

# PAN1761 Embedded *Bluetooth*<sup>®</sup> Low Energy and NFC Combination Single Mode RF Module



## Create Highly Secure BLE Connections and Extend Battery Life Using NFC

Introducing Panasonic's Embedded Bluetooth Low Energy and NFC Combination RF Module, the PAN1761 Series!

**PAN1761** supports both Bluetooth Low Energy (LE) 4.1 and NFC – NFC Forum Type 3 compliant tag – based on leading edge Toshiba SOC. The unique configuration of the PAN1761 allows NFC to wake up BLE from standby using an NFC field and automatically initiate a Bluetooth connection. Highly secure Bluetooth connections are created using NFC to exchange link keys. Bluetooth LE applications with extended battery life are possible as a result of zero power consumption in standby mode. A remote device may independently create a wake up signal with neither host control nor local battery consumption. Embedded microcontroller access and 32KB EEPROM is available for autonomous stand-alone operation.

### Main Features:

- Unique Combination of Bluetooth LE and NFC
  - NFC Wakeup For Products With Zero Standby Power Consumption
  - Added Security With BT Pairing Via NFC “Out-of-Band Pairing”
  - Android APK Available For NFC Pairing
  - Select Bluetooth Nodes Individually Via NFC
  - Start Mobile Apps Automatically

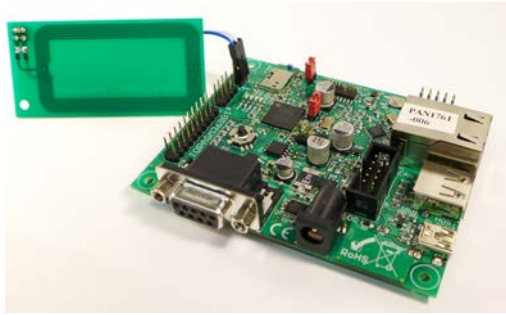
### General Features:

- Small 15.6 x 8.7 x 1.8 mm<sup>3</sup> SMD Package
- Same Form Factor and Footprint As PAN1026 and PAN1760
- Integrated 2.4GHz Antenna, NFC Antenna External (Antenna Pin)

- Compliant With NFC Forum Tag Type 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
- Operation As Host-less, Stand Alone With 32KB Available For Applications
- Standard SIG BLE and “SPP Over BLE” Profiles Available
- Plug-in For Bluetooth Developer Studio Available

## Bluetooth 4.1

- Support For Over the Air Update (OTA) And Scatternet
- GAP Central And Peripheral Support For LE



## Evaluation Kits

- PAN1761 EMK Starter Kit with NFC Antenna Available
- SDK Demo Project with NFC Example
- SDK Library For “Out-of-Band Pairing”
- Android App As Example Application And Source Code

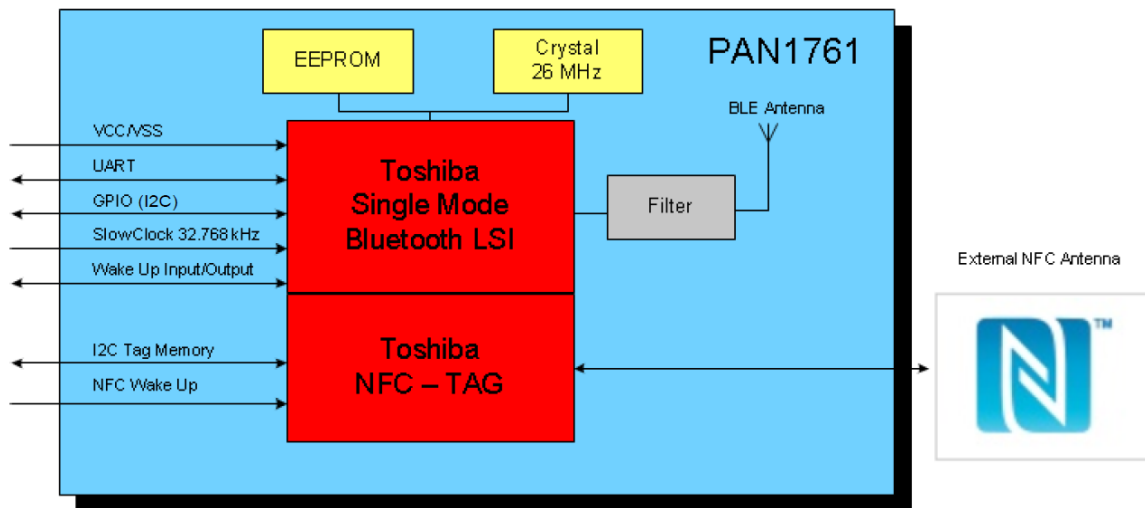
## Applications:

- 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

## Part Number Information:

Part Number	Description	Series Number
ENW-89848A1KF	PAN1761, BLE with NFC, Embedded Processor With Antenna	PAN1761
ENW-89848AVKF	PAN1761 Experimenter Kit	EVAL_PAN1761EMK
ENW-89848AYKF	PAN1761 Demonstration Kit	EVAL_PAN1761ETU

## Block Diagram:



## Technical Characteristics:

Parameter                      0,1%BER                      Value  
Condition/Note

<b>Receiver Sensitivity (30.8% PER)</b>	<b>-90 dBm</b>	<b>@ 500 kpbs / MSK (high-gain mode)</b>
<b>Output Power</b>	<b>0 dBm</b>	<b>Maximum Setting</b>
<b>Power Supply</b>	<b>1.8V - 3.6V</b>	<b>Single Operation Voltage</b>
<b>Transmit and Receive Mode</b>	<b>5,5 mA</b>	<b>typ. Bluetooth Tx mode</b>
<b>Low Power Mode</b>	<b>&lt;1 <math>\mu</math>A</b>	
<b>Operating Temperature Range</b>	<b>-40°C / +85°C</b>	<b>Industrial Range</b>