Amphenol
MILITARY HIGH SPEED

# Raptor Go 1G /10G Ethernet Switches

TSN/MACSec 1G/10GBase-T Enabled

**PDS - 459**

## Next Generation Ethernet Switch Units

Amphenol's next-generation RaptorGo TSN/MACSec Enabled 1G/10GBase-T Ethernet, standalone switches operate with 34-36 individual channels, supporting speeds of up to 1GBase-T and 10GBase-T.

Management is handled by on-board quad-core ARM processors, each with ample memory for complex networking applications.

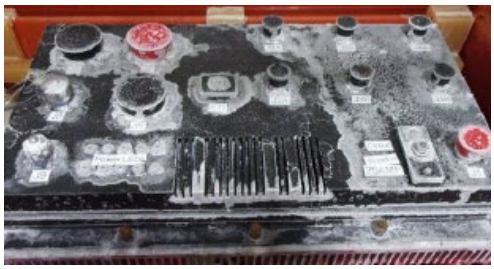
Several versions of the RaptorGo switch are available which have different quantities of the 10GBase-T (six and eight) compatible ports while each of the units has 28 channels of up to 1GBase-T.

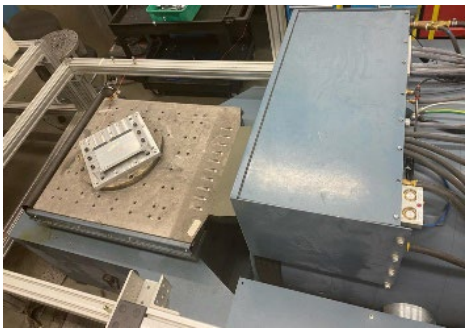
## FEATURES

- 34-36 channel standalone Ethernet switch
    - 6 channels 10GBase-T; 28 channels 1GBase-T
    - 8 channels 10GBase-T; 28 channels 1GBase-T
- Support for multiple speeds: 10/100/1G/2.5G/5G/10GBase-T
- Layer 2 and Layer 3 network management capabilities, including support for time-sensitive networking (TSN), MACsec, and advanced routing applications
- Dedicated management interfaces via dual RS-232 and 1GBase-T
- Powered by dual quad-core ARM CPUs with DDR4-SDRAM, flash memory, and EEPROM.
- Linux OS with comprehensive network management software.


## RUGGEDIZATION

- Fully ruggedized to withstand extreme environmental and EMI/EMP conditions.
- Interfaces for power diagnostics and more.
- Meets the following environmental specifications:
- Operating Temperature: -40ºC to 85ºC while operating.
- Storage Temperature: -55ºC to 125ºC.
- Humidity: 0-100% non-condensing humidity during operation.
- Vibration: 10g peak, 5-2,000 Hz sine vibration, and 40 G peak shock cycles.
- Altitude: -1,500 to 60,000 ft with rapid depressurization.
- EMC: Designed to comply with MIL-STD-461E.





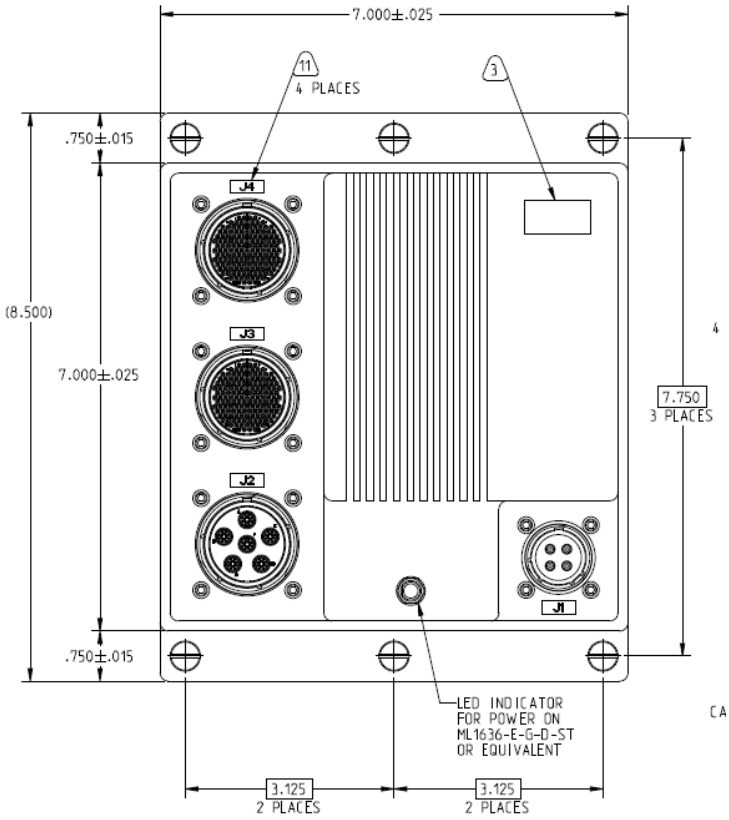
# ORDERING INFORMATION

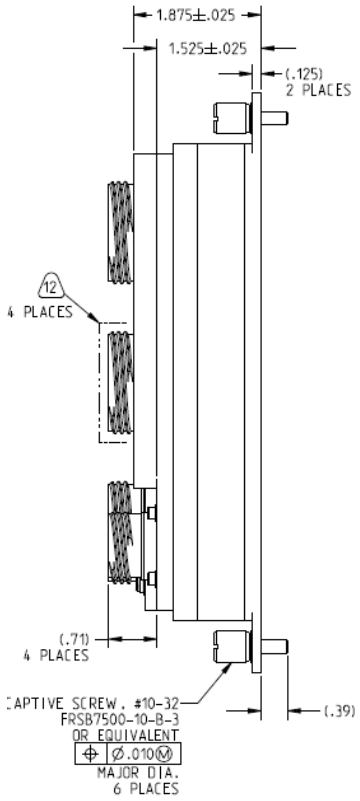
## PART NUMBER TABLE

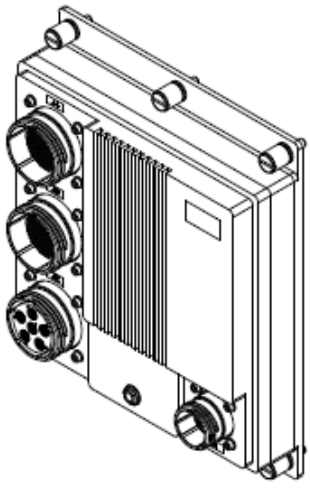
| | | | | |
|---|---|---|---|---|
| CF-02WA00-29X | 6 channels 10GBase-T; 28 channels 1GBase-T | Managed | 75 Watts | ~60 second boot |
| CF-02WA00-30X | 8 channels 10GBase-T; 28 channels 1GBase-T | Managed | 65 Watts | ~60 second boot |

# DIMENSIONS & I/O

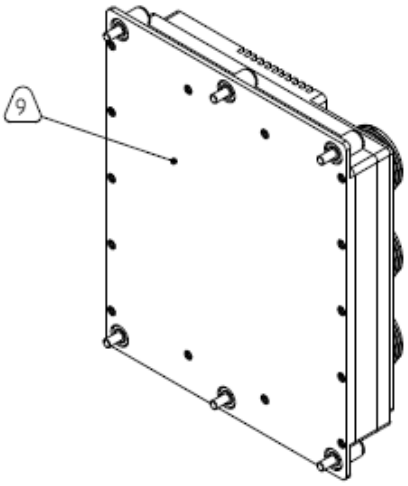
CF-02WA00-29X



FRONT ISOMETRIC VIEW
SCALE 0.500




REAR ISOMETRIC VIEW
SCALE 0.500

# DIMENSIONS & I/O

CF-02WA00-29X

| I/O CHART | | | |
|---|---|---|---|
| CONNECTOR | PIN ID | DATA DIRECTION | SIGNAL NAME |
| J1 POWER 15-4P | A | IN | 28VDC_IN |
| | B | OUT | 28VDC_RTN |
| | C | -- | SAFETY GROUND CHASSIS |
| | D | -- | NOT CONNECTED |
| | SHELL | -- | CHASSIS |

| I/O CHART | | | | |
|---|---|---|---|---|
| CONNECTOR | PIN ID | DATA DIRECTION | PORT NO | SIGNAL NAME |
| J2 10GBASE-T 23-6S | A-1 | BI | 1 | 10GBase-T_DA+ |
| | A-2 | | | 10GBase-T_DA- |
| | A-3 | | | 10GBase-T_DB+ |
| | A-4 | | | 10GBase-T_DB- |
| | A-5 | | | 10GBase-T_DC+ |
| | A-6 | | | 10GBase-T_DC- |
| | A-7 | | | 10GBase-T_DD+ |
| | A-8 | | | 10GBase-T_DD- |
| | A-OUTER | -- | -- | CHASSIS GND |
| | A-CENTER | -- | -- | CHASSIS GND |
| | B-1 | BI | 2 | 10GBase-T_DA+ |
| | B-2 | | | 10GBase-T_DA- |
| | B-3 | | | 10GBase-T_DB+ |
| | B-4 | | | 10GBase-T_DB- |
| | B-5 | | | 10GBase-T_DC+ |
| | B-6 | | | 10GBase-T_DC- |
| | B-7 | | | 10GBase-T_DD+ |
| | B-8 | | | 10GBase-T_DD- |
| | B-OUTER | -- | -- | CHASSIS GND |
| | B-CENTER | -- | -- | CHASSIS GND |
| | C-1 | BI | 3 | 10GBase-T_DA+ |
| | C-2 | | | 10GBase-T_DA- |
| | C-3 | | | 10GBase-T_DB+ |
| | C-4 | | | 10GBase-T_DB- |
| | C-5 | | | 10GBase-T_DC+ |
| | C-6 | | | 10GBase-T_DC- |
| | C-7 | | | 10GBase-T_DD+ |
| | C-8 | | | 10GBase-T_DD- |
| | C-OUTER | -- | -- | CHASSIS GND |
| | C-CENTER | -- | -- | CHASSIS GND |

| I/O CHART | | | | |
|---|---|---|---|---|
| CONNECTOR | PIN ID | DATA DIRECTION | PORT NO | SIGNAL NAME |
| J2 10GBASE-T 23-6S | D-1 | BI | 4 | 10GBase-T_DA+ |
| | D-2 | | | 10GBase-T_DA- |
| | D-3 | | | 10GBase-T_DB+ |
| | D-4 | | | 10GBase-T_DB- |
| | D-5 | | | 10GBase-T_DC+ |
| | D-6 | | | 10GBase-T_DC- |
| | D-7 | | | 10GBase-T_DD+ |
| | D-8 | | | 10GBase-T_DD- |
| | D-OUTER | -- | -- | CHASSIS GND |
| | D-CENTER | -- | -- | CHASSIS GND |
| | E-1 | BI | 5 | 10GBase-T_DA+ |
| | E-2 | | | 10GBase-T_DA- |
| | E-3 | | | 10GBase-T_DB+ |
| | E-4 | | | 10GBase-T_DB- |
| | E-5 | | | 10GBase-T_DC+ |
| | E-6 | | | 10GBase-T_DC- |
| | E-7 | | | 10GBase-T_DD+ |
| | E-8 | | | 10GBase-T_DD- |
| | E-OUTER | -- | -- | CHASSIS GND |
| | E-CENTER | -- | -- | CHASSIS GND |
| | F-1 | BI | 6 | 10GBase-T_DA+ |
| | F-2 | | | 10GBase-T_DA- |
| | F-3 | | | 10GBase-T_DB+ |
| | F-4 | | | 10GBase-T_DB- |
| | F-5 | | | 10GBase-T_DC+ |
| | F-6 | | | 10GBase-T_DC- |
| | F-7 | | | 10GBase-T_DD+ |
| | F-8 | | | 10GBase-T_DD- |
| | F-OUTER | -- | -- | CHASSIS GND |
| | F-CENTER | -- | -- | CHASSIS GND |

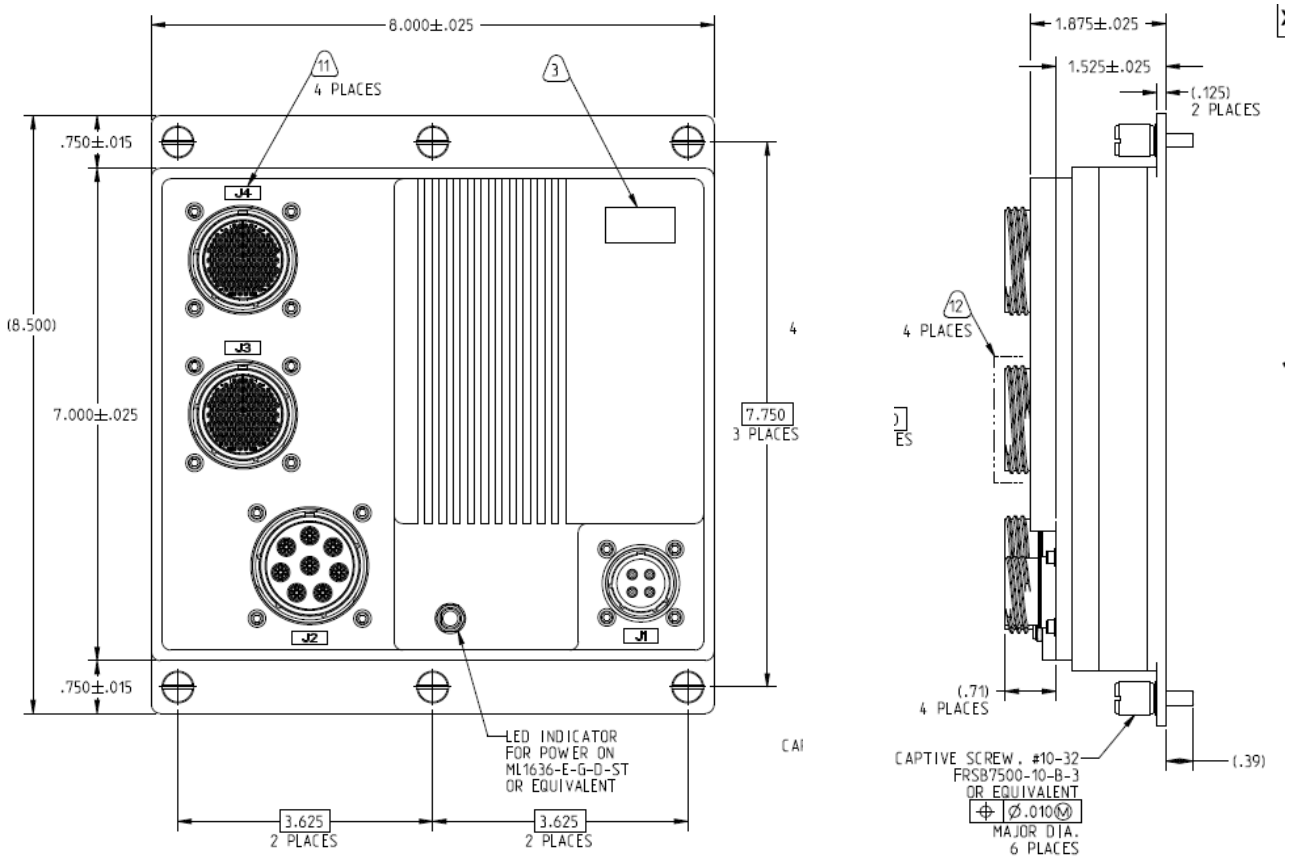
| I/O CHART | | | | |
|---|---|---|---|---|
| CONNECTOR | PIN ID | DATA DIRECTION | PORT NO | SIGNAL NAME |
| J4 1GBase-T 23-151P | 1 | BI | 21 | 1GBase-T_DA+ |
| | 2 | | | 1GBase-T_DA- |
| | 6 | | | 1GBase-T_DB+ |
| | 7 | | | 1GBase-T_DB- |
| | 13 | | | 1GBase-T_DC+ |
| | 14 | | | 1GBase-T_DC- |
| | 15 | | | 1GBase-T_DD+ |
| | 16 | | | 1GBase-T_DD- |
| | 3 | BI | 22 | 1GBase-T_DA+ |
| | 4 | | | 1GBase-T_DA- |
| | 9 | | | 1GBase-T_DB+ |
| | 10 | | | 1GBase-T_DB- |
| | 17 | | | 1GBase-T_DC+ |
| | 18 | | | 1GBase-T_DC- |
| | 19 | | | 1GBase-T_DD+ |
| | 20 | | | 1GBase-T_DD- |
| | 23 | BI | 23 | 1GBase-T_DA+ |
| | 24 | | | 1GBase-T_DA- |
| | 25 | | | 1GBase-T_DB+ |
| | 26 | | | 1GBase-T_DB- |
| | 34 | | | 1GBase-T_DC+ |
| | 35 | | | 1GBase-T_DC- |
| | 36 | | | 1GBase-T_DD+ |
| | 37 | | | 1GBase-T_DD- |
| | 28 | BI | 24 | 1GBase-T_DA+ |
| | 29 | | | 1GBase-T_DA- |
| | 30 | | | 1GBase-T_DB+ |
| | 31 | | | 1GBase-T_DB- |
| | 40 | | | 1GBase-T_DC+ |
| | 41 | | | 1GBase-T_DC- |
| | 42 | | | 1GBase-T_DD+ |
| | 43 | | | 1GBase-T_DD- |
| | ALL OTHER PINS | -- | -- | NO CONNECT |

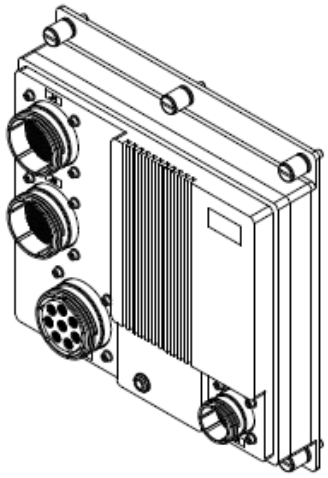
| I/O CHART | | | | |
|---|---|---|---|---|
| CONNECTOR | PIN ID | DATA DIRECTION | PORT NO | SIGNAL NAME |
| J4 1GBase-T 23-151P | 45 | BI | 25 | 1GBase-T_DA+ |
| | 46 | | | 1GBase-T_DA- |
| | 47 | | | 1GBase-T_DB+ |
| | 48 | | | 1GBase-T_DB- |
| | 58 | | | 1GBase-T_DC+ |
| | 59 | | | 1GBase-T_DC- |
| | 60 | | | 1GBase-T_DD+ |
| | 61 | | | 1GBase-T_DD- |
| | 49 | BI | 26 | 1GBase-T_DA+ |
| | 50 | | | 1GBase-T_DA- |
| | 52 | | | 1GBase-T_DB+ |
| | 53 | | | 1GBase-T_DB- |
| | 62 | | | 1GBase-T_DC+ |
| | 63 | | | 1GBase-T_DC- |
| | 64 | | | 1GBase-T_DD+ |
| | 65 | | | 1GBase-T_DD- |
| | 54 | BI | 27 | 1GBase-T_DA+ |
| | 55 | | | 1GBase-T_DA- |
| | 56 | | | 1GBase-T_DB+ |
| | 57 | | | 1GBase-T_DB- |
| | 66 | | | 1GBase-T_DC+ |
| | 67 | | | 1GBase-T_DC- |
| | 68 | | | 1GBase-T_DD+ |
| | 69 | | | 1GBase-T_DD- |
| | 83 | BI | 28 | 1GBase-T_DA+ |
| | 84 | | | 1GBase-T_DA- |
| | 85 | | | 1GBase-T_DB+ |
| | 86 | | | 1GBase-T_DB- |
| | 95 | | | 1GBase-T_DC+ |
| | 96 | | | 1GBase-T_DC- |
| | 97 | | | 1GBase-T_DD+ |
| | 98 | | | 1GBase-T_DD- |
| | 87 | BI | 29 | 1GBase-T_DA+ |
| | 88 | | | 1GBase-T_DA- |
| | 89 | | | 1GBase-T_DB+ |
| | 90 | | | 1GBase-T_DB- |
| | 99 | | | 1GBase-T_DC+ |
| | 100 | | | 1GBase-T_DC- |
| | 102 | | | 1GBase-T_DD+ |
| | 103 | | | 1GBase-T_DD- |

| I/O CHART | | | | |
|---|---|---|---|---|
| CONNECTOR | PIN ID | DATA DIRECTION | PORT NO | SIGNAL NAME |
| J4 1GBase-T 23-151P | 91 | BI | 30 | 1GBase-T_DA+ |
| | 92 | | | 1GBase-T_DA- |
| | 93 | | | 1GBase-T_DB+ |
| | 94 | | | 1GBase-T_DB- |
| | 104 | | | 1GBase-T_DC+ |
| | 105 | | | 1GBase-T_DC- |
| | 106 | | | 1GBase-T_DD+ |
| | 107 | | | 1GBase-T_DD- |
| | 109 | BI | 31 | 1GBase-T_DA+ |
| | 110 | | | 1GBase-T_DA- |
| | 111 | | | 1GBase-T_DB+ |
| | 112 | | | 1GBase-T_DB- |
| | 121 | | | 1GBase-T_DC+ |
| | 122 | | | 1GBase-T_DC- |
| | 123 | | | 1GBase-T_DD+ |
| | 124 | | | 1GBase-T_DD- |
| | 115 | BI | 32 | 1GBase-T_DA+ |
| | 116 | | | 1GBase-T_DA- |
| | 117 | | | 1GBase-T_DB+ |
| | 118 | | | 1GBase-T_DB- |
| | 126 | | | 1GBase-T_DC+ |
| | 127 | | | 1GBase-T_DC- |
| | 128 | | | 1GBase-T_DD+ |
| | 129 | | | 1GBase-T_DD- |
| | 132 | BI | 33 | 1GBase-T_DA+ |
| | 133 | | | 1GBase-T_DA- |
| | 134 | | | 1GBase-T_DB+ |
| | 135 | | | 1GBase-T_DB- |
| | 142 | | | 1GBase-T_DC+ |
| | 143 | | | 1GBase-T_DC- |
| | 148 | | | 1GBase-T_DD+ |
| | 149 | | | 1GBase-T_DD- |
| | 136 | BI | 34 | 1GBase-T_DA+ |
| | 137 | | | 1GBase-T_DA- |
| | 138 | | | 1GBase-T_DB+ |
| | 139 | | | 1GBase-T_DB- |
| | 145 | | | 1GBase-T_DC+ |
| | 146 | | | 1GBase-T_DC- |
| | 150 | | | 1GBase-T_DD+ |
| | 151 | | | 1GBase-T_DD- |

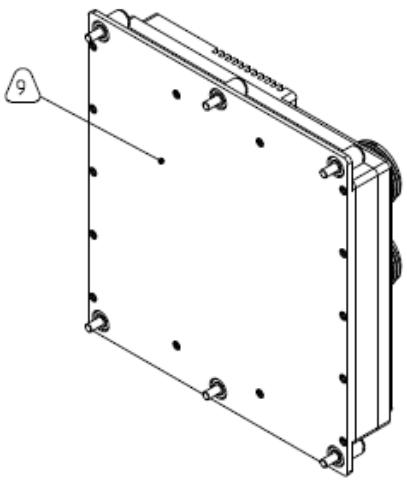
# DIMENSIONS & I/O

CF-02WA00-30X



FRONT ISOMETRIC VIEW
SCALE 0.500




REAR ISOMETRIC VIEW
SCALE 0.500

Amphenol
MILITARY HIGH SPEED

# DIMENSIONS & I/O

## CF-02WA00-30X

I/O CHART

| CONNECTOR | PIN ID | DATA DIRECTION | SIGNAL NAME |
|---|---|---|---|
| J1 POWER 15-4P | A | IN | 28VDC_IN |
| | B | OUT | 28VDC_RTN |
| | C | -- | SAFETY GROUND CHASSIS |
| | D | -- | NOT CONNECTED |
| | SHELL | -- | CHASSIS |

I/O CHART

| CONNECTOR | PIN ID | DATA DIRECTION | PORT NO | SIGNAL NAME |
|---|---|---|---|---|
| J2 10GBASE-T 25-8S | A-1 | BI | 1 | 10GBase-T_DA+ |
| | A-2 | | | 10GBase-T_DA- |
| | A-3 | | | 10GBase-T_DB+ |
| | A-4 | | | 10GBase-T_DB- |
| | A-5 | | | 10GBase-T_DC+ |
| | A-6 | | | 10GBase-T_DC- |
| | A-7 | | | 10GBase-T_DD+ |
| | A-8 | | | 10GBase-T_DD- |
| | A-OUTER | -- | -- | CHASSIS GND |
| | A-CENTER | -- | -- | CHASSIS GND |
| | B-1 | BI | 2 | 10GBase-T_DA+ |
| | B-2 | | | 10GBase-T_DA- |
| | B-3 | | | 10GBase-T_DB+ |
| | B-4 | | | 10GBase-T_DB- |
| | B-5 | | | 10GBase-T_DC+ |
| | B-6 | | | 10GBase-T_DC- |
| | B-7 | | | 10GBase-T_DD+ |
| | B-8 | | | 10GBase-T_DD- |
| | B-OUTER | -- | -- | CHASSIS GND |
| | B-CENTER | -- | -- | CHASSIS GND |
| | C-1 | BI | 3 | 10GBase-T_DA+ |
| | C-2 | | | 10GBase-T_DA- |
| | C-3 | | | 10GBase-T_DB+ |
| | C-4 | | | 10GBase-T_DB- |
| | C-5 | | | 10GBase-T_DC+ |
| | C-6 | | | 10GBase-T_DC- |
| | C-7 | | | 10GBase-T_DD+ |
| | C-8 | | | 10GBase-T_DD- |
| | C-OUTER | -- | -- | CHASSIS GND |
| | C-CENTER | -- | -- | CHASSIS GND |
| | D-1 | BI | 4 | 10GBase-T_DA+ |
| | D-2 | | | 10GBase-T_DA- |
| | D-3 | | | 10GBase-T_DB+ |
| | D-4 | | | 10GBase-T_DB- |
| | D-5 | | | 10GBase-T_DC+ |
| | D-6 | | | 10GBase-T_DC- |
| | D-7 | | | 10GBase-T_DD+ |
| | D-8 | | | 10GBase-T_DD- |
| | D-OUTER | -- | -- | CHASSIS GND |
| | D-CENTER | -- | -- | CHASSIS GND |

I/O CHART

| CONNECTOR | PIN ID | DATA DIRECTION | PORT NO | SIGNAL NAME |
|---|---|---|---|---|
| J2 10GBASE-T 25-8S | E-1 | BI | 5 | 10GBase-T_DA+ |
| | E-2 | | | 10GBase-T_DA- |
| | E-3 | | | 10GBase-T_DB+ |
| | E-4 | | | 10GBase-T_DB- |
| | E-5 | | | 10GBase-T_DC+ |
| | E-6 | | | 10GBase-T_DC- |
| | E-7 | | | 10GBase-T_DD+ |
| | E-8 | | | 10GBase-T_DD- |
| | E-OUTER | -- | -- | CHASSIS GND |
| | E-CENTER | -- | -- | CHASSIS GND |
| | F-1 | BI | 6 | 10GBase-T_DA+ |
| | F-2 | | | 10GBase-T_DA- |
| | F-3 | | | 10GBase-T_DB+ |
| | F-4 | | | 10GBase-T_DB- |
| | F-5 | | | 10GBase-T_DC+ |
| | F-6 | | | 10GBase-T_DC- |
| | F-7 | | | 10GBase-T_DD+ |
| | F-8 | | | 10GBase-T_DD- |
| | F-OUTER | -- | -- | CHASSIS GND |
| | F-CENTER | -- | -- | CHASSIS GND |
| | G-1 | BI | 7 | 10GBase-T_DA+ |
| | G-2 | | | 10GBase-T_DA- |
| | G-3 | | | 10GBase-T_DB+ |
| | G-4 | | | 10GBase-T_DB- |
| | G-5 | | | 10GBase-T_DC+ |
| | G-6 | | | 10GBase-T_DC- |
| | G-7 | | | 10GBase-T_DD+ |
| | G-8 | | | 10GBase-T_DD- |
| | G-OUTER | -- | -- | CHASSIS GND |
| | G-CENTER | -- | -- | CHASSIS GND |
| | H-1 | BI | 8 | 10GBase-T_DA+ |
| | H-2 | | | 10GBase-T_DA- |
| | H-3 | | | 10GBase-T_DB+ |
| | H-4 | | | 10GBase-T_DB- |
| | H-5 | | | 10GBase-T_DC+ |
| | H-6 | | | 10GBase-T_DC- |
| | H-7 | | | 10GBase-T_DD+ |
| | H-8 | | | 10GBase-T_DD- |
| | H-OUTER | -- | -- | CHASSIS GND |
| | H-CENTER | -- | -- | CHASSIS GND |

I/O CHART

| CONNECTOR | PIN ID | DATA DIRECTION | PORT NO | SIGNAL NAME |
|---|---|---|---|---|
| J3 1GBase-T 23-151P | 1 | BI | 9 | 1GBase-T_DA+ |
| | 2 | | | 1GBase-T_DA- |
| | 6 | | | 1GBase-T_DB+ |
| | 7 | | | 1GBase-T_DB- |
| | 13 | | | 1GBase-T_DC+ |
| | 14 | | | 1GBase-T_DC- |
| | 15 | | | 1GBase-T_DD+ |
| | 16 | | | 1GBase-T_DD- |
| | 3 | BI | 10 | 1GBase-T_DA+ |
| | 4 | | | 1GBase-T_DA- |
| | 9 | | | 1GBase-T_DB+ |
| | 10 | | | 1GBase-T_DB- |
| | 17 | | | 1GBase-T_DC+ |
| | 18 | | | 1GBase-T_DC- |
| | 19 | | | 1GBase-T_DD+ |
| | 20 | | | 1GBase-T_DD- |
| | 23 | BI | 11 | 1GBase-T_DA+ |
| | 24 | | | 1GBase-T_DA- |
| | 25 | | | 1GBase-T_DB+ |
| | 26 | | | 1GBase-T_DB- |
| | 34 | | | 1GBase-T_DC+ |
| | 35 | | | 1GBase-T_DC- |
| | 36 | | | 1GBase-T_DD+ |
| | 37 | | | 1GBase-T_DD- |
| | 28 | BI | 12 | 1GBase-T_DA+ |
| | 29 | | | 1GBase-T_DA- |
| | 30 | | | 1GBase-T_DB+ |
| | 31 | | | 1GBase-T_DB- |
| | 40 | | | 1GBase-T_DC+ |
| | 41 | | | 1GBase-T_DC- |
| | 42 | | | 1GBase-T_DD+ |
| | 43 | | | 1GBase-T_DD- |
| | ALL OTHER PINS | -- | -- | NO CONNECT |

I/O CHART

| CONNECTOR | PIN ID | DATA DIRECTION | PORT NO | SIGNAL NAME |
|---|---|---|---|---|
| J3 1GBase-T 23-151P | 45 | BI | 13 | 1GBase-T_DA+ |
| | 46 | | | 1GBase-T_DA- |
| | 47 | | | 1GBase-T_DB+ |
| | 48 | | | 1GBase-T_DB- |
| | 58 | | | 1GBase-T_DC+ |
| | 59 | | | 1GBase-T_DC- |
| | 60 | | | 1GBase-T_DD+ |
| | 61 | | | 1GBase-T_DD- |
| | 49 | BI | 14 | 1GBase-T_DA+ |
| | 50 | | | 1GBase-T_DA- |
| | 52 | | | 1GBase-T_DB+ |
| | 53 | | | 1GBase-T_DB- |
| | 62 | | | 1GBase-T_DC+ |
| | 63 | | | 1GBase-T_DC- |
| | 64 | | | 1GBase-T_DD+ |
| | 65 | | | 1GBase-T_DD- |
| | 54 | BI | 15 | 1GBase-T_DA+ |
| | 55 | | | 1GBase-T_DA- |
| | 56 | | | 1GBase-T_DB+ |
| | 57 | | | 1GBase-T_DB- |
| | 66 | | | 1GBase-T_DC+ |
| | 67 | | | 1GBase-T_DC- |
| | 68 | | | 1GBase-T_DD+ |
| | 69 | | | 1GBase-T_DD- |
| | 83 | BI | 16 | 1GBase-T_DA+ |
| | 84 | | | 1GBase-T_DA- |
| | 85 | | | 1GBase-T_DB+ |
| | 86 | | | 1GBase-T_DB- |
| | 95 | | | 1GBase-T_DC+ |
| | 96 | | | 1GBase-T_DC- |
| | 97 | | | 1GBase-T_DD+ |
| | 98 | | | 1GBase-T_DD- |
| | 87 | BI | 17 | 1GBase-T_DA+ |
| | 88 | | | 1GBase-T_DA- |
| | 89 | | | 1GBase-T_DB+ |
| | 90 | | | 1GBase-T_DB- |
| | 99 | | | 1GBase-T_DC+ |
| | 100 | | | 1GBase-T_DC- |
| | 102 | | | 1GBase-T_DD+ |
| | 103 | | | 1GBase-T_DD- |

I/O CHART

| CONNECTOR | PIN ID | DATA DIRECTION | PORT NO | SIGNAL NAME |
|---|---|---|---|---|
| J3 1GBase-T 23-151P | 91 | BI | 18 | 1GBase-T_DA+ |
| | 92 | | | 1GBase-T_DA- |
| | 93 | | | 1GBase-T_DB+ |
| | 94 | | | 1GBase-T_DB- |
| | 104 | | | 1GBase-T_DC+ |
| | 105 | | | 1GBase-T_DC- |
| | 106 | | | 1GBase-T_DD+ |
| | 107 | | | 1GBase-T_DD- |
| | 109 | BI | 19 | 1GBase-T_DA+ |
| | 110 | | | 1GBase-T_DA- |
| | 111 | | | 1GBase-T_DB+ |
| | 112 | | | 1GBase-T_DB- |
| | 121 | | | 1GBase-T_DC+ |
| | 122 | | | 1GBase-T_DC- |
| | 123 | | | 1GBase-T_DD+ |
| | 124 | | | 1GBase-T_DD- |
| | 115 | BI | 20 | 1GBase-T_DA+ |
| | 116 | | | 1GBase-T_DA- |
| | 117 | | | 1GBase-T_DB+ |
| | 118 | | | 1GBase-T_DB- |
| | 126 | | | 1GBase-T_DC+ |
| | 127 | | | 1GBase-T_DC- |
| | 128 | | | 1GBase-T_DD+ |
| | 129 | | | 1GBase-T_DD- |
| | 132 | BI | 21 | 1GBase-T_DA+ |
| | 133 | | | 1GBase-T_DA- |
| | 134 | | | 1GBase-T_DB+ |
| | 135 | | | 1GBase-T_DB- |
| | 142 | | | 1GBase-T_DC+ |
| | 143 | | | 1GBase-T_DC- |
| | 148 | | | 1GBase-T_DD+ |
| | 149 | | | 1GBase-T_DD- |
| | 136 | BI | 22 | 1GBase-T_DA+ |
| | 137 | | | 1GBase-T_DA- |
| | 138 | | | 1GBase-T_DB+ |
| | 139 | | | 1GBase-T_DB- |
| | 145 | | | 1GBase-T_DC+ |
| | 146 | | | 1GBase-T_DC- |
| | 150 | | | 1GBase-T_DD+ |
| | 151 | | | 1GBase-T_DD- |

# QUALIFICATION STANDARDS

| Parameter | Detail | Requirement | Test Method |
|---|---|---|---|
| Low Pressure (Altitude) | Storage | Sea level to 50,000 ft @ -57°C | MIL-STD-810G Method 500.5 Procedure I |
| | Operational | Sea level to 40,000 ft @ -54°C | MIL-STD-810G Method 500.5 Procedure II |
| | Explosive Decompression | 8,000 ft to 23,100 feet in 8ms | MIL-STD-810G Method 500.5 Procedure IV |
| High Temperature extremes | Storage, cyclic | +95°C | MIL-STD-810G Method 501.5 Procedure I |
| | Operational, cyclic | +55°C | MIL-STD-810G Method 501.5 Procedure II |
| | Operational, constant | +71°C for 30 Minutes | MIL-STD-810G Method 501.5 Procedure II |
| Low Temperature extremes | Storage, cyclic | -57°C | MIL-STD-810G Method 502.5 Procedure I |
| | Operational, cyclic | -40°C | MIL-STD-810G Method 502.5 Procedure II |
| | Operational, sea level, constant | -65°C for 120 Minutes | MIL-STD-810G Method 502.5 Procedure II, as per F-16 |
| Temperature | Shock, from constant | -54°C to +71°C at 125°C/Minute | MIL-STD-810G Method 503.5 Procedure I-B |
| Combined temperature-altitude-humidity | Operational, 10 cycles | -40°C to +71°C, Sea level to 60,000 ft | MIL-STD-810G Method 520.3 Procedure III |
| Humidity | Operational and Non-Operational, aggravated cycle | 95% ± 4% Humidity, +30°C to +60°C, 10 cycles | MIL-STD-810F Method 507.5 Procedure II |
| Sand and Dust | Operational and Non-Operational, blowing | < 150um dust, 150um to 850um sand | MIL-STD-810G Method 510.5 Procedure I (Dust) Procedure II (Sand) |
| Rain | Operational, Dripping | 7 gal/ft2/hr, 40 mph for 30 minutes | MIL-STD-810G Method 506.5 Procedure III |
| Fungus | Non-Operational | 7-day growth | MIL-STD-810G Method 508.6 |
| Salt Fog | Operational and Non-Operational, exposure | Four 24-hour wet/dry cycles | MIL-STD-810G Method 509.5 |
| Explosive Atmosphere | Operational | At site and 40,000 ft altitudes | MIL-STD-810G Method 511.5 Procedure I |
| Acceleration, structural | Limit Loads | Performance at ±10.0g applied individually along all 3 axes | MIL-STD-810G Method 513.6 Procedure I |

# QUALIFICATION STANDARDS CONT.

| | | | |
|---|---|---|---|
| | Ultimate Loads | Withstand without structural failure ±15.0g applied individually along all 3 axes | MIL-STD-810F Method 513.6 Procedure II |
| | Crash Landing | Remain captive, 40g fore, 20g aft and down, 10g up, 18g left and right | MIL-STD-810F Method 513.6 Procedure III |
| Shock – Functional | Operational | 20g, 11ms nominal, 3 blows each direction, each axis (18 total), terminal peak sawtooth | MIL-STD-810G Method 516.6 Procedure I |
| Shock – Crash Hazard | Non-Operational | 40g, 11ms nominal, 2 blows each direction, each axis (12 total) | MIL-STD-810G Method 516.6, Procedure V |
| Shock – Bench Handling | Non-Operational | 4" drop, 1 drop per edge per face (24 total) | MIL-STD-810G Method 516.6, Procedure VI |
| Vibration | Operational, Performance, Jet aircraft | 30 mins, 0.02 g2/Hz to 0.04 g2/Hz, 15 - 2000 Hz, Overall 4.4Grms | MIL-STD-810G Method 514.6, Procedure I, Category 12, Annex D, Fig 514.6D-I |
| | Non-Operational, Endurance, Jet aircraft | 60 mins, 0.04 g2/Hz to 0.06 g2/Hz, 15 - 2000 Hz, Overall 9.2Grms | MIL-STD-810G Method 514.6, Procedure I, Category 12, Annex D, Fig 514.6D-I |
| | Operational, Gunfire Shock | 7.5 min sweeps, 5 to 15 g, 66 to 856 Hz | MIL-STD-810G Method 519.6, Procedure III |
| | Operational, UH-60 Main Rotor speeds and blade numbers | 4 hours, 0.001g2/Hz to 0.01g2/Hz, 3 to 500 Hz | MIL-STD-810G Method 514.6, Procedure I, Category 14, Annex A & Annex D, Table 514.6D-III |
| Acoustic Noise | Operational | 30 mins, 140 dB overall, 50 to 10000 Hz | MIL-STD-810G Method 515.6 Procedure I |
| Conducted Emissions | Operational | Power Leads, 30 Hz to 10 kHz | MIL-STD-461G CE101 Par 5.4, CE101-4 Curve #2 |
| | Operational | Power Leads, 10 kHz to 10MHz | MIL-STD-461G CE102 Par 5.5, Fig CE102-1 Basic Curve |
| Conducted Susceptibility | Operational | Power leads, 30Hz to 150 kHz | MIL-STD-461G CS101 Par 5.7, Fig CS101-1 Curve #2 |
| | Operational | Bulk cable injection, 10 kHz to 200MHz | MIL-STD-461G CS114 Par 5.12, Fig CS114-1 Curve #5 |
| | Operational | Bulk cable injection, impulse excitation, 30Hz for one minute | MIL-STD-461G CS115 Par 5.13, Fig CS115-1 |

# QUALIFICATION STANDARDS CONT.

| | | | |
|---|---|---|---|
| | Operational | Damped sinusoidal transients, cables and power leads, 10kHz to 100MHz, 5 minutes | MIL-STD-461G CS116<br>Par 5.14, Fig CS116-1 and CS116-2 |
| Radiated Emissions | Operational | Magnetic field, 30Hz to 100kHz | MIL-STD-461G RE101<br>Par 5.17, Fig RE101-1 and Fig RE101-2 |
| | Operational | Electric field, 10kHz to 18GHz | MIL-STD-461G RE102<br>Par 5.18, Fig RE102-3 Fixed wing external and Fixed wing internal < 25m |
| Radiated Susceptibility | Operational | Magnetic field, 30 Hz to 100 kHz | MIL-STD-461G RS101<br>Par 5.20 Fig RS101-2 Army |
| | Operational | Electric field, 2 MHz to 18 GHz | MIL-STD-461G RS103<br>Par 5.21, Table XI, Aircraft Internal Army |
| Power Supply | Operational, normal condition | Load measurements, ask for info | MIL-STD-704F Chg1<br>MIL-HDBK-704-8 LDC-101 |
| | Operational, normal condition | Steady state limits, 22 Vdc to 29 Vdc | MIL-STD-704F Chg1<br>MIL-HDBK-704-8 LDC-102<br>Tests A, B, C |
| | Operational, normal condition | Voltage distortion spectrum | MIL-STD-704F Chg1 Fig 15<br>MIL-HDBK-704-8 LDC-103<br>Tests A thru K |
| | Operational, normal condition | Total ripple | MIL-STD-704F Chg1 Fig 15<br>MIL-HDBK-704-8 LDC-104,<br>Table LDC104-II |
| | Operational, normal condition | Normal voltage transients, 18Vdc to 29Vdc | MIL-STD-704F Chg1 Fig 13<br>MIL-HDBK-704-8 LDC-105<br>Tests AA thru RR |
| | Operational, transfer interrupt | Power interrupt, 50ms, 22Vdc to 29Vdc | MIL-STD-704F Chg1<br>MIL-HDBK-704-8 LDC-201 |
| | Operational, abnormal condition | Steady state limits, 20.0 Vdc and 31.5Vdc, 30 minutes | MIL-STD-704F Chg1<br>MIL-HDBK-704-8 LDC-301<br>Tests A and B |
| | Operational, abnormal condition | Abnormal voltage transients, abnormal condition | MIL-STD-704F Chg1 Fig 14<br>MIL-HDBK-704-8 LDC-302,<br>Tests AAA thru NNN, 7 to 50V |
| | Operational, emergency condition | Steady state limits, 18 Vdc to 29 Vdc | MIL-STD-704F Chg1<br>MIL-HDBK-704-8 LDC-401 |

# QUALIFICATION STANDARDS CONT.

| | | | |
|---|---|---|---|
| Power Supply (cont.) | Operational, starting | Starting voltage transients, 12 Vdc to 29 Vdc | MIL-STD-704F Chg1<br>MIL-HDBK-704-8 LDC-501,<br>Table LDC501-IV |
| | Operational, power failure and automatic recovery | Power failure, from 100ms to 7 seconds | MIL-STD-704F Chg1<br>MIL-HDBK-704-8 LDC-601<br>Tests A thru D |
| | Operational, power failure | Phase reversal protection/ prevention | MIL-STD-704F Chg1<br>MIL-HDBK-704-8 LDC-602 |
| Chassis Grounding | Operating | Allow for proper electrical bonding through designated external stub and dedicated pins on connectors | SAE-AS-50881H |
| Electrical Bonding | Operating | Primary Chassis ground connection for electrical bonding provided by designated external stub | MIL-STD-464C, Paragraph 5.11.3 |
| Mounting | For vibration tolerance | 4x 10-32 captive screws | |

Amphenol
MILITARY HIGH SPEED

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