

# Bluetooth Low Energy embedded Single Mode Module PAN1760

Panasonic



## OUTLINES

PAN1760 is based on Toshiba's single chip TC35667 Bluetooth semiconductor device with embedded Toshiba Bluetooth 4.1 LE stack and GATT profile. The TC35667 is a highly integrated and compact Bluetooth controller that delivers high-speed operation at ultra-low power consumption. It significantly reduces external component count and power consumption in applications requiring Bluetooth Low Energy support. PAN1760 and PAN1026 share the same form factor and module footprint. Bluetooth LE applications and profiles developed using PAN1026 can almost 1:1 be transferred to PAN1760. Only small changes for higher feature set of PAN1760 are needed. Central and Peripheral Mode are supported. FCC, IC and CE approval are available. The integrated EEPROM can be used for applications, up to 32kB are available for stand alone operation, no host MCU is needed.

## FEATURES

### General

- Same form factor and footprint as PAN1026
- Bluetooth 4.1 (LE) embedded GATT profile with high level API commands, compatible to Toshiba reference BLE profiles
- Power consumption Max 5.4mA Tx/ Max 5.4mA Rx/<1µA Sleep
- Tx power 0 dBm, Rx sensitivity -91 dBm
- Small 15.6 x 8.7 x 1.8 mm<sup>3</sup> SMD package
- Compliant to BT 4.1
- 32kB on-chip RAM for applications
- 512kBit eeprom to download user program during start up
- Operation with or without external host (standalone) feasible
- Standard SIG BLE and "SPP over BLE" profiles available
- Temperature Range from -40°C to +85°C

### Interfaces

- UART, I2C, GPIO (10 in/out), Wake-Up control pins, ADC(4 CH), SPI

### Bluetooth 4.1

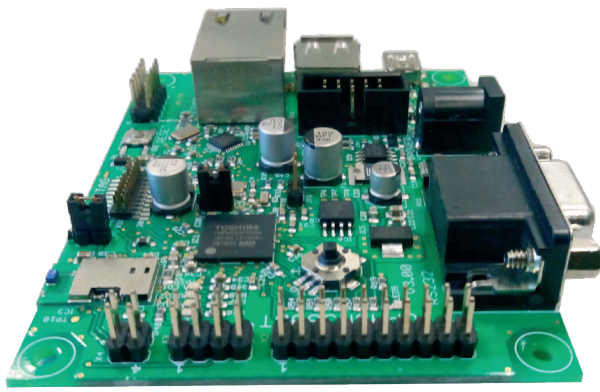
- Support for Over the Air Update (OTA)
- Support for Scatternet
- GAP central and peripheral support for LE
- GATT, SMP and SDB support for LE

MODULES  
Panasonic Industrial Devices Europe GmbH  
WIRELESS

Design and Specifications are subject to change without notice. Ask the factory for technical specifications before purchase and/or use. If there is any doubt regarding the safety of this product, kindly inform us immediately for technical consultation.

PAN1760 4.1 Rev. 0.3

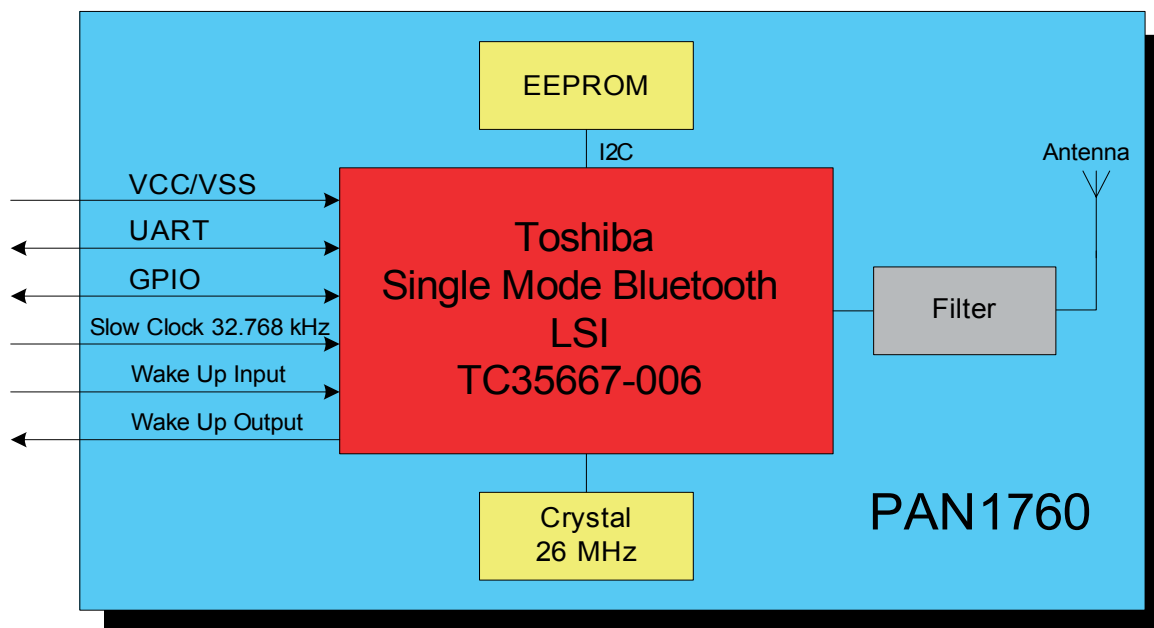
Hardware Status:  
Pre Production



## APPLICATIONS

- Wearables
- Health Care, Medical Diagnostic Systems
- Sports and leisure equipment
- Mobile phone accessories
- Bluetooth LE Sensors
- Consumer Electronics
- Automotive Aftermarket Products
- Industrial Sensors and Measurement Devices
- Heart Rate Monitor
- Blood Glucose Meter

## BLOCK DIAGRAM



## TECHNICAL CHARACTERISTICS

Parameter	0,1% BER	Value	Condition / Note
Receiver Sensitivity (1% PER)		- 91 dBm	@ 500 kpbs / MSK (high-gain mode)
Output Power		0 dBm	Maximum setting
Power Supply		1.8V - 3.6V	Single operation voltage
Transmit and Receive Mode		5.4 mA	peak, low power modes available
Low Power Mode		<1 $\mu$ A	
Operating Temperature Range		-40C / +85C	Industrial Range