A

XT2
3 OSC2   GND 4
2 GND   OSC1 1
32M/10ppm/9pF/3225

GND

Table 4-1: Internal Foot Capacitor Configuration

Pin	Register Address	Typical Values
XTA	0x0911	Each capacitor can be controlled independently in steps of 0.47 pF added to the minimal value:
XTB	0x0912	0x00 sets the trimming cap to 11.3 pF (minimum) 0x2F sets the trimming cap to 33.4 pF (maximum)

GND

C18
0402
1uF

L6
0402
PZ1005U121-1R0TF
V33

DIO3
GND
GND

VR_PA

C20   C21
0402   0402
47nF   47pF
GND

L8
0402
47nH

L9\C22
用于二次谐波
滤波器

C22 3.0pF
0402

L9   2.5nH   C24 39pF   L10   4.7nH
0402   0402

C26\L10\C27
用于高次谐波滤波器
π阻抗陪陪
C24用于隔直

C25
0402
NC

C26
0402
5.6pF

C27
0402
1.8pF

L9\C25\C26
用于阻抗匹配

GND

DIO3 R6   1K
0402

C23
0402
100pF
GND

GND

C19
0402
470nF

DCDC

L7
0805
15uH/120mA

GND

V33

U3
SX1262

6 5 4 3 2 1
DIO3 GND XTB XTA GND VDD_IN

7 VREG
8 GND
9 DCC_SW
10 VBAT
11 VBAT_IO
12 DIO2

VR_PA 24
RFO   23
RFI_N 22
RFI_P 21
GND   20
SPI_NSS 19

L11 0R
0402

L12
0402
15nH

L12\C34\C29
用于巴伦匹配

C34
0402
1.8pF
GND

C29 2.4pF
0402

C33
0402
NC
GND

C33是可选元件
用于滤除干扰。

C30 100pF
0402

U4
RTC6603U

1 RF1   V1 6
2 GND   RFC 5
3 RF2   V2 4

DIO2 R7   1K
0402

C32
0402
100pF
GND

C28 100pF
0402

C35
0402
NC
GND

C36
0402
NC
GND

LORA_ANT

GND

D3
LESD5D5.0CT1G

U5
1 GND2
2 IN
3 GND3
IPEX-1

GND

V1 DIO3	V2 DIO2	RF1---RFC RFO	RF2---RFC RFI
0	1	ON	OFF
1	0	OFF	ON

GND

C31
0402
100nF

DIO2

GND

25 13 14 15 16 17 18
GND DIO1 BUSY NRESET SPI_MISO SPI_MOSI SPI_SCK

GND

2,3 GPIO3/LORA_IRQ
2,3 MTMS/LORA_BUSY
2,3,4 MTDI/LORA_RST
2,3 MTCK/LORA_MISO
2,3 MTDO/LORA_MOSI
2,3 GPIO10/LORA_SCK
2,3 GPIO18/LORA_NSS

BUSY 忙碌指示灯,1忙碌
NREST 复位信号，低电平复位

V33

R8
0402
10K

MTDI/LORA_RST   2,3,4

V33

GND
U1
GND3 3
IN 2 2.4G_ANT
GND2 1
IPEX-1
GND

D2
LESD5D5.0CT1G

此处需根据PCB微调

L2 100pF 0402   R1 0402 0R   L3 2.4nH 0402   LNA_IN

C4 0402 NC   C5 0402 NC   C6 0402 1.8pF   C7 0402 2pF

GND   GND   GND   GND   GND

GND
C8 0402 15pF

GND
C9 0402 15pF

XT1
OSC2 3   GND 4 GND
GND 2   OSC1 1
26MHz/9PF/10ppm/3225

L4 27nH 0402

XTAL_P
XTAL_N

3V3
C10 0402 1uF   C11 0402 10nF
GND   GND

C40 10nF GND

R2 0402 499R
GPIO20/U0TXD 2
GPIO19/U0RXD 2

U2
VDDA 24
XTAL_P 23
XTAL_N 22
VDDA 21
U0TXD 20
U0RXD 19

3V3
L5 2.0nH 0402
C12 10uF   C13 100nF   C14 100nF
GND GND   GND

LNA_IN
ANT 1
VDDA3P3 2
VDDA3P3 3
GPIO0 4 GPIO0 2
GPIO1 5 GPIO1 2
GPIO2 6 GPIO2 2

GPIO18 18
VDD3P3_CPU 17
GPIO10 16
GPIO9 15
GPIO8 14
MTDO 13

GPIO18/LORA_NSS 2,4
3V3
GPIO10/LORA_SCK 2,4
GPIO9 2
GPIO8 2,3
MTDO/LORA_MOSI 2,4
C15 0402 100nF
GND

EP 25

3V3
R3 0402 1M
GPIO8 2,3

3V3
R4 0402 10K

2
CHIP_EN
R5 0402 100R
C16 0402 1uF
GND

CHIP_EN 7
GPIO3 8
MTMS 9
MTDI 10
VDD3P3_RTC 11
MTCK 12

ESP8684

GND

2,4 GPIO3/LORA_IRQ
2,4 MTMS/LORA_BUSY
2,4 MTDI/LORA_RST

MTCK/LORA_MISO 2,4

3V3
C17 0402 100nF GND

JP3

3	CHIP_EN	1
3	GPIO0	2
3	GPIO1	3
3	GPIO2	4
3	GPIO8	5
3	GPIO9	6
3	GPIO19/U0RXD	7
3	GPIO20/U0TXD	8
	GND	9
	VIN	10
	VIN	11

FZ-1_27X11PIN
PM254V-11-06-H85

JP4

15	LORA_ANT	4
14	GND	
13	GND	
12	2.4G_ANT	3

PM254V-11-06-H85
FZ-1_27X4PIN-ZQL

VIN

D1
LESD5D5.0CT1G

GND

L13
0402
PZ1005U121-1R0TF

V33

C37 0402 10uF
C38 0402 100nF
C39 0402 100pF

GND GND GND

L1
0402
PZ1005U121-1R0TF

3V3

C1 0402 10uF
C2 0402 100nF
C3 0402 100pF

GND GND GND

3,4	GPIO3/LORA_IRQ	TP1
3,4	MTMS/LORA_BUSY	TP2
3,4	MTDI/LORA_RST	TP3
3,4	MTCK/LORA_MISO	TP4
3,4	MTDO/LORA_MOSI	TP5
3,4	GPIO18/LORA_NSS	TP6
3,4	GPIO10/LORA_SCK	TP7

26MHz
XTAL

OUT IN

32MHz
XTAL

OUT IN

MCU
ESP32-C2

NSS
IRQ
MOSI
MISO
SCK
BUSY
NREST

SX1262

RFO

RFI_N

RFI_P

RTC6603SP
(SP2T)

RF Matching

外置LORA天线

A

A

外置Antenna-2.4GHz

RF Matching

Hardware Block: