NetSwitch 8/16/24 Ports.
Rugged Airborne Ethernet Switch

etep

From 8 to 24 Ports. 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 and 8x ports PoE+ option.

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 *

Power Over Ethernet
POE   8x PoE+ ports (60W power budget)
0   None

NETSWITCH-PTPGM-16-RJ45-0

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

Inputs
8   8 ports Gigabit Ethernet
16 16 ports Gigabit Ethernet
24 24 ports Gigabit Ethernet

Only available for 8 ports 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.
Ports 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 P00 ZNCI 09 98 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 rage: +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, 8 ports with 60W 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
	187.5	138.6	55.1	187.5	138.6	71.7	187.5	138.6	88.3
Weight ~ Kg [lbs]	0/PTP		PTPGM	0/PTP		PTPGM	0/PTP		PTPGM
	1.2 [2.6]		1.5 [3.3]	1.8 [4]		2.1 [4.6]	2.4 [5.3]		2.7 [5.9]

NetSwitch 8/16/24 Ports.
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Key Features

- Eight to Twenty-Four 1000/100/10 Mbps Ethernet ports (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
- sFlow

Dimensional Drawing 8-Ports

175,50 ±2,00
4 x Ø 5.5
15,00 ±0,50
109,56 ±1,00
138,56 ±1,00
165,10 ±1,00
187,50 ±1,00
201,26 ±2,00

10,48 ±0,50
24,99 MAX
55,14 ±1,00
138,56 ±1,00
188,54 ±2,00
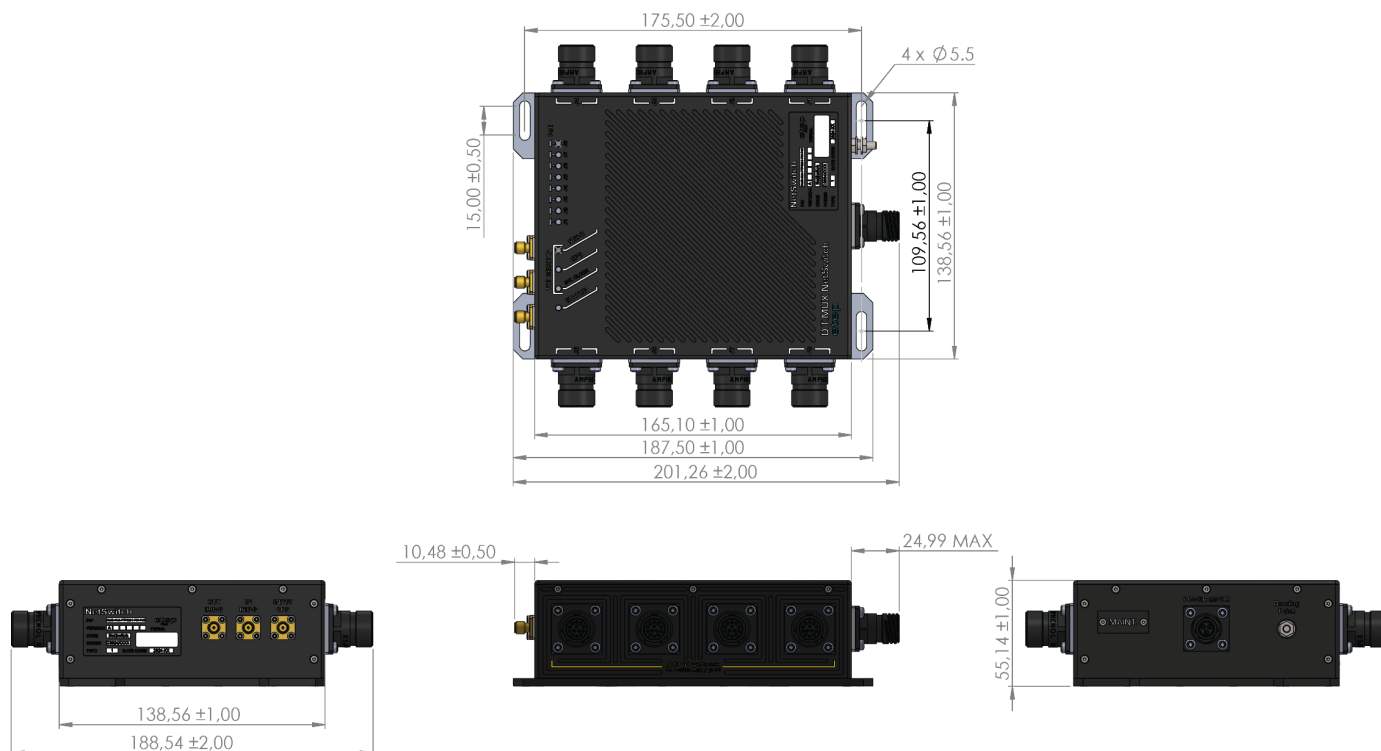
Dimensional Drawing 16-Ports
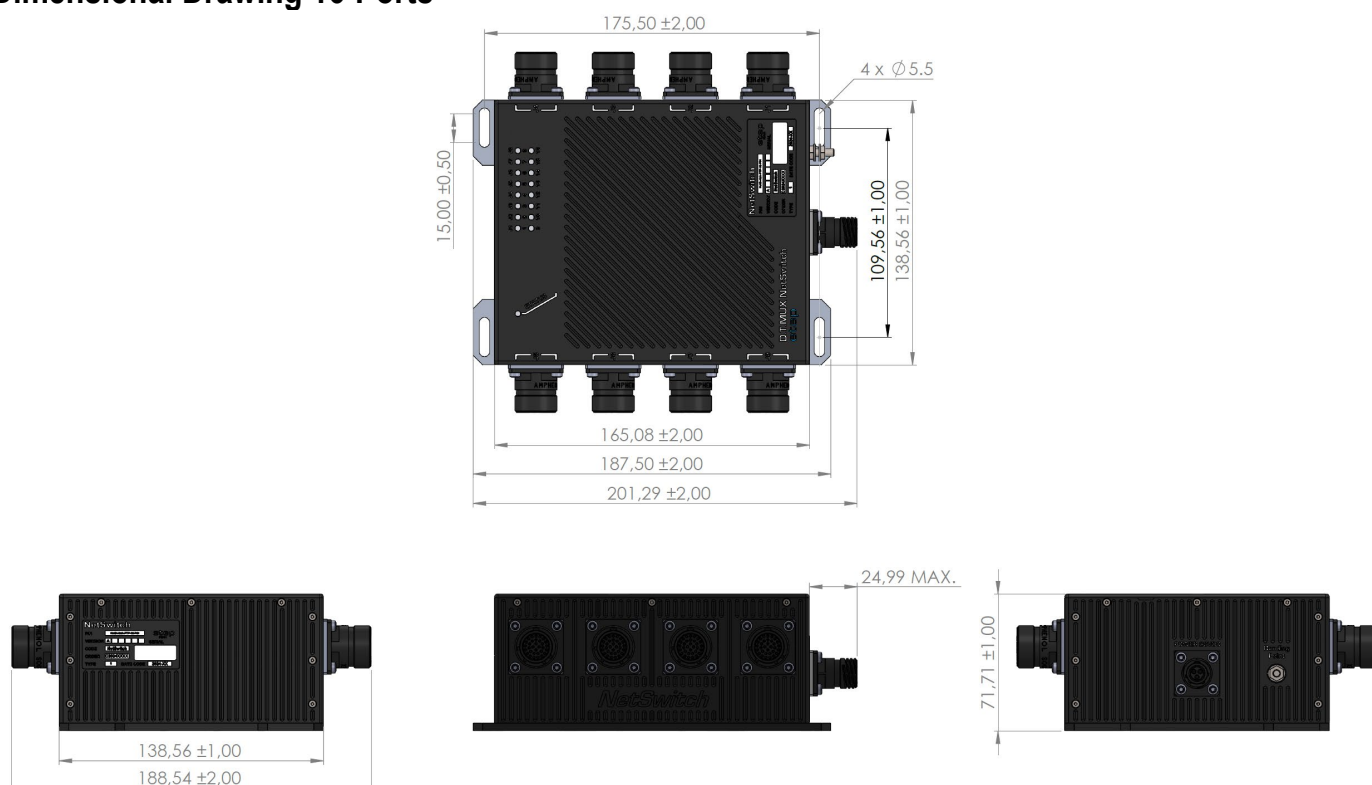
175,50 ±2,00
4 x Ø 5.5
15,00 ±0,50
109,56 ±1,00
138,56 ±1,00
165,08 ±2,00
187,50 ±2,00
201,29 ±2,00

24,99 MAX.
71,71 ±1,00
138,56 ±1,00
188,54 ±2,00

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# Dimensional Drawing 24-Ports
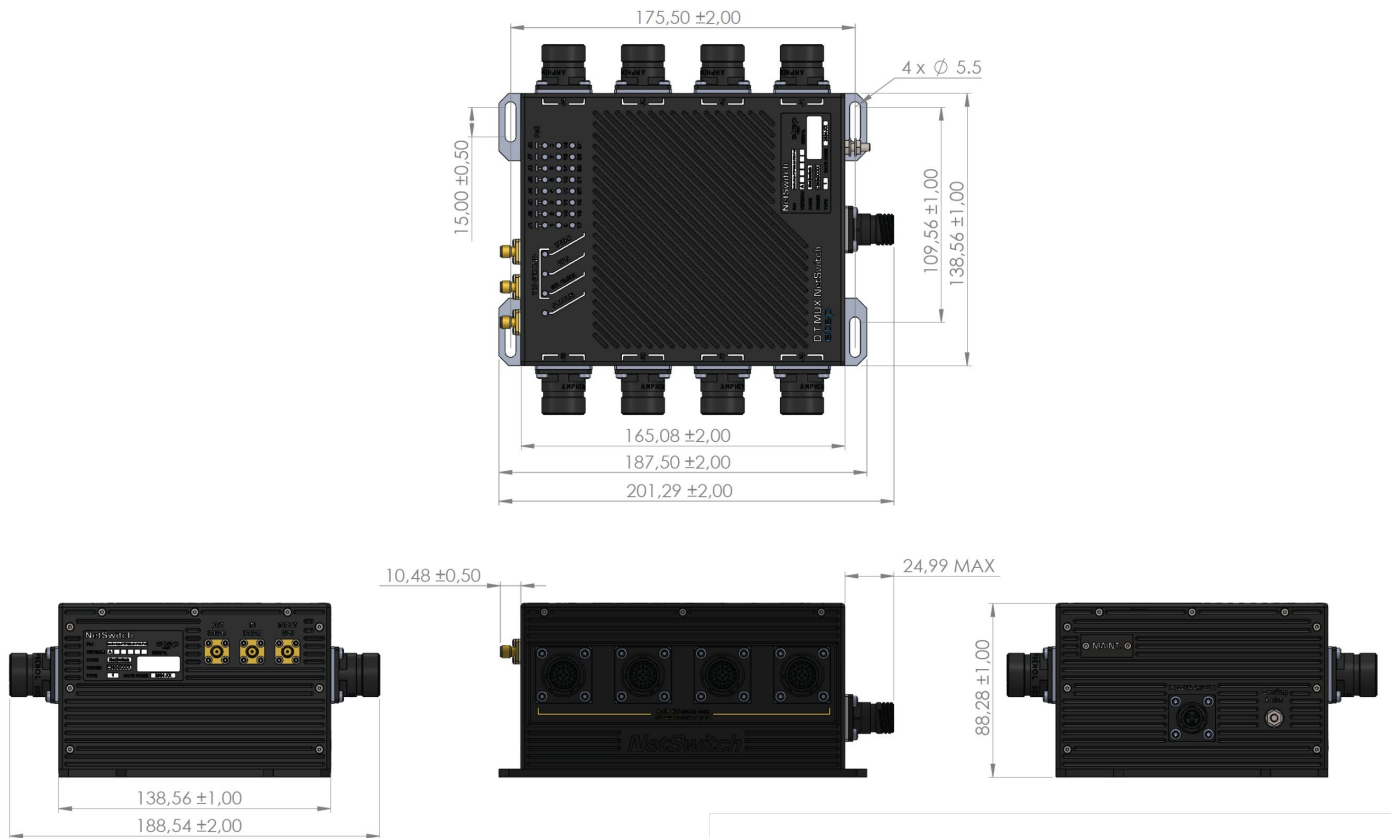
NetSwitch 8/16/24 Ports.

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INPUT 28VDC

INPUT 28VDC	J0

SOCKET	PLUG
TYPE: SOCKET 3 CONTACTS MALE Manufacturer: AMPHENOL SERIE: MIL-C 38999 SERIE III REFERENCE: TV P00 ZNCI 09 98 PN Socket mark: INPUT 28VDC	TYPE: PLUG 3 CONTACTS FEMALE Manufacturer: AMPHENOL SERIE: MIL-C 38999 SERIE III REFERENCE: TV 06 ZN 09 98 SN Cable mark: INPUT 28VDC

📄 Note:

« MM »	AIRFRAME GROUNDING

Pin	Signal name	Identification	Color
A	+28VDC AIRCRAFT	+28VA	RED
B	0VDC AIRCRAFT	0VA	BLACK
C	AIRCRAFT GROUNDING	MM	YELLOW

NetSwitch 8/16/24 Ports.

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8 Ports Pin Contact Gigabit Ethernet Input

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INPUT DATA	J1 to J8

PIN VERSION SOCKET	PIN PLUG
TYPE: SOCKET 13 CONTACTS FEMALE FOR 8-PORTS. **Manufacturer: AMPHENOL** **SERIE: MIL-C 38999 SERIE III** **8-PORTS REFERENCE: TV P00 ZN CI 11 35 SN** **Socket mark: J1 to J8**	**TYPE: SOCKET 13 CONTACTS MALE FOR 8-PORTS.** **Manufacturer: AMPHENOL** **SERIE: MIL-C 38999 SERIE III** **8-PORTS REFERENCE: TV 06 ZN 11 35 PN** **Cable mark: J1 to J8**

8-Port version from J1 to J8

Pin	Designation	color		📄 Notes
13	SHIELD	MM		Ethernet Shield
1	ETH_1	*Orange*	*White*	**J1 Port : 1** (PoE+ option)
10	ETH_2	*Orange*		**J2 Port : 2** (PoE+ option)
7	ETH_3	*Green*	*White*	**J3 Port : 3** (PoE+ option)
6	ETH_6	*Green*		**J4 Port : 4** (PoE+ option)
5	ETH_5	*Blue*	*White*	**J5 Port : 5** (PoE+ option)
4	ETH_4	*Blue*		**J6 Port : 6** (PoE+ option)
3	ETH_7	*Brown*	*White*	**J7 Port : 7** (PoE+ option)
2	ETH_8	*Brown*		**J8 Port : 8** (PoE+ option)

***Pin 11 / 12 Not connected**

NetSwitch 8/16/24 Ports.
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16 Ports Pin Contact Gigabit Ethernet Input

INPUT DATA	J1 to J8

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PIN VERSION SOCKET	PIN PLUG
TYPE: SOCKET 32 CONTACTS FEMALE FOR 16-PORTS. Manufacturer: AMPHENOL SERIE: MIL-C 38999 SERIE III 16/24-PORTS REFERENCE: TV P00 ZN CI 13-32 SN Socket mark: J1 to J8	**TYPE: SOCKET 32 CONTACTS MALE FOR 16-PORTS.** Manufacturer: AMPHENOL SERIE: MIL-C 38999 SERIE III 16/24-PORTS REFERENCE: TV 06 ZN 13-32 PN Cable mark: J1 to J8

16-Port version from J1 to J8

Pin	Designation	color		🖹 Notes
31	SHIELD	MM		Ethernet Shield port
12	ETH_1	*Orange*	*White*	**J1 Port : 1** (PoE+ option)
11	ETH_2	*Orange*		**J2 Port : 2** (PoE+ option)
10	ETH_3	*Green*	*White*	**J3 Port : 3** (PoE+ option)
24	ETH_6	*Green*		**J4 Port : 4** (PoE+ option)
23	ETH_5	*Blue*	*White*	**J5 Port : 5** (PoE+ option)
9	ETH_4	*Blue*		**J6 Port : 6** (PoE+ option)
8	ETH_7	*Brown*	*White*	**J7 Port : 7** (PoE+ option)
7	ETH_8	*Brown*		**J8 Port : 8** (PoE+ option)
29	SHIELD	MM		Ethernet Shield port
30	ETH_1	*Orange*	*White*	**J1 Port : 9**
21	ETH_2	*Orange*		**J2 Port : 10**
26	ETH_3	*Green*	*White*	**J3 Port : 11**
32	ETH_6	*Green*		**J4 Port : 12**
14	ETH_5	*Blue*	*White*	**J5 Port : 13**
13	ETH_4	*Blue*		**J6 Port : 14**
4	ETH_7	*Brown*	*White*	**J7 Port : 15**
5	ETH_8	*Brown*		**J8 Port : 16**

*Pin 6 / 19 / 20 / 22 / 25 / 27 Ethernet shield

*Pin 1 / 2 / 3 / 15 / 16 / 17 / 18 / 28 Not connected

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24 Ports Pin Contact Gigabit Ethernet Input

INPUT DATA **J1 to J8**

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PIN VERSION SOCKET	PIN PLUG
TYPE: SOCKET 32 CONTACTS FEMALE FOR 24-PORTS. Manufacturer: AMPHENOL SERIE: MIL-C 38999 SERIE III 16/24-PORTS REFERENCE: TV P00 ZN CI 13-32 SN Socket mark: J1 to J8	**TYPE: SOCKET 32 CONTACTS MALE FOR 24-PORTS.** Manufacturer: AMPHENOL SERIE: MIL-C 38999 SERIE III 16/24-PORTS REFERENCE: TV 06 ZN 13-32 PN Cable mark: J1 to J8

24-Port version J1 to J8

Pin	Designation	color		📄 Notes
31	SHIELD	MM		Ethernet Shield port
12	ETH_1	*Orange*	*White*	**J1 Port : 1** (PoE+ option)
11	ETH_2	*Orange*		**J2 Port : 2** (PoE+ option)
10	ETH_3	*Green*	*White*	**J3 Port : 3** (PoE+ option)
24	ETH_6	*Green*		**J4 Port : 4** (PoE+ option)
23	ETH_5	*Blue*	*White*	**J5 Port : 5** (PoE+ option)
9	ETH_4	*Blue*		**J6 Port : 6** (PoE+ option)
8	ETH_7	*Brown*	*White*	**J7 Port : 7** (PoE+ option)
7	ETH_8	*Brown*		**J8 Port : 8** (PoE+ option)
29	SHIELD	MM		Ethernet Shield port
30	ETH_1	*Orange*	*White*	**J1 Port : 9**
21	ETH_2	*Orange*		**J2 Port : 10**
26	ETH_3	*Green*	*White*	**J3 Port : 11**
32	ETH_6	*Green*		**J4 Port : 12**
14	ETH_5	*Blue*	*White*	**J5 Port : 13**
13	ETH_4	*Blue*		**J6 Port : 14**
4	ETH_7	*Brown*	*White*	**J7 Port : 15**
5	ETH_8	*Brown*		**J8 Port : 16**
20	SHIELD	MM		Ethernet Shield port
1	ETH_1	*Orange*	*White*	**J1 Port : 17**
18	ETH_2	*Orange*		**J2 Port : 18**
15	ETH_3	*Green*	*White*	**J3 Port : 19**
16	ETH_6	*Green*		**J4 Port : 20**
28	ETH_5	*Blue*	*White*	**J5 Port : 21**
17	ETH_4	*Blue*		**J6 Port : 22**
3	ETH_7	*Brown*	*White*	**J7 Port : 23**
2	ETH_8	*Brown*		**J8 Port : 24**

*Pin 6 / 19 / 22 / 25 / 27 Ethernet shield

NetSwitch 8/16/24 Ports.
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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^e 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^e

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 Ports.

Rugged Airborne Ethernet Switch v6