

Cranberry Bill of Materials (V1) (BOM)

Part #	Quantity	EAGLE Name	EAGLE Description	Part Type	Part Description	Mounting Type	Part Package	Part Value	Manufacturer	Manufacturer P/N	Distributor	Distributor P/N	Unit Cost	Sub-Cost
25	1	VREG3.3_MAIN; VREG3.3_XBEE	Main Board and XBEE V.Regs	V. Regulator	IC REG LDO 3.3V 0.5A SOT23-5	SMD	SOT23-5	3.3V	Microchip Tech.	MIC5219-3.3YM5-TR	Digi-Key	576-1281-1-ND	\$ 0.89	\$ 1.78
50	2	C5	ATMEGA RESET Cap	Capacitor	CAP CER 10000PF 50V X7R 0805	SMD	0805	10nF	Yageo	CC0805KRX7R9BB103	Digi-Key	311-1136-1-ND	\$ 0.10	\$ 0.10
X	3	C3	IC Switch Decoupling Cap	Capacitor	CAP CER 1UF 10V X7R 0805	SMD	0805	1uF	Yageo	CC0805KX7R6BB105	Digi-Key	311-1458-1-ND	\$ 0.10	\$ 0.10
X	4	C4, C6	V. Reg Decoupling Caps	Capacitor	CAP CER 470PF 100V X7R 0805	SMD	0805	470pF	Samsung Electro-Mech.	CL21B471KCANNNC	Digi-Key	1276-2516-1-ND	\$ 0.12	\$ 0.24
25	5	C2, C12	V.Reg Polarized Decoupling Caps	Capacitor	CAP TANT 2.2UF 6.3V 20% 0805	SMD	0805	2.2uF	Rohm Semiconductor	TCPOJ225MSR	Digi-Key	511-1439-6-ND	\$ 0.69	\$ 1.38
X	6	C1	ATMEGA Decoupling Cap	Capacitor	CAP CER 0.1UF 50V Y5V 0805	SMD	0805	100nF	Yageo	CC0805ZR5Y5V9BB104	Digi-Key	311-1361-1-ND	\$ 0.10	\$ 0.10
X	7	C7, C8	Crystal Oscillator Decoupling Caps	Capacitor	CAP CER 18PF 50V NP0 0805	SMD	0805	18pF	Johanson Dielectrics	500R15N180V4T	Digi-Key	709-1171-1-ND	\$ 0.10	\$ 0.20
15	8	C10	Solar Charger Decoupling Cap	Capacitor	CAP ALUM 4700UF 20% 10V RADIAL	PTH	0.197" (5.00mm)	4700uF	Panasonic Electro-Comp.	ECA-1AM472	Digi-Key	P5130-ND	\$ 0.90	\$ 0.90
50	9	C11	Solar Charger Decoupling Cap	Capacitor	CAP CER 10UF 20V X6S 0805	SMD	0805	10uF	Murata Electronics NA	GRM21BC81D106KE51L	Digi-Key	490-10500-6-ND	\$ 0.24	\$ 0.24
X	10	C1	ATMEGA Decoupling Cap	Capacitor	CAP CER 0.1UF 50V Y5V 0805	SMD	0805	0.1uF	Yageo	CC0805ZR5Y5V9BB104	Digi-Key	311-1361-1-ND	\$ 0.10	\$ 0.10
X	11	C9	Humidity Sensor Decoupling Cap	Capacitor	CAP CER 0.1UF 50V Y5V 0805	SMD	0805	0.1uF					\$ 0.10	\$ 0.10
12	2	C14, C15	Pressure Sensor Decoupling Cap	Capacitor	CAP CER 0.1UF 50V Y5V 0805	SMD	0805	0.1uF					\$ 0.10	\$ 0.20
13	1	C16	Solar Irradiance Decoupling Cap	Capacitor	CAP CER 0.1UF 50V Y5V 0805	SMD	0805	0.1uF					\$ 0.10	\$ 0.10
X	14	C13	Humidity Sensor Decoupling Cap	Capacitor	CAP CER 0.22UF 50V X7R 0805	SMD	0805	0.22uF	Yemet	C0805C224K5RACTU	Digi-Key	399-3491-1-ND	\$ 0.14	\$ 0.14
15	1	TPS27081A	Sensor IC Switch Switch	IC Chip	IC LOAD SW HIGH SIDE 6SOT	SMD	TSOT-23-6		Texas Instruments	TPS27081ADDCR	Digi-Key	296-34970-1-ND	\$ 0.41	\$ 0.41
X	16	IC1	Solar Panel / Battery Charging Chip	IC Chip	IC USB/AC BATT CHRGR W/PPM 20QFN	SMD	20-VQFN		Microchip Tech.	MCP73871-2CAIAML	Digi-Key	MCP73871-2CAIAML-ND	\$ 1.79	\$ 1.79
X	17	ADSI115_ADC	Solar Irradiance ADC	IC Chip	IC ADC 16-BIT I2C PROGBL 10-MSOP	SMD	10-VSSOP		Texas Instruments	ADS1151DGST	Digi-Key	296-24934-1-ND	\$ 6.51	\$ 6.51
X	18	MIC7300_OPAMP	Solar Irradiance Op-Amp	IC Chip	IC OPAMP GP 370KHZ RRO SOT23-5	SMD	SOT23-5		Microchip Tech.	MIC7300YM5-TR	Digi-Key	576-1319-1-ND	\$ 0.28	\$ 0.28
X	19	BAROMETER	Barometer / Pressure Sensor	IC Sensor	IC BAROMETER I2C DGLT MINI 8-LGA	SMD	8-TLGA		Freescal Semiconductor	MPL115A2T1	Digi-Key	MPL115A2T1CT-ND	\$ 5.10	\$ 5.10
X	20	HUMIDITY	Humidity Sensor (Old)	IC Sensor	SENSOR HUMIDITY SPI 4.5% SMD	SMD	SOIC-8		Honeywell Sensing	HHH6031-000-001	Digi-Key	HHH6031-000-001TR-ND	\$ -	\$ -
X	21	HUMIDITY	Humidity Sensor (New)	IC Sensor	SENSOR HUMIDITY/TEMP I2C 4% SMD	SMD	SOIC-8		Honeywell Sensing	HHH6131-021-001	Digi-Key	480-3652-1-ND	\$ 15.13	\$ 15.13
X	22	IRRADIANCE_110	Solar Irradiance (Old)	IC Sensor	SELF-POWERED PYRANOMETER	3-Pin Wire	3-Pin Wire		Apogee Instruments	SP-110	Apogee	SP-110	\$ 195.00	\$ 195.00
X	23	IRRADIANCE_215	Solar Irradiance (New)	IC Sensor	SELF-POWERED PYRANOMETER	3-Pin Wire	3-Pin Wire		Apogee Instruments	SP-215	Apogee	SP-215	\$ 235.00	\$ -
X	24	Q2	Crystal Oscillator	Crystal	Crystal 8.00MHz 10ppm 18pF 80 Ohm Through Hole HC49/US	PTH	HC49/US	8.00MHz	TXC Corp.	9B-8.000MEEJ-B	Digi-Key	887-1233-ND	\$ 0.48	\$ 0.48
X	25	U2	ATMEGA MCU	MCU	IC MCU 8BIT 32KB FLASH 32QFN	SMD	32-VQFN		Atmel	ATMEGA328P-MU	Digi-Key	ATMEGA328P-MU-ND	\$ 3.58	\$ 3.58
X	26	R1, R4	Solar Irradiance Op-Amp Feedback	Resistor	RES SMD 4.7K OHM 5% 1/8W 0805	SMD	0805	4.7k	Stackpole Electronics Inc.	RMCF0805JT4K70	Digi-Key	RMCF0805JT4K70CT-ND	\$ 0.10	\$ 0.20
X	27	R2, R3	Humidity Pull-Up	Resistor	RES SMD 4.7K OHM 5% 1/8W 0805	SMD	0805	4.7k					\$ 0.10	\$ 0.20
X	28	R5, R12	MCU Pull-Up; Solar Charger Resistor	Resistor	RES SMD 10K OHM 5% 1/8W 0805	SMD	0805	10k	Stackpole Electronics Inc.	RMCF0805JT10K0	Digi-Key	RMCF0805JT10K0CT-ND	\$ 0.10	\$ 0.20
X	29	R6	Solar Charger Resistor	Resistor	RES SMD 270K OHM 5% 1/8W 0805	SMD	0805	270k	Panasonic Electro-Comp.	ERJ-6GEYJ274V	Digi-Key	P270KACT-ND	\$ 0.10	\$ 0.10
X	30	R8, R10	Solar Charger Resistors	Resistor	RES SMD 100K OHM 5% 1/8W 0805	SMD	0805	100k	Panasonic Electro-Comp.	ERJ-6GEYJ104V	Digi-Key	P100KACT-ND	\$ 0.10	\$ 0.20
X	31	R9	Solar Charger Resistor	Resistor	RES SMD 2K OHM 5% 1/8W 0805	SMD	0805	2k	Panasonic Electro-Comp.	ERJ-6GEYJ202V	Digi-Key	P20KACT-ND	\$ 0.10	\$ 0.10
X	32	R11	Solar Charger Resistor	Resistor	RES SMD 1K OHM 5% 1/8W 0805	SMD	0805	1k	Panasonic Electro-Comp.	ERJ-6GEYJ102V	Digi-Key	P10KACT-ND	\$ 0.10	\$ 0.10
X	33	R13	Solar Charger Resistor	Resistor	RES SMD 150K OHM 5% 1/8W 0805	SMD	0805	150k	Panasonic Electro-Comp.	ERJ-6GEYJ154V	Digi-Key	P150KACT-ND	\$ 0.10	\$ 0.10
34	1	PANEL	Solar Panel 6V 5.6W	Solar Panel	HUGE 6V 5.6W SOLAR PANEL	DC JACK	3.8mm OD		Adafruit	1525	Adafruit	1525	\$ 59.00	\$ 59.00
20	35	D1	Solar Charger Zener Diode	Diode	DIODE SCHOTTKY 20V 500MA SOD123	SMD	SOD-123		ON Semiconductor	MBR0520LT3G	Digi-Key	MBR0520LT3GOSCT-ND	\$ 0.33	\$ 0.33
X	36	BATT	Li-Po Battery JST Cable Connector	Connector	CONN HEADER PH SIDE 2POS 2MM SMD	SMD	0.079" (2.00mm)	2-Pin	JST Sales America Inc.	S2B-PH-SM4-TB(LF)(SN)	Digi-Key	455-1749-1-ND	\$ 0.56	\$ 0.56
X	37	SOLAR_SENS	Solar Irradiance Cable Connector	Connector	CONN HEADER PH SIDE 2POS 2MM SMD	SMD	0.079" (2.00mm)	2-Pin					\$ 0.56	\$ 0.56
X	38	SOLAR_PANEL	Solar Panel Barrel Jack Connector	Connector	CONN POWER JACK 1.3X3.8MM HI CUR	SMD	1.35mm Plug	4-Pin	CUI Inc.	PJ-014DH-SMT-TR	Digi-Key	CP-014DHPJCT-ND	\$ 1.34	\$ 1.34
10	39	BUS1, BUS4	Sensor Board Bus Header	Header	Connector Header 8 Position 0.100" (2.54mm) Gold Through Hole	PTH	0.100" (2.54mm)	8-Pin	Sullins Connector Solutions	PPPC081LFBN-RC	Digi-Key	S7041-ND	\$ 0.89	\$ 0.89
10	40	BUS2, BUS3	Sensor Board Bus Header	Header	Connector Header 9 Position 0.100" (2.54mm) Gold Through Hole	PTH	0.100" (2.54mm)	9-Pin	Sullins Connector Solutions	PPPC091LFBN-RC	Digi-Key	S7042-ND	\$ 0.83	\$ 0.83
25	41	JP2; XBEEOUT	XBEE RSSI/ON/EN Pin Headers	Header	Connector Header 2 Position 0.100" (2.54mm) Gold Through Hole	PTH	0.100" (2.54mm)	2-Pin	Sullins Connector Solutions	PPPC021LFBN-RC	Digi-Key	S7035-ND	\$ 0.50	\$ 1.00
X	42	XBEE	Main ON/OFF Switch Header	Header	Connector Header 10 Position 0.079" (2.00mm) Gold Surface Mount	SMD	0.079" (2.00mm)	10-Pin	Sullins Connector Solutions	NPPN101BFLC-RC	Digi-Key	S5901-10-ND	\$ 1.48	\$ 2.96
													Total	\$ 302.63