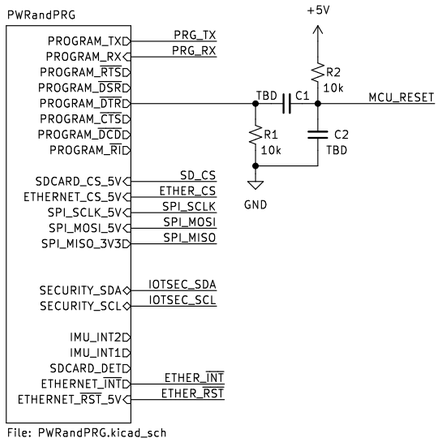
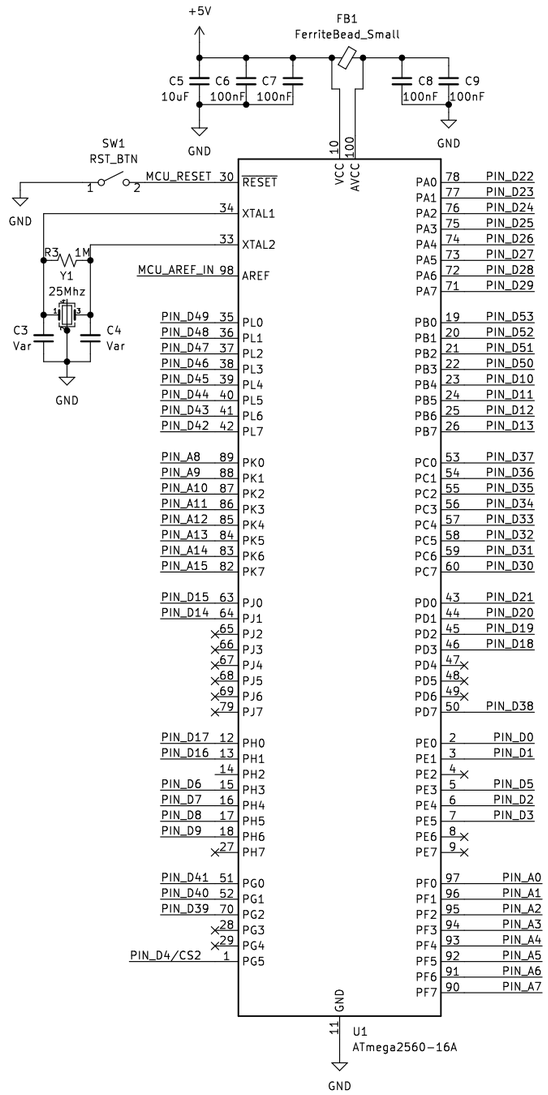
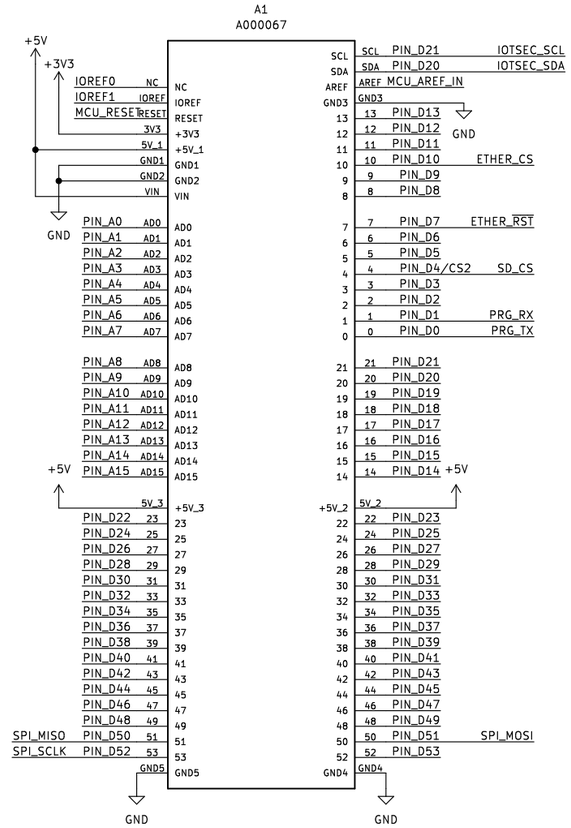
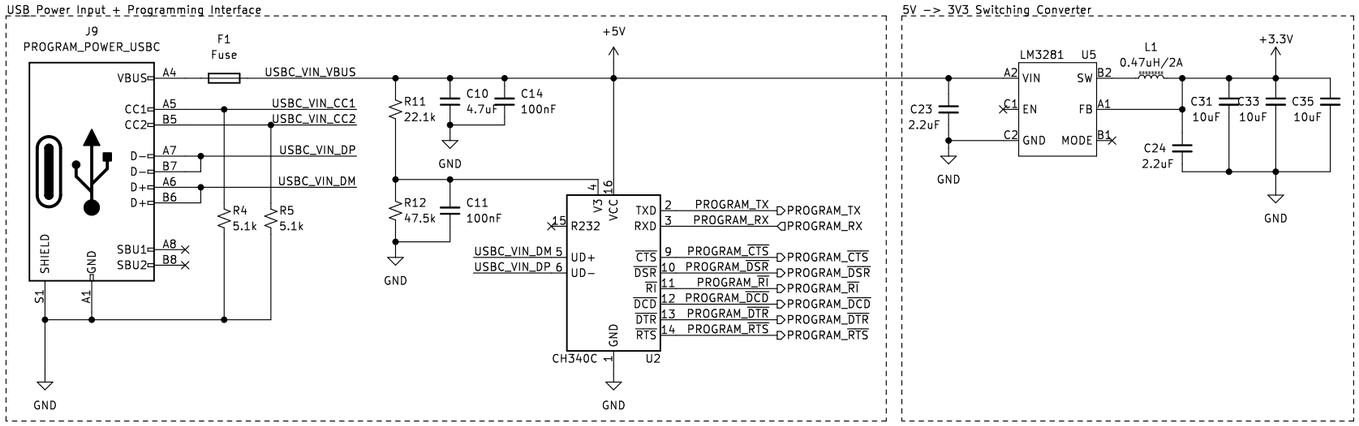
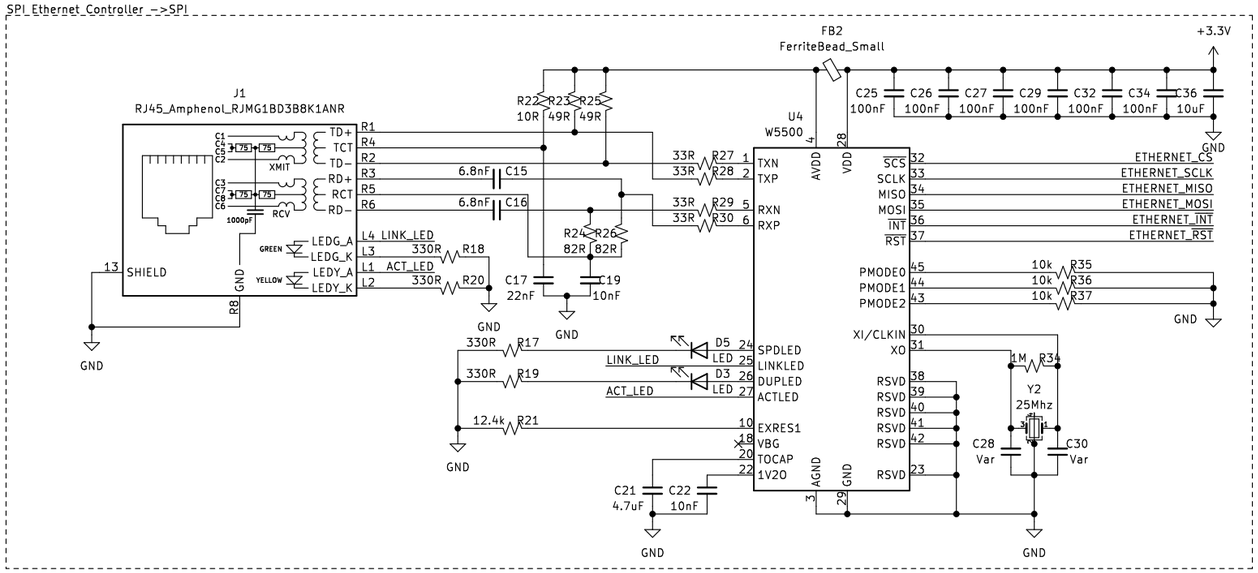
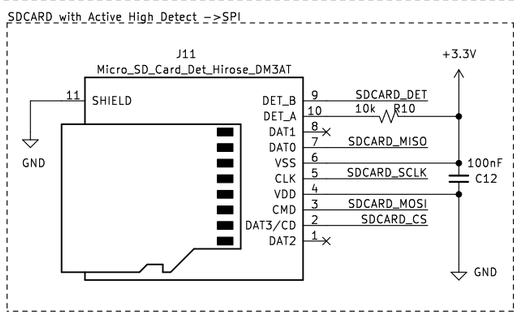

PWRandPRG
PROGRAM_TXD
PROGRAM_RXD
PROGRAM_RTSD
PROGRAM_DSRD
PROGRAM_DTRD
PROGRAM_CTSD
PROGRAM_DCDD
PROGRAM_RID
SDCARD_CS_5V
ETHERNET_CS_5V
SPI_SCLK_5V
SPI_MOSI_5V
SPI_MISO_3V3D
SECURITY_SDA
SECURITY_SCL
IMU_INT2D
IMU_INT1D
SDCARD_DETD
ETHERNET_INTD
ETHERNET_RST_5V
PRG_TX
PRG_RX
SD_CS
ETHER_CS
SPI_SCLK
SPI_MOSI
SPI_MISO
IOTSEC_SDA
IOTSEC_SCL
ETHER_INT
ETHER_RST
+5V
R2
10k
TBD
C1
MCU_RESET
R1
10k
C2
TBD
GND
File: PWRandPRG.kicad_sch

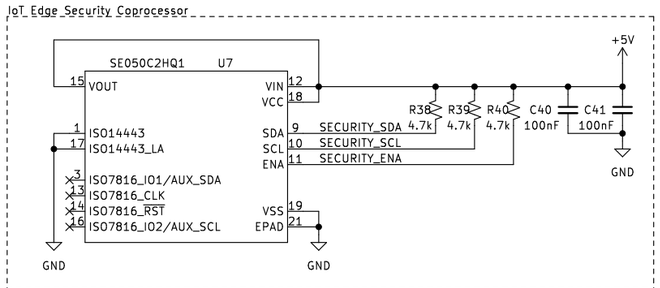

+5V
FB1
FerriteBead_Small
C5
10uF
C6
100nF
C7
100nF
C8
100nF
C9
100nF
GND
SW1
RST_BTN
MCU_RESET
RESET
XTAL1
XTAL2
R3
1M
Y1
25Mhz
C3
Var
C4
Var
MCU_AREF_IN
AREF
VCC
AVCC
PL0
PL1
PL2
PL3
PL4
PL5
PL6
PL7
PK0
PK1
PK2
PK3
PK4
PK5
PK6
PK7
PJ0
PJ1
PJ2
PJ3
PJ4
PJ5
PJ6
PJ7
PH0
PH1
PH2
PH3
PH4
PH5
PH6
PH7
PG0
PG1
PG2
PG3
PG4
PG5
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
PB0
PB1
PB2
PB3
PB4
PB5
PB6
PB7
PC0
PC1
PC2
PC3
PC4
PC5
PC6
PC7
PD0
PD1
PD2
PD3
PD4
PD5
PD6
PD7
PE0
PE1
PE2
PE3
PE4
PE5
PE6
PE7
PF0
PF1
PF2
PF3
PF4
PF5
PF6
PF7
U1
ATmega2560-16A

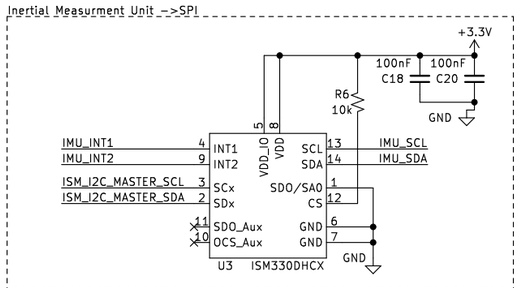

A1
A000067
+5V
+3V3
IOREF0
IOREF1
MCU_RESET
5V_1
GND1
GND2
VIN
NC
IOREF
RESET
+3V3
+5V_1
GND1
GND2
VIN
AD0
AD1
AD2
AD3
AD4
AD5
AD6
AD7
AD8
AD9
AD10
AD11
AD12
AD13
AD14
AD15
5V_3
+5V_3
5V_2
+5V_2
GND3
GND4
GND5
SCL
SDA
AREF
GND
PIN_D21
PIN_D20
MCU_AREF_IN
PIN_D13
PIN_D12
PIN_D11
PIN_D10
PIN_D9
PIN_D8
PIN_D7
PIN_D6
PIN_D5
PIN_D4/CS2
PIN_D3
PIN_D2
PIN_D1
PIN_D0
PIN_D22
PIN_D24
PIN_D26
PIN_D28
PIN_D30
PIN_D32
PIN_D34
PIN_D36
PIN_D38
PIN_D40
PIN_D42
PIN_D44
PIN_D46
PIN_D48
PIN_D50
PIN_D52
PIN_D23
PIN_D25
PIN_D27
PIN_D29
PIN_D31
PIN_D33
PIN_D35
PIN_D37
PIN_D39
PIN_D41
PIN_D43
PIN_D45
PIN_D47
PIN_D49
PIN_D51
PIN_D53
IOTSEC_SCL
IOTSEC_SDA
ETHER_CS
ETHER_RST
PRG_RX
PRG_TX
SD_CS
SPI_MISO
SPI_MOSI
SPI_SCLK

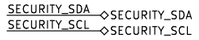

USB Power Input + Programming Interface
J9
PROGRAM_POWER_USBC
F1
Fuse
VBUS
CC1
CC2
D-
D-
D+
D+
SHIELD
GND
SBU1
SBU2
USBC_VIN_VBUS
USBC_VIN_CC1
USBC_VIN_CC2
USBC_VIN_DP
USBC_VIN_DM
R4 5.1k
R5 5.1k
R11 22.1k
C10 4.7uF
C14 100nF
R12 47.5k
C11 100nF
+5V
GND
CH340C
U2
R232
V3
VCC
TXD
RXD
CTS
DSR
RI
DCD
DTR
RTS
PROGRAM_TX
PROGRAM_RX
PROGRAM_CTS
PROGRAM_DSR
PROGRAM_RI
PROGRAM_DCD
PROGRAM_DTR
PROGRAM_RTS
USBC_VIN_DM
USBC_VIN_DP
UD+
UD-
5V -> 3V3 Switching Converter
LM3281
U5
VIN
SW
EN
FB
GND
MODE
L1
0.47uH/2A
+3.3V
C23 2.2uF
C24 2.2uF
C31 10uF
C33 10uF
C35 10uF


SPI Ethernet Controller -->SPI
J1
RJ45_Amphenol_RJMG1BD3B8K1ANR
XMIT
RCV
SHIELD
LEDG_A
LEDG_K
LEDY_A
LEDY_K
L4 LINK_LED
L1 ACT_LED
330R
R18
R20
C17 22nF
C19 10nF
FB2
FerriteBead_Small
+3.3V
C25 100nF
C26 100nF
C27 100nF
C29 100nF
C32 100nF
C34 100nF
C36 10uF
U4
W5500
R22 10R
R23 49R
R25 49R
R24 82R
R26 82R
6.8nF C15
6.8nF C16
33R R27
33R R28
33R R29
33R R30
TXN
TXP
RXN
RXP
AVDD
VDD
SCS
SCLK
MISO
MOSI
INT
RST
ETHERNET_CS
ETHERNET_SCLK
ETHERNET_MISO
ETHERNET_MOSI
ETHERNET_INT
ETHERNET_RST
PMODE0
PMODE1
PMODE2
10k R35
10k R36
10k R37
XI/CLKIN
XO
1M R34
Y2
25Mhz
C28 Var
C30 Var
RSVD
EXRES1
VBG
TOCAP
1V2O
AGND
GND
C21 4.7uF
C22 10nF
330R R17
330R R19
12.4k R21
D5
D3
LED
LINK_LED
ACT_LED
SPDLED
LINKLED
DUPLED
ACTLED
3V3 SPI<->5V SPI Interface
ETHERNET_INT
SDCARD_DET
IMU_INT1
IMU_INT2
SPI_MISO_3V3
ETHERNET_MISO
SDCARD_MISO
IMU_MISO
100nF C39
U6
74HC244
SPI_SCLK_3V3
SPI_MOSI_3V3
ETHERNET_RST_5V
ETHERNET_CS_5V
SDCARD_CS_5V
SPI_SCLK_5V
SPI_MOSI_5V
ETHERNET_SCLK
SDCARD_SCLK
IMU_SCK
ETHERNET_MOSI
SDCARD_MOSI
IMU_MOSI
ETHERNET_CS
SDCARD_CS
1Y0
1Y1
1Y2
1Y3
2Y0
2Y1
2Y2
2Y3
1A0
1A1
1A2
1A3
2A0
2A1
2A2
2A3
1OE
2OE
VCC


SDCARD with Active High Detect -->SPI
J11
Micro_SD_Card_Det_Hirose_DM3AT
SHIELD
DET_B
DET_A
DAT1
DATO
VSS
CLK
VDD
CMD
DAT3/CD
DAT2
SDCARD_DET
SDCARD_MISO
SDCARD_SCLK
SDCARD_MOSI
SDCARD_CS
10k R10
100nF C12
+3.3V
GND


IoT Edge Security Coprocessor
SE050C2HQ1
U7
VOUT
VIN
VCC
ISO14443
ISO14443_LA
ISO7816_IO1/AUX_SDA
ISO7816_CLK
ISO7816_RST
ISO7816_IO2/AUX_SCL
SDA
SCL
ENA
VSS
EPAD
SECURITY_SDA
SECURITY_SCL
SECURITY_ENA
R36 4.7k
R39 4.7k
R40 4.7k
C40 100nF
C41 100nF
+5V
GND


Inertial Measurment Unit -->SPI
+3.3V
100nF C18
100nF C20
R6 10k
IMU_INT1
IMU_INT2
ISM_I2C_MASTER_SCL
ISM_I2C_MASTER_SDA
SDO_Aux
OCS_Aux
INT1
INT2
SCx
SDx
VDD_IO
VDD
SCL
SDA
SDO/SA0
CS
IMU_SCL
IMU_SDA
U3
ISM330DHCX
GND


SECURITY_SDA
SECURITY_SCL