

Product Preview

## TTEthernet Switch 24P/i

*The Industrial 18+6G Port TTEthernet Switch with IEC61508 certification artefacts*



This member of the TTEthernet production switch family has 6 triple-speed 10/100/1000 Mbit/s ports and 18 10/100 Mbit/s ports operating in the full-duplex mode. The Switch is developed in order to fulfill the requirements of the IEC 61508 standard. TTEthernet is a fault-tolerant real-time communication protocol for safety-related systems. It integrates data flows of time-triggered, rate-constrained, and standard Ethernet in one physical infrastructure. The TTEthernet switches provide the means for robust partitioning between these three traffic classes.

### Switching Function

The TTEthernet Switch 24P/i is a high-speed deterministic Ethernet switch enabling critical network-centric applications in harsh environments. The high-performance switch enables packet processing on all 24 ports with maximum line speeds. The switch supports time-triggered (according to SAE AS 6802), rate-constrained (ARINC 664 p7), and COTS Ethernet (IEEE 802.3) traffic flows. This switch offers built-in mechanisms for traffic policing for fault isolation. The TTEthernet Switch 24P/i is suitable for implementing safety-critical applications according to the requirements of the IEC 61508 standard.

### KEY FEATURES/BENEFITS

- 18 x 10/100 Mbit/s full-duplex Ethernet, 6 x 10/100/1000 Mbit/s full-duplex Ethernet
- 15.6 Gbit/s cross-sectional bandwidth
- 1.5 Mbit on-chip memory
- 256 Mbit flash memory for storing the switch configuration
- Configuration data programmable via the network using <sup>TTE</sup>Load
- Diagnosis via management interface

### Secure Network Management

The TTEthernet Switch 24P/i supports secure network management. The built-in management module allows data loading and querying of health and status information. Using <sup>TTE</sup>Load, the configuration data of the switch can be updated via the network. The data is then stored in the non-volatile memory of the switch, and becomes effective at the next power-up or reset.

### Physical Layer Interface

The switch ports use RJ45 connectors and 10/100/1000 Base-Tx physical layer.

### TTEthernet Implementation

- 8 subschedules
- 8 clock sync masters
- 4096 virtual links
- 256 shared BAGs
- Store-and-forward switch architecture
- Manageable via network (configuration data download, diagnosis data queries, scheduled diagnosis status) through standard Ethernet frames

### Software Tool Support Options

- <sup>TTE</sup>Load: GUI and batch programmable tool for downloading switch configurations into the flash non-volatile configuration memory
- <sup>TTE</sup>Build: Allows creation of a binary device configuration from an XML-based device configuration file
- <sup>TTE</sup>Build Network Configuration Plug-in: Generates device configuration XMLs from a system-wide network configuration XML database
- <sup>TTE</sup>Verify: A qualified software tool for production programs for automated device configuration verification

### Compliance

- IEEE 802.3-2005 (switching, flow control)
- SAE AS 6802
- ARINC 664 p7 (layer 2 switching)
- IEEE 1588 (transparent clock support)

### General Product Features

- 18 x 10/100 Mbit/s full-duplex Ethernet, 6 x 10/100/1000 Mbit/s full-duplex Ethernet
- 15.6 Gbit/s cross-sectional bandwidth
- 1.5 Mbit on-chip memory
- 256 Mbit flash memory for storing the switch configuration
- Configuration data programmable via the network with <sup>TTE</sup>Load
- Configuration generation by <sup>TTE</sup>Tools and enhanced diagnosis via management interface
- TTEthernet implementation supports up to two channel setups
- Compliant with TTEthernet 1.0 specification
- Extended temperature range

### Form Factor

- 19" rack housing 2 height unit

### Dimensions

- Size: 44 x 483 x 356 (in mm)
- Weight: 3 kg

### Power Supply

- Thermal control 260 W AC power supply with PFC
- AC voltage: 100 to 240 V, 60 to 50 Hz, 2 A max.

### Environmental Operating Ranges

- Operational temperature: -40 °C to +70 °C
- Storage temperature: -55 °C to +125 °C
- Operating/non-operating humidity: humidity level from 25 to 90 %

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