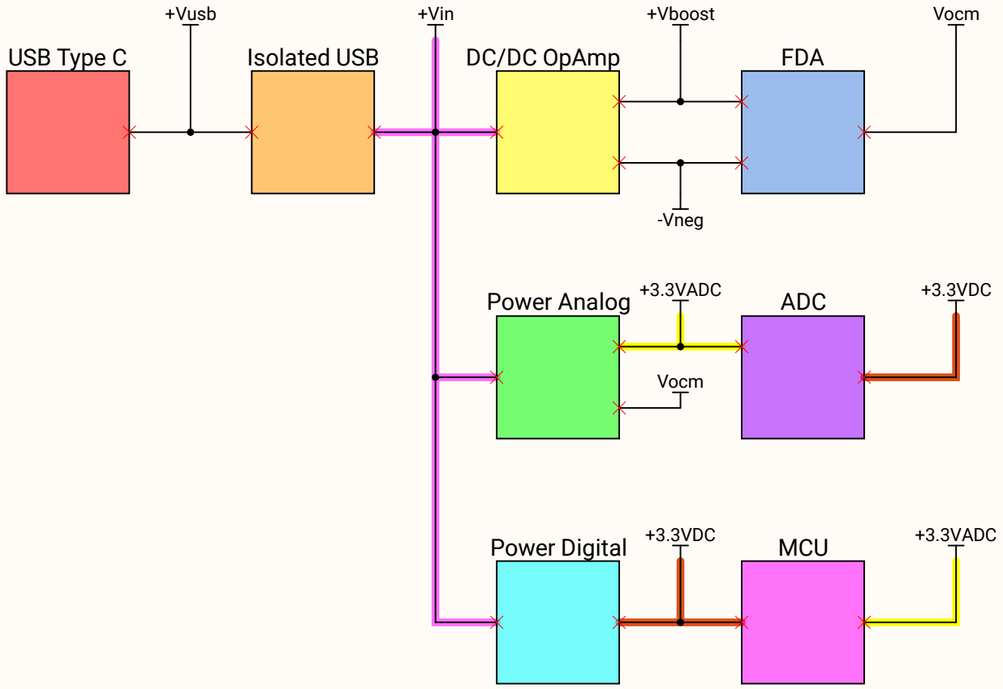
Power Tree



Block Diagram

To Do:
Check MCU pinout with R
Check USB prog with R
Add Board Block Diagram
Add Pins functions table
shield S02-25200300
place P/N

Pins Function Table

History

Revision	Date	Description

Part Number: '	Rev.: '		Germany, Berlin
Material		Name	
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Input

J1
112640
GND
R1
0R
R8
1M
R5
*
C18
*
R2
R3
C4
JR100
1.5k
1.5k
VD1
TPD2EUSB30ADRTR
R6
1.5k
Signal_P
Signal_N
Signal = +/-15 V
Vin = +/- 1.5V after 1:10 probe

FDA

Vocm
+Vboost
C1 1u
C2 0.1u
C3 0.1u
C4 1u
GND
+3.3VADC
C5 0.1u
GND
DA1
INA851RGTR
14 Vs+
13 Vocm
4 IN+
1 IN-
2 RG
3 RG
8 NC
7 Vs-
16 Vclamp+
15 FDA_IN-
12 G02+
11 OUT+
10 OUT-
9 G02-
6 FDA_IN+
5 Vclamp-
C11 2p
C15 2p
R4 22 R
R7 22 R
C16 10p
C17 10p
GND
-Vneg
C19 0.1u
C20 1u
GND
Gain = Gin x Gout
Gain = 5 x 0.2 = 1 V/V

ADC

All caps are NP0
+3.3VDC
+3.3VADC
C6 1u
C7 0.1u
C8 1u
C9 0.1u
C10 0.1u
GND
DA2
AD9245BCPZ-20
27, 32 AVDD
16 DRVDD
1 NC
29 IN+
30 IN-
3 NC
21 OTR
22 Mode
4 PDWN
23 Sense
24 Vref
26 RefT
25 RefB
28, 31 AGND
15 DGND
2 CLK
5 D0
6 D1
7 D2
8 D3
9 D4
10 D5
11 D6
12 D7
13 D8
14 D9
17 D10
18 D11
19 D12
20 D13
ADC_CLK
D_0
D_1
D_2
D_3
D_4
D_5
D_6
D_7
D_8
D_9
D_10
D_11
D_12
D_13
C12 10p
C13 10p
Out_P
Out_N
R9 10 k
R10 10 k
R11 10 k
GND
C21 10 uF
C22 0.1u
C23 0.1u
C24 10 uF
C25 0.1u
C26 0.1u
GND

MCU

DD1
STM32G431CBU3
+3.3VDC
+3.3VADC
C27 10 uF
C28 0.1u
C29 0.1u
C30 0.1u
C31 0.1u
C32 10 uF
C33 0.1u
GND
20, 21 Vdda
1, 23, 35, 48 Vdd
8 PA_0
9 PA_1
10 PA_2
11 PA_3
12 PA_4
13 PA_5
14 PA_6
15 PA_7
30 PA_8
31 PA_9
32 PA_10
33 PA_11
34 PA_12
36 PA_13
37 PA_14
38 PA_15
5 PF_0
6 PF_1
7 PG_10
49 Vss
17 PB_0
18 PB_1
19 PB_2
41 PB_3
42 PB_4
43 PB_5
44 PB_6
45 PB_7
46 PB_8
47 PB_9
22 PB_10
24 PB_11
25 PB_12
26 PB_13
27 PB_14
28 PB_15
16 PC_4
29 PC_6
39 PC_10
40 PC_11
2 PC_13
3 PC_14
4 PC_15
ADC_CLK R15
OTR R17
PDWN R19
R21
Mode R23
Sense R25
PWM_LED R27
USB_Pin R31
USB_N
USB_P
SWDIO R34
SWCLK R35
Trigger
1.5k
5k1
20k
22 R
R12 1.5k D_0
R13 1.5k D_1
R14 1.5k D_2
R16 1.5k D_3
R18 1.5k D_4
R20 1.5k D_5
R22 1.5k D_6
R24 1.5k D_7
R26 1.5k D_8
R28 1.5k D_9
R29 1.5k D_10
R30 1.5k D_11
R32 1.5k D_12
R33 1.5k D_13

LED

+3.3VADC
C34 0.1u
VD2
WS2812C
1 Vdd
3 Vss
4 Din
2 Dout

Trigger

J2
112640
T1
PWB1010LC
R36 1.5k
VD3
CDBQR40
VD4
CDBQR40
R39 1.5k
TP1
TP2
TP3
G1
ECS-200-10-37B-CKY-TR
R37 22 R
R38 22 R
C35 10p
C36 10p
C37 10p
GND
CL = ((CX1 x CX2) / (CX1 + CX2)) + Cstray
CX1 = CX2 = 2*(10 - 5) = 10pF

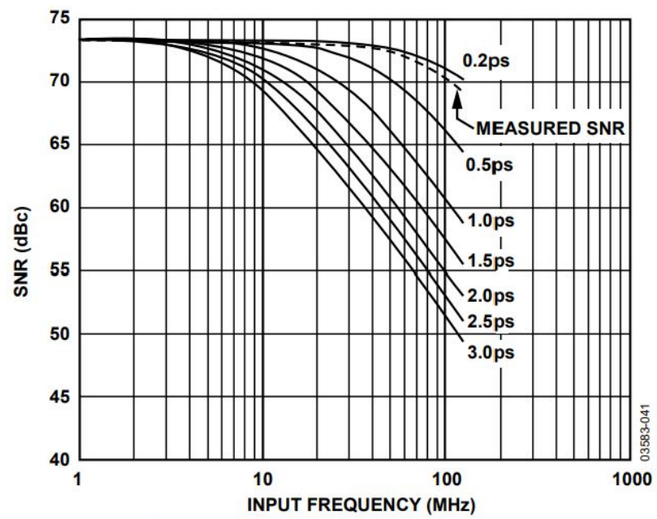

Figure 43. SNR vs. Input Frequency and Jitter

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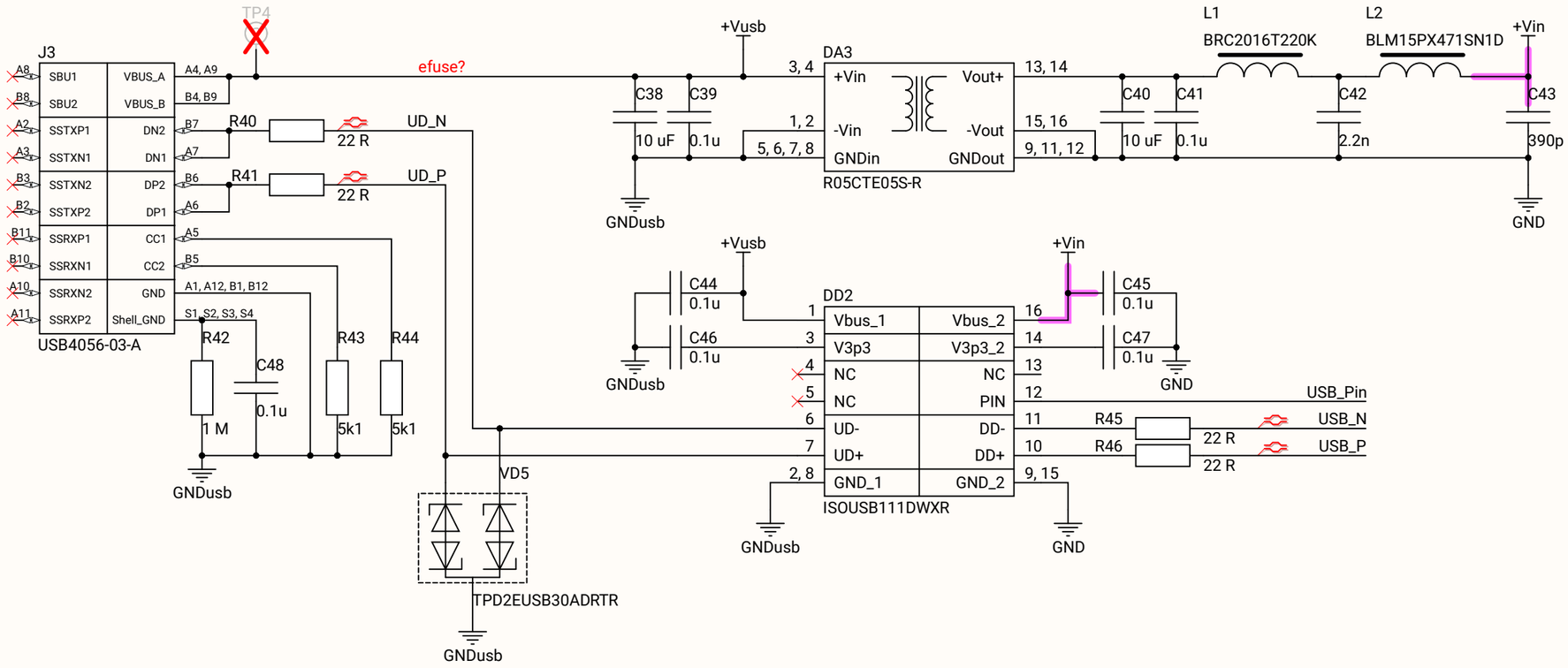
Reviewer:	Date:	Scale:	Weight: Page № 2 Pages: 3

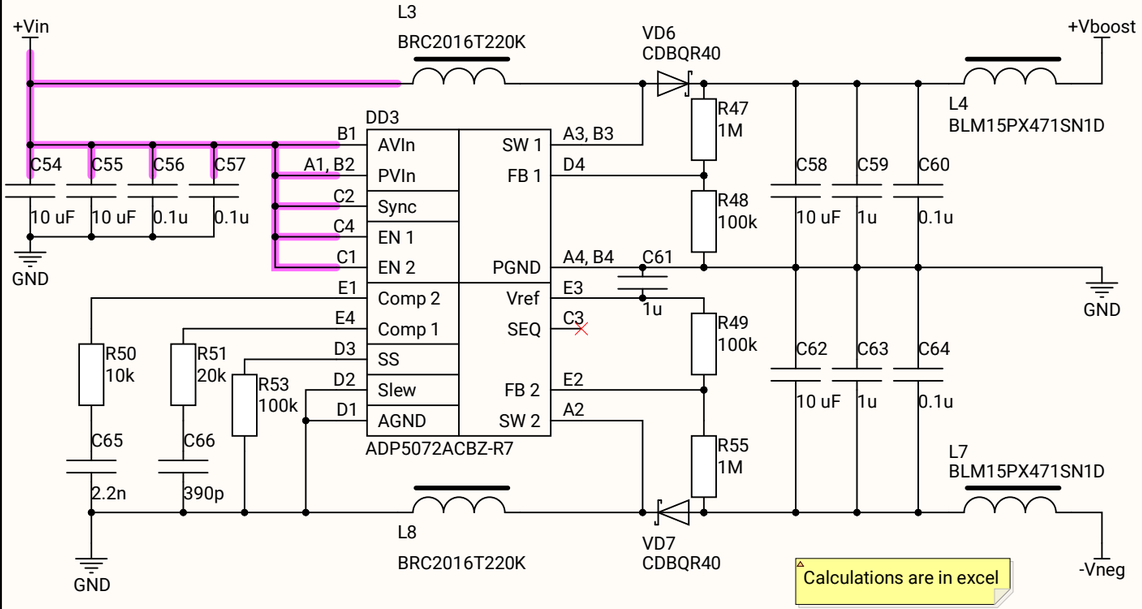
USB

Isolation of USB

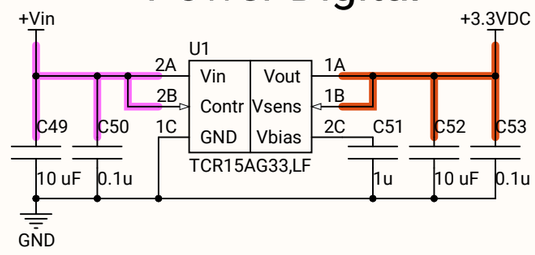
All caps are X7R



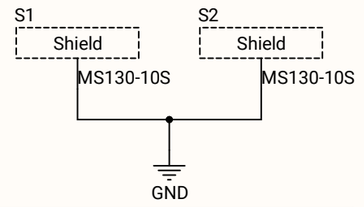
DC/DC OpAmp



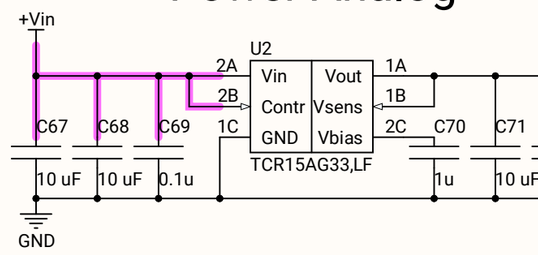
Power Digital



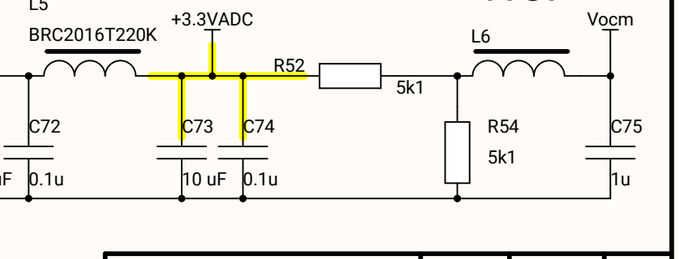
Shield



Power Analog



Vref



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