EdgeTinker Lite

PINOUT REFERENCE
ETPCB0003 | Hardware V1 RevC

ON-BOARD I2C | SDA IO6 / SCL IO7

	DEVICE	FUNCTION	ADDR
7	LIS2DH12	ACCEL, INT1: IO0	0x18
8	AHT20	TEMP / HUMIDITY	0x38
9	AGS10	TVOC GAS	0x1A
10	PCF85063A	RTC (CR1220)	0x51

Sensors on 3V3 SW: drive IO2 HIGH to power them.

BUTTONS

	BUTTON	ESP32-C6
1	RESET	EN
2	BOOT	IO9
3	USER	IO1

LEDs

	LED	DRIVEN BY
4	GREEN: USER	IO8
5	RED: UART ACT	CH343P
6	RED: USB PWR	+5V

J5 | LoRa HEADER

RAK3172 pins | 3.3 V logic

2	4	6	8	10	12	14
3V3 OUT	PA12	RST	BOOT	DIO	CLK	GND
I2C SCL	ESP IO3	BOOT0	SWDIO PA13	SWCLK PA14		

1	3	5	7	9	11	13
PA11	PB7	PB6	PA7	PA6	PA5	PA4
I2C SDA	UART1 RX	UART1 TX	SPI MOSI	SPI MISO	SPI SCK	SPI NSS

J2 | ESP32-C6 HEADER

ESP32-C6 GPIO | 3.3 V logic

2	4	6	8	10	12	14
VBAT	3V3 OUT	3V3 SW OUT	VRTC	SDA	SCL	GND
BATTERY	ALWAYS ON	EN: IO2	RTC BACKUP	IO6	IO7	

1	3	5	7	9	11	13
IO23	IO18	IO8	IO15	IO14	IO1	IO0
	ALSO J3-8	USER LED	STRAPPING		ADC1_CH1	ADC1_CH0
		STRAPPING			USER BTN	ACCEL INT1

J3 | EXPANSION

Shared with J2

10	9	8	7	6
SDA	SCL	IO18	GND	GND
IO6	IO7	ALSO J2-3		

1	2	3	4	5
NC	NC	VBAT	NC	+5V OUT
		BATTERY		USB ONLY

WARNING
All GPIOs are 3.3 V logic.
They are NOT 5 V tolerant.

POWER
USB-C (J1 or J4) 5 V or battery (J6)
feeds a TPS63900 buck-boost regulator:
3.3 V, 400 mA max.
3V3 SW rail: drive IO2 HIGH to enable.

NOTES
Any ESP32-C6 GPIO can output PWM (LEDC).
Headers are shown as seen from the top,
in the same orientation as the PCB.

RAK3172 (U10) ⟷ ESP32-C6

RAK3172	FUNCTION	ESP32-C6	ESP FUNCTION
PA2	UART2 TX	IO4	LP_UART RX
PA3	UART2 RX	IO5	LP_UART TX
NRST	RESET	IO3	LORA RST

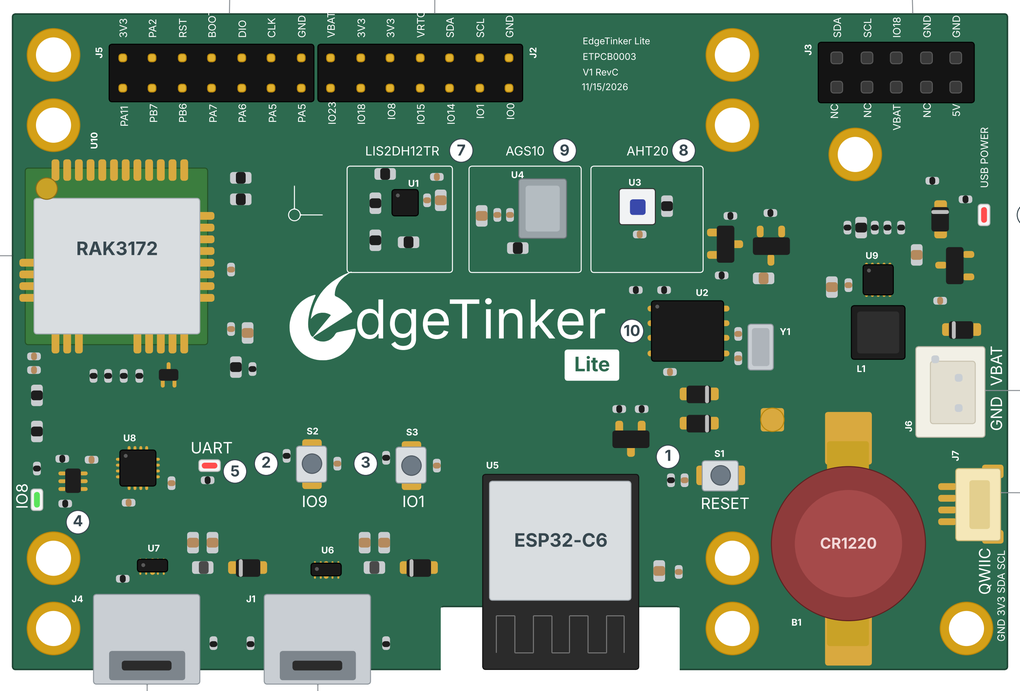
AT commands on UART2.

USB-C J4 | USB-UART (CH343P)

CH343P	FUNCTION	ESP32-C6	ESP FUNCTION
TXD	UART TX	IO17	U0RXD
RXD	UART RX	IO16	U0TXD
DTR/RTS	AUTO PROG	EN/IO9	RESET+BOOT
VBUS IN	+5V		

Flash and serial monitor over UART0.

TOP VIEW
Component side



BATTERY | J6 (JST-XH 2P)

PIN	SIGNAL	NOTE
1	GND	
2	VBAT IN	1.8 - 5.5 V, reverse protected

QWIIC | J7 (JST-SH 4P)

PIN	SIGNAL	ESP32-C6
1	GND	
2	+3V3 OUT	
3	SDA	IO6
4	SCL	IO7

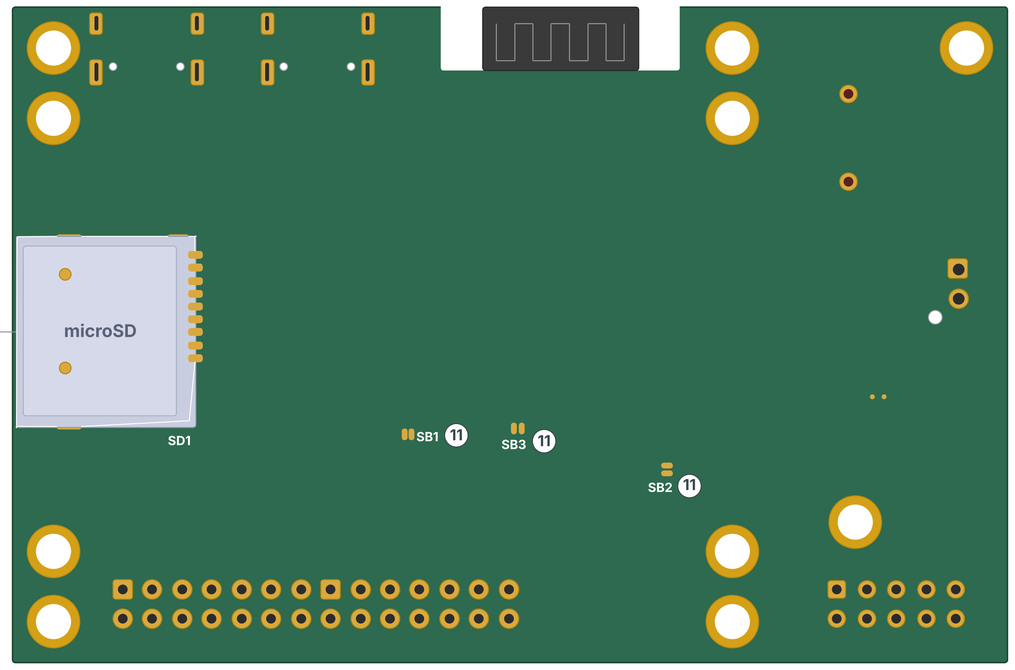
Same I2C bus as the sensors.

USB-C J1 | ESP32-C6 NATIVE USB

USB	FUNCTION	ESP32-C6
D-	USB D-	IO12
D+	USB D+	IO13
VBUS IN	+5V	

USB Serial/JTAG: flash and debug.

BOTTOM VIEW
Board flipped top to bottom



microSD | SD1 (bottom side)

CARD	FUNCTION	ESP32-C6
CLK	SPI SCK	IO19
CMD	SPI MOSI	IO20
DAT0	SPI MISO	IO21
DAT3	SPI CS	IO22

Card powered from 3V3 SW.

SOLDER JUMPERS | bottom side

JUMPER	POWERS	FROM
11 SB1	LIS2DH12 (U1)	3V3 SW
11 SB2	AHT20 (U3)	3V3 SW
11 SB3	AGS10 (U4)	3V3 SW

Each jumper links one sensor supply to 3V3 SW.

Legend: ESP32-C6 GPIO · RAK3172 pin · Analog (ADC) · I2C · SPI · UART / USB · SWD debug · Power · Ground · Control / strapping · On-board function · Not connected