

DEXATEK

DK9176B Bluetooth Low Energy Module Specification

Revision History

This table describes the changes to the specification.

Version	Date	Description
1.0.0	2020/11/16	Official Release
2.0.0	2020/11/27	Modify Info

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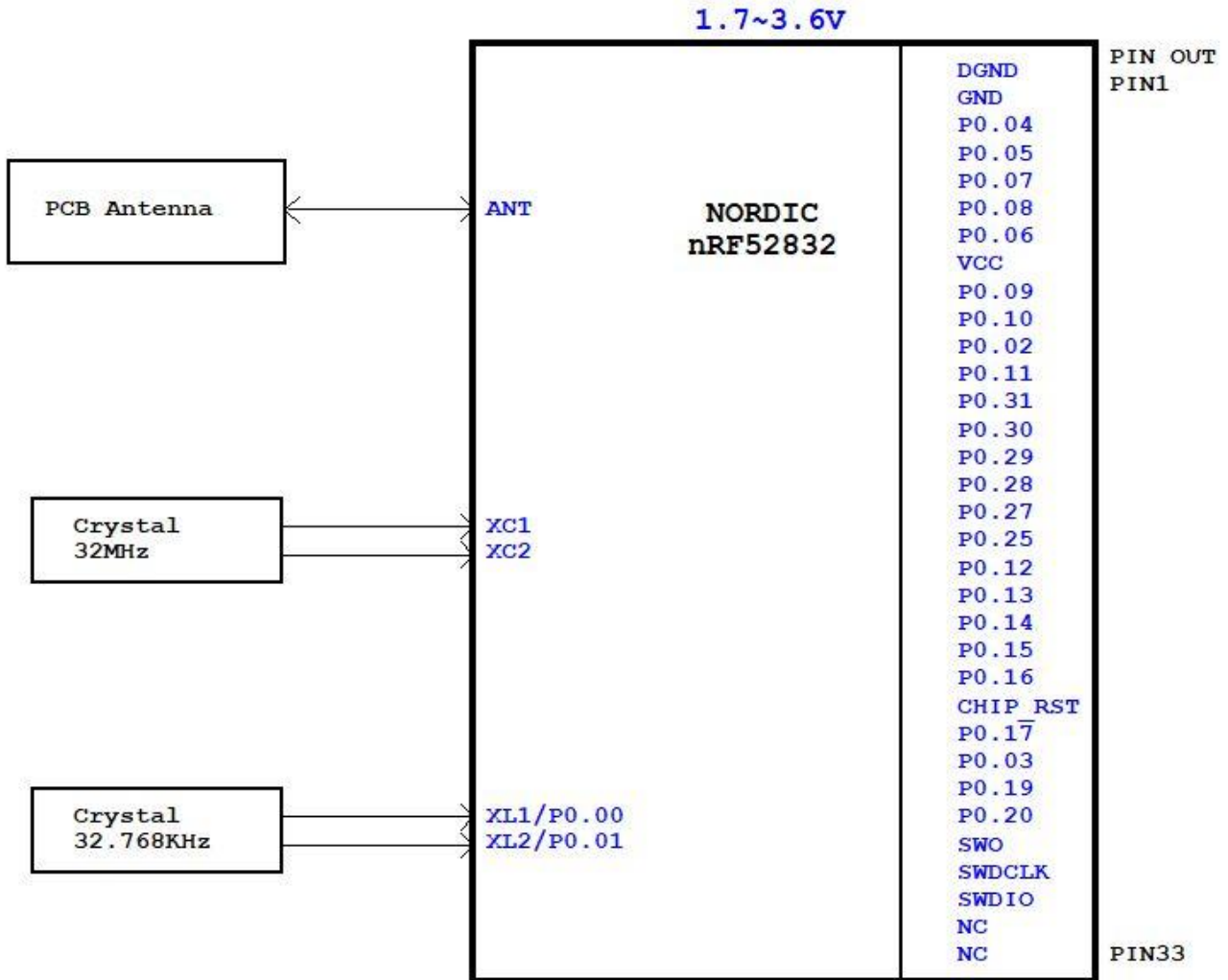
I. Introduction

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)

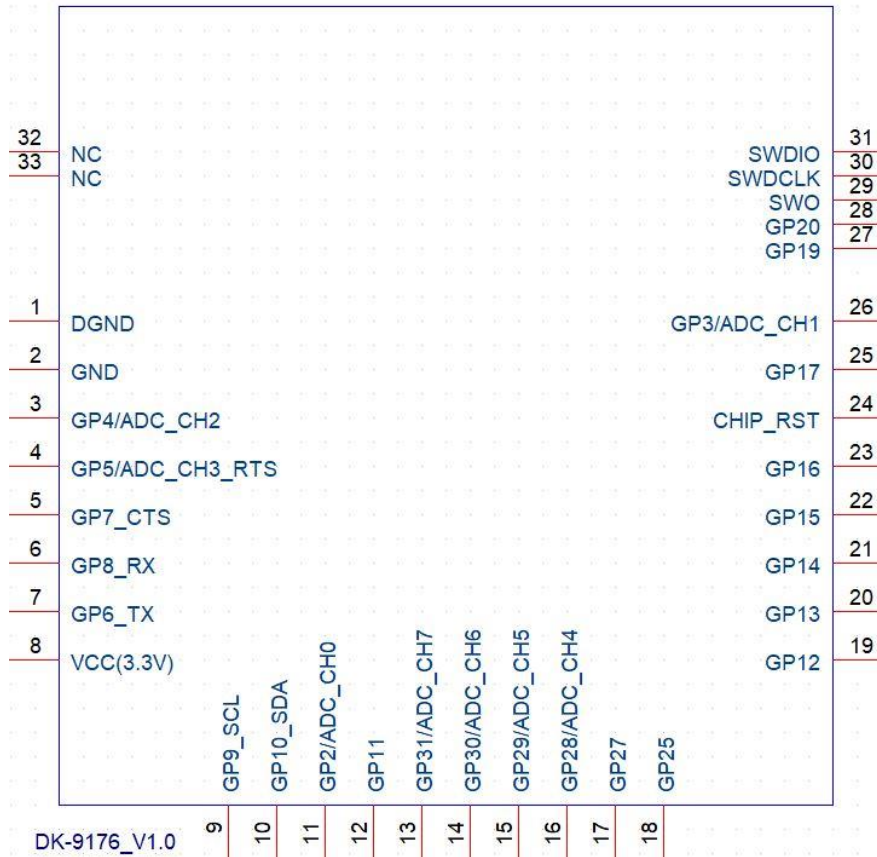
III. Block Diagram



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: -10°C~45°C Storage Temperature: -20°C~65°C

V. Module Pin Definition

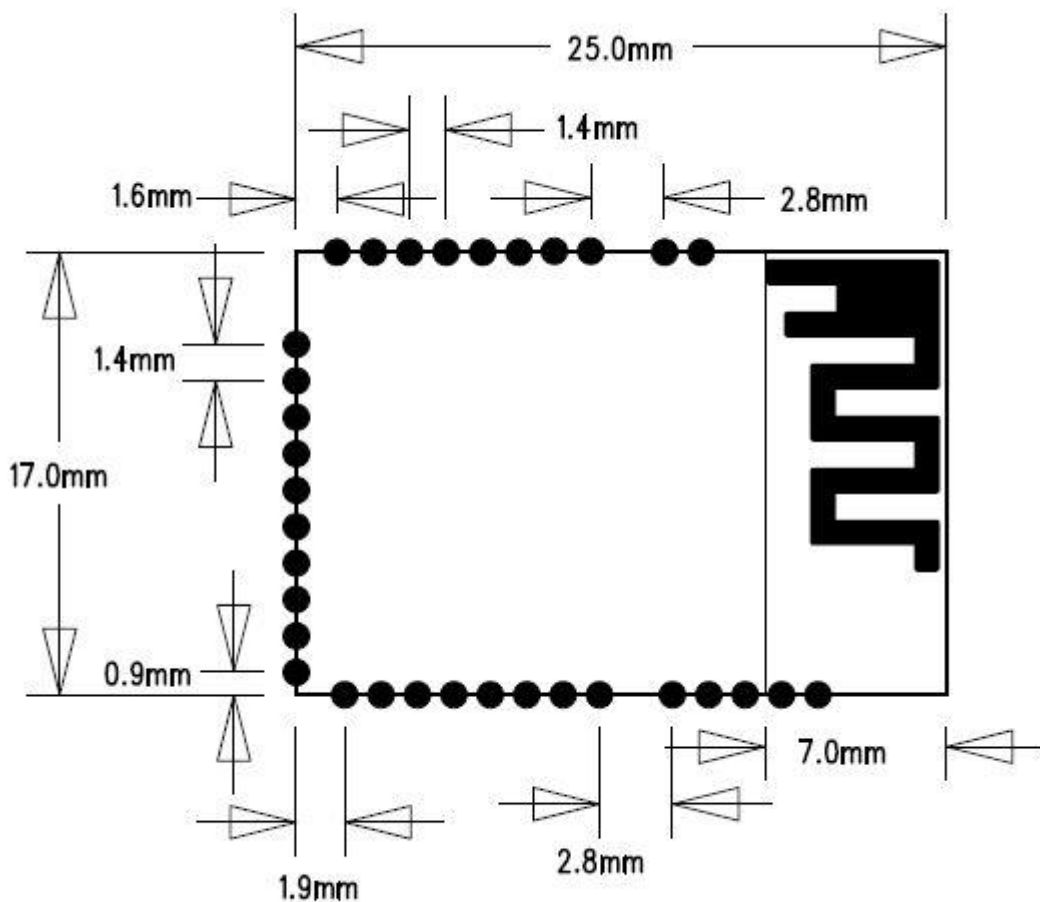


Pin No.	Function	Pin No.	Function
1	<u>DGND</u>	18	GP25
2	<u>GND</u>	19	GP12
3	GP4	20	GP13
4	GP5	21	GP14
5	GP7	22	GP15
6	GP8	23	GP16
7	GP6	24	CHIP_RST
8	<u>VCC</u>	25	GP17
9	GP9	26	GP3
10	GP10	27	GP19
11	GP2	28	GP20
12	GP11	29	SWO
13	GP31	30	<u>SWDCLK</u>
14	GP30	31	<u>SWDIO</u>
15	GP29	32	NA
16	GP28	33	NA
17	GP27		

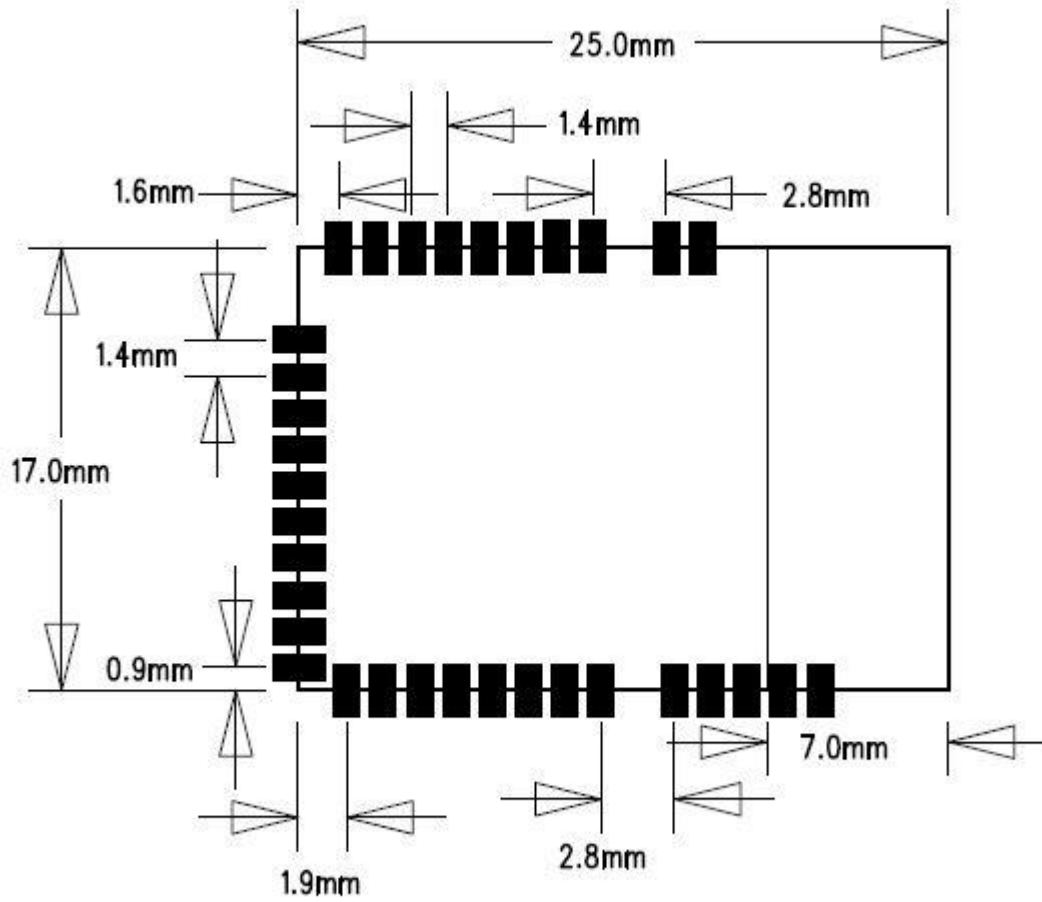
VI. Product Dimension

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

TOP Layer

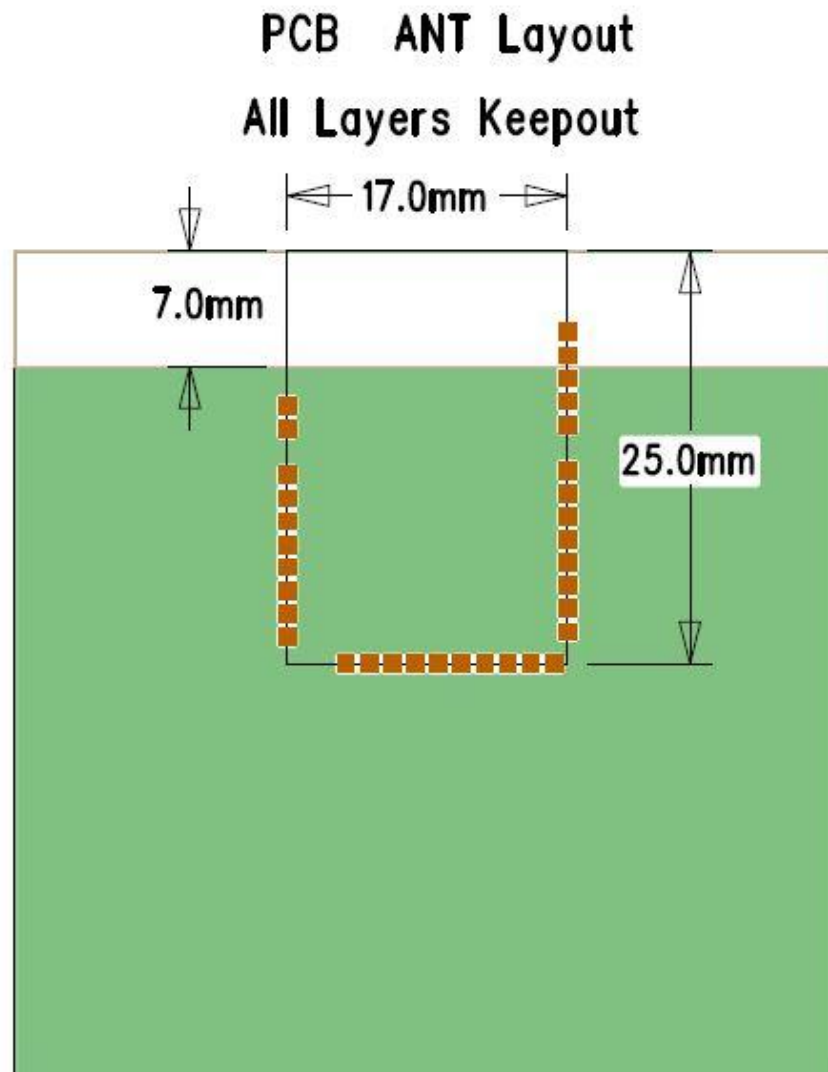


BOTTON Layer



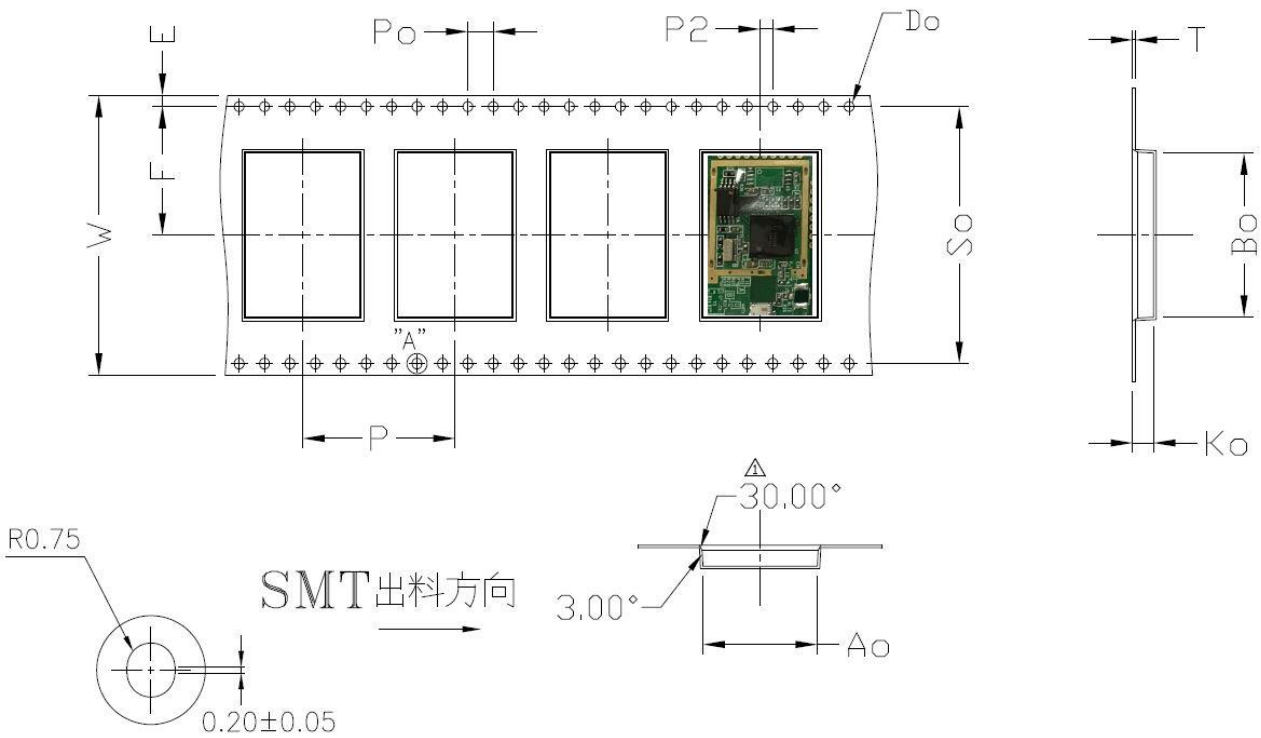
VII. RF Layout Suggestion

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}	