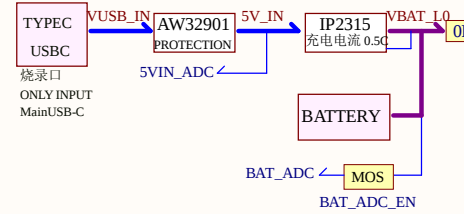


Functions

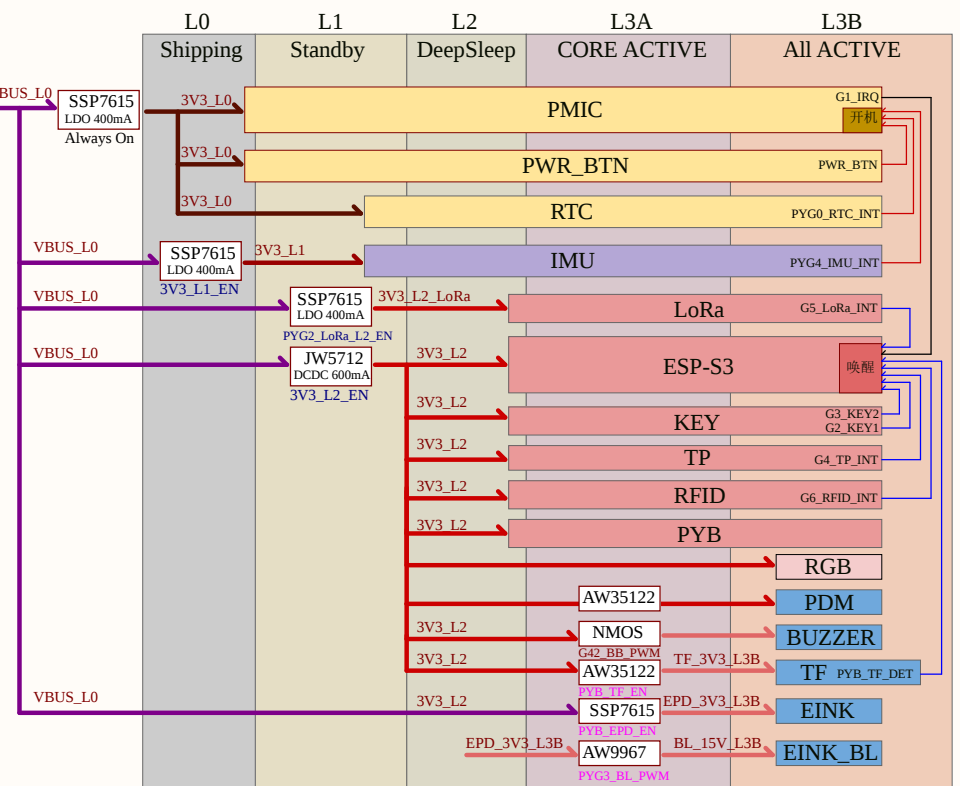
	Class	PowerMode					Features
		L0	L1	L2	L3A	L3B	
SOC	S3						ESP32-S3-R8
	PYB						PY32L020F15U6_IIC
POWER	PMIC						PY32L020F15U6
	BATTERY						Li-ion Battery
HMI	EINK						EINK
	TP						Touch-to-wake supported
	BUTTON						Wake-up support
FUNC.	RTC						RX8130CE;Wake-up support
	IMU						BM1270;Wake-up support
	LoRa						SX1262;Wake-up support
	NFC						ST25R3916;Wake-up support
	EINK_BL						EINK
	TF						TF
	RGB						RGB LED
	PDM						MEMS Microphone
	BUZZER						BEEP

Power Network

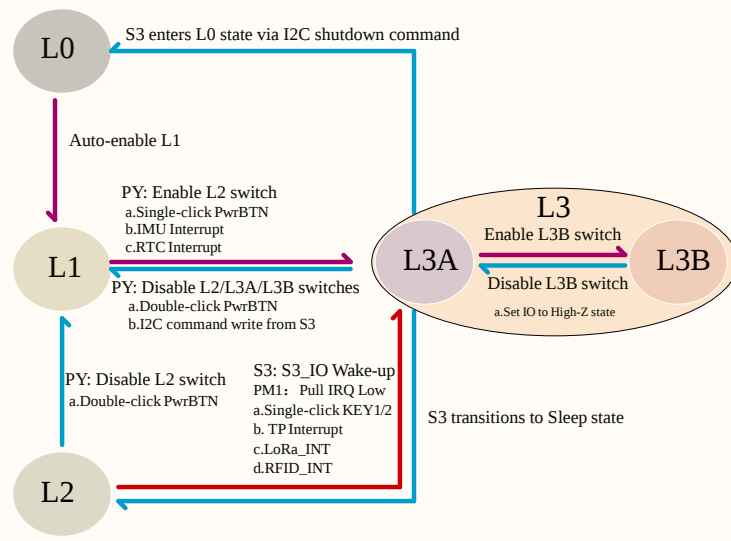


NOTE

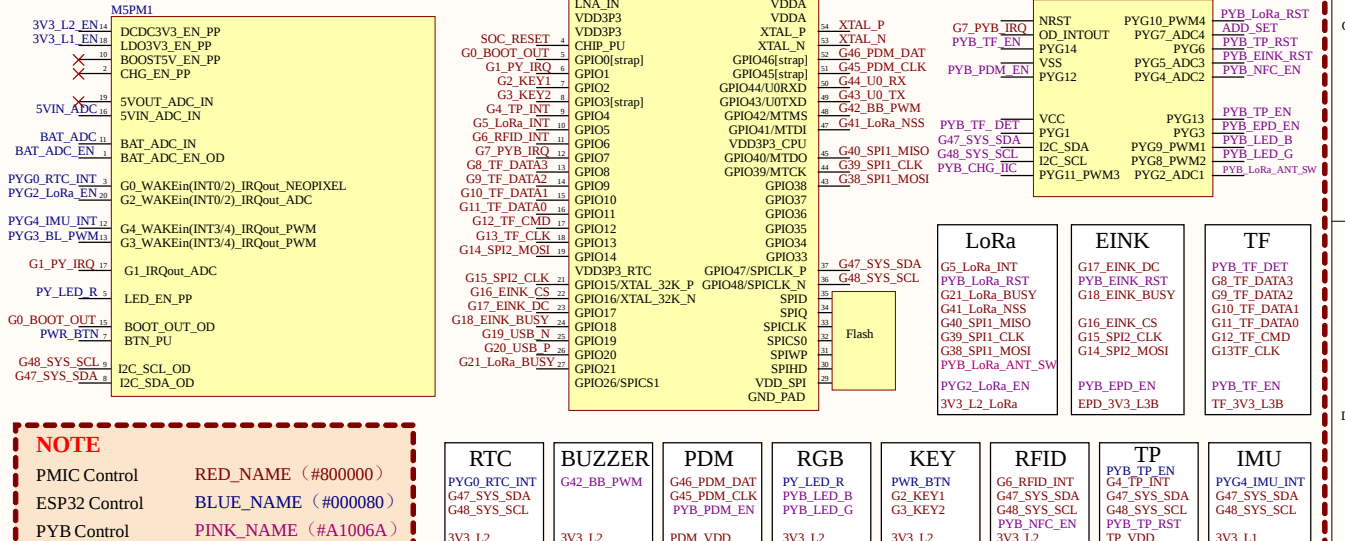
Power Supply	RED_NAME (#800000)
L1/L2 Power Control	BLUE_NAME (#000080)
L3B Power Control	PINK_NAME (#FF00FF)
Power Direction	→ (Medium)
Wake up ESP32	↘ (Small#000000)
PMIC Turn on	↗ (Small#800000)
PMIC ADC_DET	↖ (Small#0000FF)

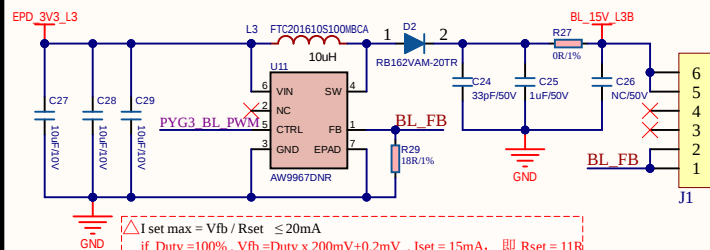
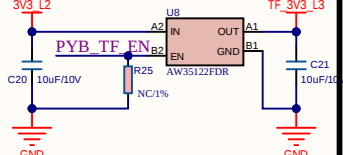
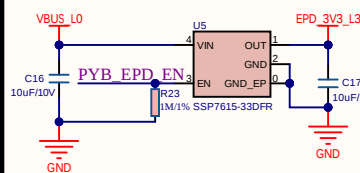
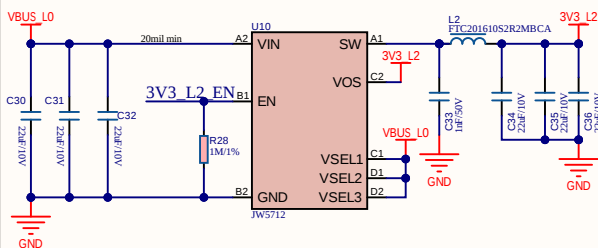
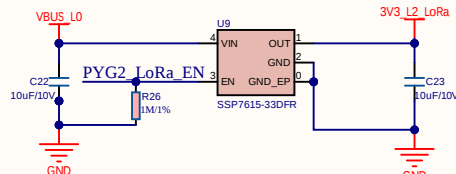
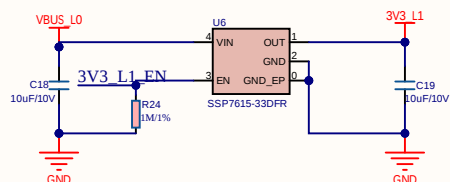
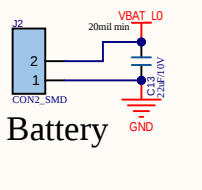
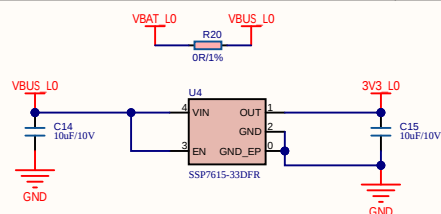
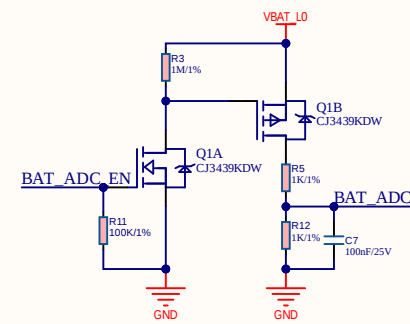
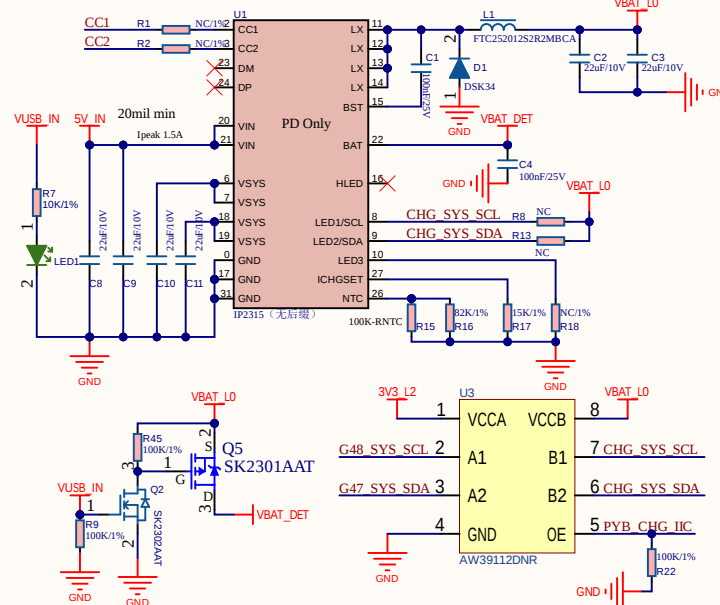
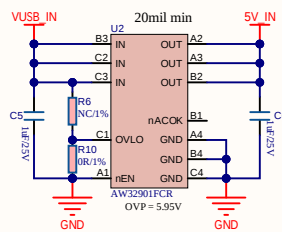
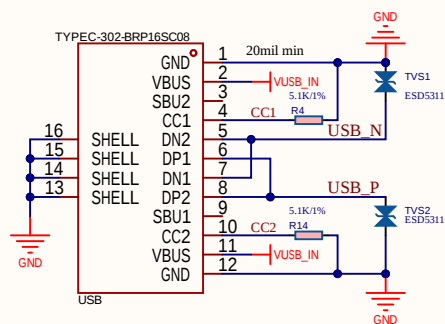


Power Mode

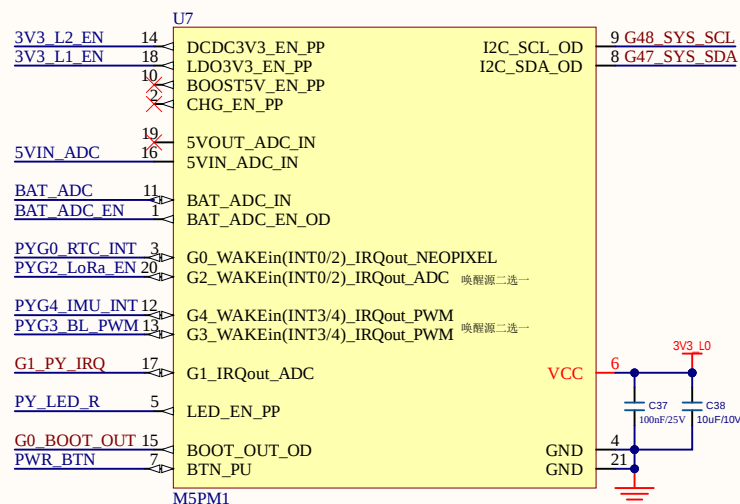


I/Os Map





$\Delta I_{set\ max} = V_{fb} / R_{set} \leq 20mA$
if Duty=100%, $V_{fb} = Duty \times 200mV + 0.2mV$, $I_{set} = 15mA$, 即 $R_{set} = 11\Omega$



IIC Adress:0x6E



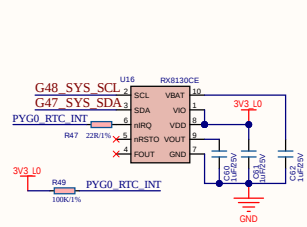
A



RTC

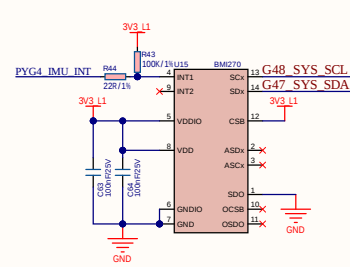
1

IIC Adress:0x32

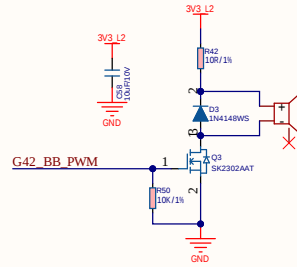


IMU

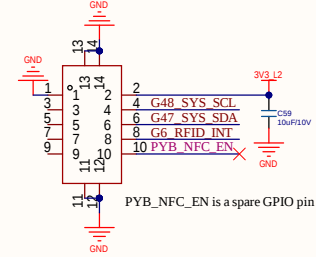
IIC Adress:0x68



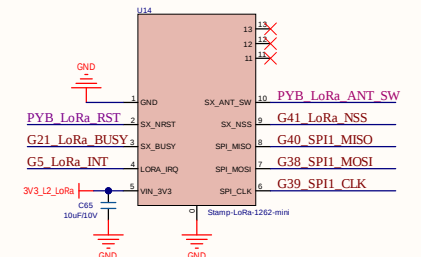
BUZZER



RFID

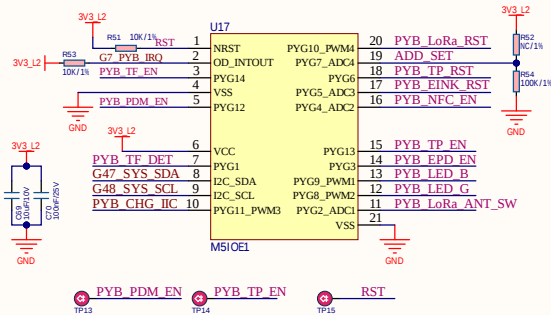


LoRa

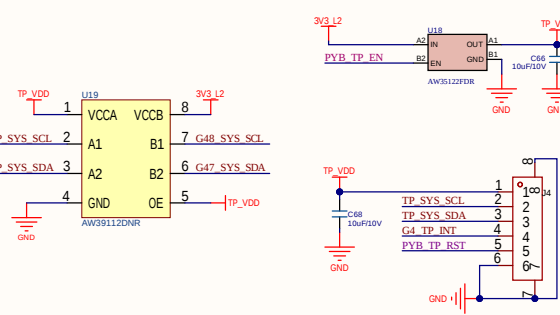


PYB_IIC

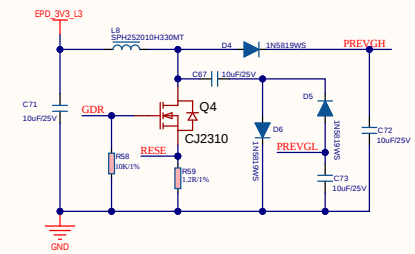
IIC Adress:0x4F



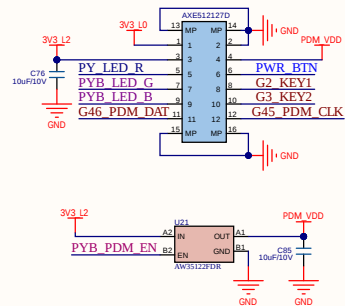
TP



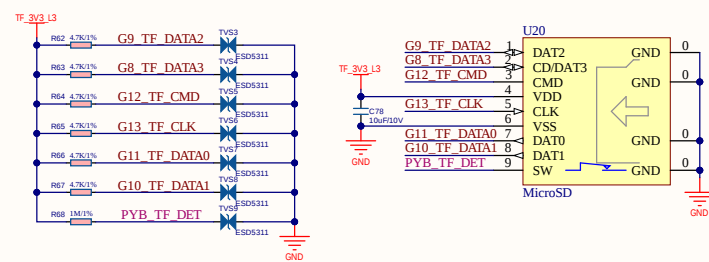
EINK



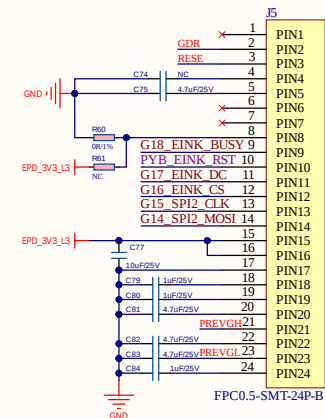
KEY&RGB&PDM



TF



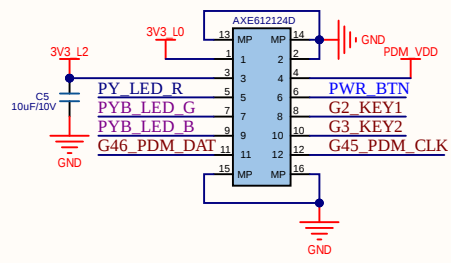
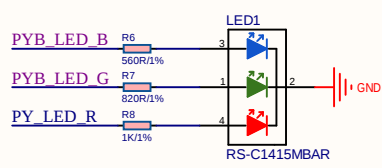
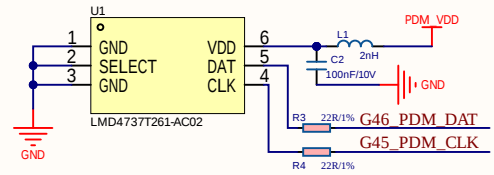
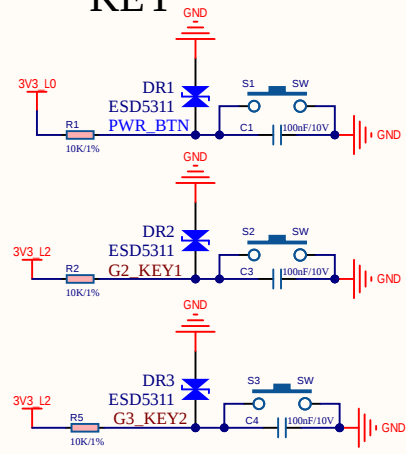
The PYB_TF_DET pin uses an internal pull-up to detect a ground connection. It identifies card insertion and wakes up the ESP32.



KEY

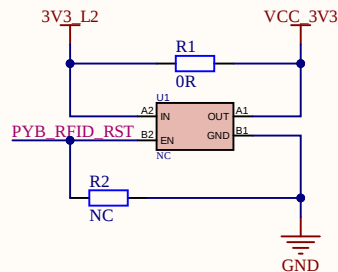
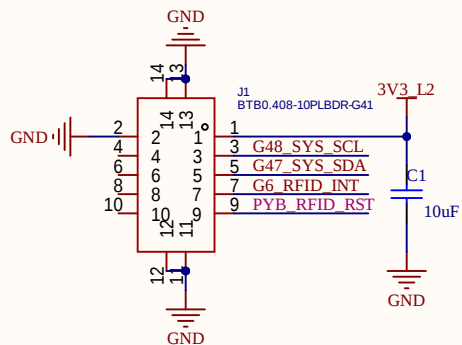
PDM

RGB

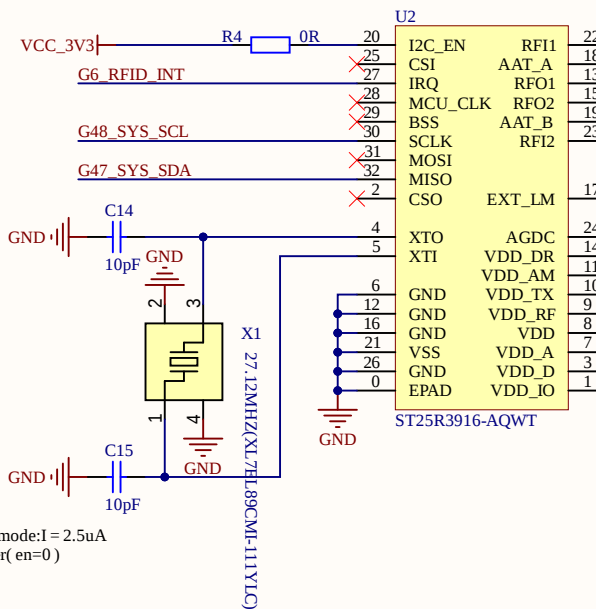


Title		
Size	Number	Revision
A4		
Date:	4/14/2026	Sheet of
File:	Y:\AD.Prj\PaperMono KEY RGB.SchDoc	Drawn By:

Mono BTB



Communication mode:
I2C_EN=VDD; I2C mode
I2C_EN=GND; SPI mode



Supply current in Power-down mode: I = 2.5uA
When Operation control register (en=0)



Geometry

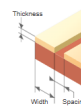
Turns	4
Antenna Length	25 mm
Antenna Width	25 mm

Conductor

Width	0.25 mm
Spacing	0.3 mm
Thickness	17 μm

Substrate

Thickness	0.1 mm
Relative Electrical Permittivity (εr)	3.3



Antenna Results

Segmentation Mode: Vertical
Segments: 16
Equivalent Inductance: **956.94 nH**
@13.56 Mhz



NFC Antance Layout Note:

Turns: 4
Antenna Length: 25mm
Antenna Width: 25mm
Line Width: 0.25mm
Line Spacing: 0.3mm
Thickness: 17um(0.5oz)

Title		
Paper Mono NFC		
Size	Number	Revision
A4	2/2	V0.2
Date:	7/28/2026	Sheet of
File:	Y:\AD.Prj\...\02 Paper Mono NFC.SchDoc	Drawn By: