J2
USB_microB_2040002-1

VBUS 1
D- 2
D+ 3
ID 4
GND 5

Shield 11
Shield 10
Shield 9
Shield 8
Shield 7
Shield 6

+5V

R3
90.9K

C7
10µF

GND

U1
MCP1702T-3302E_CB
VIN   VOUT
GND

C8
10µF

R7
1K

+3V3

D4
PWR

GND

GND

U2
PIC24FJ128GC006-I_MR

+3V3 57 VBAT   RE7/SDA3   3
34 VBUS   RG6/RP21   4
36 D-   RG7/RP26   5
37 D+   RG8/RP19   6
+3V3 35 VUSB   RG9/RP27/DAC1 8   DAC1
                      RB5/RP18/AN5 11 MISO_POT
NCS_POT 39 RC12/OSCI RB4/RP28/AN4 12 MISO_DDS
                      RB3/AN3   13
40 RC15/OSCO   RB2/RP13/AN2 14 CH2
7   MCLR   RB1/RP1/AN1/VREF- 15 CH1
18 RB7/RP7/AN7/PGED2 RB0/RP0/AN0/VREF+ 16 VREF
17 RB6/RP6/AN6/PGEC2 CH0+   22
SCK_DDS 29 RB14/RP14/AN14 CH0-   23
MOSI_DDS 30 RB15/RP29/AN15 CH1+   24
47 RC13/SOSCI   CH1-   25
48 RC14/RPI37/SOSCO   RB12/AN12   27 NCS_DDS
55 RD7   RB13/AN13/DAC2 28 DAC2
58 RF0   RF4/RP10/SDA2 31 D0
59 RF1   RF5/RP17/SCL2 32 D1
                      RF3/RP16   33 MCLK_DDS
                      RD8/RP2   42 MOSI_POT
                      RD9/RP4/SDA1   43 D2
                      RD10/RP3/SCL1 44 D3
                      RD11/RP12   45 SCK_POT
C3 0.1µF +3V3   RD0/RP11/INT0 46
10 VDD   RD1/RP24   49
C4 0.1µF +3V3   RD2/RP23   50
19 AVDD   RD3/RP22   51
C5 0.1µF +3V3   RD4/RP25   52
26 SVDD   RD5/RP20   53
C6 0.1µF +3V3   RD6   54 SQ
38 VDD   RE0   60 CH2GAIN
GND   RE1   61 CH1GAIN
56 VCAP   RE2   62 WGGAIN
C1 10µF C2 0.1µF   RE3   63
9   VSS   RE4   64
20 AVSS   RE5   1
21 SVSS   RE6/SCL3   2
41 VSS
65 EP

GND

+3V3
R1
10K
S1
RST
NCS_POT
GND

+3V3
R2
10K
S2
SW1
GND

J1
1
2 +3V3
3
4 GND
5
6
ICD3 Header

R4 1K D1 G
R5 1K D2 R
R6 1K D3 B
GND

U3
MCP1501T-20E_CHY
+3V3
6 VDD
4 SHDN
OUT 1
VREF TP1 VREF
C9 0.1µF
GND
C10 100pF
GND
GND GND GND

U11
TLE2426D
+5V
3 IN   OUT 1 2V5
NOISE
COM   NC NC NC NC
C38 1µF
GND   GND   GND

wavegen
NCS_DDS   NCS_DDS
SCK_DDS   SCK_DDS
MOSI_DDS MOSI_DDS
MCLK_DDS MCLK_DDS
SQ   SQ
NCS_POT   NCS_POT   VOUT VOUT
MOSI_POT MOSI_POT   VOFF VOFF
SCK_POT   SCK_POT
WGGAIN   WGGAIN
DAC1   DAC1
DAC2   DAC2
VREF   VREF
File: wavegen.kicad_sch

scope
CH1GAIN   CH1GAIN
CH2GAIN   CH2GAIN
1+   1+   CH1 CH1
1-   1-   CH2 CH2
2+   2+
2-   2-
VREF   VREF
File: scope.kicad_sch

VOUT 6
VOFF 5
2-   4   J3
2+   3   Analog
1-   2
1+   1

+3V3 6
GND   5
D0   4   J4
D1   3   Digital
D2   2
D3   1

+5V   2   J5
2V5   1   Power1

+3V3 2   J6
GND   1   Power2

Olin College
Sheet: /
File: oscope.kicad_sch
Title: O-Scope
Size: B   Date: 2021-06-14   Rev:
KiCad E.D.A. kicad (6.0.7-1)-1   Id: 1/3

Olin College
Sheet: /wavegen/
File: wavegen.kicad_sch
Title: Wavegen
Size: B | Date: 2021-06-14 | Rev:
KiCad E.D.A. kicad (6.0.7-1)-1 | Id: 2/3

R8 887K
R12 13K
+3V3
R22 200K
R17 200K
C19 100pF
C23 SGC3S300
C11 15pF
C15 1nF
GND GND GND
1+

+3V3 C28 0.1µF
3 + 7 8
2 − EN
5 1 4
U5 MCP6N11-001E_SN
GND
GND 6

U7A MCP6024
3 + 1
2 −
U8B CD74HC4053
15 2
CH1GAIN 10 1
R26 806
R30 110K
R27 200
CH1

R9 887K
R13 13K
+3V3
R23 200K
R18 200K
C20 100pF
C24 SGC3S300
C12 15pF
C16 1nF
GND GND GND
1−

R10 887K
R14 13K
+3V3
R24 200K
R19 200K
C21 100pF
C25 SGC3S300
C13 15pF
C17 1nF
GND GND GND
2+

+3V3 C29 0.1µF
3 + 7 8
2 − EN
5 1 4
U6 MCP6N11-001E_SN
GND
GND 6

U7D MCP6024
12 +
13 −
14
U8A CD74HC4053
14 12
CH2GAIN 11 13
R28 806
R31 110K
R29 200
CH2

R11 887K
R15 13K
+3V3
R25 200K
R20 200K
C22 100pF
C26 SGC3S300
C14 15pF
C18 1nF
GND GND GND
2−

VREF
R16 10K
R21 10K
GND
+3V3 C27 0.1µF
5
3 +
4 −
2
U4 MCP6021
GND GND 1

+3V3 C30 0.1µF
4 VDD
GND
11 VSS
U7E MCP6024
GND

+5V C31 0.1µF
16 VCC
GND
6 ENA
7 VEE
8 GND
U8D CD74HC4053
GND GND GND GND