

Iridium 9603N Mini Radio Beacon

Page 2:

With grateful thanks to:
Adafruit for the Feather M0 Adalogger
<https://www.adafruit.com/products/2796>
<https://github.com/adafruit/Adafruit-Feather-M0-Adalogger-PCB>
Adafruit invests time and resources providing this open source design,
please support Adafruit and open-source hardware by purchasing products from Adafruit
Designed by Adafruit Industries.

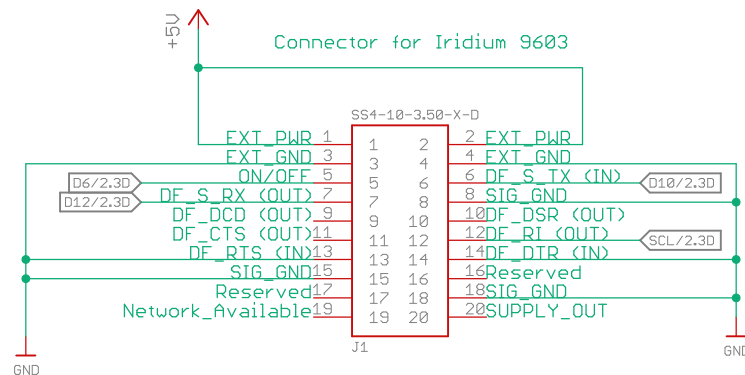
Page 3:

With grateful thanks to:
Adafruit for the Ultimate GPS FeatherWing
<https://www.adafruit.com/products/3133>
<https://github.com/adafruit/Adafruit-Ultimate-GPS-FeatherWing-PCB>
Adafruit invests time and resources providing this open source design,
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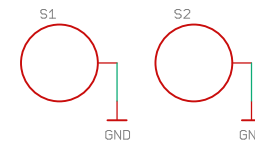
Page 4:

MPM3610 5V regulator based on the Arduino Zero

Fiducials



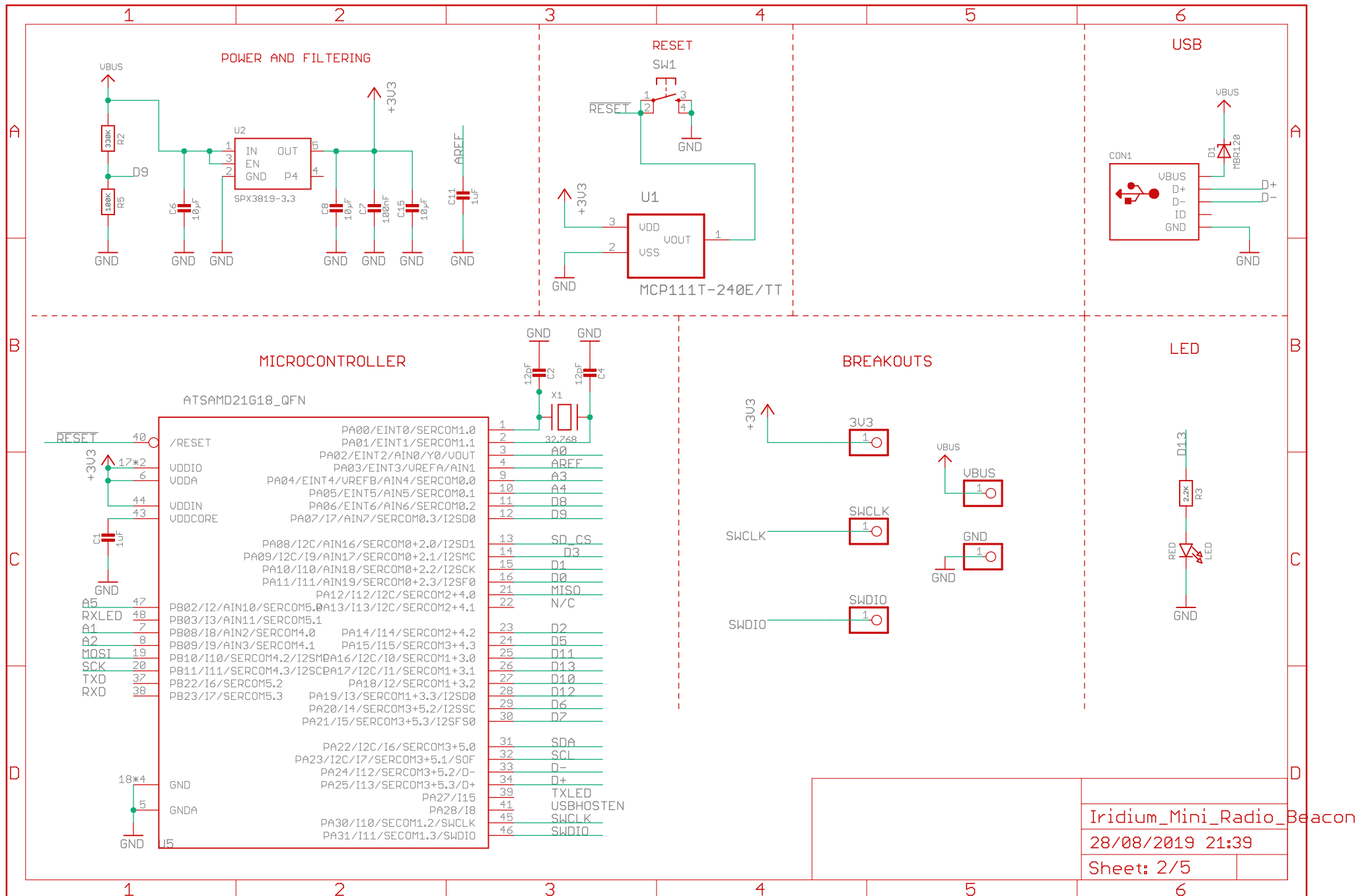
Mounting holes for Iridium 9603
2 x McMaster 95117A411 Press-In Nuts

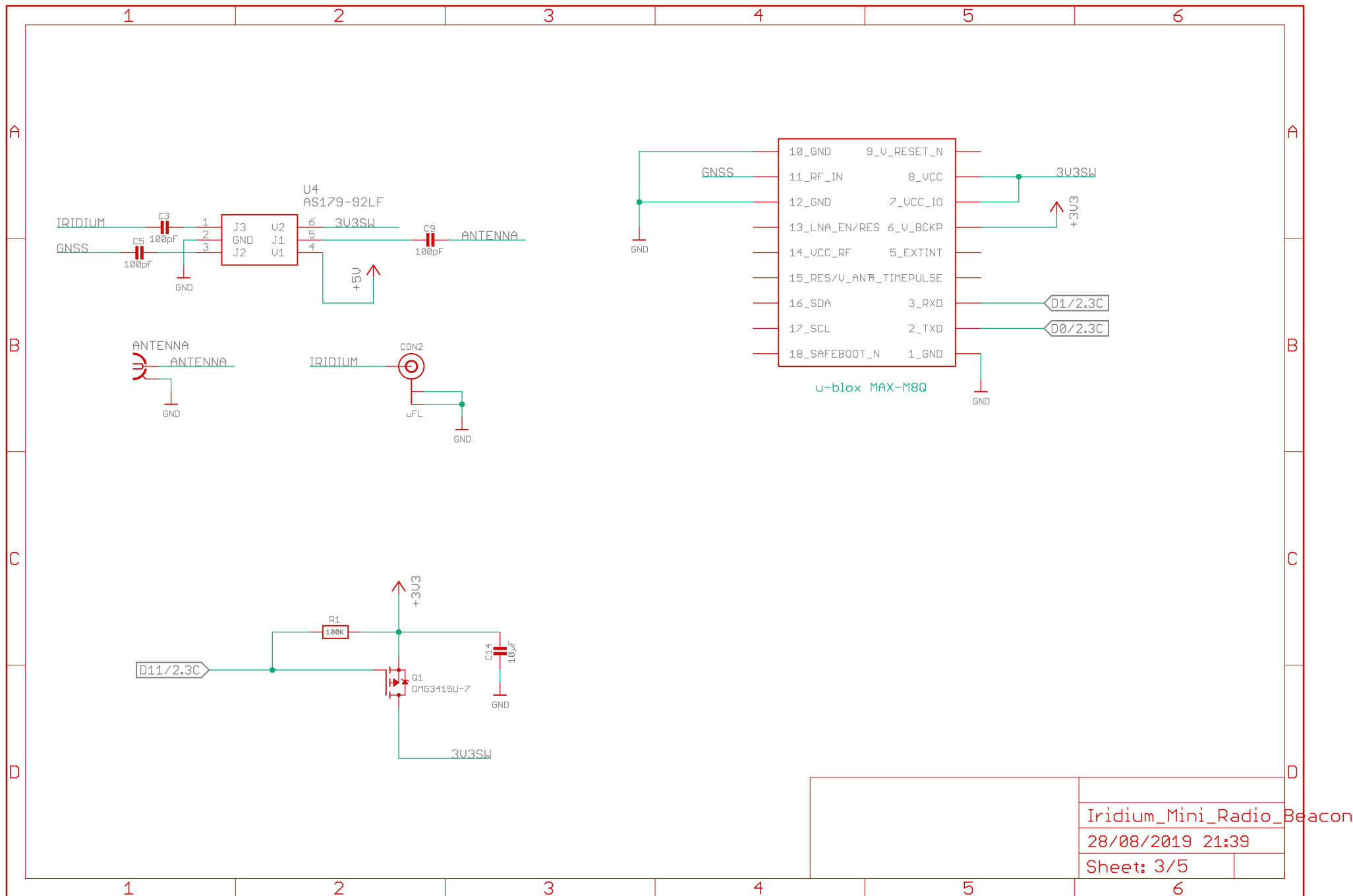


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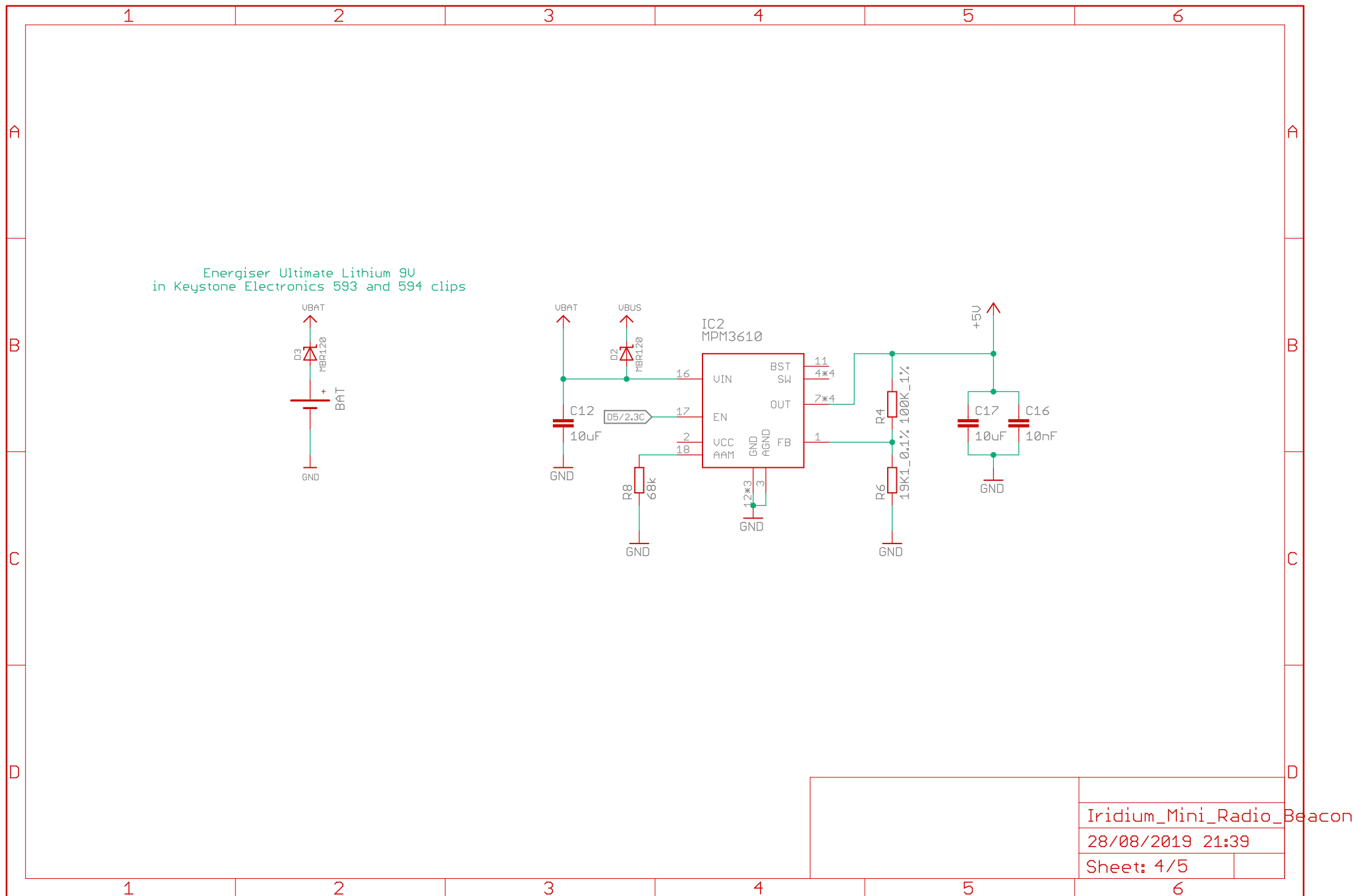


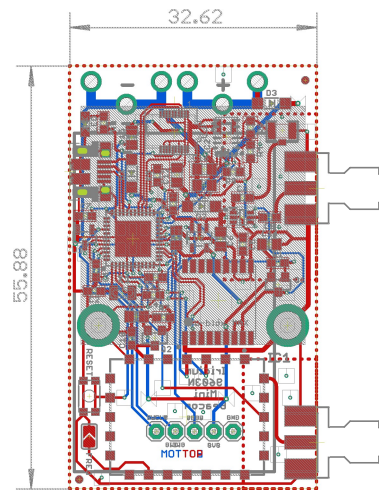


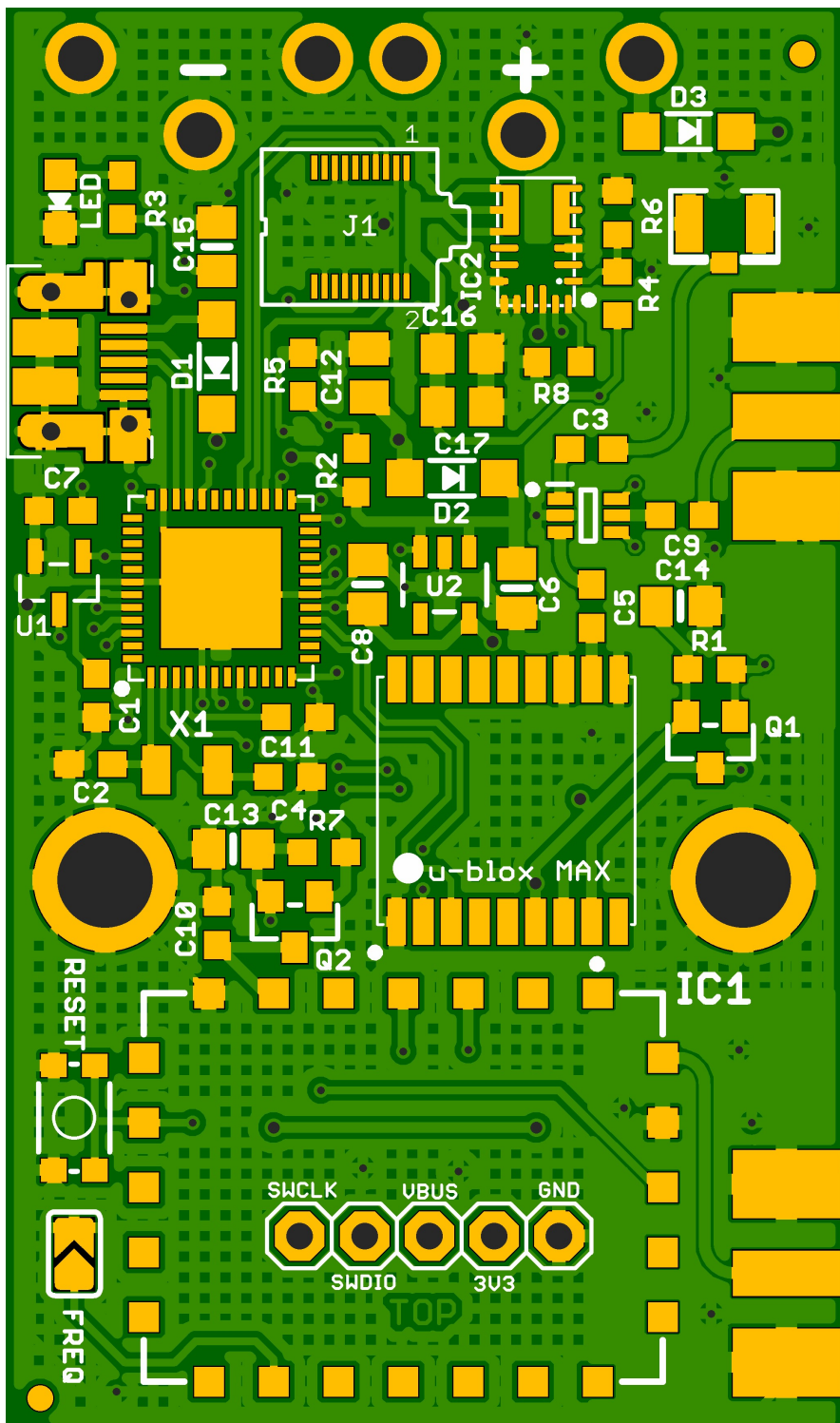
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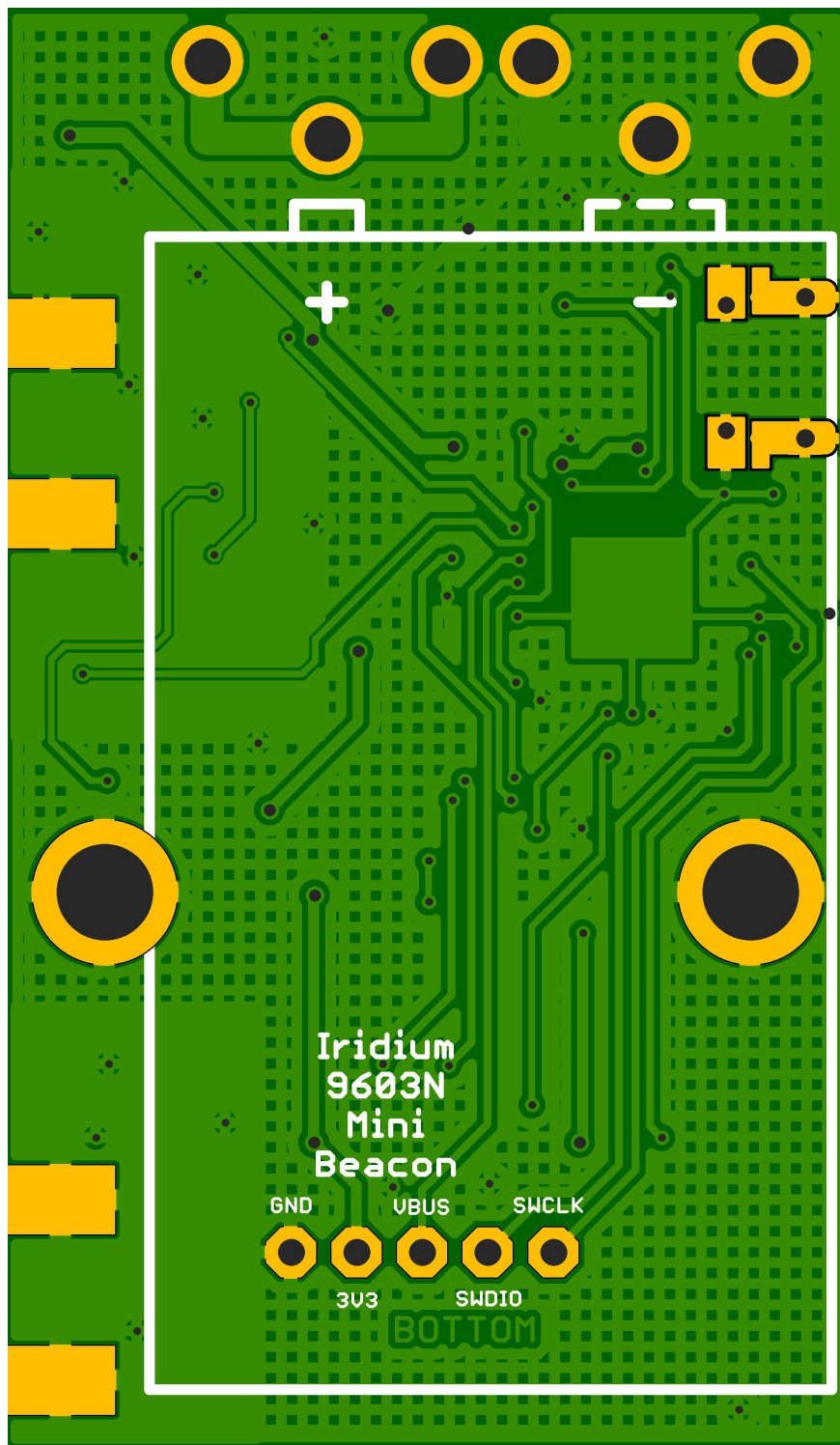
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Part	X	Y	Angle	Package	Value	Manufacturer	Manufacturer Part No	Farnell Part No	Mouser Part No	McMaster Part No	Description
Dimensions	32.62	55.88									
Fiducials - for solder paste mask alignment:											
FD1	1.27	-16.51	0								Fiducial 1mm
FD2	31.12	36.20	0								Fiducial 1mm
Surface Mount Components:											
C1	3.46	11.05	270	0603	1uF	Walsin	0603X105K100CT	2496916			MultiLayer Ceramic Capacitor; 1uF; 10V; 0603; X5R
C2	3.24	8.35	180	0603	12pF	Walsin	0603N120J500CT	2496884			MultiLayer Ceramic Capacitor; 12pF; 50V; 0603
C3	22.86	20.7	0	0603	120pF	Walsin	0603B121K500CT	2524820			MultiLayer Ceramic Capacitor; 120pF; 50V; 0603
C4	11.05	7.84	0	0603	12pF	Walsin	0603N120J500CT	2496884			MultiLayer Ceramic Capacitor; 12pF; 50V; 0603
C5	22.86	14.54	270	0603	120pF	Walsin	0603B121K500CT	2524820			MultiLayer Ceramic Capacitor; 120pF; 50V; 0603
C6	19.94	15.24	270	0805	10uF	Walsin	0805F106Z100CT	2496998			MultiLayer Ceramic Capacitor; 10uF; 10V; 0805
C7	2.06	18.29	180	0603	100nF	Murata	GRM188R71H104JA93D	2688523			MultiLayer Ceramic Capacitor; 0.1uF; 50V; 0603; X7R
C8	14.1	15.4	90	0805	10uF	Walsin	0805F106Z100CT	2496998			MultiLayer Ceramic Capacitor; 10uF; 10V; 0805
C9	26.42	18.1	180	0603	120pF	Walsin	0603B121K500CT	2524820			MultiLayer Ceramic Capacitor; 120pF; 50V; 0603
C10	8.19	2.1	90	0603	100nF	Murata	GRM188R71H104JA93D	2688523			MultiLayer Ceramic Capacitor; 0.1uF; 50V; 0603; X7R
C11	11.37	10.19	0	0603	1uF	Walsin	0603X105K100CT	2496916			MultiLayer Ceramic Capacitor; 1uF; 10V; 0603; X5R
C12	14.16	23.69	90	0805	10uF	Walsin	0805F106Z100CT	2496998			MultiLayer Ceramic Capacitor; 10uF; 10V; 0805
C13	8.83	5.02	180	0805	10uF	Walsin	0805F106Z100CT	2496998			MultiLayer Ceramic Capacitor; 10uF; 10V; 0805
C14	26.35	14.54	0	0805	10uF	Walsin	0805F106Z100CT	2496998			MultiLayer Ceramic Capacitor; 10uF; 10V; 0805
C15	8.19	28.64	90	0805	10uF	Walsin	0805F106Z100CT	2496998			MultiLayer Ceramic Capacitor; 10uF; 10V; 0805
C16	17.78	24.45	0	0805	10nF	Walsin	0805B103K500CT	2496939			MultiLayer Ceramic Capacitor; 10nF; 50V; 0805; X7R
C17	17.78	22.35	0	0805	10uF	Walsin	0805F106Z100CT	2496998			MultiLayer Ceramic Capacitor; 10uF; 10V; 0805
CON1	2.99	24.13	270		Micro_USB	Amphenol_FCI	10103594	2293752			Amphenol FCI 10103594 Micro USB Type B
CON2	28.07	28.77	270	uFL	uFL	Hirose	U.FL-R-SMT(01)	3908021			HIROSE U.FL-R-SMT(01); U.FL Coaxial; Straight Jack; 50 ohm
D1	8.19	23.94	90	SOD-123	MBR120	ON SEMICONDUCTOR	MBR120VLSFT1G	1431044			Schottky Rectifier; 20V; 1A; SOD-123
D2	17.4	19.56	180	SOD-123	MBR120	ON SEMICONDUCTOR	MBR120VLSFT1G	1431044			Schottky Rectifier; 20V; 1A; SOD-123
D3	26.67	33.15	180	SOD-123	MBR120	ON SEMICONDUCTOR	MBR120VLSFT1G	1431044			Schottky Rectifier; 20V; 1A; SOD-123
IC1	15.49	-8.26	180		ERIC4	LPRS	ERIC4	2362439			LPRS easy Radio Intelligent Controller 433MHz
IC2	20.7	28.65	180	QFN-20	MPM3610	MPS	MPM3610AGQV-P		946-MPM3610AGQV-P		Switching Voltage Regulator; 21V; 1.2A; DC/DC
J1	13.81	29.41	0		SS4-10-3.50	Samtec	SS4-10-3.50-L-D-K-TR	2085336			Samtec SS4-10-3.50-L-D-K-TR
LED	2.03	30.42	180	2.0x1.25	RED	Würth Elektronik	150080RS75000	2322077			LED; Red; 20mA; 2V; 2.0x1.25mm
Q1	27.53	9.21	180	SOT23	DMG3415U-7	Diodes Inc.	DMG3415U-7	1843688			MOSFET; P Channel; SOT23-WIDE
Q2	11.24	2.16	180	SOT23	DMG3415U-7	Diodes Inc.	DMG3415U-7	1843688			MOSFET; P Channel; SOT23-WIDE
R1	27.5	12.07	180	0603	100K	Multicomp	MCWR06X1003FTL	2447226			Chip Resistor; Thick Film; 100k; 50V; 0603; 100mW
R2	13.65	19.88	90	0603	330K	Multicomp	MCWR06X3303FTL	2447338			Resistor, Thick Film, 330K, 1%, 50V, 100mW, 0603
R3	4.48	30.58	90	0603	2.2K	Multicomp	MCWR06X2201FTL	2447320			Chip Resistor; Thick Film; 2.2k; 50V; 0603; 100mW
R4	23.88	26.8	270	0603	100K 1%	Multicomp	MCWR06X1003FTL	2447226			Chip Resistor; Thick Film; 100k; 50V; 0603; 100mW
R5	11.56	23.62	90	0603	100K	Multicomp	MCWR06X1003FTL	2447226			Chip Resistor; Thick Film; 100k; 50V; 0603; 100mW
R6	23.88	29.97	270	0603	19K1 0.1%	Panasonic	ERA3ARB1912V	2094530			Resistor, Thin Film, 19K1, 0.1%, 100mW, 0603
R7	12.38	4.89	180	0603	100K	Multicomp	MCWR06X1003FTL	2447226			Chip Resistor; Thick Film; 100k; 50V; 0603; 100mW
R8	21.59	24.13	0	0603	68K	Multicomp	MCWR06X6802FTL	2447420			Resistor, Thick Film, 68K, 1%, 50V, 100mW, 0603
SW1	2.6	-5.52	90	4.6x2.8	Tactile Switch	Multicomp	MCIPTG23K-V	1605470			Tactile Switch; 4.6x2.8mm; 50mA; 12V
U1	2	15.46	180	SOT23-3	MCP111T-240E/TT	Microchip	MCP111T-240E/TT	1627192			Reset Supervisor; SOT23-3; 2.40V; Open Drain; Active Low
U2	17.11	15.37	180	SOT23-5	SPX3819-3.3	Exar	SPX3819M5-L-3-3/TR	2889625			LDO Voltage Regulator; 500mA; SOT-23-5
U3	19.57	6.91	270		MAX-M8Q	u-blox	MAX-M8Q				https://www.u-blox.com/en/product/max-m8-series
U4	22.73	18.1	0	SOT65P220X100-6N	AS179-92LF	Skyworks Solutions	AS179-92LF	1753762			Skyworks AS179-92LF RF Switch
U5	8.35	15.24	0	TQFN48	ATSAMD21G18A	Atmel	ATSAMD21G18A-MF	2460544			ATSAMD21G18A-MF; QFN48
X1	7.02	8.13	180	3.2x1.5	32.768	Epson	Q13FC13500004	1278036			Crystal; 32.768kHz; 12.5pF; 3.2 x 1.5mm

Press-In Nuts for Iridium 9603N (press into the TOP of the PCB):

S1	3.81	3.81			Press-In Nut	McMaster-Carr	95117A411			95117A411	Press-In Nut; 2-56
S2	28.81	3.81			Press-In Nut	McMaster-Carr	95117A411			95117A411	Press-In Nut; 2-56

Non-surface mount components:

BAT						Keystone	593 + 594	723988			Battery Contact, PP3 (9V), Snap Contact, Steel, Nickel Plated
ANTENNA					SMA Jack	Johnson	142-0711-821	1019328			SMA End Launch Jack
RADIO					SMA Jack	Johnson	142-0711-821	1019328			SMA End Launch Jack

Iridium 9603N:

9603N						Iridium	9603N				https://www.rock7.com/shop-product-detail?productId=50
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Mounting hardware for Iridium 9603N:

SPACERS_x2										92511A127	1/8" OD x 3/16" Spacers for Iridium Module
SCREWS_x2										92185A079	2-56 x 3/8" Screws for Iridium Module

Cable for Iridium 9603N:

CABLE						Amphenol	A-1PA-132-025B2	2664624			Amphenol AMC cable (u.FL compatible) 50ohm 25mm
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SMA Antenna:

Iridium						Maxtena	M1600HCT-P-SMA				Iridium + GNSS Passive Antenna with SMA connector
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433MHz Antenna:

						LPRS	ANT-SR433	2096221			Antenna, Stub Right Angled SMA, 434MHz
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