

Part	X	Y	Angle	Package	Value	Manufacturer	Manufacturer Part No	Farnell Part No	McMaster Part No	Mouser Part No	Description
Dimensions	63.50	69.85									
Fiducials - for solder paste mask alignment:											
FD1	62.74	0.76	0								Fiducial
FD2	0.76	69.09	0								Fiducial
Surface Mount Components:											
B1	8.21	66.33	180			Seiko Instruments	ML414H-IV01E			628-ML414H-IV01E	Rechargeable Battery - Reflow Compatible
C1	11.43	50.29	0	0603	10nF	Walsin	0603B103K101CT	2496825			MultiLayer Ceramic Capacitor; 10nF; 100V; 0603; X7R
C2	19.30	56.64	270	0603	2.2uF	AVX	06036D225KAT2A	1327678			MultiLayer Ceramic Capacitor; 2.2uF; 6.3V; 0603; X5R
C3	12.07	57.28	270	0603	1.0uF	Walsin	0603X105K100CT	2496916			MultiLayer Ceramic Capacitor; 1uF; 10V; 0603; X5R
C4	21.34	56.64	270	0603	0.22uF	Multicomp	MC0603F224Z160CT	1759019			MultiLayer Ceramic Capacitor; 0.22uF; 16V; 0603
C7	11.43	52.20	0	0603	0.1uF	Murata	GRM188R71H104JA93D	2688523			MultiLayer Ceramic Capacitor; 0.1uF; 50V; 0603; X7R
C8	12.83	20.70	0	0603	4.7uF	AVX	06036D475KAT2A	1833803			MultiLayer Ceramic Capacitor; 4.7uF; 6.3V; 0603; X5R
C9	45.21	47.50	270	0603	10nF	Walsin	0603B103K101CT	2496825			MultiLayer Ceramic Capacitor; 10nF; 100V; 0603; X7R
C10	35.56	51.18	270	0603	1.0uF	Walsin	0603X105K100CT	2496916			MultiLayer Ceramic Capacitor; 1uF; 10V; 0603; X5R
C11	42.67	52.07	90	0603	4.7uF	AVX	06036D475KAT2A	1833803			MultiLayer Ceramic Capacitor; 4.7uF; 6.3V; 0603; X5R
C12	11.81	30.35	90	0603	0.22uF	Multicomp	MC0603F224Z160CT	1759019			MultiLayer Ceramic Capacitor; 0.22uF; 16V; 0603
C13	47.96	45.34	180	0603	0.1uF	Murata	GRM188R71H104JA93D	2688523			MultiLayer Ceramic Capacitor; 0.1uF; 50V; 0603; X7R
C14	42.93	59.56	270	0603	100pF	Walsin	0603B101K500CT	2524815			MultiLayer Ceramic Capacitor; 100pF; 50V; 0603; X7R
C15	49.66	59.56	270	0603	100pF	Walsin	0603B101K500CT	2524815			MultiLayer Ceramic Capacitor; 100pF; 50V; 0603; X7R
C16	46.36	62.87	270	0603	100pF	Walsin	0603B101K500CT	2524815			MultiLayer Ceramic Capacitor; 100pF; 50V; 0603; X7R
C17	10.29	24.00	180	0603	4.7uF	AVX	06036D475KAT2A	1833803			MultiLayer Ceramic Capacitor; 4.7uF; 6.3V; 0603; X5R
C18	27.94	20.83	270	0603	12pF	Walsin	0603N120J500CT	2496884			MultiLayer Ceramic Capacitor; 12pF; 50V; 0603
C19	25.40	20.83	270	0603	12pF	Walsin	0603N120J500CT	2496884			MultiLayer Ceramic Capacitor; 12pF; 50V; 0603
C20	21.13	17.45	90	0603	0.1uF	Murata	GRM188R71H104JA93D	2688523			MultiLayer Ceramic Capacitor; 0.1uF; 50V; 0603; X7R
C21	24.51	40.13	270	0805	22uF	AVX	08056D226MAT2A	1867955			MultiLayer Ceramic Capacitor; 22uF; 6.3V; 0805; X5R
C22	22.78	17.45	270	0603	10uF	AVX	06036D106MAT2A	1833804			MultiLayer Ceramic Capacitor; 10uF; 6.3V; 0603; X5R
C23	41.27	8.38	270	0603	1.0uF	Walsin	0603X105K100CT	2496916			MultiLayer Ceramic Capacitor; 1uF; 10V; 0603; X5R
C24	30.35	35.69	270	0603	22uF	Murata	GRM188R60J226MEA0D	2494232			MultiLayer Ceramic Capacitor; 22uF; 6.3V; 0603; X5R
C25	32.51	35.69	270	0603	22uF	Murata	GRM188R60J226MEA0D	2494232			MultiLayer Ceramic Capacitor; 22uF; 6.3V; 0603; X5R
C26	27.56	36.96	180	0603	22pF	Walsin	0603N220J500CT	2496893			MultiLayer Ceramic Capacitor; 22pF; 50V; 0603; COG/NPO
C27	34.67	35.69	270	0603	1.0uF	Walsin	0603X105K100CT	2496916			MultiLayer Ceramic Capacitor; 1uF; 10V; 0603; X5R
C28	36.83	35.69	270	0603	0.1uF	Murata	GRM188R71H104JA93D	2688523			MultiLayer Ceramic Capacitor; 0.1uF; 50V; 0603; X7R
C29	15.88	16.51	180	0603	1nF	Walsin	0603B102K500CT	2496822			MultiLayer Ceramic Capacitor; 1000pF; 50V; 0603; X7R
C30	15.88	21.46	270	0603	0.1uF	Murata	GRM188R71H104JA93D	2688523			MultiLayer Ceramic Capacitor; 0.1uF; 50V; 0603; X7R
C31	18.03	21.46	270	0603	0.1uF	Murata	GRM188R71H104JA93D	2688523			MultiLayer Ceramic Capacitor; 0.1uF; 50V; 0603; X7R
D1	52.76	18.01	0	0603		Kingbright	KP-1608CGCK	2290328			Green LED 0603
D2	52.76	20.55	0	0603		Kingbright	KP-1608SYCK	2290330			Yellow LED 0603
D3	52.76	23.09	0	0603		Kingbright	KPT-1608SURCK	2099224			Red LED 0603
D4	52.76	15.47	0	0603		Kingbright	KP-1608PBC-A	8529809			Blue LED 0603
D5	8.51	55.50	270	SOD-323		Nexperia	PMEG4005EJ	1757776			Schottky Rectifier 40V 500mA
D6	52.76	12.93	0	0603		Rohm	SMLE13WBC8W1	2762565			White LED 0603
D7	15.37	44.70	180	0603		Kingbright	KP-1608CGCK	2290328			Green LED 0603
D8	11.43	35.56	180	SOD-323		Infineon	BAT60AE6327HTSA1	2432679			Schottky Diode 10V 3A 370mV
D9	10.29	15.24	0	0603		Kingbright	KP-1608SYCK	2290330			Yellow LED 0603
D10	11.43	40.64	180	SOD-323		Infineon	BAT60AE6327HTSA1	2432679			Schottky Diode 10V 3A 370mV
D11	54.61	52.71	270	SOD-323		Infineon	BAT60AE6327HTSA1	2432679			Schottky Diode 10V 3A 370mV
D12	15.24	66.67	180	SOD-323		Infineon	BAT60AE6327HTSA1	2432679			Schottky Diode 10V 3A 370mV
D13	15.37	46.74	180	0603		Kingbright	KP-1608SYCK	2290330			Yellow LED 0603
D14	11.43	38.10	180	SOD-323		Infineon	BAT60AE6327HTSA1	2432679			Schottky Diode 10V 3A 370mV
J1	29.05	53.79	0		SS4-10-3.50	Samtec	SS4-10-3.50-L-D-K-TR	2085336			Samtec SS4-10-3.50-L-D-K-TR
J2	3.88	43.82	270			Valcon	CSP-USC16-TR				USB-C 16-way (Toby Electronics)
J3	58.92	10.16	270		S2B-PH-SM4-TB	JST	S2B-PH-SM4-TB			474-PRT-08612	2-way 2mm connector SparkFun PRT-08612
J5	4.58	10.16	90		S2B-PH-SM4-TB	JST	S2B-PH-SM4-TB			474-PRT-08612	2-way 2mm connector SparkFun PRT-08612
J6	42.93	56.13	90	uFL		Hirose	U.FL-R-SMT(01)	3908021			HIROSE U.FL-R-SMT(01); U.FL Coaxial; Straight Jack; 50 ohm
QWIIIC	39.37	3.24	0	SM04B-SRSS-TB		JST	SM04B-SRSS-TB	1830839			4-way 1mm Qwiic connector SparkFun PRT-14417
L1	45.32	51.44	0	0806		Murata	DFE201610E-2R2M-P2			81-DFE201610E-2R2MP2	Fixed Inductor 0806 2.2uH
L2	33.15	40.13	0	4mm x 4mm		Vishay	IFSC1515AHER2R2M01			70-IFSC1515AHER2R2M0	Fixed Inductor 2.2uH
Q1	35.43	54.86	0	SOT23	DMG3414U-7	Diodes Inc.	DMG3414U-7	2061404			MOSFET; N Channel; SOT23-WIDE
Q2	51.94	45.39	90	SOT23	DMG3415U-7	Diodes Inc.	DMG3415U-7	1843688			MOSFET; P Channel; SOT23-WIDE
Q3	50.29	38.23	90	SOT23	DMG3415U-7	Diodes Inc.	DMG3415U-7	1843688			MOSFET; P Channel; SOT23-WIDE
Q4	51.31	34.29	0	SOT23	2N2222	Fairchild	MMBT2222A	9846700			Bipolar (BJT) Single Transistor, NPN, 40 V, 350 mW, 1 A
R1	47.68	18.01	180	0603	1k	Multicomp	MCWR06X1001FTL	2447272			Chip Resistor; Thick Film; 1k; 50V; 0603; 100mW
R2	18.80	46.74	0	0603	1k	Multicomp	MCWR06X1001FTL	2447272			Chip Resistor; Thick Film; 1k; 50V; 0603; 100mW
R3	18.80	44.70	0	0603	1k	Multicomp	MCWR06X1001FTL	2447272			Chip Resistor; Thick Film; 1k; 50V; 0603; 100mW
R4	8.38	40.13	90	0603	5.1k	Multicomp	MCWR06X5101FTL	2447404			Chip Resistor; Thick Film; 5.1k; 75V; 0603; 100mW
R5	18.47	50.95	180	0603	10k	Multicomp	MCWR06X1002FTL	2447230			Chip Resistor; Thick Film; 10k; 50V; 0603; 100mW
R6	13.34	62.23	270	0603	12k	Multicomp	MCWR06X1202FTL	2447243			Chip Resistor; Thick Film; 12k; 50V; 0603; 100mW
R7	17.14	62.23	90	0603	30.1k	Multicomp	MCWR06X3012FTL	2447334			Chip Resistor; Thick Film; 30.1k; 50V; 0603; 100mW
R8	18.47	53.39	0	0603	100k	Multicomp	MCWR06X1003FTL	2447226			Chip Resistor; Thick Film; 100k; 50V; 0603; 100mW
R9	38.61	55.75	90	0603	0.012 Ohm	Yageo	RL0603FR-070R012L			603-RL0603FR070R012L	Current Sense Resistor; 12 mOhms; 0603; 100mW
R10	41.02	45.85	0	0603	100R	Multicomp	MCWR06X1000FTL	2447227			Chip Resistor; Thick Film; 100R; 50V; 0603; 100mW
R11	42.55	48.39	0	0603	100R	Multicomp	MCWR06X1000FTL	2447227			Chip Resistor; Thick Film; 100R; 50V; 0603; 100mW
R12	47.68	20.55	180	0603	1k	Multicomp	MCWR06X1001FTL	2447272			Chip Resistor; Thick Film; 1k; 50V; 0603; 100mW
R13	47.68	23.09	180	0603	2.2k	Multicomp	MCWR06X2201FTL	2447320			Chip Resistor; Thick Film; 2.2k; 50V; 0603; 100mW
R14	38.23	48.39	180	0603	10k	Multicomp	MCWR06X1002FTL	2447230			Chip Resistor; Thick Film; 10k; 50V; 0603; 100mW
R15	8.51	59.82	270	0603	62k	Multicomp	MCWR06X6202FTL	2447414			Chip Resistor; Thick Film; 62k; 75V; 0603; 100mW
R16	47.68	15.47	180	0603	1k	Multicomp	MCWR06X1001FTL	2447272			Chip Resistor; Thick Film; 1k; 50V; 0603; 100mW
R17	53.75	42.29	0	0603	10k	Multicomp	MCWR06X1002FTL	2447230			Chip Resistor; Thick Film; 10k; 50V; 0603; 100mW
R18	27.56	34.80	0	0603	453k	Multicomp	MCWR06X4533FTL	2694875			Chip Resistor; Thick Film; 453k; 75V; 0603; 100mW
R19	24.64	35.69	270	0603	100k	Multicomp	MCWR06X1003FTL	2447226			Chip Resistor; Thick Film; 100k; 50V; 0603; 100mW
R20	8.38	47.50	270	0603	5.1k	Multicomp	MCWR06X5101FTL	2447404			Chip Resistor; Thick Film; 5.1k; 75V; 0603; 100mW
R21	47.68	12.93	180	0603	1k	Multicomp	MCWR06X1001FTL	2447272			Chip Resistor; Thick Film; 1k; 50V; 0603; 100mW
R22	53.21	38.23	90	0603	10k	Multicomp	MCWR06X1002FTL	2447230			Chip Resistor; Thick Film; 10k; 50V; 0603; 100mW
R23	47.50	32.89	270	0603	10k	Multicomp	MCWR06X1002FTL	2447230			Chip Resistor; Thick Film; 10k; 50V; 0603; 100mW
R24	47.50	37.34	270	0603	20k	Multicomp	MCWR06X2002FTL	2447293			Chip Resistor; Thick Film; 20k; 75V; 0603; 100mW
R25	50.42	29.85	0	0603	1k	Multicomp	MCWR06X1001FTL	2447272			Chip Resistor; Thick Film; 1k; 50V; 0603; 100mW
R26	20.19	21.46	90	0603	100k	Multicomp	MCWR06X1003FTL	2447226			Chip Resistor; Thick Film; 100k; 50V; 0603; 100mW
R27	15.88	18.29	0	0603	220k	Multicomp	MCWR06X2203FTL	2447297			Chip Resistor; Thick Film; 220k; 75V; 0603; 100mW
R28	7.62	20.70	90	0603	2k	Multicomp	MCWR06X2001FTL	2447319			Chip Resistor; Thick Film; 2k; 75V; 0603; 100mW
R29	10.29	17.40	0	0603	1k	Multicomp	MCWR06X1001FTL	2447272			Chip Resistor; Thick Film; 1k; 50V; 0603; 100mW
R30	52.32	29.85	90	0603	10k	Multicomp	MCWR06X1002FTL	2447230			Chip Resistor; Thick Film; 10k; 50V; 0603; 100mW
S1	16.51	11.30	90			C&K	PT5526-SK15-SMTR2-LF5			611-PT5526SK15SMR2L	Tactile switch 5.2mm x 5.2mm
U1	11.43	45.72	90	MSOP-10		WCH	CH340E_MSOP10				USB to Serial converter
U2	15.24	56.52	0	DFN-10	LTC3225EDDB	Linear Technology	LTC3225EDDB#TRMPBF	1715231		584-C3225EDDB#TRMPBF	Supercapacitor Charger
U3	38.61	51.18	270	TSOT6	ADMA4210-1	Analog Devices	ADMA4210-1			584-ADM4210-1AUJZ-R7	Hot Swap Controller
U4	50.17	53.73	0		ZOE-M8Q	u-blox	ZOE-M8Q				<a href="https://www.u-blox.com/en/product/zoe-m8-series">https://www.u-blox.com/en/product/zoe-m8-series</a>
U5	46.36	58.93	90	SOT65P220X100-6N	AS179-92LF	Skyworks Solutions	AS179-92LF				

U9	10.29	20.70	0	SOT23-5	MCP73831T-2ACI/OT	Microchip	MCP73831T-2ACI/OT		579-MCP73831T-2ACIOT	Battery Charge Controller
X1	26.67	17.78	0	3.2x1.5	32.768	Epson	Q13FC13500004	1278036		Crystal; 32.768kHz; 12.5pF; 3.2 x 1.5mm
X2	52.32	49.53	0	3.2x1.5	32.768	Epson	Q13FC13500004	1278036		Crystal; 32.768kHz; 12.5pF; 3.2 x 1.5mm
Select on test (may be required for solar power):										
U10	42.16	34.93	90	SOT23-3	MCP111T-240E/TT	Microchip	MCP111T-240E/TT	1627192		Reset Supervisor; SOT23-3; 2.40V; Open Drain; Active Low
Press-In Nuts for Iridium 9603N (press into the BOTTOM of the PCB):										
HOLE1	19.05	28.19			Press-In Nut	McMaster-Carr	95117A411		95117A411	Press-In Nut; 2-56
HOLE2	44.05	28.19			Press-In Nut	McMaster-Carr	95117A411		95117A411	Press-In Nut; 2-56
Non-surface mount components:										
C5 & C6					1F 2.7V	Bussmann	HV0810-2R7105-R	2148482		Supercapacitor; 1F; 2.7V; +30%, -10%; 3.5mm Pitch
SC1 & SC2	See notes below				10F 2.7V	Bussmann	HV1030-2R7106-R	2148486		Supercapacitor; 10F; 2.7V; +30%, -10%; 5.0mm Pitch
J7					SMA Jack	Samtec	SMA-J-P-H-ST-EM1	2856818		SMA End Launch Jack 50 Ohm
BAT1-3						Keystone	82	908721		Keystone 82 AAA battery clips (6 total)
Iridium 9603N:										
9603N						Iridium	9603N			<a href="https://www.rock7.com/shop-product-detail?productId=50">https://www.rock7.com/shop-product-detail?productId=50</a>
Mounting hardware for Iridium 9603N:										
SPACERS_x2									94669A100	4.5mm OD x 6mm Spacers for Iridium Module
SCREWS_x2									92185A081	2-56 x 7/16 Screws for Iridium Module
Cable for Iridium 9603N:										
CABLE						Amphenol	A-1PA-132-025B2	2664624		Amphenol AMC cable (u.FL compatible) 50ohm 25mm
SMA Antenna:										
Iridium + GNSS						Maxtena	M1600HCT-P-SMA	2281621		Iridium + GPS Passive Antenna with SMA connector
Notes:										

SC1 and SC2 are optional - they are only required if you select 60mA charge current. Install them flat against the underside of the PCB, carefully bending the legs first. Glue them in place if required.