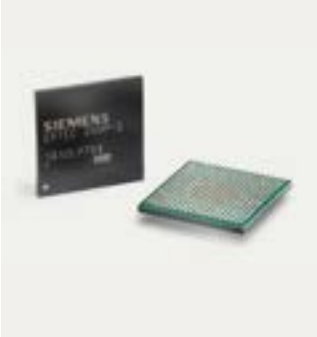
SUPPORT FOR YOUR DEVICE DEVELOPMENT

ERTEC 200P Evaluation Kit – Develop PROFINET devices for embedded products

With the development kits for ASICs in the ERTEC family, you can develop compact or modular PROFINET field devices with an integrated RT (real-time) or IRT (isochronous real-time) switch within a very short time and with very little effort.

ERTEC 200P – the fast path to PROFINET

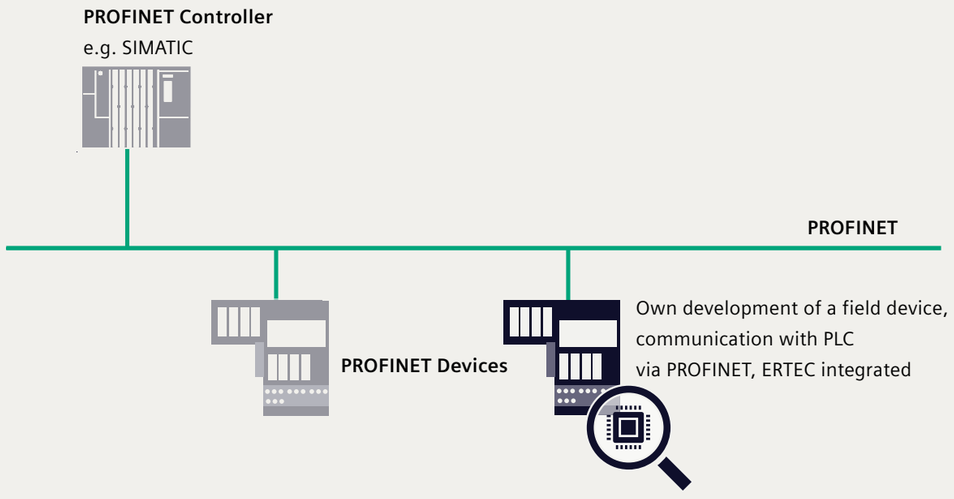
ERTEC 200P* (Enhanced Real-Time Ethernet Controller) is setting new standards in communication. Designed for cycle times as low as 125 µs, the performance upgrade for PROFINET has been integrated into ERTEC 200P. Its 250 MHz ARM 9 CPU and integrated IRT switch make it possible to implement field devices that meet the highest performance standards.



The small chip size simplifies integration into compact field devices. In addition, the CPU lets you integrate your own applications, eliminating the need for an external host CPU, depending on the application.

> Go to the ERTEC controller in the Industry Mall

* ERTEC 200P relates to the ERTEC 200P-2 and ERTEC 200P-3 ASICs. Both ASICs are functionally compatible and are programmed using the same development kit.



ERTEC 200P operating modes

Standalone: ERTEC 200P can be operated as a single chip. In this case, the application and communication run on ERTEC. An additional host processor is not necessary.

Host mode: ERTEC 200P can also be operated as a companion chip together with a host processor. In this case, ERTEC performs communication. The host processor operates the application. SPI and the XHIF high-performance interface are available as possible interfaces – for example, for motion control with isochronous mode and 250 µs.

Development of a PROFINET device on a standard Ethernet controller
The hardware integrated in ERTEC provides optimal support for PROFINET Conformance Classes A, B, and C. Naturally, PROFINET communication can also be implemented via a standard Ethernet controller. The PROFINET driver development kit is available for this purpose.

> LINK to PN driver

Development kit for ERTEC 200P
The development kit includes an evaluation board with sample applications that make it possible to carry out development within a very short time. The PROFINET stack is supplied as source code, including the eCos open-source real-time operation system, all development tools, analysis programs, and documentation. The ERTEC ASICs make it possible to implement RT (real-time) and IRT (isochronous real-time) field devices. The integrated switch lets you build field devices with two ports.



Functions:

- Optimized for PROFINET communication over RT or IRT with Isochronous Mode
- Shared device for 4 controllers
- S2 system redundancy: communication to a redundant control system, e.g. for the S7-1500R/H controller
- PROFINET performance upgrade
  - Minimum cycle time of 125 µs
  - DFP (Dynamic Frame Packing), enables lines with more than 64 IRT nodes
  - Fragmentation, for the best possible transmission of TCP messages in parallel to PROFINET and without disturbing the PN real-time channel
- Network redundancy with MRP/MRPD
- Current PROFINET technology certificate from the PROFINET user organization (PI)

> To PROFINET Device Development Kit for ERTEC 200P

Published by
Siemens AG

Digital Industries
Factory Automation
Postfach 48 48
90026 Nuremberg
Germany

For the U.S. published by
Siemens Industry Inc.

100 Technology Drive
Alpharetta, GA 30005
United States

Article No.: DIFA-B10241-00-7600

© Siemens 2024

Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.