12R2 Rugged Chassis

FEATURES

- VME, VME64x, VXS, VPX, cPCI and MicroTCA compatible
- MIL-grade components
- Tested for shock, vibration, and structural integrity
- Proven performance for multiple military and defense applications
- Ideal for airborne, shipboard and ground mobile programs
- All products feature multiple configurations and are customizable
- Withstands 25 G's (shock and vibration resistance)
- Shelf management optional
- Custom configurations available

PRODUCT OVERVIEW

The 12R2 COTS chassis comes in 5U to 14U heights in horizontal and vertical orientations. A wide range of backplanes in various slot sizes is available in VME, VME64x, VXS, VPX, CompactPCI or MicroTCA architectures.

The 12R2 enclosure system integrates pre tested, standardized enclosure modules with off-the-shelf ruggedized components to include; power supplies, fans, and backplanes, to meet a wide range of customer requirements. The standard off-the-shelf parts; aluminum flat frames and covers, ruggedized side plates, cross-functional extruded profiles, standard electrical components and wire harnesses, ensure performance and reduce lead-time. The 12R2 has MIL-grade components, system monitoring LEDs, and an optimal cooling system to handle a harsh military environment. To meet EMC, the units incorporate honeycomb filters, braided gasketing and metal impregnated gasket sheets to seal off every external seam.

Because system functionality is the most critical requirement of the COTS initiative, Elma baseline tested our design approach to MIL-STD: 810F, 167, 901D and 461, to insure the 12R2 could withstand a military environment. These tests confirm that the 12R2 is a packaging system that has been successfully deployed in shipboard, airborne and ground mobile applications.

12R2 SPECIFICATIONS

PHYSICAL

Depth	22", 25"
Heights	5U (8.71")
	8U (13.96")
	9U (15.71")
	10U (17.46")
	12U (20.96")
	14U (24.47")
Width	17.1"
	(19" Rack mount)
Weight	5U 60 lb. Typ.
	8U 75 lb. Typ.
	9U 80 lb. Typ.
	9U(PCI) 85 lb. Typ.
	10U 85 lb. Typ.
	12U 100 lb. Typ.
	14U 115 lb. Typ.

ELECTRICAL

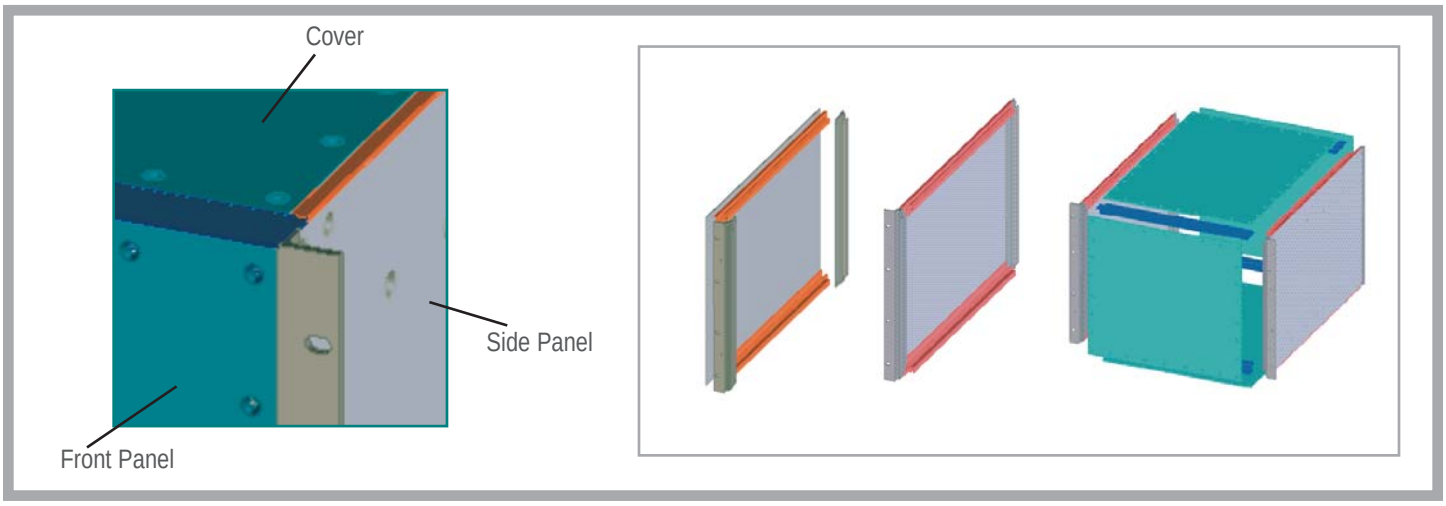
Frequency	47-500Hz
Voltage Input	90-264 VAC
	28/48 VDC
Power	350W-1000W
Outputs	+5V, +3.3V, +/-12V

ENVIRONMENTAL

Operating Temp.	0°C to 65°C
Storage Temp.	-20°C to 85°C
Humidity	0 to 95%, non-condensing
Altitude	-1,200 to 18,000 ft.
Shock	25Gs 11ms
Vibration	4.0Gs RMS 15 to 2000Hz
Acceleration	4.5Gs w/o disk
Sand and Dust	Blowing
Salt/Fog	Limited
Fungus	Limited

12R2 Design Features

The 12R2 rugged COTS design combines extruded profiles and the rugged benefits of standard aluminum frames and captive hardware. This innovative design bases the entire chassis around the custom ruggedized side plate. Spot-welded to a 3mm thick aluminum plate are front, rear, top and bottom extruded aluminum profiles. The flexibility of the extrusions allows modification of the entire chassis with standard, off-the-shelf aluminum frames, ensuring quick delivery and minimal engineering effort. The final product is a shell that can and has easily passed MIL-STD-810F, MIL-STD-167 and MIL-STD-901D shock and vibration tests.

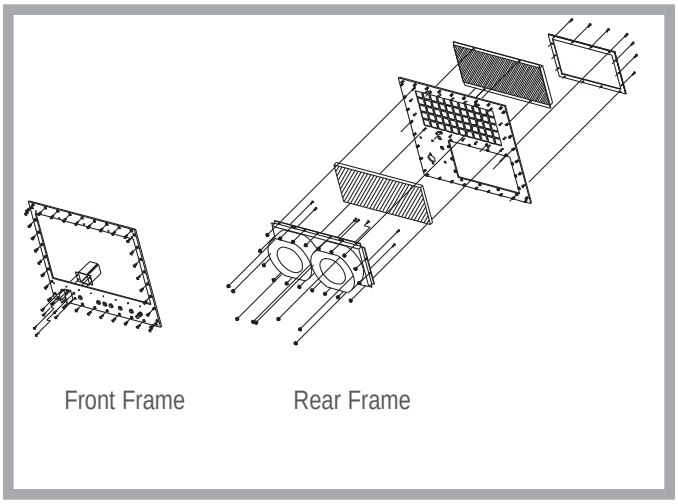


The coverset is 3mm thick and has custom, stainless steel, captive screws installed. Each mating extrusion has an EMC gasket channel and a T-channel that accommodates the rugged stainless steel tapped strip. The 4mm thick rear frame is designed to give maximum available I/O space for each size; each chassis comes with a standard 1.5mm thick blank patch panel. For corrosion resistance, every aluminum part in the 12R2 chassis has a protective yellow chemical conversion coating per MIL-C-5541E Class 3.

The 12R2 offers a superior EMC package. Designed to meet EMI requirements per MIL-STD-461D, the 12R2 uses MIL grade EMC line honeycomb filters, braided gasketing, and metal impregnated flat gaskets to seal off every external seam.

The 12R2 integrates COTS MIL-grade components and a standard wire harness to ensure a high quality, rugged electrical turnkey system without the associated engineering and delivery problems common in today's COTS market. The harnesses and components have been designed and selected to maximize the system options from standard configurations.

EXPLODED VIEWS



CROSS SECTIONS