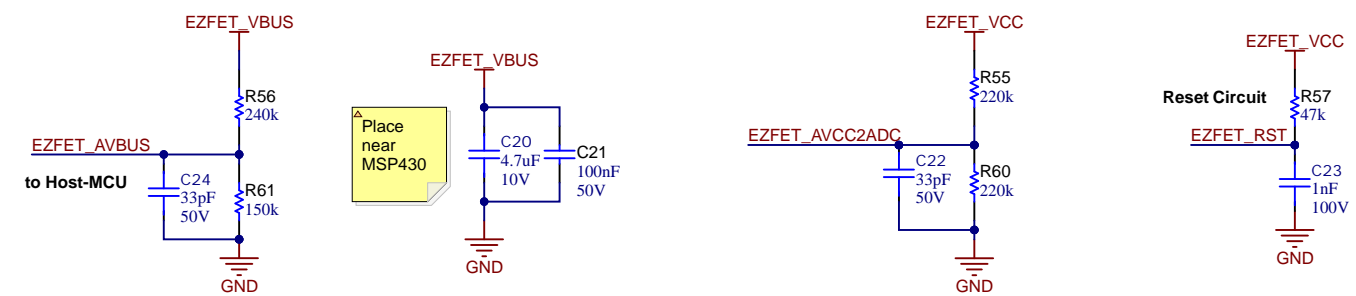
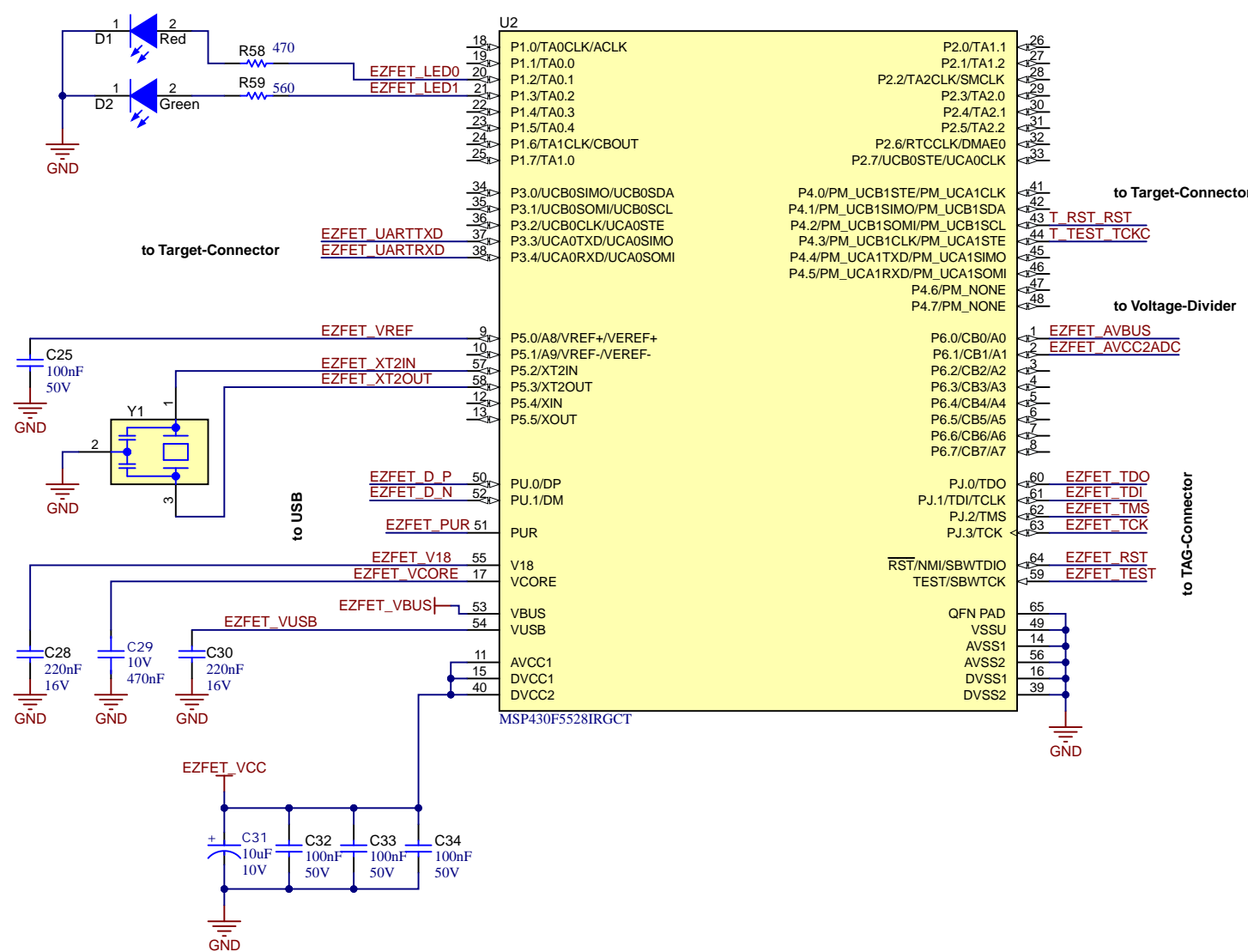
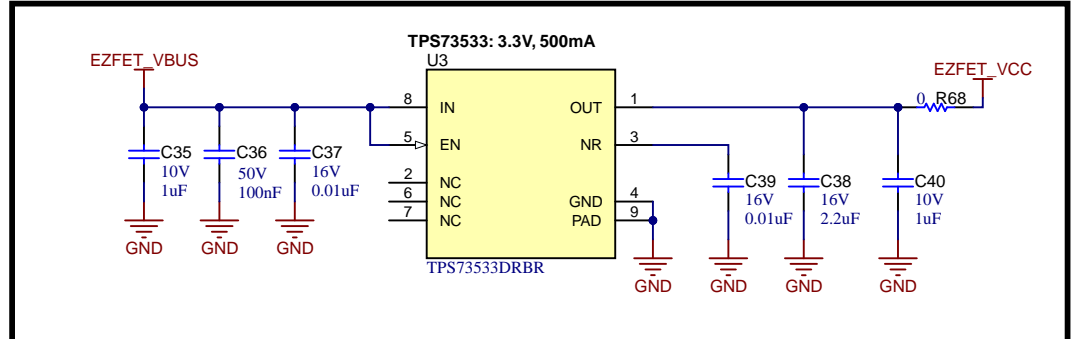


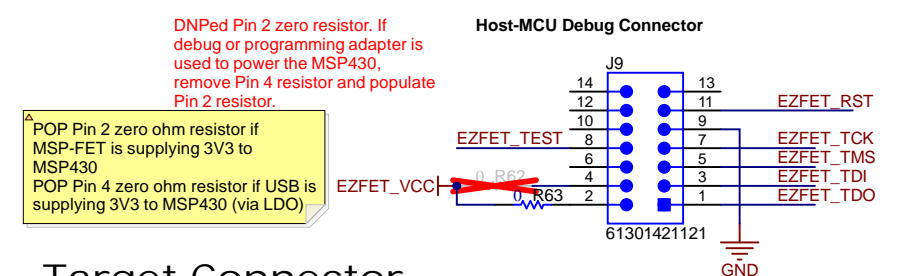
Host MCU for Emulation



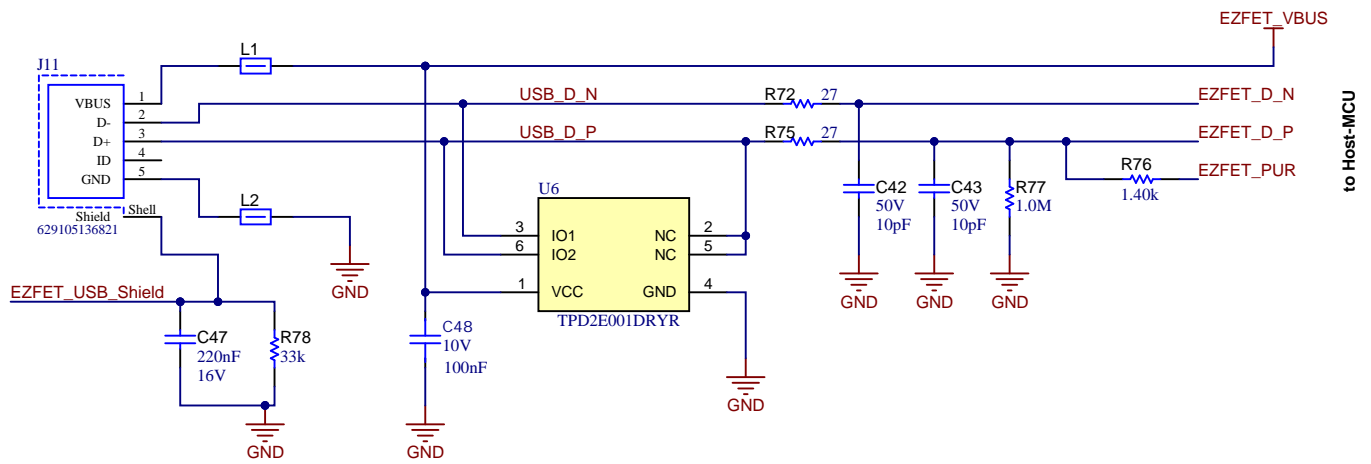
3.3V Power (EZFET_VCC)



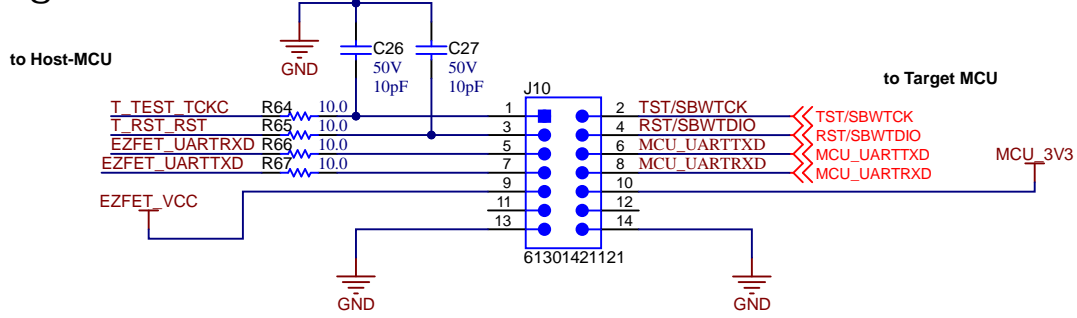
JTAG-Connector (Host Debug)



USB-I-Interface



Target Connector

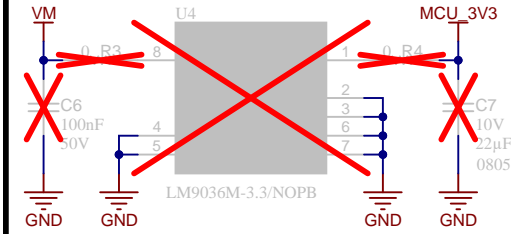


3.3V LDO

The diagram shows a 3.3V LDO regulator (U4: LM9036M-3.3/NOPB) with the following connections:

- Input:** VM connected to pin 8. A 100nF capacitor (C6) is connected between VM and GND. A 50V capacitor is connected between pin 4 and GND.
- Output:** MCU_3V3 connected to pin 1. A 22μF capacitor (C7) is connected between MCU_3V3 and GND.
- Other pins:** Pin 2 is connected to pin 3. Pins 3, 6, and 7 are connected to GND.

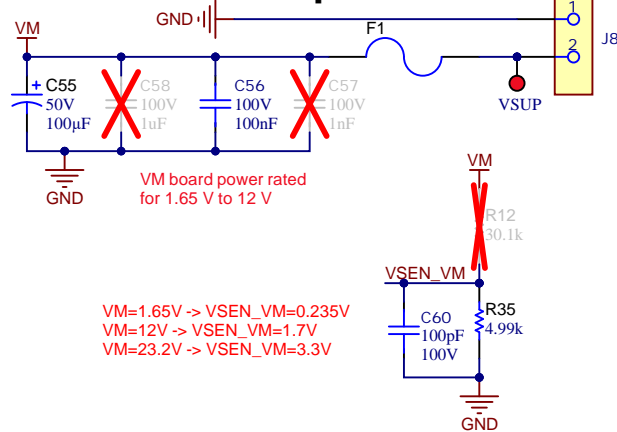
Red 'X' marks are placed over the input capacitor C6, the output capacitor C7, and the 50V capacitor, indicating they are not required for this configuration.



Board power

VM board power rated for 1.65 V to 12 V

$VM=1.65V \rightarrow VSEN_VM=0.235V$
 $VM=12V \rightarrow VSEN_VM=1.7V$
 $VM=23.2V \rightarrow VSEN_VM=3.3V$



Output Connector

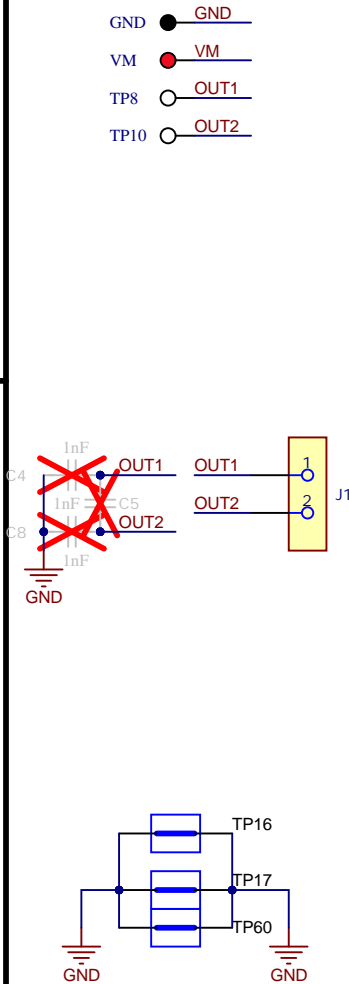
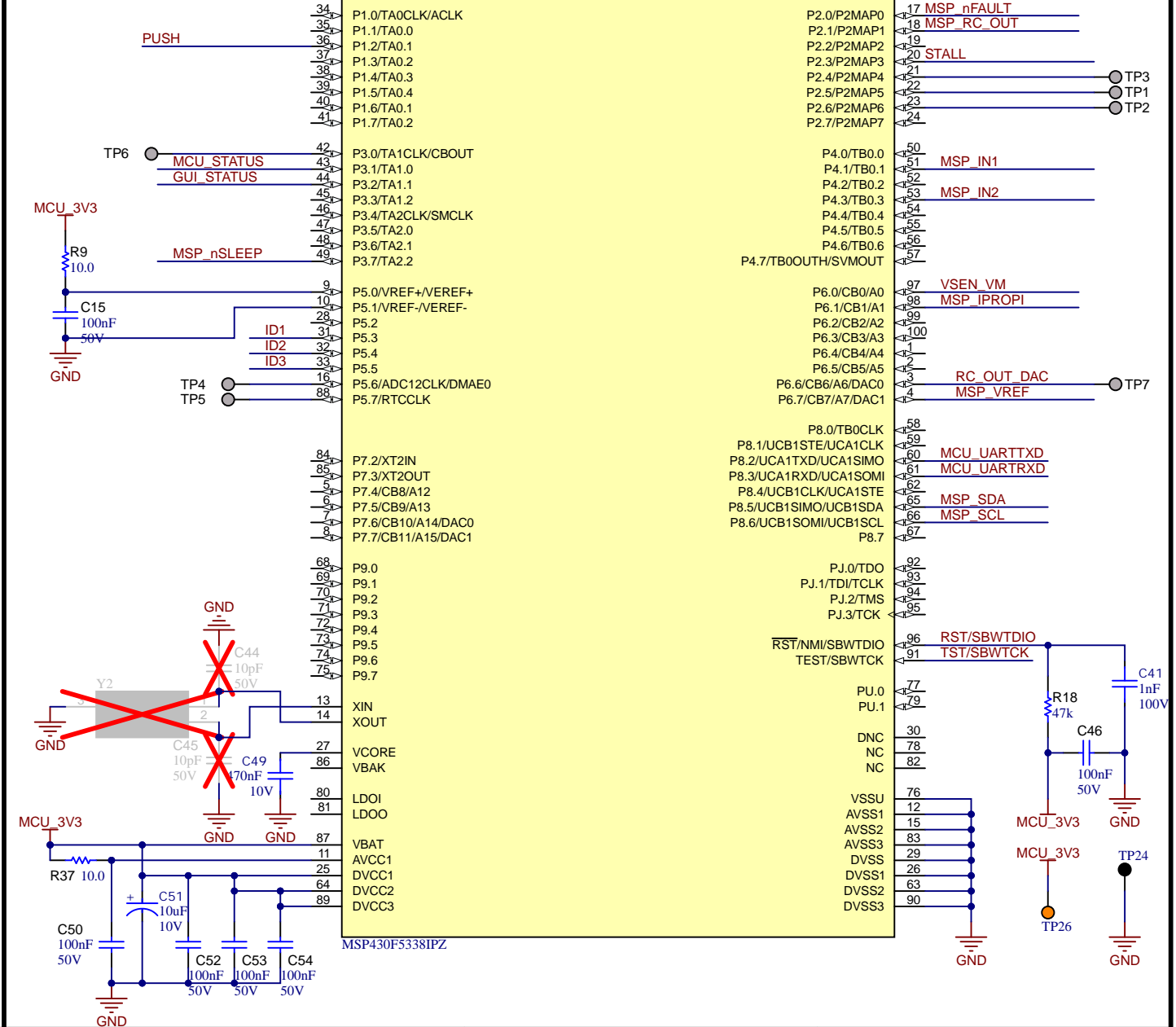
Legend:

- GND (Black dot)
- VM (Red dot)
- TP8 (White circle)
- TP10 (White circle)

Components and Connections:

- Capacitors: $1nF$, $10nF$, $100nF$
- Inductors: $100nH$
- Output Connector: J1 (1, 2)

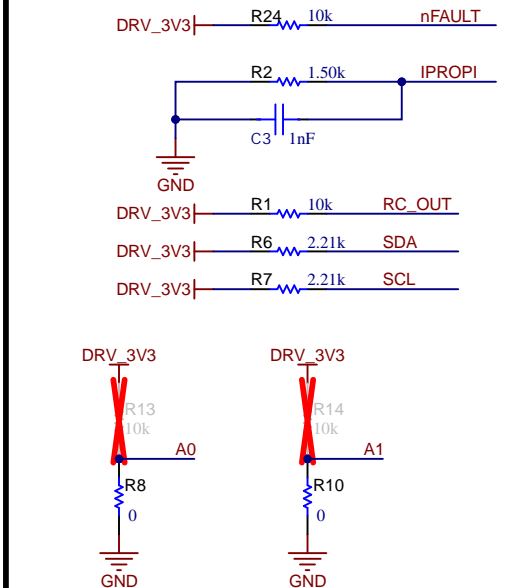
The diagram shows a circuit with a red 'X' over it, indicating a modification or error. The circuit includes a network of capacitors and inductors connected to GND and VM. The output is taken from OUT1 and OUT2, which are connected to a connector J1.

[illegible]

External pull-up/pull-down

The image displays five circuit diagrams illustrating the correct and incorrect ways to connect pull-up and pull-down resistors to a microcontroller's I/O pins.

- Top Diagram (Correct Pull-up):** Shows a pin connected to `DRV_3V3` through a resistor `R24` (10k). The pin is labeled `nFAULT`. This is a correct pull-up connection.
- Second Diagram (Correct Pull-up with Decoupling):** Shows a pin connected to `DRV_3V3` through a resistor `R2` (1.50k). The pin is labeled `IPROPI`. A capacitor `C3` (1nF) is connected between the pin and `GND`. This is a correct pull-up connection with decoupling.
- Third Diagram (Correct Pull-up):** Shows a pin connected to `DRV_3V3` through a resistor `R1` (10k). The pin is labeled `RC_OUT`. This is a correct pull-up connection.
- Fourth Diagram (Correct Pull-up):** Shows a pin connected to `DRV_3V3` through a resistor `R6` (2.21k). The pin is labeled `SDA`. This is a correct pull-up connection.
- Fifth Diagram (Correct Pull-up):** Shows a pin connected to `DRV_3V3` through a resistor `R7` (2.21k). The pin is labeled `SCL`. This is a correct pull-up connection.
- Sixth Diagram (Incorrect Pull-down):** Shows a pin connected to `DRV_3V3` through a resistor `R13` (10k). The pin is labeled `A0`. A resistor `R8` is connected between the pin and `GND`, but it is crossed out with a red 'X', indicating this is an incorrect pull-down connection.
- Seventh Diagram (Incorrect Pull-down):** Shows a pin connected to `DRV_3V3` through a resistor `R14` (10k). The pin is labeled `A1`. A resistor `R10` is connected between the pin and `GND`, but it is crossed out with a red 'X', indicating this is an incorrect pull-down connection.



Main Signal Header

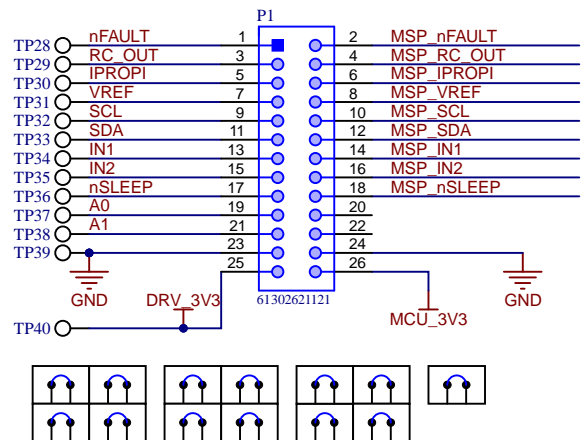
The diagram illustrates the Main Signal Header connections. The microcontroller (P1) has the following pins connected to the MSP430:

TP	Signal	P1 Pin	MSP Pin	Signal
TP28	nFAULT	1	2	MSP nFAULT
TP29	RC OUT	3	4	MSP RC OUT
TP30	IPROPI	5	6	MSP IPROPI
TP31	VREF	7	8	MSP_VREF
TP32	SCL	9	10	MSP SCL
TP33	SDA	11	12	MSP SDA
TP34	IN1	13	14	MSP IN1
TP35	IN2	15	16	MSP IN2
TP36	nSLEEP	17	18	MSP nSLEEP
TP37	A0	19	20	
TP38	A1	21	22	
TP39		23	24	
		25	26	

The physical header layout shows pins 1 through 26. The wiring connections are as follows:

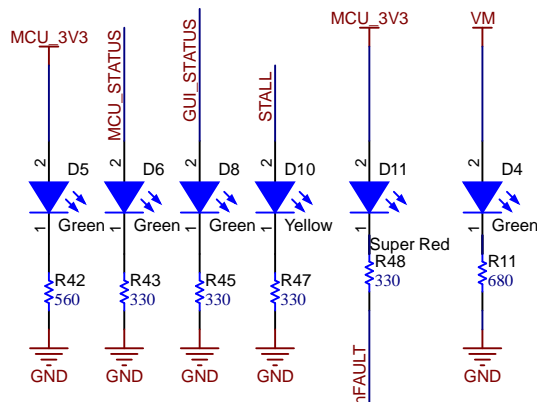
- TP28 (nFAULT) is connected to P1 pin 1.
- TP29 (RC OUT) is connected to P1 pin 3.
- TP30 (IPROPI) is connected to P1 pin 5.
- TP31 (VREF) is connected to P1 pin 7.
- TP32 (SCL) is connected to P1 pin 9.
- TP33 (SDA) is connected to P1 pin 11.
- TP34 (IN1) is connected to P1 pin 13.
- TP35 (IN2) is connected to P1 pin 15.
- TP36 (nSLEEP) is connected to P1 pin 17.
- TP37 (A0) is connected to P1 pin 19.
- TP38 (A1) is connected to P1 pin 21.
- TP39 is connected to P1 pin 23.
- TP40 is connected to P1 pin 25.
- DRV_3V3 is connected to P1 pin 25.
- MCU_3V3 is connected to P1 pin 26.
- GND is connected to P1 pin 26.

The diagram also shows the physical layout of the header with pins 1 through 26, and the connection of the DRV_3V3 and MCU_3V3 power rails to the header.



LEDS

The diagram illustrates the wiring for six LEDs. Each LED is connected to a specific MCU pin or power source through a current-limiting resistor. The LEDs are labeled D5, D6, D8, D10, D11, and D4. The colors of the LEDs are Green, Green, Green, Yellow, Super Red, and Green, respectively. The resistors are labeled R42, R43, R45, R47, R48, and R11, with values 560, 330, 330, 330, 330, and 680 ohms. The power sources are MCU_3V3, MCU_STATUS, GUI_STATUS, STALL, MCU_3V3, and VM. The ground connections are labeled GND, GND, GND, GND, nFAULT, and GND.



RST/PUSH Button

Reset Circuit

MCU_3V3

R19
47k

RST/SBWTDIO

C59
1nF
100V

GND

DEFAULT PINS 1-2

J6

RST/SBWTDIO

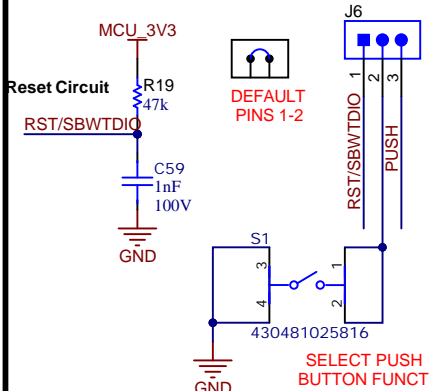
PUSH

S1

430481025816

GND

SELECT PUSH BUTTON FUNCT



Device ID Resistor

The resistors on the ID[2:0] nets inform the firmware which device ID variant is on this board

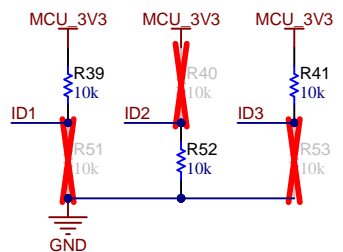
Device	ID1	ID2
DRV8214	1	0
DRV8234	0	0

Type	ID3
Prerelease	0
Release	1

The diagram illustrates the hardware configuration for device identification. It shows three signal lines: ID1, ID2, and ID3. Each line is connected to a 3V3 supply (MCU_3V3) via a pull-up resistor (R39, R40, and R41 respectively, all 10k). Additionally, each line is connected to ground (GND) via a resistor (R51, R52, and R53 respectively, all 10k). The ID2 line has a unique configuration where it is connected to ground through R52, while ID1 and ID3 are connected to ground through R51 and R53 respectively. The resistors are color-coded: R39, R40, and R41 are blue, and R51, R52, and R53 are red.

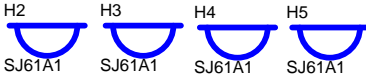
The resistors on the ID[2:0] nets inform the firmware which device ID variant is on this board

Device.	ID1	ID2	Type	ID3
DRV8214	1	0	Prerelease	0
DRV8234	0	0	Release	1





PCB Number: MD069
PCB Rev: B



LBL1
PCB Label
THT-14-423-10
Size: 0.65" x 0.20 "

Label Table	
Variant	Label Text
001	DRV8214EVM
002	DRV8234EVM

ZZ1
Assembly Note
These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ2
Assembly Note
These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ3
Assembly Note
These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

ZZ4
Label Assembly Note
This Assembly Note is for PCB labels only

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