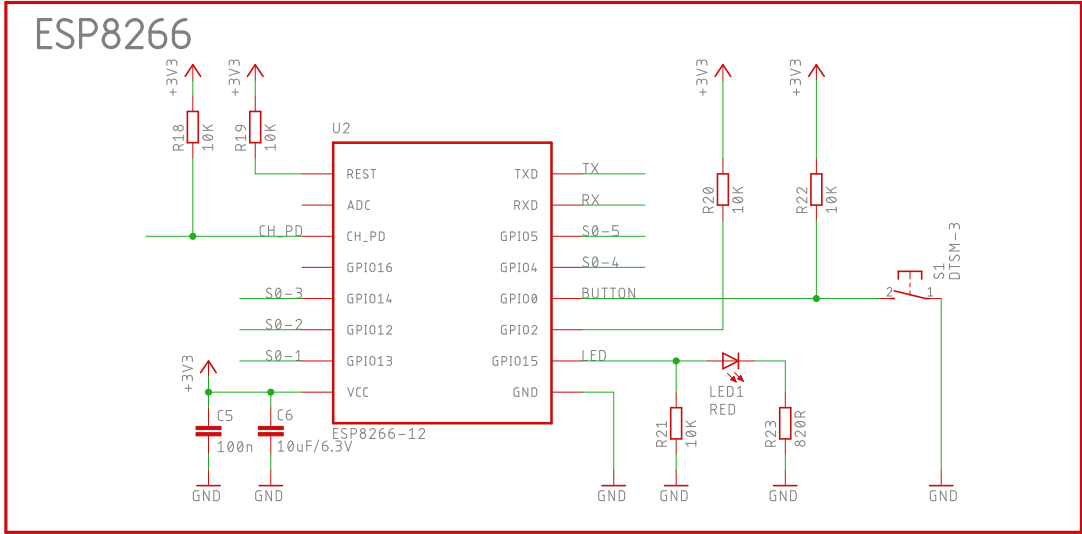


# POWER

The schematic diagram illustrates the power supply section of a USB-C to RS-485 converter. It features an AC-DC converter (U1) connected to a boost converter (IC1). The AC-DC converter (U1) is labeled "AC-DC, 3.6W, 24V, 150mA" and has pins for L, N, VCC, and GND. The boost converter (IC1) is labeled "MCP16301T-I/CH" and has pins for VIN, BOOST, SW, EN, GND, and VFB. The circuit includes several passive components: a 22uF/50V capacitor (C1) connected to the VCC pin of U1; a 100nF capacitor (C2) connected to the SW pin of IC1; a 22uF/50V capacitor (C3) connected to the +5V3 output; an inductor L1 (DJNR3015-150) connected between the SW pin of IC1 and the +5V3 output; a diode D1 (SS14) connected between the SW pin of IC1 and the +5V3 output; and a diode D2 (1N4148WS) connected between the SW pin of IC1 and the +5V3 output. The output of the boost converter is +5V3, which is connected to the VCC pin of the RS-485 transceiver (U2).



# S0 INPUT

The diagram illustrates the S0 input circuit, which consists of four channels (S0-1, S0-2, S0-3, S0-4, and S0-5) using BC817-40SMD transistors and KF350-3.5-2P connectors. Each channel is connected to a +3V3 supply and a 10K resistor (R3, R9, R17, R6, R14) to VCC. The input signal (IN5) is connected to the base of the transistor (Q1, Q3, Q5, Q2, Q4) through a 1K resistor (R1, R7, R15, R4, R12). The emitter of each transistor is connected to GND. The collector of each transistor is connected to the output signal (S0-1, S0-2, S0-3, S0-4, S0-5) through a 10K resistor (R2, R8, R16, R5, R13).

Channel S0-1: IN5 (KF350-3.5-2P) → R1 (1K) → Q1 (BC817-40SMD) → R2 (10K) → S0-1. Q1 is biased by +3V3 through R3 (10K) to VCC.

Channel S0-2: IN5 (KF350-3.5-2P) → R7 (1K) → Q3 (BC817-40SMD) → R8 (10K) → S0-2. Q3 is biased by +3V3 through R9 (10K) to VCC.

Channel S0-3: IN5 (KF350-3.5-2P) → R15 (1K) → Q5 (BC817-40SMD) → R16 (10K) → S0-3. Q5 is biased by +3V3 through R17 (10K) to VCC.

Channel S0-4: IN5 (KF350-3.5-2P) → R4 (1K) → Q2 (BC817-40SMD) → R5 (10K) → S0-4. Q2 is biased by +3V3 through R6 (10K) to VCC.

Channel S0-5: IN5 (KF350-3.5-2P) → R12 (1K) → Q4 (BC817-40SMD) → R13 (10K) → S0-5. Q4 is biased by +3V3 through R14 (10K) to VCC.

# FTDI HEADER

Diagram illustrating the FTDI Header circuit connections:

- BUTTON** (Green line) connects to the anode of the **BAT54S** diode.
- The cathode of the **BAT54S** diode connects to the **D3** line.
- A capacitor **C4** (100n) connects the **D3** line to the **CH\_PD** line.
- The **D3** line connects to the **DTR** pin of the **CON6 FTDI\_CONN** header.
- The **CON6 FTDI\_CONN** header pins are: **DTR**, **TX0**, **RX1**, **VCC**, **CTS**, and **GND**.
- The **VCC** pin connects to the **+3V3** supply.
- The **GND** pin connects to the **GND** reference.



Name: <b>S0-energy-meter-v1.1</b> 10.11.2020 21:38	Sheet: <b>1/1</b>
---	----------------------

Sheet:  
1/1

