

6U VPX ETHERNET SWITCH

AMPHENOL FAMILY OF RUGGEDIZED ETHERNET SWITCHES



DESCRIPTION

Amphenol Aerospace has developed a new 6U VPX Ethernet Switch -- the second in a series of ruggedized Ethernet Switches that provide an unmatched level of flexibility to meet any system requirement. The 48-port 6U VPX-managed Ethernet Switch is configurable for system connectivity, speeds, port types, and interoperation with various high-speed media converters and connectors for system interfacing. The new 6U VPX switch is a form, fit, and function replacement to the GXB-460.

The configurability to meet system requirements is achieved through superior product design. For starters, each port is capable of 10G Ethernet -- some ports can either be configured as 10G-Base-T (also supporting 100-Base-T and 1G-Base-T) or 10G-Base-KR (also supporting 1000-Base-X and SGMII). The switching throughput is up to 480 Gbps when using all 48 ports on the switch. In addition, the switch is non-blocking and low-latency for high-throughput architectures and applications. While the backplane is providing the highest densities of port count, the front-panel connections operate with various copper/fiber media converters and high-speed system connectors. Finally, the management software provides a command line interface, SNMP, and other web-based options for configuring the switch. It is capable of a full complement of virtualization, quality of service, security, tunneling, precision-time protocol, and other capabilities.

FEATURES & BENEFITS

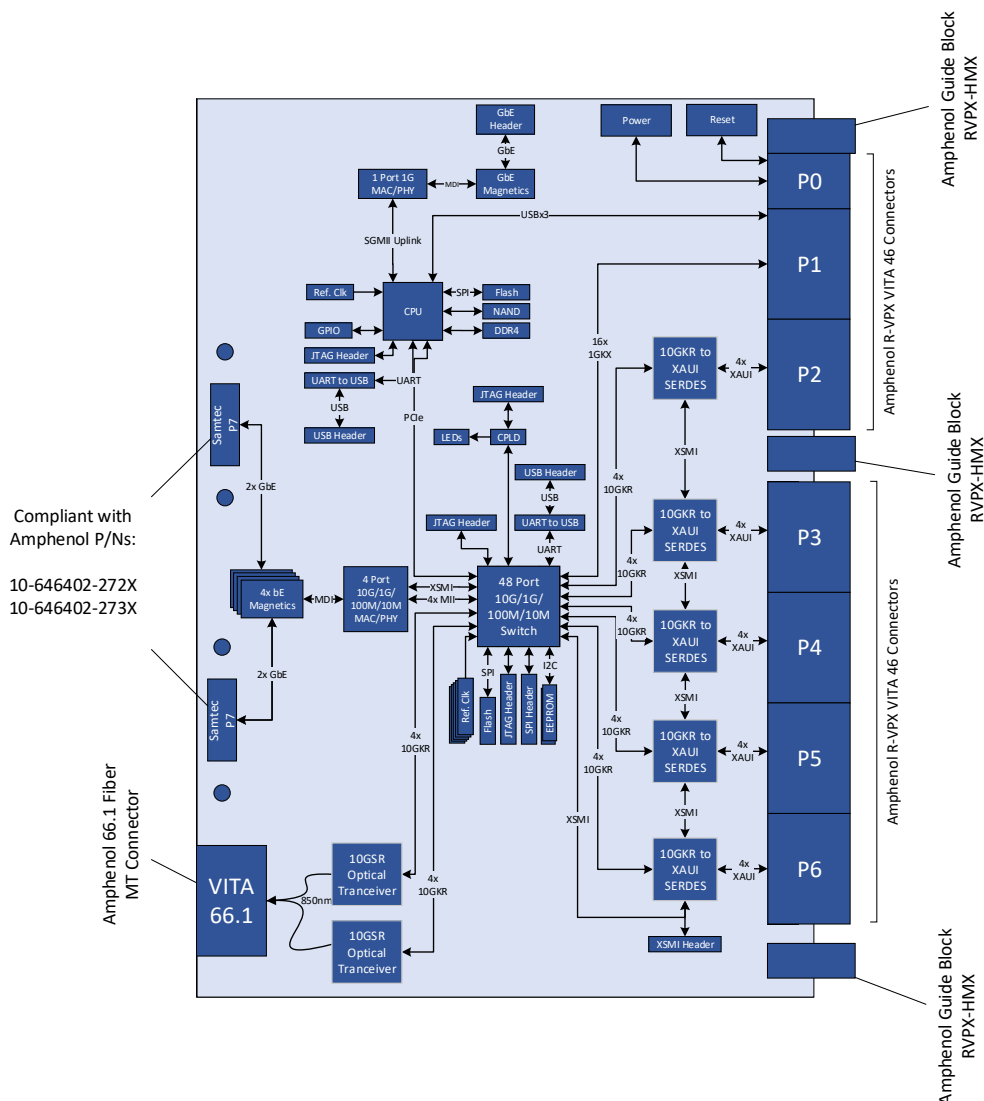
- Up to 48 channels of 10 GbE interfaces on a single card. Many of the ports are configurable between 10G-Base-T and 10G-Base-KR. While the ports are all 10G capable, they also work in 100M and 1G modes.
- Line rate forwarding up to 480 Gbps
- Configurable for multiple backplane pinouts and profiles
- Highly managed multi-layer switching services to include multicast, QoS, and security features
- Precision time protocol (IEEE 1588v1/v2) support
- VITA 46 6U VPX available in conduction cooled -40-+85C environments as well as harsh vibration profiles

ORDERING INFORMATION

Part Number	Backplane XAUI or 10G Base-KXY	Backplane 10G-Base- KR	Top Base-T	Top 10G-Base-SR
CTC-202440-VPX6	20	24	4	0
CTC-202044-VPX6	20	20	4	4
CTC-201648-VPX	20	16	4	8

For other options, please contact factory.

BLOCK DIAGRAM



Compliant with Amphenol Part Numbers:

10-646402-272X

10-646402-273X

CA-628485-C00

CA-628485-C01

ETHERNET INTERFACES - BACKPLANE

- 16 ports of 10G-Base-KR / SGMII / 1000-Base-X are static
- 4 ports of 10G-Base-T / 1G-Base-T / 100-Base-T
- 20 ports of XAUI/10G-Base-KX4 are static from top HQDP Headers
- A maximum of 44 channels of 10G-Base-KR / SGMII / 1000-Base-X can be brought to the backplane
- This part is also compliant with Amphenol LightConex technology thereby removing a half differential pair wafer and replacing with backplane blind mate compliant fiber to copper and copper to fiber conversion. By utilizing Light Conex, 8 channels of 10G-Base-KR / SGMII / 1000-Base-X will be replaced by 4 channels of 10G-Base-SR / 1G-Base-SX. If LightConex is of interest, please contact the factory.
- 8 ports can each be either 10G-Base SR off the top Vita 66.1 connector or 10G-Base-KR/SGMII 1000-Base X off VPX Connectors” should be “8 ports can each be either 10G-Base-SR off the top Vita 66.1 connector or 10G-Base-KR/SGMII off the VPX Connectors

TECHNICAL SPECIFICATIONS

LAYER 2 SWITCHING ENGINE

- 802.1Q-compliant bridging
- Large forwarding database for MAC entries, IGMPv3/MLDv2 IP multicast, FCoE entries, and router host entries
- Learning and forwarding based on virtual ports (ePorts) and virtual bridge domains
- L2 ECMP and link aggregation groups

LAYER 3 WIRE-SPEED ROUTING ENGINE

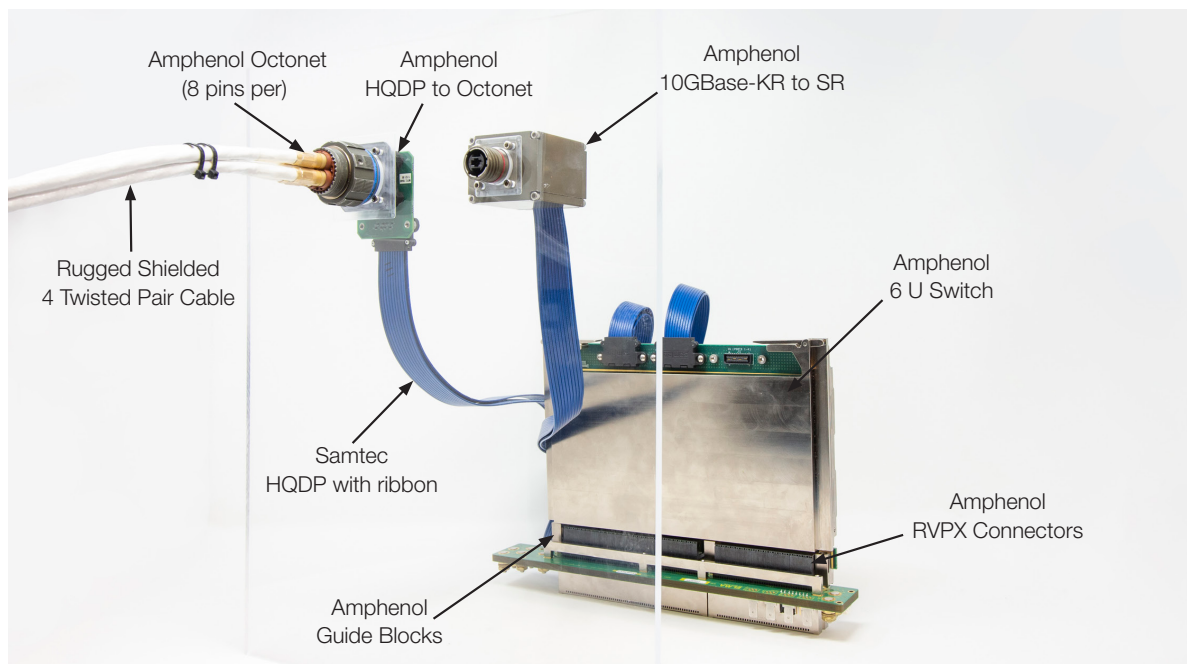
- Longest prefix match for IPV4/6 and IP Multicast
- Policy based routing
- VRF, VRF-Lite, BGP/MPLS IP VPNs
- Multicast routing supporting PIM-SM/DM and PIM-bidirectional routing protocols
- ECMP routing for load balancing traffic
- Network address translation (NAT 44,66)
- 10-646402-272X copper connectors Plus MT D38999 fiber connector for system interconnect

INTEROPERABILITY WITH AMPHENOL HIGH SPEED CONNECTORS

- Many options exist including Amphenol 10-646402-273X and 10-646402-272X which are Amphenol Octonet 10G-Base-T / 1G-Base-T connectors with Samtec HQDP accessible sites.
- Many options for system cables exist including Amphenol CA-628485-C00 and CA-628485-C01 which work with the 10-646402-273X and 10-646402-272X.

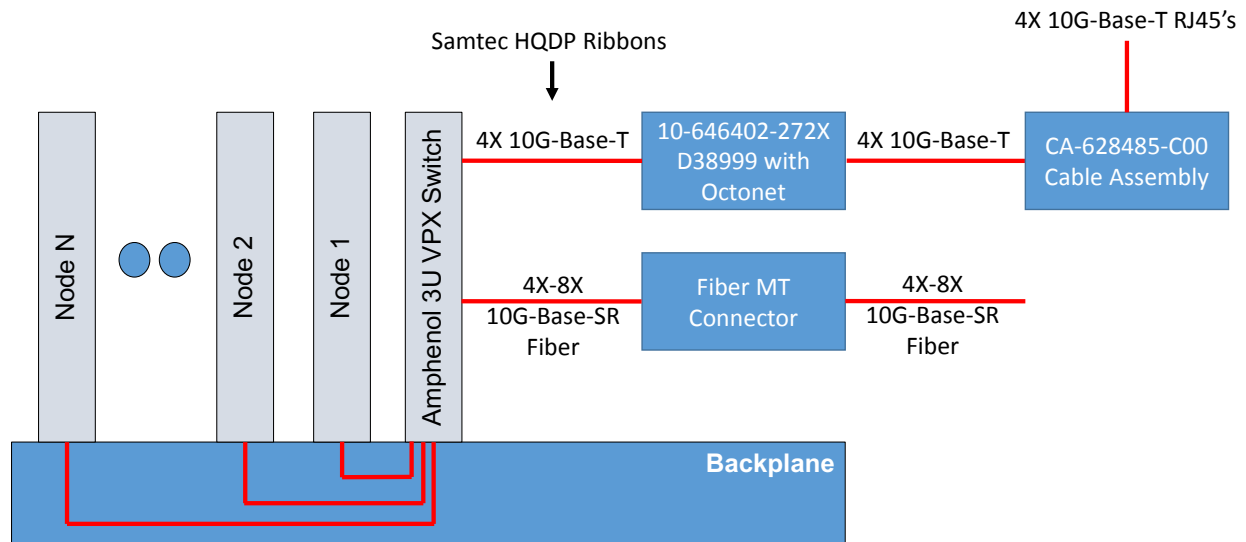
INTEROPERABILITY WITH AMPHENOL FIBER/ COPPER MEDIA CONVERTERS

- By using the board top Samtec HQDP connectors as well as Samtec HQDP configurable ribbons, the 6U VPX switch is easily connected to endless Amphenol fiber/ copper media converters. Examples are below.
- Many other options exist and can be tailored to customer system architectures.



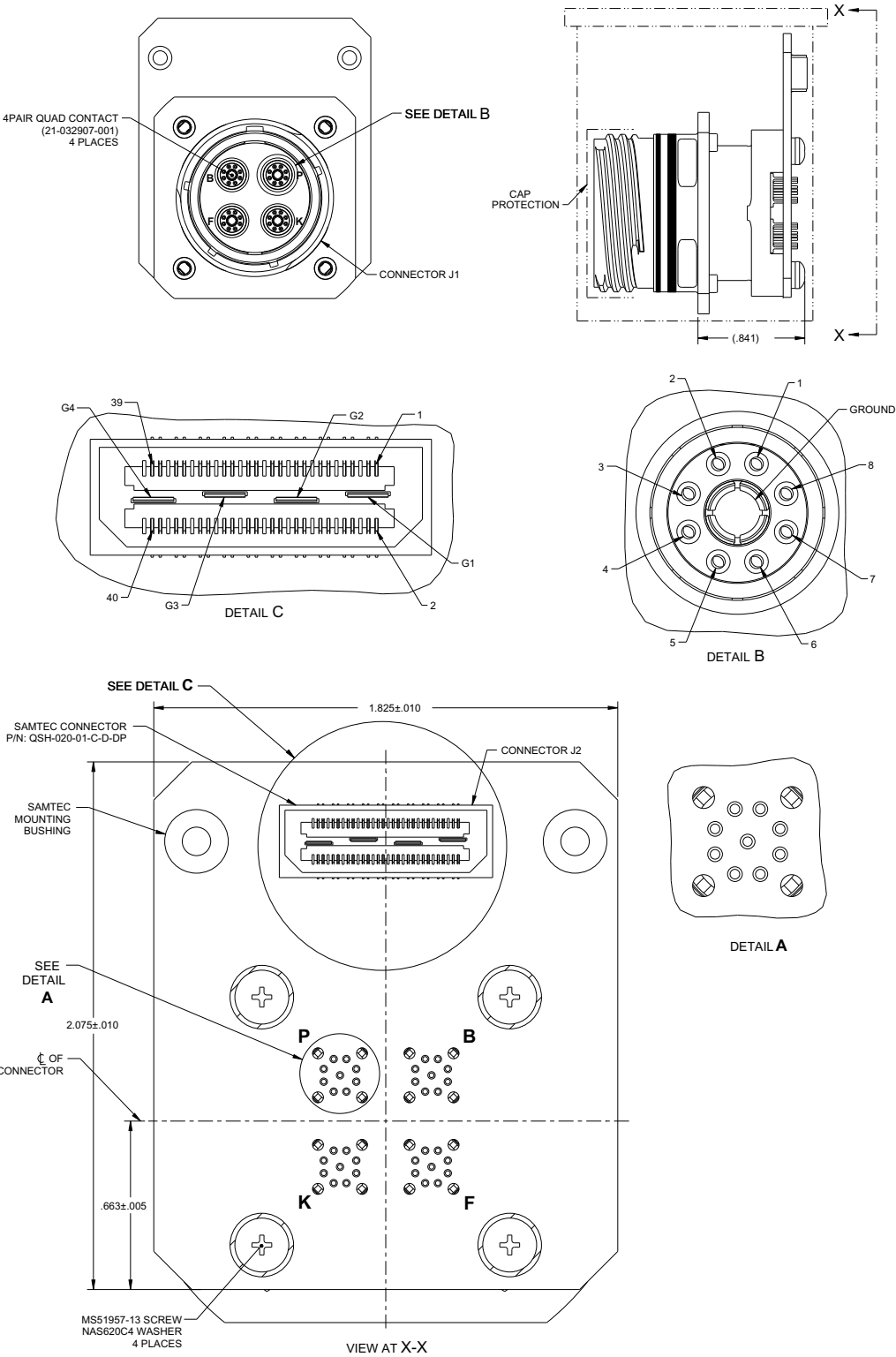
APPLICATION EXAMPLE

Amphenol VPX switch coupled with Samtec HQDP cable, Amphenol Octonet Connector, and Amphenol breakout cable for system connectivity of 8X 10G-Base-T channels. 10G-Base-T can also be 1G-Base-T and 100-Base-T.



10-646402-272X: CONNECTOR DETAILS

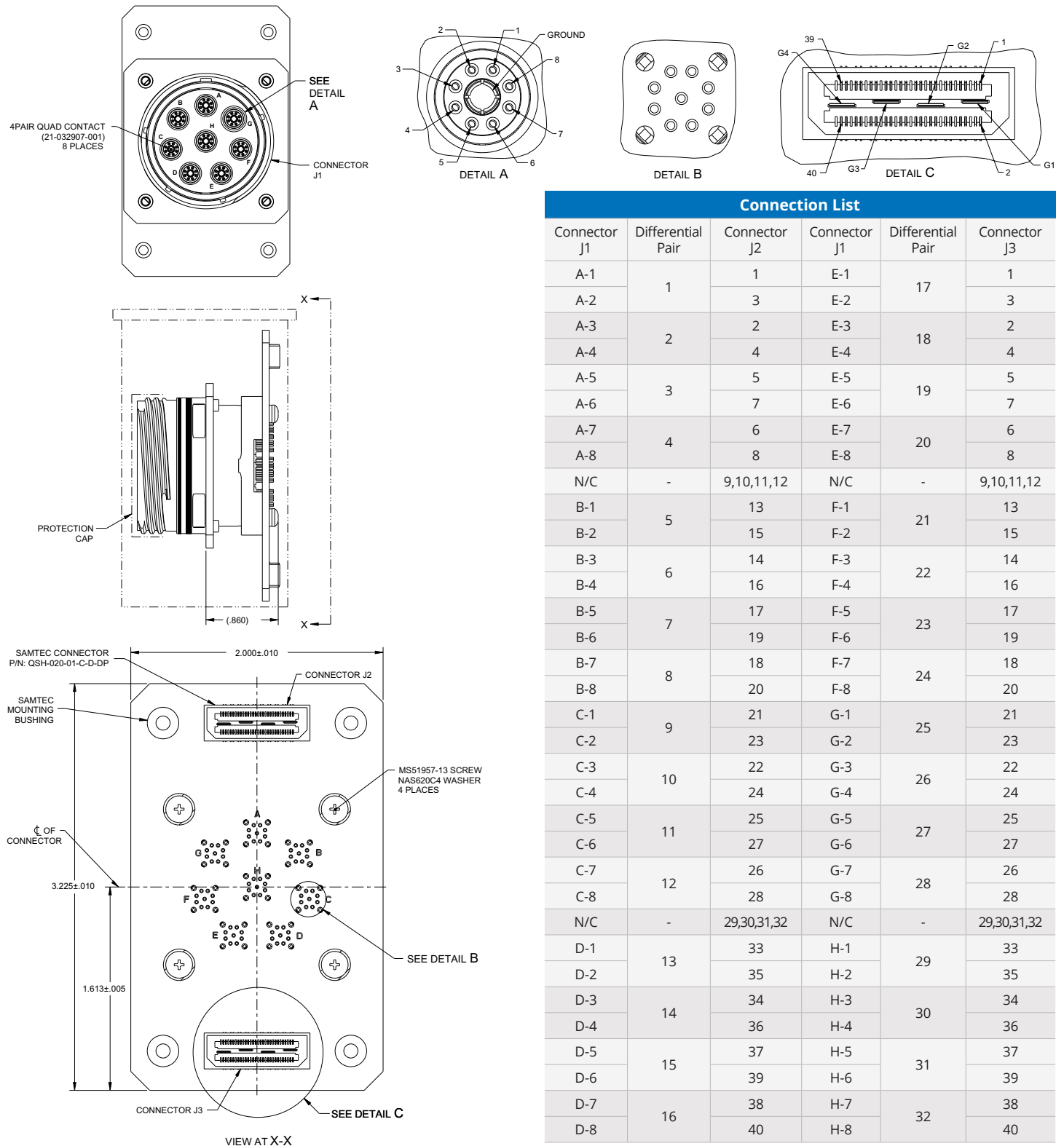
Receptacle Connector; TV40GQDZ-19-ABS; Ground Plane; 4-pair Quad Contact



Connection List		
Connector J1	Differential Pair	Connector J3
E-1	17	1
E-2		3
E-3	18	2
E-4		4
E-5	19	5
E-6		7
E-7	20	6
E-8		8
N/C	-	9,10,11,12
F-1	21	13
F-2		15
F-3	22	14
F-4		16
F-5	23	17
F-6		19
F-7	24	18
F-8		20
G-1	25	21
G-2		23
G-3	26	22
G-4		24
G-5	27	25
G-6		27
G-7	28	26
G-8		28
N/C	-	29,30,31,32
H-1	29	33
H-2		35
H-3	30	34
H-4		36
H-5	31	37
H-6		39
H-7	32	38
H-8		40

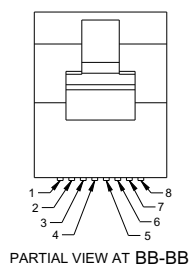
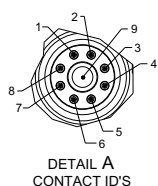
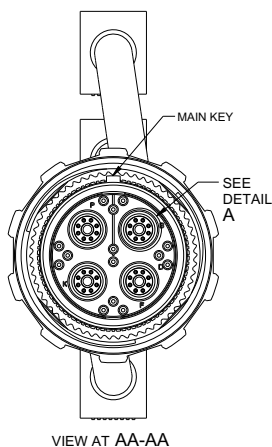
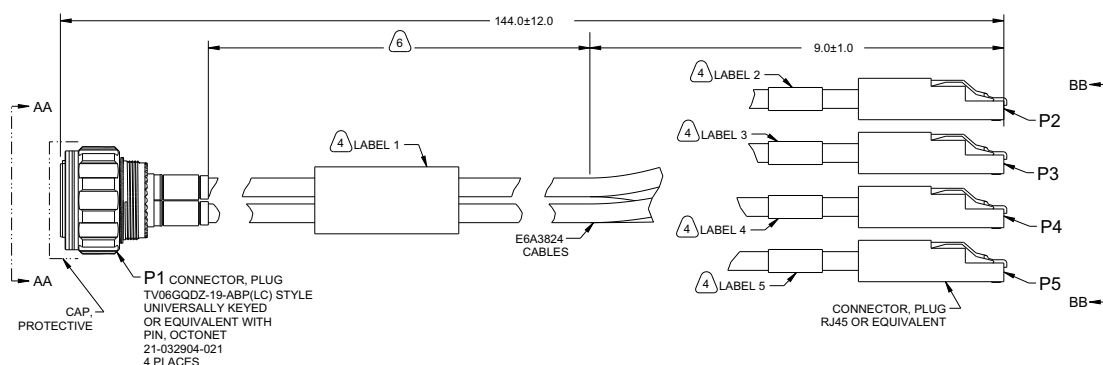
10-646402-273X: CONNECTOR DETAILS

Receptacle Connector; TV40GQDZ-25-8S; Ground Plane; 4-pair Quad Contact



CA-628485-C00: TEST CABLE DETAILS

Universally Keyed; TV06GQDZ-19-ABP to RJ45; Zinc Nickel Plated; 12 ft.

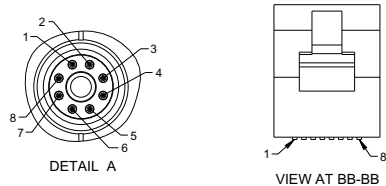
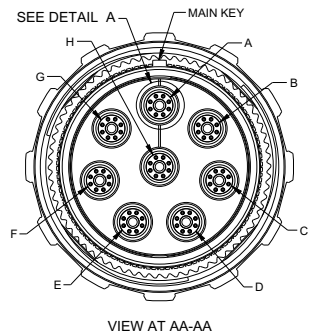
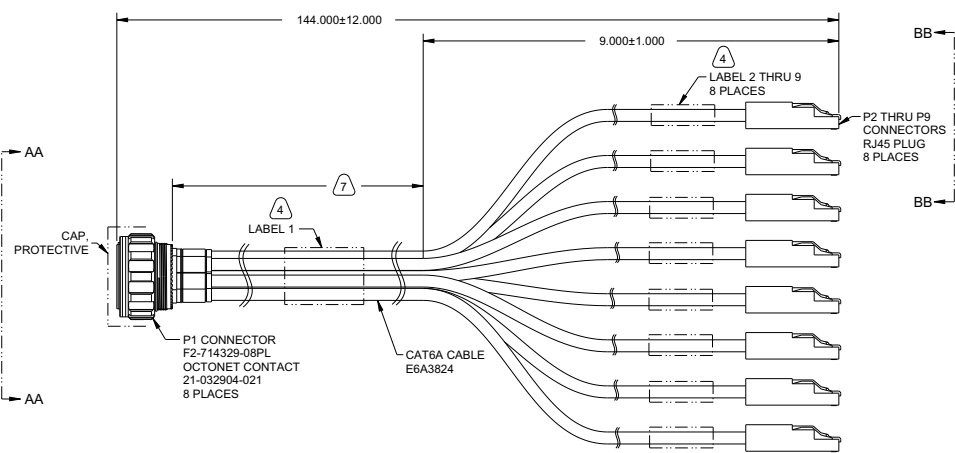


Marking Table	
Label ID	Marking
Label 1	AMPHENOL CA-6284850-C00 DATE CODE PER 9-9172-3 & LOT NO.
Label 2	B
Label 3	F
Label 4	K
Label 5	P

Wiring Table			Wiring Table (Continued)		
P1 Connector Cavity ID	P2 Connector PIN ID	P3 Connector PIN ID	P1 Connector Cavity ID	P4 Connector PIN ID	P5 Connector PIN ID
B : 1	1	-	K : 1	1	-
B : 2	2	-	K : 2	2	-
B : 3	3	-	K : 3	3	-
B : 4	6	-	K : 4	6	-
B : 5	4	-	K : 5	4	-
B : 6	5	-	K : 6	5	-
B : 7	7	-	K : 7	7	-
B : 8	8	-	K : 8	8	-
F : 1	-	1	P : 1	-	1
F : 2	-	2	P : 2	-	2
F : 3	-	3	P : 3	-	3
F : 4	-	4	P : 4	-	4
F : 5	-	5	P : 5	-	5
F : 6	-	6	P : 6	-	6
F : 7	-	7	P : 7	-	7
F : 8	-	8	P : 8	-	8
B : 9 B : Outer	Outer	-	K : 9 K : Outer	Outer	-
F : 9 F : Outer	-	Outer	P : 9 P : Outer	-	Outer

CA-628485-C01: TEST CABLE DETAILS

Cable Assembly; Octonet Test; Universal Key



Wiring Table		Wiring Table	
P1 Cavity	P () Connector	P1 Cavity	P () Connector
A-1	P2-1	E-1	P6-1
A-2	P2-2	E-2	P6-2
A-3	P2-3	E-3	P6-3
A-4	P2-4	E-4	P6-4
A-5	P2-5	E-5	P6-5
A-6	P2-6	E-6	P6-6
A-7	P2-7	E-7	P6-7
A-8	P2-8	E-8	P6-8
B-1	P3-1	F-1	P7-1
B-2	P3-2	F-2	P7-2
B-3	P3-3	F-3	P7-3
B-4	P3-4	F-4	P7-4
B-5	P3-5	F-5	P7-5
B-6	P3-6	F-6	P7-6
B-7	P3-7	F-7	P7-7
B-8	P3-8	F-8	P7-8
C-1	P4-1	G-1	P8-1
C-2	P4-2	G-2	P8-2
C-3	P4-3	G-3	P8-3
C-4	P4-4	G-4	P8-4
C-5	P4-5	G-5	P8-5
C-6	P4-6	G-6	P8-6
C-7	P4-7	G-7	P8-7
C-8	P4-8	G-8	P8-8
D-1	P5-1	H-1	P9-1
D-2	P5-2	H-2	P9-2
D-3	P5-3	H-3	P9-3
D-4	P5-4	H-4	P9-4
D-5	P5-5	H-5	P9-5
D-6	P5-6	H-6	P9-6
D-7	P5-7	H-7	P9-7
D-8	P5-8	H-8	P9-8