Honeywell

Five/Ten-Slot Module Service

LC13-500

Table 2-3 — Board Replacement Notes

Board Type	Description	Minimum Software Release
EMEM	1 MB memory board used as main memory with MCPU and EMPU boards. This board also is used as additional memory with HMPU and HPK2 boards.	200
EPDG	With the PDG I/O board, operates as a PDG with the interlaced monitor, and can replace the PDG or VDG/PIC.	200
EPDG	With the EPDG or EPDGP I/O board, operates as an EPDG with the noninterlaced monitor. Also has a Cartridge Disk interface.	210M1
EPDGP I/O	EPDGP I/O board (Tab-300) with jumper (J11) for DIRECT or INVERT of vertical sync signal. Vertical sync for 21" FST monitors in XC3000 consoles require inverted sync signal.	300
HMPU	68020 processor and memory (2 MB) board replaced by HPK2 in current production (except in redundant AMs). The HMPU board also contains a floating-point coprocessor.	200 (HG) 210 (All)
HPK2-2	68020 processor with 2 MB of on-board memory that replaces an HMPU, EMPU, and MCPU in all modules except redundant AMs (MCPU is not recommended for R400).	210M1
HPK2-3	68020 processor and memory (same as HPK2-2 with 3 MB).	230
K2LCN-x	68020 combined processor, memory and LCN interface (eliminates LCN board and external memory boards). Available with x = 2, 3, 4, 6, or 8 MB of on board memory.	320
K4LCN-x	68040 combined processor, memory and LCN interface (eliminates LCN board and external memory boards). Available with x = 4, 8, or 16 MB of on board memory, ordered separately.	R500
LLCN	Replacement for LCN board. Uses low power consumption circuits. Operates with LCN I/O board.	Any
QMEM-1	This board type has been withdrawn. Use EMEM for additional memory of 1 megaword increments.	200
QMEM-2, 3, 4	Quad Memory board of 2, 3 or 4 MB capacity. Memory capacity cannot be increased in the field. Each has a unique ID.	300
TPDG	With TPDG I/O drives a 21" FST monitor in a Universal Station^X.	410/U^{X}S R100
TPDGX	With TPDG I/O drives a 21" FST monitor in a Universal Station^X requires WSI2.	410/U^{X}S R200
WSI	Release 100/110 Workstation Interface for Universal Station^X.	410/U^{X}S R100
WSI2	Release 200 Workstation Interface for Universal Station^X. Board has replaceable memory daughter boards in sizes = 2-16 MB, 3 2 MB, 2-32 MB, 64 MB, or 2-64 MB.	410/U^{X}S R200
WSI2R I/O	Replaces WSI I/O in R100 units updated to R200 with WSI2 board.	R200
WSI2 I/O	Used with WSI2 board in new build units and units upgraded from US to UXS (R200) by upgrade kits MP-ZUXCC2 or MP-ZUXNC2.	R200

Table 2-4 — Functional Board Types

Board Type	Description	Part Number
AMR	Redundant AM Interface	51401070-100
CLI	Communications Line Interface	80360206-001
CNI	Communications Network Interface	51401088-100
DHI	Data Hiway Interface	51400700-100
EAMR	Enhanced Application Module Redunancy	51401996-100
EMEM	1 MB Enhanced Memory	51400910-100
EMPU	Enhanced Microprocessor board	51400901-100
EPNI	Enhanced Network Interface	51401583-100
EPDG EPDG-2	Enhanced Peripheral Display Generator	51401286-100 51402089-100
FDC	Floppy Disk Controller	51400669-100
HDDT	Hard Disk Drive Tray	51402176-100
HMPU	High Perf. Module Processor Unit (incl: Coprocessor, 2 MB mem.)	51400978-100
HPK2-2	High Perf. Module Proc. (incl: 2 MB memory, no coprocessor)	51401288-100
HPK2-3	High Perf. Module Proc. (incl: 3 MB memory, no coprocessor)	51401288-200
K2LCN-x	68020 High Density Kernel (2, 3, 4, 6, 8 MB of memory)	51401551-x01
K4LCN-x	68040 High Density Kernel (4, 8, or 16 MB of memory) Separate 4 MB of memory Separate 8 MB of memory Separate 16 MB of memory	51401946-100 51201645-400 51201645-800 51201645-160
LCN	Local Control Network Interface	51400667-100
LLCN	Low Power LCN Interface	51401291-100
MMEM	Memory Board, 1 MB	8036211-100
MMEM	Memory Board, 3/4 MB	8036211-200
NGI	Network Gateway Interface	51401583-200
PDG	Peripheral Display Generator Interface	51400926-100
PLCI	Programmable Logic Controller Interface	51400997-100
PMEM	2 MB Memory	51400903-100
PNI	Process Network Interface	51400955-100
PNM	Process Network Modem	51401163-100
QMEM-x	2 to 4 MB Quad Enhanced Memory (x = 2, 3, or 4 MB)	51401072-x00

(Continued)

CAUTION

Power must be removed from the module whenever you are removing or installing any board, including an I/O paddle board. Be sure that an I/O paddle board is installed in the correct slot; some boards have only one slot that they can be installed in without causing damage. I/O paddle boards plugged into the wrong slot can cause traces on the backplane to burn open.

2.2.19 Universal Station Configurations

Universal Stations upgraded from previous releases with upgrade kit MP-ZPROC4 or MP-ZPROC6 will have one of the following configurations. USs with Operator personality require 4 Mw of memory. USs with Universal personality require 6 Mw of memory.

Table 2-21 — Universal Station (US) Upgraded to R500 (Non CE Compliant)

Type	4 Mw (Operator)		6 Mw (Universal)	
Slot	Front	Rear	Front	Rear
5	EPDG	EPDG I/O	EPDG	EPDG I/O
4				
3				
2	K2LCN-4	LCN I/O	K2LCN-6	LCN I/O
1		*Note 6*		*Note 6*

Table 2-22 — Universal Station (US) Upgraded to R500 (Non CE Compliant)

Type	4 Mw (Operator)		6 Mw (Universal)	
Slot	Front	Rear		
10				
9				
8				
7				
6 *Note 11*	SIO	SIO I/O	SIO	SIO I/O
5 *Note 10*	(Do Not Use)		(Do Not Use)	
4	EPDG	EPDG I/O	EPDG	EPDGP I/O
3 *Note 9*	FDC	FDC I/O	FDC	FDC I/O
2	K2LCN-4	LCN I/O	K2LCN-6	LCN I/O
1		*Note 6*		*Note 6*

Note 6 Optional clock source/typer boards CS/R or MCPU I/O (see Table 2-5) may be included with any module type. Clock sources are generally placed in either the HG or NIM module.
Note 9 These slots may contain optional FDC & FDC I/O or SPC & SPC I/O boards.
Note 10 Do not use the slot above EPDG—use only certain boards in the 2nd slot above EPDG.
Note 11 SIO & SIO I/O boards are optional.

2.2.20 Universal Station Configurations (CE Compliant)

This module is only available in a Dual Node Module. Refer to *Dual Node Module Service*.

3.3.6 PDG , EPDG, TPDG, or TPDGX Board

SELF TST/ERR light does not go out on PDG/EPDG.

- Replace I/O card (EPDG I/O, EPDGP I/O, TPDG I/O, or TPDGC).
- Replace PDG, EPDG, TPDG, or TPDGX.
- Replace HMPU, HPK2, K2LCN, or K4LCN.

SELF TST/ERR light goes out on PDG, EPDG, TPDG, or TPDGX, but **PASS MOD TEST** (green) light does not light on PDG, EPDG, TPDG, or TPDGX.

- Replace I/O card.
- Replace PDG, EPDG, TPDG, or TPDGX.
- Replace HMPU, HPK2, K2LCN, or K4LCN.

BUS TRAN ERR is lit on PDG, EPDG, TPDG, or TPDGX and **DTAK TIME OUT** is lit on the HMPU, HPK2, K2LCN, or K4LCN, but the **BUS ERR** light is not on.

- Replace I/O card.
- Replace PDG, EPDG, TPDG, or TPDGX.
- Replace HMPU, HPK2, K2LCN, or K4LCN.

BUS TRAN ERR is lit on PDG, EPDG, TPDG, or TPDGX and **DTAK TIME OUT** and **BUS ERR** is lit on the EMPU, HMPU, HPK2, K2LCN, or K4LCN board.

- Replace I/O card.
- Replace PDG, EPDG, TPDG, or TPDGX.
- Replace HMPU, HPK2, K2LCN, or K4LCN.