

# Embedded Bluetooth Low Energy & NFC Combo Module PAN1761

Panasonic



## OUTLINES

The PAN1761 is a single chip solution based on Toshiba's TC35670 supporting both Bluetooth Low Energy (LE) 4.1 and NFC – NFC Forum Class 3 compliant tag. The unique configuration of the PAN1761 allows NFC to wake up BLE from standby using an NFC field and initiate a Bluetooth connection. Bluetooth LE applications with extended battery life are possible from the result of zero power consumption in standby. Remote device may create a wake up signal without host control and local battery consumption. Bluetooth pairing after confirmation of the BT device address using NFC creates secure connections. PAN1761 shares the same form factor and module footprint with PAN1760 and PAN1026, Bluetooth LE applications and profiles developed can be transferred seamlessly. The integrated EEPROM can be used for applications, up to 32KB are available for standalone operation without a host MCU.

## FEATURES

### General

- Same form factor and footprint as PAN1026 and PAN1760
- Integrated 2.4GHz Antenna, NFC Antenna external (Antenna Pin)
- Low power NFC Tag function
- Compliant with NFC Forum Tag Class 3 for easy pairing initialization and transfer of small amounts of data (ISO/IEC18092)
- Bluetooth 4.1 (LE) embedded GATT profile with high level API commands, compatible to Toshiba reference BLE profiles
- 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
- 512kBit eeprom to download user program during start up
- Operation as host-less, stand alone
- 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)

### Bluetooth 4.1

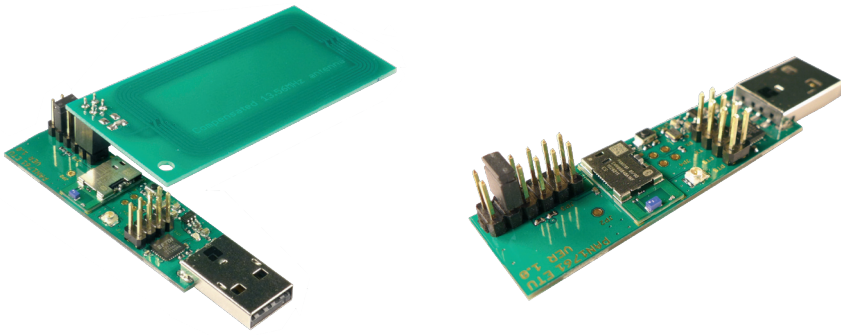
- Support for Over the Air Update (OTA)
- Support for Scatternet
- GAP central and peripheral support for LE
- GATT, SMP and SDB support for LE

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.

PAN1761 4.1 Rev. 0.11

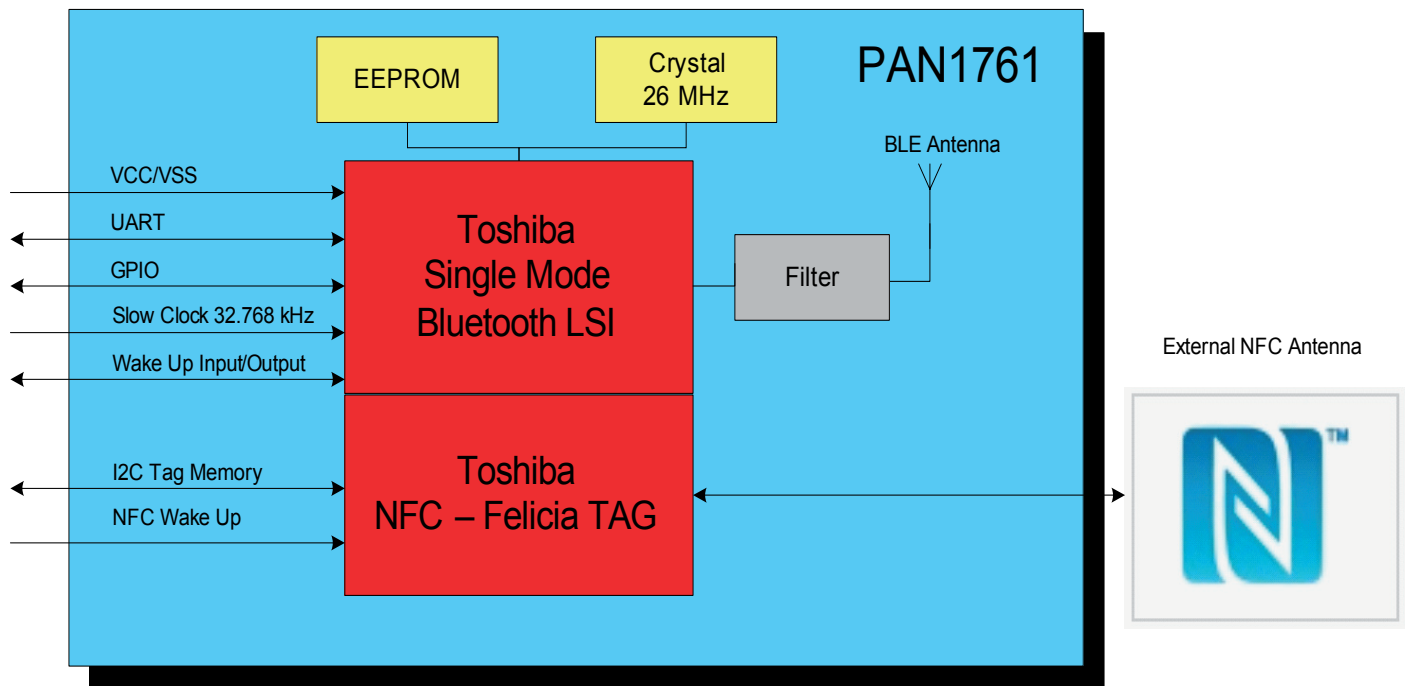
Hardware Status:  
Under Development, Samples Q1/16



## APPLICATIONS

- Diagnostic and maintenance systems with requirement for zero standby power consumption
- Healthcare and medical diagnostic systems without human control interface
- Bluetooth Low Energy sensor applications, which need to send data on request
- Automotive Aftermarket Products
- Industrial sensors and measurement devices

## 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		tbd	
Low Power Mode		<1 $\mu$ A	
Operating Temperature Range		-40C / +85C	Industrial Range