HP 82000 Product Support Brochure

HP 82000 Models D50/100/200/400

SERIAL NUMBERS

Affects all systems.

A B C D E

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N o t i c e

The information in this document is subject to change without notice. The content of this brochure is 'For Internal Use Only'.

The purpose of this brochure is to give you information on available support services on the HP 82000 IC Evaluation System.

Target Audience: This manual is targeted at Hewlett Packard service personnel.

Overview

This brochure deals with information on available support products and other valuable information to assist you in finding the right answers with respect to arising support questions on the HP82000 Digital IC Test System.

The following items are covered with this brochure:

- Bundled Start-up Support Services
- Contractual HW Support Services
- Contractual SW Support Services
- User Trainings
- Application Support Services
- Upgrade Services
- Warranty Reporting
- System Failrate
- Escalation Process
- System Documentation
- Revision Matrix
- Available Exchange Parts
- Available Replacement Parts

Bundled Start-up Support Services

Several services are bundled with the HP82000 system at the various stages of bringing the system onto the customers floor resp. at operation of the system.

Site Planning and Preparation

- The Site Planning and Preparation Guide is set up at SMO/PCE with part number E1280-900014.
  It is the CE's responsibility to order the manual and pass it on to the customer prior to installation. A good rule would be to provide this info approx. 3 weeks before installation date.
- **Maxiframe based systems qualify for a site planning and preparation visit.** Alternatively, you may opt for a site verification visit in order to be sure the site preparation was done properly.
  Qualifier for a site inspection: **E1219C Master Sequencer** (Core Product)
- The customer is responsible to meet the on-site requirements prior to installation. These are in detail:
  1. Receive the system and move it to its final location
  2. Unpack the system components and check for completeness
  3. Provide a power line as requested in the Site Planning and Preparation Guide
  4. Provide adequate cooling of tester environment

Installation and Configuration

Installation and Configuration services comprise

- System hardware (controller and supported peripherals, HP82000, DPS(s), HSWG(s)
- System software (HP-UX, C/ANSI-C, RMB-UX, HP82000 including system specific configuration settings)

NOT included (and not supported from the factory) is set up of discless workstation clusters!

System Upgrades

For System Upgrades the following items should be kept in mind:

- FEs are requested to originate an ISP for the Upgrade (Installation/ Compatibility issues)
- If a system gets upgraded, the order should specify:
  "Upgrade for Sales Order No. xxxx-yyyyy-zzz "
- If references to the original system order are provided, we can do a consistency check.
- A compatibility/revision matrix has been published to CEs. If in doubt, consult with BID.

Bundling of **Installation of System Upgrades** is dependant on what is being upgraded:

- Upgrades of straight D50, D100(X), or D200 I/O boards are generally customer responsability.
- If a Clock Bd. Upgrade (E1222M #H01) has been ordered, all of the upgrade installation becomes CE responsibility.
- Upgrades with E1214A/B or HSWGs or Mainframe Extenders installation responsibility is always with the CE.

Installation Verification

Installation Verification services comprise

- Diagnostics on-site
- Base Calibration, DC Calibration and AC Calibration of all pins on-site (no User Calibration !)
- Running a demo DUT for sign off

Report the installation charges via SIS warranty billing system:

1. Encode "IN"
2. Specify order number and serial number of Master mainframe.
3. Cover all of the system in **one** bill ! Always report one system installation/upgrade installation to one joint installation CSO.
4. Time required depends on the system configuration. We expect 5 hours for an average system configuration (128 channels, 1 DPS, Controller, Monitor, Disc, Printer).

After the installation the customer as well as the CE sign the **System Installation Report.**

Installation Qualifiers are:

E1220C	Miniframe
E1222C	Standardframe
E1202/03A	Maxiframes
E1214A/B	400 MHz I/O Board
E1215A	High Speed Width Generator

Note

Special Considerations:
Installations may become complex with

- 400 MHz I/O Boards
- High Speed Width Generators
- Maxiframes (more than 1 card-cage)

This should be handled by experienced System CEs. These "specialists" should be dispatched on the area or region level. Please note that the same complexity may be possible also for system upgrades.
A CE trained with level 200 should continue to do the 'standard' installations and do first-line system troubleshooting even on complex systems, once successfully installed. Maxiframe Installations require up to 4 people to lift the rack from the pallet. Ensure that customer is prepared to help - or ensure support by local CEs. (Charge 3 * 0.5 hrs plus Zone II travel).

Introductory User Training

Standard Bundled Training:

- One week Standard User Training can be delivered on-site or at factory or from the SSC.
- Product No.: E1288A #24D

ResponseLine Support

ResponseLine Support (E1288A #H00) is bundled for the first year of ownership with any kind of HP82000 Test System, regardless of model and mainframe type. It provides SW Updates and Phone-in Consulting. All System SW modules are covered:

- HP-UX
- C/ANSI C Developer's Bundle
- UX-RMB
- CAE Links

Warranty Reporting

The HP82000 System has a standard warranty period of just **90 days**. Very often the field is selling an extended warranty period of 1 year. For any warranty claims please follow the below mentioned guidelines:

- Always report a failure to the product affected; e.g. E1210B, E1212A, E1213A, E1231A, E1222E, etc.
  Don't bother about 'accessory' products, like cable assemblies, DUT interface, DUT boards, etc. Report such failures to the closest related 'real' product; e.g. I/O cables—> I/O board.
- Report a failure on **one** CSO, when claiming warranty.
- If a related (e.g. intermittent) failure required multiple on-site visits, for which multiple CSO's have been opened, encode them as "Associated Repair".
- Indicate the **Bar Code** serial number in the comments section, if an assembly has been exchanged.
- Indicate the System type and **Product** serial number; e.g. E1222M 2825G00131.* Please use available comment space to note down failure description as precise as possible. Avoid useless information such as e.g. "Customer satisfied".

Warranty reports are checked in the division e.g. for technical plausibility, warranty period matching, excessive charges and charge guideline matching.

To avoid the most common report errors, please keep the following items in mind:

- Extended warranty is **NOT** covered by the division
- Refurbishment of DEMO units is **NOT** covered by the division
- Warranty billing of Workstation equipment must **NOT** be done to BID

Failrates

An average system failrate can be determined by the number of installed systems/I/Ochannels and the number of field returns for repair. A comparison with the claimed warranty items supports the fact that field failures during warranty period and later system life are approximately the same.

From warranty data an average failrate of **0.6%/year/k$** can be derived.

This means for a typical 128 pin system @ 420 k$: 420 * 0.6% = 250%.
In other words, such a typical system will fail 5 times within 2 years, or approximately once every 5 months.

With >8000 hrs/year and a failrate of 250%, the Mean Time Between Failure **(MTBF)** is > **2500 hrs.**

For a Mean Time To Repair **(MTTR)** we expect about 3 hrs for troubleshooting, replacement, verification by diagnostics and, as necessary base cal, dc cal and/or ac cal.

The Escalation process has been installed to make any resource available which is needed to solve a customer problem that cannot be fixed with field resources alone.

To effectively utilize this process, please follow the below mentioned guidelines:

- Consult with product support at factory/SSC if you do not *feel comfortable* with respect to the problem solution.
- Escalate to **PROBLEM SITE**, if problem cannot be fixed with a single on-site visit; regardless whether problem is of technical or parts-supply nature. Indicate reasons why the problem couldn't be fixed with a single shot.
- Copy factory/SSC PSE on EPICS. CC: Bid-Pl1gESCAMGR /HPB100/MG
- Report precisely what has been done to differentiate between diagnostics perception and actual application problem. Remember that forgotten small things might cause wrong conclusions of the Escalation team.
- Report whether problem is solid or intermittent. If intermittent, what has been done to provoke the failure.
- Report complete system configuration, system placement (too close to wall?), room temperature, and if configuration has been changed recently.
- When has problem been observed first?
- How many different people have worked on a problem solution? Assess chances for a miscommunication.
- If parts supply problem: When is the required part acknowledged by SMO/SME? Is a drop-shipment from the factory/SSC requested?
- Escalate to **HOT SITE** if the problem cannot be fixed with field resources in an adequate time. Report all pertinent information of configuration, actions taken so far, customer anxiety level and expectations from the factory/SSC.

Contractual HW Support Services

For HW maintenance and repair the following services are available:

1. **24hrs response time** service contract (SuccessLine)
2. **4hrs response time** service contract () (subject to local availability)
3. **Traceable On-site Calibration** according ISO 9000 requirements (+23S) (Refering to NIST traceable equipment)

Note

If calibration is required verifying all specifications on a per pin basis in compliance with MIL45662A, a 'special' has to be negotiated. Such a calibration is very time consuming and very expensive.

Calibration consists of:

- Base Calibration with external NIST traceable equipment
- Calibration of Cal Probe channel with external NIST traceable equipment
- Verification of int. Clock Reference with external NIST traceable equipment
- DC Calibration using NIST calibrated internal references
- AC Calibration using NIST calibrated internal Cal Probe channel. Global cal files are generated, using the MUX cal board/probe.

Typical Contract Pricing

24 hrs response:	4.6% of system list for Model D200
	3.8% of system list for Models D50, D100, D100X, D400
4 hrs response:	5.7% of system list for Model D200
	5.0% of system list for Models D50, D100, D100X, D400
Calibration (#23S):	
	E1220AU Miniframe: $ 77,-/instance
	E1222C Standardframe: $ 84,-/instance
	E1202/3 Maxiframe: $ 84,-/instance

These prices may differ depending on local contract negotiations, especially in Europe and Far East.

Contractual SW Support Services

For SW Update and Application Support the following services are available:

1. SW Update Support (BasicLine)

2. Phone-In Consulting Support (ResponseLine)

Phone-in Consulting Support is delivered out of the factory and out of the SSCs in Santa Clara and Tokyo. The Customer calls into the Response Center. The call is logged on **TRAK II** and passed to the factory/SSC for resolution. The assigned engineer in the factory/SSC returns the call to the customer and provides problem resolution.

Support Products

Dated: 10/94

■ E1288A	#H00	Response Center Support (1 caller)	$ 445,-
■ E1288A	#P00	Add Caller	$ 275,-
■ E1288A	#UAC	SW Update Subscription	$ 340,-
■ E1288A	#U00	SW License Update Subscription	$ 204,-
■ E1288A	#QA0	Documentation Update Subscription	$ 51,-
■ E1288A	#24D	User Training (one week)	$2345,-
■ E1288A	#24B	User Training (Division PSE, Europe only)	$2905,-

User Training

The User Training covers testing topics such as using the system as well as application support. One week total, the training is delivered on-site or at the SSC. Trainers are local AEs.
Application support addresses the following topics:

- General Consulting for

  DUT connection

  Calibration considerations

  Test approaches

- Consulting for specific application problems
- Implementation of networking solutions—> data link to EDA systems
- Adaption of test system to handlers and probers
- Development of custom specific EDA Interface Modules
- Development of custom specific Test Functions
- Integrations of test solutions with miscellaneous instruments (Oscilloscope, Ultra-fast Pulse Generator, etc.)

Service Documentation:

Title	Part Number	Revision	Date
"Installing HP82000 Maxiframes"	E1280-90002	Rev. 1.1	Jan. 91
"Installing HP82000 Miniframes and Standardframes"	E1280-90010	Rev. 2.1	Nov. 91
"System Support Log"	E1280-90001	Rev. 1.0	Apr. 89
"Site Planning and Preparation Guide"	E1280-90014	Rev. 2.1	Aug. 91
"Troubleshooting the HP82000"	E1280-90005	Rev. 3.0	Sep. 93

Status: September 1993

User Documentation:

Title	Part Number	Revision	Date
"Maintaining the HP82000"	E1280-90003	Rev. 3.0	Nov. 92
"HPIB Command Reference"	E1280-90203	Rev. 2.0	Apr. 92
"Test Function Reference"	E1280-90205	Rev. 2.0	Oct. 92
"Advanced Testing with the HP82000"	E1280-90224	Rev. 2.0	Oct. 92
"Using the HP82000"	E1280-90242	Rev. 2.0	Oct. 92
"Production Test Shell"	E1282-90000	Rev. 3.0.1	Oct. 91
"Using the TABULAR LINK EDA Interface"	E1283-90000	Rev. 1.0	Apr. 92
"Standard Test Function Programming"	E1294-90000	Rev. 1.0	Nov. 89
"Using the FACTOR EDA Interface"	E1296-90000	Rev. 1.0	July 89
"Using the HP81810 EDA Interface"	E1297-90000	Rev. 1.0	Nov. 89
"Using the VALID EDA Interface"	E1298-90000	Rev. 1.0	Nov. 89
"Using the VERILOG EDA Interface"	E1299-90000	Rev. 1.0	Oct. 90
"Using the EDA Interface"	E1299-90001	Rev. 1.0	Mar. 89
"EDA Interface Programming"	E1299-90002	Rev. 1.0	Mar. 89

Status: September 1993

The following tables are a list of the parts of the HP 82000 system which are available as *replaceable or exchangeable* parts. The table gives a short description of the parts, and the Part Number associated with each part.

Note

Exchange Parts are easily recognized by the structure of their part number: All parts with a structure like 'E12xx-69yyy' are Exchange Parts. For an Exchange Part, the according Replacement Part ('E12xx-66yyy') is always available, although not mentioned in the list.

System Boards and Accessories

This section contains the part numbers for the system boards, and for cables and other part which are connected to these boards.

Clock Boards

Part Number	Part Description
E1222-69503	Clock board (512K Firmware Memory)[1]
E1222-66533	Clock board (2MB Firmware Memory)[2]
E1222-69563	Clock board (2MB Firmware Memory)
8120-3446	HP-IB Cable 2m
E1222-61605	DC-Rail (Long)

1 For D50 and D200 only.

2 For D40 only. Replacement only

Sequencer Boards

Part Number	Part Description
E1222-69504	Standard Sequencer (Address Range 64k)
E1222-69564	Standard Sequencer (Address Range 256k)
E1222-69574	Standard Sequencer (Address Range 1M)
E1216-69504	Master Sequencer (Address Range 256k)
E1216-69574	Master Sequencer (Address Range 1M)
1818-4568	SRAM, 256K
E1222-61606	Master-Slave Cable, Standard Sequencer
E1216-61601	Master-Slave Cable, Master Sequencer
E1222-61607	Wordmask Cable
E1269-61601	Utility-Line Cable (0.5 metre)
E1269-61602	Utility-Line Cable (1 metre)
E1269-61603	Utility-Line Cable (1.5 metre)

I/O Boards

Part Number	Part Description
E1209-69501	Base I/O Board 100 MHz 64k mixable
E1209-69521	Base I/O Board 100 MHz 256k mixable
E1209-69541	Base I/O Board 100 MHz 1 M mixable
E1210-69501	Base I/O Board 50 MHz 64K
E1210-69521	Base I/O Board 50 MHz 256K
E1210-69541	Base I/O Board 50 MHz 1 M
E1211-69501	Base I/O Board 100 MHz 64K
E1211-69521	Base I/O Board 100 MHz 256K
E1211-69541	Base I/O Board 100 MHz 1M
E1212-69501	Base I/O Board 200 MHz 64K
E1212-69521	Base I/O board 200 MHz 256K
E1212-69541	Base I/O board 200 MHz 1M
E1214-69501	Base I/O board 400 MHz
E1222-66515	Serializing Board
E1212-69502	SMD-Board[1]
E1214-69502	Daughter Memory Board 256K RAM - Rev A[2]
E1214-69503	Daughter Memory Board 1M RAM - Rev B[2]
E1212-61601	DC-Rail (Short)
E1222-61605	DC-Rail (Long)
E1222-61607	Wordmask Cable

1 For E1211-69501/21 and E1212-69501/21 only.

2 For E1214-69501 only.

I/O Cables

Part Number	Part Description
E1249-61602	I/O Cable 2000mm 40/50 MHz (100 Ohm) (E1248A)
E1249-61601	I/O Cable 850mm 40/50 MHz (100 Ohm) (E1249A)
E1250-61601	I/O Cable 310mm 40/50 MHz (100 Ohm) (E1250A)
E1251-61601	I/O Cable 450mm 40/50 MHz (100 Ohm) (E1251A)
E1252-61602	I/O Cable 600mm 40/50 MHz (100 Ohm) (E1252A)
E1252-61601	I/O Cable 260mm 200 MHz (50 Ohm) (E1253A)
E1253-61601	I/O Cable 400mm 100/200/400 MHz (50 Ohm) (E1254A)
E1255-61601	I/O Cable 550mm 100/200/400 MHz (50 Ohm) (E1255A)
E1256-61601	I/O Cable 900mm 100/200/400 MHz (50 Ohm) (E1256A)
E1256-61602	I/O Cable 2000mm 100/200/400 MHz (50 Ohm) (E1257A)
E1222-01211	Spring-Clips, to secure I/O cables to I/O boards
E1222-42350	Pogo-Pin Block

PMU Board

Part Number	Part Description
E1213-69501	PMU-Board
E1222-66515	Serializing Board
E1213-61601	PMU Cable 30V
E1212-61601	DC-Rail (Short)

Miscellaneous Cables

Part Number	Part Description
E1265-61601	BNC-Cable BNC/POGO 50 MHz
E1266-61601	BNC-Cable BNC/POGO 200 MHz
E1222-61607	Wordmask Cable
8120-3446	HP-IB Cable 2m
E1212-61601	DC-Rail (Short)
E1222-61605	DC-Rail (Long)
E1213-61601	PMU Cable 30V
E1269-61601	Utility-Line Cable (0.5 metre)
E1269-61602	Utility-Line Cable (1 metre)
E1269-61603	Utility-Line Cable (1.5 metre)
E1242-61604	Manual Probe I/O Bd. Cable, also used for calibration

Fuses and Relays

Part Number	Part Description
0490-1598	Relay REED-DC (black)
0490-1413	Relay 1C 5V DC-AC
0837-0435	Multifuse 3A (Utility Lines Sequencer Bd.)
0490-1546	Relay 5V DC 2A (yellow) - selects PMU

Part Number	Part Description
E1215-69500	High Speed Width Generator (HSWG)
E1215-61680	HSWG Cable (red), I/O Board to HSWG
E1215-61685	HSWG Cable (red), HSWG to DUT
E1215-61681	HSWG Cable (white), I/O Board to HSWG
E1215-61686	HSWG Cable (white), HSWG to DUT
E1215-61682	HSWG Cable (blue), I/O Board to HSWG
E1215-61687	HSWG Cable (blue), HSWG to DUT

General

Part Number	Part Description
E1220-04125	Pogo Panel Miniframe
E1220-04126	Cover
E1220-66501	Motherboard
E1221-66501	Motherboard Extender
E1220-66502	Termination for Extender Connector

Cooling

Part Number	Part Description
3160-0584	Fan, 24V DC
E1220-45201	Outside Fan Housing (foam)[1]
E1220-45202	Inside Fan Housing (foam) for Master
E1220-45203	Inside Fan Housing (foam) for Extender

1 Two required.

Power

Part Number	Part Description
9100-4800	Power Transformer
3105-0103	Circuit Breaker
E1220-66504	Power Option Board
E1260-61601	DPS cable
0957-0044	Power Supply Multi-Output
0957-0045	Power Supply Single-Output
E1220-61601	Cable Kit, Option Board to Power Supply (short)
E1220-61602	Cable Kit, Option Board to Power Supply (long)
E1220-61603	Cable Assy, Power Option Board to Trafo
2110-0360	Fuse 0.75A

DUT Interface

Part Number	Part Description
E1220-60101	DUT-Interface
E1220-04125	Pogo Block Frame

General

Part Number	Part Description
40118-00001	Bracket, 1000mm
E1222-00604	Front Support (supports the BNC Rail)
E1222-00605	BNC Rail
E1225-01250	Bracket Top HOIZ
E1225-01251	Tie-Together, Front
E1222-64103	Top Front Cover Assembly
E1222C #I06	Left and right side panel (2 panels !!) (—>Sales order only)
E1222C #I07	Top Cover Assy (—>Sales order only)

Card-Cage

Part Number	Part Description
E1222-65201	Card-Cage
E1222-66501	VME-Motherboard
E1222-66502	HF-Motherboard
E1222-00202	Side Panel (right)
E1222-60202	Side Panel (left)
E1222-03102	Board Guide (middle)
E1222-03103	Board Guide (rear)
E1222-63101	Board Guide (front)
E1222-02301	Backpanel Holder for Motherboard
E1222-02302	Holder for Power Supply Modules
E1222-01202	Rear Bracket for Card-Cage Connection
E1222-64112	Front Air Shield (top)
E1222-64113	Front Air Shield (middle)
E1222-64114	Front Air Shield (bottom)
E1222-04109	Internal Air Shield

Cooling, Lower Front

Part Number	Part Description
E1222-02308	Keeper Fan Chassis
E1222-02310	Angle Assembly
E1222-23704	Card-Cage Stiffener
E1222-61602	Cable from PCM to Fans
E1222-00101	Fan Chassis
E1222-88501	Radial Fan A (Clockwise Rotation)
E1222-88502	Radial Fan B (Anti-Clockwise Rotation)
E1222-44602	Fan Grille (Plastic)
E1222-02305	Filter Frame
E1222-01203	Fan Bracket, Right
E1222-01204	Fan Bracket, Left
0624-0324	Screws, TPG 4-20
1520-0261	Shock-Absorber, 25mm
1390-0036	Fastener Panel
3150-0562	Air Filter

Cooling, Lower Rear

Part Number	Part Description
E1222-61602	Cable from PCM to Fans
E1222-60204	Fan Chassis
E1222-02306	Filter Frame
E1222-01204	Fan Bracket, Left
E1222-01204	Fan Bracket, Right
0360-1737	Barrier Block, 12 Pole
0361-1737	Snap Rivet
1520-0261	Shock-Absorber, 25mm
3150-0563	Air Filter
3160-0567	FAN Propeller axial 220V
8120-2641	Cable (1m) from Barrier Block to Fan
0362-0317	Lug CRP22
E1222-02304	Fan Holder

Power

Part Number	Part Description
E1222-65203	Power Control Module (PCM)
E1222-61610	Cable Assy External Power
E1222-01209	Frame for Line Filters
E1222-04106	Rear Panel for PCM
E1222-04107	Top Panel for PCM
E1222-62703	Line Filter Assembly
E1222-66505	Power Option Board
E1222-66509	Trip Coil Board
3105-0260	Circuit Breaker
9100-4767	Transformer for PMU/Fans
2110-0843	Fuse 30A 500V
2110-0303	Fuse 2A (option board)
2110-0201	Fuse 250V 0.25 A (trip-coil board)
E1222-61601	Cable from PCM to PSMs
E1231-69551	Power Supply Module
3105-0234	Emergency Switch Off (EMO) Button
E1222-61609	EMO Cable
3105-0261	EMO Contact Block

DUT Interface

Part Number	Part Description
E1204-60110	Top and Bottom Frame (assembled)
E1222-66508	Ground Plate (gold)
E1223-03253	Top Frame Swivel Limiter
E1223-05150	Hinge
E1223-26150	Hinge Pin
E1223-26152	Clamp Pin
1460-1450	Spring for Pressure Frame locking mechanism
E1223-09150	Snapper DUT Bd.
E1261-22355	DPS Pogo Block
E1261-61601	DPS Cable (short)
E1261-61611	DPS Cable (long)
E1261-61621	DPS Cable, External Testhead
1400-1509	DPS Pogo Pin (single)
1400-1508	DPS Pogo Pin Sleeve
E1261-26155	DPS Pogo Block Holder (Hex Nut)
1400-1699	Pack of 50 DUT Pogo Pins
E1225-04152	Pogo Frame (vertical)
E1226-04150	Pogo Frame (horizontal)
E1204-60110	Top and Bottom Frame (assembled)
E1223-60201	90° DUT Interface (beauty) Cover
E1223-00552	90° DUT Interface Right Side Panel
E1223-00553	90° DUT Interface Left Side Panel
E1224-64103	45° DUT Interface (beauty) Cover - Single Mainframe
E1224-00556	45° DUT Interface Right Side Panel - Single Mainframe
E1224-00557	45° DUT Interface Left Side Panel - Single Mainframe
E1224-00558	45° DUT Interface Bottom Panel - Single Mainframe

Continued on the next page.

DUT Interface (continued)

Part Number	Part Description
E1225-60250	45° DUT Interface (beauty) Cover - Double Mainframe
E1225-00560	45° DUT Interface Right Side Panel - Double Mainframe
E1225-00561	45° DUT Interface Left Side Panel - Double Mainframe
E1225-00562	45° DUT Interface Bottom Panel - Double Mainframe
E1226-60251	45° DUT Interface (beauty) Cover - Triple Mainframe
E1222-64103	Top Front Cover Assembly

General

Part Number	Part Description
E1202-04101	Side panels
E1222C #I07	Top Cover Assy (—> Sales order only)
E1202-04701	Mount for Front Panels
12679-20001	Instrument guide rail
E1261-61611	DPS Cable Assy (long)
E1202-61606	Cable from PCM to PSM (Long)
E1202-61609	PMU Cable Assy
E1222-61602	Fan Cable Assy
8120-1752	Power Cable for Upper Instruments 2.3m
8120-1860	Power Cable for Lower Instruments
8120-3445	HP-IB Cable 1m
8120-3446	HP-IB Cable 2m

Card-Cage

Part Number	Part Description
E1222-65201	Card-Cage
E1222-66501	VME-Motherboard
E1222-66502	HF-Motherboard
E1222-00202	Side Panel (right)
E1222-60202	Side Panel (left)
E1222-03102	Board Guide (middle)
E1222-03103	Board Guide (rear)
E1222-63101	Board Guide (front)
E1222-02301	Backpanel Holder for Motherboard
E1222-02302	Holder for Power Supply Modules
E1222-01202	Rear Bracket for Card-Cage Connection
E1222-64112	Front Air Shield (top)
E1222-04113	Front Air Shield (middle)
E1222-64114	Front Air Shield (bottom)
E1222-04109	Internal Air Shield
E1222-23704	Card-Cage Stiffener

Cooling, Lower Front

Part Number	Part Description
E1222-02308	Keeper Fan Chassis
E1222-02310	Angle Assembly
E1222-61602	Cable from PCM to Fans
E1222-00101	Fan Chassis
E1222-88501	Radial Fan A (Clockwise Rotation)
E1222-88502	Radial Fan B (Anti-Clockwise Rotation)
E1222-44602	Fan Grille (Plastic)
E1222-02305	Filter Frame
E1222-01203	Fan Bracket, Right
E1222-01204	Fan Bracket, Left
0624-0324	Screws, TPG 4-20
1520-0261	Shock-Absorber, 25mm
1390-0036	Fastener Panel
3150-0562	Air Filter

Cooling, Lower Rear

Part Number	Part Description
E1222-61602	Cable from PCM to Fans
E1222-60204	Fan Chassis
E1222-02306	Filter Frame
E1222-01204	Fan Bracket, Left
E1222-01204	Fan Bracket, Right
0360-1737	Barrier Block, 12 Pole
0361-1737	Snap Rivet
1520-0261	Shock-Absorber, 25mm
3150-0563	Air Filter
3160-0567	FAN Propeller axial 220V
8120-2641	Cable (1m) from Barrier Block to Fan
0362-0317	Lug CRP22
E1222-02304	Fan Holder

Cooling, Upper Front (Two Card-Cage Maxiframe)

Part Number	Part Description
0361-1291	Snap rivet (holding axial fans)
3150-0597	Air filter
E1202-61608	Cable Assy for Upper Fans
E1222-61602	Cable Assy for Lower Fans
E1222-88501	FAN Radial A

Cooling, Upper Rear (Two Card-Cage Maxiframe)

Part Number	Part Description
3160-0567	Fan, axial 220V
3150-0563	Air filter rear
0361-1291	Snap rivet (holding axial fans)
8120-2641	Cable Assy 1m Propeller Connection
0362-0317	Lug CRP22
E1222-02304	Fan Holder

Power

Part Number	Part Description
E1202-65241	Power Control Module (PCM) #OE5
E1202-65242	Power Control Module (PCM) #OED
E1202-65243	Power Control Module (PCM) #OEF
0400-0335	NUT PG 21
0400-0337	Grommet (Cable Clamp) 13/18 mm[12]
0400-0355	Grommet (Cable Clamp) 18/25 mm[3]
8120-3444	HP-IB Cable 0.5m
E1202-62703	Line Filter Assy
E1202-66505	Power Option Board
E1202-61603	Cable-Set, non-soldered cables
E1202-61604	Cable-Set, soldered cables
2110-0007	Fuse 1A 250V
2110-0202	Fuse 0.5A 250V
2110-0303	Fuse 2A FER
2110-0395	Fuse 10A 250V
E1231-69551	Power Supply Module
3105-0234	Emergency Switch Off (EMO) Button
E1222-61609	EMO Cable
E1222-61610	Cable Assy Extender EMO Short
3105-0261	EMO Contact Block
E1202-00201	PCM Rear Panel, Option OED (Japan)[2]
E1202-00202	PCM Rear Panel, Option OE5 (Europe)[1]
E1202-00203	PCM Rear Panel, Option OEF (USA)[3]
3105-0265	Circuit Breaker, 3 Pole, Options OED and OEF (Japan and USA)[23]
3105-0264	Circuit Breaker, 4 Pole, Option OE5 (Europe)[1]
0360-1755	Barrier-Block, Option OEF (USA)[3]
0360-1094	Barrier-Block End, Option OEF (USA)[3]

1 Needed when changing to power option OE5 (Europe).

2 Needed when changing to power option OED (Japan).

3 Needed when changing to power option OEF (USA).

DUT Interface

Part Number	Part Description
E1261-22355	DPS Pogo Block
E1261-61601	DPS Cable (short)
E1261-61611	DPS Cable (long)
E1261-61621	DPS Cable ,External Testhead
1400-1509	Pogo Pin (single)
1400-1508	DPS Pogo Pin Sleeve
E1261-26155	DPS Pogo Block Holder (Hex Nut)
E1225-04152	Pogo Frame (vertical)
E1226-04150	Pogo Frame (horizontal)
E1222-66508	Ground Plate (gold)
1460-1450	Spring for Pressure Frame locking mechanism
E1223-09150	Snapper DUT Bd.
E1204-60110	Top and Bottom Frame (assembled)
E1202-04101	Side cover frame
E1202-00510	Angle Top
E1202-00501	DUT Interface Right Side Panel - Single Maxiframe
E1202-00502	DUT Interface Left Side Panel - Single Maxiframe
E1202-04105	DUT Interface (beauty) Cover - Single Maxiframe
E1205-00507	DUT Interface Right Side Panel - Double Maxiframe
E1205-00508	DUT Interface Left Side Panel - Double Maxiframe
E1205-04120	DUT Interface (beauty) Cover - Double Maxiframe
E1205-02304	Mount for DUT Interface Cover
E1205-00511	DUT Mounting Interface
E1205-00512	DUT Mounting Bottom

Part Number	Part Description
E1222-62107	Calibration Probe
E1222-62157	Calibration Probe tip
E1262-61602	Cable Extension
E1262-62101	Calibration Probe MATRIX
E1262-66504	Calibration DUT Board 100/200/400 MHz
E1263-66503	Calibration DUT Board 50 MHz
E1262-02351	Holder Calprobe (MUX-Probe)
E1222-02351	Holder Calprobe (Single Probe)

Part Number	Part Description
1390-0496	Spring loaded screw, M4*20 mm
1390-0494	Spring loaded screw M5*20 mm
0515-0131	NUT M5
0515-1970	Screw bolt M6*8
0515-1510	M5*6 mm
0515-1115	M4*0.7*12
0515-1117	M5*10 mm, Pozidrive Head
0515-1118	M5*15 mm Pozidrive head
0515-0898	M4*0.7 *6
0535-0023	Hex-nut M4*0.7
0535-0114	Snap on nut M5
0535-0131	Snap on nut M5 deeper
0515-0886	Screw M3*6 mm
8160-0392	EMI Fingers

The following table is an up-to-date list of available special options, dated August 1995. These parts are NOT set up at SMO/PCE, instead a sales order is necessary to get them.

Part Number	Part Description
E1202A #E01	Empty Maxiframe
E1202A #H01	Lower Card-Cage
E1202A #H02	Upper Card-Cage
E1202A #I06	Side Covers Maxiframe
E1202A #I07	Mounting Brackets Maxiframe
E1209B #H10	D40 Version of E1209B
E1212A #H01	Memory Upgrade A—> B
E1212B #H02	Used E1212B board
E1212B #H03	Used E1212B (strategic F.E.)
E1212B #H04	Used E1212B (strategic U.S.)
E1214A #H01	Memory Upgrade A—> B
E1222C #H01	Clock Bd. Upgrade M
E1222C #I06	Side Covers Standardframe
E1222C #I07	Top Cover for Standardframe
E1223A #T01	DUT Interface Kit, RAM
E1223A #T02	Pressure Frame
E1238A #M01	Mixed Signal DUT Bd. (DAC). Internal Orders only!
E1238A #M02	Mixed Signal DUT Bd. (ADC). Internal Orders only!
E1288A #H10	D40 System SW

Status: September 1993

Note

S/N = Service Note

Clockboard

E1222-66503	Rev A	- Not released to field.
	Rev B	- First revision released.
	Rev C	- Calibration problem fixed.
E1222-66563	Rev A	- 2 MByte firmware memory.
	Rev B	- FIFO problem fixed.
	Rev C	- (Rev B + S/N E1222-05). VME bus problem fixed.

Sequencer Board

E1222-66504	Rev A	- Not released to field.
	Rev B	- Only in a few demo systems.
	Rev C	- Timing jitter problem fixed for Single-Mainframe systems.
	Rev D	- (Rev C + S/N E1222M-01 or E1220A-01).
		Timing jitter problem fixed for Multi-Mainframe systems.
	Rev E	- (Rev D + S/N E1222M-02). Modified Address Bus, to be able to address I/O Boards with 1MByte Vector Memory.
E1222-66564	Rev A	- (Rev E + S/N E1222M-06). Upgraded
		Instruction Change Memory and Error Map, to 256K.
E1222-66574	Rev A	- (S/N E1222M-09). Upgraded Instruction Change Memory
		and Error Map, to 1 M.
E1216-66504	Rev A	- Master Sequencer: 256 K Firmware Memory & Error Map,
		supports up to 4 slave Card-Cages.
E1216-66574	Rev A	- Master Sequencer: 1 M Firmware Memory & Error Map,
		supports up to 4 Slave Card-Cages. (S/N E1222M-09)

Note

The I/O Board revision numbers are linked to the Vector Memory Depth and not to bug-fixes or modifications. All revisions are available.

I/O Boards

E1210-66501	Rev A	- 50 MHz, 32K
E1210-66521	Rev B	- 50 MHz, 128K
E1210-66541	Rev C	- 50 MHz, 512K
E1211-66501	Rev A	- 100 MHz, 64K
E1211-66521	Rev B	- 100 MHz, 256K
E1211-66541	Rev C	- 100 MHz, 1024K
E1209-66501	Rev A	- 100 MHz "X", 64K
E1209-66521	Rev B	- 100 MHz "X", 256K
E1209-66541	Rev C	- 100 MHz "X", 1024K
E1212-66501	Rev A	- 200 MHz, 64K
E1212-66521	Rev B	- 200 MHz, 256K
E1212-66541	Rev C	- 200 MHz, 1024K
E1214-66501	Rev A	- 400 MHz, 64K
E1214-66521	Rev B	- 400 MHz, 256K

PMU Board

E1213-66501	Rev A	- Not released to field.
	Rev B	- The current revision.

Note

A "Y" indicates that the board is supported by the particular software revision. This means that the software will run, but does NOT mean that all software functions will be available; e.g. you cannot use high-throughput commands with E1222-66503 Clockboards (small firmware memory).

New HP-UX Releases have come with:

HP-UX 7.0 HP82000 Rev. 2.0.0

HP-UX 8.0 HP82000 Rev. 3.0.0

HP-UX 9.0 HP82000 Rev. 5.0.0

Clock Board

S/W Revision	1.3.0	1.3.2	1.4.0	2.0.0	2.1.1	3.0.0	4.0.0	4.5.2	5.0.0
			1.4.1	2.1.0		3.1.0			
E1222-66503A	Y	Y	Y	Y	Y				
E1222-66503B	Y	Y	Y	Y	Y				
E1222-66503C	Y	Y	Y	Y	Y				
E1222-66563A			Y	Y	Y	Y	Y	Y	Y
E1222-66563B			Y	Y	Y	Y	Y	Y	Y
E1222-66563C			Y	Y	Y	Y	Y	Y	Y

Sequencer Board

S/W Revision	1.3.0	1.3.2	1.4.0	2.0.0	2.1.1	3.0.0	4.0.0	4.5.2	5.0.0
			1.4.1	2.1.0		3.1.0			
E1222-66504A	Y	Y	Y	Y	Y	Y	Y		
E1222-66504B	Y	Y	Y	Y	Y	Y	Y		
E1222-66504C	Y	Y	Y	Y	Y	Y	Y		
E1222-66504D		Y	Y	Y	Y	Y	Y	Y	Y
E1222-66504E		Y	Y	Y	Y	Y	Y	Y	Y
E1222-66564A			Y	Y	Y	Y	Y	Y	Y
E1222-66574A								Y	Y
E1216-66504A					Y	Y	Y	Y	Y
E1216-66574A								Y	Y

I/O Boards

S/W Revision	1.3.0	1.3.2	1.4.0	2.0.0	2.1.1	3.0.0	4.0.0	4.5.2	5.0.0
			1.4.1	2.1.0		3.1.0			
E1210-66501A		Y	Y	Y	Y	Y	Y	Y	Y
E1210-66521B		Y	Y	Y	Y	Y	Y	Y	Y
E1210-66541C						Y	Y	Y	Y
E1211-66501A				Y	Y	Y	Y	Y	Y
E1211-66521B				Y	Y	Y	Y	Y	Y
E1211-66541C						Y	Y	Y	Y
E1209-66501A							Y	Y	Y
E1209-66521B							Y	Y	Y
E1209-66541C							Y	Y	Y
E1212-66501A	Y	Y	Y	Y	Y	Y	Y	Y	Y
E1212-66521B			Y	Y	Y	Y	Y	Y	Y
E1212-66541C						Y	Y	Y	Y
E1214-66501A				Y	Y	Y	Y	Y	Y
E1214-66521B				Y	Y	Y	Y	Y	Y

PMU Boards

S/W Revision	1.3.0	1.3.2	1.4.0	2.0.0	2.1.1	3.0.0	4.0.0	4.5.2	5.0.0
			1.4.1	2.1.0		3.1.0			
E1213A	Y	Y	Y	Y	Y	Y	Y	Y	Y
E1213B	Y	Y	Y	Y	Y	Y	Y	Y	Y

Manual Probe

S/W Revision	1.3.0	1.3.2	1.4.0	2.0.0	2.1.1	3.0.0	4.0.0	4.5.2	5.0.0
			1.4.1	2.1.0		3.1.0			
E1242A								Y	Y

Clock Boards

		D50	D100	D100X	D200	D400	D100X+D200+D400
E1222-66503	Rev B	Y			Y		
	Rev C	Y			Y		
E1222-66563	Rev A	Y	Y	Y	Y	Y	Y
	Rev B	Y	Y	Y	Y	Y	Y
	Rev C	Y	Y	Y	Y	Y	Y

Note

* D100, D100X, or D400 installed => need E1222-66563 in all Card-Cages.
* D50 or D200 installed => E1222-66503 and E1222-66563 can be mixed.
* D100X+D200+D400 mixed => need E1222-66563 in all Card-Cages.

Sequencer Boards

		E1222-	E1222-	E1222-	E1216-	E1216-	
		66504	66564	66574	66504	66574	Rev B/C
	Rev	A B C D E	A	A	A	A	I/O Bds
E1222-66504	Rev A	Y Y Y - -					
	Rev B	Y Y Y - -					
	Rev C	Y Y Y - -					
	Rev D	- - - Y Y	Y				
	Rev E	- - - Y Y	Y				Y
E1222-66564	Rev A	- - - Y Y	Y		Y		Y
E1222-66574	Rev A			Y		Y	Y
E1216-66504	Rev A		Y				Y
E1216-66574	Rev A			Y			Y

- E1216-66504 installed => need E1222-66564 in every other Card-Cage.
- E1222-66504 Rev A + Rev B + Rev C can be mixed.

- E1222-66504 Rev D + Rev E + E1222-66564 Rev A can be mixed.
- E1216-66504, E1216-66574 can only work as Master. It can NOT be a Slave, and thus only one Master Sequencer per system is allowed.
- E1222-66564 Rev A and E1216-66504 Rev A provide a 256 K Error Map, if they are installed in Card-Cage 1.
- E1222-66574 Rev A and E1216-66574 Rev A provide a 1M Error Map, if they are installed in Card-Cage 1.
- New sequencers E12xx-66574 may be set to behave like "old" ones. In the table this fact is reflected by the old sequencers.
- The Revision B and C I/O Boards are only supported by the E1222-66504 Rev E and later.

I/O Boards

		E1210	E1211	E1209	E1212	E1214
	Rev	A B C	A B C	A B C	A B C	A B
E1210-66501	A	Y - -				
E1210-66521	B	- Y -				
E1210-66541	C	- - Y				
E1211-66501	A		Y - -			
E1211-66521	B		- Y -			
E1211-66541	C		- - Y			
E1209-66501	A			Y - -	Y - -	Y -
E1209-66521	B			- Y -	- Y -	- Y
E1209-66541	C			- - Y	- - Y	- -
E1212-66501	A			Y - -	Y - -	Y -
E1212-66521	B			- Y -	- Y -	Y
E1212-66541	C			- - Y	- - Y	- -
E1214-66501	A			Y - -	Y - -	Y -
E1214-66521	B			- Y -	- Y -	- Y

- I/O Board Revisions (A,B & C) indicate the Memory-Depth of the Board, and not later revisions due to bug-fixes or modifications.

- You can mix D100, D100X and D400 I/O Boards of the same revision in the same system.
- You can NOT mix I/O boards of different revisions.

PMU Boards

E1213-66501	Rev B	- No hardware dependencies.

(1) Start the HP 82000 Software.

(2) Open an HP-UX window.

(3) Type `/hp82000/pws/bin/hpt` Return, to start the "hpt" HP-IB driver.

(4) At the @ prompt, type `*opt?` return, to query the system configuration.

You will get an answer string for each Card-Cage, like the following:

Slot 1————————————————————————————-> Slot 16

"8,23,104,104,80,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0"

Each position in the string represents a slot in the Card-Cage and the number represents the board in that slot. The codes representing the different types of boards are as follows:

Clockboards:	E1222-66503	B -> N/A
		C -> 4
	E1222-66563	A -> 8
		B -> 8
		C -> 8
Sequencers:	E1222-66504	A -> N/A
		B -> (17 + X)
		C -> (18 + X)
		D -> (19 + X)
		E -> (19 + X)
	E1222-66564	A -> (23 + X)
	E1222-66574	A -> (24 + X)
	E1216-66504	A -> (116 + X)
	E1216-66574	A -> (120 + X)

Where X depends on the position of the Sequencer Board in the system, as follows:

Card-Cage 1	=>	X = 0
Card-Cage 2	=>	X = 256
Card-Cage 3	=>	X = 512
Card-Cage 4	=>	X = 768
Card-Cage 5	=>	X = 1024

I/O Boards:	E1210-66501	A -> 64
	E1210-66521	B -> 68
	E1210-66541	C -> 72
	E1211-66501	A -> 36
	E1211-66521	B -> 40
	E1211-66541	C -> 44
	E1209-66501	A -> 164
	E1209-66521	B -> 168
	E1209-66541	C -> 172
	E1212-66501	A -> 52
	E1212-66521	B -> 56
	E1212-66541	C -> 60
	E1214-66501	A -> 100
	E1214-66521	B -> 104
PMU Board:	E1213-66501	A -> 80
		B -> 80