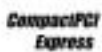


## *Processing Platform for CPCI*

*OSS-CPCI-HighWire HW400c/2*



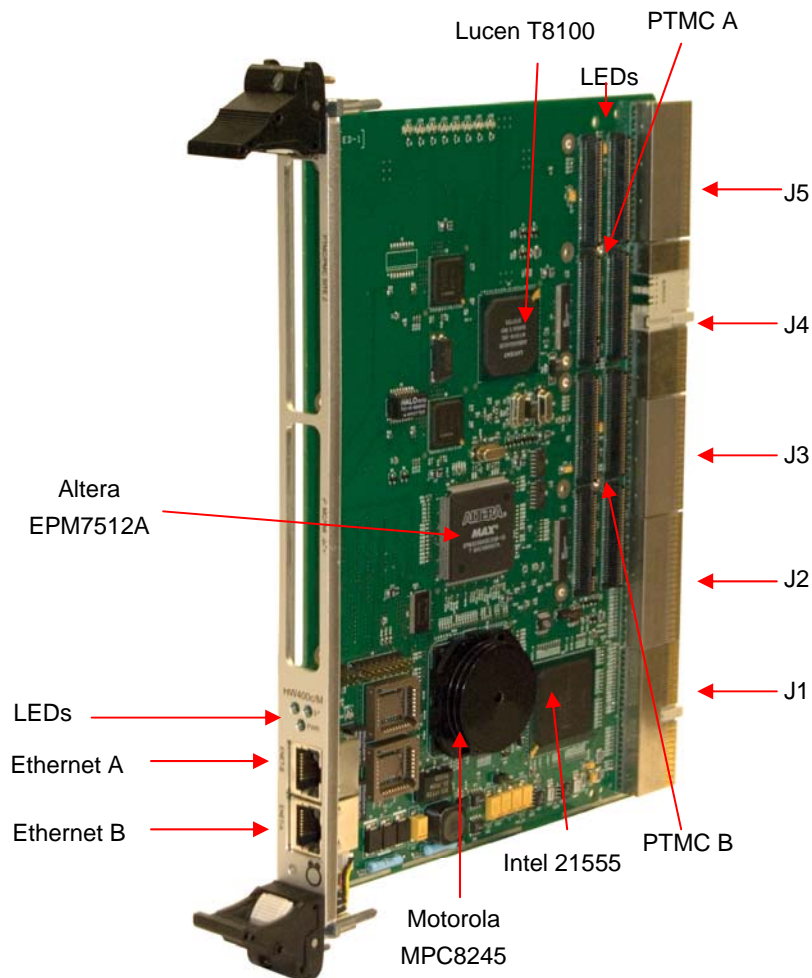
[www.onestopsystems.com](http://www.onestopsystems.com)

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## Description

The OSS-HW400c/M is a network interface and protocol processing product with the following characteristics:

- 6U CompactPCI communications core processing platform that combines dual node CompactPCI Packet Switched Backplane (cPSB) technology and dual PCI Telecom Mezzanine Card (PTMC) sites with a PowerPC core CPU.
- Designed for carrier grade environments, the OSS-HW400c/M has a 66MHz/64-bit capable backplane interface that is hot swappable in both CompactPCI and cPSB systems.
- Front and rear I/O paradigms are supported for both the PTMC sites and the two on-board Ethernet interfaces.
- A full featured Computer Telephony Bus (CT Bus) interface linking the PTMC sites with the backplane H.110 CT Bus is provided for TDM I/O applications.



## Unpacking Instructions

1. If the carton is damaged when you receive it, request that the carrier's agent be present when you unpack and inspect the equipment.
2. After unpacking, verify that all items listed in the packing list are present.
3. Inspect the equipment for shipping damage.
4. Save all packing material for storage or return shipment of the equipment.
5. For repairs or replacement of equipment damaged during shipment, contact One Stop Systems, Inc. to obtain a Return Materials Authorization (RMA) number and further shipping instructions.

## Installation and Removal

1. Power down the host system.
2. Open the chassis according to your system documentation.
3. Let the power supply cool down, if necessary.
4. Remove the OSS-OSS-HW400c/M from the protective bag, observing proper ESD safety procedures.

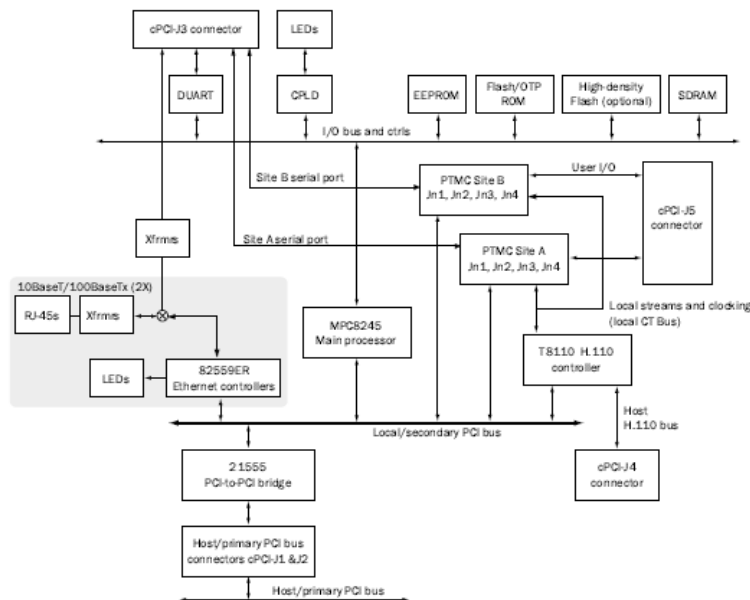
## Installing the OSS-HW400c/M:

1. Slide the OSS0OSS-HW400c/M into an available peripheral board slot in the CompactPCI chassis. Check that the board is aligned properly on the card guides.
2. Completely insert the board until the top and bottom board ejectors lock into place. If chassis power is on the blue hot swap LED will blink and turn off.
3. Tighten top and bottom screws to secure the HW400c/2 in place.

## Specifications

Electrical/Mechanical Specifications	
Form Factor:	6U Compact PCI
Dimensions (H x L):	9.2 x 6.3 inches (233.68 x 160.02 mm)
Front Panel Connectors:	PTMC A&B cutouts, Ethernet, Console
Front Panel Indicators:	Status LEDs A,B,C,D Power LED, Blue hot-swap LED
Power Consumption (designed to meet the following conditions)	
	9W (not including PTMC modules)
Operating Environment (designed to meet the following conditions)	
Temperature Range:	0° to 55°C (32° to 136°F)
Relative Humidity:	10 to 90% non-condensing
Shock:	30g acceleration peak (11ms pulse)
Vibration:	5-17 Hz 0.5" double amplitude displacement; 7-2000Hz, 1.5g acceleration.
Agency Compliance Designed to meet, but not tested	
	NEBS, UL 60950, FCC Class B, CE Mark, VCCI
MTBF (Telecordia TR-332 Version 6)	
	>150,000 hours

## Block Diagram Processor



The Motorola MPC8245 is the main controller. It consists of:

- PowerPC 603e core operating at 333MHz.
- 32-bit PCI interface operating at 33MHz.
- SDRAM memory controller supporting SDRAMs operating at 133MHz.
- General purpose I/O and ROM interface.
- Two-channel DMA controller.
- Programmable interrupt controller with multiple timers and counters.

## Memory

The synchronous DRAM provides the following features:

- 133MHz operation
- 128MB organized as a single bank of four 16M x 16 devices
- No parity

## Boot PROM

The boot PROM provides the following features:

- The Flash implementation uses two byte-wide devices
- PLCC devices (29LV010 or 29LV040) socketed
- 3.3V LVTTTL-compatible
- Attached to the local I/O bus of the MPC8245
- U65 and U66 PCB reference designators (U66 is accessed by processor at power up)

## Secondary Flash

The secondary Flash provides the following features:

- Up to 32MB organized as two 8MB x 16 devices
- Solder on manufacturing option
- Attached to the local I/O bus of the MPC8245
- 150ns

## EEPROM

The EEPROM provides the following features:

- A 2k x 8 parallel device, used for the retention of manufacturing identification information
- 250ns
- Attached to the local I/O bus of the MPC8245

## DUART

The Exar ST162550CQ Dual Universal Asynchronous Receiver/Transmitter (DUART) provides connectivity to the download and console ports by the RJ-45 connectors on the developers. RTM.

## H.110 Bus/T8110

The T8110 CT bus controller provides a complete interface to the H.110 Computer Telephony Bus, and provides the following features:

- Connects to all 32 streams of the H.110 bus via J4 of the CompactPCI.
- 20 bi-directional local TDM connections.
- A PCI-bus interface, which consists of a 32-bit address/data bus and control signals.
- Target accesses to registers, connection memory, data memory, and virtual connection memory.
- The T8110 can initiate PCI transactions to perform packet payload switching between the local PCI bus and the 64 H.110/L-bus data streams.

## 10/100Mbps Ethernet/Intel82559ER

The Intel 82559ER controller is a single-chip full-duplex, 10/100-Mbps fully integrated 32-bit PCI-to-Wire Fast Ethernet controller, and provides the following features:

- An Ethernet circuit that supports either 10BaseT or 100BaseTx.
- Integrates the complete 10/100 PHY interface.
- The internal 10/100 PHY implements auto-negotiation for twisted-pair (10/100) operating as defined in the IEEE 802.3u specification.
- 12k buffers.
- 32-bit 33MHz PCI bus interface.
- Three LEDs indicate the Ethernet status (see LEDs for more):
  - . two on the front panel.
  - . one surface-mounted near the Ethernet connector.

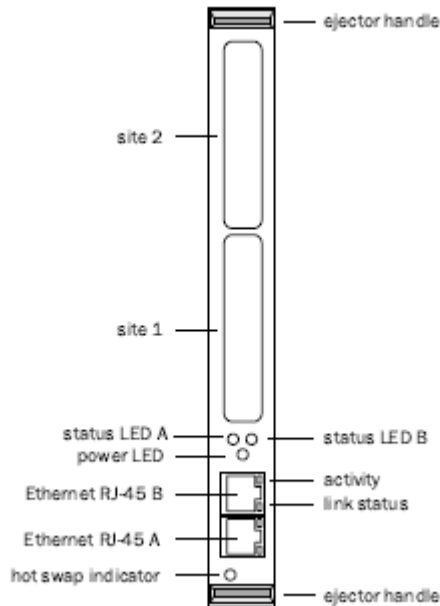
## Intel 21555 PCI-to-PCI bridge

The CompactPCI host bus interface is implemented using the Intel 21555 PCI-PCI translation bridge chip operating at 33/66MHz on the CompactPCI backplane and 33MHz on the local PCI. The CompactPCI bus interface provides the following features:

- The 21555 is a PCI Master or Slave for memory and I/O accesses on a 33/66MHz, 32/64-bit (host) PCI bus.
- 33MHz 32-bit local PCI bus.
- A nontransparent PCI-to-PCI bridge that allows a local processor to independently configure and control a local subsystem.
- PCI universal signaling.

## Front Panel

The front panel includes cutouts for the two PTMC modules as well as the two Ethernet connectors. The front panel LEDs are: a blue hot swap indicator, a green board power indicator, and two status LED.



## LEDs

LED Function	Location	Source	Color
<b>Hot Swap LED</b>	Front Panel	CPLD	Blue
<b>Power Good LED</b>	Front Panel	CPLD	Green
<b>MPC8245 Board Status LED A1</b>	Front Panel	CPLD . Board Status Register bit 0	Green
<b>MPC8245 Board Status LED Ba</b>	Front Panel	CPLD . Board Status Register bit 1	Green
<b>MPC8245 Development LEDs (eight total)</b>	Along top edge of PCB	CPLD . LED Register bits 7.0	Green
<b>Ethernet Port A Activity</b>	Front Panel at RJ-45 A	Ethernet Controller 0	Green
<b>Ethernet Port A Link Pass</b>	Front Panel at RJ-45 A	Ethernet Controller 0	Green
<b>Ethernet Port A 100BaseT Mode</b>	Behind RJ-45 A	Ethernet Controller 0	Green
<b>Ethernet Port B Activity</b>	Front Panel at RJ-45 B	Ethernet Controller 1	Green
<b>Ethernet Port B Link Pass</b>	Front Panel at RJ-45 B	Ethernet Controller 1	Green
<b>Ethernet Port B 100BaseT Mode</b>	Behind RJ-45 B	Ethernet Controller 1	Green

## PTMC Connectors

Four connectors (Jn1..Jn4) are provided for each of the two PTMC sites. All PTMC connector pin outs are as defined for a PTMC Configuration #2 site in PICMG 2.16 R1.0. The Jn1 and Jn2 connectors implement a 32-bit, 33MHz PCI interface and are interoperable with standard PMC32 modules. The Jn3 connector implements the connection to the local CT bus, a subset of the H.110 Computer Telephony Bus. Jn4 provides rear I/O access for PMC and PTMC modules. Jn3 is equipped with isolation FETs to provide full interoperability with PMC32 and PMC64 modules

Jn1 32-bit PCI				Jn2 32-bit PCI			
Pin #	Name	Name	Pin #	Pin #	Name	Name	Pin #
1	TCK	-12V	2	1	+12V	TRST#	2
3	Ground	INTA#	4	3	TMS	TDO	4
5	INTB#	INTC#	6	5	TDI	Ground	6
7	BUSMODE1#	+5V	8	7	Ground	PCI-RSVD	8
9	INTD#	PCI-RSVD	10	9	PCI-RSVD	PCI-RSVD	10
11	Ground	3.3Vaux	12	11	BUSMODE2#	+3.3V	12
13	CLK	Ground	14	13	RST#	BUSMODE3#	14
15	Ground	GNT#	16	15	+3.3V	BUSMODE4#	16
17	REQ#	+5V	18	17	PME#	Ground	18
19	V(I/O)	AD[31]	20	19	AD[30]	AD[29]	20
21	AD[28]	AD[27]	22	21	Ground	AD[26]	22
23	AD[25]	Ground	24	23	AD[24]	+3.3V	24
25	Ground	C/BE[3]#	26	25	IDSEL	AD[23]	26
27	AD[22]	AD[21]	28	27	+3.3V	AD[20]	28
29	AD[19]	+5V	30	29	AD[18]	Ground	30
31	V(I/O)	AD[17]	32	31	AD[16]	C/BE[2]#	32
33	FRAME#	Ground	34	33	Ground	PMC-RSVD	34
35	Ground	IRDY#	36	35	TRDY#	+3.3V	36
37	DEVSEL#	+5V	38	37	Ground	STOP#	38
39	Ground	LOCK#	40	39	PERR#	Ground	40
41	PCI-RSDV*	PCI-RSVD	42	41	+3.3V	SERR#	42
43	PAR	Ground	44	43	C/BE[1]#	Ground	44
45	V(I/O)	AD[15]	46	45	AD[14]	AD[13]	46
47	AD[12]	AD[11]	48	47	M66EN	AD[10]	48
49	AD[09]	+5V	50	49	AD[08]	+3.3V	50
51	Ground	C/BE[0]#	52	51	AD[07]	PMC-RSVD	52
53	AD[06]	AD[05]	54	53	+3.3V	PMC-RSVD	54
55	AD[04]	Ground	56	55	PMC-RSVD	Ground	56
57	V(I/O)	AD[03]	58	57	PMC-RSVD	PMC-RSVD	58
59	AD[02]	AD[01]	60	59	Ground	PMC-RSVD	60
61	AD[00]	+5V	62	61	ACK64#	+3.3V	62
63	Ground	REQ64#	64	63	Ground	PMC-RSVD	64

## PMC Jn3 CT Bus Connector

Jn3 PMC			
Pin #	Name	Name	Pin #
1	MDIO	GROUND	2
3	GROUND	STX	4
5	MDC	SRX	6
7	RXER	GROUND	8
9	PTID2	TXD0	10
11	PTGNDZ	TXD1	12
13	REFCLK	GROUND	14
15	GROUND	RXD0	16
17	CT_FA	RXD1	18
19	CT_FB	GROUND	20
21	PTID0	TXEN	22
23	PTGNDZ	CAS/DV	24
25	CT_C8A	GROUND	26
27	GROUND	CT_D19	28
29	CT_D18	CT_D17	30
31	CT_D16	GROUND	32
33	GROUND	NETREF2	34
35	CT_D14	USER	36
37	CT_D12	GROUND	38
39	PCENB#	USER2Z	40
41	PTGNDZ	NETREF1	42
43	CT_C8B	GROUND	44
45	GROUND	CT_D15	46
47	CT_D10	CT_D13	48
49	CT_D8	CT_D11	50
51	GROUND	CT_D9	52
53	CT_D6	CT_D7	54
55	CT_D4	GROUND	56
57	PTID1	CT_D5	58
59	CT_D2	CT_D3	60
61	CT_D0	GROUND	62
63	GROUND	CT_D1	64

PMC Site A J14 and Site B J24

J14 Site A				J24 Site B			
Pin #	Name	Name	Pin #	Pin #	Name	Name	Pin #
1	E22	D22	2	1	E11	D11	2
3	C22	B22	4	3	C11	B11	4
5	A22	E21	6	5	A11	E10	6
7	D21	C21	8	7	D10	C10	8
9	B21	A21	10	9	B10	A10	10
11	E20	D20	12	11	E9	D9	12
13	C20	B20	14	13	C9	B9	14
15	A20	E19	16	15	A9	E8	16
17	D19	C19	18	17	D8	C8	18
19	B19	A19	20	19	B8	A8	20
21	E18	D18	22	21	E7	D7	22
23	C18	B18	24	23	C7	B7	24
25	A18	E17	26	25	A7	E6	26
27	D17	C17	28	27	D6	C6	28
29	B17	A17	30	29	B6	A6	30
31	E16	D16	32	31	E5	D5	32
33	C16	B16	34	33	C5	B5	34
35	A16	E15	36	35	A5	E4	36
37	D15	C15	38	37	D4	C4	38
39	B15	A15	40	39	B4	A4	40
41	E14	D14	42	41	E3	D3	42
43	C14	B14	44	43	C3	B3	44
45	A14	E13	46	45	A3	E2	46
47	D13	C13	48	47	D2	C2	48
49	B13	A13	50	49	B2	A2	50
51	E12	D12	52	51	E1	D1	52
53	C12	B12	54	53	C1	B1	54
55	A12	No connect	56	55	A1	No connect	56
57	No connect	No connect	58	57	No connect	No connect	58
59	No connect	No connect	60	59	No connect	No connect	60
61	No connect	No connect	62	61	No connect	No connect	62
63	No connect	No connect	64	63	No connect	No connect	64