Gigabit Ethernet Router (GER) AB10GR

Part Number: AE101814-001 **23-Port Rugged Ethernet Router**

FEATURES

Ethernet Ports	• 20x managed tri-speed 10/100/1000 BASE-T • 3x 10GbE BASE-T
Networking	• 16K MAC Switching Engine • Auto MDI/MDX and polarity correction • 802.1p Quality of Service / DiffServ • 802.1q VLANs, RSTP • 802.3 Link Aggregation LACP, Redundancy • Layer 2 Tunneling Protocol • IGMP Snooping • Port Mirroring • Stateful Firewall - IPv4 • Intrusion Detection Prevention - IPv4 • Network Address Translation (NAT) - IPv4 • IPSEC - IPv4 • OSPF v2/v3, RIP v1/v2/ng, IPv6
Control and Status	• Serial Port Command Line Interface • In Band SSH, HTTPS GUI, SNMP v2/3 MIBs • Default and custom non-volatile configurations • Built-In Test: Startup, Periodic, Commanded
Power	• MIL-STD-704A Power/Voltage • Voltage Input: 16Vdc - 32Vdc (28Vdc nominal) • Power Consumption: 45 W maximum
Connectors / Indicators	• Power,10/100/1G Connectors: MIL-C-38999 • 10GbE Connectors: CeeLok FAS-T2102351 • LED Indicator: n/a
Mechanical	• Housing: Machined rugged aluminum • Weight: 10 lbs • Dimensions: 6.98” W x 10.97” L x 5.63” H • Installation: 4x thru-holes
Standards Compliance and Compatibility	• IEEE 801.1, IEEE 802.1, IEEE 802.3, DO-160, MIL-STD-704, MIL-STD-810, MIL-HDBK-5400, MIL-HDBK-217
Cooling	• No moving parts, passive cooling. • No forced air or conductive cooling needed.
Environmental	• MIL-STD-810G, DO-160D
EMI / EMC	• MIL-STD-461F Emissions and Susceptibility
Temperature Range	• Operating: -20C to +55C • Storage: -40C to +71C
Altitude	• Operating up to: 65,000 ft continuous
MTBF	• >27,000 hours @ 55C, Airborne Uninhabited Fighter Environment (calculated)
Customizable	• Aeronix offers an extensive line of Engineering Services including the creation and implementation of custom configurations for the AB10GR Packaging, Connectors, Number of Channels, and/or other customer unique requirements.

The Aeronix Gigabit Ethernet Router (GER) AB10GR provides twenty 10/100/1000 and three 10G Ethernet ports for use in commercial, industrial, and military applications that require ultra-high data transfer rates in a self contained ruggedized package. The rugged design requires no forced air or conductive cooling, and has autonomous heating elements for low temperatures, allowing operation in a broad range of harsh environments including operation in uninhabited aircraft bays.

All of the AB10GR’s 23 ports can be configured with all with Layer 2 and Layer 3 capabilities. Functions like Spanning Tree Protocol (STP) prevent looping and provide more efficient communication using cheapest cost routes and route recovery in case of link failure. VLANs and QOS allow targeted data to flow on specific routes or with higher priority. Other functions like IPSEC, RIP and OSPF can be utilized to add security to packets, and dynamic routing for more efficient communication using least cost routes. Firewalls can be set up to block traffic of specific types on specific ports.

Each of the twenty IEEE 802.3ab ports can individually auto-detect data rates of 10, 100, or 1000 BASE-T, or can be managed externally. The three 10GBASE-T 802.3an can be connected on full-duplex point-to-point links for blazing fast throughput. Incorporating the Aeronix AB10GR into your design allows the use of high speed Ethernet connectivity between any or all of your devices while virtually eliminating data-rate bottlenecks.

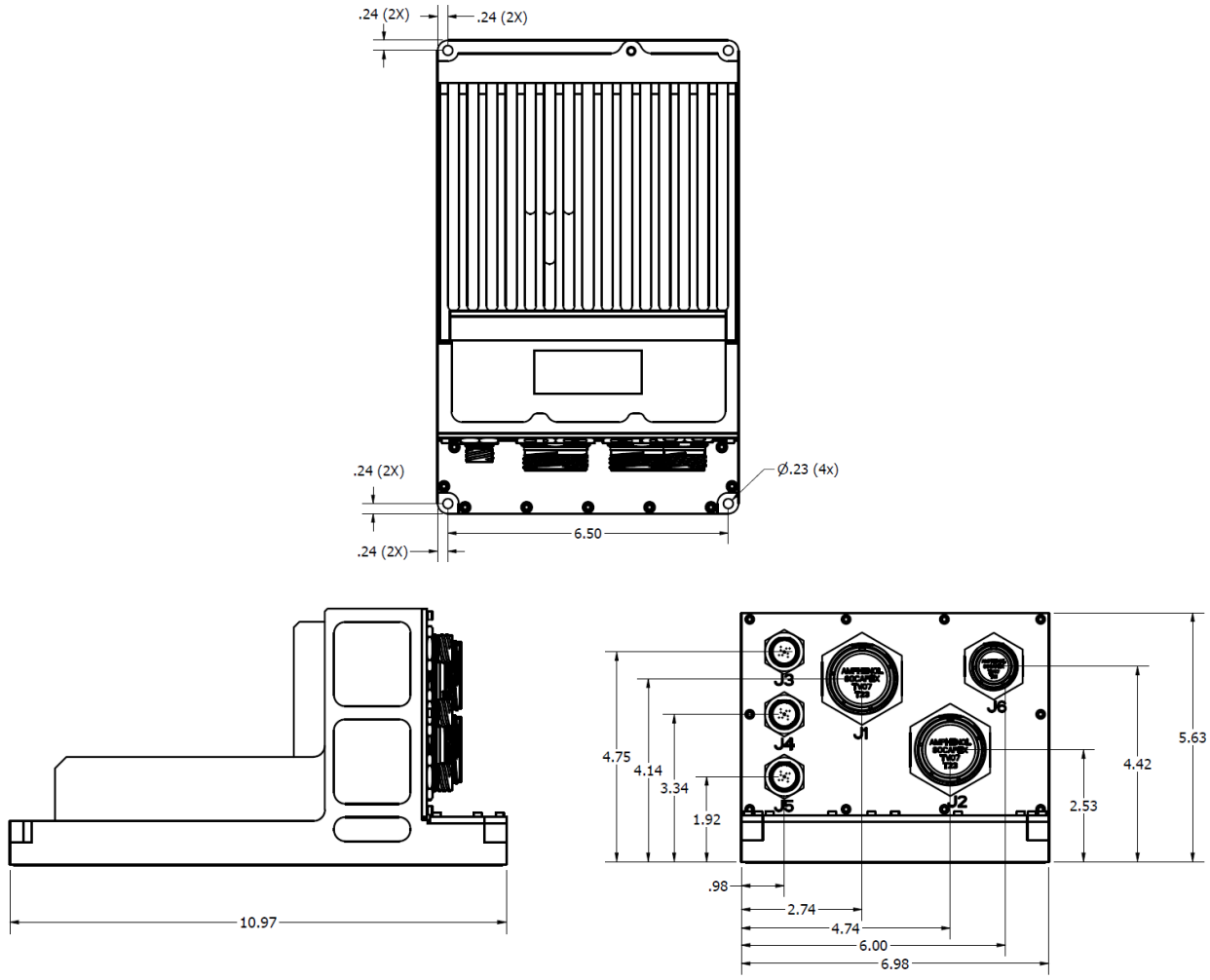
ethernet@aeronix.com **www.aeronix.com**

1775 West Hibiscus Boulevard ■ Suite 200 ■ Melbourne Florida 32901 ■ Tel.(321) 984-1671 ■ Fax.(321) 984-0366

Aeronix Airborne 10 Gigabit Ethernet Router (AB10GR) Qualifications

Characteristic	Detail
Ports	20x 1000Mbps full duplex,10Mbps or 100Mbps full duplex, 3x 10GBASE-T full duplex
Dimensions	6.98” W x 10.97” L x 5.63” H
Weight	10 lbs
Processor	Freescale P2020
Connectors	MIL-C-38999 (Power and 1G)
	CeeLok FAS-T2102351 (10G)

Test	Detail	Military Specification	Comment/Tailoring
Environmental			
Cooling Air	Free Air, unmounted	MIL-HDBK-5400	Does not use the aircraft structure as a heat sink
Altitude	Storage	MIL-STD-810G Method 500.5 Procedure I	Procedure I: @ 65,000 feet
	Operational	MIL-STD-810G Method 500.5 Procedure II	Procedure II : @ 65,000 feet
High Temperature	Storage	MIL-STD-810G Method 501.5 Procedure I	Procedure I: +71°C
	Operational	MIL-STD-810G Method 520.3 Procedure III	Procedure II: +55°C
Low Temperature	Storage	MIL-STD-810G Method 502.5 Procedure I	Procedure I: -40°C
	Operational	MIL-STD-810G Method 520.3 Procedure IV	Procedure II: -20°C
Water proofness		DO-160D	Section 10.2, Category W
Humidity		DO-160D	Section 6.2, Category A
Fungus		DO-160D	Section 13.3, Category F
Salt Spray		DO-160D	Section14.2, Category S
Icing		DO-160D	Section 24.3, Category A
Rapid Decompression		DO-160D	Section 4.6.2
Sand and Dust		DO-160D	Section 12.2, Category D
Fluid Susceptibility		DO-160D	Section 11.3, Category F
Explosive Atmosphere		DO-160D	Section 9.4.2, Category E
Acceleration Load Factors	Limit Loads	MIL-STD-810G Method 513.6 Procedure II	Performance at ±5.62G applied individually along the three axes
Vibration	Performance		10Hz to 2000 Hz 20 minutes per axis 0.77 Grms
Vibration	Endurance		10Hz to 2000 Hz 120 minutes per axis 1.2Grms
Acoustical Noise		MIL-STD-810B Method 515.1 Category B	130 dB OASPI
Shock	Operational	MIL-STD-810G Method 516.5 Procedure IV	As modified: eighteen (18) blows, terminal peak sawtooth, 20g, 11ms
Temperature Altitude		MIL-STD-810G Method 520.2 Procedure III	Operational at 65,000 feet from -20°C
MTBF		MIL-HDBK-217 FN2, Method I, Case 3 using part stress calculations. 100% Duty Cycle	27,000 hours @ +55°C, Airborne Uninhabited Fighter Environment
Transportability			Transportation by rail, truck, air and/or ship
Service Life			>20,000 hours
Storage Life			> 5 years
Electromagnetic Compatibility			
CE102	Conducted Emissions	MIL-STD-461E	Power leads, 10 kHz to 10MHz
CS101	Conducted Susceptibil-ity	MIL-STD-461E	Power leads, 30Hz to 150 kHz
CS114			Bulk cable injection, 10 kHz to 200MHz
CS115			Bulk cable injection, impulse excitation
CS116			Damped sinusoidal transients, cables and power leads, 10kHz to 100MHz
RE102	Radiated Emissions	MIL-STD-461E	Electric field, 2MHz to 18GHz
RS103	Radiated Susceptibility	MIL-STD-461E	20 V/m from 30MHz to 1GHz - 60V/m from 1GHz to 18GHz
Electrostatic Discharge		DO-160D	Section 25, Category A
Electrical Bonding		MIL-B-5087 Class R	
Chassis Grounding			DC resistance measured from the equipment case to the aircraft structure < 10mΩ
			DC resistance measured between each power input line and the safety grounding contact > 75MΩ
Primary Power			
Power Input	28VDC nominal	MIL-STD-704A w/ Notice 3	28VDC Category B, Curve 2 and Curve 3 of Figure 9
Power Consumption			45 Watts maximum



3D model file available upon request

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
AE101814-001	• Military Rugged, Ethernet Router, Airborne Vehicle Qualified, 20 10/100/1000 BASE-T with MIL-C-38999 Connectors, 3x 10GbE BASE-T with CeeLok FAS-T2102351 Connectors
Accessories (Intended for Lab Use Only)	
AE102113-001	• Breakout box from AB10GR J1, J3, J4 to 10x1G RJ45 and 2x10GbE RJ45 in box
AE102113-002	• Breakout box from AB10GR J2, J5, to 10x1G RJ45 and 1x10GbE RJ45 in box
AE102115-001	• Breakout cabling from AB10GR J6 to 1x Maintenance DB-9 and Power Banana plugs