



**DEFCON 15 Circuit Board Badge**  
**Bill-of-Materials**

Item	Quantity	Reference	Manufacturer	Manuf. Part #	Distributor	Distrib. Part #	Description
1	2	BT1,BT2	Keystone	3002	FAI	3002	Battery holder, 20mm coin cell, SMD
1a	2	N/A	Renata Batteries	CR2032	FAI	CR2032	CR2032 Lithium 3V Coin Cell Battery (225mAh)
2	2	C1,C2	TDK	C1608X7R1H471K	Digi-Key	445-1307-2-ND	470pF ceramic capacitor, 10%, X7R (PPS OK), 50V, 0603
3	8	C3,C4,C5,C6,C7,C8,C9,C10	AVX	0603YC104JAT2A	FAI	0603YC104JAT2A	0.1uF bypass capacitor, 16V, X7R, 0603
4	4	C28,C29,C30,C31	Murata	GRM31MR71H105KA88L	FAI	GRM31MR71H105KA88L	1uF ceramic capacitor, 50V, X7R, 1206
5	95	D1-D95	Avago	HSMH-C192	FAI	HSMH-C192	Red LED, 0603, 1.8Vf, 17mcd @ 20mA
6	5	R1,R2,R3,R4,R5	Rohm	MCR03EZHZ101	FAI	MCR03EZHZ101	100 ohm, 5%, 1/10W, 0603
7	3	R6,R7,R8	Dale	CRCW060310K0JNEA	FAI	CRCW060310K0JNEA	10k, 5%, 1/10W, 0603
8	2	U1,U2	Quantum Research	QT100-ISG	Saelig	QT100-ISG	Charge-Transfer QTouch Sensor, SOT23-6
9	1	U3	Freescall	MC9S08QG8CFFE	Arrow	MC9S08QG8CFFE	Microcontroller, QFN16
9a	1	N/A	N/A	N/A	Arrow	N/A	Microcontroller programming service
10	3	U4,U5,U6	Fairchild	MM74HC595MTCX	FAI	MM74HC595MTCX	Logic, 8-bit Shift Register, TSSOP16
11	2	U10,U11	Sipex	SP6201EM5-L-2-5	FAI	SP6201EM5-L-2-5	Linear Regulator LDO, 2.5V fixed output, SOT23-5
12	1	PCB	e-Teknet	DC15 1.0	N/A	N/A	PCB (includes assembly and testing)

**DO NOT POPULATE**

**802.15.4 Wireless Components**

Item	Quantity	Reference	Manufacturer	Manuf. Part #	Distributor	Distrib. Part #	Description
1	4	C11,C12,C14,C15	AVX	0603YC103JAT2A	FAI	0603YC103JAT2A	0.01uF, 16V, X7R, 0603
2	1	C13	AVX	0603YC104JAT2A	FAI	0603YC104JAT2A	0.1uF bypass capacitor, 16V, X7R, 0603
3	2	C16,C17	Murata	GRM1885C1H6R8DZ01D	NewarkInOne	38K1691	6.8pF, 50V, 0603
4	2	D96,D97	Kingbright	KP-1608SEC	NewarkInOne	38K3373	Orange LED, 0603, 2.0Vf, 200mcd @ 30mA
5	2	R9,R10	Any	Any	FAI	CRCW0603-102JRT1	1.0k, 5%, 1/10W, 0603
6	2	L1,L2	Murata	LQW18AN22NG00D	Mouser	81-LQW18AN22NG00D	Inductor, 22nH, 500mA, 0.17 ohm 0603
7	1	L3	Murata	LQW18AN5N6D00D	Mouser	81-LQW18AN5N6D00D	Inductor, 5.6nH, 750mA, 0.082 ohm 0603
8	1	L4	Murata	LQW18AN4N7D00D	Mouser	81-LQW18AN4N7D00D	Inductor, 4.7nH, 850mA, 0.059 ohm 0603
9	1	U7	Freescall	MC13191FC	Digikey	MC13191FC-ND	RF Transceiver, 802.15.4/ZigBee, 2.4GHz, QFN32
10	1	Y1	NDK	NX2520SA-16MHz	Digikey	644-1059-1-ND	16MHz Crystal Oscillator, 10pF, SMD

**3-Axis Accelerometer Components**

Item	Quantity	Reference	Manufacturer	Manuf. Part #	Distributor	Distrib. Part #	Description
1	4	C18,C19,C20,C26	AVX	0603YC104JAT2A	FAI	0603YC104JAT2A	0.1uF bypass capacitor, 16V, X7R, 0603
2	1	C27	Sprague	594D477X9004C2T	FAI	594D477X9004C2T	470uF, 4V, tantalum, size D
3	3	R11,R12,R13	NIC	NRC06J103TRF	FAI	CRCW0603-103JRT1	10k, 5%, 1/10W, 0603
4	1	U8	Freescall	MMA7260QT	FAI	MMA7260QT	Accelerometer, 3-axis, adjustable g (1.5/2/4/6), QFN16

**PC Serial Port Interface (No Footprints on PCB)**

Item	Quantity	Reference	Manufacturer	Manuf. Part #	Distributor	Distrib. Part #	Description
1	5	C21,C22,C23,C24,C25	AVX	0603YC104JAT2A	FAI	0603YC104JAT2A	0.1uF bypass capacitor, 16V, X7R, 0603
2	1	P1	Norcomp	182-009-213R531	Digikey	182-09FE-ND	Connector, DB9 Female, R/A, PCB Mount
3	1	U9	Maxim	MAX3316ECAE	N/A	N/A	RS232 Transceiver, 2.5V, SSOP16