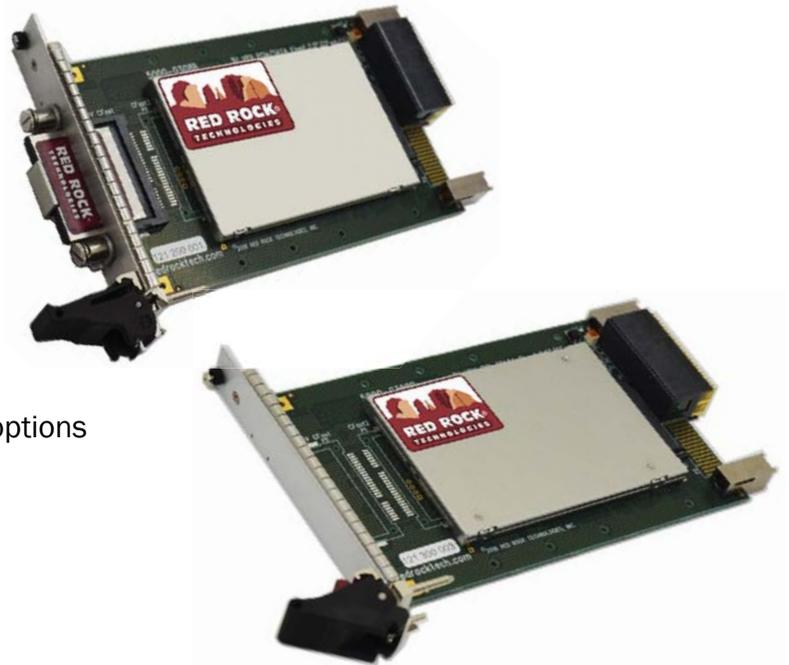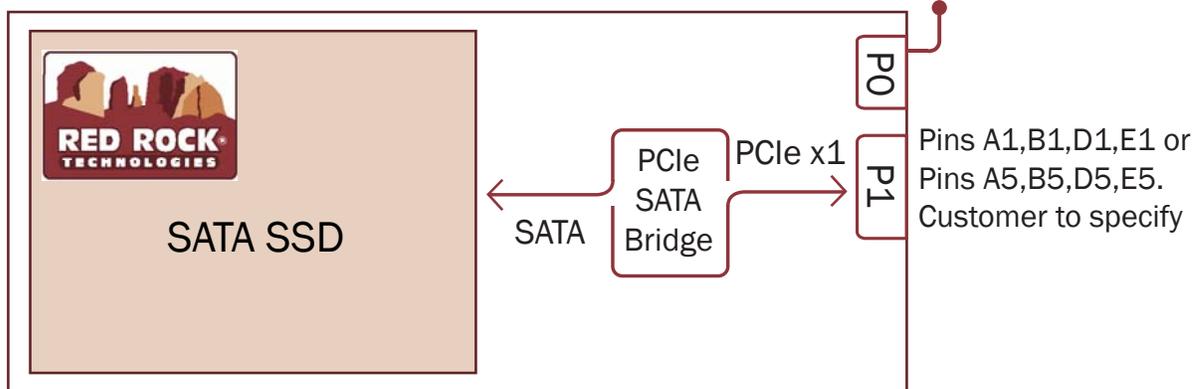# 3U VPX Air Cooled SSD Module with PCIe Interface

THE 3U VPX AIR COOLED SSD MODULE WITH PCIE INTERFACE to VPX backplane adds SSD to a VPX system using one 3U VPX slot with COTS 2.5" SATA Solid State Drives (SSDs) providing capacities up to 20TB and transfer rates of up to 600MB/S. Options for FIPS140-2, FIPS197, TCG Opal, and military erase.

Optional removable CFast port on front panel with CFast secured by a rugged retainer clip. CFast is the same form factor as Compact Flash but has a SATA interface for faster speeds.

- Capacities up to 20TB
- 600MB/S transfer rates
- OpenVPX Thin Pipe (TP) PCIe x1 interface
- VITA 65 Slot Profiles:
  - SLT3-PER-1T-14.3.3
- VITA 46, 47, 48, 65
- Boot and/or storage disk
- Air cooled
- COTS 2.5" SATA SSDs
- SATA3 (SATA600) Interface to SSD
- Military erase, FIPS140-2, FIPS197, TCG Opal options
- IDE or AHCI Mode
- Option for removable CFast port

Module Profile: MOD3-PER-1U-14.3.3

Diagram: SATA SSD → SATA → PCIe SATA Bridge → PCIe x1 → P1. P0 and P1 at 5 V. Pins A1,B1,D1,E1 or Pins A5,B5,D5,E5. Customer to specify

3U VPX Air Cooled SSD Module with PCIe Interface

RRT-3UVPX-PCIe- A100 - PER - MLC - 20TB - UR - X - SE1 - CFast

Requirements

Cooling
A080	Air Cooled, 0.80" Pitch
A085	Air Cooled, 0.85" Pitch
A100	Air Cooled, 1.00" Pitch

VPX Interface
PER	Peripheral Slot

NAND Flash Type
HDD	Hard Disk Drive
TLC	3D NAND
MLC	Multi Level Cell
SLC	Single Level Cell

Capacity
1TB - 5TB	For HDD
120GB - 8TB	For TLC
60GB - 20TB	For MLC
7GB - 240GB	For SLC

Options May be left blank

Conformal Coating
UR	Polyurethane
AR	Acrylic

Extended Temperature Range
X	-40°C to 85°C

Security
FE	Fast Erase
SE1	NSA/CSS Manual 9-12 Erase
SE2	RCC-TG IRIG 106-107 Chapter 10 Erase
OPAL	TCG OPAL Compliant SSD
FIPS140-2	FIPS 140-2 Compliant SSD
FIPS197	FIPS 197 Compliant SSD

CFast Front Panel Port
CFAST	Removable CFast

ORDER EXAMPLES
RRT-3UVPX-PCIe-A100-PER-MLC-20TB-UR-X-SE1
RRT-3UVPX-PCIe-A080-PER-SLC-240GB
RRT-3UVPX-PCIe-A100-PER-TLC-8TB-CFast
RRT-3UVPX-PCIe-A100-PER-HDD-1TB-FIPS140-2

3U VPX AIR COOLED SSD MODULE WITH PCIE INTERFACE

PERFORMANCE					
NAND FLASH TYPE	HDD	SSD: TLC	SSD: MLC	SSD: MLC-X	SSD: SLC
CAPACITIES[1]	Up to 5TB	Up to 8TB	Up to 20TB		Up to 240GB
INTERFACE[2]	PCIe Gen 2x1				
THROUGHPUT - SUSTAINED	130 MB/S	400 MB/S			

RELIABILITY					
MTBF-DRIVE	500,000 hours	1 million hours	2 million hours		3 million hours
MTBF-VPX BOARD[3]	3 million hours				
DATA RETENTION	Not applicable	1 year			10 years
ENDURANCE (100GB) TOTAL BYTES WRITTEN	Not applicable	70 TBW			350 TBW
CFAST CONNECTOR MATING CYCLES	100,000 mating cycles				

POWER				
VOLTAGE-PERIPHERAL SLOT	+5V +/- 5%			
WATTS (IDLE)	1 W	1.2 W	3.5 W	1 W
WATTS (ACTIVE)	2.5 W	4 W	10 W	2.5 W

ENVIRONMENTAL				
OPERATING TEMP., VITA 47 CLASS	5°C to 55°C	0°C to 60°C, AC1	0°C to 70°C, AC1	See MLC	0°C to 70°C, AC1
EXTENDED OPERATING TEMP., VITA 47 CLASS[4]	Not available			-40°C to 85°C, AC4	
STORAGE TEMP.	-40°C to 70°C	-40°C to 85°C			
ALTITUDE	10,000 ft. (3,000 meters)			80,000 ft. (24,000 meters)	
RELATIVE HUMIDITY	5% to 95% non-condensing				
SHOCK, VITA 47 CLASS[5]	20g, 11 millisecond terminal sawtooth pulse, OS1			40g, 11 millisecond terminal sawtooth pulse, OS2	
VIBRATION, VITA 47 CLASS[6]	0.04 g2/Hz, 5 Hz to 100 Hz, V1			0.1 g2/Hz, 100 Hz to 1000 Hz, V3	

PHYSICAL	
FORM FACTOR	3U VPX
WEIGHT	10 oz. max
PITCH	0.8", 0.85", and 1.0" options

NOTES

(1) Larger capacities available as new COTS 2.5" drives released
(2) Interface connected via compatible slot profile SLT3-PAY-1F1U1S1S1U1U2F1H-146.11 or SLT3-PER-1F-14.3.2
(3) Telcordia SR-322, Issue 3, operating temp (40C), electrical stress (50%), environmental factor (1.0)
(4) Thermal qualification per MIL-STD-810, Method 501, Procedure II, and MIL-STD-810, Method 502, Procedure II
(5) Shock qualification per MIL-STD-810F, Method 516, Procedure I
(6) Vibration qualification per MIL-STD-810F, Method 514, Procedure I