

DEXATEK

DK9179B Bluetooth Low Energy Module Specification

Revision History

This table describes the changes to the specification.

| Version | Date | Description |
|---------|------------|------------------|
| 1.0.0 | 2020/11/12 | Official Release |
| 2.0.0 | 2020/11/27 | Modify Info |

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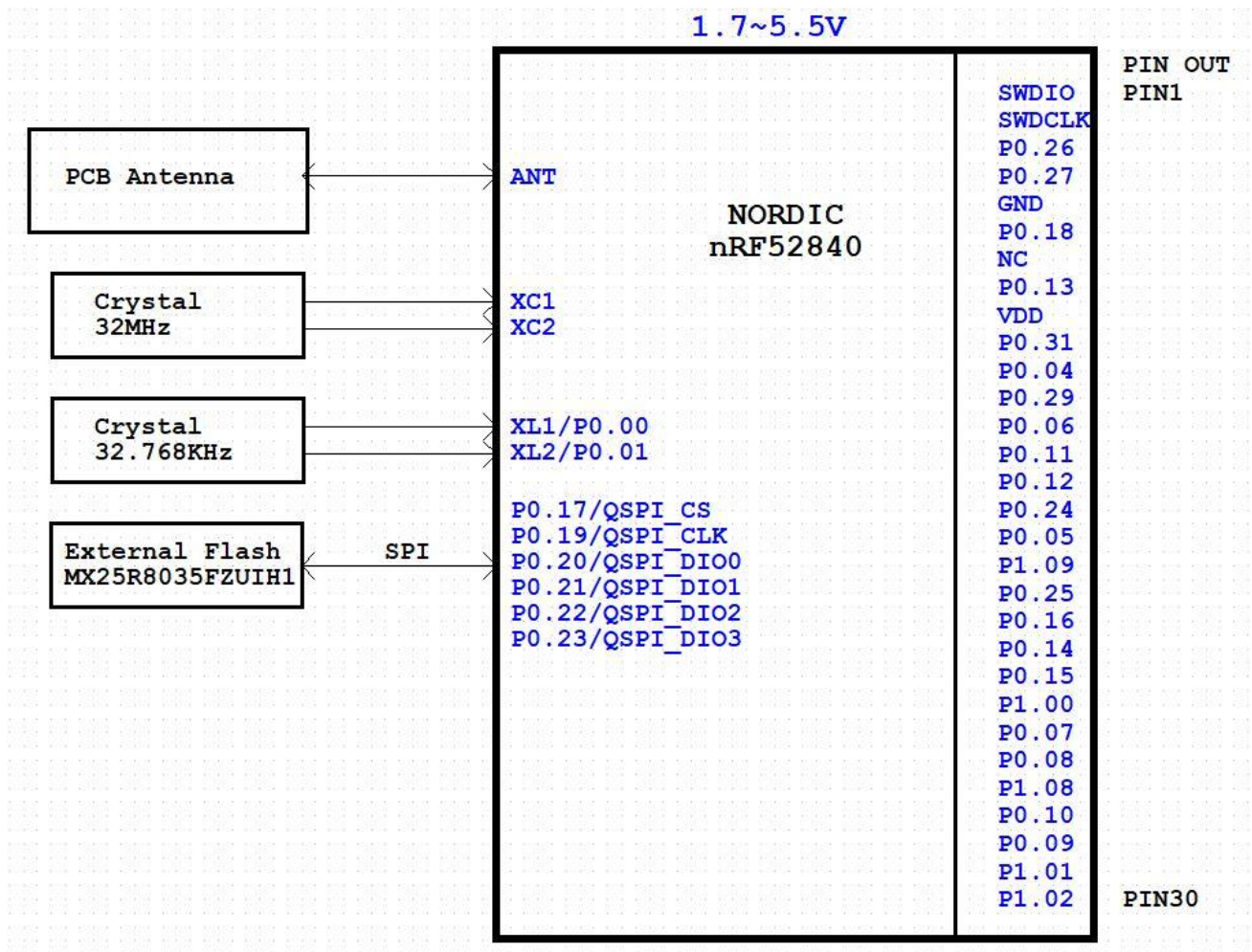
I. Introduction

The DK9179B module is compact, surface mount Bluetooth Low Energy, Bluetooth mesh, Thread, Zigbee, 802.15.4 , ANT and 2.4 GHz compliant wireless module. The module is based on Nordic nRF52840 radio Transceiver IC, has a ARM® Cortex®-M4 32-bit processor with FPU, 64 MHz, Flash memory. The outstanding performance at low power consumption and ultra-low cost, the DK9179B module is leading the way for the new generation of Bluetooth low energy modules.

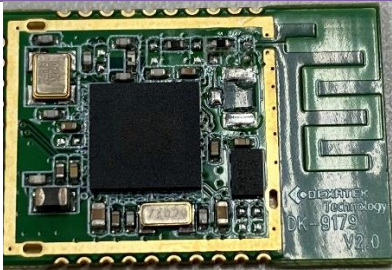
II. Key Features

- ARM® Cortex®-M4 32-bit processor with FPU, 64 MHz
- 2.4GHz multi-protocol transceiver
- Supported data rates :
 - Bluetooth®5: 2 Mbps, 1 Mbps, 500 kbps, and 125 kbps
 - IEEE 801.15.4-2006: 250 kbps
 - Proprietary 2.4GHz: 2 Mbps, 1 Mbps
- 1MB flash, 256kB RAM
- Flexible power management , DC/DC power mode
 - Wide supply voltage range: LDO (1.8 to 3.3V)
- Flexible and configurable 25 GPIO
- Peripheral 12-bit/200ksps ADC, Temperature sensor
- Up to 4x SPI master/3x SPI slave with EasyDMA
- Up to 2x I2C compatible 2-wire master/slave
- 2x UART (CTS/RTS) with EasyDMA
- 128-bit AES/ECB/CCM/AAR co-processor (on-the-fly packet encryption)
- Quadrature Decoder (QDEC)
- Bluetooth mesh and Thread support

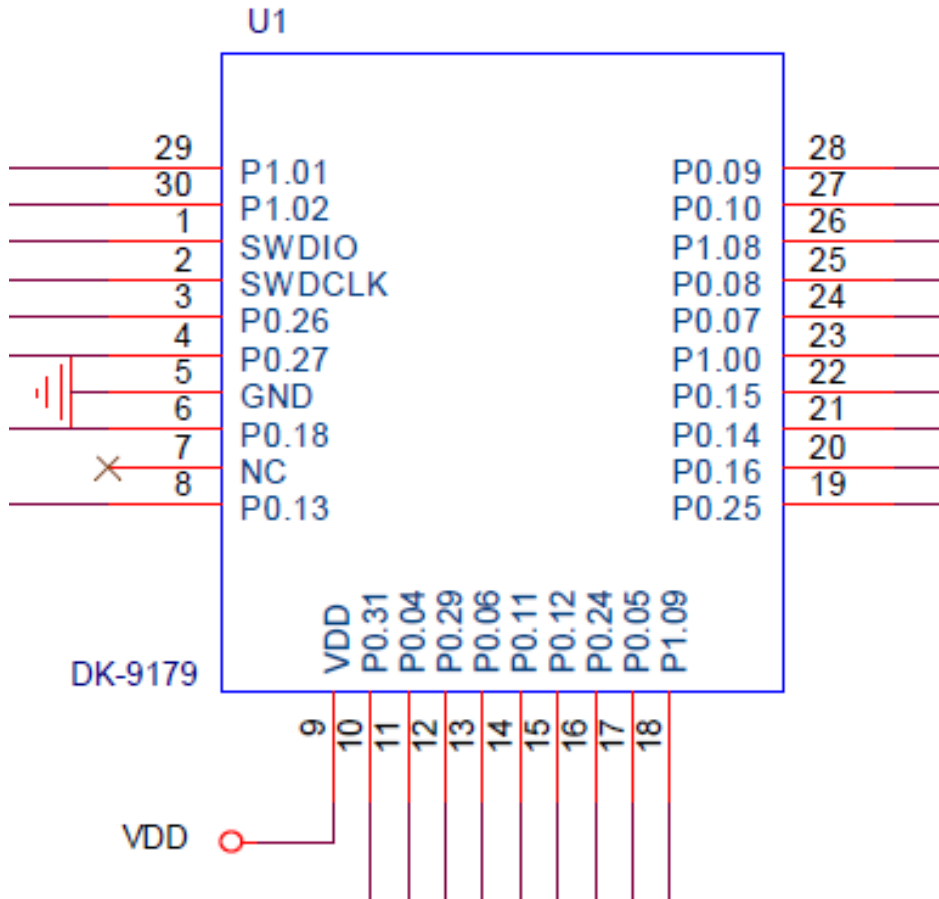
III. Block Diagram



IV. Specification

| | |
|--|---|
| Model | DK-9179B |
| |  |
| Antenna | PCB Antenna |
| Main Chip | nRF52840 |
| Application | smart home sensors and controllers industrial IoT sensors and controllers |
| Transmit Power | Transmit Mode output power: 0 ~+8 dBm |
| Wireless Standards | Bluetooth ® 5.0 |
| Data Rates | Bluetooth®5: 2 Mbps, 1 Mbps, 500kbps, and 125kbps IEEE 802.15.4-2006: 250kbps Proprietary 2.4 GHz: 2 Mbps, 1 Mbps |
| Work Mode | Bluetooth ® 5.0 |
| Frequency Range | 2405MHz---2480MHz |
| Power Consumption (in different states) | Radio transmitting @ 0 dBm output power, 1 Mbps BLE : 6.4mA |
| Voltage: | 1.7V-5.5V |
| Modulation Technique | GFSK Modulation |
| Wireless Security | AES/ECB/CCM/AAR Encryption |
| Dimension(W×D×H) | 25x17x2.3 mm |
| Certification | BQB |
| Environment | Operating Temperature: -10°C~45°C Storage Temperature: -20°C~65°C |

V. Module Pin Definition

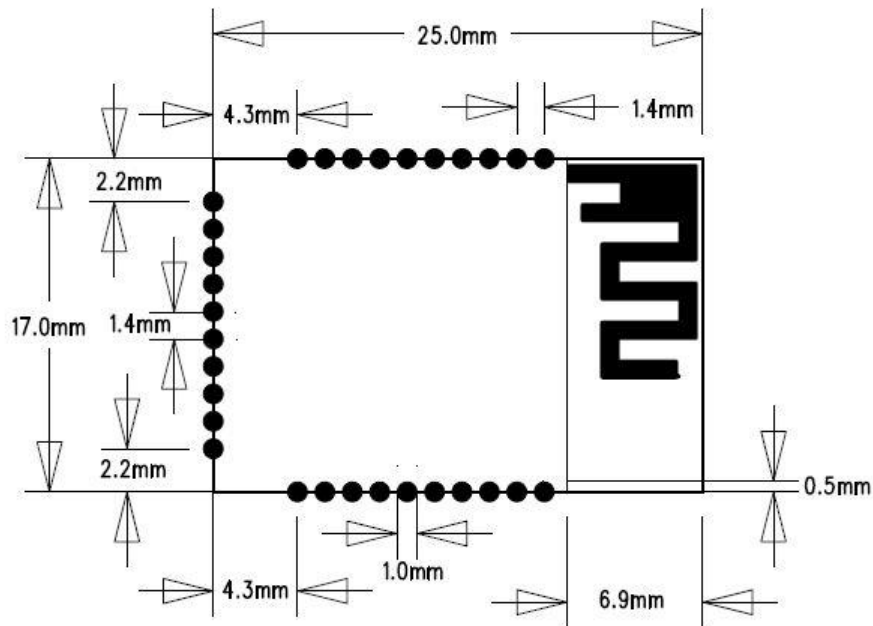


| Pin | Function | Pin | Function |
|-----|----------------|-----|-------------|
| 1 | <u>SWDIO</u> | 16 | P0.24 |
| 2 | <u>SWDCLK</u> | 17 | P0.05 (ADC) |
| 3 | P0.26 | 18 | P1.09 |
| 4 | P0.27 | 19 | P0.25 |
| 5 | <u>GND</u> | 20 | P0.16 |
| 6 | P0.18 | 21 | P0.14 |
| 7 | NC | 22 | P0.15 |
| 8 | P0.13 | 23 | P1.00 (SWO) |
| 9 | <u>VDD</u> | 24 | P0.07 |
| 10 | P0.31 (ADC,LF) | 25 | P0.08 |
| 11 | P0.04 (ADC) | 26 | P1.08 |
| 12 | P0.29 (ADC,LF) | 27 | P0.10(NFC2) |
| 13 | P0.06 | 28 | P0.09(NFC1) |
| 14 | P0.11 | 29 | P1.01 |
| 15 | P0.12 | 30 | P1.02 |

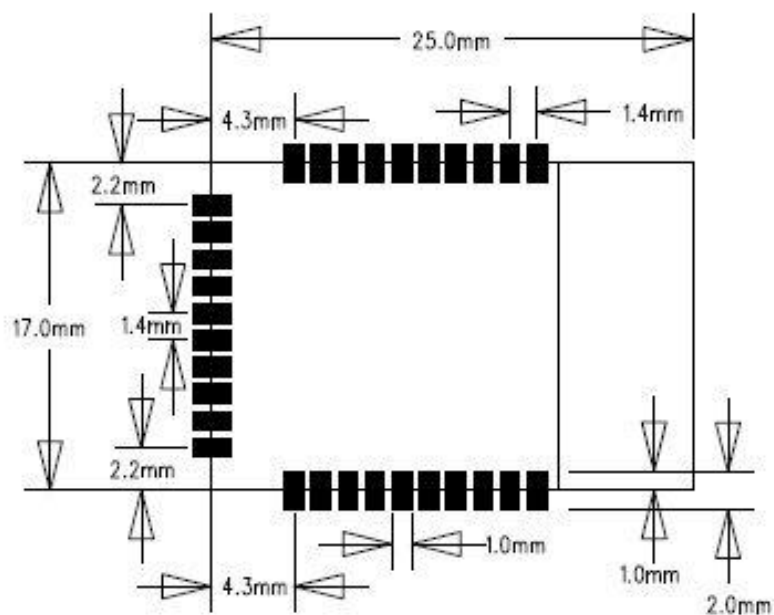
VI. Product Dimension

- PCB SIZE: (W) 25 x (D) 17 mm
- PIN OUT: 30
- Recommended Layout of solder Pad

TOP Layer

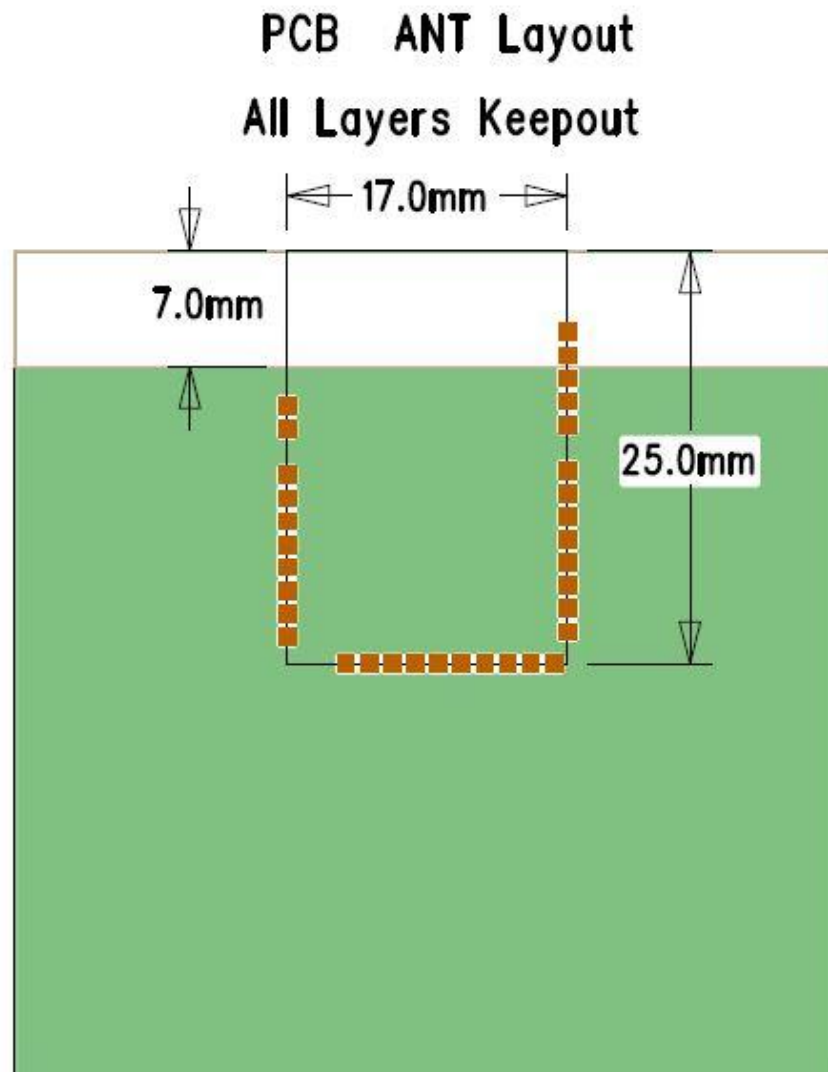


BOTTON Layer



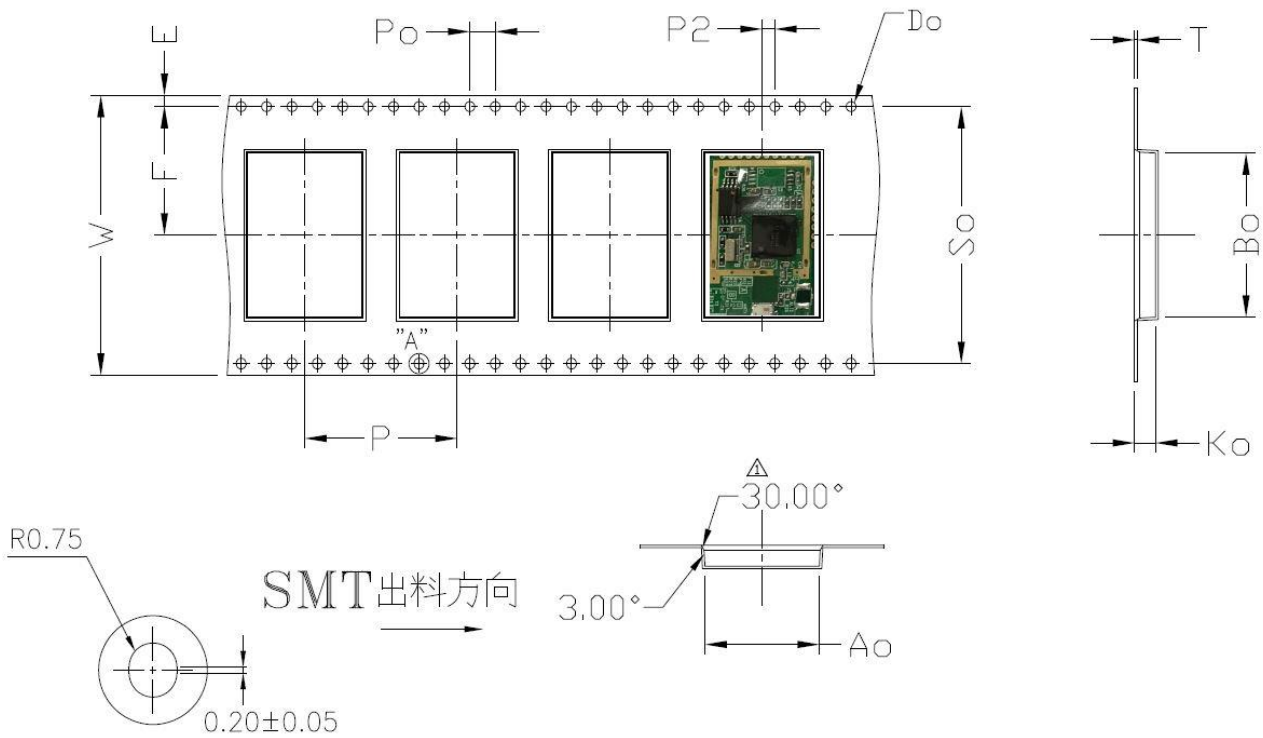
VII. RF Layout Suggestion

Please follow below instruction to avoid RF Performance lose.



VIII. Packaging Info

● Reel Packaging



| ITEM | DIM | ALTERNATE |
|----------------|---|-----------|
| W | 44.00 ^{+0.30} _{-0.30} | |
| E | 1.75 ^{+0.10} _{-0.10} | |
| F | 20.20 ^{+0.15} _{-0.15} | |
| S ₀ | 40.40 ^{+0.10} _{-0.10} | |
| P | 24.00 ^{+0.10} _{-0.10} | |
| P ₀ | 4.00 ^{+0.10} _{-0.10} | |
| P ₂ | 2.00 ^{+0.15} _{-0.15} | |
| D ₀ | ∅1.50 ^{+0.10} _{-0.00} | |
| T | 0.40 ^{+0.05} _{-0.05} | |
| A ₀ | 18.00 ^{+0.10} _{-0.10} | |
| B ₀ | 25.80 ^{+0.10} _{-0.10} | |
| K ₀ | 3.30 ^{+0.10} _{-0.10} | |