1/2 ATR Chassis, Sealed w/Heat Exchange

ATR012-HEX-3U

KEY FEATURES

- Rugged MIL 1/2 ATR enclosure for 3U boards
- Sealed conduction cooled enclosure with 4 heat exchangers + fan guards
- 5 slots at 1.0" pitch or 6 slots at 0.85" pitch
- 215mm H x 163mm W x 290mm D
- 3U OpenVPX, CompactPCI, VME, or custom backplanes
- Conduction cooled to 250W payload with heat exchangers (contact Pixus for higher heat dissipation options)
- Control switches for battle-short and PSU "on/ stand-by" are standard
- PSU options to 750W (28 or 48VDC, or 90-264 VAC), with hold-up capacitors
- In-line EMI/EMC MIL-STD-461F Filter
- 12V, 5V, and 3.3V power outputs standard
- Optional custom front panel options with filtering, MIL 38999 connectors, etc.
- Certificates per MIL-STD-461 for emissions & susceptibility and MIL-STD-810 for temperature, shock, vibration, humidity, fungus, & salt fog

The ATR012-HEX-3U is a MIL-rugged ATR enclosure that meets MIL specifications for airborne and shipboard applications.

The ATR012-HEX-3U features a rugged construction and sleek aesthetics. The unit is designed for higher power applications and can cool 250W of payload with an internal fan and a rear 84 or higher CFM heat exchanger. Optional cold plates, heat pipes, or other modifications available upon request.

Mounting trays and other accessories are also available. Contact Pixus for details.

Pixus Technologies can modify this product to meet special customer requirements without NRE (minimum order placement is required).

Pixus Technologies Inc. USA (916) 297-0020 Canada (519) 885-5775
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POWER

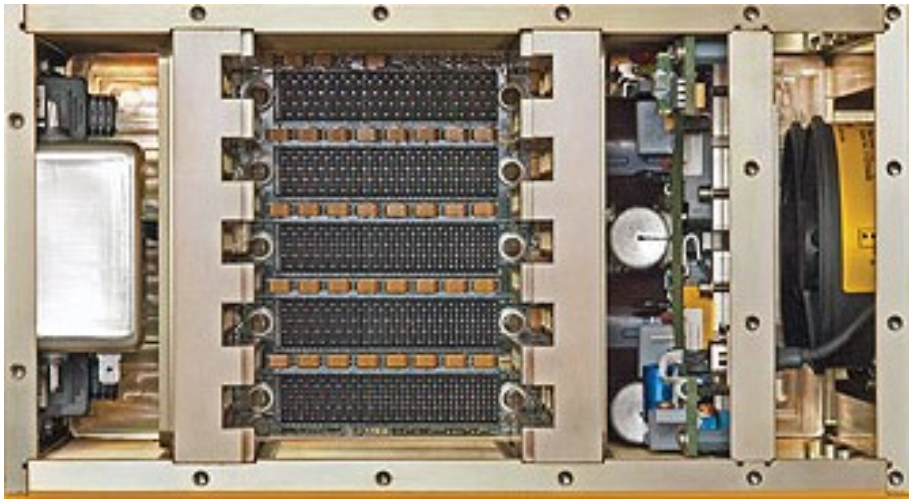
The ATR012-HEX-3U features single-phase AC PSUs with a VICOR military Filter and Autoranging Rectifier Module (FARM) to provided EMI filtering, auto-ranging line rectification and inrush current limiting to meet MIL-STD-461 category A1b specifications for Electromagnetic Compatibility. The 200VAC 3-Phase PSU versions incorporate the AC/DC rectifier stage prior to the VICOR front-end modules.

DC PSUs are equipped with a VICOR military Filter and Attenuator Module (FIAM). This front-end device is fitted prior to the DC/DC converters to provide EMI filtering, in-rush current limiting and transient protection. Front-end FIAM modules are protected against DC reverse polarity. An optional reverse polarity diode may be fitted in series with power connector input pin IN (+).

The ATR012-HEX has PSUs with isolated DC/DC converters and oversized hold-up capacitors to ensure proper operation during short power line failures. Outputs are protected against short-circuit, thermal-shutdown etc. The PSUs are custom-made to match the enclosure mechanical design.

COOLING

The ATR012-HEX features four heat exchangers with dual rear fans that provide enhanced cooling. The conduction-cooled clamshells that hold the boards have strategically placed airflow holes to reduce heat build-up. Internal air recirculation dissipates heat generated by the PSU through its panel via thermal conduction to the chassis frame.



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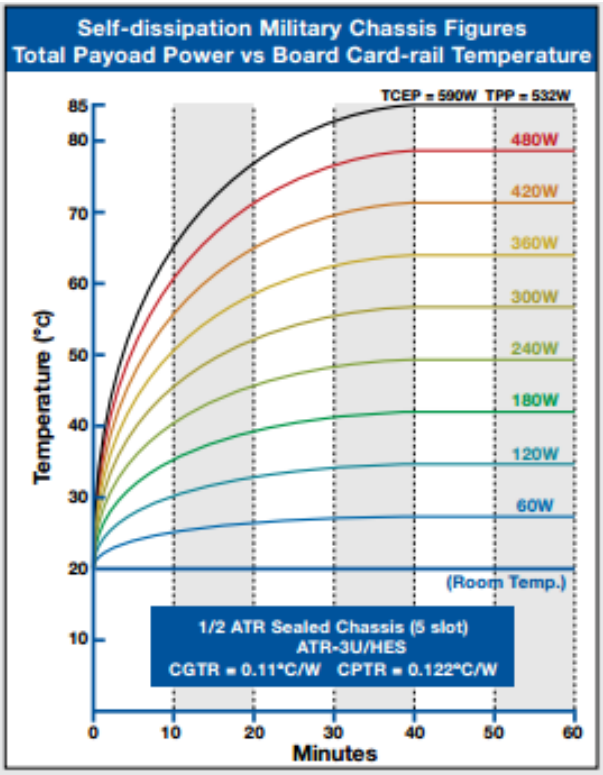
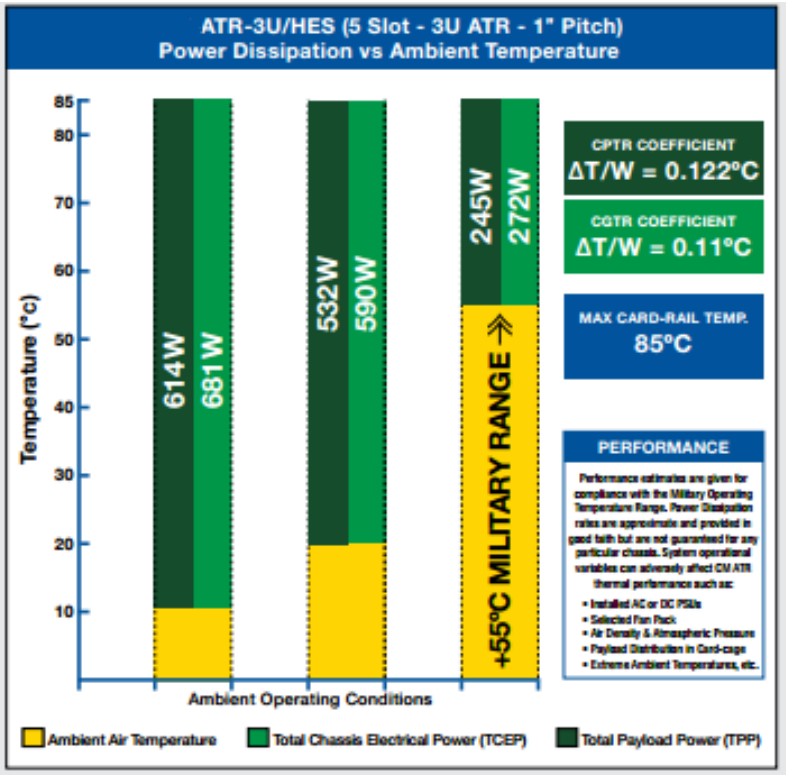
TESTING

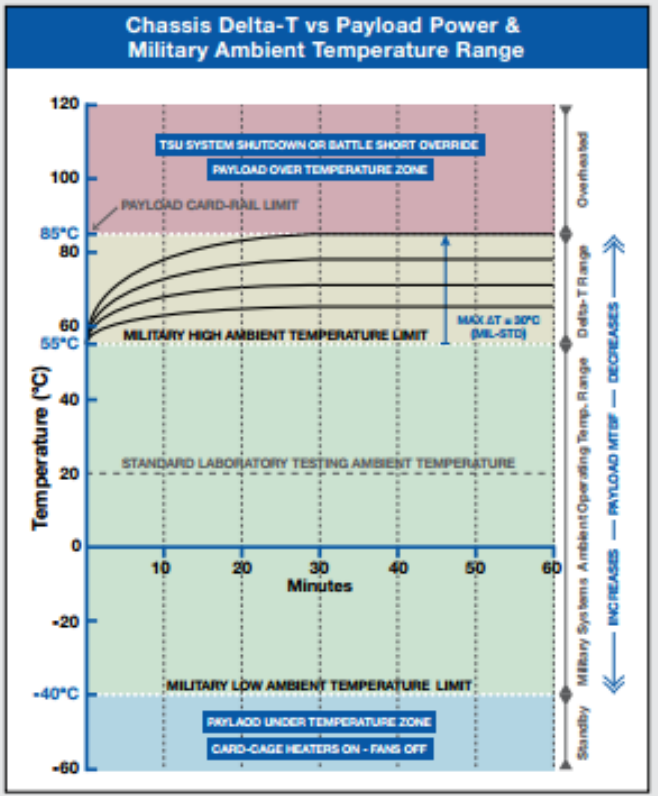




MAXIMUM MILITARY SYSTEM DELTA-T

Maximum conduction-cooled payload card-rail temperature is typically 85ºC. To comply with MIL-STD-810, systems must be operational up to 55ºC ambient (worst case scenario).

In theory, this restricts payload maximum ΔT to 85ºC - 55ºC (ΔTmax = 30ºC). Temperatures in excess of 85ºC dramatically increase the risk of module failure and reduce component MTBF. Military limits may be relaxed for systems serving in 'indoor environments' (e.g. to 40ºC ambient). Under these conditions ΔT margin can be increased to 85ºC - 40ºC = 45ºC ΔTmax.



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SPECIFICATIONS

Architecture		
Physical	Dimensions	Height: 215mm*
	Pitch	1.0" slot pitch standard, 0.85" optional
	(from aspect of front of card cage)	Width: 163mm*
		Depth: 290mm*
Type	ATR chassis	*consult Pixus for other size options
Standards		
ARINC	Type	ARINC 404, 600
VITA/ANSI	Backplane, Chassis	VITA 65 for OpenVPX (optional), VITA 48.1/.2
MIL-STD	Type	810F (shock, vibration to 20G, environmental), 461F (EMI)
Configuration		
Power	Type	28VDC, 48VDC, 90-264VAC input @ 47-880Hz
		Various output options (3.3V, 5.5V, +/- 12V)
Environmental	Temperature	Operating temperature: -40° to +85°C
		Storage temperature: -55° to +90°C
	Altitude	Up to 30,000ft operating
Conformal Coating		Upon request (See page 6 selection "J" for available options)
Other		
MTBF	25 degrees GB 82,000 hrs, 65 degrees A/C 27,000 hrs	
Certifications	Designed to meet FCC, CE and UL certifications where applicable	
Standards	ISO9001:2000 and AS9100B:2004 standards	
Compliance	MIL-STD-810, MIL-STD-461	
Warranty	Two years	
Trademarks and logos	The Pixus Logo is a registered trademark of Pixus Technologies Inc. other registered trademarks are the property of their respective owners. Specs. subject to change without notice.	

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ORDERING OPTIONS

ATR012-HEX-ABDD-EFG-J

A = Backplane

1 = 3U OpenVPX
2 = 3U CompactPCI
3 = 3U VME
4 = Other

B = Backplane Speed

1 = 3.125 Gbps
2 = 5 Gbps
3 = 6.25 Gbps
4 = 8 Gbps
5 = 10 Gbps
6 = 33 MHz for cPCI
7 = 66 MHz for cPCI
8 = 40 MB/s for VME
9 = Other

DD = Slots

Example 0n = n slots
01 = 1 slot
02 = 2 slots
03 = 3 slots

E = PSU Input

1 = 28V DC
2 = 48V DC
3 = 90-230V AC
4 = Other

F = PSU Output

1 = Dual Output, (among 3.3V, 5V, 12V, -12V) to 300W
2 = Dual Output, 300W to 500W
3 = Dual Output, above 500W
4 = Tri Output, (among 3.3V, 5V, 12V, -12V) to 300W
5 = Tri Output, 300W to 500W
6 = Tri Output, above 500W
7 = Other

G = Cooling

1 = Sealed with heat exchange (standard)
2 = Sealed with heat exchange, cold plate or customized

J = Conformal Coating

0 = None
1 = Humiseal 1A33 Polyurethane
2 = Humiseal 1B31 Acrylic