



RN4870/71 Firmware 1.42 Release Note

9/01/2021

1 Overview

This release note provides details on the firmware Rev 1.42 that is released for the RN4870 and RN4871 modules.

2 New Features

- Rev 1.42 incorporates a new command to change the UART immediately without the need for a reboot (unlike the SB command).
 - SBI, <8-bit hex value>
 - The input parameter is an 8-bit hex value in the range of 00 to 0B, representing baud rate from 2400 to 921K as shown in table below.
 -

Hex value	Baud rate
00	921000
01	460800
02	230400
03	115200
04	57600
05	38400
06	28800
07	19200
08	14400
09	9600
0A	4800
0B	2400

- Default: 03
- Example: SBI,07 //Set the UART baud rate to 19200 immediately
- Response: AOK //Success
- ERR //Syntax error or invalid parameter

3 Resolved Issues

- Fixed ANSSI vulnerabilities
- Fixed Sneyntooth vulnerabilities
- Modified the SM command to limit the range of timers 2 and 3. The value can be set for these timers should be between 0 to 0xFFE.

4 Known Issues

- The 'Accepted List' feature that is supported in the RN487x firmware supports public address and fixed static random address but not resolvable random address.

5 Recommendations

Hardware Flow Control

When using Transparent UART for streaming data application, it is important to include the RTS/CTS hardware lines and enable the hardware control feature. Without hardware flow control, it is possible for host to cause buffer overflow on RN4870 UART, which can result in instability.

Await for 'AOK' before sending next command

When issuing frequent RN4870/71 GATT access commands (SHW, SHR, SUW, SUR, CHW, CHR, CUW, CUR), higher command throughput is achieved by disabling flow control. The host MCU issuing the GATT commands must wait for a response, such as "AOK" before using the next command.

Connectable advertisements on Android devices

When using NA or IA commands to create custom connectable advertisements, the connectable FLAGS field must be included for Android devices connection. This is done by preceding flags advertisement payload with the "NA,01,06" command. See the example below:

```
NA,Z
NA,01,06
NA,FF,CD00F014AD11CF40063F11E5BE3E0002A5D5C51B00BC00BD
```

Handle enumeration after clearing GATT services

If clearing or updating the GATT service and characteristic tables, please ensure that they remain same and not changed when using static characteristic handle values in a script or by a remote BLE client. If the characteristic handle values change, please ensure to update the script or remote BLE client with the new handle values.

6 Firmware Update protocol

The firmware update protocol and process are documented in the firmware update User guide that is available in the RN4870 webpage.

Refer to the following Github page for an example code that executes the firmware update with a PIC32 MCU:

https://github.com/MchpBTApps/BM71_MemoryProgramming

Microchip also provides PC tools to update firmware via a host PC. The tools are available to download from the BM70 webpage.