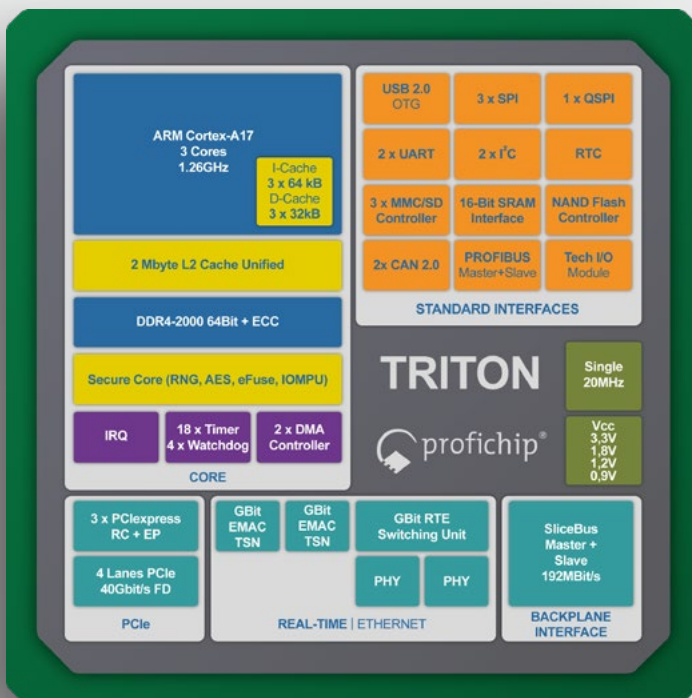


profichip[®] TRITON

Gigabit Ethernet Communication Controller, PLC, Backplane Master and Motion Controller in One Chip



Ether**CAT**[®]

PROFI[®]
NET

Ether**Net/IP**[™]

PROFI[®]
BUS

MECHATROLINK

Modbus

CANopen

Main Features

- Future ready with TSN support, DDR4, PCI-Express, and Security Core
- No heatsink needed thanks to low power consumption
- Low Total Cost of Ownership due to integrated functionalities (Backplane Master, PHYs, etc.)
- 3 cores with high single thread performance best suited for motion and PLC tasks



Triton combines industrial gigabit Ethernet communication with a fast and reliable backplane system as well as a powerful motion/automation multicore processor in one product with low power dissipation.

Discover New Ways

- For high-speed number crunching
- For industrial real-time communication
- For reliable and synchronous backplane communication
- Everything secure and with low power

Processor System

- 3 x ARM Cortex A17 cores with up to 1.26 GHz
- 64-bit floating point unit per core
- 64/32 kB instruction/data cache
- 2 Mb of L2 cache (with ECC)

Memory Interfaces

- 64-bit DDR4-2000 RAM (16 GB/s bandwidth, with ECC support)
- 3 x MMC/SD card controller
- QuadSPI flash controller
- 8/16-bit SRAM controller (Master/Slave)
- 8-bit NAND flash controller

Serial Interfaces

- PCIexpress up to Gen3, max. 4 lanes, max. 3 controllers, max. 40 Gbit/s in Full Duplex, RC/EP virtual channels, time synchronization
- USB 2.0 host/device controller (480 Mbit/s)
- 2 x UART (12 Mbit/s)
- 3 x SPI Master/Slave controller, max. 78 Mbit/s
- 2 x I²C

Security

- Secure boot (signed and encrypted)
- integrated eFuse for customer key storage
- AES 256 GCM hardware acceleration
- True random number generator
- IOMPU (memory protection for I/O devices)

Backplane Bus Solution: SliceBus[®]

- Master for I/O Modules
- Up to 64 nodes
- High-speed 192 Mbit/s
- Alarm and error handling
- Time Synchronization

Advanced Real-Time Gigabit Ethernet Solution

- 4 x Gbit Ethernet port
- 2 x integrated 100BaseT Ethernet PHYs
- All 4 Ethernet ports can be combined as one switch
- in different configurations (software-defined networking)
- Software-defined protocols
 - » PROFINET[®] IO-Device RT/IRT
 - » EtherCAT Slave/Master
 - » Mechatrolink-III/IV Master/Slave
 - » EtherNet/IP Adapter
 - » TSN ready
 - » More on demand

Classic Fieldbus Options

- 2 x PROFIBUS[®] Master (12 Mbit/s)
- PROFIBUS Slave (12 Mbit/s)
- 2 x CAN controller (1 Mbit/s)

Fieldbus Options and Stacks

- Licensed with TRITON
 - » PROFIBUS Slave DP-V0
 - » PROFINET IO Device RT/IRT library
 - » EtherCAT Slave
- Purchasing stacks (source codes)
 - » PROFIBUS Slave DP-V1/V2
 - » PROFIBUS Master
 - » PROFINET IO Device RT/IRT
 - » PROFINET IO Controller RT
 - » EtherNet/IP Adapter
 - » Mechatrolink-III/IV Master/Slave
 - » CANopen
 - » Others on demand

PLC

- CODESYS[®] Runtime *
- SliceBus integrated
- PROFINET Controller
- EtherCAT Master
- EtherNet/IP Adapter
- ModbusTCP Master

Other Features

- 2 x DMA controllers
- IRQ controller
- 4 x Watchdog
- 32-bit timers (18x)
- Technology Function Module (TechIO)
 - » Max. 32 In / 22 Out (shared pins)
 - » Configurable digital input filter
 - » 4 counter channels
 - » Ready for incremental up to 4 encoders
 - » 4 PWM channels
 - » 2 SSI encoder interfaces

Package

- FCBGA784:
23 x 23 mm², 0.8 mm pitch

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