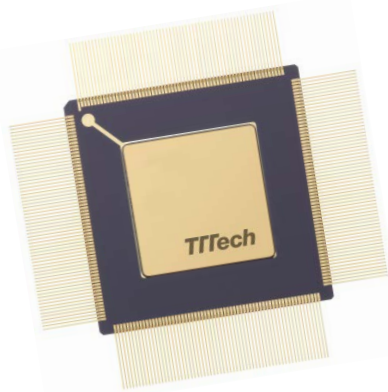




# TT6802-1-SW

The <sup>TTE</sup>Switch Controller Space



Product Preview – Available in 2017

## Key Benefits

- ✓ Three supported traffic classes
  - Ethernet (IEEE802.3)
  - Rate-constrained (ARINC 664 p7)
  - Time-triggered traffic (SAE AS6802)
- ✓ 6x10/100/1000Mbit/s + 12x10/100Mbit/s Ethernet channels
- ✓ 256 pin CQFP package
- ✓ 256 kByte of frame memory
- ✓ Temperature range: -55 °C to +125 °C
- ✓ Rad-tolerant

The <sup>TTE</sup>Switch Controller Space is an integrated device supporting standard Ethernet, rate-constrained according to ARINC 664 part 7 and time-triggered SAE AS6802 Time-Triggered Ethernet Standard compliant communication. The chip is based on radiation hardened by design process and packaged in a hermetic housing providing the necessary radiation tolerance to be used in harsh space environment.

## Non-Synchronized and Synchronized Functions over Ethernet

TTEthernet permits the integration of synchronized and non-synchronized functions in Ethernet-based distributed systems. While hard real-time functions enjoy reserved bandwidth, full determinism and delivery jitter below 1µs, ARINC 664 part 7 and standard IEEE 802.3 Ethernet traffic operates without impact on time-critical and synchronized functions.

## Supports Single to Triple-Channel Networks

TTEthernet supports single to triple-channel multi hop networks with system synchronization, redundancy management, fault-tolerance, fault

isolation and recovery capability. Distributed functions can utilize scalable QoS for different data streams and share a common Ethernet network without unintended interactions for critical traffic.

## <sup>TTE</sup>Switch Controller Benefits

The <sup>TTE</sup>Switch Controller provides an integrated management CPU allowing the chip to provide data loading and diagnostic for a full managed TTEthernet switch. The <sup>TTE</sup>Switch Controller provides support for fault-tolerant, high-speed data communication in a single device. The switch controller is qualified for the full temperature and radiation range required for space applications and is qualifiable according to international space standards. It offers superior reliability and supports data transfer rates of up to 1000Mbps.

## Application Fields

- Space Application
- Military Applications



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## Quality of Service and Partitioning

The TTE Switch Controller supports up to 4096 virtual links which can be fully separated via the 8 memory partitions allowing using standard Ethernet traffic and time-triggered or rate-constrained traffic on the same network without interference.

## General Product Features

- Suitable for highly dependable, distributed real-time systems with guaranteed response time
- Support of the three TTEthernet traffic classes:
  - Standard Ethernet traffic (IEEE 802.3)
  - Rate-constrained traffic (according to ARINC664 part 7)
  - Time-triggered traffic (according to SAE AS6802)
- 4096 Virtual Links (VLs)
- Flexible configurable periods (us granularity)
- 8 traffic partitions
- Switch management and diagnosis
- 256kByte internal frame memory triggered frame transport

## Network Connectivity

- 6x 10/100/1000 Mbps via RGMII + 12x 10/100 Mbps via RMII interface

## Power Supply and Consumption

- Power supply 1.2V core and 2.5, 3.3V I/O
- Maximum power consumption of 3W

## Environmentals

- Temperature range -55°C to +125°C
- Radiation tolerance 100 krad (Si)
- SEU free cells up to 60 MeV/cm2/mg
- Latch-up immunity up to 60 MeV/cm2/mg

## Package & Quality Level

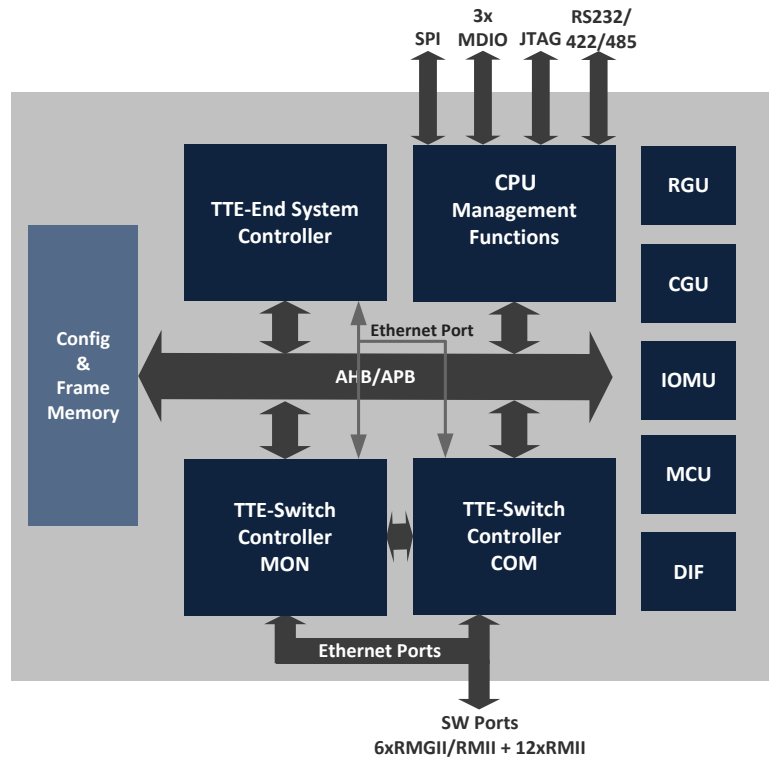
- CQFP with 256 pins
- QML V

## Related Products

- TTE-Tools is a PC based tool chain that supports the generation of the configuration files for the IP
- The TTE Switch Controller is compliant to all other TTE Products of TTTech
- TTE End System Controller Space

## Order Numbers

- On request



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