



RRT-3UVPX-NVMe-R-A 3U VPX Air Cooled Carrier with PCIe Interface and Removable NVMe SSD Module

- Capacities up to 16 TB
- 3940 MB/S Transfer rates
- Removable SSD module
- OpenVPX Fat Pipe (FP) PCIe x4 interface
- 100,000 mating cycles
- VITA 65 Slot Profiles:
 - SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11
 - VPX P1 EP00-EP03 OR
 - VPX P1 EP04-EP07
 - SLT3-PER-1F-14.3.2
- VITA 46, 47, 48, 65
- Boot and/or storage disk
- Air cooled
- COTS NVMe SSDs
- Military erase options
- FIPS140-2, FIPS197, TCG Opal options
- Option for thumbscrews to remove drive module without tools
- PC kit available to connect drive module to PC
- VxWorks, Linux and Windows support



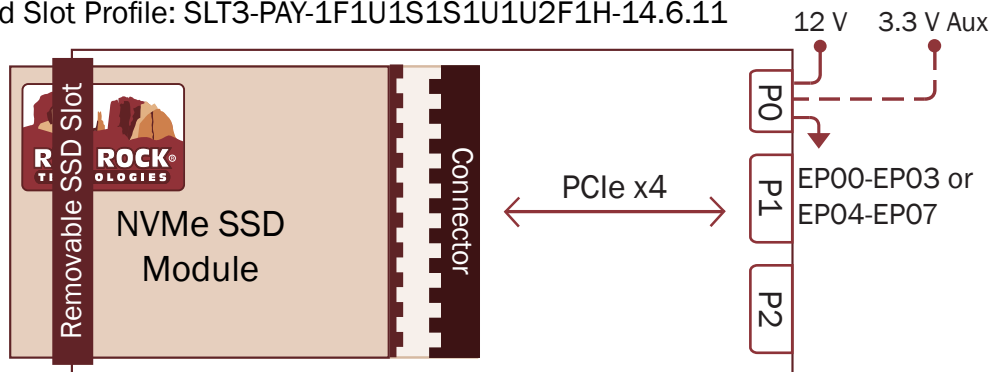
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3U VPX AIR COOLED CARRIER WITH PCIe INTERFACE AND REMOVABLE NVME SSD MODULE is for applications that require the frequent removal of SSD, fast transfer rates and large capacities. It consists of two components: the 3U VPX carrier board with PCI express (PCIe) interface to VPX backplane that mounts in one slot of 3U VPX chassis and the removable NVMe SSD module. The connectors between the drive module and the carrier are rated for 100,000 mating cycles to support frequent insertions and removals.

The NVMe SSD module can use any COTS NVMe Solid State Drive (SSD) providing capacities up to 16TB and transfer rates of up to 3940 MB/S. Options for FIPS140-2, FIPS197, TCG Opal, and military erase.

SOSA Aligned Slot Profile: SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11



Ordering Information

3U VPX Air Cooled Carrier with PCIe Interface

RRT-3UVPX-NVMe-R-A- **P1EP00EP03** - **UR** - **X**

Requirements

VPX Interface

P1EP00EP03 Payload Slot EP00-EP03 (SOSA Aligned)
 P1EP04EP07 Payload Slot EP04-EP07 (SOSA Aligned)
 PER Peripheral Slot

Options May be left blank

Extended Temperature Range

X -40°C to 85°C

Conformal Coating

UR Polyurethane
 AR Acrylic

ORDER EXAMPLES

RRT-3UVPX-NVMe-R-A-P1EP00EP03-UR-X
 RRT-3UVPX-NVMe-R-A-PER

Removable NVMe SSD Drive Module

RRT-DM-NVMe- **pSLC** - **4TB** - **UR** - **X** - **FE** - **TS**

Requirements

NAND Flash Type

TLC 3D NAND
 MLC Multi Level Cell
 pSLC Pseudo Single Level Cell

Capacity

500GB - 15.3TB For TLC
 500GB - 8TB For TLC-X
 1TB - 16TB For MLC
 1TB - 8TB For pSLC

Options May be left blank

No Tools

TS Thumbscrews

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

Extended Temperature Range

X -40°C to 85°C

Conformal Coating

UR Polyurethane
 AR Acrylic

ORDER EXAMPLES

RRT-DM-NVMe-TLC-15.3TB-TS
 RRT-DM-NVMe-TLC-3840GB-UR-X-SE1
 RRT-DM-NVMe-MLC-16TB-FIPS197
 RRT-DM-NVMe-pSLC-1TB-UR-X-SE1



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Product Specifications

3U VPX AIR COOLED CARRIER WITH PCIE INTERFACE AND REMOVABLE NVME SSD MODULE

PERFORMANCE

NAND FLASH TYPE	TLC	MLC	pSLC	TLC-X
CAPACITIES ¹	Up to 15.3TB	Up to 16TB	Up to 4TB	Up to 8TB
INTERFACE ²	PCIe Gen 3/4 x 4	PCIe Gen 2 x 4		PCIe Gen 3 x 4
THROUGHPUT - SUSTAINED	3500MB/S (Gen3), 5000MB/S (Gen4)	800 MB/S	1000 MB/S	1500MB/S

RELIABILITY

MTBF - DRIVE	1 million hours	2 million hours		
MTBF - VPX BOARD ³	3 million hours			
DATA RETENTION	1 year	5 years	1 year	
ENDURANCE (100GB) TOTAL BYTES WRITTEN	70 TBW	250 TBW	70 TBW	
CARRIER/DRIVE MODULE MATING CYCLES	100,000 mating cycles			

POWER

VOLTAGE - PAYLOAD SLOT	+12V, +3.3V Aux			
VOLTAGE - PERIPHERAL SLOT	12V +/- 5%, +5V +/- 5%, +3.3V +/- 5%			
WATTS (IDLE)	7 W	1.5 W		
WATTS (ACTIVE)	20 W	10 W		

ENVIRONMENTAL

OPERATING TEMP., VITA 47 CLASS ⁴	0°C to 55°C, AC1	0°C to 60°C, AC1	See TLC	
EXT. OPERATING TEMP., VITA 47 CLASS ⁴	See TLC-X	Not available	-40°C to 85°C, AC3	
STORAGE TEMP.	-40°C to 85°C			
ALTITUDE	10,000 ft. (3,000 meters)	80,000 ft. (24,000 meters)		
RELATIVE HUMIDITY	5% to 95%			
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 g ² /Hz, 5 Hz to 100 Hz, V1	0.1 g ² /Hz, 100 Hz to 1000 Hz, V3		

PHYSICAL

FORM FACTOR	3U VPX			
WEIGHT	14 oz. max			
PITCH	1"			

NOTES

- (1) Larger capacities available as new COTS U.2 NVMe drives released
- (2) Interface connected via compatible slot profile SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11 OR SLT3-PER-1F-14.3.2
- (3) Telcordia SR-332, issue 3, operating temp (40C), electrical stress (50%), environmental factor (1.0)
- (4) Thermal qualification per MIL-STD-810F, Method 501 Procedure II, and MIL-STD-810F, 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



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