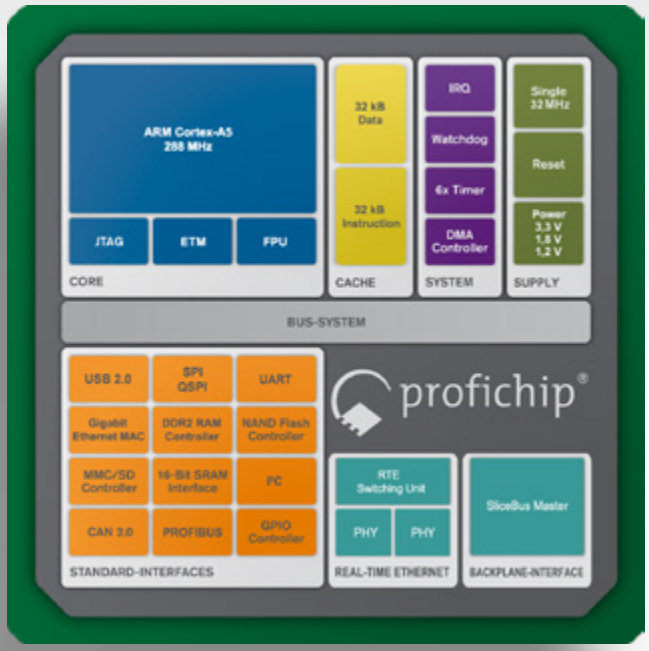
YASKAWA

profichip® ANTAIOS

Real-time Ethernet Communication Controller



EtherCAT®

PROFINET®

EtherNet/IP™

PROFIBUS®

MECHATROLINK

Modbus

CANopen

www.profichip.com

Discover new ways ...

- Multiple fieldbus support
- 288 MHz ARM Cortex-A5 processor
- Ethernet interface with real-time switch
- Gigabit Ethernet MAC
- SliceBus® master

... of industrial communication.

One small chip combines fast real-time Ethernet technology with traditional fieldbuses and a backplane master.

ARM Cortex-A5 Core

- 288 MHz clock speed
- 64-bit floating-point unit
- Little-endian byte ordering
- 32/32 kbyte instruction/data cache
- Debug interfaces: JTAG, ETM, ETB, ITM

Advanced Real-time Ethernet Switch

- 3x port switches (2 external Ethernet + 1 internal)
- Integrated PHYs
- Programmable switch
- Microcode and software stack-based implementation for
  - » PROFINET® I/O Device RT/IRT
  - » EtherCAT® Slave
  - » Mechatrolink-III/IV Master/Slave
  - » EtherNet/IP Adapter
  - » Other Ethernet protocols on demand

Classic Fieldbus Options

- 2 x PROFIBUS® Masters (12 Mbit/s)
  - » Protocols: DP-V0, DP-V1/V2
- PROFIBUS Slave (12 Mbit/s)
  - » Protocols: DP-V0, DP-V1/V2
- 2 x CAN Controller (1 Mbit/s)
  - » Specification: CAN 2.0B

Fieldbus Options and Stacks

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

Standard Interfaces

- USB 2.0 Device Controller (480 Mbit/s)
- 2 x UART (12 Mbit/s)
- Gigabit Ethernet MAC (supports 10/100/1000 Mbit/s modes)
- SPI channel
  - » Master Mode with 80 Mbit/s
  - » Slave Mode with 24 Mbit/s
- QSPI channel Master with 384 Mbit/s
- SRAM interface
  - » Master configurable with 8/16-bits
  - » Slave with 16-bits
- 2 x I²C

SliceBus Master Controller

- Backplane or local bus communication
- Local single Master for I/O Modules
- Up to 64 nodes
- High speed of 48 Mbit/s
- Alarm and error handling

Memory Interfaces

- MMC/SD card Controller
- 8-bit NAND flash Controller
- DDR2 RAM 16-bit Controller (max. 800 MByte/s)

Other Features

- DMA Controller (8 channels)
- IRQ Controller (8 priority levels)
- Watchdog
- Six independent 32-bit timers with prescaler
- Technology function module (TechIO)
  - » Max. 26 In / 20 Out (shared pins)
  - » Configurable digital input filter
  - » 4 x counter channels
  - » Valuation for incremental encoders
  - » 4 x PWM channels
  - » 2 x SSI encoder interfaces

Package

- TFBGA380: 15 x 15 mm², 0.65 mm pitch
- TFBGA385: 19 x 19 mm², 0.80 mm pitch

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