# RN4678 Bluetooth® 4.2 Dual-Mode Module

## *The Easy-to-Use, Flexible Solution for BLE and Bluetooth Classic Connectivity*


## Summary

The RN4678 is a fully certified Bluetooth® 4.2 Dual-Mode Module which enables you to easily add classic Bluetooth and Bluetooth Low Energy (BLE) capability to your products. Delivering local connectivity for the Internet of Things (IoT), the RN4678 bridges the end application to smartphones and tablets for convenient data transfer, control and access to cloud applications.

This Bluetooth SIG-certified module provides a complete wireless solution with Bluetooth stack on board, integrated antenna and worldwide radio certifications in a compact surface-mount 22 × 12 × 2.4 mm package. It supports GAP, SDP, SPP and GATT profiles. Data is transferred over the Bluetooth link by sending/receiving data via transparent UART mode, making it easy to integrate with any processor or microcontroller with a UART interface. Configuration is made easy through ASCII commands via UART.

The RN4678 enables rapid product development and faster time to market, and is designed to provide designers with:

- Simple integration and programming
- Reduced development time
- Interoperability with Bluetooth host
- Wide range of applications

The RN4678 is a complete and fully-certified module with integrated ceramic chip antenna and RF shield. The RN4678U is a low-cost alternative with RF pad (for external antenna) and no RF shield. Low-power usage and flexible power management maximize the lifetime of both the RN4678 and RN4678U module in battery-operated devices.


## Features

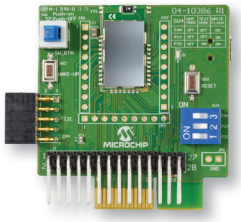
- Fully certified Bluetooth 4.2 Module
- Bluetooth Classic and Bluetooth Low Energy support
- Easy-to-use RN-style ASCII interface
- On-board embedded Bluetooth stack (GAP, SDP, SPP, GATT)
- Easy-to-use transparent mode for data transfer via UART
- Multiple I/O pins for control and status
- Supports Apple® iPod® Accessory Protocol (iAP2) (RN4678APL only)
- Secure AES128 encryption
- +2 dBm transmit power
- Receiver sensitivity –90 dBm (classic); –92 dBm (BLE)
- Firmware is field upgradable via UART
- Compact surface-mount module: 22 × 12 × 2.4 mm
- Temperature range from –20°C to +70°C
- Operating voltage: 3.3–4.2V
- Bluetooth SIG certified
- Worldwide regulatory certifications


## Applications

- Internet of Things (IoT)
- LED lighting
- Wearables
- Secure payment
- Fitness devices
- Healthcare/medical
- Automotive accessories
- Home automation
- Remote control toys

## Development Tools

### RN4678 Bluetooth 4.2 Dual-Mode PICtail™/PICtail Plus Daughter Board (RN-4678-PICtail)



The RN4678 PICtail/PICtail Plus Daughter Board provides rapid prototyping and developing for Bluetooth data applications for Classic Serial Port Profile (SPP) or Bluetooth Low Energy. It is powered via USB host or external battery. This daughter board utilizes the RN4678 module, a fully certified Bluetooth 4.2 dual-mode RF module supporting Bluetooth Classic SPP and Bluetooth Low Energy, to provide a Bluetooth serial data connection. It also provides a USB-to-UART converter allowing a flexible interface to the host PC, a PC terminal utility and smartphone apps to drive both classic SPP and BLE data connections.

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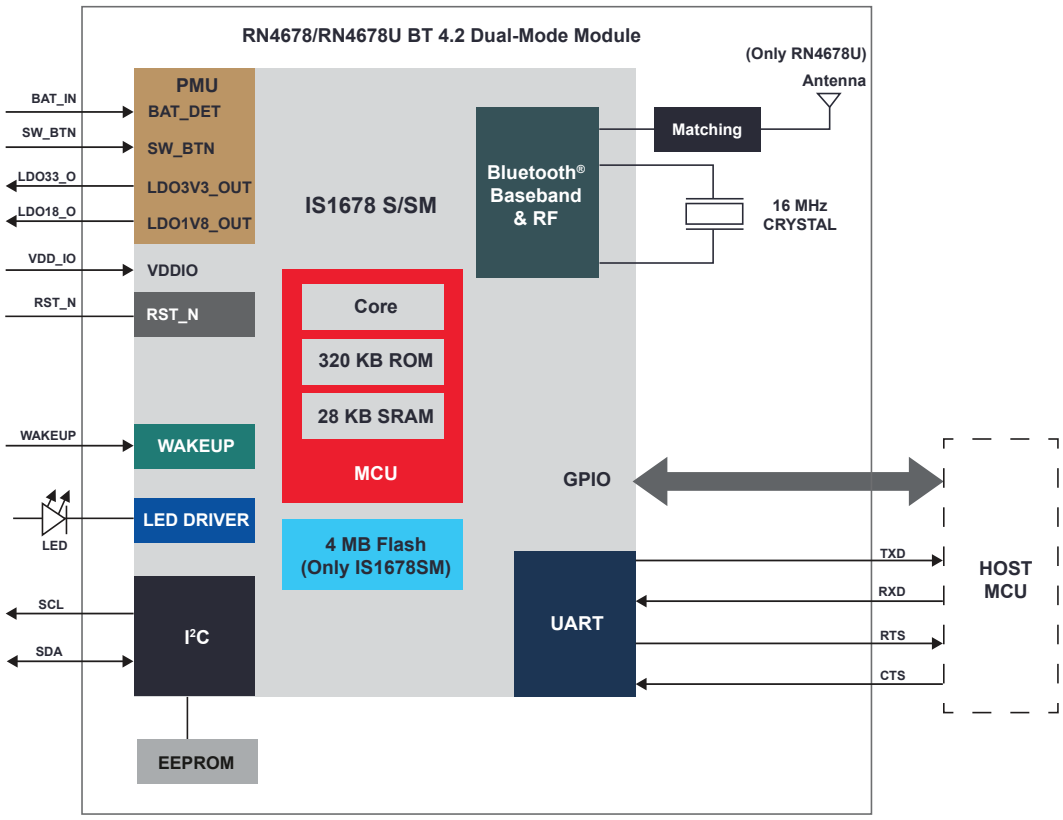
## Block Diagram




## Ordering Information

| Part Number | Description |
|---|---|
| RN4678-V/RM100 | Bluetooth® 4.2 Dual-Mode Module with easy-to-use ASCII interface |
| RN4678APL-V/RM100 | Bluetooth 4.2 Dual-Mode Module with easy-to-use ASCII interface, iAP compatible |
| RN4678U-V/RM100 | Bluetooth 4.2 Dual-Mode module with easy-to-use ASCII interface, no shield |

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**www.microchip.com/RN4678**

Visit our web site for additional product information and to locate your local sales office.

Microchip Technology Inc. · 2355 W. Chandler Blvd. · Chandler, AZ 85224-6199

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