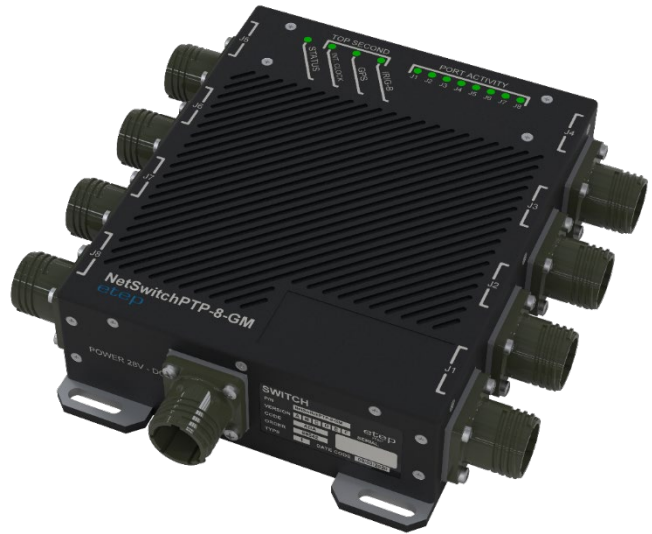


NetSwitch 8/16/24 Ch.

Rugged Airborne Ethernet Switch

From 8 to 24 Ch. Gigabit Ethernet Rugged Airborne managed Switch with support of IEEE 1588v1 & 2 PTP or PTP Grandmaster (GPS & IRIG-B) in option for hardware time stamping for precise time synchronization.

Excellent for high-end airborne applications, the NetSwitch/GbE Managed Carrier Ethernet Switch is a highly reliable way to communicate with 10/100/1000 devices in an embedded system. Powered by the latest generation Carrier Ethernet Switch engine. Its embedded 416 MHz MIPS 32-bit CPU, 1Gb DDR2 external memory and DMA-based frame extraction and insertion support timing over packet, Ethernet OAM, and performance monitoring.



Ethernet Connector Type

- PIN** Pin Contact MIL-38999 III
- RJ45** RJ45 MIL-38999 III *

NETSWITCH-PTPGM-16-RJ45-0

Function

- Unmanaged: **0** (or nothing)
- Managed PTP Support: **PTP**
- Managed PTP Grand Master: **PTPGM**

Power Over Ethernet

- POE** 4x PoE+ ports (68W power budget)
- 0** None

Inputs

- 8** 8 ports Gigabit Ethernet
- 16** 16 ports Gigabit Ethernet
- 24** 24 ports Gigabit Ethernet

*Only available for 8 port Gigabit Ethernet version

Hardware Specifications

Ethernet Switch Engine	Carrier Grade Ethernet Switch Chipset (NetSwitch 8Ch/16Ch/24Ch.) A powerful embedded 416 MHz RISC 32-bit CPU, with DDR2 external memory and DMA-based frame extraction and insertion supports timing over packet, Ethernet OAM, and performance monitoring.								
Port Type	8 to 24 Gigabit Ethernet (10/100/1000 Mbps)								
GPS/IRIG B Input Connectors	SMA Serial: R.125.680.000 (PTP Grandmaster Option)								
IRIG B Output Connector	SMA Serial: R.125.680.000 (PTP Grandmaster Option)								
Ethernet Connectors	MIL-DLT-38999 Series III Pins or RJ45								
Power Connector	MIL-DLT-38999 Series III (TV POO RW 0998 PN)								
Time Precision Protocol	IEEE 1588 v2 – Grandmaster (Managed GM option) or Transparency mode								
Management Access	Web Interface HTTP/HTTPS (Managed)								
Input voltage	Wide input range: +16V to +36V DC with Reverse Polarity Protection								
Power Consumption	About 10Watts (8 ports), 15 Watts (16 ports), 25 Watts (24 ports) / Add 8W for GM								
Power Over Ethernet (PoE+)	IEEE 802.3at (PoE+) Option, 4 ports with 68W power budget max (30W max by port)								
Vibration, Shock, Acceleration	D0-160/MIL-STD-810 Qualified								
Operating Temperature	-40°C to +85°C								
Dimensions in mm. (without connectors)	NetSwitch 8ch.			NetSwitch 16ch.			NetSwitch 24ch.		
	L	W	H	L	W	H	L	W	H
Weight ~ Kg [lbs]	0/PTP		PTPGM	0/PTP		PTPGM	0/PTP		PTPGM
	1.2 [2.6]		1.5 [3.3]	1.8 [3.9]		2.1 [4.6]	2.4 [5.3]		2.7 [5.9]

NetSwitch 8/16/24 Ch.

Rugged Airborne Ethernet Switch v3

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Key Features

- Eight to Twenty-Four 1000/100/10 Mbps Ethernet port (MIL-DLT 38999 Independent connector for each inputs)
- PTP (IEEE 1588 v2) Grandmaster (option) or Transparency mode
- LED for each Ethernet Port status
- Fully managed Layer 2 Ethernet Switch with Layer 3-aware packet processing
- Support for all major Enterprise switching features such as VLANs, Spanning Tree, QoS, and SNMP
- Manageable via web GUI interface, SSH, Telnet [Managed switch]
- PoE+ in option
- Passive heat sink included
- Low power consumption

Additional Technical Details

Vitesse VSC7428XJG [Managed]

- Integrated 416MHz MIPS CPU
- 4Mbit Packet Memory
- 8K MAC and 4K VLAN Table
- Multistage TCAM Engine

Port Control:

- Speed/Duplex settings
- Jumbo Frame Support (1518-9600 bytes)
- Port Status and Statistics

Quality of Service (QoS)

- Up to 8 traffic classes
- Shaping/policing per queue and per port
- Hierarchical MEF compliant policing and scheduling

Layer 2 Switching:

- VLAN support, IEEE 802.1Q
- Spanning Tree Protocol (STP), IEEE 802.1D
- Rapid Spanning Tree (RSTP), IEEE 802.1w
- Multiple Spanning Tree (MSTP), IEEE 802.1s
- Loop Guard
- Link Aggregation (Static and LACP), IEEE 802.3ad
- BPDU Guard
- Error Disable Recovery
- IGMP snooping
- DHCP snooping
- Port Mirroring

Layer 3 Aware

- DHCP Option 82 Relay
- UPNP
- IPv4 Static Routing (Unicast)
- IPv6 Static Routing (Unicast)

OAM and Test:

- Y.1731
- IEEE 802.1ag
- G.8021

Security:

- Port-based access control based on IEEE 802.1X
- MAC-Based Authentication
- VLAN Assignment for authenticated users/devices
- QoS Assignment for authenticated users/devices
- Guest VLAN for unauthenticated users/devices
- RADIUS Authentication, Authorization, and Accounting
- Limit number of MAC Addresses per port
- IP-MAC binding restrictions
- TACACS+ Authentication, Authorization, and Accounting
- User Authentication for Web and CLI interfaces
- 15 User Authorization Levels for Web and CLI interfaces
- Access Control Lists (ACLs) for filtering/policing/port copy
- IP source guard

Time Synchronization [Managed]

- Synchronous Ethernet (SyncE) with SSM
- IEEE 1588v2 with one or two-step clock
- Peer-to-Peer Transparent Clock
- End-to-End Transparent Clock
- Boundary Clock
- Redundant Masters and Multiple Timing Domains
- ITU G8265.1 Best Master Selection
- PTP over IPv4 (unicast and multicast)
- NTPv4 Client

Power and Thermal:

- PHY power savings
- LED power savings
- Thermal Protection

Management [Managed]

- JSON-RPC
- DHCP and DHCPv6 Client / DHCP Server
- DNS Client, Proxy
- Web Interface via HTTP or HTTPS
- IPv6 Management
- SNMP v1, v2c, v3c (MIBs and Traps)
- RMON
- Link Layer Discovery Protocol (LLDP), IEEE 802.1AB, TIA 1057
- Cisco Discovery Protocol (CDP) – Receive Only

NetSwitch 8/16/24 Ch.

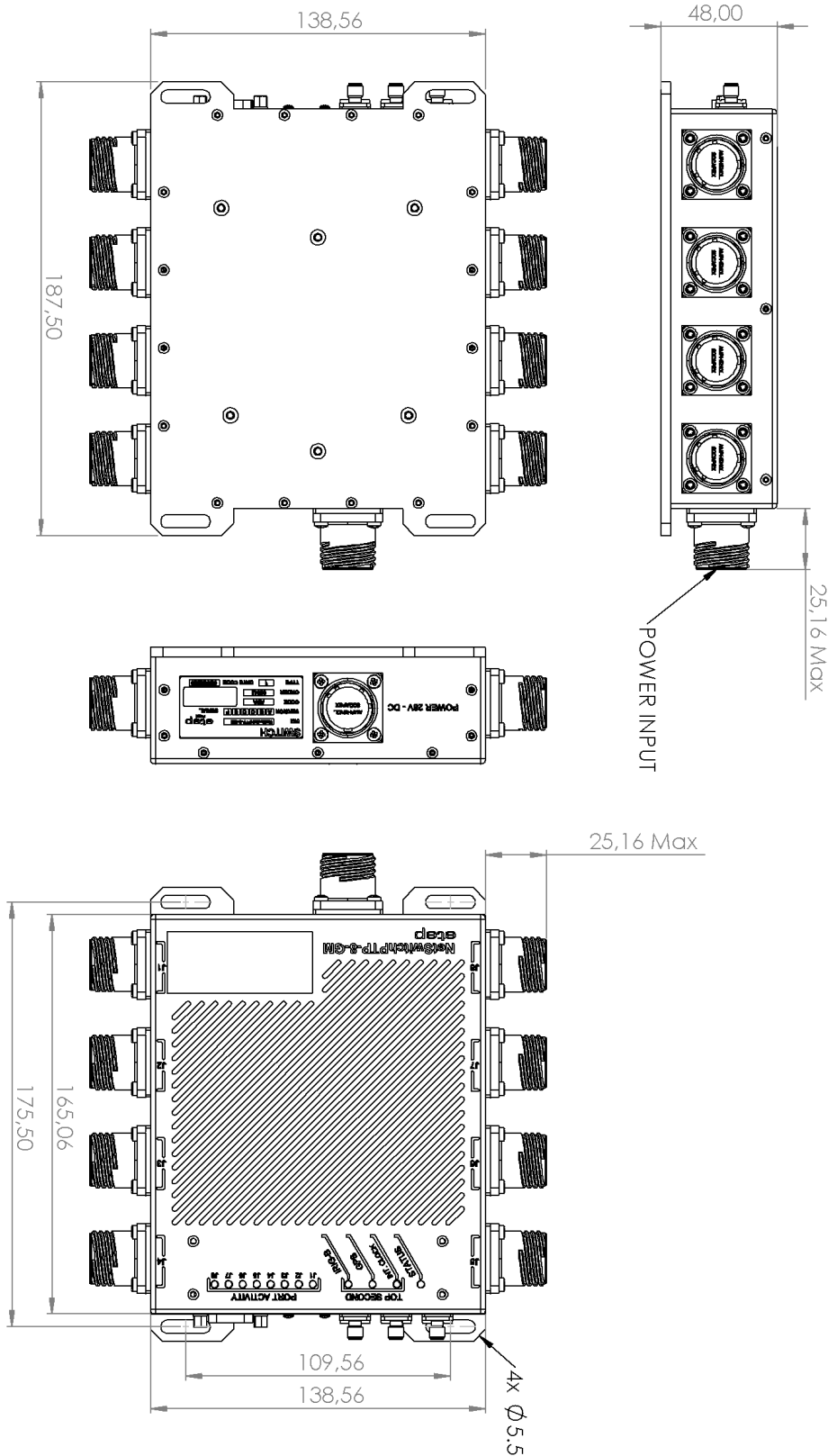
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Dimensional Drawing 8-Port



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INPUT 28VDC

INPUT 28VDC	J0
-------------	----

SOCKET	PLUG
TYPE: SOCKET 10 CONTACTS MALE Manufacturer: AMPHENOL SERIE: MIL-C 38999 SERIE III REFERENCE: TV P00 RW 13 98 PN Socket mark: INPUT 28VDC	TYPE: PLUG 10 CONTACTS FEMALE Manufacturer: AMPHENOL SERIE: MIL-C 38999 SERIE III REFERENCE: TV 06 RW 13 98 SN Cable mark:

Note:

« MM »	AIRFRAME GROUNDING
--------	--------------------

Pin	Signal name	Identification	Color	Notes
H	+28 VDC	+ 28V DC (Port 1 & 2)	RED	
A	0VN	0V	BLACK	
G	+28 VDC	+28 V DC (Port 3 & 4)	RED	Option: If power distribution through switch only
B	0VN	0V	BLACK	Option: If power distribution through switch only
F	+28 V DC (Port 5&6)	+28 V DC (Port 5 & 6)	RED	Option: If power distribution through switch only
C	0VN	0V	BLACK	Option: If power distribution through switch only
E	+28 V DC (Port 7&8)	+28 V DC (Port 7 & 8)	RED	Option: If power distribution through switch only
D	0VN	0V	BLACK	Option: If power distribution through switch only
J	AIRFRAME GROUNDING	MM	YELLOW	

NetSwitch 8/16/24 Ch.

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Pin Contact Gigabit Ethernet Input



INPUT DATA J1 to J8/J16/J24*

PIN VERSION SOCKET	PIN PLUG
<p>TYPE: SOCKET 22 CONTACTS FEMALE FOR 8-PORT. TYPE: SOCKET 37 CONTACTS FEMALE FOR 16 / 24-PORT. Manufacturer: AMPHENOL SERIE: MIL-C 38999 SERIE III 8-PORT REFERENCE: TV P00 RW 13 35 SN 16/24-PORT REFERENCE: TV P00 RW 15 35 SN Socket mark: J1 to J8/J16/J24*</p>	<p>TYPE: SOCKET 22 CONTACTS MALE FOR 8-PORT. TYPE: SOCKET 37 CONTACTS MALE FOR 16 / 24-PORT. Manufacturer: AMPHENOL SERIE: MIL-C 38999 SERIE III 8-PORT REFERENCE: TV 06 RW 13 35 PN 16/24-PORT REFERENCE: TV 06 RW 15 35 PN Cable mark: J1 to J8/J16/J24*</p>

*Following version

8-Port version

Pin	Designation	color	Notes
16	GND		ETHERNET SHIELDING
2	ETH_1	Orange White	
3	ETH_2	Orange	
14	ETH_3	Green White	
12	ETH_6	Green	
13	ETH_5	Blue White	
1	ETH_4	Blue	
21	ETH_7	Brown White	
15	ETH_8	Brown	
4	IN_SYNC_BANC+		SYNCHRO - J1 only (For NanoX)
5	IN_SYNC_BANC-		
17	GND		SHIELDING
6	OUT_SYNC_BANC+		SYNCHRO (For NanoX)
7	OUT_SYNC_BANC-		SYNCHRO (For NanoX)
18	GND		SHIELDING
19	ON/OFF		ON/OFF - J1 only (For NanoX)
20	0VN		
8	+28V_1_2		Power Distribution (Option)
9	+28V_1_2		
10	0VN		
11	0VN		
22	AIRFRAME GROUNDING	MM	

NetSwitch 8/16/24 Ch.

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RJ45 Gigabit Ethernet Input

INPUT DATA **J1 to J8**

SOCKET	Use in Flight Plug [ETHERNET*]	
TYPE: RJ45 MIL Socket Manufacturer: AMPHENOL SERIE: MIL-C 38999 SERIE III REFERENCE: RJFTV22G00 Socket mark: CONTROL	RJFTV 6M G	
	Use in Flight Cable [ETHERNET*]	
	Cat 5/6° per TIA/EIA 568B and Class D per ISO/IEC 11801	
CAP	Use Ground Plug [CONTROL]	
Manufacturer: AMPHENOL SERIE: MIL-C 38999 SERIE III REFERENCE: RJFTVC2G	RJ45 T568B Standard Cable Cat5/6°	

*Following version

INPUT GPS

SOCKET	PLUG
TYPE: SMA 50Ω Manufacturer: RADIALL SERIE: RF SMA CONNECTOR REFERENCE: R125 560001 Socket mark: INPUT GPS	TYPE: SMA 50Ω Manufacturer: RADIALL SERIE: RF SMA CONNECTOR REFERENCE: R125 073000W Cable mark:

INPUT IRIG B

SOCKET	PLUG
TYPE: SMA 50Ω Manufacturer: RADIALL SERIE: RF SMA CONNECTOR REFERENCE: R125 560001 Socket mark: INPUT IRIG B	TYPE: SMA 50Ω Manufacturer: RADIALL SERIE: RF SMA CONNECTOR REFERENCE: R125 073000W Cable mark:

OUTPUT IRIG B

SOCKET	PLUG
TYPE: SMA 50Ω Manufacturer: RADIALL SERIE: RF SMA CONNECTOR REFERENCE: R125 560001 Socket mark: OUTPUT IRIG B	TYPE: SMA 50Ω Manufacturer: RADIALL SERIE: RF SMA CONNECTOR REFERENCE: R125 073000W Cable mark:

NetSwitch 8/16/24 Ch.

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