

# Rugged Storage Module

## Air and Conduction Cooled Storage



**Air-Cooled**



**Conduction-Cooled**

### Description

Elma Electronic has designed a range of storage modules for use in harsh environments. These 3U VPX modules are available in conduction-cooled or air-cooled form factors and they support solid state SLC, MLC and eMLC drives or rotating drives depending on the application requirements.

The modules can be customized to suit individual requirements and are always designed in consideration of the complete system architecture to ensure optimal overall system performance. Elma's 5334 line of storage modules can be used to build extensible multi drive storage arrays with RAID options using software RAID, or external RAID controllers. Cover-plates ensure that the media is protected even when removed from the chassis.

The storage modules are suited to the most demanding applications such as those found in ground mobile vehicles, high altitude avionics as well as harsh shipboard naval installations where extremes of temperature, vibration, shock, humidity and EMC sealing to MIL-STD-810 are of critical importance.

### Features

- 4HP or 5HP configurations
- Optional VITA 48 face plate and secondary side REDI cover
- Meets OpenVPX (VITA 65) profile MOD3-STO-2U-16.5.1-2
- Mounting for a single 2.5in SATA drive
- Dual SATA channels to support multiple drives (MO 297)
- Fitted support solid-state or rotating media
- Conduction and air cooled versions
- +3 V3, +5 V and +12 V Connections
- Conformal coating standard

### Benefits

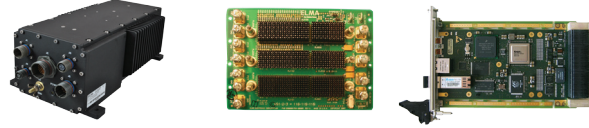
- Build high capacity rugged storage arrays using external controllers
- Extreme temperature and shock resistance with solid state drives
- Streamlined system development time with easy integration into VITA 65 systems
- Build RAID arrays using external controllers
- High capacity in a single slot using current capacity drives

## Related Products and Applications

- High capacity storage arrays in a wide range of defense applications including ground, shipboard and airborne systems
  - Signal intelligence data storage
  - Engine control systems data
  - Flight data recorders
- Rugged industrial and defense storage arrays supporting systems requiring resistance to high temperature and high shock and vibration
- Low to moderate capacity single blade storage for medical imaging equipment with expansion capability

### Example Order Number: 53342256G00SSS4RE

Conduction cooled model 5334 with a 256GB SLC drive, secondary side REDI cover, conformal coating, extended temperature capability



- Custom backplanes – need a custom backplane architecture for your system?
- Embedded computing products – Single Board Computers (SBCs), networking switches, storage
- FPGA based configurable I/O
- Rear transition modules (RTMs), extender and load boards
- Mounting trays
- Thermal simulation
- Qualification support

**VPX**

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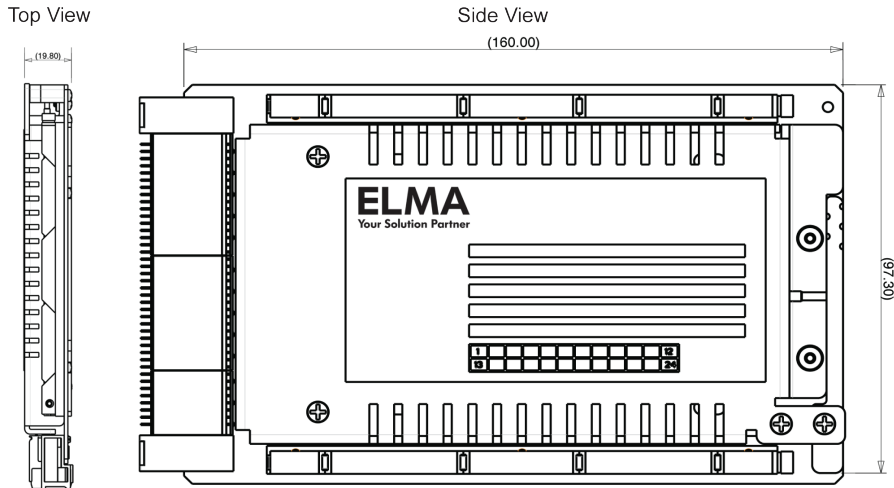


Storage



VPX

### Line Drawings



### Environmental

Standard Operating Temp: 0°C to 55°C  
Extended Operating Temp: -40°C to 85°C (optional)  
Non-operating: -55C to 105C  
Operating Shock: 40 Gs half-sine wave (11 ms)  
Operating Vibration: 2 Gs from 15 to 2000 Hz  
Humidity: 5 to 95%, non-condensing

All configurations of the 5334 are RoHS compliant.

### Order Information

 — **5334**        -   **Air cooled or conduction cooled** 

0 = air cooled (4HP or 5HP IEEE)  
1 = air cooled (5HP offset faceplate, VITA 48 REDI)  
2 = conduction cooled

**2.5" Drive capacity\*** 

xxxG  
xxxT  
Example  
064G = 64GB drive  
500G = 500GB drive  
012T = 1.2TB drive

**Drive RPM** 

54  
72  
00 (solid state drive)  
M0 (M0297)

**2.5" Drive Type** 

RSD= standard duty rotating  
RED= enhanced duty rotating  
RXD= extended duty rotating  
SSS= commercial solid state SLC  
SSM= commercial solid state MLC  
SSE= commercial solid state eMLC  
STS=extended temp solid state SLC  
STM=extended temp solid state MLC  
STE=extended temp solid state eMLC  
MS1 - Single SLC M0297  
MS2 - Dual SLC M0297  
MM1 - Single MLC M0297  
MM2 - Dual MLC M0297

**Slot Width / Face Plate** 

4 = 4HP (applicable to no covers or primary side cover only)  
5 = 5HP (required when ordering primary and secondary covers)

**Side Covers (drive / primary side cover supplied as standard)** 

R = conduction or convection cooled, rear / secondary side cover  
N = conduction or convection cooled, no rear / secondary side cover

**Temperature Requirements** 

S = 0°C to +55°C  
E = -40°C to +85°C  
O = Other

The model description on all quotes must include any other specific drive attributes necessary to fulfilling the application requirement

Conformal coating is standard on the 5334

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