cpu

2

CPU

File: iot-esp-eth-com-cpu.kicad_sch

network

3

NETWORK

File: iot-esp-eth-com-network.kicad_sch

misc

4

MISC

File: iot-esp-eth-com-misc.kicad_sch

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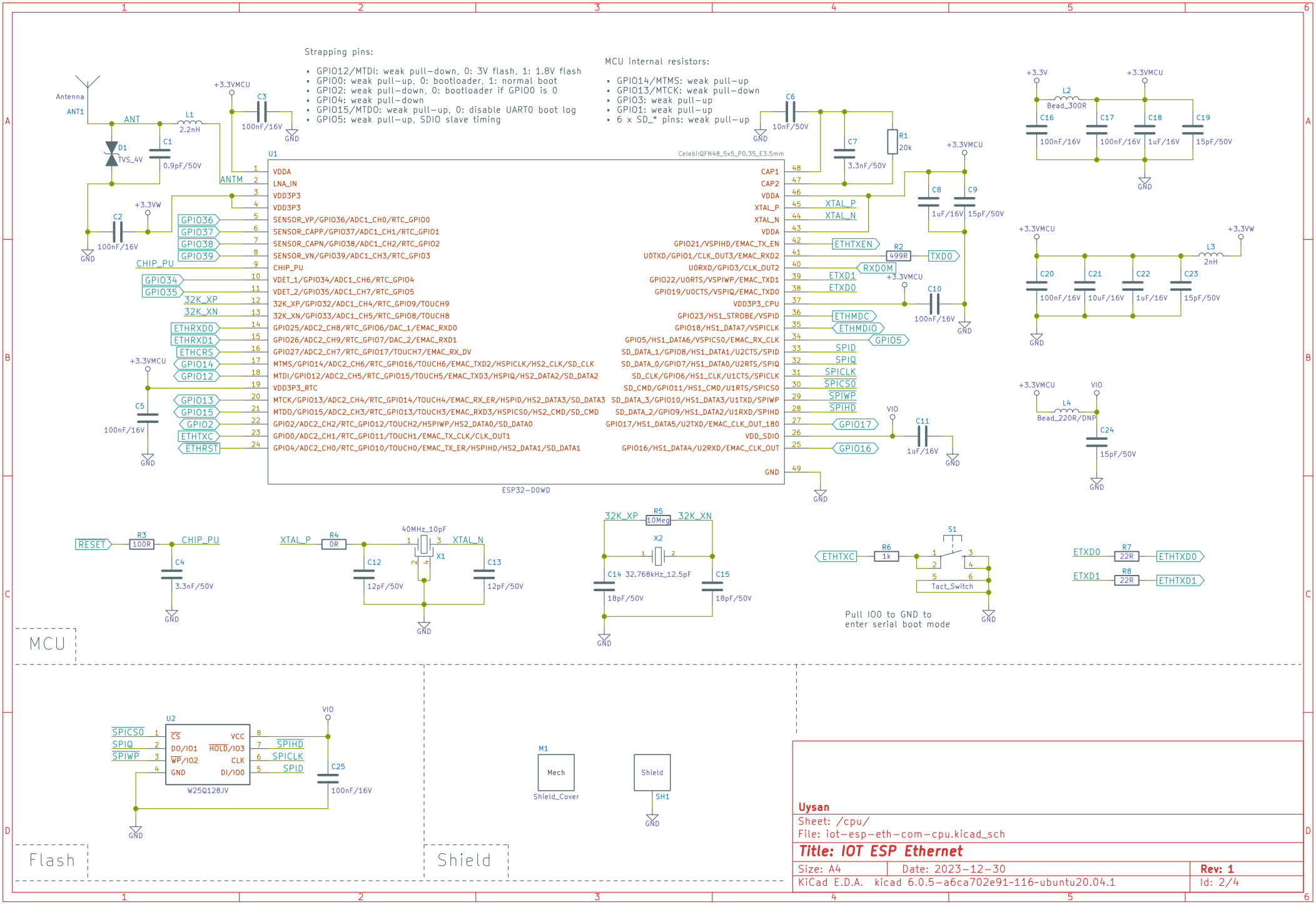
Sheet: /

File: iot-esp-eth-com.kicad_sch

Title: IOT ESP Ethernet

Size: A4	Date: 2023-12-30	**Rev: 1**
KiCad E.D.A. kicad 6.0.5-a6ca702e91~116~ubuntu20.04.1		Id: 1/4


Strapping pins:
• GPIO12/MTDI: weak pull-down, 0: 3V flash, 1: 1.8V flash
• GPIO0: weak pull-up, 0: bootloader, 1: normal boot
• GPIO2: weak pull-down, 0: bootloader if GPIO0 is 0
• GPIO4: weak pull-down
• GPIO15/MTDO: weak pull-up, 0: disable UART0 boot log
• GPIO5: weak pull-up, SDIO slave timing
MCU internal resistors:
• GPIO14/MTMS: weak pull-up
• GPIO13/MTCK: weak pull-down
• GPIO3: weak pull-up
• GPIO1: weak pull-up
• 6 x SD_* pins: weak pull-up
Antenna
ANT1
ANT
L1
2.2nH
C1
0.9pF/50V
D1
TVS_4V
+3.3VMCU
C3
100nF/16V
GND
ANTM
+3.3VW
C2
100nF/16V
U1
Celebi:QFN48_5x5_P0.35_E3.5mm
VDDA
LNA_IN
VDD3P3
VDD3P3
SENSOR_VP/GPIO36/ADC1_CH0/RTC_GPIO0
SENSOR_CAPP/GPIO37/ADC1_CH1/RTC_GPIO1
SENSOR_CAPN/GPIO38/ADC1_CH2/RTC_GPIO2
SENSOR_VN/GPIO39/ADC1_CH3/RTC_GPIO3
CHIP_PU
VDET_1/GPIO34/ADC1_CH6/RTC_GPIO4
VDET_2/GPIO35/ADC1_CH7/RTC_GPIO5
32K_XP/GPIO32/ADC1_CH4/RTC_GPIO9/TOUCH9
32K_XN/GPIO33/ADC1_CH5/RTC_GPIO8/TOUCH8
GPIO25/ADC2_CH8/RTC_GPIO6/DAC_1/EMAC_RXD0
GPIO26/ADC2_CH9/RTC_GPIO7/DAC_2/EMAC_RXD1
GPIO27/ADC2_CH7/RTC_GPIO17/TOUCH7/EMAC_RX_DV
MTMS/GPIO14/ADC2_CH6/RTC_GPIO16/TOUCH6/EMAC_TXD2/HSPICLK/HS2_CLK/SD_CLK
MTDI/GPIO12/ADC2_CH5/RTC_GPIO15/TOUCH5/EMAC_TXD3/HSPIQ/HS2_DATA2/SD_DATA2
VDD3P3_RTC
MTCK/GPIO13/ADC2_CH4/RTC_GPIO14/TOUCH4/EMAC_RX_ER/HSPID/HS2_DATA3/SD_DATA3
MTDO/GPIO15/ADC2_CH3/RTC_GPIO13/TOUCH3/EMAC_RXD3/HSPICS0/HS2_CMD/SD_CMD
GPIO2/ADC2_CH2/RTC_GPIO12/TOUCH2/HSPIWP/HS2_DATA0/SD_DATA0
GPIO0/ADC2_CH1/RTC_GPIO11/TOUCH1/EMAC_TX_CLK/CLK_OUT1
GPIO4/ADC2_CH0/RTC_GPIO10/TOUCH0/EMAC_TX_ER/HSPIHD/HS2_DATA1/SD_DATA1
CAP1
CAP2
VDDA
XTAL_P
XTAL_N
VDDA
GPIO21/VSPIHD/EMAC_TX_EN
U0TXD/GPIO1/CLK_OUT3/EMAC_RXD2
U0RXD/GPIO3/CLK_OUT2
GPIO22/U0RTS/VSPIWP/EMAC_TXD1
GPIO19/U0CTS/VSPIQ/EMAC_TXD0
VDD3P3_CPU
GPIO23/HS1_STROBE/VSPID
GPIO18/HS1_DATA7/VSPICLK
GPIO5/HS1_DATA6/VSPICS0/EMAC_RX_CLK
SD_DATA_1/GPIO8/HS1_DATA1/U2CTS/SPID
SD_DATA_0/GPIO7/HS1_DATA0/U2RTS/SPIQ
SD_CLK/GPIO6/HS1_CLK/U1CTS/SPICLK
SD_CMD/GPIO11/HS1_CMD/U1RTS/SPICS0
SD_DATA_3/GPIO10/HS1_DATA3/U1TXD/SPIWP
SD_DATA_2/GPIO9/HS1_DATA2/U1RXD/SPIHD
GPIO17/HS1_DATA5/U2TXD/EMAC_CLK_OUT_180
VDD_SDIO
GPIO16/HS1_DATA4/U2RXD/EMAC_CLK_OUT
GND
ESP32-D0WD
GPIO36
GPIO37
GPIO38
GPIO39
GPIO34
GPIO35
32K_XP
32K_XN
ETHRXD0
ETHRXD1
ETHCRS
GPIO14
GPIO12
GPIO13
GPIO15
GPIO2
ETHTXC
ETHRST
C5
100nF/16V
C6
10nF/50V
C7
3.3nF/50V
R1
20k
C8
1uF/16V
C9
15pF/50V
ETHTXEN
R2
499R
TXD0
RXD0M
ETXD1
ETXD0
C10
100nF/16V
ETHMDC
ETHMDIO
GPIO5
SPID
SPIQ
SPICLK
SPICS0
SPIWP
SPIHD
GPIO17
GPIO16
VIO
C11
1uF/16V
+3.3V
L2
Bead_300R
C16
100nF/16V
C17
100nF/16V
C18
1uF/16V
C19
15pF/50V
L3
2nH
C20
100nF/16V
C21
10uF/16V
C22
1uF/16V
C23
15pF/50V
L4
Bead_220R/DNP
C24
15pF/50V
RESET
R3
100R
CHIP_PU
C4
3.3nF/50V
XTAL_P
R4
0R
40MHz_10pF
X1
C12
12pF/50V
C13
12pF/50V
32K_XP
R5
10Meg
32K_XN
X2
C14 32.768kHz_12.5pF
C15
18pF/50V
ETHTXC
R6
1k
S1
Tact_Switch
Pull IO0 to GND to
enter serial boot mode
ETXD0
R7
22R
ETHTXD0
ETXD1
R8
22R
ETHTXD1
MCU
U2
SPICS0
SPIQ
SPIWP
CS
DO/IO1
WP/IO2
GND
VCC
HOLD/IO3
CLK
DI/IO0
W25Q128JV
C25
100nF/16V
M1
Mech
Shield_Cover
Shield
SH1
Flash
Shield
Uysan
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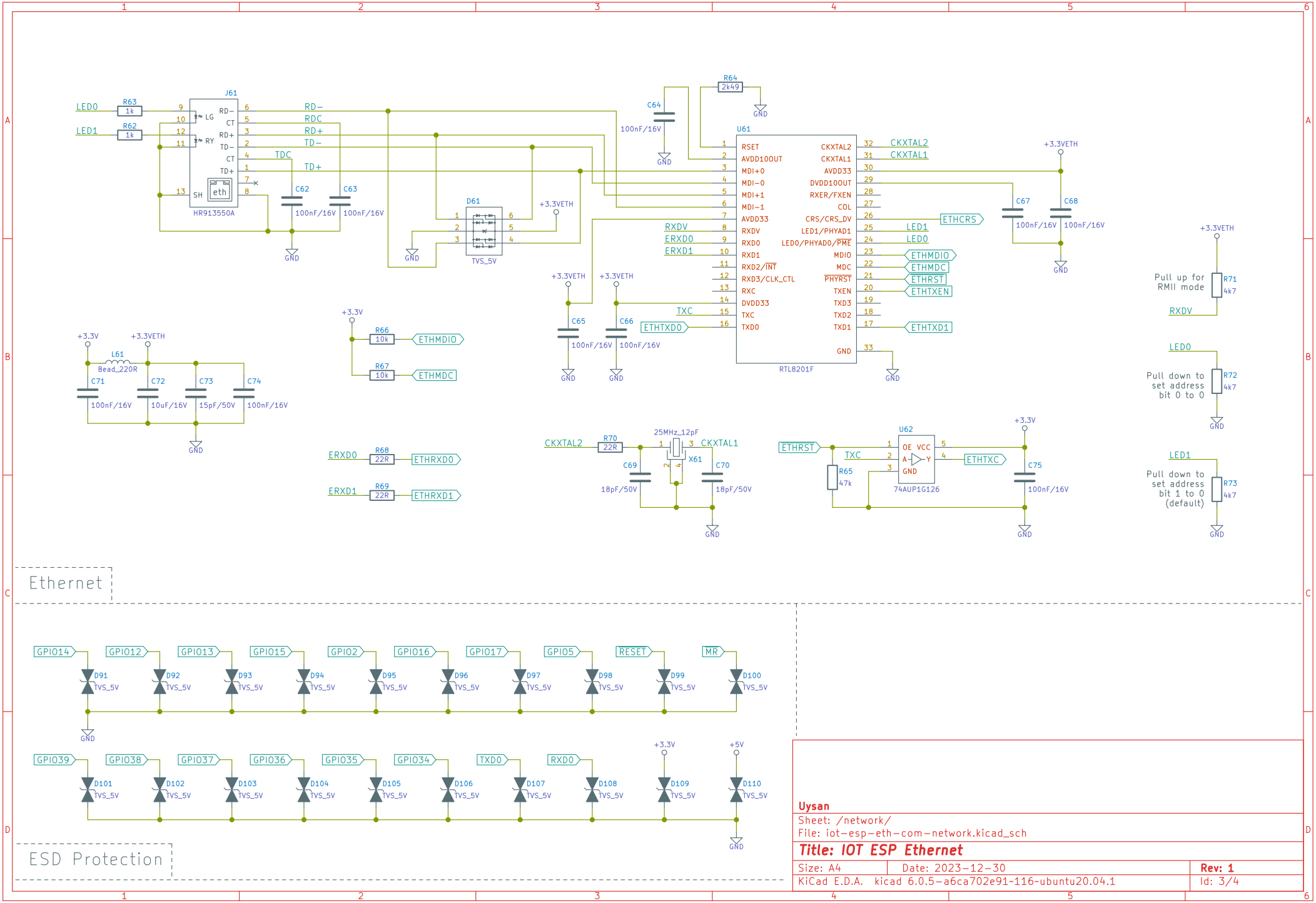

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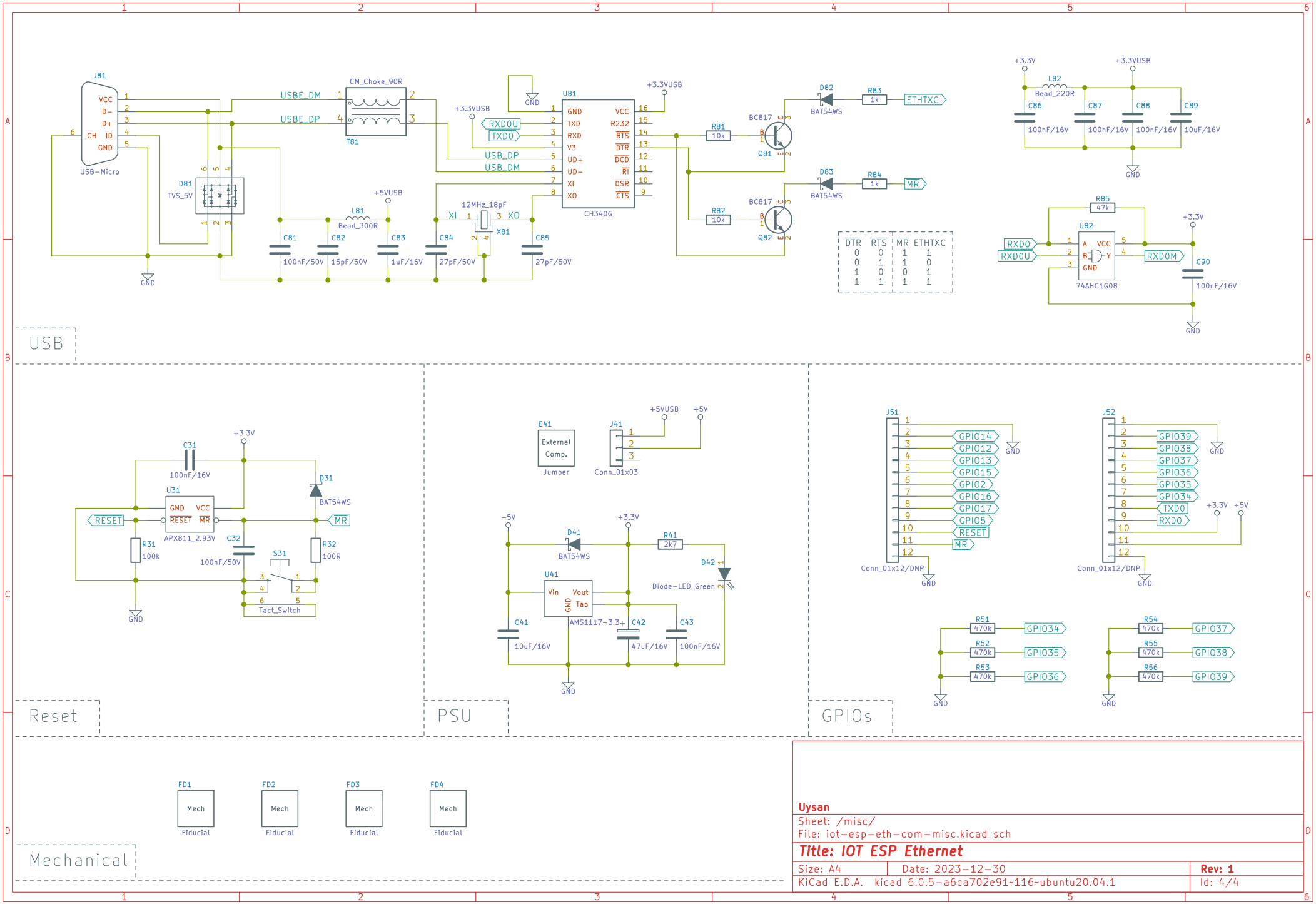

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