BM78 and RN4678 Dual-Mode Bluetooth® 4.2 Modules

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

Summary

The BM78 and RN4678 are fully certified dual-mode Bluetooth® 4.2 modules that enable 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 BM78 and RN4678 bridge the device to smartphones and tablets for convenient data transfer, control and access to cloud applications. Low power usage and flexible power management maximize the lifetime of both the BM78 and RN4678 module in battery-operated devices.

These Bluetooth SIG-certified modules provide a complete wireless solution with Bluetooth stack on-board, integrated chip antenna, RF shield and worldwide radio certifications in a compact surface-mount package, 22 x 12 x 2.4 mm. They support 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.

The primary difference between the BM78 and the RN4678 is how the module is configured. The BM78 is configured through a Windows® GUI or directly via UART by a microcontroller. The RN4678 is configured with standard ASCII commands via UART.

You can embed Bluetooth functionality into any application using the BM78/RN4678 modules. Both modules enable rapid product development and faster time to market and are designed to provide you with:

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

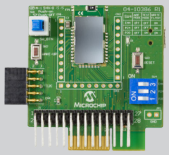
Features

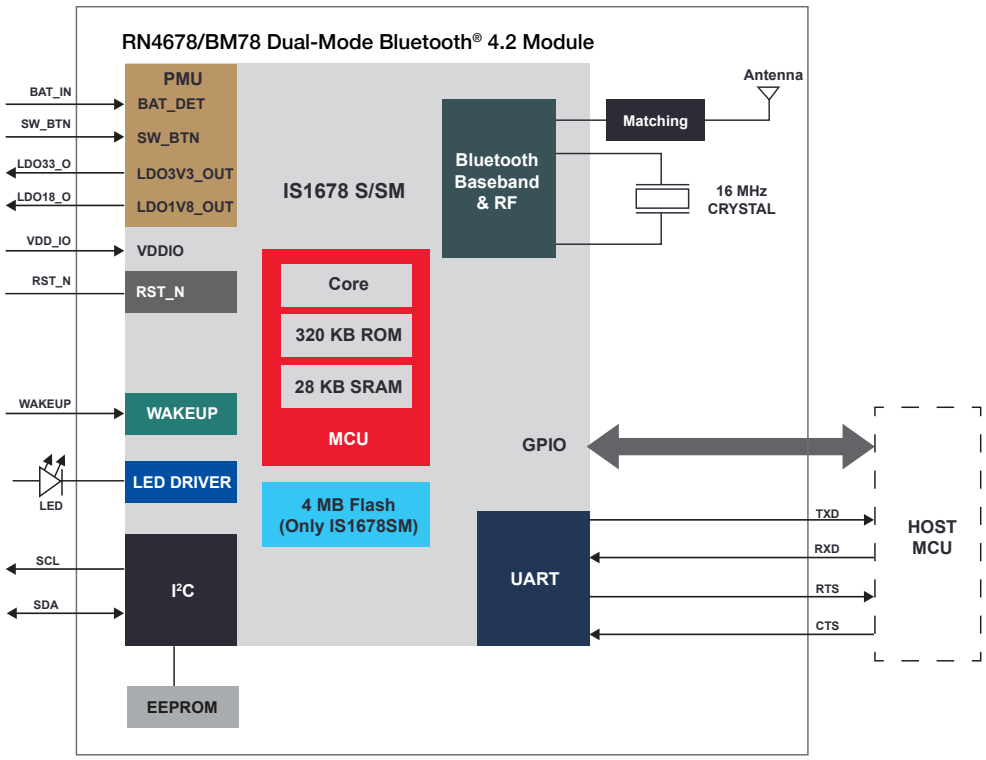
- Fully certified Bluetooth version 4.2 module
- Bluetooth Classic and Bluetooth Low-Energy support
- Easy-to-use 'RN-style' ASCII interface (RN4678)
- On-board embedded Bluetooth stack (GAP, SDP, SPP, GATT)
- Easy-to-use transparent mode for data transfer via UART
- Multiple I/O pins for control and status
- Secure AES128 encryption
- +2 dBm transmit power
- Receiver sensitivity –90 dBm (Classic); –92 dBm (LE)
- Firmware can be field upgradable via UART
- Compact surface mount module: 22 x 12 x 2.4 mm
- Temperature range from –20°C to 70°C
- Operating voltage: 3.3–4.3V
- Bluetooth SIG certified
- Worldwide regulatory certifications (shielded versions only)

Applications

- Mobile Point of Sales (mPOS)
- LED lighting
- Wearables
- Digital sports
- Fitness devices
- Health care and medical
- Automotive accessories
- Home automation
- Remote control toys

Development Tools

Image	Tool Name	Part Number	Description
	BM78 Dual-Mode Bluetooth® 4.2 PICtail™/PICtail Plus Daughter Board	BM-78-PICTAIL	Based on the BM78 dual-mode module, the BM78 PICtail/PICtail Plus Daughter Board provides rapid prototyping and developing for Bluetooth data applications for Classic SPP or Bluetooth Low Energy.
	RN4678 Dual-Mode Bluetooth 4.2 PICtail/PICtail Plus Daughter Board	RN-4678-PICTAIL	Based on the RN4678 dual-mode module, the RN4678 PICtail/PICtail Plus Daughter Board provides rapid prototyping and developing for Bluetooth data applications for Classic SPP or Bluetooth Low Energy.



Part Number	Description
RN4678-V/RM111	Dual-mode Bluetooth® 4.2 module with ASCII interface
RN4678APL-V/RM111	Dual-mode Bluetooth 4.2 module with ASCII interface, iAP compatible
BM78SPP05MC2-0002AA	Dual-mode Bluetooth 4.2 module with Flash, no shield, external antenna
BM78SPP05NC2-0002AA	Dual-mode Bluetooth 4.2 module with ROM, no shield, external antenna
BM78SPPS5MC2-0002AA	Dual-mode Bluetooth 4.2 module with Flash, shield and on-board antenna
BM78SPPS5NC2-0002AA	Dual-mode Bluetooth 4.2 module with ROM, shield and on-board antenna

The Microchip name and logo and the Microchip logo are registered trademarks and PICtail is a trademark of Microchip Technology Incorporated in the U.S.A. and other countries. All other trademarks mentioned herein are property of their respective companies. © 2017, Microchip Technology Incorporated. All Rights Reserved. 8/17
DS00002461A