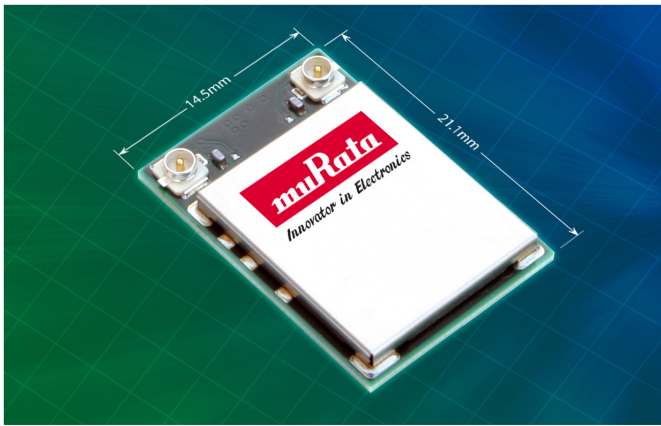![muRata logo - Innovator in Electronics]

# Wi-Fi® 802.11 a/b/g/n Wireless Connectivity Module
## *Model: SN1857*



The SN1857 provides 2.4 and 5 GHz WLAN plus Bluetooth and NFC functionality in a small, FCC/IC certified and ETSI compliant module. The SN1857 is based on TI's WL1857 SOC.

The module features optimized RF performance including a high-efficiency RF front end circuit, a stable 26 MHz internal reference clock and U.FL coaxial RF connectors. The module is designed to fit into small spaces, and requires a minimum of external components to operate. Software drivers are available for Linux and Android operating systems.
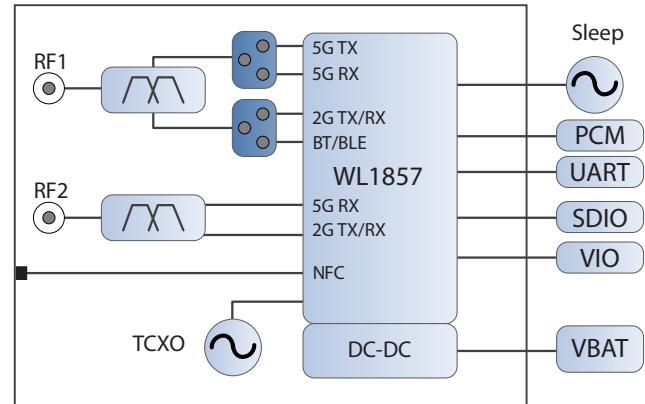
## Features

- IEEE 802.11a/b/g/n compliant
- 2.4 GHz MIMO 2T/2R support
- 5 GHz MISO 1T/2R support
- SISO 40 MHz bandwidth support
- WiFi Direct, Soft AP and Multi-role support
- 4-bit SDIO WLAN host interface
- Bluetooth 4.0 with Bluetooth Low Energy
- NFC card and reader functions
- Industrial temperature range operation
- Low current consumption in all operating modes
- Extremely low current sleep mode
- Miniature 62 terminal LGA package, 21.1 x 14.5 x 2.3 mm nominal dimensions
- Open source compliant Wi-Fi and Bluetooth software drivers
- Optional ANT support
- No production calibration required

## Block Diagram



## WLAN Specifications

- IEEE 802.11a/b/g/n compliant
- Operating Frequency Range: 2.412 to 2.472 GHz and 5.180 to 5.825 GHz
- Data Rates

  802.11a/g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps

  802.11b: 11, 5.5, 2, 1 Mbps

  802.11n: 65, 58.5, 52, 39, 26, 19.5, 13, 6.5 Mbps
- Transmit Power

  802.11b, 11Mbps +15 dBm

  802.11g, 54 Mbps: +12 dBm

  802.11n, 65 Mbps: +11 dBm
- Receive Sensitivity

  802.11b, 11 Mbps: -84 dBm

  802.11g, 54 Mbps: -72 dBm

  802.11n, 65 Mbps, -70 dBm
- Supply Current:

  Transmit: 11Mbps 408mA, 54Mbps 324mA

  Receive: 57mA

## Security

- Hardware-based encryption/decryption for 64-, 128- and 256-bit WEP, TKIP and AES keys
- IEEE 802.11 d/e/h/i/k/r PICS compliant
- WEP, TKIP, WPA & WPA2, AES/CCMP per 802.11i

Note: Information in this brief is subject to change without notice.

## Bluetooth Specifications

- *Bluetooth V4.0 with BLE*
- *Power Class 1.5*
- *Operating Frequency Range: 2.4000 to 2.4835 GHz*
- *Data Rates: 1, 2, 3 Mbps*
- *High Rate UART 4-wire HCI (H4)*
- *Transmit Power: TBD*
- *Receive Sensitivity*

    *DH5, 1 Mbps: TBD*

    *EDR, 3 Mbps: TBD*
- *Transmit/Receive Supply Current: TBD (DH1)*

## Standard Host Processors

- *AM335x/OMAP5 running Linux or Android*

## Environmental

- *VBAT Input: 3.6 V nominal*
- *VIO Input: 1.8 V nominal*
- *Operating Temperature Range: -40 to +85℃*
- *RoHS Compliant*

## Interfaces

- *WLAN: SDIO*
- *BT: UART, PCM*
- *NFC: UART*

## Mechanical Dimensions

**Top View**   **Side View**   **Bottom View**

21.1   2.3

ANT1

14.5

ANT2

**Top View**

14.50
4.30
3.60
3.20
2.50
1.70
0.20

21.10
4.30
3.60
3.20
1.70
0.20

8.30
8.10
7.15
6.20
4.30
3.90

14.20
9.40
4.60
4.05
2.70

0.50

0.50

2.00

2.00

1.00

0.70

Dimensions in mm

**Top View**

1   43
52   44
2   42
62  61  59
60
53   58

54   57

55   56

16   28
26
17  18   27

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