

DEXATEK

DK9176A 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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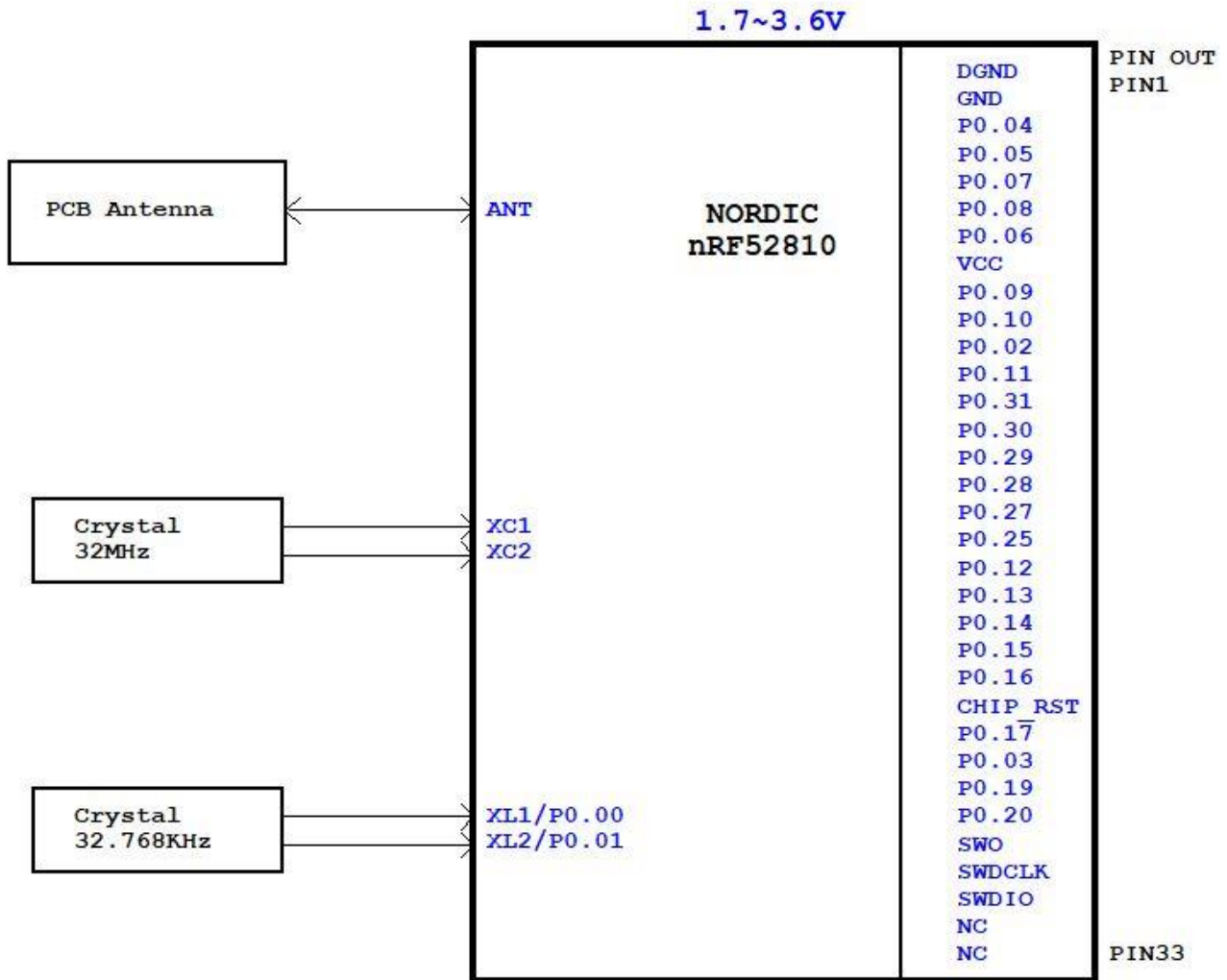
I. Introduction

The DK9176A is compact, surface mount Bluetooth Low Energy (BLE) compliant wireless module. The module is based on Nordic nRF52810 radio Transceiver IC, has a 32 bit ARM[®] Cortex[™]-M4 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 DK9176A is leading the way for the new generation of Bluetooth low energy modules.


II. Key Features

- 32-bit ARM® Cortex™-M4 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
- 192kB flash, 24kB 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)

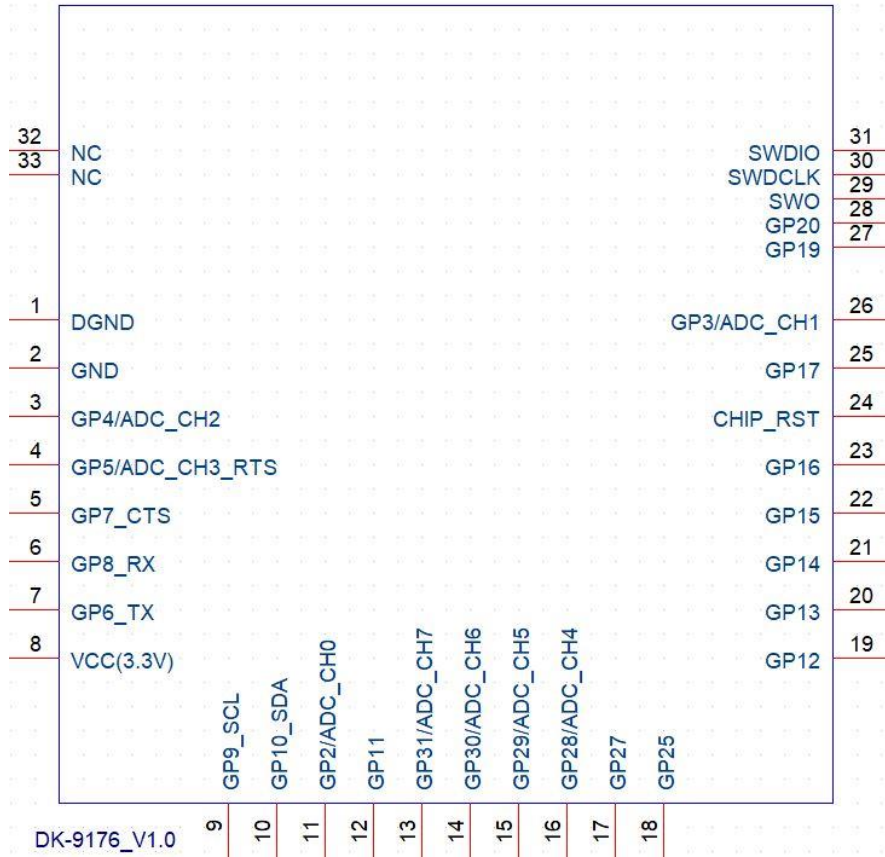
III. Block Diagram



IV. Specification

	DK-9176A
Model	
Antenna	PCB Antenna
Main Chip	nRF52810
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 : 7mA RX Peak : 4.6mA
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

V. Module Pin Definition

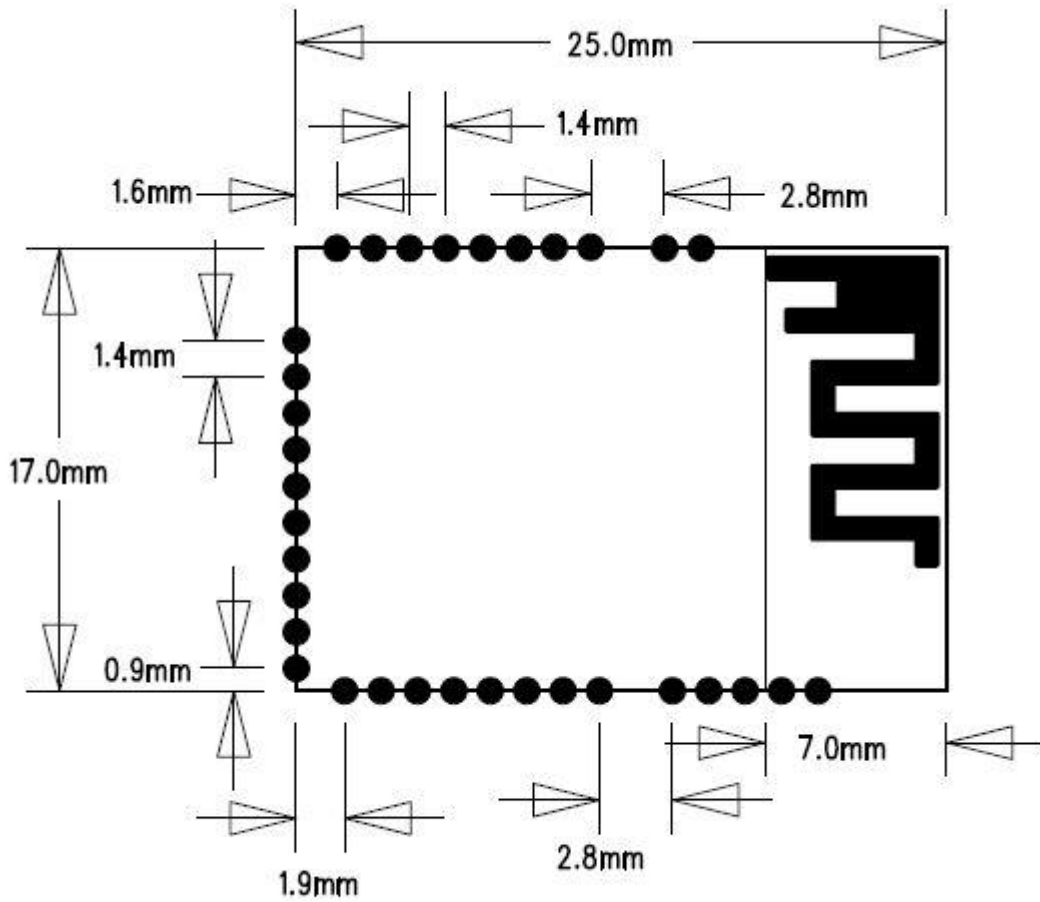


1	DGND	18	GP25
2	GND	19	GP12
3	GP4	20	GP13
4	GP5	21	GP14
5	GP7	22	GP15
6	GP8	23	GP16
7	GP6	24	CHIP_RST
8	VCC	25	GP17
9	GP9	26	GP3
10	GP10	27	GP19
11	GP2	28	GP20
12	GP11	29	SWO
13	GP31	30	SWDCLK
14	GP30	31	SWDIO
15	GP29	32	NA
16	GP28	33	NA
17	GP27		

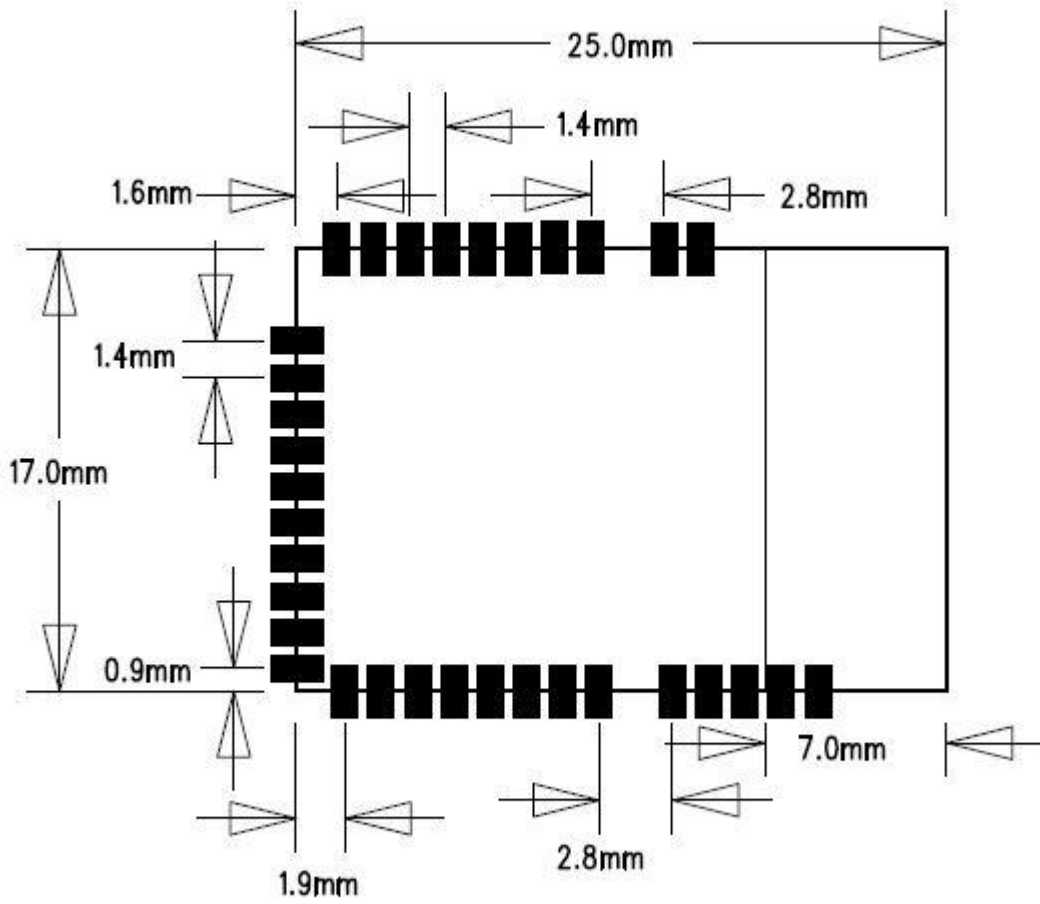
VI. Product Dimension

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

TOP Layer

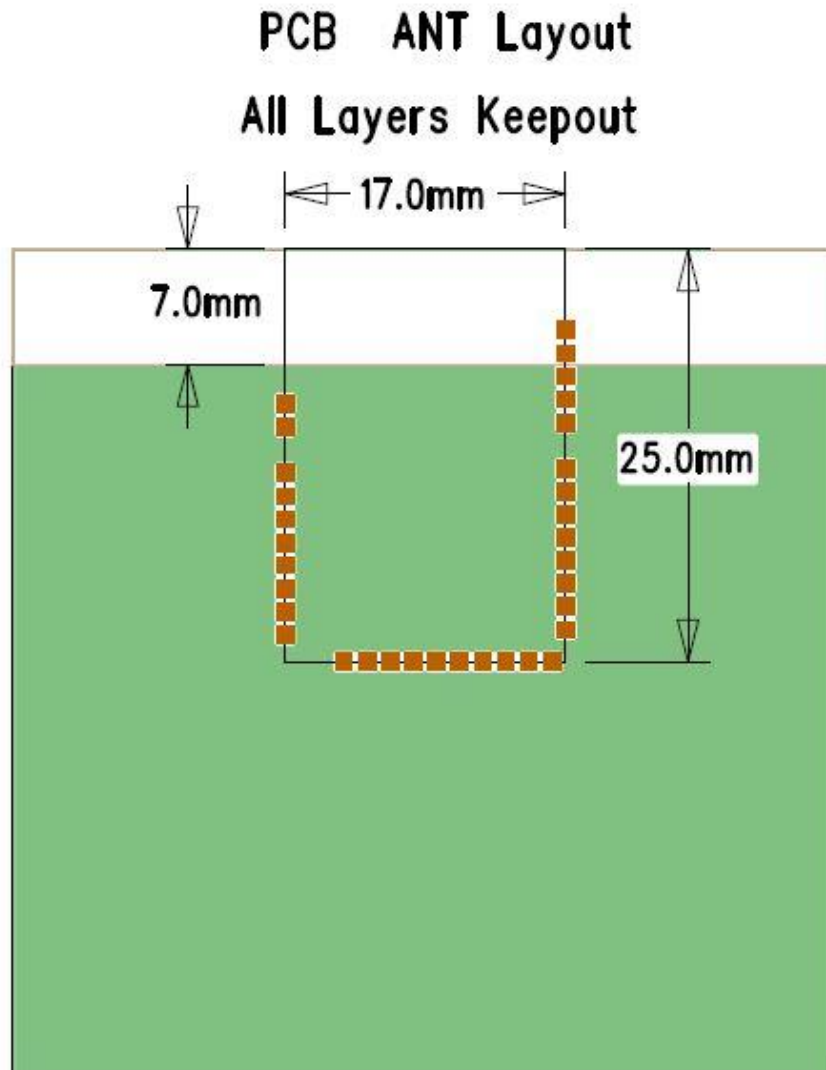


BOTTON Layer



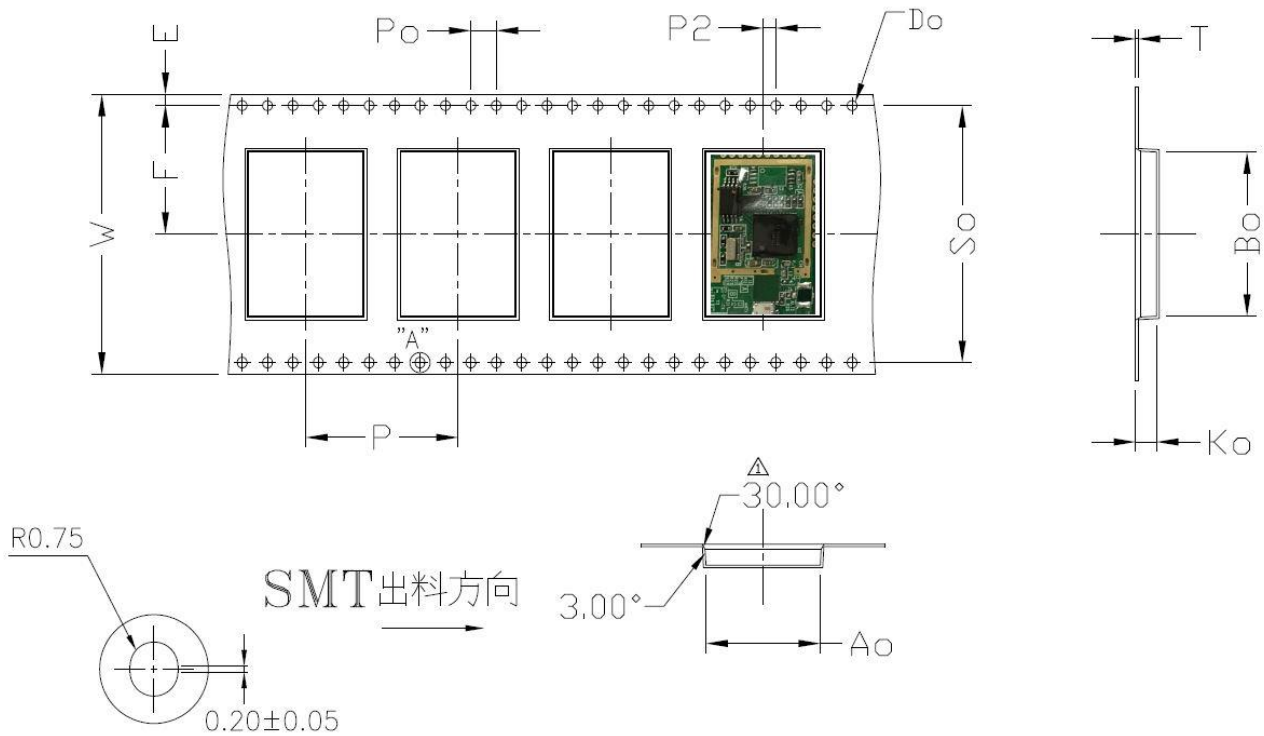
VII. RF Layout Suggestion

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}	
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	A	
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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