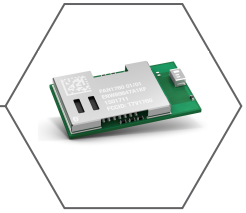


## New Product Introduction

# PAN1760 Series

## Bluetooth® Smart, Place and Play Module



Introducing a new member to Panasonic's growing family of *Bluetooth* Smart modules; the **PAN1760 Series**, place and play, single-mode, *Bluetooth* Low Energy module. This module is based on Toshiba's TC35667 SOC, with an integrated *Bluetooth* Smart controller, ARM7 CPU core, *Bluetooth* SIG certified stack v4.1, API, and GATT profile. The **PAN1760 Series** delivers high-speed operation at ultra-low power consumption. Design in time and application BOM are minimized with embedded 26MHz oscillator and 2.4 GHz antenna.

The **PAN1760 Series** is a fully autonomous device, perfectly suited for stand-alone operation, with integrated 512Kb EEPROM and 32KB of RAM for application code storage and execution.

*Bluetooth* dual-mode networks - *Bluetooth* Classic plus *Bluetooth* Smart (Low Energy) - are easily implemented by pairing together Panasonic's **PAN1760 Series** *Bluetooth* Smart and **PAN1026 Series**, *Bluetooth* SmartReady modules, as they share an identical form factor and module footprint. Most *Bluetooth* Low Energy applications and profiles developed for **PAN1026 Series** can be transferred to **PAN1760 Series**<sup>1</sup>.

Program development is easily accomplished using the **EVAL\_PAN1760EMK Experimenter Kit** and extracted API enabling text based high level commands. The **EVAL\_PAN1760EMK Experimenter Kit** simplifies both firmware and hardware development by integrating a Cortex M3 processor, **PAN1760 Series**, and UART on a single board.

Created with the design engineer in mind, product design cycles are greatly reduced using Panasonic's free of charge reference design and design review services<sup>2</sup>. PCB layouts are simplified using available Gerber files and minimized with Panasonic's tiny footprint technology. The module is just 15.6mm x 8.7mm x 1.9mm and fully shielded to improve immunity. All Panasonic *Bluetooth* RF modules carry FCC, IC, CE and *Bluetooth* certifications.

## Features

- Software and Hardware Compatible with the **PAN1026 Series**
- *Bluetooth* 4.1 (LE) Embedded GATT Profile with High-Level API Commands
- Power Consumption Max 8.7mA Tx/ Max 8.4 Rx/<5µA Sleep
- Tx Power 0 dBm, Rx Sensitivity -91 dBm
- Small 15.6 x 8.7 x 1.9 mm<sup>3</sup> SMD Package
- 32KB on-chip RAM for Applications
- 512Kb EEPROM
- Autonomous Operation, No Host Required
- Standard SIG BLE and "SPP over BLE" Profiles Available
- -40°C to +85°C Operating Temperature

## Interfaces

- UART, I2C , GPIO (10 in/out), Wake-Up Control Pins, Four Channel ADC
- Bluetooth 4.1
- GAP Central and Peripheral Support
- GATT, SMP and SDB Support

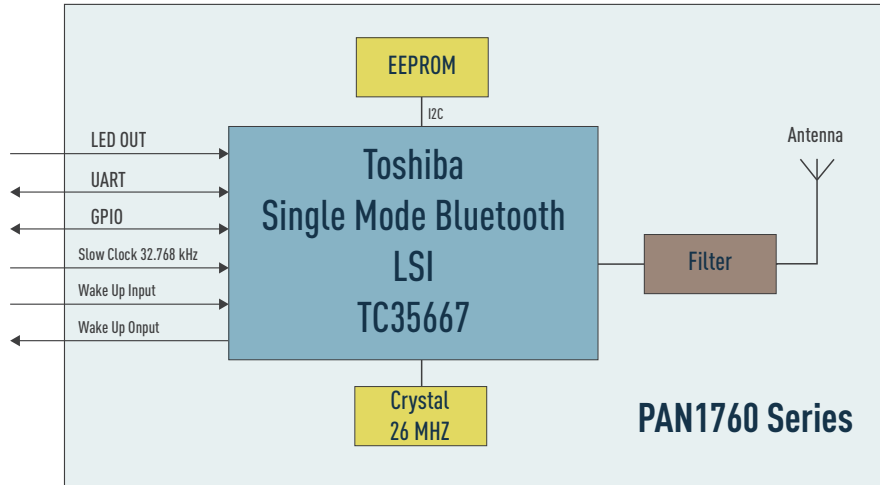
<sup>1</sup>Accessing the advanced feature set of PAN1760 Series which includes support for both Central and Peripheral modes will require code modifications.

<sup>2</sup>Qualified projects only

# Applications

- Wearable Devices
- Health Care, Medical Diagnostic Systems - Sports and Leisure Equipment
- Mobile Phone Accessories
- Industrial Measurement and Diagnosis
- Devices Where Power Consumption is Critical
- Consumer Electronics
- Remote Controls
- Health Care and Medical
- Heart Rate Monitor
- Blood Glucose Meter

# Block Diagram



# Technical Characteristics

Parameter	Value	Condition / Note
Receiver Sensitivity (1% PER)	- 91 dBm	@ 500 kbps / MSK (high-gain mode)
Output Power	0 dBm	Maximum
Power Supply	1.8V - 3.6V	Single operation voltage
Transmit and Receive Mode	8.7 / 8.4 mA	
Low Power Mode	<1 $\mu$ A	
Operating Temperature Range	-40C / +85C	Industrial Range

# Ordering Information

Part Number	Description
ENW-89847A1KF	PAN1760 Series, <i>Bluetooth</i> Low Energy Module, Integrated Antenna
EVAL_PAN1760EMK	PAN1760 Series Experimenter Kit

For detailed specification information on the PAN1760 Series, visit our website at: [na.industrial.panasonic.com/products/wireless-connectivity/bluetooth](http://na.industrial.panasonic.com/products/wireless-connectivity/bluetooth)

