

Cloudberry Managed Aircraft Gigabit Ethernet Switch CM-6937F0-AER-GS029ABD4-64-75

1 Features

- 36x RJ45 connectors for 36x 10/100/1000Base-T ports and 1xRJ45 for 1g-T management
- 28VDC (20-32VDC)
- Designed to comply for aircraft environmental and EMC requirements
- PTP 1588 Grand Master Clock (GMC) with an accuracy better than 30nanoseconds and with PTP version translation (v1/v2) support
- Built-in GNSS receiver
- Time synchronization output interfaces such as GNSS emulation, PPS, IRIG-B 002 (DC) and IRIG-B 122 (AM)
- NMEA/PPS and IRIG-B 002 (DC) as alternative time base input
- NTP server.
- Network redundancy based on MSTP/RSTP/STP
- Network management: Web, telnet, CLI and SNMP v1/v2/v3
- Multicast filtering: IGMP snooping or static multicast filters
- IEEE802.1Q VLAN
- Event notification: through Syslog and SNMP trap
- Wide operating temperature range
- Enhanced Watch dog features
- 19-inch mounting
- Port mirroring
- IEEE802.1x, access control
- Event notification through Syslog and SNMP trap
- Data Zeroization Support
- COTS - No export restrictions

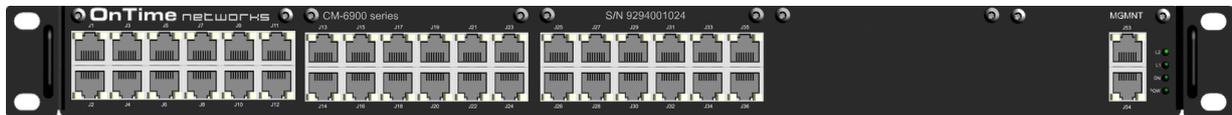


Figure 1: CM-6937F0-AER-GS029ABD4-64-75

2 General

The CM-6937F0-AER-GS029ABD4 is a fully rugged managed gigabit Ethernet switch specially designed to operate reliably in the harsh climatically and noisy electrical demanding environments (e.g. high altitude, extreme shock, and vibration, wide temperatures, humidity, dust and water exposure, noisy EMI, dirty power) of military applications. The platform is an advanced and highly engineered switch that addresses complexity, enables modularity and provides growth, while delivering optimal performance for Space, Weight, Power and Cost (SWaP-C) constrained aircraft applications onboard helicopters and fixed wing aircrafts. The unit complies to the military environmental, EMC and power input requirements.

This fully managed, Layer 2/3 gigabit switch provides a powerful set of networking features, including support for IPv4 multicast traffic filtering according to static filters or IGMP snooping, Virtual Local Area Networks (VLANs), port control (speed / mode / statistics, flow control), Quality of Service (QoS) traffic prioritization, Link Aggregation (802.3ad), SNMP v1/v2/v3 management, secure authentication (802.1X, ACLs, Web/CLI), port mirroring and network redundancy based on RSTP/MSTP.

The CM-6937F0-AER-GS029ABD4 contains a PTP 1588 Grand Master Clock (GMC) with an accuracy better than 30nanoseconds and with PTP version translation (v1/v2) support with a built-in GNSS receiver. The unit can also provide other time synchronization outputs. NMEA/PPS and IRIG-B 002 (DC) can be taken as time base input as an alternative to GNSS.

The unit also contains an NTP server.

3 Specification

Ethernet ports	
10/100/1000BASE-T	37
Switch protocols	
Standards	IEEE 802.3x for Flow control IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.1D for STP (Spanning Tree Protocol) IEEE 802.1p for COS (Class of Service) IEEE 802.1Q for VLAN Tagging IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) IEEE 802.1X for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol) IEEE 1588 (PTPv1 and PTPv2)
MAC table	32768 MAC addresses
Priority queues	8
Switch fabric properties	Store-and-forward and full wire speed on all ports
Security Features	Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1Q) to segregate and secure network traffic. Radius centralized password management SNMPv3 encrypted authentication and access security
Management	HTTP/HTTPS, telnet/SSHv2, CLI and SNMP v1/v2/v3
Built-in test	Built-in test procedure performed at boot time. Continuous BIT procedure when device is powered
Other protocols	IGMP snooping (up to 1024 multicast filters) Static multicast filter setting Port rate limiting DHCP TOS/Diffserv supported Quality of Service (802.1Q) for real-time traffic VLAN (802.1Q) with VLAN tagging and MVR Port configuration, status, statistics, monitoring, security
Other I/O	
RS232	1 port, settings: 115200, N, 8, 1 (CLI console)
PPS	Pulse-Per-Second (PPS) output
Connectors	
Ethernet copper connectors	RJ45
Power connector	M83723/72R1203N for DC
Connector spacing	According to MIL-STD-1472F
Data Zeroization Support	
Data Zeroization	To erase Non-Volatile Flash Memory and Restore Board to Factory Default Configuration. Available via HTTP and CLI
Power	
Power Consumption (Typ.)	56W
Overload Current Protection	Yes

Reverse Polarity Protection	Yes
Power input	28VDC (20-32VDC)
Hold-up	100ms
Physical Characteristics	
Enclosure	Aluminum case
Dimension (W * D * H)	482.6mm (W) x 400mm (D) x 44mm (H) / 18.98in (W) x 15.75in (D) x 1.73in (H)
Weight	approx. 10kg / 22.7lbs.
Surface finish	Powder paint on top of SurTec 650
EMC/Environmental	
Conducted Emission	MIL-STD-461F: CE102, 10KHz - 10MHz, power leads
Conducted Susceptibility	MIL-STD-461F/G: CS101, Power Leads; CS114, Bulk Cable Injection, 10 KHz - 200 MHz; CS115, Bulk Cable Injection, 10 KHz - 200 MHz; CS116, Damped Sinusoidal Transients, Cables and Power Leads, 10 KHz - 100 MHz; CS118, Personnel Borne Electrostatic Discharge (ESD)
Operational Temperature	MIL-STD-810G: 501.5 and 502.5; RTCA DO-160G: chapter 4.5.1 and 4.5.4, [-40..71]°C
Storage Temperature	MIL-STD-810G: 502.5; RTCA DO-160G: chapter 4.5.1 and 4.5.3, [-40..85]°C
Vibration	PSD: 5-500Hz: 2.5 - 0.03gG ² /Hz, 2h per axis (operational) PSD: 5-500Hz: 2.8 - 0.175gG ² /Hz, 8h per axis (non-operational)
Shock	20g, 18ms

4 Order information

CM-6937F0-AER-GS029ABD4-64-75

CM-6937	F0	AER	G	S	0	29	A	B	D	4
Number of ports 37 ports										
Number of Fiber ports 0 - Fiber ports										
Enviroment AER										
PTP G - PTP GMC										
NTP S - Standard NTP server										
TAP 0 - No Tap										
Connector type 29 - 37xRJ45 for 37x 1G-T										
Form factor A - 19inch 1U										
Power B - 28VDC										
Power Connector D - M83723/72R1203N for DC										
Power hold-up 4 - 100ms										

Options:

- 64, PPS out, 10V level
- 75, PPS in, 10V level