

**BoM, for kit building assembly**

ref	value	Position X	Position Y	Orientation	Layer	Vendor	Vendor P/N	NOTE1
BT1	BATT_RTC	6.3400	1.8550	0	Front	<a href="#">DigiKey</a>	3003K-ND	
*	3V CR2032 Battery					<a href="#">DigiKey</a>	P189-ND	
C1,C2,C8	100u	1.7975	9.0375	180	Front	<a href="#">DigiKey</a>	P833-ND	
C3,C4,C5,C6,C7,C9,C10	100n	3.6450	9.1600	180	Front	<a href="#">DigiKey</a>	399-5863-ND	
D1 to D128	LED	1.2000	3.0500	90	Front	<a href="#">DigiKey</a>	C535A-WJN-CU0V0231-ND	
D258	DBG	3.5400	9.8000	180	Front	<a href="#">DigiKey</a>	1080-1134-ND	
D260	PWR	4.2300	1.8100	90	Front	<a href="#">DigiKey</a>	1080-1134-ND	
J1	V_IN	7.1900	9.4800	180	Front	<a href="#">DigiKey</a>	H2960CT-ND	
K1	PWR	2.3000	9.7000	180	Front	<a href="#">DigiKey</a>	SAM1031-50-ND	
*						<a href="#">DigiKey</a>	S9341-ND	
K2	LED_ENABLE	2.3000	9.5000	180	Front	<a href="#">DigiKey</a>	SAM1031-50-ND	
*						<a href="#">DigiKey</a>	S9341-ND	
K4	SCL	7.1200	2.0100	0	Front	<a href="#">DigiKey</a>	SAM1031-50-ND	
*						<a href="#">DigiKey</a>	S9341-ND	
K5	SDA	7.1200	1.8600	0	Front	<a href="#">DigiKey</a>	SAM1031-50-ND	
*						<a href="#">DigiKey</a>	S9341-ND	
P7	FTDI	1.7500	9.5000	0	Front	<a href="#">DigiKey</a>	SAM1031-50-ND	
Q1 to Q17	2N5401	6.8350	8.5000	90	Front	<a href="#">DigiKey</a>	2N5401GOS-ND	
R1 to R16	100	6.7600	8.7000	0	Front	<a href="#">DigiKey</a>	CF18JT100RCT-ND	
R17,R18,R19,R22,R23,R31,R36,R37,R38	10k	1.8725	1.4225	270	Front	<a href="#">DigiKey</a>	CF18JT10K0CT-ND	
R20,R21	4k7	4.0500	9.7500	180	Front	<a href="#">DigiKey</a>	CF18JT4K70CT-ND	
R24,R25,R26	1k	3.2000	2.2625	180	Front	<a href="#">DigiKey</a>	CF18JT1K00CT-ND	
R30	100E	3.2000	2.3525	180	Front	<a href="#">DigiKey</a>	CF18JT100RCT-ND	
R32	LDR SOCKET	5.1000	1.2200	0	Front	<a href="#">DigiKey</a>	A32932-ND	
--	LDR					<a href="#">DigiKey</a>	PDV-P9007-ND	
R33,R35	680E	3.2000	2.4450	180	Front	<a href="#">DigiKey</a>	CF18JT680RCT-ND	
R34	2k	4.5000	1.5100	90	Front	<a href="#">DigiKey</a>	3352T-202LF-ND	
SP1	SPEAKER	3.6000	1.9500	90	Front	<a href="#">DigiKey</a>	102-1169-ND	
SW12,SW22,SW32,SW52	INC	3.3000	1.4000	270	Back	<a href="#">DigiKey</a>	450-1644-ND	
SW42	RST	1.5000	1.4000	270	Back	<a href="#">DigiKey</a>	450-1649-ND	
U1	STP8DP05	1.9850	2.1750	0	Front	<a href="#">DigiKey</a>	497-6271-5-ND	
*	Socket STP8DP05					<a href="#">DigiKey</a>	A100206-ND	
U2	7805	6.1025	9.5200	0	Front	--	--	
U3	ATMEGA8-P	3.4900	9.4500	180	Front	<a href="#">DigiKey</a>	ATMEGA328-PU-ND	
*	IC ATMEGA8-P					<a href="#">DigiKey</a>	A100210-ND	
U4	74HC154	5.1200	9.3400	180	Front	<a href="#">DigiKey</a>	568-1407-5-ND	
*	IC 74HC154					<a href="#">DigiKey</a>	3M5479-ND	

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U6	DS3231N	6.3375	1.8525	90	Back	<a href="#">DigiKey</a>	DS3231S#-ND	
X1	16MHz	3.2400	9.1600	180	Front	<a href="#">DigiKey</a>	X908-ND	

**NOT USED COMPONENTS**

C11,C12	22p	3.4425	9.1100	90	Front	<a href="#">DigiKey</a>	BC1034CT-ND	Optional
CD1,CD2,CD3	CDOT1	6.3375	1.4675	180	Front	<a href="#">DigiKey</a>	3M9515-ND	Optional
DIL-U1	STP16DP05	2.1850	2.1750	0	Front	<a href="#">DigiKey</a>	3M5479-ND	Optional
J2	V_IN	6.6750	9.4800	180	Front	<a href="#">DigiKey</a>	ED2982-ND	Optional
J3	V_IN	6.4875	9.8050	180	Front	<a href="#">DigiKey</a>	CP-002B-ND	Optional
K3	7Seg_Sel	5.2275	9.2775	90	Back	--	--	Optional
P1	7SegDisp	5.1850	1.7750	0	Front	<a href="#">Sparkfun</a>	COM-09766	Optional
P13	ISP	2.6500	9.8000	90	Front	<a href="#">DigiKey</a>	SAM1095-36-ND	Optional
P41	STACK-L	1.4000	9.0000	270	Front	<a href="#">DigiKey</a>	SAM1009-50-ND	Optional
P42	STACK-R	7.2600	9.0000	90	Front	<a href="#">DigiKey</a>	SAM1043-50-ND	Optional
P43	CONN_1					--	Break Out Pad, no component	Optional
SW1,SW2,SW3,SW4,SW5	INC	3.3000	1.2725	270	Front	<a href="#">DigiKey</a>	450-1657-ND	Optional
U2	7805	6.1025	9.5200	0	Front	<a href="#">DigiKey</a>	MC7805CTGOS-ND	Optional

**MISC. COMPONENTS**

BF1	BAFFLE
BP1	BackPlate
FM1	FRAME
FP1	FacePlate
P8,P9,P10,P11	CONN_1
P14,P15,P53,P54	CONN_1
P49,P40,P51,P52	CONN_1
rowBoB1	CONN_1
P24 to P39	DIL6
PCB1	PCB

NOTE 2
Battery Socket
LR2032 Coin Battery
Capacitor Voltage Rating >= 16V
Decoupling capacitor
CREE LED 5mm Cool White Clear 110deg
Debug LED, 3mm or 5mm LED, any Color
Power On LED, 3mm or 5mm LED, any Color
USB-Mini Socket
Header, Male, 3 pin, for PWR_SEL
Jumper socket for PWR_SEL K1
Header, Male, 3 pin, for LED_ENABLE
Jumper socket for LED_ENABLE K2
Header, Male, 2 pin, Link for INT, OPEN for EXT
Jumper socket for SCL, K4
Header, Male, 2 pin, Link for INT, OPEN for EXT
Jumper socket for SDL, K5
Header, Male, 6 pin, for FTDI
Transistor, TO-92-3
Resistor, 1/8W, 5%
Resistor, 1/8W, 5%
Resistor, 1/8W, 5%
Resistor, 1/8W, 5%
Resistor, 1/8W, 5%
Socket header, 2 pin, for LDR
LDR, 10k to 100k
Resistor, 1/8W, 5%
Pot, Thumbwheel, Ceramic,
Audio Buzzer
Push button switch, Long Button
Push button switch, Short Button
IC, Row Driver
Socket for IC U1
SHORTING LINK between VI and VO
Micro Controller
Socket for IC U3
IC, Column Driver
Socket for IC U4

NOTE 2
IC, RTC
Resonator, with capacitors, 3 pin

if using crystal instead of resonator
if using I2SD, rtcBoB or ChronoDot, Socket, 4 pin
if using rowBoB, 24 pin IC socket
USB-B, Socket
Barrel socket
Solder Bridge for uC pin selection
7 segment 4 digit display
Header, 3x2 pin
Socket, 4 pin, right angle, for daisy-chaining boards
Header, 4 pin, right angle, for daisy-chaining boards
ATMega Port PC2
Right Angle switch, for Top access
ONLY if V_IN > 5V. ELSE USE SHORTING LINK

Angus Hines
Angus Hines
Ikea or None
Angus Hines
Fixing Screw for Board
Fixing Screw for Baffle
Fixing Screw for rtcBoB
Fixing Screw for rowBoB
Prototyping area
Main Board, seeed