

## Entry into the World of Time-Triggered Systems



### **TTP** Evaluation Kit – The TTP Entry Level Solution

TTP<sup>®</sup> is a time-triggered communication protocol for fault-tolerant distributed hard real-time systems. Distributed embedded computing based on synchronous time-triggered TTP networks is a paradigm which enables design of applications independent of underlying communication architecture, physical layer, topology or embedded host hardware.

#### **Evaluating distributed applications using time-triggered systems and TTP**

TTP Evaluation Kit is an entry-level solution targeted at system, software, and hardware engineers for a first evaluation of TTP. TTP Evaluation Kit supports quick evaluation of TTP technology and toolset capabilities. It is designed for first steps in the design of TTP-based time-triggered architectures and provides an overview of available tools and embedded software for TTP-based distributed platforms.

#### **Evaluation Kit Capabilities**

TTP Evaluation Kit consists of two nodes (TTP Pownode Freescale MPC555) which include the austriamicrosystems AS8202NF TTP communication controller, housing and power supplies. A simple demo application is preconfigured with a ready-made communication schedule. Both nodes exchange large frames to fully utilize the available bandwidth and allow the user to define the data content for simple distributed applications.

Each node runs two time-triggered tasks – a fast one and a slow one, with the slow one handling most of the data to demonstrate basic message and task scheduling features of the TTP Tools. A feature-limited demo version of TTP Plan is included in order to visualize the schedule and examine scheduling principles for time-triggered systems.

#### **Demonstration Application**

The demo application enables the evaluation of embedded components with fault-tolerant functionality and redundancy management. It deploys a time triggered RTOS with fault-tolerant layer TTP FT-COM and enables the separation of plain application functionality and redundancy management.

#### **Upgradeability to TTP Development Cluster**

The solution can be upgraded to a full TTP Development Cluster. This enables additional flexibility and supports design of more complex systems with configurable communication schedules and architectures, and a larger number of nodes.

## Features

The <sup>TTP</sup>Evaluation Kit is a 2-channel fault-tolerant communication system with 5 Mbit/s with the following features:

- Enables fault-tolerant functionality and redundancy management
- <sup>TTP</sup>OS/ - time-triggered RTOS
- FT-COM – fault-tolerant communication stack
- 2 nodes with TTP communication controller (<sup>TTP</sup>Powernode Freescale MPC 555)
- Contains housing and power supplies
- Demo application for 2 nodes with ready-made communication schedule
- Demo version of <sup>TTP</sup>Plan
- BDM cable incl. P&E flash programmer
- Provides an overview of available tools and embedded software for TTP-based distributed platforms
- Supports quick demonstration of basic technology and toolset capabilities

## System Requirements

- User needs Wind River Diab compiler (and a Freescale MPC555 debugger)
- Operating system: Microsoft Windows 2000 (SP 1 or 2), Windows XP (support for other operating systems is available upon request)
- Processor: Intel Pentium 4 or above, AMD Athlon XP or above, or compatible (1.5 GHz or above recommended)
- Disk space: 30 MB
- RAM: 256 MB (minimum), 512 MB (recommended)
- Graphics: 1024x768 16-bit colors (minimum), 1280x1024 32-bit colors (recommended)
- CD-ROM drive, Adobe Acrobat Reader 4.0 or above
- Network: 100Base-TX to link to <sup>TTP</sup>Monitoring Node
- TCP/IP required

Subject to changes and corrections.

For further information, including price and availability, contact [products@tttech.com](mailto:products@tttech.com).

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