



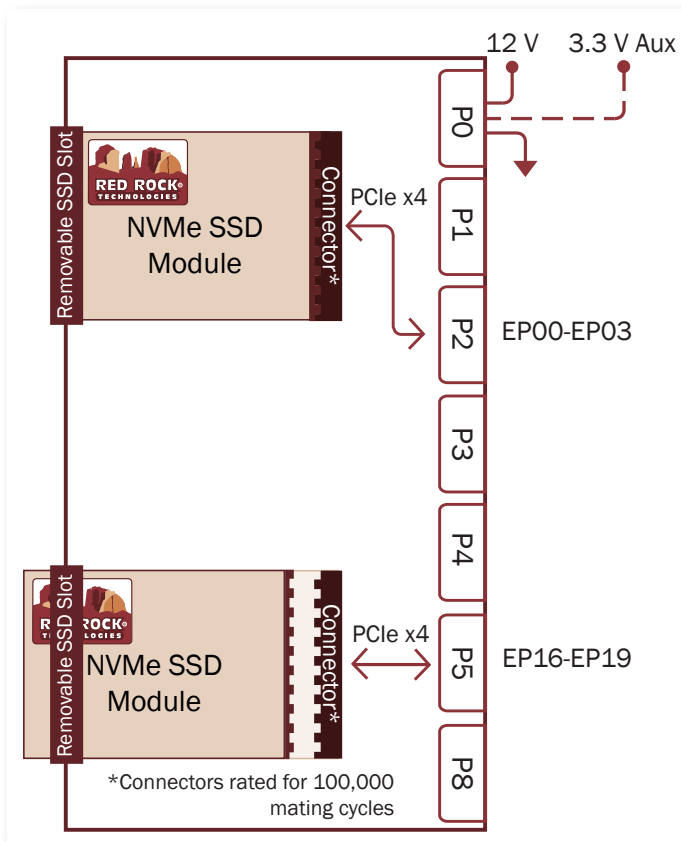
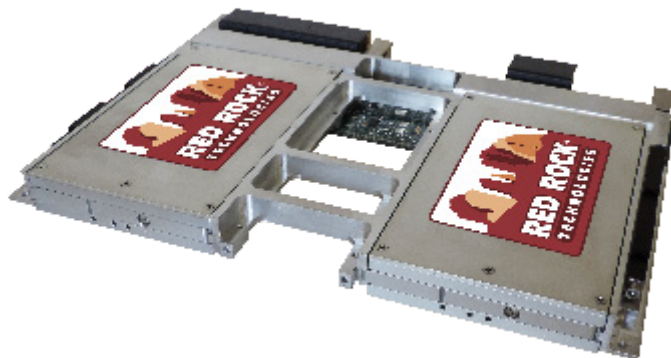
## 6U VPX Conduction Cooled Carrier with PCIe Interface and Removable NVMe SSD Module

### 6U VPX CONDUCTION 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 6U VPX carrier board with PCI express (PCIe) interface to VPX backplane that mounts in one slot of 6U 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 32TB (16TB per drive module) and transfer rates of up to 3940 MB/S.

- Capacities up to 32TB (2 x 16TB)
- 3940 MB/S Transfer rates
- Removable SSD module
- Two OpenVPX Fat Pipes (FP) PCIe x4 interface
- 100,000 mating cycles
- VITA 65 Slot Profiles (SOSA Aligned):
  - 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
- Conduction cooled
- COTS NVMe SSDs
- Military erase options
- FIPS140-2, FIPS197, TCG Opal options
- No Tools option with easily removable thumbscrews
- Requires only +12V and +3.3V Aux power
- Rugged design
- VxWorks, Linux, and Windows support



**Parhelia B.V.**  
[www.parheliabv.com](http://www.parheliabv.com)  
 ☎ +31(0)10 741 00 28

# Ordering Information

## 6U VPX Conduction Cooled Carrier with PCIe Interface

RRT-6UVPX-NVMe-R-C-P2EP00EP03-P5EP16EP19-UR-X

**Options** *May be left blank*

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

**Conformal Coating**  
UR Polyurethane  
AR Acrylic

### ORDER EXAMPLES

RRT-6UVPX-NVMe-R-C-P2EP00EP03-P5EP16EP19-UR-X  
RRT-6UVPX-NVMe-R-C-P2EP00EP03-P5EP16EP19

## 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

### 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

**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



**Parhelia B.V.**

[www.parheliabv.com](http://www.parheliabv.com)

+31(0)10 741 00 28

# Product Specifications

## 6U VPX CONDUCTION COOLED CARRIER WITH PCIE INTERFACE AND REMOVABLE NVME SSD MODULE

PERFORMANCE				
NAND FLASH TYPE	TLC	MLC	pSLC	TLC-X
CAPACITIES <sup>1</sup>	Up to 30.6TB	Up to 32TB	Up to 8TB	Up to 16TB
INTERFACE <sup>2</sup>	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 <sup>3</sup>	3 million hours			
DATA RETENTION	1 year		5 years	1 year
ENDURANCE (100GB) TOTAL BYTES WRITTEN	70 TBW		250 TBW	70 TBW
ENDURANCE RATING <sup>4</sup>	5 years			
CARRIER/DRIVE MODULE MATING CYCLES	100,000 mating cycles			
POWER				
VOLTAGE - PAYLOAD SLOT	+12V, +3.3V Aux			
WATTS (IDLE)	7 W	1.5 W		
WATTS (ACTIVE)	20 W	10 W		
ENVIRONMENTAL				
OPERATING TEMP., VITA 47 CLASS <sup>5</sup>	0°C to 55°C, CC1		0°C to 60°C, CC1	See TLC
EXT. OPERATING TEMP., VITA 47 CLASS <sup>5</sup>	See TLC-X	Not available	-40°C to 85°C, CC4	
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 <sup>6</sup>	20g, 11 millisecond terminal sawtooth pulse, OS1		40g, 11 millisecond terminal sawtooth pulse, OS2	
VIBRATION, VITA 47 CLASS <sup>7</sup>	0.04 g <sup>2</sup> /Hz, 5 Hz to 100 Hz, V1		0.1 g <sup>2</sup> /Hz, 100 Hz to 1000 Hz, V3	
PHYSICAL				
FORM FACTOR	6U VPX			
WEIGHT	12.2 oz (346 grams) max for carrier, 6.5 oz (184 grams) max per drive module 25.1 oz (712 grams) max total (carrier + 2 drive modules)			
PITCH	1"			
NOTES				
<p>(1) Larger capacities available as new COTS U.2 NVMe drives released</p> <p>(2) Interface connected via compatible slot profile SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11 OR SLT3-PER-1F-14.3.2</p> <p>(3) Telcordia SR-332, issue 3, operating temp (40C), electrical stress (50%), environmental factor (1.0)</p> <p>(4) Based on JESD218 standard with 4KB random write workload</p> <p>(5) Thermal qualification per MIL-STD-810F, Method 501 Procedure II, and MIL-STD-810F, Method 502, Procedure II</p> <p>(6) Shock qualification per MIL-STD-810F, Method 516, Procedure I</p> <p>(7) Vibration qualification per MIL-STD-810F, Method 514, Procedure I</p>				



Red Rock Technologies, Inc. reserves the right to modify, change or discontinue specific products within its product line at its own discretion. Red Rock Technologies, Inc. does not assume any liability resulting from the application or use of its products. The information contained herein has been checked and is believed to be entirely accurate; however, no responsibility is assumed for inaccuracies. "Red Rock Technologies" and the mountain logo are registered trademarks of Red Rock Technologies, Inc.

© Copyright 2023 Red Rock Technologies, Inc.  
All rights reserved. (Rev. 20230712a)