

# ERTEC 400

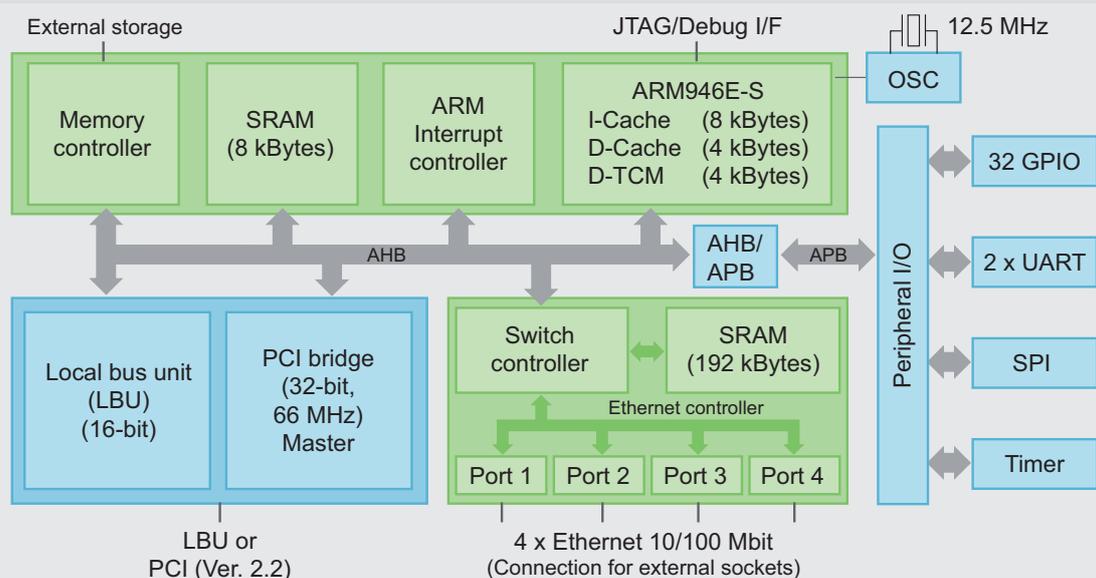
## Ethernet Controller

The industrial Ethernet device ERTEC 400 (Enhanced Real-time Ethernet Controller) is a high-performance integrated Ethernet Controller with a 4-port real-time switch and 32-bit microprocessor developed for industrial use.

The ERTEC 400 device combines isochronous real-time (IRT) and IT data without compromise.

### Features

- High-performance ARM946E-S RISC core
- 150 MHz max. clock frequency
- 4-kByte D-Cache, 8-kByte I-Cache
- 4-kByte D-TCM
- Integrated V 2.2 PCI interface
- Integrated PLL
- Debugging capability via embedded ICE (JTAG)
- 8-kByte SRAM on chip
- Boot ROM
- 4-port switch
  - 10/100-Mbit Ethernet support
  - 192-kByte SRAM for telegram buffering
- Non-real-time and real-time data transfer support
- Low-cycle-time, low-jitter isochronous real-time data transfer
- Asynchronous (32-bit) interface
- SDRAM interface for 256 MByte external memory
- Local bus master interface
- 2 independent serial ports
- SPI-Master interface
- 32 I/Os
- 304-pin BGA package
- Power supply: 3.3 V and 1.5 V
- Temperature range: -40 °C to +85 °C



## Applications

The integration of the ERTEC 400 opens up new perspectives for factory automation with PROFINET. Target systems for the ERTEC 400 are automation devices for PROFINET I/O as well as PC-based systems and network components.

Thanks to innovative switching technology, the special requirements of automation with regard to line topology, hard real-time and unlimited IT openness have been satisfied within a single technology for the first time.

## Benefits

- All functions on chip for high-performance system solutions in the automation industry (system on chip)
- Highest degree of intelligence in the smallest space
- Hardware-supported pre-processing of real-time communications increases performance
- Support for redundant transmission features
- PCI interface for optimal integration of PC-based environments
- IRT support facilitates extremely fast data transmission
- Openness through compatibility to IEEE 802
- Up to 150 axes controlled in isochronous mode leaving 50% of the bandwidth solely for IT communication
- Broad field of applications thanks to comprehensive interfaces
- Industry-standard environmental characteristics
- Supports IT communication and parallel and unrestricted real-time data communication on a single line

## Ordering Information

### Devices

Part number	Package
μPD800232F1-014-HN2-A	P-FBGA, 304-pin, 19 x 19 mm <sup>2</sup> , 0.8 mm ball pitch

Remark: Products with -A at the end of the part number are lead-free products.

### Documentation

Doc Reference	Type
A17813EE2V0DS00	ERTEC 400 Datasheet
A17812EE1V1UM00	ERTEC 400 User's Manual

For further information on Renesas Ethernet Controllers visit our European website at [www.renesas.eu](http://www.renesas.eu)

Before purchasing or using any Renesas Electronics products listed herein, please refer to the latest product manual and/or data sheet in advance.

