

► 3U Conduction-Cooled Mechanical Housing Assembly

The 3U Conduction-Cooled Mechanical Housing Assembly (3U CC MHA) is a versatile, rugged enclosure for 3U Single Board Computer (SBC) based embedded systems, as used in varied Airborne, Vehicular and Naval applications. The MHA can be configured for use with standard 3U CompactPCI, VME, VPX or other custom backplanes.

The 3U CC MHA has dual-redundant hot-swap power supplies, connected in a load-sharing topology, capable of operating from a wide AC input range and supplying standard DC output rails. Onboard power line filtering is implemented to limit susceptibility to EMI and RFI.

The modular rear-I/O connector plate can easily be customised to suit any end application. Resilience to shock and vibration can be enhanced using external shockmounts.

The 3U CC MHA is designed for highest levels of resilience to mechanical shock, vibration, temperature, dust and salt fog.

Features

- support for various 3U backplanes (CompactPCI, VME, VPX, custom, etc.)
- 2 to 5 3U CompactPCI or VME card slots in the standard configuration
- custom 1 slot configuration for low mass applications
- rugged, lightweight cast aluminium construction
- optional dual-redundant power supplies
- optional external shockmounts
- conduction-cooling
- optional forced-air cooling
- rugged and reliable military circular connectors



Figure 1 : 3U CC MHA with Open Lid



Figure 2 : 3U CC MHA with Fan Cooling



Figure 3 : 3U CC MHA without Fan Cooling

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Specifications							
Mechanical Construction	Aluminium construction Freestanding (with or without shockmounts) Rear mounted handles						
Card Space	Inner card cage One to eight 3U card slot backplane Support for hot swap Vertical card orientation Conduction-cooled cards						
Thermal Management	Conduction-cooling via finned side panels Optional forced-air cooling with fans						
Backplane Type	Standard (CompactPCI, VME, VPX) or other 3U options						
Power Supply	Dual-redundant hot swap power supplies (application specific rating) EMI/RFI power line filtering						
I/O Interface	Fully customisable rear I/O area 210 mm x 100 mm (height x width)						
Switches and Indicators	Optional front and rear panel switches and indicators : ► Power Switch ► Battleshort Switch ► BIT Status Indicators						
Surface Finish	Black anodised aluminium						
IP Rating	IP-65 (IEC-60529)						
Acoustic Noise	0 dB without fan cooling 42 dB with fan cooling						
Maximum Power Dissipation	Baseplate Temperature	20 C	30 C	40 C	50 C	60C	70 C
	Power Dissipation without fan cooling	270 W	230 W	190 W	160W	110 W	80 W
	Power Dissipation with fan cooling	370 W	320 W	280 W	240 W	210 W	170 W

Characteristics		
Physical	Dimensions (Height x Width x Depth)	Mass
Conduction-Cooling	260 mm x 220 mm x 330 mm	12,0 kg ± 0,5 kg
Air-Cooling	260 mm x 220 mm x 365 mm	12,5 kg ± 0,5 kg

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Environmental Specifications		
Grade	Industrial	Ruggedised
Temperature - Operating - Storage	-15 C to +75 C -50 C to +85 C	-40 C to +85 C -60 C to +125 C
Relative Humidity	0% to 100%	
Shock	60 g for 5 ms, ½ sine 30 g for 10 ms, ½ sine i.a.w. MIL-STD-810F Method 516.5 Procedure I	
Vibration	5 g (peak) 10 Hz to 100 Hz 0,1 g²/Hz at 15 Hz to 2 kHz i.a.w. MIL-STD-810F Method 516.5 Procedure II	
EMC	RE, CE, RS, CS i.a.w. MIL-STD-461C for military equipment	

Part Designations				
Part Designation	Grade	Cooling	Formfactor	Backplane
CCII/MHA/3UAC/CPCI/xy/IND	Industrial	Forced-air cooled	3U	CompactPCI
CCII/MHA/3UCC/CPCI/xy/IND	Industrial	Conduction-cooled	3U	CompactPCI
CCII/MHA/3UAC/CPCI/xy/RGD	Ruggedised	Forced-air cooled	3U	CompactPCI
CCII/MHA/3UCC/CPCI/xy/RGD	Ruggedised	Conduction-cooled	3U	CompactPCI
CCII/MHA/3UAC/VME/xy/IND	Industrial	Forced-air cooled	3U	VMEbus
CCII/MHA/3UCC/VME/xy/IND	Industrial	Conduction-cooled	3U	VMEbus
CCII/MHA/3UAC/VME/xy/RGD	Ruggedised	Forced-air cooled	3U	VMEbus
CCII/MHA/3UCC/VME/xy/RGD	Ruggedised	Conduction-cooled	3U	VMEbus
CCII/MHA/3UAC/VPX/xy/IND	Industrial	Forced-air cooled	3U	VPX
CCII/MHA/3UCC/VPX/xy/IND	Industrial	Conduction-cooled	3U	VPX
CCII/MHA/3UAC/VPX/xy/RGD	Ruggedised	Forced-air cooled	3U	VPX
CCII/MHA/3UCC/VPX/xy/RGD	Ruggedised	Conduction-cooled	3U	VPX

[x] is one of 1 or 2, denoting the number of power supplies

[y] is one of 2, 3, 4, 5, 6, 7 or 8, denoting the number of card slots

For example : CCII/MHA/3UAC/CPCI/28/IND is an industrial grade air-cooled 3U mechanical housing assembly with a CompactPCI backplane providing 2 power supplies and 8 card slots