Panasonic

New **EVAL_PAN1026EMK**
PAN1026 Experimenter Kit

## Accelerate Development Using Panasonic's PAN1026 Series *Bluetooth* RF Module!

Introducing a new development tool to the PAN1026 family, the PAN1026 Experimenter Kit supplements Panasonic's evaluation kit (EVAL_PAN1026) by emulating an application environment where a Bluetooth RF module is controlled by an external processor, an environment that reduces both software and hardware development time. This kit is for design engineers using Panasonic's PAN1026 Bluetooth SmartReady ® RF Module with embedded Bluetooth Classic and Bluetooth Low Energy protocol stacks and profiles and based on Toshiba's TC35661, baseband controller and ARM7TDMI CPU SOC.

The PAN1026 Experimenter Kit integrates a PAN1026 RF module[1], Toshiba's TMPM369 ARM Cortex-M3 based MCU with 512KB flash memory and serial, USB, CAN and Ethernet interfaces on a single board to eliminate hardware prototyping in the project's development stages[2]. A J-Link JTAG debugger interface incorporated in the Experimenter kit board is compatible with commonly available third party toolchains such as those from Atollic, IAR and Keil. The embedded MCU also supports standard interfaces on the board for Ethernet, CAN, USB (host and device), serial and UART connection.

The embedded dual mode Bluetooth Classic and Bluetooth Low Energy protocol stacks and profiles may be accessed using two command sets. Toshiba's TCU command set consisting of over 100 commands is extremely flexible, allowing full access to the PAN1026's resources and I/O. A superset of the TCU commands, (TCU Superset – TCUS) where one command executes a routine of TCU commands to perform common BT functions, is available using an Abstract Application Programming Interface – A2PI. The A2PI resides and executes Experimenter Kit's Cortex-M3 MPU.

1. This design is intended only for software development and should not be used as hardware reference design. For optimum performance, the module should be on the edge of the application PCB. For layout recommendations and how to place the module refer to the PAN1026 design guide.
2. The EVAL_PAN1026 evaluation kit remains as an excellent demonstration and development tool for a PC based environment. The kit consists of two PAN1026ETU development modules used with EasySPP and EasyBLE testware. EasySPP is the development environment for Bluetooth Classic and EasyBLE is the development environment for Bluetooth Low Energy, both applications are available on Panasonic's website.
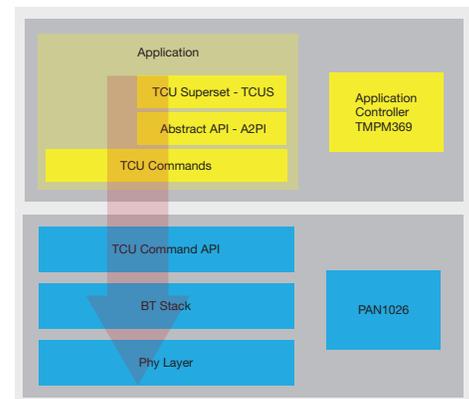
Experimenter Kit Contents

- *Toshiba TOPAS369BT Board*
- Segger J-Link JTAG/SWD Emulator with USB interface including J-Link 19-pin Cortex-M Adapter and USB Cable
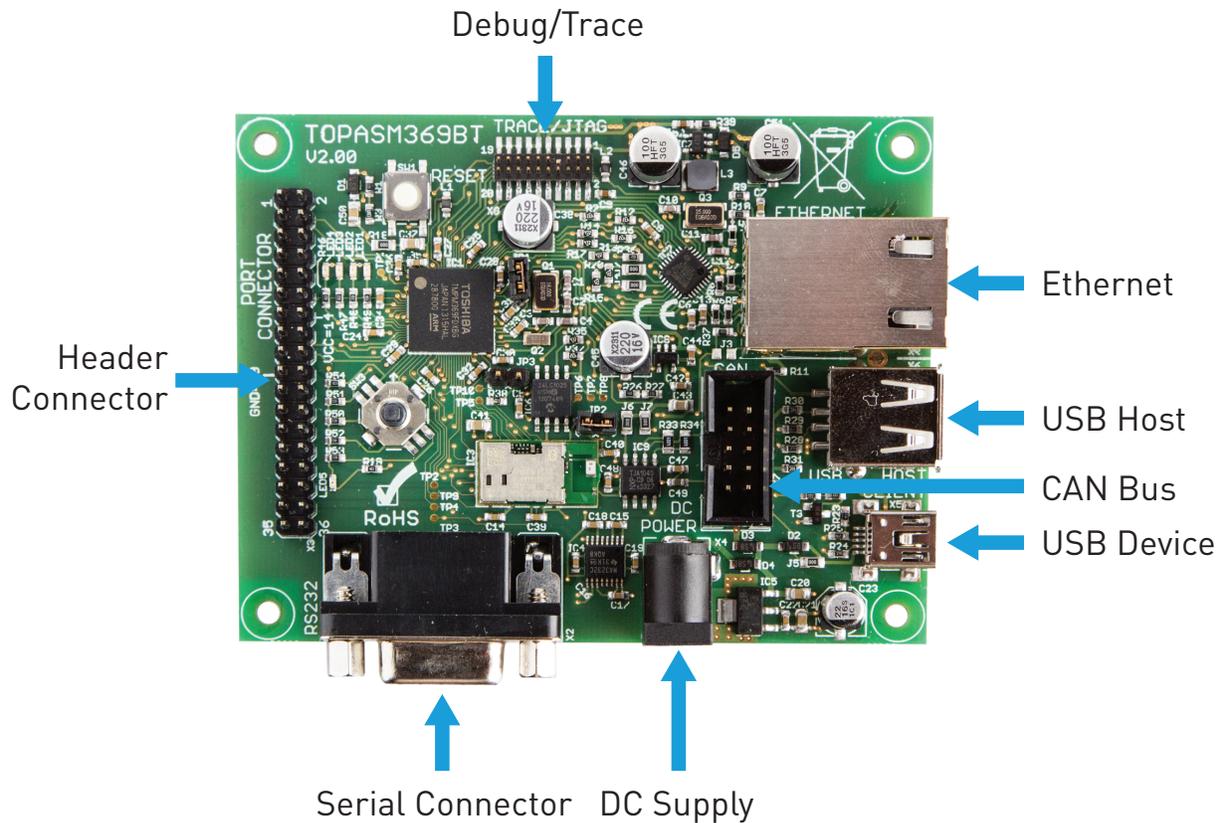
Suggested IDEs

- Keil MDK TM with µVision® IDE/Debugger
- IAR® Kickstart Edition
- Atollic® TrueStudio® Lite

Application Examples

Application examples are available that can be compiled to run on the TMPM369 MCU with FreeRTOS™. (The operating system is available from Real Time Engineers Ltd). The application software includes a set of BLE standard reference profiles and a design guide on how to develop a proprietary BLE profiles.

- SPP Over BLE Application
- BLE Heart Rate Measurement Over BLE Application

EVAL_PAN1026EMK Physical Interfaces

Debug/Trace

Ethernet

Header
Connector

USB Host

CAN Bus

USB Device

Serial Connector   DC Supply

PAN1026 Technical Characteristics

Parameter	Value	Condition
Receiver Sensitivity	-87 dBm typ.	Ideal Signal
Output Power	+4 dBm typ.	@ 50 Ohm Antenna Pin
Power Supply	1.7 to 3.6 V	Single Voltage Operation
Transmit	46 mA	ACL, DH1
Receive	46 mA	ACL, DH1
Operating Temperature	-40 to +85°C	

Additional Information

For detailed specification information on the **EVAL_PAN1026EMK** or the **PAN1026** Place and Play *Bluetooth* Module, visit our website at:

http://www.panasonic.com/rfmodules/

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