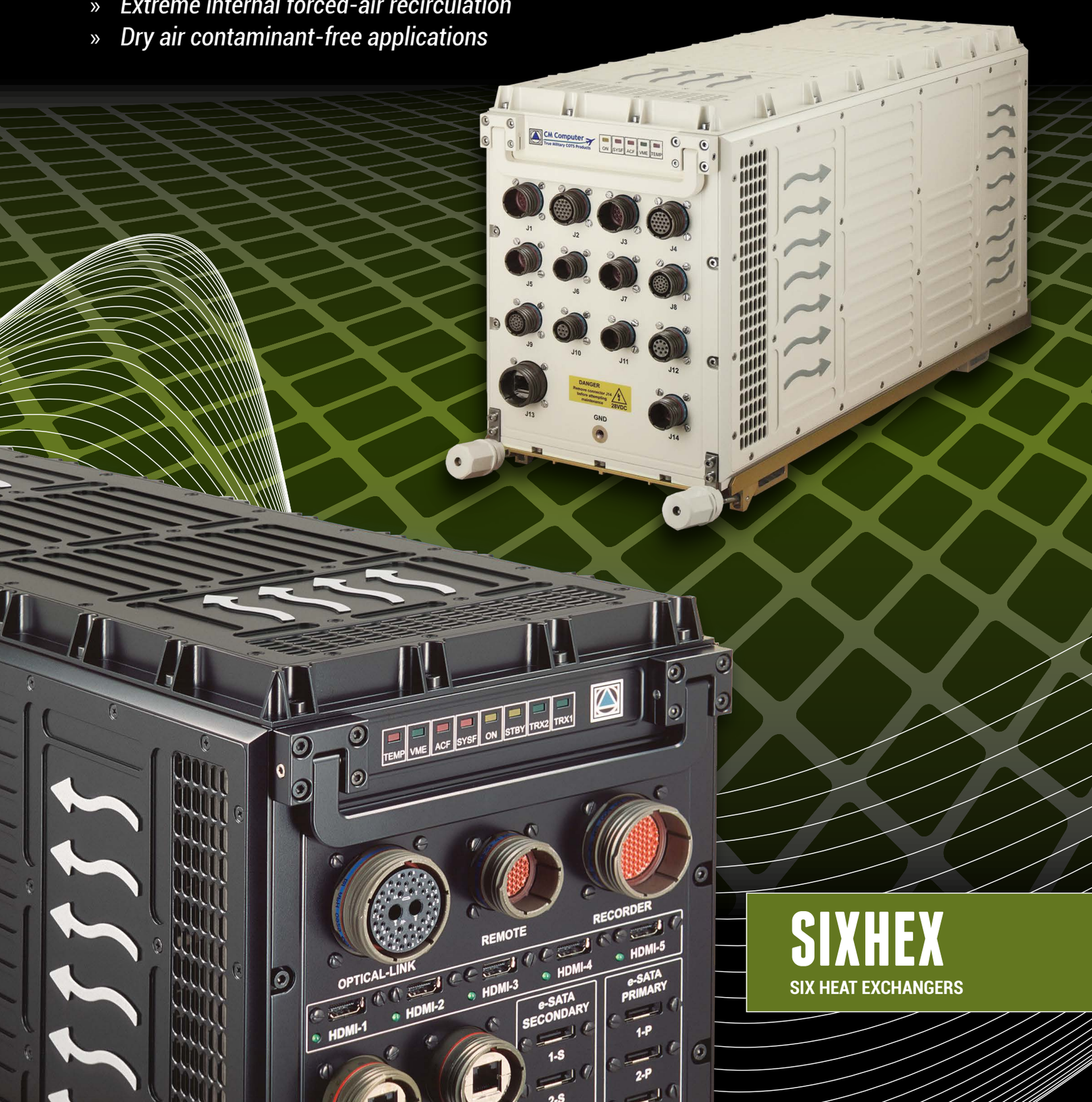
6U

SEALED SIX HEAT EXCHANGERS ATR ENCLOSURE

- *Forced-air heat exchanger sidewalls, top cover & rear panel*
- *Two internal reverse forced-airflow heat exchangers*
- *Supports conduction and air-cooled modules*
- *Extensive variety of military power supply options*
- *Accepts payloads up to 125 watts per slot*
- *Very high airflow military PX3 rear fans*
- *Extreme internal forced-air recirculation*
- *Dry air contaminant-free applications*



SIXHEX

SIX HEAT EXCHANGERS

↑600W
PAYLOAD POWER DISSIPATION

SIX HEAT EXCHANGERS 6U ATR

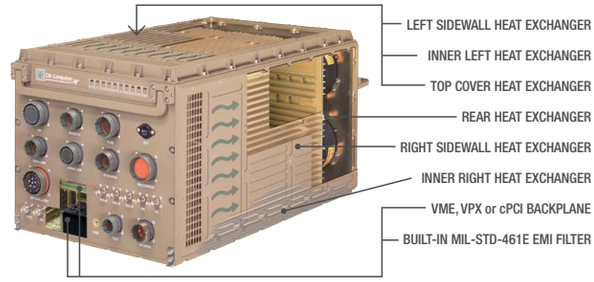
Six Heat Exchangers 6U ATR - Contaminant-free Enclosure

suitable for high wattage applications that demand advanced cooling capability

CM's *Six Heat Exchangers* chassis is a high thermal performance solution for the most demanding military embedded systems. Integrates oversized compact heat exchangers that are forced by a very high capacity dual or quad PX3 fan assembly at the rear. These low maintenance chassis are ideal for hostile or harmful air environments.

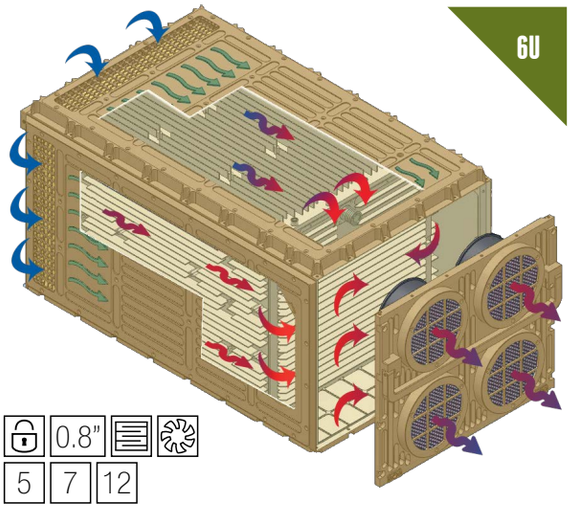
AVAILABILITY

The 6U CM Six Heat Exchangers series is available in 5, 7, & 12 slot versions, supporting our full line of 0.8" pitch military VME, cPCI, VPX or Hybrid Backplanes and the complete range of advanced CM military Power Supply Units.



LAYOUT & DESIGN

Internal layout is divided into 4 independent metallic partitions: I/O section at the front, card-cage, PSU section, & 2/4 exhaust fans at the rear. This isolates the card-cage, improves EMI/EMC and reduces PSU heat & electrical noise on system electronics.



DISSIPATION & COOLING

Heat within the enclosure is conducted to hollow sidewalls, top cover and rear panel forced-air heat exchangers. Internal recirculation fans and two internal cross-airflow heat exchangers ensure dry air is forced across payload modules, minimizing hot-spots and dissipating heat homogeneously.

RECOMMENDED PAYLOAD POWER RATINGS

(SELF DISSIPATING @ 55ºC AMBIENT: NO EXTERNAL AIRFLOW OR COLD PLATE PROVIDED)

CM-ATR-45/SIXHEX (12 SLOT)	≤ 600 watts
CM-ATR-35/SIXHEX (7 SLOT)	≤ 500 watts
CM-ATR-25/SIXHEX (5 SLOT)	≤ 450 watts

6U

SIX INTEGRATED HEAT EXCHANGERS

HIGH PERFORMANCE APPLICATIONS

LIQUID COOLED ALTERNATIVE

SIXHEX

SIX HEAT EXCHANGERS

CM MILITARY ATR PRODUCT RANGE

Six Heat Exchangers 6U ATR Series Specifications

for high wattage VME, VPX & cPCI applications with 0.8" pitch eurocards

	CM-ATR-25/SIXHEX	CM-ATR-35/SIXHEX	CM-ATR-45/SIXHEX
SLOTS	5	7	12
WIDTH	180 mm	220 mm	321 mm
HEIGHT	288 mm	288 mm	288 mm
DEPTH	510 mm	510 mm	510 mm
WEIGHT	9 Kg	13 Kg	17 Kg
CGTR THERMAL RES.	ΔT/W = 0.068°C (CIA = 200 CFM)	ΔT/W = 0.059°C (CIA = 200 CFM)	ΔT/W = 0.051°C (CIA = 400 CFM)
MAX. PSU POWER	575 watts (28 VDC 475 watts)	825 watts (28 VDC 675 watts)	1550 watts (28 VDC 1350 watts)
PSU V-INPUT	28 VDC ±30%, 48 VDC ±30%, 72 VDC ±30%, 270 VDC ±30%, Autorange 90-132 VAC RMS & 180-264 VAC RMS @ 47-880 Hz, 3-Phase 200 VAC @ 47-880 Hz ±30%		
STD BACKPLANE	VME64X or cPCI or VPX or Hybrid VME64X/VPX 6U 0.8" pitch backplanes		
BOARD FORMAT	CCS: Conduction-cooled slots only or MCS: Slot-by-slot user configured card-cage allows intermixing conduction-cooled ANSI-VITA 48.2 & air-cooled ANSI-VITA 48.1 boards		
INTERNAL FAN	54 CFM	110 CFM	220 CFM
REAR FAN	200/280 CFM (2 x PX3)	200/280 CFM (2 x PX3)	400/560 CFM (4 x PX3)
FRONT PANEL AREA	138 mm x 200 mm	178 mm x 200 mm	280 mm x 200 mm
CM FRONT PANEL I/O	6 Power Pins (23 Amp) & 601 I/O Pins (5 Amp)	6 Power Pins (23 Amp) & 832 I/O Pins (5 Amp)	6 Power Pins (23 Amp) & 1226 I/O Pins (5 Amp)
TEMPERATURE SPECS	-40 °C to +85 °C Operating, -55 °C to 100 °C Storage		
MTBF	25° GB 82,000 Hours 65° AIC 27,000 Hours	25° GB 80,000 Hours 65° AIC 26,000 Hours	25° GB 63,000 Hours 65° AIC 20,000 Hours
MOUNTING TRAY	CM-TR-25/SXIHEX	CM-TR-35/SXIHEX	CM-TR-45/SXIHEX

MORE DETAILED INFORMATION

- CM ATR Common Features
- CM ATR Backplanes
- CM ATR Power Supplies

OPTIONAL COLD PLATE MOUNTING 6U

Chassis can be optionally cold plate mounted to increase power dissipation rates by approximately 8%.

SIX HEAT EXCHANGERS ATR ORDERING

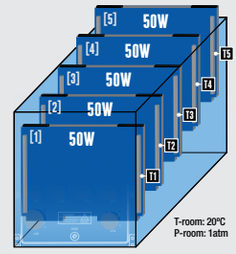
For ordering information see page 127 of this catalog.

PART NUMBER EXAMPLE:

CM-ATR-35/SIXHEX/VME64x/28VDC/B-750W/15-100W/TSU/UDP/HTC/HBC/MCS/F28/EMIG/B

- 7 slot, 6U Avionics Enclosure.
- Six Heat Exchangers.
- 7 slot VME64x Backplane for 6U 0.8" boards, 160 pin J0/J1/J2 connectors.
- 28VDC Power Supply Unit 750W (+5VDC @ 80A, +3.3VDC @ 22A, ±12VDC @ 16A).
- (+)15VDC @ 6.6A DC/DC AUX1 user output on backplane.
- Temperature Supervisory Unit.
- User defined front panel.
- High Top Cover (50mm wiring clearance).
- High profile Bottom Cover (50mm).
- Universal card-cage slots.
- 2x Rotron PX3 military fan fitted for 28 VDC installed at the rear (200 CFM total).
- EMI shielded finger guards.
- Enclosure color: Black.

CM ATR CHASSIS THERMAL TESTING



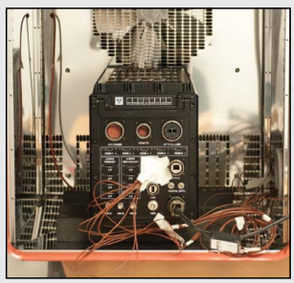
6U SIXHEX Military ATR Chassis Performance

suitable for high wattage, 0.8" pitch - sealed applications

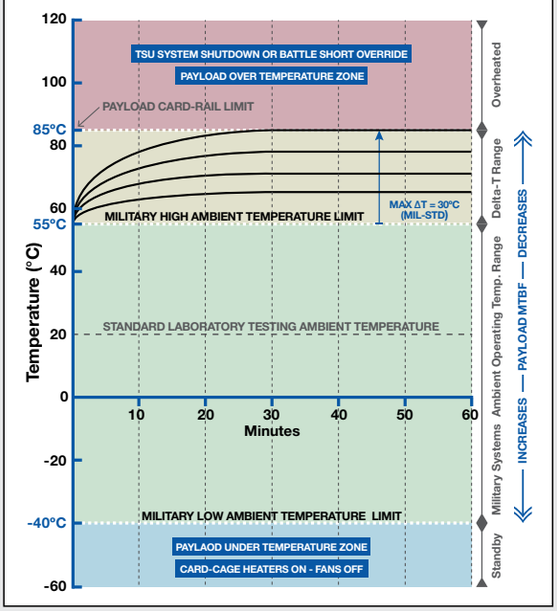
MAXIMUM MILITARY SYSTEM DELTA-T

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).

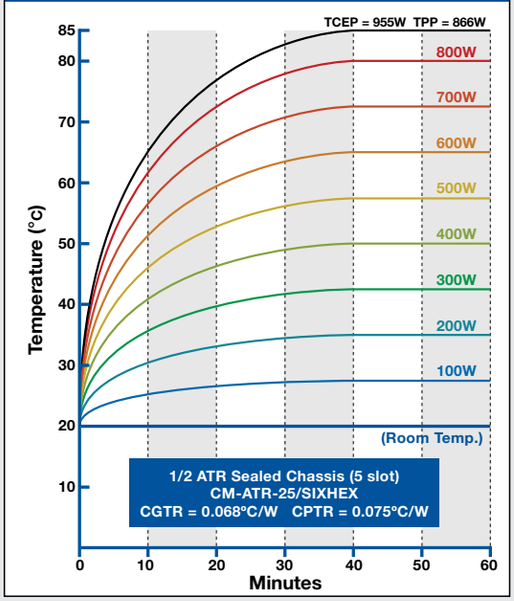
In theory, this restricts payload maximum ΔT to 85ºC - 55ºC (ΔTmax = 30ºC). Temperatures in excess of 85ºC dramatically increase the risk of module failure and reduce component MTBF. Military limits may be relaxed for systems serving in 'indoor environments' (e.g. to 40ºC ambient). Under these conditions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



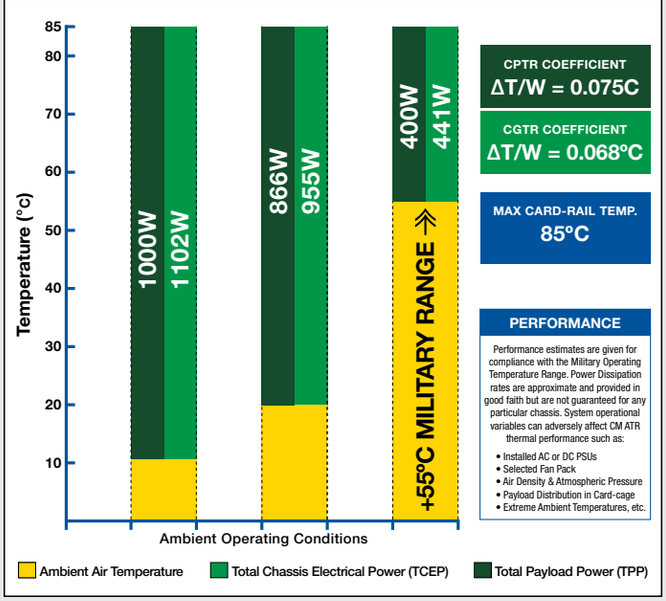
Chassis Delta-T vs Payload Power & Military Ambient Temperature Range



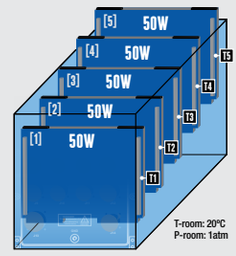
Self-dissipation Military Chassis Figures
Total Payoad Power vs Board Card-rail Temperature



CM-ATR-25/SIXHEX (5 Slot - 6U ATR - 0.8" Pitch)
Power Dissipation vs Ambient Temperature



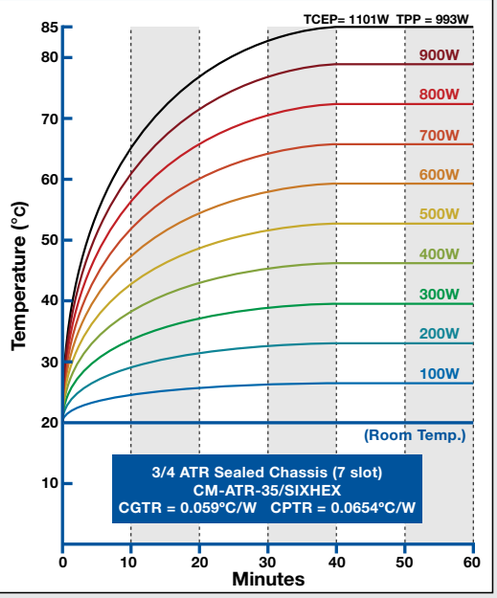
CM ATR CHASSIS THERMAL TESTING



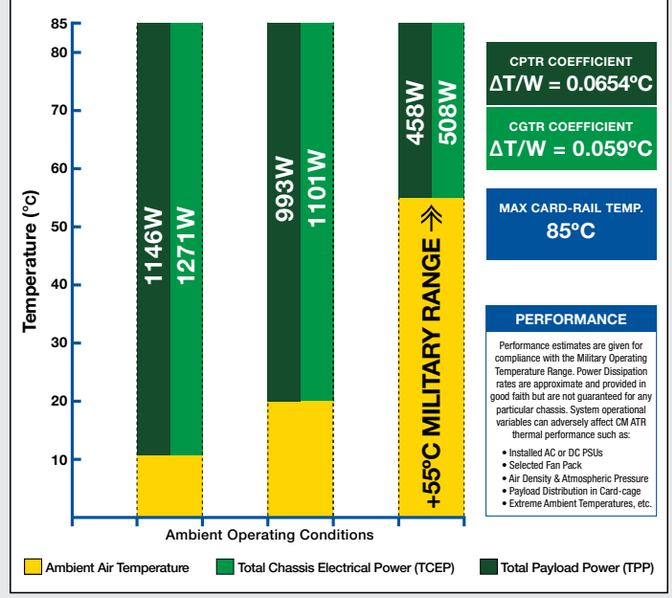
6U SIXHEX Military ATR Chassis Performance

suitable for high wattage, 0.8" pitch - sealed applications

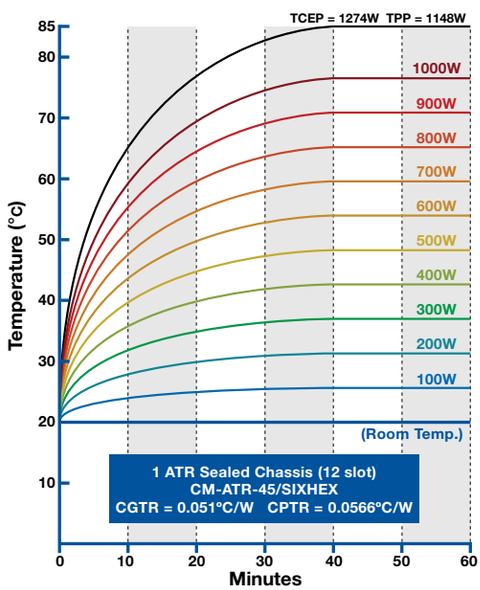
Self-dissipation Military Chassis Figures
Total Payoad Power vs Board Card-rail Temperature



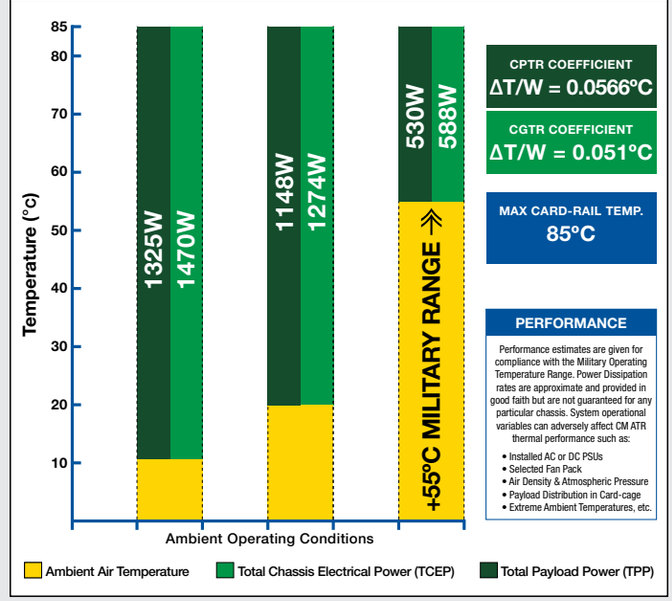
CM-ATR-35/SIXHEX (7 Slot - 6U ATR - 0.8" Pitch)
Power Dissipation vs Ambient Temperature



Self-dissipation Military Chassis Figures
Total Payoad Power vs Board Card-rail Temperature



CM-ATR-45/SIXHEX (12 Slot - 6U ATR - 0.8" Pitch)
Power Dissipation vs Ambient Temperature



CM ATR ORDERING INFORMATION

6U Military ATR Chassis Ordering

high performance military aerospace enclosure part number configuration

CHASSIS GENERIC PART NUMBER:

CM-ATR-S5 /CT /B /I /W /3.3 /D1 /D2 /R /S /FP /TC /BC /CS /F /G /C

/S5 COTS Enclosure Size/Model

CM-ATR-25: 5 Slot 6U Enclosure (0.8" pitch - 1/2 ATR type)
CM-ATR-125: 5 Slot 6U Enclosure (1" pitch - 1/2 ATR type)
CM-ATR-35: 7 Slot 6U Enclosure (0.8" pitch - 3/4 ATR type)
CM-ATR-135: 7 Slot 6U Enclosure (1" pitch - 3/4 ATR type)
CM-ATR-45: 12 Slot 6U Enclosure (0.8" pitch - 1 ATR type)

/CT Enclosure Cooling Technique

S: Standard Sealed (0.8" pitch)
SEF: Sealed with Extended Fins (0.8" pitch)
SEF-HP: Sealed with Extended Fins + 18/20 Heat Pipes (0.8" pitch)
HES: Sealed with 4 Heat Exchangers (0.8" and 1" pitch versions)
SIXHEX: Sealed with 6 Heat Exchangers (0.8" and 1" pitch versions)
SIXHEX-HP: Sealed with 6 Heat Exchangers and integrated Heat Pipes (0.8" pitch with 16HP and 1" pitch with 20HP versions)
FAC: Flowthrough Air Cooled Enclosure (open, non-sealed) (0.8" pitch)

/B Backplane Type (slot pitch according to chassis model)

VME64x: Military VME64x Backplane
cPCI: Military Compact PCI Backplane
VPX: VITA 46 Military VPX Backplane
VME64x/VPX: Hybrid VME64x mixed with VPX Military Backplane
VME64x/cPCI: Hybrid VME64x mixed with cPCI Military Backplane
Note: Hybrid dual bus backplanes are available for a limited set of chassis only

/I PSU Input Power Voltage

28VDC: 28 VDC Input
48VDC: 48 VDC Input
72VDC: 72 VDC Input
270VDC: 270 VDC Input
90-264VAC: Autorange 90-264 VAC @ 47-880 Hz Input
200VAC-3PH: 200 VAC 3 Phase @ 47-880 Hz Input

/W Power Supply Unit Watts

All PSUs = All PSUs except 28 VDC input | 28 VDC = 28 VDC input only

PSUs for CM-ATR-25 (5 slot)

Models: /S or /SEF or /SEF-HP or /HES (0.8") or /FAC

300W: 28 VDC (+5 VDC @ 20A, +3.3 VDC @ 5A, ±12 VDC @ 8A)
400W: All PSUs (+5 VDC @ 20A, +3.3 VDC @ 5A, ±12 VDC @ 12A)

Models: /S or /SEF or /SEF-HP or /HES or /SIXHEX or /SIXHEX-HP

A-475W: 28 VDC (+5 VDC @ 40A, +3.3 VDC @ 22A, ±12 VDC @ 8A)
A-575W: All PSUs (+5 VDC @ 40A, +3.3 VDC @ 22A, ±12 VDC @ 12A)
B-450W: 28 VDC (+5 VDC @ 20A, +3.3 VDC @ 45A, ±12 VDC @ 8A)
B-550W: All PSUs (+5 VDC @ 20A, +3.3 VDC @ 45A, ±12 VDC @ 12A)
C-475W: 28 VDC (+5 VDC @ 20A, +3.3 VDC @ 22A, +12 VDC @ 16A,-12 VDC @ 8A)
C-575W: All PSUs (+5 VDC @ 20A, +3.3 VDC @ 22A, +12 VDC @ 21A, -12 VDC @ 12A)

MOUNTING TRAY GENERIC PART NUMBER:

CM-TR-S5 /CT

PSUs for CM-ATR-(1)35 (7 slot) & CM-ATR-125 (5 Slot 1" Pitch)

Models: /S or /SEF or /SEF-HP or /HES (0.8") or /FAC

400W: 28 VDC (+5 VDC @ 40A, +3.3 VDC @ 5A, ±12 VDC @ 8A)
500W: All PSUs (+5 VDC @ 40A, +3.3 VDC @ 5A, ±12 VDC @ 12A)

Models: /S or /SEF or /SEF-HP or /HES or /SIXHEX or /SIXHEX-HP

A-475W: 28 VDC (+5 VDC @ 40A, +3.3 VDC @ 22A, ±12 VDC @ 8A)
A-575W: All PSUs (+5 VDC @ 40A, +3.3 VDC @ 22A, ±12 VDC @ 12A)
A-675W: 28 VDC (+5 VDC @ 80A, +3.3 VDC @ 22A, ±12 VDC @ 8A)
A-775W: All PSUs (+5 VDC @ 80A, +3.3 VDC @ 22A, ±12 VDC @ 12A)
B-450W: 28 VDC (+5 VDC @ 20A, +3.3 VDC @ 45A, ±12 VDC @ 8A)
B-550W: All PSUs (+5 VDC @ 20A, +3.3 VDC @ 45A, ±12 VDC @ 12A)
B-564W: 28 VDC (+5 VDC @ 20A, +3.3 VDC @ 80A, ±12 VDC @ 8A)
B-664W: All PSUs (+5 VDC @ 20A, +3.3 VDC @ 80A, ±12 VDC @ 12A)
C-475W: 28 VDC (+5 VDC @ 20A, +3.3 VDC @ 22A, +12 VDC @ 16A,-12 VDC @ 8A)
C-575W: All PSUs (+5 VDC @ 20A, +3.3 VDC @ 22A, +12 VDC @ 21A, -12 VDC @ 12A)
C-775W: 28 VDC (+5 VDC @ 20A, +3.3 VDC @ 22A, +12 VDC @ 41A, -12 VDC @ 8A)
C-825W: All PSUs (+5 VDC @ 20A, +3.3 VDC @ 22A, +12 VDC @ 41A, -12 VDC @ 12A)
D-550W: 28 VDC (+5 VDC @ 40A, +3.3 VDC @ 45A, ±12 VDC @ 8A)
D-650W: All PSUs (+5 VDC @ 40A, +3.3 VDC @ 45A, ±12 VDC @ 12A)
E-550W: 28 VDC (+5 VDC @ 20A, +3.3 VDC @ 45A, +12 VDC @ 16A, -12 VDC @ 8A)
E-650W: All PSUs (+5 VDC @ 20A, +3.3 VDC @ 45A, +12 VDC @ 21A, -12 VDC @ 12A)
F-575W: 28 VDC (+5 VDC @ 40A, +3.3 VDC @ 22A, +12 VDC @ 16A,-12 VDC @ 8A)
F-675W: All PSUs (+5 VDC @ 40A, +3.3 VDC @ 22A, +12 VDC @ 21A, -12 VDC @ 12A)

Dual-redundant PSUs for /HES or /SIXHEX or /SIXHEX-HP models

R2x500W: (+5 VDC @ 25A, +3.3 VDC @ 23A, ±12 VDC @ 12A)

PSU for CM-ATR-45 (12 slot)

Models: /S or /SEF or /SEF-HP or /HES (0.8") or /FAC

950W: 28 VDC (+5 VDC @ 80A, +3.3 VDC @ 45A, ±12 VDC @ 16A)
1050W: All PSUs (+5 VDC @ 80A, +3.3 VDC @ 45A, ±12 VDC @ 21A)

Models: /HES or /SIXHEX or /SIXHEX-HP

A-950W: 28 VDC (+5 VDC @ 80A, +3.3 VDC @ 45A, ±12 VDC @ 16A)
A-1050W: All PSUs (+5 VDC @ 80A, +3.3 VDC @ 45A, ±12 VDC @ 21A)
B-950W: 28 VDC (+5 VDC @ 40A, +3.3 VDC @ 45A, +12 VDC @ 33A, -12 VDC @ 16A)
B-1100W: All PSUs (+5 VDC @ 40A, +3.3 VDC @ 45A, +12 VDC @ 41A, -12 VDC @ 20A)
B-1065W: 28 VDC (+5 VDC @ 80A, +3.3 VDC @ 80A, ±12 VDC @ 16A)
B-1165W: All PSUs (+5 VDC @ 80A, +3.3 VDC @ 80A, ±12 VDC @ 21A)
C-864W: 28 VDC (+5 VDC @ 40A, +3.3 VDC @ 80A, ±12 VDC @ 16A)
C-964W: All PSUs (+5 VDC @ 40A, +3.3 VDC @ 80A, ±12 VDC @ 20A)
C-1225W: 28 VDC (+5 VDC @ 80A, +3.3 VDC @ 160A, ±12 VDC @ 16A)
C-1425W: All PSUs (+5 VDC @ 80A, +3.3 VDC @ 160A, ±12 VDC @ 21A)
D-1350W: 28 VDC (+5 VDC @ 160A, +3.3 VDC @ 80A, ±12 VDC @ 16A)
D-1550W: All PSUs (+5 VDC @ 160A, +3.3 VDC @ 80A, ±12 VDC @ 21A)

Dual-redundant PSUs for /HES or /SIXHEX or /SIXHEX-HP models

R2x725W: (+5 VDC @ 20A, +3.3 VDC @ 23A, ±12 VDC @ 12A, ±28 VDC @ 9A)
R2x675W: (+5 VDC @ 60A, +3.3 VDC @ 23A, ±12 VDC @ 12A)
R2x625W: (+5 VDC @ 20A, +3.3 VDC @ 68A, ±12 VDC @ 12A)
R2x710W: (+5 VDC @ 20A, +3.3 VDC @ 23A, +12 VDC @ 32A, -12 VDC @ 12A)

/3.3 DC/DC AUX0 fitted for 3.3VDC (CM-ATR-25 & CM-ATR-35)

3.3-75W: 3.3VDC @ 22A (in lieu of default 3.3 VDC @ 5A)

Optional DC/DC AUX0 converter on Backplane fitted for 3.3VDC. Option suited for 1st generation PSU models 300W/400W/500W. Note: If /3.3-75W is not selected, DC/DC power socket AUX0 remains free to the user.

/D1 DC/DC AUX1 (CM-ATR-35 & CM-ATR-45)
/D2 DC/DC AUX2 (CM-ATR-45)

D1: 100W Optional DC/DC Converter on Backplane. User-defined output 1
D2: 100W Optional DC/DC Converter on Backplane. User-defined output 2

Backplane auxiliary DC/DC converter output options: +2VDC 50W, -2VDC 50W, +3.3VDC 75W, -3.3VDC 75W, +5VDC 100W, -5VDC 100W, +12VDC 100W, -12VDC 100W, +15VDC 100W, -15VDC 100W, +28VDC 100W, -28VDC 100W, +48VDC 100W, -48VDC 100W.

Ordering Examples: 48-100W » 48VDC @ 2A / -5-100W » -5VDC @ 20A / 2-50W » 2VDC @ 25A / ±15-100W » ±15VDC @ 6A

/R Redundant PSU (Plug-in for VMEbus systems only)

RPSU for CM-ATR-35 (7 slot) & CM-ATR-45 (12 slot)

RA-475W: 28 VDC (+5 VDC @ 40A, +3.3 VDC @ 22A, ±12 VDC @ 8A)
RB-575W: All PSUs (+5 VDC @ 40A, +3.3 VDC @ 22A, ±12 VDC @ 12A)

/S Temperature Supervisory Unit

TSU: Optionally installed in backplane (for /S or /SEF or /FAC models)

Note: TSU is fitted as standard in /SEF-HP, /HES, /SIXHEX & /SIXHEX-HP models

/FP Front Panel Layout

CMP: Standard CM front panel fitted with MIL-DTL-38999 connectors
UDP: User-defined front panel layout (requires customer drawing)

/TC Chassis Top Cover

STC: Standard top cover (wiring clearance 20mm)
FTC: Finned top cover (wiring clearance 20mm)*
HTC: High profile top cover (wiring clearance 35mm)
HETC: Heat Exchanger top cover (wiring clearance 20mm)**
EHETC: Extended Heat Exchanger top cover (wiring clearance 35mm)

** FTC chassis top cover is standard on /SEF & /SEF-HP models*
*** HETC chassis top cover is standard on /HES, /SIXHEX & /SIXHEX-HP models*

/BC Chassis Bottom Cover

SBC: Standard bottom cover (wiring clearance below backplane 25mm)
HBC: High profile bottom cover (wiring clearance below backplane 50mm)*

** 50mm bottom clearance is standard on /HES-1", /SIXHEX & /SIXHEX-HP models*

/CS Chassis Card-Cage Slot

MCS: Mixed Card-cage slots (mixed conduction-cooled & air-cooled boards)
CCS: Conduction-cooled Card-cage slots (conduction-cooled boards only)*

** CCS card-cage is standard on /HES-1", /SIXHEX-1" & /SIXHEX-HP-1" models*

/F Rear-Mounted Fan Assembly

Fans for CM-ATR-(1)25 (5 slot) & CM-ATR-(1)35 (7 slot)

Models: /FAC

F115-400: 1x65 CFM 115 VAC @ 400Hz Rotron PX2 Military fan
F200-400: 1x120 CFM 200 VAC 3PH @ 400Hz Rotron PX2 fan
F28: 1x65 CFM 28 VDC Rotron PX2 Military fan (through DC/AC converter)

Models: /HES (0.8")

F115-400: 2x65 CFM 115 VAC @ 400Hz Rotron PX2 Military fans
F200-400: 2x120 CFM 200 VAC 3PH @ 400Hz Rotron PX2 fans
F28: 2x65 CFM 28 VDC Rotron PX2 Military fans (through DC/AC converter)

Models: /HES (1") /SIXHEX or /SIXHEX-HP

F115-400: 2x100 CFM 115 VAC @ 400Hz Rotron PX3 Military fans
F200-400: 2x140 CFM 200 VAC 3PH @ 400Hz Rotron PX3 fans
F28: 2x100 CFM 28 VDC Rotron PX3 Military fans
F115-60: 2x100 CFM 115 VAC @ 60Hz Rugged fans
F220-50: 2x100 CFM 220 VAC @ 50Hz Rugged fans

Fans for CM-ATR-45 (12 slot)

Models: /FAC

F115-400: 2x100 CFM 115 VAC @ 400Hz Rotron PX3 Military fans
F200-400: 2x140 CFM 200 VAC 3PH @ 400Hz Rotron PX3 fans
F28: 2x100 CFM 28 VDC Rotron PX3 Military fans

Models: /HES

F115-400: 4x65 CFM 115 VAC @ 400Hz Rotron PX2 Military fans
F200-400: 4x120 CFM 200 VAC 3PH @ 400Hz Rotron PX2 fans
F28: 4x65 CFM 28 VDC Rotron PX2 Military fans (through DC/AC converter)

Models: /SIXHEX or /SIXHEX-HP

F115-400: 4x100 CFM 115 VAC @ 400Hz Rotron PX3 Military fans
F200-400: 4x140 CFM 200 VAC 3PH @ 400Hz Rotron PX3 fans
F28: 4x100 CFM 28 VDC Rotron PX3 Military fans
F115-60: 4x100 CFM 115 VAC @ 60Hz Rugged fans
F220-50: 4x100 CFM 220 VAC @ 50Hz Rugged fans

VAP: Vehicle Air-Plenum according to system specs (external forced air source)

- No rear fan required for /S, /SEF & /SEF-HP models, omit option from part number
- Rugged fans are fitted with aluminum housing. Operating range: -10ºC to +70ºC
- Full military Rotron PX2 & PX3 AC fans. Operating range: -54ºC to +125ºC
- Note: Fan input voltage can be selected independently of main PSU voltage

/G Fan Finger Guards

STDG: Standard Rotron PX2/PX3 finger guards
EMIG: Optional EMI shielding finger guards with honeycomb filter
GNF: Optional finger guards with acoustic noise filter (-5dB)

/C Chassis Color

B: Black, ***G:*** Navy Grey, ***E:*** Army Dark Earth, ***W:*** White, ***R:*** Red, ***PT:*** Platinum, ***YW:*** Yellow, ***GN:*** Green, ***BLU:*** Dark Blue, ***CR:*** Chromate, ***O:*** Other (user-defined)

PART NUMBER EXAMPLE:

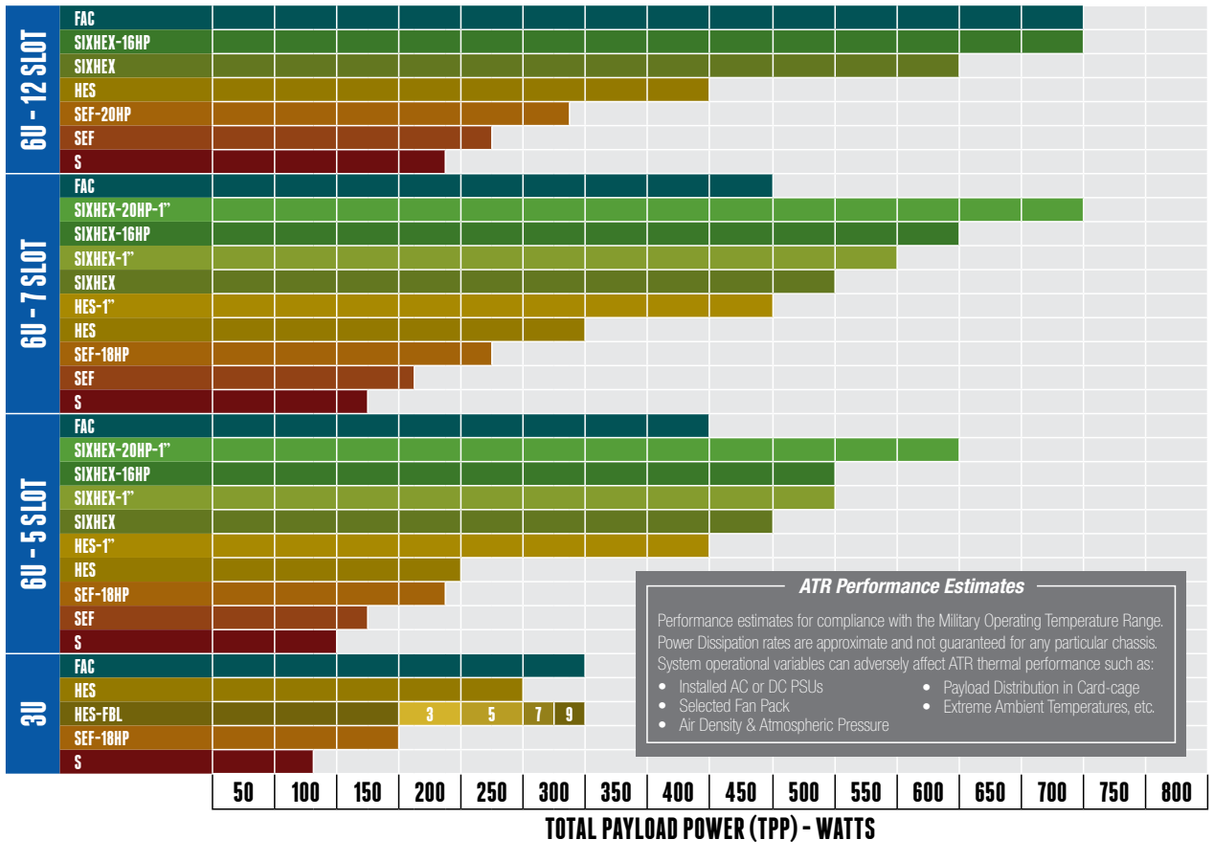
CM-ATR-45/HES/VME64x/90-264VAC/A-1050W/15-100W/ -15-100W/UDP/HTC/HBC/MCS/F200-400/EMIG/B

- 12 slot, Heat Exchanger Sidewalls. 6U Avionics Enclosure.
- 12 slot VME64x backplane for 6U boards (0.8" pitch).
- Auto-range 90-264VAC @ 47-880Hz Input Power Supply.
- A-1050W power supply (+5VDC @ 80A, +3.3VDC @ 45A, ±12VDC @ 21A).
- (±)15VDC @ 6.6A DC/DC AUX1 & AUX2 user output on backplane.
- Temperature Supervisory Unit fitted as standard.
- User-defined front panel layout.
- High profile Top & Bottom cover. Universal Card-cage Slots.
- 4x Rotron PX2 military fan 115VAC @ 400Hz (260 CFM total).
- EMI shielded finger guards. Enclosure color: Black.

CM ATR CHASSIS THERMAL TESTING

CM ATR Chassis Selection Chart

based on system total payload power dissipation



Glossary of Technical Terms

establishing new chassis engineering terminology

LT : Chassis Linear Thermal Test (Linear Test)
PT : Chassis Peak Slot Thermal Test (Peak Test)
MT : Chassis Mixed Linear & Peak Slot Thermal Test (Mixed Test)
LT-AV : Linear Test Payload Average Temperature
PT-AV : Peak Test Payload Average Temperature
MT-T1 : Mixed Test Slot 1 Payload Temperature
MT-AV : Mixed Test Payload Average Temperature (excluding Slot 1)
ΔT : Chassis Payload Delta-T with respect to Ambient Temperature
TPP : Total Payload Power
TCEP : Total Chassis Electrical Power
CPTR : Chassis Payload Thermal Resistance
CGTR : Chassis Global Thermal Resistance

CHMPF : Chassis Half MTBF Power Factor
CPMDC : Chassis Payload MTBF Degradation Coefficient
CIA : Chassis Installed Airflow
CEA : Chassis Effective Airflow
ADDT : Ambient Airflow Delta-T
CSAOP : Chassis Stable Airflow Operating Point
CIARC : Chassis Impedance Airflow Reduction Coefficient
MFARC : Multiple Fan Airflow Reduction Coefficient
OARC : Overall Airflow Reduction Coefficient
SCIDPC : Sealed Chassis Indirect Delta-T Power Coefficient
PEADT : Payload to Exhaust Airflow Delta-T
CCAAT : Chassis Cooling Airflow Average Temperature