

[illegible][illegible]

The schematic diagram illustrates the power supply section, featuring five MOSFET drivers (Q1-Q5) and their associated components. Each driver is controlled by a microcontroller pin (MCU1 through MCU5) and a pull-up resistor (R1 through R5, 10kR). The MOSFETs (Q1-Q5) are YJL3416A. The source of each MOSFET is connected to GND, and the drain is connected to a load resistor (R6 through R10, 10kR) and a +12V supply. The load resistors are connected to GND. The +12V supply is connected to the drain of each MOSFET. The MOSFETs are controlled by a microcontroller pin (MCU1 through MCU5) and a pull-up resistor (R1 through R5, 10kR). The MOSFETs (Q1-Q5) are YJL3416A. The source of each MOSFET is connected to GND, and the drain is connected to a load resistor (R6 through R10, 10kR) and a +12V supply. The load resistors are connected to GND. The +12V supply is connected to the drain of each MOSFET. The MOSFETs are controlled by a microcontroller pin (MCU1 through MCU5) and a pull-up resistor (R1 through R5, 10kR). The MOSFETs (Q1-Q5) are YJL3416A. The source of each MOSFET is connected to GND, and the drain is connected to a load resistor (R6 through R10, 10kR) and a +12V supply. The load resistors are connected to GND. The +12V supply is connected to the drain of each MOSFET. The MOSFETs are controlled by a microcontroller pin (MCU1 through MCU5) and a pull-up resistor (R1 through R5, 10kR).

USB\_DTR

R16  
10kR

Q1  
Q\_NPN\_BEC

USB\_RTS

R17  
10kR

Q4  
Q\_NPN\_BEC

C6  
4.7uF

R18  
10kR

SW1  
SW\_Push

GND

GND

[illegible]

Battery conn

+12V

BATT\_SHUNT\_P

R2  
5mR

BATT\_SHUNT\_N

CONN\_01X02  
J2

GND

Vbus

D\_Schottky  
D10

Vbus\_blocked

R24  
1kR

Vbus\_to\_12V\_EN

0.005R \* 32A = 163mV

Q8  
Q\_Pmos\_GDS

+12V

+12V

C2  
220uF/25V

GND

Diagram of the J1 connector pinout:

- Pin 1: GND (labeled VD\_TX)
- Pin 2: RX (labeled VD\_RX)
- Pin 3: TX (labeled VD\_TX)
- Pin 4: GND (labeled VD\_TX)

The connector is labeled J1 and CONN\_01X04.

The diagram shows three connector pin configurations:

- J14 CONN\_01X03:** A 3-pin connector with pins 1, 2, and 3. Pin 1 is connected to +3V3, pin 2 to GND, and pin 3 to GRAVITY0.
- J16 CONN\_01X03:** A 3-pin connector with pins 1, 2, and 3. Pin 1 is connected to +3V3, pin 2 to GND, and pin 3 to GRAVITY1.
- J10 CONN\_01X06:** A 6-pin connector with pins 1 through 6. Pin 1 is connected to +3V3, pin 2 to GND, pin 3 to GRAVITY0, pin 4 to GND, pin 5 to GRAVITY1, and pin 6 to GND.

The schematic diagram shows the electrical connections for the pressure sensor. A 12V supply is connected to the PRES\_SHUNT\_P pin through a 6.8R resistor (R6). The PRES\_SHUNT\_N pin is connected to a 24mA current source (J6, CONN\_01X02). The pressure sensor (Q5) is connected between PRES\_SHUNT\_P and PRES\_SHUNT\_N. The sensor's output is connected to a 10kR resistor (R14) and a 60V source (Q\_NMOS\_GSD). The sensor's ground is connected to GND.

Grounded Coplanar Wave Guide (JLC7628 Substrate):  
 Calculator: <https://spok.ca/index.php/resources/tools/99-cpwcac>  
 $H = 0.18$ ,  $W = 0.295$ ,  $T = 0.035$ ,  $S = 0.2$ ,  $Er = 4.6$ ,  $Z0 = 50.05\Omega$

1mm PCB

LNA

R4  
OR

AE1  
Antenna\_Dipole

C1  
DNP

C7  
DNP

GND

- H1 MountingHole
- H2 MountingHole
- H3 MountingHole

