

High Capacity OpenVPX Storage

6U SATA Storage Module



5650

5651



5652

Description

The 5650/51/52 family of 6U VPX Storage Modules provide the ability to access up to three 2.5" solid state or rotating hard drives in a single slot. Conduction and air cooled versions bring high capacity storage array capability to rugged environments. Designed to provide SATA I/O access via data plane connections in OpenVPX backplanes, the boards may be utilized singularly or integrated as part of a multi-slot storage array using an external SATA RAID controller. A lab version is available with DVD and single 2.5" drive support.

Features

- Choose the latest in solid state drive technology; SLC or MLC standard, enhanced or extended duty rotating drives
- Supports current drive capacities currently up to 4TB per drive
- 6Gbps data rates are supported (external controller dependent)
- Standard 6U x 5HP x 160mm OpenVPX form factor
- Drive activity LEDs media dependent
- Extended temperature operation from -40°C to +75°C
- Conduction or air cooled option
- VITA 48.1 REDI primary and Secondary Covers
- RoHS compliant and lead-free
- Also available in 6U cPCI and VME form factor
- Optional rear transition module design on request

Benefits

- High data rates for current application needs
- Addresses high capacity storage needs
- Capable of providing RAID 0, 1 or 5 via external RAID controller
- Operates in temperature extremes of -40°C to +75°C using solid-state drives
- Multi-slot expansion capability enables high capacity array design

Applications and Related Products

- High capacity storage requirements for a wide range of defense applications including ground, shipboard and airborne systems
 - Signal intelligence data storage
 - Engine control systems data
 - Mission data storage
- Commercial and industrial data storage applications requiring high capacities, expandability.
- Rugged applications requiring resistance to a wide range of temperature extremes as well as high shock and vibration resistance.

Example Order Number: 565200020TSTMBYEE

Conduction cooled Model 5652 with 3 X 2TB extended temp MLC drives, REDI covers, signal ground isolation, conformal coating, for use in extended temperature environments.



- RAID Controllers
- Intel & Freescale Single Board Computers
- Blade level networking boards (Ethernet, PCI Express)
- FPGA configurable I/O solutions
- Rackmount, desktop, and ATR chassis platforms
- Ruggedization programs

VPX

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Storage

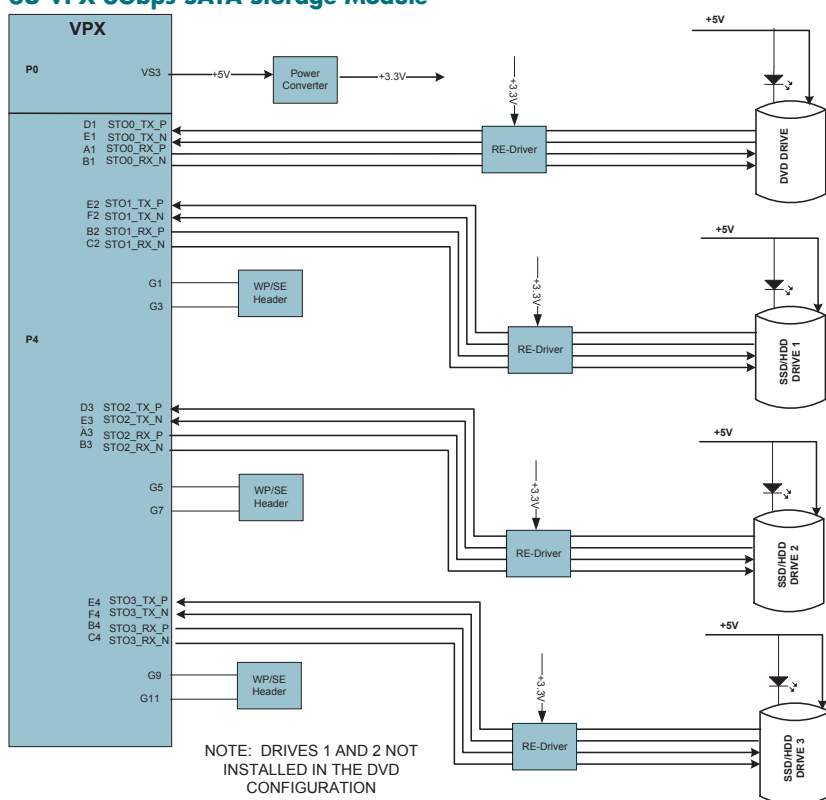
VPX

Block Diagram and Environmentals

Specification	With Typical HDD	With Typical SSD	
Temperature	Operating (Ambient)	0°C to 60°C	-40°C to +85°C
	Non-operating	-40°C to 65°C	-40°C to +85°C
Relative Humidity	Operating	8% to 90% Non-condensing	5% to 95% Non-condensing
Vibration (Sine)	Operating	1G (5 to 500 Hz)	5G (10 to 2000 Hz)
Shock	Operating	400G (2 ms)	20G (11 ms)
Altitude	Operating	40,000 ft	80,000 ft

Shock and vibration values are media dependent.

6U VPX 6Gbps SATA Storage Module



General

The 5650, 51 and 52 are 6U VPX conduction or air cooled single slot (5HP) SATA storage modules with three fixed drives, or a single fixed drive plus DVD in air cooled configuration.

Input / Output

When attached to a host Single Board Computer (SBC), the 5650, 51 and 52 provide direct access to all drives from the host SATA ports via P4 or rear transition module.

Compatibility

The 5650, 51 and 52 are directly compatible with 6U VPX system components, chassis and architectures.

Power Requirements

- 5V ±5% @ .004A 3.3V ±5% @ 0.16A
- Typical HDD, add 5V ±5% @ 1.1A
- Typical SSD, add 5V ±5% @ 0.8A

Order Information



Configuration

- 0 = Air cooled with three 2.5" drives
- 1 = Air cooled with one 2.5" drive and one DVD R/W
- 2 = Conduction cooled with three 2.5" drives

Drive RPM

- 54
- 72
- 00 (solid state drive)

2.5" Drive capacity (configuration 2 - both drives same capacity)

- xxxG
- xxxT
- 064G = 64GB drive
- 500G = 500GB drive
- 012T = 1.2TB drive
- 000G = no drive installed

Drive Type

- RSD = standard duty rotating
- RED = enhanced duty rotating
- RXD = extended duty rotating
- SSS = commercial solid state SLC
- SSM = commercial solid state MLC
- STS = extended temp solid state SLC
- STM = extended temp solid state MLC
- NNN = no 2.5" drives installed

REDI Side Covers standard configuration includes primary and secondary covers**

B = primary and secondary side covers for conduction or convection cooled versions, 5HP configuration is standard

Secure erasure and write protection

Y / N

Conformal Coating

Y / N

Temperature Requirements

- S = +5°C to +45°C with DVD
- = 0°C to +55°C with HDD
- = 0°C to + 60°C with SSD
- E = -40°C to +75°C with Ext Temp SSD
- O = Other

*Consult Elma for the complete range of available drive capacities.