

L-LRMFL22-97NN4-HT

LoRa 868/915MHz SPI

L-LRMFL22-97NN4-HT
SEMTECH

LLCC68
LORA

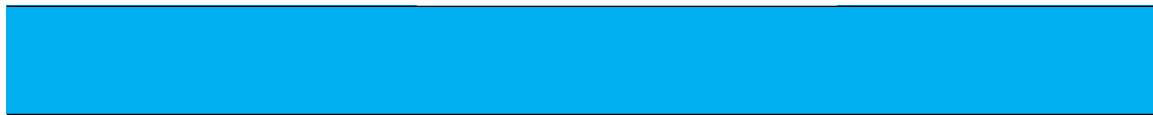
LoRa

q □ □ □ n A n



1

1-1



V	-0.5	+3.9
dBm	-	+10
	-40	+105

1-2

1



				VBAT=3.1V for +22dBm	
V	1.8	3.3	3.7	VBAT=2.7V for +20dBm	
				VBAT=2.4V for +19dBm	
	-40	-	+105		
(KHz)	-11	-	+11		
(MHZ)	860		930	863~870MHz	
(mA)	90	110	125	DC-DC	22dBm
	-	50	60	DC-DC	EU868 max14dBm
(mA)	-	5.5	6.5	DC-DC	Rx Boosted BW_L=125KHz
(uA)	-	0.6	2		
(dBm)	21	22	-		
(dBm)	-	-124	-	BW_L=125KHz ,SF=7	
LoRa bps	-	-	62.5K		
FSK bps	-	-	150K		
LoRa/GFSK/FSK					
2 mm					
SPI			SPI 16MHz		
(mm)	18.4*18.4*3.0mm		2-1	-	
GB/T1804-C				C	

1-3 PA

paDutyCycle		hpMax	deviceSel	paLut	Value in SetTxParams
915MHz	22dbm				

1-4 PA

paDutyCycle		hpMax	deviceSel	paLut	Value in SetTxParams
868MHz	14dbm				

2-2 L-LRMFL22-97NN4-HT

2.3

2-1

PIN				
P1	NRESET			
P2	DIO1	LLCC68		
P3	DIO2	LLCC68		
P4	BUSY			
P5	SW_CTL2	2, TX	SW_CTL1=0	SW_CTL2=1
		RX	SW_CTL1=1	SW_CTL2=0
		Sleep	SW_CTL1=0	SW_CTL2=0
P6	SW_CTL1	1 TX	SW_CTL1=0	SW_CTL2=1
		RX	SW_CTL1=1	SW_CTL2=0
		Sleep	SW_CTL1=0	SW_CTL2=0
P7	GND			
P8	VCC	VCC		
P9	MISO	SPI		
P10	MOSI	SPI		
P11	NSS	SPI		
P12	SCK	SPI		
P13	GND			
P14	RF			

The image shows the PCB layout of the ESP8266 module. Key components and labels include:

- MCU**: Microcontroller Unit, located at the top left.
- GPIO1**: General Purpose Input/Output pin 1, located at the top left.
- ESP8266**: The main microcontroller chip, located in the center.
- R1**: Resistor, located at the top right.
- OR**: Optocoupler, located at the top right.
- Antenna**: A small antenna symbol is located at the top right.
- Pin Headers**: Various pin headers are shown along the bottom edge, including pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

MODE	SW_CTL1
Transmit	0
Receive	1

```
void SX126xSetDio2AsRfSwitchCtrl( uint8_t enable )
{
    SX126xWriteCommand( RADIO_SET_RFSWITCHMODE, &enable, 1 );
}
```

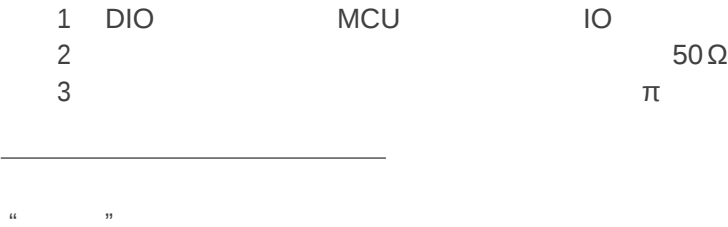
3.2

255

3-1 L-LRMFL22-97NN4-HT LoRa

BW PL² SF	125KHz	250KHz	500KHz
5	255 bytes 136ms	255 bytes 68ms	255 bytes 34ms
6	255 bytes 229ms	255 bytes 114ms	255 bytes 57ms
7	255 bytes 394ms	255 bytes 197ms	255 bytes 99ms
8	255 bytes 696ms	255 bytes 348ms	255 bytes 174ms
9	255 bytes 1250ms	255 bytes 625ms	255 bytes 313ms
10		255 bytes (1127ms	255 bytes 564ms
11			255 bytes 1025ms
12			

3.3

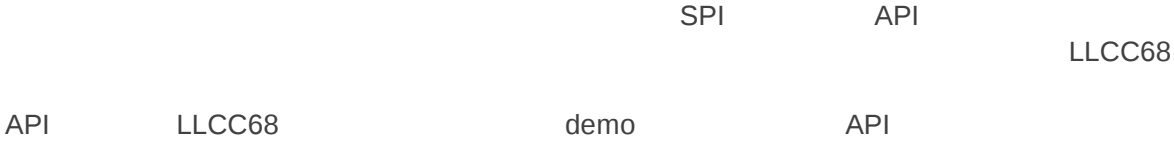


4
5
6
7

5mm

PCB LAYOUT (sub-1GHZ)

3.3





4

4.1

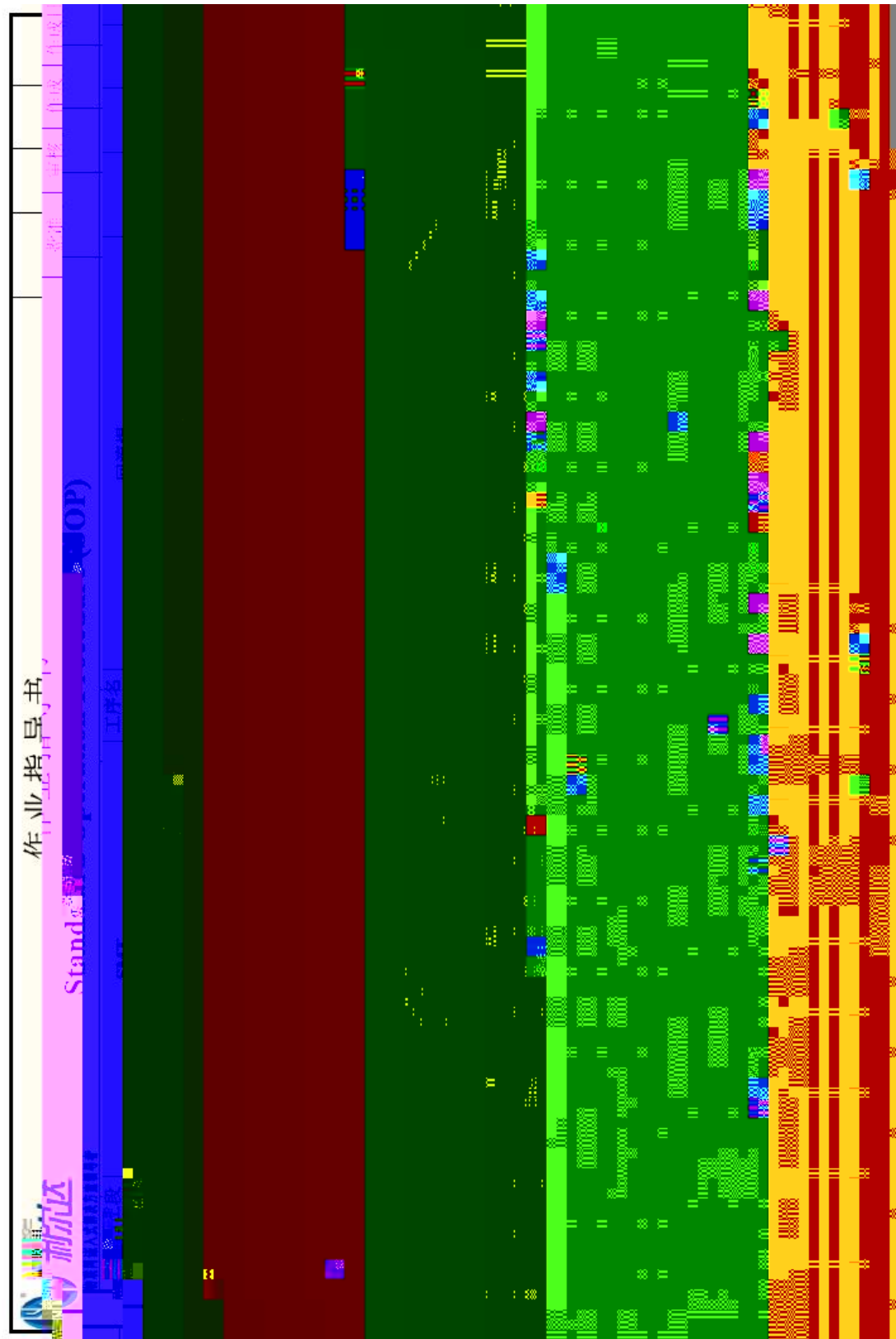
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4.2

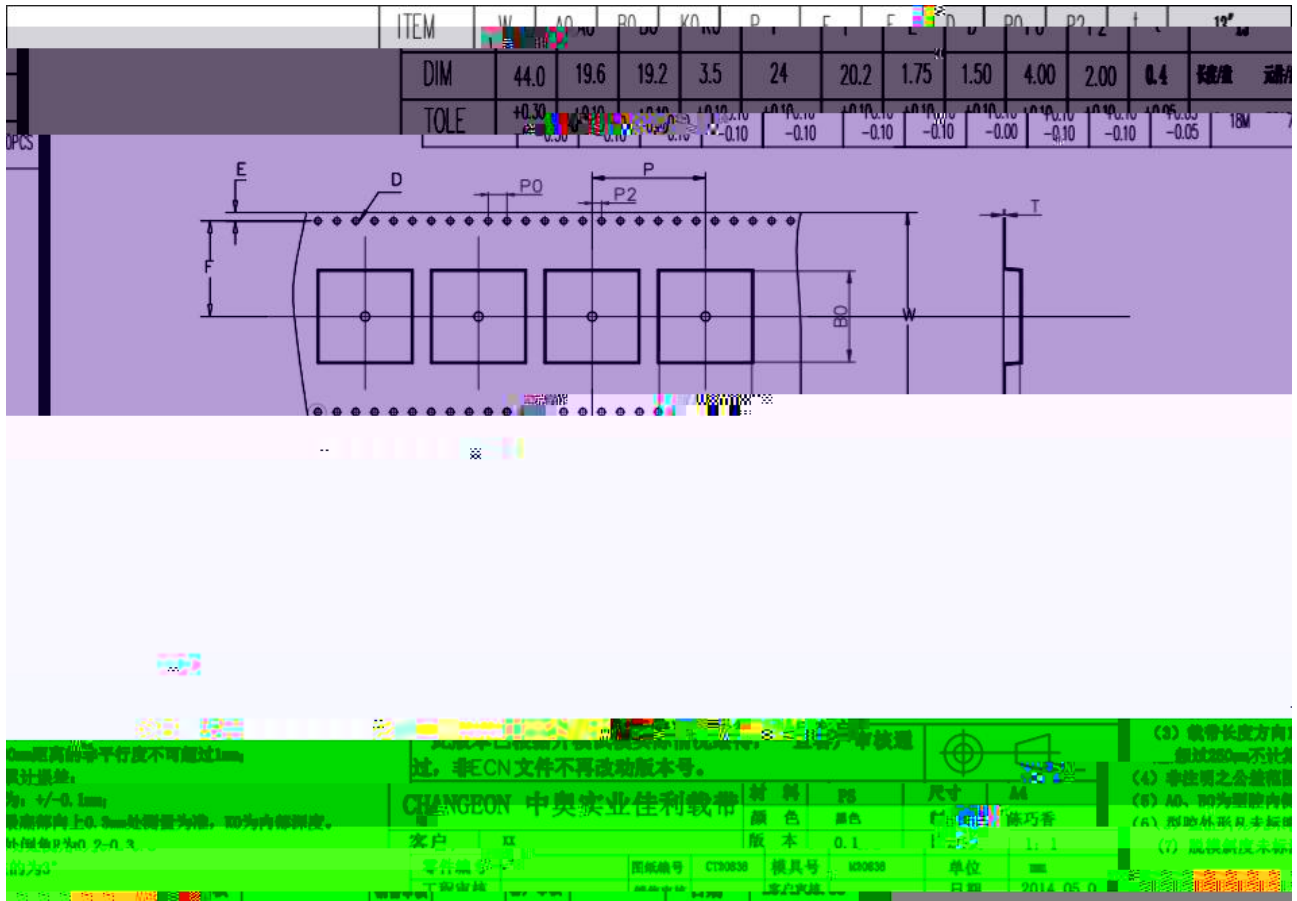
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- MCU
- MCU
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4.3

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6



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