SparkFun ESP32 Thing (DEV-13907)

Legend

Name		ADC
Power		DAC
GND		SPI
Control		UART
Arduino		Touch
GPIO		Misc

*GPIO: Port Input Only
*ADC: Preamplifier ADC
GPIO 3.3V tolerant only

PCB Antenna

sparkfun ESP32 Thing

Reset button

Button: GPIO 0

Left header

Touch		ADC		GPIO	Label	Pin
	ADC1_0*		GPIO36*	SenseVP	36
	ADC1_1*		GPIO37*	CapVP	37
	ADC1_2*		GPIO38*	CapVN	38
	ADC1_3*		GPIO39*	SensVN	39
Touch9	ADC1_4		GPIO32	XTAL32	32
Touch8	ADC1_5		GPIO33	XTAL32	33
VDET1	ADC1_6		GPIO34*		34
VDET2	ADC1_7		GPIO35*		35
DAC1	ADC2_8		GPIO25		25
DAC2	ADC2_9		GPIO26		26
Touch7	ADC2_7		GPIO27		27
Touch6	HSPI_CLK	ADC2_6	GPIO14		14
Touch5	HSPI_Q	ADC2_5	GPIO12		12
Touch4	HSP_ID	ADC2_4	GPIO13		13
			Reset	RST
			3.3V	3V3
			GND	GND
			VBAT	VBAT
			VUSB	VUSB
			GND	GND

Right header

Pin	Name	GPIO	Misc	Misc	Touch	
	GND					
21	SDA	GPIO21	V_SPI_HD			
TX	CLK3	GPIO1	U0_TXD			
RX	CLK2	GPIO3	U0_RXD			
22	SCL	GPIO22	V_SPI_WP	U0_RTS		
19	MISO	GPIO19	V_SPI_Q	U0_CTS		
23	MOSI	GPIO23	V_SPI_D			
18	SCK	GPIO18	V_SPI_CLK			
5	GPIO5		V_SPI_CS0	LED (Blue)		
15	GPIO15	ADC2_3	HSPI_CS0		Touch3	
2	CS	GPIO2	ADC2_2	HSPI_WP	Touch2	
0	CLK1	GPIO0	ADC2_1		Touch1	Button
4	GPIO4	ADC2_0	HSPI_HD		Touch0	
17	GPIO17	U2_TXD				
16	GPIO16	U2_RXD				
3V3	3.3V					
GND	GND					
VBAT	VBAT					
VUSB	VUSB					
GND	GND					

microB Connector

JST Connector for single cell LiPo

Power LED: Red
Charge LED: Yellow

Jumpers

SJ1: Can be cut to change charge current

SJ2: Disconnect to disable Power LED

SJ3: Use to change voltage to flash chip

Power

ESP32 VCC range: 2.2V-3.6V
VBAT: direct to battery (and charger)
VUSB: direct to USB (5V)
VCC: Output of regulator 3.3V/600mA
Up to 250mA during RF transmissions

Wireless

Wifi: 802.11 b/g/n/e/i
WPA/WPA2/WPA2-Enterprise/SPS

ESP32

Dual-core Xtensa 32-bit LX6
Up to 240MHz
520kB internal SRAM
4MB external flash

Multiplexed I/Os allow up to

18 ADC channels
3 SPI interfaces
3 UART interfaces
2 I2C interfaces
2 I2S interfaces
16 LED PWM outputs
2 DACs
10 Capacitive Touch Inputs

ADC Preamp

GPIO pins 36,67,38, and 39 are able to be used as a low noise analog pre-amplifier

Other*

Hall Sensor
Temp sensor (-40C to 125C)
SD/SDIO/MMC Host Controller
CAN Bus

*On datasheet, but may not be supported yet

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