

Bill of Materials
EE445L Fall 2016

October 17, 2016
EE445L pays for the PCB

Total Cost: \$85.41

Qty Note [REF DES Note](#)

Quantity	REF DES	Type	Description
1	J5	ASM	8-ohm speaker
2	C7 C9	CAP	Ceramic, Z5U, -20/+80%, 0.47 uF
4	C4 C6 C10 C11	CAP	Ceramic, Z5U, -20/+80%, 0.1 uF
3	C8 C3 C5	CAP	Ceramic, Z5U, -20/+80%, 0.01 uF
2	C13 C14	CAP	Ceramic C0G, 10%, 10 pF
1	C12	CAP-Tant	Tantalum, 16V, 20% 2.2 uF
2	C1 C2	CAP-Tant	Tantalum, 16V, 10% 4.7 uF
7	GND TP2 TP1 voltage GroundCh	CON	Test point, black
1	J3	CON	Logic Analyzer connector
1	J1	CON	JTAG 1 by 5 male header
1	U1	CPU	TM4C123GH6PM 64-pin LQFP
1	Y1	CRYS	NX5032GA-16.000000
1	D2	DIODE	1N914 diode
1	U2	IC	LM2937 3.3 V regulator TO220, 500mA
1	U5	IC	TPA731 audio amp (pin 1 low) 700mW
1	U6	IC	LM4041CILPR shunt diode reference
1	U4	KEY	3 by 4 common bus (D), keypad
1	J5	LCD	18-bit color 128*160 1.8" TFT LCD display
1	D1	LED	Green 2mA 5mm diffused
1	D3	LED	Red 1.6V 1mA 5mm diffused
1	D4	LED	Yellow 2mA 5mm diffused
1	R3	RES	Carbon 1/6W, 5%, 470
2	R9 R10	RES	Carbon 1/6W, 5%, 1K
7	R4 R6 R7 R5 R8 R2 R11	RES	Carbon 1/6W, 5%, 10K
1	R9	RES	Carbon 1/6W, 5%, 100K

1	R1	RES	Carbon 1/6W, 5%, 1M
1	Reset	SW	B3F tactile push button switch
1	Q1	TRAN	PN2222 NPN transistor
1	J2	BATTERY	Tenergy 3.7V 2600mAh Lithium-Ion 18650 Flat Top
1		BOX	SOD6747-2.0 Kit box 6.74 x 4.77 x 2.18 in. with PC
1	U3	IC	ESP8266
1	U5	Sensor	PIR Motion Sensor (JST)
2	LCD and Keypad	Headers	8-pin connector
1	Motion Sensor?	Headers	3-pin connector

"not free" means you have to buy it

"free sample" means you have to order it

"Cabinet means in one of the six black cabinets in professor's office (bring a print out of your SCH")

"Valvano" means ask Valvano, quantity and style will vary (bring a print out of your SCH circuit)

"Box means in box in your Bard's office (bring a print out of your SCH circuit)

Manufacturer	Mfg. P/N	Distributor	P/N	Unit cost	Cost	Current
		AllElectronics	SK-230	\$0.50	\$0.50	41
Kemet	C320C474M5U5TA	Digikey	399-4309-ND	\$0.40	\$0.80	0
		Digikey	399-4151-ND	\$0.05	\$0.18	0
		Digikey	399-4188-ND	\$0.40	\$1.20	0
Murata 50V 5%	RDE5C1H100J0P1H03B	Digikey	490-8629-ND	\$0.31	\$0.62	0
AVX Corporation	TAP225M016CCS	Mouser	581-TAP225M016CCS	\$0.29	\$0.29	0
		Jameco	94035	\$0.22	\$0.44	0
Keystone Electronics	5001	Digikey	36-5001K-ND	\$0.23	\$1.61	0
FCI	68021-208HLF	Digikey	609-3344-ND	\$0.27	\$0.27	0
				\$0.29	\$0.29	0
TI	TM4C123GH6PMI	Mouser	595-TM4C123GH6PMI	\$11.55	\$11.55	131
NDK	NX5032GA-16.000000	Digikey	644-1037-1-ND	\$0.51	\$0.51	0
Fairchild	1N914	Digikey	1N914B-ND	\$0.05	\$0.05	
TI	LM2937ET-3.3/NOPB	Digikey	LM2937ET-3.3-ND	\$1.17	\$1.17	0
TI	TPA731D	TI	TPA731D	\$1.84	\$1.84	0
TI	LM4041CILPR	TI	LM4041CILPR	\$0.90	\$0.90	0
Grayhill	87YY3212A-506	BGMicro	SWT1109	\$2.99	\$2.99	3
Sitronix	ST7735R	Adafruit	358	\$19.96	\$19.96	90
Avago Technologies	HLMP-4740	Digikey	516-1327-ND	\$0.29	\$0.29	0
Avago Technologies	HLMP-D150	Digikey	516-1323-ND	\$0.29	\$0.29	
Avago Technologies	HLMP-4719	Digikey	516-1326-ND	\$0.29	\$0.29	
Yageo	CFR-12JB-470R	Digikey	470EBK-ND	\$0.02	\$0.02	0
Yageo	CFR-12JB-1K0	Digikey	1.0KEBK-ND	\$0.02	\$0.05	
Yageo	CFR-12JB-10K	Digikey	10KEBK-ND	\$0.02	\$0.17	0
Yageo	CFR-12JB-100K	Digikey	100KEBK-ND	\$0.02	\$0.02	0

Yageo	CFR-12JB-1M0	Digikey	1.0MEBK-ND	\$0.02	\$0.02	0
Omron Electronics	B3F-1052	Digikey	SW405-ND	\$0.17	\$0.17	0
Fairchild Semiconductor	PN2222	Digikey	PN2222BU-ND	\$0.13	\$0.13	
Tenergy		Amazon	MH48285	\$7.40	\$7.40	131
PacTec Enclosures		PacTec Enclosures	SOD6747-2.0	\$14.48	\$14.48	0
		Sparkfun	WRL-13678	\$6.95	\$6.95	70
		Sparkfun	SE-10	\$9.95	\$9.95	3

PCB Artist	Where to get it?	Current	Datasheet
Speaker	Cabinet	41	
Ceramic	Cabinet	0	
Ceramic	Cabinet	0	
Ceramic	Cabinet	0	
Ceramic	Cabinet	0	
tantalum	Cabinet	0	
tantalum	Cabinet	0	
testpoint	Cabinet	0	
LogicAnalyzer	Cabinet	0	
JTAG	Cabinet	0	
TM4C123GH6PM	solder to PCB	131	tm4c123_sheet
XTAL/NX5032	Cabinet	0	crystal_sheet
1N914	Cabinet		
LM2937-3.3	Cabinet	0	regulator_sheet
TPA731	free sample	0	amp_sheet
LM4041	free sample	0	diode_sheet
87YY3212A	Box	http://docs.bgmicro.com/pdf/swt1109.pdf	
ST7735	not free	90	
LEDT1.75	Cabinet	0	
LEDT1.75	Cabinet		
LEDT1.75	Cabinet		
0.125Wresistor	Cabinet	0	
0.125Wresistor	Cabinet		
0.125Wresistor	Cabinet	0	
0.125Wresistor	Cabinet	0	

0.125Wresistor	Cabinet	0
B3F-1050	Cabinet	0
2N2222	Cabinet	
Header	Online	65.5
Box	Online	0
ESP8266	Online	70
		3

be careful to get pins 1 and 3 correct, there are two versions of the chip: 2N2222 and PI

N2222