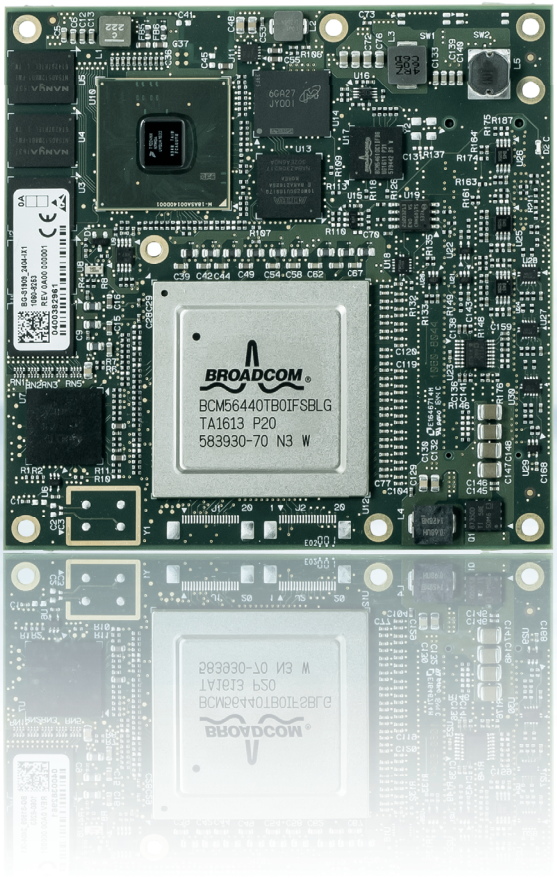
ESC1600-PTP
ESC2404-PTP



1/10 Gigabit Ethernet Switch Core Module featured with Precision Time Protocol

- Performant - 1/10 Gb Ethernet Switch Module including IEEE1588 and PoE support
- Flexible & scalable - Standardized Interfaces, Alarm & Status Ports, Single Voltage
- Rugged - Highly Shock and Vibration Resistant, Extended Temperature Range

POSSIBILITIES START HERE kontron S&T Group

ESC1600-PTP / ESC2404-PTP

Fully Managed Ethernet Switch Core Module

The Kontron ESC is a modular non blocking fully managed L2/L3 1/10Gb Ethernet Switch module with Precision Time Protocol that provides a rich and versatile feature set to integrate Ethernet switching functions on custom base board designs.
Whatever you need to integrate, the ESC-PTP is the ideal fit for all kinds of high performance Ethernet switching, either in military, avionics or industrial applications. The IEEE1588v2 features enable precise timing synchronization and packet time stamping for time sensitive applications.
E.g. AVB (Audio Video Bridging) is supported on project request. It also supports intelligent Power Over Ethernet devices by built in firmware.

Bandwidth

The ESC is designed for future oriented applications requiring outstanding bandwidth and communication safety.

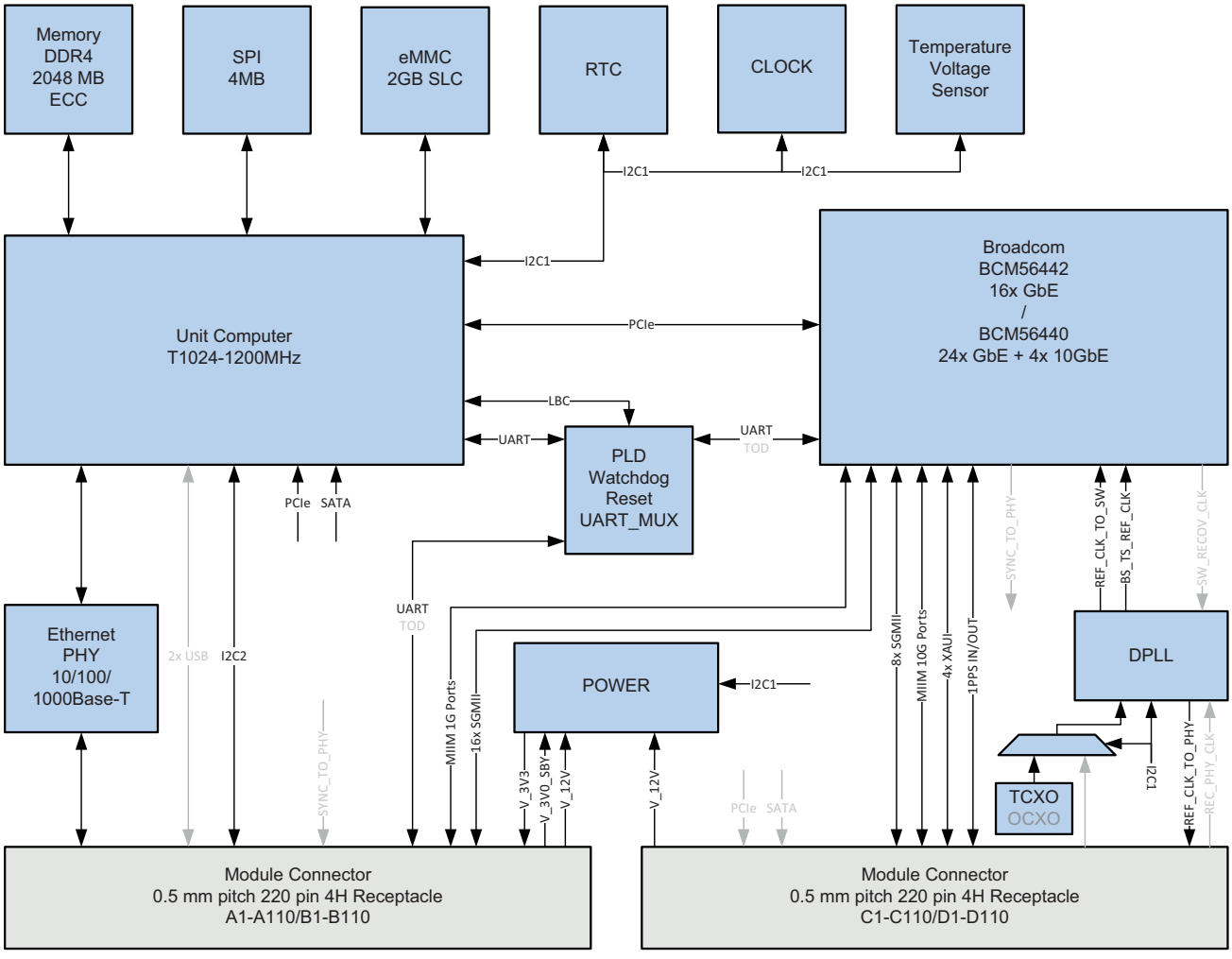
Up to 4 ports running at 10Gb/s full line speed and up to 24 ports providing 1Gb/s support gives flexibility and an intrinsic value for today's investments. On project request, support for up to 32 x 1Gb/s ports can be provided.

Reliability

The robust design including components for extended temperature range provides the basis for rugged Ethernet switching devices. A 12 V single supply voltage gives the option for a broad portfolio of power supplies.
Built-In test capabilities enable effective switch maintenance.

Management

The ESC module can be monitored via SNMP over serial line or Ethernet. Web based management and a comprehensive command line interface enable layer 2/3 management including full IPv6 support. Features like IP forwarding & Multicast, Routing & Switching, Quality of Service, VLANs etc. enable complex network routing.



TECHNICAL INFORMATION

INTERFACES		ESC2404-PTP - 4x XAUI* including MIIM management interfaces for 10GbE physical layers - 24x SGMII including MIIM management interfaces for 1GbE phys ESC1600-PTP - 16x SGMII including MIIM management interfaces for 1GbE physical layers Both versions: - 1x 10/100/1000Base-T for Management - 1x RS232 for Management - Reset input - Status LED signals - Alarm output - 12 V DC supply input *2 of 4 XAUI ports could be configured in 4x SGMII each, which give you the flexibility of 2 1/10GbE plus additional 8 1GbE ports. (optional) The ESC1600-PTP and ESC2404-PTP are backward compatible with ESC1600 and ESC2404
CONTROLLER & SWITCH		Broadcom 1/10G Ethernet Switch 56440 family NXP (Freescale) Dual Core PowerPC T1024 1200 MHz with 2 GByte DDR4 1600 MHz
MANAGEMENT		Management via SNMP, Command Line (Telnet, SSH) and Web - In-band - Out of band via Ethernet serviceport or RS232 Power On Self Test DHCP server and relay, boot media support Field reliable firmware upgrade Event and Error Logging Facility Environmental sensor monitoring
ETHERNET/ BRIDGING PROTOCOLS		Ethernet/Bridging protocols include - Flow control (802.3x) - Link aggregation (802.3ad) - IGMP snooping & proxy support - VLANs (802.1Q) - QoS (IEEE 802.1p) - Spanning tree (802.1D, 802.1w) - GARP/GVRP, GMRP - IPv4/IPv6 Routing - ARP, ICMP - OSPF - RIP, DVMRP, VRRP - Multicast Routing - IGMP, PIM-SM, PIM-DM
ENHANCED FEATURES		Enhanced Features are - Double VLAN/VMAN tagging - Egress ACLs, IP ACL support - Diffserv - Auto VoIP User timer/watchdog function - 10BASE-T/100BASE-TX/1000BASE-T cable test - Unidirectional link detection on fiber protocols - Link dependency groups - PoE (on compatible carrier boards)
PRECISION TIME PROTOCOL		IEEE 1588v2 features are - 1-step clocking - Single PTP domain - Boundary Clock configuration with up to 32 ports - End-2-End delay measurement mechanism - L2 Multicast Ethernet PTP message encapsulation - Phase Profile - ITU-T G.8262 ECC Option 1 free running and hold-up accuracy

TECHNICAL INFORMATION

CUSTOMER SPECIFIC OPTIONS ON PROJECT REQUEST		Configuration options for custom carrier designs: - Port options ranging from 16 to 32 GbE and up to four 10 GbE ports - GbE port operation in (Phy-less) 1000Base-KX mode - 10 GbE port operation in XAUI mode Carrier Extensions: - PCIe Gen2 interface to carrier, provisioning for PCIe IO cards (miniPCIe; WLAN, GSM). - SATA 3.0 interface to carrier, provisioning for external Firmware storage. - USB 2.0 - 1PPS/ToD Input/Output Synchronisation - ITU-T G.8262 EEC-Option 2 incl. SyncE - IEEE 802.1AS PTP (AVB) - ITU-T G.8273.2: Telecom Boundary Clock (T-BC) class B - IEEE1588 hybrid mode - IEEE1588 Ordinary Clock Firmware - NETCONF/RESTCONF - RESTful Web API - OpenAPI
GENERAL	POWER CONSUMPTION	25 W typ. at 12 VDC (ESC2404-PTP) 34 W max at 12 VDC
	VOLTAGE RANGE	6 VDC to 20 VDC
	DIMENSIONS	95 x 95 mm
	WEIGHT	Approx. 200 gr
	MTBF (HOURS)	222773,99 h (acc. MIL-HDBK-217, 30 °C, GB)
	TEMPERATURE RANGE	-40 °C to +85 °C (max. surface temperature)
	HUMIDITY	93 % RH at 40 °C, non-condensing (acc. to IEC 60068-2-78)

ORDERING INFORMATION

ARTICLE	DESCRIPTION
ESC1600-PTP-FINS	Fully managed L2/L3 Ethernet switch module, 16x 1G (SGMII), 1x ETH management port, serial line, USB -40 °C to +85 °C operating temperature, with fin heat sink
ESC2404-PTP-FINS	Fully managed L2/L3 Ethernet switch module, 4x 10G (XAUI), 24x 1G (SGMII), 1x ETH management port, serial line, -40 °C to +85 °C operating temperature, with fin heat sink
OPTIONS	Test Base board with 4x10G SFP+, 24x 1G RJ45, serial and Ethernet management port, Alarm contacts, status LEDs, DIP switch for configuration management Cooling Solutions Heatplate 95 x 95 x11 mm Standard Extruded Fin Heat Sink 95x 95 x 26.1 mm

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