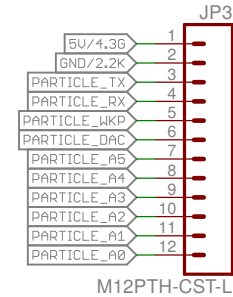
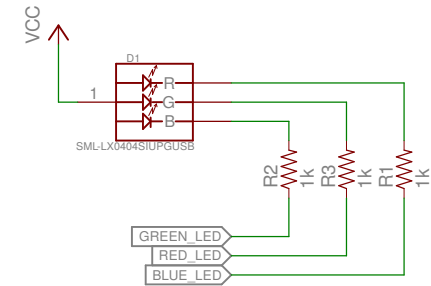
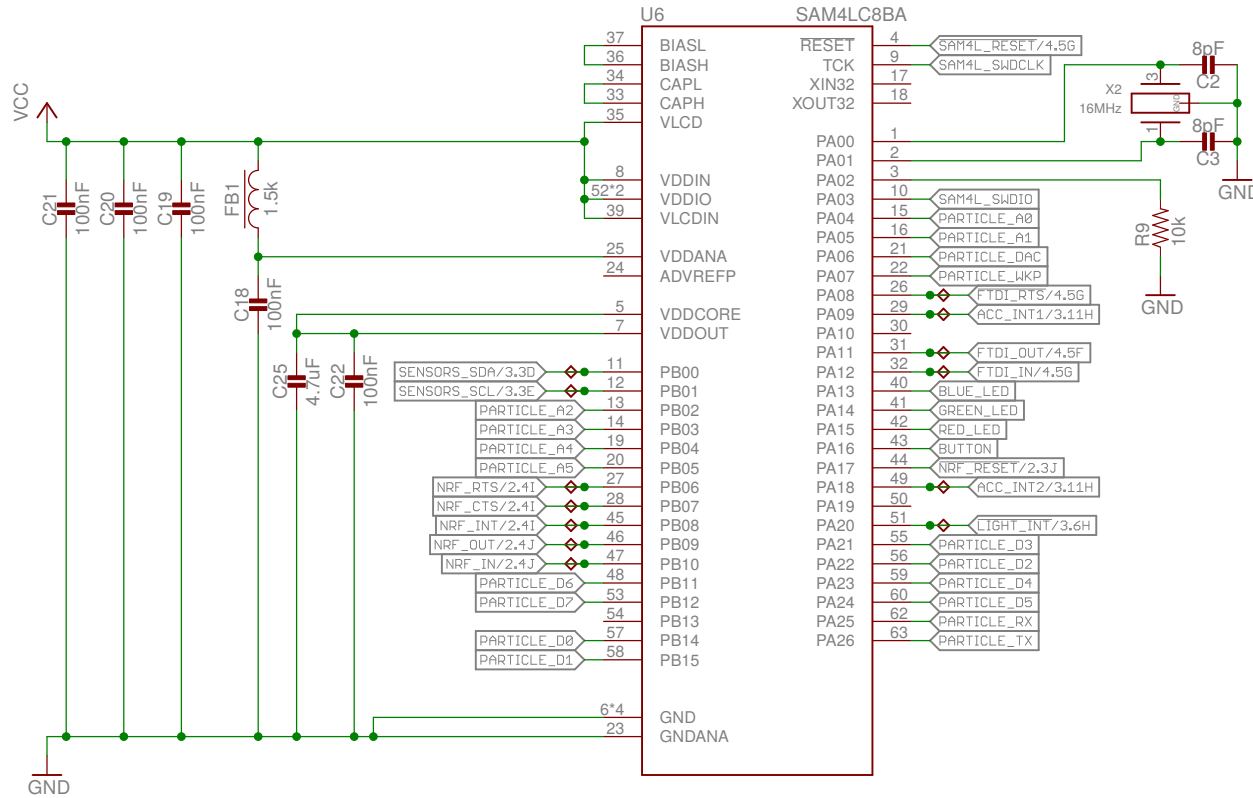
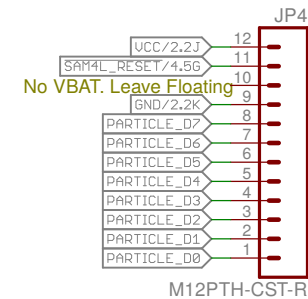


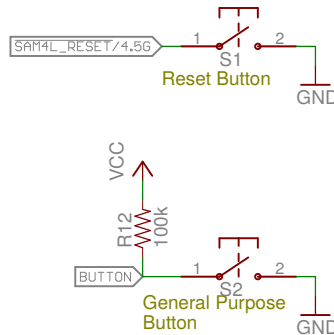
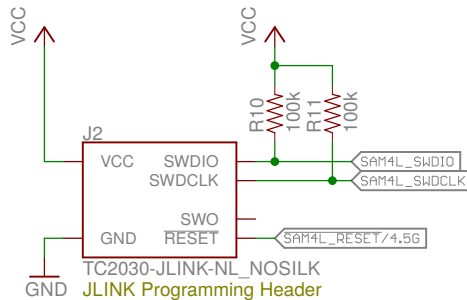
Microcontroller



M12PTH-CST-L



M12PTH-CST-R



M Hail

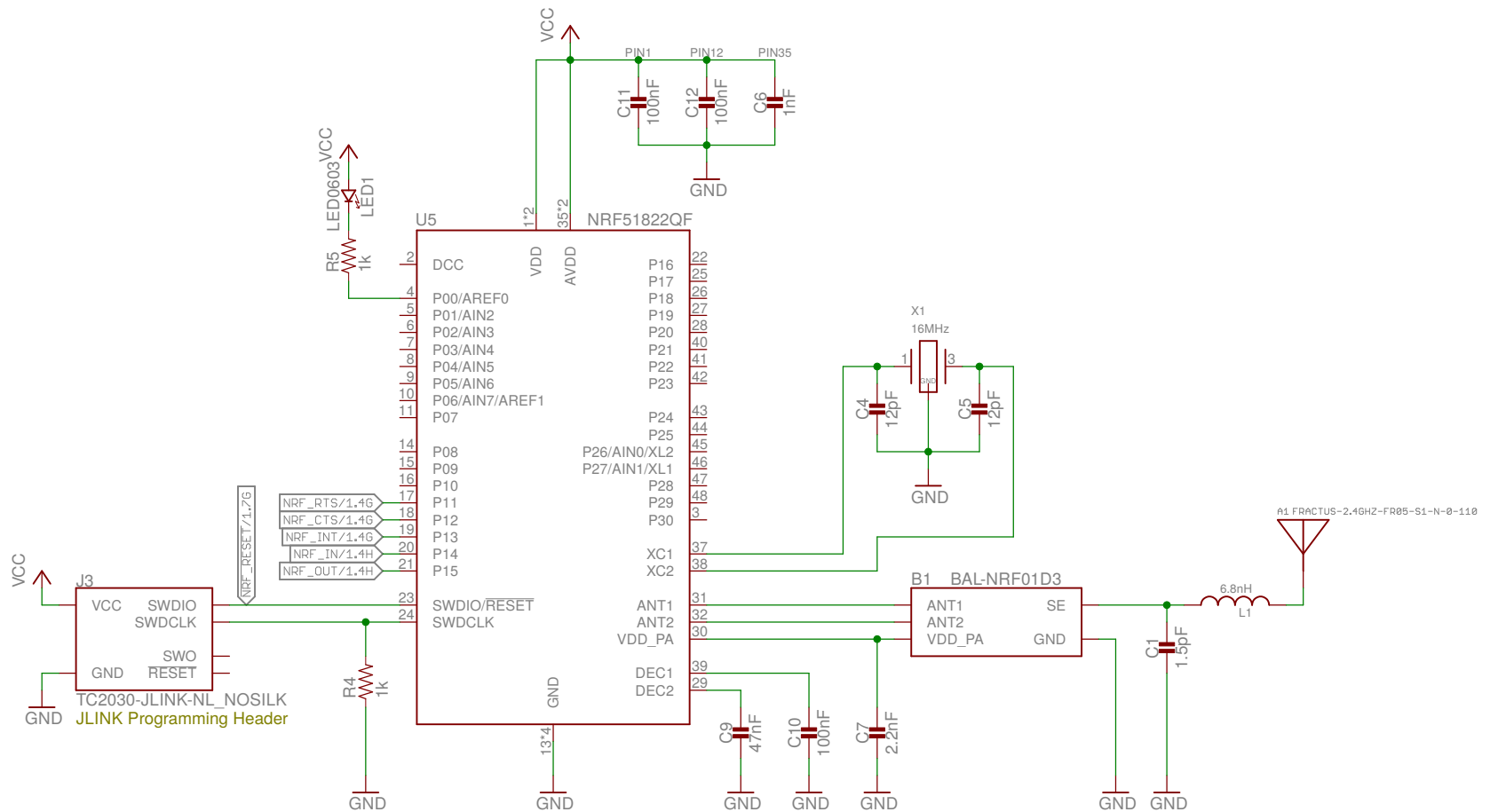
REV:
A

Author: Branden Ghena

Date: 12/3/16 5:12 PM

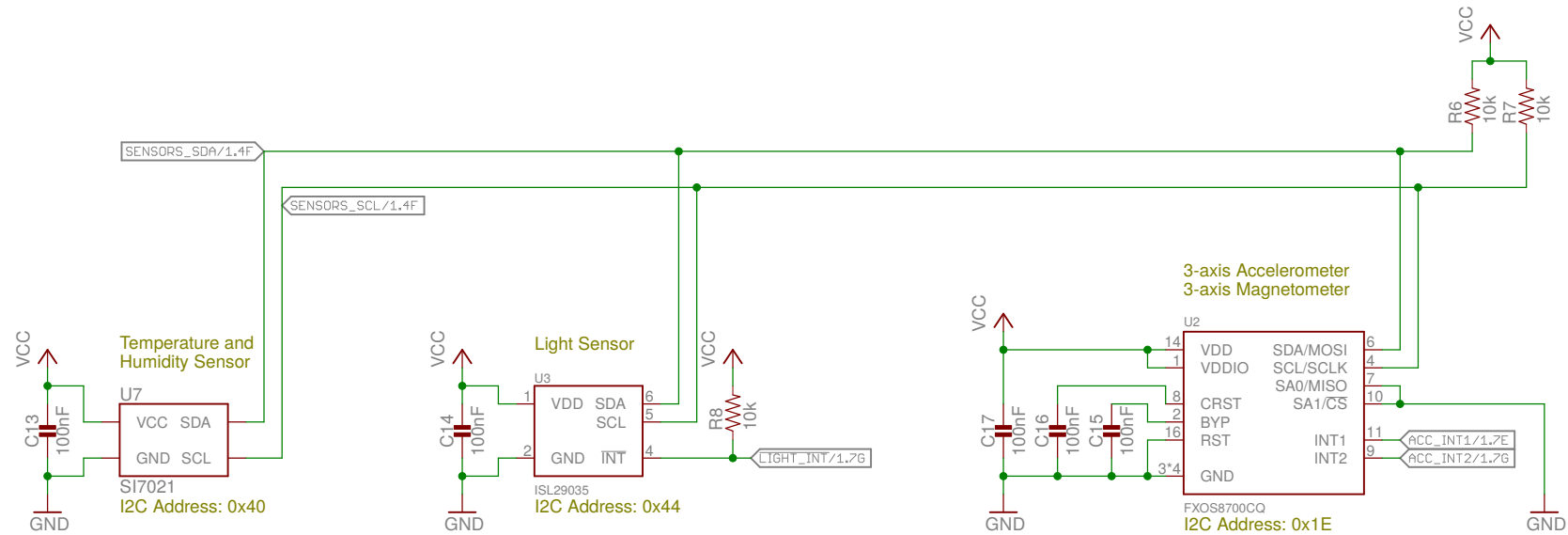
Sheet: 1/4

BLE Radio



| | |
|-----------------------|------------|
| M Hail | REV: A |
| Author: Branden Ghena | |
| Date: 12/3/16 5:12 PM | Sheet: 2/4 |

Sensors



M Hail

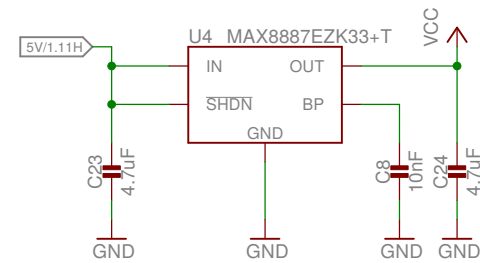
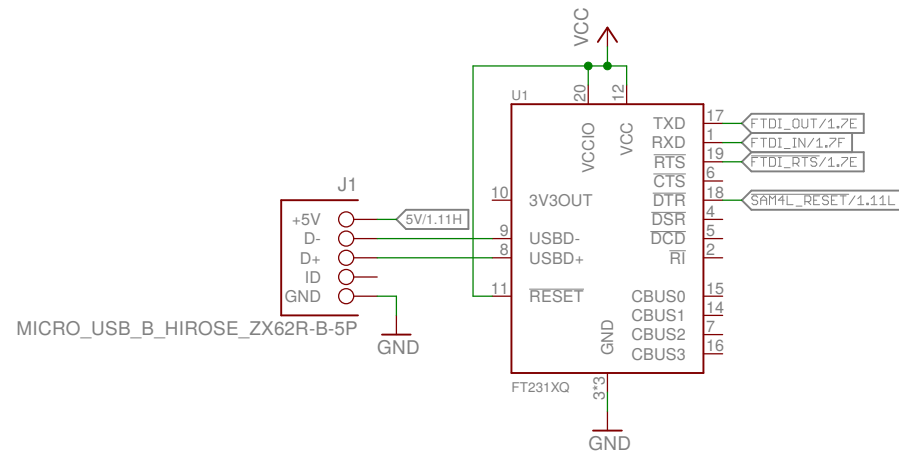
REV:
A

Author: Branden Ghena

Date: 12/3/16 5:12 PM

Sheet: 3/4

Power and USB



M Hail

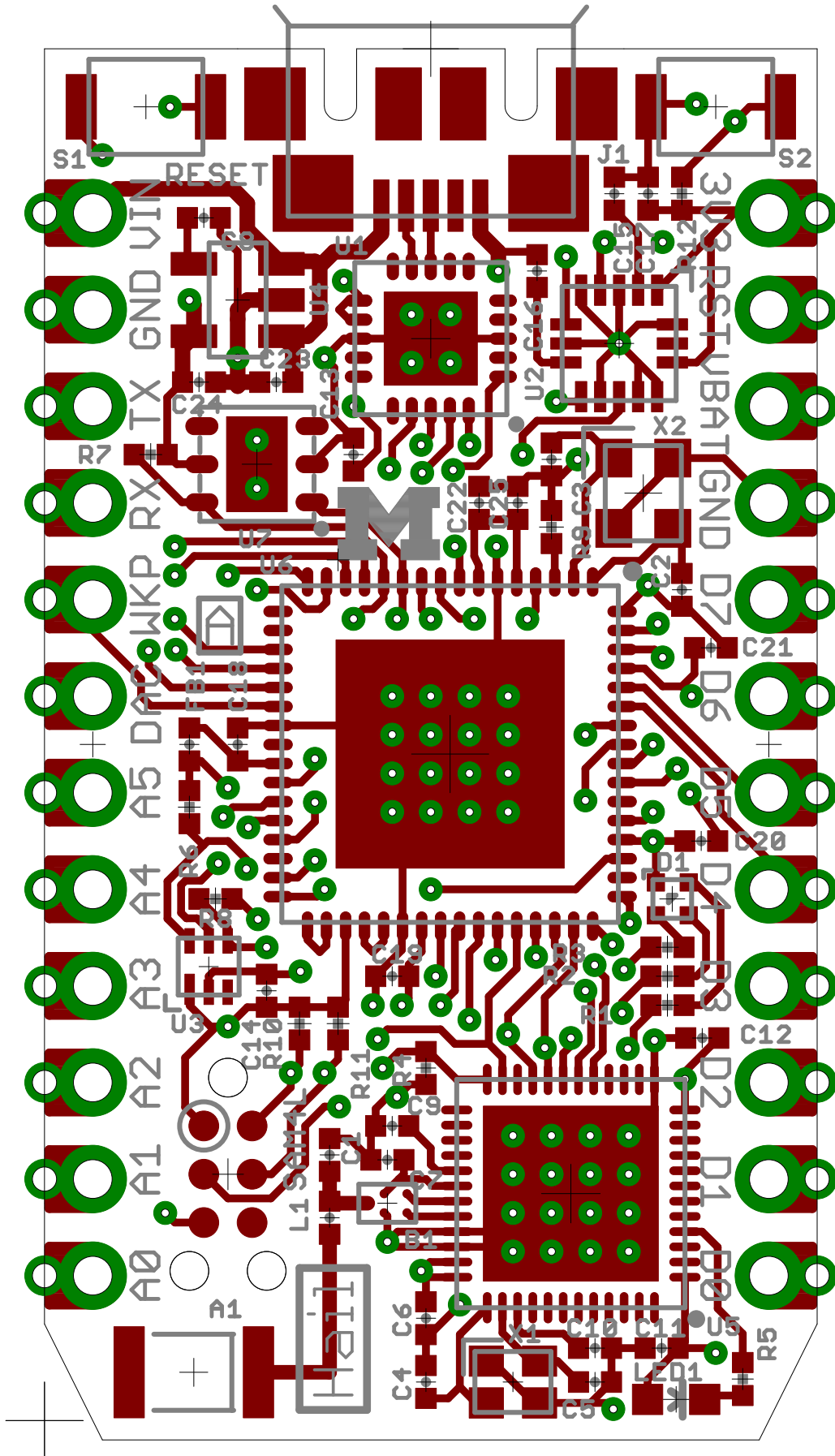
REV:
A

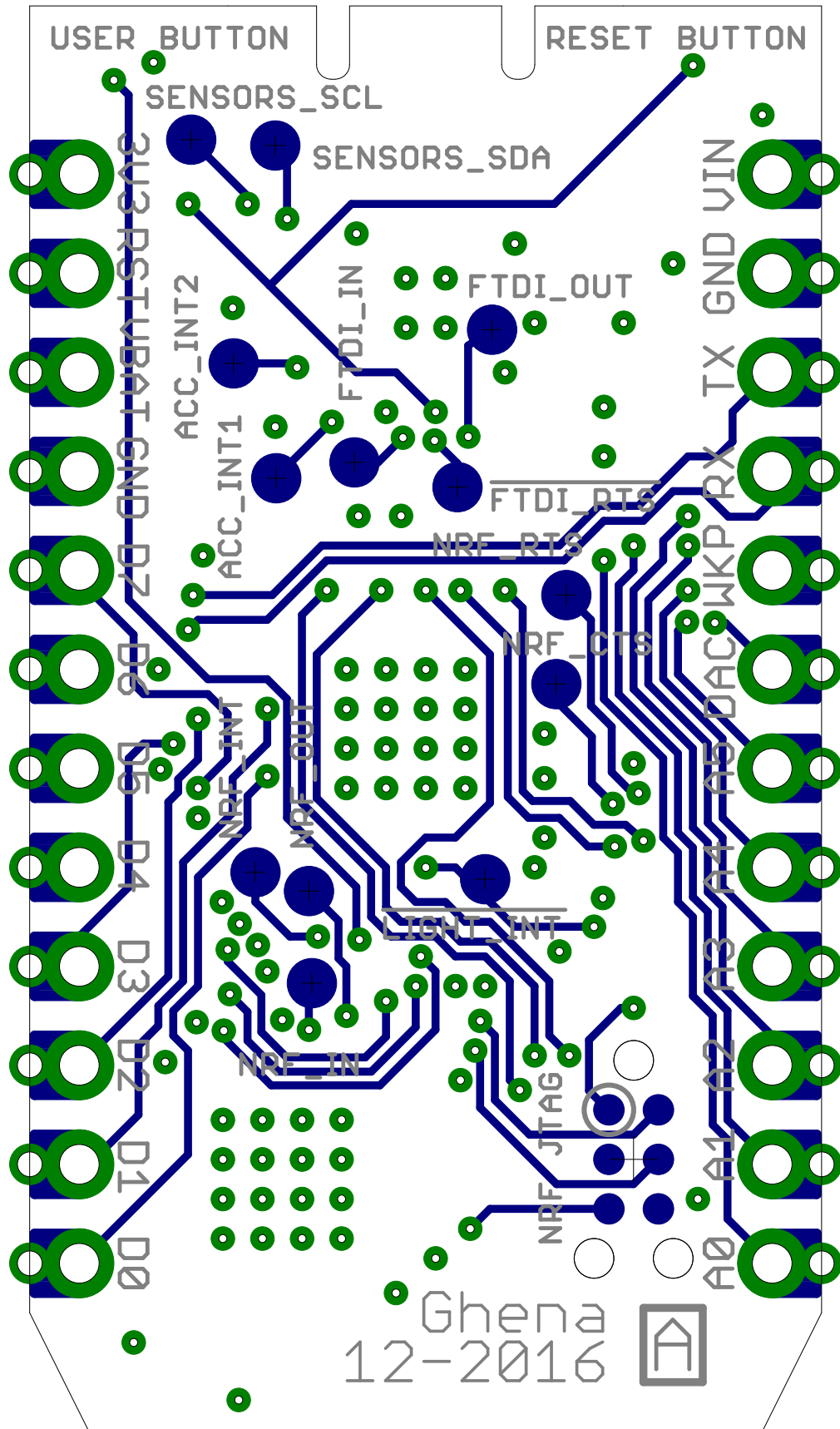
Author: Branden Ghena

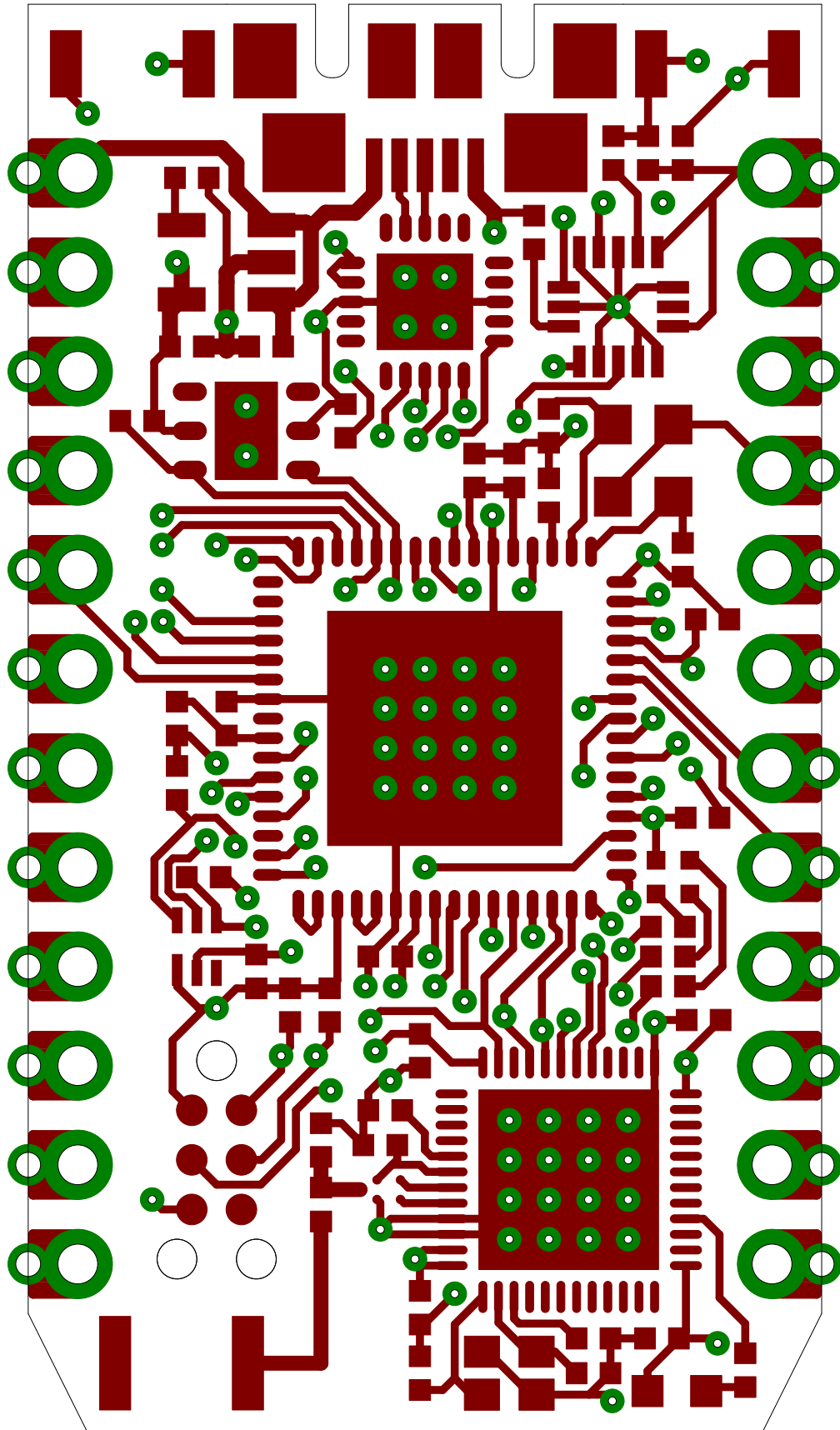
Date: 12/3/16 5:12 PM

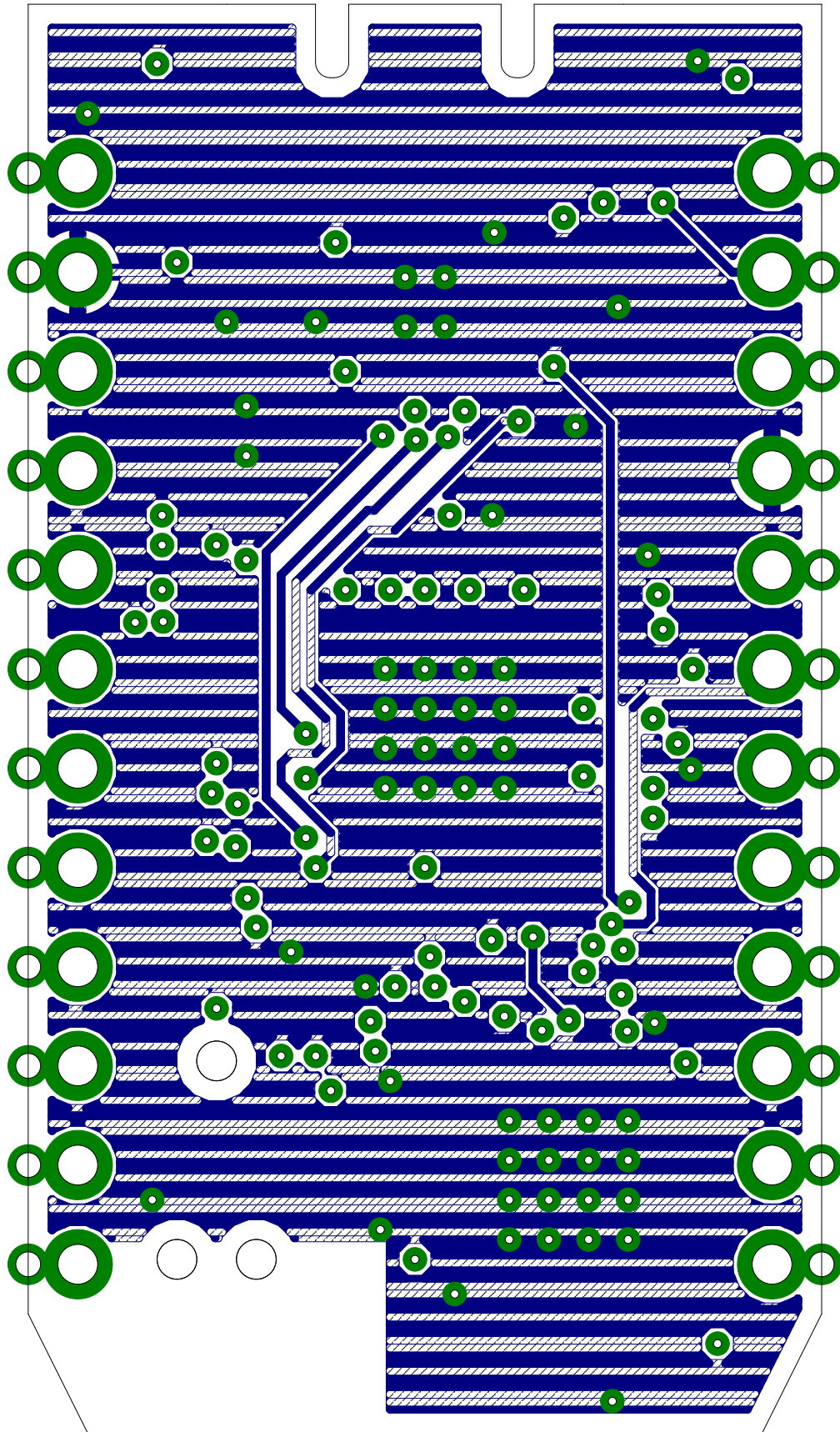
Sheet: 4/4

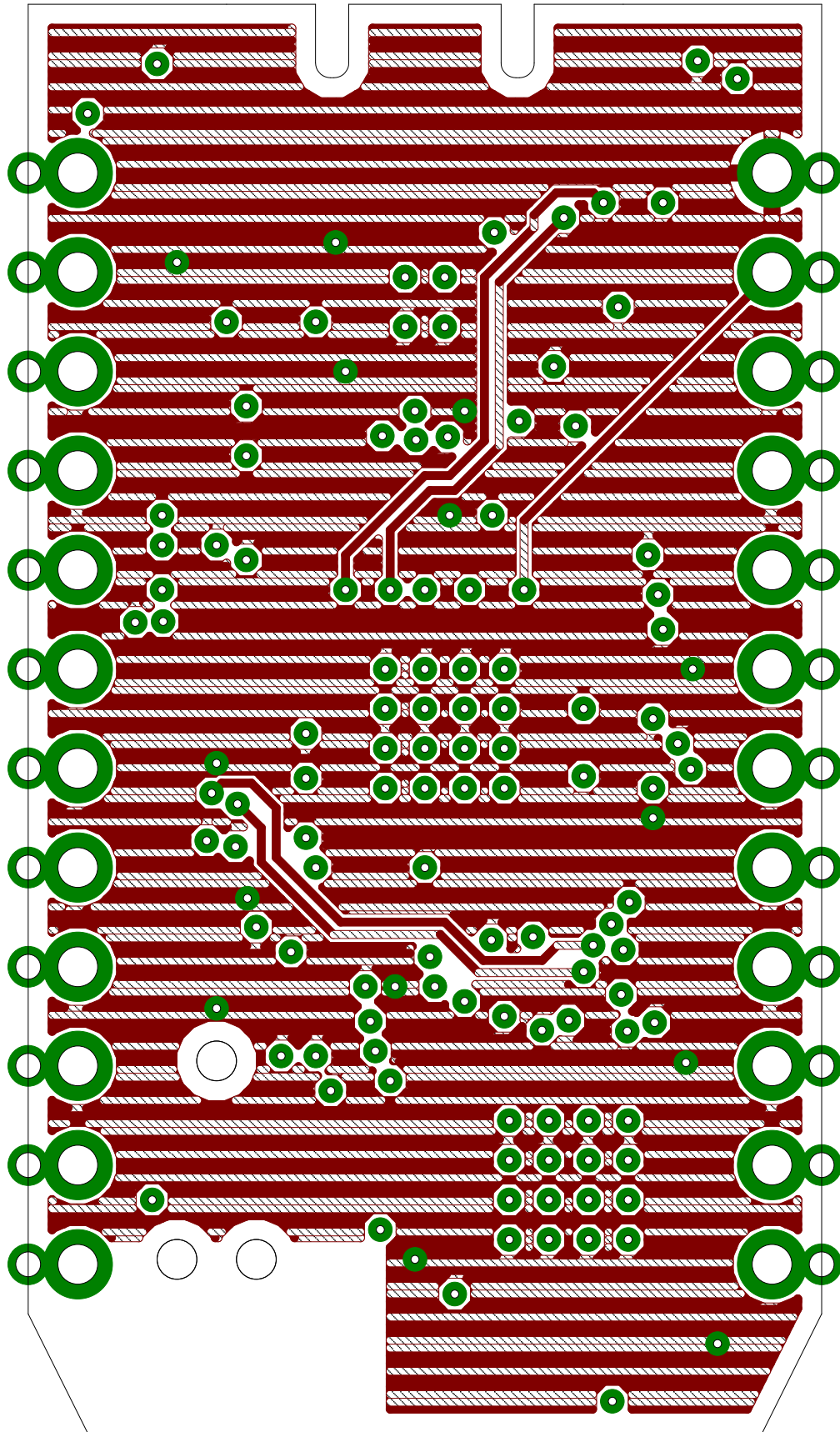
Top Layer



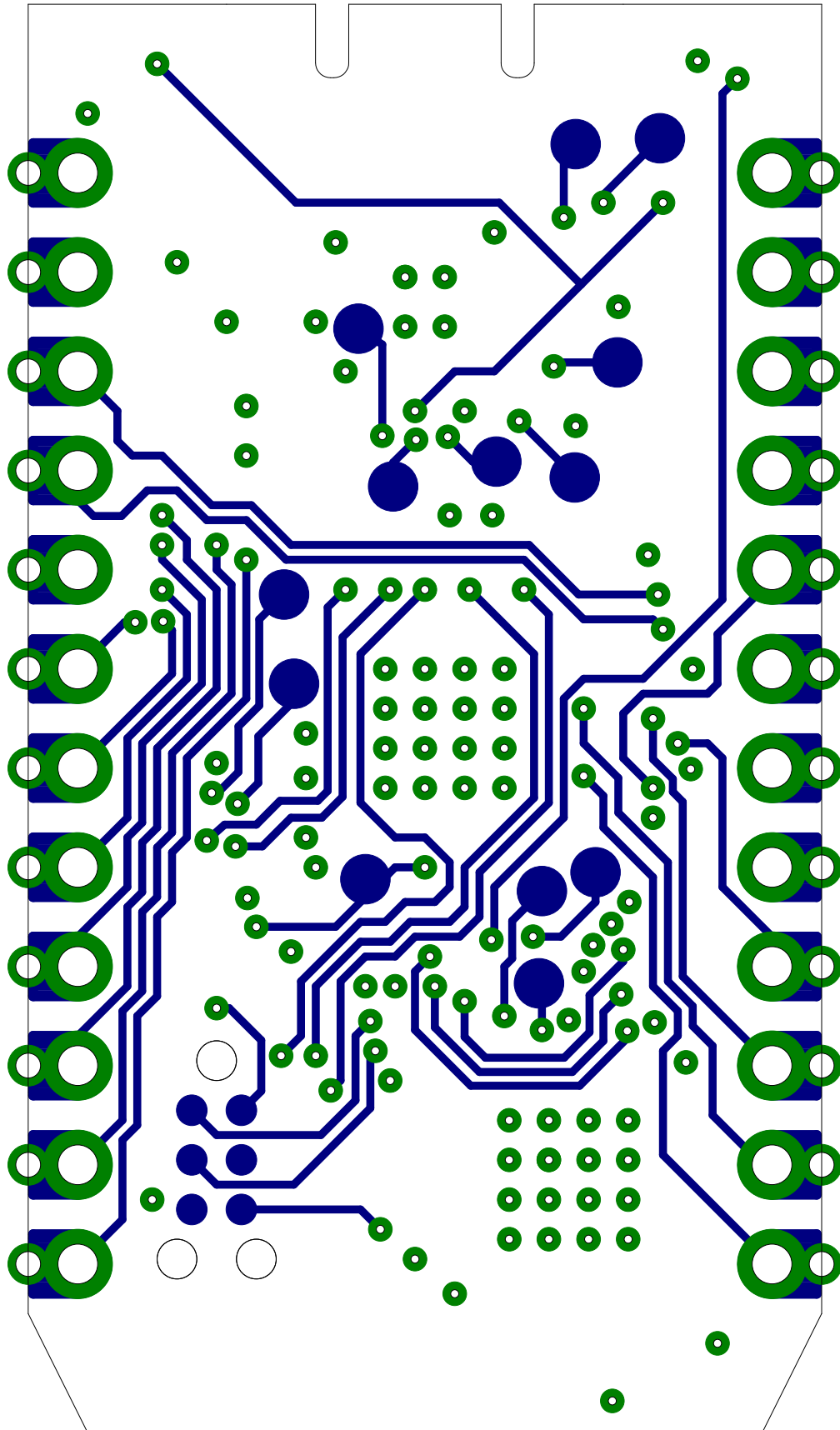


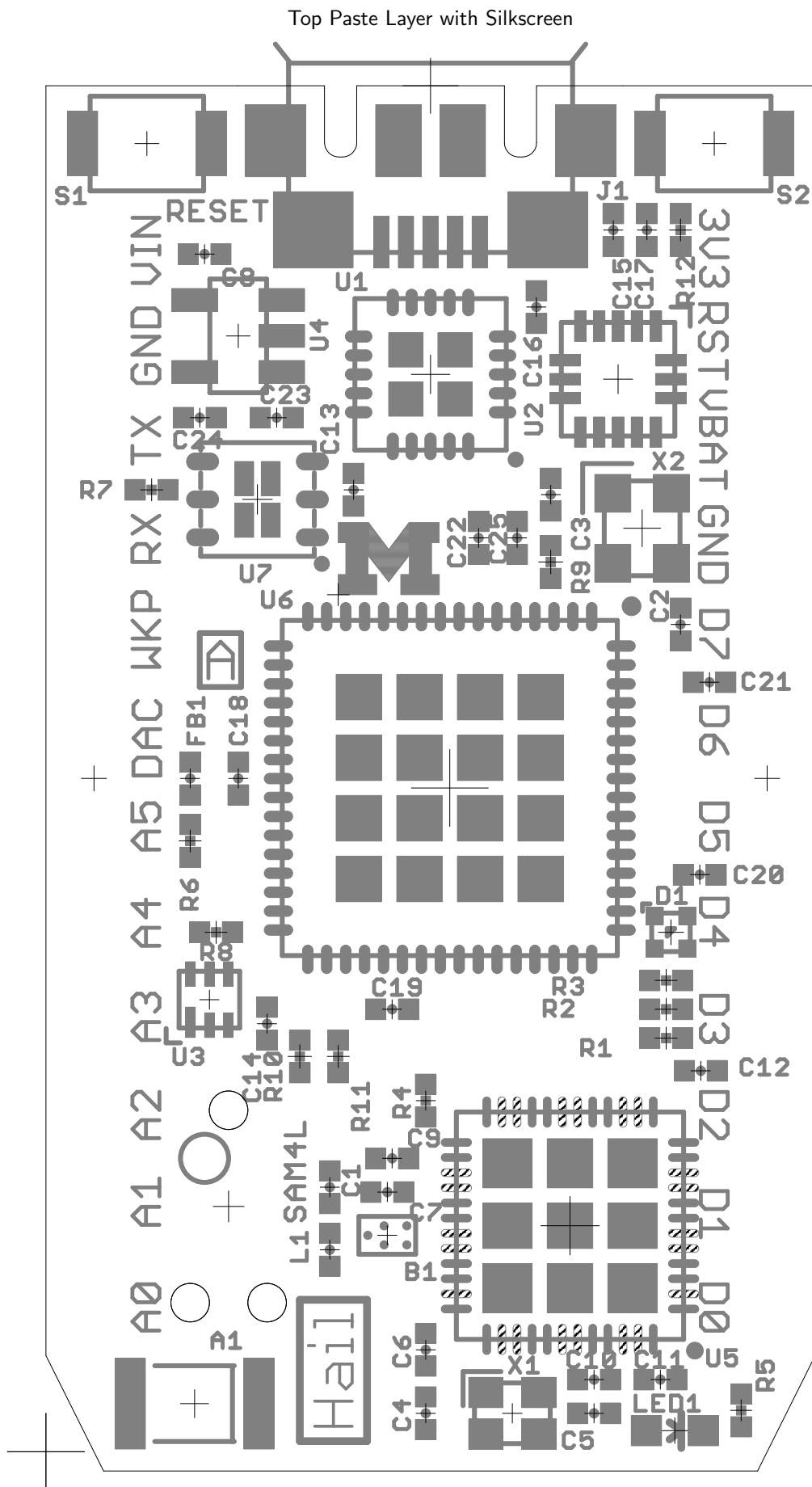


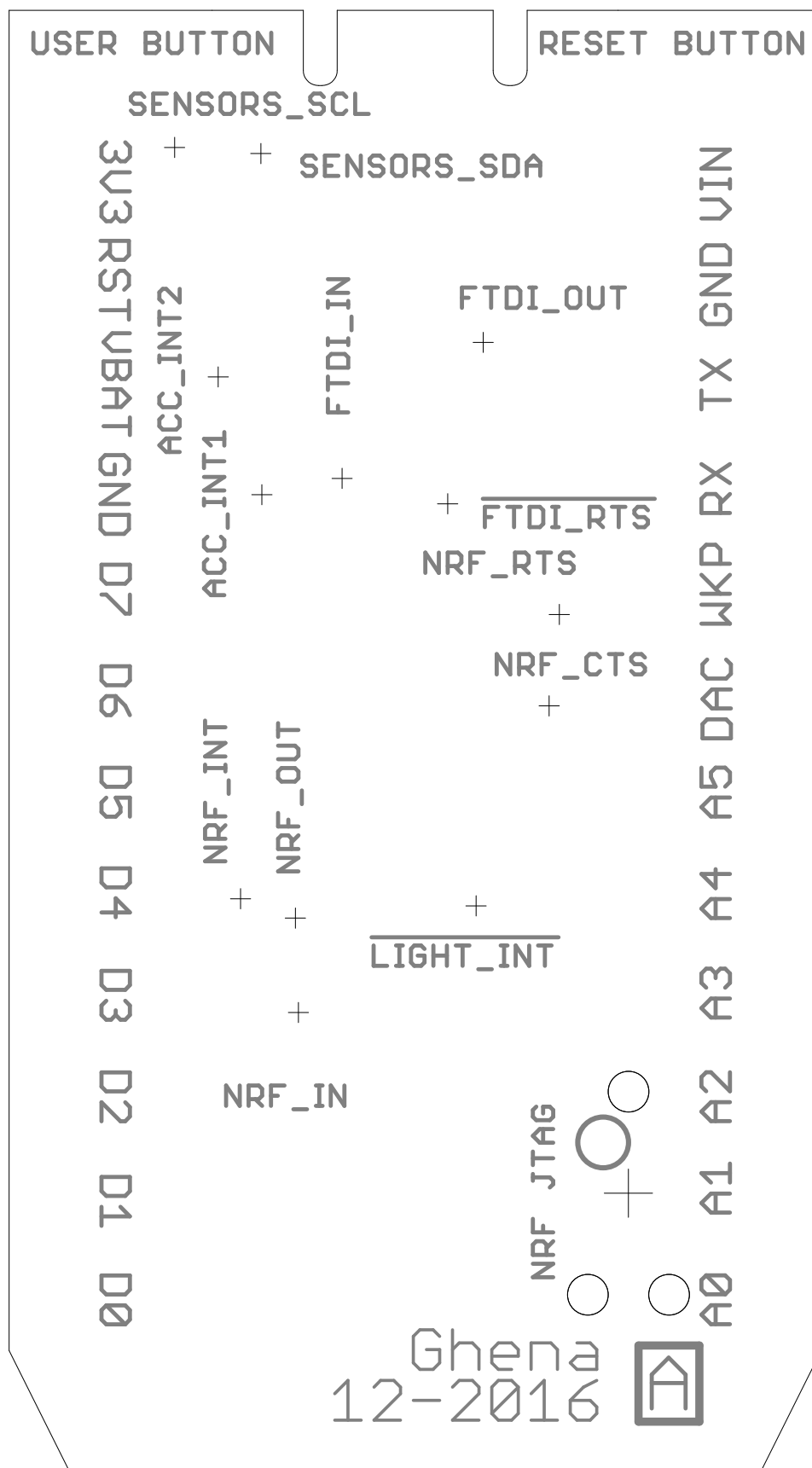




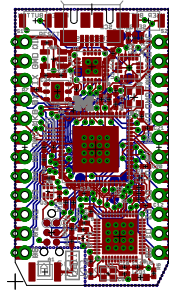
Bottom Copper Layer



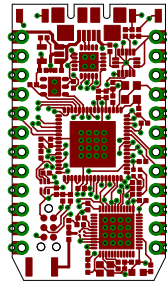


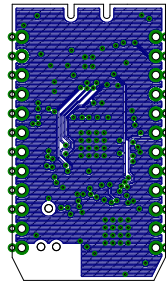


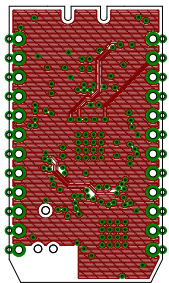
Top and Bottom Layers 1:1 Scale



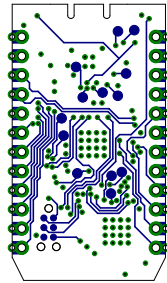
Top Layer 1:1 Scale







Bottom Copper Layer 1:1 Scale



hail_bom

| Qty | Value | Device |
|-----|--------------------------------|--------------------------------|
| 1 | FRACTUS-2.4GHZ-FR05-S1-N-0-110 | FRACTUS-2.4GHZ-FR05-S1-N-0-110 |
| 1 | BAL-NRF01D3 | BAL-NRF01D3 |
| 1 | 1.5pF | CAPACITOR0402_CAP |
| 2 | 8pF | CAPACITOR0402_CAP |
| 2 | 12pF | CAPACITOR0402_CAP |
| 1 | 1nF | CAPACITOR0402_CAP |
| 1 | 2.2nF | CAPACITOR0402_CAP |
| 1 | 10nF | CAPACITOR0402_CAP |
| 1 | 47nF | CAPACITOR0402_CAP |
| 13 | 100nF | CAPACITOR0402_CAP |
| 3 | 4.7uF | CAPACITOR0402_CAP |
| 1 | SML-LX0404SIUPGUSB | SML-LX0404SIUPGUSB |
| 1 | 1.5k | FERRITE_BEAD0402 |
| 1 | MICRO_USB_B_HIROSE_ZX62R-B-5 | MICRO_USB_B_HIROSE_ZX62R-B-5 |
| 2 | TC2030-JLINK-NL_NOSILK | TC2030-JLINK-NL_NOSILK |
| 1 | M12PTH-CST-L | M12PTH-CST-L |
| 1 | M12PTH-CST-R | M12PTH-CST-R |
| 1 | 6.8nH | INDUCTOR0402 |
| 1 | LED0603 | LED0603 |
| 5 | 1k | RESISTOR0402_RES |
| 4 | 10k | RESISTOR0402_RES |
| 3 | 100k | RESISTOR0402_RES |
| 2 | B3U-1000P | B3U-1000P |
| 1 | FT231XQ | FT231XQ |
| 1 | FXOS8700CQ | FXOS8700CQ |
| 1 | ISL29035 | ISL29035 |
| 1 | MAX8887EZK33+T | MAX8887EZK33+T |
| 1 | NRF51822QF | NRF51822QF |
| 1 | SAM4LC8BA | SAM4LC8BA |
| 1 | SI7021 | SI7021 |
| 1 | 16MHz | TXC-8Y |
| 1 | 16MHz | FH1600015 |

hail_bom

Package
FRACTUS-ANTENNA-FR05-S1-N-0-110
BAL-NRF01D3
0402_CAP
0402_CAP
0402_CAP
0402_CAP
0402_CAP
0402_CAP
0402_CAP
0402_CAP
0402_CAP
1MM_SQ_4PAD
0402_CAP
USB_MICRO_B-HIROSE-ZX62R-B-5P
TC2030-IDC-NL_NOSILK
1X12-CASTELLATED
1X12-CASTELLATED
0402_CAP
LED-0603
0402_RES
0402_RES
0402_RES
B3U-1000P
QFN-20-4MM
QFN-16-3MM
ODFN-6-1.5MMX1.6MM
SOT-23-5
QFN-48-6MM
QFN-64-9MM
DFN-6/3MM
TXC-8Y
FHXXX

hail_bom

Parts

A1

B1

C1

C2, C3

C4, C5

C6

C7

C8

C9

C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22

C23, C24, C25

D1

FB1

J1

J2, J3

JP3

JP4

L1

LED1

R1, R2, R3, R4, R5

R6, R7, R8, R9

R10, R11, R12

S1, S2

U1

U2

U3

U4

U5

U6

U7

X1

X2

hail_bom

| Description | DIGIKEY |
|--|-----------------------|
| Fractus Micro Reach Xtend | |
| 50 ohm nominal input / conjugate match balun to nRF51422-QFAA, | 497-13637-1-ND |
| 0402 Capacitor | 490-6212-1-ND |
| 0402 Capacitor | 490-8230-1-ND |
| 0402 Capacitor | 490-6197-1-ND |
| 0402 Capacitor | 490-1303-1-ND |
| 0402 Capacitor | 490-5419-1-ND |
| 0402 Capacitor | 490-7763-1-ND |
| 0402 Capacitor | 445-1264-1-ND |
| 0402 Capacitor | 490-10777-1-ND |
| 0402 Capacitor | 490-13252-1-ND |
| 1mm^2 RGB LED | 67-2125-1-ND |
| 0402 Ferrite Bead | 490-5216-1-ND |
| USB Micro B Connector | H125274CT-ND |
| Header 12 | |
| Header 12 | |
| A very specific inductor | 490-6840-1-ND |
| LED | 160-1837-6-ND |
| Resistor | 1276-3430-1-ND |
| Resistor | 1276-3431-1-ND |
| Resistor | 1276-3432-1-ND |
| Switch | SW1020CT-ND |
| USB Bridge, USB to UART USB 2.0 UART Interface | 768-1128-1-ND |
| Accelerometer, Magnetometer, 3 Axis Sensor, I2C/SPI | FXOS8700CQR1CT-ND |
| Optical Sensor Ambient 550nm I2C | ISL29035IROZ-T7CT-ND |
| IC REG LDO 3.3V 0.3A TSOT23-5 | MAX8887EZK33+TCT-ND |
| Multiprotocol Bluetooth® 4.0 low energy/2.4 GHz RF SoC | 1490-1032-1-ND |
| SAM4L Microcontroller. 64QFN Package. 512 Flash. | ATSAM4LC8BA-MURDKR-ND |
| IC TEMP SENSOR RH 2% DFN | 336-3141-1-ND |
| 2mmx1.6mm SMD Crystal | 887-2003-1-ND |
| Pericom Type FH 16 MHz 2.5 x 2.0 mm | FH1600015CT-ND |

hail_bom

RICHARDSON_RFPD
FR05-S1-N-0110B