SIMCOM-PINS

SOC

LoRa

LILYGO®

T-SimShield — SOC Schematic

Schematic diagram (KiCad) containing power supply section with U2 (SGM61430A), current monitor U1 (INA3221), RS-485 transceiver U3 (SP3485EEN(UMW)), transistor Q1 (MMBT3904), and various connectors (J1, J4–J22, U7).

Key labeled components:

- **U2 SGM61430A** — VIN, BOOT, EN/SYNC, SW, VCC, PGND, AGND, FB
- **D1 SS34**, **D5 SMBJ40CA**, **D3 SS34**, **D6 RED**, **D2 SMBJ5.0CA**, **D4 SMBJ5.0CA**
- **R1 402K 1%**, **R2 0R**, **R3 110K 1%**, **R4 20K 1%**, **R13 4.7K**
- **C1 100uF 50V**, **C23 100nF 50V**, **C3 2.2uF 50V**, **C8 0.47uF 50V**, **C9 56pF**
- **C24 100nF 50V**, **C10 100uF 16V**, **C11 100uF 16V**, **C2 100uF 16V**
- **L5 10uH**, **L3 0R**
- **U1 INA3221** — VS, VPU, IN+1, IN-1, IN+2, IN-2, IN+3, IN-3, PV, CRITICAL, WARNING, TC, SDA, SCL, A0, GND, EP
- **C13 100nF**, **C12 10uF**, **C14 100nF**
- **R55 10K**, **R56 10K**, **R57 10K**, **R58 10K**
- **R54 10R 1%**, **R7 100mΩ 1%**, **R53 10R 1%**
- **R51 10R 1%**, **R6 100mΩ 1%**, **R52 10R 1%**
- **R50 10R 1%**, **R5 100mΩ 1%**, **R49 10R 1%**
- **U3 SP3485EEN(UMW)** — RO, RE, DE, DI, VCC, A, B, GND
- **C17 10uF**, **C18 100nF**
- **R79 0R**, **R60 4.7K**, **R59 120R**, **R61 4.7K**
- **Q1 MMBT3904**, **R62 4.7K**, **R64 0R**, **R66 NC**, **R65 0R**, **R63 1K**
- **R80 10K**, **R81 10K**
- Signals: +5V, +3V3, VBUS, VS, VBAT, LOAD2+, LOAD2-, SDA, SCL, MOSI, SCK, MISO, RS_RX, RS_TX
- Connectors: J1, J4, J5, J6, J7, J8, J9, J10, J11, J12, J13, J14, J16, J17, J18, J22, U7, JP1

SX1276/8 Default map IRQ to DIO0 BUSY = DIO1
SX1262/SX1280 Default map IRQ to DIO1
LR1121 Default map IRQ to DIO9

U4
LilyGo-LoRa

RF2
BWIPX-1-001E

L2
0R

C4 NC
C5 NC

GND
GND

TP1
TP2

Radio_3V3

C6 C7 C19 C20
100nF 1uF 10uF 10uF

GND

IRQ
BUSY

	13A	16A	T89	16E		16E	T89	16A	13A/T	
16	ANT	ANT	ANT	ANT		GND	GND	GND	GND	1
15	GND	GND	GND	GND		IO9/IRQ	TCXO	NC	IO5	2
14	IO3	IO3	IO3	IO8		RST	RST	RST	RST	3
13	IO4	NC	IO4	IO7		CS	CS	CS	CS	4
12	VCC	VCC	VCC	VCC		SCK	SCK	SCK	SCK	5
11	IO0/IRQ	NC	IO0/IRQ	IO10/32KN		MOSI	MOSI	MOSI	MOSI	6
10	IO1/BUSY	IO1/IRQ	IO1	IO11/32KP		MISO	MISO	MISO	MISO	7
9	IO2	BUSY	IO2	BUSY		GND	GND	GND	GND	8

- 16E LR1121   - 16A - SX1262
- 13A - SX1276   - T89 - SX1276 TCXO

LilyGo LoRa

R8 NC
R9 0R
R10 NC
R11 0R

R14 NC
R15 0R RST
R16 0R CS
R17 0R SCK
R18 0R MOSI
R19 0R MISO

IRQ

GND

Radio_3V3   L4   +3V3
            0R

A7670X-S3

SIM7670G-S3

SIM7080G-S3

SIM7000G-ESP32

A7608X-S3

A7670X-ESP32

Need remove GPIO5 RES

SIM7600-ESP32

A7670X: MIN:3.4 TYPE:3.8 MAX:4.2V
SIM7670X: MIN:3.4 TYPE:3.8 MAX:4.2V
SIM7000x: MIN:3.0 TYPE:3.8 MAX:4.3V
A7608X: MIN:3.4 TYPE:3.8 MAX:4.2V
SIM7080G: MIN:2.7 TYPE:3.8 MAX:4.2V

CARD1
TF-SHORT

DAT2
CS/DAT3
MOSI/CMD
VDD
SCK/CLK
VSS
MISO/DAT0
DAT1

SD_CS
MOSI
SCK
MISO

SW1
DSHP10TSGER
A7670X ESP32-S3

SW2
DSHP10TSGER
SIM7670G/A7608X ESP32-S3

SW3
DSHP10TSGER
SIM7600/A7670/SIM7000 ESP32

SW4
DSHP10TSGER
SIM7080G

CN1
SIMCOM-PINS

SIM7080G NOT CONN

J25
Conn_01x03

J21

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