Sheet: External Input

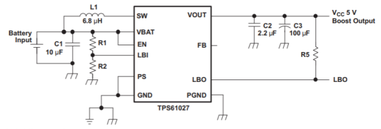
Estimated BOM cost: $0.03

Alt Power Input

File: ExternalInput.sch

Sheet: Boost Converters

Estimated BOM cost: $0.60



List of Components:
U1 = TPS61027DRC
L1 = EPCOS B82462-G4682
C1, C2 = X7R,X5R Ceramic
C3 = Low ESR Tantalum

Figure 24. Power Supply Solution for Maximum Output Power Operating From a Single Alkaline Cell

Power Conversion

File: Boost.sch

Sheet: USB Input

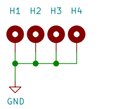
Estimated BOM cost: $1.00
($0.02 without serial to usb)

USB Input (Power/serial)

File: USB_Input.sch

Sheet: Sensors

File: Sensors.sch



Sheet: User Input/Output

Estimated BOM cost: $0.05

User I/O

File: UserInputOutput.sch

Sheet: Programming

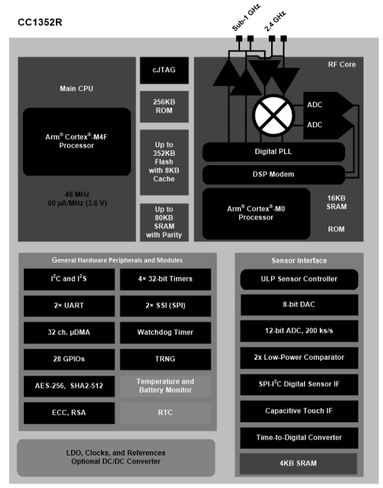
Estimated BOM cost: $0.00

Programming

File: Programming.sch

Sheet: RF

Estimated BOM cost: $1.27

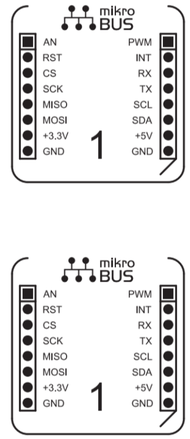


RF and Processor

File: RF.sch

Sheet: MikroBus Click

Estimated BOM cost: $0.15



MikroBus Headers

File: MikroBusClick.sch

Sheet: Sheet5D099F01

Estimated BOM cost: $0.03

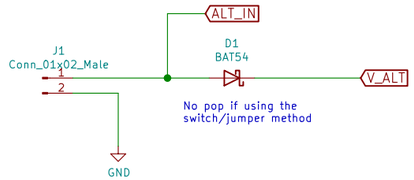
Indicators

File: Indicators.sch

Schematic originally designed by Analog Life, LLC
Beagleboard.org
Sheet: /
File: BeagleConnect.sch

Title: BeagleConnect Leash

Size: C	Date: 2020-08-31	**Rev: A**
KiCad E.D.A. kicad (5.1.6)-1		Id: 1/10



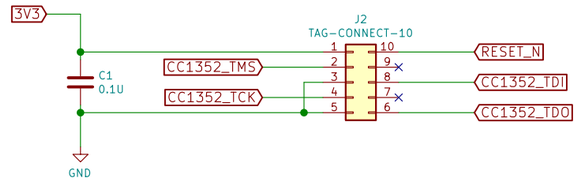
Schematic originally designed by Analog Life, LLC

Beagleboard.org

Sheet: /External Input/
File: ExternalInput.sch

Title: BeagleConnect Leash

Size: B	Date: 2020-08-31	**Rev: A**
KiCad E.D.A. kicad (5.1.6)-1		Id: 2/10



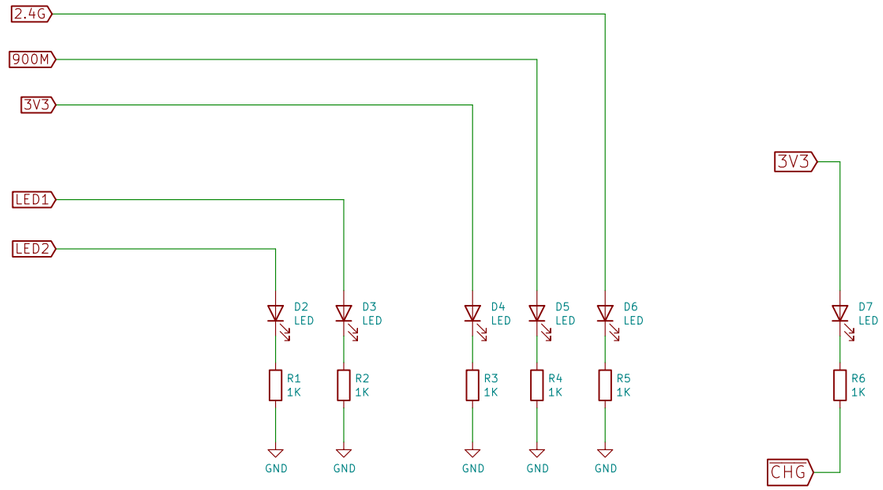
Schematic originally designed by Analog Life, LLC

Beagleboard.org

Sheet: /Programming/
File: Programming.sch

Title: BeagleConnect Leash

Size: B	Date: 2020-08-31	**Rev: A**
KiCad E.D.A. kicad (5.1.6)-1		Id: 3/10



Schematic originally designed by Analog Life, LLC

Beagleboard.org

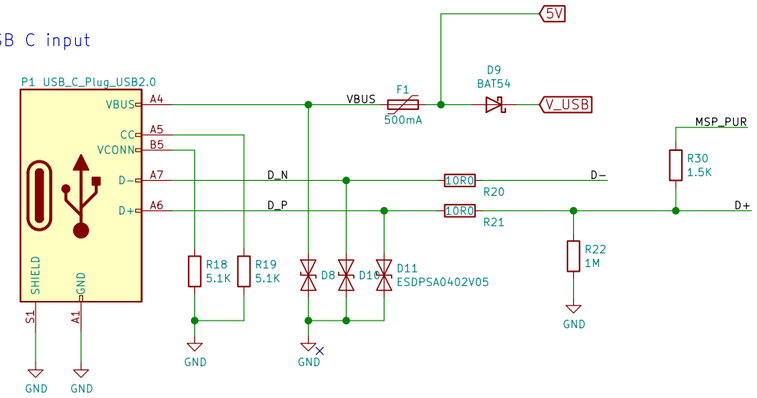
Sheet: /Sheet5D099F01/

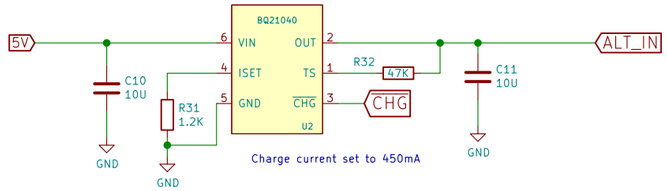
File: Indicators.sch

Title: BeagleConnect Leash

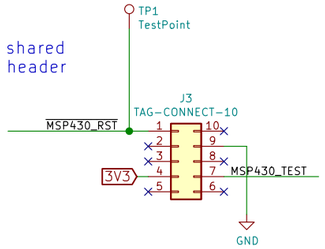
Size: B	Date: 2020-08-31	**Rev: A**
KiCad E.D.A. kicad (5.1.6)-1		Id: 4/10

USB C input

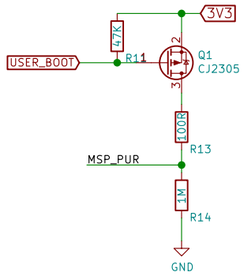




Decoupling cap shared
with other prog header

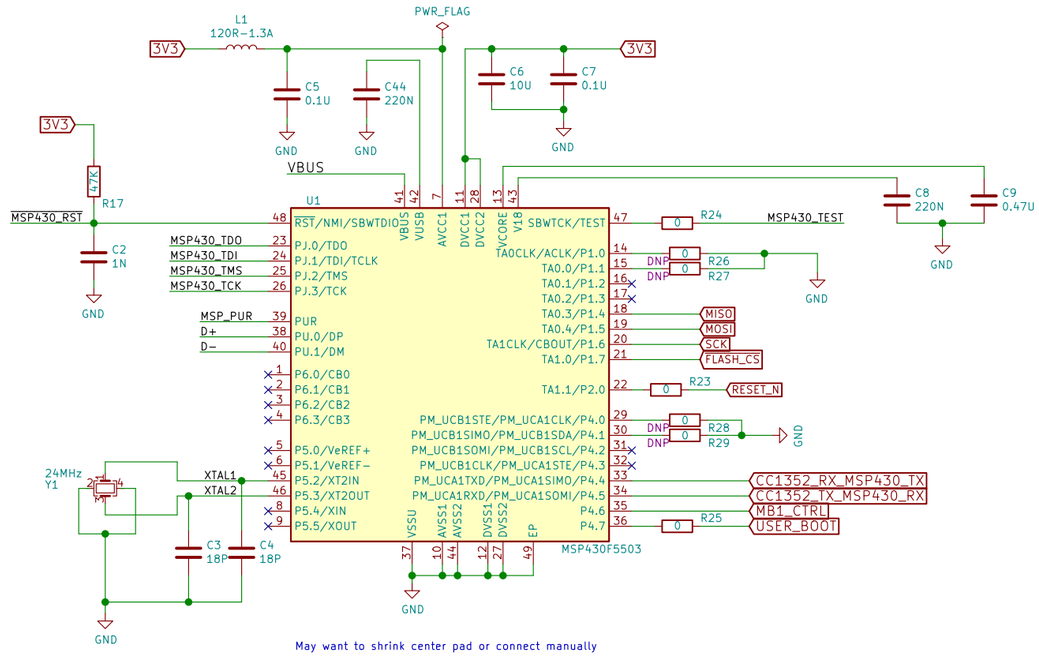


Verify all connections with Erik Larson



When USER_BOOT button is pressed during USB power up,
it pulls MSP_PUR high. This puts the MSP430 into programming mode.

The USER_BOOT button is also used as an input to the
CC1352R for it's programming, but is active low



May want to shrink center pad or connect manually

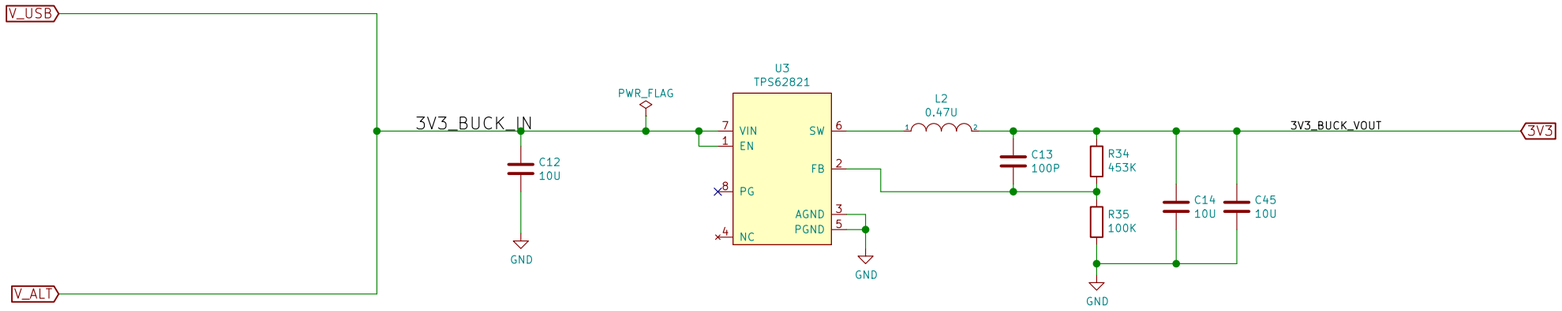
On rev B prototype, the soldermask peeled back and many of the
pins on the edge of the QFN would short to the center pad after
attempted repair to the part (reflow, component replacement)

Schematic originally designed by Analog Life, LLC
Beagleboard.org

Sheet: /USB Input/
File: USB_Input.sch

Title: BeagleConnect Leash

Size: B	Date: 2020-08-31	**Rev: A**
KiCad E.D.A. kicad (5.1.6)-1		Id: 5/10



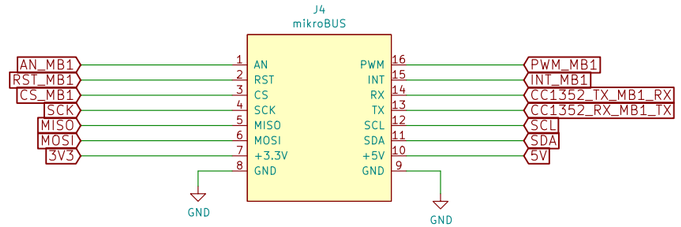
Schematic originally designed by Analog Life, LLC

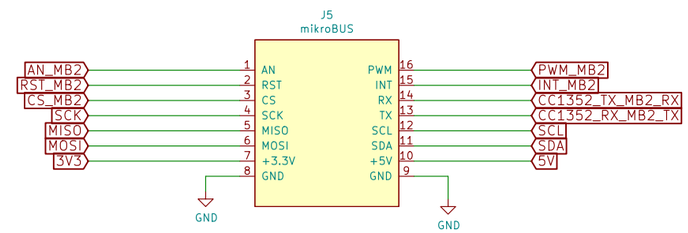
Beagleboard.org

Sheet: /Boost Converters/
File: Boost.sch

Title: BeagleConnect Leash

Size: B	Date: 2020-08-31	**Rev: A**
KiCad E.D.A. kicad (5.1.6)-1		Id: 6/10





Schematic originally designed by Analog Life, LLC

Beagleboard.org

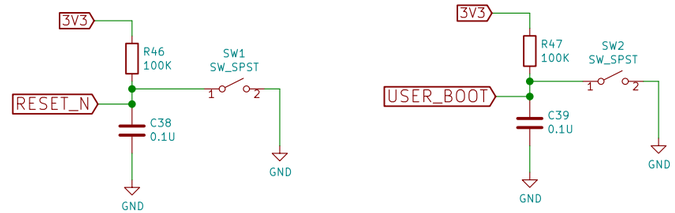
Sheet: /MikroBus Click/

File: MikroBusClick.sch

Title: BeagleConnect Leash

Size: B	Date: 2020-08-31	**Rev: A**
KiCad E.D.A. kicad (5.1.6)-1		Id: 7/10

PWR_FLAG
R36
0
PWR_FLAG
VDD
L3
120R-1.3A
PWR_FLAG
3V3
VDDS
VDDS
Optional sense resistor for
power measurement
L4
6.8 uH
DCDC_SW
VDDR
C24
22U
GND
U4A
CC1352P
Power Subsection
Y3
48MHz
X48M_N
X48M_P
VDDR
VDDR_RF
C22
0.1U
C23
0.1U
VDDR
GND
VDDS
VDDS2
VDDS3
VDDS_DCDC
DCDC_SW
DCOUPL
GND/EP
Must connect!
C18
0.1U
C19
0.1U
C20
0.1U
C21
0.1U
VDDS
VDDS
VDDS
GND
Y2
32.768KHz
X32K_Q1
X32K_Q2
C15
12P
C16
12P
GND
C17
1U
GND
U4B
CC1352P
RF Subsection
RF_P_2_4GHZ
RF_N_2_4GHZ
RF_P_SUB_1GHZ
RF_N_SUB_1GHZ
RX_TX
RF_2_4GHZ_P
RF_2_4GHZ_N
RF_SUB_1GHZ_P
RF_SUB_1GHZ_N
RX_TX
GND
0900PC15A0036E
GND
BP_2_4_GHZ_RF_P
BP_2_4_GHZ_RF_N
BP_SUB-1_GHZ_RF_P
BP_SUB-1_GHZ_RF_N
UBP_2_4_GHZ
GND
GND
UBP_SUB-1_GHZ
RX_TX
B1
GND
C27
100N
GND
DNP
C33
DNP
J6
UFL
GND
12P
C34
L5
0
C29
DNP
C31
DNP
DNP
AE1
Antenna_Dipole
1P
C37
GND
GND
GND
50 Ohm Traces for All RF
100N
C28
J7
UFL
GND
100N
C36
DNP
L6
0
AE2
Antenna
C30
DNP
DNP
C32
DNP
DNP
GND
U4D
CC1352P
Analog Subsection
AN_MB1
AN_MB2
SCL
SDA
CS_MB2
CS_MB1
INT_MB1
PWM_MB1
DIO_23
DIO_24
DIO_25
DIO_26
DIO_27
DIO_28
DIO_29
DIO_30
3V3
R41
2.21K
R43
2.21K
R44
2.21K
U6
GD25Q16CEIGR
MOSI
SCK
FLASH_CS
RESET_N
SI/SIO0
SCLK
nCS
nWP/SIO2
nRST/SIO3
GND
EP
VCC
SO/SIO1
MISO
R45
0
C26
0.1U
GND
GND
U4C
CC1352P
Digital Subsection
900M
2.4G
RST_MB2
RST_MB1
INT_SENSOR
FLASH_CS
MOSI
SCK
MISO
CC1352_TDO
CC1352_TDI
CC1352_TMS
CC1352_TCK
RESET_N
DIO_3
DIO_4
DIO_5
DIO_6
DIO_7
DIO_8
DIO_9
DIO_10
DIO_11
DIO_16/JTAG_TDO
DIO_17/JTAG_TDI
JTAG_TMSC
JTAG_TCKC
RESET_N
DIO_18
DIO_19
DIO_20
DIO_21
DIO_22
DIO_12
DIO_13
DIO_14
DIO_15
LED2
PWM_MB2
INT_MB2
CC1352_TX_MB2_RX
CC1352_RX_MB2_TX
LED1
USER_BOOT
0
R37
0
R38
0
R39
0
R40
VDDS
C25
0.1U
GND
U5
TS5A23157
V+
COM1
IN1
COM2
IN2
GND
NC1
NO1
NC2
NO2
MB1_CTRL
MB1_CTRL
CC1352_RX_MB1_TX
CC1352_RX_MSP430_TX
CC1352_TX_MB1_RX
CC1352_TX_MSP430_RX
R42
2.21K
GND
GND
Schematic originally designed by Analog Life, LLC
Beagleboard.org
Sheet: /RF/
File: RF.sch
Title: BeagleConnect Leash
Size: B
Date: 2020-08-31
Rev: A
KiCad E.D.A. kicad (5.1.6)-1
Id: 8/10



Schematic originally designed by Analog Life, LLC

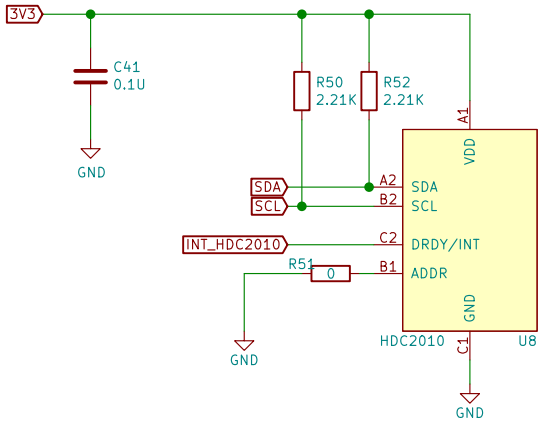
Beagleboard.org

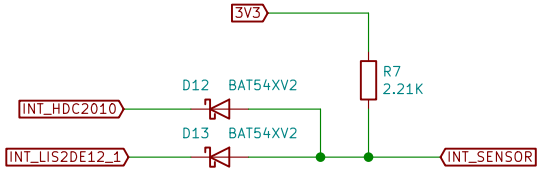
Sheet: /User Input/Output/

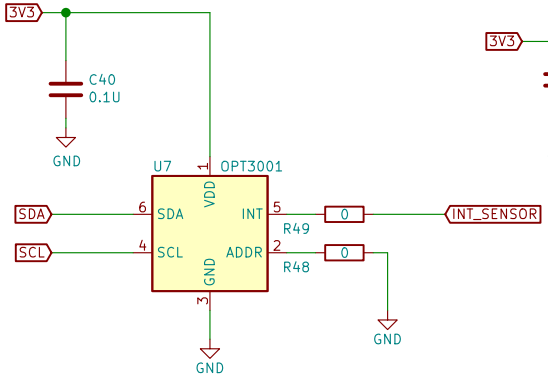
File: UserInputOutput.sch

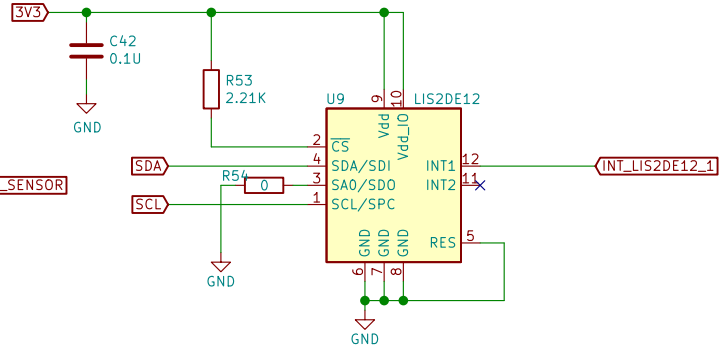
Title: BeagleConnect Leash

Size: B	Date: 2020-08-31	**Rev: A**
KiCad E.D.A. kicad (5.1.6)-1		Id: 9/10









Schematic originally designed by Analog Life, LLC

Sheet: /Sensors/
File: Sensors.sch

Title: BeagleConnect Leash

Size: A4	Date: 2020-08-31	**Rev: A**
KiCad E.D.A. kicad (5.1.6)-1		Id: 10/10