

DEXATEK

DK9176B

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

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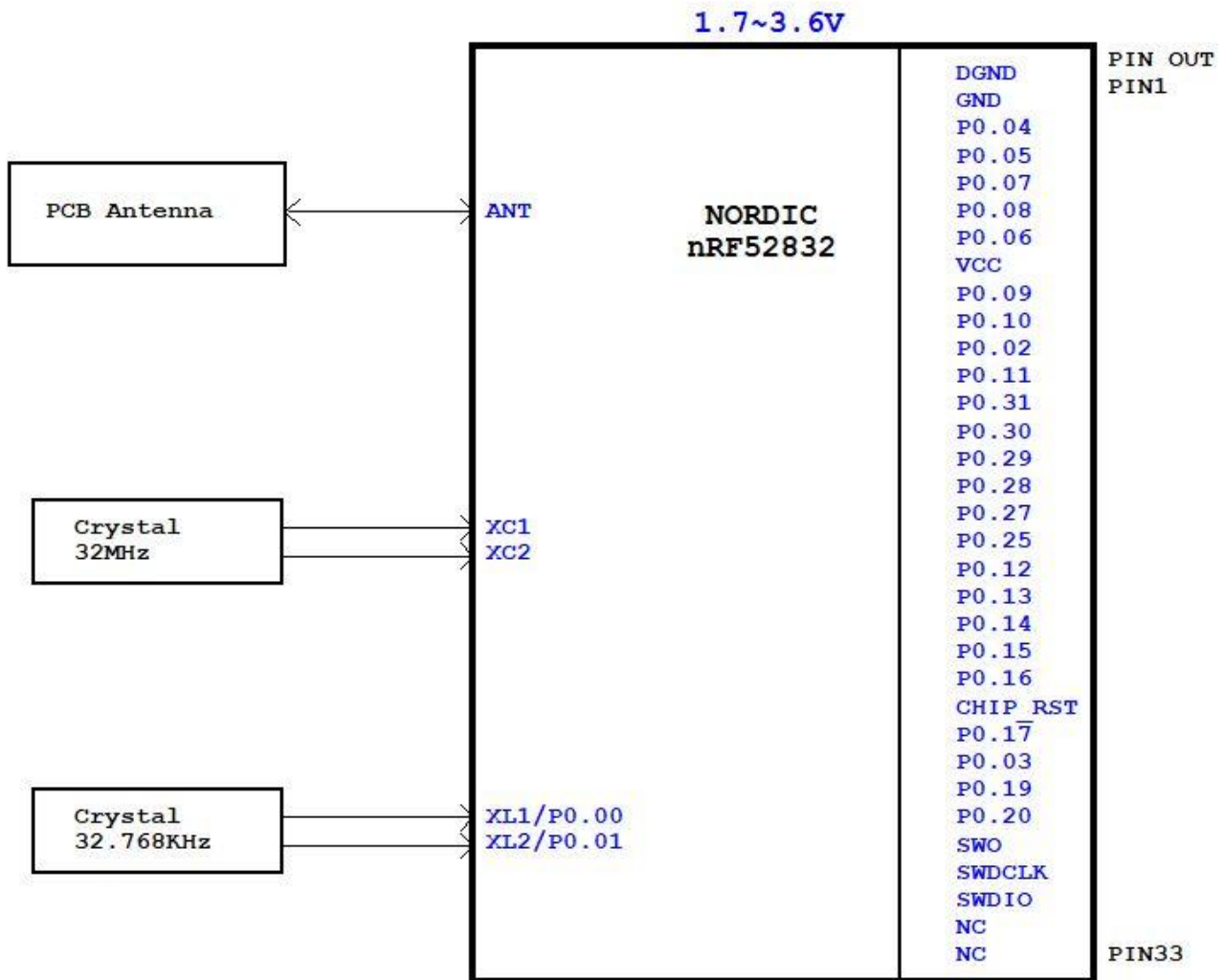
I. Introduction

The DK9176B is compact, surface mount Bluetooth Low Energy (BLE) compliant wireless module. The module is based on Nordic nRF52832 radio Transceiver IC, has a 32 bit ARM[®] Cortex[™]-M4F 64MHz, Flash memory, analog and digital I/O. It can form large scale industrial mesh networks for several applications such as metering. Since its small size, outstanding performance at low power consumption and ultra-low cost, the DK9176B is leading the way for the new generation of Bluetooth low energy modules.


II. Key Features

- 32-bit ARM® Cortex™-M4F 64MHz
- 2.4GHz multi-protocol transceiver
- Data rates: 1Mbps, 2Mbps Bluetooth low energy mode (Bluetooth 5 compatible)
- Sensitivity of -96 dbm for Bluetooth low energy
- 512kB flash, 64kB RAM
- Flexible power management , DC/DC power mode
- Wide supply voltage range: LDO (1.7 to 3.6V), Buck DC/DC (1.7 to 3.6V)
- Flexible and configurable 24 GPIO
- Ultra low-power 32kHz crystal and RC oscillators
- Peripheral 12-bit/200KSPS ADC, Temperature sensor
- Digital I/O
- SPI Master/Slave, 2-wire Master/Slave
- UART (CTS/RTS) with Easy DMA
- AES HW encryption
- Quadrature Decoder (QDEC)

III. Block Diagram



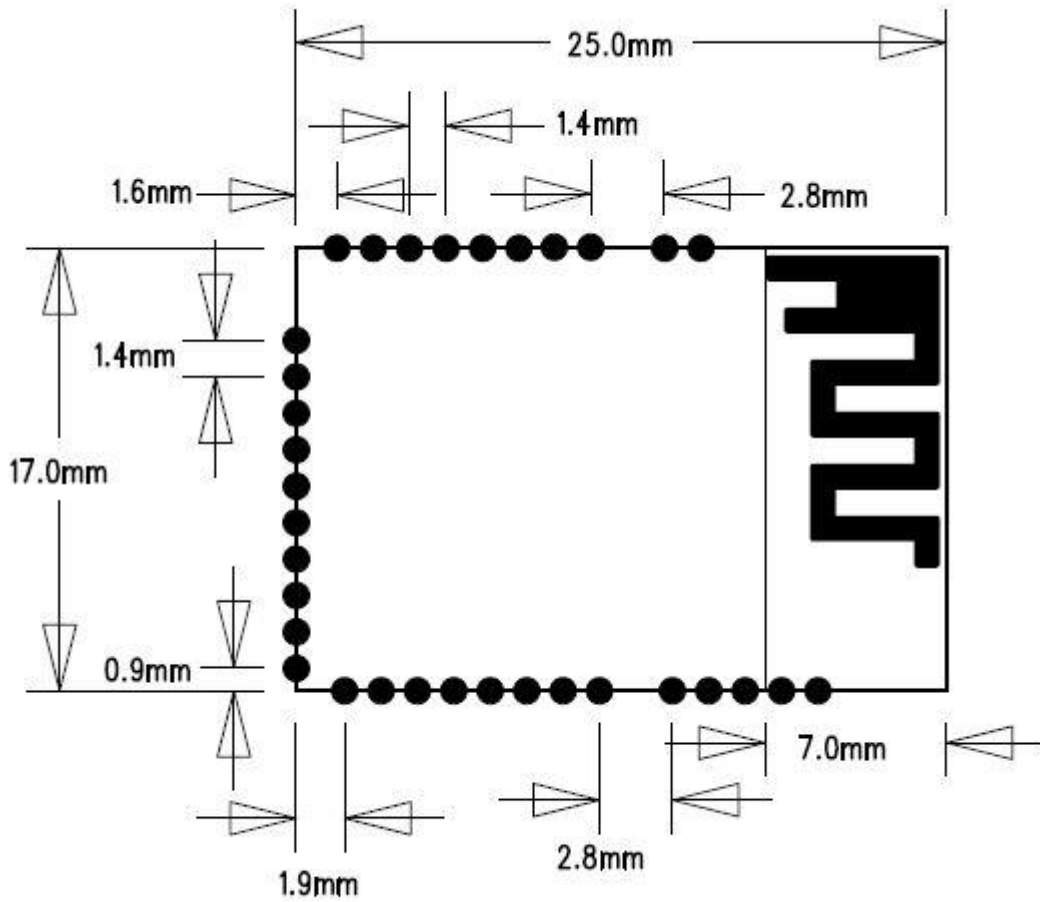
IV. Specification

	DK-9176B
Model	
Antenna	PCB Antenna
Main Chip	nRF52832
Application	Non-Home kit Alarm System TaiSEIA & BLE 5.0
CP MFi / PA	W/O MFi CP W/O PA
Transmit Power	Tx Maxmum@ 4dBm
Wireless Standards	Bluetooth ® 5
Data Rates	2Mbps (Bluetooth ® 5)
Work Mode	Bluetooth ® 5
Frequency Range	2400MHz---2483.5MHz
Power Consumption (in different states)	TX Peak@ 4dBm : 7.5mA RX Peak : 5.4mA
Voltage:	1.7V-3.6V
Modulation Technique	GFSK Modulation
Wireless Security	AES HW Encryption
Dimension(W×D×H)	25×17×2.4 mm
Certification	RoHS / Declaration ID / BQB Test / FCC/ CE RF
Environment	Operating Temperature: -40°C~85°C Storage Temperature: -40°C~125°C

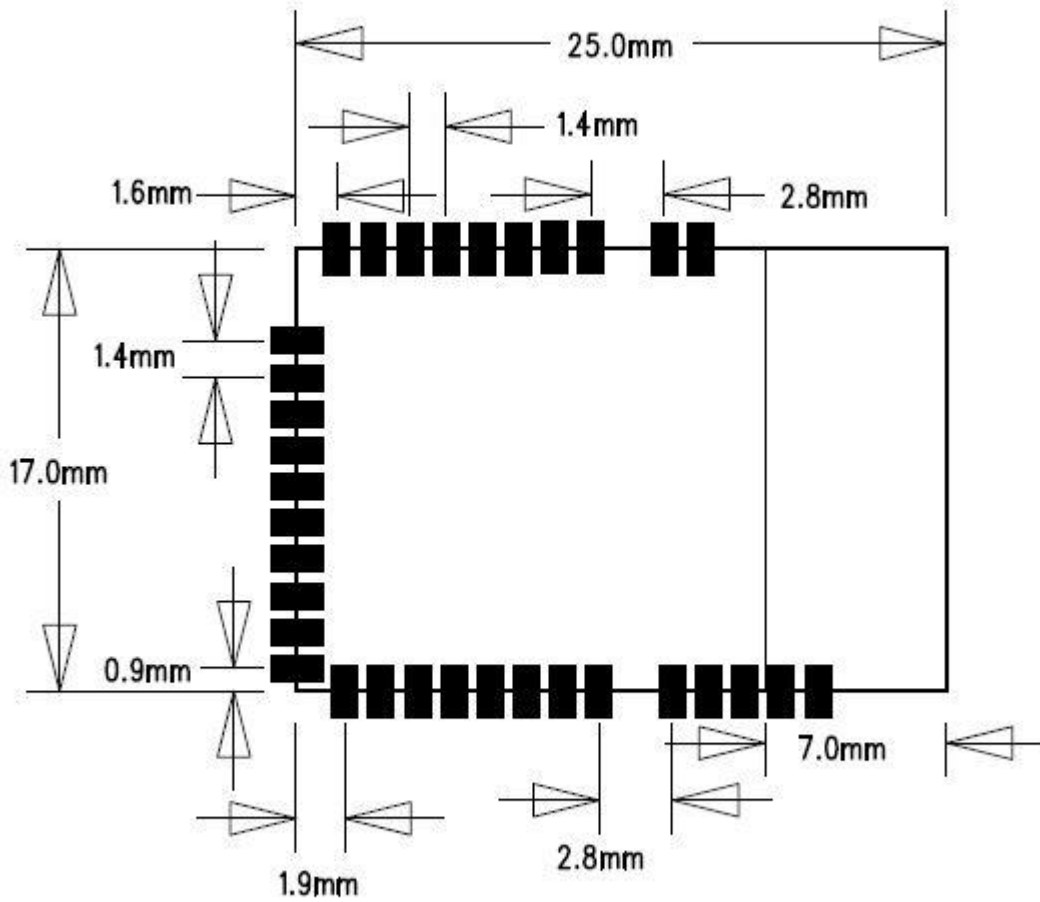
VI. Product Dimension

- PCB SIZE: (W) 25 x (D) 17 mm
- PIN OUT: 33
- Recommended Layout of solder Pad

TOP Layer

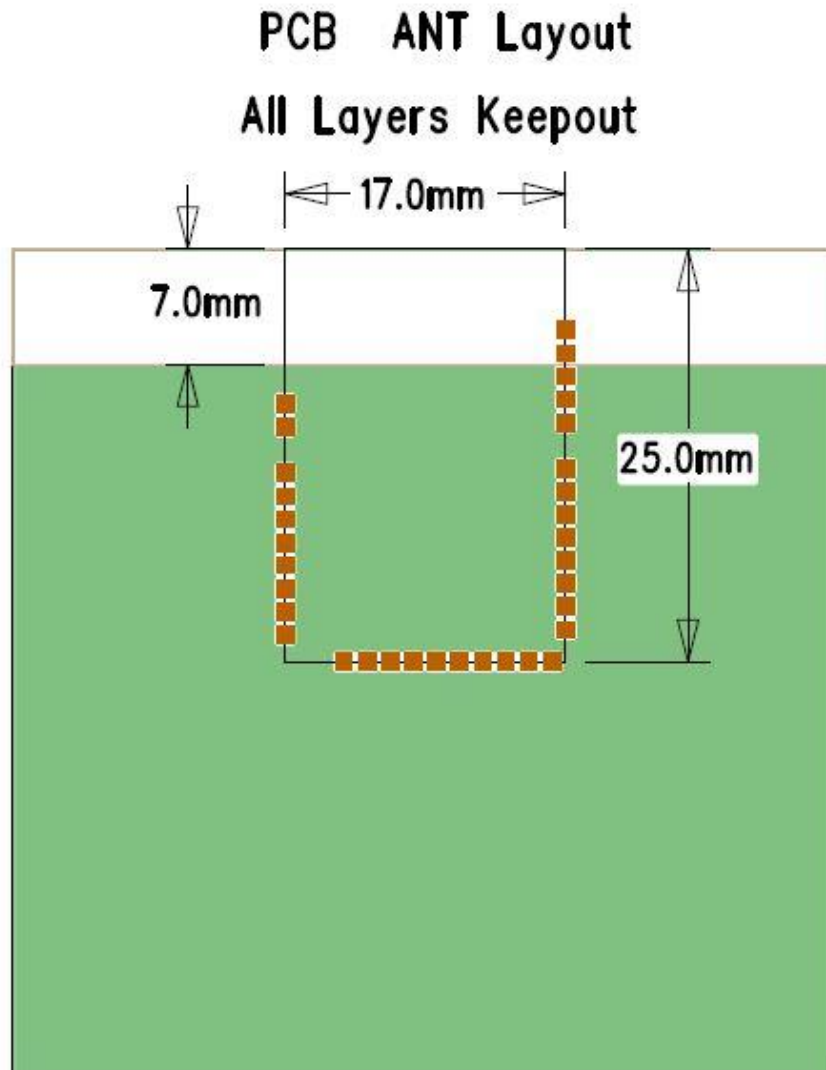


BOTTOM Layer



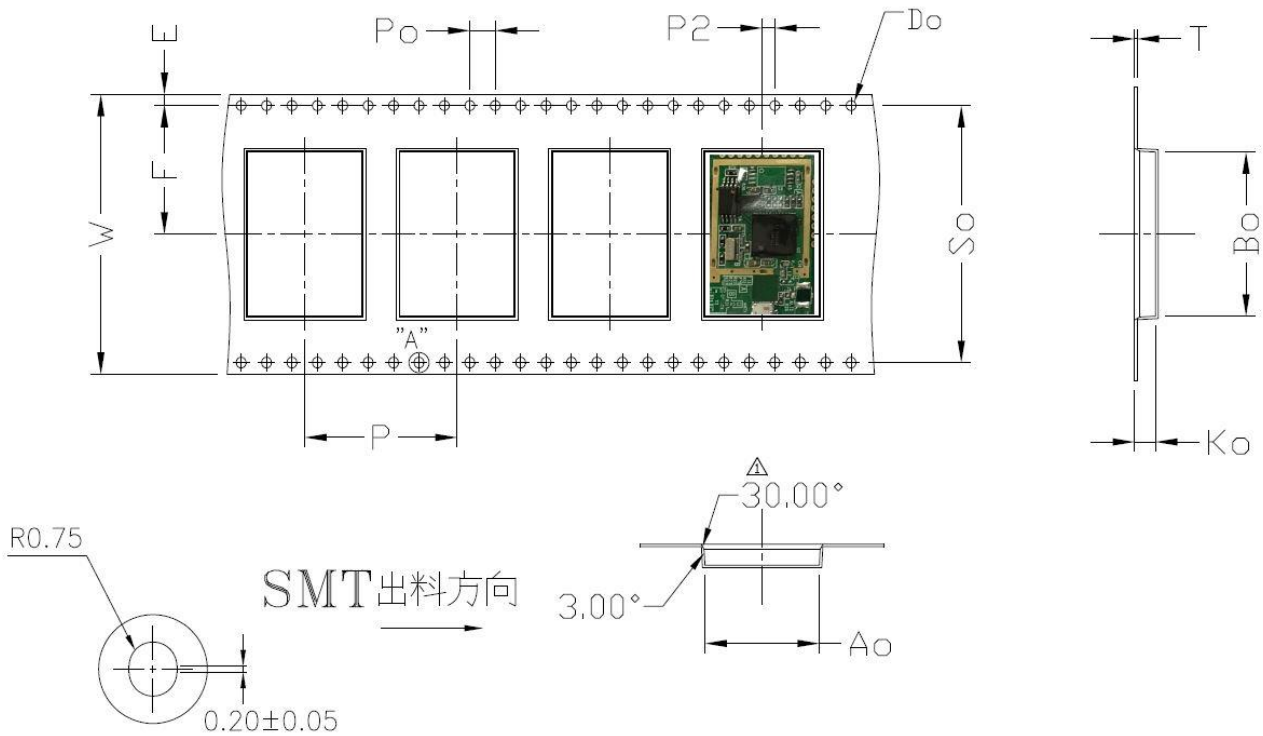
VII. RF Layout Suggestion

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}	
Ao	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 52810/52832)

D	K	9	1	7	6	B	
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Abbreviation	Definition codes
DK	Dexatek Product
91	Nordic Chip
71	Without PA Solution / Chip Antenna
76	Without PA Solution / PCB Antenna
67	PA Solution / Chip Antenna
A	nRF52810 Solution
B	nRF52832 Solution