HP 75000 Series C

C-SIZE VXIbus Active
Adapter Module HP E1403A

Installation Manual

HEWLETT PACKARD

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CERTIFICATION

Hewlett-Packard Company certifies that this product met its published specifications at the time of shipment from the factory. Hewlett-Packard further certifies that its calibration measurements are traceable to the United States National Institute of Standards and Technology (formerly National Bureau of Standards), to the extent allowed by that organization's calibration facility, and to the calibration facilities of other International Standards Organization members.

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Herstellerbescheinigung

Hiermit wird bescheinigt, dass dieses Gerät/System HP E1482 in Übereinstimmung mit den Bestimmungen von Postverfügung 1046/84 funkentstört ist. Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes/Systems angezeigt und die Berechtigung zur Überprfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Zusatzinformation für Mess- und Testgeräte:
Werden Mess- und Testgeräte mit ungeschirmten Kabeln und/oder in offenen Messaufbauten verwendet, so ist vom Betreiber sicherzustellen, dass die Funk-Entstörbestimmungen unter Betriebsbedingungen an seiner Grundstücksgrenze eingehalten werden.

Manufacturer's Declaration

This is to certify that the equipment HP E1482 meets the radio frequency interference requirements of Directive FTZ 1046/84. The German Bundespost has been notified that this equipment was put into circulation and has been granted the right to check the product type for compliance with these requirements.

Additional Information for Test and Measurement Equipment:
If test and measurement equipment is operated with unscreened cables and/or used for measurements on open set-ups, the user has to assure that under operating conditions the Radio Interference Limits are still met at the border of the user's premises.

Printing History

Trademark and Copyright Information

Safety Symbols

Instruction manual symbol affixed to product. Indicates that the user must refer to the manual for specific Warning or Caution information to avoid personal injury or damage to the product.

Indicates the field wiring terminal that must be connected to earth ground before operating the equipment — protects against electrical shock in case of fault.

Frame or chassis ground terminal — typically connects to the equipment's metal frame.

Alternating current (AC).

Direct current (DC).

Indicates hazardous voltages.

Calls attention to a procedure, practice, or condition that could cause bodily injury or death.

WARNING

Calls attention to a procedure, practice, or condition that could possibly cause damage to equipment or permanent loss of data.

CAUTION

WARNINGS

The following general safety precautions must be observed during all phases of operation, service, and repair of this product. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the product. Hewlett-Packard Company assumes no liability for the customer's failure to comply with these requirements.

Ground the equipment: For Safety Class 1 equipment (equipment having a protective earth terminal), an uninterruptible safety earth ground must be provided from the mains power source to the product input wiring terminals or supplied power cable.

DO NOT operate the product in an explosive atmosphere or in the presence of flammable gases or fumes.

For continued protection against fire, replace the line fuse(s) only with fuse(s) of the same voltage and current rating and type. DO NOT use repaired fuses or short-circuited fuseholders.

Keep away from live circuits: Operating personnel must not remove equipment covers or shields. Procedures involving the removal of covers or shields are for use by service-trained personnel only. Under certain conditions, dangerous voltages may exist even with the equipment switched off. To avoid dangerous electrical shock, DO NOT perform procedures involving cover or shield removal unless you are qualified to do so.

DO NOT operate damaged equipment: Whenever it is possible that the safety protection features built into this product have been impaired, either through physical damage, excessive moisture, or any other reason, REMOVE POWER and do not use the product until safe operation can be verified by service-trained personnel. If necessary, return the product to a Hewlett-Packard Sales and Service Office for service and repair to ensure that safety features are maintained.

DO NOT service or adjust alone: Do not attempt internal service or adjustment unless another person, capable of rendering first aid and resuscitation, is present.

DO NOT substitute parts or modify equipment: Because of the danger of introducing additional hazards, do not install substitute parts or perform any unauthorized modification to the product. Return the product to a Hewlett-Packard Sales and Service Office for service and repair to ensure that safety features are maintained.

Contents

Getting Started

Introduction

This manual is divided into three chapters and one appendix:

Chapter 1. Getting Started introduces the HP E1403A C-Size VXIbus Active Adapter Module and describes the hardware components included with the module.

Chapter 2. Installing a VMEbus Card describes how to install a VMEbus card in the VXIbus Active Adapter Module.

Chapter 3. Installing an HP E1403A VXIbus Active Adapter Module describes how to install the module in the VXIbus C-Size Mainframe.

Appendix A. Replaceable Parts lists the part numbers and descriptions of replaceable parts available for the VMEbus Active Adapter Module from Hewlett-Packard, provides a component locator, and provides a schematic diagram.

Module Description

The HP E1403A VXIbus Active Adapter Module is an electronic module that allows A- or B-Size VMEbus cards to connect to a VXIbus C-Size Mainframe. The A- or B-Size VMEbus card with a J1 connector plugs directly into the P1 connector of the VXIbus backplane. The active adapter portion of the module physically extends the VXIbus backplane to compensate for the shorter VMEbus card. This module meets VME/VXI electric specifications.

The following lists the features of the HP E1403A VXIbus Active Adapter Module:

- mounts with front panel of the VMEbus card flush with the front of the module.

- occupies one slot in the VXIbus C-Size Mainframe.

- provides direct access to the front panel I/O connections.

- provides VMEbus J1 connector with pin-for-pin compatibility with the VXIbus P1 connector.

- meets VMEbus driving and loading specifications.

- provides proper timing for Data Transfer Acknowledgment (DTACK) and Interrupt Signals (IRQ).

- provides connectivity for HP B-Size modules or any P1-only VXI slave module. (Bus Master signals are not provided. These include: BBSY*, BLCR*, BR0*, BR1*, BR2*, BR3*, SERCLK, SERDAT.)

For more information, refer to the "Printed Circuit Assembly" in Appendix A.

Note

For A- or B-size modules with both J1 and J2 connectors, use the optional C-size HP E1408A Module Carrier. For access to the user-defined pins on J2, use the HP E1402A for B-size VMEbus cards into a C-size VXIbus Mainframe.

Hardware Components

The Active Adapter Module contains a top shield, a bottom shield, a component card with 96-pin connectors at each end, a blank metal card the same size as the component card (used as a guide when inserting the module into the C-size VXIbus Mainframe), and two support stiffeners/mounting brackets which reinforce the extractor handles on the front panel of the VMEbus card. A plastic protective strip on the front of the bottom shield protects the electrical components on the VMEbus card during installation and removal.
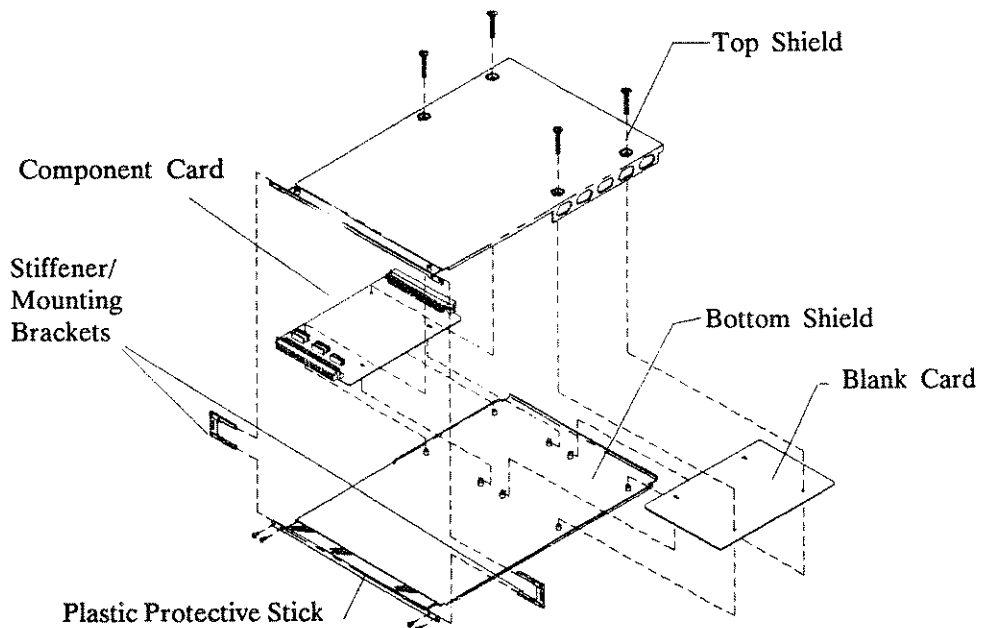

Figure 1-1. HP E1403A Active Adapter Module

Installing the VMEbus Card

Preparing for Installation

This chapter describes the procedures to install the VMEbus card into the HP E1403A VXIbus Active Adapter Module. To install the HP E1403A Module into the C-Size Mainframe, refer to the following Chapter, "Installing the HP E1403A VXIbus Active Adapter Module". The Active Adapter Module can be installed in the C-Size Mainframe before installing the VMEbus card.

Before beginning the installation, the logical address of the VMEbus card needs to be set. To determine how to set the address of the VMEbus card, refer to the VMEbus Specifications and the VXIbus Specifications.

Installing the VMEbus Card

VMEbus cards fit only one way into the VXIbus Active Adapter Module. The J1 96-pin connector on the back of the VMEbus card tightly connects to the P1 96-pin connector on the front of the Active Adapter Module. See Figure 2-1.

1. Gently slide the VMEbus card into the module until the two connectors are touching.

2. Lay the module on a flat surface.

3. Put your two forefingers behind the stiffeners/mounting brackets.

4. Use your thumbs on the extractor handles to firmly press the VMEbus card into the module.

When the VMEbus card is completely seated, the front panel of the VMEbus card will be flush with the front of the module. The VMEbus card is now installed in the Active Adapter Module.

NOTE

If the HP E1403A VXIbus Active Adapter Module was installed in the C-Size Mainframe before installing the VMEbus card, then the VMEbus card can be installed following the above procedures, omitting step 2. For B-size cards, the top and bottom card guides help direct the card into the module properly. For A-size cards, the top card guide helps direct the card into the module.

P1 Connector

J1 Connector

VME A or B–Size Card

1403F2–1

E1403 Active Adapter Module
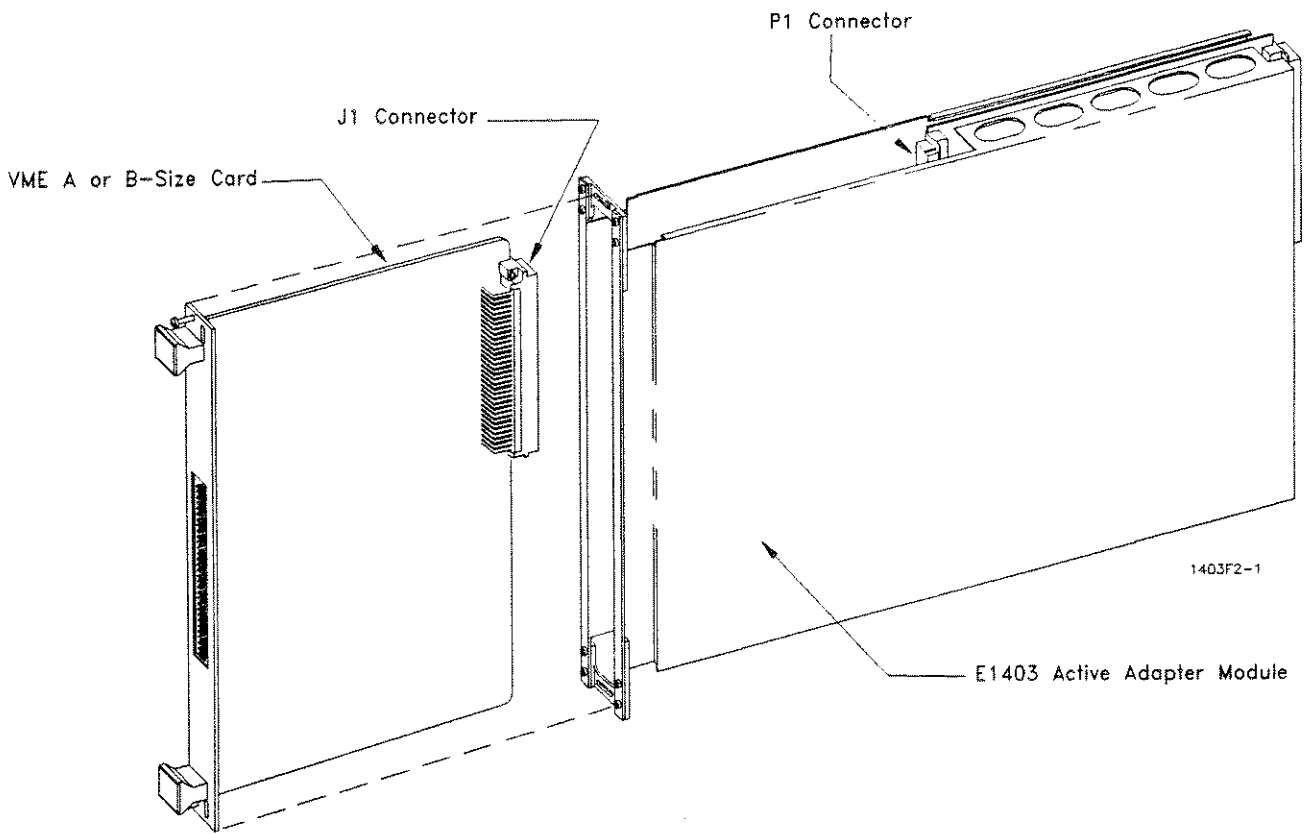
Figure 2-1. Installing the VMEbus Card.

Removing the VMEbus Card from the Module

The VMEbus card is tightly seated in the Active Adapter module and will require a small amount of force to unseat it.

NOTE

Do not try to remove the VMEbus card from the VXIbus Active Adapter Module while the module is in the mainframe and the mainframe power is turned-on.

1. Secure the module firmly with the front panel facing upwards.

2. Grasp the two extractor handles, and gently but firmly pull them upwards.

3. Apply a slight back and forth motion to the extractors.

Once the connector is unseated, the VMEbus card will slide out easily.

Installing the HP E1403A VXIbus Active Adapter Module

Preparing for Installation

This chapter describes the procedures to install the HP E1403A VXIbus Active Adapter Module into the C-size Mainframe.

Before beginning the installation, the filler panel in the slot where the HP E1403A is to be installed needs to be removed. Additionally, all power to the C-size Mainframe should be removed.

Warning

SHOCK HAZARD. Only qualified, service trained personnel who are aware of the hazards involved should install, configure, or remove modules from the mainframe. Remove all sources of power from the mainframe and installed modules before installing or removing a module.

Installing the Module

After the front panel has been removed and the power has been removed, the module can be installed in the C-size Mainframe. See Figure 3-1.

1. Hold the module so that the connector on the back is to the top.

2. Insert the Active Adapter Module aligning the edges of the module's circuit board (top) and spacer (bottom) with the top and bottom guide assemblies in the C-size Mainframe.

3. Slide the module firmly into the mainframe until the module connectors engage the backplane. Additional pressure may be necessary to fully seat the connectors.

4. Tighten the two front panel mounting screws until the VMEbus card and the Active Adapter module are secured to the mainframe front panel mounting brackets.

NOTE

The Active Adpater Module should not be left in the C-size Mainframe without a VMEbus card installed. During powerup, the resource manager will recognize a module is in the slot. However, if the VMEbus card is not installed, the resource manager will not be able to identify the module, and an error message will be returned. If the E1403 Active Adapter Module was installed in the mainframe first, refer to "Installing the VMEbus Card" to properly install the VMEbus A- or B-size card into the module.

The Active Adapter Module is now installed in the C-size Mainframe.

VXI C-Size Mainframe

VME A or B-Size Card

E1403 Active Adapter Module

1403f3-1
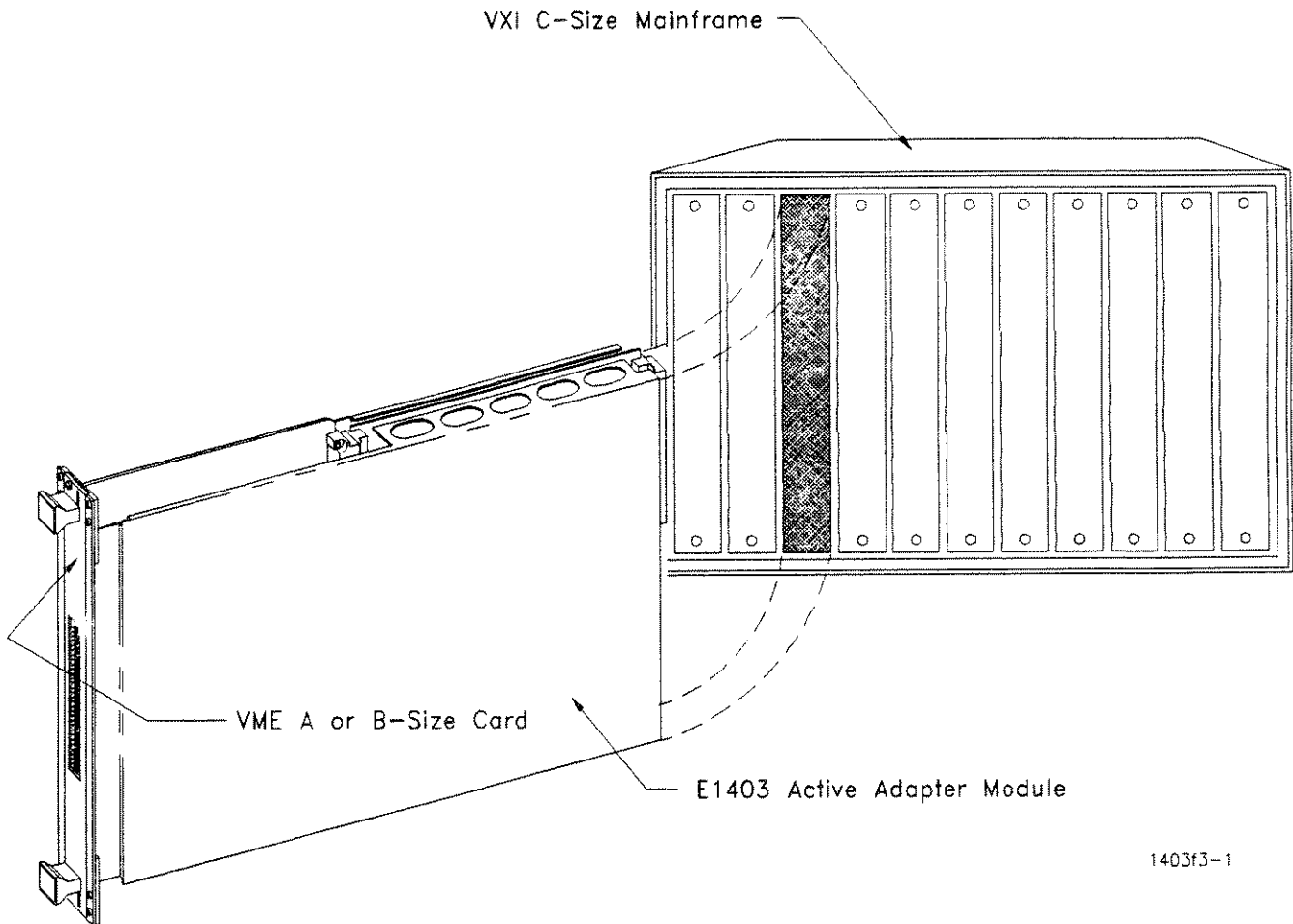
3-1 Installing the VXIbus Active Adapter Module

Removing the Module from the Mainframe

Do not try to remove the VMEbus card from the VXIbus Active Adapter Module while the module is in the mainframe and the mainframe power is turned-on.

1. Loosen the two front panel mounting screws.

2. Press down on the bottom extractor while pulling up on the top extractor.

3. Pull the assembly away from the mainframe.

Once the Active Adapter module is away from the backplane connectors of the mainframe, the module can be easily pulled away from the mainframe.

Note

It may be necessary to remove adjacent modules before removing the module from the mainframe. Additionally, you may need to hold the top and bottom sheet metals of the E1403A Active Adapter to pull it away from the mainframe.

Replaceable Parts

HP E1403A Replacement Parts

| Reference Designation	HP Part Number	C D	Qty	Part Description	Mfr. Code	Mfr. Part Number
A1	E1403-66501	6	1	PRINTED CIRCUIT ASSEMBLY	28480	E1403-66501
C1-C3	0180-1746	5	3	CAPACITOR-FXD 15UF +-10% 20VDC TA	56289	150D156X9020B2-DYS
C4-C9	0160-4835	7	6	CAPACITOR-FXD .1UF +-10% 50VDC CER	04222	SA105C104KAAH
F1-F3	2110-0712	8	3	FUSE-SUBMINIATURE 4A 125V NTD AX	75915	R251004T1
J1	1252-1593	4	1	CONNECTOR-POST TYPE 5.08-PIN-SPCG	09922	RPI96B30RIG52
L1-L3	9140-1354	6	6	INDUCTOR-FXD 47UH +-15% .453IN-D X.9IN-LG	91637	IHD-3-01 47 UH 15%
P1	1252-1596	7	1	CONNECTOR-POST TYPE 2.54-PIN-SPCG	09922	PI96B30P00F50
RP1-RP8	1810-0759	6	8	NETWORK-RESISTOR 10-SIP MULTI-VALUE	32997	4310R-104-331/471
U1	1820-4242	1	1	IC SCHMITT-TRIG HEX-INVERTOR CMOS/74HC	18324	74HCT14N
U2	1820-2739	7	1	IC GATE QUAD 2-INP-NOR TTL ALS	01295	SN74ALS02N
U3-U3	1820-4057	6	3	IC BUFFER QUAD-2INP-NAND TTL F	18324	74F38N
U6-U10	1820-6435	8	5	IC OCTAL LINE DRIVER TTL ALS	01295	SN74ALS541-1N
U11-U12	1820-3714	0	2	IC OCTAL BUS TRANSCEIVER TTL ALS	01295	SN74ALS245A-1N
U13	1820-2699	8	1	IC OCTAL LINE DRIVER TTL F	18324	74F241N
U18	1820-3630	9	1	IC OCTAL BUS DRIVER CMOS/74HCT	04713	MC74HCT240N
MP1-MP2	E1403-00201	5	2	BRACE-TOP & BOTTOM SHIELD	28480	E1403-00201
SCR001-SCR008	0515-1056	1	8	SCREW-MACHINE M2.5X0.45 4MM-LG PAN-HD	28480	0515-1056
SHD1	E1403-00601	9	1	SHIELD-TOP	28480	E1403-00601
SCROO9-SCRO010	0515-1135	7	4	SCREW-MACHINE M3X0.5 25MM-LG FLT-HD	28480	0515-1135
SHD2	E1403-00603	1	1	SHIELD-BOTTOM	28480	E1403-00603
SHD3	E1403-00604	2	1	EXTENDER GUIDE	28480	E1403-00604
				TORX T10		

Code List of Manufacturers

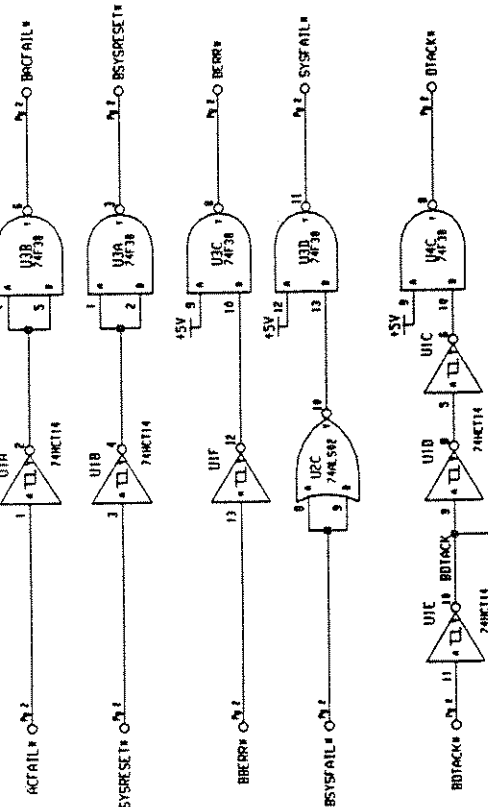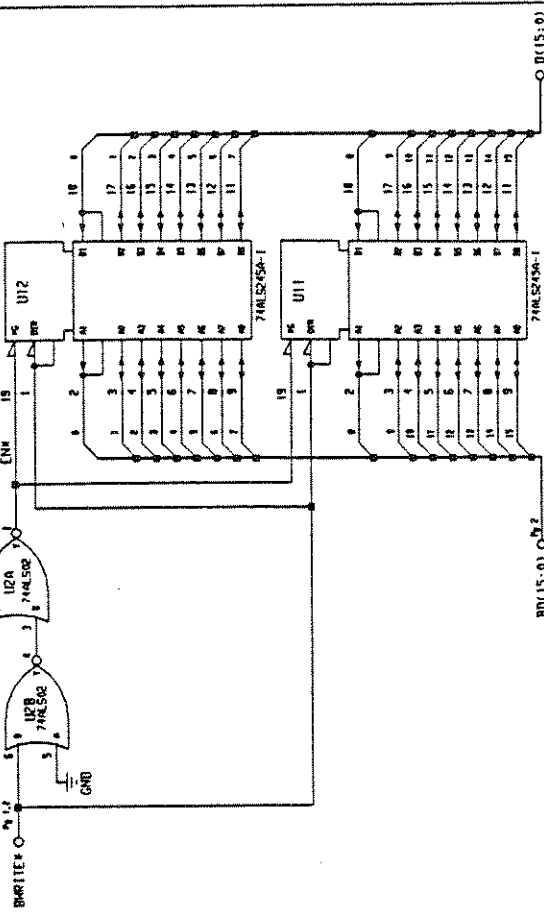| Mfr. Code	Manufacturer's Name	Manufacturer's Address	Zip Code
01295	TEXAS INSTRUMENTS INC.	DALLAS TX. US	75265
04222	AVX CORP.	GREAT NECK NY. US	11021
04713	MOTOROLA INC.	ROSELLE IL. US	60195
09922	BURNDY CORP.	NORWALK CT. US	06856
18324	SIGNETICS CORP.	SUNNYVALE CA. US	94086
28480	HEWLETT PACKARD COMPANY-CORPORATE	PALO ALTO CA. US	94304
32997	BOURNS INC.	RIVERSIDE CA. US	92507
56289	SPRAGUE ELECTRIC CO.	LEXINGTON MA. US	02173
75915	LITTELFUSE INC.	DES PLAINES IL. US	60016
91637	DALE ELECTRONICS INC.	COLUMBUS NE. US	68601

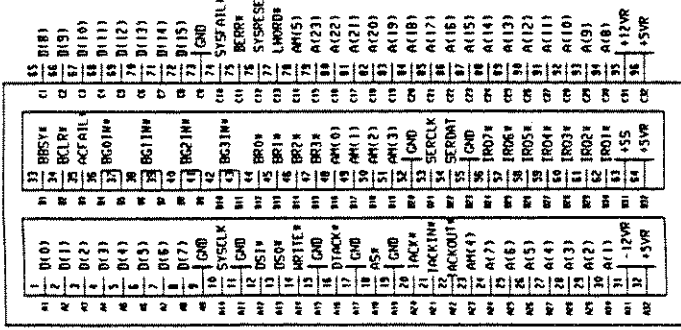VME INTERFACE BUFFER
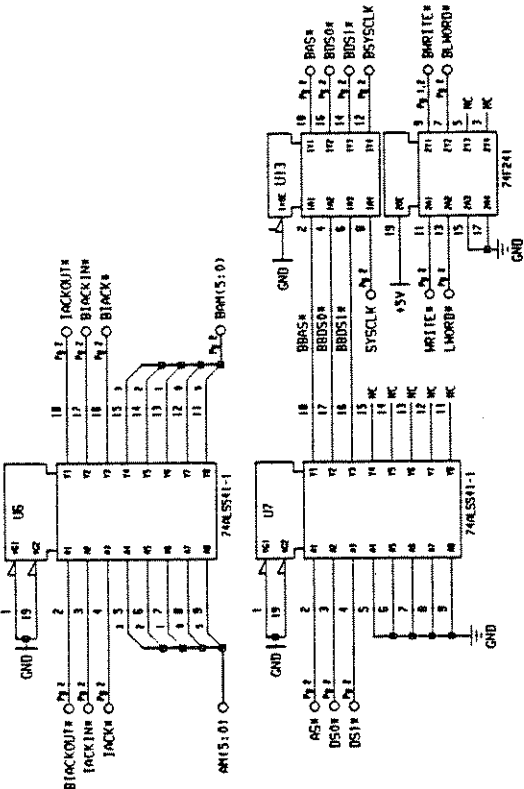
DATA BUS BUFFER

ADDRESS BUS BUFFER
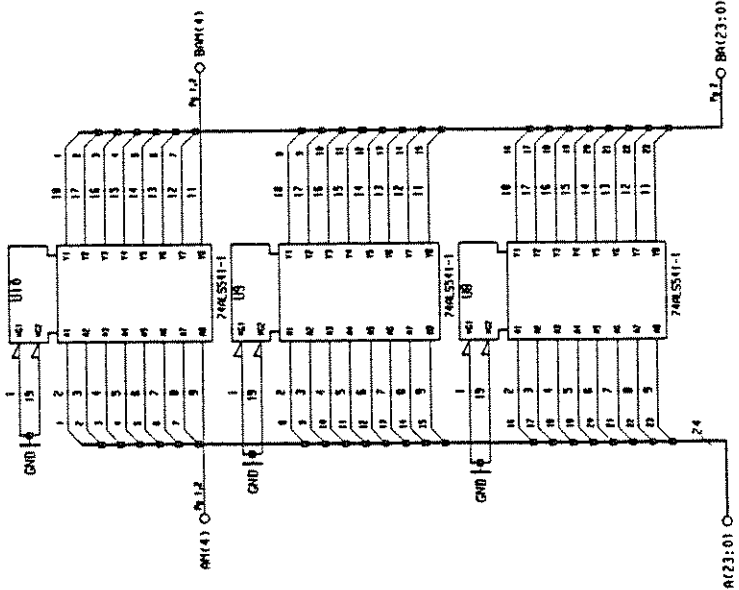
TO VXI-B MODULE
J1

IRQ BUFFER
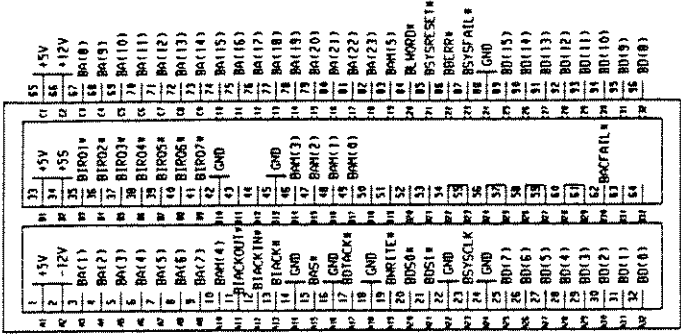
VXI CONNECTOR (TO BACKPLANE)
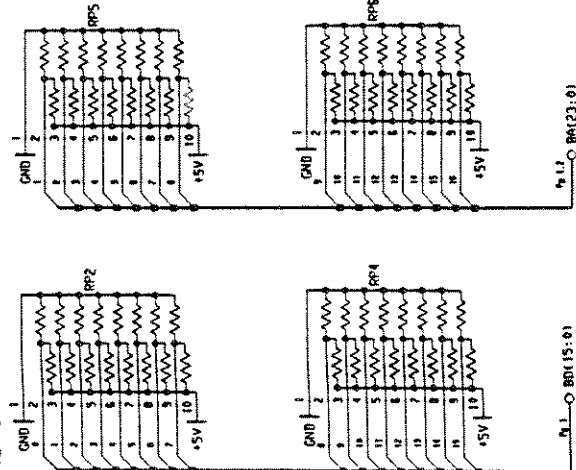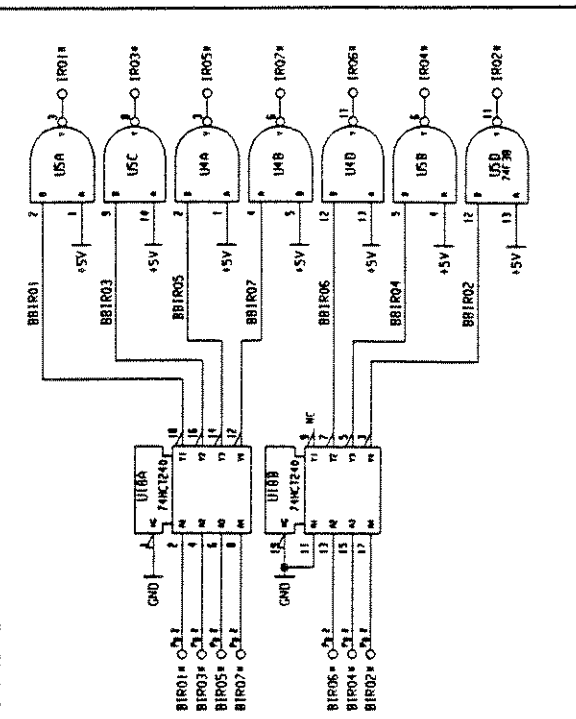P1

TERMINATION

DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Hewlett-Packard Company
Loveland Instrument Division

Manufacturer's Address: 815 14th Street S.W.
Loveland, Colorado   80537

declares, that the product

Product Name: HP 75000 Series B Mainframe with associated plug in modules.

Model Number: HP E1300/E1301A, E1326B, E1328A, E1330A, E1332A, E1333A, E1345A
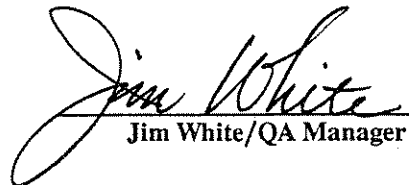
Serial Number: N/A

conforms to the following Product Specifications:

Safety: HD 401/IEC 348
CSA 231
UL 1244

EMC: EN55011 (1991)
/CISPR11 Group 1 Class A
EN50082-1 (1991)
/IEC 801-2
/IEC 801-3
/IEC 801-4

Loveland, Colorado   December 18, 1991   _Jim White_
Location   **Date**   **Jim White/QA Manager**

E1300-90055