

# RRT-3UVPX-NVMe-R-A

## 3U VPX Air Cooled Carrier with Removable NVMe SSD Module

The 3U VPX air cooled carrier with 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.

### FEATURES

- Capacities up to 16 TB
- 3940 MB/S Transfer rates
- Removable SSD module
- PCIe Gen 3 x4 interface
- 100,000 mating cycles
- OpenVPX Fat Pipe (FP) MOD-3-PER-1F-16.3.2.1 or 2
- VITA 46, 47, 48, 65
- Boot and/or storage disk
- Air cooled
- COTS NVMe SSDs
- Military erase options
- FIPS197, FIPS140-2, TCG Opal options
- Rugged design
- VxWorks™, Linux and Windows™ support



**EASILY REMOVE SSD DRIVE  
MODULE FROM VPX BOARD**



**3U VPX Air Cooled Carrier  
with PCIe Interface**

**RRT-3UVPX-NVMe-R-A100--**

OPTIONS (MAY BE LEFT BLANK)	
CONFORMAL COATING	
UR	POLYURETHANE
AR	ACRYLIC
EXTENDED TEMP. RANGE	
X	-40° C TO 85° C

**EXAMPLES:**

RRT-3UVPX-NVMe-R-A100-UR-X  
RRT-3UVPX-NVMe-R-A100

**Removable NVMe SSD Drive Module**

**RRT-DM-NVME------**

REQUIREMENTS	
NAND FLASH TYPE	
TLC	TRI LEVEL CELL (3D)
MLC	MULTI LEVEL CELL
pSLC	PSUEDO SINGLE LEVEL CELL
CAPACITY	
CAPACITIES UP TO 16 TB	
OPTIONS (MAY BE LEFT BLANK)	
CONFORMAL COATING	
UR	POLYURETHANE
AR	ACRYLIC
EXTENDED TEMP. 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
NO TOOLS	
TS	THUMB SCREWS

**EXAMPLES:**

RRT-DM-NVMe-TLC-16TB  
RRT-DM-NVMe-pSLC-1TB-UR-X-SE1  
RRT-DM-NVMe-MLC-8TB-UR-X



## 3U VPX Air Cooled Carrier with Removable NVMe SSD Module

PERFORMANCE			
NAND FLASH TYPE	TLC	MLC	pSLC
CAPACITIES <sup>1</sup>	UP TO 16TB	UP TO 8TB	UP TO 4TB
INTERFACE <sup>2</sup>	PCIe Gen 3 x4	PCIe Gen 2 x4	PCIe Gen 2 x4
THROUGHPUT - SUSTAINED	3940 MB/S	800 MB/S	1000 MB/S
RELIABILITY			
MTBF-DRIVE	1 MILLION HOURS	1 MILLION HOURS	2 MILLION HOURS
MTBF-VPX BOARD <sup>6</sup>	3 MILLION HOURS	3 MILLION HOURS	3 MILLION HOURS
DATA RETENTION	1 YEAR	1 YEAR	5 YEARS
ENDURANCE (100GB) TOTAL BYTES WRITTEN	70 TBW	70 TBW	250 TBW
ENDURANCE RATING <sup>7</sup>	5 YEARS	5 YEARS	5 YEARS
CARRIER/DRIVE MODULE MATING CYCLES	100,000 CYCLES	100,000 CYCLES	100,000 CYCLES
POWER			
VOLTAGE	12V +/- 5%, +5V +/- 5%, +3.3V +/- 5%	12V +/- 5%, +5V +/- 5%, +3.3V +/- 5%	12V +/- 5%, +5V +/- 5%, +3.3V +/- 5%
WATTS (IDLE)	7 W	1.5 W	1.5 W
WATTS (ACTIVE)	20 W	10 W	10 W
ENVIRONMENTAL			
OPERATING TEMP., VITA 47 CLASS <sup>3</sup>	0° to 55° C, AC1	0° to 55° C, AC1	-0° to 60° C, CC1 40° to 85° C, AC3 for -X option
STORAGE TEMP.	-40° C to 85° C	-40° C to 85° C	-40° C to 85° C
ALTITUDE	80,000 FT (24,000 METERS)	80,000 FT (24,000 METERS)	80,000 FT (24,000 METERS)
RELATIVE HUMIDITY	5% TO 95%	5% TO 95%	5% TO 95%
SHOCK, VITA 47 CLASS <sup>4</sup>	40 g 11 MILLISECOND HALF-SINE, OS2	40 g 11 MILLISECOND HALF-SINE, OS2	40 g 11 MILLISECOND HALF-SINE, OS2
VIBRATION, VITA 47 CLASS <sup>5</sup>	0.1 g <sup>2</sup> /HZ 100 HZ TO 1000 HZ, V3	0.1 g <sup>2</sup> /HZ 100 HZ TO 1000 HZ, V3	0.1 g <sup>2</sup> /HZ 100 HZ TO 1000 HZ, V3
PHYSICAL			
FORM FACTOR	3U VPX	3U VPX	3U VPX
WEIGHT	14 OZ MAX	14 OZ MAX	14 OZ MAX
PITCH	1.00"	1.00"	1.00"
NOTES			
<p>(1) Larger capacities available as new COTS U.2 NVMe 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-332, issue 3, operating temp (40C), electrical stress (50%), environmental factor (1.0)  (7) Based on JESD218 standard with 4KB random write workload</p>			

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