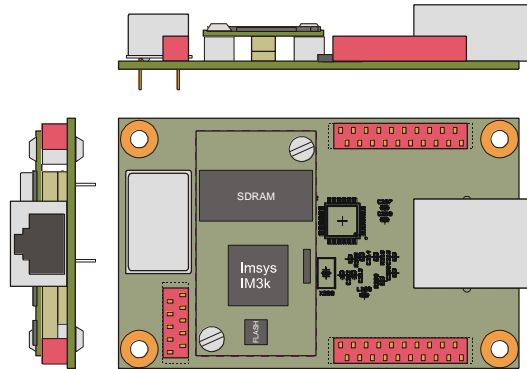


# IM3240 Development Kit for IEEE 1588 Applications

## Applications

- IEEE 1588 Version 1 or 2, ordinary clock or grandmaster
- Three different internal oscillator alternatives, and input for external oscillator
- PPS input from GPS, for grandmaster mode
- PPS and frequency output
- Compact OEM design.



The DK4-3240 is a complete kit for the development environment of Imsys' new connected embedded controllers where IEEE1588 is used for time synchronization. The kit is intended for the development of compact grandmasters, high precision slaves or ordinary clocks in the IEEE1588 network. It is based on a new IM3240 microcontroller located on a sub-module.

The functionality of the system is delivered by the IM3240 which is a dedicated controller for time synchronized applications. Its outstanding features stem from the ability to analyze and act on gate level, in real-time. With its ability to sustain almost 20 Mbit/s of IP dataflow, while running the IEEE 1588 Protocol software in the background. The IM3240 dramatically reduces the cost and size of time synchronization.

The IM3240 module embeds a complete software platform including real-time operating system, flash file system, TCP/IP communication stack, FTP and web server. For the execution of IEEE1588 protocol version 1, a software stack with full ordinary clock implementation from Zurich University of Applied Sciences is already integrated. Version 2 of the IEEE1588 protocol will be released for the IM3200 microcontroller series during 2Q 2008.

The development environment enables the application designer to manage projects with configurations for different clock modes and precisions.

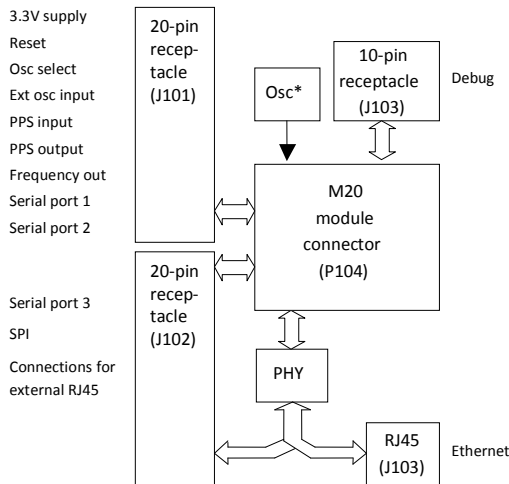
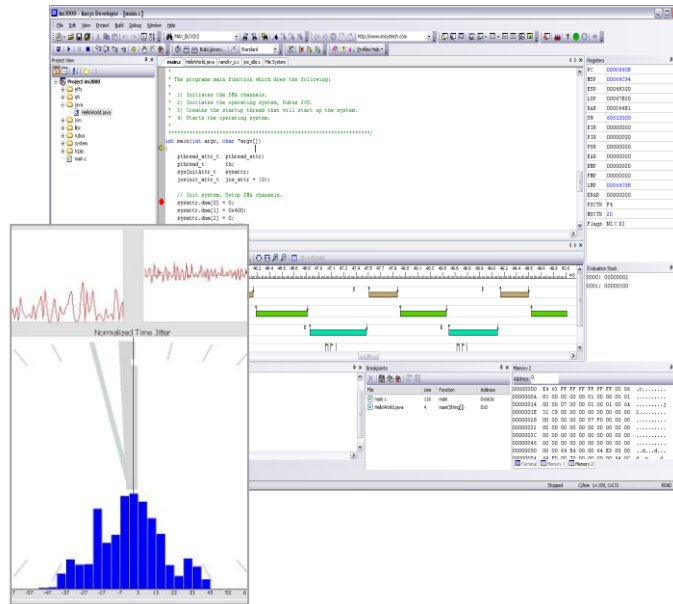
## Features

- Ethernet 10/100 auto-sensing PHY with RJ-45 jack
- Three RS-232 ports
- SPI port
- Debug port
- PPS input from GPS, for grandmaster mode
- PPS and frequency output
- Connectors (except RJ45) suitable for flat cable or board-to-board connection.



## Programming and Debugging

- The Imsys Developer comes set with a framework of programming tools and the Im3240 profile for time synchronization applications.
- A simulator, source code debugging features and an event analyzer assist the programmer throughout the project.
- IEEE 1588 protocol software stack with Grandmaster API
- Jitter analysis monitor.



\*) Configurable

## Block Diagram

The Development Kit is designed for an optimized IEEE 1588 communication application and the Grandmaster mode. The kit comes set with an on board oven-controlled oscillator, but can be adapted for different oscillators: on-module, on-board, external. The kit has an optional input for an external reference (eg. GPS).

A host system interfaces to the board via the SPI port and a separate debug port connects to the development system via the trace adapter.

## Technical Specifications

- Processor: IM3240 on plug-in module with a 100-pin FX10 connector, 32 MB SDRAM, 8 MB Flash
- Internal oscillator: oven-controlled Rakon CPFO-20-RS-A-LF 20 MHz (P4792), 50ppb
- Input/Output: 40 pins on connectors with tri-state support
- Serial interface: three High Speed serial RS232 interfaces (CMOS level)
- Ethernet: one 10/100 Base-T with auto-sensing PHY and RJ-45 jack
- Clock frequency: 167 MHz
- Supply Voltage: Typ 3.3V (3.15-3.30V)
- Overall Dimensions: 83.2 x 50 x 13 mm
- Operating Temperature: 0 - +70 °C
- RoHS compliant.

### Contents

- 1x P40 – combined socket and CPU board
- 1x Imsys Developer 7.x, CD
- 1x IM3240 firmware profile
- 1x Test application
- 1x Trace Adapter
- 1x Parallel cable

### Ordering Code

DK4-3240

Imsys may make changes to specifications and product descriptions at any time, without notice.