

DEXATEK

DK9179B

Bluetooth Low Energy Module Specification

Revision History

This table describes the changes to the specification.

Version	Date	Description
1.0.0	2020/11/30	Official Release
1.0.1	2020/12/08	Modify Temperature
1.0.2	2020/12/30	Add Order Code

Table of Contents

1. Introduction.....	3
2. Key Features	4
3. Block Diagram	5
4. Specifications	6
5. Module Pin Definition	7
6. Product dimensions.....	8
7. RF Layout Suggection	9
8. Packaging Info	10
9. Order Code.....	11

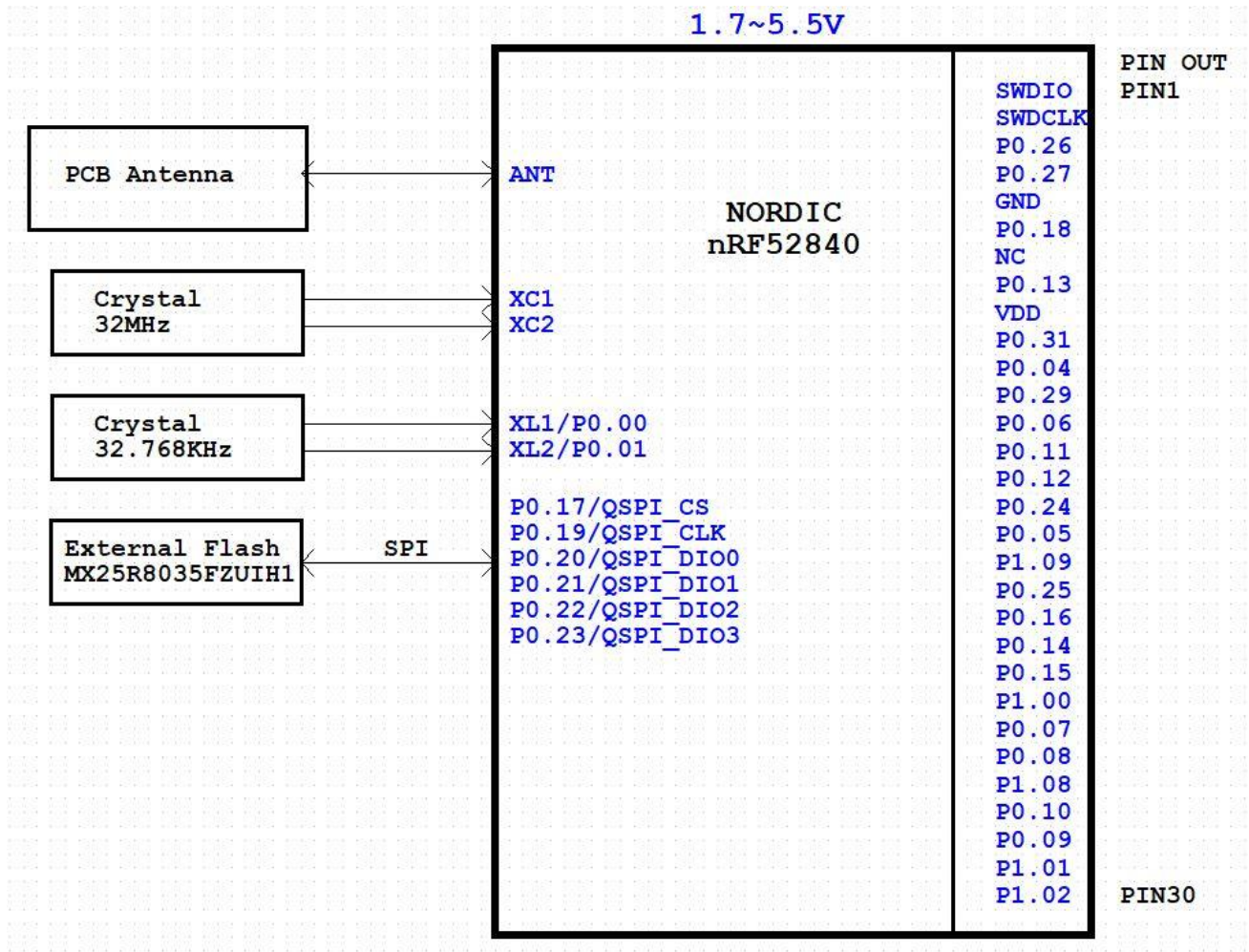
I. Introduction

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.

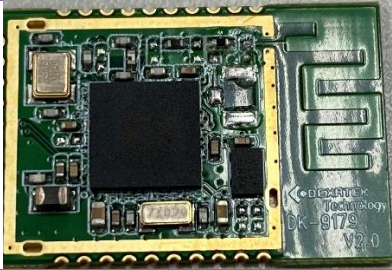
II. Key Features

- 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/200ksp 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

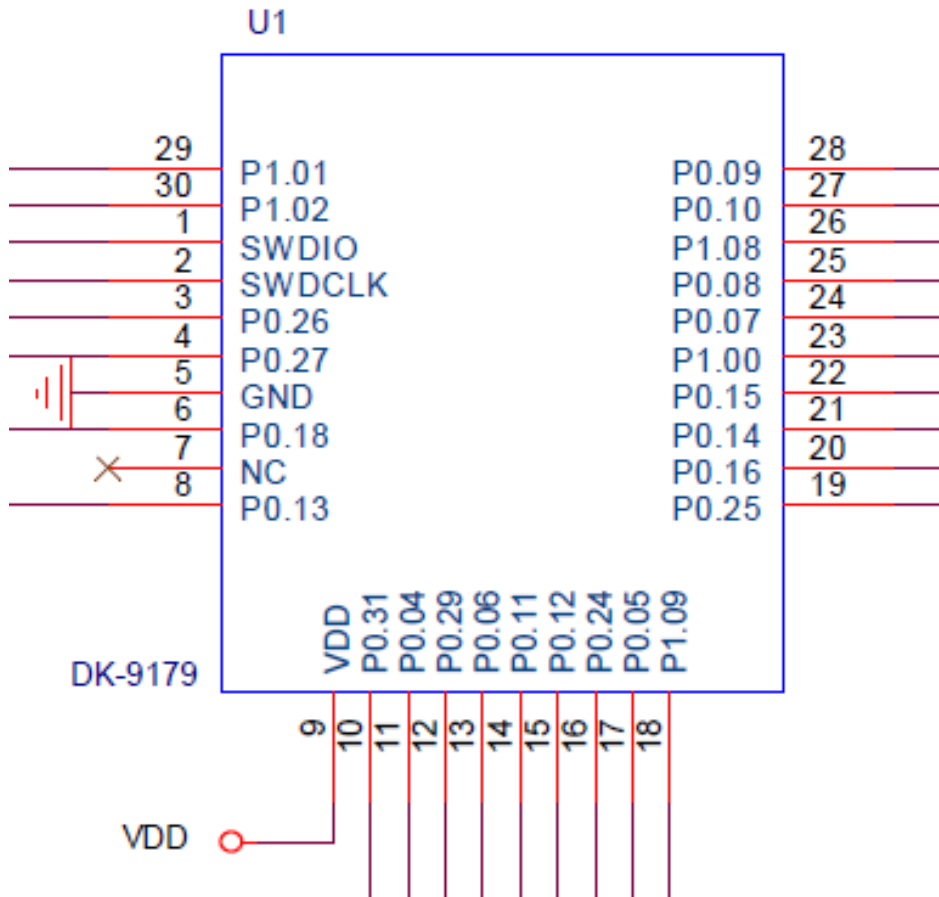
III. Block Diagram



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: -40°C~85°C Storage Temperature: -40°C~125°C

V. Module Pin Definition

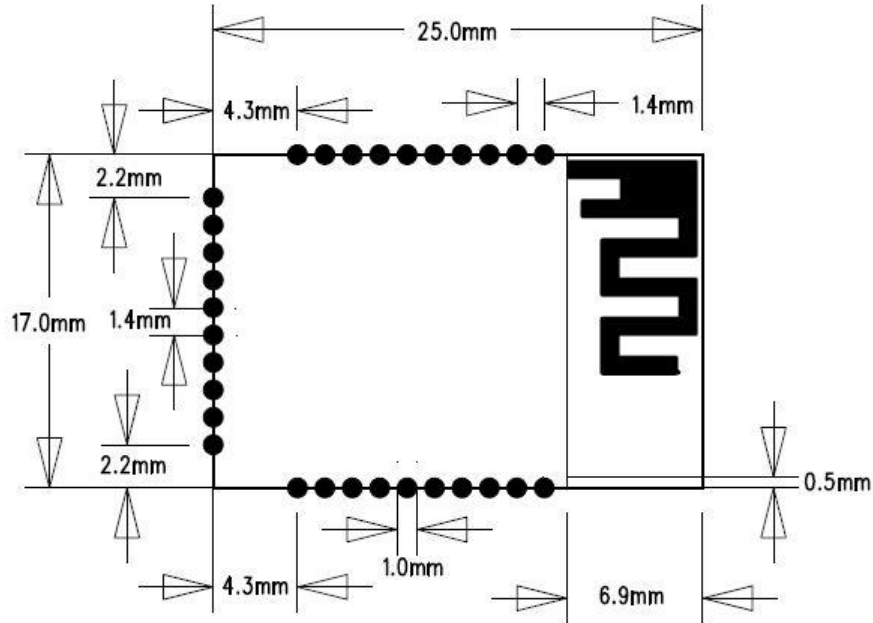


Pin No.	Module Pin	Pin No.	Module Pin
1	<u>SWDIO</u>	16	Po.24
2	<u>SWDCLK</u>	17	Po.05 (ADC)
3	Po.26	18	P1.09
4	Po.27	19	Po.25
5	<u>GND</u>	20	Po.16
6	Po.18	21	Po.14
7	NC	22	Po.15
8	Po.13	23	P1.00 (SWO)
9	<u>VDD</u>	24	Po.07
10	Po.31 (ADC,LF)	25	Po.08
11	Po.04 (ADC)	26	P1.08
12	Po.29 (ADC,LF)	27	Po.10(NFC2)
13	Po.06	28	Po.09(NFC1)
14	Po.11	29	P1.01
15	Po.12	30	P1.02

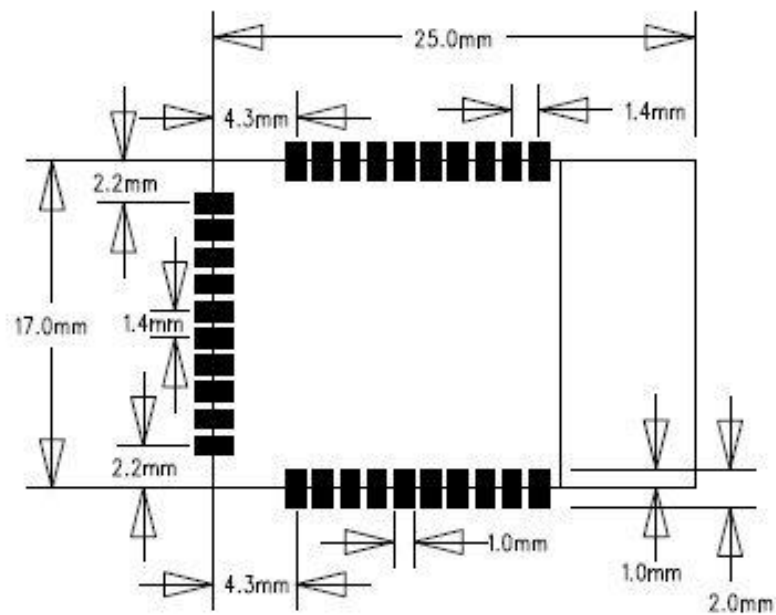
VI. Product Dimension

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

TOP Layer

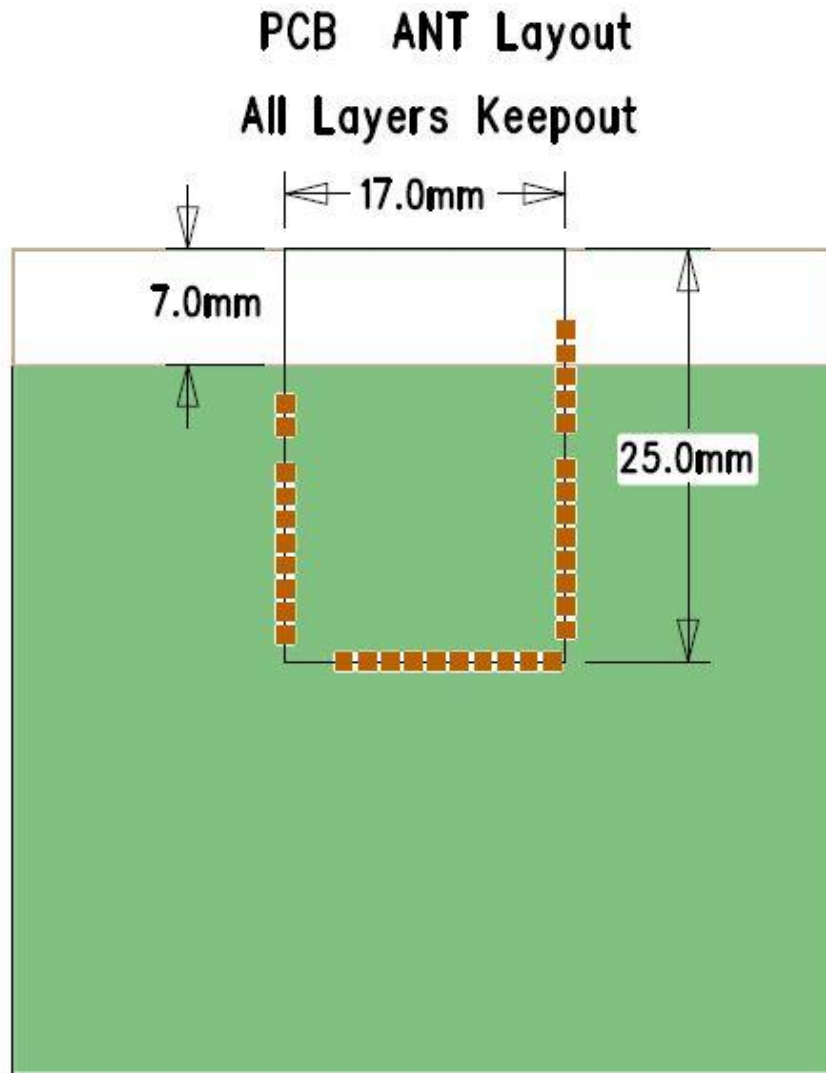


BOTTOM Layer



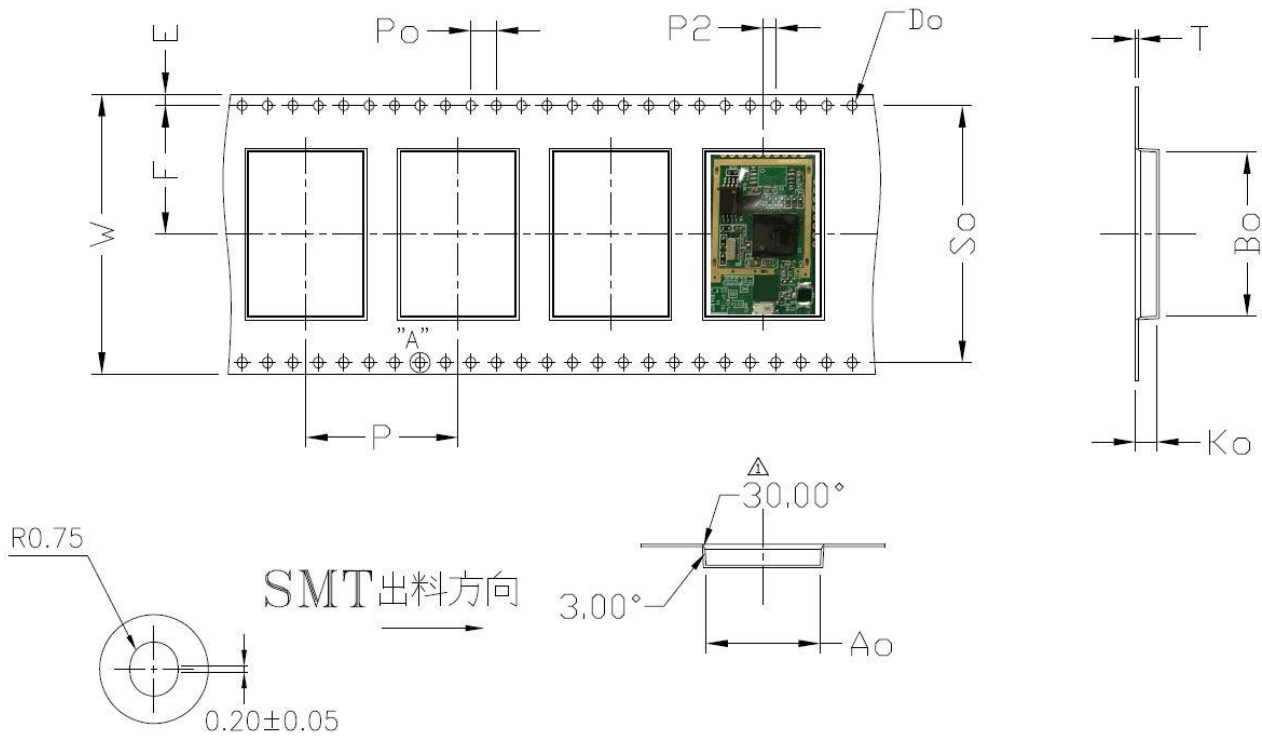
VII. RF Layout Suggestion

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}	
So	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}	
Do	∅1.50 ^{+0.10} _{-0.00}	
T	0.40 ^{+0.05} _{-0.05}	
A ₀	18.00 ^{+0.10} _{-0.10}	
Bo	25.80 ^{+0.10} _{-0.10}	
Ko	3.30 ^{+0.10} _{-0.10}	

IX. Order Code

● DK91 Series (For 52833/52840)

D	K	9	1	7	9	B	
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Abbreviation	Definition codes
DK	Dexatek Product
91	Nordic Chip
79	Without PA Solution / PCB Antenna
A	nRF52833 Solution
B	nRF52840 Solution
1	External 1MB Flash