Power Supply

LiPo Charger

CHARGING

CHRG1

Battery Measurement

External Power Sense

Vout=0.6*(1+Ra/Rb)

BL4054B-42PRN(SOT23-5)
IBAT = 1000/Rprog = 455mA

SY8089AAAC(SOT23-5)

ESP-WROOM-32 MODULE

U9

ESP-WROOM-32 MODULE

THERMAL_PAD

ESP_EN

ESP-WROOM-32

Buttons

BUT1
IT1105AU2

RST1
IT1105AU2

SD/MMC Card

MICRO_SD1

TFC-9P-1.7H(ATFFS150A01BR016)

Ethernet

In RMII Mode

LAN8710A-EZC(QFN32)

Single 10/100 BASE-TX Filter Connector Module

2x1000pF/2KV
2x75 Ohm

RJP-003TC1(LPJ4112CNL)

The PHY is setted up as follows:
MODE: All capable(10/100Base)
-Auto-negotiation enabled
-RMII Configuration
-SMI address: 0x00

PoE Power Supply

The input filter capacitor must be >5 µF for to MPS!

250mA(50mA@5V) minimal power consumption
on the PD required for to Maintain Power Signature(MPS)!

Vpos

Vss

Vss

Vneg

Class=0 (0.44 to 12.95W)

VOUT=1.35*(1+Ra/Rb)

Si3402-8-GM(QFN-20_5x5mm)

Closed
Closed

Extensions

EXT1
NS(HN1x10)

EXT2
NS(HN1x10)

UEXT

UEXT1
B-V-10-LF(GBH254SMT-10)

USB to UART

USB-UART1
MISB-SWMM-5B-LF(USB_MICRO)

U1
CH340T(SSOP20W)

Q12MHz/20pF/10ppm/4P/3.2x2.5mm

!!!WARNING!!!
When the board is powered via PoE, don't include the USB cable for to programming it!!!
In case this is required, USB-ISO must be used for to guarantee galvanic isolation!
See: https://www.olimex.com/Products/USB-Modules/USB-ISO/

Auto program

DTR	RTS	->EN	IO0
1	1	1	1
0	0	1	1
1	0	0	1
0	1	1	0

Notes:

Software Selectable Pins

Interface	Signal	Pin
EMAC	EMAC_MDC_out	Any GPIO
	EMAC_MDI_in	
	EMAC_MDO_out	
	EMAC_CRS_out	
	EMAC_COL_out	
I2C	I2CEXT0_SCL_in	Any GPIO
	I2CEXT0_SDA_in	
	I2CEXT0_SDA_out	
	I2CEXT0_SCL_out	
	I2CEXT1_SCL_in	
	I2CEXT1_SDA_in	
	I2CEXT1_SCL_out	
	I2CEXT1_SDA_out	
General Purpose SPI	HSPIQ_in/_out	Any GPIO
	HSPID_in/_out	
	HSPICLK_in/_out	
	HSPICS0_in/_out	
	HSPICS1_in/_out	
	HSPICS2_in/_out	
	VSPIQ_in/_out	
	VSPID_in/_out	
	VSPICLK_in/_out	
	VSPICS0_in/_out	
	VSPICS1_in/_out	
	VSPICS2_in/_out	

For more information refer to esp_wroom_32_datasheet_en.pdf.

Internal Bootstrapping Resistors

MTDI/GPIO12:	Pull-Down
GPIO0:	Pull-Up
GPIO2:	Pull-Down
GPIO4:	Pull-Down
MTDO/GPIO15:	Pull-Up
GPIO5:	Pull-Up

Bootstrapping Pins Settings

Voltage of Internal LDO(VDD_SDIO)

Pins	Default	3.3V	1.8V
GPIO12/MTDI	Pull-Down		

Booting Mode

Pin	Default	SPI Flash Boot	Download Boot
GPIO0	Pull-Up		
GPIO2	Pull-Down	Don't-care	

Debugging Log on UOTXD During Booting

	Default	UOTXD Toggling	UOTXD Silent
GPIO15/MTDO	Pull-Up		

Timing of SDIO Slave

Pin	Default	Falling-edge Output	Falling-edge Output	Rising-edge Output	Rising-edge Output
GPIO15/MTDO	Pull-Up				
GPIO5	Pull-Up				

Fiducials

FID1 Fiducial
FID2 Fiducial
FID3 Fiducial
FID4 Fiducial
FID5 Fiducial
FID6 Fiducial

OLIMEX
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Sheet: /
File: ESP32-PoE_Rev_D.sch
Title: ESP32-PoE

| Size: A2 | Date: 2019-03-22 | Rev: D |
| KiCad E.D.A. kicad 5.1.0-unknown-a7c8df594ubuntu18.04.1 | | Id: 1/1 |