

# DEXATEK

## DK9167B Bluetooth Low Energy Module Specification

### Revision History

This table describes the changes to the specification.

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

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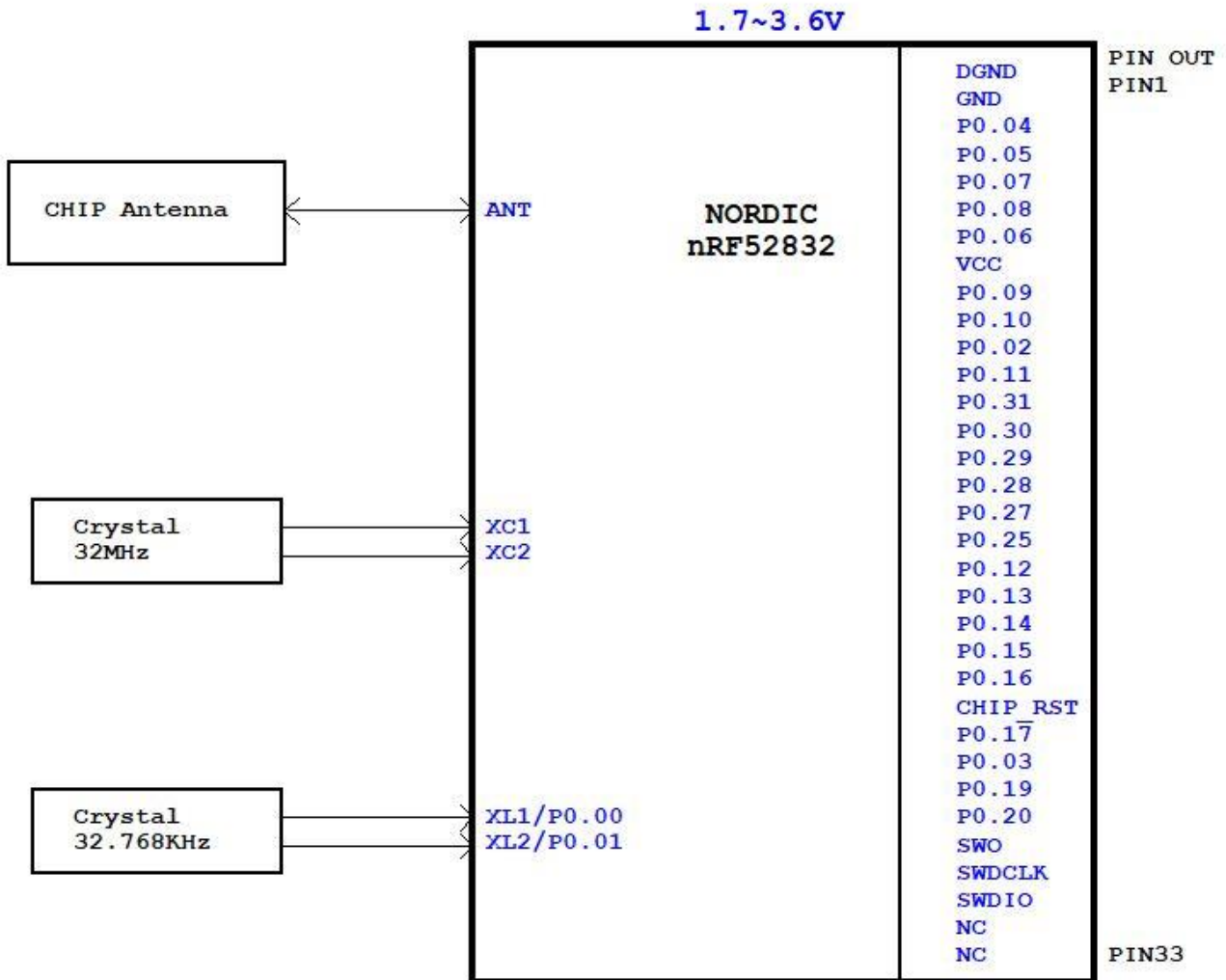
## I. Introduction

The DK9167B 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 DK9167B is leading the way for the new generation of Bluetooth low energy modules, provide more tx power performance.


## 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)

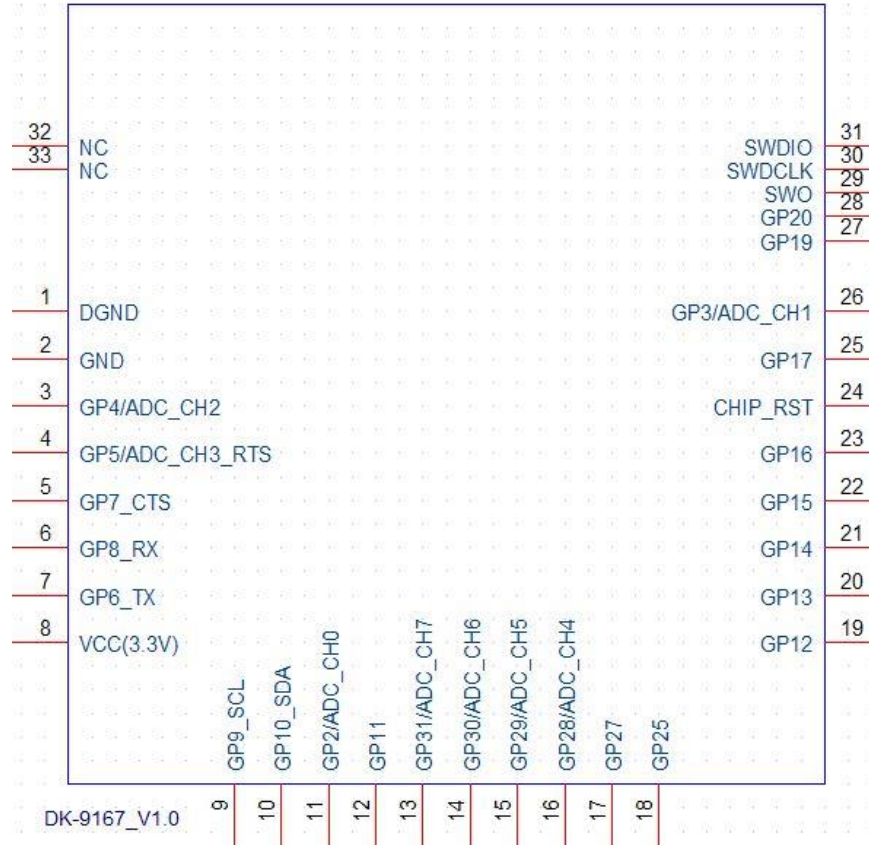
### III. Block Diagram



## IV. Specification

	DK-9167B
<b>Model</b>	
<b>Antenna</b>	Chip Antenna
<b>Main Chip</b>	nRF52832
<b>Application</b>	Non-Home kit Alarm System TaiSEIA & BLE 5.0
<b>CP MFi / PA</b>	W/O MFi CP W/ PA
<b>Transmit Power</b>	Tx Maxmum@ 20dBm
<b>Wireless Standards</b>	Bluetooth ® 5
<b>Data Rates</b>	2Mbps (Bluetooth ® 5)
<b>Work Mode</b>	Bluetooth ® 5
<b>Frequency Range</b>	2400MHz---2483.5MHz
<b>Power Consumption (in different states)</b>	TX Peak@ 4dBm : 7.5mA RX Peak : 5.4mA
<b>Voltage:</b>	1.7V-3.6V
<b>Modulation Technique</b>	GFSK Modulation
<b>Wireless Security</b>	AES HW Encryption
<b>Dimension(W×D×H)</b>	25×17×2.4 mm
<b>Certification</b>	RoHS / Declaration ID / BQB Test / FCC/ CE RF
<b>Environment</b>	Operating Temperature: -10°C~45°C Storage Temperature: -20°C~65°C

## V. Module Pin Definition

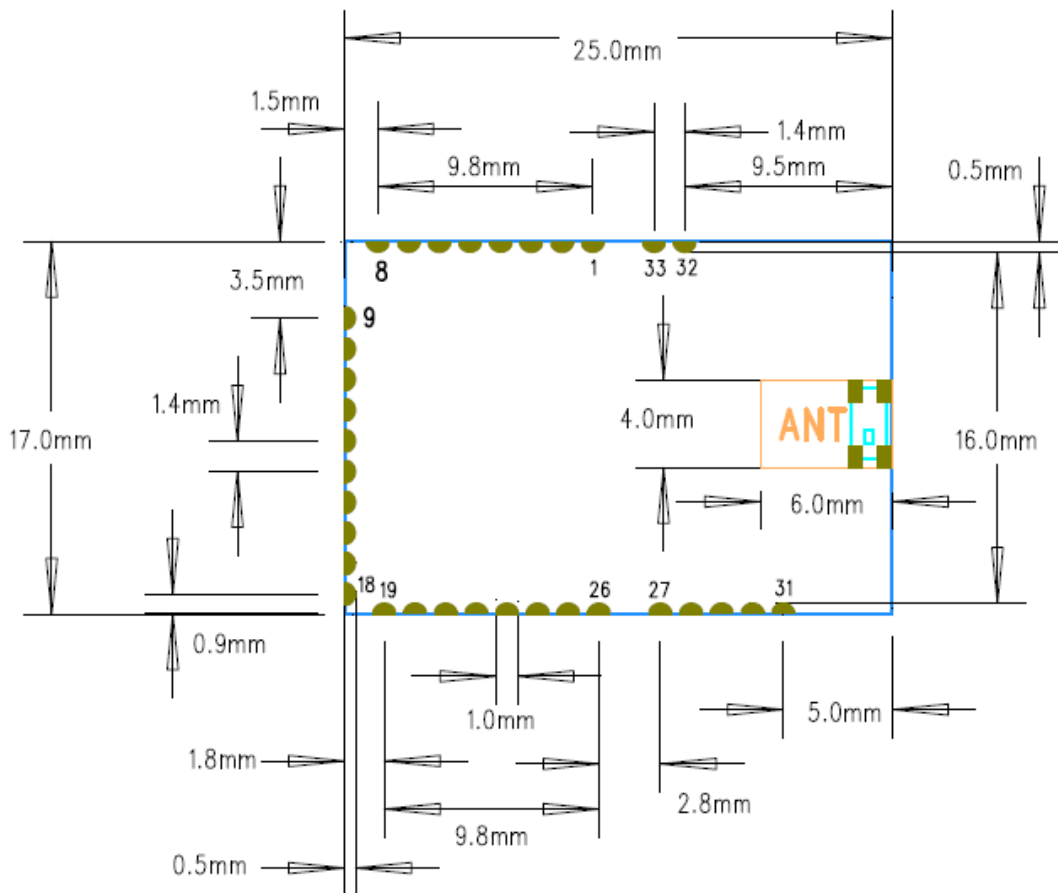


DK-9167B Module Pin Definition			
1	DGND	18	GP25
2	GND	19	GP12
3	GP4	20	GP13
4	GP5	21	GP14
5	GP7	22	GP15
6	GP8	23	GP16
7	GP6	24	CHIP_RST
8	VCC	25	GP17
9	GP9	26	GP3
10	GP10	27	GP19
11	GP2	28	GP20
12	GP11	29	SWO
13	GP31	30	SWDCLK
14	GP30	31	SWDIO
15	GP29	32	NA
16	GP28	33	NA
17	GP27		

## VI. Product Dimension

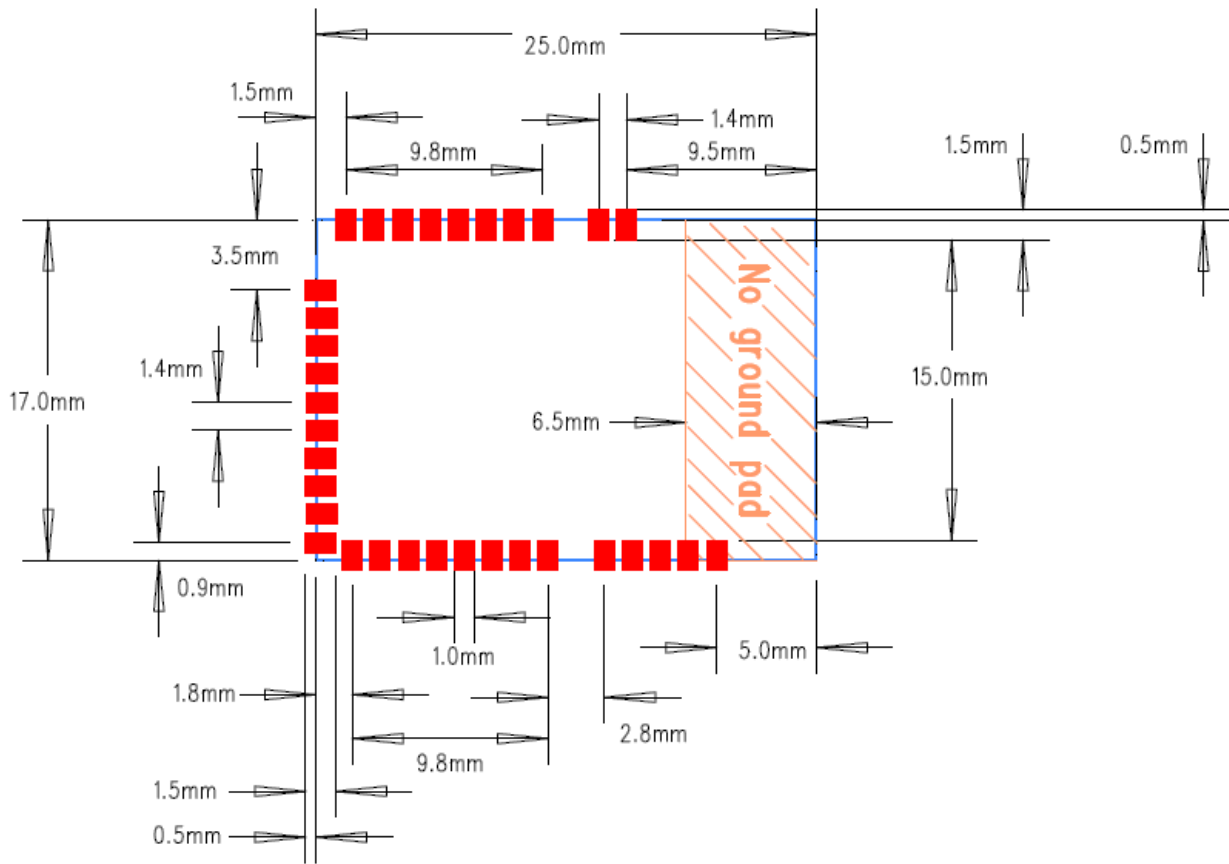
- PCB SIZE: (W) 25 x (D) 17 mm
- PIN OUT: 33
- Recommended Layout of solder Pad

### TOP Layer



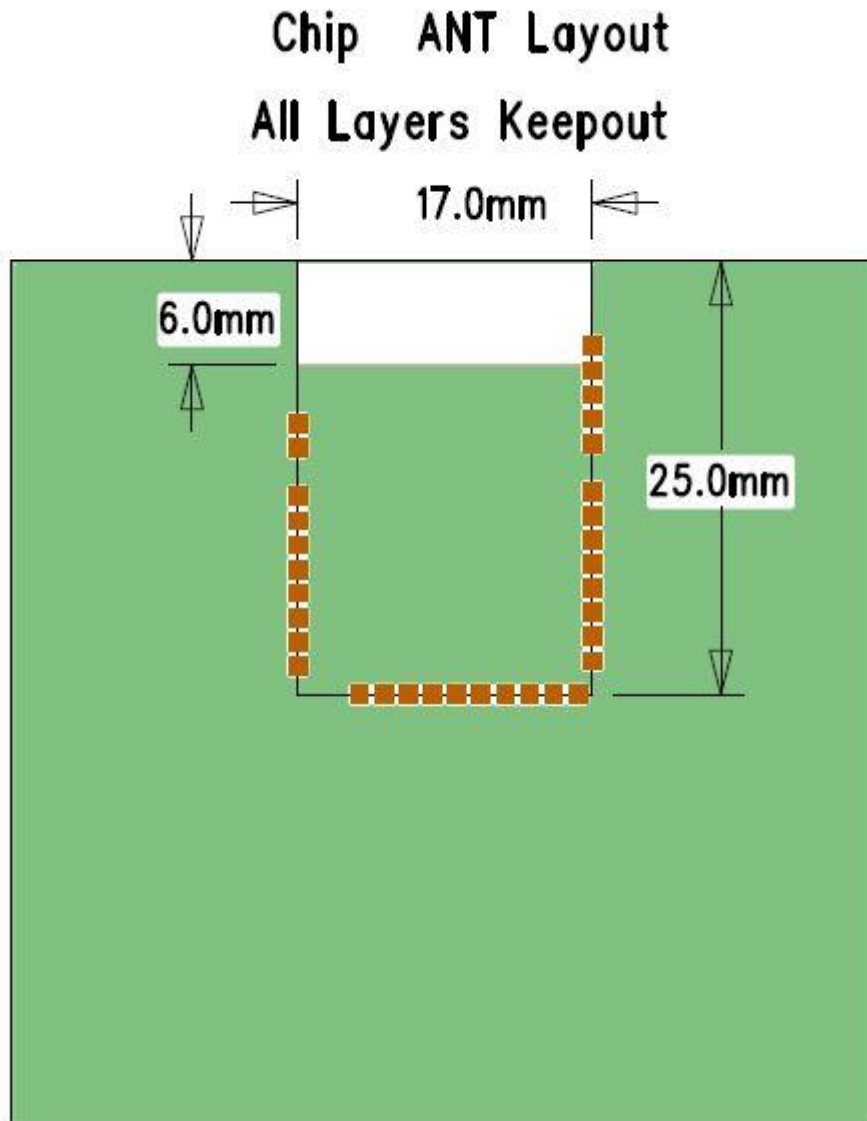


## BOTTON Layer



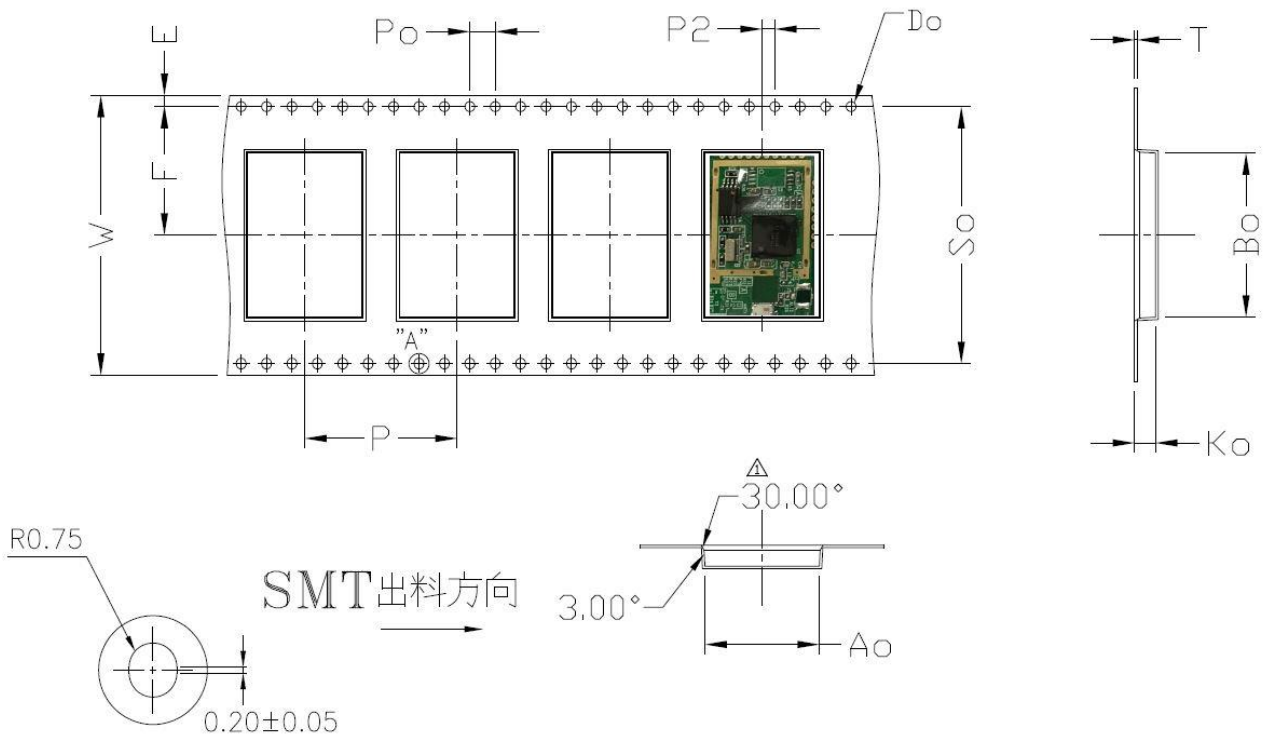
## VII. RF Layout Suggestion

Please follow below instruction to avoid RF Performance lose.



# VIII. Packaging Info

## ● Reel Packaging



ITEM	DIM	ALTERNATE
W	44.00 <sup>+0.30</sup> <sub>-0.30</sub>	
E	1.75 <sup>+0.10</sup> <sub>-0.10</sub>	
F	20.20 <sup>+0.15</sup> <sub>-0.15</sub>	
S <sub>0</sub>	40.40 <sup>+0.10</sup> <sub>-0.10</sub>	
P	24.00 <sup>+0.10</sup> <sub>-0.10</sub>	
P <sub>0</sub>	4.00 <sup>+0.10</sup> <sub>-0.10</sub>	
P <sub>2</sub>	2.00 <sup>+0.15</sup> <sub>-0.15</sub>	
D <sub>0</sub>	∅1.50 <sup>+0.10</sup> <sub>-0.00</sub>	
T	0.40 <sup>+0.05</sup> <sub>-0.05</sub>	
A <sub>0</sub>	18.00 <sup>+0.10</sup> <sub>-0.10</sub>	
B <sub>0</sub>	25.80 <sup>+0.10</sup> <sub>-0.10</sub>	
K <sub>0</sub>	3.30 <sup>+0.10</sup> <sub>-0.10</sub>	