

3U VPX PCIe Carrier with Removable Drive Module

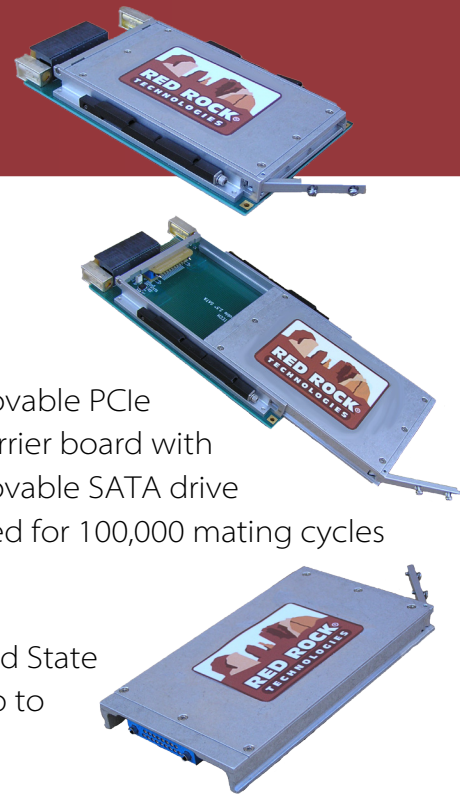
RRT-3UVPX-PCIe-R

For applications that require the frequent removal of SSD, the 3U VPX Removable PCIe drive module is recommended. It consists of 2 components; the 3U VPX carrier board with PCI express (PCIe) interface that mounts in the 3U VPX chassis and the removable SATA drive module. The connectors between the drive module and the carrier are rated for 100,000 mating cycles to support frequent insertions/removals.

The drive module can use any COTS 2.5" SATA Hard Disk Drive (HDD) or Solid State Drive (SSD) providing capacities up to 2TB and sustained transfer rates of up to 500 MB/S. Option for discrete controlled secure erase.

FEATURES INCLUDE

- PCIe Gen 2 x 2 interface to VPX backplane
- OpenVPX Thin Pipe (TP) storage module profile MOD-3-PER-1T-16.3.3.1 or 2
- 3U VPX Storage VITA 46, 47, 48, 65
- Provides boot disk and/or disk storage
- Conduction or air cooled versions
- Rugged removable module connectors rated for 100,000 mating cycles
- Uses COTS 2.5" SATA drives for wide range of options
- Options for discrete controlled secure erase
- Robust design for extreme temperature, shock & vibration environments
- High performance SATA transfer rates up to 500 MB/S
- VxWorks™, Linux and Windows™ drivers available



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Security Options

ERASE/DESTROY OPTIONS INVOKED BY COMMAND OR BY DISCRETE INPUT

Fast Erase Sets all locations to set value

NSA/CSS Manual 9-12 Erase Erases all locations, including bad blocks, then sets all locations to 0x55, then internal verification is performed reading 1% of capacity confirming data pattern

RCC-TG IRIG 106-07 Chapter 10 Erase Erases all locations, including bad blocks, then sets all locations to 0x55, then sets all locations to 0xAA, and finally erased

Drive Destroy Performs erase of all NAND flash including internal SSD firmware, file system, and tables which makes the drive unusable and unreadable

Ordering Information – 3U VPX Carrier Board

RRT-3UVPX-PCIe-R - C - UR - X

Requirements

Options May be Left Blank

Cooling

C - Conduction Cooled
A1 - Air Cooled, 0.8" pitch
A2 - Air Cooled, 0.85" pitch
A3 - Air Cooled, 1.0" pitch

Extended Temperature Range

X - -40°C to 85°C

Conformal Coating

UR - polyurethane
AR - acrylic

Example: RRT-3UVPX-PCIe-R-C-UR-X

Example: RRT-3UVPX-PCIe-R-A3

Ordering Information – Removable Drive Module

RRT-DM-SATA - SLC - 480GB - 1 - SE1 - UR - X

Requirements

Options May be left blank

PCIe Drive Type

HDD - Hard Disk Drive
SLC - Single Level Cell SSD
MLC - Multi Level Cell SSD

Extended Temperature Range

X - -40°C to 85°C

Capacity

Any capacity up to 8TB

Conformal Coating

UR - polyurethane
AR - acrylic

Speed

1 >100MB/s; 2 >200MB/s; 3 >300MB/s;
4 >400MB/s; 5 >500MB/s

Security Options

FE - Fast Erase
SE1 - NSA/CSS Manual 9-12 Erase
SE2 - RCC-TG IRIG 106-07 Chapter 10 Erase
DD - Drive Destroy

Example: RRT-DM-SATA-SLC-480GB-SE1-UR-X

Example: RRT-DM-SATA-MLC-8TB-UR

Example: RRT-DM-SATA-HDD-1TB

3U VPX Removable PCIe Drive Module Specifications

Performance				
Version	HDD	SSD- SLC	SSD-MLC	SSD-SLC-Secure Erase
Capacities (1)	Up to 2TB	Up to 480GB	Up to 2TB	Up to 480GB
NAND FLASH Type	NA	SLC	MLC	SLC
Interface (2)	PCIe Gen 2 x 2			
Sustained Throughput	130 MB/S	220 MB/S	450 MB/S	220 MB/S
Sector Size	512			
Reliability				
MTBF-Drive (in hours)	500,000	3 million	1 million	1.2 million
MTBF-Drive Module (6)	3 million hours			
MTBF-Drive Carrier (6)	3 million hours			
Carrier/Drive Module Mating cycles	100,000			
Power				
Voltage	5 V+/- 5%, +3.3V +/- 5%			
Watts	1	1.2	1.2	1
Watts-active	2.5	2.5	2.5	2
Environmental				
Temperature – operating (3) VITA 47 Class	0 to 60C, CC1,AC1	-40 to 85C, CC4, AC3 for -X option 0 to 70C, CC1, AC1 for Standard SSD		
Temperature storage	-40 to 70C	-40 to 85C		
Relative Humidity	5% to 95%			
Altitude	10,000 ft (3000 meters)	80,000 ft (24,000 meters)		
Shock (4) VITA 47 Class	20g, OS1	40g 11 millisecond half-sine, OS2		
Vibration (5), VITA 47 Class	0.04 g ² /Hz,V2	0.1 g ² /Hz100 Hz to 1000 Hz,V3		
Physical				
Form Factor	3U VPX			
Weight	14 oz max.			
Pitch	0.8", 0.85" and 1.0" options			
<p>(1) Larger capacities available as new COTS 2.5" drives released (2) Interface connected via compatible slot profile MOD-3-PER-1T-16.3.3.1 or 2 (3) Thermal qualification per MIL-STD-810F, Method 501 Procedure II, and MIL-STD-810F, Method 502, Procedure II (4) Shock qualification per MIL-STD-810F, Method 516, Procedure I (5) Vibration qualification per MIL-STD-810F, Method 514, Procedure I (6) Telcordia SR-322, issue 3, operating temp (40C), electrical stress (50%), environmental factor (1.0)</p>				

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