

# High Speed Ethernet Switch GES-32

The Aeronix High Speed Gigabit Ethernet Switch (GES-32) delivers non-blocking 10G Ethernet across all channels in a compact, SOSA™-aligned solution conforming to both the SLT3-SWH-32U-14.4.15 and SLT3-SWH-6F8U-14.4.15 slot profiles.

At its core, the switch combines Marvell's proven network switch fabric along with a powerful i.MX8Max QuadCore processor. This platform provides line rate switching at speeds of 10Gb/s and support for virtualized software applications suitable for the RTB5 standard—enabling advanced security, partitioning, and data processing capabilities for mission-critical deployments.

The open-architecture design ensures interoperability, scalability, and future upgradability for demanding defense, aerospace, and industrial environments.

## KEY FEATURES

Part Number: AE103XXX-001

### Enhanced Features

- Boot Time < 90s
- Hardware-based geo-strapping through P0 on Backplane
- Secure Boot with ARM Trusted Firmware
- Enhanced Built-In Test (Startup, Periodic, Initiated)
- Analog loop-back on TX/RX ports
- Multiple VLANs with Layer2/Layer3 routing
- Per-VLAN DHCP Server for IPv4 Address Handout
- Aligned to SOSA Profile SLT3-SWH-6F8U-14.4.15
- Legacy Profile SLT3-SWH-32U(8U)-14.4.15

### Standards Compliance & Compatibility

- IEEE 802.3 Ethernet
- IEEE 802.1AB MAC Discovery
- IEEE 802.1D MAC learning, aging, static
- IEEE 802.1Q VLAN
- IEEE 802.3ap Backplane Attachment 1000-KX, 10G-KR, 40G-KR4, 25G-KR, 100G-KR4
- IEEE SFF-8418 Direct Attachment 10G, 25G, SFP+

### Security and Access Control

- Authentication required on all management interfaces, RSA Encryption with SSHv2
- User accounts and permission levels, Minimum password complexity, timeouts
- Syslog and audit trail to both UDP and TCP servers
- Traffic data never stored in non-

### Management Interfaces

- In-band HMI: SSHv2 CLI
- Out-of-band HMI: RS232 CLI, SSHv2 CLI
- Out-of-band MMI: Dual I2C-A/B, IPMI Tier-1

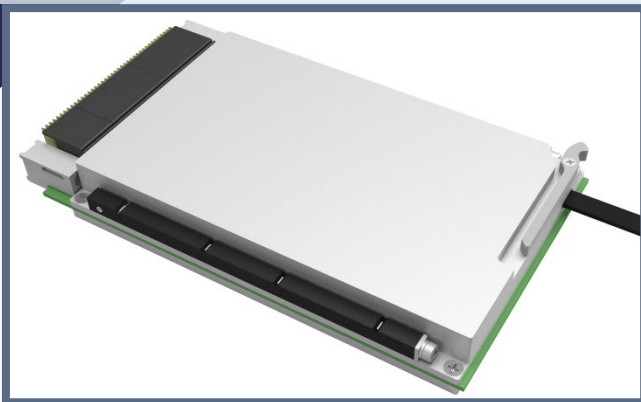
All interfaces can be enabled/disabled via startup-config.

### Ethernet Ports

- Total of 32 Ethernet Serdes Ports
- 32 10g Ports, Bondable 40G OR
- Additional 1g Port for Dedicated Management
- 33 Total Network Ports

### Networking

- Broadcasting and Storm Control
- VLANs (802.1Q) up to 4K group
- L2 Switching
- L3 Routing
- IPv4 Routing
- IPv6 Switching



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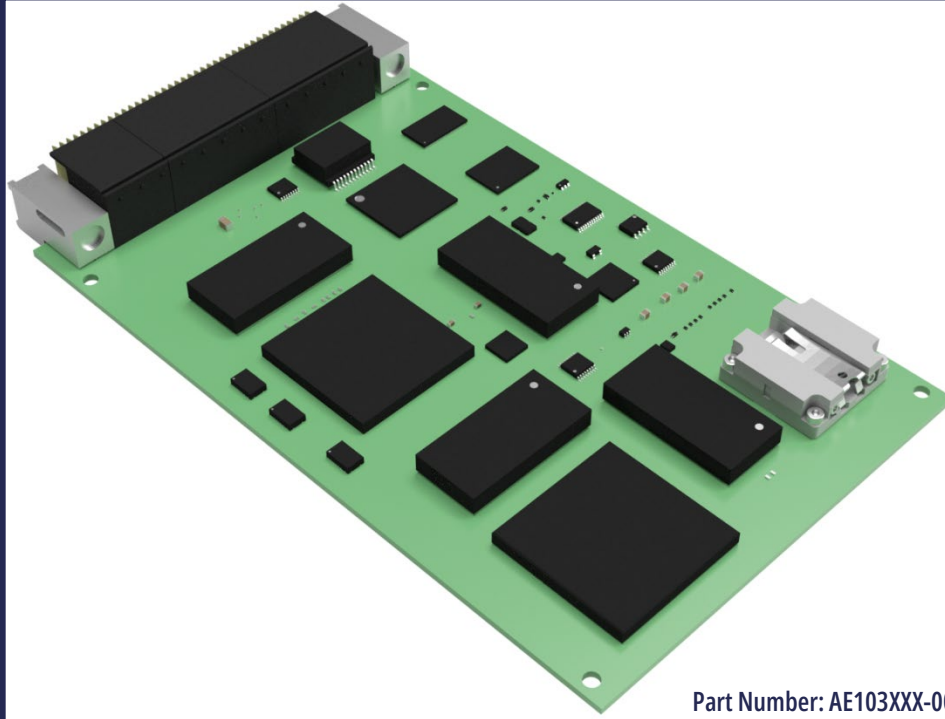
Tel. (321) 984-1671 Fax. (321) 984-0366

[www.aeronix.com](http://www.aeronix.com) - <mailto:ethernet@aeronix.com>

Aeronix High Speed Ethernet Switch GES-32 Qualifications

Characteristic	Detail		
Cooling	Conduction-Cooled		
Form Factor	100mm x 160mm 3u VPX, 1 inch pitch, VITA 65		
Temperatures	Operating: -40 to +85C (ambient) 95% Humidity non-condensing Storage: -55 to +105C (maximum)		
Vibration / Shock	0.1g2/Hz at 5 to 2KHz / 10g, 11ms sawtooth		
Operational, Normal Condition	12Vdc, 12 Amps, +/-5%, Full line rate at 10G/40G on all ports 3.3Vdc Auxiliary < 100ma SOSA Aligned VITA 62/46.11		
Test	Detail	Specification	Comment/Tailoring
Environmental			
Low Pressure (Altitude)	Storage	MIL-STD-810G Method 500.5 Procedure I	Procedure I: -57°C @ 50,000 feet
	Operational	MIL-STD-810G Method 500.5 Procedure II	Procedure II: -40°C @ 40,000 feet
	Explosive Decomp	MIL-STD-810G Method 500.5 Procedure IV	Procedure IV: 8,000 feet to 40,000 feet in not more than 0.1Sec
High Temperature	Storage	MIL-STD-810G Method 501.5 Procedure I	Procedure I: +95°C
	Operational	MIL-STD-810G Method 501.5 Procedure II	Procedure II: Cyclic = +55°C    Constant = +71°C for 30 Minutes
Low Temperature	Storage	MIL-STD-810G Method 502.5 Procedure I	Procedure I: -57°C
	Operational	MIL-STD-810G Method 502.5 Procedure II	Procedure II: Cyclic = -40°C    Sea level Constant = -65°C for 120 Minutes
Temperature	Shock	MIL-STD-810G Method 503.5 Procedure I-B	Procedure I-B: from Constant = -54°C to +71°C at 125°C/Minute
Comb Temp Alt/Humidity	Operational	MIL-STD-810G Method 520.3 Procedure III	Procedure III: -40°C to +71°C    Sea level to 60,000ft
Rain	Drip	MIL-STD-810G Method 506.5 Procedure III	7 gal/ft2/hr. 40 mph for 30 minutes
Humidity	Exposure	MIL-STD-810F Method 507.5 Procedure II	Operating and non-operating effects, 95% ± 4% Humidity +30°C to 60°C, 10 Cycles
Fungus	Non-Operational	MIL-STD-810G Method 508.6	7-day growth
Salt Fog	Exposure	MIL-STD-810G Method 509.5	Operating and non-operating exposure to salt-sea atmosphere – Four 24hr wet/dry cycles
Sand and Dust	Blowing	MIL-STD-810G Method 510.5 Procedure I & II	<150um dust, 150um to 850um sand
Explosive Atmosphere	Operational	MIL-STD-810G Method 511.5 Procedure I	At site and 40,000ft altitudes
Acceleration Load Factors (Structural)	Limit Loads	MIL-STD-810F Method 513.6 Procedure I	Performance at ±10.0g applied individually along all 3 axes
	Ultimate Loads	MIL-STD-810F Method 513.6 Procedure II	Withstand without structural failure ±15.0g applied individually along all 3 axes
	Crash Landing	MIL-STD-810F Method 513.6 Procedure III	Remain captive, 40G forward, 20G aft and down, 18G left/right, 10G up
Vibration	Performance	MIL-STD-810G Method 514.6 Procedure I	Cat 12, Annex D, 514.6D-I; 30 mins, 0.02 G2/Hz to 0.04 G2/Hz, 15-2000 Hz, Overall, 4.4Grms
	Endurance	MIL-STD-810G Method 514.6 Procedure I	Cat 12, Annex D, 514.6D-I; 60 mins, 0.04 G2/Hz to 0.06 G2/Hz, 15-2000 Hz, Overall, 9.2Grms
Acoustical Noise	Operational	MIL-STD-810G Method 515.6 Procedure I	30 mins, 140dB overall, 50 to 10000 Hz
Shock	Functional	MIL-STD-810G Method 516.6 Procedure I	20g, 11ms nominal, 3 blows ea direction, ea axis (18 total), terminal peak sawtooth (TPS)
	Crash Hazard	MIL-STD-810G Method 516.6, Procedure V	40g, 11ms nominal, 2 blows ea direction, ea axis (12 total) TPS
	Bench Handling	MIL-STD-810G Method 516.6, Procedure VI	4" drop, 1 drop per edge per face (24 total)
Cooling Air	Free Air, unmounted	MIL-HDBK-5400	Free convection and radiation. Does not use the aircraft structure as a heat sink
Electromagnetic Compatibility			
Radiated Emissions	Operational	MIL-STD-461G RE101 Par 5.17, RE101-1 and RE101-2	Magnetic field, 30Hz to 100kHz
		MIL-STD-461G RE102 Par 5.18, RE102-3	Fixed wing external and Fixed wing internal < 25m; Electric field, 10kHz to 18GHz
Radiated Susceptibility	Operational	MIL-STD-461G RS101 Par 5.20 RS101-2	Army; Magnetic field, 30 Hz to 100 kHz
		MIL-STD-461G RS103 Par 5.21, Table XI	Aircraft Internal Army; Electric field, 2 MHz to 18 GHz
Primary Power			
Power Input	+12VDC in	MIL-STD-704F and MIL-STD-1275E	Category B
Voltage Spike		MIL-STD-704F and MIL-STD-1275E, 5.3.3.1.1	Category B; Spikes: +/- 250V, 50 ea, 2 Joules
Power Consumption	Operational	12Vdc, 12 Amps, +/-5%, Full line rate at 10G/40G on all ports, 3.3Vdc Auxiliary < 100ma, SOSA Aligned VITA 62/46.11	

# High Speed Ethernet Switch GES-32



Part Number: AE103XXX-00

## ORDERING INFORMATION

PART NUMBER	DESCRIPTION
AE103XXX-001	Military Rugged, DO-160 Qualified, 100mm x 160mm 3u VPX, 1 inch pitch, VITA 65
Accessories (Intended for Lab Use Only)	
TBA	TBA