RN487x Firmware 1.18.3 Release Note
September 2016 Update

1 Overview
Firmware 1.18.3 is the first release for the RN487x Bluetooth® Low Energy 4.2 RF module. The date code returned by the "V" version command is 4/14/2016.

2 Firmware Features
Firmware 1.18 supports the following features:
- ASCII command interface for configuration and control
- Custom GATT service definition
- Peripheral and Central GAP roles
- Configurable Advertising Packets
- Private Address
- White List
- Scripting Engine
- Remote Console
- Serial Data Service (MLDP and Transparent UART)
- Configurable PIO functions

Refer to the RN4870/71 User Guide for more detailed description for each feature.

3 Ordering Information
The RN487x module, and variants, can be ordered with 1.18.3 firmware using the following part numbers:

Part Number	Description
RN4870-V/RM118	Full size footprint, shield, chip antenna
RN4871-V/RM118	Compact footprint, shield, chip antenna
RN4870U-V/RM118	Small footprint, unshielded, no antenna
RN4871U-V/RM118	Compact footprint, unshielded, chip antenna

4 Known Issues

4.1 Using Built-in and Private Services
Firmware 1.18.3 supports built-in GATT services via the SS command, and custom services via PS & PC commands. The SS command will clear any custom services previously defined by PS and PC commands. To use built-in services and customer services, the SS command be invoked prior to any PC or PS command.

4.2   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.

When issuing frequent RN487x 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 <u>wait for a response</u>, such as "AOK" before issuing the next command.

4.3   Connectable Advertisements on Android Devices

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

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

4.4   Handle Enumeration Not Reset After Clearing GATT Services

The PZ command is used to clear out an existing GATT service. The PS and PC commands are used to create service and characteristics respectively. If an existing service is cleared using PZ, and then followed immediately by PS and PC commands, the handle values will enumerate starting on from last entry in previous service. In order to reset enumeration handle for services, the module must rebooted using R,1. In most cases this is not an issue. In some cases, known (static) characteristic handle values are referenced by a script or remote BLE Client. Any applications that use static handles should issue the R,1 command immediately after PZ command, and prior to any PS and PC commands. This issue will be fixed in a future firmware release.

4.5   Set PIO P1_3 Level Command

The PIO level command "|O,10,xx " for pin P1_3 does not work. Recommended workaround is to use another pin. This issue will be fixed in a future firmware release.

4.6   Deep Sleep Current on RN4870 PICTail

The default state for PIO pin, P1_2 is not configured correctly, leading to high sleep current. There are two options for working around this problem: The first option is to pull up the pin P1_2 to Vdd on the board. The second option is use the command "SW,0A,00" to configure PIO P1_2 as 'None' that internally pulls up the pin. This issue will be resolved in next firmware release.