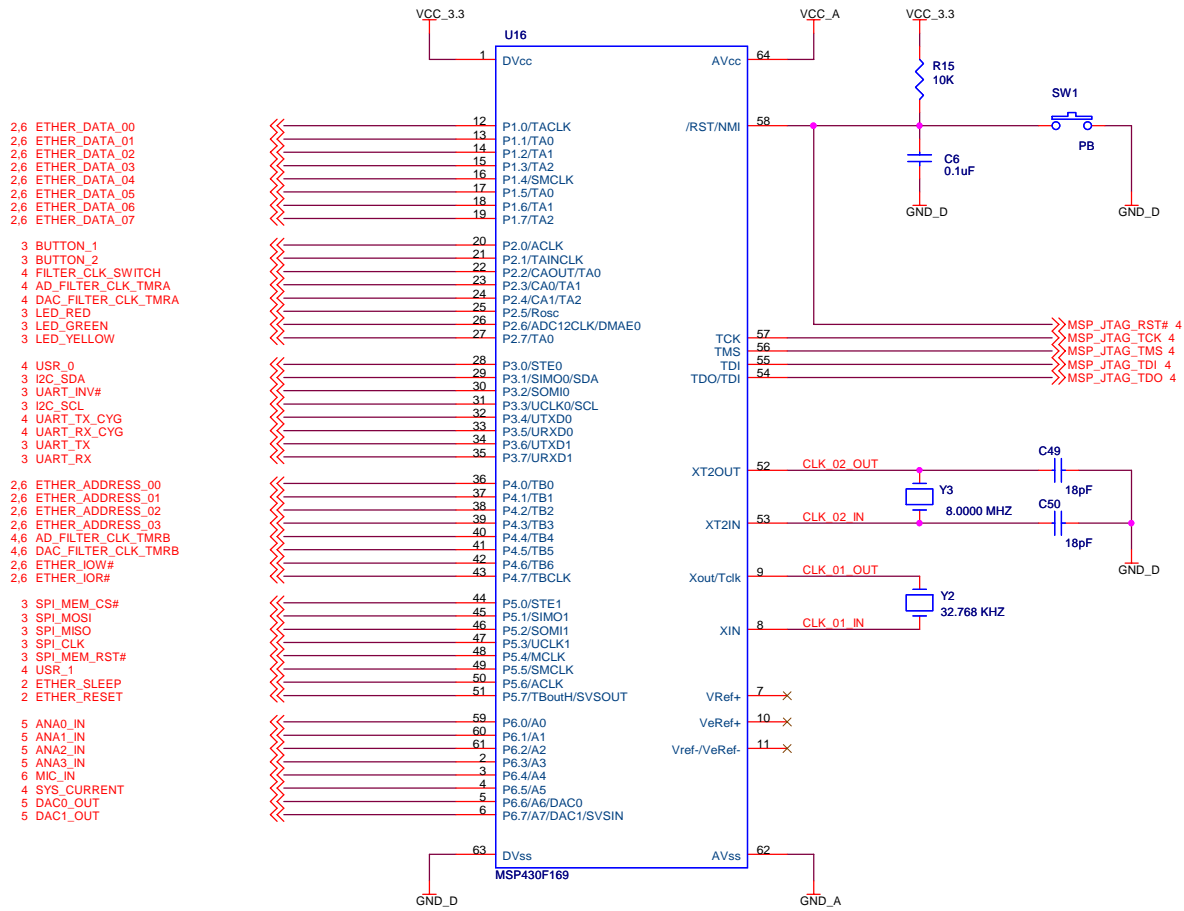
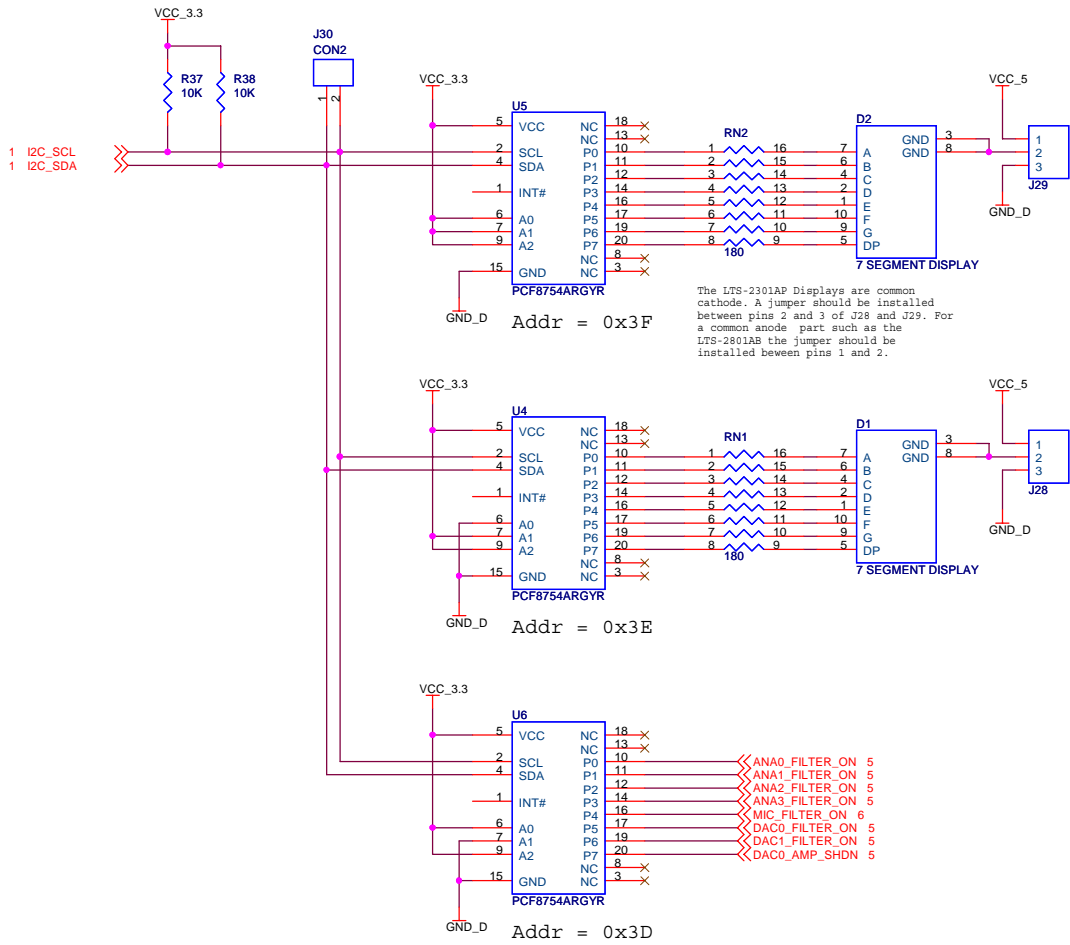


MSP430F16x Processor

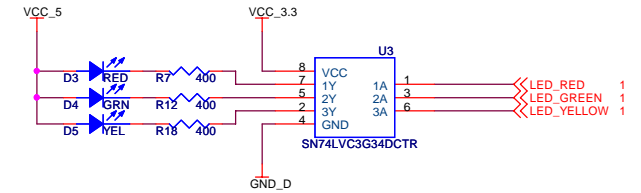


7 Segment Displays and I2C IO

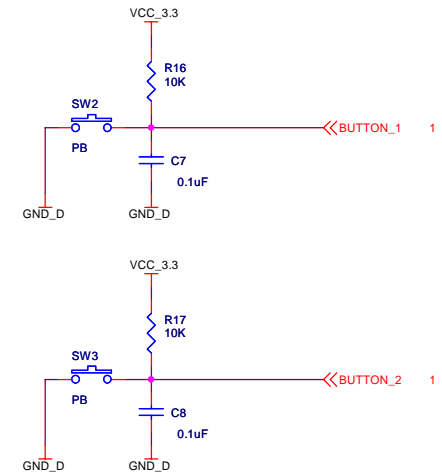


The LTS-2301AP Displays are common cathode. A jumper should be installed between pins 2 and 3 of J28 and J29. For a common anode part such as the LTS-2801AS the jumper should be installed between pins 1 and 2.

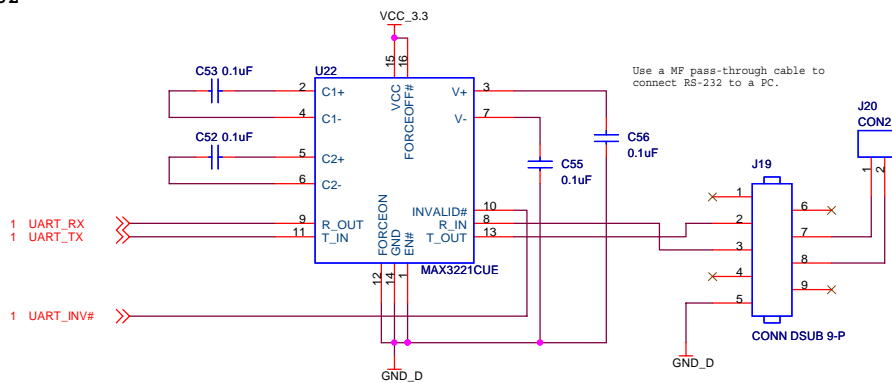
User LEDs



User Input

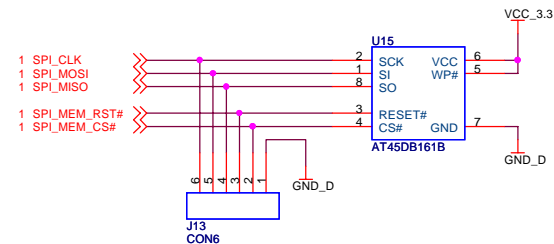


RS-232



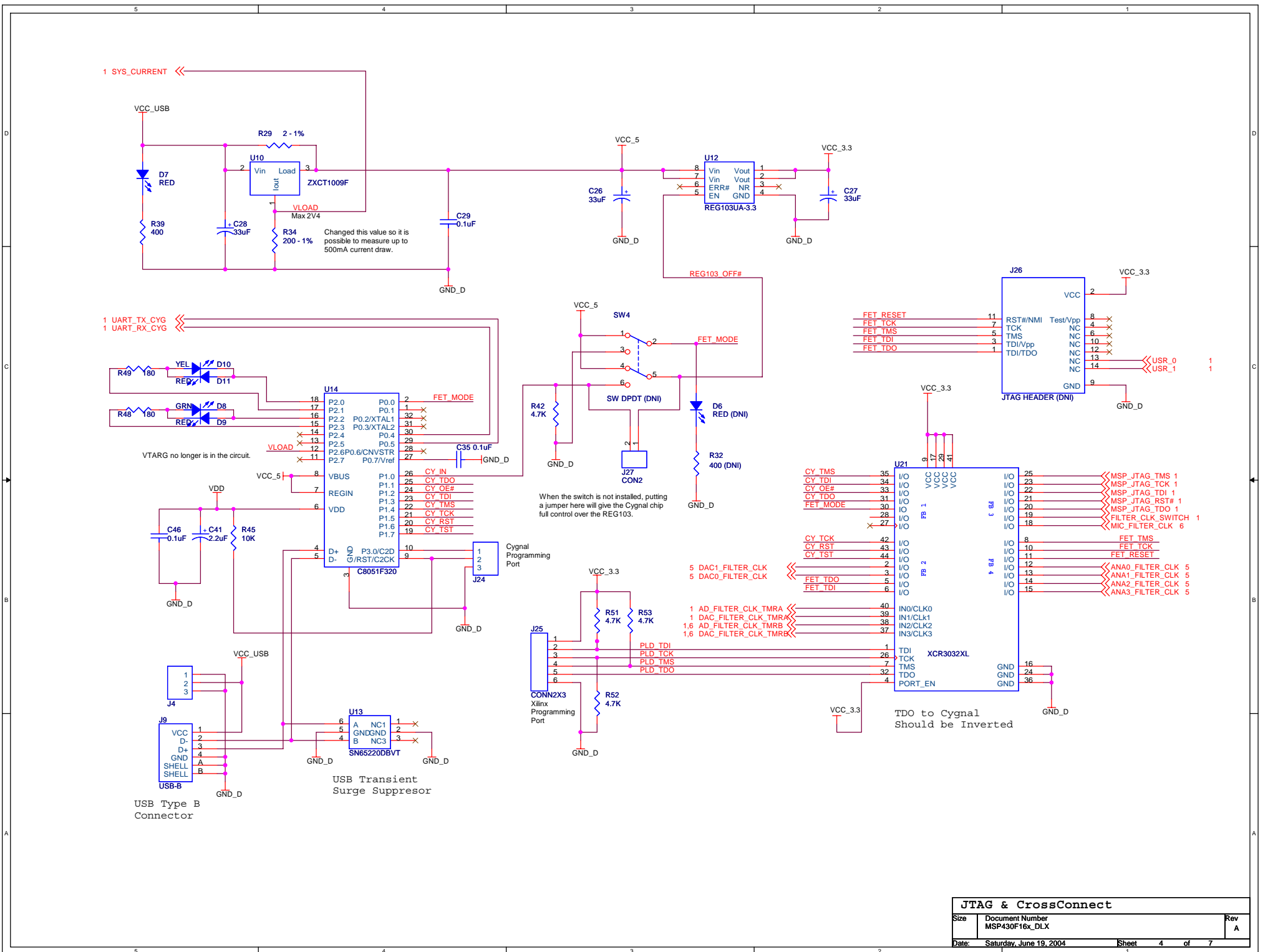
Use a MF pass-through cable to connect RS-232 to a PC.

16Mbit DataFlash



Digital Peripherals

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1 SYS_CURRENT ←

VCC_USB

R29 2 - 1%

U10 ZXCT1009F

Vin Load

Iout

R39 400

C28 33uF

R34 200 - 1%

VLOAD Max 2V4

C29 0.1uF

GND_D

Changed this value so it is possible to measure up to 500mA current draw.

VCC_5

U12 REG103UA-3.3

Vin Vout

ERR# NR

EN GND

VCC_3.3

C26 33uF

C27 33uF

GND_D

REG103_OFF#

1 UART_TX_CYG

1 UART_RX_CYG

R49 180

YEL

REF

D10

D11

R48 180

GRN

REF

D8

D9

U14

P2.0 P0.0

P2.1 P0.1

P2.2 P0.2/XTAL1

P2.3 P0.3/XTAL2

P2.4 P0.4

P2.5 P0.5

P2.6 P0.6/CNVSTR

P2.7 P0.7/Vref

VLOAD

C35 0.1uF

GND_D

VCC_5

SW4

SW DPDT (DNI)

FET_MODE

R42 4.7K

GND_D

J27 CON2

D6 RED (DNI)

R32 400 (DNI)

GND_D

When the switch is not installed, putting a jumper here will give the Cignal chip full control over the REG103.

FET RESET 11

FET TCK 7

FET TMS 5

FET TDI 3

FET TDO 1

J26 JTAG HEADER (DNI)

VCC 2

RST#/NMI Test/Vpp 8

TCK 4

TMS NC 6

TDI/Vpp NC 10

TDI/TDO NC 12

NC 13

NC 14

GND 9

VCC_3.3

GND_D

USR_0 1

USR_1 1

VDD

C46 0.1uF

C41 2.2uF

R45 10K

GND_D

VBUS P1.0

REGIN P1.1

VDD P1.2

P1.3

P1.4

P1.5

P1.6

P1.7

P1.0

P1.1

P1.2

P1.3

P1.4

P1.5

P1.6

P1.7

CY IN 26

CY TDO 25

CY OE# 24

CY TDI 23

CY TMS 22

CY TCK 21

CY RST 20

CY TST 19

P3.0/C2D 10

P3.1/RST/C2CK 9

U14 C8051F320

J24

Cygnal Programming Port

VCC_3.3

R51 4.7K

R53 4.7K

R52 4.7K

GND_D

J25 CONN2X3

Xilinx Programming Port

PLD TDI

PLD TCK

PLD TMS

PLD TDO

5 DAC1_FILTER_CLK

5 DAC0_FILTER_CLK

1 AD_FILTER_CLK_TMRA

1 DAC_FILTER_CLK_TMRA

1,6 AD_FILTER_CLK_TMRB

1,6 DAC_FILTER_CLK_TMRB

VCC_3.3

U21 XCR3032XL

I/O 25

I/O 23

I/O 22

I/O 21

I/O 20

I/O 19

I/O 18

I/O 8

I/O 10

I/O 11

I/O 12

I/O 13

I/O 14

I/O 15

I/O 35

I/O 34

I/O 33

I/O 31

I/O 30

I/O 28

I/O 27

I/O 42

I/O 43

I/O 44

I/O 2

I/O 3

I/O 5

I/O 6

I/O 40

I/O 39

I/O 38

I/O 37

I/O 26

I/O 7

I/O 32

I/O 4

I/O 16

GND 24

GND 36

GND_D

MSP_JTAG_TMS 1

MSP_JTAG_TCK 1

MSP_JTAG_TDI 1

MSP_JTAG_RST# 1

MSP_JTAG_TDO 1

FILTER_CLK_SWITCH 1

MIC_FILTER_CLK 6

FET TMS

FET TCK

FET RESET

ANA0_FILTER_CLK 5

ANA1_FILTER_CLK 5

ANA2_FILTER_CLK 5

ANA3_FILTER_CLK 5

FB 1

FB 2

FB 3

FB 4

TDO to Cygnal Should be Inverted

VCC_USB

J4

J9

VCC 1

D- 2

D+ 3

GND 4

A 5

SHELL 6

SHELL 7

USB-B

USB Type B Connector

U13 SN65220DBVT

A NC1 1

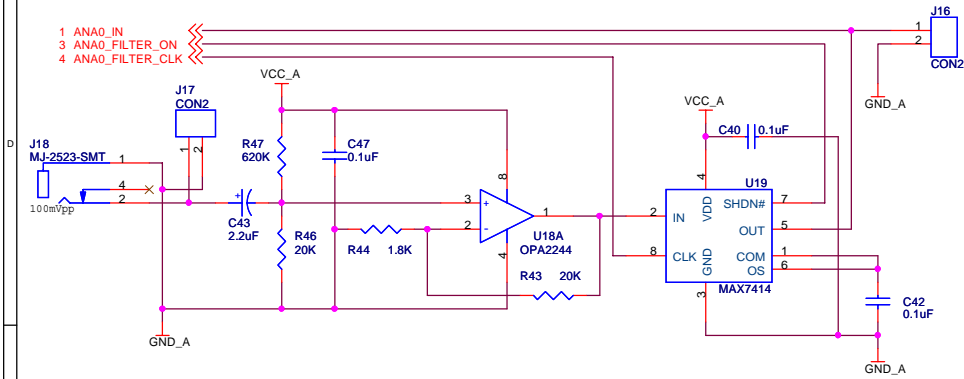
GND/GND 2

B NC3 3

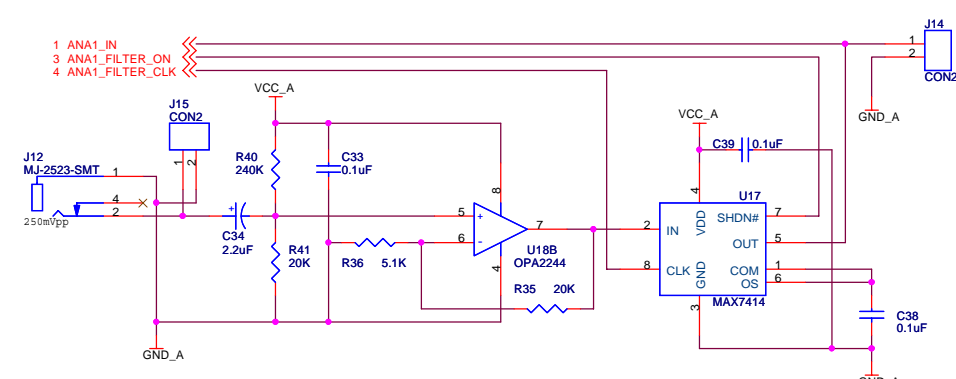
GND_D

USB Transient Surge Suppressor

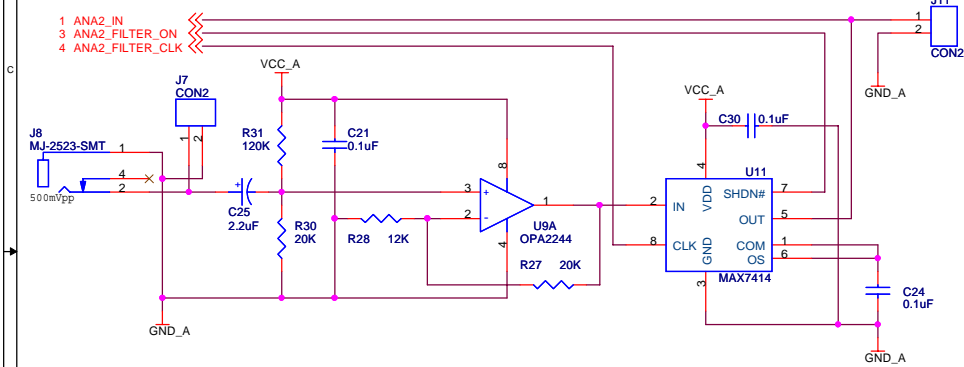
Analog Input Ch 0 (100mVpp Max)



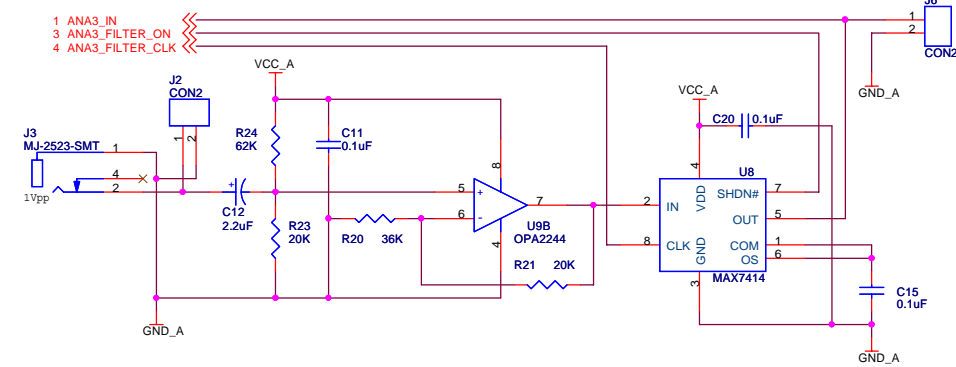
Analog Input Ch 1 (250mVpp Max)



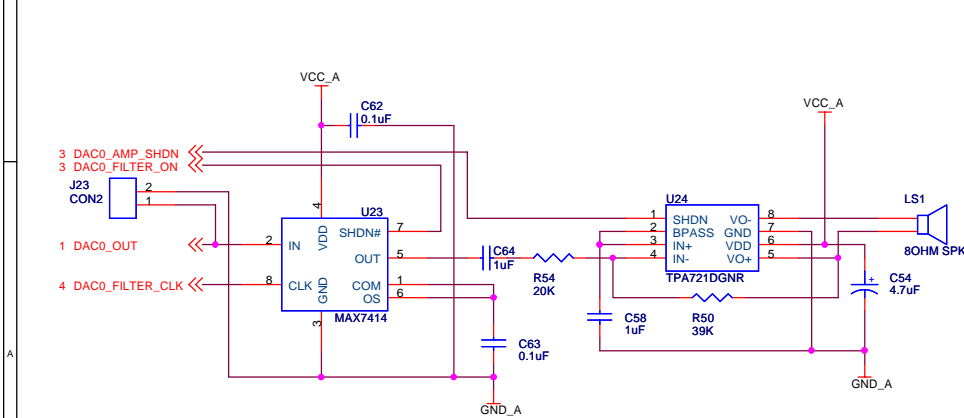
Analog Input Ch 2 (500mVpp Max)



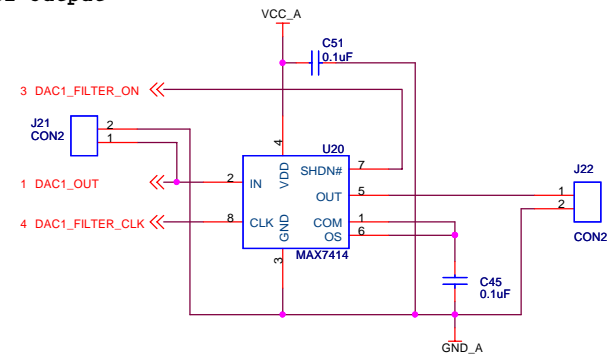
Analog Input Ch 3 (1Vpp Max)



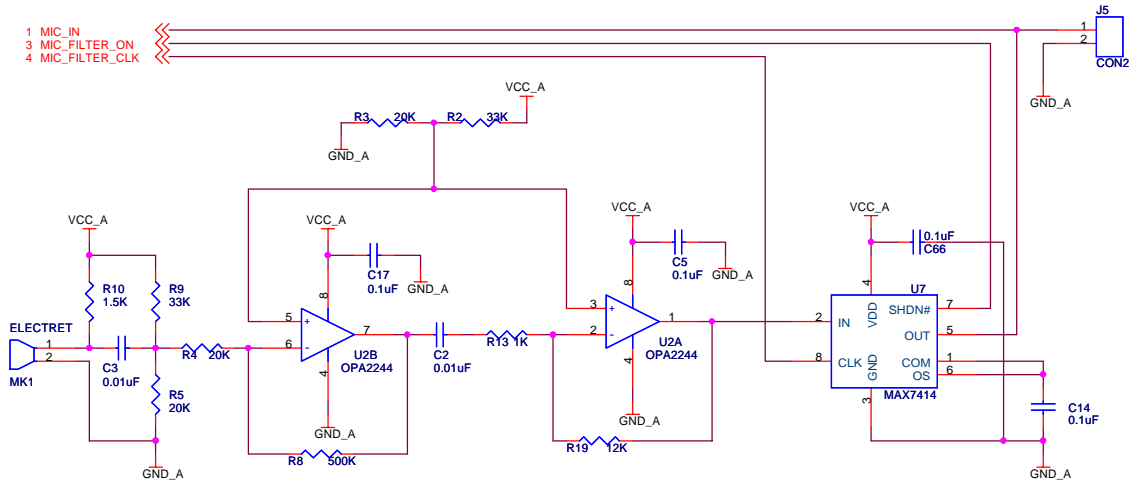
DAC0 Output & Speaker



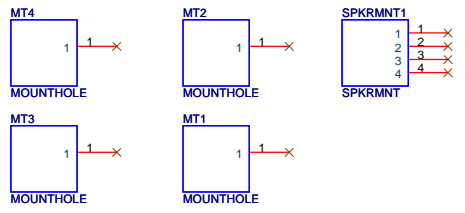
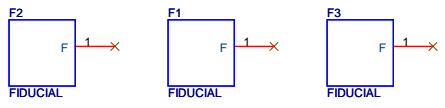
DAC1 Output



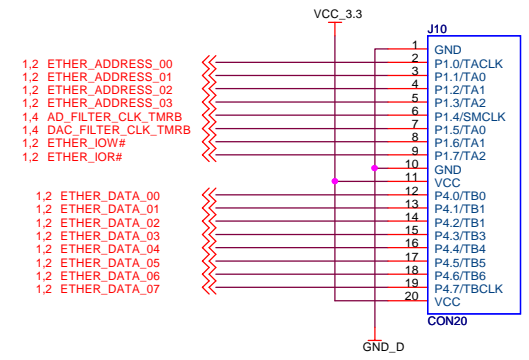
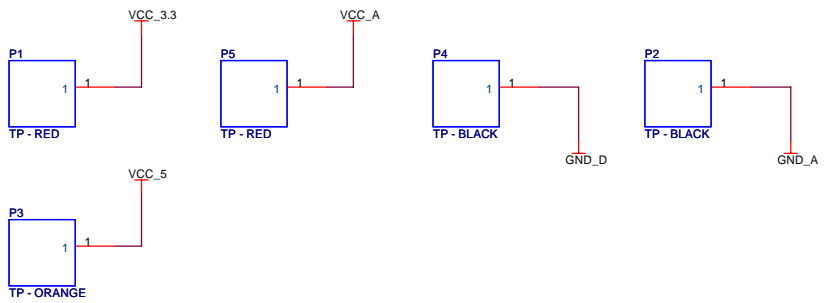
Microphone Input



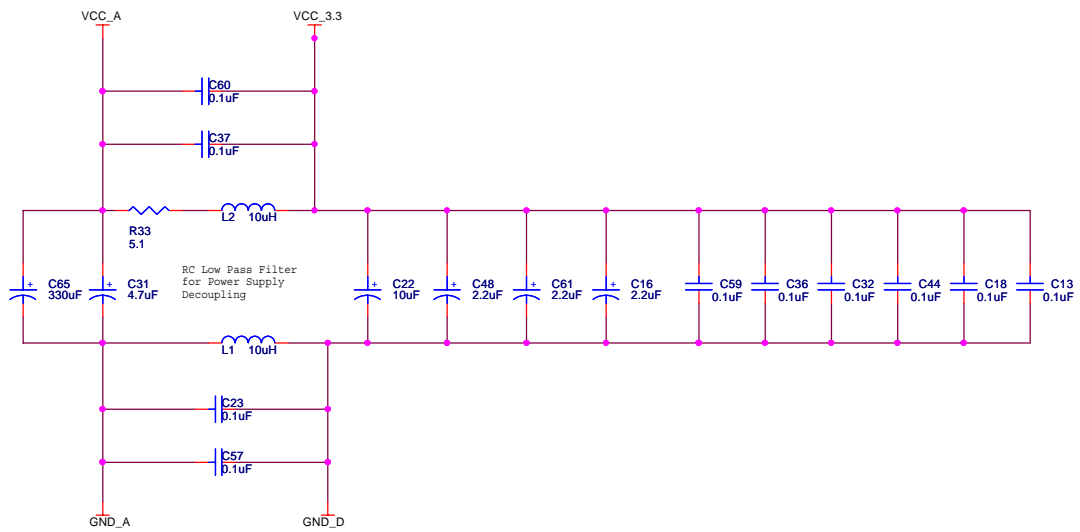
Mechanical - Fiducials and other Mounting Holes



Test Points



Analog I/O & Mechanical		
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Bulk Decoupling		
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