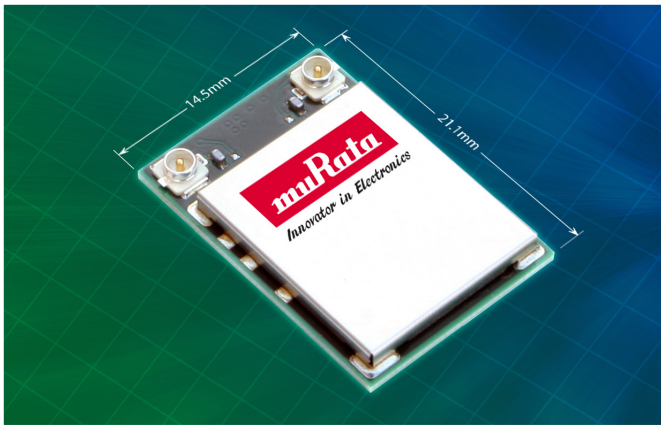# Wi-Fi® 802.11 a/b/g/n Wireless Connectivity Module
Model: SN1857

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.
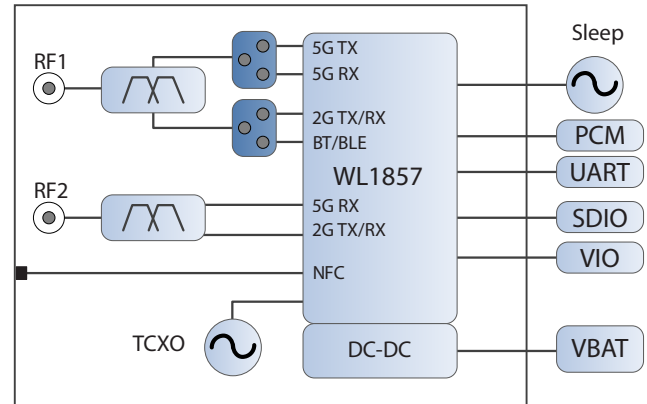
Features

- 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

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

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

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
2.50
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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