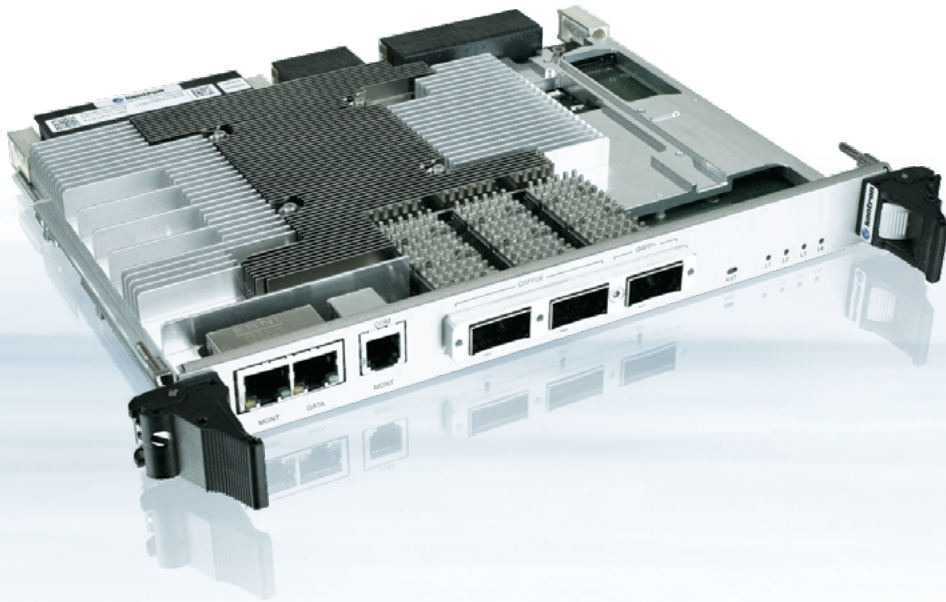


# VX6940

## 40GETH/100 GETH L2/L3 Network Switch

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### OpenVPX 10/40/100 Gigabit Ethernet Switch

- ▶ High End L2/L3 switch for harsh environments
- ▶ Line Rate sustained for all packet sizes
- ▶ Low Power 50 W architecture
- ▶ Developed in alignment with the SOSA™ Technical Standard
- ▶ Air-Cooled and Conduction-Cooled builds

POSSIBILITIES START HERE



# VX6940

## Fully Managed L2&L3 Switching and Routing

- ▶ Low power state of the art silicon technology
- ▶ Based on Broadcom® high-density matrix 72 x 10GbE port switch with 100 GbE capability
- ▶ 2 front QSFP28 for 10G/25G/40G/50G/100G optical or passive copper connections. (each allowing 4 ports 10GB or SFP+ via COTS liaison cables)
- ▶ 1 front QSFP+ multi-rate for 1G/10G
- ▶ Optimized for multicast traffic
- ▶ Robust: VITA 47 extended temperature
- ▶ Reliable: IPMI, SNMP, built-in tests, maintenance

Kontron's VX6940 is a non blocking\* fully managed layer 2&3 1/10/40/50/100 Gigabit Ethernet Switch series. It provides rich and versatile feature support by using highest integration of Ethernet switch silicon. VX6940 is designed for long term programs and harsh environments, for applications requiring outstanding bandwidth and reliable communication and compatibility with the new VPX system open architecture specifications (SOSA)

### Optimized for multicast traffic

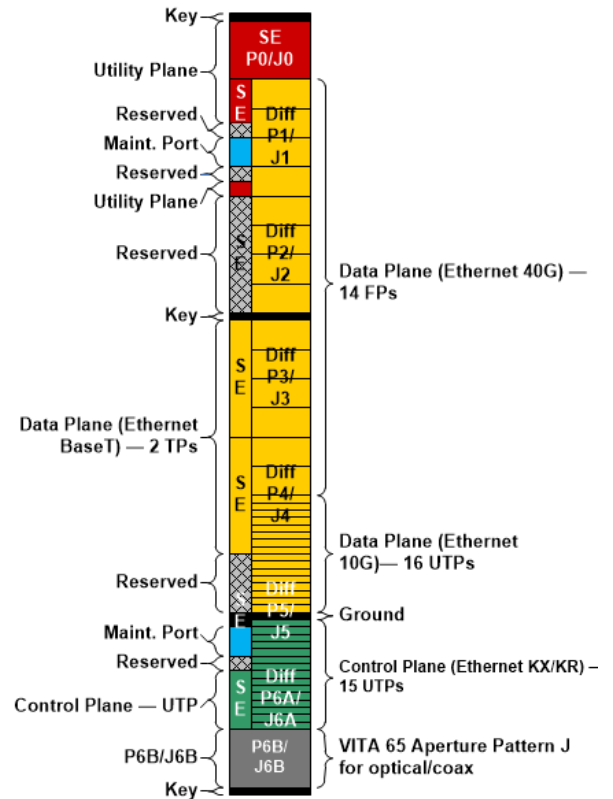
The Kontron design is populated with a powerful QorIQ® family processor. This onboard processor enables faster setup of routings, higher performance in protocol handling, especially higher throughput of Multicast traffic. The heart of the switch is the Broadcom® matrix offering up to a maximum of 720 Gbps Ethernet switching capability, with native (100G) support, line-rate switching for all packet sizes and ultra-low port-to-port latency.

### Full L2/L3 Management

The VX6940 can be monitored via SNMP. A comprehensive command line interface provides easy management and remote configuration by either serial or network interface. Supported features are: IPv4/IPv6 forwarding & multicast, routing & switching, Quality of Service, VLANs, Spanning tree (STP, RSTP, MSTP), access control, extended user management and many more.

VX6940 is compatible with multiple system management infrastructure:

- ▶ Kontron system management: in this mode, a small credit card size Chassis Management Board (CMB) from Kontron is present in the system and offers key control and monitoring operations for all system blades using i2c accesses to on board management registers. CMB is managed via CLI (serial line port) http or SNMP (RJ45 Gbit port) and connects to other boards via VPX SMB signals.
- ▶ VITA 46.11 management: in this mode, VX6940 operates under the control of a VITA46.11 Shelf manager. IPMI messages are exchanged via IPMB buses on the backplane.



// VITA65/SLT6-SWH-14F16U1U15U1J-10.8.1 slot profile

### OPEN VPX / Interoperability

VX6940 features 12\*40G data plane ports (of which 2 are 100G capable) and 12 8\*10G control planes. The build option list include a VITA 66 compliant device featuring optical ports on the P6 back-plane connector. As an alternate build option, the 2\*100G and 1\*40G front panel ports can be routed to the back as additional data plane 2 and control plane. The 14\*40G data plane ports and 12\*10G control plane ports meet the requirement of VITA65 / Open-VPX architectures.

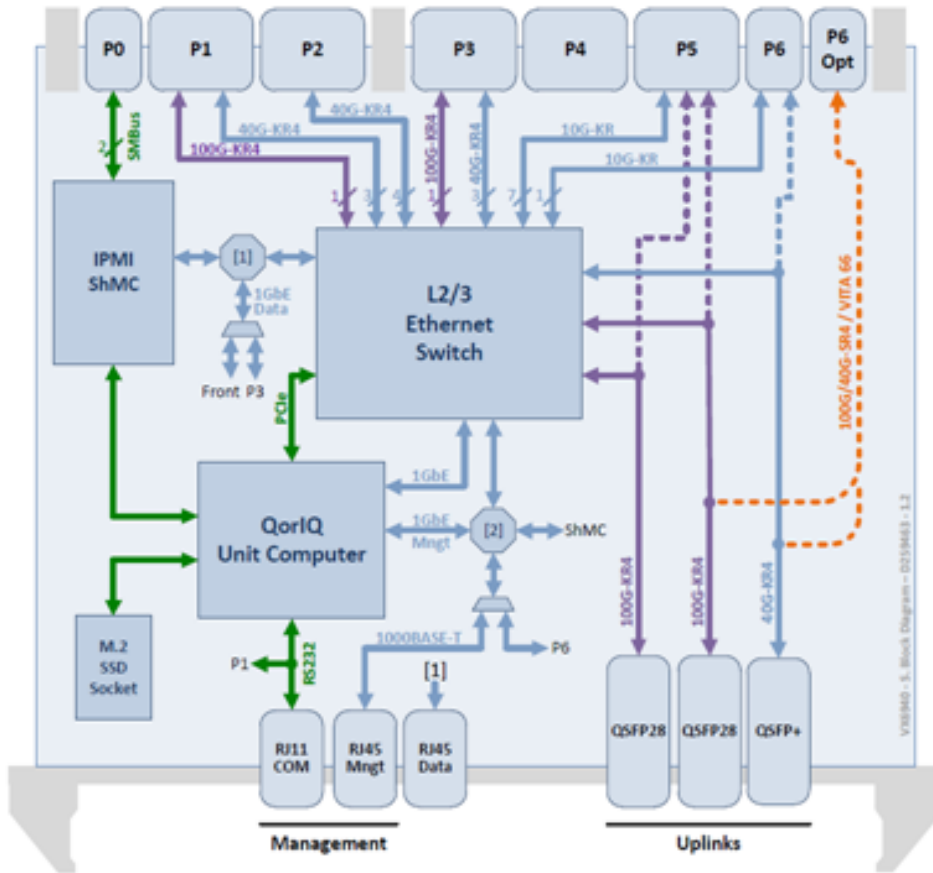
### Reliability and Robustness

The design of the VX6940 has been performed in accordance to the recognized Kontron quality process and in order to meet harsh environments. Extended temperature 'WA' and Rugged Air-cooled 'RA' builds are foreseen to be released in addition to the currently available Standard Air-cooled and Rugged Conduction-Cooled ones. Rugged air cooled is made for harsh environments and meet VITA 47 class EAC6 V2 and can operate in extended temperature environments up to of -40 °C/+75 °C. Built-In test capabilities enable effective switch maintenance.

### VX6940 optimized for HPEC

The VX6949 is particularly optimized for cost sensitive high performance embedded computers, when high bandwidth single network switching occurs within the system where network configuration is rather static during the system operation, allowing for classical SNMP, CLI configuration approach.

▶ VX6940 ARCHITECTURE



A unique design able to offer top performance on various port routing options, according to the system architecture. With FASTPAH advanced management software, multiple front panel options can be envisaged (contact Kontron for details).

**VX6940 SWITCH SOFTWARE**

The VX6940 runs Broadcom FASTPATH (Version higher than 8.6.0 .7.x) at full speed thanks to the powerful T1042 processor. This QorIQ quad-core communication processor supports four integrated 64-bit e5500 Power Architecture® processor cores with high-performance data path acceleration architecture (DPAA) and network peripheral interfaces required for networking and telecommunications.

FASTPATH CLI main interface is available on a serial line on the front panel, or through TCP/IP remote shell also on the front panel RJ45 management port. These interfaces are available on the rear VPX connectors on the Rugged Conduction-Cooled builds. Broadcom® FASTPATH® networking software extensive feature set and integration capabilities are perfectly suited for demanding networking use cases such as high performance computing.

The FASTPATH software supports a broad array of field-proven Ethernet solutions, including:

- ▶ 10G/40G/25G/50G/100G blade server switches for chassis solutions or data center type deployments.

The FASTPATH software operates on the Linux operating system and has been integrated with Broadcom's market-leading switching silicon.

The FASTPATH software supports numerous industry RFCs, standards, and protocols. In the VX6940, FASTPATH has been built with the following modules (more features can be added on program basis, contact Kontron):

- ▶ Switching
- ▶ Routing
- ▶ IPv6 Routing
- ▶ Management
- ▶ Quality of Service
- ▶ Multicast

**VX6940 TAILORED SYSTEM INTEGRATION & RTM**

Stand alone versions of the switch are available in 19 inch form factor, featuring a set of SFP+ or Mil-Std-38999 connectors qualified for industrial or airborne applications. Please contact Kontron for further information.

## ▶ ENVIRONMENTAL SPECIFICATIONS

	AIR-COOLED	RUGGED CONDUCTION COOLED
CONFORMAL COATING	Optional	Standard
AIRFLOW	10 CFM	NA
COOLING METHOD	Convection	Convection
OPERATING	0 °C to +55 °C	-40 °C to +85 °C
STORAGE	-45 °C to +85 °C	-50 °C to +100 °C
VIBRATION SINE (OPERATING)	5-2.000 Hz - 3 g	5-22 Hz: 2.5 mm displ, 22 to 2000 Hz: 5 g accel.
RANDOM	VITA 47-Class V1	VITA 47 V2
SHOCK (OPERATING)	20g/18ms Half Sine	40 g/11 ms Half Sine
ALTITUDE (OPERATING)	-1.500 to 60.000 ft	-1.500 to 80.000 ft
RELATIVE HUMIDITY	90 % without condensation	95 % without condensation

Contact Kontron for alternate environmental build option

## ▶ ORDERING INFORMATION

ARTICLE	DESCRIPTION
VX6940-SA-00A00	5HP 6U VPX 40G/100 Gigabit Ethernet Switch 56*10G Base-KX configurable ports on VPX connectors Dual 100G QSFP28, 40G QSFP+ on front Standard Air Cooled 'SA' Version
VX6940-RC-00A00	5HP 6U VPX 40G/100 Gigabit Ethernet Switch 56*10G Base-KX configurable ports on VPX connectors Rugged Conduction-Cooled 'RC' Version

## ▶ GLOBAL HEADQUARTERS

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