this manual.

By Order of the Secretary of the Army:

O f f i c a l

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*General, United States Army*  
*Chief of Staff*

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*Major General, United States Army*  
*The Adjutant General*

**DISTRIBUTION:**

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**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

**TECHNICAL MANUAL**  
**No. 11-5840-363-40**

**HEADQUARTERS**  
**DEPARTMENT OF THE ARMY**  
 Washington, DC, 24 August 1982

**General Support**  
**Maintenance Manual**  
**(Card Test and Repair)**  
**RADAR SET**  
**AN/TPQ-36**  
**(NSN 5840-01-043-4257)**  
**AND**  
**RADAR SET**  
**AN/TPQ-37(V)**  
**(NSN 5840-01-043-4258)**

**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 the back of this manual direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703. A reply will be furnished to you.

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## HOW TO USE THIS MANUAL

### CONTENT OF MANUAL

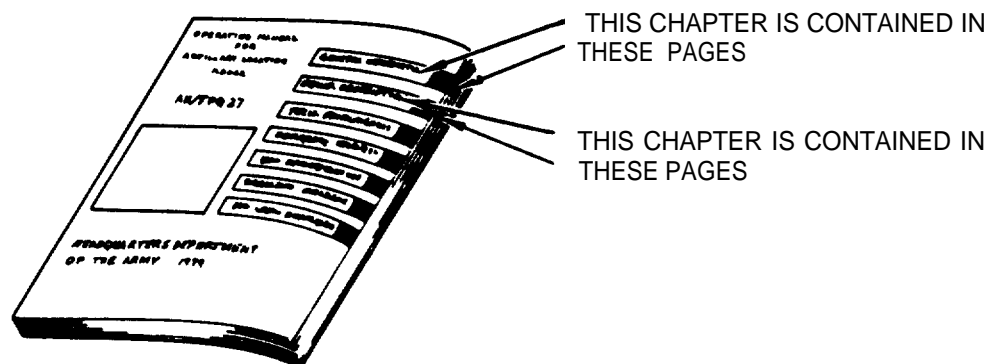
This manual contains all of the information that you require for testing, troubleshooting, and repairing 106 types of cards and assemblies which have been removed from Radar Set AN/TPQ-36 or Radar Set AN/TPQ-37(V).

The manual is divided into six chapters:

- Chapter 1 identifies the scope of the manual and describes how to handle maintenance forms and records.
- Chapter 2 briefly describes the AN/USM-410(V) tester and tells you where you can find operating and maintenance instructions for the tester.
- Chapter 3 contains maintenance information (schematic, parts list, parts location, and wire list) for each of the interconnection devices (IDs) and test point adapters.
- Chapter 4 contains the test and troubleshooting procedures for the units under test (UUTS).
- Chapter 5 contains the repair procedures for the UUTS.
- Chapter 6 contains the repair procedures for IDs and test point adapter.

### HOW TO ACCESS INFORMATION QUICKLY

Pages are numbered consecutively within each chapter. Each page number is prefixed with the chapter number. For example, page 3 of chapter 2 is numbered 2-3. Chapter titles appear on the front cover of the manual and provide an index for locating the chapters in the manual. Each chapter title is boxed on the front cover and contains the page number at which the chapter starts. At the right edge of each box is a blackened area. This blackened area matches black markings on the first page of that chapter of the manual.



In addition, the first page of each chapter contains a chapter index. This index lists the contents of the chapter and gives the page numbers of the data.

## CHAPTER 1 INTRODUCTION

### SCOPE

This manual contains general support maintenance instructions to test and repair 105 types of cards contained in Radar Sets AN/TPQ-36 and AN/TPQ-37(V) using Electronic Equipment Repair Facility OA-8991/USM-410(V).

#### **MAINTENANCE FORMS, RECORDS, AND REPORTS**

- **Reports of Maintenance and Unsatisfactory Equipment** — Department of the Army forms and procedures used for equipment maintenance will be those prescribed by **TM 38-750, The Army Maintenance Management System (TAMMS)**.

#### **REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRs)**

If your AN/TPQ-36 or AN/TPQ-37(V) cards, test programs, or interconnecting devices need improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design or performance. Put it on an SF 368 (Quality Deficiency Report). Mail it to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703. We'll send you a reply.

## CHAPTER 2

### AN/USM-410(V) TESTER OPERATING AND MAINTENANCE INSTRUCTIONS

#### AN/USM-410(V) TESTER DESCRIPTION

Electronic Equipment Test Station AN/USM-410(V) is used for automatic testing and fault isolation of electronic equipment, assemblies, subassemblies, printed circuit boards, and components. This testing and fault isolation is accomplished using a software test program that directs the system to provide the proper stimuli to the unit under test (UUT), make measurements of responses from the UUT, determine the acceptability of the UUT, and fault isolate within the UUT.

The AN/USM-410(V) tester is a computer-controlled automatic test station. It consists of the following major units:

- Tape Station
- Control Station
- DC Station
- UUT Station
- Programmable Interface Station
- Video Display Terminal (1 terminal)
- Printer
- RF/Microwave Subsystem

This equipment provides the system functions of control and display, system clock, low frequency and radio frequency stimulus, measurements, dedicated and programmable UUT interface, and input power and internal power distribution. The system operates from a 115/200 V, 60-Hz, 3-phase power source. See TM 11-6625-2773-12-1 for a detailed description of the AN/USM-410(V) tester.

#### AN/USM-410(V) TESTER OPERATING INSTRUCTIONS

Operating instructions for the AN/USM-410(V) tester are contained in TM 11-6625-2773-12-1. These instructions include:

- Description of operator controls and indicators
- Full power turn-on
- Normal power turn-on
- System restart
- Recovery from loss of power
- Full power shutdown
- Normal power shutdown
- Emergency shutdown

The procedures in chapter 4 of this manual (TM 11-5840-363-40) contain all operator instructions required to test and troubleshoot the UUTs except for the above AN/USM-410(V) tester power turn-on and shutdown procedures.

## **AN/USM-410(V) TESTER MAINTENANCE INSTRUCTIONS**

Maintenance instructions for the AN/USM-410(V) tester are contained in TM 11-6625-2773-12-1. These instructions include:

- Preventive maintenance
- Test
- Troubleshooting
- Removal and replacement
- Parts list

Chapter 3 of this manual (TM 11-5840-363-40) contains the maintenance information required to maintain the IDs and test point adapters. Information on how to repair the UUTs is contained in chapter 5. Information on how to repair the IDs and test point adapter is contained in chapter 6.



**CHAPTER 3**  
**TEST EQUIPMENT AND ACCESSORIES**

**Section I. GENERAL INFORMATION**

**INTRODUCTION**

This chapter identifies the test equipment and accessories required to test and troubleshoot cards contained in Radar Sets AN/TPQ-36 and AN/TPQ-37(V) at the general support level. In addition, information required to maintain the accessories (Interconnecting Device (ID), test point adapter, test point adapter cable, DIP socket plug, and special purpose cable assembly) is provided.

**TEST EQUIPMENT AND ACCESSORIES**

The following test equipment and accessories are required to test and troubleshoot UUTs at the general support level.

Item	Description	Part Number
1	Electronic Equipment Test Station	AN/USM-410(V)
2	Interconnecting Device	C5000610
3	Interconnecting Device	C5000621
4	Test Point Adapter	C5000628
5	Test Point Adapter	C5000629
6	Test Point Adapter Cable	C5000649
7	DIP Socket Plug (with attached cable)	C5000651
8	Special Purpose Electrical Cable Assembly	C5000658
9	Test Clip	3781-12(05276)

**Section II. ID 1 C5000610 MAINTENANCE**

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ID 1 C5000610, Schematic .....	3-3	ID 1 C5000610, Wire List. ....	3-6
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**INTRODUCTION**

This section contains the information required to maintain ID 1 (part number C5000610). The following maintenance information is provided:

- Schematic
- Parts list and parts location
- Wire list

**ID 1 C5000610, SCHEMATIC**

See page FO-1 thru FO-4 for the schematic of ID 1 (part number C5000610).

**ID FAILURE MESSAGE**

If during execution of a card test program, a failure is detected in the ID, the following message will be printed out to the operator:

**\*\*\*\* END OF PROGRAM \*\*\*\***  
**\* ID COOOXX FAILED \***  
**GO-CHAIN=XXXX**  
**PCOF: XXXXXXXXXXXXX**

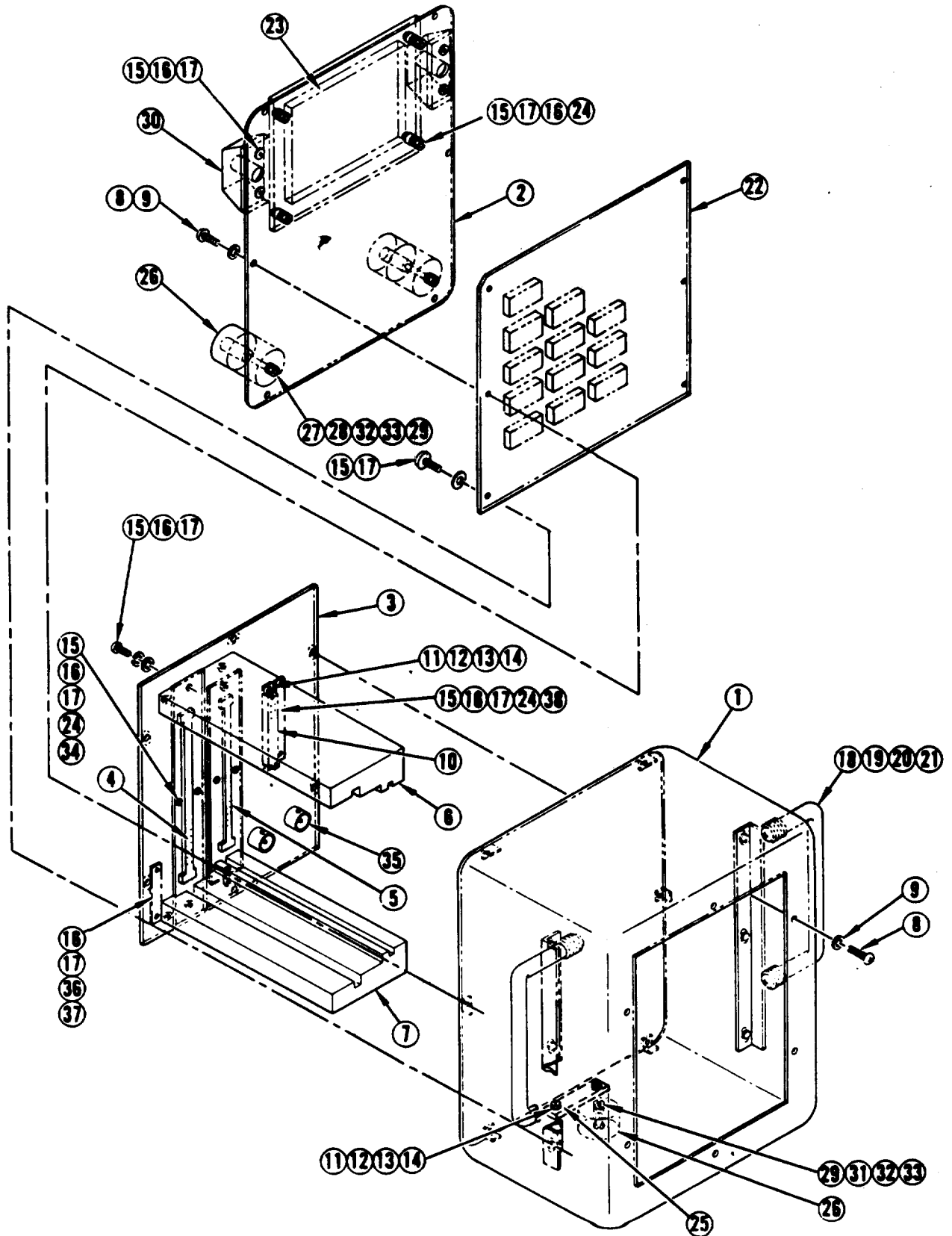
By using the probable cause of failure (PCOF) and the examples in the following table, the corrective action can be determined.

PCOF	Corrective Action
U12,J3-26  U1 --SHORT BETWEEN POWER AND GROUND  U7-U9  U1, U2, U3  U2-U9--SHORT ACROSS RELAY COILS	1. Check wiring between J3 Pin 26 and U12. Replace if required. 2. If wiring is okay, replace U12.  Replace U 1.  Replace U7, U8, and U9.  Replace U1, U2, U3.  Replace U2 thru U9.

## ID 1 C5000610, PARTS LIST AND PARTS LOCATION (1 of 2)

Index Number	Manufacturer's Code	Part Number	Description
1	56977	C5000611	Enclosure
2	56977	C5000612	Plate, adapter
3	56977	C5000613	Plate, mounting
4	56977	C5000614-1	Connector receptacle
5	56977	C5000614-2	Connector receptacle
6	56977	C5000615-1	Guide, circuit card
7	56977	C5000615-2	Guide, circuit card
8	96906	MS51957-45	Screw, machine
9	80205	NAS620C8L	Washer, flat
10	81349	M24308-2-5	Connector
11	96906	MS51957-5	Screw, machine
12	81349	AN960C3L	Washer, flat
13	96906	MS35338-134	Washer, lock
14	96906	MS35649-224	Nut, hex
15	96906	MS51957-30	Screw, machine
16	96906	MS35338-136	Washer, lock
17	81349	AN960C6L	Washer, flat
18	96906	MS39087-3	Handle
19	81349	AN960C10L	Washer, flat
20	96906	MS35338-138	Washer, lock
21	96906	MS51958-64	Screw, machine
22	56977	C5000618	Component board
23	56977	C5000676-1	Connector, receptacle
24	96906	MS35649-264	Nut, hex
25	81349	M24308-2-15	Connector
26	56977	C5000681-1	Bumper, rubber
27	96906	MS51957-51	Screw, machine
28	56977	C5000616	Spacer, bumper
29	96906	MS35649-284	Nut, hex
30	56977	C5000620	Guide, connector
31	96906	MS51957-47	Screw, machine
32	81349	AN960C8L	Washer, flat
33	96906	MS35649-137	Washer, lock
34	80205	NAS620C6L	Washer, flat
35	56997	C5000677-1	Connector
36	96906	MS51957-31	Screw, machine
37	56997	C5000652-1	Terminal board
38	56997	C5000652-2	Terminal board

ID 1 C5000610, PARTS LIST AND PARTS LOCATION (2 of 2)



## ID 1 C5000610, WIRE LIST (1 of 8)

Signal	From	To	Signal	From	To
CH001	P1-Z1	J6-56	CH012	P1-Y13	J1-12
RCH001	P1-Z2	J6-76	RCH012	F1-Y12	TB1-12
CH002	J1 -2	J2-1	CH013	P1-X1	J1-13
CH002	P1-Z3	J1-2	CH013	J1-13	J2-12
CH002	P1-Z3	J1 -2	RCH013	P1-X2	TB1-13
CH003	J1-3	J2-2	CH014	P1-X3	J1-14
CH003	P1-Z5	J1-3	CH014	J1-14	J2-13
RCH003	P1-Z6	TB1-3	RCH014	P1-X4	TB1-14
CH004	J1-4	J2-3	CH015	P1-X5	J1-15
CH004	P1-Z8	J1-4	CH015	J1-15	J2-14
RCH004	P1-Z9	TB1-4	RCH015	P1-X6	TB1-15
CH005	J1-5	J2-4	CH016	P1-X8	J1-16
CH005	P1-Z10	J1-5	CH016	J1-16	J2-15
RCH005	P1-Z11	TB1-5	RCH016	P1-X9	TB1-16
CH006	J1-6	J2-5	CH017	P1-X10	J1-17
CH006	P1-Z12	J1-6	CH017	J1-17	J2-16
RCH006	P1-Z13	TB1-6	RCH017	P1-X11	TB1-17
CH007	J1-7	J2-6	CH018	P1-X12	J1-18
CH007	P1-Y2	J1-7	CH018	J1-18	J2-17
RCH007	P1-Y1	TB1-7	RCH018	P1-X13	TB1-18
CH008	J1-8	J2-7	CH019	P1-W2	J1-19
CH008	P1-Y4	J1 -8	CH019	J1-19	J2-18
RCH008	P1-Y3	TB1-8	RCH019	P1-W1	TB1-19
CH009	J1-9	J2-8	CH020	P1-W4	J1-20
CH009	P1-Y6	J1-9	CH020	J1-20	J2-19
RCH009	P1-Y5	TB1-9	RCH020	P1-W3	TB1-20
CH010	J1-10	J2-9	CH021	P1-W6	J1-21
CH010	P1-Y9	J1-10	CH021	J1-21	J2-20
CH010	P1-Y9	J1-10	RCH021	P1-W5	TB1 -21
CH011	J1-11	J2-10	CH022	P1-W9	J1-22
CH011	P1-Y11	J1-11	CH022	J1-22	J2-21
RCH011	P1-Y10	TB1-11	RCH022	P1-W8	TB1-22
CH012	J1-12	J2-11	CH023	P1-W11	J1-23

## ID 1 C5000610, WIRE LIST (2 of 8)

Signal	From	To	Signal	From	To
CH023	J1-23	J2-22	CH034	J1 -34	J2-33
RCH023	P1-W10	TB1-23	RCH034	P1-U8	TB1-34
CH024	P1-W13	J1-24	CH035	P1-U11	J1-35
CH024	J1-24	J2-23	CH035	J1-35	J2-34
RCH024	P1-W12	TB1-24	RCH035 SH	P1-U10	TB1-35
CH025	P1-V1	J1-25	CH036	P1-U13	J1-36
CH025	J1-25	J2-24	CH036	J1-36	J2-35
RCH025	P1-V2	TB1-25	RCH036 SH	P1-U12	TB1-36
CH026	P1-V3	J1-26	CH037	P1-S1	J1-37
CH026	J1-26	J2-25	CH037	J1-37	J2-36
RCH026	P1-V4	TB1-26	RCH037	P1-S2	TB1-37
CH027	P1-V5	J1-27	CH038	P1-S3	J1-38
CH027	J1-27	J2-26	CH038	J1-38	J2-37
RCH027	P1-V6	TB1-27	RCH038 SH	P1-S4	TB1-38
CH028	P1-V8	J1-28	CH039	P1-S5	J1-39
CH028	J1-28	J2-27	CH039	J1-39	J2-38
RCH028	P1-V9	TB1-28	RCH039	P1-S6	TB1-39
CH029	P1-V10	J1-29	CH040	P1-S8	J1-40
CH029	J1-29	J2-28	CH040	J1-40	J2-39
RCH029	P1-V11	TB1-29	RCH040	P1-S9	TB1-40
CH030	P1-V12	J1-30	CH041	P1-S10	J1-41
CH030	J1-30	J2-29	CH041	J1-41	J2-40
RCH030	P1-V13	TB1-30	RCH041	P1-S11	TB1-41
CH031	P1-U2	J1-31	CH042	P1-S12	J1-42
CH031	J1-31	J2-30	CH042	J1-42	J2-41
RCH031	P1-U1	TB1-31	RCH042	P1-S13	TB1-42
CH032	P1-U4	J1-32	CH043	P1-R2	J1-43
CH032	J1-32	J2-31	CH043	J1-43	J2-42
RCH032	P1-U3	TB1-32	RCH043 SH	P1-R1	TB1-43
CH033	P1-U6	J1-33	CH044	P1-R4	J1-44
CH033	J1-33	J2-32	CH044	J1-44	J2-43
RCH033	P1-U5	TB1-33	RCH044 SH	P1-R3	TB1-44
CH034	P1-U9	J1-34	CH045	P1-R6	J1-45

**ID 1 C5000610, WIRE LIST (3 of 8)**

Signal	From	To
CH045	J1-45	J2-44
RCH045	P1-R5	TB1-45
CH046	P1-R9	J1-46
CH046	J1-46	J2-45
RCH046	P1-R8	TB1-46
CH047	P1-R11	J1-47
CH047	J1-47	J2-46
RCH047	P1-R10	TB1-47
CH048	P1-R13	U6-1
CH048	U6-1	U7-1
CH048	U7-1	U7-8
CH048	U7-8	U8-1
CH048	U8-1	U8-8
CH048	U8-8	U9-1
CH048	U9-1	U9-8
CH048/077	J1-77	U7-14
CH048/077	P1-V14	U7-7
CH048/077	U7-7	U7-14
CH048/077	U8-7	U7-14
CH048/077	U8-7	U8-14
CH048/077	U9-7	U8-14
CH048/077	U9-7	U9-14
RCH048/077	TB1-77	U7-6
CH048A	J1-48	J2-47
CH048A	J1-48	U6-8
CH048A	P 1 - W 2 6	U6-8
CH049	P1-Q1	J1-49
CH049	J1-49	J2-48
RCH049 SH	P 1 - Q 2	TB1-49
CH050	P1-Q3	J1-50
CH050	J1-50	J2-49
RCH050	P1-Q4	TB1 -50
CH051	P1-Q5	J6-37

Signal	From	To
RCH051	P1-Q6	J6-17
CH052	J1-52	U1-20
CH052	P1-Q8	J1-52
CH052	P1-Q8	J1-52
CH052	U1-20	U10-14
CH052	U10-14	U11-14
CH052	U11 -14	U12-14
CH053	P1-Q10	J1-53
CH053	J1-53	J2-51
RCH053	P1 -Q11	TB1-53
CH054	P1-Q12	J1-54
CH054	J1-54	J2-52
RCH054	P1-Q13	TB1-54
CH055	P1-P2	J1-55
CH055	J1-55	J2-53
RCH055	P1-P1	TB1-55
CH056	P1-P4	J1-56
CH056	J1-56	J2-54
RCH056	P1-P3	TB1-56
CH057	P1-P6	J1-57
CH057	J1-57	J2-55
RCH057	P1-P5	TB1-57
CH058	P1-P9	J1-58
CH058	J1-58	J2-56
RCH058	P1-P8	TB1-58
CH059	P1-P11	J1-59
CH059	J1-59	J2-57
RCH059	P1-P10	TB1 -59
CH060	P1-P13	J1-60
CH060	P1-P13	J1-60
CH060	J1-60	J2-58
CH061	P1-N1	J1-61
CH061	J1-61	J2-59

## ID 1 C5000610, WIRE LIST (4 of 8)

Signal	From	To	Signal	From	To
RCH061	P1-N2	TB1-61	RCH072	P1-M12	TB1-72
CH062	P1-N3	J1-62	CH073	P1-L1	J1-73
CH062	J1-62	J2-60	CH073	J1-73	J2-71
RCH062	P1-N4	TB1-62	RCH073	P1-L2	TB1-73
CH063	P1-N5	J1-63	CH074	P1-L3	J1-74
CH063	J1-63	J2-61	CH074	J1-74	J2-72
RCH063	P1-N6	TB1-63	RCH074	P1-L4	TB1-74
CH064	P1-N8	J1-64	CH075	P1-L5	J1-75
CH064	J1-64	J2-62	CH075	J1-75	J2-73
RCH064	P1-N9	TB1-64	RCH075	P1-L6	TB1-75
CH065	P1-N10	J1-65	CH076	P1-L8	J1-76
CH065	J1-65	J2-63	CH076	J1-76	J2-74
RCH065	P1-N11	TB1-65	RCH076SH	P1-L9	TB1-76
CH066	P1-N12	J1-66	CH077	P1-L10	U2-2
CH066	J1-66	J2-64	CH077	U2-2	U3-2
RCH066	P1-N13	TB1-66	CH077	U3-2	U4-2
CH067	P1-M2	J1-67	CH077	U4-2	U5-2
CH067	J1-67	J2-65	CH077	U5-2	U9-2
RCH067	P1-M1	TB1-67	CH077	U6-2	U7-2
CH068	P1-M4	J1-68	CH077	U7-2	U8-2
CH068	J1-68	J2-66	CH077	U8-2	U9-2
RCH068	P1-M3	TB1-68	CH078	P1-L12	J1-78
CH069	P1-M6	J1-69	CH078	J1-78	J2-76
CH069	J1-69	J2-67	RCH078	P1-L13	TB1-78
RCH069	P1-M5	TB1-69	CH079	P1-K2	J1-79
CH070	P1-M9	J1-70	RCH079	P1-K1	TB1-79
CH070	J1-70	J2-68	CH080	P1-K4	J1-80
RCH070	P1-M8	TB1-70	RCH080	P1-K3	TB1-80
CH071	P1-M11	J1-71	CH081	P1-K6	J1-81
CH071	J1-71	J2-69	CH081	J1-81	J2-77
RCH071	P1-M10	TB1-71	RCH081	P1-K5	TB1-81
CH072	P1-M13	J1-72	CH082	P1-K9	J1-82
CH072	J1-72	J2-70	CH082	J1-82	J2-78



**ID 1 C5000610, WIRE LIST (5 of 8)**

Signal	From	To	Signal	From	To
RCH082	P1-K8	TB1-82	CH097	P1-G1	J1-97
CH083	P1-K1 1	J1-83	RCH097	P1-G2	TB1-97
CH083	J1-83	J2-79	CH098	P1-G3	J1-98
RCH083	P1-K10	TB1-83	CH098	P1-G3	J1-98
CH084	P1-K13	J1-84	CH099	P1-G5	J1-99
CH084	J1-84	J2-80	RCH099 SH	P1-G6	TB1-99
RCH084	P1-K12	TB1-84	CH100	P1-G8	J1-100
CH085	P1-J1	J1-85	RCH100	P1-G9	TB1-100
CH085	J1-85	J2-50	CH101	P1-G10	J6-1
RCH085 SH	P1-J2	TB1-85	RCH101	P1-G11	J6-21
CH086	P1-J3	J1-86	CH102	P1-G12	J6-41
CH086	J1-86	J2-75	RCH102	P1-G13	J6-61
RCH086 SH	P1-J4	TB1-86	CH103	P1-E2	J6-22
CH087	P1-J5	J1-87	RCH103	P1-E1	J6-2
RCH087	P1-J6	TB1-87	CH104	P1-E4	J6-77
CH088	P1-J8	J1-88	RCH104	P1-E3	J6-57
RCH088 SH	P1-J9	TB1-88	CH105	P1-E6	J6-3
CH089	P1-J10	J1-89	RCH105	P1-E5	J6-23
RCH089 SH	P1-J11	TB1-89	CH106	P1-E9	J6-43
CH090	P1-J12	J1-90	RCH106	P1-E8	J6-63
RCH090	P1-J13	TB1-90	CH107	P1 -E11	J6-24
CH091	P1-H2	J1-91	RCH107	P1-E10	J6-4
RCH091	P1-H1	TB1-91	CH108	P1-E13	J6-64
CH092	P1-H4	J1-92	RCH108	P1-E1 2	J6-44
RCH092	P1-H3	TB1-92	CH109	P1-D1	J6-5
CH093	P1-H6	J1-93	RCH109	P1-D2	J6-25
RCH093 SH	P1-H5	TB1-93	CH110	P1-D3	J6-45
CH094	P1-H9	J1-94	RCH110	P1-D4	J6-65
RCH094 SH	P1-H8	TB1-94	CH111	P1-D5	J6-26
CH095	P1-H11	J1-95	RCH111	P1-D6	J6-6
RCH095	P1-H10	TB1-95	CH112	P1-D8	J6-66
CH096	P1-H13	J1-96	RCH112	P1-D9	J6-46
RCH096	P1-H12	TB1-96	CH113	P1-010	J 6 - 7

## ID 1 C5000610, WIRE LIST (6 of 8)

Signal	From	To	Signal	From	To
RCH113	P1-D11	J6-27	RCH125	P1-B11	U5-6
CH114	P1-D12	U2-1	CH125A	J6-54	U5-8
CH114	U1-2	U1-1	CH125A	P1-W24	U4-8
CH114	U3-7	U1-2	CH125A	U4-8	U5-8
RCH114	P1-D13	U2-6	RCH125A	J6-74	U9-6
CH114A	J6-47	U3-8	CH126	P1-B12	J6-35
CH114A	P1-W22	U2-8	RCH126	P1-B13	J6-15
CH114A	U2-8	U3-8	CH127	P1-A2	J6-75
RCH114A	J6-67	U4-6	RCH127	P1-A1	J6-55
CH115	P1-C2	J6-28	CH128	P1-A4	J6-16
RCH115	P1-C1	J6-8	RCH128	P1-A3	J6-36
CH116	P1-C4	J6-68	CH1001	J3-1	U10-1
RCH116	P1-C3	J6-48	CH1001	P1-Z14	J3-1
CH117	P1-C6	J6-50	RCH1001	P1-Z15	TB2-1
RCH117	P1-C5	J6-70	CH1002	J3-2	U10-2
CH118	P1-C9	J6-31	CH1002	P1-Z16	J3-2
RCH118	P1-C8	J6-11	RCH1002	P1-Z17	TB2-2
CH119	P1-C11	J6-71	CH1003	J3-3	U10-3
RCH119	P1-C10	J6-51	CH1003	P1-Z18	J3-3
CH120	P1-C13	J6-18	RCH1003	P1-Z19	TB2-3
RCH120	P1-C12	J6-38	CH1006	J3-4	U10-4
CH121	P1-B1	J6-52	CH1006	P1-Z25	J3-4
RCH121	P1-B2	J6-72	RCH1006	P1-Z26	TB2-4
CH122	P1-B3	J6-33	CH1008	J3-5	U10-5
RCH122	P1-B4	J6-13	CH1008	P1-Y17	J3-5
CH123	P1-B5	J6-73	RCH1008	P1-Y16	TB2-5
RCH123	P1-B6	J6-53	CH1009	J3-6	U10-6
CH124	P1-B8	J6-14	CH1009	P1-Y19	J3-6
RCH124	P1-B9	J6-34	RCH1009	P1-Y18	TB2-6
CH125	P1-B10	U4-1	CH1010	J3-7	U10-13
CH125	U1-17	U1-19	CH1010	P1-Y22	J3-7
CH125	U4-1	U5-1	RCH1010	P1-Y21	TB2-7
CH125	U5-7	U1-17	CH1011	J3-9	U10-12

**ID 1 C5000610, WIRE LIST (7 of 8)**

Signal	From	To	Signal	From	To
CH1011	P1-Y24	J3-9	CH1046	P1-R22	J3-20
RCH1011	P1-Y23	TB2-9	RCH1046	P1-R21	TB2-20
CH1012	J3-10	U10-11	CH1047	J3-21	U11-13
CH1012	P1-Y26	J3-10	CH1047	P1-R24	J3-21
RCH1012	P1-Y25	TB2-10	RCH1047	P1-R23	TB2-21
CH1013	J3-11	U10-10	CH1048	J3-22	U11-12
CH1013	P1-X14	J3-11	CH1048	P1-R26	J3-22
RCH1013	P1-X15	TB2-11	RCH1048	P1-R25	TB2-22
CH1014	J3-12	U10-9	CH1050	J3-23	U11-11
CH1014	P1-X16	J3-12	CH1050	P1-Q16	J3-23
RCH1014	P1-X17	TB2-12	RCH1050	P1-Q17	TB2-23
CH1015	J3-13	U10-8	CH1051	P1-Q18	J6-58
CH1015	P1-X18	J3-13	RCH1051	P1-Q19	J6-78
RCH1015	P1-X19	TB2-13	CH1057	J3-25	U11-10
CH1016	J3-14	U10-7	CH1057	P1-P19	J3-25
CH1016	P1-X21	J3-14	RCH1057	P1-P18	TB2-25
RCH1016	P1-X22	TB2-14	CH1060	J6-62	U12-5
CH1017	J3-15	U11-1	CH1060	P1-P26	J6-62
CH1017	P1-X23	J3-15	RCH1060	P1-P25	J6-42
RCH1017	P1-X24	TB2-15	CH1061	J3-32	U11-9
CH1021	J3-16	U11-2	CH1061	P1-N14	J3-32
CH1021	P1-W19	J3-16	RCH1061	P1-N15	TB2-32
RCH1021	P1-W18	TB2-16	CH1062	J3-28	U11-8
CH1042	J3-17	U11-3	CH1062	P1-N16	J3-28
CH1042	P1-S25	J3-17	RCH1062	P1-N1 7	TB2-28
RCH1042	P1-S26	TB2-17	CH1063	J3-27	U11-7
CH1043	J3-18	U11-4	CH1063	P1-N18	J3-27
CH1043	P1-R15	J3-18	RCH1063	P1-N19	TB2-27
RCH1043	P1-R14	TB2-18	CH1064	J3-29	U12-1
CH1044	J3-19	U11-5	CH1064	P1-N21	J3-29
CH1044	P1-R17	J3-19	RCH1064	P1-N22	TB2-29
RCH1044	P1-R16	TB2-19	CH1065	J3-30	U12-2
CH1046	J3-20	U11-6	CH1065	P1-N23	J3-30

**ID 1 C5000610, WIRE LIST (8 of 8)**

Signal	From	To
RCH1065	P1-N24	TB2-30
CH1066	J3-33	U12-3
CH1066	P1-N25	J3-31
RCH1066	P1-N26	TB2-31
CH1067	J3-26	U12-4
CH1067	P1-M15	J3-26
RCH1067	P1-M1 4	TB2-26
CH1076	P1-L21	J5-C
RCH1076 SH	P1-L22	J5-S
CH1098	J6-12	U12-6
CH1098	P1-G16	J6-12
RCH1098	P1-G17	J6-32
CH1099	P1-G18	R1-A
CH1100	P1-G21	R1-B
CH1101	P1-G23	J1-1
RCH1101	P1-G24	TB1-1
CH1102	P1-G25	J1-51

Signal	From	To
RCH1102	P1-G26	TB1-51
CH1114	P1-D25	U3-14
RCH1114	P1-D26	U3-6
CH1125	P1-B23	U1-3
CH1125	U1-3	U5-14
RCH1125	P1-B24	U9-6
CH1127	P1-A15	J4-C
RCH1127 SH	P1-A14	J4-S
CHAS RTN	TB1-60	U1-10
CHAS RTN	U1-10	U2-6
CHAS RTN	U2-6	U3-6
CHAS RTN	U3-6	U4-6
CHAS RTN	U4-6	U5-6
CHAS RTN	U5-6	U9-6
CHAS RTN	U6-6	U7-6
CHAS RTN	U7-6	U8-6
CHAS RTN	U8-6	U9-6

**Section III. ID 2 C5000621 MAINTENANCE**

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Introduction . . . . .	3-15	ID 2 C5000621, Parts List and Parts Location .	3-16
ID 2 C5000621, Schematic . . . . .	3-15	ID 2 C5000621, Wire List. . . . .	3-18
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**INTRODUCTION**

This section contains the information required to maintain ID 2 (part number C5000621 ). The following maintenance information is provided:

- Schematic
- Parts list and parts location
- Wire list

**ID 2 C5000621, SCHEMATIC**

See page FO-5 thru FO-8 for the schematic of ID 2 (part number C5000621).

**ID FAILURE MESSAGE**

during execution of a card test program, a failure is detected in the ID, the following message will be printed out to the operator:

**\*\*\*\* END OF PROGRAM \*\*\*\***  
**\* ID C5000XXX FAILED \***  
**GO-CHAIN=XXXX**  
**PCOF: XXXXXXXXXXXX**

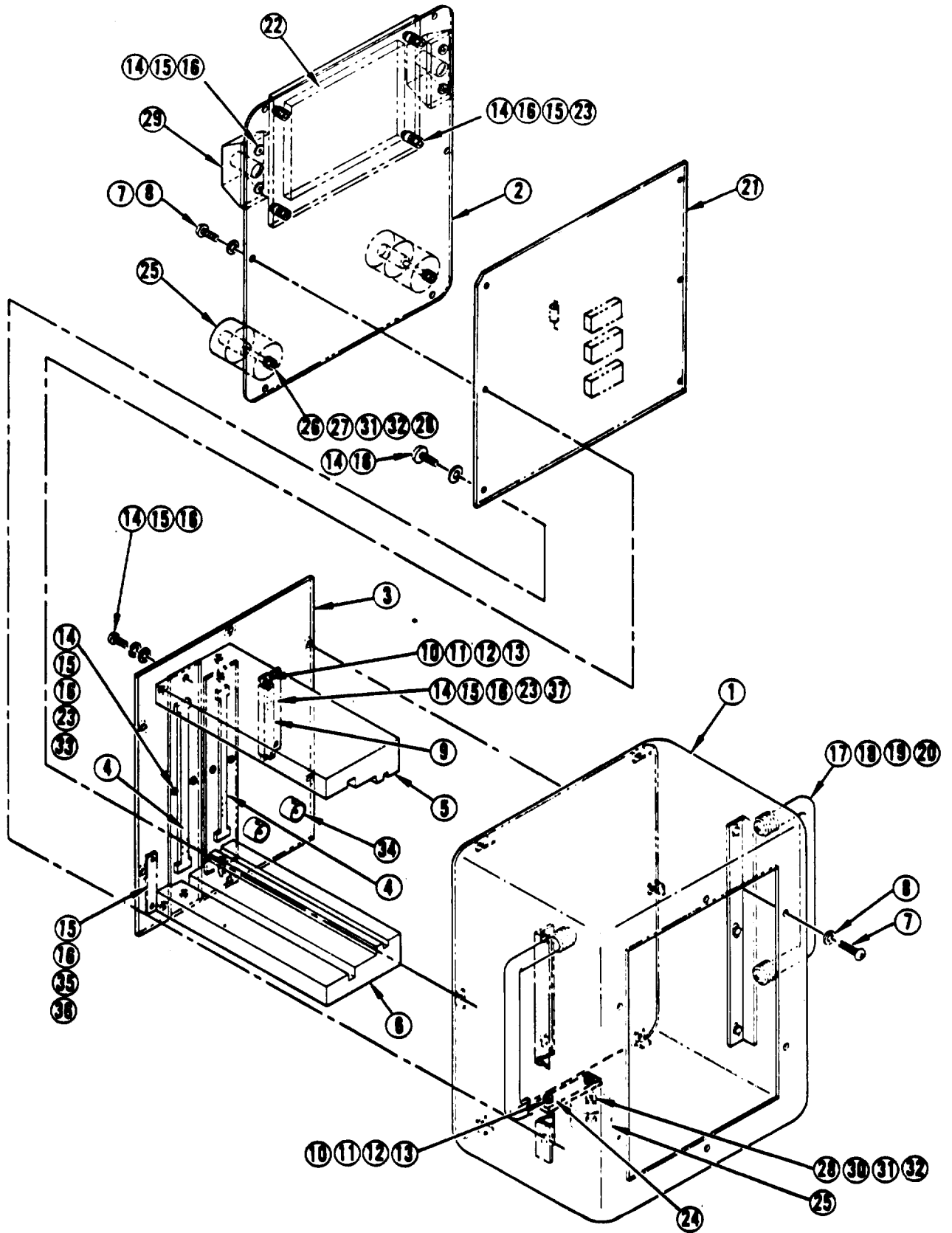
By using the probable cause of failure (PCOF) and the corrective action can be determined.

PCOF	Corrective Action
U1 , J3-4	1. Check wiring between J3 Pin 4 and U1 . Replace if required. 2. If wiring is okay, replace U1.

**ID 2 C5000621, PARTS LIST AND PARTS LOCATION (1 OF 2 )**

Index Number	Manufacturer's Code	Part Number	Description
1	56977	C5000611	Enclosure
2	56977	C5000612	Plate, adapter
3	56977	C5000613	Plate, mounting
4	56977	C5000614-1	Connector, receptacle
5	56977	C5000615-1	Guide, circuitcard
6	56977	C5000615-2	Guide, circuit card
7	96906	MS51957-45	Screw, machine
8	80205	NAS620C8L	Washer,flat
9	81349	M24308-2-5	Connector
10	96906	MS51957-5	Screw,machine
11	81349	AN960C3L	Washer,flat
12	96906	MS35338-134	Washer,lock
13	96906	MS35649-224	Nut,hex
14	96906	MS51957-30	Screw, machine
15	96906	MS35338-136	Washer,lock
16	81349	AN960C6L	Washer,flat
17	96906	MS39087-3	Handle
18	81349	AN960C10L	Washer,flat
19	96906	MS35338-138	Washer,lock
20	96906	MS51958-64	Screw, machine
21	56977	C5000618	Component board
22	56977	C5000676-1	Connecton receptacle
23	96906	MS35649-264	Nut,hex
24	81349	M24308-2-15	Connector
25	56977	C5000681-1	Bumper,rubber
26	96906	MS51957-51	Screw, machine
27	56977	C5000616	Spacer,bumper
28	96906	MS35649-284	Nut,hex
29	56977	C5000620	Guide, connector
30	96906	MS51957-47	Screw, machine
31	81349	AN960C8L	Washer,flat
32	96906	MS35338-137	Washer,lock
33	80205	NAS620C6L	Washer,flat
34	56997	C5000677-1	Connector
35	96906	MS51957-31	Screw, machine
36	56997	C5000652-1	Terminal board
37	56997	C5000652-2	Terminal board
38	81349	M39024-10-03	Connector test point (black)
39	81349	M39024-10-02	Connecton,testpoint (red)

ID 2 C5000621, PARTS LIST AND PARTS LOCATION (2 of 2)



**ID 2 C5000621, WIRE LIST (1 of 8)**

Signal	From	To	Signal	From	To
CH001	P1-Z1	J2-1	CH011	P1-Y11	J1-11
CH001	J1-1	J2-1	RCH011	P1-Y10	TB1-11
CH001	TP1	J1-1	CH012	J1-12	J2-12
CH001	TP1	J1-1	CH012	P1-Y13	J1-12
RCH001	P1-Z2	TB1-1	RCH012	P1-Y12	TB1-12
CH002	P1-Z3	J1-2	CH013	P1-X1	J1-13
CH002	P1-Z3	J1-2	CH013	J1-13	J2-13
CH002	J1-2	J2-1	RCH013	P1-X2	TB1-13
CH003	J1-3	J2-3	CH014	P1-X3	J1-14
CH003	P1-Z5	J1-3	CH014	J1-14	J2-14
RCH003	P1-Z6	TB1-3	RCH014	P1-X4	TB1-14
CH004	J1-4	J2-4	CH015	P1-X5	J1-15
CH004	P1-Z8	J1-4	CH015	J1-15	J2-15
RCH-1004	P1-Z9	TB1-4	RCH015	P1-X6	TB1-15
CH005	J1-5	J2-5	CH016	P1-X8	J1-16
CH005	P1-Z10	J1-5	CH016	J1-16	J2-16
RCH005	P1-Z11	TB1-5	RCH016	P1-X9	TB1-16
CH006	J1-6	J2-6	CH017	P1-X10	J1-17
CH006	P1-Z12	J1-6	CH017	J1-17	J2-17
RCH006	P1-Z13	TB1-6	RCH017	P1-X11	TB1-17
CH-1007	J1-7	J2-7	CH018	P1-X12	J1-18
CH007	P1-Y2	J1-7	CH018	J1-18	J2-18
RCH007	P1-Y1	TB1-7	RCH018	P1-X13	TB1-18
CH008	J1-8	J2-8	CH019	P1-W2	J1-19
CH008	P1-Y4	J1-8	CH019	J1-19	J2-19
RCH008	P1-Y3	TB1-8	RCH019	P1-W1	TB1-19
CH009	J1-9	J2-9	CH020	P1-W4	J1-20
CH009	P1-Y6	J1-9	CH020	J1-20	J2-20
RCH009	P1-Y5	TB1-9	RCH020	P1-W3	TB1-20
CH010	J1-10	J2-10	CH021	P1-W6	J1-21
CH010	P1-Y9	J1-10	CH021	J1-21	J2-21
CH010	P1-Y9	J1-10	RCH021	P1-W5	TB1-21
CH011	J1-11	J2-11	CH022	P1-W9	J1-22



I D 2 C5000621, WIRE LIST (2 of 8)

Signal	From	To
CH022	J1-22	J2-22
RCH022	P1-W8	TB1-22
CH023	P1-W11	J1-23
CH023	J1-23	J2-23
RCH023	P1-W10	TB1-23
CH024	P1-W13	J1-24
CH024	J1-24	J2-24
RCH024	P1-W12	TB1-24
CH025	P1-V1	J1-25
CH025	J1-25	J2-25
RCH025	P1-V2	TB1-25
CH026	P1-V3	J1-26
CH026	J1-26	J2-26
RCH026	P1-V4	TB1-26
CH027	P1-V5	J1-27
CH027	J1-27	J2-27
RCH027	P1-V6	TB1-27
CH028	P1-V8	J1-28
CH028	J1-28	J2-28
RCH028	P1-V9	TB1-28
CH029	P1-V10	J1-29
CH029	J1-29	J2-29
RCH029	P1-V11	TB1-29
CH030	P1-V12	J1-30
CH030	J1-30	J2-30
RCH030	P1-V13	TB1-30
CH031	P1-U2	J1-31
CH031	J1-31	J2-31
RCH031	P1-U1	TB1-31
CH032	P1-U4	J1-32
CH032	J1-32	J2-32
RCH032	P1-U3	TB1-32
CH033	P1-U6	J1-33

Signal	From	To
CH033	J1-33	J2-33
RCH033	P1-U5	TB1-33
CH034	P1-U9	J1-34
CH034	J1-34	J2-34
RCH034	P1-U8	TB1-34
CH035	P1-U11	J1-35
CH035	J1-35	J2-35
RCH035 SH	P1-U10	TB1-35
CH036	P1-U13	J1-36
CH036	J1-36	J2-36
RCH036 SH	P1-U12	TB1-36
CH037	P1-S1	J1-37
CH037	J1-37	J2-37
RCH037	P1-S2	TB1-37
CH038	P1-S3	J1-38
CH038	J1-38	J2-38
RCH038 SH	P1-S4	TB1-38
CH039	P1-S5	J1-39
CH039	J1-39	J2-39
RCH039	P1-S6	TB1-39
CH040	P1-S8	J1-40
CH040	J1-40	J2-40
CH040	P1-S9	TB1-40
CH041	P1-S10	J1-41
CH041	J1-41	J2-41
RCH041	P1-S11	TB1-41
CH042	P1-S12	J1-42
CH042	J1-42	J2-42
RCH042	P1-S13	TB1-42
CH043	P1-R2	J1-43
CH043	J1-43	J2-43
RCH043 SH	P1-R1	TB1-43
CH044	P1-R4	J1-44

**ID 2 C5000621, WIRE LIST (3 of 8)**

Signal	From	To	Signal	From	To
CH044	J1-44	J2-44	CH054	J1-54	J2-54
RCH044 SH	P1-R3	TB1-44	RCH054	P1-Q13	TB1-54
CH045	P1-R6	J1-45	CH055	P1-P2	J1-55
CH045	J1-45	J2-45	CH055	J1-55	J2-55
RCH045	P1-R5	TB1-45	RCH055	P1-P1	TB1-55
CH046	P1-R9	J1-46	CH056	P1-P4	J1-56
CH046	J-146	J2-46	CH056	J1-56	J2-56
RCH046	P1-R8	TB1-46	RCH056	P1-P3	TB1-56
CH047	P1-R11	J1-47	CH057	P1-P6	J1-57
CH047	J1-47	J2-47	CH057	J1-57	J2-57
RCH047	P1-R10	TB1-47	RCH057	P1-P5	TB1-57
CH048	P1-R13	J1-48	CH058	P1-P9	J1-58
CH048	P1-R13	J1-48	CH058	J1-58	J2-58
CH048	J1-48	J2-48	RCH058	P1-P8	TB1-58
CH048	TP2	J1-48	CH059	P1-P11	J1-59
CH048	TP2	J1-48	CH059	J1-59	J2-59
CH049	P1-Q1	J1-49	RCH059	P1-P10	TB1-59
CH049	J1-49	J2-49	CH060	P1-P13	J1-60
RCH049 SH	P1-Q2	TB1-49	CH060	P1-P13	J1-60
CH050	P1-Q3	J1-50	CH060	J1-60	J2-60
CH050	J1-50	J2-50	CH061	P1-N1	J1-61
RCH050	P1-Q4	TB1-50	CH061	J1-61	J2-61
CH051	P1-Q5	J1-51	RCH061	P1-N2	TB1-61
CH051	J1-51	J2-51	CH062	P1-N3	J1-62
RCH051	P1-Q6	TB1-51	CH062	J1-62	J2-62
CH052	P1-Q8	J1-52	RCH062	P1-N4	TB1-62
CH052	P1-Q8	J1-52	CH063	P1-N5	J1-63
CH052	U1-14	U2-14	CH063	J1-63	J2-63
CH052	U2-14	U3-14	RCH063	P1-N6	TB1-63
CH053	P1-Q10	J1-53	CH064	P1-N8	J1-64
CH053	J1-53	J2-53	CH064	J1-64	J2-64
RCH053	P1-Q11	TB1-53	RCH064	P1-N9	TB1-64
CH054	P1-Q12	J1-54	CH065	P1-N10	J1-65

## ID 2 C5000621, WIRE LIST (4 of 8)

Signal	From	To	Signal	From	To
CH065	J1-65	J2-65	CH076	J1-76	J2-76
RCH065	P1-N11	TB1-65	RCH076 SH	P1-L9	TB1-76
CH066	P1-N12	J1-66	CH077	P1-L10	J1-77
CH066	J1-66	J2-66	CH077	J1-77	J2-77
RCH066	P1-N13	TB1-66	RCH077	P1-L1 1	TB1-77
CH067	P1-M2	J1-67	CH078	P1-L12	J1-78
CH067	J1-67	J2-67	CH078	J1-78	J2-78
RCH067	P1-M1	TB1-67	RCH078	P1-L13	TB1-78
CH068	P1-M4	J1-68	CH079	P1-K2	J1-79
CH068	J1-68	J2-68	CH079	J1-79	J2-79
RCH068	P1-M3	TB1-68	RCH079	P1-K1	TB1-79
CH069	P1-M6	J1-69	CH080	P1-K4	J1-80
CH069	J1-69	J2-69	CH080	J1-80	J2-80
RCH069	P1-M5	TB1-69	RCH080	P1-K3	TB1-80
CH070	P1-M9	J1-70	CH081	P1-K6	J1-81
CH070	J1-70	J2-70	CH081	J1-81	J2-81
RCH070	P1-M8	TB1-70	RCH081	P1-K5	TB1-81
CH071	P1-M11	J1-71	CH082	P1-K9	J1-82
CH071	J1-71	J2-71	CH082	J1-82	J2-82
RCH071	P1-M10	TB1-71	RCH082	P1-K8	TB1-82
CH072	P1-M13	J1-72	CH083	P1-K11	J1-83
CH072	J1-72	J2-72	CH083	J1-83	J2-83
RCH072	P1-M12	TB1-72	RCH083	P1-K10	TB1-83
CH073	P1-L1	J1-73	CH084	P1-K13	J1-84
CH073	J1-73	J2-73	CH084	J1-84	J2-84
RCH073	P1-L2	TB1-73	RCH084	P1-K12	TB1-84
CH074	P1-L3	J1-74	CH085	P1-J1	J1-85
CH074	J1-74	J2-74	CH085	J1-85	J2-85
RCH074	P1-L4	TB1-74	RCH085 SH	P1-J2	TB1-85
CH075	P1-L5	J1-75	CH086	P1-J3	J1-86
CH075	J1-75	J2-75	CH086	J1-86	J2-86
RCH075	P1-L6	TB1-75	RCH086 SH	P1-J4	TB1-86
CH076	P1-L8	J1-76	CH087	P1-J5	J1-87

**ID 2 C5000621, WIRE LIST (5 of 8)**

Signal	From	To	Signal	From	To
CH087	J1-87	J2-87	CH098	P1-G3	J1-98
RCH087	P1-J6	TB1-87	CH098	J1-98	J2-98
CH088	P1-J8	J1-88	CH099	P1-G5	J1-99
CH088	J1-88	J2-88	CH099	J1-99	J2-99
RCH088 SH	P1-J9	TB1-88	RCH099 SH	P1-G6	TB1-99
CH089	P1-J10	J1-89	CH100	P1-G8	J1-100
CH089	J1-89	J2-89	CH100	J1-100	J2-100
RCH089 SH	P1-J11	TB1-89	RCH100	P1-G9	TB1-100
CH090	P1-J12	J1-90	CH101	P1-G10	J6-1
CH090	J1-90	J2-90	RCH101	P1-G11	J6-21
RCH090	P1-J13	TB1-90	CH102	P1-G12	J6-41
CH091	P1-H2	J1-91	RCH102	P1-G13	J6-61
CH091	J1-91	J2-91	CH103	P1-E2	J6-22
RCH091	P1-H1	TB1-91	RCH103	P1-E1	J6-2
CH092	P1-H4	J1-92	CH104	P1-E4	J6-56
CH092	J1-92	J2-92	RCH104	P1-E3	J6-76
RCH092	P1-H3	TB1-92	CH105	P1-E6	J6-3
CH093	P1-H6	J1-93	RCH105	P1-E5	J6-23
CH093	J1-93	J2-93	CH106	P1-E9	J6-43
RCH093 SH	P1-H5	TB1-93	RCH106	P1-E8	J6-63
CH094	P1-H9	J1-94	CH107	P1-E11	J6-24
CH094	J1-94	J2-94	RCH107	P1-E10	J6-4
RCH094 SH	P1-H8	TB1-94	CH108	P1-E13	J6-64
CH095	P1-H11	J1-95	RCH108	P1-E12	J6-44
CH095	J7-95	J2-95	CH109	P1-D1	J6-5
RCH095	P1-H10	TB1-95	RCH109	P1-D2	J6-25
CH096	P1-H13	J1-96	CH110	P1-D3	J6-45
CH096	J1-96	J2-96	RCH110	P1-D4	J6-65
RCH096	P1-H12	TB1-96	CH111	P1-D5	J6-26
CH097	P1-G1	J1-97	RCH111	P1-D6	J6-6
CH097	J1-97	J2-97	CH112	P1-D8	J6-66
RCH097	P1-G2	TB1-97	RCH112	P1-D9	J6-46
CH098	P1-G3	J1-98	CH113	P1-D10	J6-7

## ID 2 C5000621, WIRE LIST (6 of 8)

Signal	From	To
RCH113	P1-D11	J6-27
CH114	P1-D12	J6-47
RCH114	P1-D13	J6-67
CH115	P1-C2	J6-28
RCH115	P1-C1	J6-8
CH116	P1-C4	J6-68
RCH116	P1-C3	J6-48
CH117	P1-C6	J6-50
RCH117	P1-C5	J6-70
CH118	P1-C9	J6-31
RCH118	P1-C8	J6-11
CH119	P1-C11	J6-71
RCH119	P1-C10	J6-51
CH120	P1-C13	J6-37
RCH120	P1-C12	J6-17
CH121	P1-B1	J6-52
RCH121	P1-B2	J6-72
CH122	P1-B3	J6-33
RCH122	P1-B4	J6-13
CH123	P1-B5	J6-77
RCH123	P1-B6	J6-57
CH124	P1-B8	J6-14
RCH124	P1-B9	J6-34
CH125	P1-B10	J6-54
RCH125	P1-B11	J6-74
CH126	P1-B12	J6-35
RCH126	P1-B13	J6-15
CH127	P1-A2	J6-75
RCH127	P1-A1	J6-55
CH128	P1-A4	J6-18
RCH128	P1-A3	J6-38
CH1001	U1-1	J3-1
CH1001	P1-Z14	J3-1

Signal	From	To
RCH1001	P1-Z15	TB2-1
CH1002	U1-2	J3-2
CH1002	P1-Z16	J3-2
RCH1002	P1-Z17	TB2-2
CH1003	U1-3	J3-3
CH1003	P1-Z18	J3-3
RCH1003	P1-Z19	TB2-3
CH1006	U1-4	J3-4
CH1006	P1-Z25	J3-4
RCH1006	P1-Z26	TB2-4
CH1008	U1-5	J3-5
CH1008	P1-Y17	J3-5
RCH1008	P1-Y16	TB2-5
CH1009	U1-6	J3-6
CH1009	P1-Y19	J3-6
RCH1009	P1-Y18	TB2-6
CH1010	U1-13	J3-7
CH1010	P1-Y22	J3-7
RCH1010	P1-Y21	TB2-7
CH1011	U1-12	J3-9
CH1011	P1-Y24	J3-9
RCH1011	P1-Y23	TB2-9
CH1012	U1-11	J3-10
CH1012	P1-Y26	J3-10
RCH1012	P1-Y25	TB2-10
CH1013	U1-10	J3-11
CH1013	P1-X14	J3-11
RCH1013	P1-X15	TB2-11
CH1014	U1-9	J3-12
CH1014	P1-X16	J3-12
RCH1014	P1-x17	TB2-12
CH1015	U1-8	J3-13
CH1015	P1-X18	J3-13

**ID 2 C5000621, WIRE LIST (7 of 8)**

Signal	From	To	Signal	From	To
RCH1015	P1-X19	TB2-13	RCH1048	P1-R25	TB2-22
CH1016	U1-7	J3-14	CH1050	U2-11	J3-23
CH1016	P1-X21	J3-14	CH1050	P1-Q16	J3-23
RCH1016	P1-X22	TB2-14	RCH1050	P1-Q17	TB2-23
CH1017	U2-1	J3-15	CH1051	P1-Q18	J6-58
CH1017	P1-X23	J3-15	RCH1051	P1-Q19	J6-78
RCH1017	P1-X24	TB2-15	CH1057	U2-10	J3-25
CH1021	U2-2	J3-16	CH1057	P1-P19	J3-25
CH1021	P1-W19	J3-16	RCH1057	P1-P18	TB2-25
RCH1021	P1-W18	TB2-16	CH1060	U3-5	J6-62
CH1023	U3-13	J6-73	CH1060	P1-P26	J6-62
CH1023	P1-W24	J6-73	RCH1060	P1-P25	J6-42
RCH1023	P1-W23	J6-53	CH1061	U2-71	J3-32
CH1028	U3-12	J6-16	CH1061	P1-N14	J3-32
CH1028	P1-V21	J6-16	RCH1061	P1-N15	TB2-32
RCH1028	P1-V22	J6-36	CH1062	U2-9	J3-28
CH1042	U2-5	J3-17	CH1062	P1-N16	J3-28
CH1042	P1-S25	J3-17	RCH1062	P1-N17	TB2-28
RCH1042	P1-S26	TB2-17	CH1063	U2-8	J3-27
CH1043	U2-3	J3-18	CH1063	P1-N18	J3-27
CH1043	P1-R15	J3-18	RCH1063	P1-N19	TB2-27
RCH1043	P1-R14	TB2-18	CH1064	U3-1	J3-29
CH1044	U2-4	J3-19	CH1064	P1-N21	J3-29
CH1044	P1-R17	J3-19	RCH1064	P1-N22	TB2-29
RCH1044	P1-R16	TB2-19	CH1065	U3-2	J3-30
CH1046	U2-6	J3-20	CH1065	P1-N23	J3-30
CH1046	P1-R22	J3-20	RCH1065	P1-N24	TB2-30
RCH1046	P1-R21	TB2-20	CH1066	U3-3	J3-33
CH1047	U2-13	J3-21	CH1066	P1-N25	J3-31
CH1047	P1-R24	J3-21	RCH1066	P1-N26	TB2-31
RCH1047	P1-R23	TB2-21	CH1067	U3-4	J3-26
CH1048	U2-12	J3-22	CH1067	P1-M15	J3-26
CH1048	P1-R26	J3-22	RCH1067	P1-M14	TB2-26

**ID 2 C5000621, WIRE LIST (8 of 8)**

Signal	From	To
CH1076	P1-L21	J5-C
RCH1076 SH	P1-L22	J5-S
CH1098	U3-6	J6-12
CH1098	P1-G16	J6-12
RCH1098	P1-G17	J6-32

Signal	From	To
CH1099	P1-G18	R1-A
CH1100	P1-G21	R1-B
CH1127	P1-A15	J4-C
RCH1127 SH	P1-A14	J4-S

**Section IV. TEST POINT ADAPTER 1 C5000628 MAINTENANCE**

Introduction . . . . .	Page 3-27	Test Point Adapter 1 C5000628, Parts List and Parts Location . . . . .	Page 3-28
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**INTRODUCTION**

This section contains the information required to maintain test point adapter 1 (part number C5000628).

- Schematic
- Parts List and Parts Location

**TEST POINT ADAPTER 1 C5000628, SCHEMATIC**

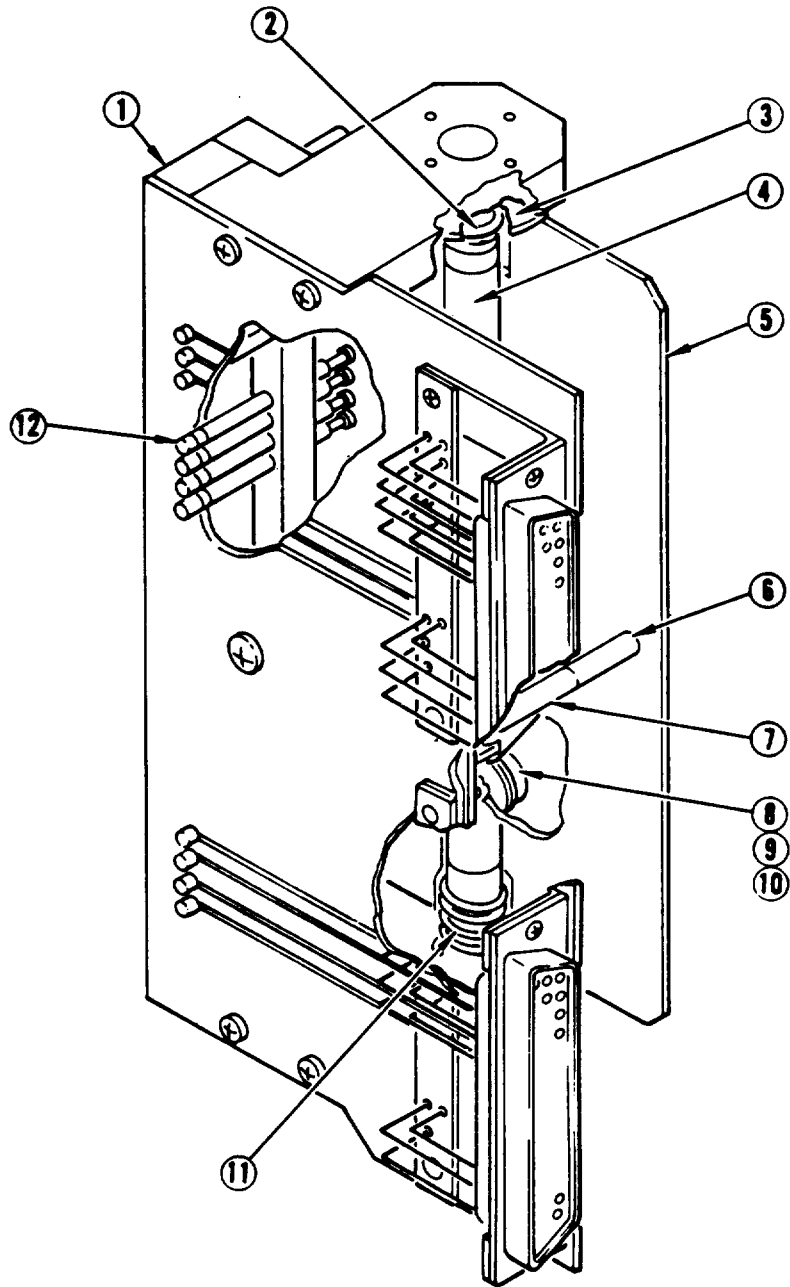
See page FO-9 for the schematic of Test Point Adapter 1 (part number C5000628).



## TEST POINT ADAPTER 1 C5000628, PARTS LIST AND PARTS LOCATION (1 of 2)

Index Number	Manufacturer's Code	Part Number	Description
1	56977	C5000632	Test clip 1 - circuit card assembly
2	56977	C5000630	Spring 1, torsion
3	56977	C5000646	Bearing, washer
4	56977	C5000644	Pivot 1, rod
5	56977	C5000647	Plate 1, pivot
6	56977	C5000655	Support top pivot plate
7	56977	C5000654	Support base pivot plate
8	96906	MS51957-27	Screw, machine
9	96906	MS35338-136	Washer, lock
10	81349	AN960C6L	Washer, flat
11	56977	C5000631	Spring 2, torsion
12	56977	C5000691-1	Probe contact

TEST POINT ADAPTER 1 C5000628, PARTS LIST AND PARTS LOCATION (2 Of 2)



**Section V. TEST POINT ADAPTER 2 C5000629 MAINTENANCE**

	Page		Page
Introduction. . . . .	3-31	Test Point Adapter 2 C5000629, Parts List and Parts	
Test Point Adapter 2 C5000629, Schematic.	3-31	Location . . . . .	3-32

**INTRODUCTION**

This section contains the information required to maintain test point adapter 1 (part number C5000629). The following maintenance information is provided:

- Schematic
- Parts List and Parts Location

**TEST POINT ADAPTER 2 C5000629, SCHEMATIC**

See page FO-10 for the schematic of Test Point Adapter 2 (part number C5000629).

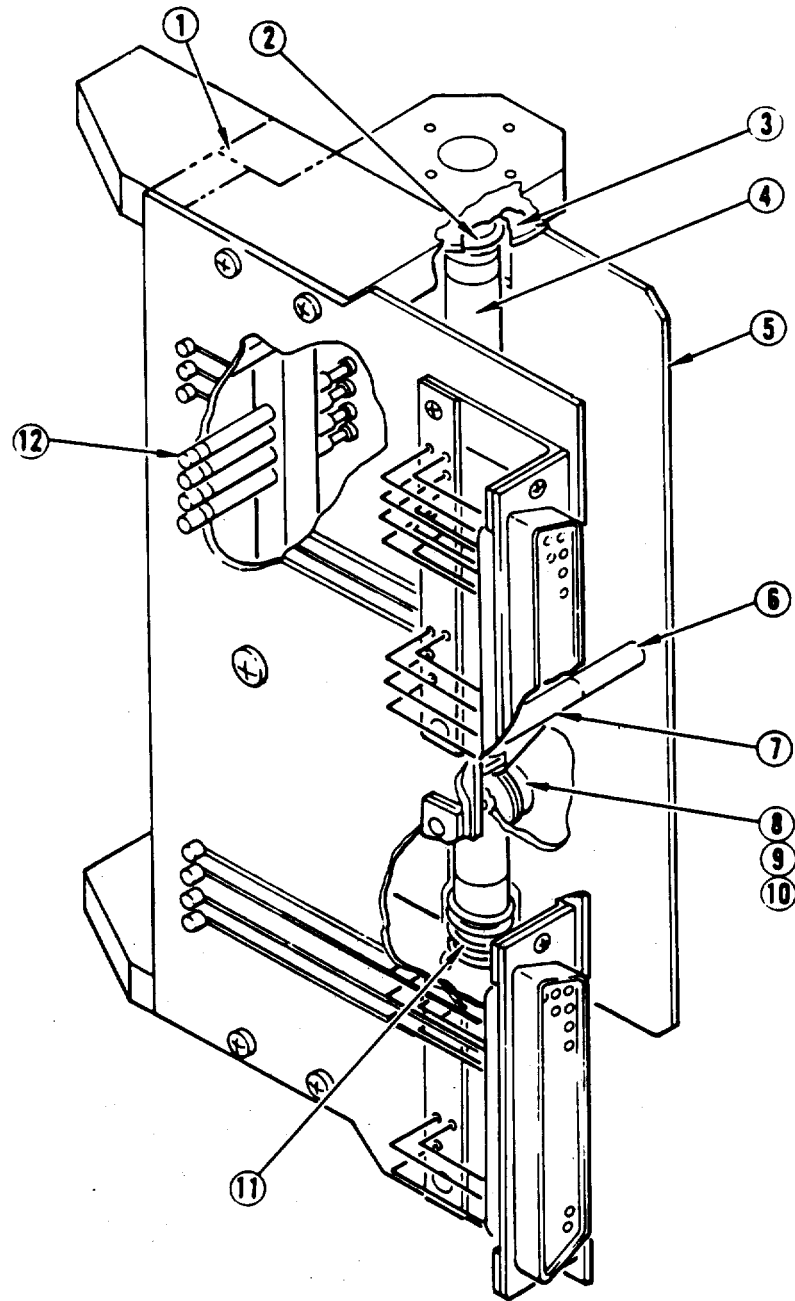
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**TEST POINT ADAPTER 2 C5000629, PARTS LIST AND PARTS LOCATION (1 of 2)**


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Index Number	Manufacturer's Code	Part Number	Description
1	56977	C5000635	Test clip 2 — circuit card assembly
2	56977	C5000630	Spring 1, torsion
3	56977	C5000646	Bearing, washer
4	56977	C5000645	Pivot 2, rod
5	56977	C5000648	Plate 2, pivot
6	56977	C5000655	Support, top pivot plate
7	56977	C5000654	Support base pivot plate
8	96906	MS51957-27	Screw, machine
9	96906	MS35338-136	Washer, lock
10	81349	AN960C6L	Washer, flat
11	56977	C5000631	Spring 2, torsion
12	56977	C5000691-1	Probe contact

TEST POINT ADAPTER 2 C5000629, PARTS LIST AND PARTS LOCATION (2 of 2)



**Section VI. TEST POINT ADAPTER CABLE C5000649 MAINTENANCE**

	Page		Page
Introduction .....	3-35	Test Point Adapter Cable C5000649, Parts List and	
Test Point Adapter Cable C5000649, Schematic ...	3-35	Parts Location .....	3-36

**INTRODUCTION**

This section contains the information required to maintain the test point adapter cable (part number C5000649). The following maintenance information is provided:

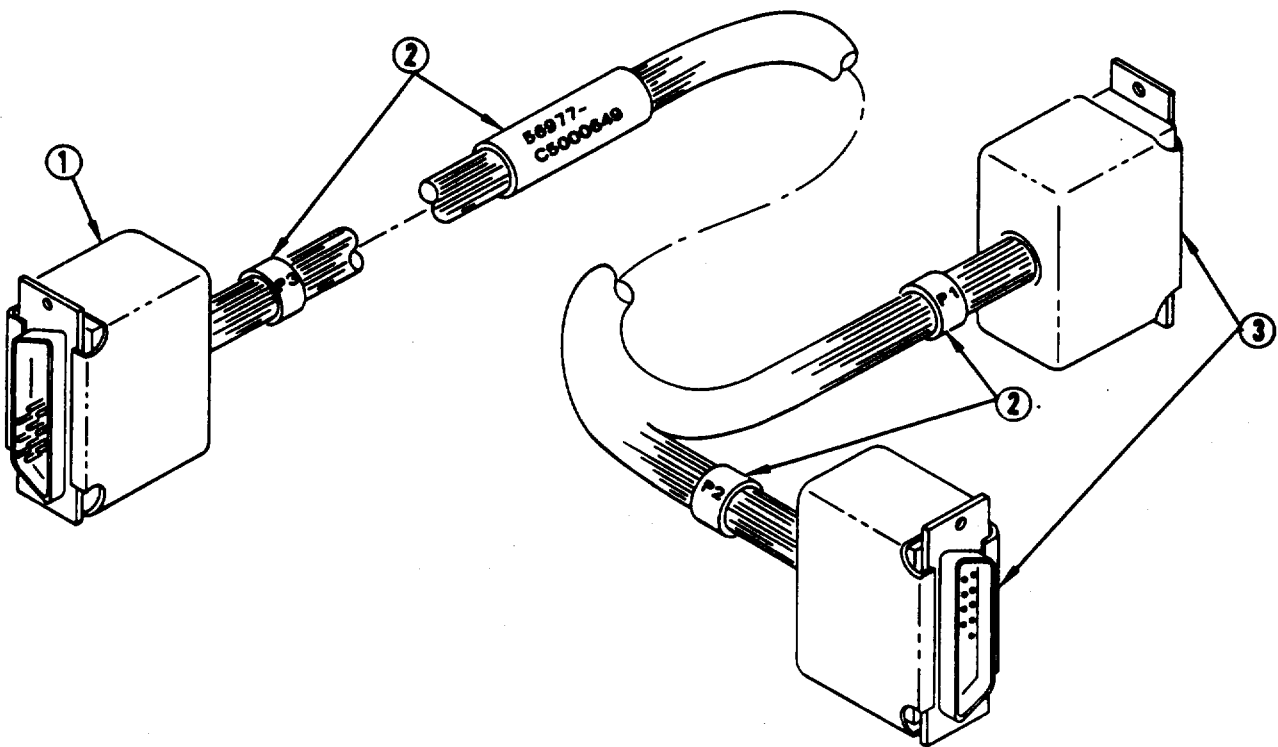
- Schematic
- Parts list and parts location

**TEST POINT ADAPTER CABLE C5000649, SCHEMATIC**

See page FO-11 for the schematic of test point adapter cable (part number C5000649).

**TEST POINT ADAPTER CABLE C5000649, PARTS LIST AND PARTS LOCATION**

Index Number	Manufacturer's Code	Part Number	Description
1	81349	M24308-4-15	Plug connector
2	80063	SM-A-800453-3	Identification marker
3	81349	M24308-2-4	Receptacle connector



**Section VII. TEST POINT ADAPTER CABLE C5000651 MAINTENANCE**

	Page		Page
Introduction.....	3-37	Test Point Adapter Cable C5000651, Schematic . . . .	3-39
Test Point Adapter Cable C5000651. Parts List and Parts Location .....	3-38		

**INTRODUCTION**

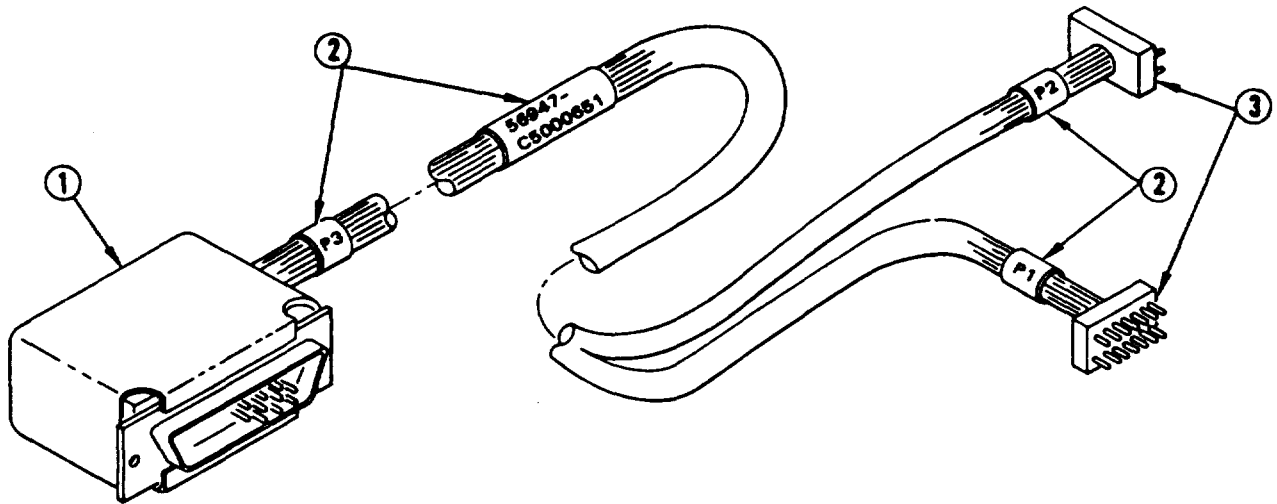
This section contains the information required to maintain the test point adapter cable (part number C5000651 ). The following maintenance information is provided:

- Parts list and parts location
- Schematic

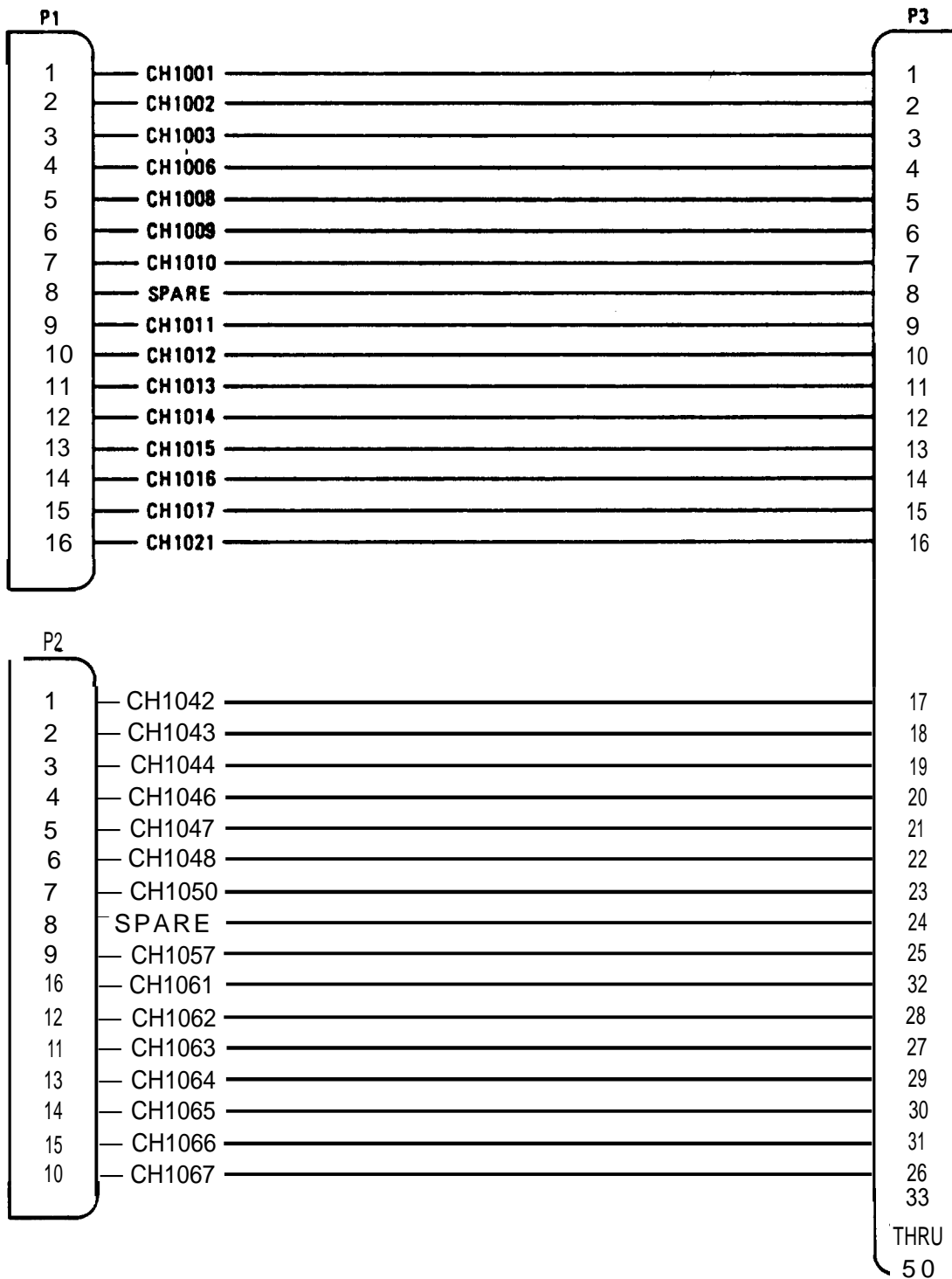


**TEST POINT ADAPTER CABLE C5000651, PARTS LIST AND PARTS LOCATION**

Index Number	Manufacturer's Code	Part Number	Description
1	81349	M24308-4-5	Plug connector
2	80063	SM-A-800453-3	Identification marker
3	56977	C5000697-1	Adapter plug



**TEST POINT ADAPTER CABLE C5000651, SCHEMATIC**



**Section VIII. TEST POINT ADAPTER CABLE C5000658 MAINTENANCE**

	Page		Page
Introduction . . . . .	3-41	Test Point Adapter Cable C5000658, Schematic	3-42
Test Point Adapter Cable C5000658, Parts List and Parts Location . . . . .	3-42		

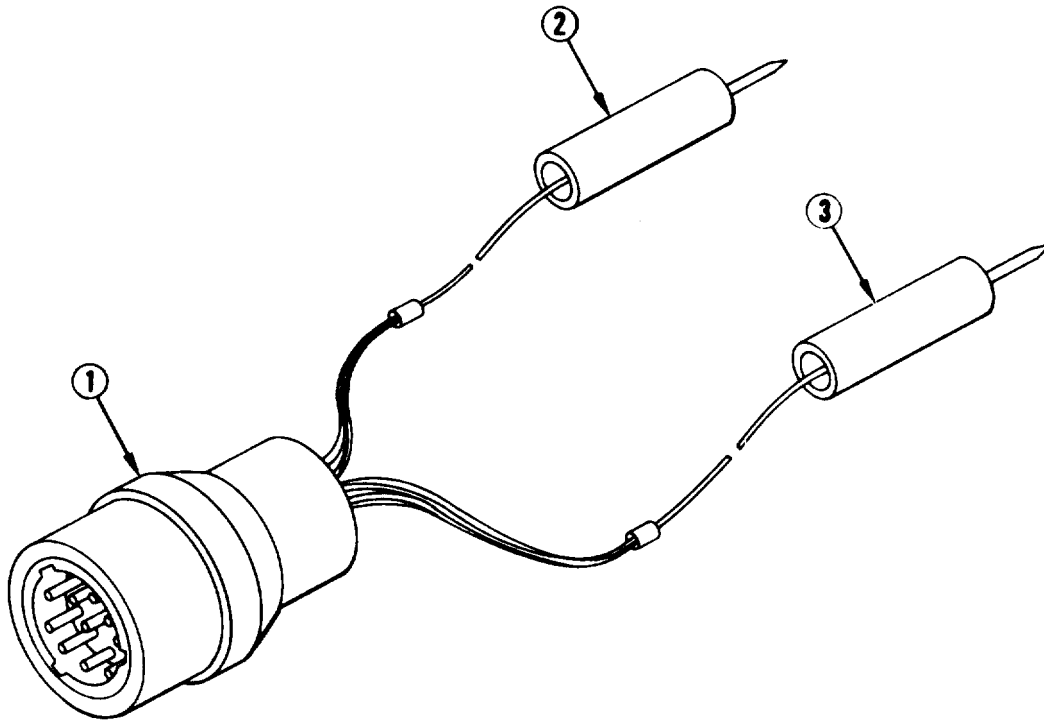
**INTRODUCTION**

This section contains the information required to maintain the test point adapter cable (part number C5000658). The following maintenance information is provided:

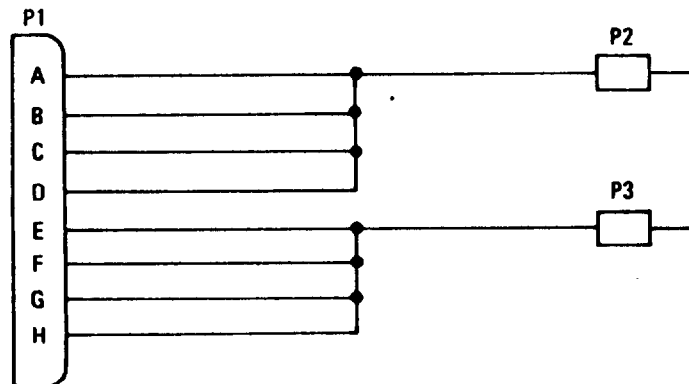
- Parts list and parts location
- Schematic

**TEST POINT ADAPTER CABLE C5000658, PARTS LIST AND PARTS LOCATION**

Index Number	Manufacturer's Code	Part Number	Description
1	96906	MS3126F18-11P	
2	56977	C5000663-1	Jack
3	56977	C5000663-2	Jack



**TEST POINT ADAPTER CABLE C5000658, SCHEMATIC**



## CHAPTER 4

### CARD TEST AND TROUBLESHOOTING

	Page		Page
Introduction .....	4-1	ID Hookup .....	4-18
Card Test and Troubleshooting Index .....	4-2	UUT Hookup .....	4-20
Card Repair Parts Index .....	4-4	UUT and ID Removal .....	4-24
Test Equipment and Accessories Index .....	4-8	Explanation of Messages. . . . .	4-26
Test Program Index .....	4-12	UUT Probing . . . . .	4-30

#### INTRODUCTION

This chapter contains the information you need to test and troubleshoot cards (UUTs) repairable at the general support level. There is one test and troubleshooting procedure for each card. The procedures are arranged in card part number order, so you can find them easily.

There are three indexes at the beginning of the chapter to help you. The first index (card test and troubleshooting index) identifies the page number of each card test and troubleshooting procedure. The second index (card repair parts index) helps you quickly find information required to order a new part. The third index (test equipment and accessories index) allows you to select the proper interconnection device, test point adapter, and test point adapter cable when testing a card. Procedures for hooking up these items are also contained in this chapter.

**CARD TEST AND TROUBLESHOOTING INDEX (2 of 2)**

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1635964-100	4-158
1635967-100	4-160
1635968-100	4-162
1635969-100	4-164
1635970-100	4-166
1635971-100	4-168
1635973-100	4-170
1635975-100	4-172
1635976-100	4-174
1635977-100	4-176
1635978-100	4-178
1635979-100	4-180
1635985-100	4-182
1635986-100	4-184
1635987-100	4-186
1635988-100	4-188
1635990-100	4-190
1642175-100	4-192
1642176-100	4-194

Card (UUT) Part Number	Page
1642177-100	4-196
1642178-100	4-198
1642179-100	4-200
1642180-100	4-202
1642181-100	4-204
1642183-100	4-208
1642184-100	4-210
1642185-100	4-212
1642186-100	4-214
1642187-100	4-216
1642188-100	4-218
1642189-100	4-220
1642190-100	4-222
1650873-100	4-224
C5000511	4-226
SM-D-803125	4-228
SM-D-803128	4-230
SM-D-803137	4-232
SM-D-803140	4-234
SM-D-803146	4-236
SM-D-803152	4-238
SM-D-803161	4-240

**CARD TEST AND TROUBLESHOOTING INDEX (2 of 2)**

<b>Card (UUT) Part Number</b>	<b>Page</b>
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1635964-100	4-158
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1635971-100	4-168
1635973-100	4-170
1635975-100	4-172
1635976-100	4-174
1635977-100	4-176
1635978-100	4-178
1635979-100	4-180
1635985-100	4-182
1635986-100	4-184
1635987-100	4-186
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<b>Card (UUT) Part Number</b>	<b>Page</b>
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1642178-100	4-198
1642179-100	4-200
1642180-100	4-202
1642181-100	4-204
1642183-100	4-208
1642184-100	4-210
1642185-100	4-212
1642186-100	4-214
1642187-100	4-216
1642188-100	4-218
1642189-100	4-220
1642190-100	4-222
1650873-100	4-224
C5000511	4-226
SM-D-803125	4-228
SM-D-803128	4-230
SM-13-803137	4-232
SM-D-803140	4-234
SM-D-803146	4-236
SM-D-803152	4-238
SM-D-803161	4-240

**CARD REPAIR PARTS INDEX (1 of 4)**

The index below allows you to determine the functional group code associated with the card you are testing. It also identifies the repair parts manual you should use to obtain repair parts for the card. When you have isolated a problem to a faulty part, use the following procedure to find the information required to obtain a new part.

1. Identify card part number located on card.
2. Use index below to determine the functional group code of card.
3. Use index below to determine the repair parts manual you should use.
4. Locate card parts list in repair parts manual.
  - a. Find functional group code of card in table of contents of repair parts manual,
  - b. Turn to page specified by table of contents.

Card (UUT)		Repair Parts Manual
Part Number	Functional Group Code	
1635841-100	7TAB3AF01	TM11-5840-355-34P
1635842-100	7TAB3AF02	TM11-5840-355-34P
1635843-100	7TAB3AF03	TM11-5840-355-34P
1635845-100 or 1635845-101	7TAB3AF05	TM11-5840-355-34P
1635846-100	7TAB3AF06	TM11-5840-355-34P
1635847-100	7TAB3AF07	TM11-5840-355-34P
1635854-100	7TAB3AF04	TM11-5840-355-34P
1635870-100 or 1635870-101	7TBA6AL00	TM11-5840-355-34P
1635871-100	7TBA6AL60	TM11-5840-355-34P
1635872-100	7TBA6AL61	TM11-5840-355-34P
1635882-100	7SHA2	TM11-5840-364-34P
1635883-100	7SHA3	TM11-5840-364-34P
1635884-100	7SHA4	TM11-5840-364-34P
1635885-100	7SHA5	TM11-5840-364-34P
1635886-100	7SHD5	TM11-5840-364-34P
1635910-100	7SHA7	TM11-5840-364-34P
1635911-100	7SHC5	TM11-5840-364-34P
1635912-100	7SHC6	TM11-5840-364-34P
1635913-100	7SHC7	TM11-5840-364-34P
1635914-100	7SHC8	TM11-5840-364-34P
1635915-100	7SHC9	TM11-5840-364-34P
1635916-100	7SHD1	TM11-5840-364-34P



**CARD REPAIR PARTS INDEX (2 of 4)**

Card (UUT)		Repair Parts Manual
Part Number	Functional Group Code	
1635917-100	7SHD3	TM11-5840-364-34P
1635918-100	7SHD6	TM11-5840-364-34P
1635919-100	7SHD7	TM11-5840-364-34P
1635920-100	7SHD9	TM11-5840-364-34P
1635921-100	7SHE2	TM11-5840-364-34P
1635922-100	7SHE3	TM11-5840-364-34P
1635923-100	7SHE4	TM11-5840-364-34P
1635924-100	7SHE5	TM11-5840-364-34P
1635925-100	7SHE6	TM11-5840-364-34P
1635926-100	7SHE7	TM11-5840-364-34P
1635927-100	7TAB2AP19B	TM11-5840-355-34P
1635928-100	7SHE8	TM11-5840-364-34P
1635929-100	7SHE9	TM11-5840-364-34P
1635930-100	7SHF1	TM11-5840-364-34P
1635931-100	7SHF2	TM11-5840-364-34P
1635932-100	7SHF5	TM11-5840-364-34P
1635933-100	7SHF6	TM11-5840-364-34P
1635935-100	7SHF7	TM11-5840-364-34P
1635936-100	7SHF8	TM11-5840-364-34P
1635937-100	7SHM3	TM11-5840-364-34P
1635939-100	7SHG6	TM11-5840-364-34P
1635940-100	7SHH1	TM11-5840-364-34P
1635941-100	7SHH7	TM11-5840-364-34P
1635942-100	7SHH8	TM11-5840-364-34P
1635944-100 or 1635944-101	7SHI3	TM11-5840-364-34P
1635945-100	7SHI4	TM11-5840-364-34P
1635946-100	7SHI5	TM11-5840-364-34P
1635947-100	7SHJ4	TM11-5840-364-34P
1635948-100	7SHJ5	TM11-5840-364-34P
1635949-100	7SHJ6	TM11-5840-364-34P
1635950-100	7SHJ7	TM11-5840-364-34P

**CARD REPAIR PARTS INDEX (3 of 4)**

Card (UUT)		Repair Parts Manual
Part Number	Functional Group Code	
1635951-100	7SHJ8	TM11-5840-364-34P
1635952-100	7SHJ9	TM11-5840-364-34P
1635953-100	7SHK1	TM11-5840-364-34P
1635954-100	7SHK2	TM11-5840-364-34P
1635955-100	7SHK3	TM11-5840-364-34P
1635956-100	7SHK4	TM11-5840-364-34P
1635957-100	7SHK5	TM11-5840-364-34P
1635960-100	7SHK6	TM11-5840-364-34P
1635961-100	7SHK7	TM11-5840-364-34P
1635962-100	7SHK8	TM11-5840-364-34P
1635963-100	7SHK9	TM11-5840-364-34P
1635964-100	7SHL1	TM11-5840-364-34P
1635967-100	7SHL2	TM11-5840-364-34P
1635968-100	7SHL3	TM11-5840-364-34P
1635969-100	7SHL4	TM11-5840-364-34P
1635970-100	7SHL5	TM11-5840-364-34P
1635971-100	7SHL6	TM11-5840-364-34P
1635973-100	7SHM1	TM11-5840-364-34P
1635975-100	7SHM2	TM11-5840-364-34P
1635976-100	7TBA6AL62	TM11-5840-364-34P
1635977-100	7SHM6	TM11-5840-364-34P
1635978-100	7SHN1	TM11-5840-364-34P
1635979-100	7SHM8	TM11-5840-364-34P
1635985-100	7TAB2AP19F	TM11-5840-355-34P
1635986-100	7TBA6AL63	TM11-5840-355-34P
1635987-100	7TBA6AL65	TM11-5840-355-34P
1635988-100	7TAB2AP19H	TM11-5840-355-34P
1635990-100	7TAB2AP19I	TM11-5840-355-34P
1642175-100	7SHN2	TM11-5840-364-34P
1642176-100	7SHN3	TM11-5840-364-34P

**CARD REPAIR PARTS INDEX (4 of 4)**

<b>Card (UUT)</b>		<b>Repair Parts Manual</b>
<b>Part Number</b>	<b>Functional Group Code</b>	
1642177-100	7SHN4	TM11-5840-364-34P
1642178-100	7SHN5	TM11-5840-364-34P
1642179-100	7SHN6	TM11-5840-364-34P
1642180-100	7SHN7	TM11-5840-364-34P
1642181-100	7SHN8	TM11-5840-364-34P
1642182-100	7SHN9	TM11-5840-364-34P
1642183-100	7SHP4	TM11-5840-364-34P
1642184-100	7SHO9	TM11-5840-364-34P
1642185-100	7SHP1	TM11-5840-364-34P
1642186-100	7SHP2	TM11-5840-364-34P
1642187-100	7SHP3	TM11-5840-364-34P
1642188-100	7SHP5	TM11-5840-364-34P
1642189-100	7SHP6	TM11-5840-364-34P
1642190-100	7SHP9	TM11-5840-364-34P
1650873-100	7SHQ4	TM11-5840-364-34P
C5000511	6TGC2AD08	TM11-5840-354-34P
SM-D-803125	6TGC2AD02	TM11-5840-354-34P
SM-D-803128	6TGC2AD03	TM11-5840-354-34P
SM-D-803137	6TGC2AD04	TM11-5840-354-34P
SM-D-803140	6TGC2AD05	TM11-5840-354-34P
SM-D-803146	6TGC2AD06	TM11-5840-354-34P
SM-D-803152	6TGC2AD09	TM11-5840-354-34P
SM-D-803161	6TGC2AD25	TM11-5840-354-34P

**TEST EQUIPMENT AND ACCESSORIES INDEX (1 of 4)**

Use the index below to select the proper ID, test point adapter, test point adapter cable, and DIP socket plug (with attached cable) for the card (UUT) you are testing. When a card does not require an item (test point adapter, DIP socket plug, etc), this will be indicated by . . . in the appropriate column.

Card (UUT)	ID	Test Point Adapter/ Power Cable Assembly	Test Point Adapter Cable	Part Number		Notes	
				DIP	Socket Plug		
				Part Number	Destination		
				Part Number	Plug Ident	Card DIP Socket	
1635841-100	C5000621	C5000628	C5000649		...	..	
1635842-100	C5000621	C5000628	C5000649	...	..	...	
1635843-100	C5000621	C5000628	C5000649	...		...	
1635845-100	C5000621	...	...	...	...	...	
1635845-101	C5000621	...	...	...	.	...	
1635846-100	C5000621	C5000628	C5000649	...		...	
1635847-100	C5000621	C5000628	C5000649		.	..	
1635854-100	C5000621	C5000628	C5000649	...	.	...	
1635870-100	C5000621	C5000628	C5000649	...	.	...	
1635871-100	C5000610	C5000628	C5000649	..	.	...	
1635872-100	C5000610	C5000628	C5000649	...	...	..	
1635882-100	C5000610	C5000628	C5000649	...	..	...	
1635883-100	C5000610	C5000628	C5000649	...		...	
1635884-100	C5000610	C5000628	C5000649	C5000651		TPS38	
1635885-100	C5000610	C5000628	C5000649	...	..	.	
1635886-100	C5000610	C5000628	C5000649	...	..	...	
1635910-100	C5000610	C5000628	C5000649	...	..	.	
1635911-100	C5000610	C5000628	C5000649		...	...	
1635912-100	C5000610	C5000628	C5000649			...	
1635913-100	C5000610	C5000628	C5000649	..			
1635914-100	C5000610	C5000628	C5000649	C5000651		TPS44	
1635915-100	C5000610	C5000628	C5000649	..	..		
1635916-100	C5000610	C5000628	C5000649	..	.	..	
1635917-100	C5000610	C5000628	C5000649	...		..	
1635918-100	C5000610	C5000628	C5000649	..	..		
1635919-100	C5000610	C5000628	C5000649	C5000651		TPS48	

**TEST EQUIPMENT AND ACCESSORIES INDEX (2 of 4)**

Part Number							Notes
Card (UUT)	ID	Test Point Adapter/ Power Cable Assembly	Test Point Adapter Cable	DIP Socket Plug			
				Part Number	Destination		
					Plug Ident	Card DIP Socket	
1635920-100	C5000610	C5000628	C5000649	...	...	...	
1635921-100	C5000610	C5000628	C5000649	...	...	...	
1635922-100	C5000610	...	...	...	...	...	
1635923-100	C5000610	C5000628	C5000649	...	...	...	
1635924-100	C5000610	C5000628	C5000649	...	...	...	
1635925-100	C5000610	C5000628	C5000649	...	...	...	
1635926-100	C5000610	C5000628	C5000649	...	...	...	
1635927-100	C5000610	C5000628	C5000649	...	...	...	
1635928-100	C5000610	C5000628	C5000649	...	...	...	
1635929-100	C5000610	C5000628	C5000649	...	...	...	
1635930-100	C5000610	C5000628	C5000649	...	...	...	
1635931-100	C5000610	C5000628	C5000649	...	...	...	
1635932-100	C5000610	C5000628	C5000649	...	...	...	
1635933-100	C5000610	C5000628	C5000649	C5000651	P1	TPS24	
1635935-100	C5000610	C5000628	C5000649	...	...	...	
1635936-100	C5000610	C5000628	C5000649	...	...	...	
1635937-100	C5000610	C5000628	C5000649	...	...	...	
1635939-100	C5000610	C5000628	C5000649	...	...	...	
1635940-100	C5000610	C5000628	C5000649	...	...	...	
1635941-100	C5000610	C5000628	C5000649	...	...	...	
1635942-100	C5000610	...	...	...	...	...	
1635944-100	C5000621	...	...	...	...	...	
1635944-101	C5000621	...	...	...	...	...	
1635945-100	C5000610	C5000628	C5000649	...	...	...	
1635946-100	C5000610	C5000628	C5000649	...	...	...	
1635947-100	C5000610	C5000628	C5000649	C5000651 C5000651	P1 P2	TPS24 TPS37	
1635948-100	C5000610	C5000628	C5000649	...	...	...	
1635949-100	C5000610	C5000628	C5000649	C5000651 C5000651	P2 P1	TPS34 TPS39	
1635950-100	C5000610	C5000628	C5000649	...	...	...	

**TEST EQUIPMENT AND ACCESSORIES INDEX (3 of 4)**

Part Number							
Card (UUT)	ID	Test Point Adapter/ Power Cable Assembly	Test Point Adapter Cable	DIP Socket Plug			Notes
				Part Number	Destination		
					Plug Ident	Card DIP Socket	
1635951-100	C5000610	C5000628	C5000649	...	...	...	
1635952-100	C5000610	C5000628	C5000649	...	...	...	
1635953-100	C5000610	...	...	C5000651	P2	TPS35	
1635954-100	C5000610	C5000628	C5000649	...	...	...	
1635955-100	C5000610	C5000628	C5000649	...	...	...	
1635956-100	C5000610	C5000628	C5000649	C5000651	P1	TPS50	
1635957-100	C5000610	C5000628	C5000649	...	...	...	
1635960-100	C5000610	C5000628	C5000649	...	...	...	
1635961-100	C5000610	C5000628	C5000649	...	...	...	
1635962-100	C5000610	C5000628	C5000649	C5000651 C5000651	P1 P2	TPS14 TPS37	
1635963-100	C5000610	C5000628	C5000649	...	...	...	
1635964-100	C5000610	C5000628	C5000649	...	...	...	
1635967-100	C5000610	C5000628	C5000649	...	...	...	
1635968-100	C5000610	C5000628	C5000649	...	...	...	
1635969-100	C5000621	...	...	...	...	...	
1635970-100	C5000610	C5000628	C5000649	...	...	...	
1635971-100	C5000621	C5000628	C5000649	...	...	...	
1635973-100	C5000610	C5000628	C5000649	...	...	...	
1635975-100	C5000610	C5000628	C5000649	...	...	...	
1635976-100	C5000621	...	...	...	...	...	
1635977-100	C5000610	C5000628	C5000649	...	...	...	
1635978-100	C5000610	C5000628	C5000649	...	...	...	
1635979-100	C5000610	C5000628	C5000649	...	...	...	
1635985-100	C5000610	C5000628	C5000649	...	...	...	
1635986-100	C5000610	C5000628	C5000649	...	...	...	
1635987-100	C5000610	C5000628	C5000649	...	...	...	
1635988-100	C5000610	C5000628	C5000649	...	...	...	
1635990-100	C5000610	C5000628	C5000649	...	...	...	

**TEST EQUIPMENT AND ACCESSORIES INDEX (4 of 4)**

Part Number							
Card (UUT)	ID	Test Point Adapter/ Power Cable Assembly	Test Point Adapter Cable	DIP Socket Plug			Notes
				Part Number	Destination		
					Plug Ident	Card DIP Socket	
1642175-100	C5000621	C5000628/ C5000658	C5000649	...	...	...	
1642176-100	C5000621	C5000628	C5000649	...	...	...	
1642177-100	C5000621	C5000628	C5000649	...	...	...	
1642178-100	C5000621	C5000628/ C5000658	C5000649	...	...	...	
1642179-100	C5000621	C5000628/ C5000658	C5000649	...	...	...	
1642180-100	C5000621	C5000628/ C5000658	C5000649	...	...	...	
1642181-100	C5000621	C5000628	C5000649	...	...	...	
1642183-100	C5000621	C5000628	C5000649	...	...	...	
1642184-100	C5000621	C5000628	C5000649	...	...	...	
1642185-100	C5000621	C5000628/ C5000658	C5000649	...	...	...	
1642186-100	C5000621	C5000628	C5000649	...	...	...	
1642187-100	C5000621	C5000628	C5000649	...	...	...	
1642188-100	C5000621	C5000628	C5000649	...	...	...	
1642189-100	C5000621	C5000628	C5000649	...	...	...	
1642190-100	C5000621	C5000628	C5000649	...	...	...	
1650873-100	C5000621	C5000628	C5000649	...	...	...	
C5000511	C5000610	C5000629	C5000649	...	...	...	
SM-D-803125	C5000610	C5000629	C5000649	...	...	...	
SM-D-803128	C5000610	C5000629	C5000649	...	...	...	
SM-D-803137	C5000610	C5000629	C5000649	...	...	...	
SM-D-803140	C5000610	C5000629	C5000649	C5000651	P1	TPS45	
SM-D-803146	C5000610	C5000629	C5000649	...	...	...	
SM-D-803152	C5000610	C5000629	C5000649	...	...	...	
SM-D-803161	C5000610	...	...	...	...	...	

● Card (UUT) must be tested using TEST CLIP 3781-12(05276) (NSN 6625-00-242-9945)

**TEST PROGRAM INDEX**

For complete listing of test program file names including latest revision numbers, refer to the current issue of the US Army Communications-Electronics Command Test program Set (TPS) Index.



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**ID HOOKUP (1 of 2)**

The ID mating connector J1 (7) on the AN/USM-410V) programmable interface unit (PIU) (1) is a very delicate connector. Use great care when inserting or removing ID (4) from this connector.

1. Use table on page 4-8 to select ID and obtain selected ID from storage.
2. Examine J1 (7) on PIU and P1 (6) on ID for foreign matter. Clean these connectors as required.

**CAUTION**

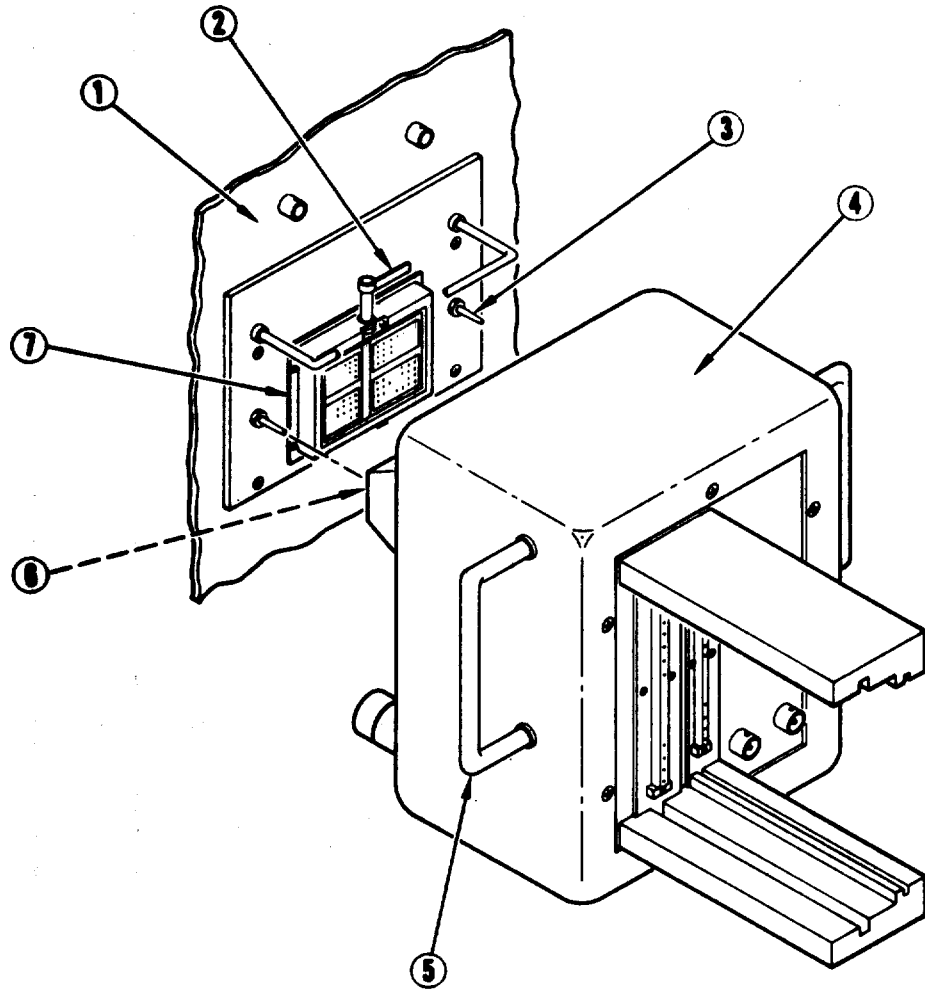
Be certain that J1 on PIU and P1 on ID are both free of foreign matter before mating the ID with the PIU. Use great care when mating P1 on ID with J1 on PIU to avoid damage to the connectors.

3. Hold ID (4) by handles (5) and carefully slide ID over guide pins (3) and into connector J1 on PIU. Ensure that ID is positioned straight on J1 of PIU.
4. When ID has been fully inserted, rotate black bar handle (2) 90 degrees so that handle points outward.
5. When ID hookup is complete, press **PROCEED** key at terminal.
  - a. If correct ID has been selected and ID hookup is correct, crt displays the following:

**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED**  
**SEE TM 11-5840-363-40**  
**PRESS PROCEED WHEN COMPLETED**

- b. If incorrect ID has been hooked up or if hookup is faulty, a failure message appears on the crt along with additional instructions.

ID HOOKUP (2 of 2)



**UUT HOOKUP (1 of 4)**

The UUT is installed in the ID with the ID removed from the PIU. The ID is laid backside down on a firm surface for inserting the UUT. After the UUT is inserted, the ID is reinstalled on the PIU. After the ID is reinstalled, the test point adapter and cable and the DIP socket plug(s) and cable are installed if required. Great care should be exercised when installing the UUT in the ID or when installing or removing the ID from the PIU. The connectors are delicate and are easily damaged if care is not used. Damaged connectors on the ID may cause UUT “failures” that are not real failures.

1. Use table on page 4-8 to select test point adapter, test point adapter cable, and DIP socket plug as required.

**CAUTION**

Use great care when removing ID from PIU to prevent damage to the connectors.

2. Remove ID (4) from PIU (1).
  - a. Release ID by rotating black bar handle (2) 90 degrees so that handle is parallel to PIU cabinet.
  - b. Hold ID by handles (23) and carefully pull ID straight out to disconnect it from J1 (24) on PIU.
3. Place ID backside down on a firm flat surface.
4. Inspect connector on UUT (7) for bent pins. Straighten any pins that are bent before attempting to install UUT in ID.

**CAUTION**

Use great care when inserting UUT into ID card connector to prevent damage to the connector. Do not attempt to install UUT if any UUT connector pins are bent. During testing, many UUT “faults” will be detected on a good UUT if ID connectors or pins are damaged.

5. Carefully install UUT in ID.
  - a. UUTs with 100-pin connectors are inserted in the ID left-hand card connector with the UUT components to the left.
  - b. UUTs with 80-pin connectors are inserted in the ID right-hand card connector with the components to the right.
  - c. Slide UUT into guide (19) until UUT connector P1 (7) contacts ID connector (22).
  - d. Press firmly on top edge of UUT until UUT seats in ID connector (22).
6. Examine J1 (24) on PIU and P1 on ID for foreign matter. Clean these connectors as required.

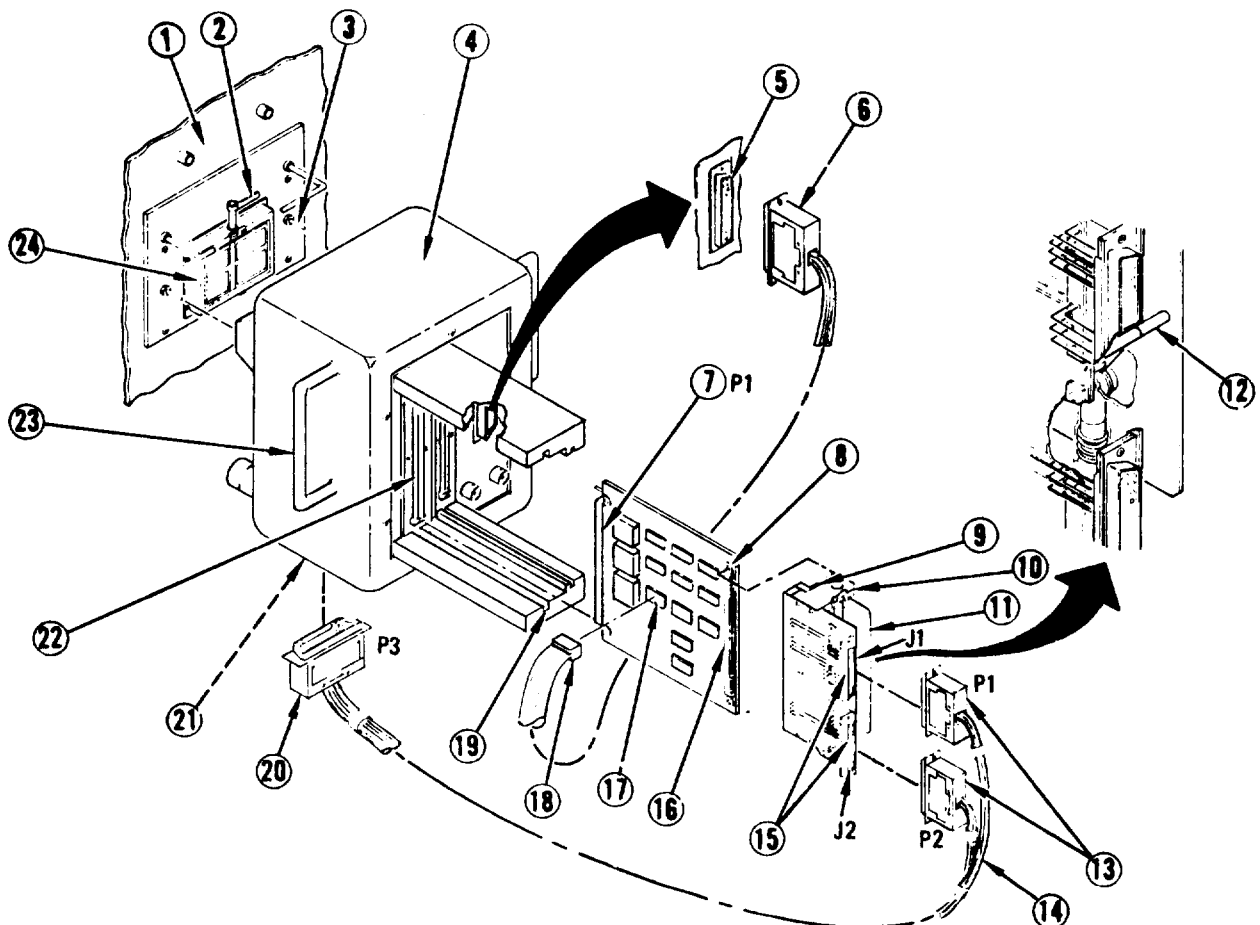
**CAUTION**

Be certain that J1 on PIU and P1 on ID are both free of foreign matter before mating the ID with the PIU. Use great care when mating P1 on ID with J1 on PM to avoid damage to the connectors.

7. Install ID on PIU.
  - a. Hold ID by handles (23) and carefully slide ID over guide pins (3) and into connector J1 (24) on PIU. Make certain that ID is positioned straight on J1 of PIU.
  - b. When ID has been fully inserted, rotate black bar handle (2) 90 degrees so that it faces outward.

**UUT HOOKUP (2 of 4)**

8. Install test point adapter (10) and cable (14) if required.
  - a. Connect test point, adapter cable (14) to test point adapter (10) by connecting P1 and P2 (13) of cable (14) to J1 and J2 (15), respectively on test point adapter,
  - b. Connect other end (P3) of test point cable (20) to connector J6 (21) on ID.
  - c. Pull out post (12), squeeze clip (11) on test point adapter, and slide adapter over end of UUT until guide pins (9) on adapter align with eyelets (8) on the UUT.
  - d. Release clip on test point adapter so that test point adapter engages test points on test point strip (16). Push post (12) in to assure good contact.
9. Install test clip or power cable assembly if required. See page 4-22.
10. Attach DIP socket plug(s) (18) if required.
  - a. Connect DIP socket cable (6) to J3 (5) on ID.
  - b. Connect DIP socket plugs (18) to DIP sockets (17) on UUT according to table on page 4-8.
  - c. Verify that DIP socket plugs (18) are oriented properly in DIP sockets. This can be done by noting the orientation of DIPs on UUT and then orienting the DIP socket plugs so that the notch on the plugs is aligned with the notches of DIPs on UUT.
11. After all connections are made, press PROCEED key at terminal.
  - a. If all connections have been made properly and correct ID and UUT have been installed, you are ready to test and troubleshoot UUT.
  - b. If the hookup is not correct or if the wrong ID or UUT has been installed, an error message is displayed on the crt along with further instructions.

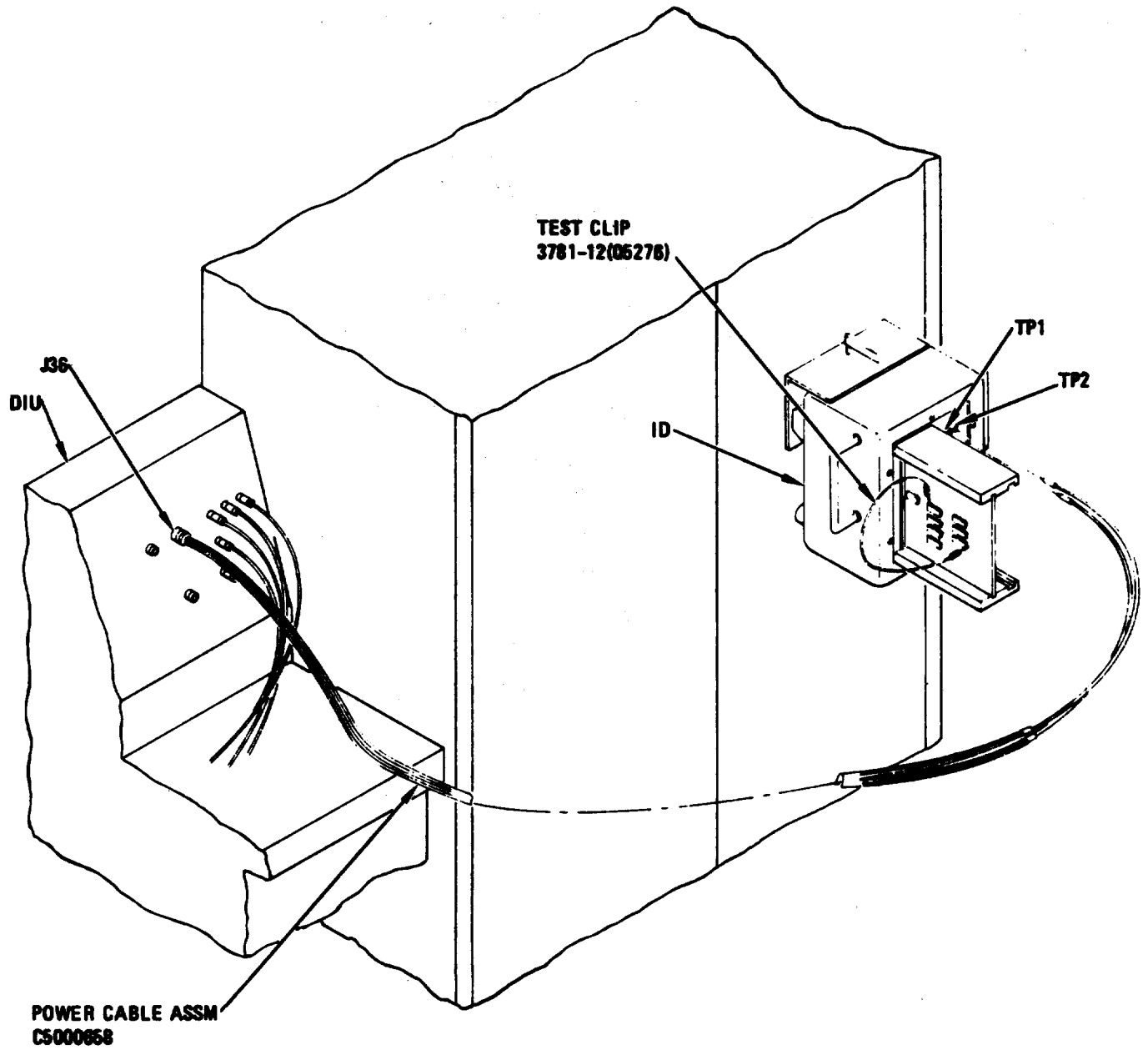


UUT HOOKUP (3 of 4)

Some cards require attaching a test clip or power cable assembly during test. Consult the following table to select appropriate part. Do not connect test clip until instructed to do so in the respective procedure.

Card Number	Part Number	Procedure
1635871-100	3781-12 (05276)	<ol style="list-style-type: none"> <li>1. Attach Test Clip from P1 Pin 28 to U41 P1</li> <li>2. On Test Point Adapter (C5000629) attach Test Clip from TP18 to TP14.</li> </ol>
1635945-100	3781-12 (05276)	<ol style="list-style-type: none"> <li>1. Attach Test Clip from P1 Pin 7 to U19 Pin 11</li> <li>2. Attach Test Clip from P1 Pin 7 to U35 Pin 8</li> <li>3. Remove Test Clip</li> </ol>
1635954-100	3781-12 (05276)	Attach Test Clip from U11 Pin 3 to U22 Pin 5
1642178-100	C5000658	Attach Power Cable Assembly from DIU J36/P1 to P2/ID TP1 (red) and P3/ID TP2 (black)
1642179-100	C5000658	Attach Power Cable Assembly from DIU J36/P1 to P2/ID TP1 (red) and P3/ID TP2 (black)
1642180-100	C5000658	Attach Power Cable Assembly from DIU J36/P1 to P2/ID TP1 (red) and P3/ID TP2 (black)
1642185-100	C5000658	Attach Power Cable Assembly from DIU J36/P1 to P2/ID TP1 (red) and P3/ID TP2 (black)
1642190-100	3781-12 (05276)	Attach Test Clip from U8 Pin 7 to TP3

UUT HOOKUP (4 of 4)



**UUT AND ID REMOVAL (1 of 2)**

The UUT is removed from the ID after the ID is removed from the PIU. First the DIP plugs and the test point adapter cable are removed from the UUT and the ID. The ID is then removed from the PIU with the UUT still installed. The ID is placed backside down on a firm flat surface. The test point adapter is removed from the UUT; then the UUT is removed from the ID. Great care should be exercised when removing the ID from the PIU to prevent damage to connector J1 on the PIU.

1. If used, remove DIP plugs (12) from DIP sockets (11) on UUT.
2. Remove DIP plug cable connector (5) from ID connector (4).
3. If used, remove test point adapter connectors (9) from test point adapter (10) by pulling straight out.
4. Remove test point adapter cable plug (14) from J6 (15) on ID (3).
5. Release ID (3) by rotating black bar handle (2) 90 degrees so that handle is parallel to the front of the PIU.

**CAUTION**

Use great care when removing P1 on ID from J1 on PIU to prevent damage to the connectors.

6. Hold ID by handles (18) and carefully pull ID straight out from J1 (17) on PIU (1).
7. Lay ID with backside down on a firm flat surface.
8. Pull post (8) out, squeeze clip (7) on test point adapter (10), and disconnect test point adapter from UUT by moving adapter to the right to disengage test point connectors and guide pins.
9. While still squeezing clip (7), remove test point adapter from UUT.

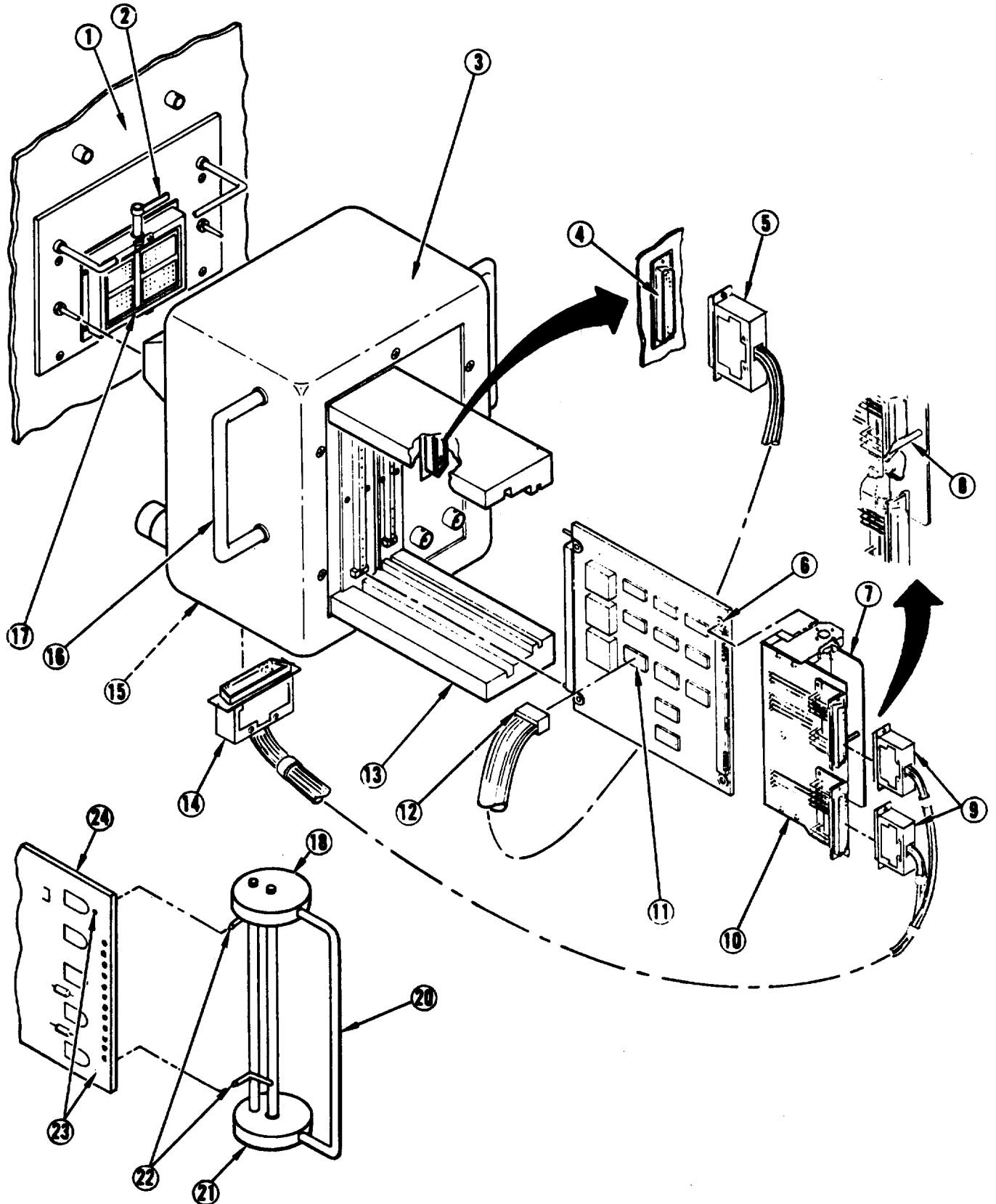
**CAUTION**

When removing UUT from ID, do not grasp UUT by any of the components. Use card extractor when removing UUT from ID. The card extractor tool is used to unseat the UUT only. When the UUT is unseated, remove the extractor from the UUT and remove the UUT from the ID by hand to avoid dropping the UUT.

10. Insert 2 pins (22) of card extractor into 2 holes (23) in UUT (24).
11. Rest ends of card extractor (18,21) on ID card brackets (13), and push firmly on extractor handle (20) until UUT unseats.
12. Remove card extractor from UUT (24), and pull UUT out of ID by hand.
13. Return ID, test point adapter, test point adapter cable, and DIP plugs to their proper storage.



**UUT AND ID REMOVAL (2 of 2)**



## **EXPLANATION OF MESSAGES (1 of 4)**

During execution of a card test program, messages will be printed at the line printer and/or displayed on the crt. There are three types of messages used:

- Operator action messages
- End of program messages
- Fault or replacement messages.

Some of these messages will require action by the operator to correct a problem. The operator actions for each message type are given in the following paragraphs.

## **OPERATOR-ACTION MESSAGES**

Operator action messages give instructions, to the operator for the following actions:

- To perform ID hookup (page 4-18)
- To perform UUT hookup (page 4-20)
- To perform PIU probe hookup (page 4-30)
- To enter part number and manufacturing sequence number (see appropriate card test procedure)
- To remove ID (page 4-24)
- To probe UUT (page 4-30)

For information on how to perform the procedures listed above, see the page number given with each action.

**EXPLANATION OF MESSAGES (2 of 4)****END OF PROGRAM MESSAGES**

End of program messages occur when the test program is terminated. The reason for the program termination is printed underneath the end of program message. By using the reason and the following table, the next steps for the operator to follow can be determined.

Reason for Termination Message	Operator Action
INCORRECT UUT P/N	<ol style="list-style-type: none"> <li>1. Check out part number and see if correct part number was entered.</li> <li>2. Verify that correct test for UUT has been selected.</li> </ol>
THIS PROGRAM DOES NOT TEST MSN XXX	<ol style="list-style-type: none"> <li>1. Check UUT MSN and see if correct MSN number was entered.</li> <li>2. Verify that correct test for UUT has been selected.</li> </ol>
UUT FAILED STTO TEST FAILED	<ol style="list-style-type: none"> <li>1. Visually inspect UUT for shorts between power and ground, and power and power, If short exists, repair UUT and then test UUT.</li> <li>2. If no shorts exist, tag and send UUT to depot for repair.</li> </ol>
UUT FAILED	Tag and send UUT for repair by replacement of parts as indicated by replacement or fault set message.
UUT PASSED ALL TESTS	No further operator action required,
ID SIGNATURE TEST FAILED	Check ID part number and verify that the ID part number is the correct one for the UUT as given in the table on pages 4-8 through 4-11,
ID C5000XXX FAILED	<ol style="list-style-type: none"> <li>1. Remove ID from PIU and reinstall, then rerun the test.</li> <li>2. If the same termination message appears, send ID for repair.</li> </ol>
SYSTEM FAULTY RUN SELF TEST	Run system self test.
UUT HAS ONLY FAULTS THAT DO NOT APPEAR IN THE FAULT DICTIONARY	<ol style="list-style-type: none"> <li>1. Remove ID from PIU. Disconnect test point adapter, cable, and DIP socket plug cable (if not required for testing) and remove UUT from. ID. Rerun the test.</li> <li>2. If the same termination message appears, send UUT to depot.</li> </ol>

**EXPLANATION OF MESSAGES (3 of 4)**

**FAULT AND REPLACEMENT MESSAGES**

When a fault has been detected during execution of a UUT test program, one of three fault or replacement messages will be printed.

- Safe-to-turn-on test failure message
- Replacement message
- Fault set message

The safe-to-turn-on test is performed on the UUT before power is applied to the UUT. If a safe-to-turn-on fault is detected, visually inspect the UUT for shorts between power and ground, and power and power. If a short is found, repair UUT and send for retest. If no visual indication of a short is found, send the UUT to the depot.

When a fault is detected on a UUT, either a list of parts to be replaced will be printed after the end of program message or a list of probable fault sets is printed before the end of program message. If a list of replacement parts is printed, replace all parts on the list and then run the UUT test again. If UUT still fails test and no new replacement parts are listed, send UUT back to depot. If new part is listed, replace new part and run test again. Repeat this procedure until the UUT passes test or UUT must be sent to depot.

On some UUTs, a list of fault sets is printed as shown below. A fault set is a list of the most probable causes of failure detected by the UUT test.

**THE MOST PROBABLE FAULT SETS ARE LISTED IN ORDER OF PRECEDENCE.**

RANK	FAULTY UNIT	ALTERNATE UNITS	FAILURE DESCRIPTION	FAILURE SET NO.	DEGREE OF MISMATCH
1	U48	U33 U42	U48P11 (SAO)	236	0
2	U39	88	88 *U39-15	214	5
3	U40 U23 U23 U23 U23 U23	U39    U40	U40P8 (SAO) U4P12 *U23-28 GND *U23-27 GND *U23-26 GND *U23-14 U23P5 (SAO)	258	5
4	U39 W5   INPUT	W5 TP121 U38 U48 W5	U39P12 (SAO) W5 (SAO)   TP21 (SAO)	213	15

**EXPLANATION OF MESSAGES (4 of 4)****FAULT AND REPLACEMENT MESSAGES**

The fault sets are ranked according to the degree of mismatch, with the fault set with the lowest degree of mismatch ranked number 1. The degree of mismatch indicates how accurately the fault isolation was performed. When the fault sets are listed, all parts under FAULTY UNIT column in the first fault set must be replaced and the test rerun. If the same fault sets are listed again, replace all parts under ALTERNATE UNITS in first fault set if any exist; otherwise, replace parts listed in next fault set FAULTY UNIT column. Continue this procedure until the UUT is repaired or the list of fault sets is exhausted, in which case, the UUT must be sent to depot for repair.

As an example, in the list of fault sets shown above, U48 under the FAULTY UNIT column in the first fault set would be replaced first and the test rerun. If the same fault sets were listed again, both U33 and U42 under the ALTERNATE UNITS column would be replaced, and so on. When replacing parts, entries in the FAULTY UNIT or ALTERNATE UNITS column such as 88, W5, TP121 and INPUT, as shown in the above list of fault sets, should be ignored because they are not replaceable parts.

**UUT PROBING (1 of 2)**

Some UUT test procedures will require probing of parts on the UUT. With a probe connected to one of the jacks on the PIU or ID, you are instructed to connect the probe by one of the following messages:

**\*\*\*\*\* OPERATOR ACTION \*\*\*\*\***  
**CONNECT PIU PROBE TO XXXXX**  
**FOR FAULT ISOLATION PROBING**  
**>> PRESS PROCEED WHEN READY <<**

Connect probe (5) to either PIU-J2 (1), PIU-J3 (2), ID-J4 (4), ID-J5 (3) as indicated by XXXXX in the operator action message. Press **PROCEED** when probe has been connected.

If probing is required after you press **PROCEED**, one of the following types of messages will be printed. The first type of message has the following form:

**CONNECT PROBE FROM JX TO NODE YY**

Where X is the jack number that probe is connected to and YY is the node number. To find node number YY, look up the appropriate card test procedure and use the part location diagram to find the node YY. The second type of message is as follows:

**PRESS YES FOR PROBING INSTRUCTIONS**  
**NO TO BYPASS PROBING**

This message allows you to choose whether you want to probe to isolate the faulty unit in the first fault set or to have the most probable fault sets listed. The last type of message has the following form. Normally, you will want to probe to fault isolate the faulty unit within the first fault. If replacing the faulty units and alternate units in the first fault set does not fix the UUT and the same fault set is listed, you must answer no to this prompt and then replace the parts in the next fault set.

When you answer yes to this prompt the following message will be displayed:

**SET PROBE ON UUT POINT XXX**

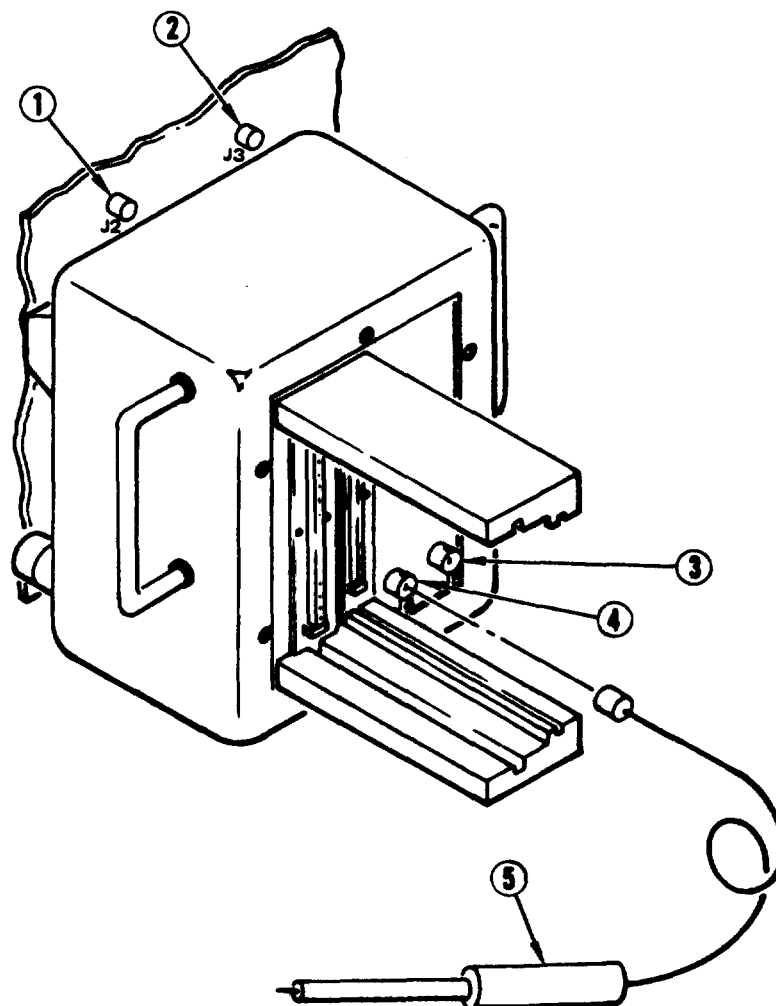
Where XXX has the form and meaning shown in the table below.

Probe Message Form	Probe Point
XX or XX INPUT UXXPYY TPX	Input pin number XX of UUT connector P 1 Pin YY of integrated circuit UXX Test point X on test point adapter or UUT test point strip
WXX or VCC or GND or UXXZYY or RXPY	Look in table on appropriate card test procedure to determine probe point The entry in the table will contain a probe point of one of the above forms or a number. If a number is listed, use parts location diagram to locate probe point.

**UUT PROBING (2 of 2)**

When probing UUTs, the following rules should be observed:

- If clip type tip of probe is used, scrape conformal coating off part lead and make good contact between probe and part lead.
- If needle point of probe is used, use needle point to penetrate conformal coating.
- Verify that the probe is connected to the proper ID or PIU jack and the correct node point before pressing PROCEED.
- Rerun test if probe slips off node point.
- Do not remove probe from node until instructed by the crt.



**1635841-100 TIMING AND RESET CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.
2. Select test.
  - a. Type **TEST 1635841TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635841TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook UP ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook Up UUT.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**

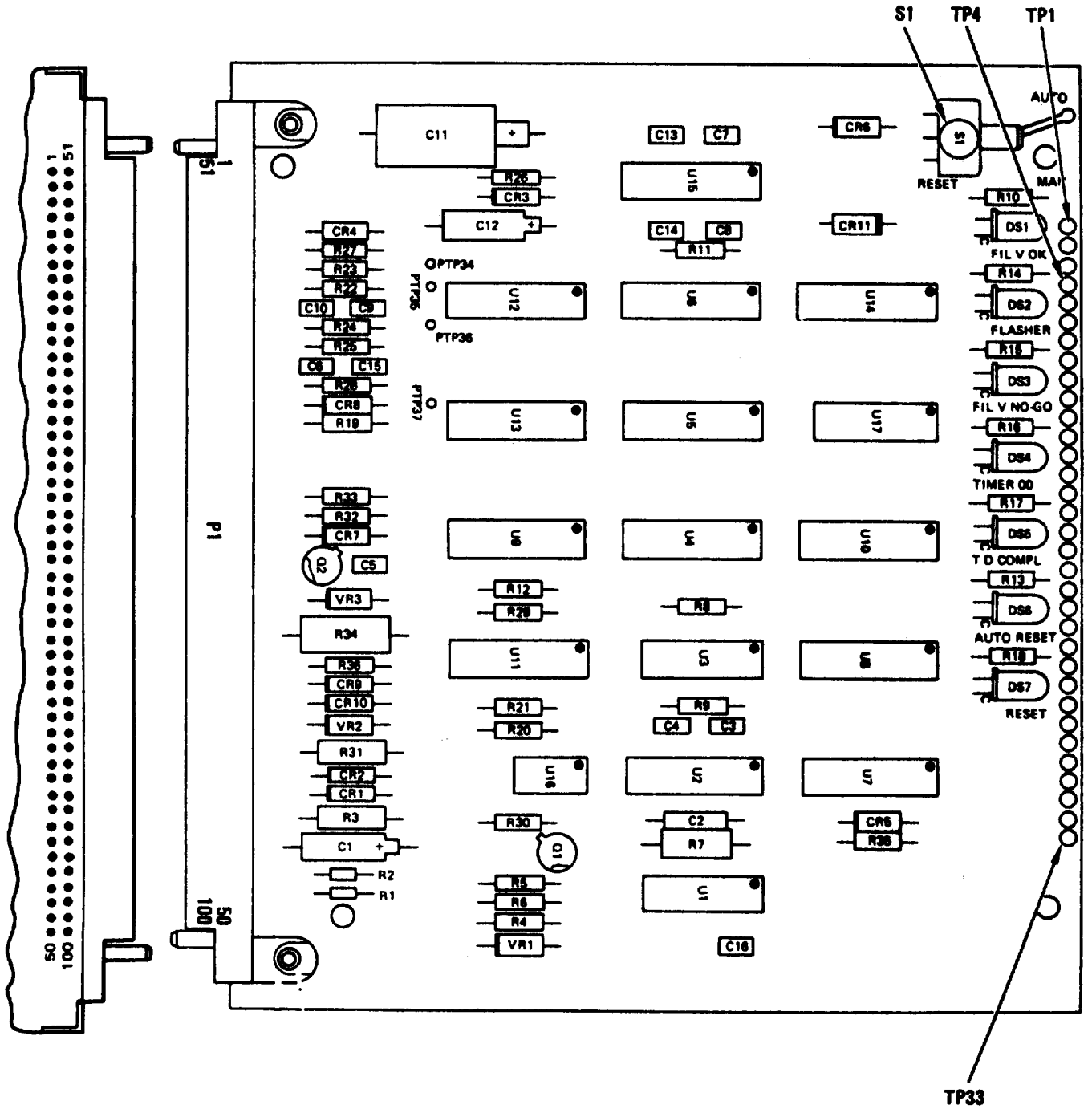


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635841-100 TIMING AND RESET CARD TEST AND TROUBLESHOOTING (2 of 2)



1635842-100 CROWBAR SENSE CARD TEST AND TROUBLESHOOTING (1 of 2)

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.
2. Select test.
  - a. Type **TEST 1635842TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635842TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPLIED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES, ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook Up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook Up UUT.
  - a. Observe the following message on crt.
 

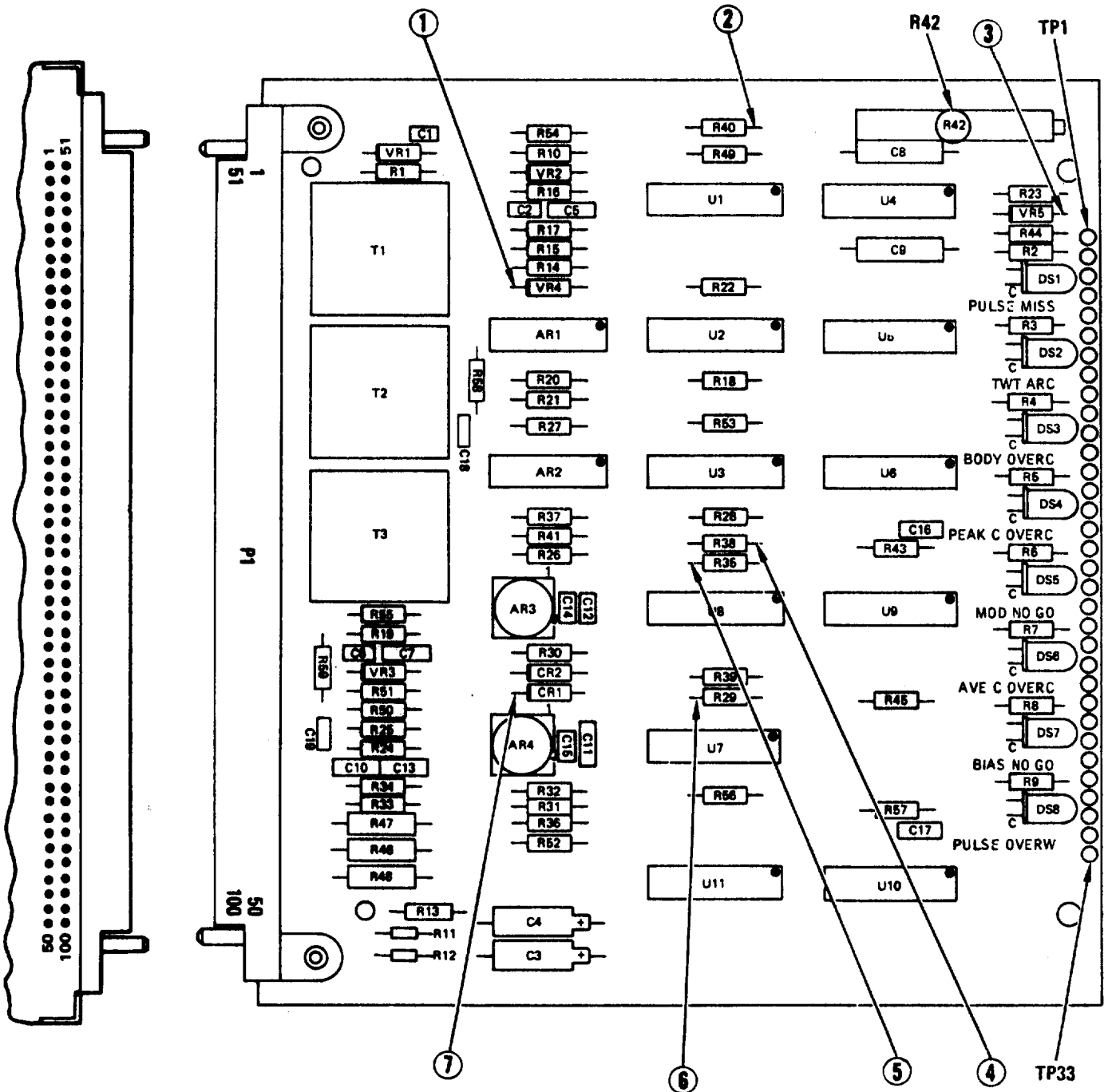
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635842-100 CROWBAR SENSE CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635843-100 OR -101 HV AREA SENSOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635843TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name)
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635843TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-383-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

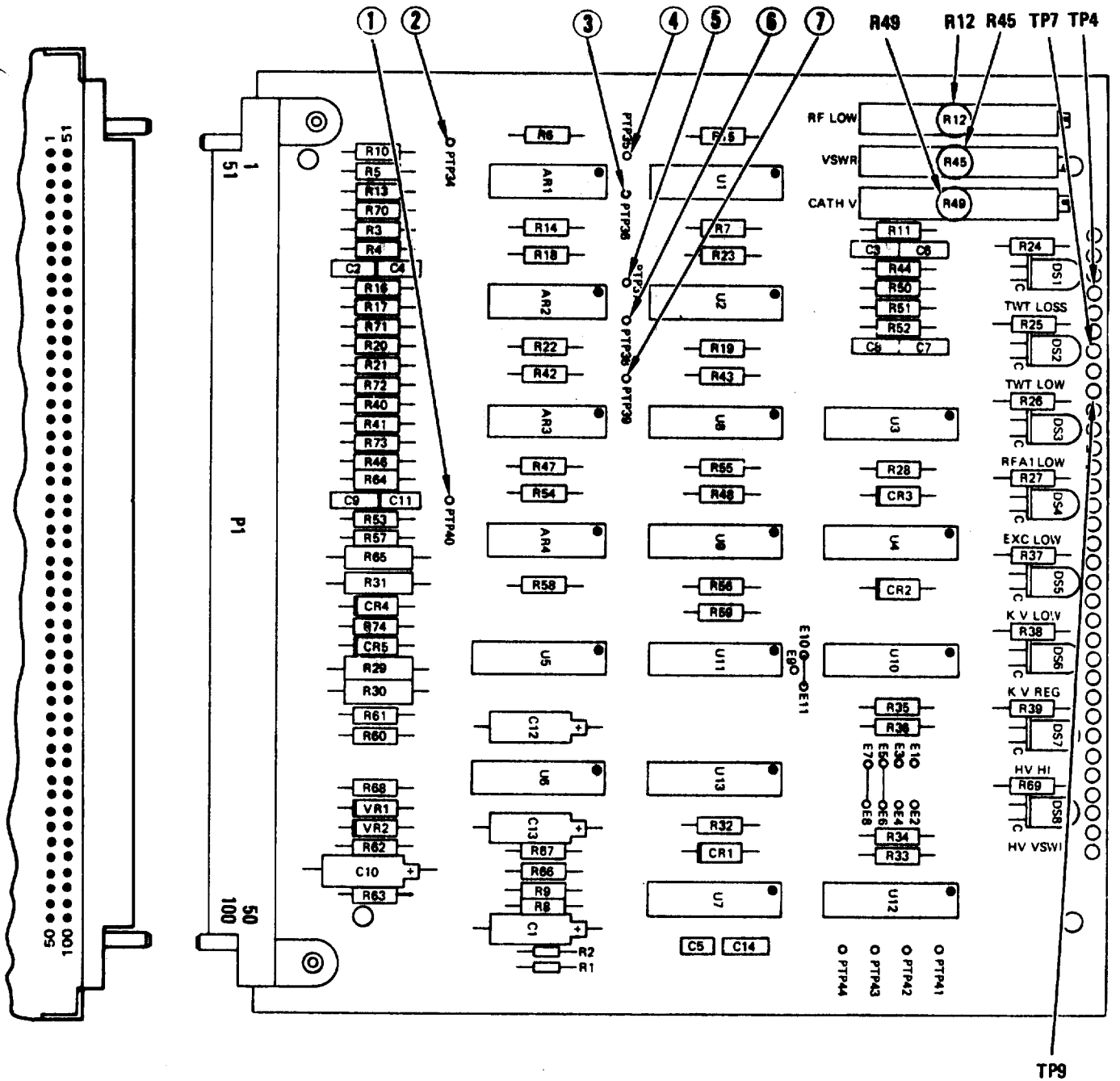
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635843-100 HV AND RF SENSOR CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635845-100 OR -101 HV AREA SENSE CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal end press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635845TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635845TXX. IC XX/XX/XX
MEAS VALUE:

- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BMC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE ITEM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

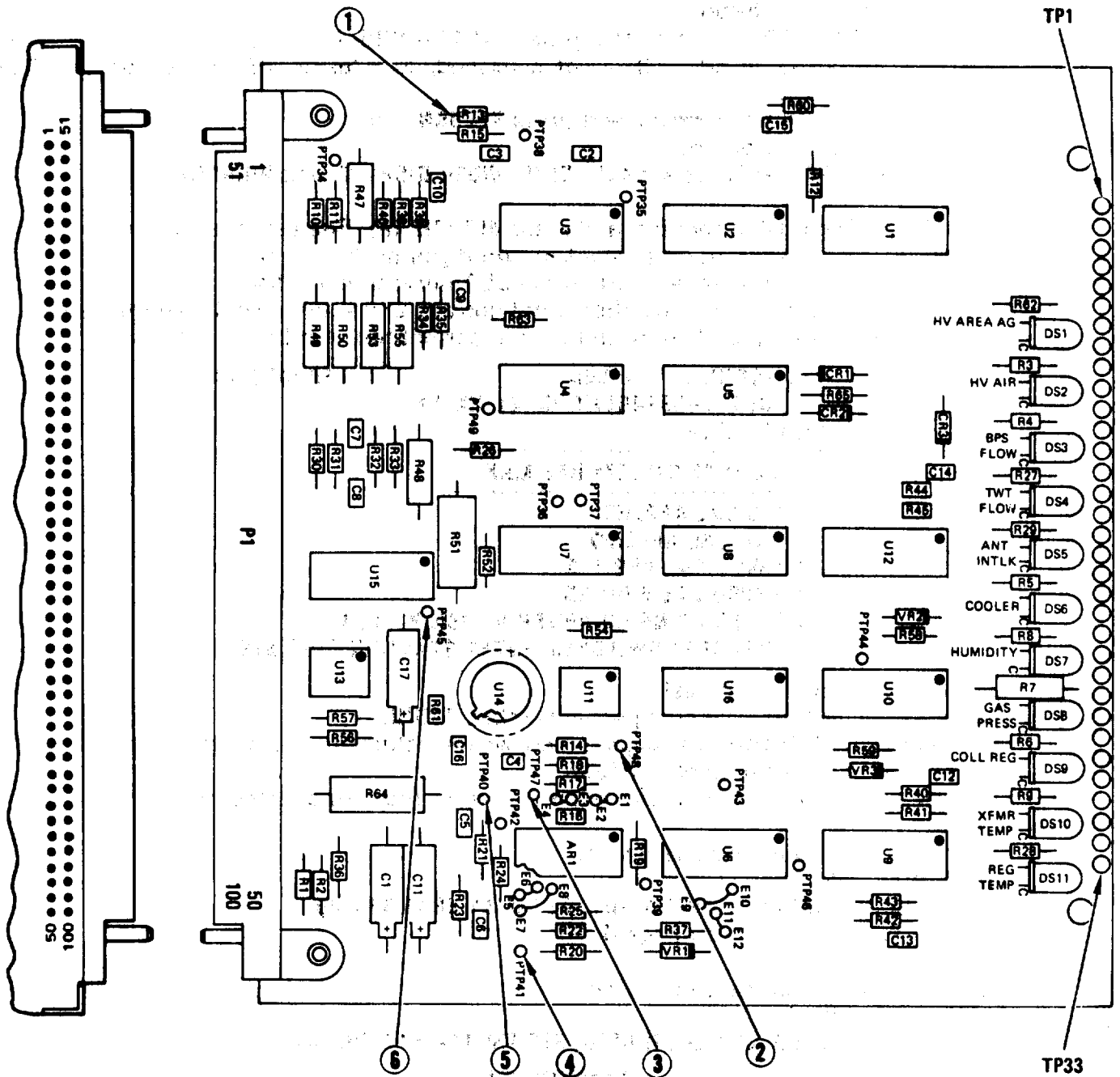
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635845-100 OR -101 AREA SENSE CARD TEST AND TROUBLESHOOTING (2 OF 2)



**1635846-100 TRIGGER CONTROL CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.

2. Select test.
  - a. Type **TEST 1635846TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635846TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**

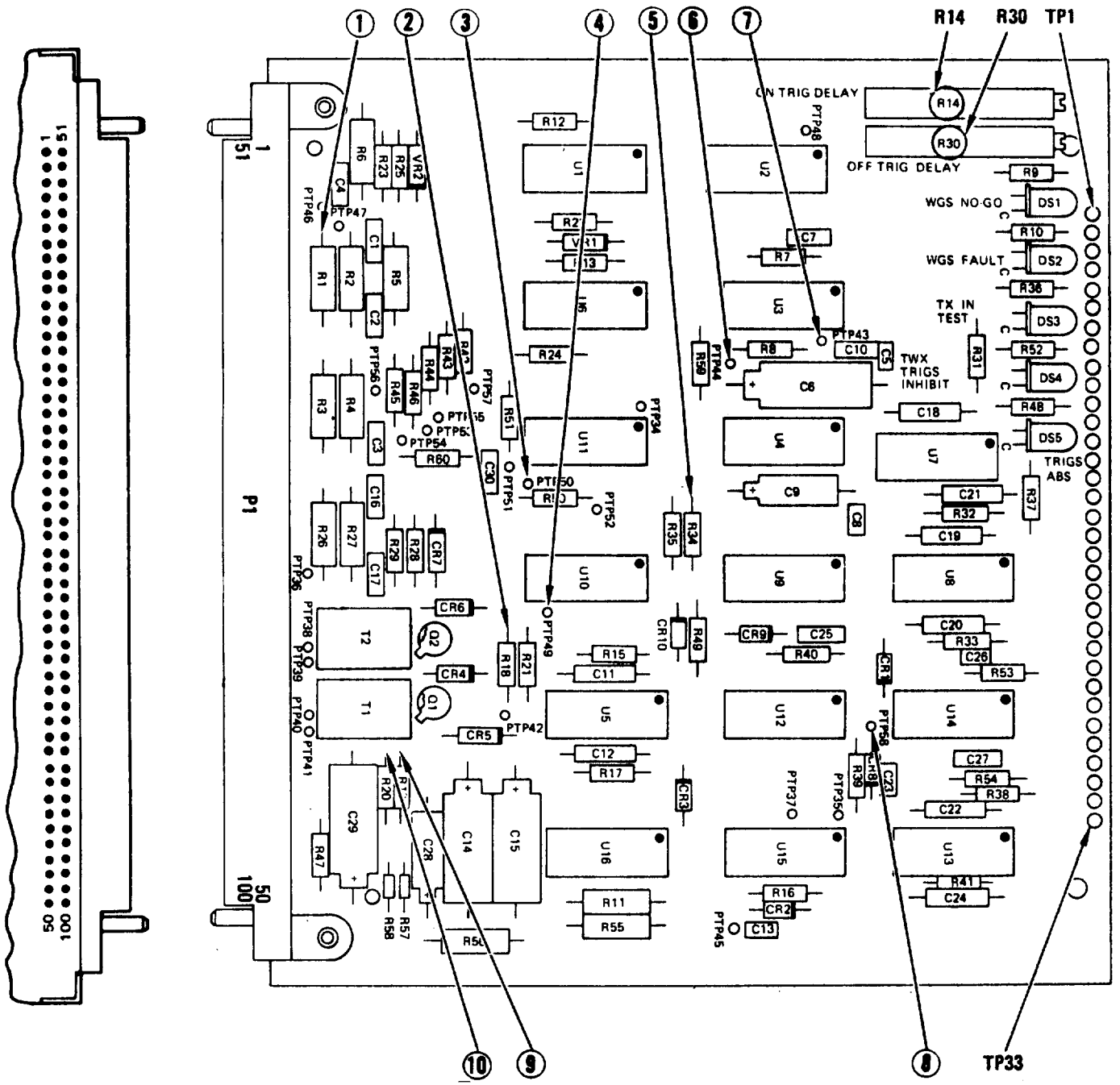


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635846-100 TRIGGER CONTROL CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635847-100 TRANSMITTER GO/NO GO CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.

2. Select test.
  - a. Type **TEST 1635847TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:    LINE#:                EQUATE XX
                UUT: 1635847TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

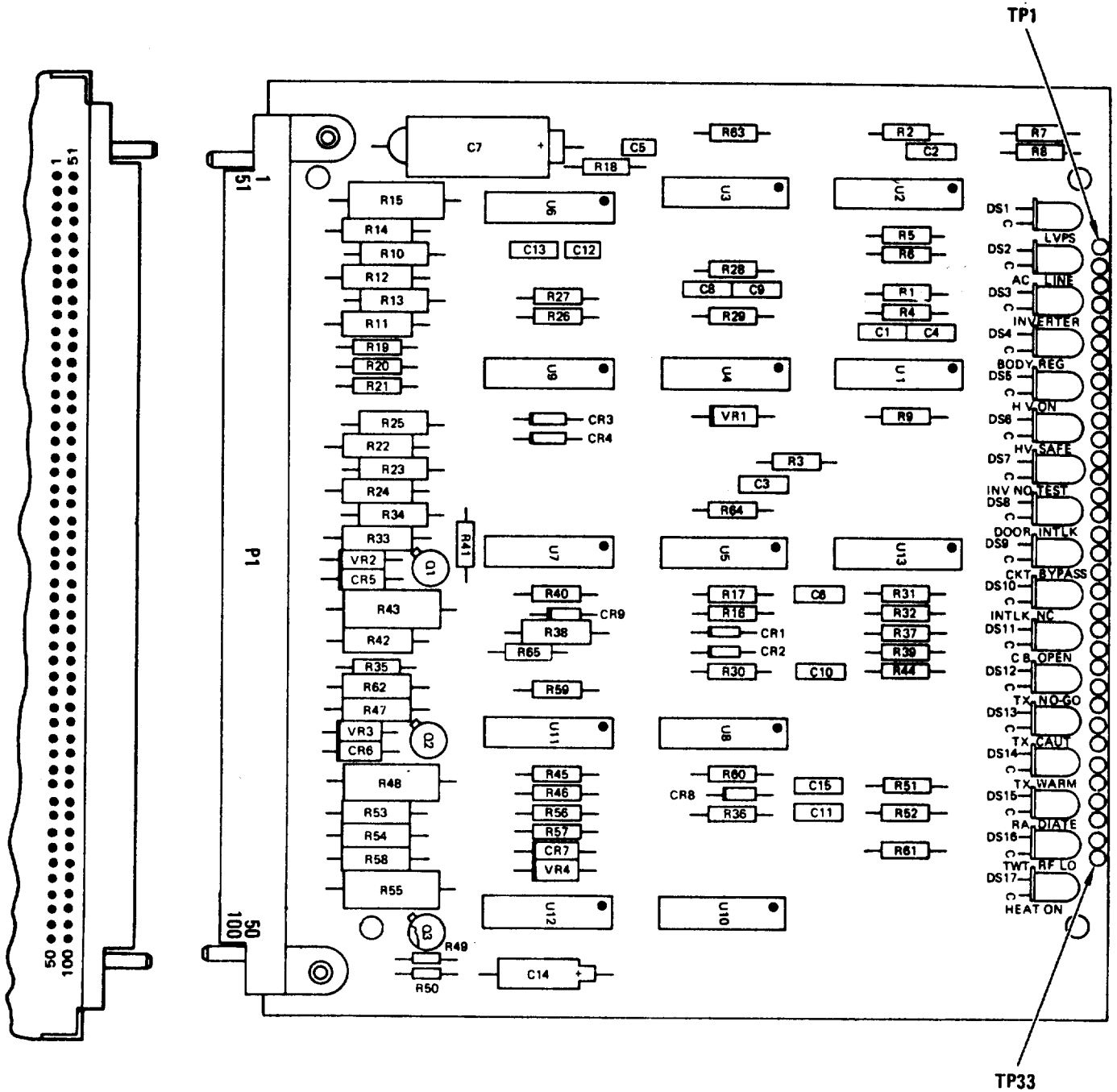
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635847-100 TRANSMITTER GO/NO GO CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635854-100 BEAM POWER SUPPLY CONTROL CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635854TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635854TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

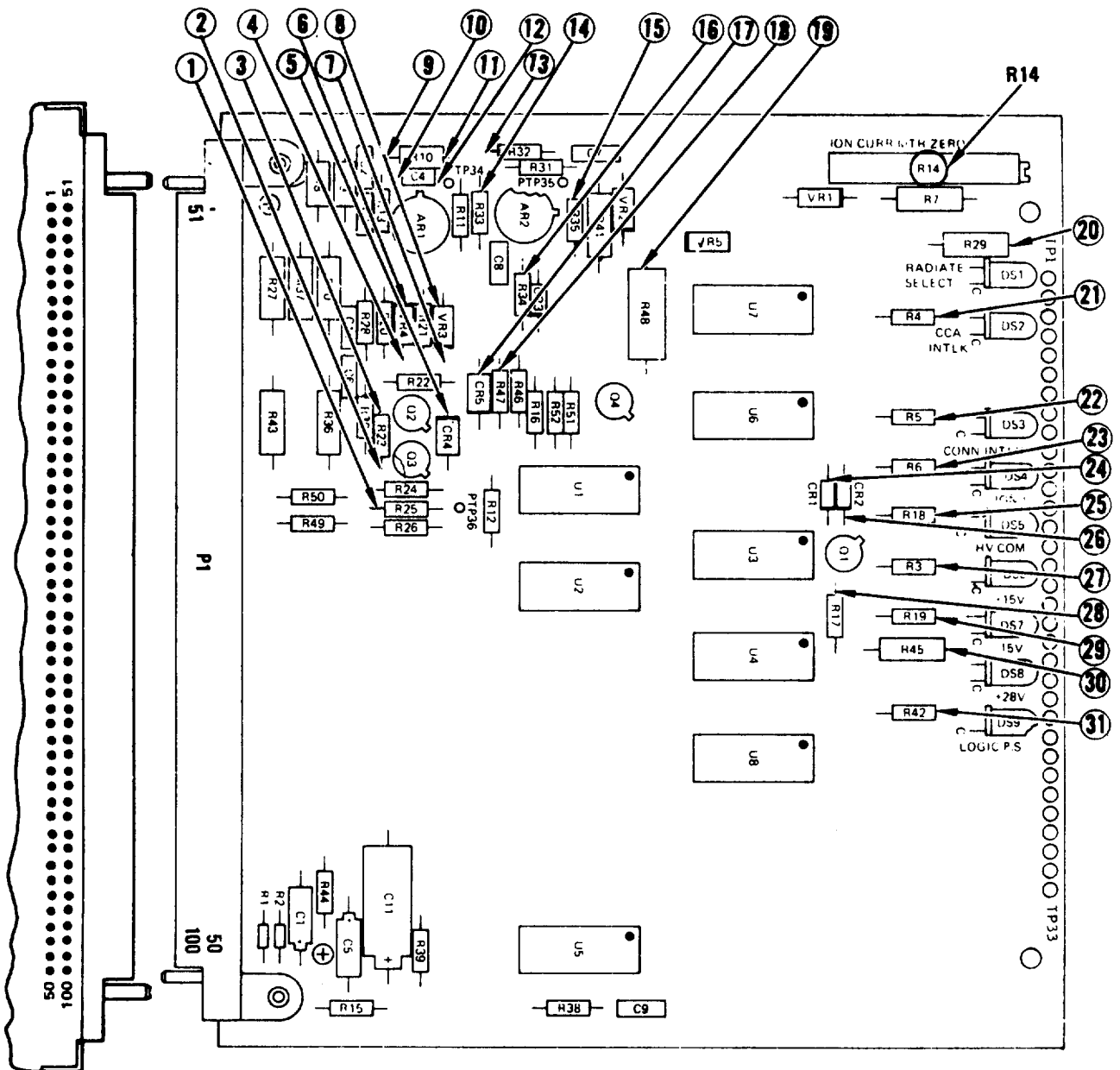
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635854-100 BEAM POWER SUPPLY CONTROL CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635870-100 OR -101 PHASE SHIFT DRIVER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS. VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635870TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635870TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**MSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

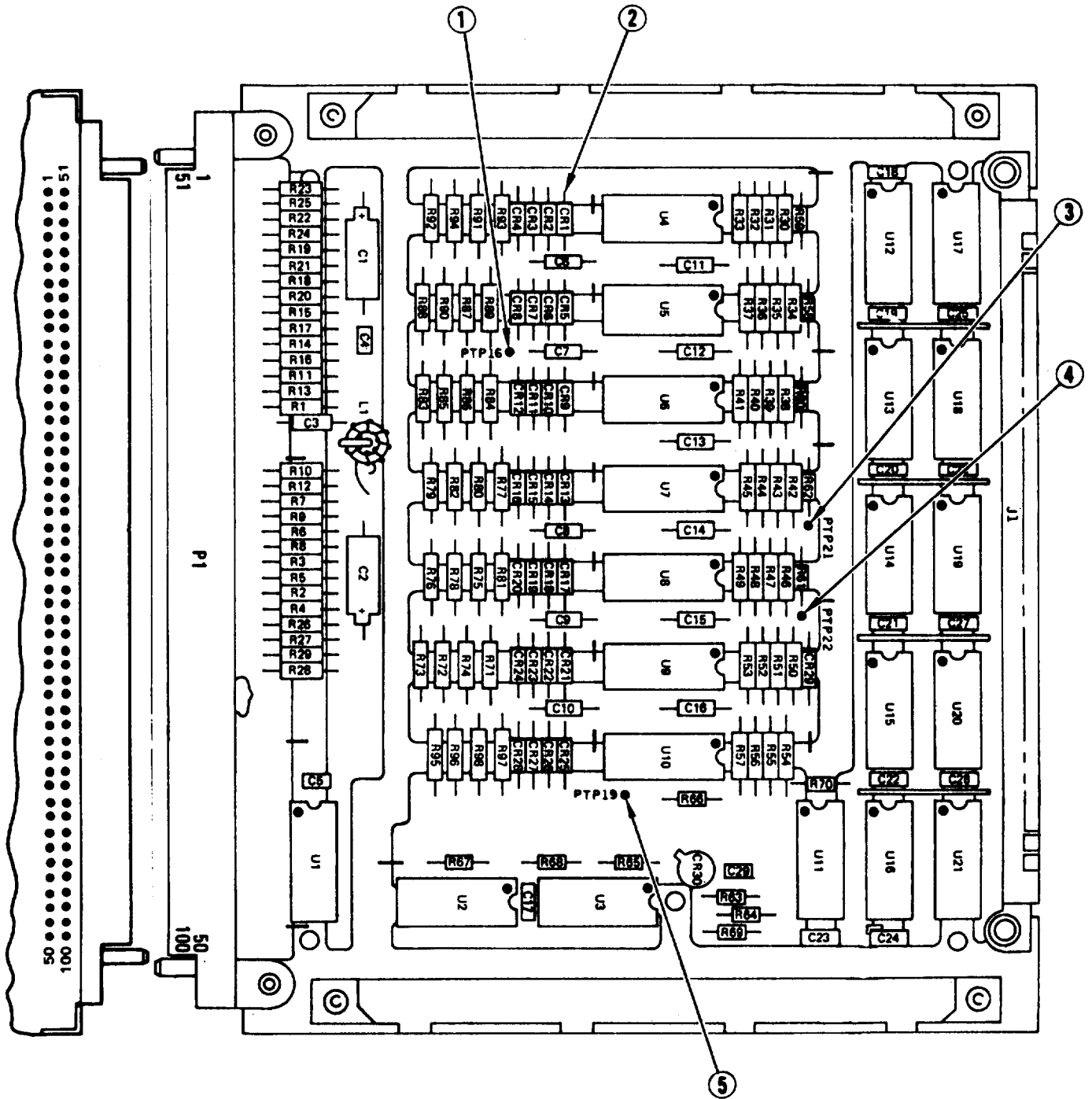
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**

**CAUTION**

Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635870-100 OR -101 PHASE SHIFT DRIVER CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND	49 INPUT
VCC	1 INPUT

**1635871-100 PHASE SHIFT COMPUTER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410 (V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.

- a. Type **TEST 1635871TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
- b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635871TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**

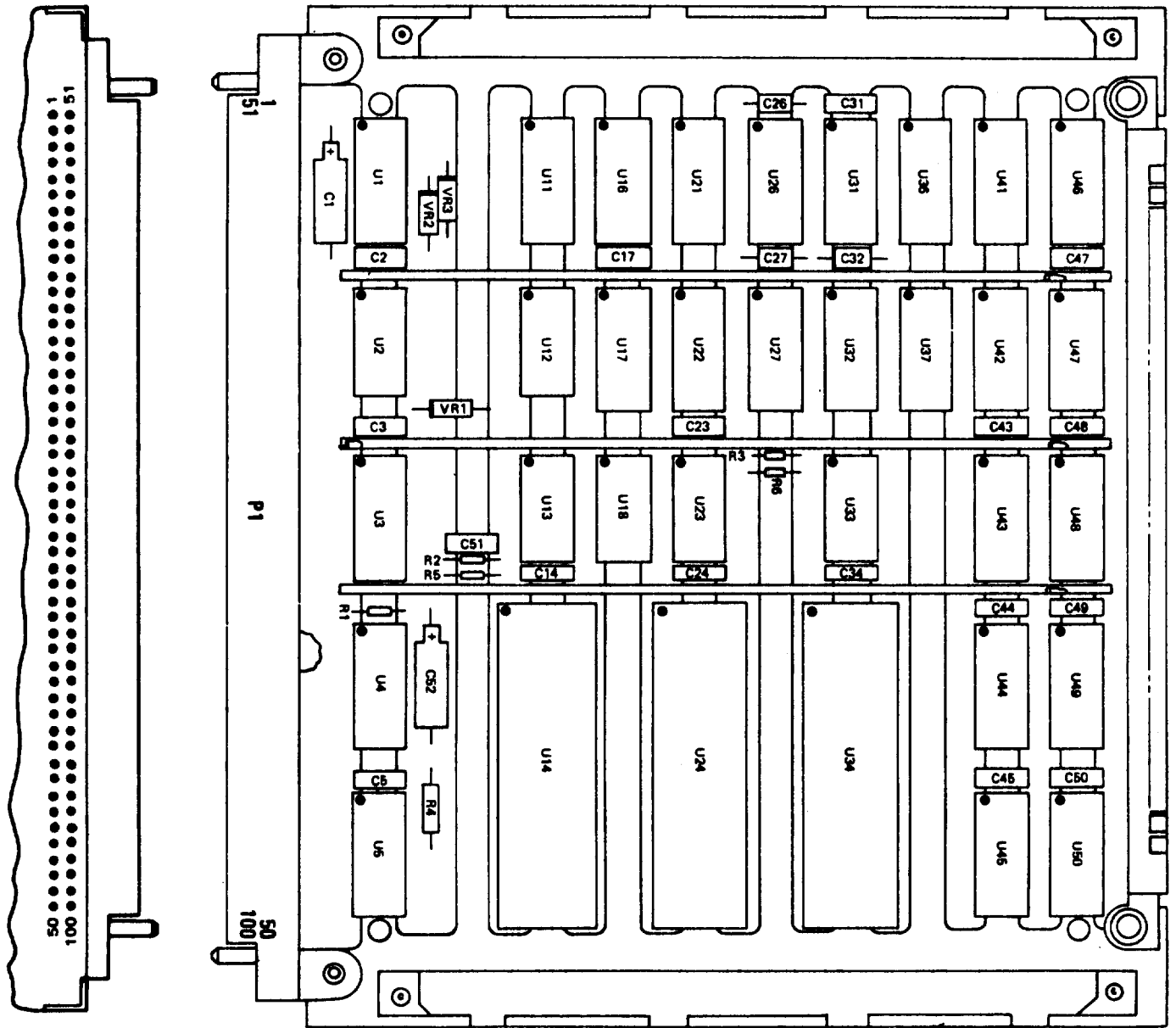


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635871-100 PHASE SHIFT COMPUTER CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
W1 W2	U21P10 U21P4

**1635872-100 TEST DRIVER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.
2. Select test.
  - a. Type **TEST 1635872TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635872TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

Press **PROCEED** key to start test.

3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

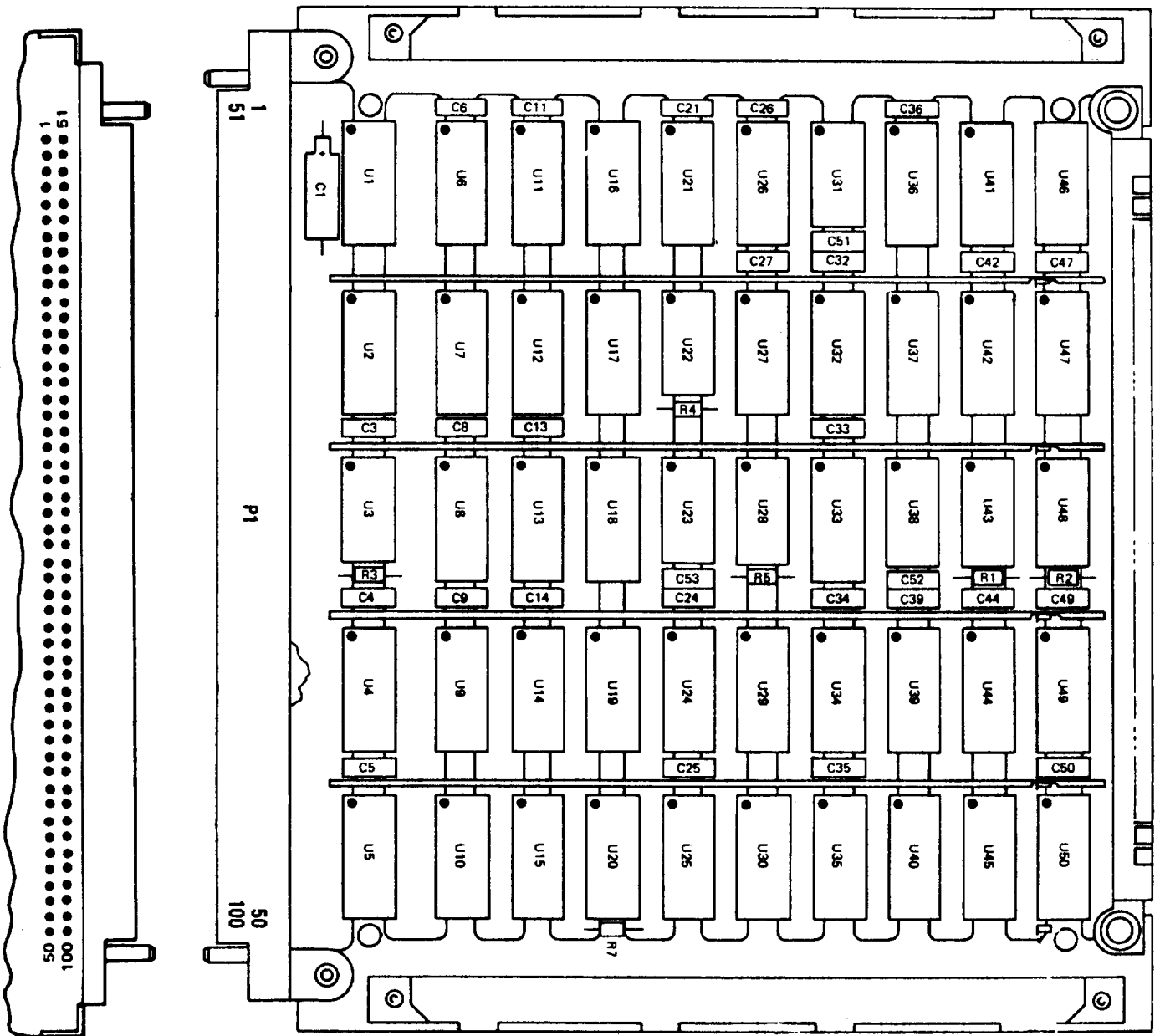
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635872-100 TEST DRIVER CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC	2 INPUT
GND	48 INPUT
R2P2	U19P4
R1P2	U3P6

**1635882-100 B-SCOPE VIDEO CONVERTER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.
2. Select test.
  - a. Type **TEST 1635882TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message, If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635882TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

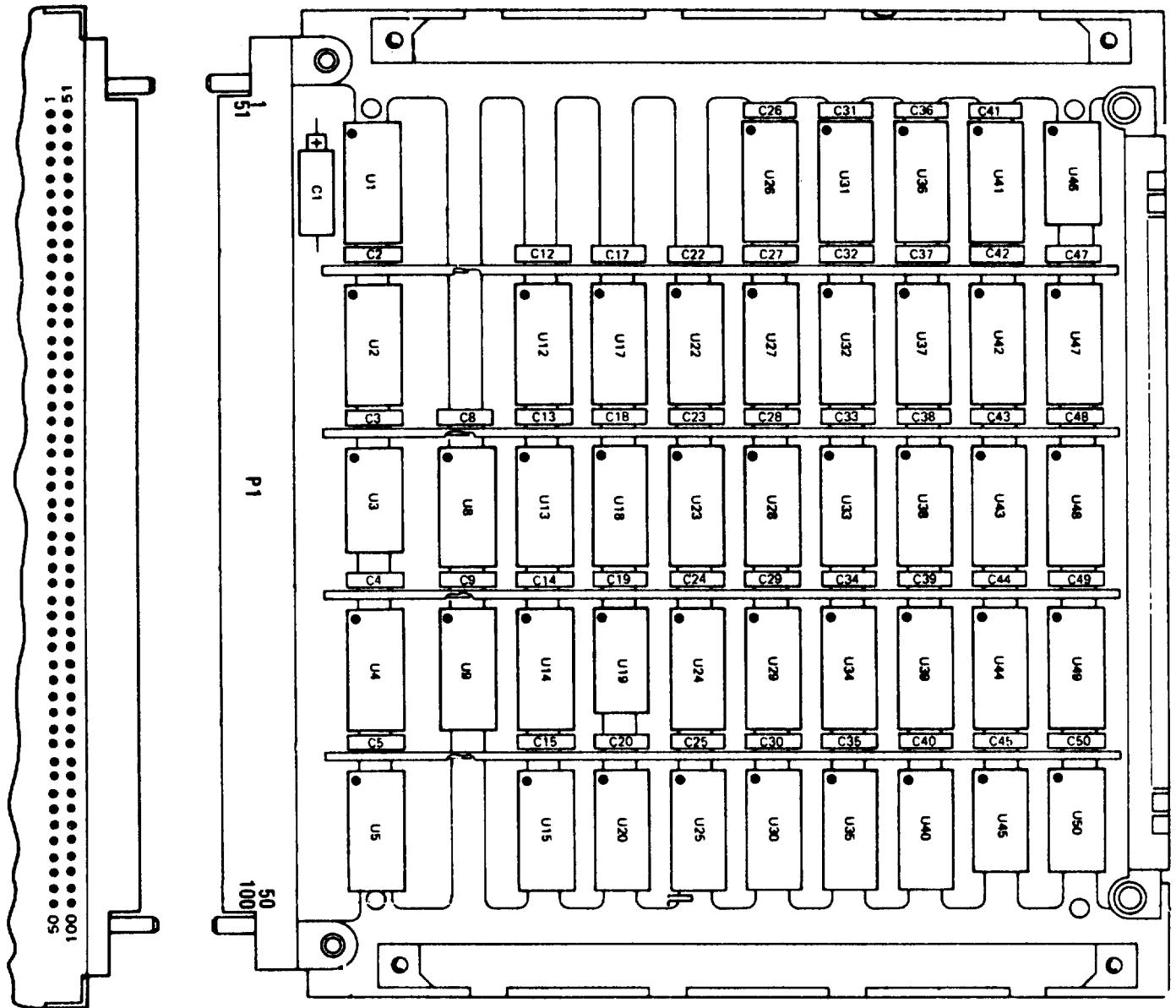
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED, SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635882-100 B-SCOPE VIDEO CONVERTER CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

**1635883-100 COMPUTER MESSAGE CONTROL CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635883TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:   LINE#:           EQUATE XX
              UUT: 1635883TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILED REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

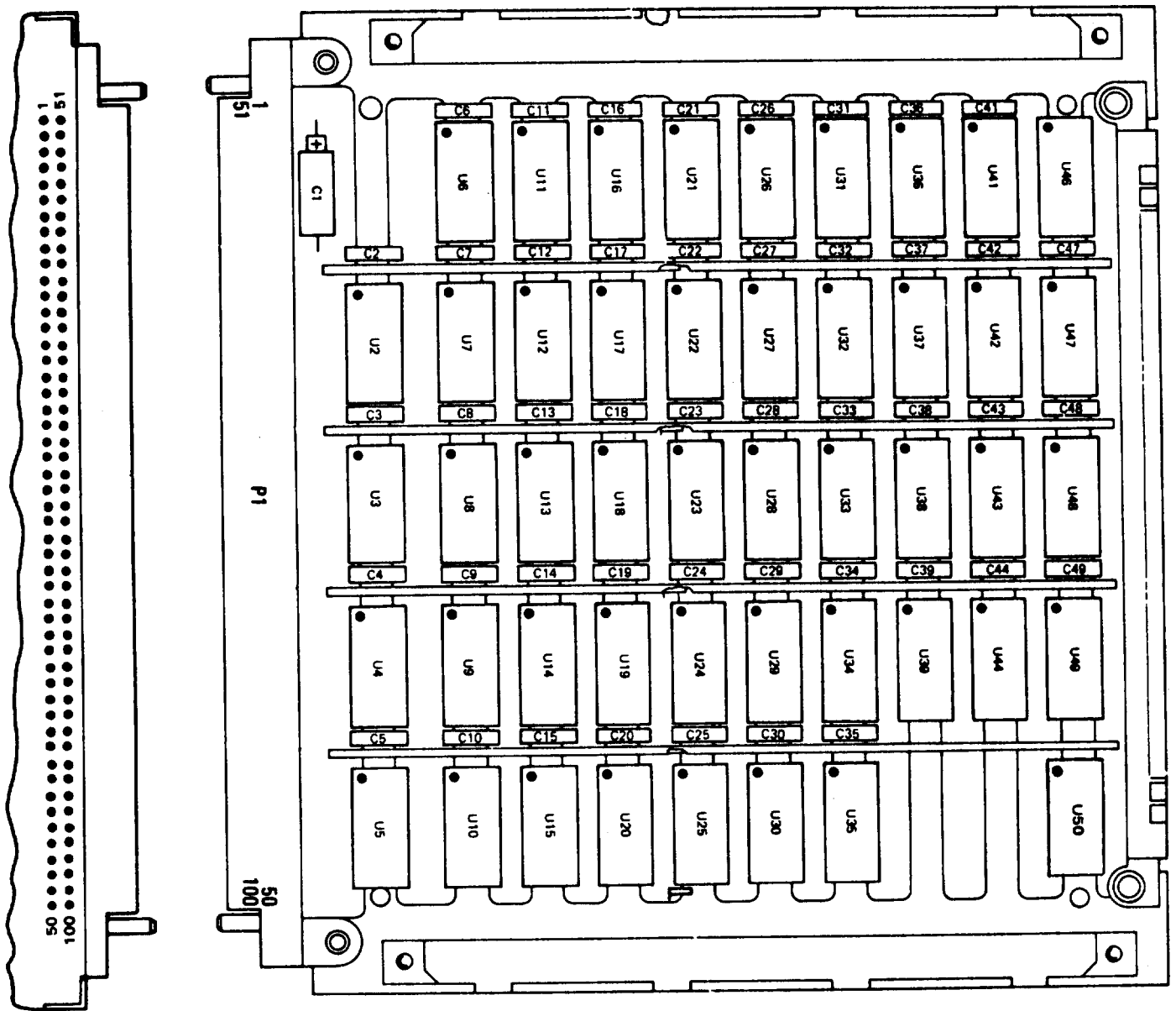
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635883-100 COMPUTER MESSAGE CONTROL CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC GND	2 INPUT 48 INPUT

**1635884-100 CLOCK/TV SYNC GENERATOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY,** and **PRINTER.**
2. Select test.
  - a. Type **TEST 1635884TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635884TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40,**

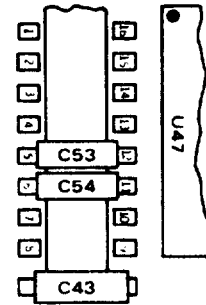
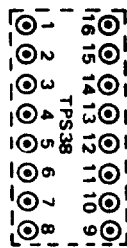
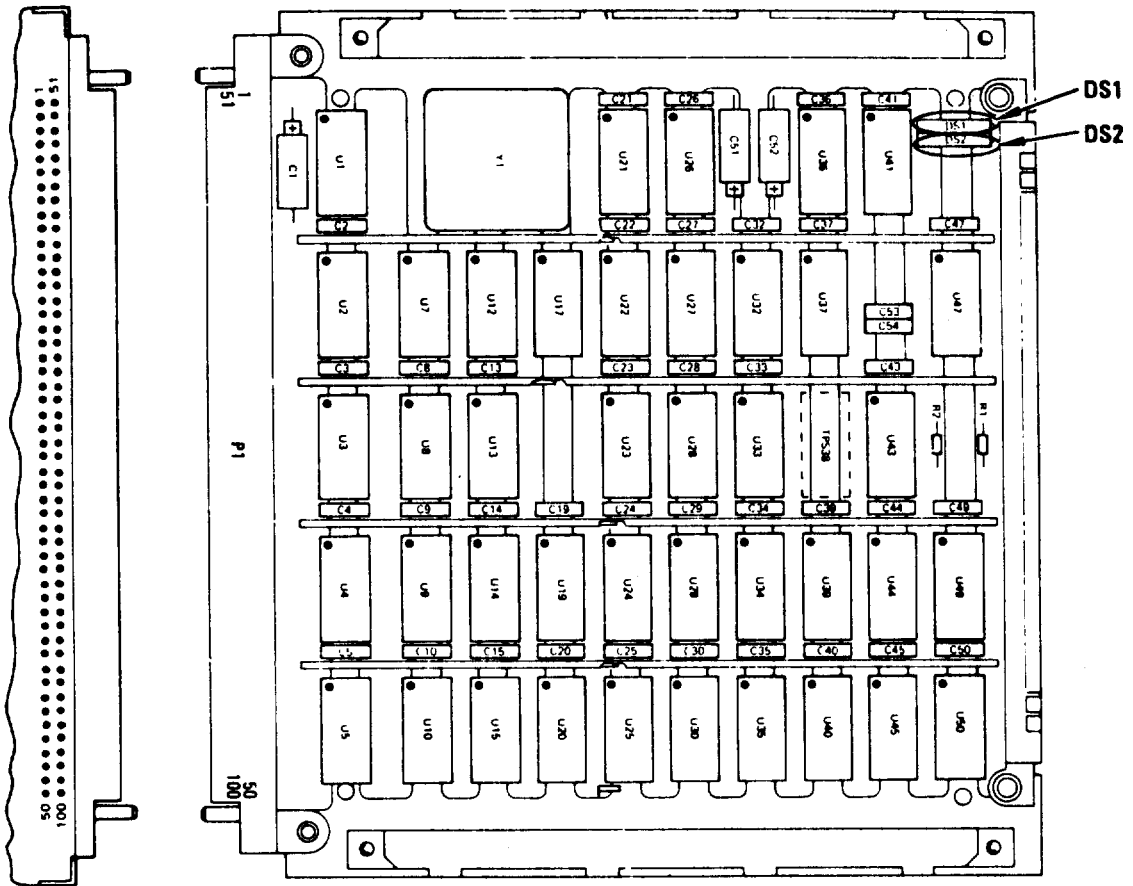


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635884-100 CLOCK/TV SYNC GENERATOR CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC W4	48 INPUT 2 INPUT U23P10

**1635885-100 CURSOR/VIDEO OUTPUT CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635805TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635885TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

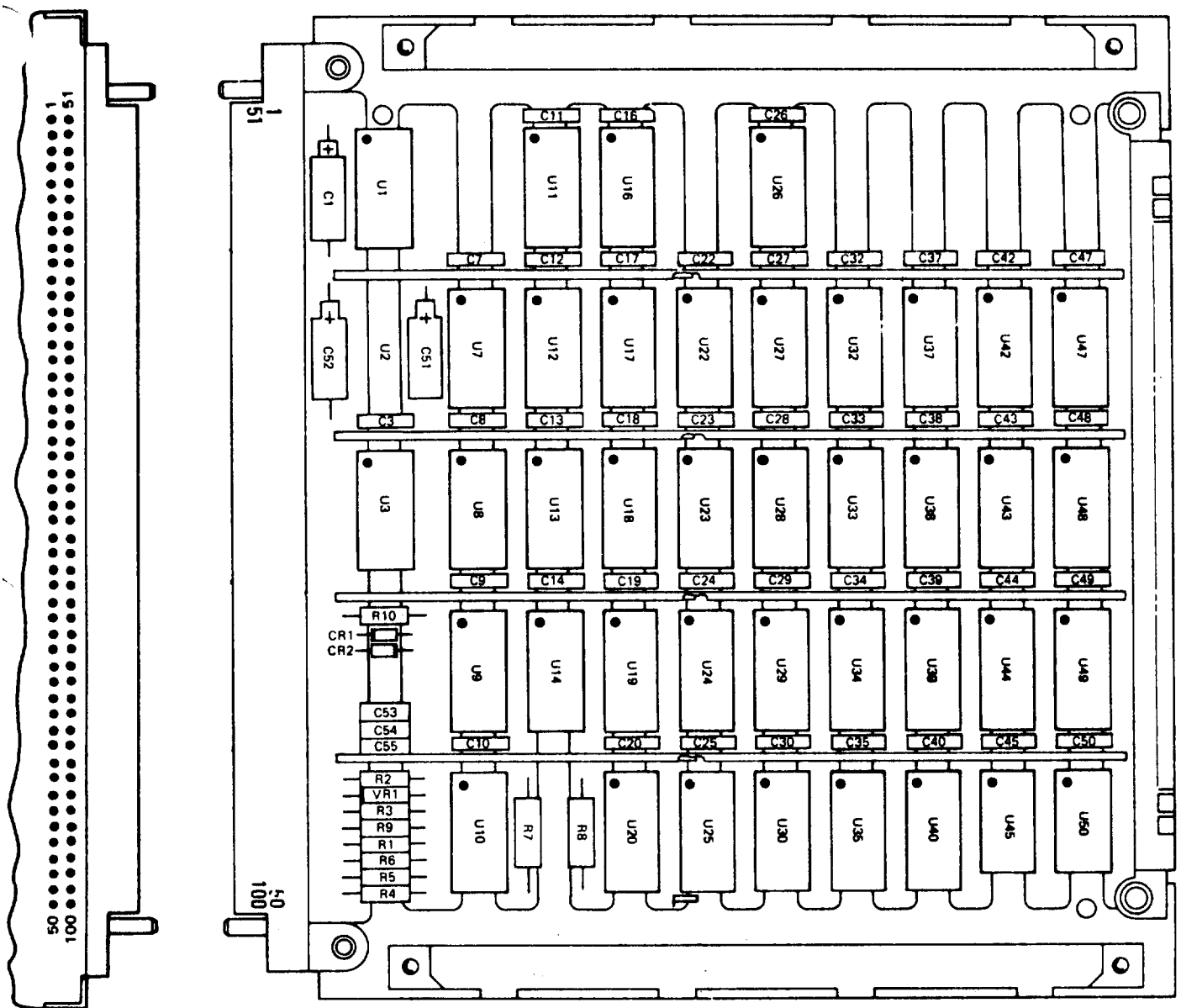
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635885-100 CURSOR/VIDEO OUTPUT CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT	PROBE MESSAGE	PROBE MEASUREMENT POINT	PROBE MESSAGE	PROBE MEASUREMENT POINT
W1 W2 W3 W4 W5	U16P10 U39P9 U39P10 U39P11 U39P12	W6 W7 W8 W9 W10	U34P9 U34P10 U34P11 U34P12 U13P2	W11 W12 W13 W14 W15	U9P8 U9P12 U9P2 U9P10 U13P8

---

**1635886-100 B-SCOPE VIDEO BUFFER CARD TEST AND TROUBLESHOOTING (1 of 2)**

---

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.
2. Select test.
  - a. Type **TEST 1635886TXX** at terminal and press **RETURN** key. See test program index (page 4-1 2) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635886TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

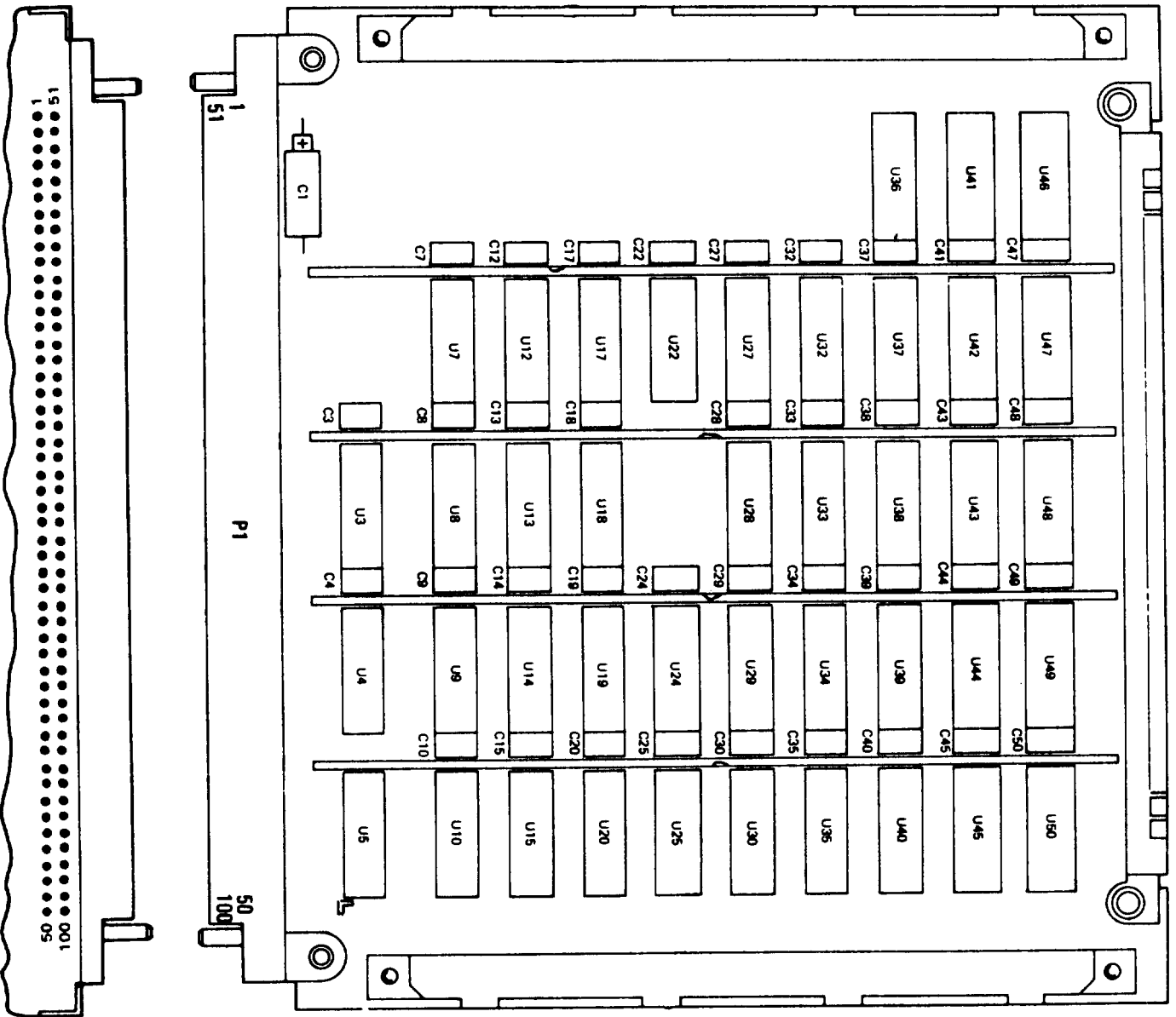
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635886-100 B-SCOPE VIDEO BUFFER CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635910-100 DOPPLER FILTER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635910TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635910TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
      **PIU CAL APPLIED
      **BNC CAL APPLIED
      **LSVSU CAL APPLIED
      **HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED, SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

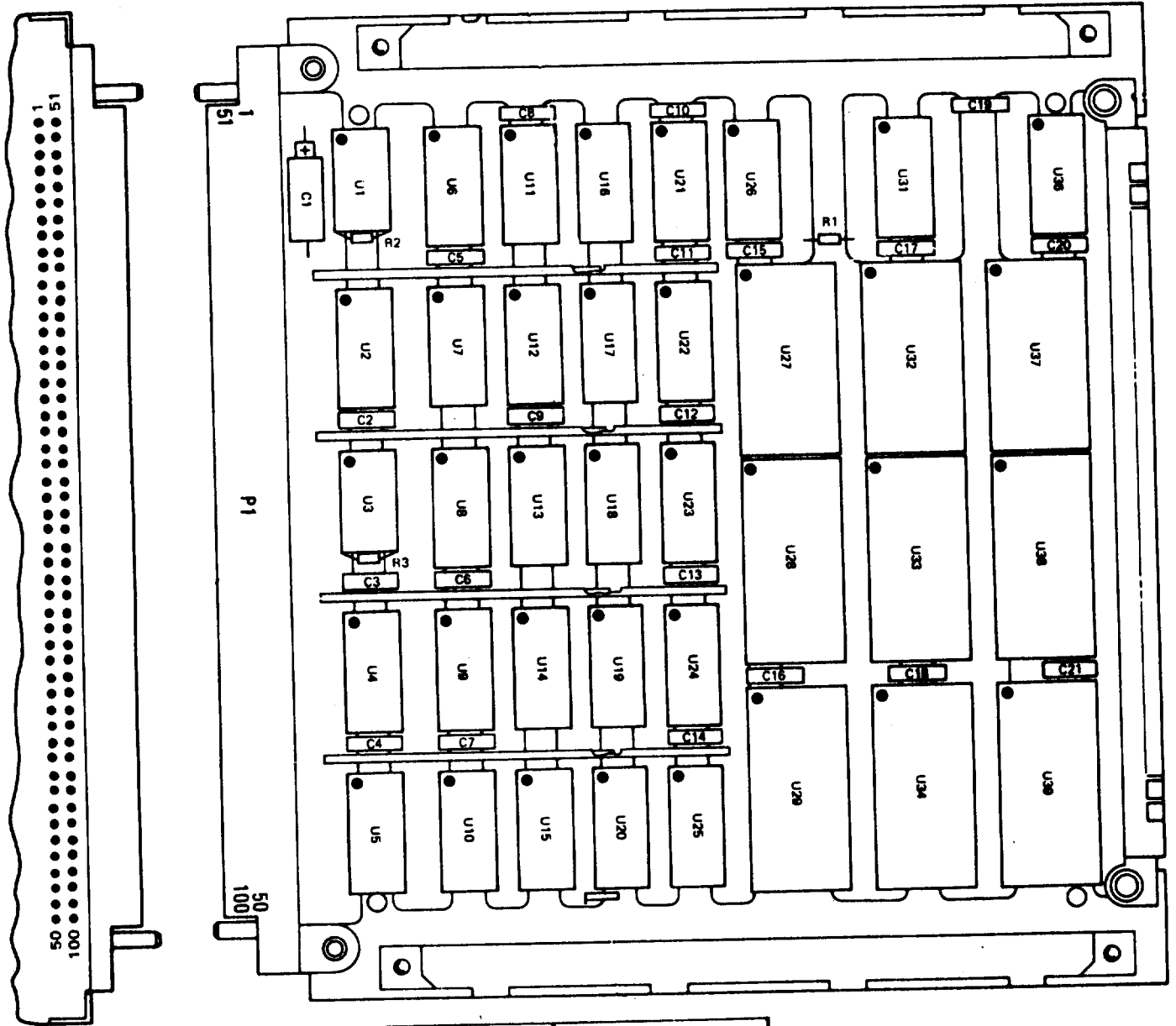
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635910-100 DOPPLER FILTER CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

---

11635911-100 COEFFICIENT GENERATOR A CARD TEST AND TROUBLESHOOTING (1 of 2)

---

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635911TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635911TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
      **PNJ CAL APPLIED
      **BNC CAL APPLIED
      **LSVSU CAL APPLIED
      **HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```

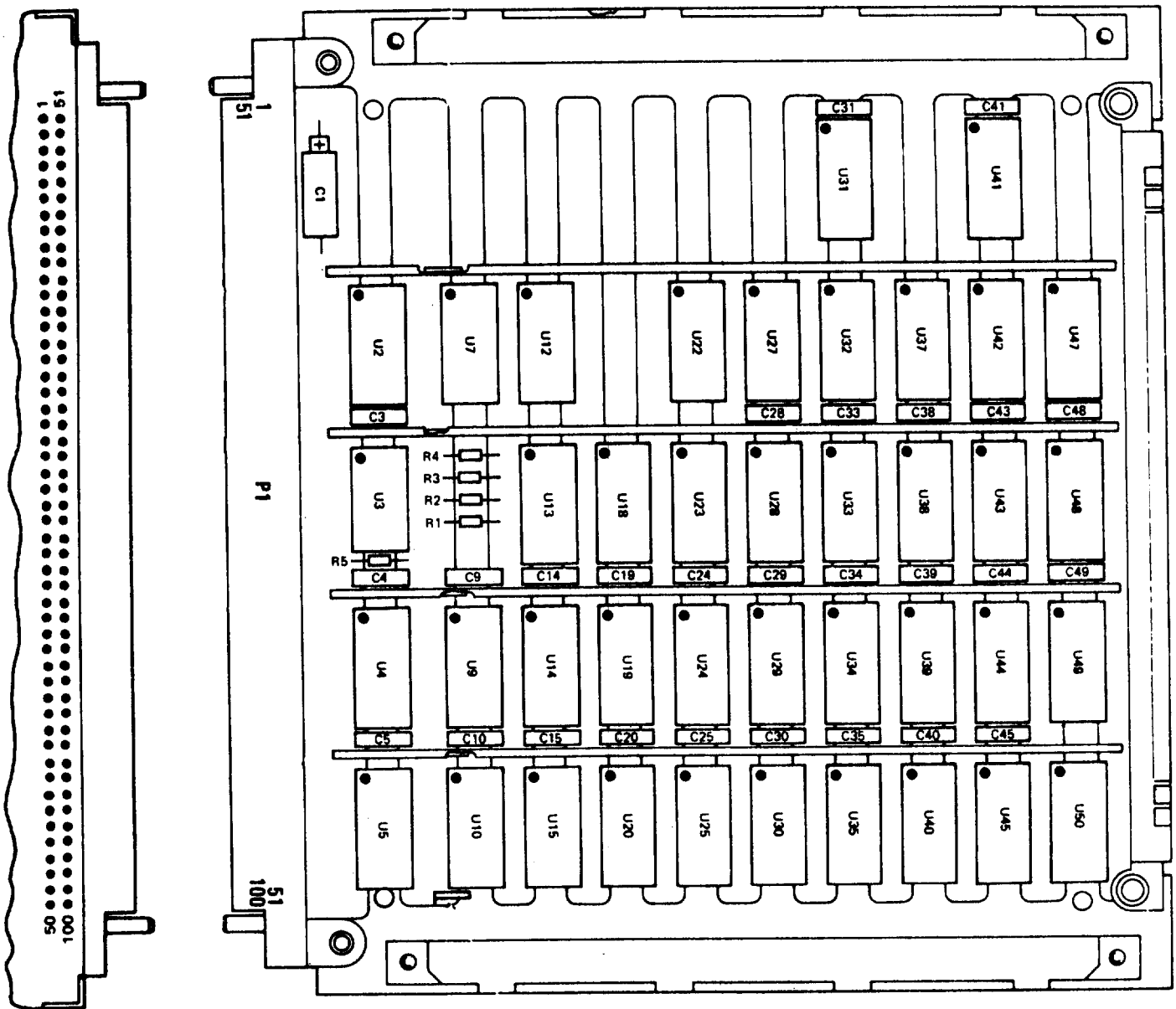


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points {nodes} and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635911-100 COEFFICIENT GENERATOR A CARD, TEST AND TROUBLESHOOTING (2 of 2)



**1635912-100 COEFFICIENT GENERATOR B CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.

2. Select test.
  - a. Type **TEST 1635912 TXX** at terminal and press **RETURN** key. see test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635912TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
.....
** PIU CAL APPLIED
** BNC CAL APPLIED
** LSVSU CAL APPLIED
** HVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

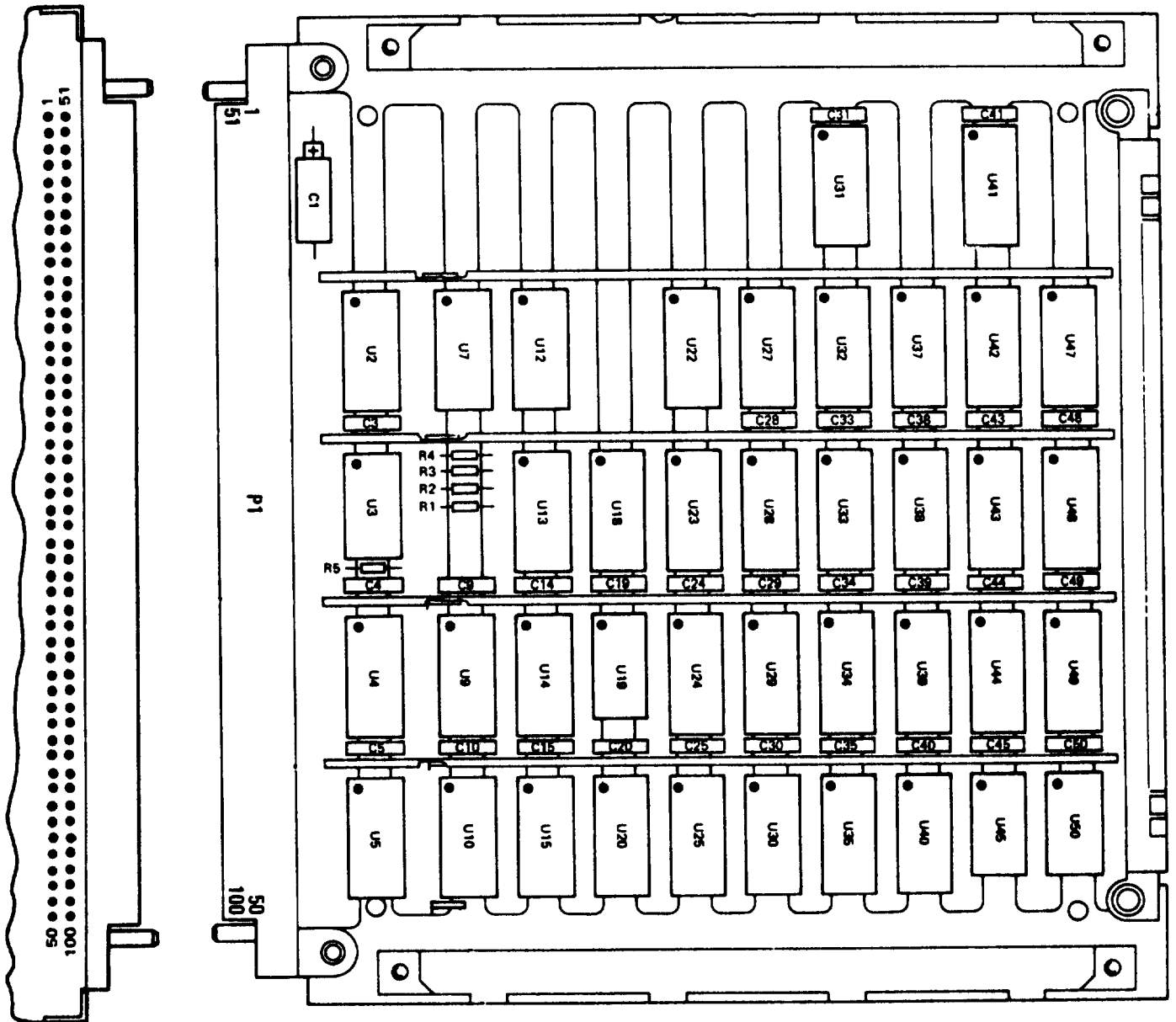
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635912-100 COEFFICIENT GENERATOR B CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635913-100 PROCESS CYCLE TIMING CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per Tlu 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635913TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635913TXX, IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to, enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

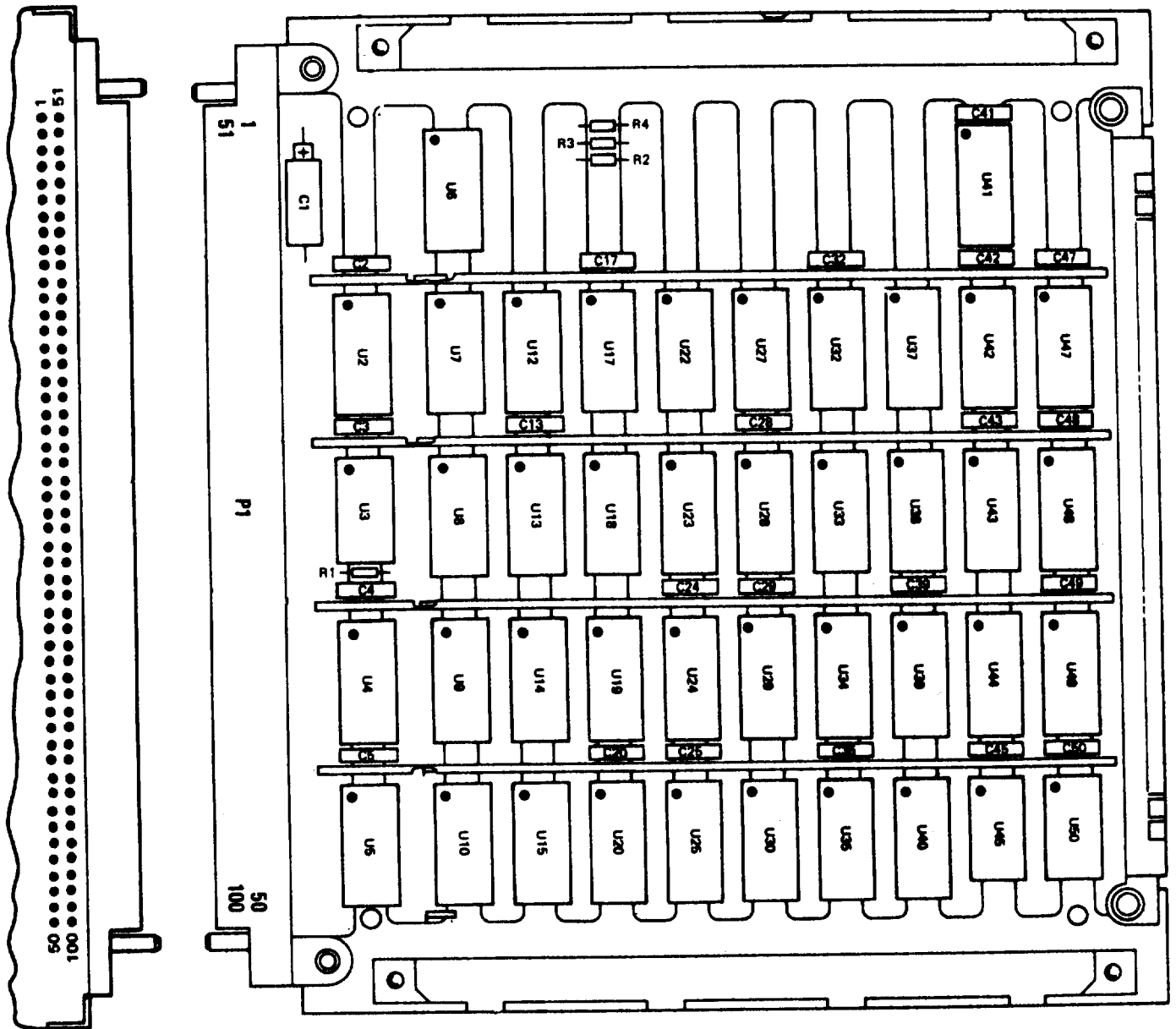
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635913-100 PROCESS CYCLE TIMING CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

1635914-100 THRESHOLD CROSSING DETECTOR CARD TEST AND TROUBLESHOOTING (1 of 2)

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. if **R** is not displayed, turn tester off and restart per TM, 11-6626-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt..
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635914TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key, Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635914TXX. IC XX/XX/XX
MEAS VALUE:
-----
-RUN TIME SYSTEM REV X.XX-
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES, ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number [MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED, SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

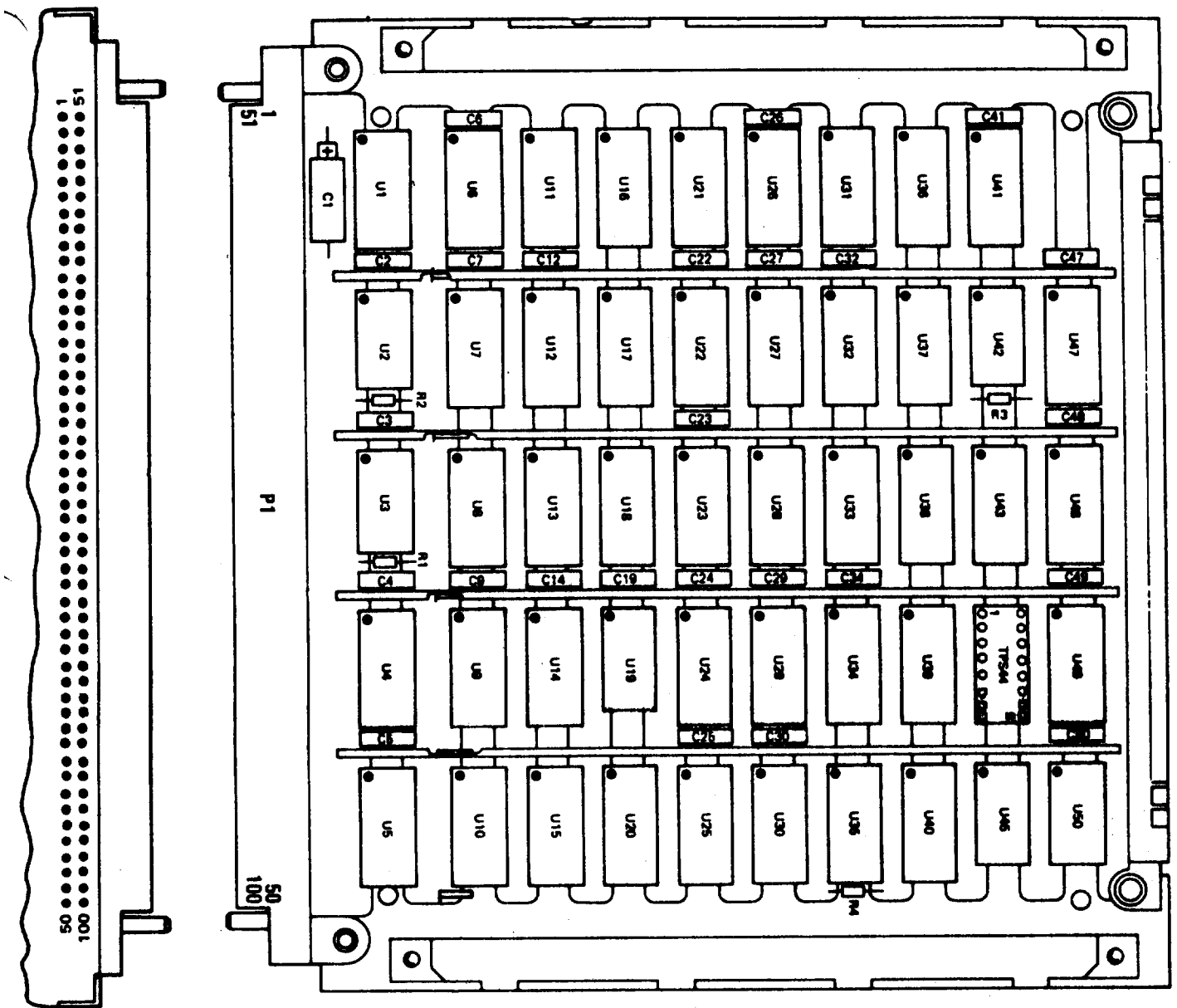
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635914-100 THRESHOLD CROSSING DETECTOR CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC GND	2 INPUT 48 INPUT

**1635915-100 TARGET DETECTOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.

- a. Type **TEST 835915TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
- b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1636915TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- a. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```

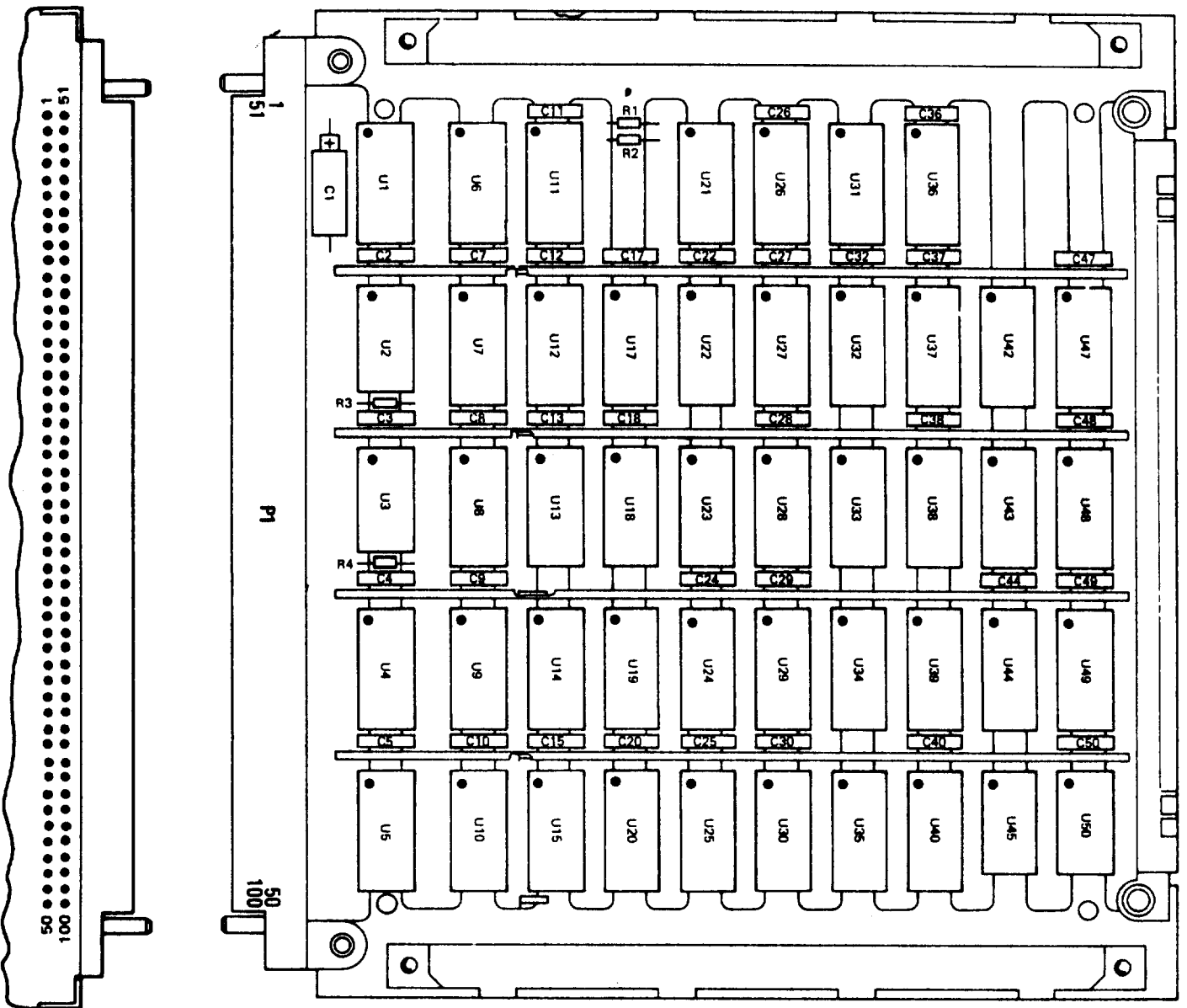


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635915-100 TARGET DETECTOR CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
W1 W2 W3 W4	U21P4 U21P7 U21P9 U21P12

**1635916-100 PHASE GAIN BIAS CORRECTION CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635916TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635916TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

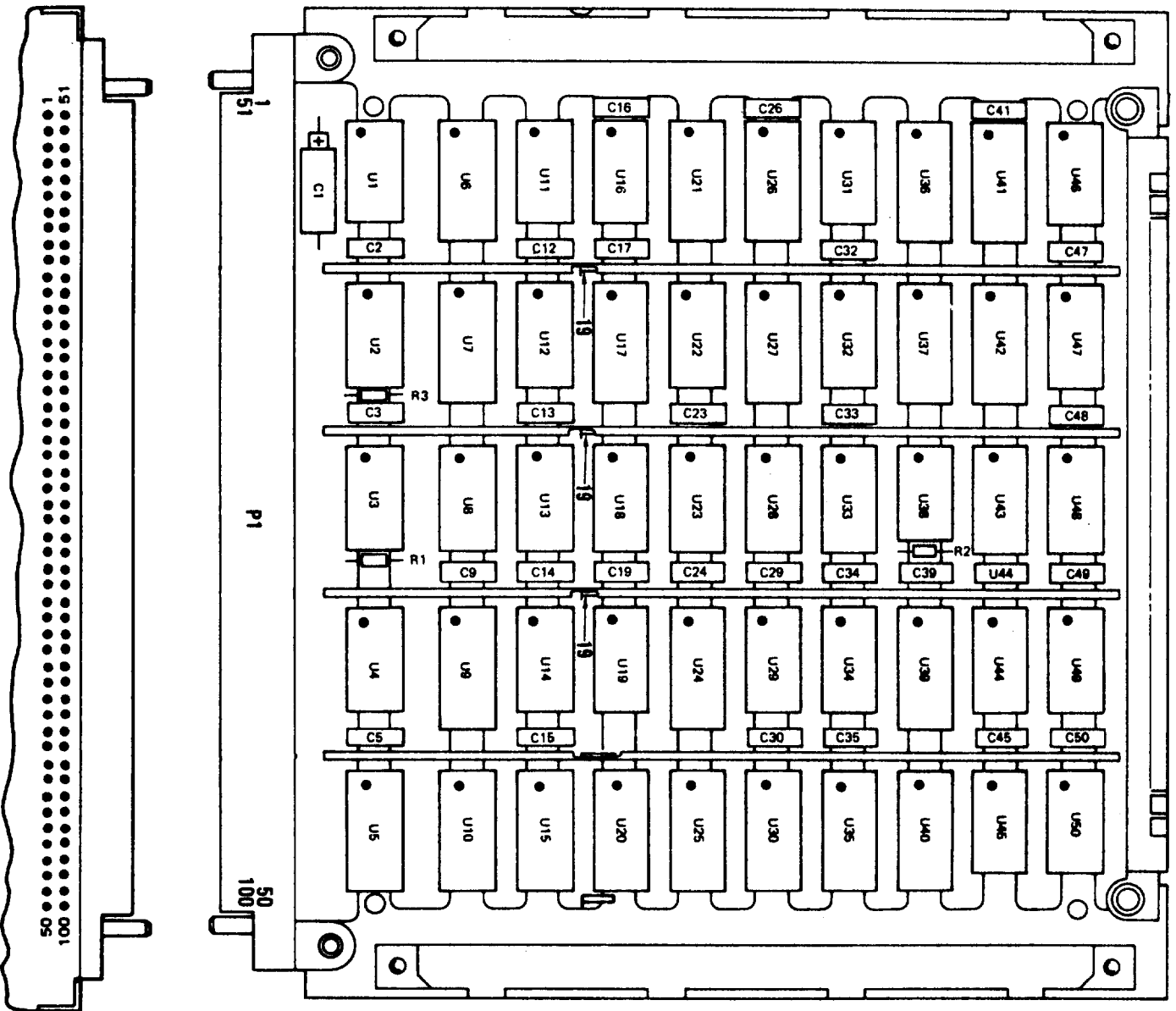
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635916-100 PHASE GAIN BIAS CORRECTION CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

**1635917-100 GENERAL PURPOSE FLIP-FLOP CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**,
2. Select test.
  - a. Type **TEST1635917TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635917TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

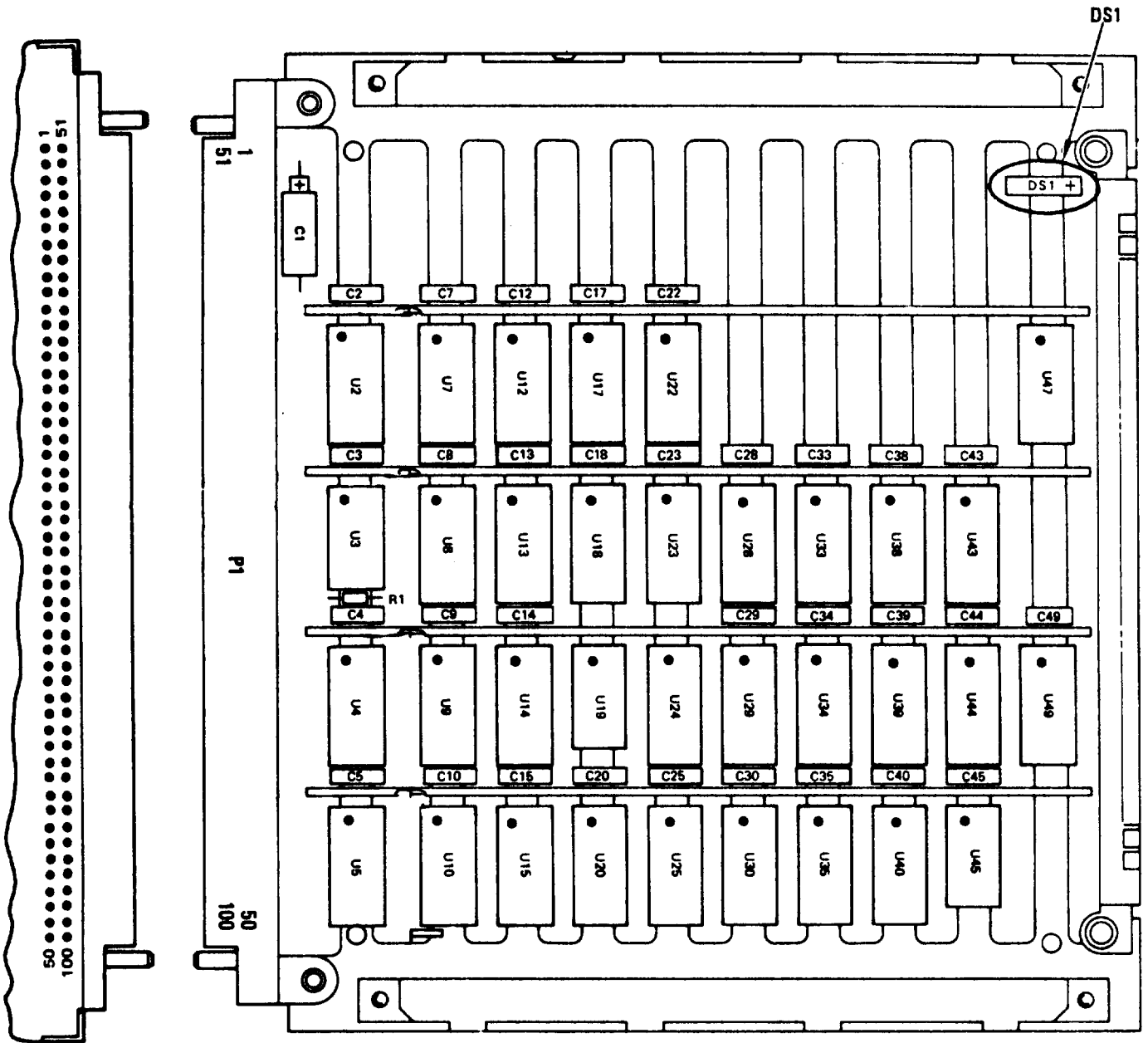
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635917-100 GENERAL PURPOSE FLIP-FLOP CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

**1635918-100 PULSED INTERFERENCE DETECTOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY,** and **PRINTER.**

2. Select test.
  - a. Type **TEST 1635918TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635918TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook Up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook Up UUT.
  - a. Observe the following message on crt.
 

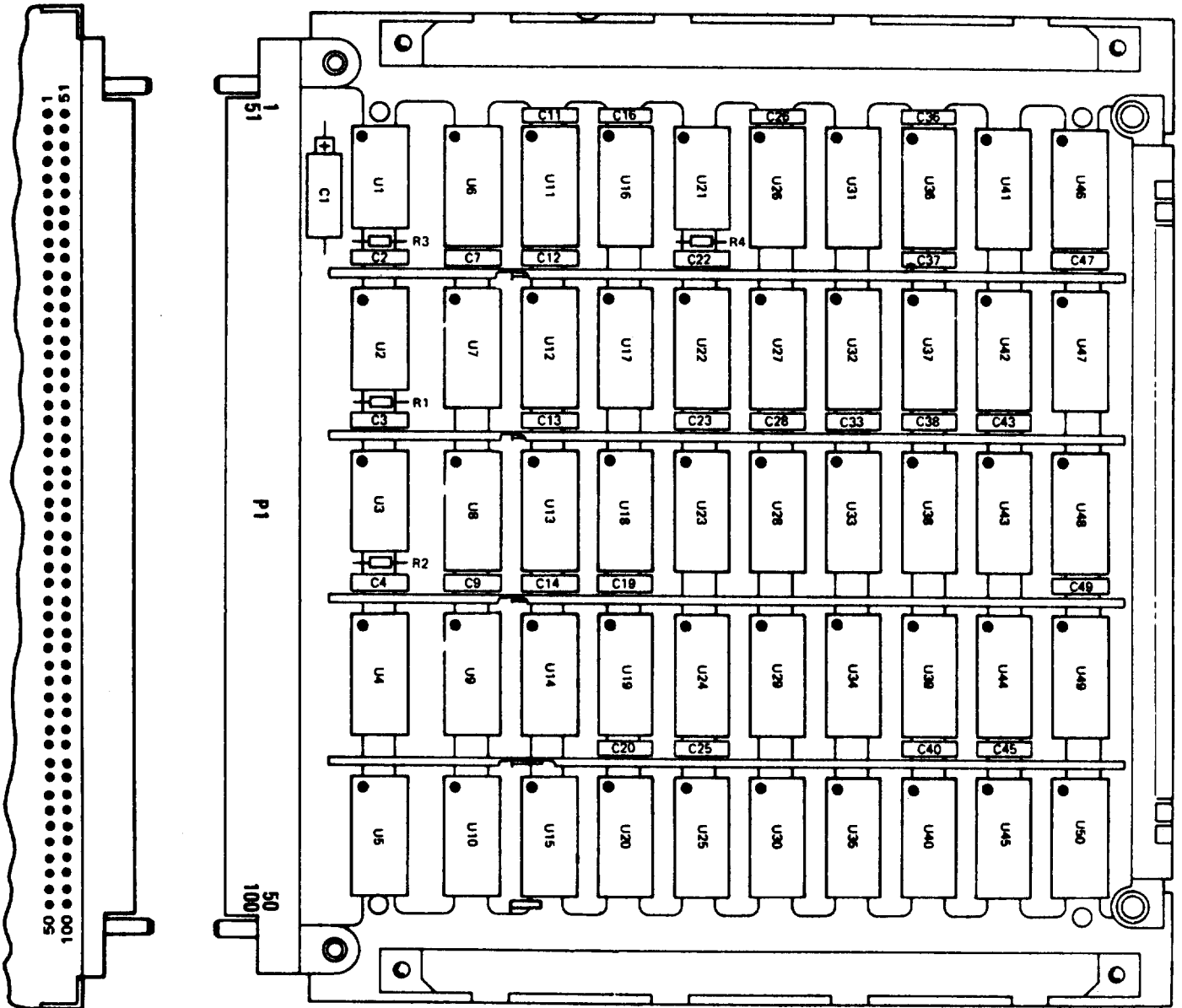
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635918-100 PULSED INTERFERENCE DETECTOR CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

**1635919-100 TARGET/BITE BUFFER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635919TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message, If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635919TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LWSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**

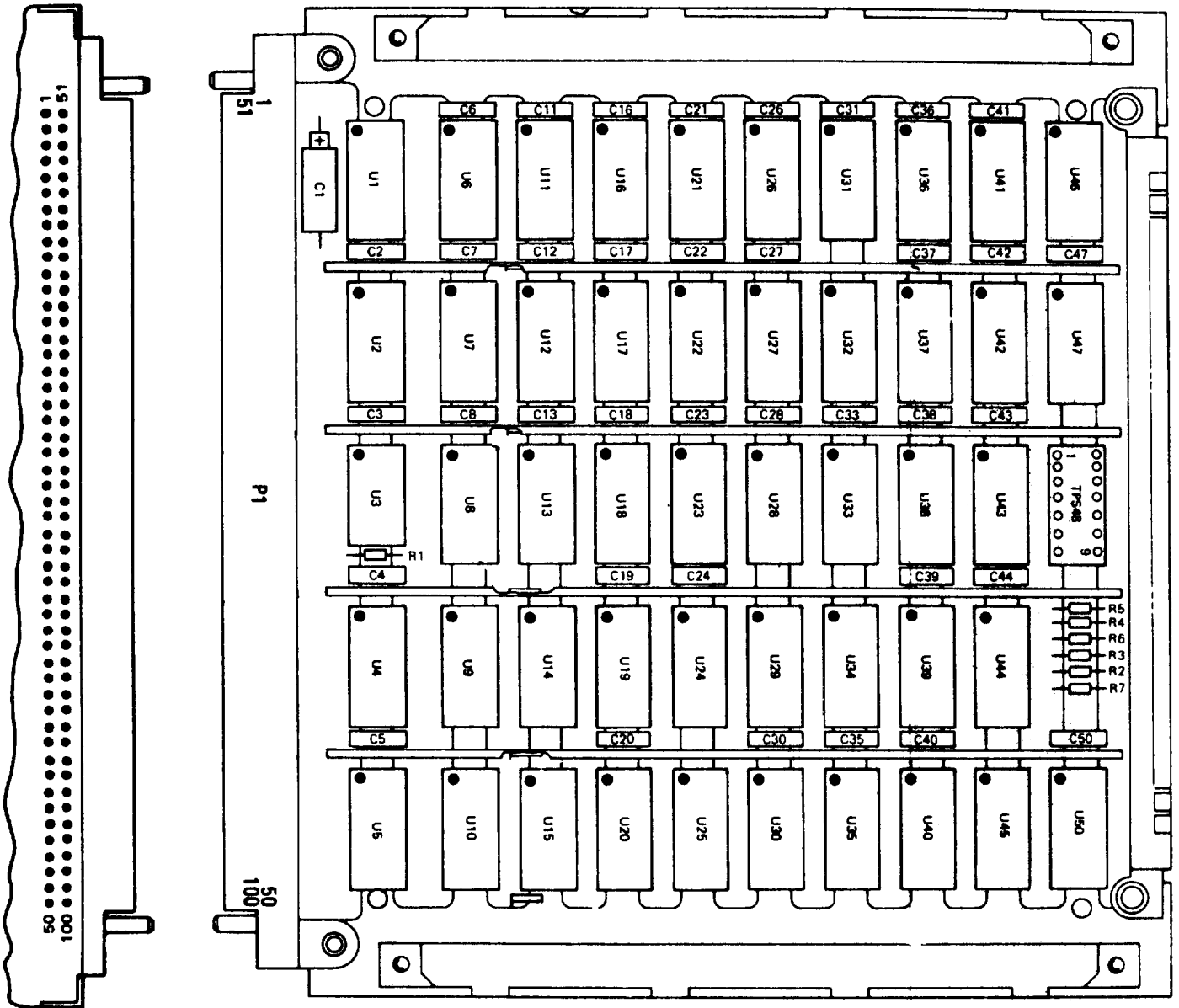


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID) per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635919-100 TARGET/BITE BUFFER CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635920-100 1K X 24 RAM CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.

2. Select test.
  - a. Type **TEST1635920TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635920TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test,
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

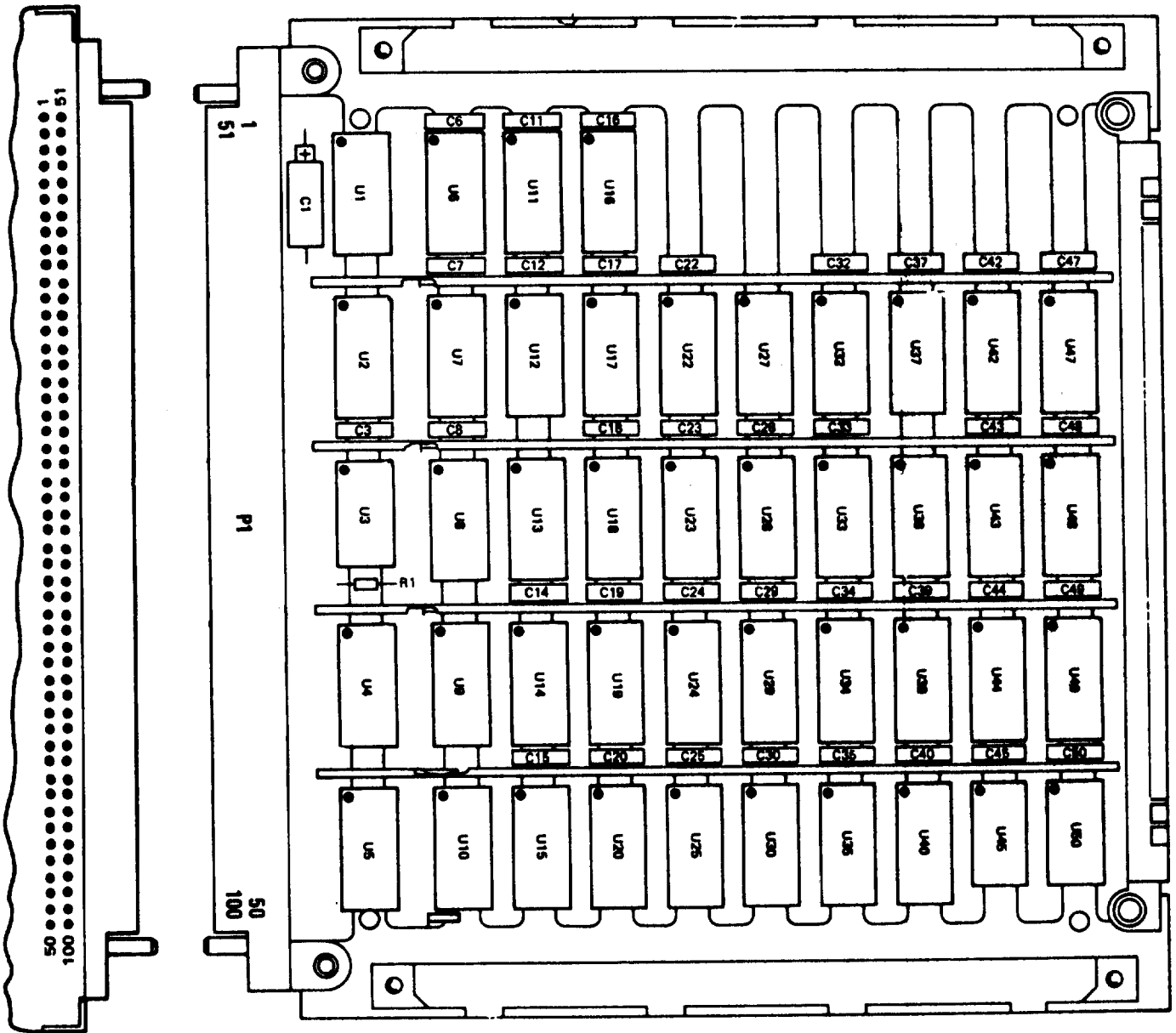
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635920-100 1K X 24 RAM CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635921-100 READ CONTROL CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.
2. Select test.
  - a. Type **TEST 1635921TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the fits name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635921TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

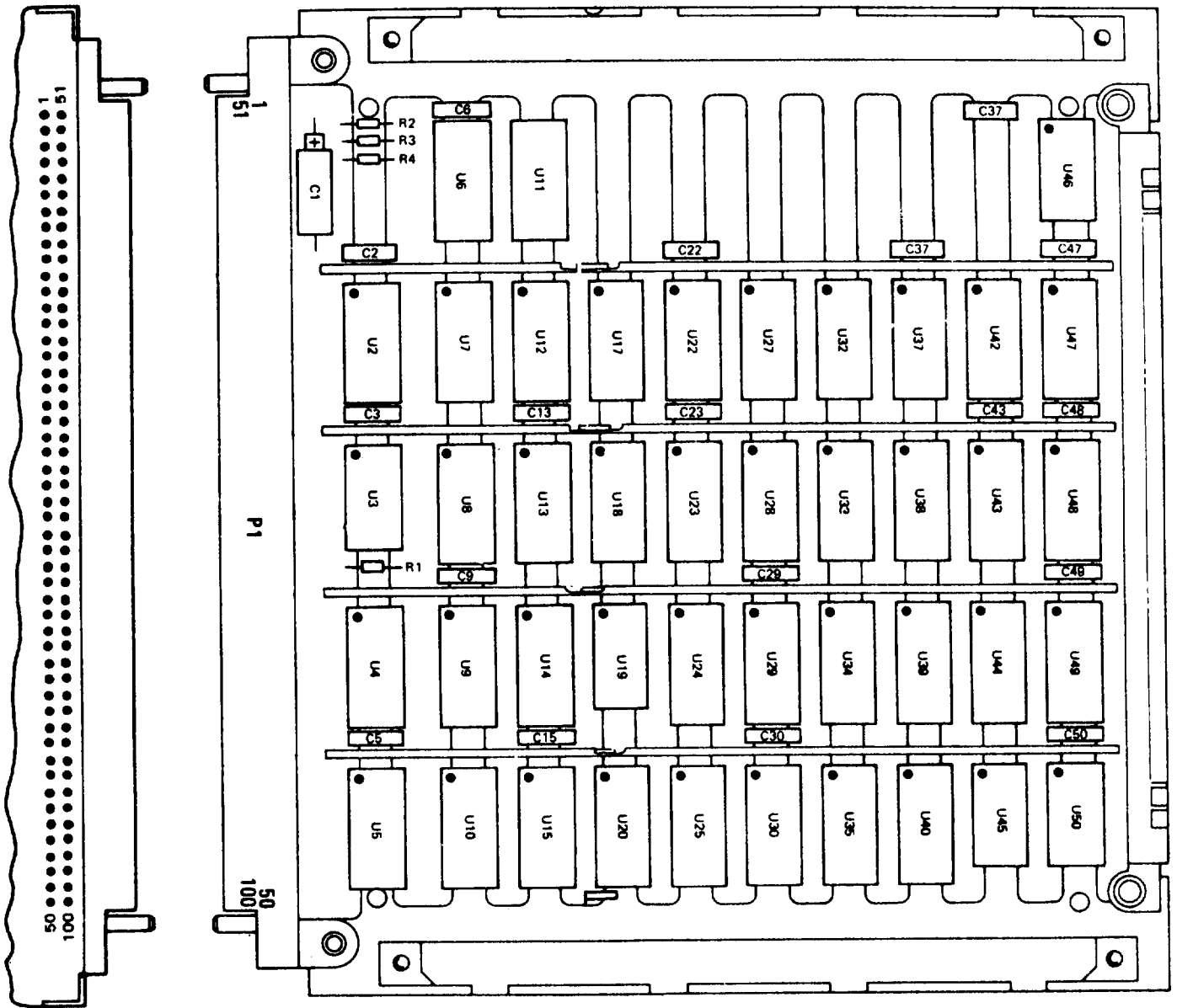
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40,**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until testis complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635921-100 READ CONTROL CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
W1	INPUT 76
W2	TP1
W3	U5P4
W4	U5P7
W5	U5P9
W6	U5P12
W7	U25P4
W8	U25P7
W9	U25P9
W10	U25P12

**1635922-100 COMMAND DATA CARD TEST AND TROUBLESHOOTING (1 of 2)]**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635922TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635922TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSV CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

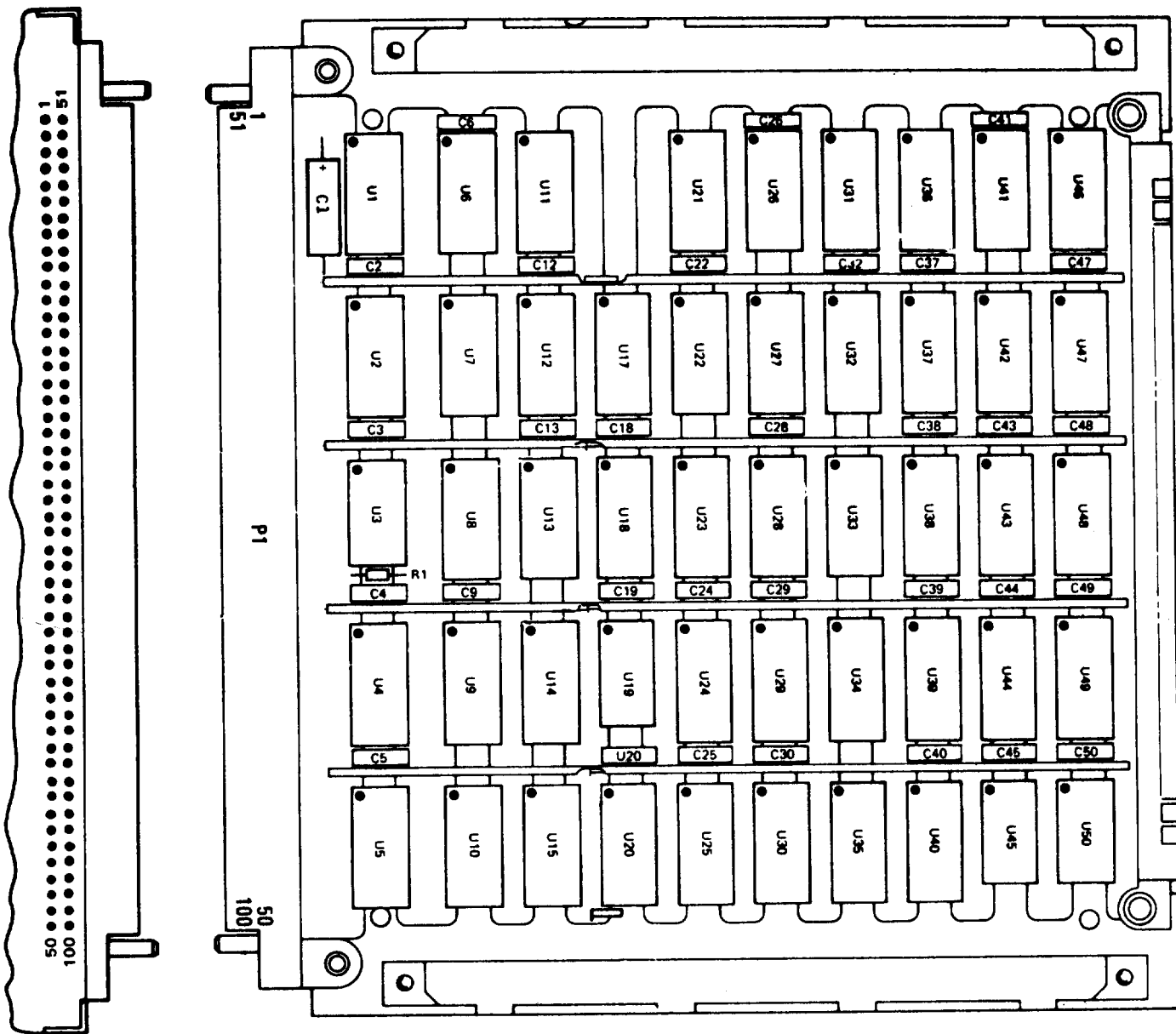
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635922-100 COMMAND DATA CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

**1635923-100 COLLECT CYCLE TIMING CARD TEST AND TROUBLESHOOTING (1 Of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635923TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635923TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
      **PIU CAL APPLIED
      **BNC CAL APPLIED
      **LSVSU CAL APPLIED
      **HSVSU CAL APPLIED
      COMPILED USING COMPILER REVISION: X.XX
      SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```

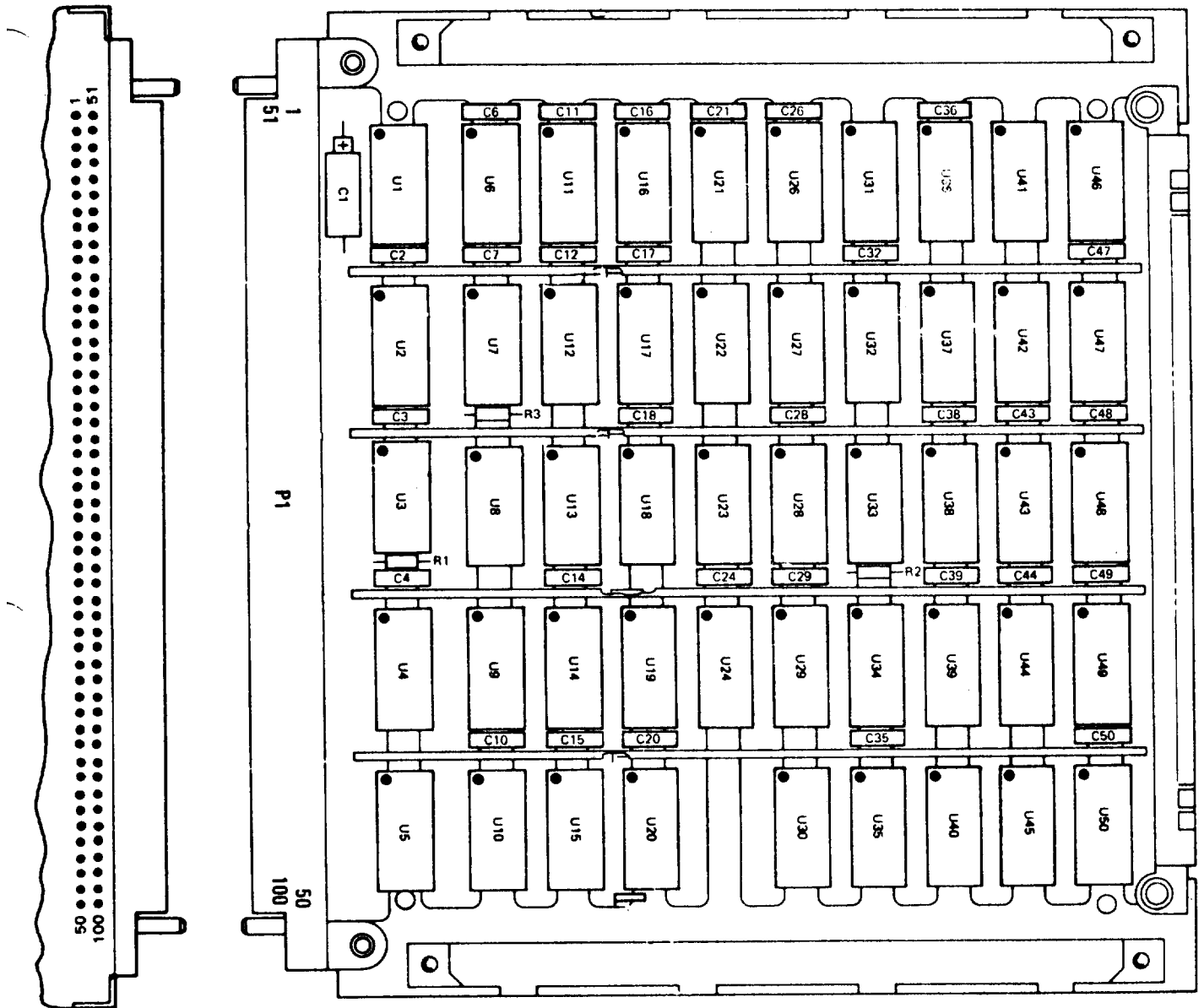


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635923-100 COLLECT CYCLE TIMING CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635924-100 TIMING DECODER NO. 1 CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester,
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635924TXX** at terminal and press **RETURN** key. See test program index [page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635924TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

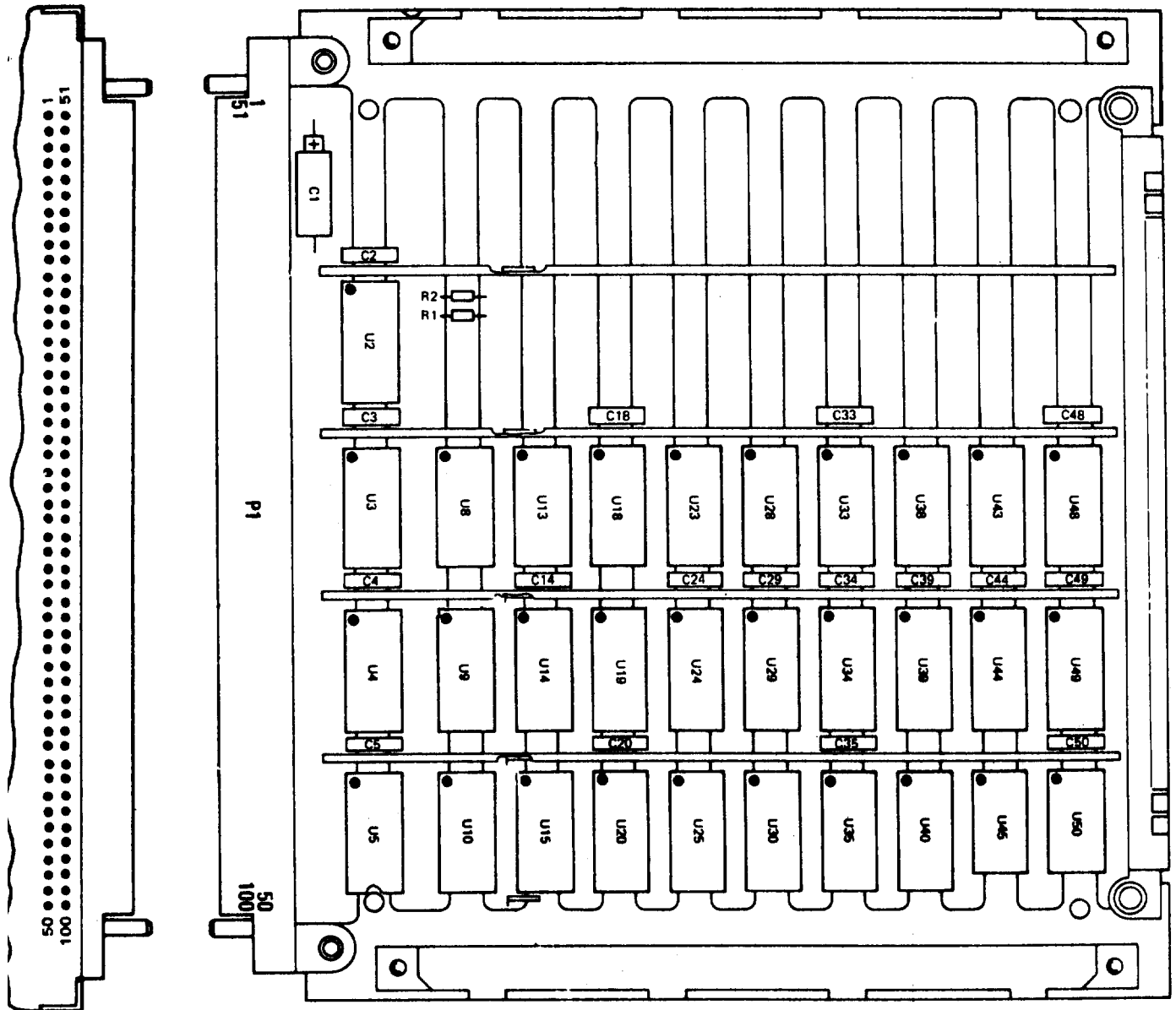
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED, SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635924-100 TIMING DECORDER NO. 1 CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635925-100 CLOCK OSCILLATOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at termina[ and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY,** and **PRINTER.**
2. Select test.
  - a. Type **TEST 1635925TXX** at terminal and press **RETURN** key. see test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635925TXX. IC XX/XX/XX
MEAS VALUE:
-----
- RUN TIME SYSTEM REV X.XX -
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

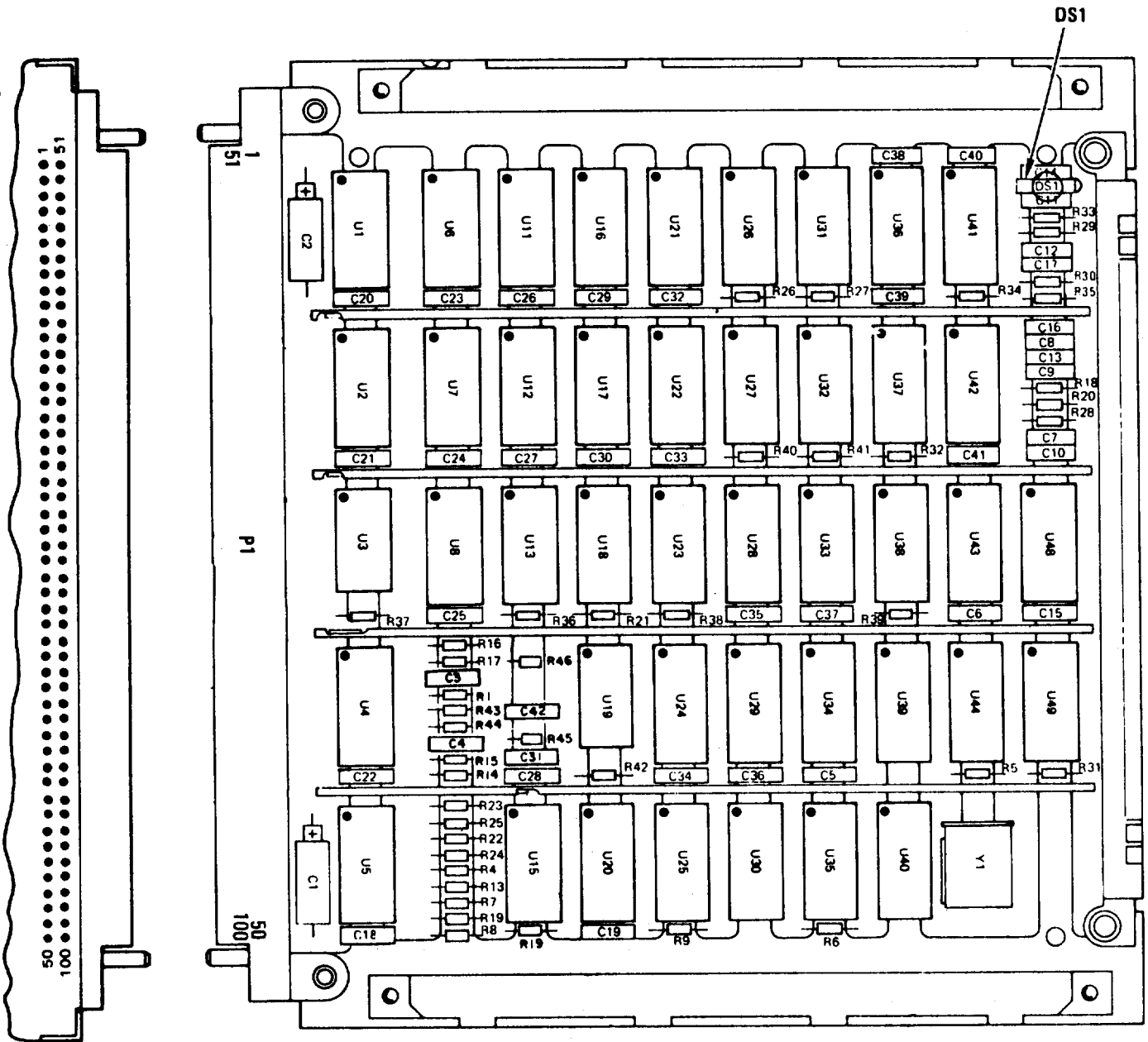
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635925-100 CLOCK OSCILLATOR CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635926-100 FRAME DECODER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635926 TXX** at terminal and press **RETURN** key, See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line incorrect; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635926TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

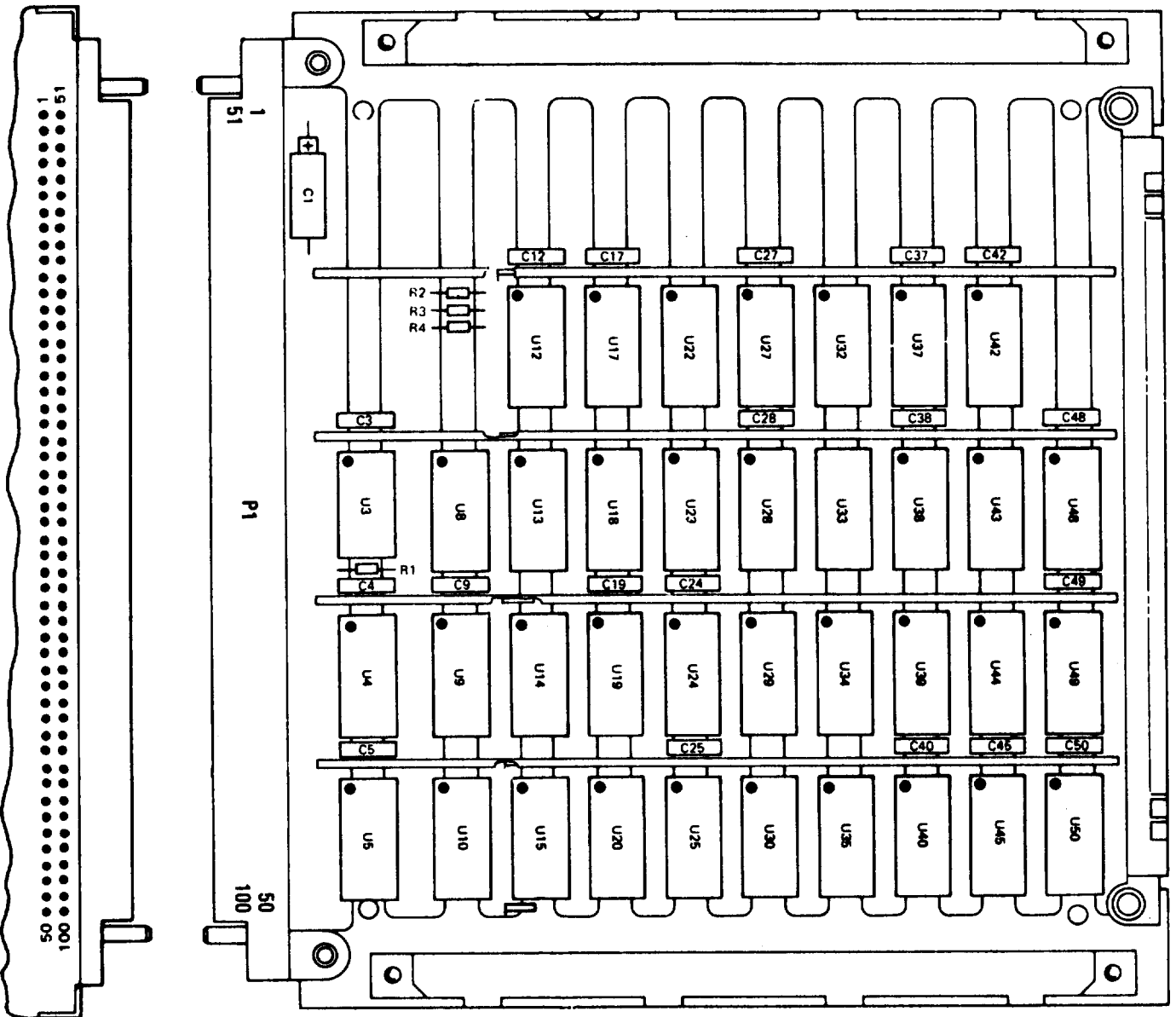
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635926-100 FRAME DECODER CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635927-100 DATA BUS DECODER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635927TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635927TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```

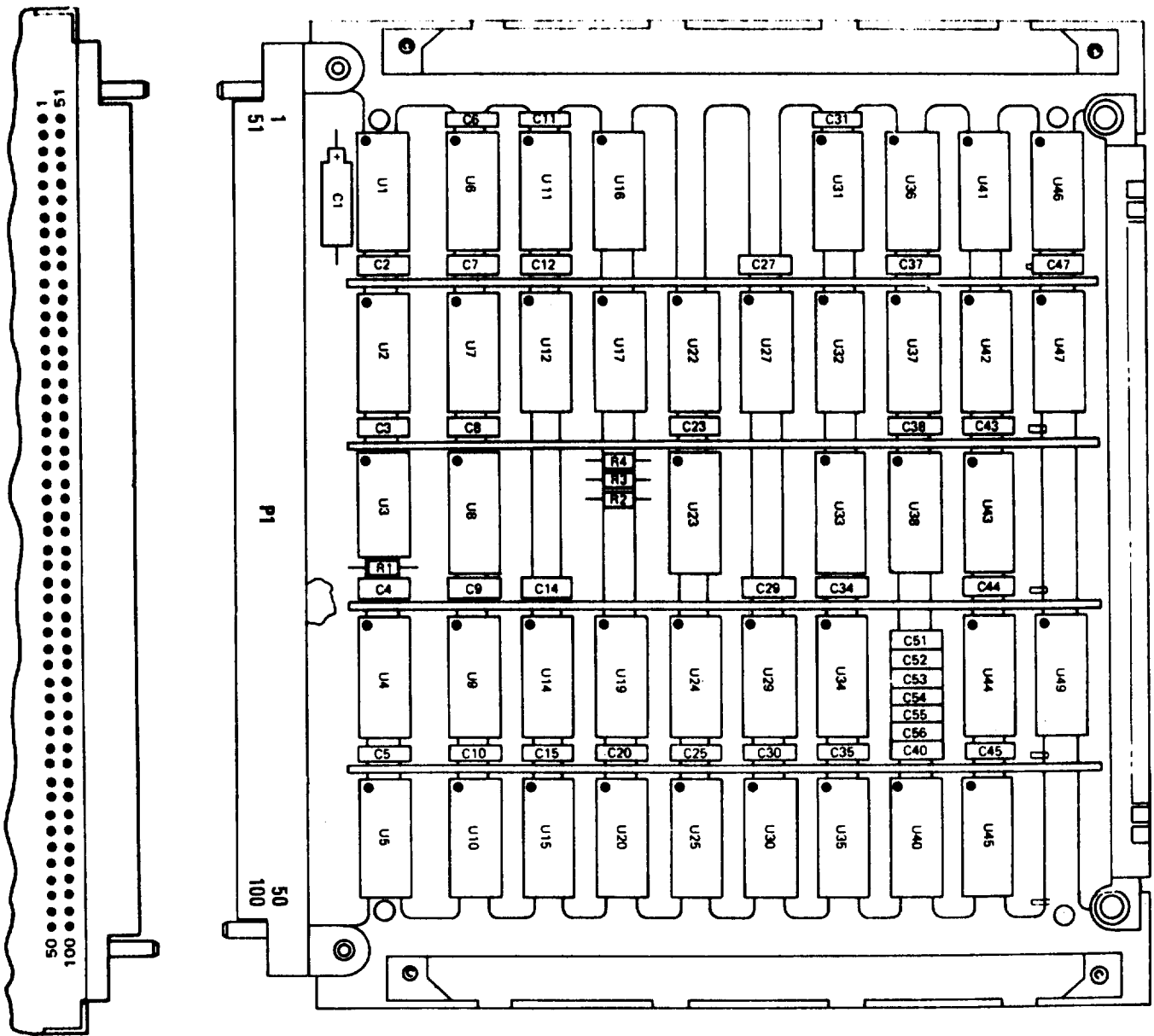


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635927-100 DATA BUS DECODER CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC W1	48 INPUT 2 INPUT TP19

---

1635928-100 MTICANCELLER CARD TEST AND TROUBLESHOOTING (1 of 2)

---

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635928TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key, Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635928TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X,XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

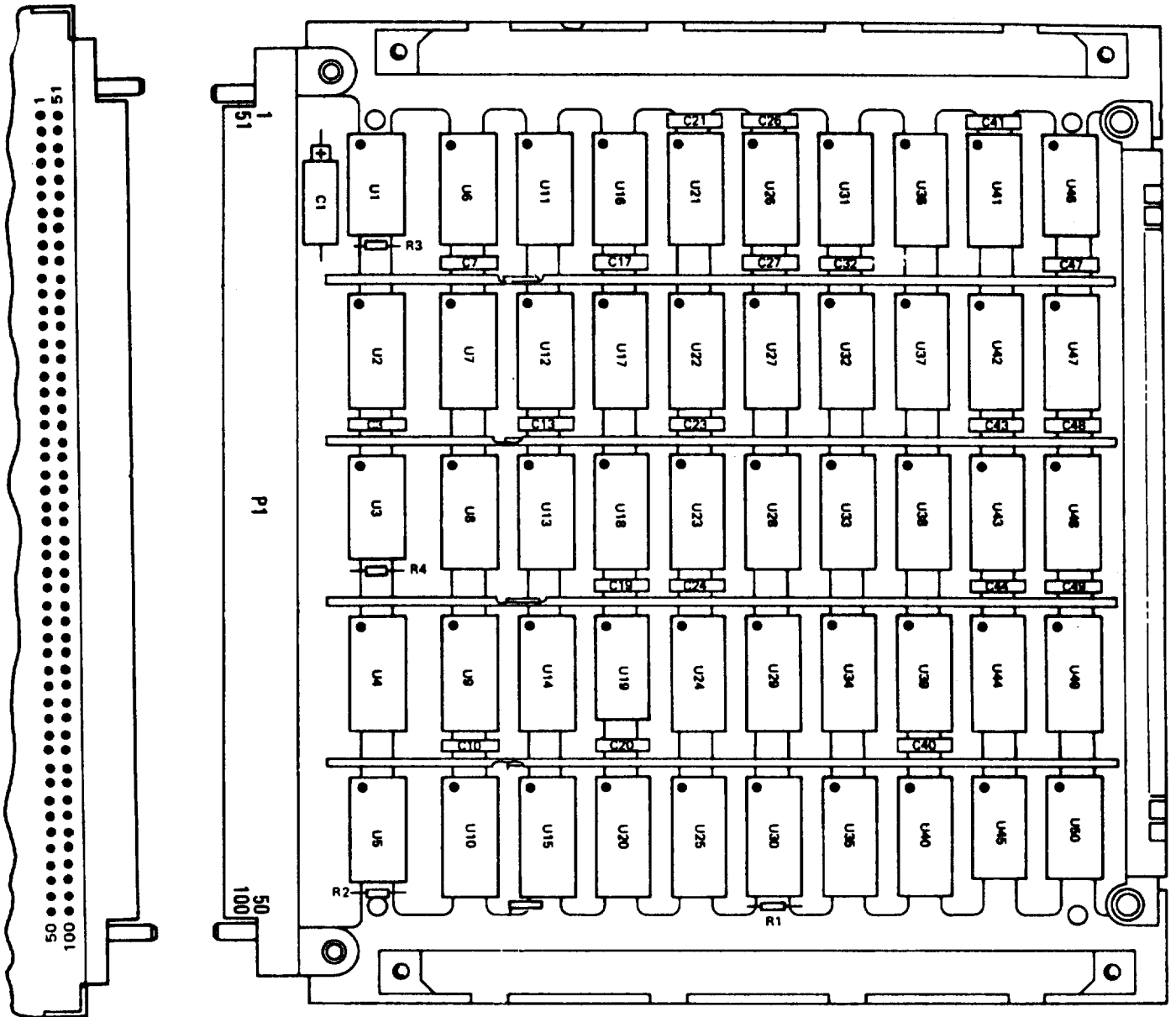
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635928-100 MTI CANCELLER CARD TEST AND TROUBLESHOOTING (1 of 2)



---

1635929-100 RECOMBINER CARD TEST AND TROUBLESHOOTING (1 of 2)

---

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.
2. Select test.
  - a. Type **TEST 1635929TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635929TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTION SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

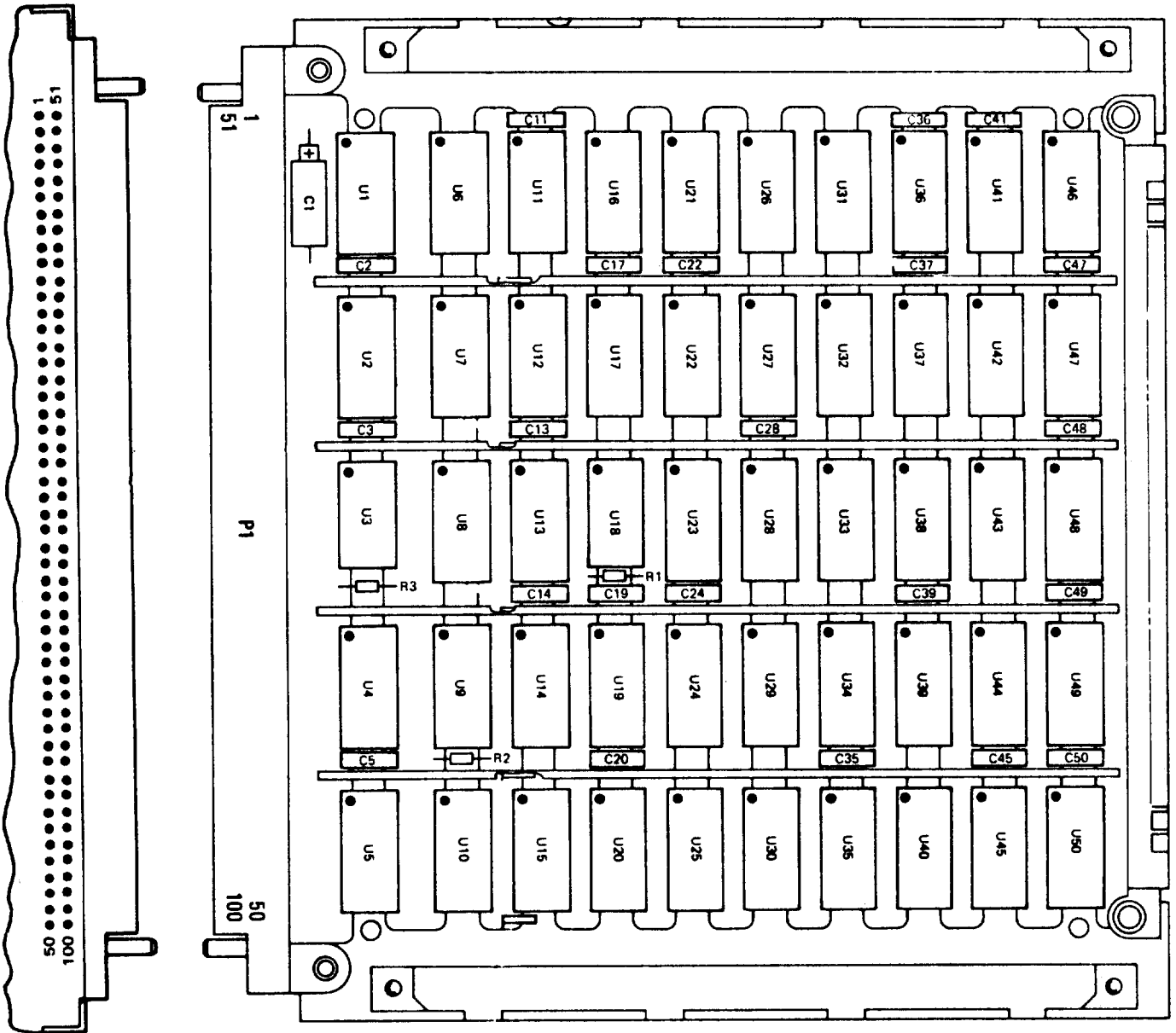
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

**1635929-100 RECOMBINER CARD TEST AND TROUBLESHOOTING, (2 of 2)**



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

**1635930-100 SIGNATURE GENERATOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM.-11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635930TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message, If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635930TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

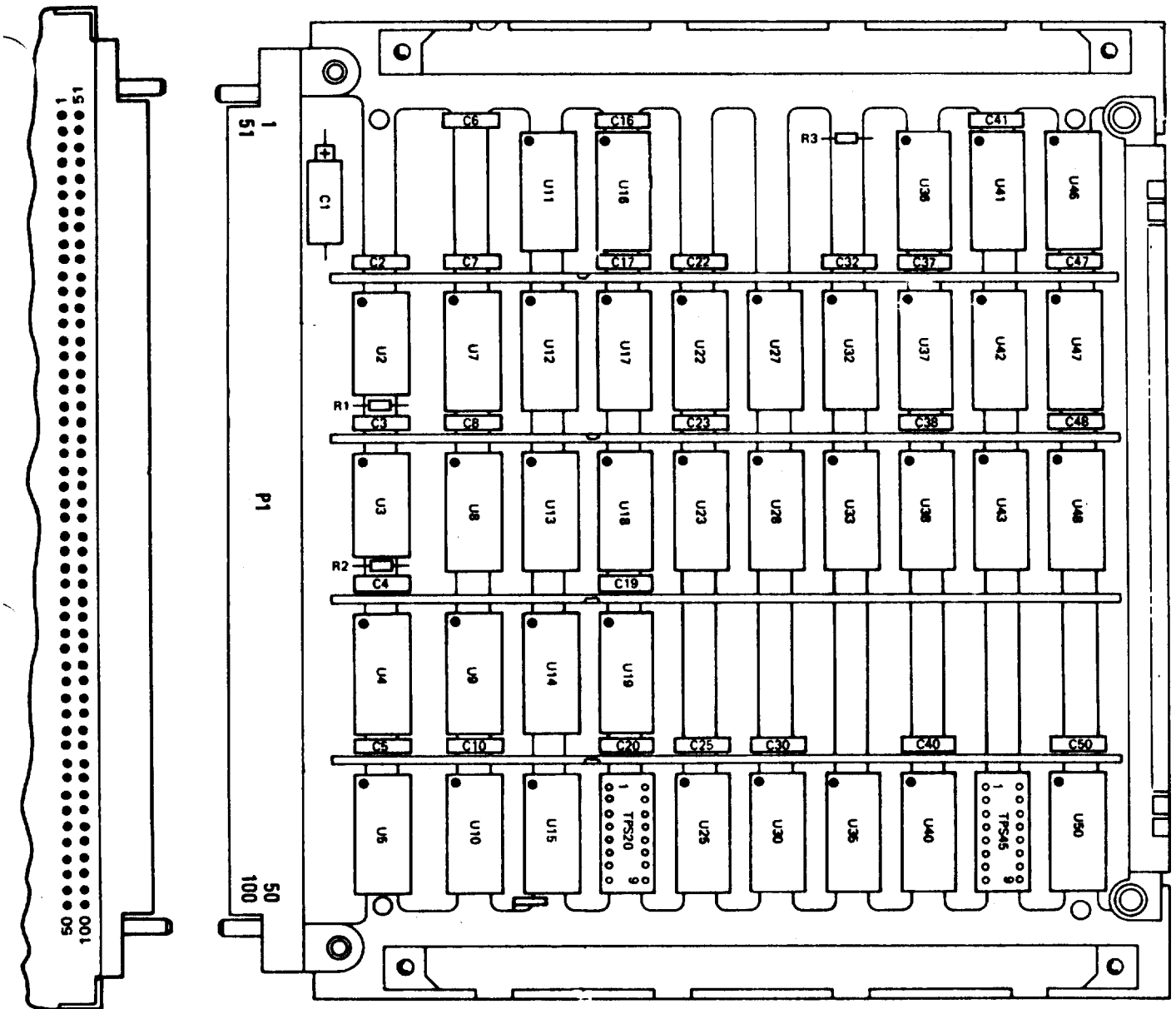
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635930-100 SIGNATURE GENERATOR CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

**1635931-100 TRI-STATE MULTIPLEXER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.

2. Select test.
  - a. Type **TEST 1635931TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635931TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```

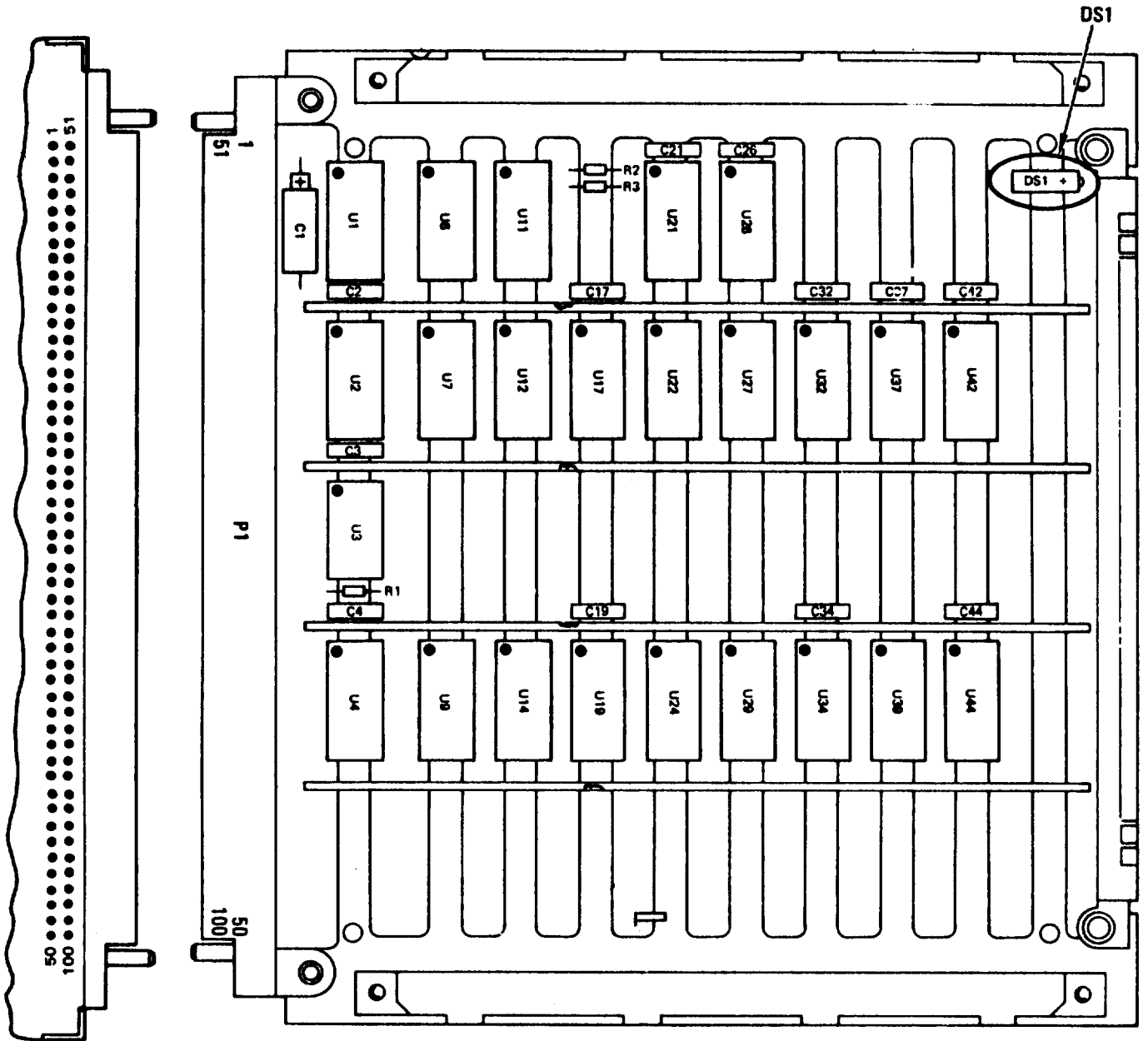


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635931-100 TRI-STATE MULTIPLEXER CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC W1	48 INPUT 2 INPUT U37 P11

**1635932-100 RECEIVER GAIN CONTROL CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
    - a. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635932TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635932TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

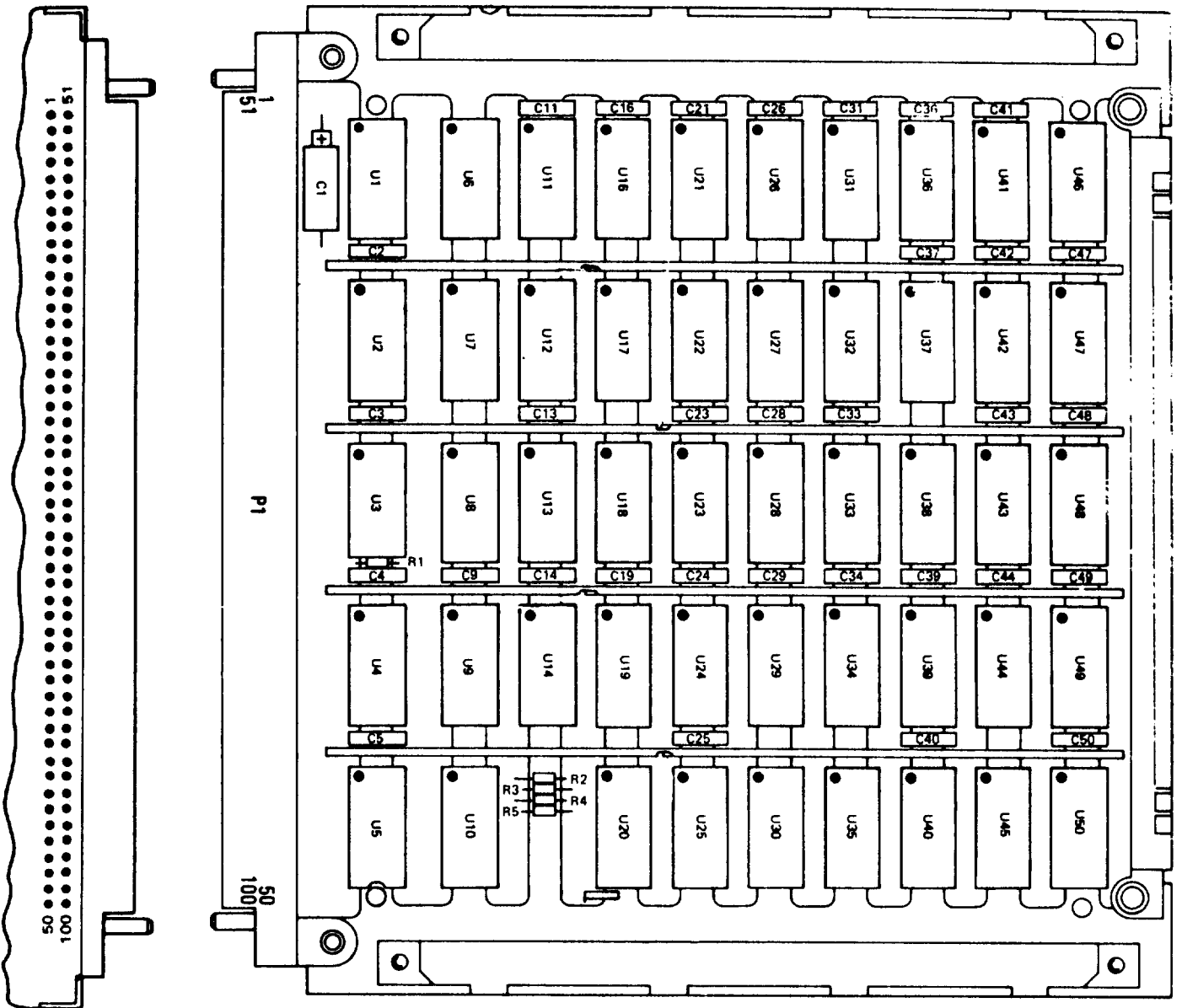
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635932-100 RECEIVER GAIN CONTROL CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
W1	U28P12
W2	U5P4
W3	U5P7
W4	U5P9
W5	U5P12
W6	U13P4
W7	U13P7
W8	U13P9
W9	U13P12

**1635933-100 RAM ADDRESS GENERATOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635933TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635933TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

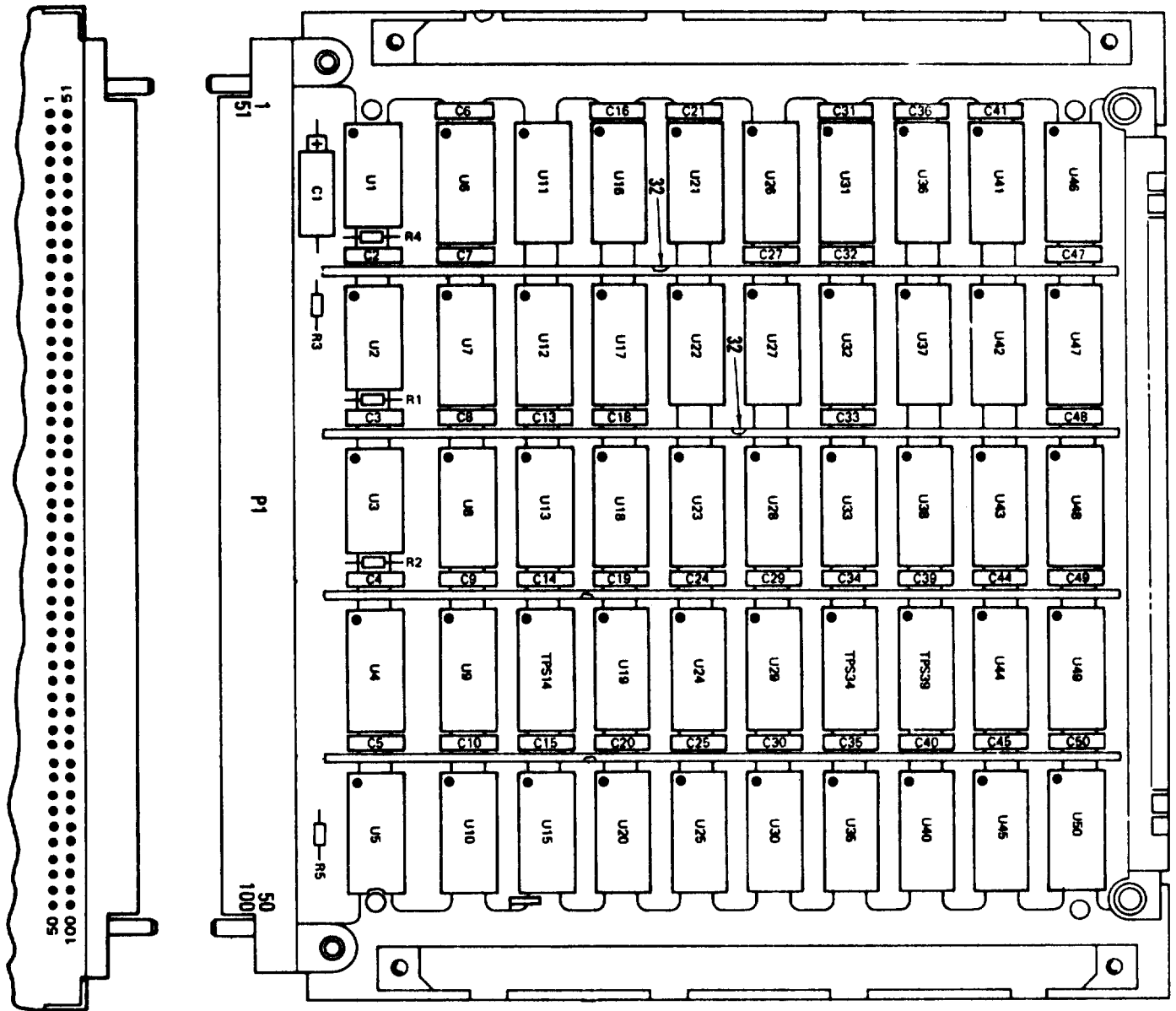
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635933-100 RAM ADDRESS GENERATOR CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
R4P2	U2P2
R5P2	U5P1
W23	U16P7
W24	U16P9
W25	U16P12
W22	U16P4
VCC	2 INPUT
GND	48 INPUT

**1635935-100 DIFFERENTIAL DRIVER/RECEIVER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635935TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635935TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

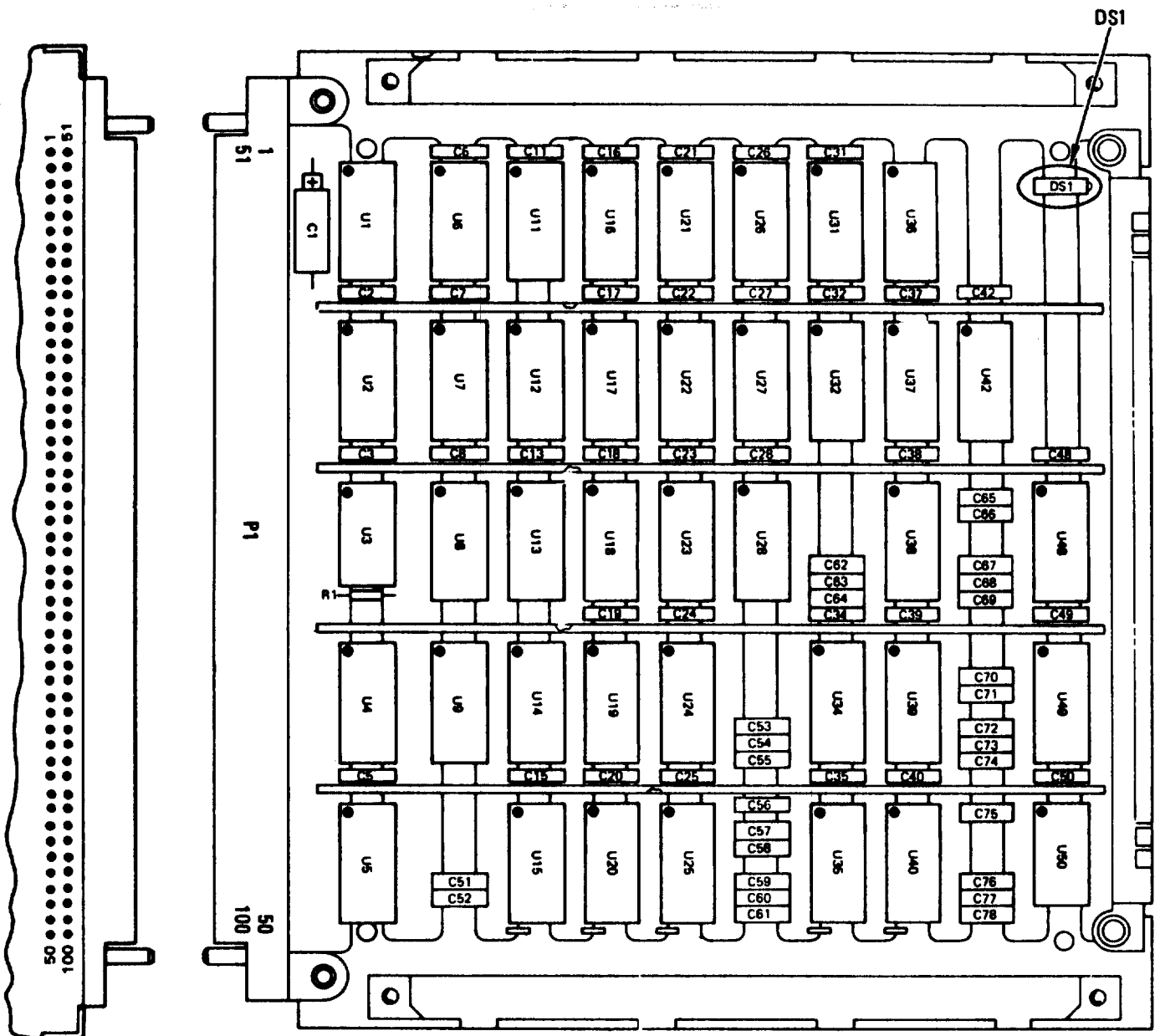
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635935-100 DIFFERENTIAL DRIVER/RECEIVER CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC GND	2 INPUT 48 INPUT

---

**11635936-100 VIDEO INPUT MULTIPLEX CARD TEST AND TROUBLESHOOTING (1 of 2)**

---

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635936TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635936TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**

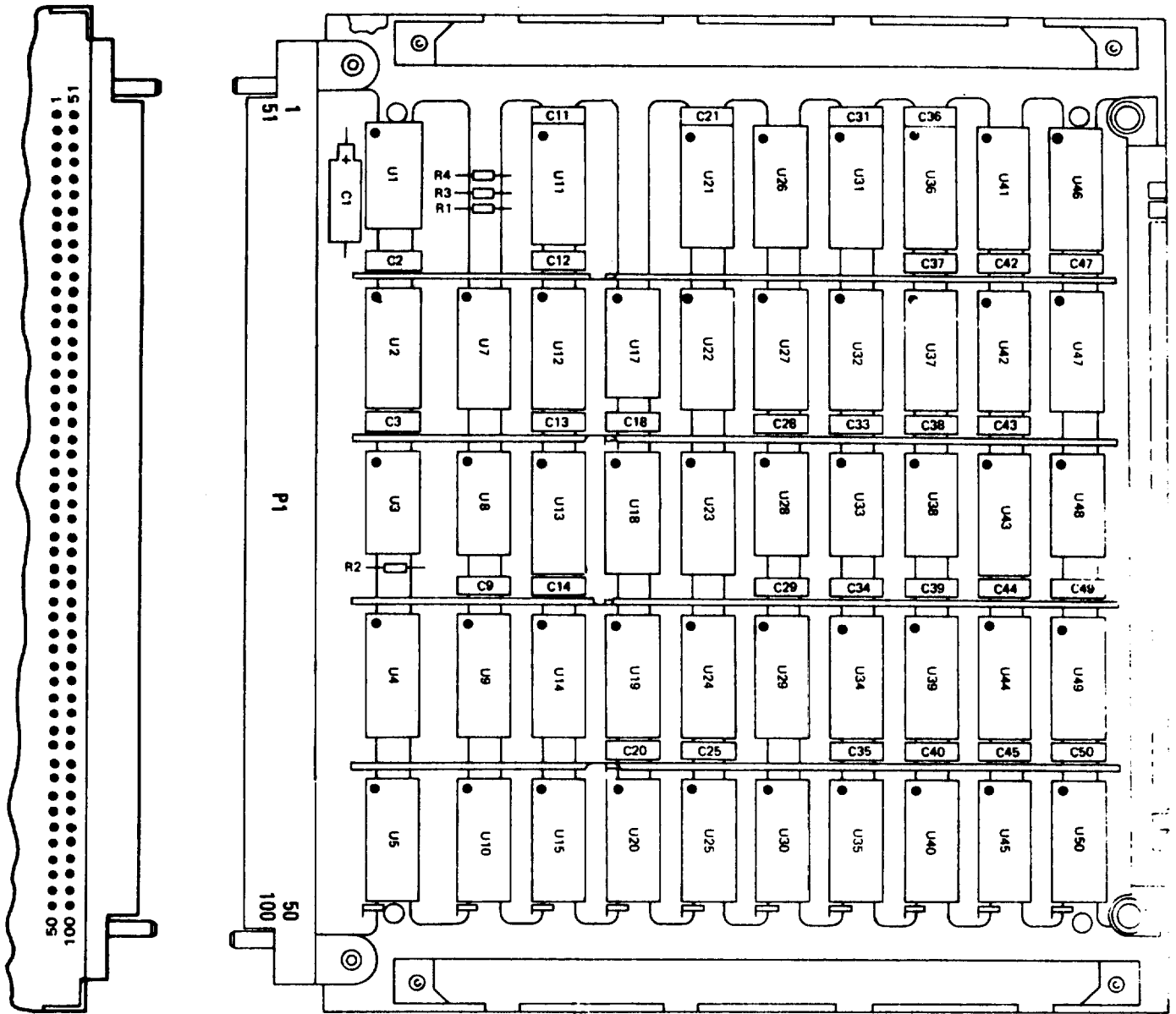


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635936-100 VIDEO INPUT MULTIPLEX CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT	PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC	2 INPUT	W24	U19P9
GND	48 INPUT	W25	U4P9
W18	U19P3	W26	U4P11
W19	U4P3	W27	U23P11
W20	U19P5	W28	U4P13
W21	U4P5	W29	U23P19
W22	U19P7		
W23	U4P7		

**1635937-100 POWER SUPPLY BITE/BUFFER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.
2. Select test.
  - a. Type **TEST 1635937TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635937TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

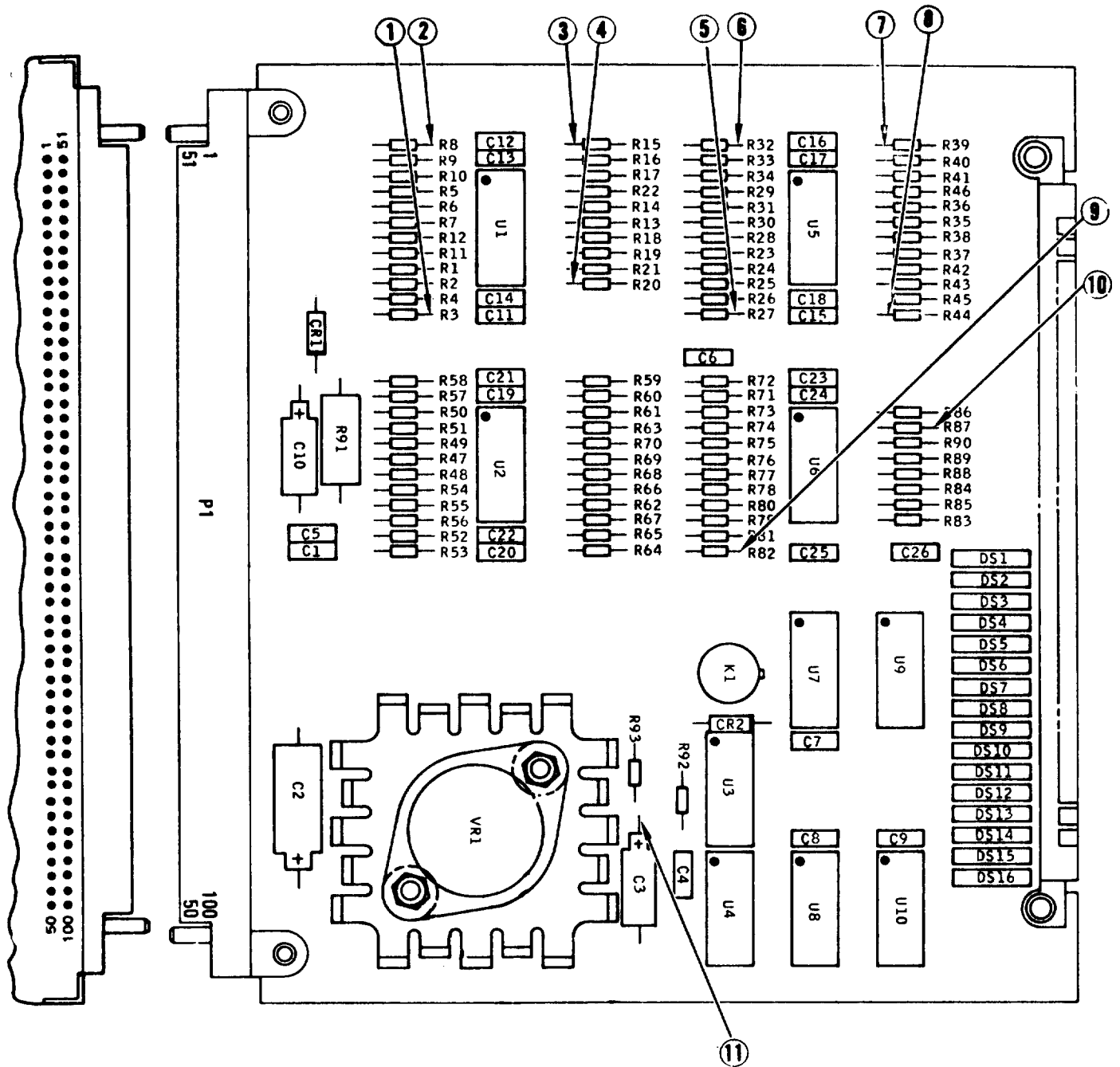
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635937-100 POWER SUPPLY BITE/BUFFER CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635939-100 GENERAL PURPOSE REGISTER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635939TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635939TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

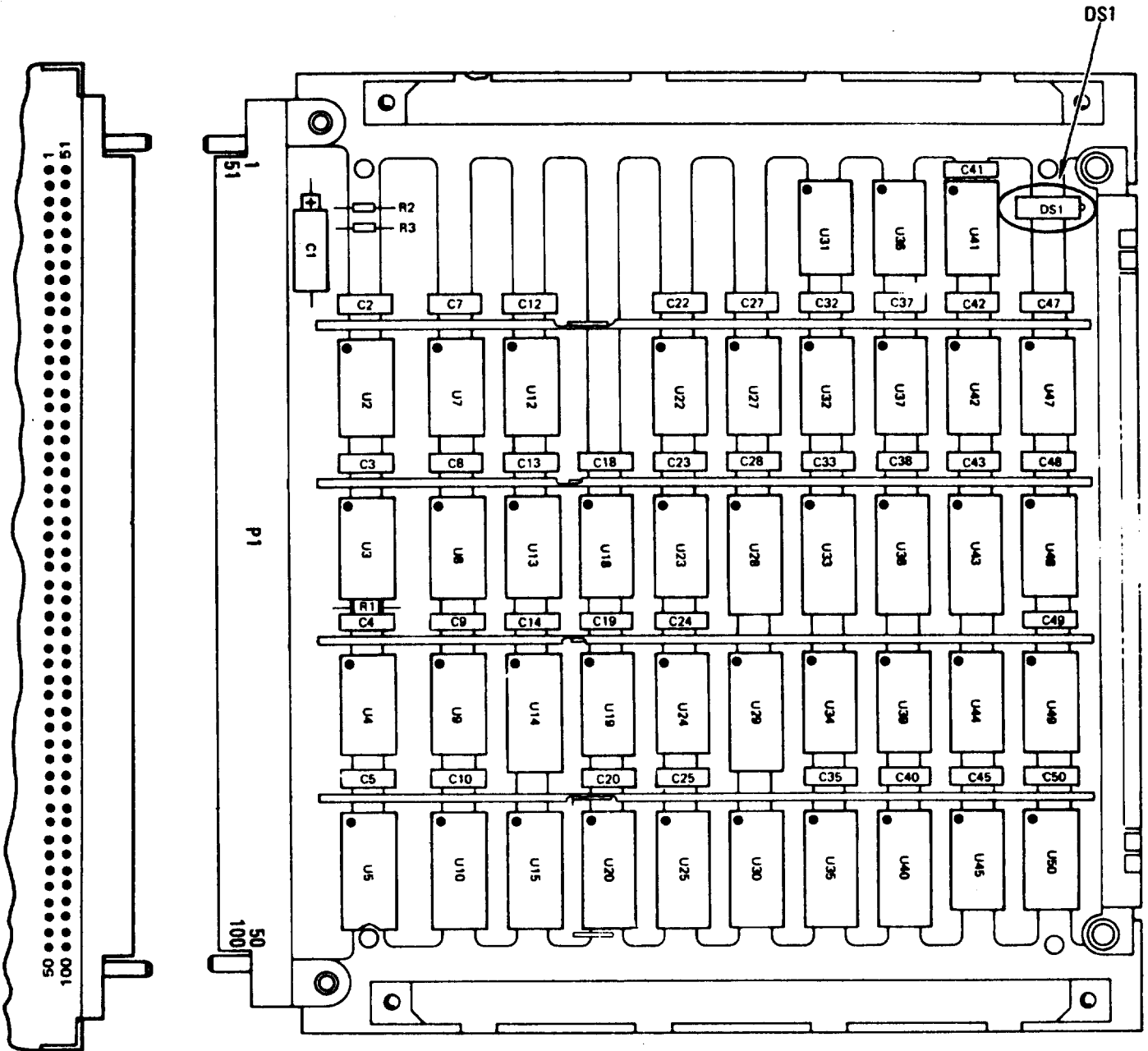
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635939-100 GENERAL PURPOSE REGISTER CARD TEST AND TROUBLESHOOTING (2 OF 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

**1635940-100 GENERAL PURPOSE GATE CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635940TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635940TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

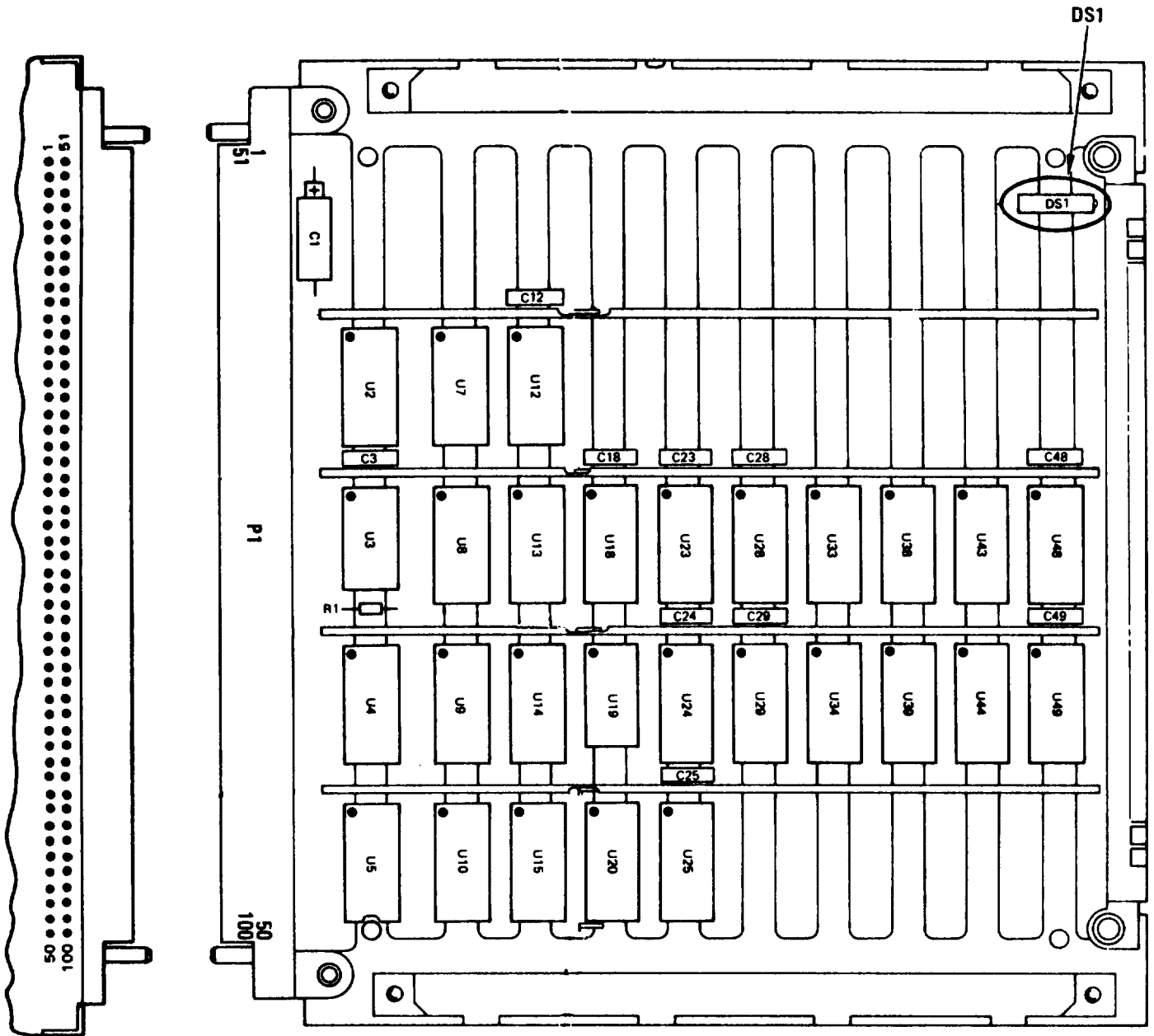
- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.  
**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.  
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635940-100 GENERAL. PURPOSE GATE CARD TEST AND TROUBLESHOOTING (2 Of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

**1635941-100 TIMING DECODER NO. 2 CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635941TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635941TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
6. Hook up UUT.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**

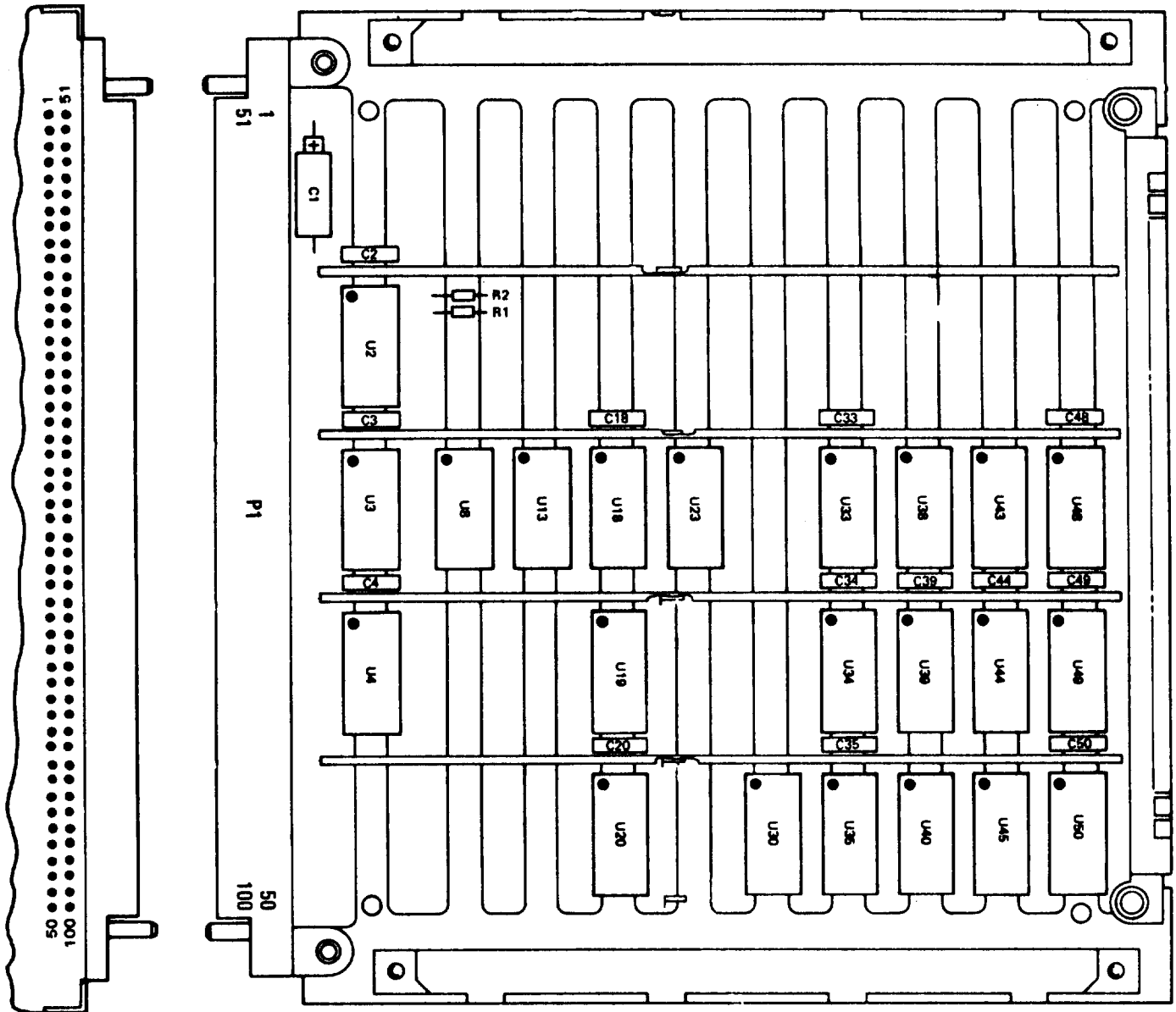


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635941-100 TIMING DECODER NO. 2 CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT	PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC	2 INPUT	W10	U44P11
GND	48 INPUT	W11	U44P10
R1P2	U2P6	W12	U44P9
W1	U33P12	W14	U34P11
W2	U33P4	W16	U39P9
W3	U20P8		
W4	U20P6		
W9	U44P12		

---

**1635942-100 A/D CONVERTER CARD TEST AND TROUBLESHOOTING (1 of 2)**

---

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635942TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```
TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635942TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSE CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
```

- c. Press **PROCEED** key to start test.
3. Enter path number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.

**635942-100 A/D CONVERTER CARD TEST AND TROUBLESHOOTING (2 of 2)**

4. Hook up ID.
  - a. Observe the following message on crt.  
**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.  
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on page FO-12 to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

**1635944-100 OR -101 8-MHz SAMPLE AND HOLD CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.
2. Select test.
  - a. Type **TEST 1635944TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:    LINE#:                EQUATE XX
                UUT: 1635944TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
  **PIU CAL APPLIED
  **BNC CAL APPLIED
  **LSVSU CAL APPLIED
  **HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

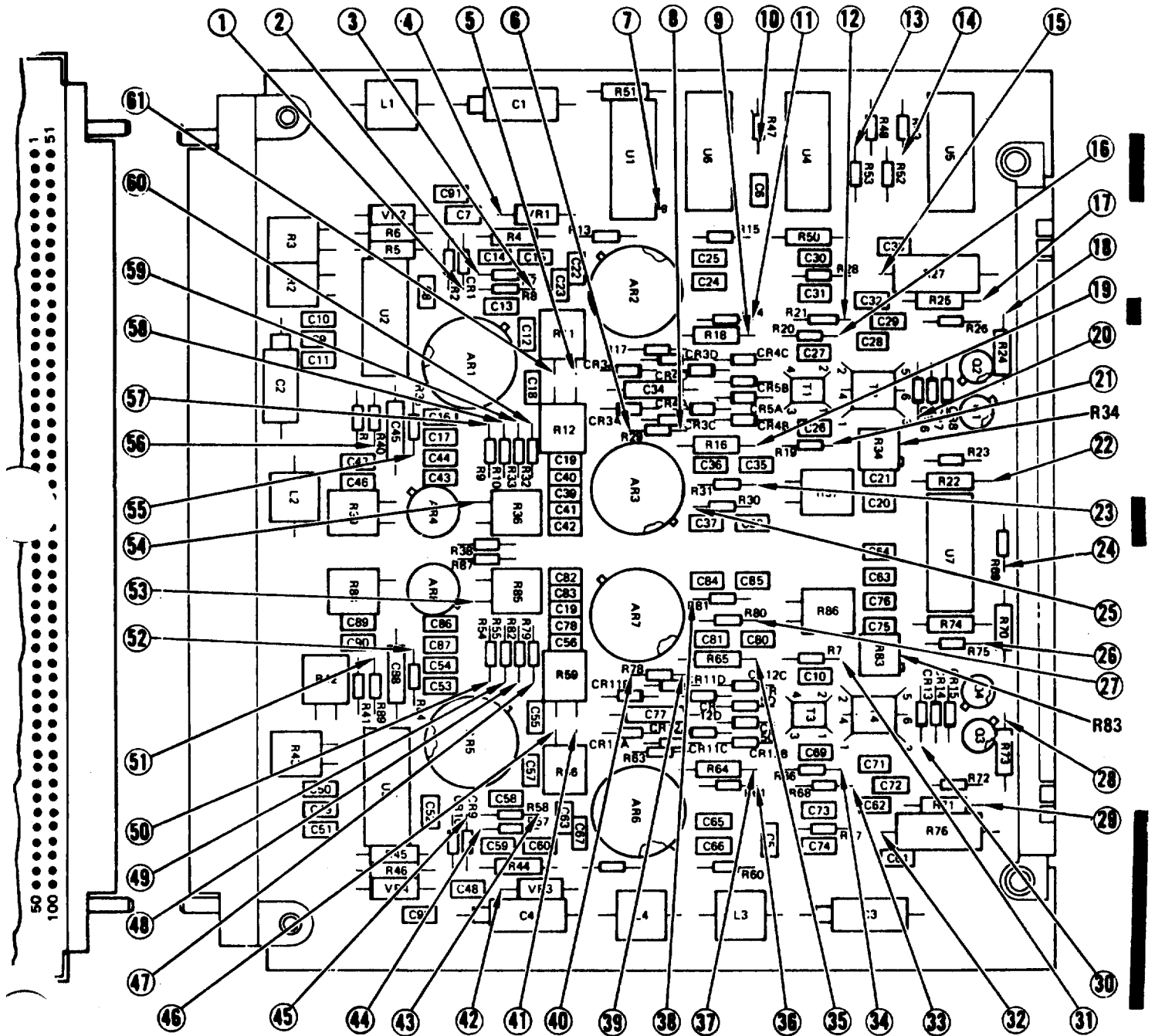
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635944-100 A/D SELF-TEST CARD TEST AND TROUBLESHOOTING (1 OF 2)



**1635945-100 A/D SELF-TEST CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635945TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635945TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

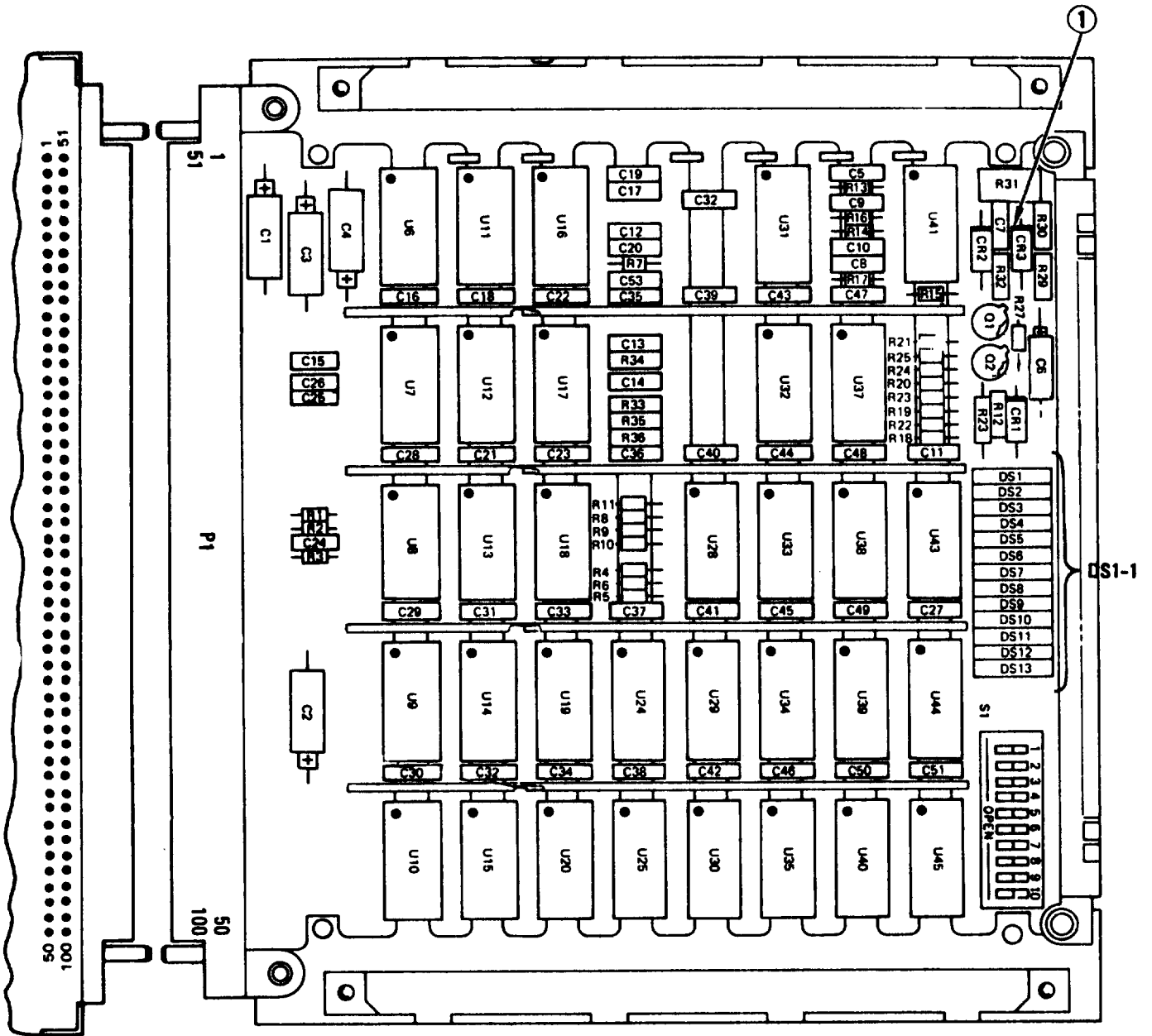
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635945-100 A/D SELF-TEST CARD TEST AND TROUBLESHOOTING (2 of 2)



**NOTE:** THIS CARD REQUIRES AN ADDITIONAL TEST CLIP OR POWER CABLE ASSEMBLY DURING TEST. CONSULT TABLE ON PAGE 4-22 TO SELECT APPROPRIATE EQUIPMENT.

**1635946-100 4K RAM CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **All TESTS, VIDEO DISPLAY, and PRINTER**.
2. Select test.
  - a. Type **TEST 1635946TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635946TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```

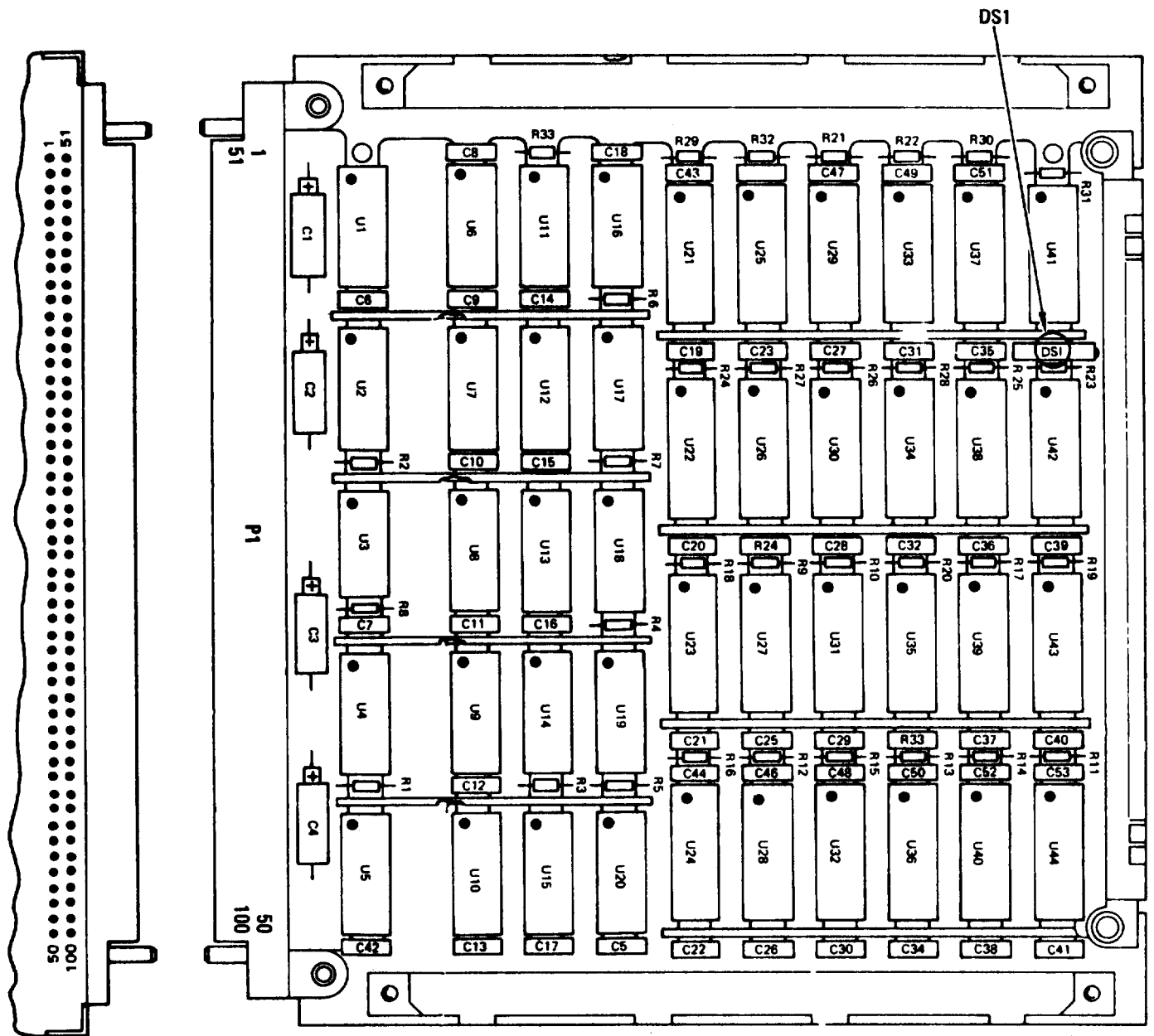


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635946-100 4K RAM CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635947-100 MEAN LEVEL SELECT CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635947TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and. press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635947TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

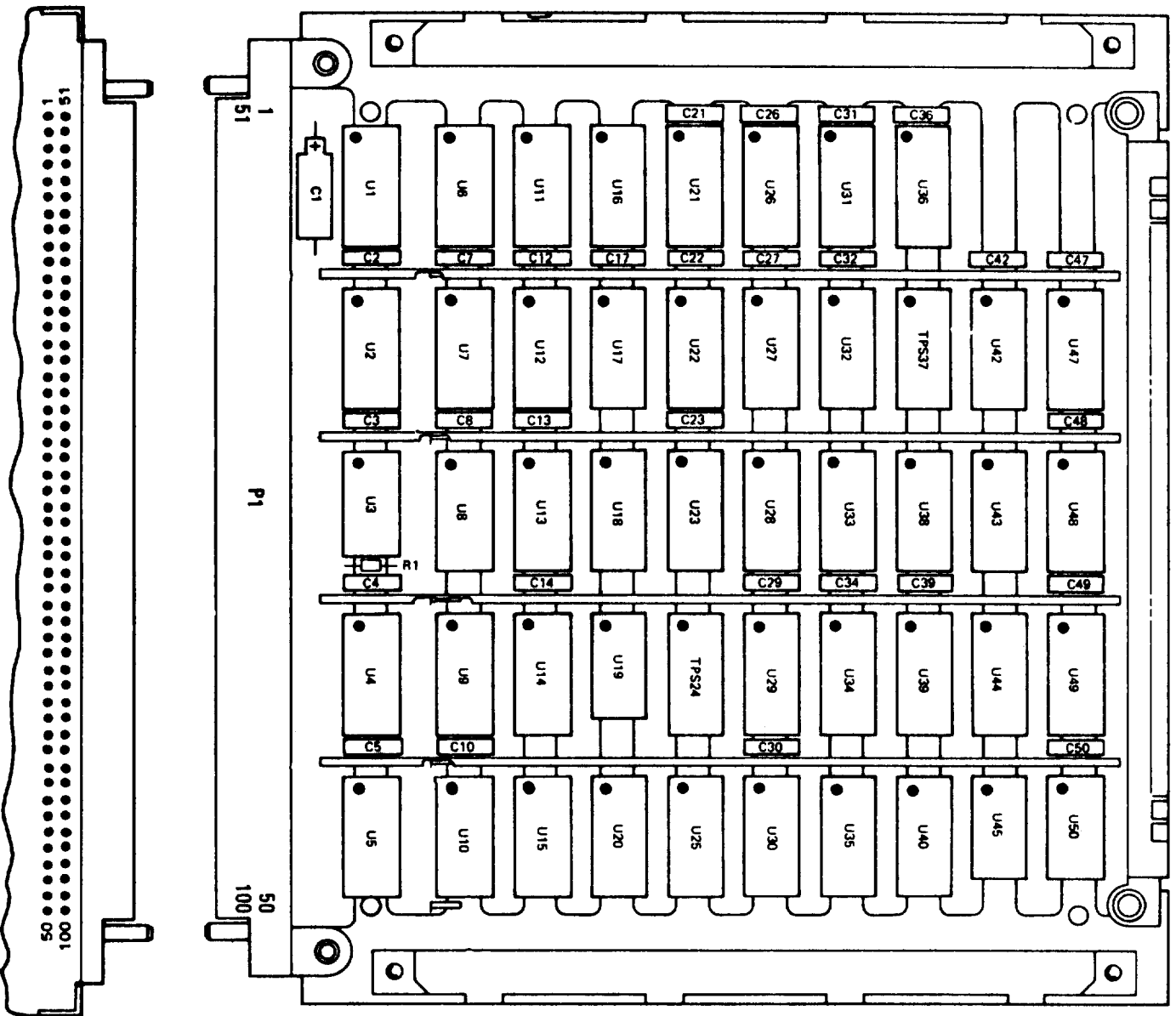
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```

**CAUTION**

Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635947-100 MEAN LEVEL SELECT CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635948-100 ACCUMULATOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635948TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635948TXX. IC XX/XX/XX
MEAS VALUE:
-----
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

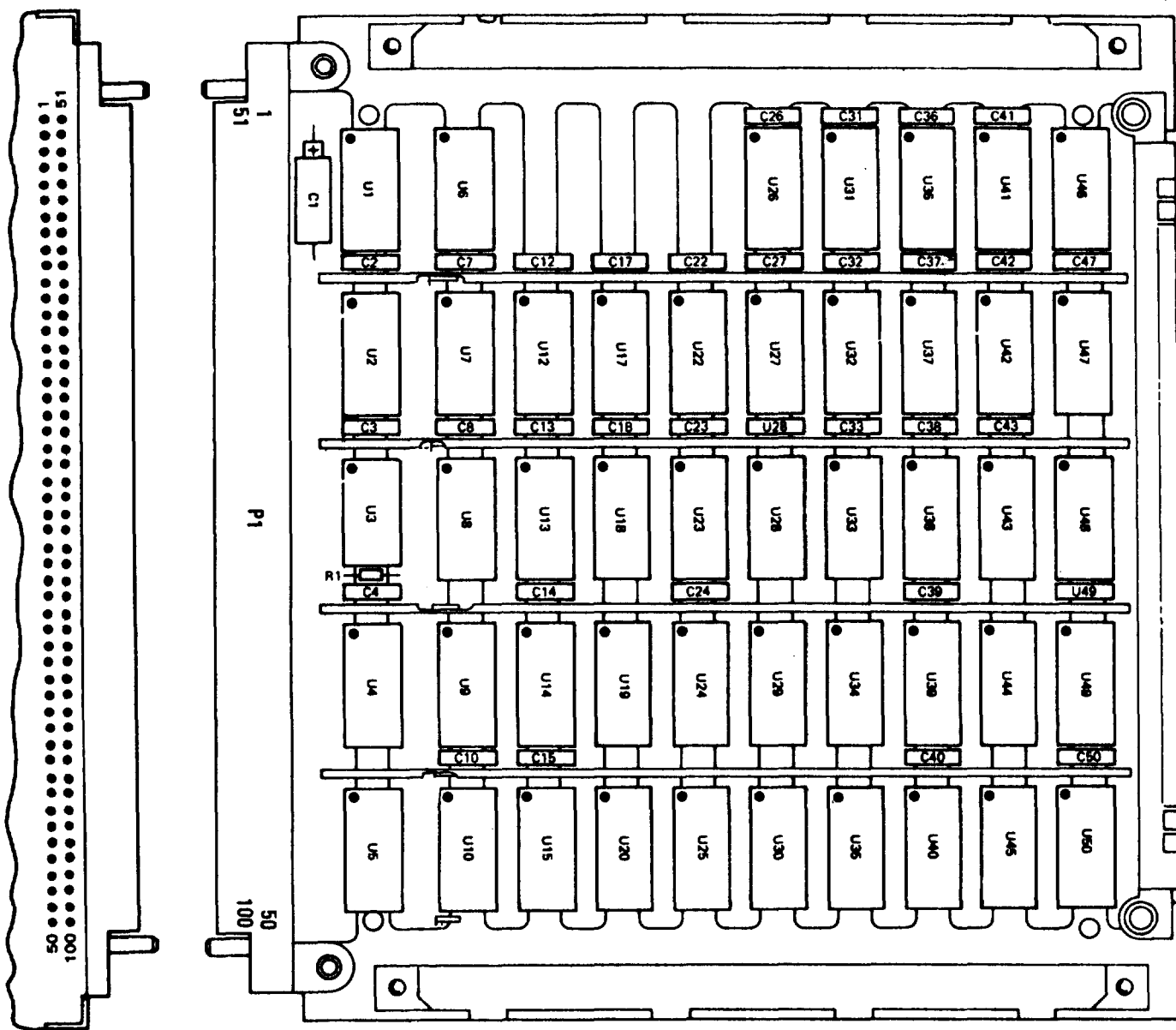
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635948-100 ACCUMULATOR CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT	PROBE MESSAGE	PROBE MEASUREMENT POINT	PROBE MESSAGE	PROBE MEASUREMENT POINT
W21	U12P7	W10	U47P7	W18	U41P7
W22	U9P11	W11	U26P7	W19	U43P7
W23	U9P9	W12	U31P7	W20	U38P7
W24	U9P10	W13	U37P7	VCC	2 INPUT
W25	U9P12	W14	U42P7	GND	48 INPUT
W26	U9P13	W15	U32P7		
W27	U9P8	W16	U36P7		
W9	U27P7	W17	U46P7		

**1635949-100 COMPOSITE GENERATOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635949TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635949TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

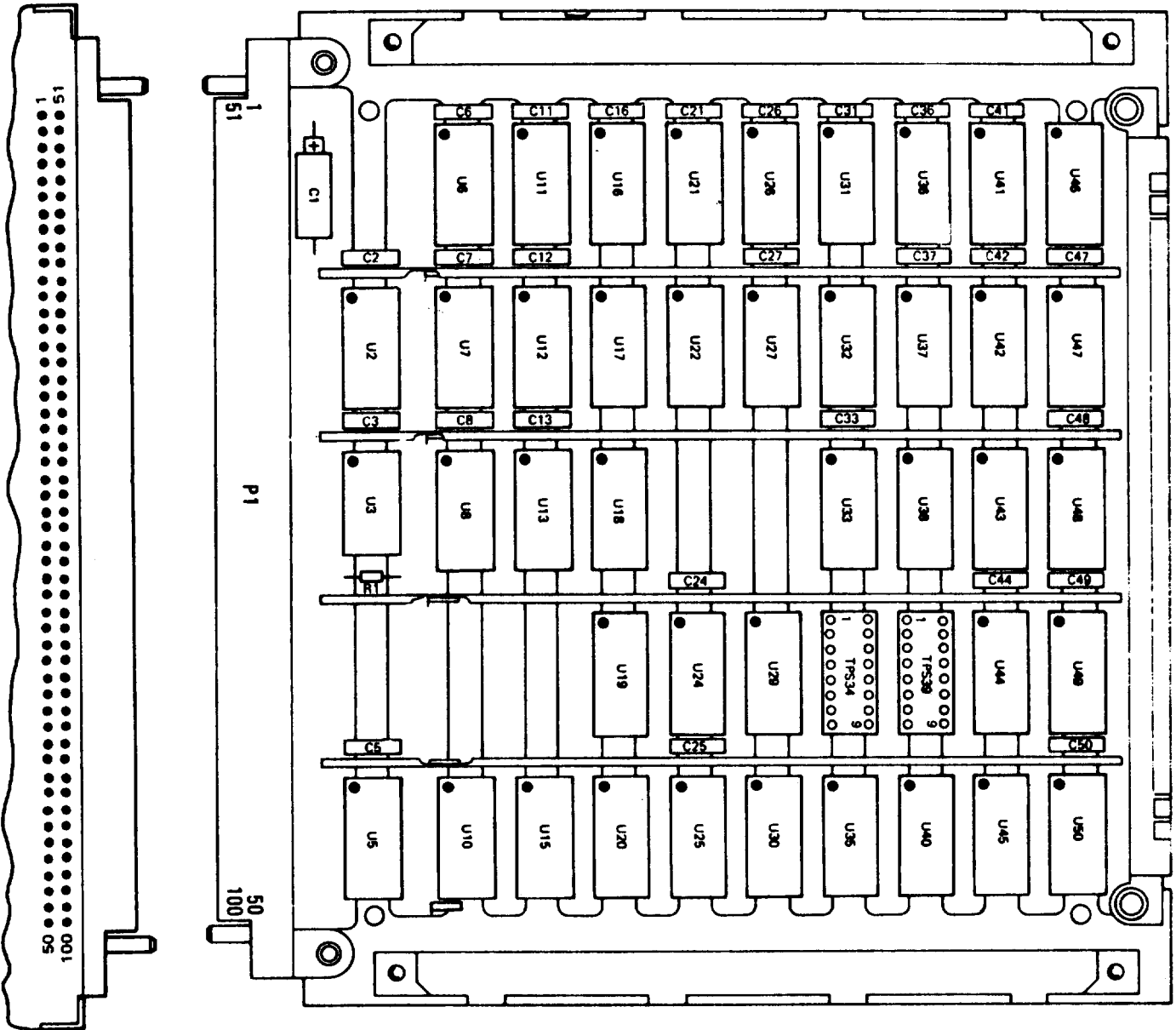
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATION ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635949-100 COMPOSITE GENERATOR CARD TEST AND TROUBLESHOOTING (2 OF 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

**1635950-100 I- AND Q-TRACK STROBE CARD TEST AND TROUBLESHOOTING (1 Of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.
2. Select test.
  - a. Type **TEST 1635950TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635950TXX. IC XX/XX/XX
MEAS VALUE:.....
- RUN TIME SYSTEM REV X.XX -
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```

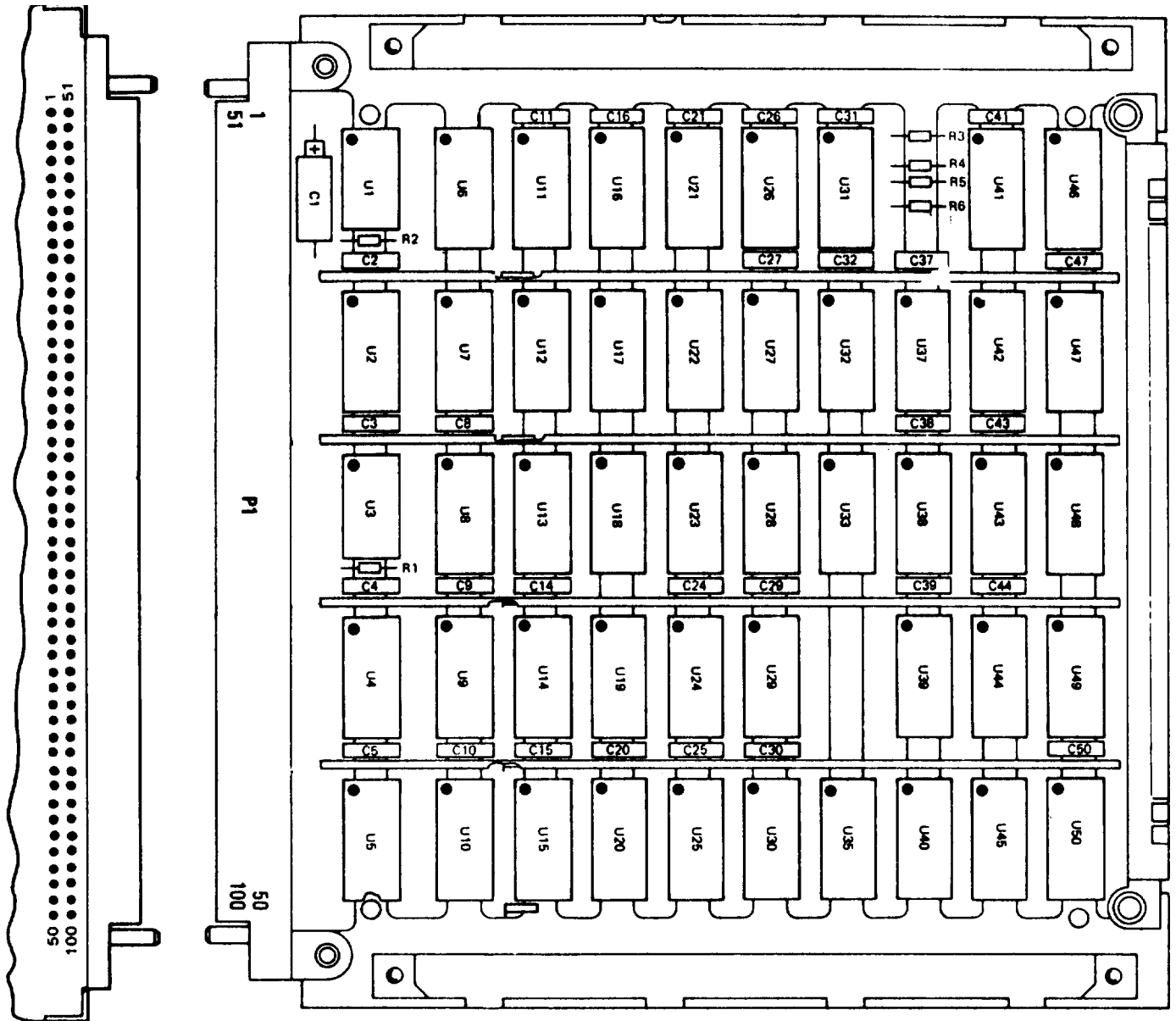


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635950-100 I- AND Q-TRACK STROBE CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

**1635951-100 GENERAL VERIFY GATE CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.

2. Select test.
  - a. Type **TEST 1635951TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635951TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED, SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

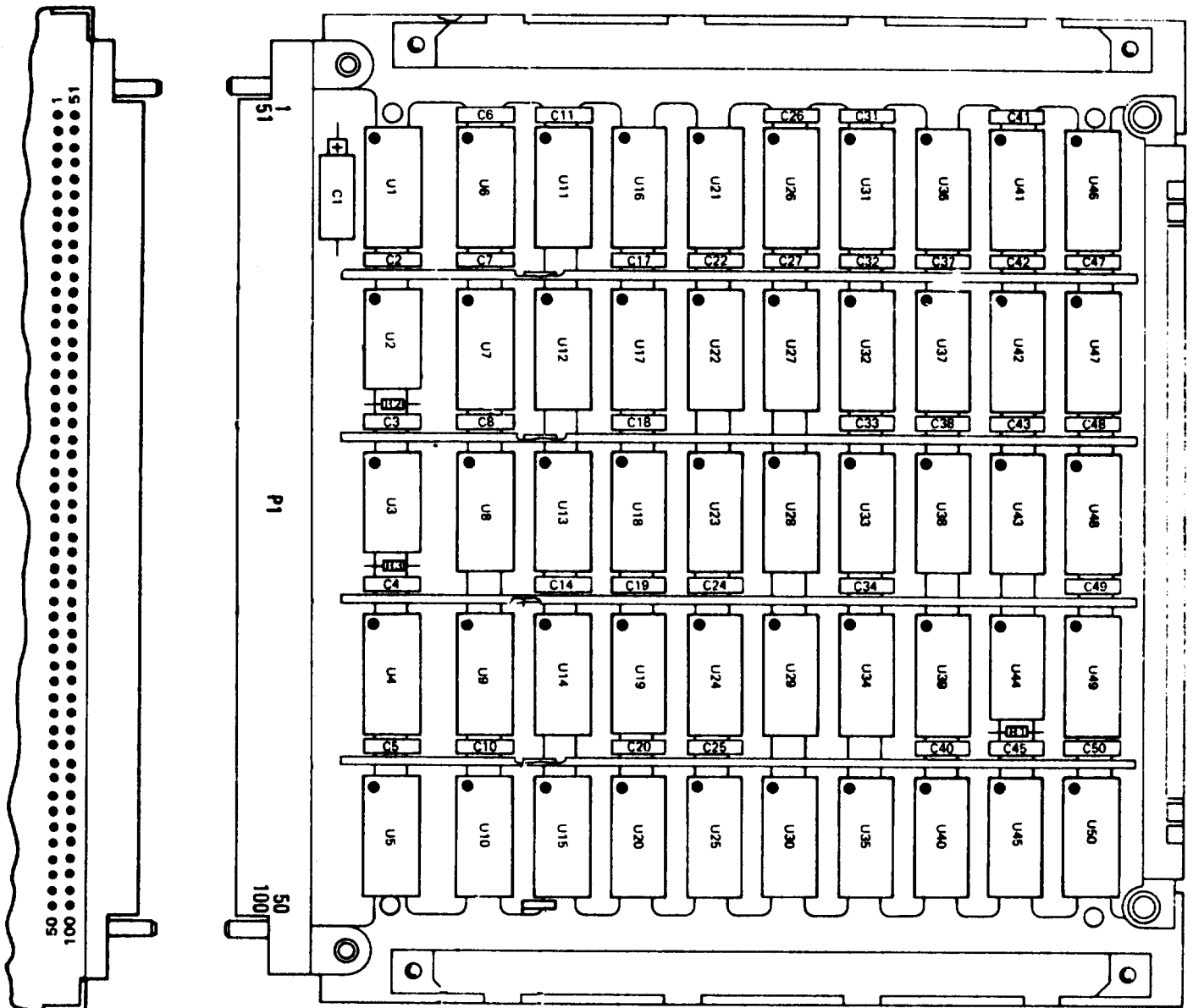
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635951-100 GENERAL VERIFY GATE CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

**1635952-100 CLUTTER MAP TRACK CORRELATOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635952TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635952TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook UP ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

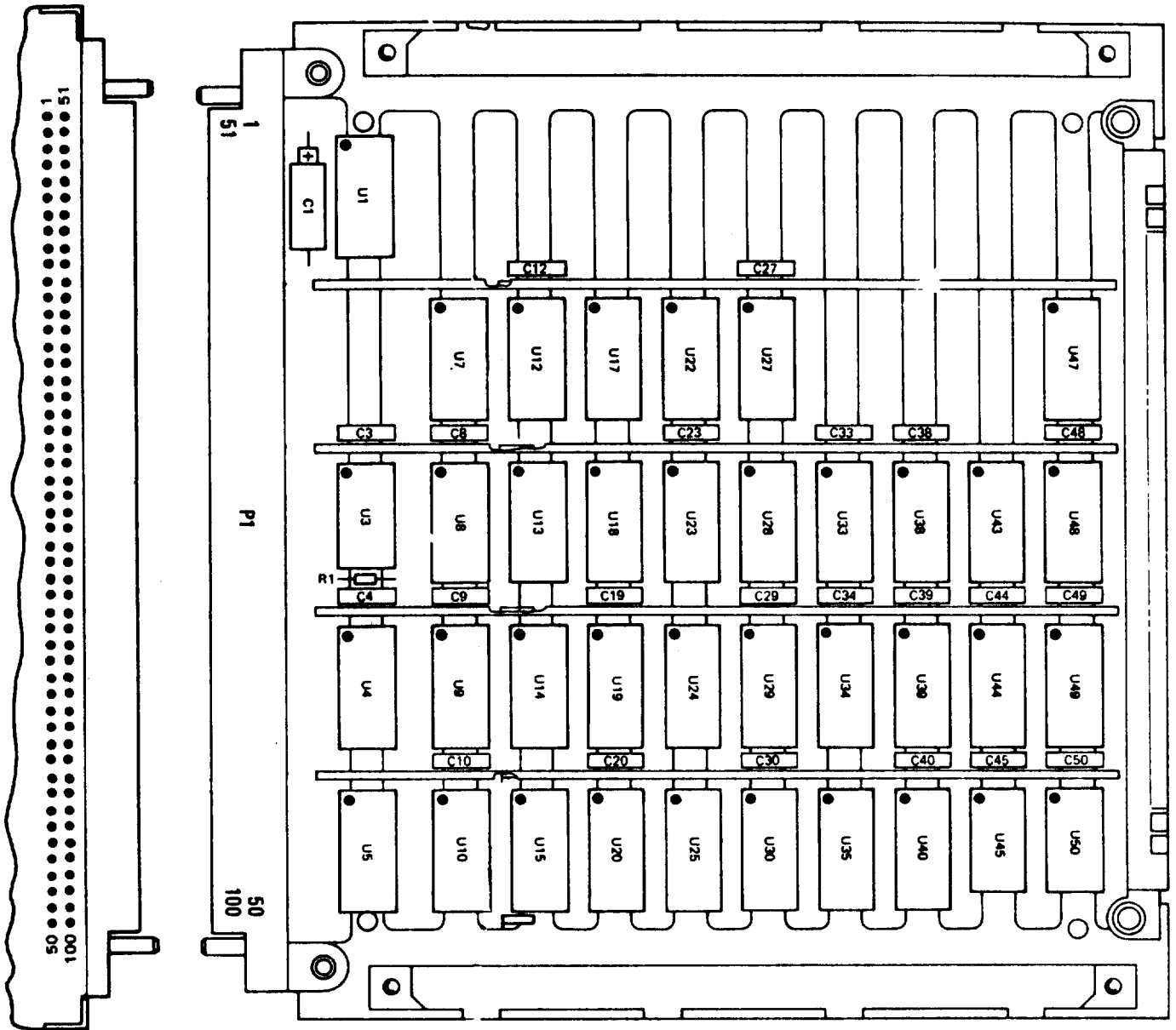
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635952-100 CLUTTER MAP TRACK CORRELATOR CARD CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

**1635953-100 CLUTTER MAP ADDRESS CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - c. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.

- a. Type **TEST 1635953TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
- b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635953TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIC CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

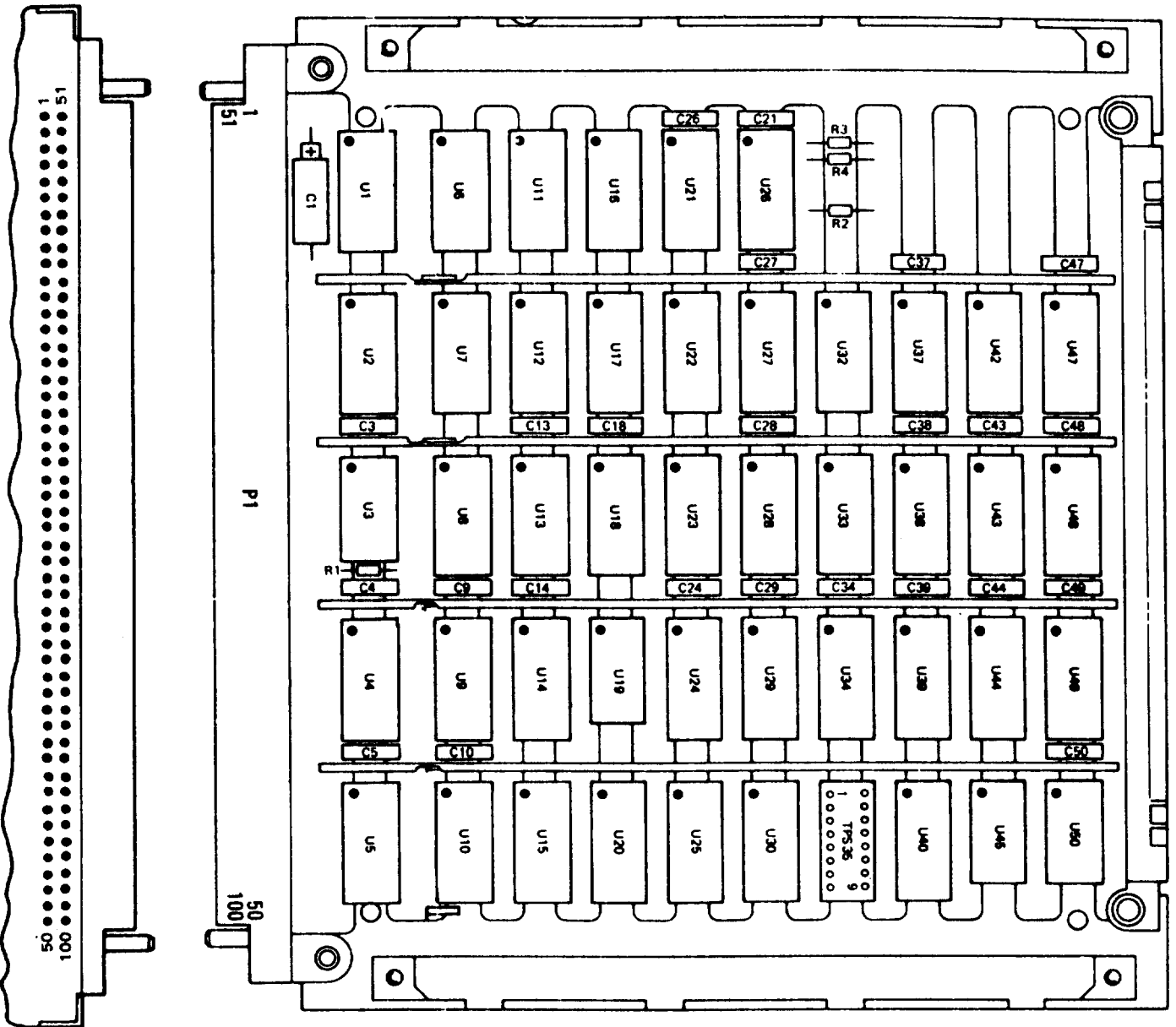
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635953-100 CLUTTER MAP ADDRESS CARD TEST ASND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC R4P2	48 INPUT 2 INPUT U11P13

**1635954-100 CLUTTER MAP INTEGRATOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635954TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:   LINE#:           EQUATE XX
              UUT: 1635954TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIE
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```

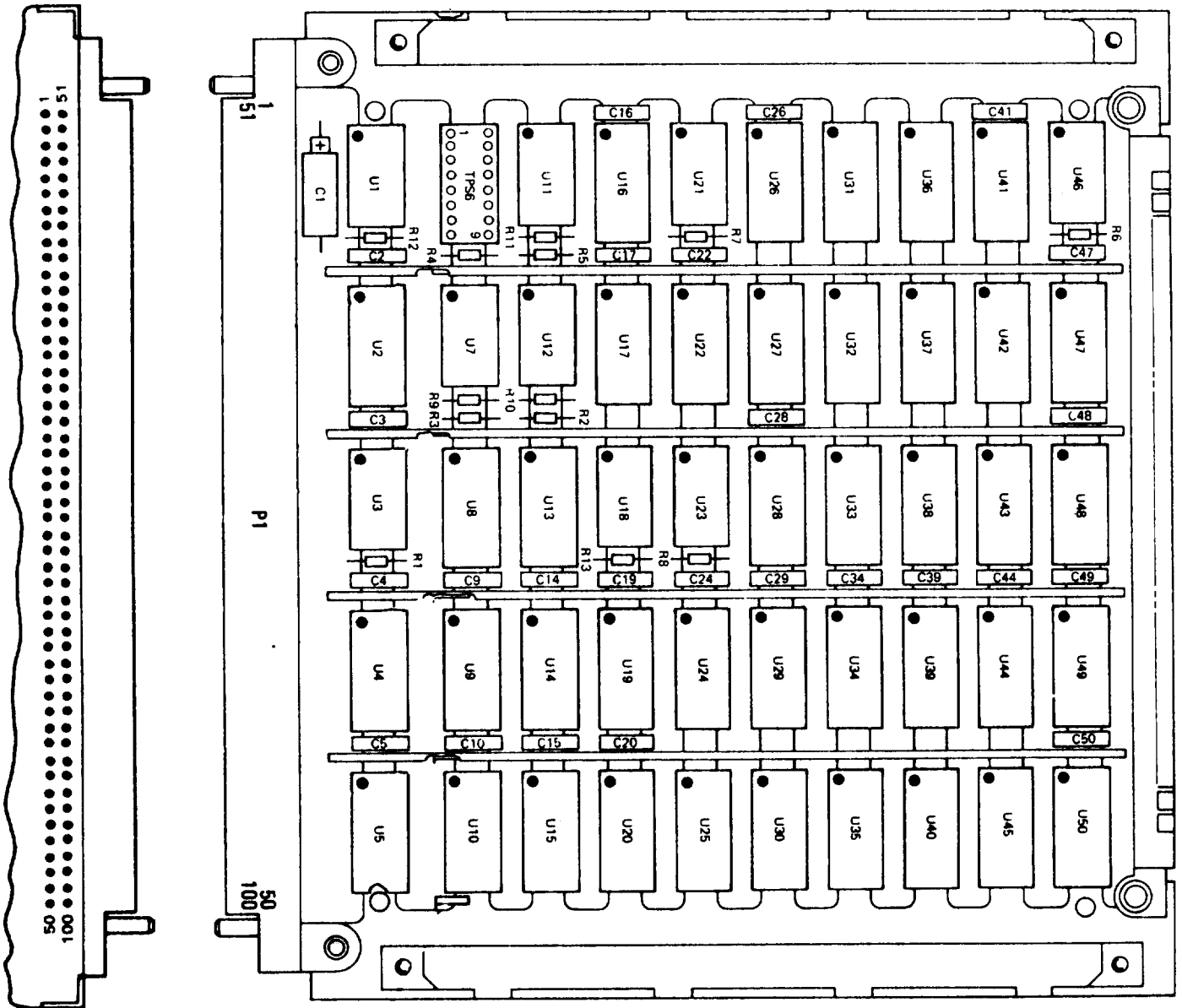


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635954-100 CLUTTER MAP INTEGRATOR CARD TEST AND TROUBLESHOOTING (1 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT	PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC	7 INPUT	W7	U34P9
GND	48 INPUT	W8	U34P11
R11P2	U7P3	W5	U34P5
R10P2	U7P13	W9	U44P5
W11	U44P9	W10	U44P7
W12	U44P11		
R13P2	U7P1		
W6	U34P7		

NOTE

THIS CARD REQUIRES AN ADDITIONAL TEST CLIP OR POWER CABLE ASSEMBLY DURING TEST. CONSULT TABLE ON PAGE 4-22 TO SELECT APPROPRIATE EQUIPMENT.

**1635955-100 TARGET COUNT CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635955TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635955TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN)
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

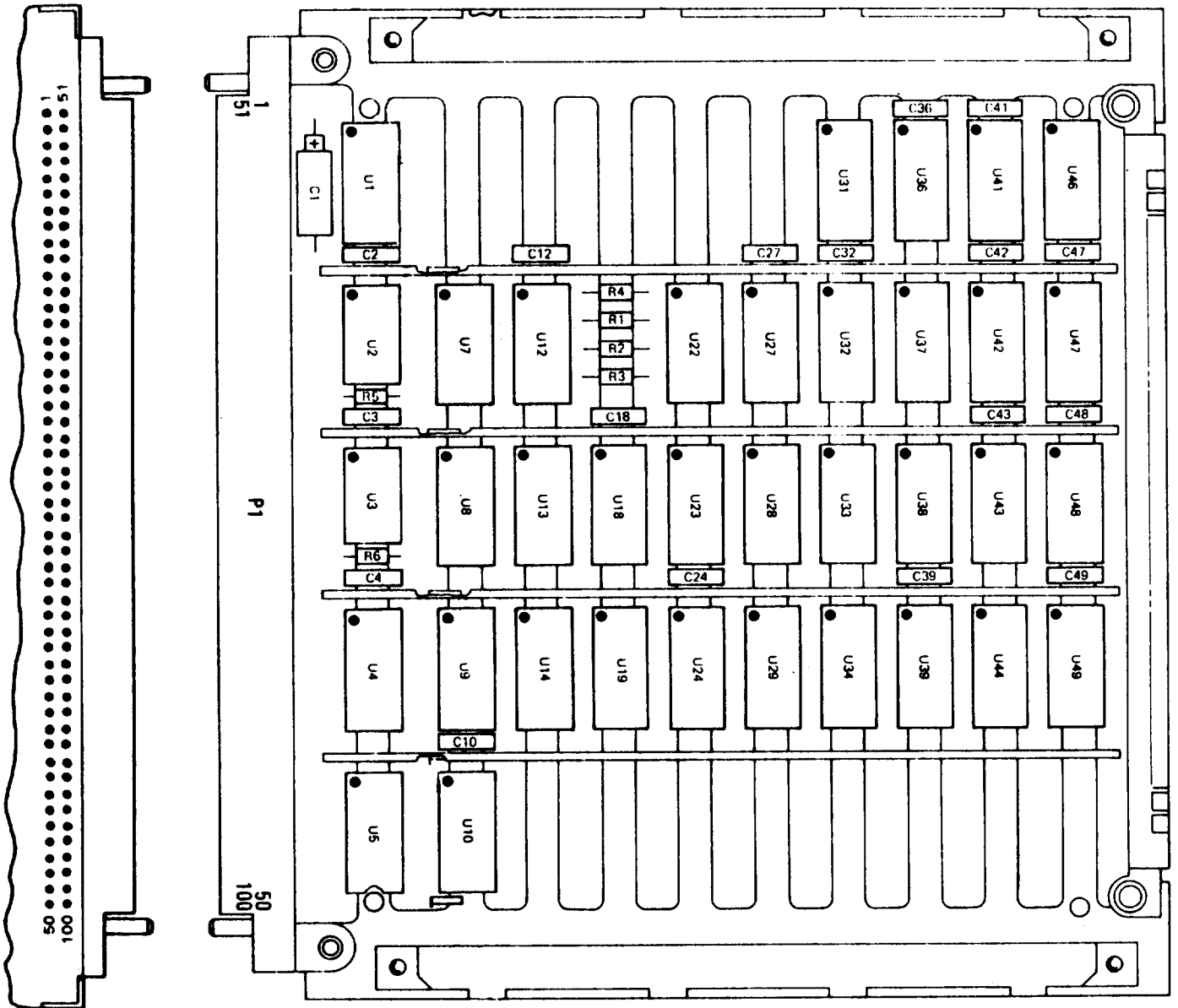
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635955-100 TARGET COUNT CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC	2 INPUT
GND	48 INPUT
W4	U1P7
R1P2	U27P6
U3Z43	---

**1635956-100 PROCESS CYCLE SIGNAL GENERATOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635956TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635956TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook UP UUT.
  - a. Observe the following message on crt.
 

```

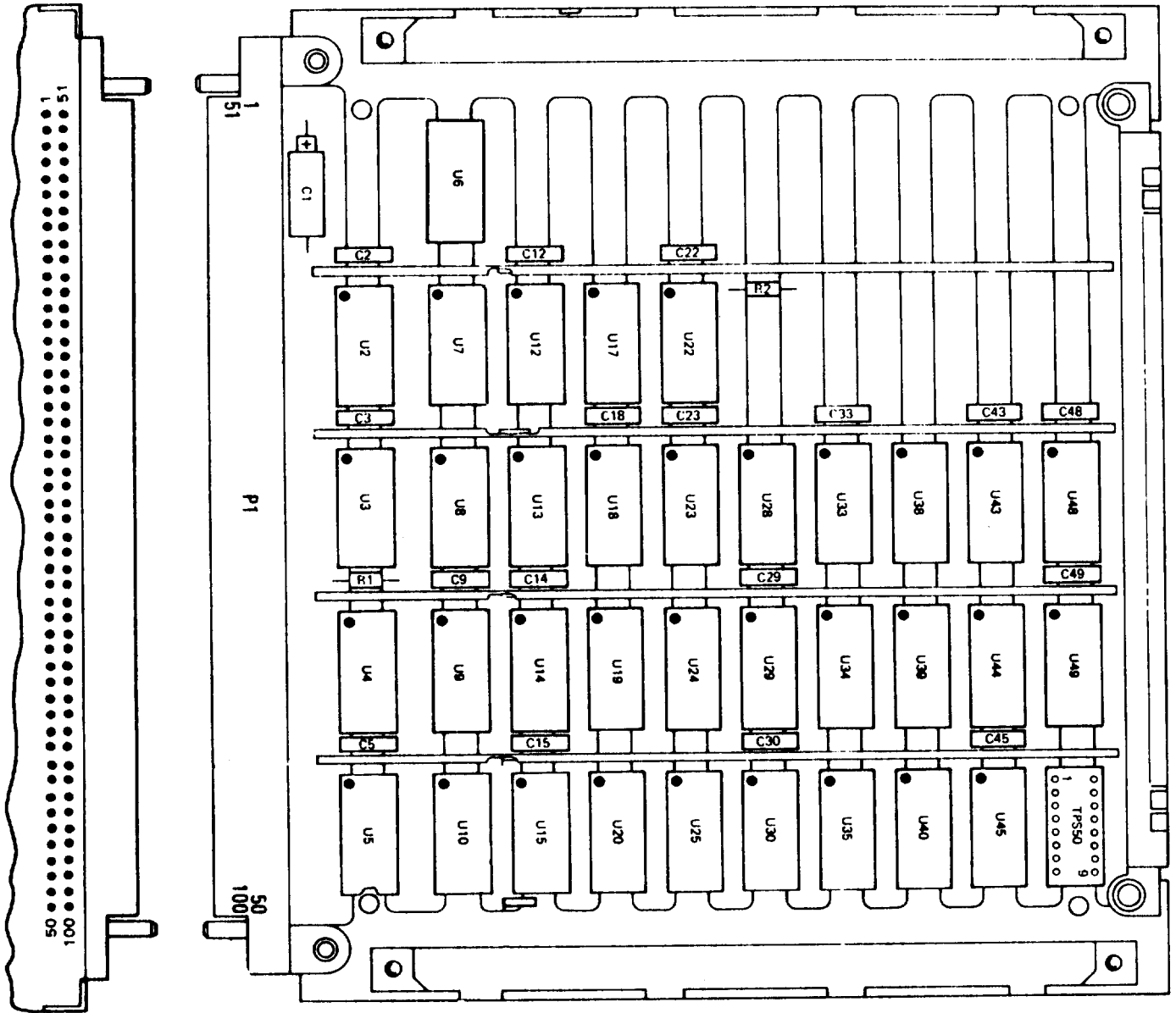
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635956-100 PROCESS CYCLE SIGNAL GENERATOR CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

**1635957-100 COLLECT CYCLE SIGNAL GENERATOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635957TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635957TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook Up UUT.
  - a. Observe the following message on crt.
 

```

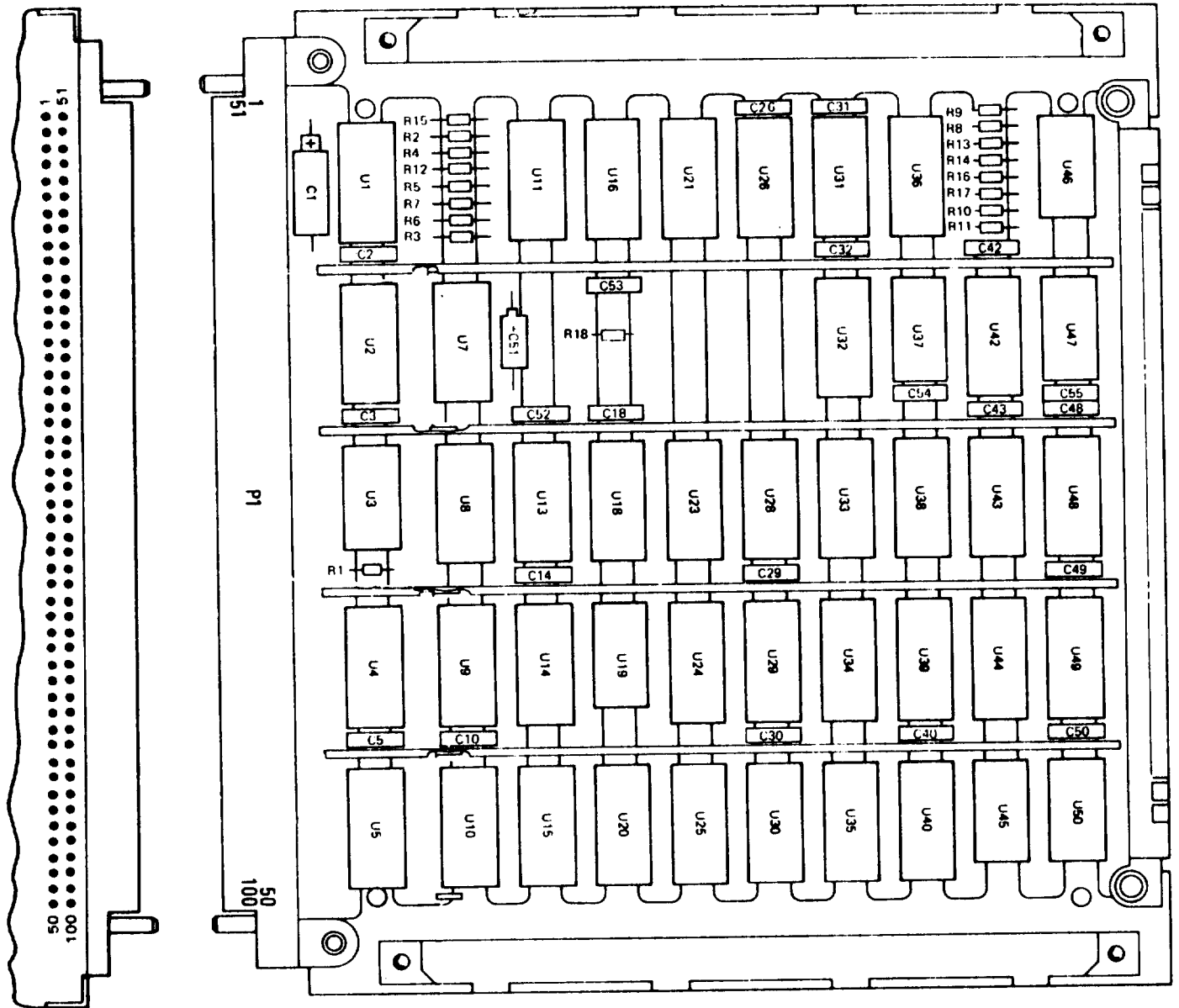
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635957-100 COLLECT CYCLE SIGNAL GENERATOR CARD TEST TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC	2 INPUT
GND	48 INPUT
W8	U31P12
W6	U31P14
W7	U31P13

**1635960-100 WRITE CONTROL CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635960TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635960TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```

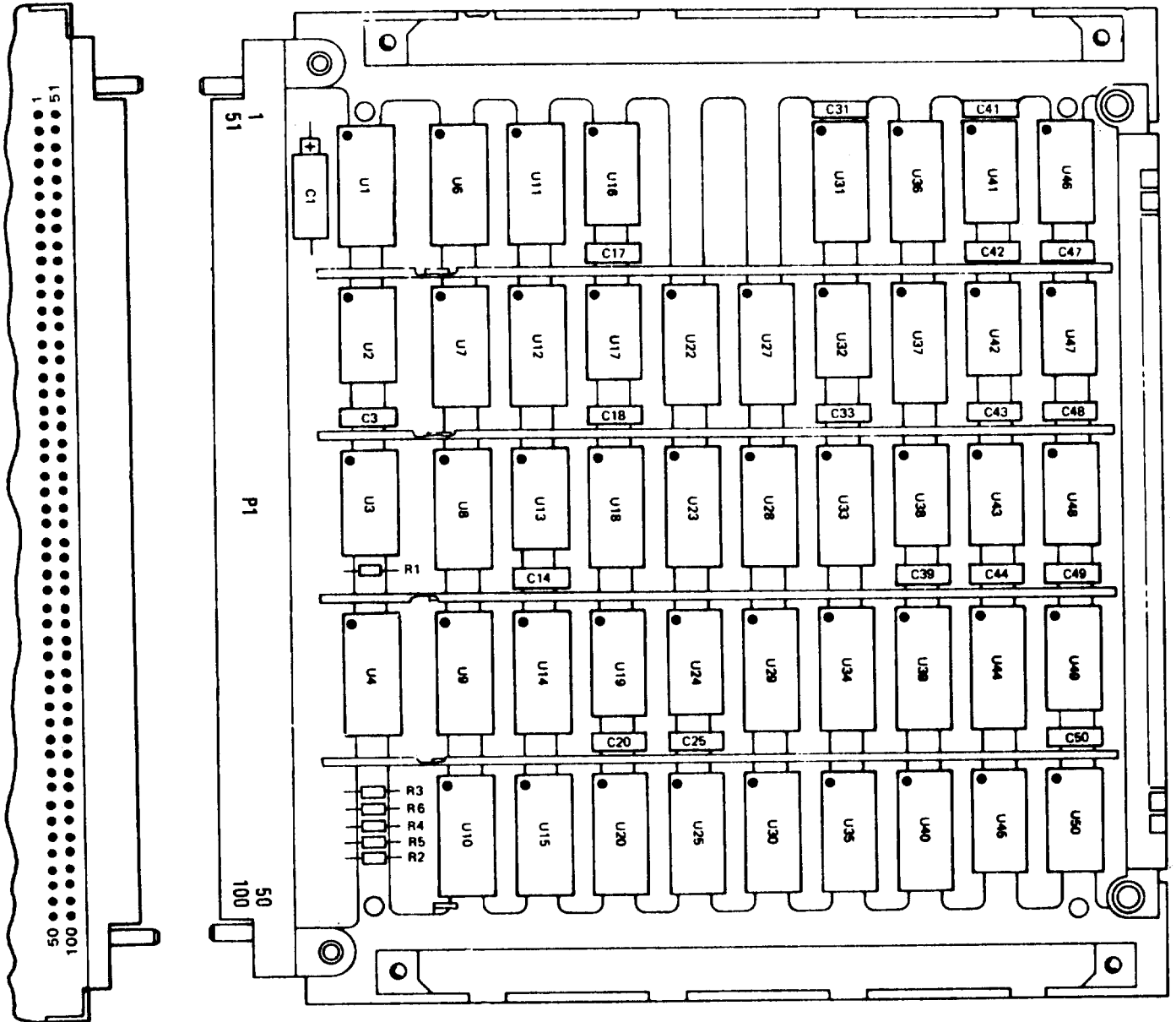


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635960-100 WRITE CONTROL CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND	48 INPUT
VCC	2 INPUT
W4	U20P6
W19	U30P9
W20	U24P5

**1635961-100 COMMAND DATA CONTROL CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635961TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635961TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

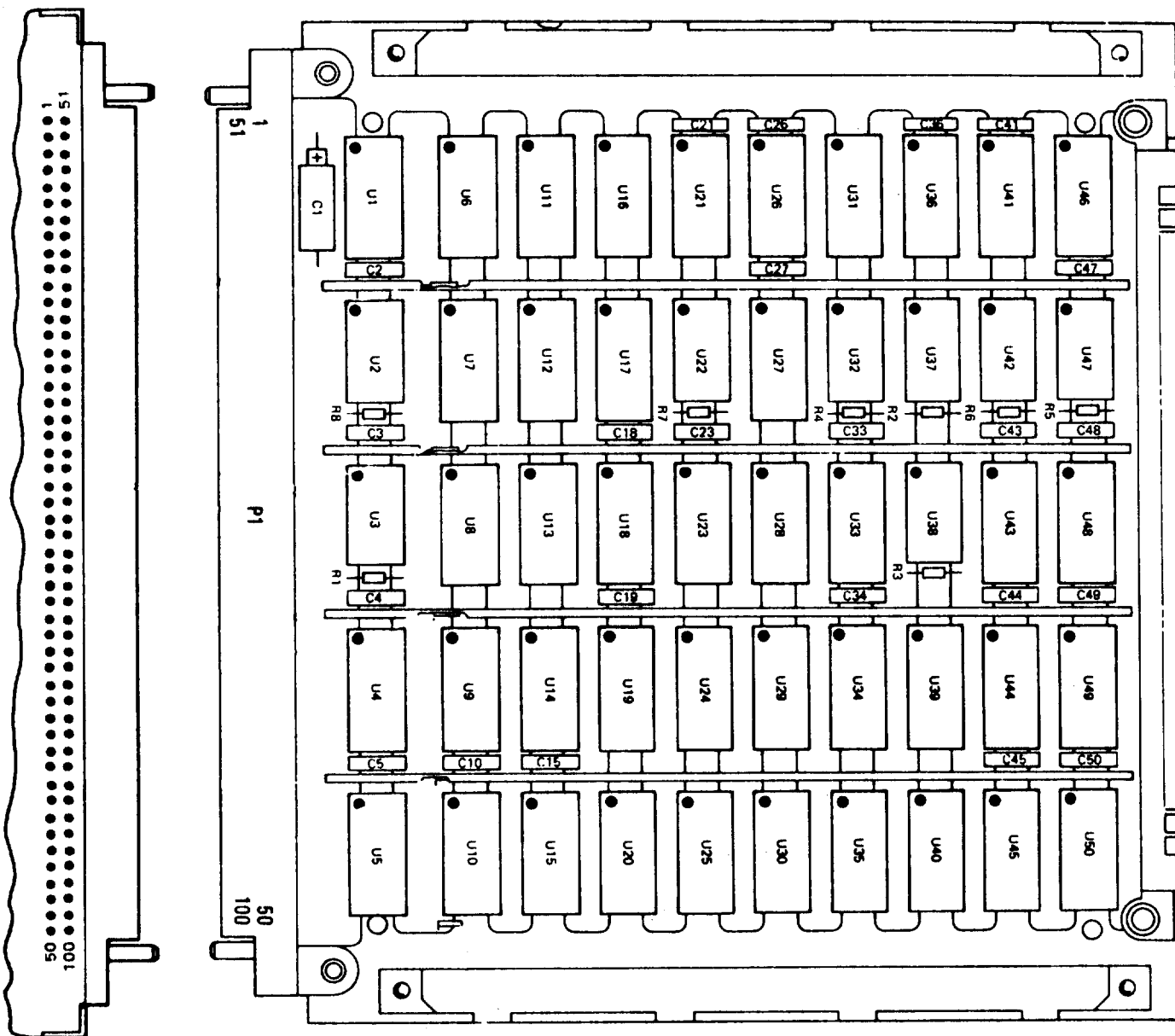
- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.  
**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.  
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635961-100 COMMAND DATA CONTROL CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC GND	2 INPUT 48 INPUT

**1635962-100 MEAN LEVEL GENERATOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635962TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635962TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
      **PIU CAL APPLIED
      **BNC CAL APPLIED
      **LSVSU CAL APPLIED
      **HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

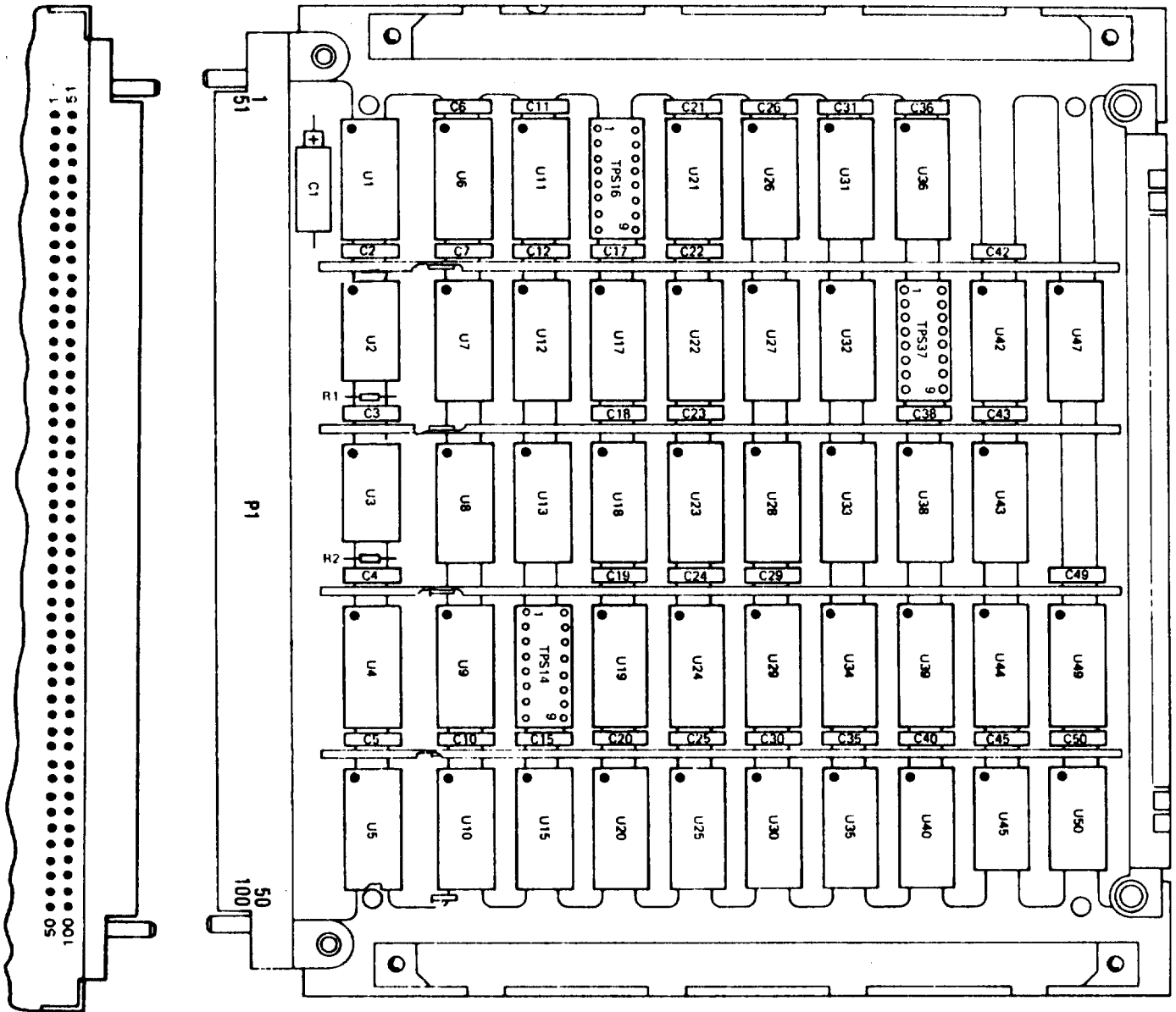
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635962-100 MEAN LEVEL GENERATOR CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

**1635963-100 INTEGRATOR AND LOG CONVERTER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635963TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635963TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

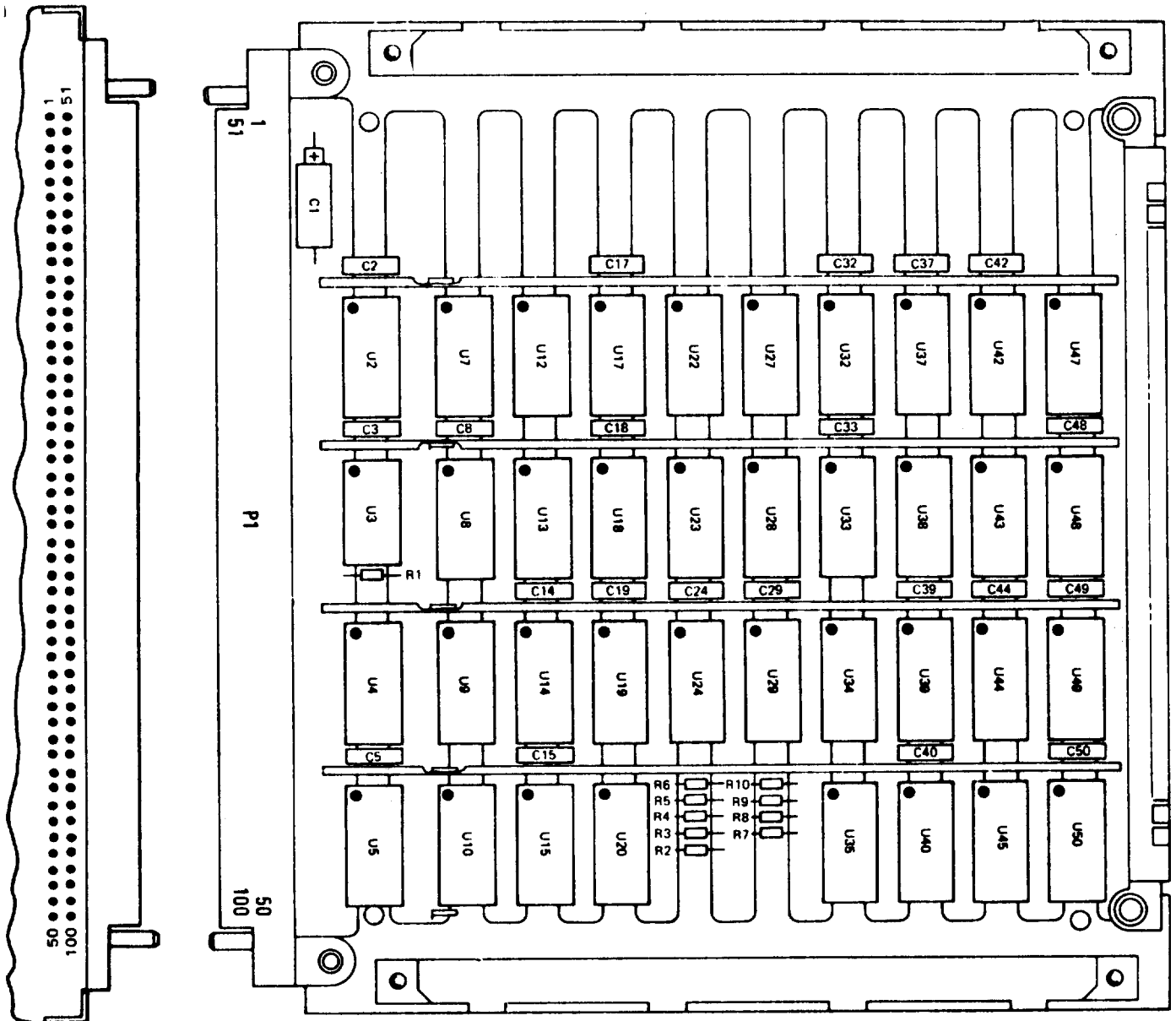
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635963-100 INTEGRATOR AND LOG CONVERTER CARD TEST AND TROUBLESHOOTING (1 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC GND	2 INPUT 48 INPUT

**1635964-100 B-SCOPE INTERFACE CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635964TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635964TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
                **PIU CAL APPLIED
                **BNC CAL APPLIED
                **LSVSU CAL APPLIED
                **HSVSU CAL APPLIED
                COMPILED USING COMPILER REVISION: X.XX
                SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```

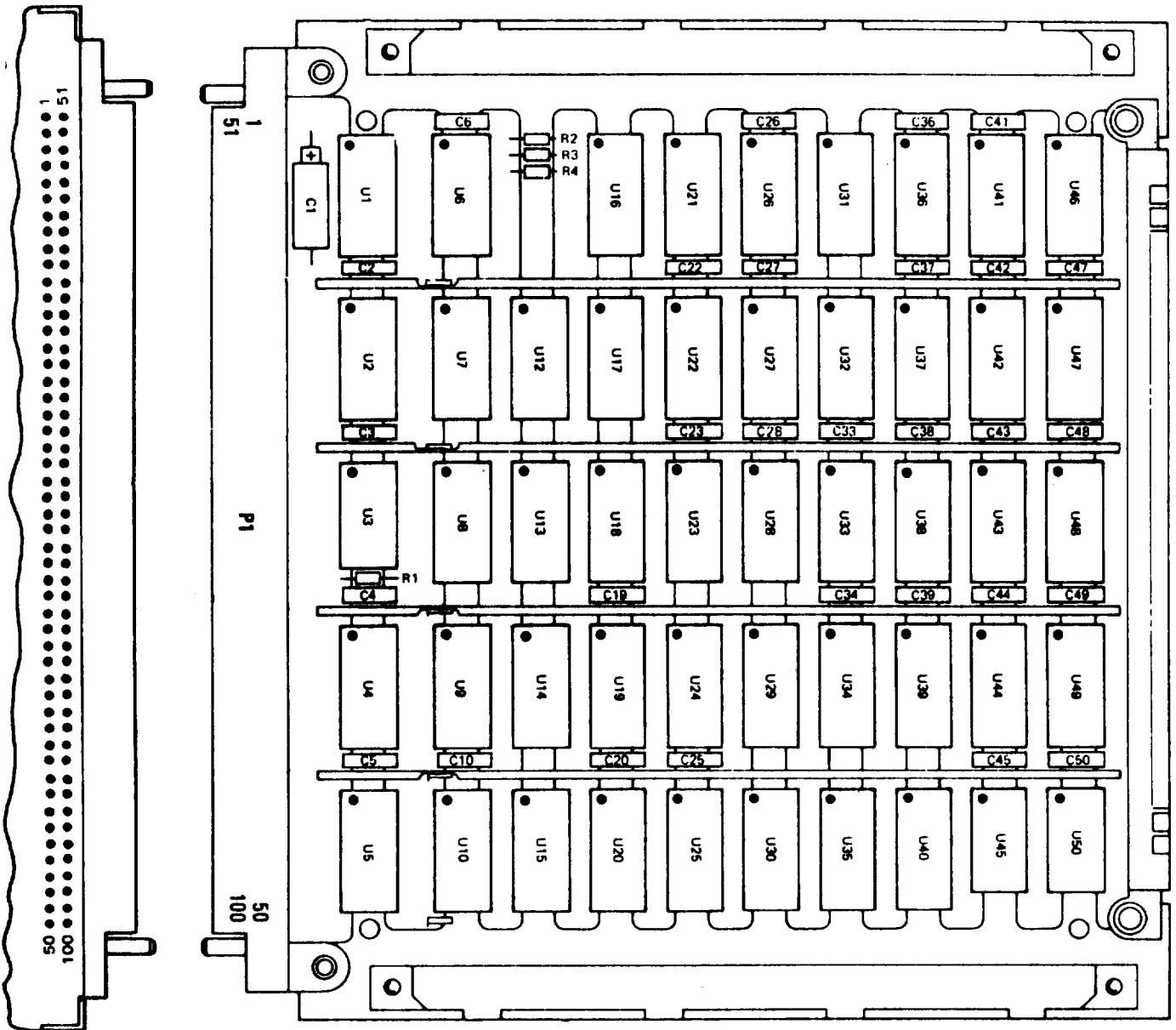


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635964-100 B-SCOPE INTERFACE CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC GND	2 INPUT 48 INPUT

**1635967-100 SWITCH/ALPHA LOGIC LATCH CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635967TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635967TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

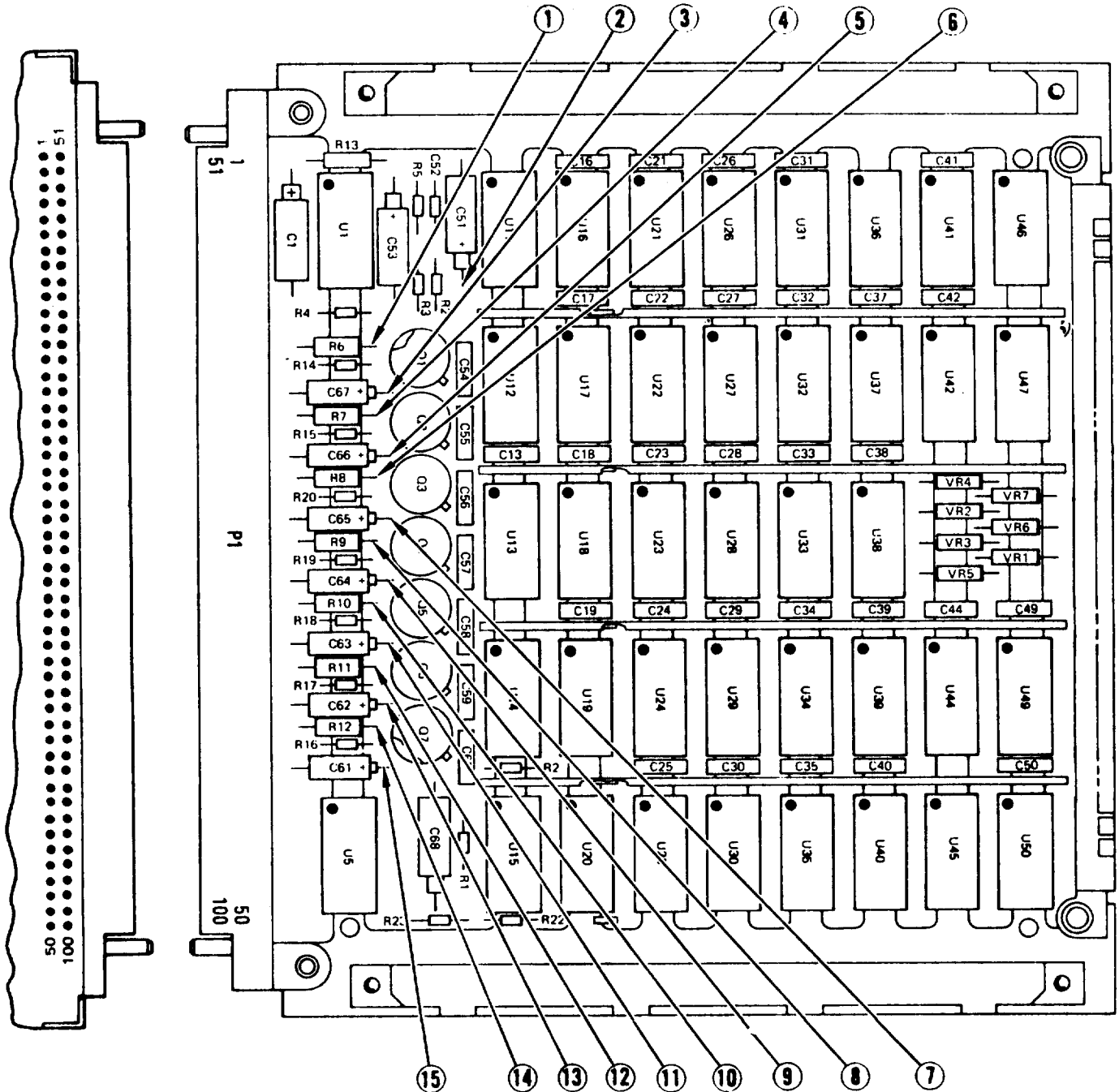
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635967-100 SWITCH/ALPHA LOGIC LATCH CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT	PROBE MESSAGE	PROBE MEASUREMENT POINT	PROBE MESSAGE	PROBE MEASUREMENT POINT
W1	U22P13	W12	U40P13	W23	6
W2	U22P11	W13	U40P12	W24	8
W3	U44P5	W14	U40P11	W25	10
W4	U44P7	W15	U40P10	W26	12
W5	U44P9	W16	U35P13	W27	14
W6	U44P11	W17	U30P12	W28	3
W7	U39P5	W18	U30P11	W29	5
W8	U39P7	W19	U30P10	W30	13
W9	U39P9	W20	2	W31	11
W10	U39P11	W21	1	W32	9
W11	15	W22	4	W33	7

**1635968-100 INDICATOR DRIVER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635968TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635968TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
                **PIU CAL APPLIED
                **BNC CAL APPLIED
                **LSVSU CAL APPLIED
                **HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

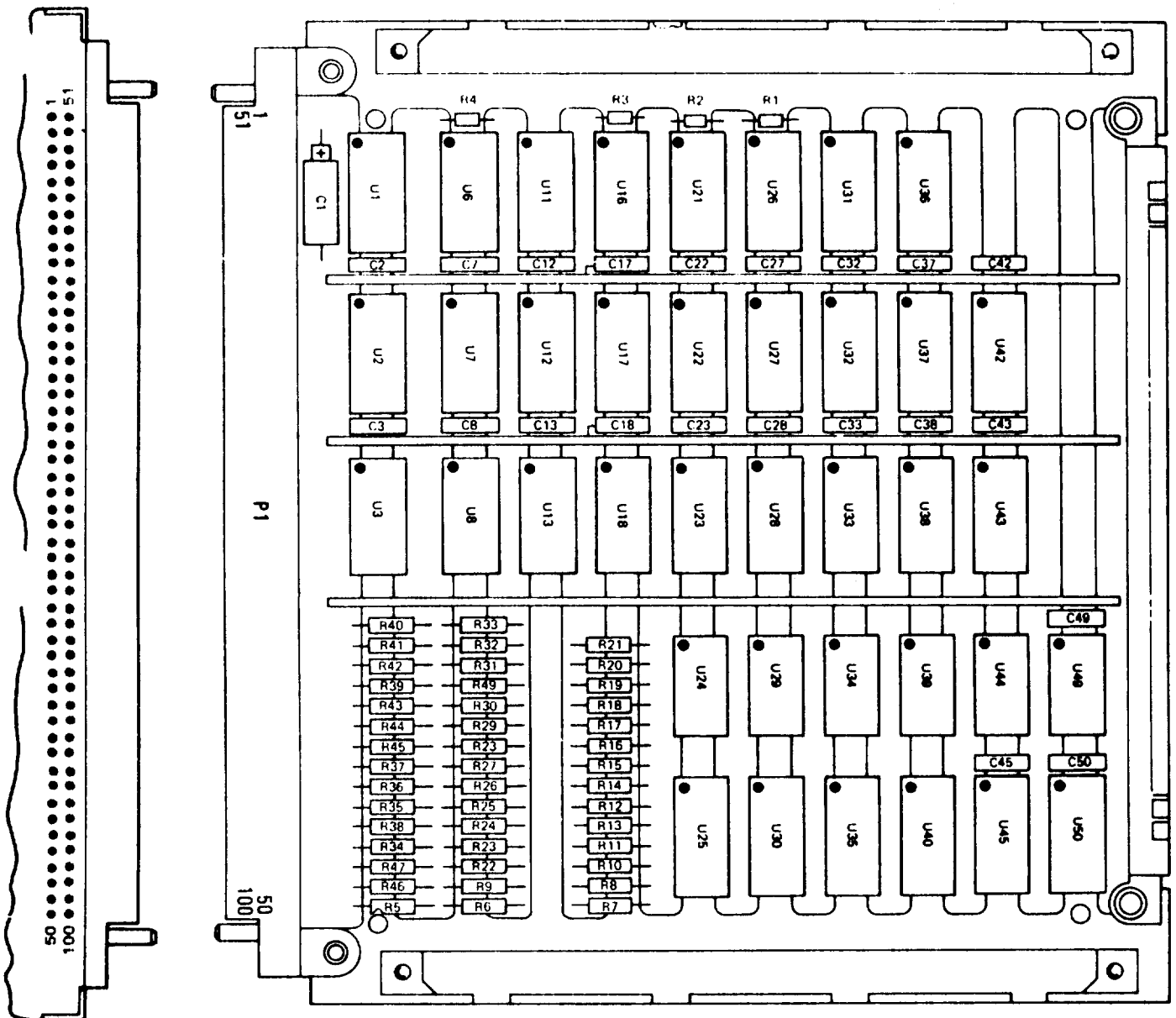
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635968-100 INDICATOR DRIVER CARD TEST AND TROUBLESHOOTING (1 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

**1635969-100 TACFIRE FSK MODULATOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.
2. Select test.
  - a. Type **TEST 1635969TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635969TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook UP ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

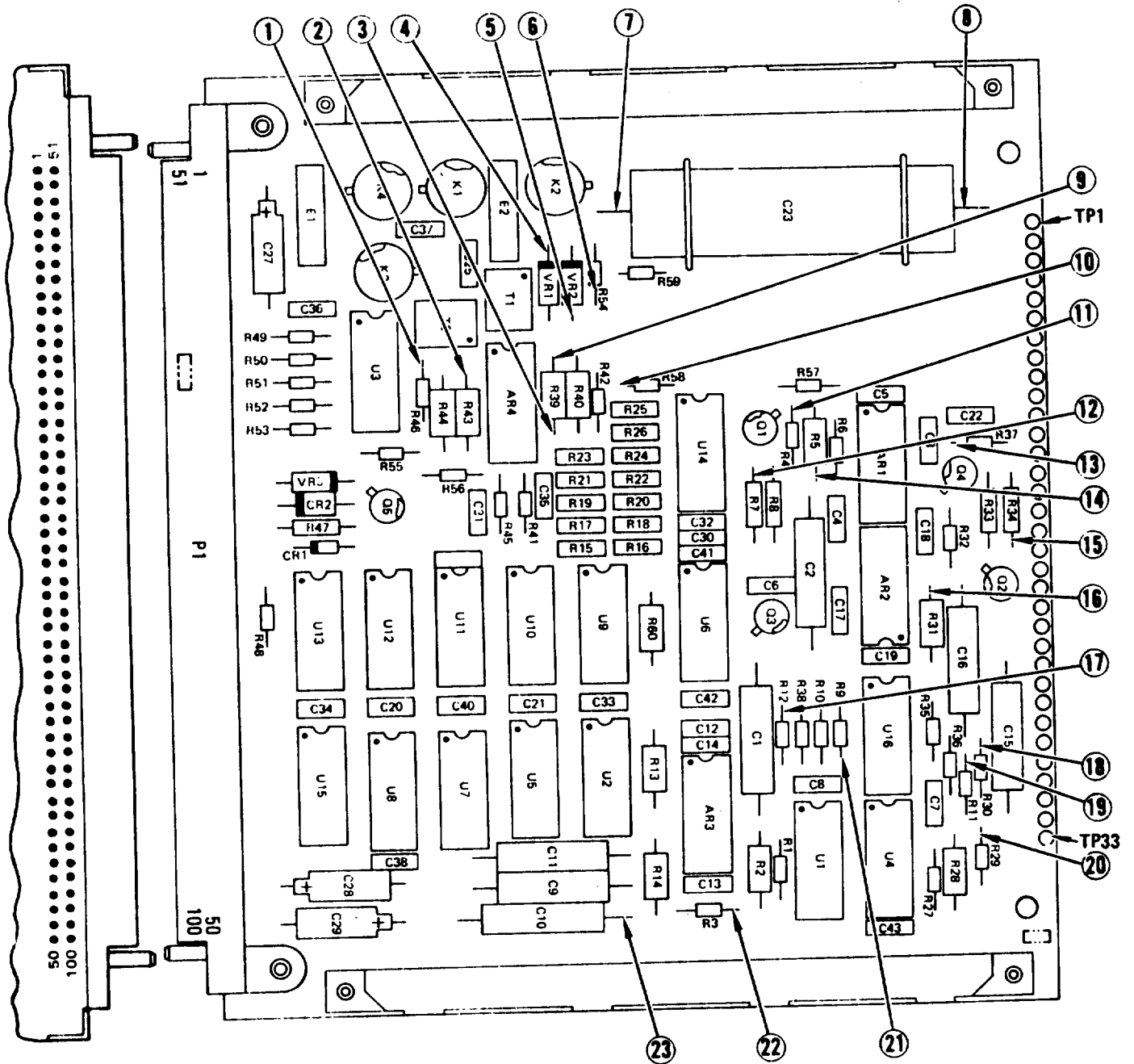
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635969-100 TACFIRE FSK MODULATOR CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635970-100 EASTING ROW/COLUMN DRIVER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
    - a. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635970TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635970TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```

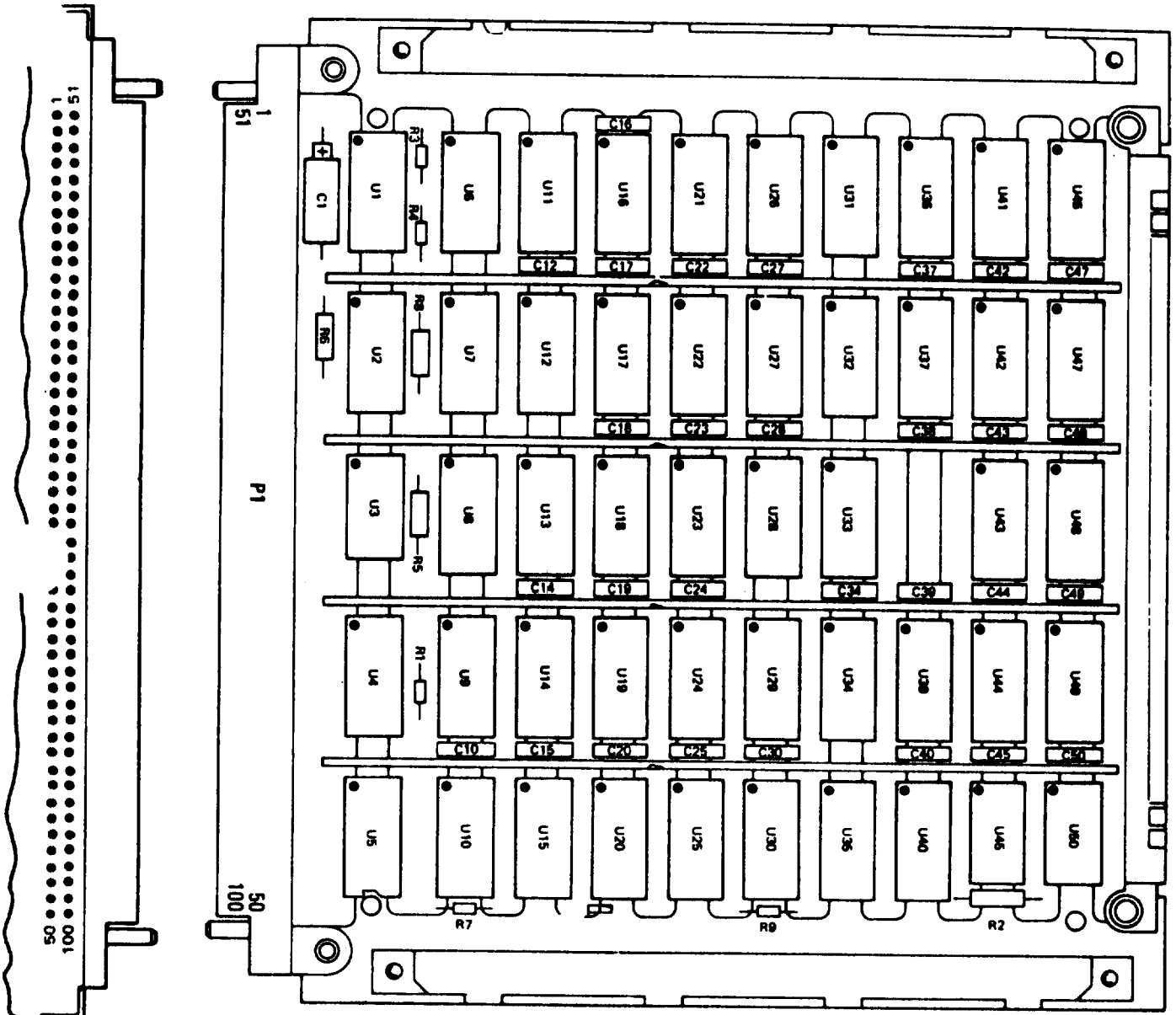


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635970-100 EASTING ROW/COLUMN DRIVER CARD TEST AND TROUBLESHOOTING (2 OF 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT	PROBE MESSAGE	PROBE MEASUREMENT POINT
W1	U35P4	W9	U42P1
W2	U36P1	W10	U38P1
W3	U36P4	W11	U38P10
W4	U41P10	W12	U43P4
W5	U41P1	W13	U43P1
W6	U37P4	W14	U39P4
W7	U37P1	W15	U39P1
W8	U42P4	W16	U44P4

**1635971-100 MAP CONTROL CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635971TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635971TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
                **PIU CAL APPLIED
                **BNC CAL APPLIED
                **LSVSU CAL APPLIED
                **HSVSU CAL APPLIED
                COMPILED USING COMPILER REVISION: X.XX
                SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

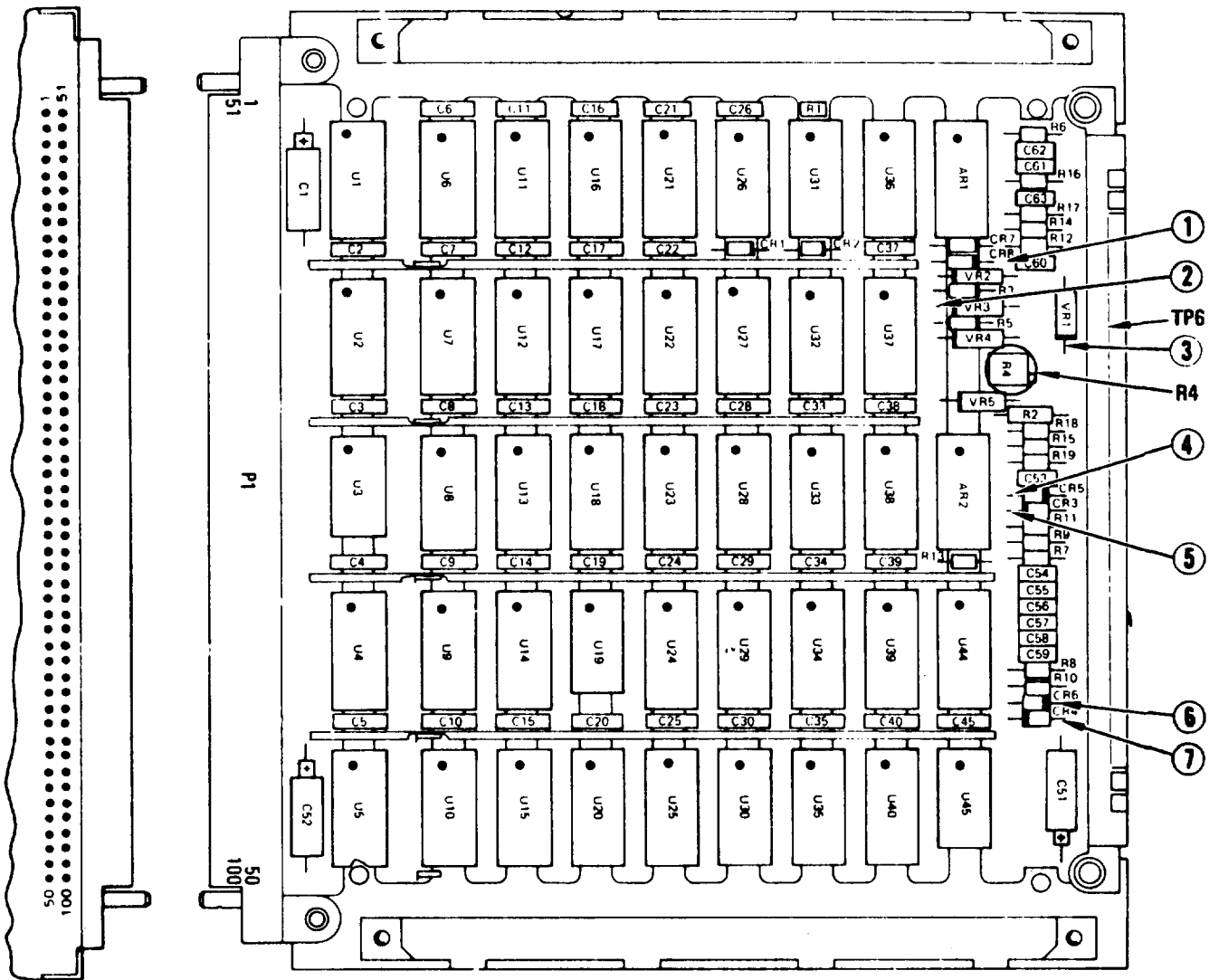
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635971-100 MAP CONTROL CARD TEST AND TROUBLESHOOTING (2 OF 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT	PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC	2 INPUT	W21	U6P6
GND	48 INPUT	W1	5 INPUT
U2Z43	U2P1		
W23	U12P4		
W24	U12P1		
W25	U12P13		
W26	U12P10		

**1635973-100 PERIPHERAL INPUT/OUTPUT CONTROL CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635973TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635973TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
                **PIU CAL APPLIED
                **BNC CAL APPLIED
                **LSVSU CAL APPLIED
                **HSVSU CAL APPLIED
                COMPILED USING COMPILER REVISION: X.XX
                SET SELECTOR SWITCHES, ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - h. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

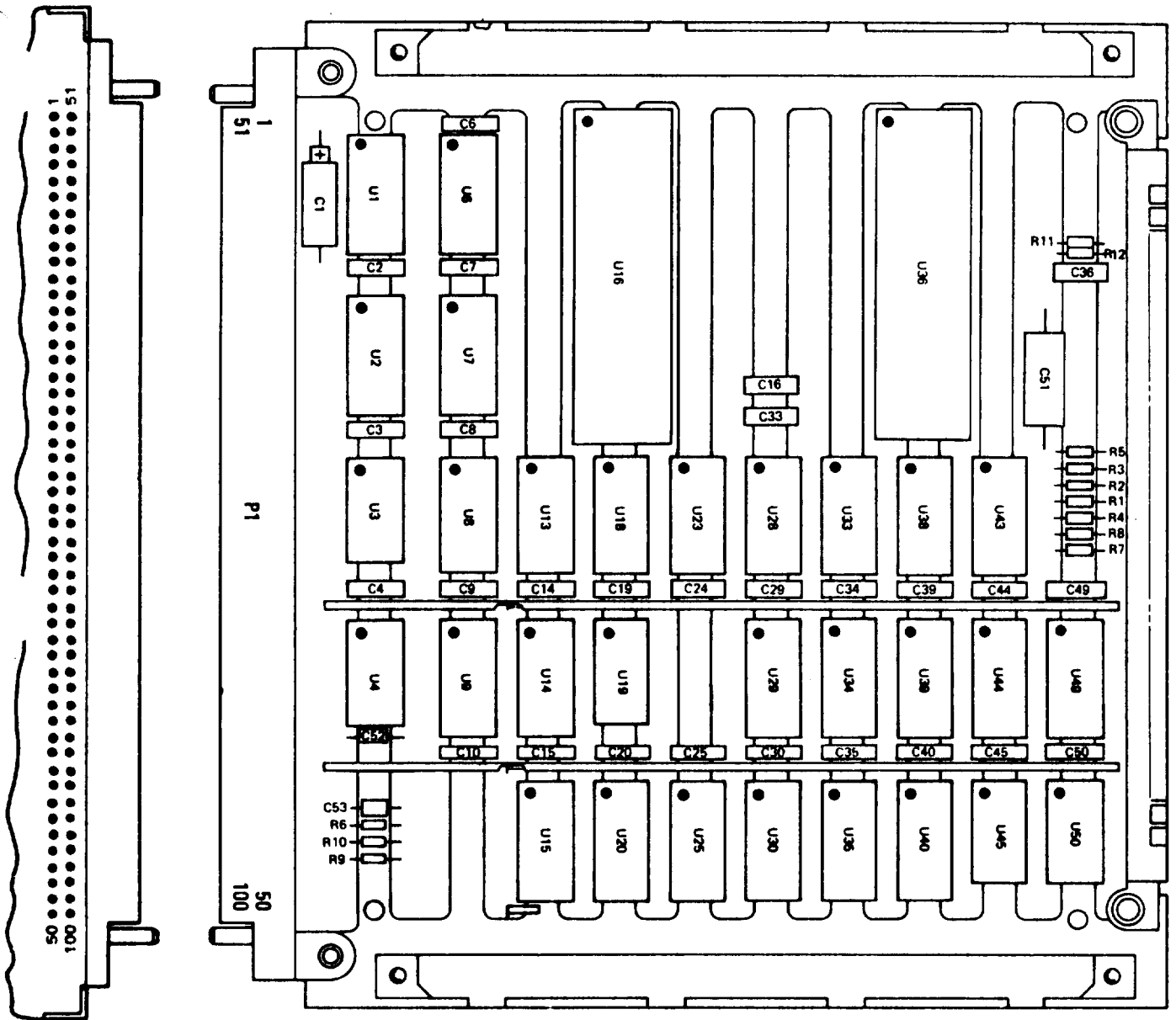
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635973-100 PERIPHERAL INPUT/OUTPUT CONTROL CARD TEST AND TROUBLESHOOTING (2 OF 2)



**1635975-100 CLUTTER MAP TRACK UPDATE CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635975TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635975TXX. IC XX/XX/XX
MEAS VALUE:
-----
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

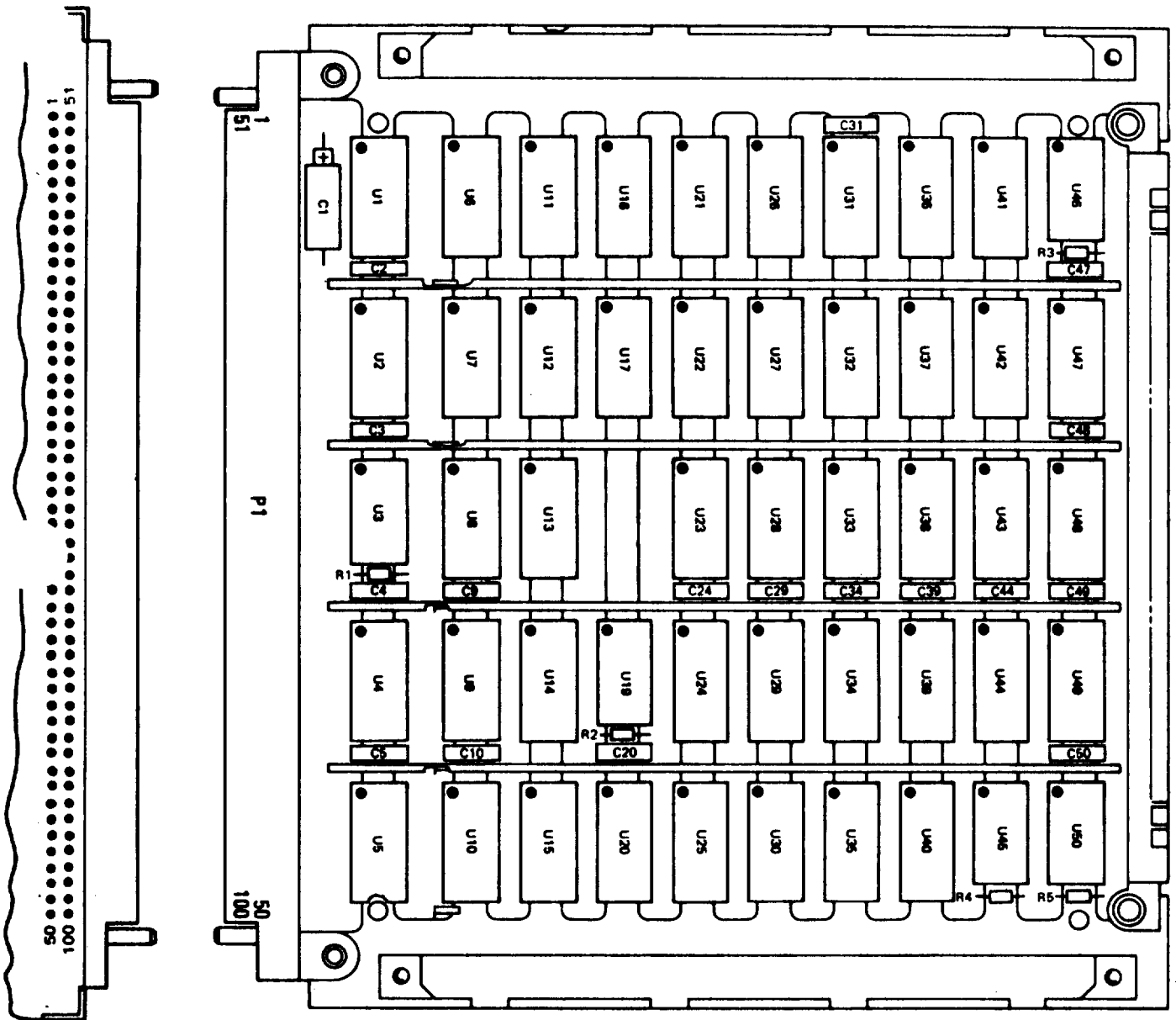
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635975-100 CLUTTER MAP TRACK UPDATE CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
R2P2 GND VCC	U20P5 48 INPUT 2 INPUT

**1635976-100 POWER SUPPLY BITE CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635976TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635976TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```

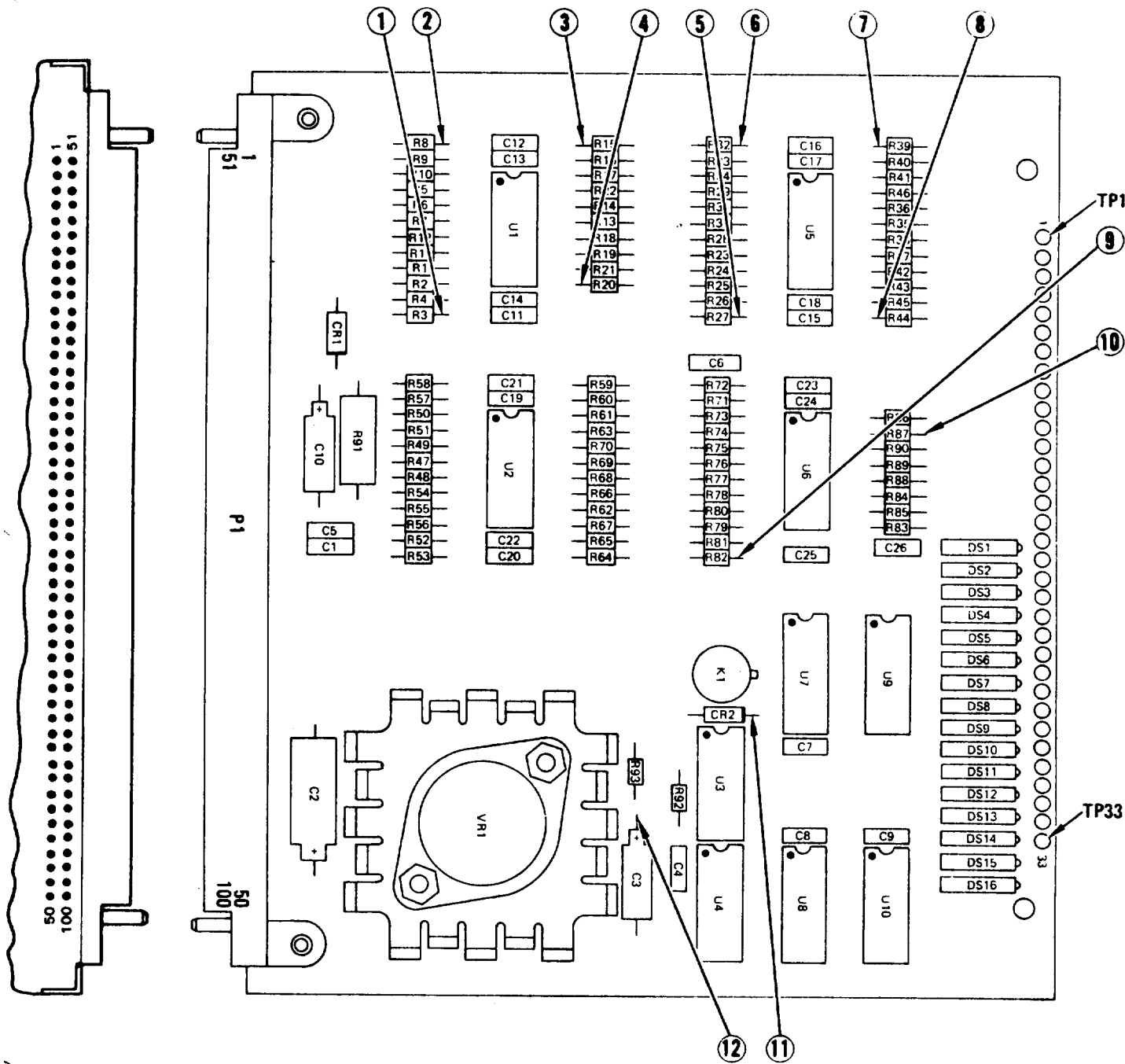


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635976-100 POWER SUPPLY BITE CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635977-100 TACFIRE DATA STORAGE CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press RETURN key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635977TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635977TXX. IC XX/XX/XX
MEAS VALUE:
-----
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

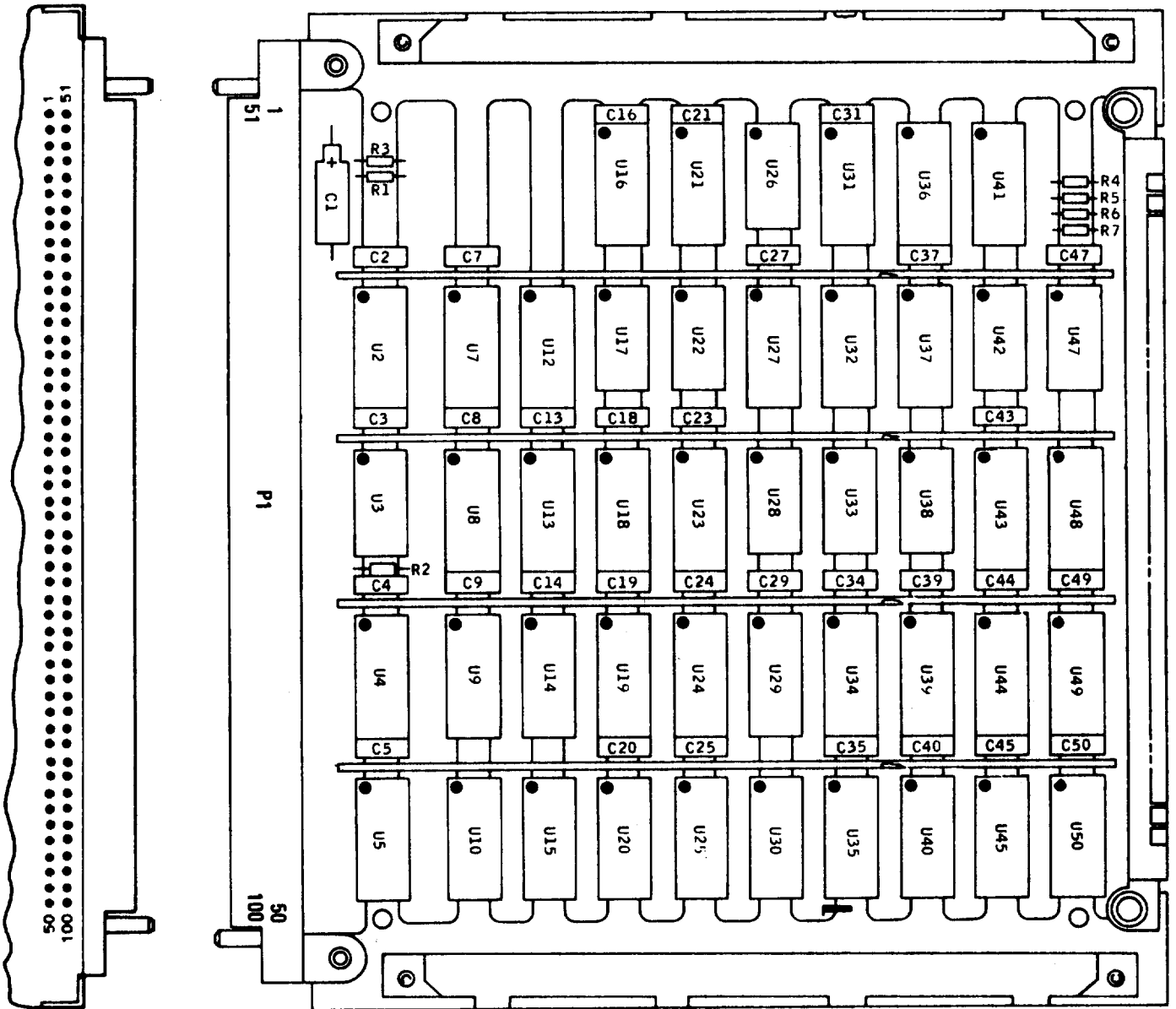
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn Off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635977-100 TACFIRE DATA STORAGE CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635978-100 TACFIRE FSK DEMODULATOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635976TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635978TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

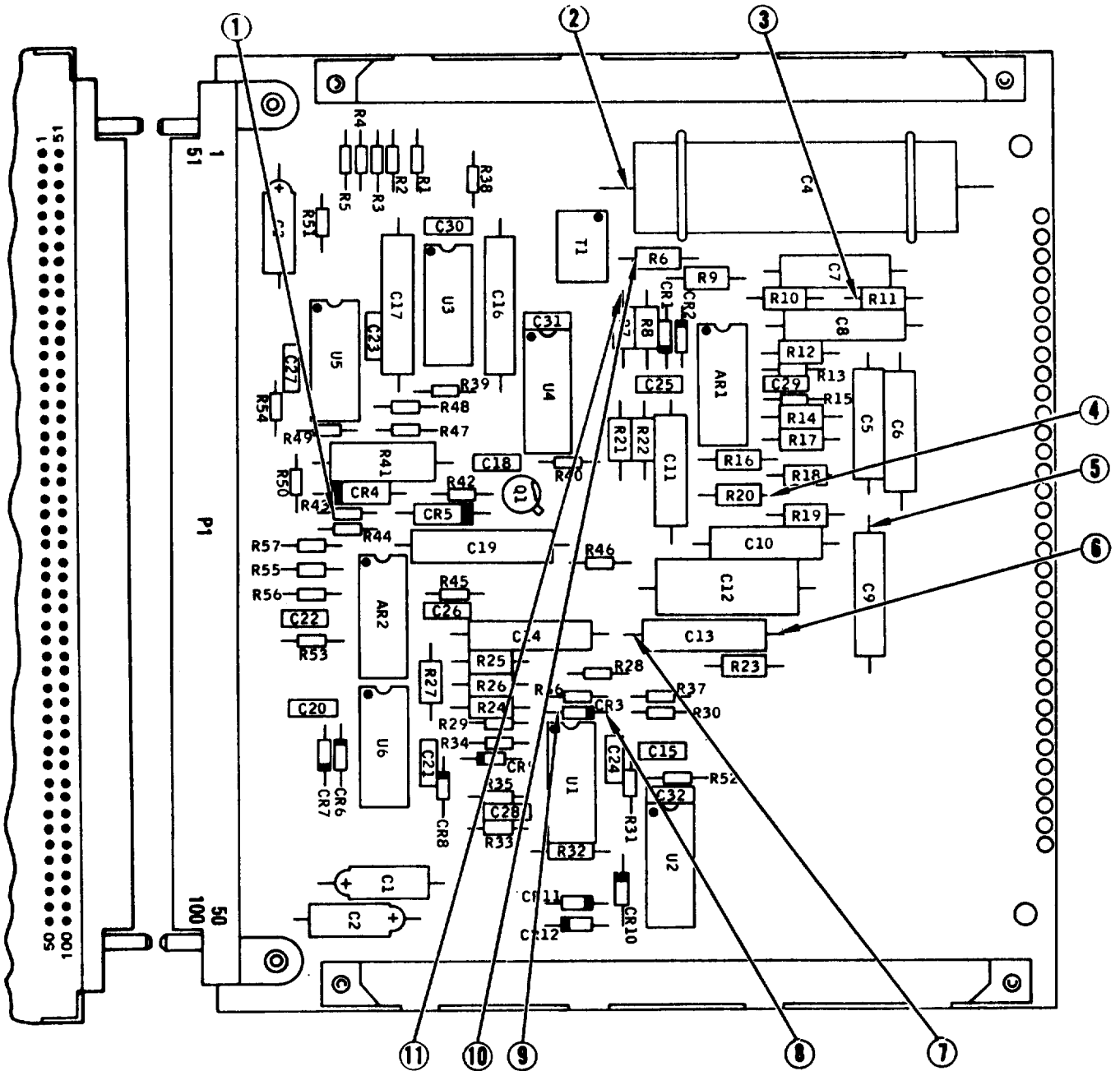
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635978-100 TACFIRE FSK DEMODULATOR CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635979-100 TACFIRE TIMING CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635979TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:    LINE#:           EQUATE XX
                UUT: 1635979TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

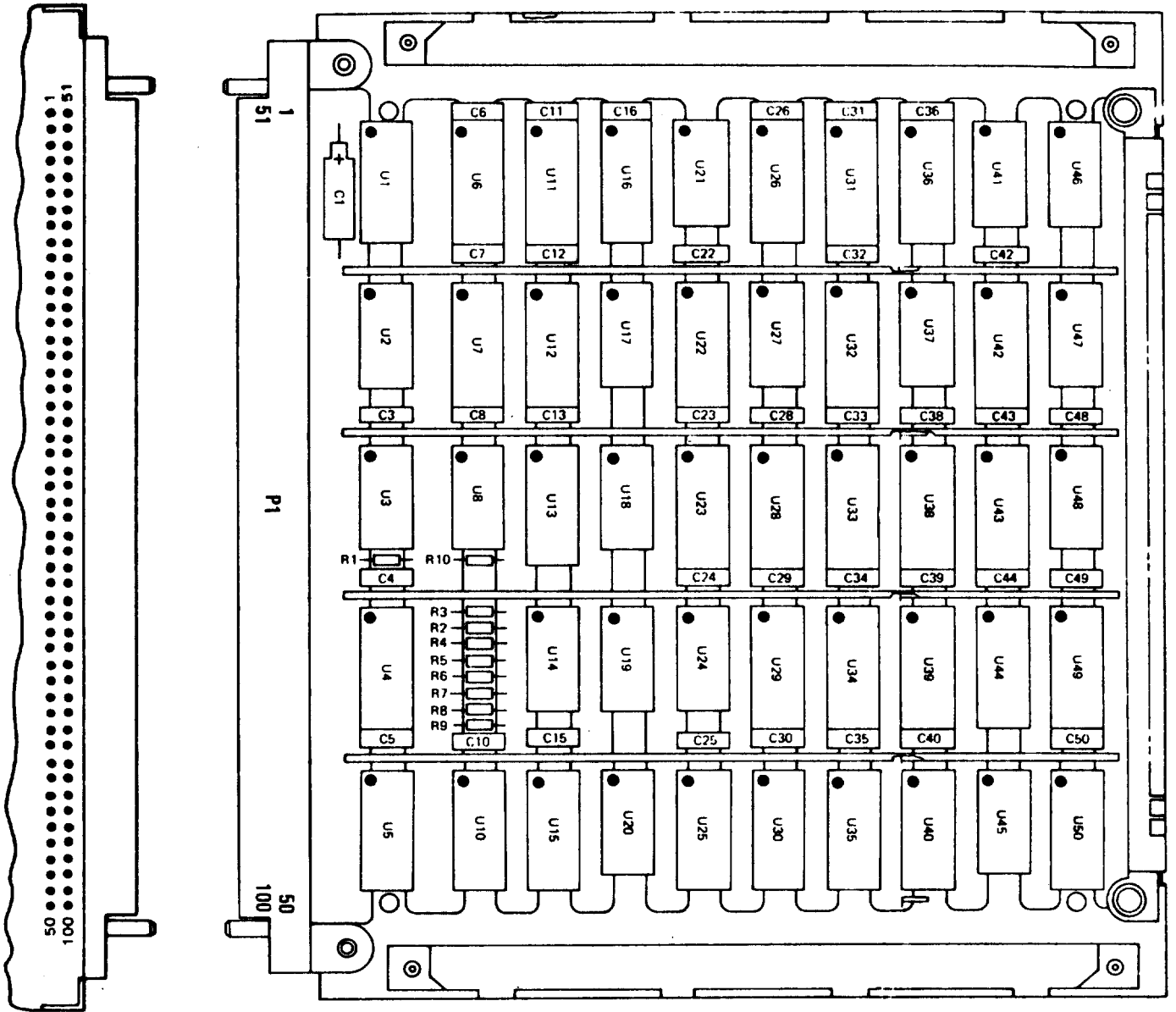
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635979-100 TACFIRE TIMING CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635985-100 TRAILER SYNC CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.

- a. Type **TEST 1635985TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
- b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635985TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
** PIU CAL APPLIED
** BNC CAL APPLIED
** LSVSU CAL APPLIED
** HVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X,XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook Up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook Up UUT.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**

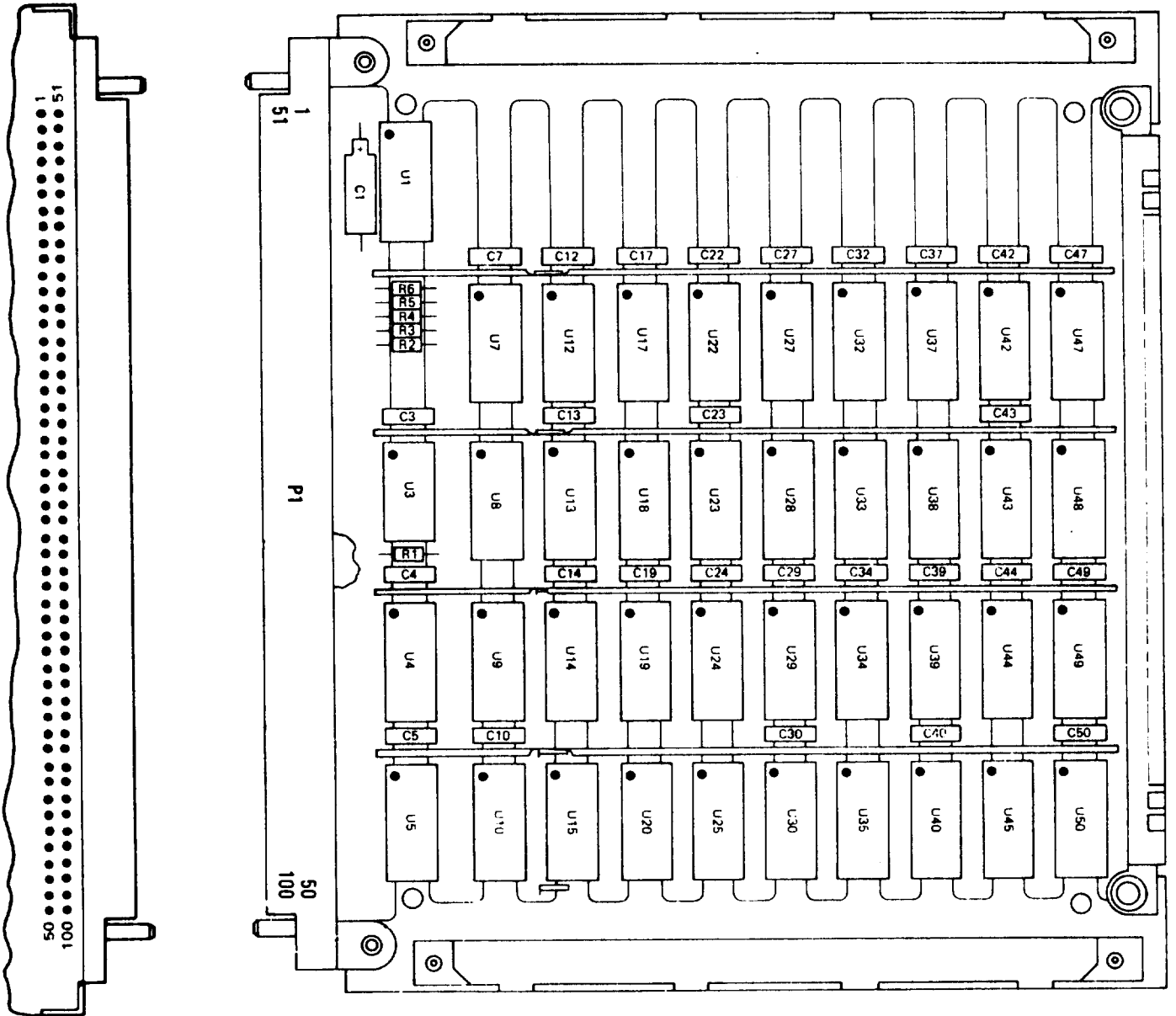


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635985-100 TRAILER SYNC CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635986-100 DATA BUS ENCODER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635986TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LiNE#:      EQUATE XX
      UUT: 1635986TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

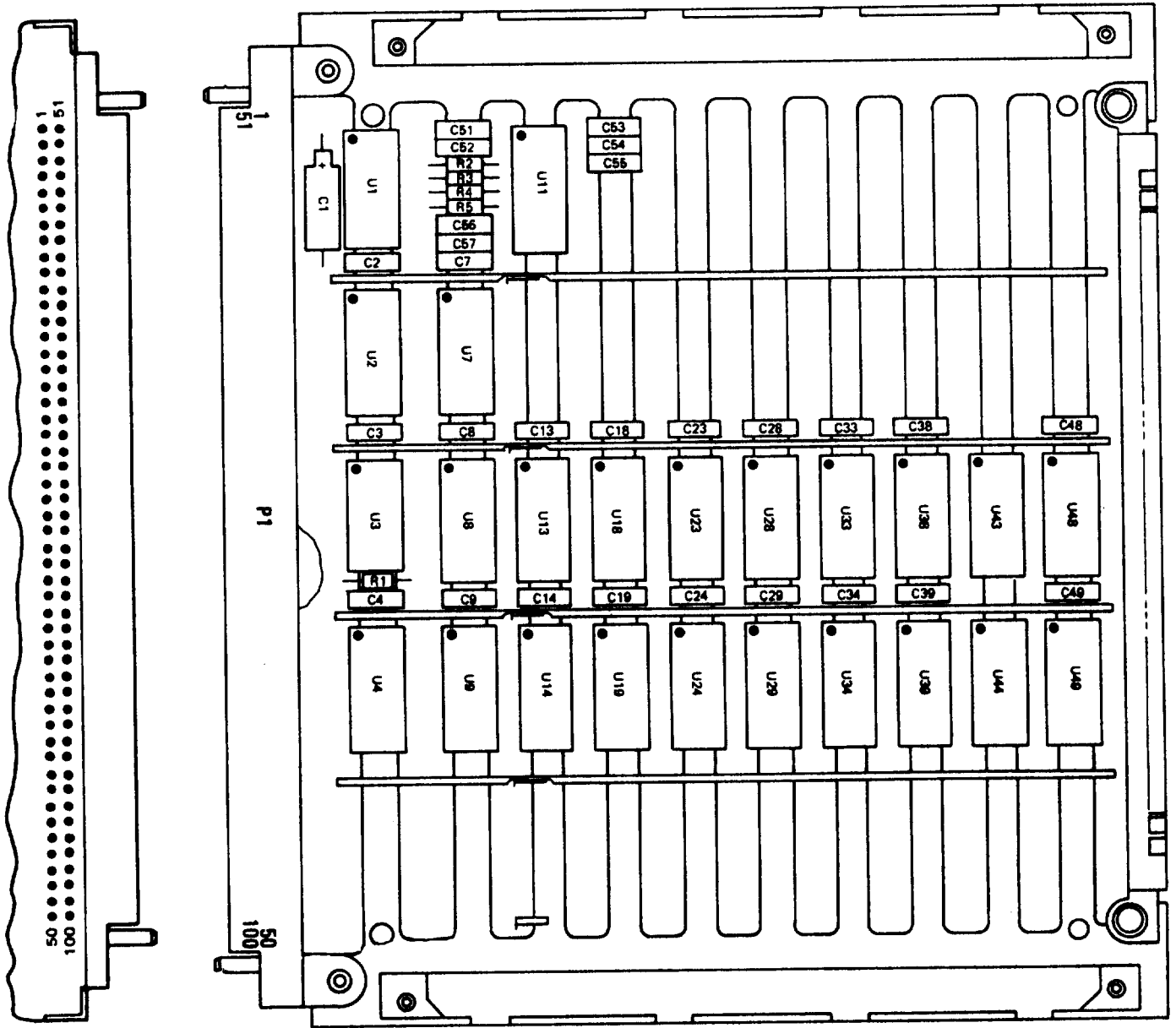
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635986-100 DATA BUS ENCODER CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	48 INPUT 2 INPUT

---

1635987-100 TEMPERATURE CONVERTER CARD TEST AND TROUBLESHOOTING (1 of 2)

---

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635987TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1635987TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES, ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

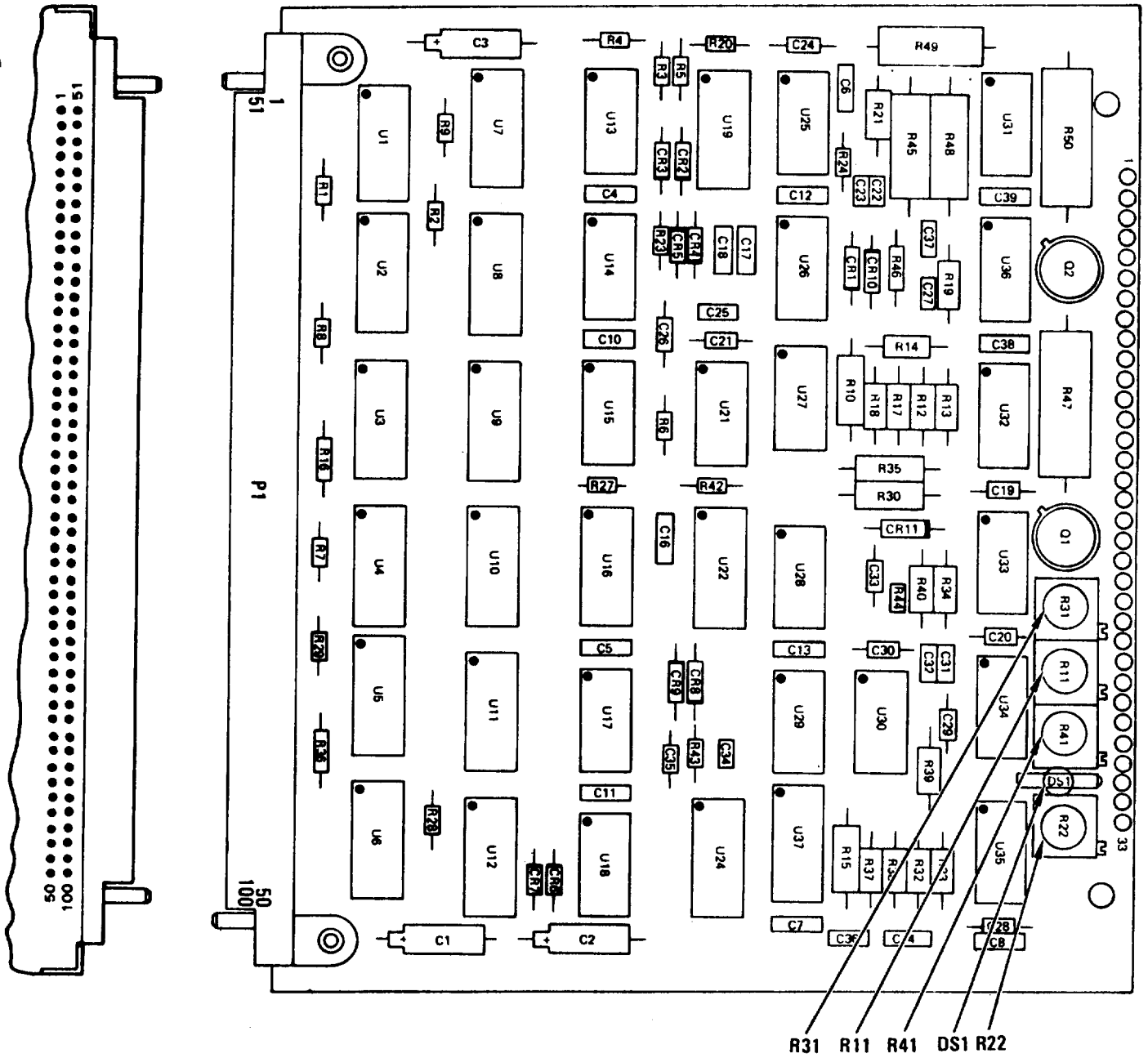
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635987-100 TEMPERATURE CONVERTER CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635988-100 ANTENNA CONTROL CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press RETURN key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1635988TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635988TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
                **PIU CAL APPLIED
                **BNC CAL APPLIED
                **LSVSU CAL APPLIED
                **HSVSU CAL APPLIED
                COMPILED USING COMPILER REVISION: X.XX
                SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook Up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook Up UUT,
  - a. Observe the following message on crt.
 

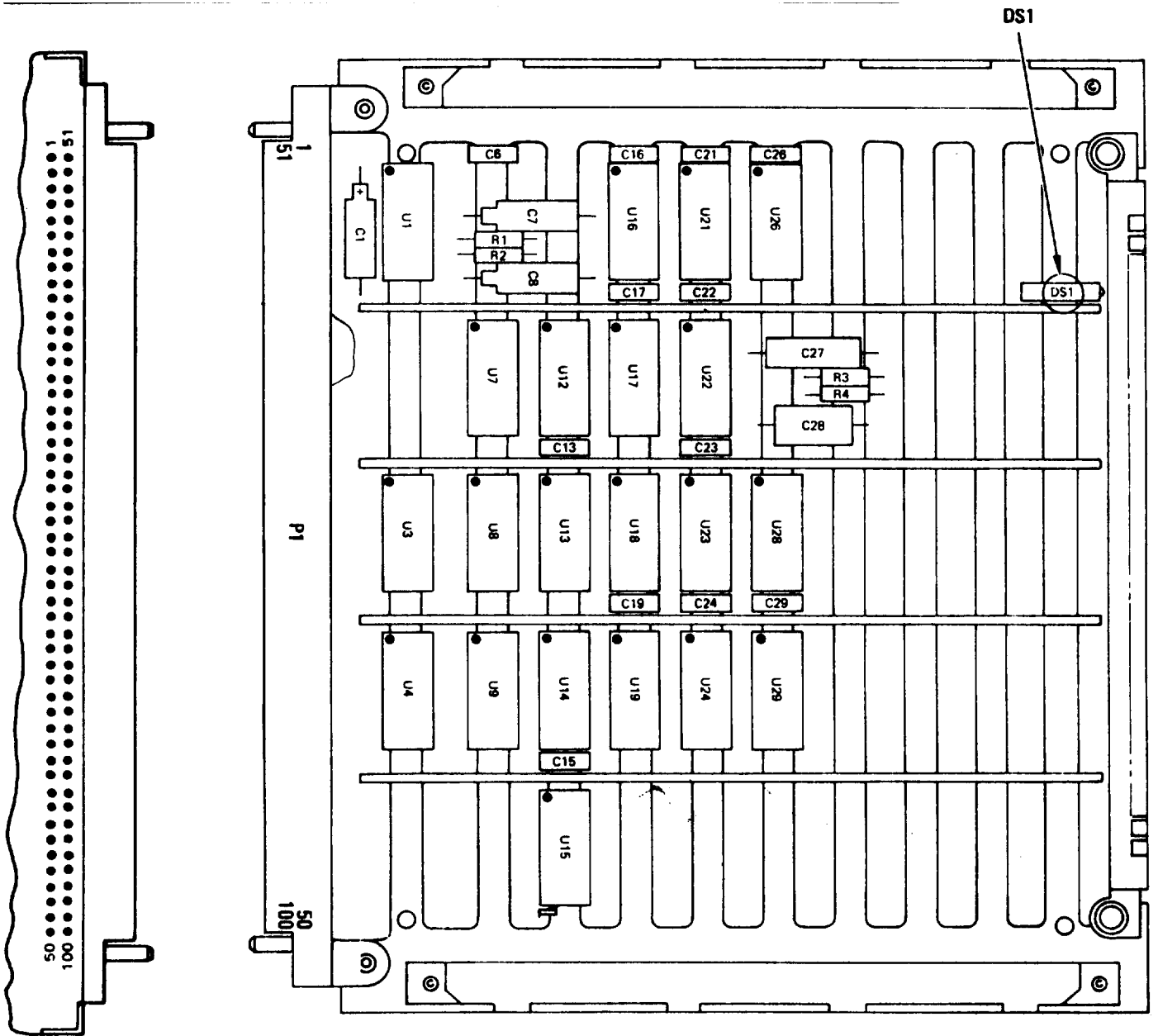
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1635988-100 ANTENNA CONTROL CARD TEST AND TROUBLESHOOTING (2 of 2)



**1635990-100 TRIGGER REFRAME CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1635990TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1635990TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
** PIU CAL APPLIED
** BNC CAL APPLIED
** LSVSU CAL APPLIED
** HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook Up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook Up UUT.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```

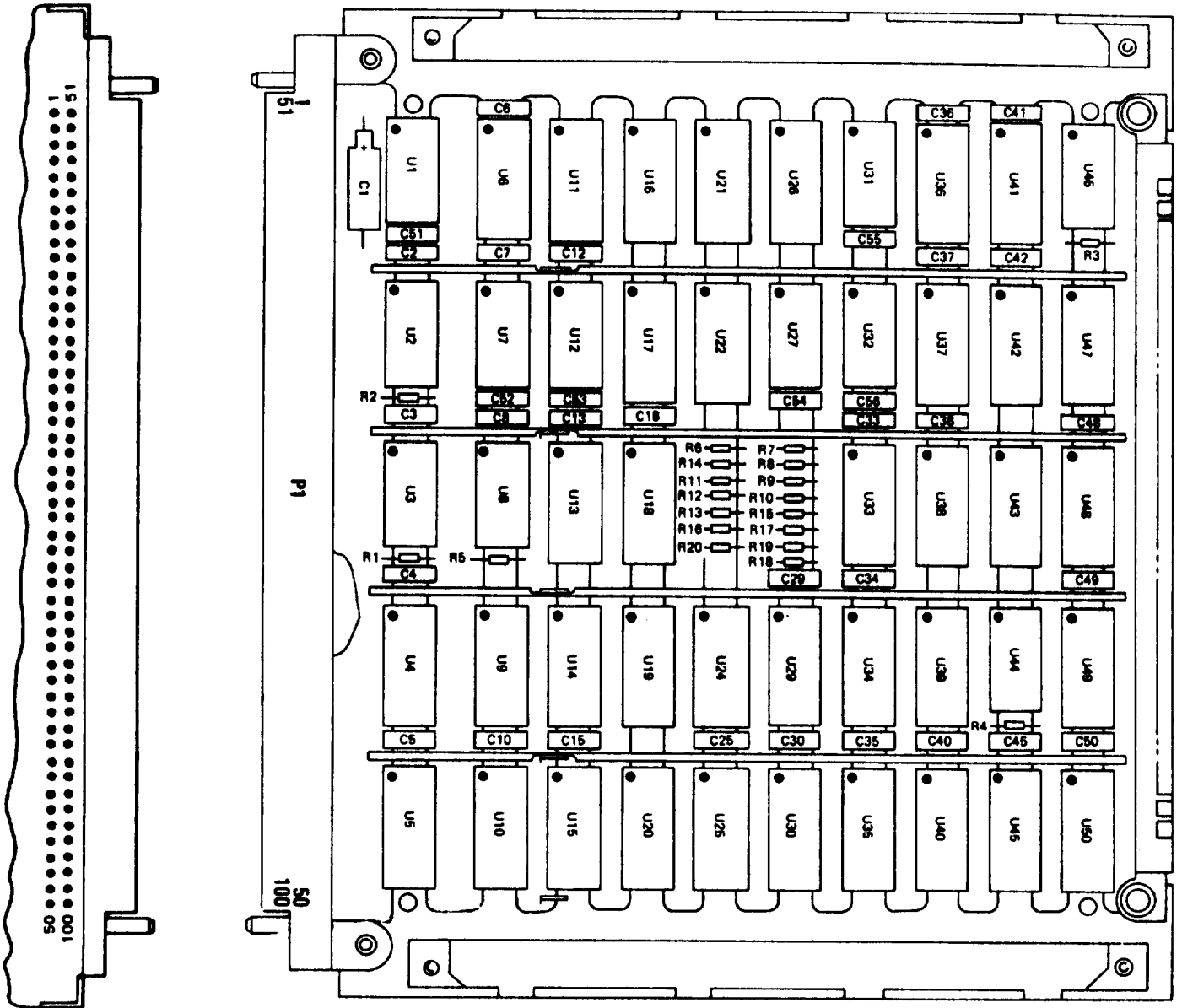


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1635990-100 TRIGGER REFRAME CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC GND W5	2 INPUT 48 INPUT U27P3

**1642175-100 MEMORY FUNCTION INTERFACE CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.

- a. Type **TEST 1642175TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
- b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1642175TXX. IC XX/XX/XX
MEAS VALUE:
-----
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook Up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-383-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook Up UUT.
  - a. Observe the following message on crt.
 

```

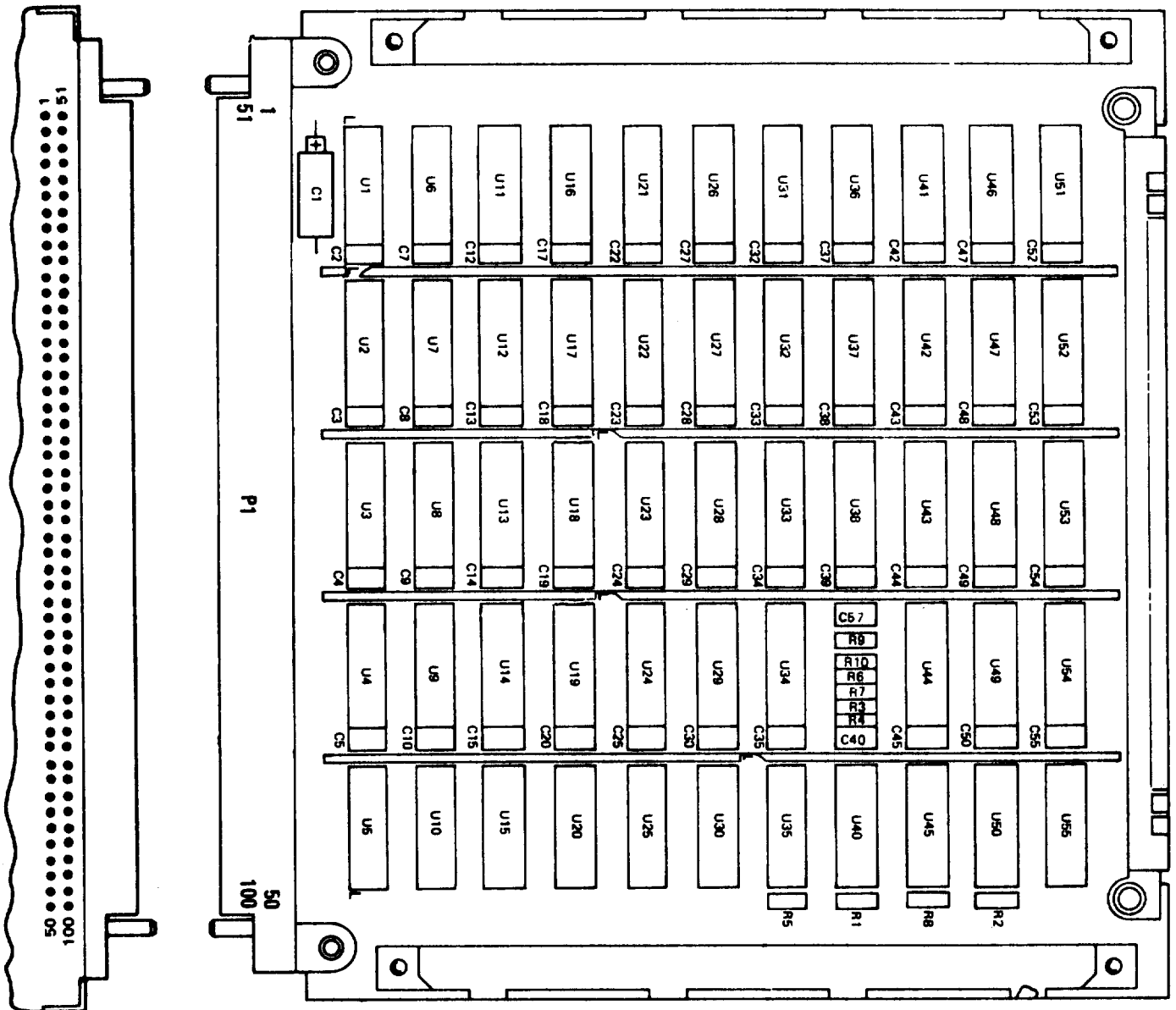
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1642175-100 MEMORY FUNCTION INTERFACE CARD TEST AND TROUBLESHOOTING (2 of 2)



---

**1642176-100 ARITHMETIC REGISTER CARD TEST AND TROUBLESHOOTING (1 of 2)**

---

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1642176TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1642176TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
** PIU CAL APPLIED
** BNC CAL APPLIED
** LSVSU CAL APPLIED
** HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook Up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook Up UUT.
  - a. Observe the following message on crt.
 

```

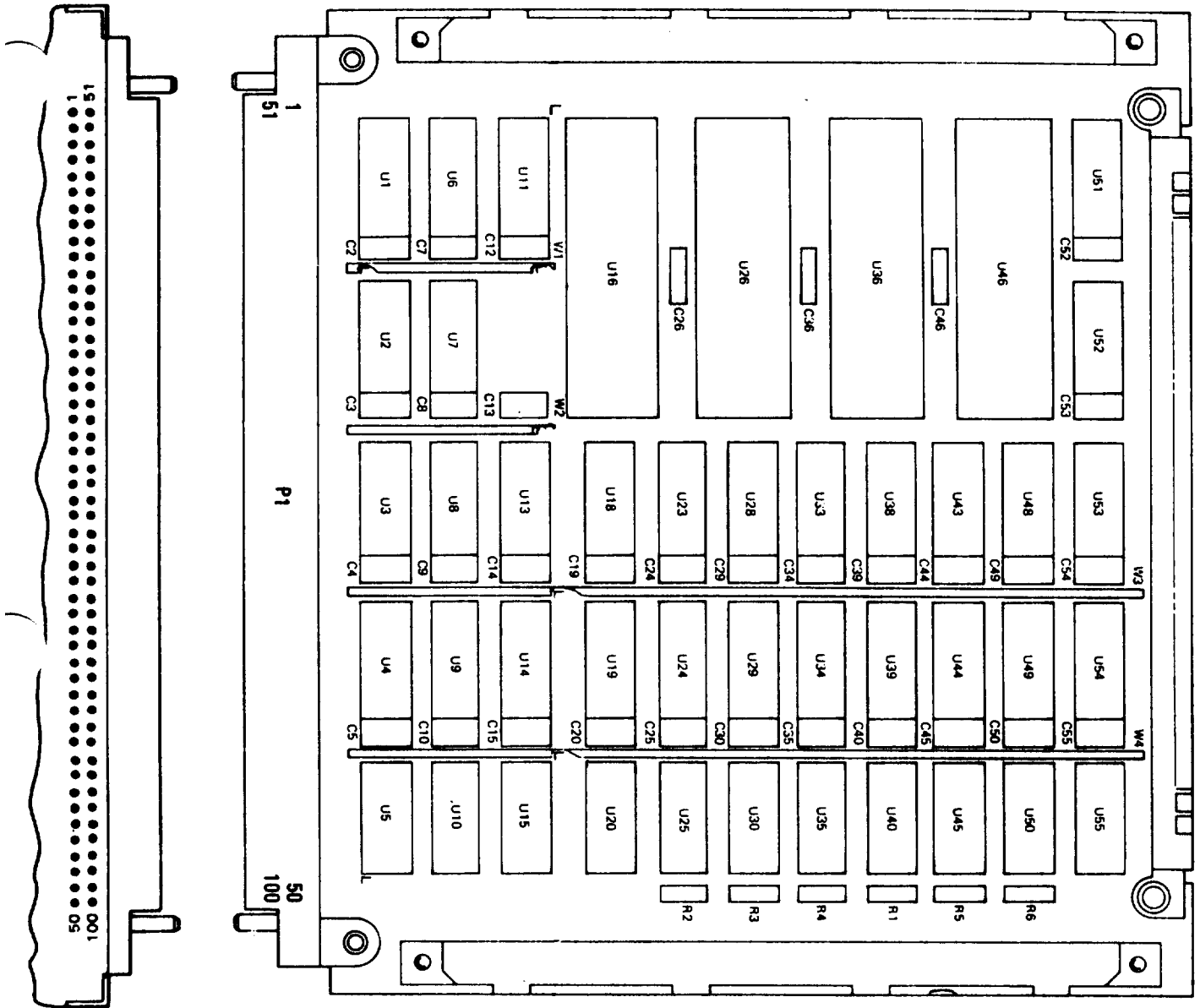
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1642176-100 ARITHMETIC REGISTER CARD TEST AND TROUBLESHOOTING (2 of 2)



**1642177-100 MICROSEQUENCER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.
2. Select test.
  - a. Type **TEST 1642177TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1642177TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
** PIU CAL APPLIED
** BNC CAL APPLIED
** LSVSU CAL APPLIED
** HVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
    
```

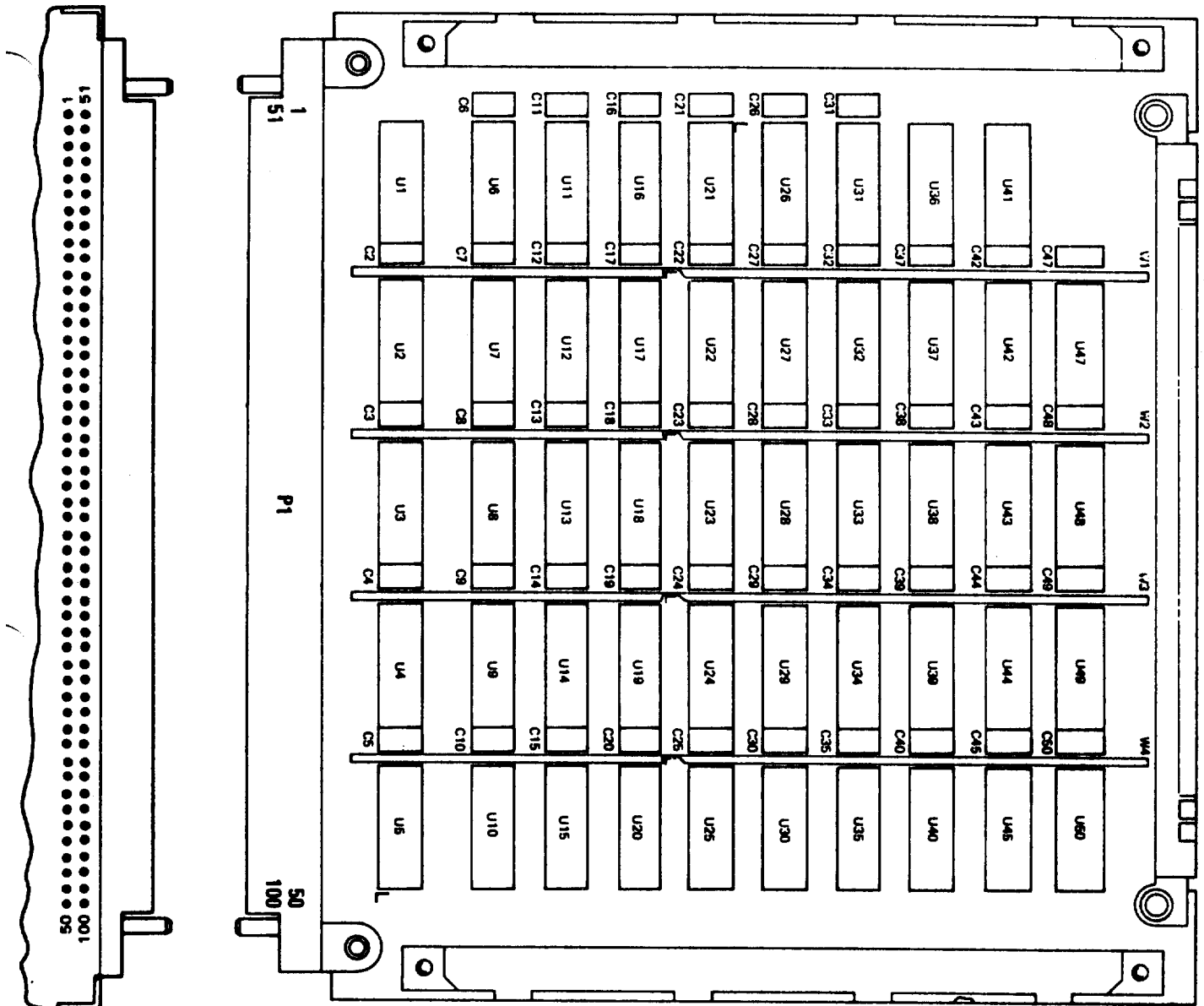
- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook Up ID.
  - a. Observe the following message on crt.  
**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook Up UUT.
  - a. Observe the following message on crt.  
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1642177-100 MICROSEQUENCER CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC GND W6 W16	1 INPUT 48 INPUT U17P5 U39P5

NOTE

BE SURE TO CONNECT PROBE GROUND STRAP TO UUT THERMAL MOUNTING PLATE.

**1642178-100 READ ONLY MEMORY 1 CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1642178TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST- STEP#:      LINE#:      EQUATE XX
      UUT: 1642178TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
** PIU CAL APPLIED
** BNC CAL APPLIED,
** LSVSU CAL APPLIED
** HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.  
**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook Up UUT.
  - a. Observe the following message on crt.  
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**

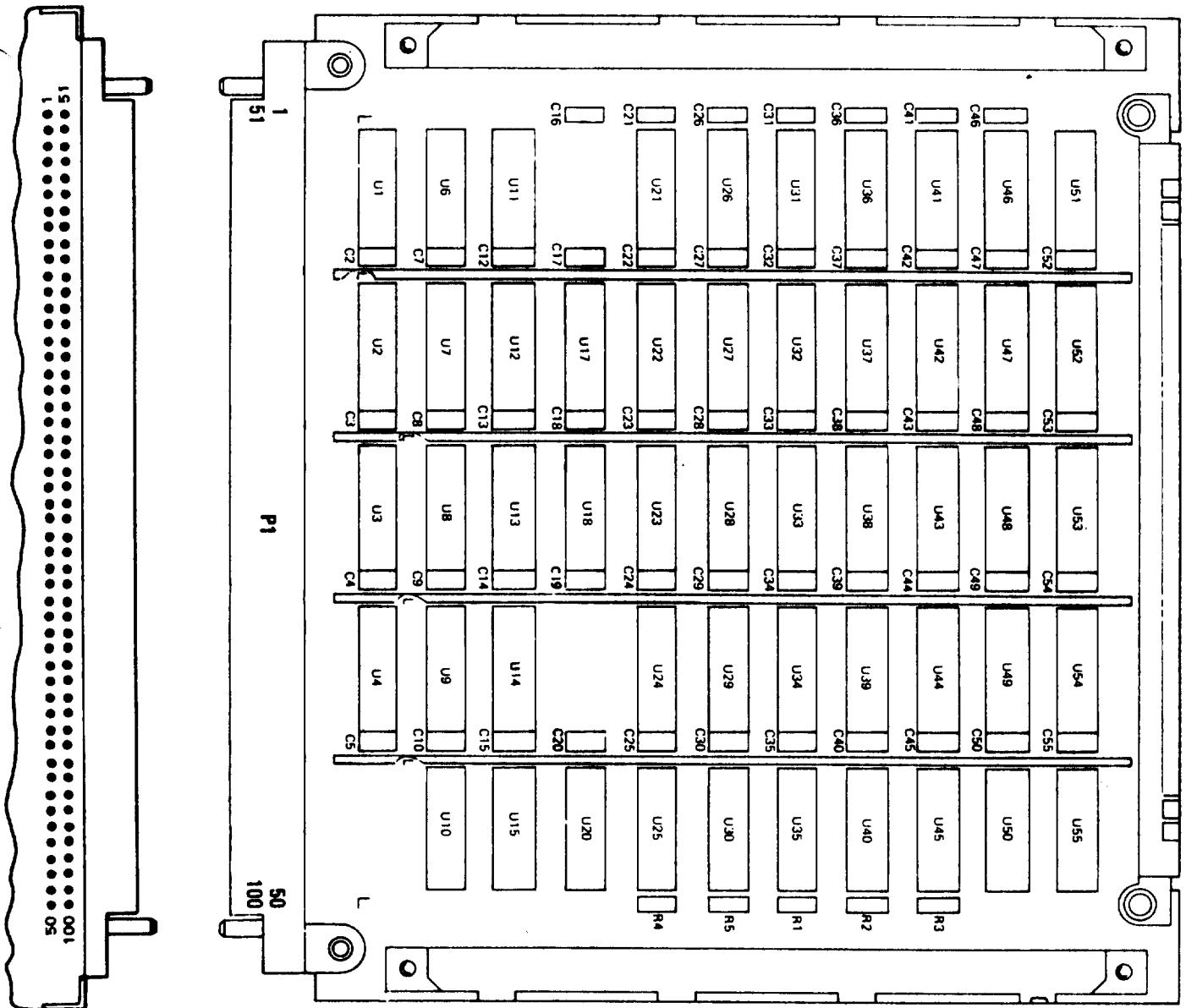


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1642178-100 READ ONLY MEMORY 1 CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC GND	1 INPUT 48 INPUT

NOTE

THIS CARD REQUIRES AN ADDITIONAL TEST CLIP OR POWER CABLE ASSEMBLY DURING TEST. CONSULT TABLE ON PAGE 4-22 TO SELECT APPROPRIATE EQUIPMENT.

**1642179-100 READ ONLY MEMORY 2 CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1642179TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1642179TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

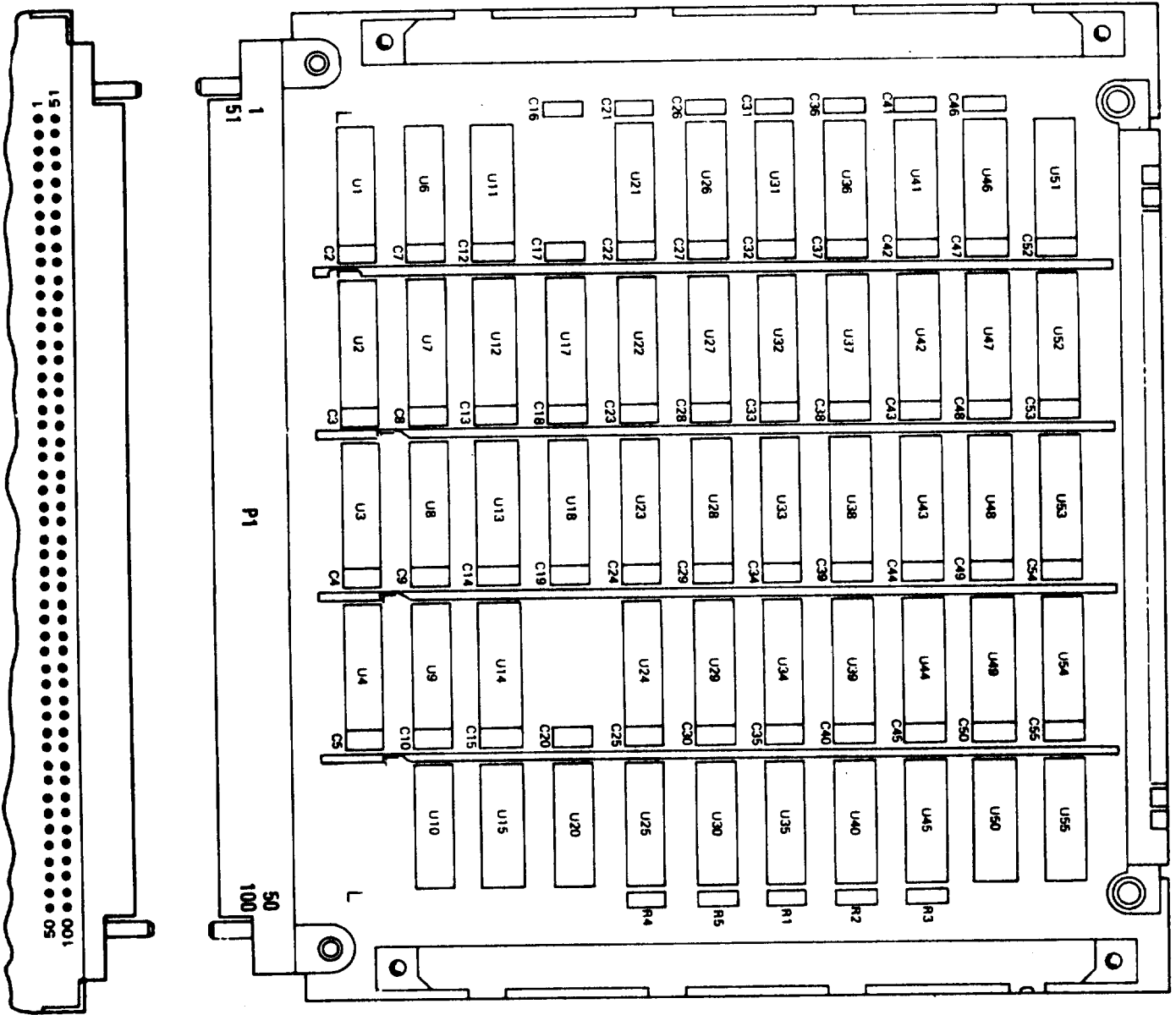
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1642179-100 READ ONLY MEMORY 2 CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC GND	1 INPUT 48 INPUT

NOTE

THIS CARD REQUIRES AN ADDITIONAL TEST CLIP OR POWER CABLE ASSEMBLY DURING TEST. CONSULT TABLE ON PAGE 4-22 TO SELECT APPROPRIATE EQUIPMENT.

**1642180-100 ONLY MEMORY 3 CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1842180TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1642180TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
** PIU CAL APPLIED
** BNC CAL APPLIED
** LSVSU CAL APPLIED
** HVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number end manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

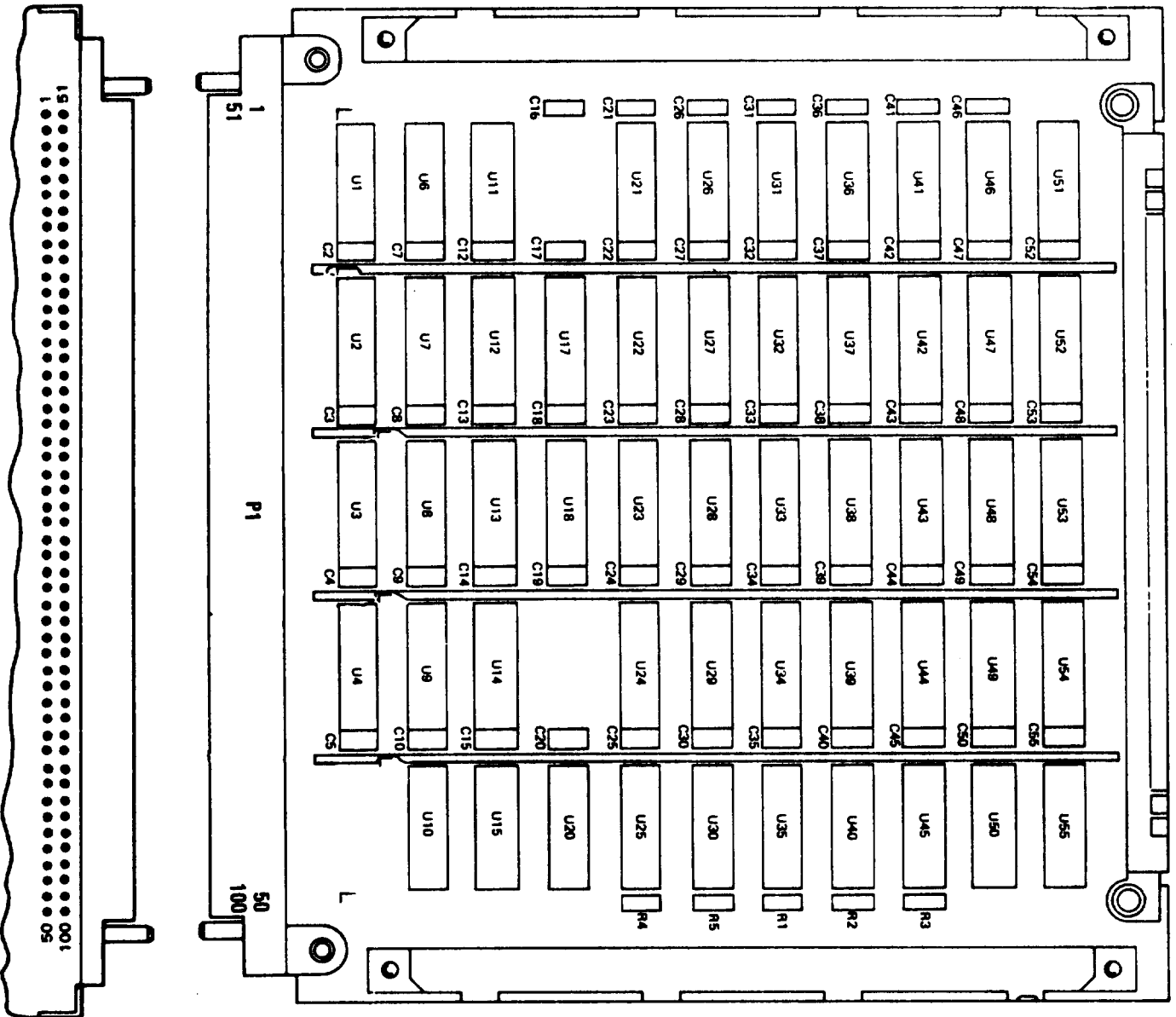
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-303-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1642180-100 READ ONLY MEMORY 3 CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC	1 INPUT
GND	48 INPUT

NOTE

THIS CARD REQUIRES AN ADDITIONAL TEST CLIP OR POWER CABLE ASSEMBLY DURING TEST. CONSULT TABLE ON PAGE 4-22 TO SELECT APPROPRIATE EQUIPMENT.

**1642181-100 EXTERNAL REGISTER CONTROL CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1642181TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1642181TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

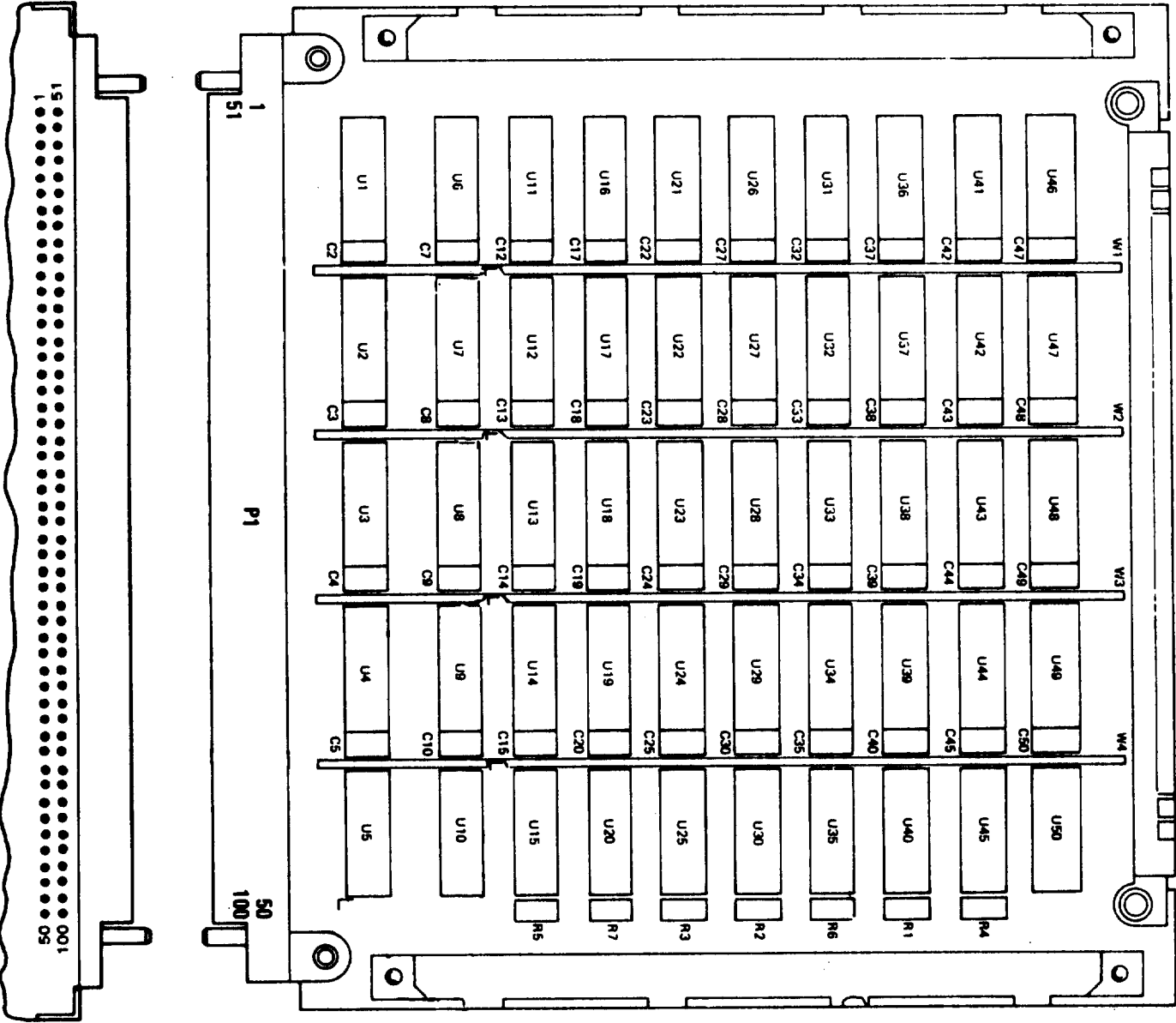
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1642181-100 EXTERNAL REGISTER CONTROL CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC GND	1 INPUT 48 INPUT

**1642183-100 EXTERNAL MULTIPLEX REGISTER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1642183TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1642183TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```

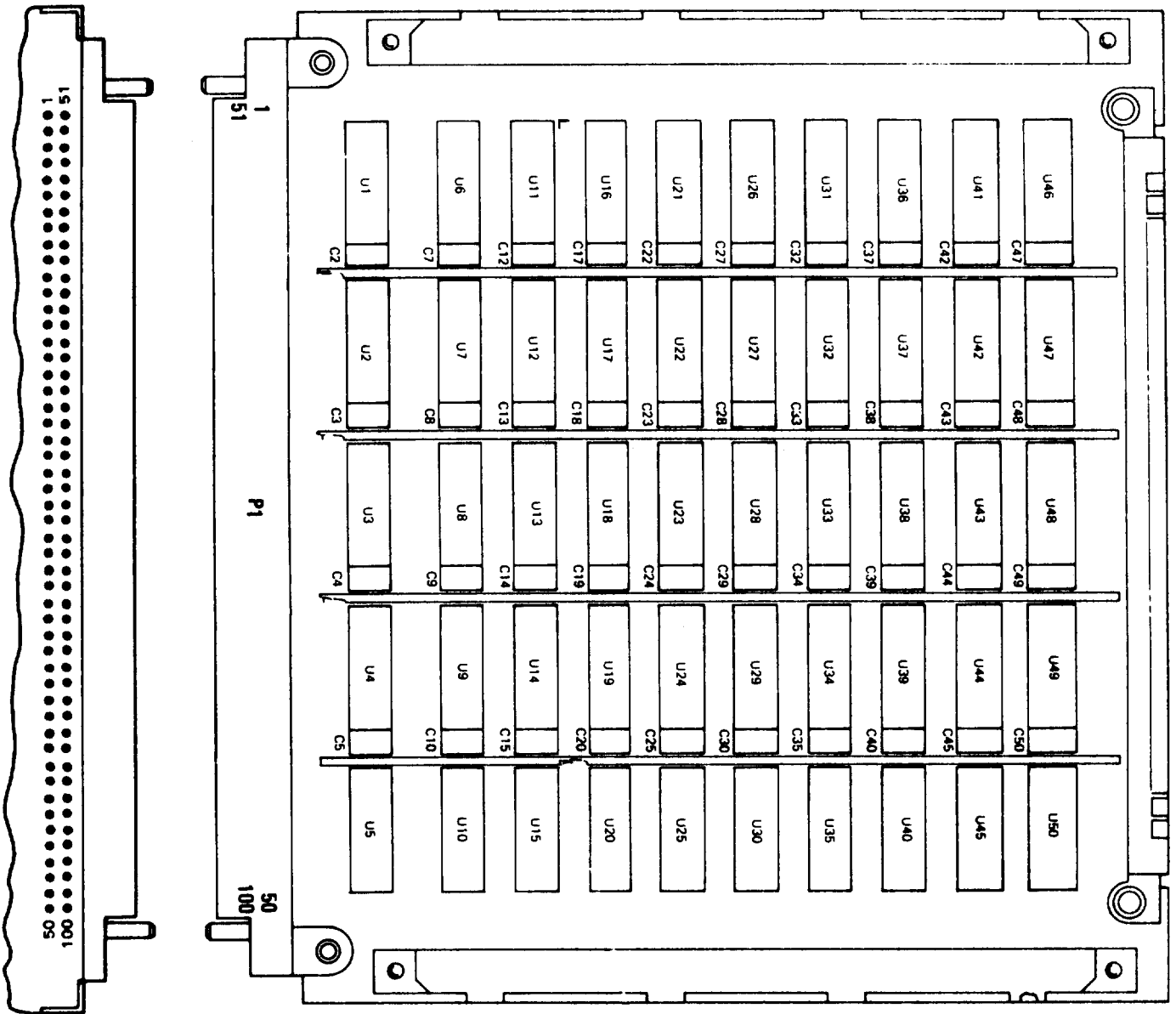


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1642183-100 EXTERNAL MULTIPLEX REGISTER CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC GND	1 INPUT 48 INPUT

**1642184-100 EXTERNAL CONTROL CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1642184TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1642184TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
      **PIU CAL APPLIED
      **BNC CAL APPLIED
      **LSVSU CAL APPLIED
      **HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

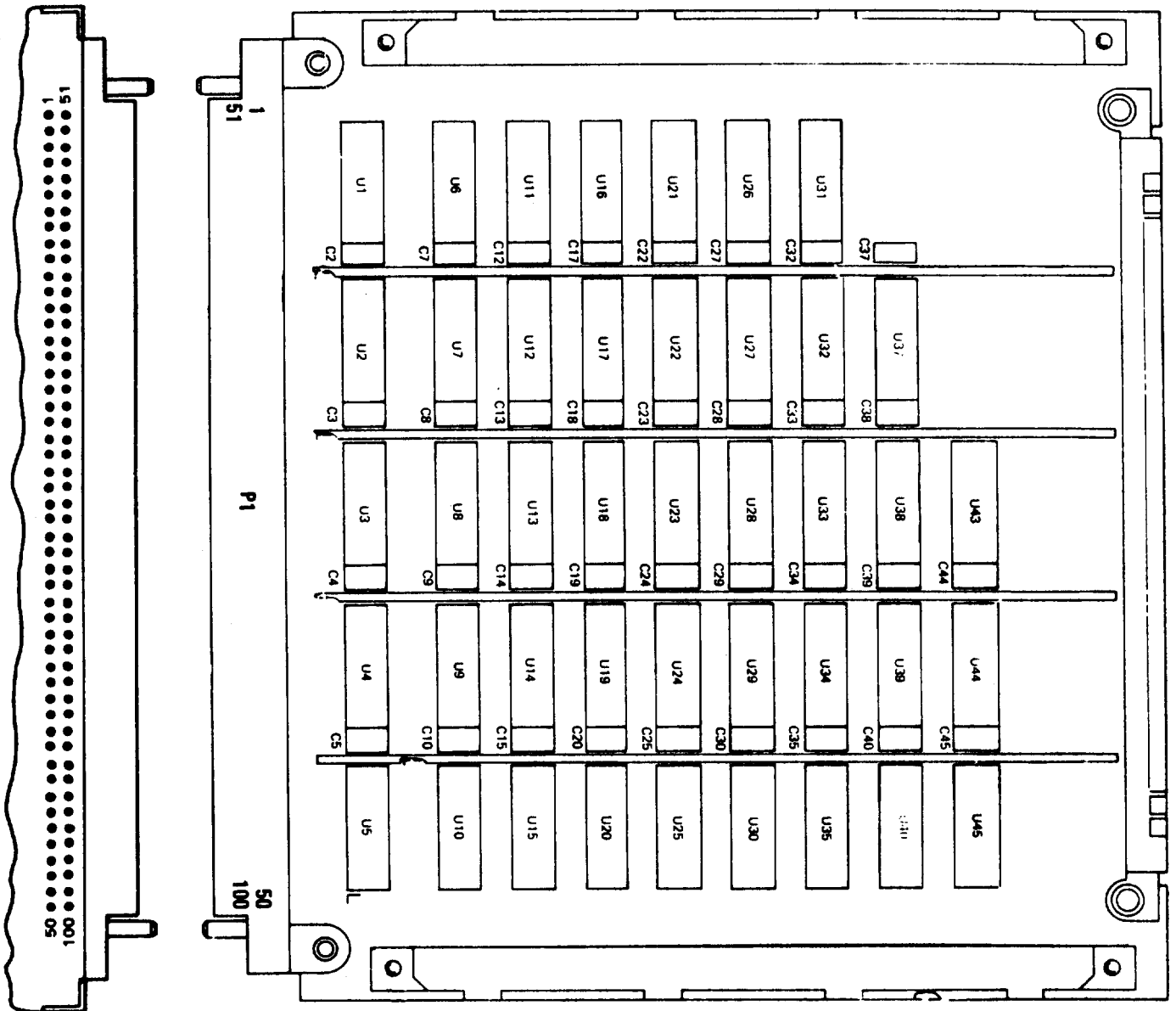
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1642184-100 EXTERNAL CONTROL CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC GND	1 INPUT 48 INPUT

**1642185-100 PROGRAM STATUS INSTRUCTION DECORER  
CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.
2. Select test.
  - a. Type **TEST 1642185TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1642185TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

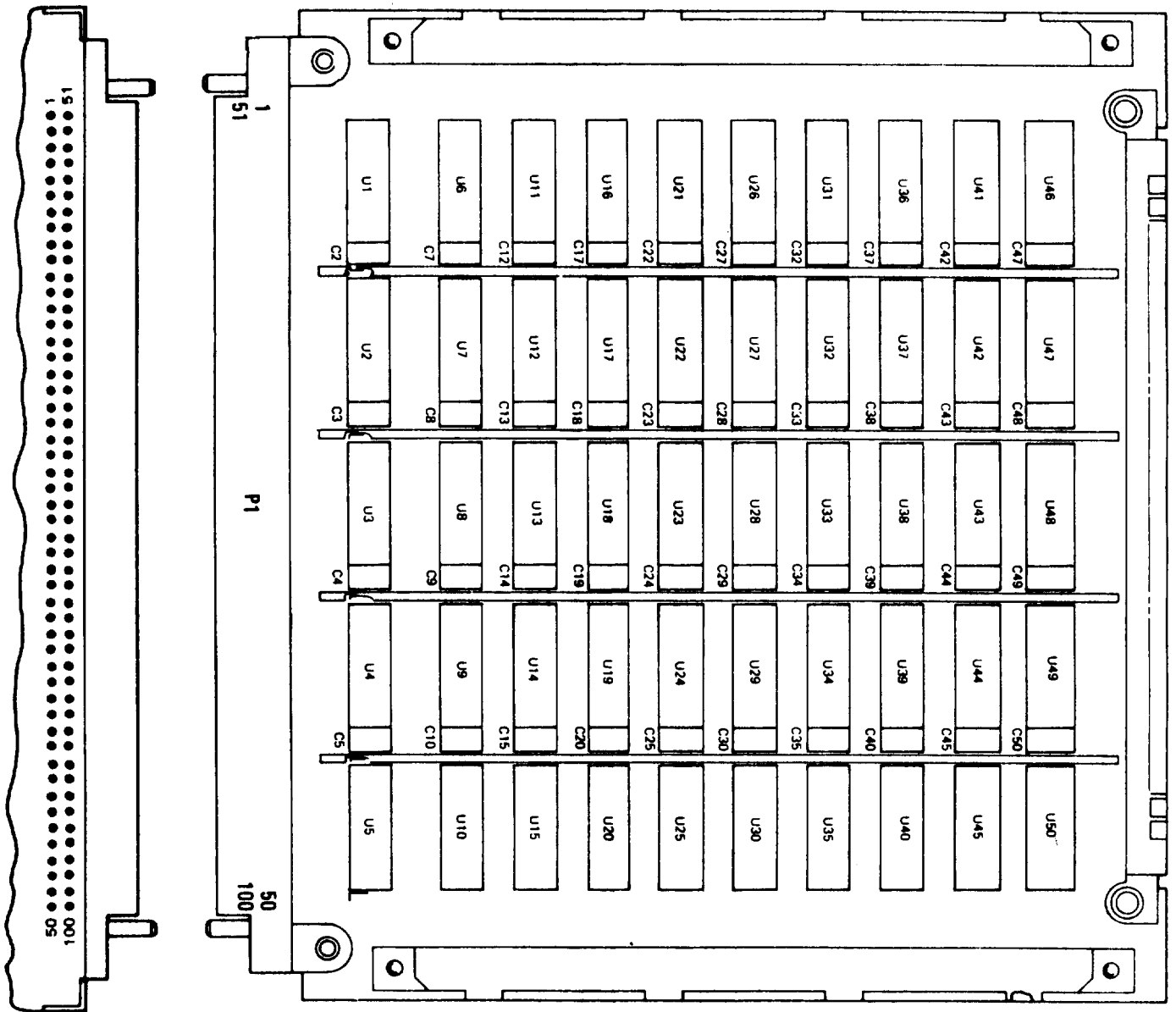
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1642185-100 PROGRAM STATUS INSTRUCTION DECODER  
 CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC	1 INPUT
GND	48 INPUT
W1	U6P9
W2	U6P7
W3	U6P15
W4	U6P14
W5	U6P2
W6	U6P1

NOTE

THIS CARD REQUIRES AN ADDITIONAL TEST CLIP OR POWER CABLE ASSEMBLY DURING TEST. CONSULT TABLE ON PAGE 4-22 TO SELECT APPROPRIATE EQUIPMENT.

**1642186-100 FAST MULTIPLIER CORDIC CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1642186TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:    LINE#:                EQUATE XX
                UUT: 1642186TXX. IC XX/XX/XX
MEAS VALUE:
-----
- RUN TIME SYSTEM REV X.XX -
-----
** PIU CAL APPLIED
** BNC CAL APPLIED
** LSVSU CAL APPLIED
** HVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

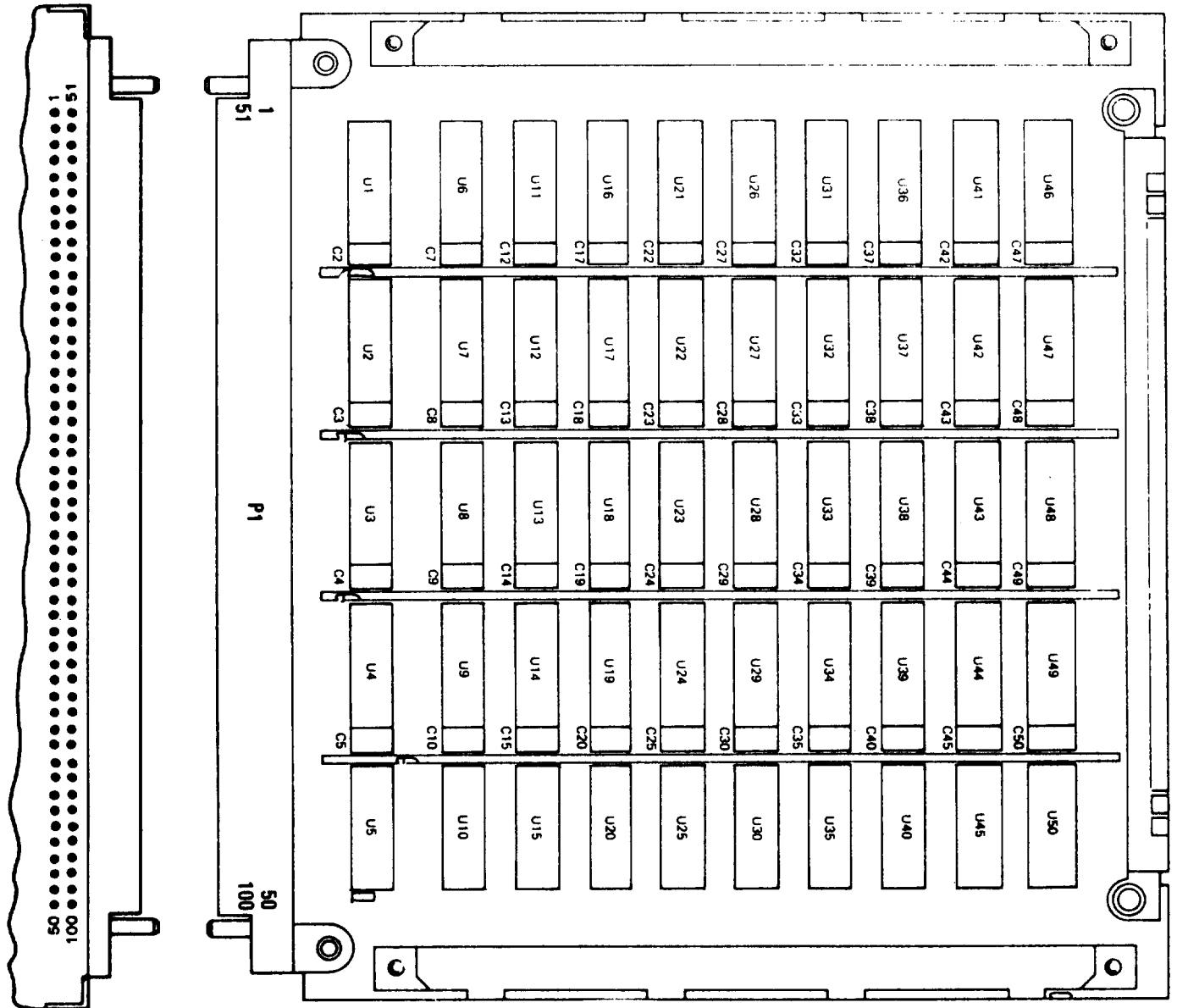
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1642186-100 FAST MULTIPLIER CORDIC CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC GND	1 INPUT 48 INPUT

**1642187-100 I/O COMMON DATA PATH CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1642187TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:    LINE#:           EQUATE XX
                UUT: 1642187TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**

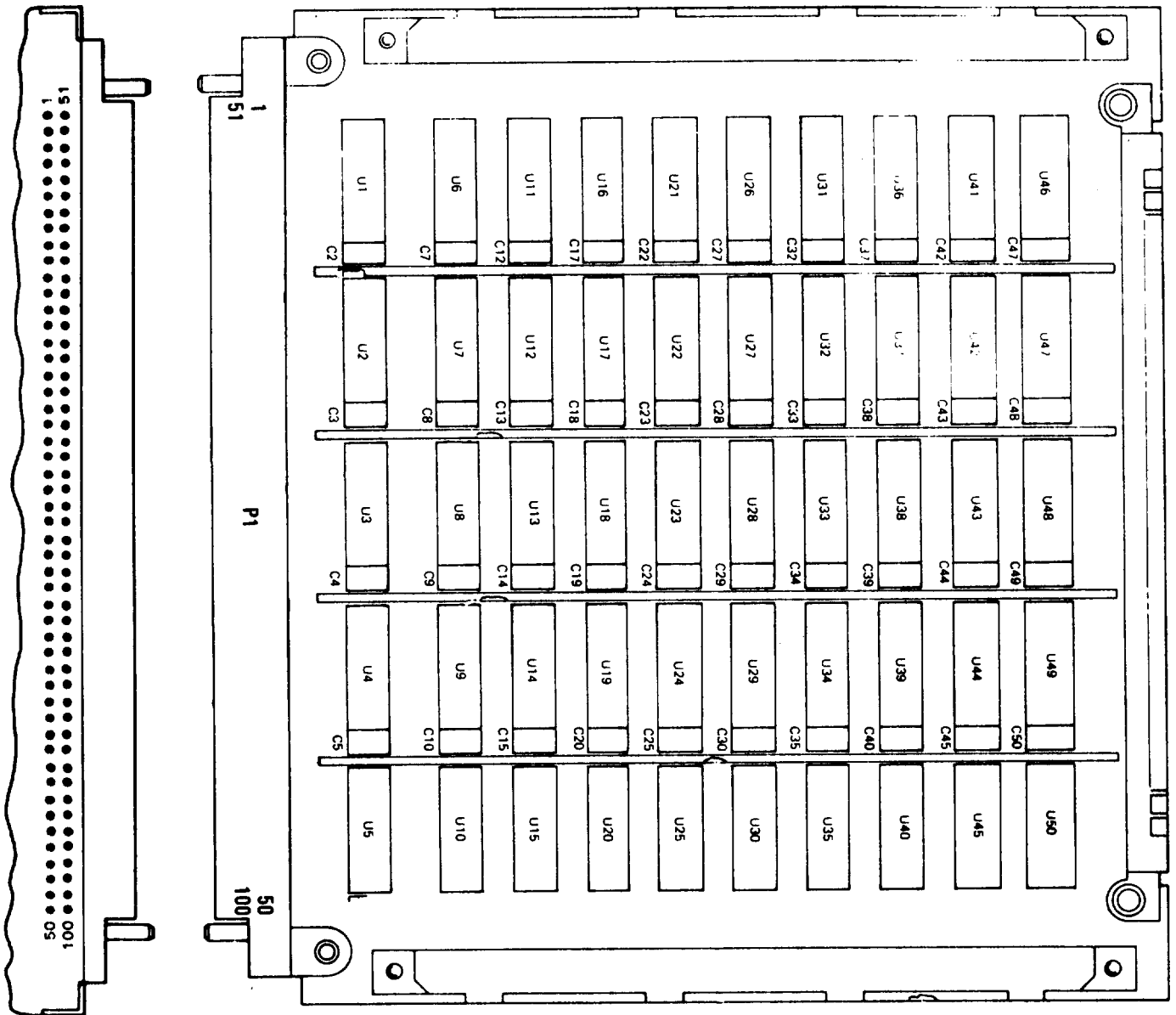


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1642187-100 I/O COMMON DATA PATH CARD TEST AND TROUBLESHOOTING (2 of 2)



**1642188-100 I/O COMMON CONTROL CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1642188TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1642188TXX. IC XX/XX/XX
MEAS VALUE:
-----
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

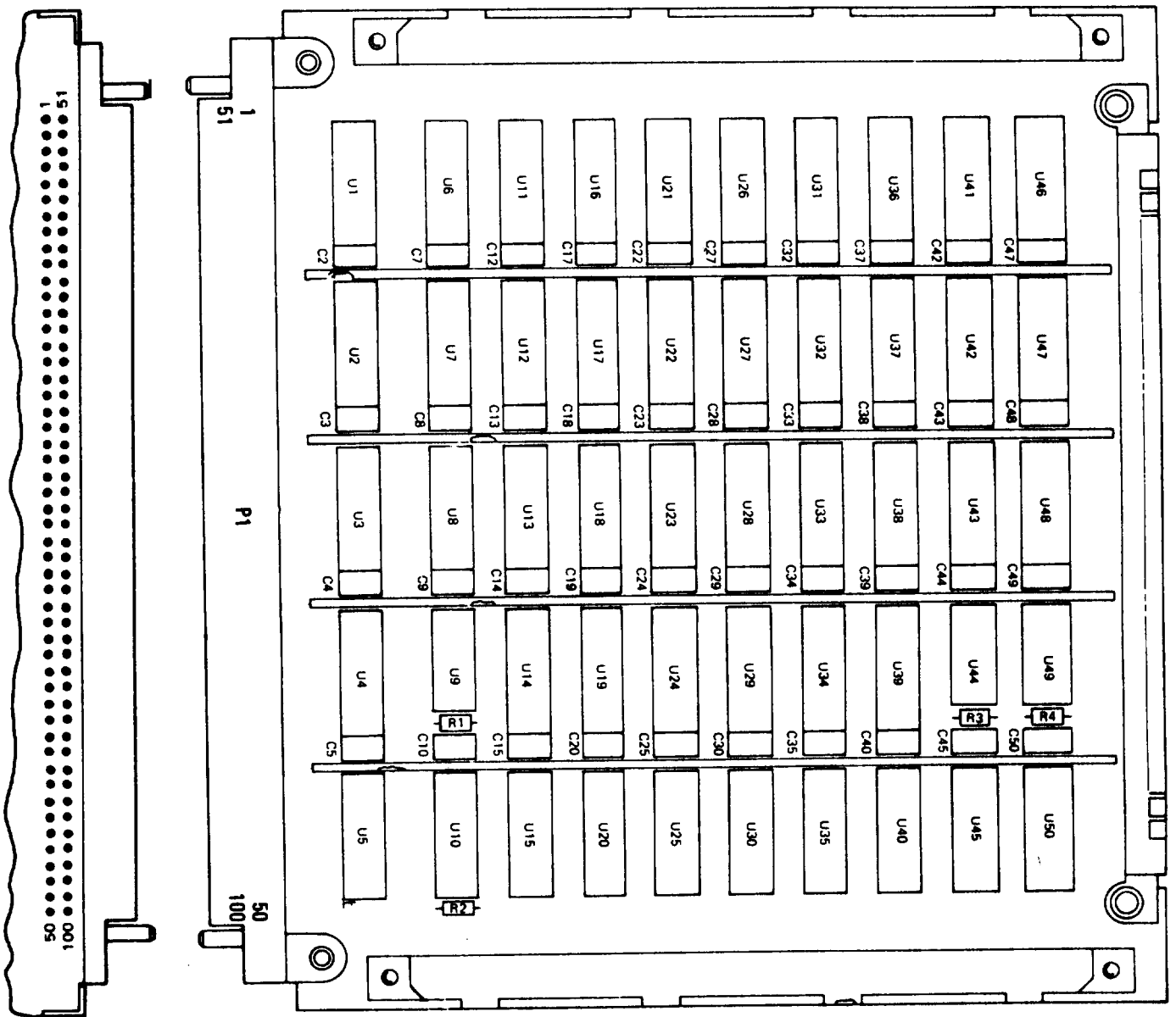
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1642188-100 I/O COMMON CONTROL CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC	1 INPUT
GND	48 INPUT
W4	U10P8
CLR131	U13P15
CLR132	U13P14

**1642189-100 DUAL CHANNEL CONTROL CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN USM-410(V) tester.
  - a. Perform AN USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per 11-6625-2773-12-1,
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 1642189TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:    LINE#:           EQUATE XX
                UUT: 1642189TXX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

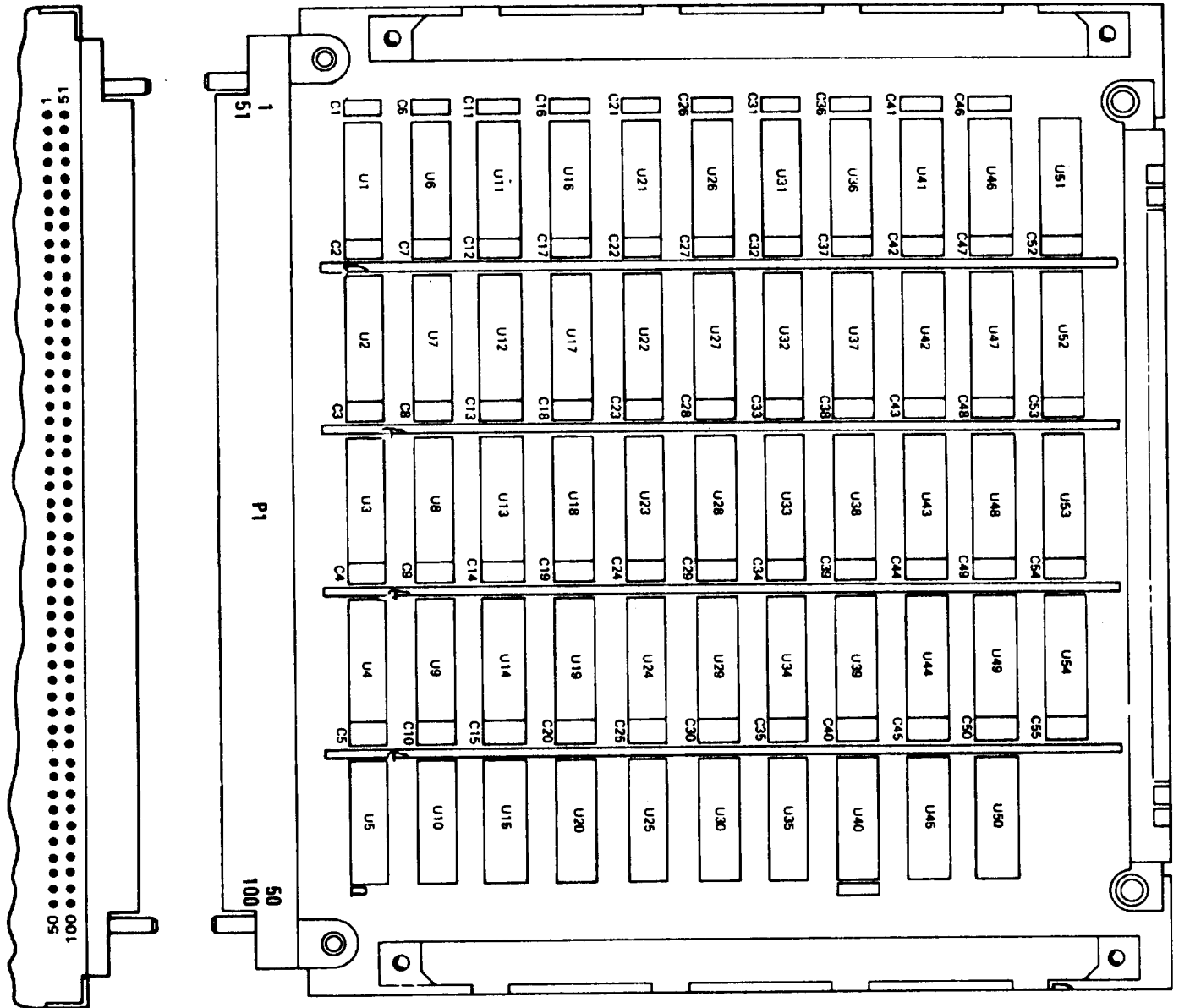
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1642189-100 DUAL CHANNEL CONTROL CARD TEST AND TROUBLESHOOTING (2 of 2)



**1642190-100 DIAGNOSTIC PANEL INTERFACE CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.

- a. Type **TEST 1642190TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
- b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 1642190TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

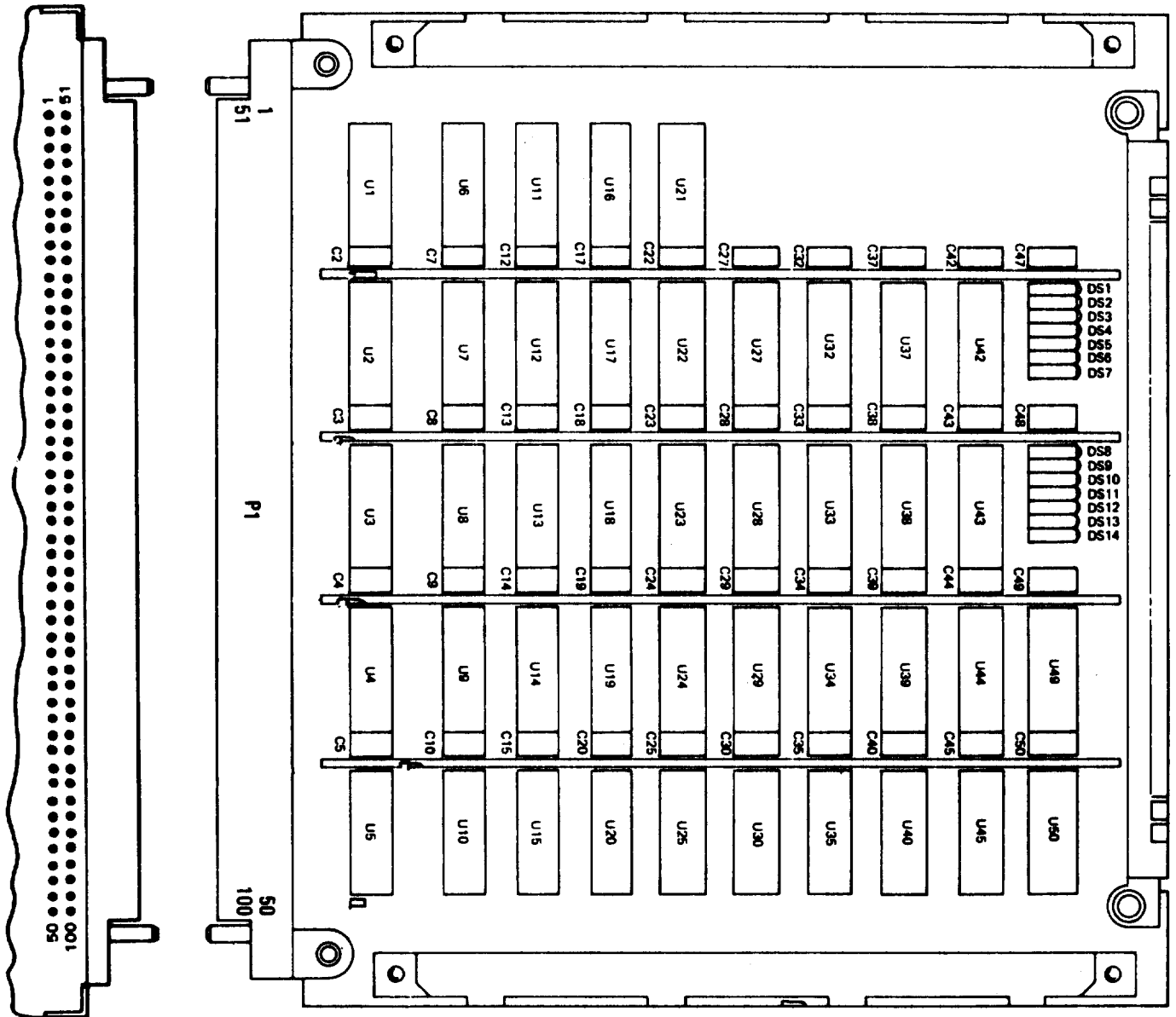
- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.  
**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.  
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

1642190-100 DIAGNOSTIC PANEL INTERFACE CARD TEST AND TROUBLESHOOTING (2 of 2)



NOTE

THIS CARD REQUIRES AN ADDITIONAL TEST CLIP OR POWER CABLE ASSEMBLY DURING TFST. CONSULT TABLE ON PAGE 4-22 TO SELECT APPROPRIATE EQUIPMENT.

**1650873-100 EXTERNAL MULTIPLEX REGISTER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 1650873 TXX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last two digits of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 1650873TXX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40,
          
```

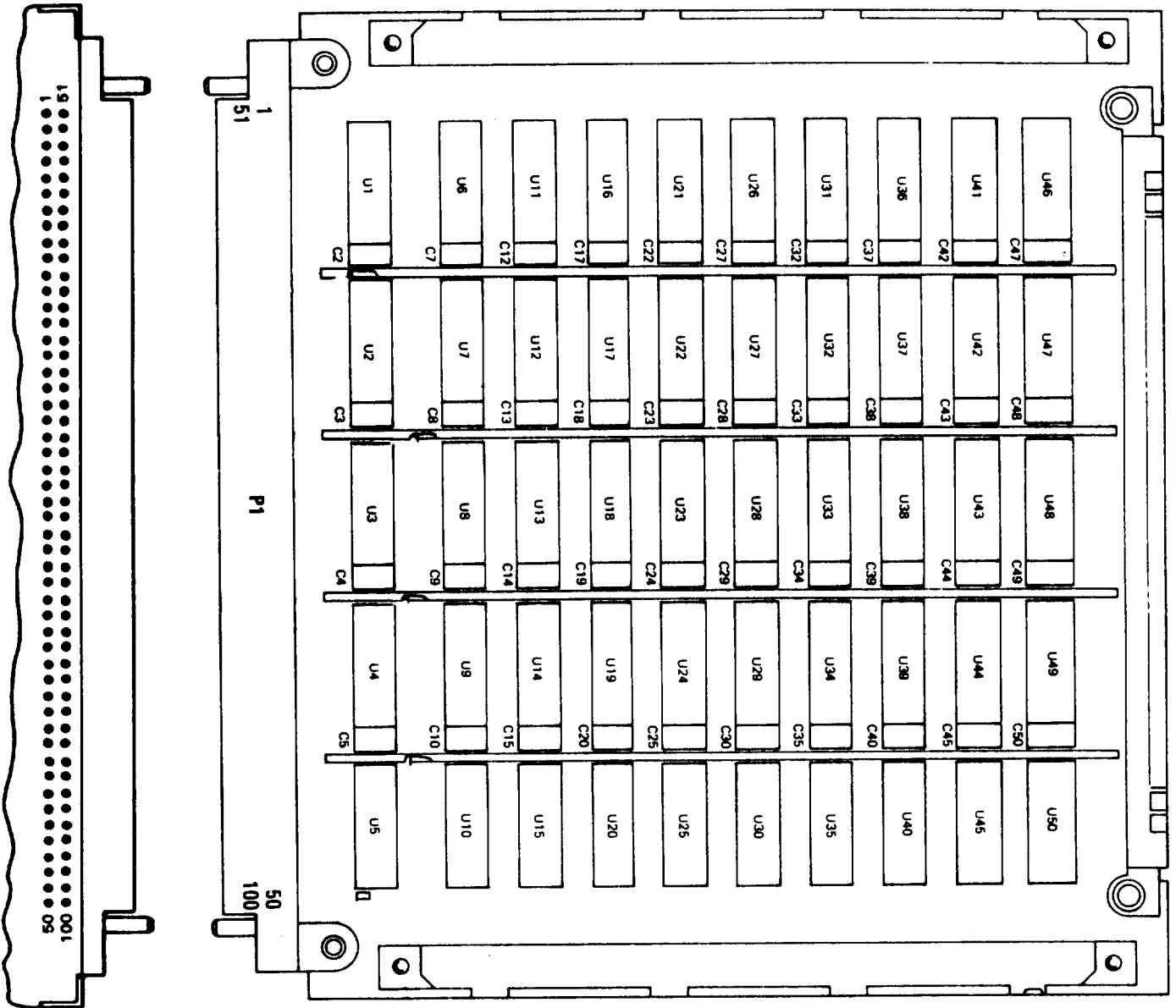


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



1650873-100 EXTERNAL MULTIPLEX REGISTER CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC GND	1 INPUT 48 INPUT

**C5000511 PHASE SHIFT COMPUTER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 5000511TX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last digit of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:    LINE#:                EQUATE XX
                UUT: 5000511TX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

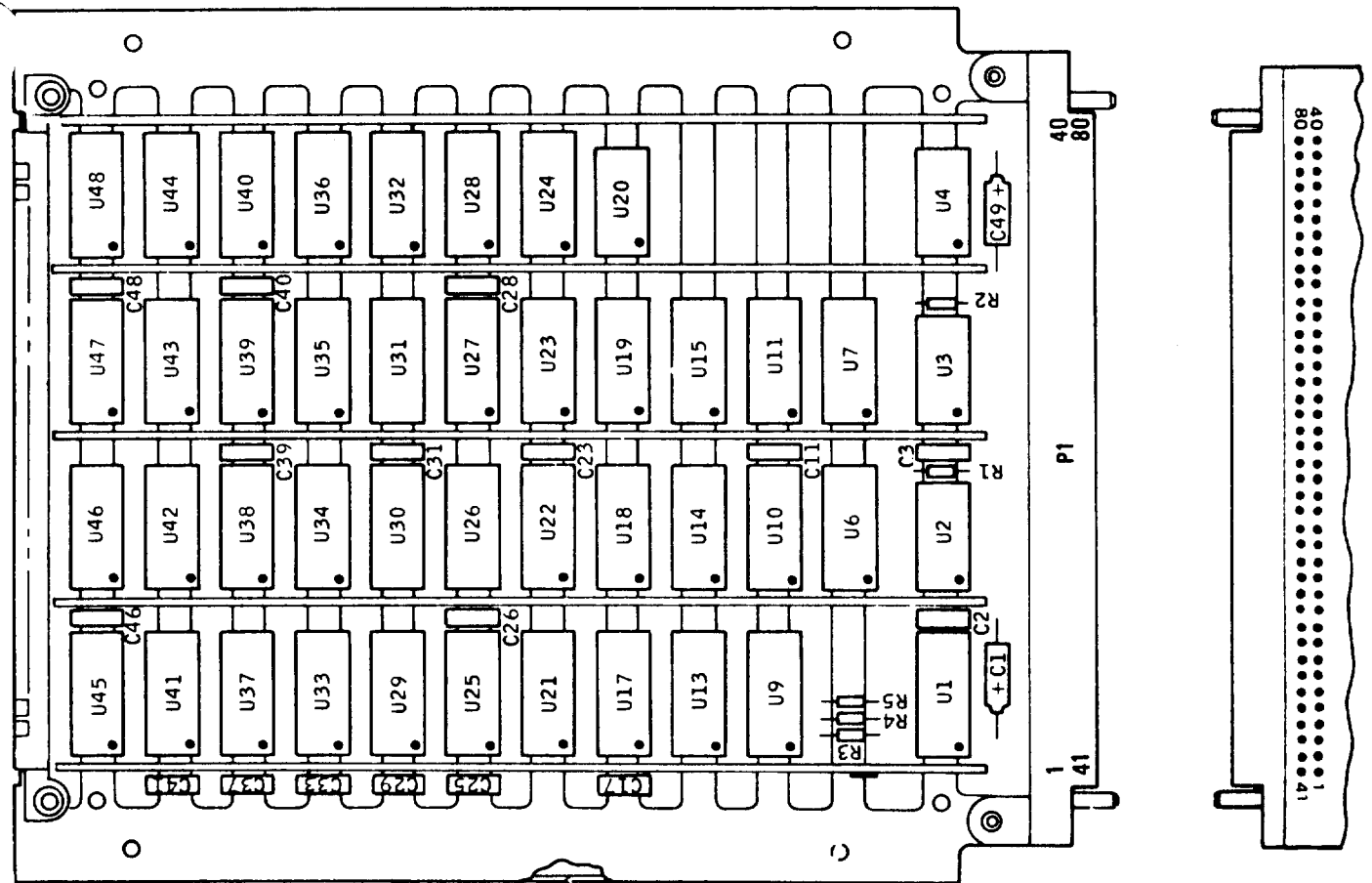
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

C5000511 PHASE SHIFT COMPUTER CARD TEST AND TROUBLESHOOTING (2 Of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC U7Z43	40 INPUT 2 INPUT U7P1

**SM-D-803125 DATA BUS ENCODER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.

2. Select test.
  - a. Type **TEST 803125TX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last digit of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 803125TX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
                **PIU CAL APPLIED
                **BNC CAL APPLIED
                **ISVSU CAL APPLIED
                **HSVSU CAL APPLIED
                COMPILED USING COMPILER REVISION: X.XX
                SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED, SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

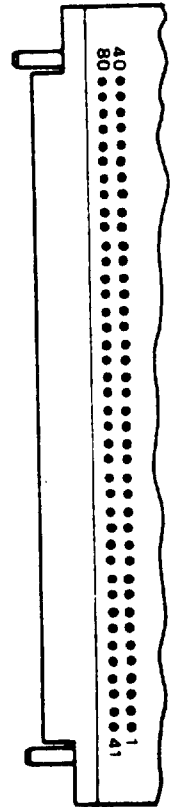
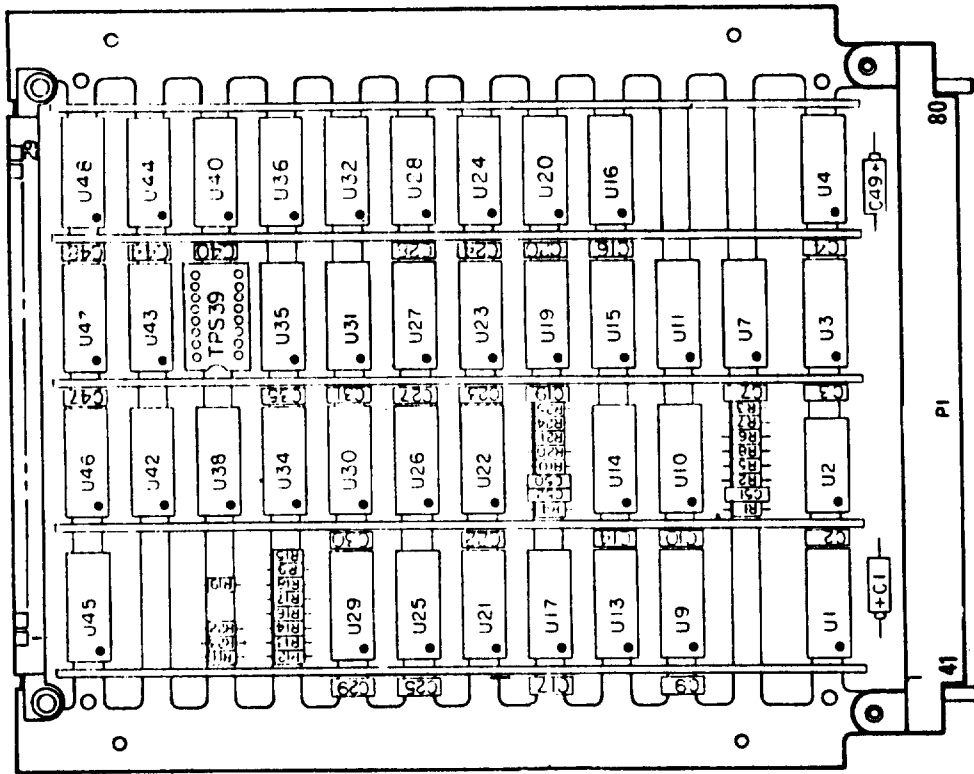
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

SM-D-803125 DATA BUS ENCODER CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
GND VCC	40 INPUT 2 INPUT

**SM-D-803128 DATA BUS DECODER CARD TEST AND TROUBLESHOOTING ( 1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 803128TX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last digit of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 803128TX. IC XX/XX/XX
MEAS VALUE:
.....
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL- APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

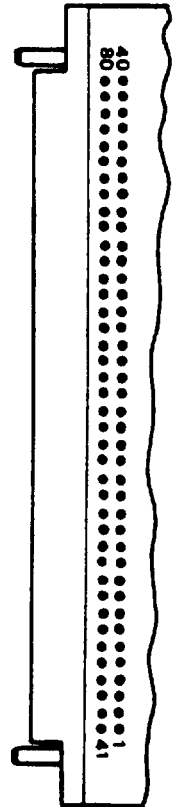
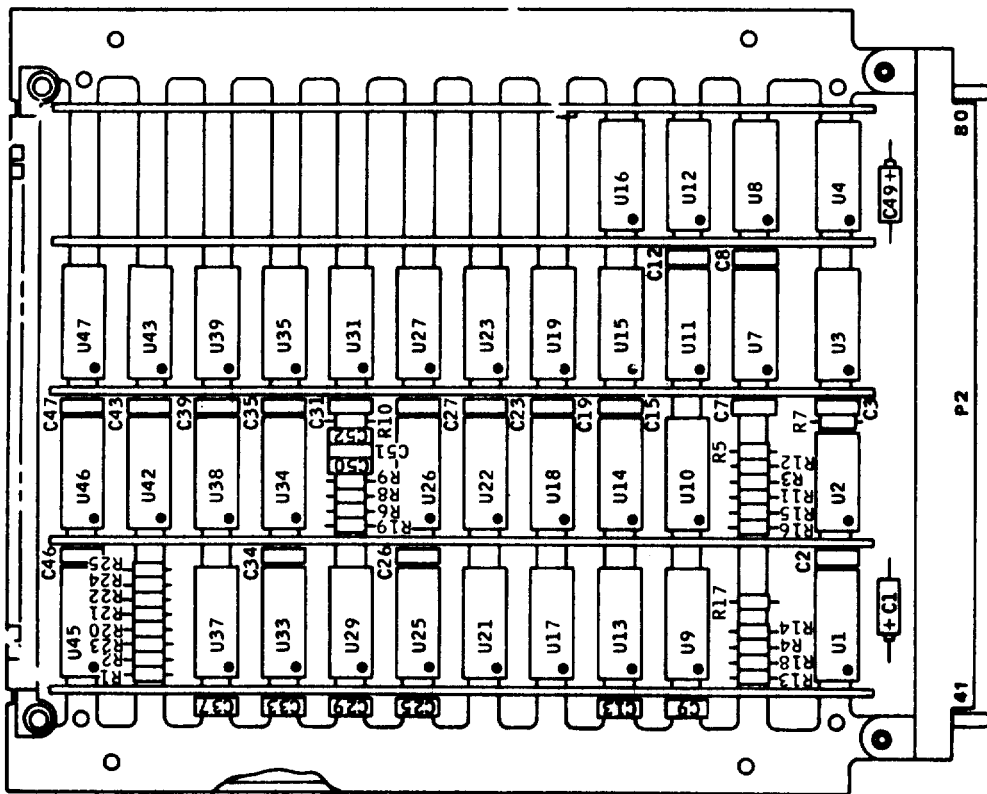
**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
8. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

SM-D-803128 DATA BUS DECODER CARD TEST AND TROUBLESHOOTING (2 of 2)



PROBE MESSAGE	PROBE MEASUREMENT POINT
VCC	2 INPUT
GND	80 INPUT
W1	U38P3
W2	U38P6
W3	U38P8
W4	U38P11

**SM-D-803137 TEMPERATURE CONVERTER CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press RETURN key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.
2. Select test.
  - a. Type **TEST 803137TX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last digit of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 803137 TX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
- . . . . . -
  **PIU CAL APPLIED
  **BNC CAL APPLIED
  **LSVSU CAL APPLIED
  **HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```

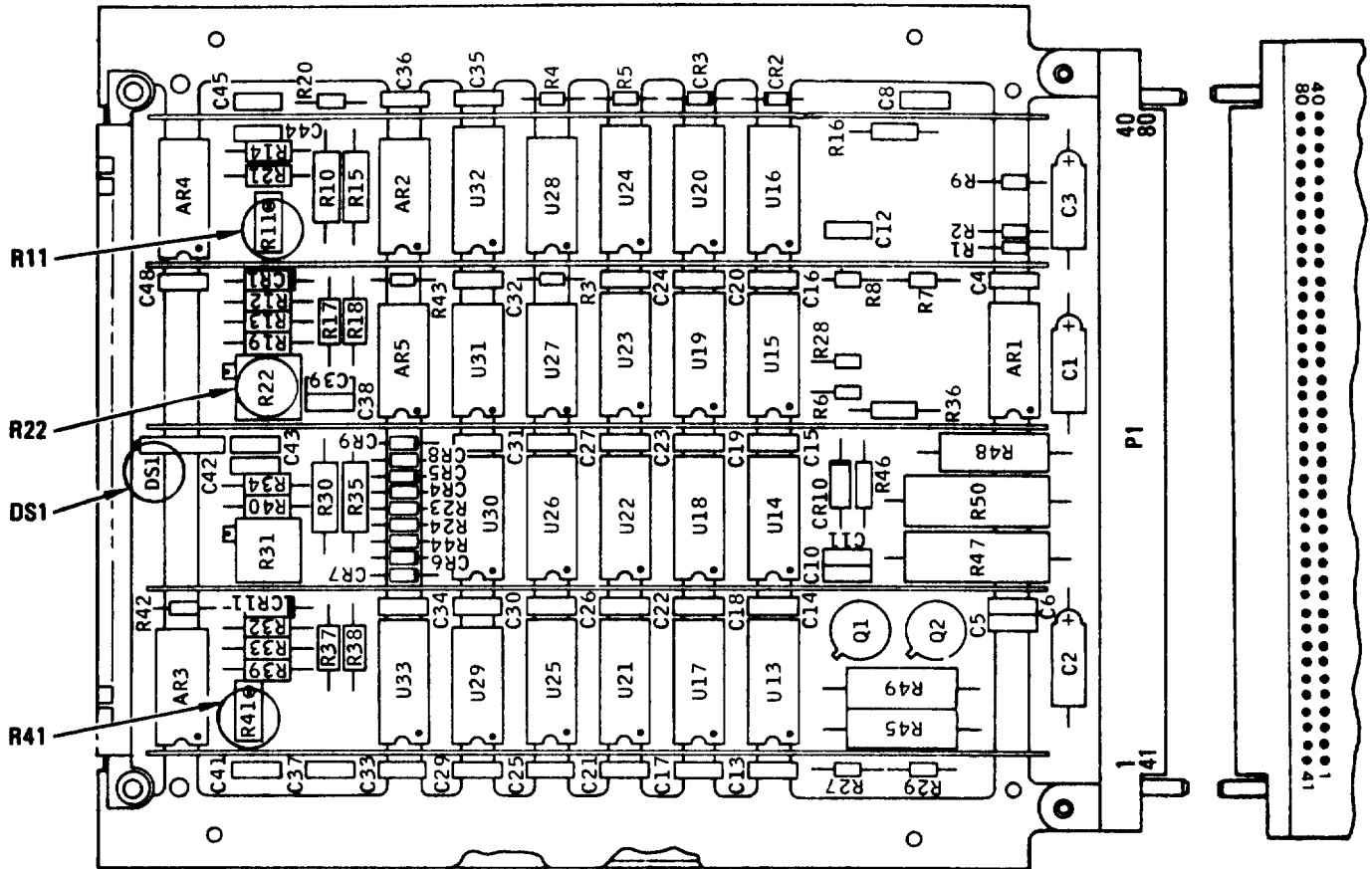


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



SM-D-803137 TEMPERATURE CONVERTER CARD TEST AND TROUBLESHOOTING (2 of 2)



---

**SM-D-803140 CLOCK OSCILLATOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

---

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press RETURN key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 803140TX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last digit of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 803140TX. IC XX/XX/XX
MEAS VALUE:
-----
- RUN TIME SYSTEM REV X.XX -
-----
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:

```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

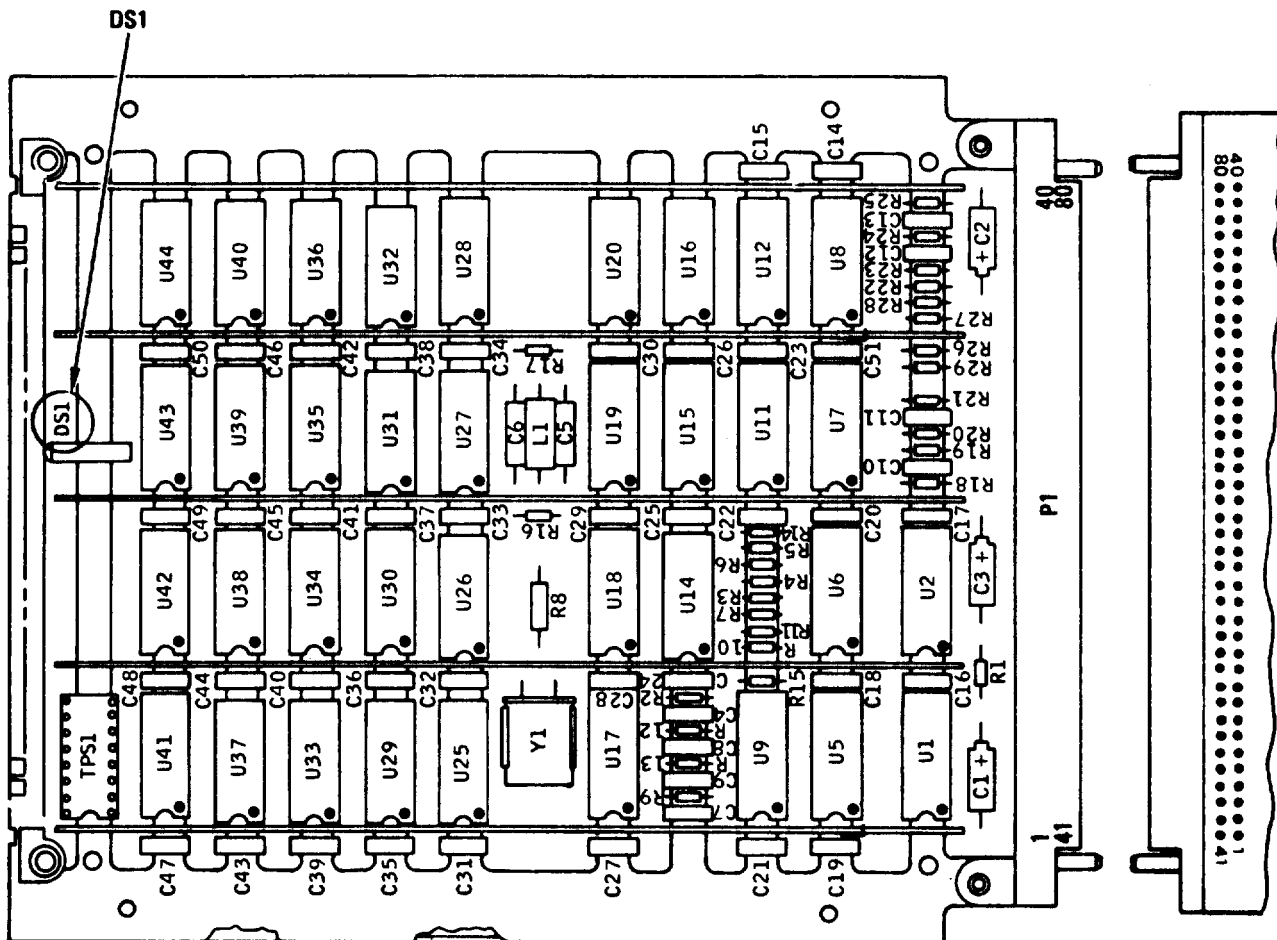
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

SM-D-803140 CLOCK OSCILLATOR CARD TEST AND TROUBLESHOOTING (2 of 2)



**SM-D-803146 TILT SENSOR CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS, VIDEO DISPLAY, and PRINTER**.
2. Select test.
  - a. Type **TEST 803146TX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last digit of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 803146TX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
      **PIU CAL APPLIED
      **BNC CAL APPLIED
      **LSVSU CAL APPLIED
      **HSVSU CAL APPLIED
      COMPILED USING COMPILER REVISION: X.XX
      SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

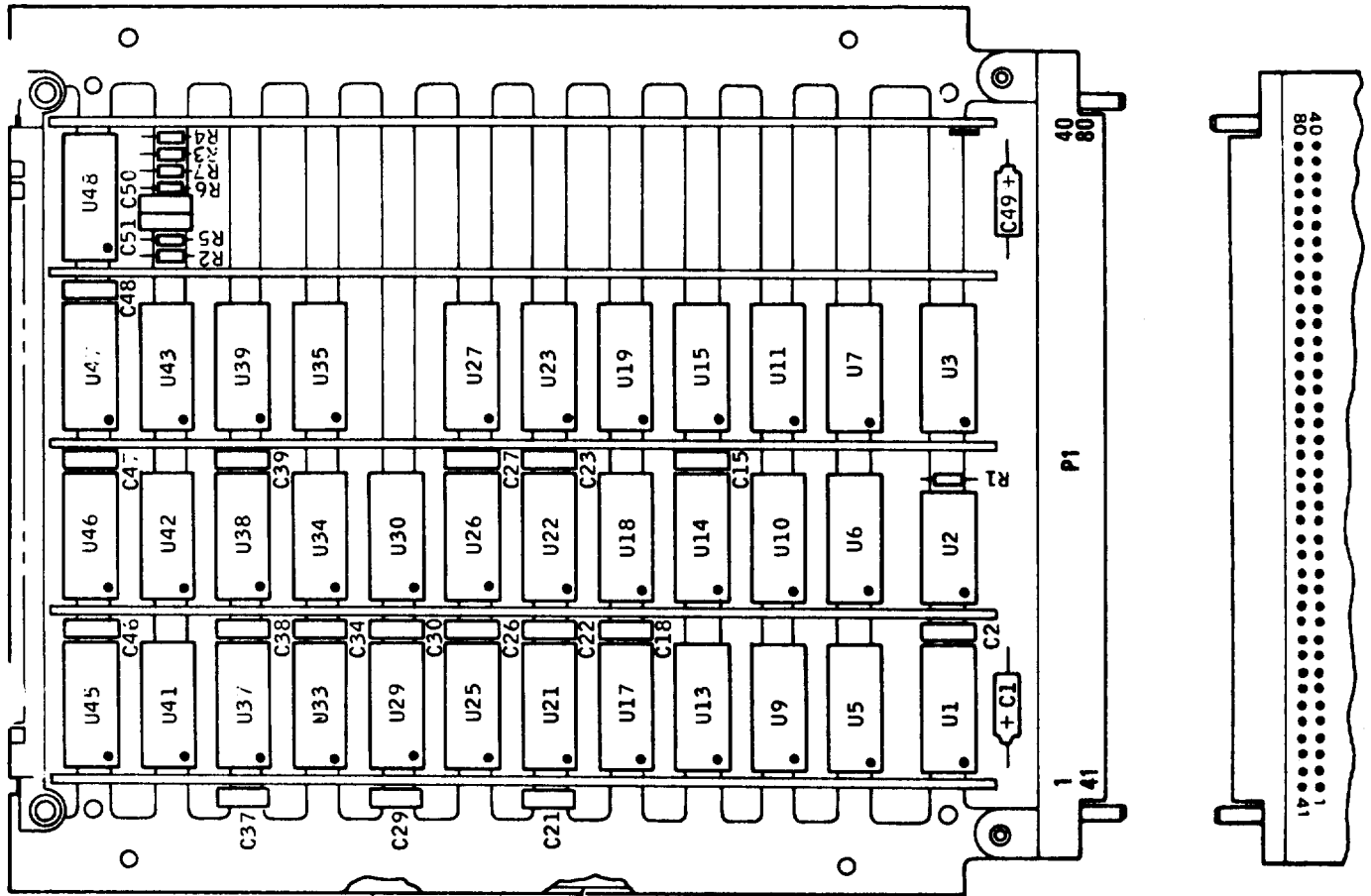
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

SM-D-803146 TILT SENSOR CARD TEST AND TROUBLESHOOTING (2 of 2)



---

**SM-D-803152 PHASE SHIFTER DRIVER CARD TEST AND TROUBLESHOOTING (1 of 2)**

---

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATORS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 803152TX** at terminal and press **RETURN** key. see test program index (page 4-12) for current revision number (the last digit of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
                UUT: 803152TX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
                **PIU CAL APPLIED
                **BNC CAL APPLIED
                **LSVSU CAL APPLIED
                **HSVSU CAL APPLIED
                COMPILED USING COMPILER REVISION: X.XX
                SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

```

OPERATOR ACTION
PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

```

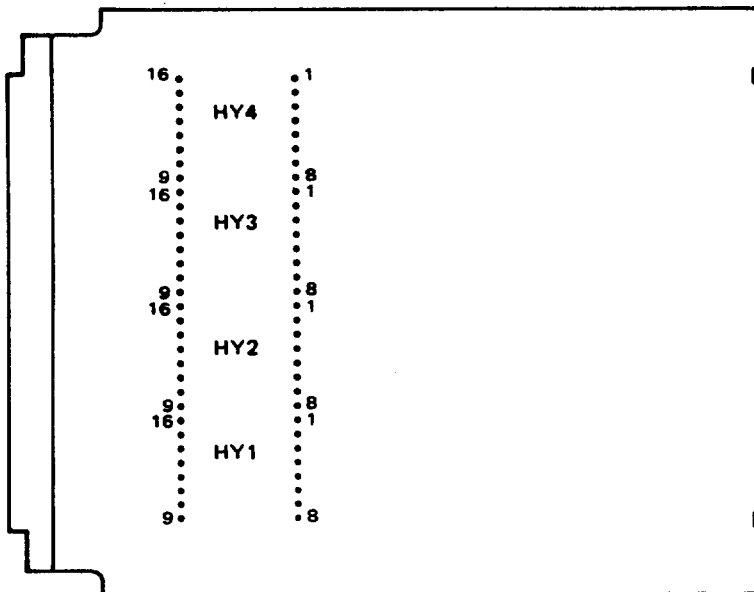
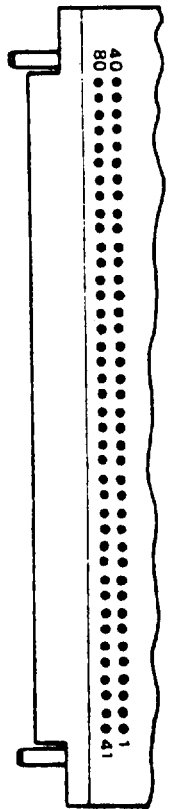
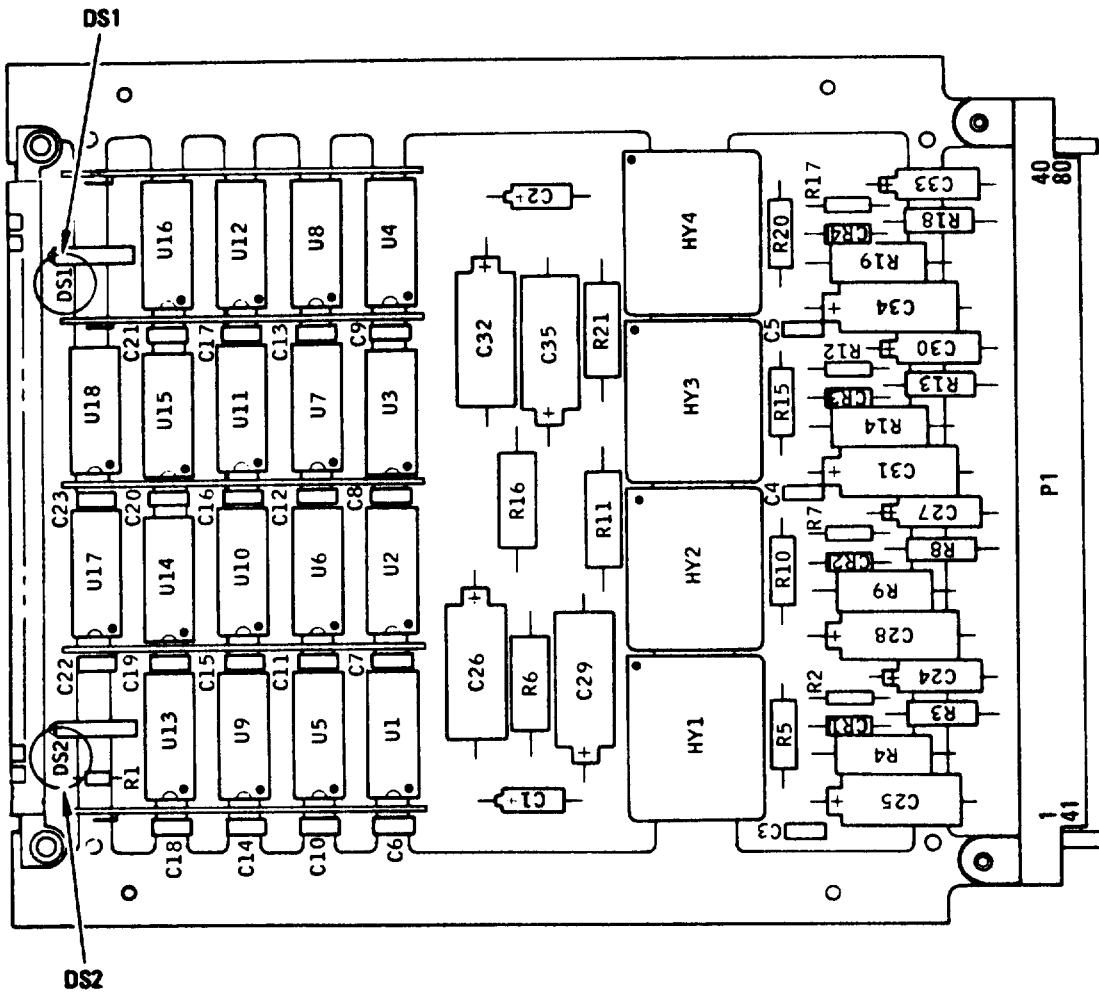
OPERATOR ACTION
PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.
          
```



Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.

SM-D-803152 PHASE SHIFTER DRIVER CARD TEST AND TROUBLESHOOTING (2 of 2)



REAR VIEW

**SM-D-803161 POWER SUPPLY BITE CARD TEST AND TROUBLESHOOTING (1 of 2)**

1. Turn on AN/USM-410(V) tester.
  - a. Perform AN/USM-410(V) tester startup per TM 11-6625-2773-12-1.
  - b. Verify **R** is displayed on crt. If **R** is not displayed, turn tester off and restart per TM 11-6625-2773-12-1.
  - c. Type **DIR BACKGROUND** at terminal and press **RETURN** key.
  - d. Observe **R** is displayed on crt.
  - e. At **TEST OPERATIONS PANEL**, select **ALL TESTS**, **VIDEO DISPLAY**, and **PRINTER**.
2. Select test.
  - a. Type **TEST 803161TX** at terminal and press **RETURN** key. See test program index (page 4-12) for current revision number (the last digit of the file name).
  - b. Observe the following message on crt. Verify UUT number on top line is correct; disregard remainder of message. If UUT number is not correct, press and hold **COMMAND** key and press **HALT** key. Release both keys and type in correct test number per step 2a.

```

TEST-STEP#:      LINE#:      EQUATE XX
      UUT: 803161TX. IC XX/XX/XX
MEAS VALUE:-----
- RUN TIME SYSTEM REV X.XX -
.....
**PIU CAL APPLIED
**BNC CAL APPLIED
**LSVSU CAL APPLIED
**HSVSU CAL APPLIED
COMPILED USING COMPILER REVISION: X.XX
SET SELECTOR SWITCHES. ENTER STARTING TEST STEP:
  
```

- c. Press **PROCEED** key to start test.
3. Enter part number and manufacturing serial number (MSN).
  - a. Observe **OPERATOR ACTION** messages on crt which instruct you to enter the part number and manufacturing serial number (MSN).
  - b. Locate these numbers on UUT connector and enter them as directed by crt messages.
4. Hook up ID.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM ID HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**
  - b. Hook up ID per procedure on page 4-18.
5. Hook up UUT.
  - a. Observe the following message on crt.
 

**OPERATOR ACTION**  
**PERFORM UUT HOOKUP AS ILLUSTRATED. SEE TM 11-5840-363-40.**

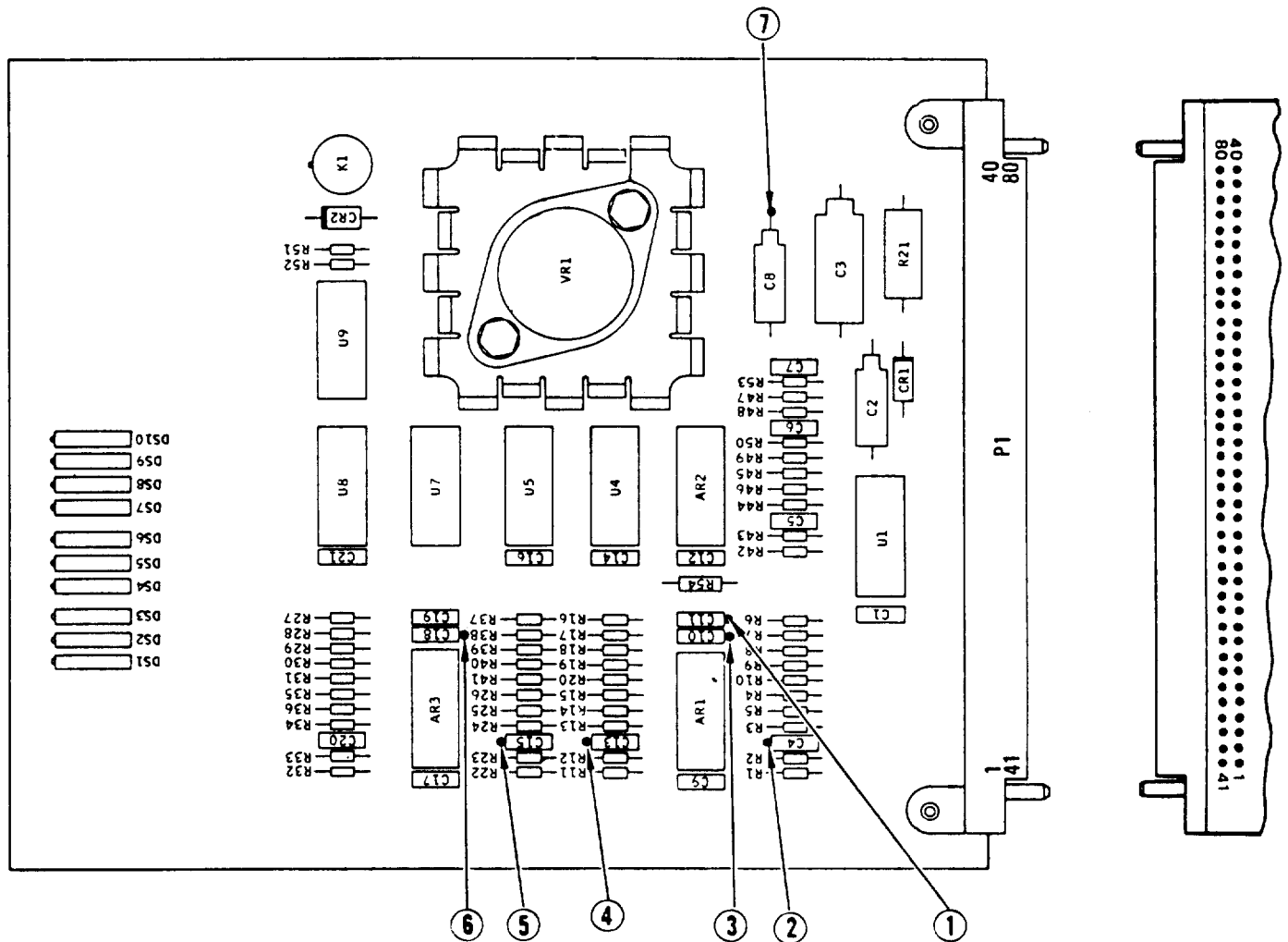


Remove ID before performing UUT hookup.

- b. Hook up UUT per procedure on page 4-20.
6. Test and troubleshoot UUT.
  - a. Perform any further **OPERATOR ACTION** messages that appear on crt until test is complete.
  - b. Use diagram on opposite page to locate probe points (nodes) and components.
7. Remove UUT and ID per procedure on page 4-24.
8. Turn off AN/USM-410(V) tester per shutdown procedure in TM 11-6625-2773-12-1.



SM-D-803161 POWER SUPPLY BITE CARD TEST AND TROUBLESHOOTING (2 of 2)



## CHAPTER 5 CARD REPAIR

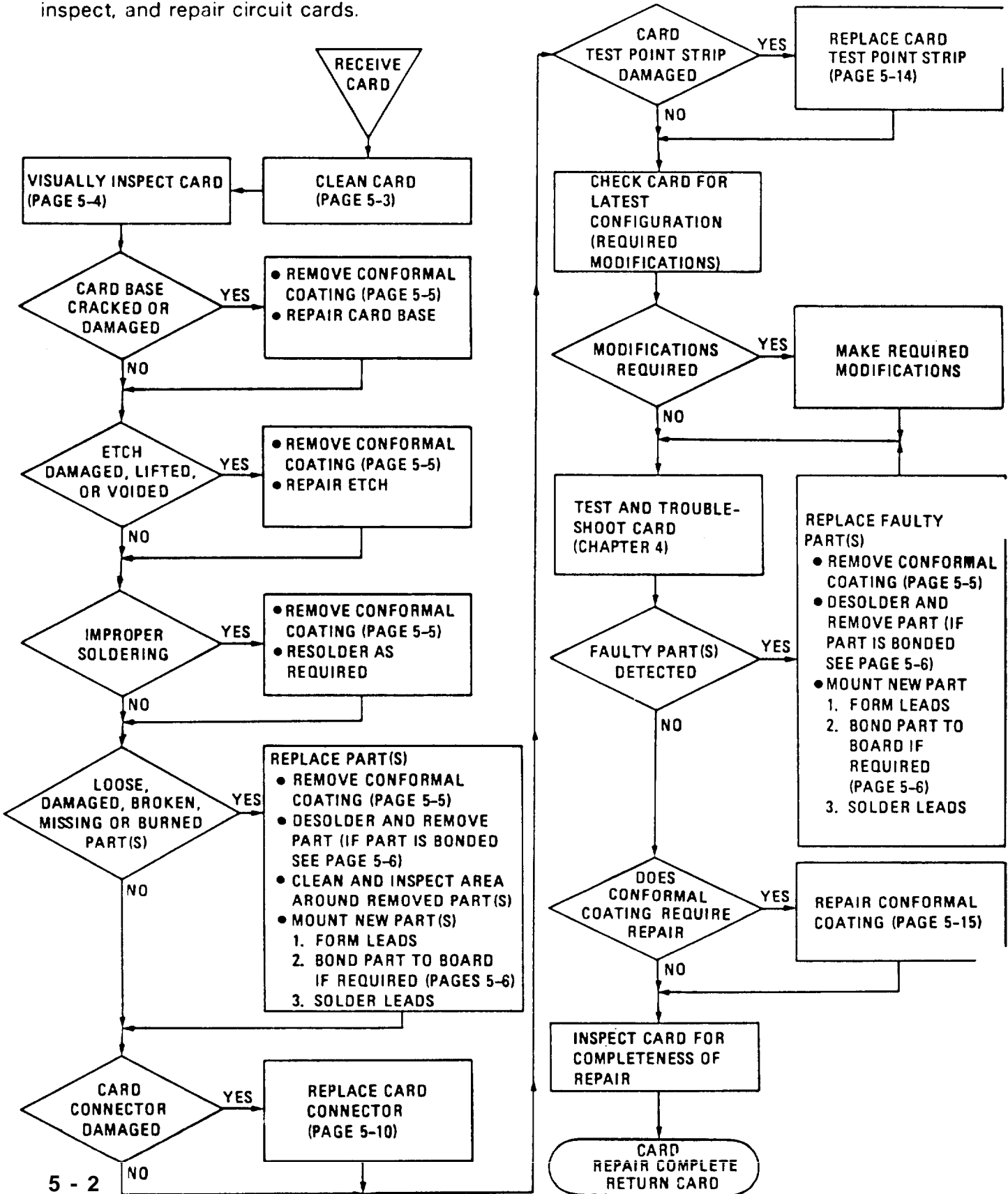
	Page		Page
Introduction.....	5-1	Replacing Card Connector.....	5-10
Card Repair Overview.....	5-2	Replacing Card Test Point Strip.....	5-14
Cleaning Cards.....	5-3	Repairing Conformal Coating.....	5-15
Inspecting Cards.....	5-4	Repairing Cards Containing MOS Microelectric	
Removing Conformal Coating.....	5-5	Circuits.....	5-17
Replacing Bonded Parts.....	5-6		

### INTRODUCTION

This chapter outlines the procedures necessary to clean, inspect, and repair circuit cards. This chapter also contains procedures for unique repair operations. General repair operations such as soldering and desoldering, component lead forming and component installation, card etch repair, and card base repair are standard procedures and are not covered in this manual. All of the facilities and tools required for card repair are contained in Electronic Equipment Repair Facility OA-8991/USM-410(V).

**CARD REPAIR OVERVIEW**

The flowchart below provides a graphical illustration of the procedures to be followed to clean, inspect, and repair circuit cards.



**CLEANING CARDS**

Circuit cards are cleaned by washing in clean isopropyl alcohol and then air drying.

**WARNING**

Isopropyl alcohol is flammable. Keep away from heat or open flame. Vapors may be harmful; use with adequate ventilation. Avoid prolonged breathing of vapor. Avoid eye contact. Do not take internally.

1. Place about 4 ounces of isopropyl alcohol in a polyethylene pan.

**CAUTION**

Do not allow sensitive components, such as potentiometers, to be immersed for more than 1 minute.

2. Hold the circuit card by the edges and semi-immersed in the pan containing the alcohol.
3. Scrub card with a small brush to remove residual contamination such as solder flux, metal chips, soil residues, or minor corrosion products.
4. Remove circuit card from the pan and allow to air dry for 15 minutes before performing any other operations on the card.

## INSPECTING CARDS

After a circuit card is cleaned, it must be visually inspected for defects. The card should be inspected in bright light and a magnifier used to examine questionable areas. Inspect the circuit card for the following defects:

- Bent, dirty, pitted, or corroded connector contacts
- Nicked, cracked, broken, or burned components
- Deformed leads on DIPs or flat packs
- Pads that are broken loose from the plating in plated-through holes
- Pads with edge separation because of excessive heat applied during rework
- Raised or broken etch
- Lifted contacts
- Burned areas. Discoloration of the board material is acceptable unless delamination or destruction of surface laminate is evident. Heat discoloration of components is also acceptable. Charred areas are acceptable unless the laminate begins to flake away.
- Delamination; any separation between the layers of the base material or between the laminate and the metal cladding
- Measling; a separation of fibers in the glass cloth laminate at the weave separation. It is seen as white spots or crosses below the surface of the base laminate.
- Fungus migration between circuit paths or contacts
- Circumferential separation; a crack around the barrel of the plated-through hole or an eyelet
- A warped board
- Missing components
- Cold solder joints or solder splashes
- Binding adjustments such as potentiometers
- Voids in the conformal coating. The conformal coating should be continuous and cover the entire circuit card except the card connector, test points, and adjustments.

**REMOVING CONFORMAL COATING**

The conformal coating must be removed from around a part that is to be replaced before it is resoldered and removed. The conformal coating is removed from around the part and from around its terminals. The recommended method for removing the conformal coating is with the thermal parting device.

1. Connect the thermal parting device to the repair station and allow to heat to a controlled temperature at  $525 \pm 25^{\circ}\text{F}$ .
2. Install thermal shunts on temperature-sensitive parts as required.

**CAUTION**

Do not attempt to remove conformal coating in one pass with the thermal parting device.

3. Holding the thermal parting device at approximately a 45-degree angle to the card, apply the tip with a firm but gentle pushing action into the conformal coating. Start from the center of the component and work toward the terminal area.
4. Repeat the action of step 3 until the conformal coating is removed from around the component, including the area around the component leads on both sides of the card.
5. Desolder the component and remove it from the circuit card.
6. Use the thermal parting device to remove any conformal coating that remains after the component is removed, and to feather the edges of the conformal coating around the area where the component was removed.

---

## REPLACING BONDED PARTS (1 of 4)

---

Some circuit cards contain parts that are bonded to thermal mounting plates or to the card base. These parts are bonded for proper heat transfer and/or for proper support. The table on the facing page lists the circuit cards that contain bonded parts, lists the parts that are bonded, and specified the method of bonding. Special techniques are required to remove parts that are bonded to the cards. Bonded parts are removed by one of two means: by heating the bonding material and prying the part away from the circuit card, or by cutting the part with diagonal cutting pliers and breaking the part away from the bonding material.

Replacement parts are bonded to circuit cards using one of two bonding materials. Dual in-line package (DIP) microcircuits are bonded with an adhesive film. Lead supported parts such as capacitors, inductors, and keying pins, etc, are bonded with a polysulfide compound (appendix B, item 1). With either type of bonding, the bond must be cured after the part is installed.

**REMOVING BONDED PARTS.** A part that has been bonded to a circuit card can be removed after the leads have been clipped by breaking the part or by applying heat to the bonding material and prying the part loose. The method to be used depends on the type of part and its location. If a part cannot be removed by heating and prying, cut or break the part away from the bonding material. Whenever possible, cut the part with diagonal cutting pliers.

When the part is removed by heating and prying, great care must be used to prevent the prying tool from damaging or breaking the circuit card.



Do not apply excessive pressure against the circuit card.

Apply the point of the tool against the bonding material and between the part and the circuit card. Use the tool so that it works away the bonding material from the part to be removed until enough has been removed for the tool to exert pressure against the part. Keep the leverage surface area of the tool flat against the circuit card to prevent the tool from gouging or breaking the board.

After the part has been removed, the lead stubs are resoldered and the remaining bonding material is removed from the circuit card with the thermal parting tool.

REPLACING BONDED PARTS (2 of 4)

Card Part Number	Bonded Parts	Bonding Method
1635841-100	C1, C1, C2	Polysulfide compound
1635842-100	C3, C4	
1635843-100	C1,C10,C12,C13	
1635844-100	C1, C5, C11, C12, C15, C18	
1635846-100	C6, C9, C14, C15, C24, C28, C29	
1635847-100	C7, C14	
1635870-100or 1635870-101	L1	
1635942-100	L1, L2, L3, L4	
1635944-100or 1635944-101	L1, L2, L3, L4, T1, T2, T3, T4	
1642175-100	All DIPs	
1642176-100	All DIPs	
1642177-100	All DIPs	
1642178-100	All DIPs	
1642179-100	All DIPs	
1642180-100	All DIPs	
1642181-100	All DIPs	
1642183-100	All DIPs	
1642184-100	All DIPs	
1642185-100	All DIPs	
1642186-100	All DIPs	
1642187-100	All DIPs	
1642188-100	All DIPs	
1642189-100	All DIPs	
1642190-100	All DIPs	
1650873-100	All DIPs	
C5000511	All DIPs	
SM-D-803125	All DIPs	
SM-D-803128	All DIPs	
SM-D-803137	All DIPs	
SM-D-803140	All DIPs	
SM-D-803146	All DIPs	
SM-D-803152	All DIPs	
SM-D-803161	All DIPs	



## REPLACING BONDED PARTS (3 of 4)

**BONDING PARTS WITH ADHESIVE FILM.** Adhesive film (appendix B, item 2) is used to bond DIPs to thermal mounting plates on circuit cards. The adhesive film contains protective material on both surfaces which must be removed before use. The protective film is removed from one surface and the DIP is positioned and then pressed in place.

1. Clean the area on the circuit card where the DIP is to be bonded.
  - a. Using a solvent composed of 50-percent isopropyl alcohol and 50-percent aliphatic naphtha, scrub the area with a soft brush until it is thoroughly clean
  - b. Rinse the area with clean unused isopropyl alcohol.
  - c. Dry for a minimum of 1 hour at  $140 \pm 11^{\circ}\text{F}$  in a vented, forced draft oven.
2. Cut adhesive film to the size needed for part
3. Peel the protective covering from one surface of the film and then carefully apply the film to the underside of the DIP, being careful not to trap air under the film.
4. Press the film in place.
5. Remove the protective covering from the other side of film and carefully position the DIP on the circuit board.
6. Firmly press the DIP in place to obtain intimate contact between the film and the DIP and the film and the circuit card.
7. Solder the DIP connections to the board and clean up flux residues with a noncorrosive solvent.

**REPLACING BONDED PARTS (4 of 4)**

**BONDING PARTS WITH POLYSULFIDE COMPOUND.** The polysulfide compound (appendix B, item 1) is a two-part compound that is thermally conductive and electrically insulating. Once the compound is mixed, it must be used within 2 hours. This compound is used for mounting lead-supported parts such as capacitors, inductors, etc. After the part is mounted and soldered in place, the polysulfide compound is cured according to the manufacturer's directions.

**WARNING**

The solvents used are flammable. Keep away from heat or open flame. Vapors may be harmful; use with adequate ventilation. Avoid prolonged breathing of vapor. Avoid eye contact. Do not take internally.

1. Clean the area on the circuit card where the part is to be bonded.
  - a. Using a solvent composed of 50-percent isopropyl alcohol and 50-percent aliphatic naphtha, scrub the area with a soft brush until it is thoroughly clean.
  - b. Rinse-the area with clean unused isopropyl alcohol.

**WARNING**

To prevent serious burns, use asbestos gloves when handling hot items.

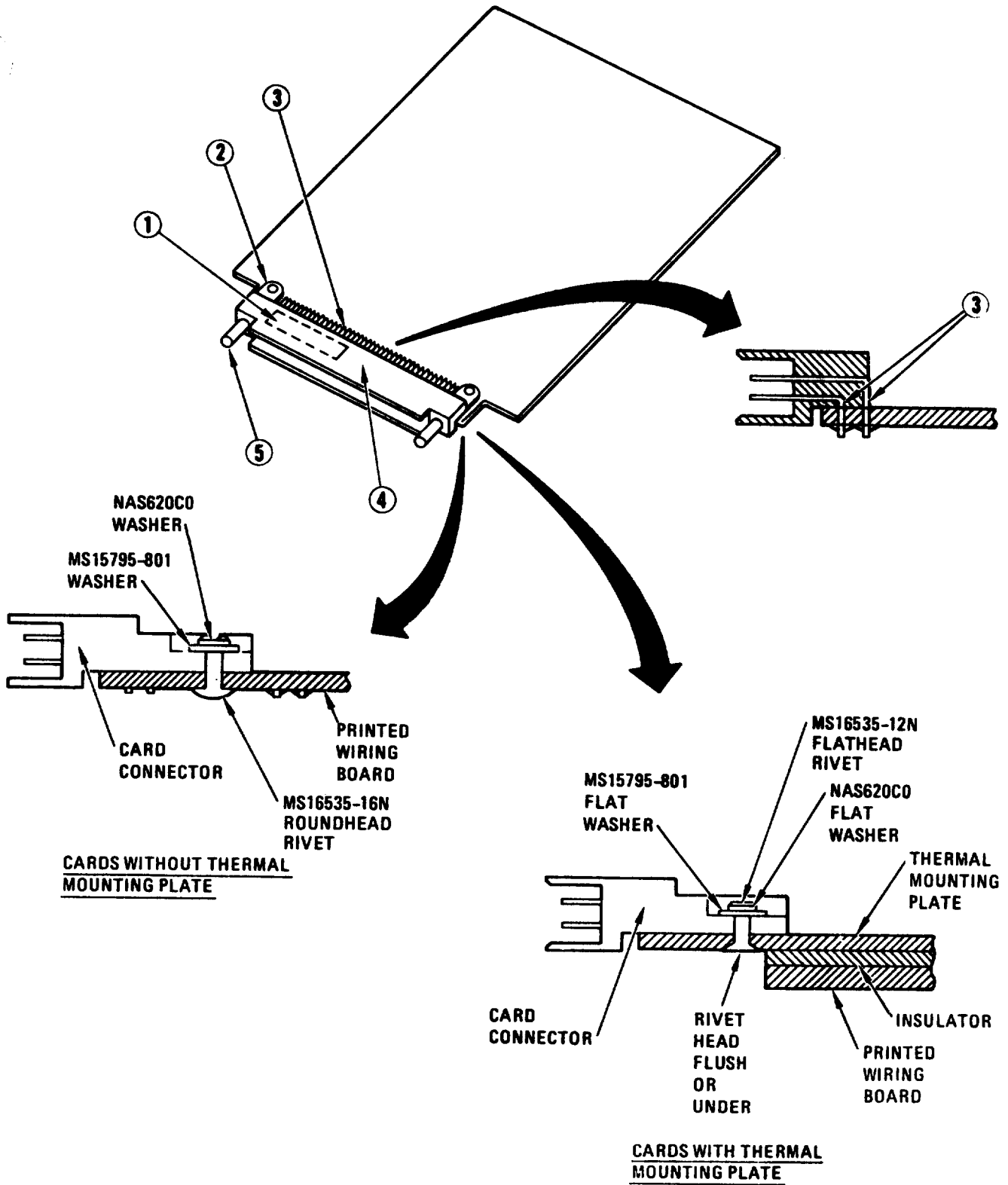
- c. Dry for a minimum of 1 hour at  $140 \pm 11^{\circ}\text{F}$  in a vented, forced-draft oven.
2. Prepare polysulfide compound, mixing two-part compound according to manufacturer's instructions.
3. Apply sufficient compound to the area between the part and the circuit card to form a filet around the part and exclude all air from the interface. This may be accomplished by placing a pad of compound on the card surface and pushing the part into it. Remove excess compound with a spatula or similar tool.
4. Solder the component to the card and cleanup flux residues with a noncorrosive solvent.
5. Cure the bond according to the polysulfide compound manufacturer's recommendation.

**REPLACING CARD CONNECTOR (1 of 4)**

There are two types of card connectors: 80-pin connectors and 100-pin connectors. Both types of connectors are replaced in the same manner. The connectors are removed by first drilling out the two rivets that secure the connector to the card, and then either resoldering or carefully cutting the 80 or 100 card-pin connections. If the card-pin connections are cut, the wire stubs are resoldered after the connector is removed.

1. Using the miniature machining unit and a 1/16-inch ball mill, carefully drill out 2 rivets (2) that secure the connector to the card,
2. Desolder or cut the 80 or 100 card-pin connections (3).
3. Remove connector (4) from card and set it aside.
4. If card-pin connections have been cut, desolder and remove the 80- or 100-wire stubs.
5. Clean up card-pin connection pads on the card.
6. Place new connector in position while carefully feeding the 80 or 100 card-pin connections through holes in card.
7. Secure connector to card with 2 rivets. There are two types of cards: those containing thermal mounting plates and those without thermal mounting plates.
  - a. On those cards with thermal mounting plates, the connector is secured to the thermal mounting plate with MS16535-12N flathead rivets.
  - b. On those cards without thermal mounting plates, the connector is secured to the card base with MS16535-16N roundhead rivets.
  - c. In each case, the rivets are installed with the heads away from the connector and 2 flat washers are placed over each rivet on the connector side. The larger washers (MS15795-801) are placed over the rivets first and the smaller washers (NAS620CO) are placed over the larger washers. See the illustration on the facing page.
8. Clinch or set rivets with appropriate rivet setters (or squeezers). Clinching or setting of rivets shall be accomplished in one operation with tool recommended by the rivet manufacturer.
9. Solder the 80 or 100 card-pin connections (3) to the card pads.
10. Install keying pins (5) in new connector.
  - a. Remove keying pins from connector that was replaced by carefully pulling pin out with a twisting motion.
  - b. Look up card number in table on page 5-12 to find correct orientation of 2 keying pins.
  - c. Apply polysulfide compound (page 5-9) to keying pin and connector, and install keying pins in holes of new connector while maintaining proper orientation. See the illustration on page 5-13 for proper keying pin projection.
11. Mark manufacturer's part number and serial number in permanent ink on surface of new connector (1). This data can be obtained from connector that was replaced.

REPLACING CARD CONNECTOR (2 of 4)

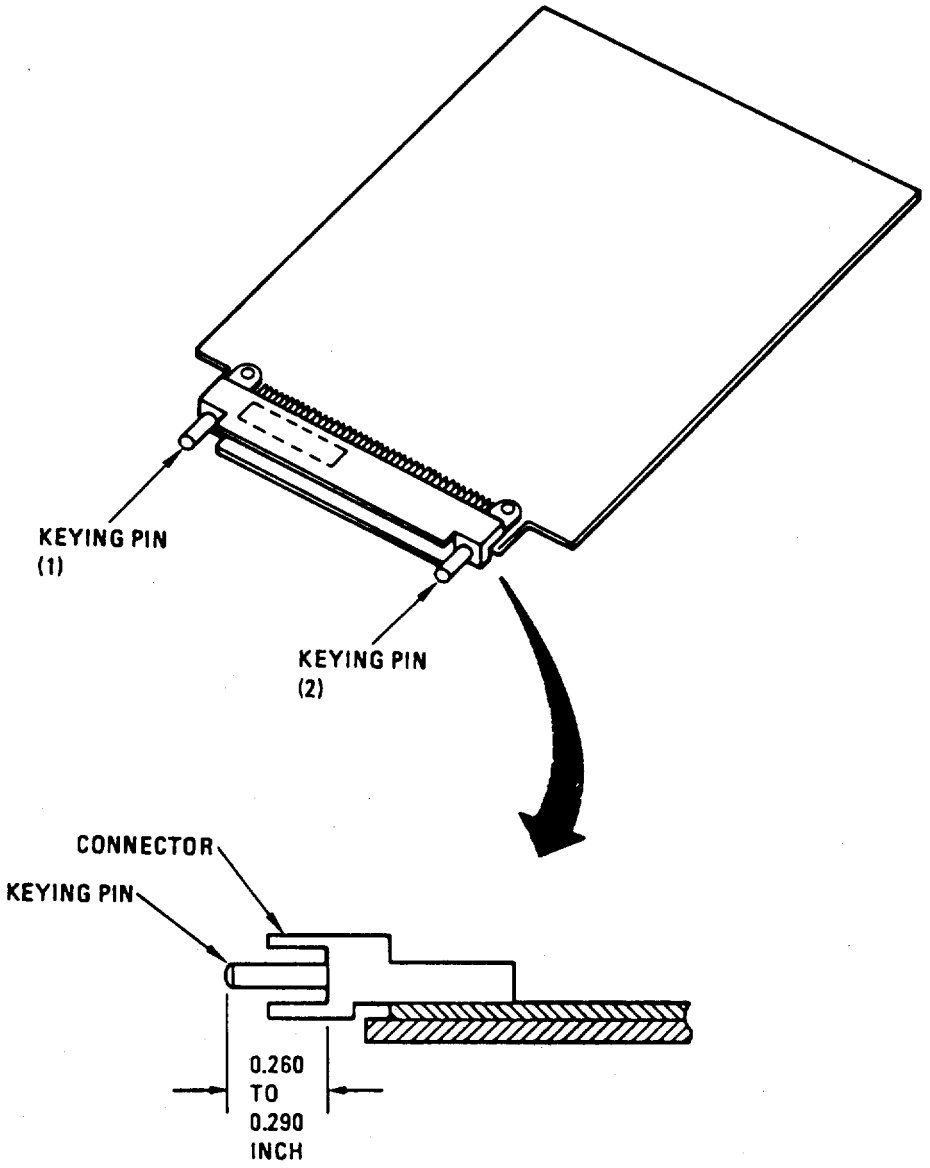


REPLACING CARD CONNECTOR (3 of 4)

Card Part No.	Keying Pin Orientation		Card Part No.	Keying Pin Orientation		Card Part No.	Keying Pin" Orientation	
	(1)	(2)		(1)	(2)		(1)	(2)
1635841-100	B	A	1635930-100	G	D	1635973-100	B	L
1635842-100	D	A	1635931-100	J	D	1635975-100	S	L
1635843-100	F	A	1635932-100	L	D	1635976-100	M	J
1635845-100	K	A	1635933-100	N	D	1635977-100	P	J
1635845-101	K	A	1635935-100	B	E	1635978-100	G	K
1635846-100	M	A	1635936-100	D	E	1635979-100	S	J
1635847-100	P	A	1635939-100	K	E	1635985-100	N	K
1635854-100	A	A	1635940-100	M	E	1635986-100	A	M
1635870-100	F	L	1635941-100	P	E	1635987-100	H	L
1635870-101	F	L	1635942-100	S	E	1635988-100	K	L
1635871-100	M	L	1635944-100	C	F	1635990-100	P	L
1635872-100	E	M	1635944-101	C	F	1642175-100	B	D
1635882-100	G	M	1635945-100	E	F	1642176-100	C	A
1635883-100	J	M	1635946-100	G	F	1642177-100	D	D
1635884-100	L	M	1635947-100	J	F	1642178-100	E	A
1635885-100	N	M	1635948-100	L	F	1642179-100	F	D
1635910-100	S	A	1635949-100	N	F	1642180-100	G	A
1635911-100	A	B	1635950-100	R	F	1642181-100	A	E
1635912-100	C	B	1635951-100	B	G	1642183-100	B	B
1635913-100	E	B	1635952-100	D	G	1642184-100	D	B
1635914-100	G	B	1635953-100	F	G	1642185-100	E	E
1635915-100	J	B	1635954-100	H	G	1642186-100	G	E
1635916-100	L	B	1635955-100	K	G	1642187-100	H	B
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1635926-100	S	C	1635969-100	F	J	SM-D-803146	A	B
1635927-100	A	D	1635970-100	D	L	SM-D-803152	E	B
1635928-100	C	D	1635971-100	H	J	SM-D-803161	G	B
1635929-100	E	D						

REPLACING CARD CONNECTOR (4 of 4)

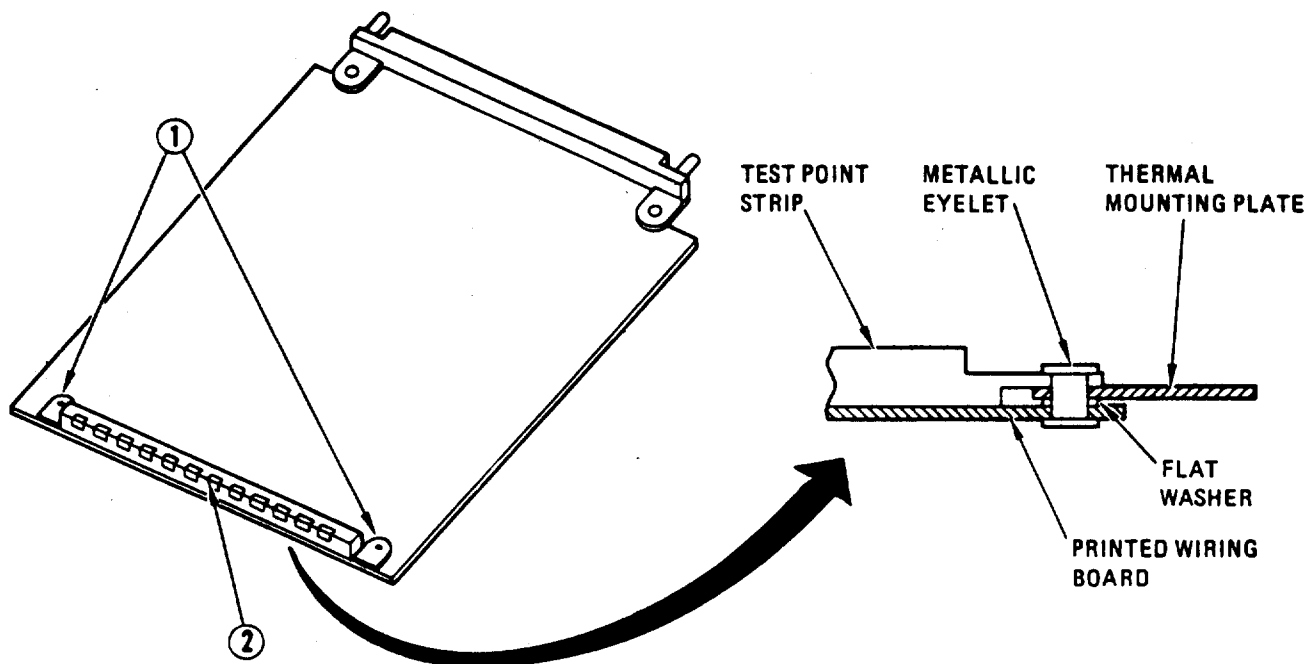
ORIENTATION CODE	KEYING PIN ORIENTATION	ORIENTATION ANGLE (0° ± 3°)	PIN TYPE
A		0°	2648703
B		45°	
C		90°	
D		135°	
E		180°	
F		225°	
G		270°	
H		315°	
J		0°	2648702
K		45°	
L		90°	
M		135°	
N		180°	
P		225°	
R		270°	
S		315°	



**REPLACING CARD TEST POINT STRIP**

There are two types of test point strips: those with 29 test points and those with 33 test points. Both types are replaced in the same manner. Individual test points in the test point strip can be replaced by resoldering the test point connection from the card pad and lifting the test point out. The entire test point strip is replaced by drilling out the two eyelets securing the test point strip to the printed wiring board and resoldering the 29 or 33 test point connections from the board.

1. Using the miniature machining unit and a 1/8-inch ball mill, carefully drill out 2 eyelets (1) that secure test point strip (2) to the board.
2. Desolder the 29 or 33 test point connections from the board and remove test point strip.
3. Place new test point strip in position while carefully feeding the 29 or 33 test point connections through the pads on the board.
4. Secure test point strip to board with 2 SM-A-803485-1 eyelets. When installing eyelets, put an SM-B-803526 flat washer between the board and thermal mounting plate. See illustration below.
5. Clinch or set eyelets with appropriate eyelet setters (or squeezers). Clinching or setting of eyelets shall be accomplished in one operation with tool recommended by eyelet manufacturer.
6. Solder the 29 or 33 test point connections to the pads on the board.
7. Touch up conformal coating as required.



**REPAIRING CONFORMAL COATING (1 of 2)**

After all repairs have been completed and the circuit card has been tested for serviceability, the conformal coating must be repaired. This is done by first thoroughly cleaning the areas to be repaired, then brushing on two new coats of conformal coating. Each coat of the conformal coating must be cured either at room temperature or in an oven. Oven curing accelerates the curing process.

1. Clean areas to be coated.

**WARNING**

The solvents used are flammable. Keep away from heat or open flame. Vapors may be harmful; use with adequate ventilation. Avoid prolonged breathing of vapors. Avoid eye contact. Do not take internally.

- a. Using a solvent composed of 50-percent isopropyl alcohol and 50-percent aliphatic naphtha, scrub the area to be coated with a soft brush until thoroughly clean.
- b. Rinse the area with clean unused isopropyl alcohol.

**WARNING**

To prevent serious burns, use asbestos gloves when handling hot items.

- c. Dry the circuit card for a minimum of 1 hour at  $140 \pm 11^{\circ}\text{F}$  in a vented, forced-draft oven.

**CAUTION**

Cleaned and oven-dried circuit cards must be coated within 16 hours, or be redried prior to coating. Protect cleaned cards from dust, fingerprints, and other contaminants at all times prior to and during application of conformal coating.

2. Apply conformal coating.
  - a. Mask any areas such as connectors, test points, and adjustable components that must not be conformal coated.

**NOTE**

The conformal coating is stored at room temperature. Unopened containers of the coating can be stored for use up to 12 months. Opened containers should be used within 90 days of the time they are opened.



**REPAIRING CONFORMAL COATING (2 of 2)**

- b. Mix two-part conformal coating material (appendix B, item 5) according to manufacturer's instructions.
  - c. Brush on conformal coating and then air dry for 30 minutes.
  - d. Brush on second coat of conformal coating and allow to air dry for 30 minutes.
3. Cure conformal coating at  $150 \pm 10^{\circ}\text{F}$  for 3 hours minimum, or at  $225 \pm 10^{\circ}\text{F}$  for 1 hour minimum.

**REPAIRING CARDS CONTAINING MOS MICROELECTRONIC CIRCUITS**

Because metal oxide semiconductor (MOS) microelectronic circuits are susceptible to damage due to static electricity, the following procedures must be followed to avoid damage to the device during handling, testing, or actual operation.

**CAUTION**

When repairing cards with MOS devices, a battery powered soldering iron must be used.

- Use a grounded work station with an antistatic surface and a conductive wristband.
- Keep leads of MOS microelectronic circuits in contact with a conductive material, except when being tested or in actual operation, to avoid buildup of static charge.
- Ground soldering iron tips, metal part of fixtures and tools, and handling facilities.
- Do not insert or remove cards from assemblies with power on.
- Do not apply signals to card inputs while power supply is off.

**CHAPTER 6**  
**ID AND TEST POINT ADAPTER REPAIR**

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Repair of Connector Receptacle .....	6-4	Repair of Test Point Adapter Contacts. ....	6-9

**INTRODUCTION**

This chapter outlines the procedures necessary to repair IDs and test point adapter. All the facilities and tools required for ID and test point adapter repair are contained in Electronic Equipment Repair Facility OA-8991/USM-410 (V), except for the connector removal tool (NSN 5120-01-084-0440).

**REPAIR OF CONTACTS (1 of 2)**

This procedure will show you how to replace any of the contacts in the interconnection device (ID).

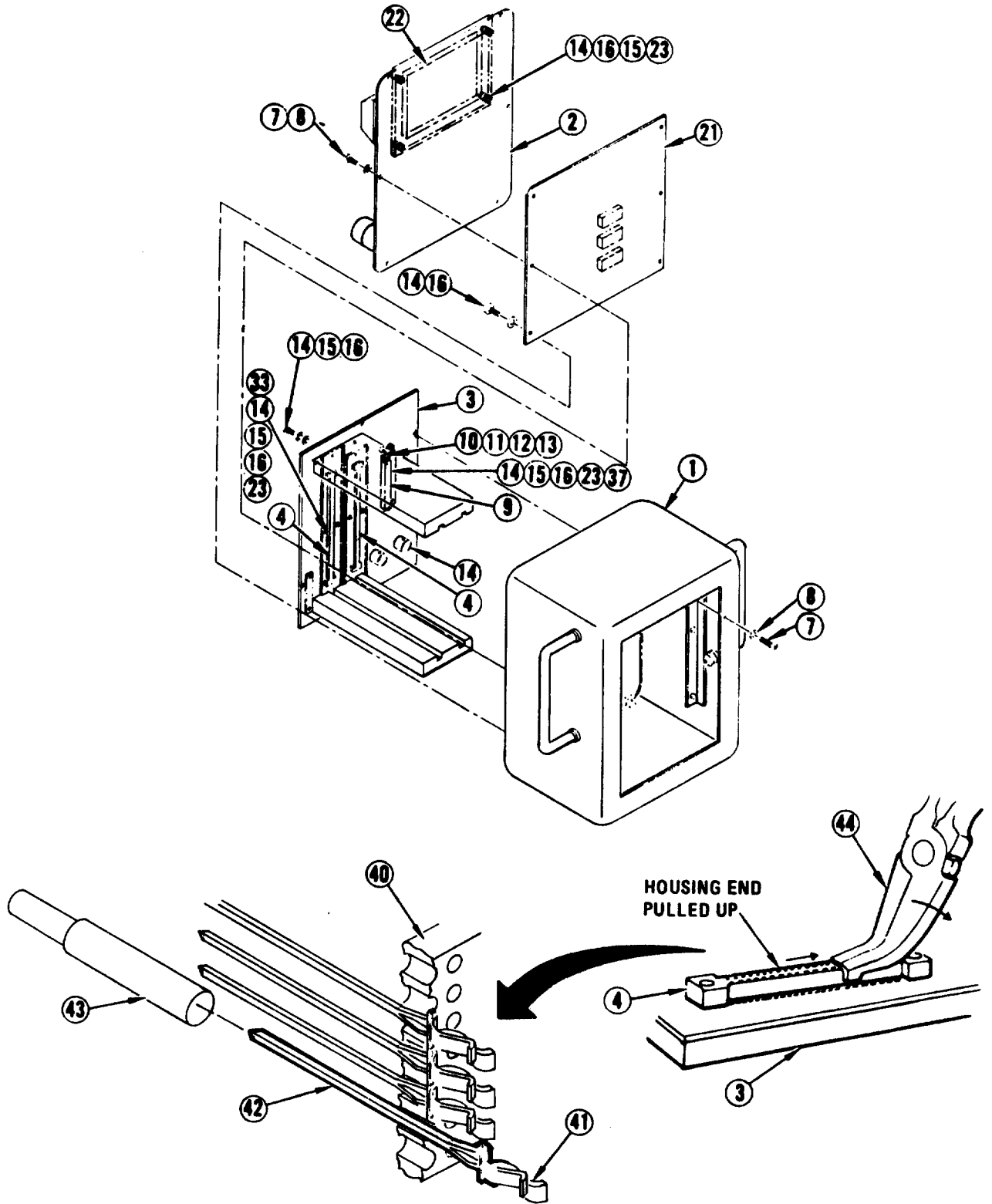
1. Remove six machine screws and washers (7, 8) from adapter back plate (2) on ID enclosure (1).
2. Remove back plate (2) from ID enclosure (1).
3. Remove 6 machine screws and washers (14, 16) from component board (21).
4. Remove component board (21 ) from inside ID enclosure.
5. Remove 6 machine screws and washers (7, 8) from mounting plate (3) on face of ID.
6. Remove mounting plate (3) from ID enclosure (1).
7. Locate damaged contact.
8. Tag and remove each wire with location from which it was removed.
9. Carefully pry connector receptacle (4) from pin plate (3).
10. Unseat contact (42), and using removal/insertion tool (43), pull contact out from the front of pin plate (40).



Be sure to place contact end so that contacts are aligned with groove on pin plate. Damage to contacts may result if not aligned properly.

11. Insert contact (42) into hole of pin plate (3) from the front.
12. Carefully place removal/insertion tool (43) on contact end (42). Then push in until it seats.
13. Reconnect wires to contacts from which they were removed.
14. Install mounting plate in ID enclosure through rear opening
15. Secure mounting plate with 6 machine screws and washers on face of ID.
16. Install component board (21 ) in ID enclosure with microcircuit facing outward.
17. Secure component board in ID enclosure using 6 machine screws and washers(14, 16).
18. Position adapter back plate on ID enclosure (2) and secure with 6 machine screws and washers (7, 8).

REPAIR OF CONTACTS (2 of 2)



**REPAIR OF CONNECTOR RECEPTACLE (1 of 2)**

This procedure will show you how to replace any of the connector housings on the mounting plate in the ID.

1. Remove 6 machine screws and washers (7, 8) from adapter back plate (2) on ID enclosure (1).
2. Remove back plate (2) from ID enclosure (1).
3. Remove 6 machine screws and washers (14, 16) from component board (3).
4. Remove component board (21) from inside ID enclosure.
5. Remove 6 machine screws and washers (7,8) from mounting plate (3) on face of ID.
6. Remove mounting plate from ID enclosure.

**CAUTION**

Use extreme care not to damage pin plate or pins.

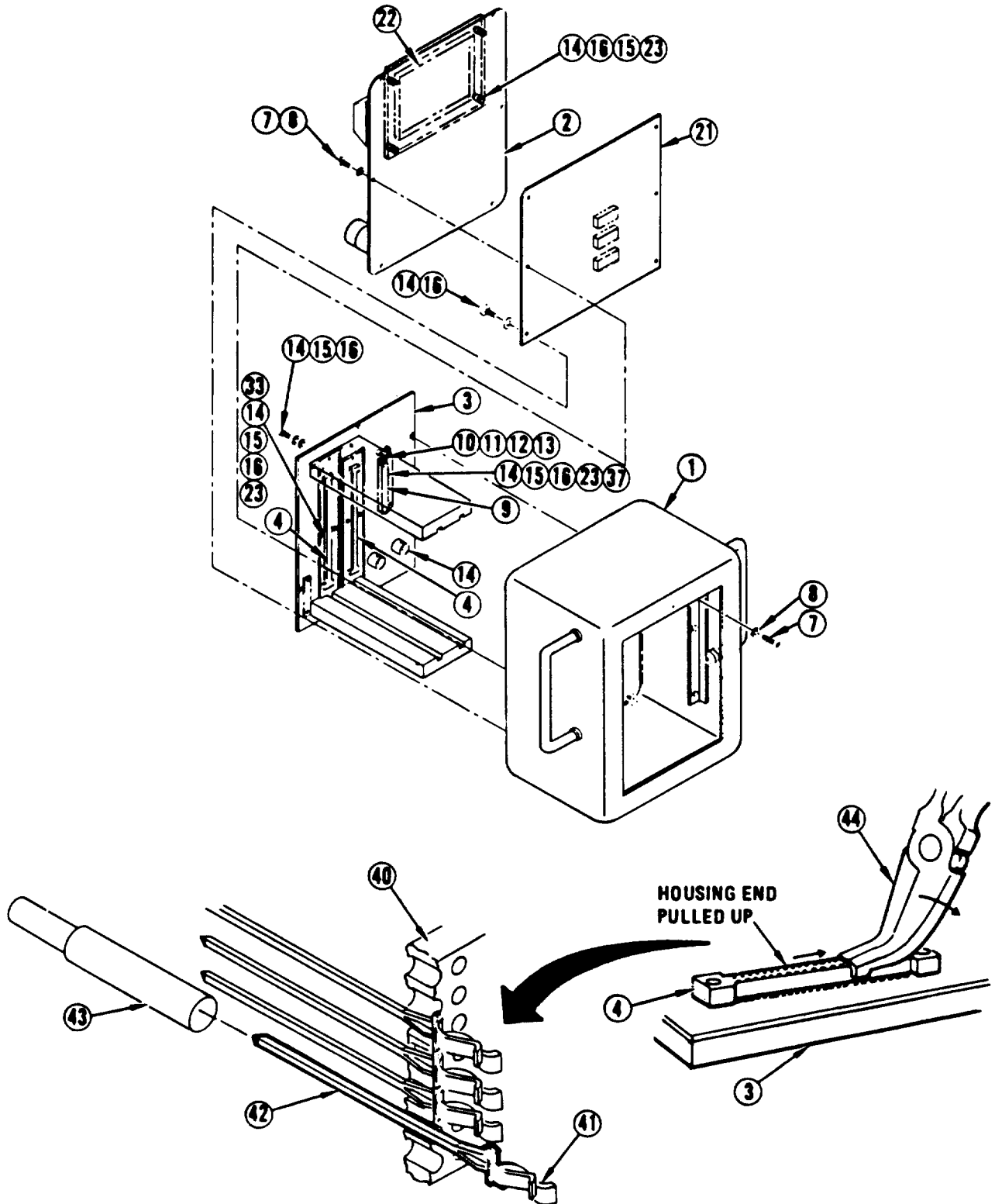
- Unseat damaged connector housing (4) by carefully prying housing from mounting plate,
7. using connector removal tool (NSN 5120-01-084-0440) (44).

**CAUTION**

Both ends of the connector housing must be carefully alined with contact.  
Damage to contact may result if not alined properly.

8. Carefully place connector housing (4) on pin plate (3). Tap lightly with connector removal tool to seat connector housing.
9. Install mounting plate in ID enclosure through rear opening.
10. Secure mounting plate with 6 machine screws and washers (14, 16) on face of ID.
11. Install component board (21) in ID enclosure with microcircuits facing outward.
12. Secure component board in ID enclosure using 6 machine screws and washers (7, 8).
13. Position adapter back plate on ID enclosure (1) and secure with 6 machine screws and washers.

REPAIR OF CONNECTOR RECEPTACLE (2 of 2)



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**REPAIR OF MICROCIRCUITS (1 of 2)**

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This procedure will show you how to replace microcircuits on the component board.

1. Remove 6 machine screws and washers (1) from adapter back plate (2) on ID enclosure,
2. Remove back plate (2) from enclosure.
3. Carefully pry failed microcircuit (4) from socket on component board (3).

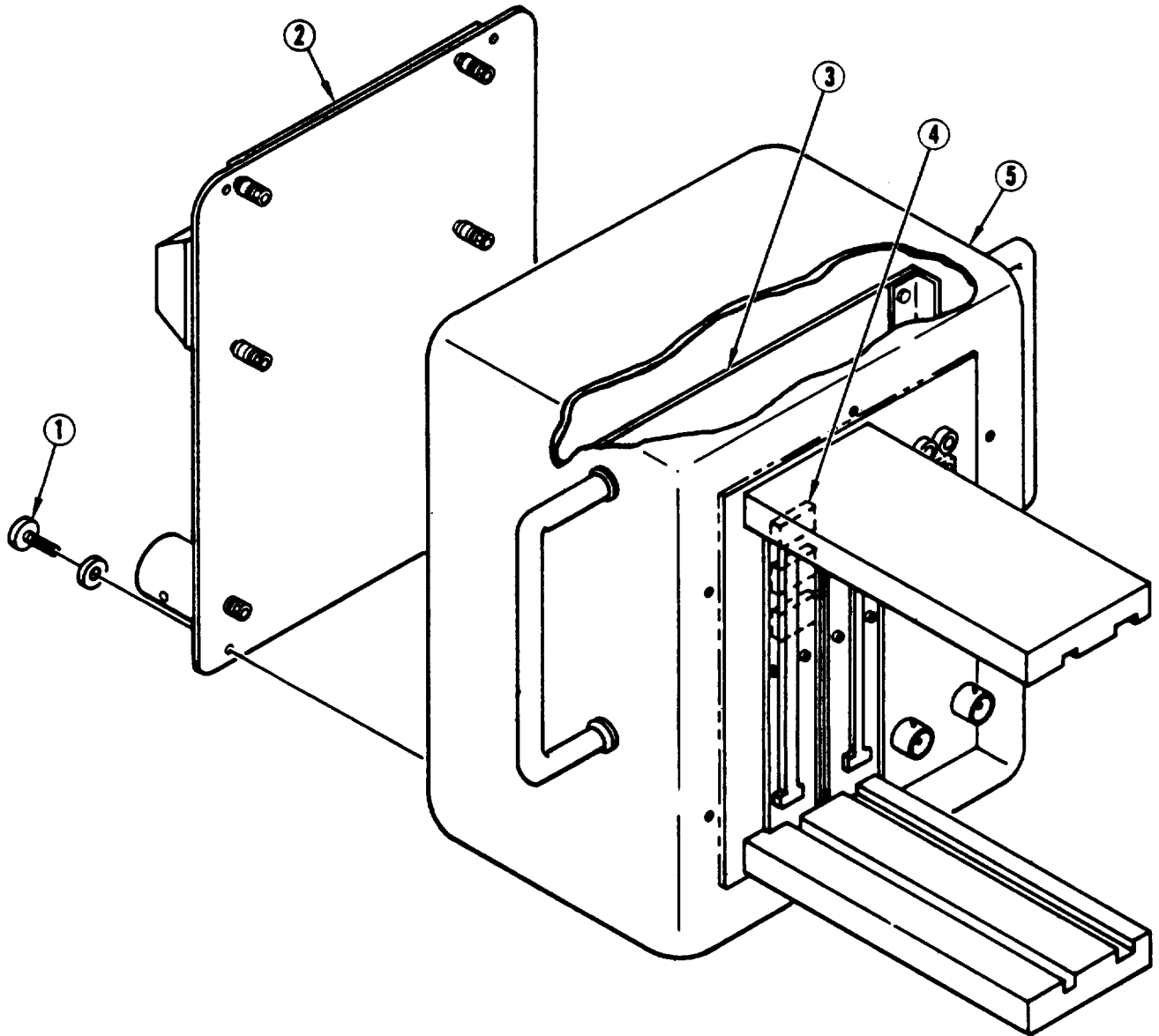


Be sure to place microcircuit in alignment with socket contacts on component board. Damage to microcircuit may result if not aligned properly.

4. Place microcircuit in proper position in socket on component board.
5. Apply a light, even pressure to microcircuit until microcircuit is seated properly.
6. Position adapter back plate on ID enclosure (5) and secure with 6 machine screws and washers.



REPAIR OF MICROCIRCUITS (2 of 2)



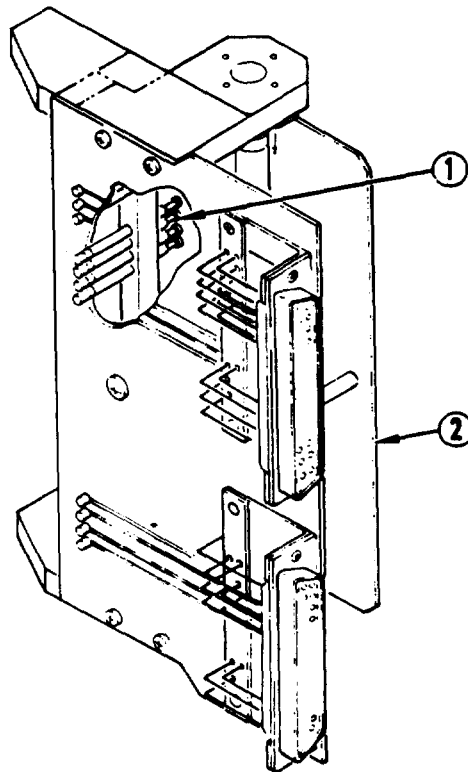
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**REPAIR OF TEST POINT ADAPTER CONTACT**

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This procedure will show you how to replace the spring-loaded contact (1) on the test point adapter (2).

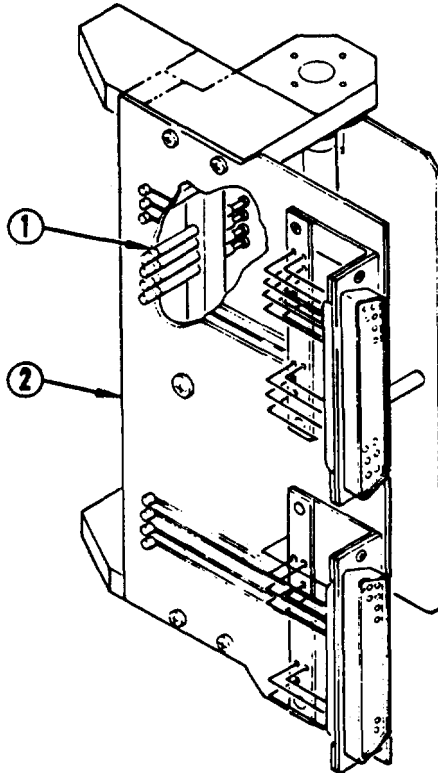
1. Using needlenose pliers, pull defective spring-loaded contact (1) from the front side of the test point adapter (2).
2. Using needlenose pliers, push spring-loaded probe contact into probe contact socket.



**REPAIR OF TEST POINT ADAPTER CONTACTS**

This procedure will show you how to replace contacts on the test point adapter.

1. Unsolder defective probe contact socket (1) from etch side of test point adapter (2).
2. Using needlenose pliers, pull probe contact socket from front side of test point adapter (2).
3. Using needlenose pliers, replace probe contact socket on front side of test point adapter (2).
4. Solder probe contact socket in place on etch side of test point adapter (2).
5. Using needlenose pliers, push spring-loaded probe contact into probe contact socket.



**APPENDIX A  
REFERENCES**

AR 746-1	Marking, Packing, and Shipment of Supplies and Equipment Packaging of Army Materiel for Shipment and Storage.
CTA 50-970	Expendable/Durable Items (Except Medical, Common Table of Allowances, Class V, Repair Parts and Heraldic Items).
DA PAM 310-1	Consolidated Index of Army Technical Publications and Blank Forms.
MIL-P-45743	Military Specification: Soldering, Manual Type, High Reliability, Electrical and Electronic Equipment.
MIL-P-46843	Military Specification: Printed Wiring Assemblies.
SB 11-573	Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment.
SB 708-41/42	Federal Supply Code for Manufacturers; United States and Canada, Name to Code, Code to Name.
TM 11-6625-2773-12-1	Operator's and Organizational Maintenance Manual (with Parts List) Test Station, Electronic Equipment AN/USM-410 (XE-3A)(V), AN/USM-410 (XE-3B)(V), and AN/USM-410 (XE-3C)(V) (to be published).
TM 38-750	The Army Maintenance Management System (TAMMS).
TM 740-90-1	Administrative Storage of Equipment.
TM 750-244-2	Procedures for Destruction of Electronics Materiel to Prevent Enemy Use.

## APPENDIX B EXPENDABLE SUPPLIES AND MATERIALS LIST

### Section I. INTRODUCTION

#### **SCOPE**

This appendix lists expendable supplies and materials you will need to operate and to maintain Electronic Equipment Test Station AN/USM-410(V). These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

#### **EXPLANATION OF COLUMNS**

- a. Column 1 – Item number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (eg, “Use cleaning compound, item 5, App. B”).
- b. Column 2 – National Stock Number. This is the National stock number assigned to the item; use it to request or requisition the item.
- c. Column 3 – Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Federal Supply Code for Manufacturer (FSCM) in parentheses followed by the part number.
- d. Column 4 – Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (eg - ea, in, pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

**EXPENDABLE SUPPLIES AND MATERIALS LIST**

(1) Item Number	(2) National Stock Number	(3) Description	(4) U/M
1	8030-00-753-5006 8030-00-753-5005 8030-00-753-4599	Polysulfide compound, MIL-S-8802 CLASS 2	2-1 oz kit 6 oz kit 1/2 pt kit
2	7510-00-159-4986	Adhesive film, NAFCO No. 101 (06530)	50 ft roll
3	6810-00-753-4993	Isopropyl alcohol	oz
4	6810-00-223-9069 6810-00-664-5278	Aliphatic naphtha, TT-N-97	gal
5	5970-00-181-0190	Conformal coating, MIL-1-46058 Type Pur	kit

## GLOSSARY (1 of 2)

Term or Abbreviation	Definition or Description
A/D	Analog-to-digital
BITE	Built-in test equipment
BNC	A type of connector
CAL	Calibration
CRT	Cathode ray tube
DC	Direct current
DIAG	Diagnostic
DIP	Dual in-line package
DIR	Director
ETE	End-to-end test
HSVSU	High speed voltage sampling unit
IC	Intermediate code
ID	Interconnection device
LED	Light emitting diode
LSVSU	Low speed voltage sampling unit
MEAS	Measure
MOS	Metal oxide semiconductor
PCOF	Probable cause of failure
PIU	Programmable interface unit
R	Indicates AN/USM-410 computer subsystem is ready. A UUT may now be tested.
REV	Revision

**GLOSSARY (2 of 2)**

<b>Term or Abbreviation</b>	<b>Definition or Description</b>
SAO	Stuck-at-zero
SA1	Stuck-at-one
TACFIRE	Tactical fire direction system
UUT	Unit under test
1635XXXT00	Test procedure for 1635XXX and 1642XXX type cards. The second 0 after the T indicates test version 0. The first 0 after the T indicates the card is 1635XXX-100. If the first number after the T were 1, it would indicate the card is 1635XXX-101.
803XXXT0 or C5000XXXT0	Test procedure for SM-D-803XXX and C5000XXX type cards. The 0 after the T indicates test version 0.



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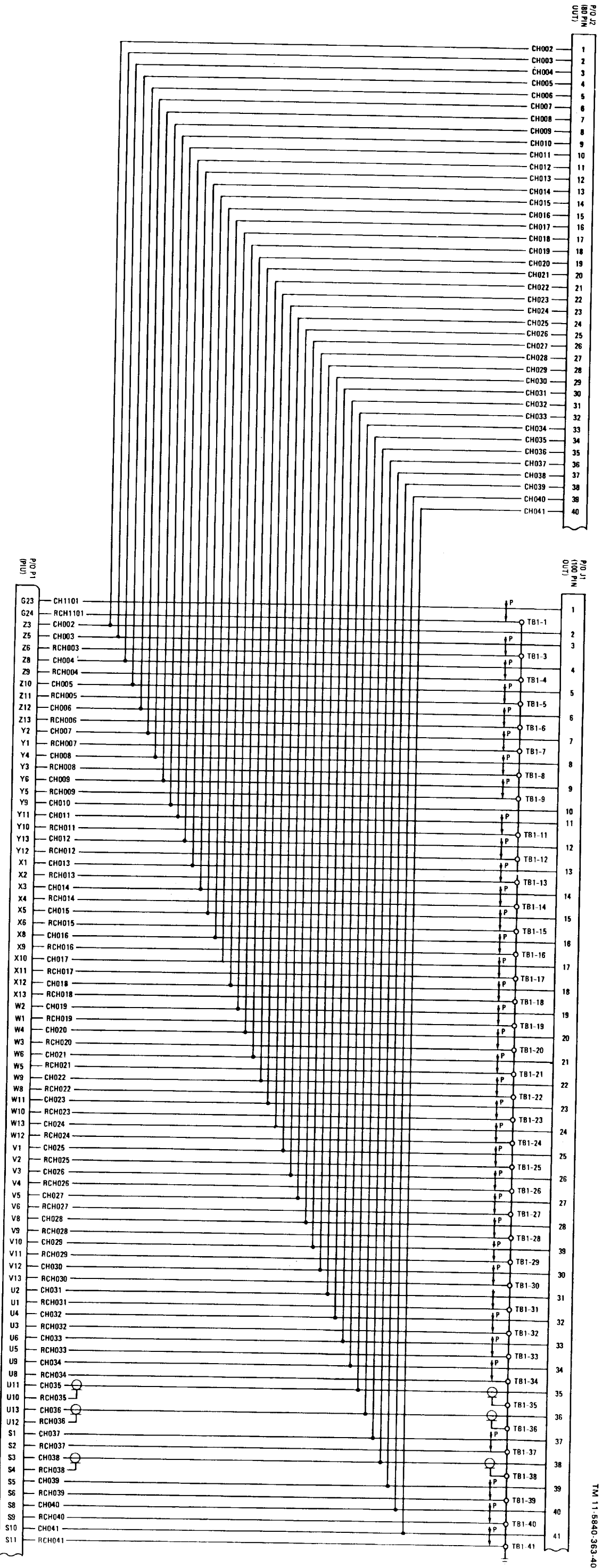
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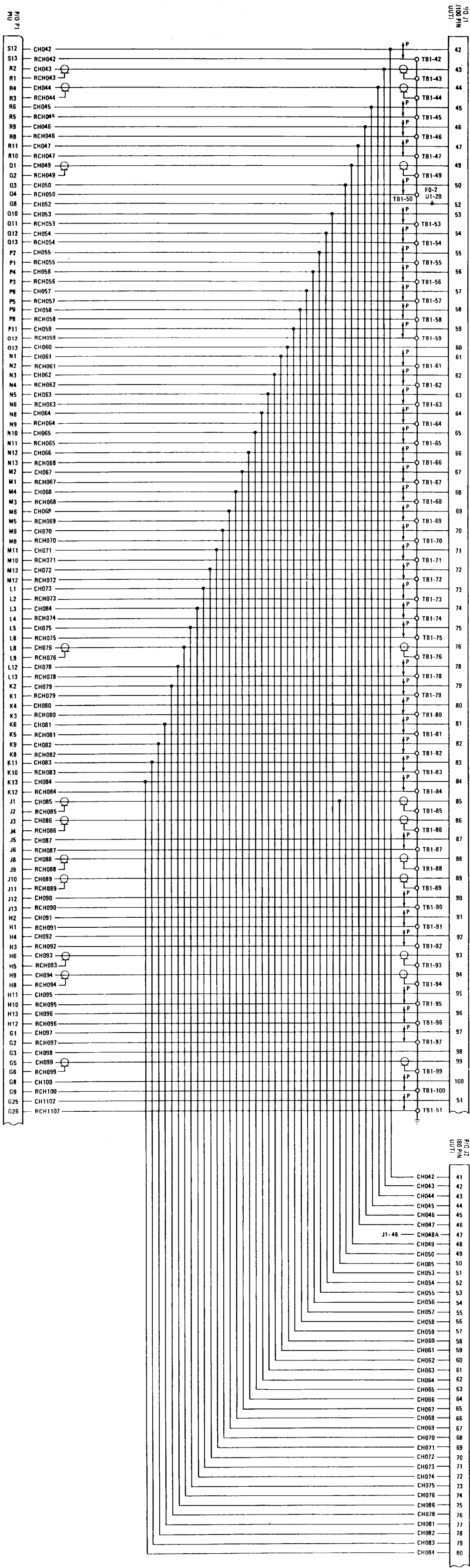


Interconnecting Device C5000610, Schematic (1 of 4)

P10 P1  
(100 PIN  
OUT)

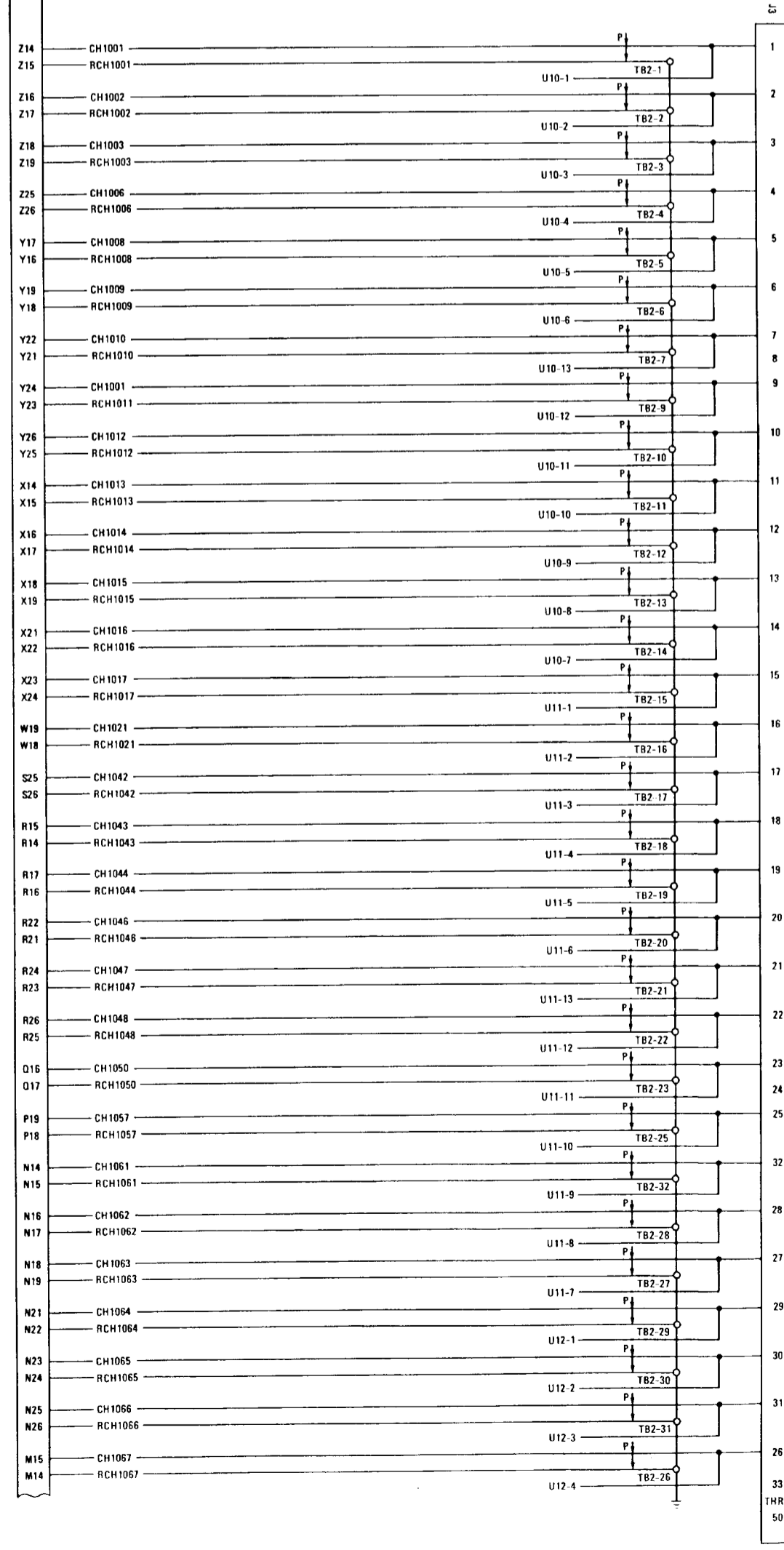
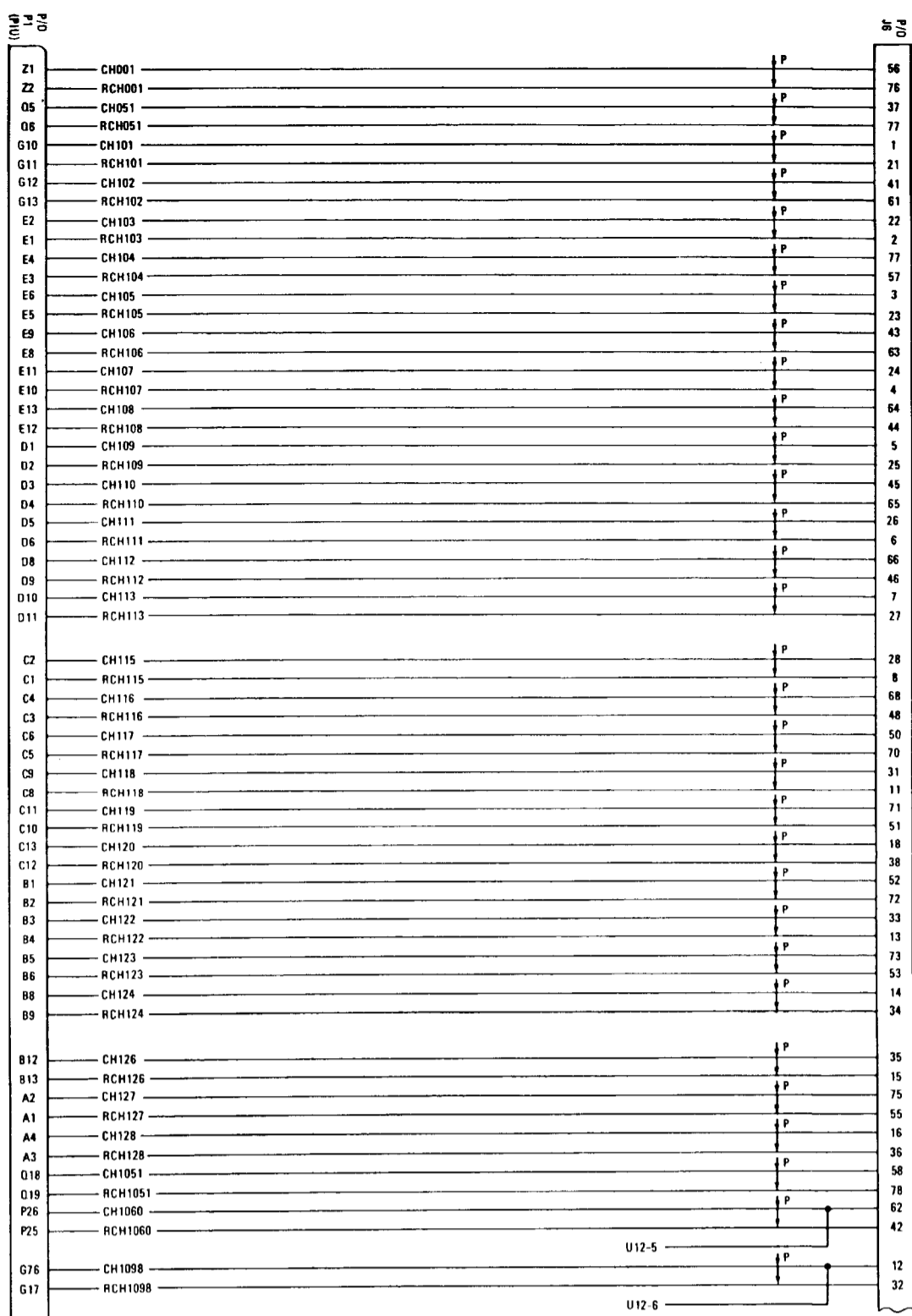
P10 P1  
(100 PIN  
OUT)

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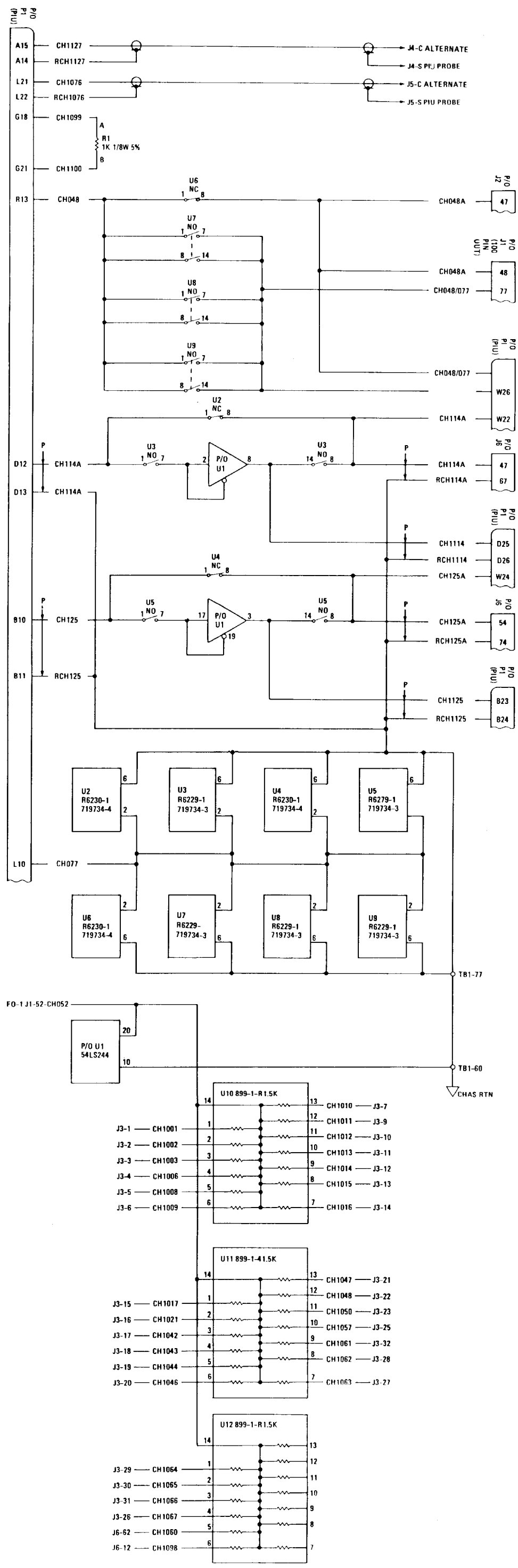


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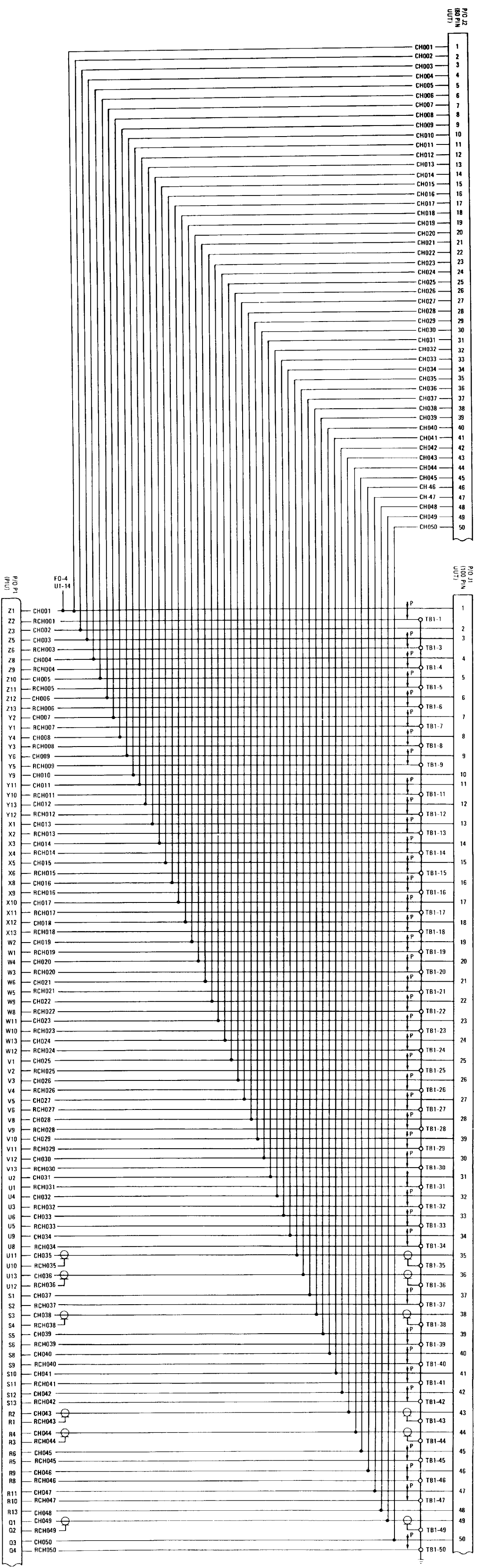
Interconnecting Device CS000610, Schematic (2 of 4)  
FO-2



Interconnecting Device CS000610, Schematic (3 of 4)  
F0-3

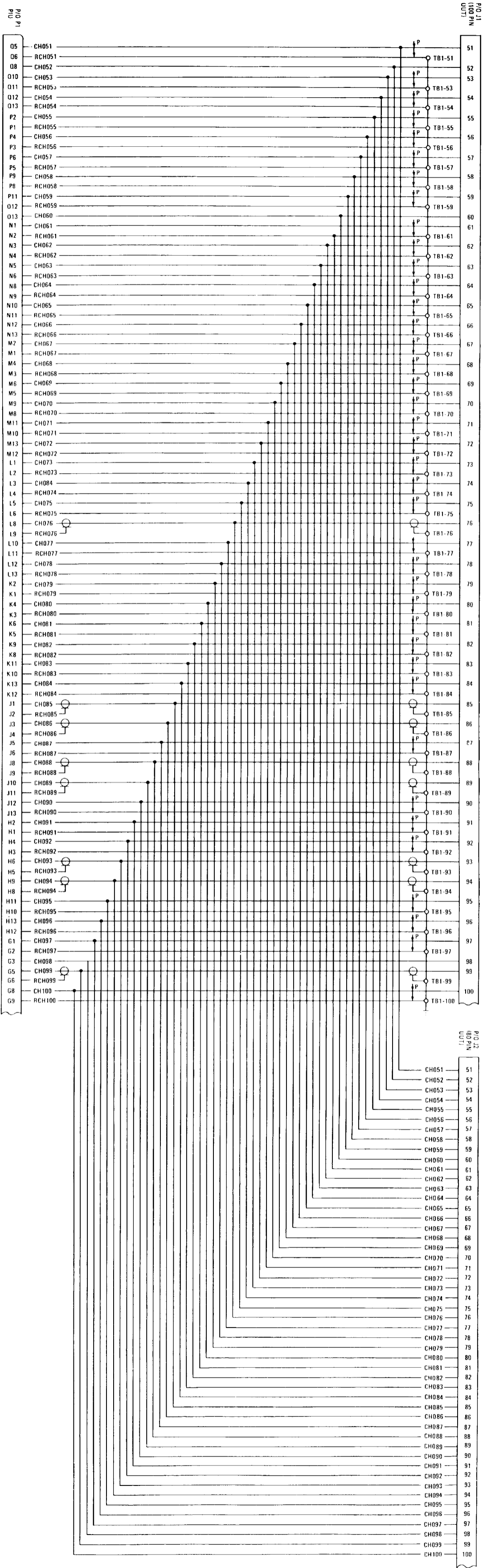


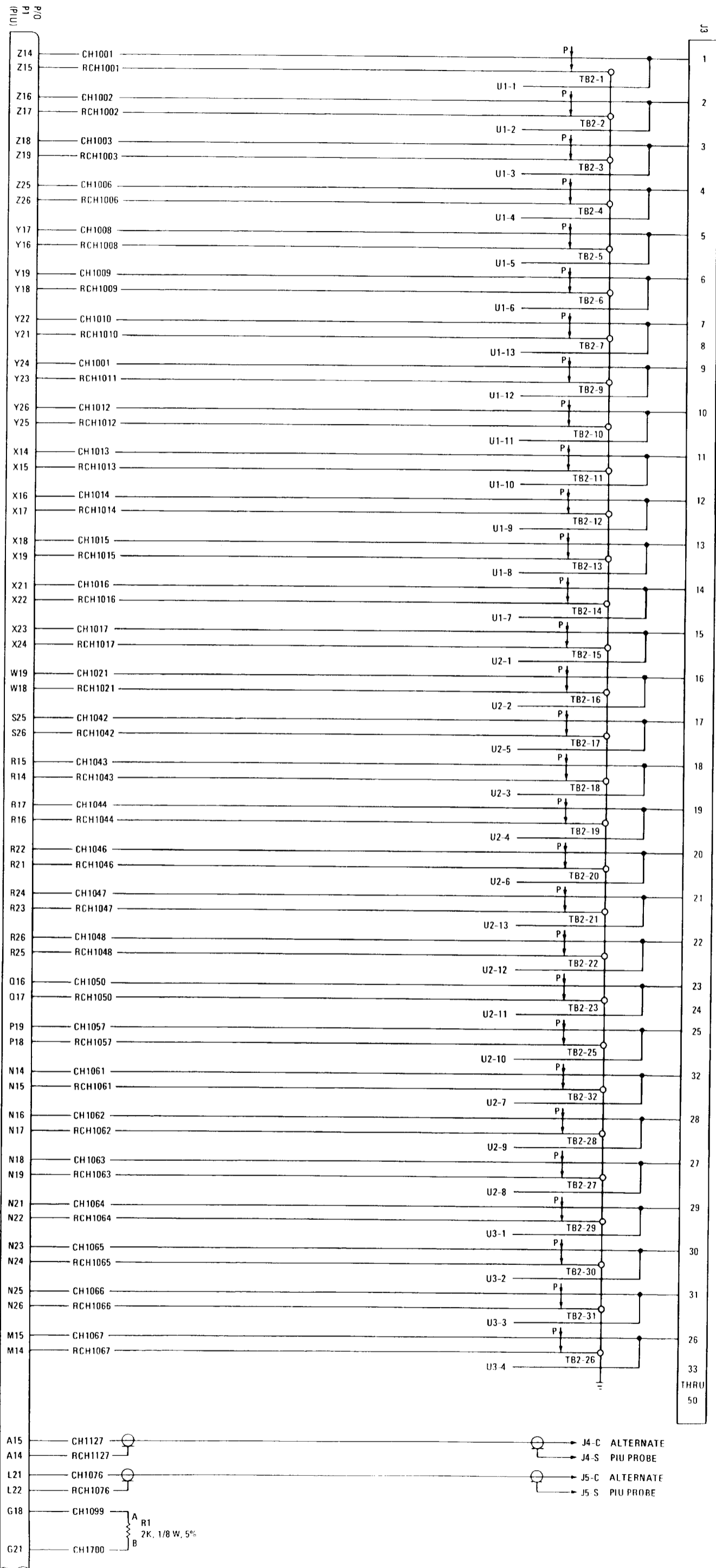
Interconnecting Device C5000610, Schematic (4 of 4)  
FO-4



Interconnecting Device CS000621, Schematic (1 of 4)  
FO-5





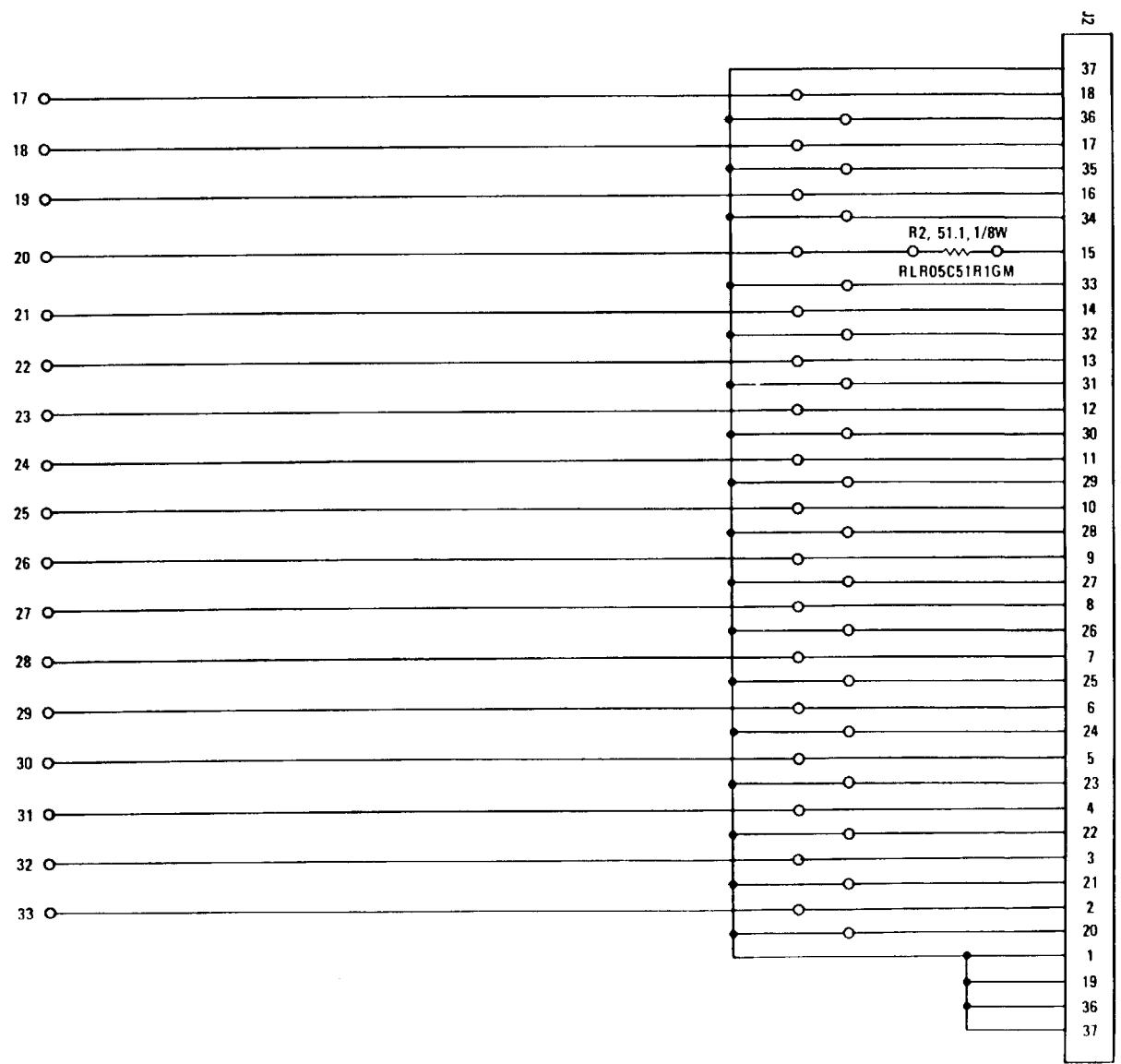
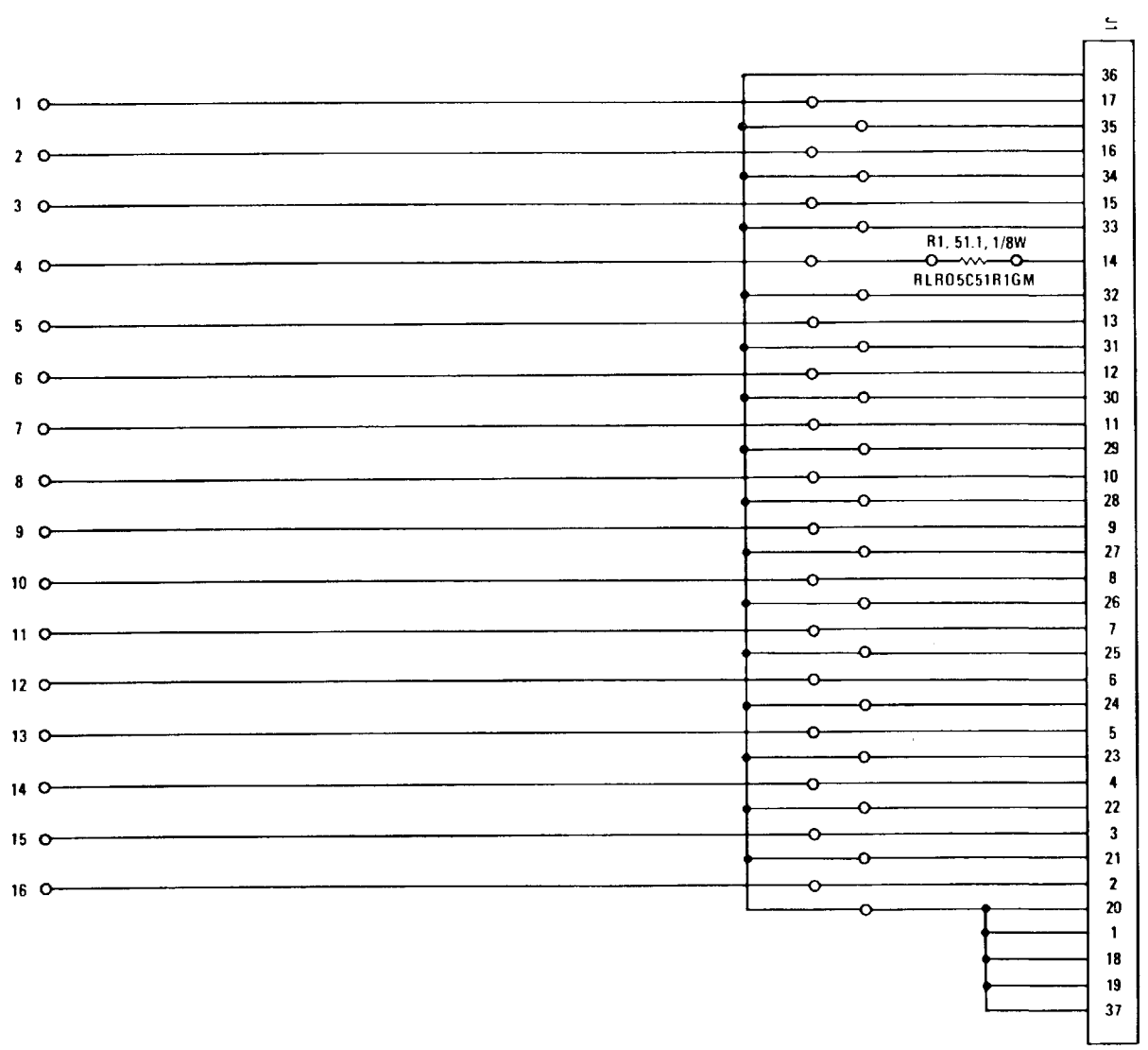


Interconnecting Device C5000621, Schematic (3 of 4)

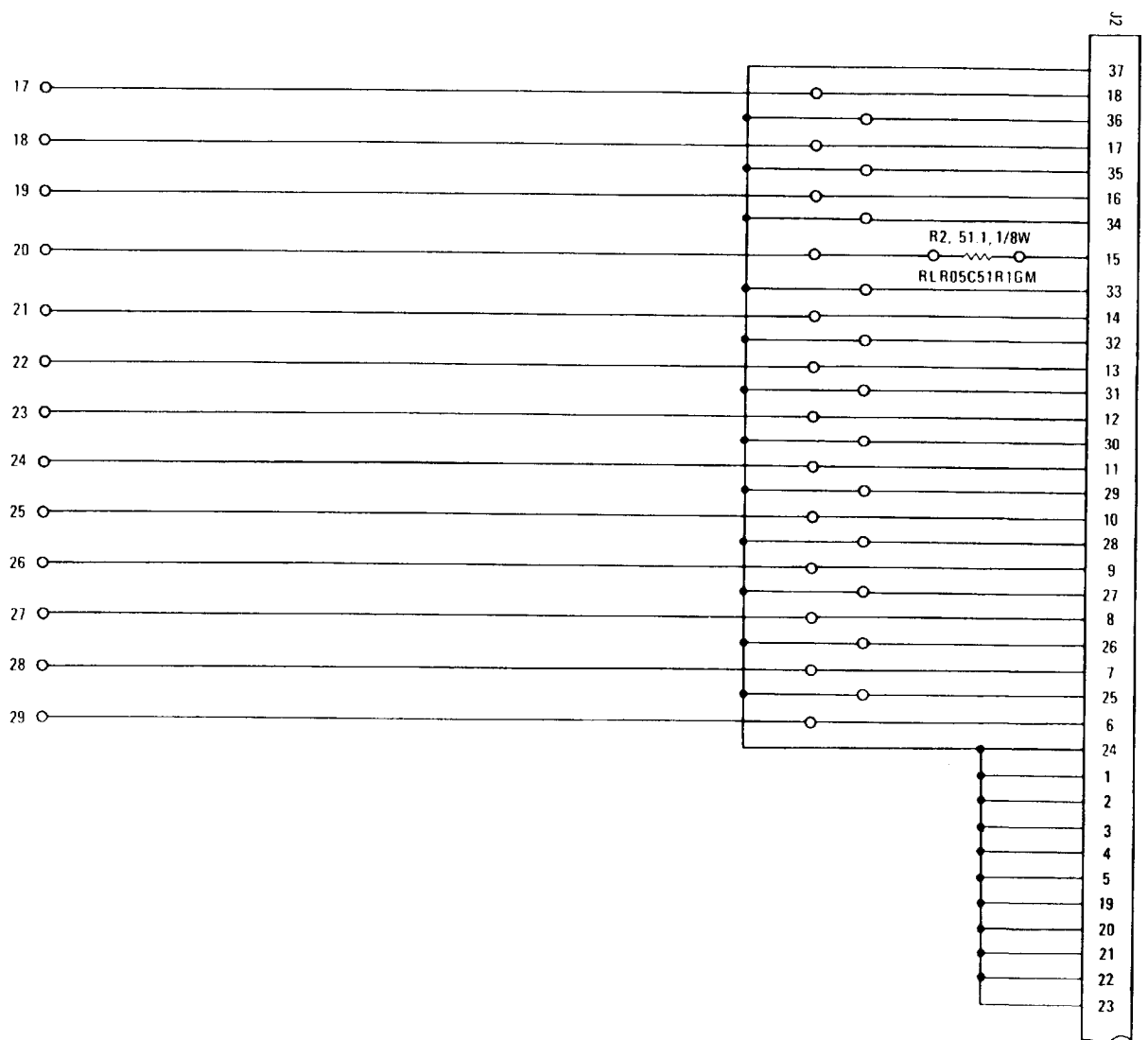
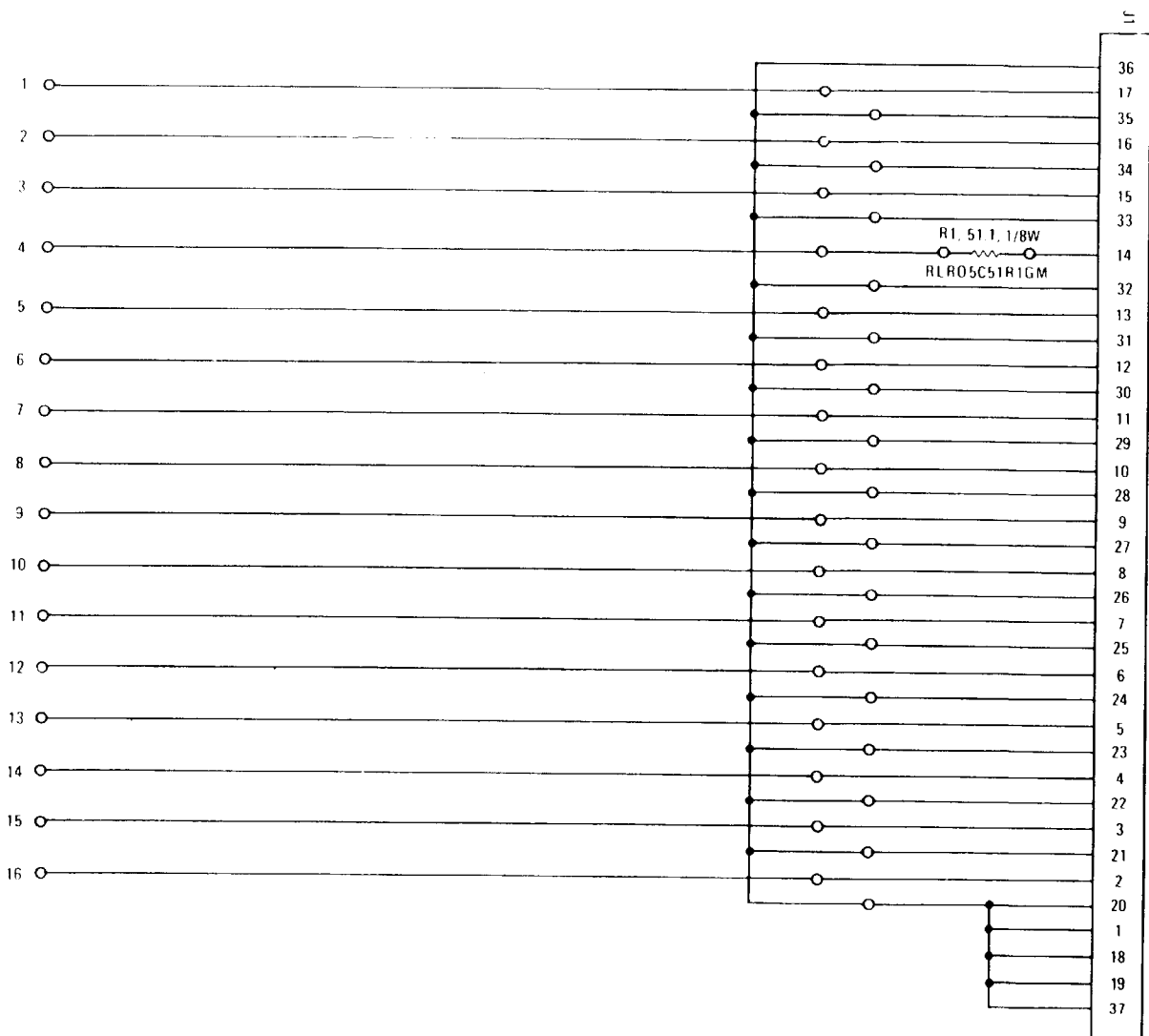
FO-7

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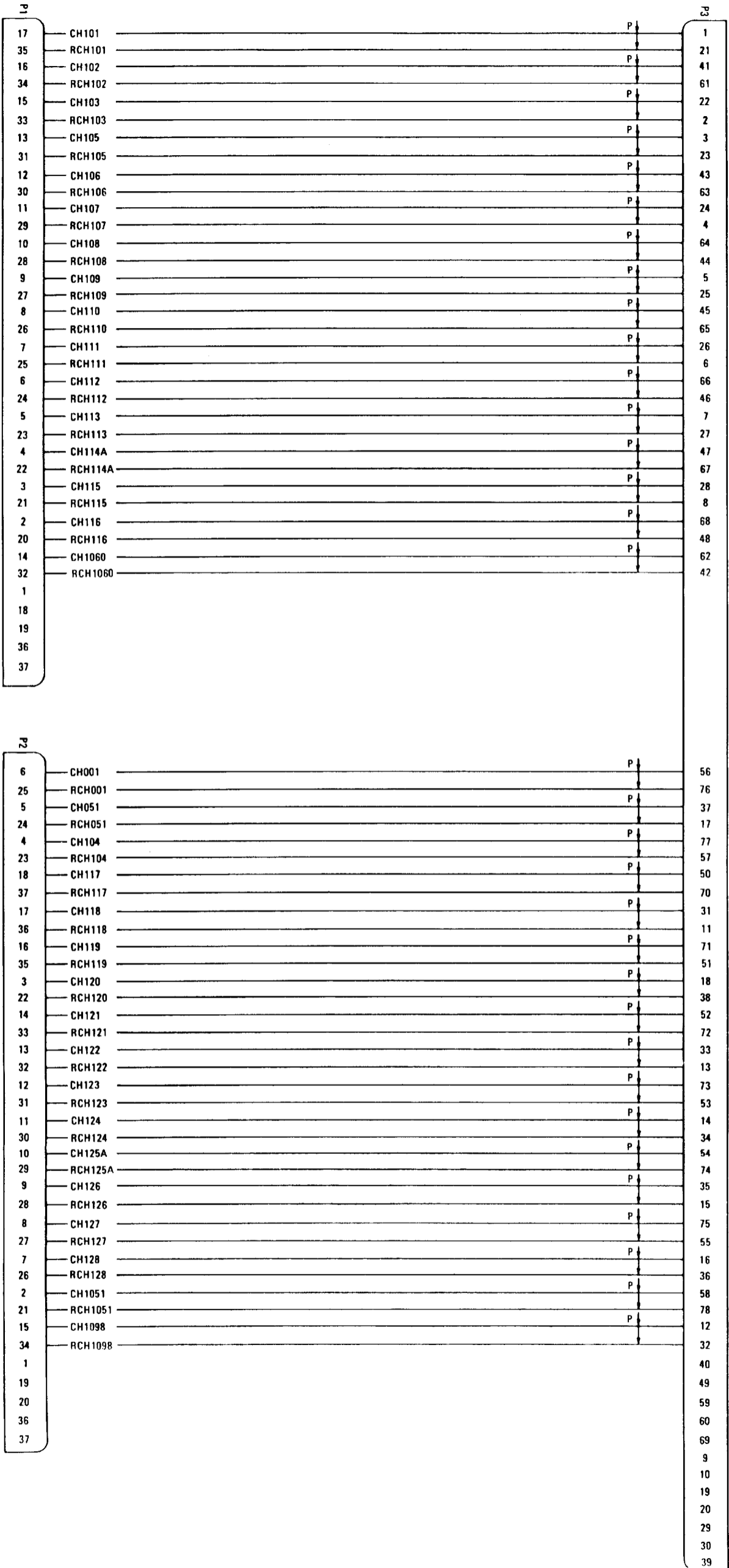
Test Point Adapter CS000528, Schematic  
FO-9



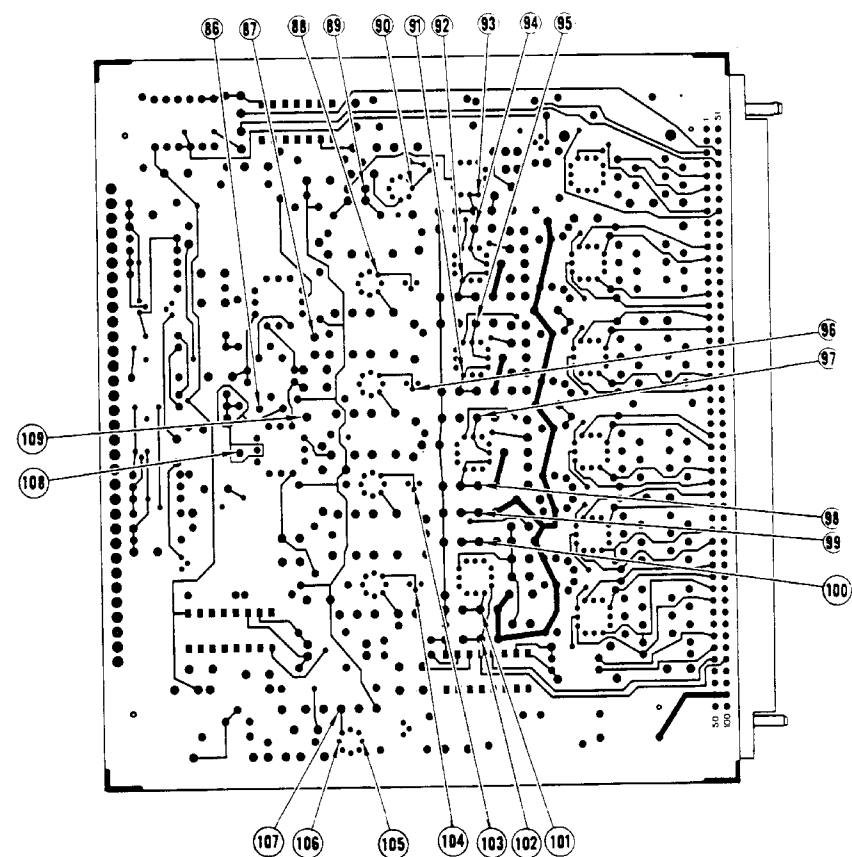
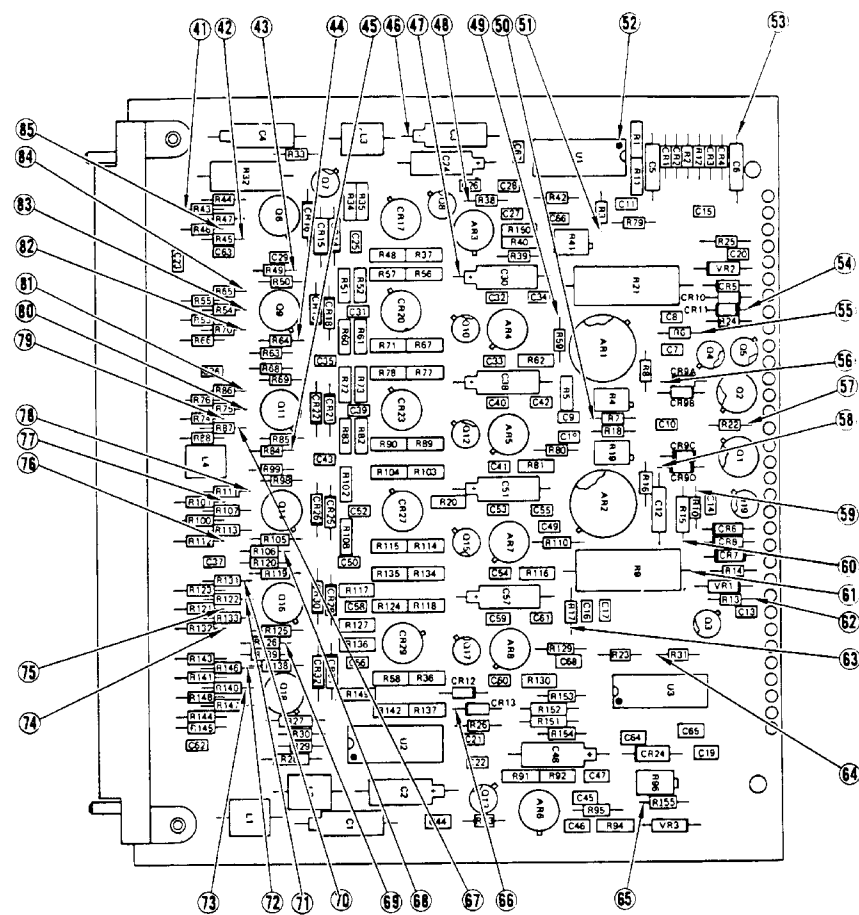
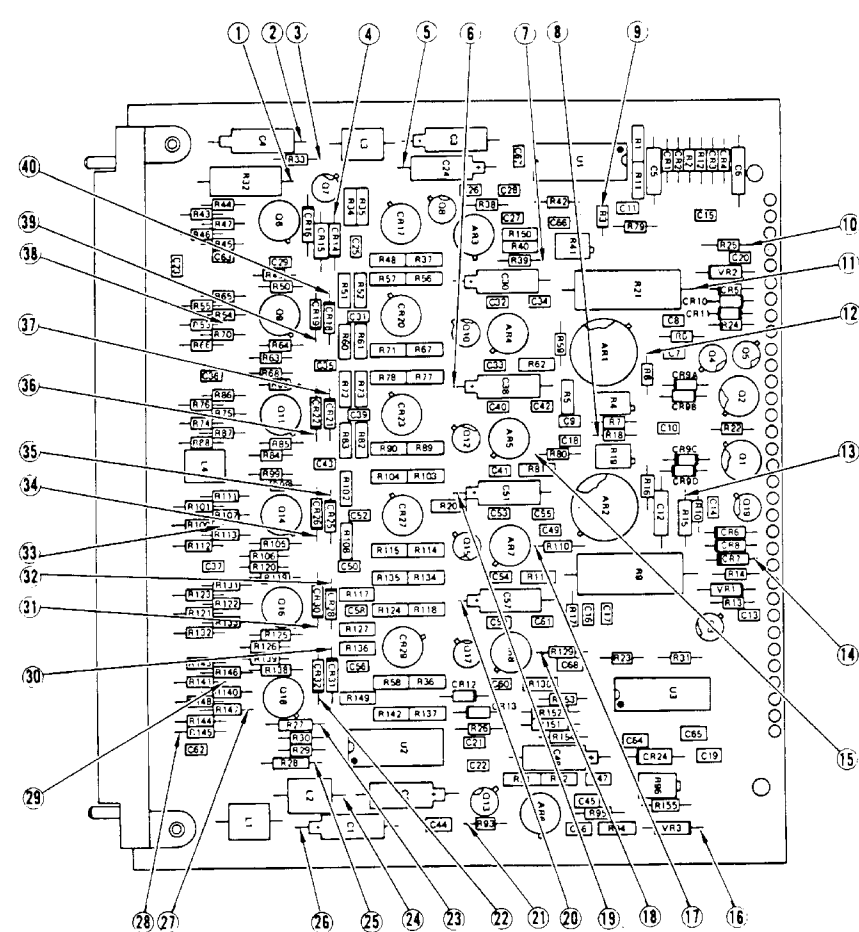
Test Point Adapter C5000629, Schematic F0-10

F0-10

TM 11-5840-363-40



Test Point Adapter Cable C5000649, Schematic  
FO-11



FRONT

REAR

1635942-100 A/D Converter Card Probe Point (Node) Location

FO-12

By Order of the Secretary of the Army:

E. C. MEYER  
*General, United States Army*  
*Chief of Staff*

Official:

ROBERT M. JOYCE  
*Major General, United States Army*  
*The Adjutant General*

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THEN... JOT DOWN THE DOPE ABOUT IT ON THIS FORM. CAREFULLY TEAR IT OUT. FOLD IT AND DROP IT IN THE MAIL.

SOMETHING WRONG WITH THIS PUBLICATION?

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 Stateside Army Depot  
 ATTN: AMSTA-US  
 Stateside, N.J. 07703

DATE SENT  
 10 July 1975

PUBLICATION NUMBER  
 TM 11-5840-340-12

PUBLICATION DATE  
 23 Jan 74

PUBLICATION TITLE  
 Radar Set AN/PRC-76

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO
2-25	2-28		
3-10	3-3		3-1
5-6	5-8		

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

Recommend that the installation antenna alignment procedure be changed throughout to specify a 2° IFF antenna lag rather than 1°.

REASON: Experience has shown that with only a 1° lag, the antenna servo system is too sensitive to wind gusting in excess of 25 knots, and has a tendency to rapidly accelerate and decelerate as it hunts, causing strain to the drive train. Hunting is minimized by adjusting the lag to 2° without degradation of operation.

Item 5, Function column. Change "2 db" to "3db."

REASON: The adjustment procedure the the TRANS POWER FAULT indicator calls for a 3 db (500 watts) adjustment to light the TRANS POWER FAULT indicator.

Add new step f.1 to read, "Replace cover plate removed in step e.1, above."

REASON: To replace the cover plate.

Zone C 3. On J1-2, change "+24 VDC to "+5 VDC."

REASON: This is the output line of the 5 VDC power supply. +24 VDC is the input voltage.

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER  
 SSG I. M. DeSpiritof 999-1776

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# The Metric System and Equivalents

## Linear Measure

1 centimeter = 10 millimeters = .39 inch  
 1 decimeter = 10 centimeters = 3.94 inches  
 1 meter = 10 decimeters = 39.37 inches  
 1 dekameter = 10 meters = 32.8 feet  
 1 hectometer = 10 dekameters = 328.08 feet  
 1 kilometer = 10 hectometers = 3,280.8 feet

## Weights

1 centigram = 10 milligrams = .15 grain  
 1 decigram = 10 centigrams = 1.54 grains  
 1 gram = 10 decigrams = .035 ounce  
 1 dekagram = 10 grams = .35 ounce  
 1 hectogram = 10 dekagrams = 3.52 ounces  
 1 kilogram = 10 hectograms = 2.2 pounds  
 1 quintal = 100 kilograms = 220.46 pounds  
 1 metric ton = 10 quintals = 1.1 short tons

## Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce  
 1 deciliter = 10 centiliters = 3.38 fl. ounces  
 1 liter = 10 deciliters = 33.81 fl. ounces  
 1 dekaliter = 10 liters = 2.64 gallons  
 1 hectoliter = 10 dekaliters = 26.42 gallons  
 1 kiloliter = 10 hectoliters = 264.18 gallons

## Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch  
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches  
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet  
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet  
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres  
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

## Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch  
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches  
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

## Approximate Conversion Factors

To change	To	Multiply by	To change	To	Multiply by
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

## Temperature (Exact)

°F Fahrenheit temperature      5/9 (after subtracting 32)      Celsius temperature      °C

