

Bill Of Materials for Bomb Jack

Design Title Bomb Jack
Author
Document Number
Revision
Design Created 25 October 2018
Design Last Modified 24 October 2019
Total Parts In Design 203

0 Modules

Quantity	References	Value	Stock Code	Unit Cost	Description
Sub-totals:				£0.00	

1 Capacitors

Quantity	References	Value	Stock Code	Unit Cost	Description
1	C5	200p	Maplin WX60Q		220p Ceramic Capacitor
Sub-totals:				£0.00	

22 Resistors

Quantity	References	Value	Stock Code	Unit Cost	Description
16	R1-R16	PULLUP			Digital Primitive Model Of A Pull-Up Resistor
2	R17-R18	PULLDOWN			Digital Primitive Model Of A Pull-Down Resistor
2	R21-R22	220			Generic resistor symbol
1	R104	100			Generic resistor symbol
1	R105	470			Generic resistor symbol
Sub-totals:				£0.00	

6 Integrated Circuits

Quantity	References	Value	Stock Code	Unit Cost	Description
1	U1	74161	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS161AN?qs=sGAEpiMZZMtdY2G%252BSI3N4ULNly7IUD05%2FJSW%252B139gsI%3D		Synchronous 4-Bit Binary Counters
1	U2	OR			Simple 2 Input OR Gate
1	U3	74S139	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS139AN?qs=sGAEpiMZZMtxONTBFicRfpKvrGTByBdi%2FBZhV6RAYCA%3D		Dual 2-Line to 4-Line Decoders/Demultiplexers
1	U4	AND			Simple Two Input AND Gate
1	U5	7404	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS04NE4?qs=sGAEpiMZZMutVWjHE%2FYQw8FcJMyir0Lqzet%252BOgibJRs%3D		Hex Inverters
1	U7	NOT			Simple Digital Inverter
Sub-totals:				£0.00	

0 Transistors

Quantity	References	Value	Stock Code	Unit Cost	Description
Sub-totals:				£0.00	

0 Diodes

<u>Quantity</u>	<u>References</u>	<u>Value</u>	<u>Stock Code</u>	<u>Unit Cost</u>	<u>Description</u>
Sub-totals:				£0.00	
174 Miscellaneous					
<u>Quantity</u>	<u>References</u>	<u>Value</u>	<u>Stock Code</u>	<u>Unit Cost</u>	<u>Description</u>
15	1A,1B,1D,2E,5N7,6D2,6F2,6F6,6H6,6J6,6K6,6M,6T,7F,7H	74157	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS157NE4?qs=sGAEpiMZZMtxONTBFicRfk9GpaUoLd0cMjAQzUGo2Hl%3D	£0.90	Quadruple 1-of-2 Data Selectors/Multiplexers
2	1C,5M8	7427	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS27N?qs=sGA EpiMZZMutXGli8Ay4kP28D9wZ8S QlwsPDjlqEADE%3D	£0.81	Triple 3-Input Positive NOR Gates
2	1S,4N	7410	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS10N?qs=sGA EpiMZZMutXGli8Ay4kBELeCaPbA 6BixFJp4A71TE%3D	£0.87	Triple 3-Input Positive-NAND Gates
5	1T,7A,7C,8C2,8C6	7408	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS08NE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaqkGmOfW4A%252BAFGonK%3D	£0.72	Quadruple 2-Input Positive-AND Gates
5	2A,2B,2C,2D,7N	74175	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS175NE4?qs=sGAEpiMZZMmxP%252Bvr8KwMwF73%2FSEETfIc4u4AUFSUKKQ%3D	£0.90	Quadruple D-Type Positive-Edge-Triggered Flip-Flops With Clear
4	2F,3L6,7B2,7C2	74LS245	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS245NE4?qs=sGAEpiMZZMs9F6aVvY09bhwfQrNqig7qlcn1fgzui%2FY%3D	£0.89	Octal Bus Transceivers With Tristate Outputs
13	2N,2P,2R,4H,5A,5B,5C,5D,5R7,5T,6H,6P6,6R7	74LS86	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS86ANE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaqkGmOhAIPhWJxBPY%3D	£1.02	Quadruple 2-Input Exclusive-OR Gates
1	2R6	7420	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS20N?qs=sGA EpiMZZMtMa9IbYwD6ZOuZLcSXNpUa3nM3MdnqdeQ%3D	£0.77	Dual 4-Input Positive-NAND Gates
3	2S,3M,7R	74S139	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS139AN?qs=sGAEpiMZZMtxONTBFicRfpKvrGTByBdi%2FBZhV6RAyCA%3D	£0.93	Dual 2-Line to 4-Line Decoders/Demultiplexers
2	2T,4R	7404	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS04NE4?qs=sGAEpiMZZMutVWjHE%2FYQw8FcJMyir0Lqzet%252BOgibJRs%3D	£0.72	Hex Inverters
4	3A,3B,3C,3D	74LS258	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS258BN?qs=%2Fha2pyFadugYCoHUAKZ16e6Ix0Tl4e52u5IkASBqGrE%3D	£1.02	Quadruple 2-Line To 1-Line Data Selectors/Multiplexers With Tristate Outputs

9	3E,3F,4A,4B,4C, 4D,6A2,6B2,6C2	2114	https://www.jameco.com/shop/ProductDisplay?catalogId=10001&langId=-1&storeId=10001&productId=38957	£5.00	4K Static RAM (1K x 4bit)
7	3H,5P7,6N2,6N6, 7B,7T,8S	7432	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS32NE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaqkGmO7x4PfQeTHF4%3D	£0.87	Quad 2-input positive-OR gates
1	3M8	74148	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS148N?qs=%2Fha2pyFaduh2M99jnePeauqUp%2FrlBfH7vdDEJ7aGS4Q%3D	£2.46	8-Line To 3-Line Priority Encoders
4	3N,3P,3R,3S	74161	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS161AN?qs=sGAEpiMZZMtdY2G%252BSI3N4ULNly7IUD05%2FJSW%252B139gsI%3D	£0.90	Synchronous 4-Bit Binary Counters
1	3T	7474	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS74ANE4?qs=%2Fha2pyFadusezm8mwWidBAnd8e%2F0Kj57shzdZeHHc%3D		Dual Positive-Edge-Triggered D-Type Flip-Flops With Clear And Preset
2	4E,4F	74126	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS126AN?qs=%2Fha2pyFadugdvCHOFYeUo9JntWnlZ2YoHaFSsm4H%2FRg%3D	£0.90	Quadruple Bus Buffer Gate With Tristate Outputs
7	4L6,5E2,5H,5L6, 6E,6F,6S7	74273	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS273NE4?qs=sGAEpiMZZMtxP%252Bvr8KwMwF73%2FSEETFicw32YC66%252Bjxg%3D	£0.90	Octal D-Type Positive-Edge-Triggered Flip-Flops With Clear
4	4M,5M,7S,8D2	74HC138	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS138NE4?qs=sGAEpiMZZMtxONTBFicRfk9GpaUoLd0ck0Ao35GjMhY%3D	£0.72	3-Line to 8-Line Decoders/Demultiplexers
8	4M6,4S7,5S7,6R, 6S,7A2,7E,8B2	74LS174	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS174N?qs=%2Fha2pyFadugqDRhw3C%2FQ8X6a6hwoxKy6iKJc85BJA4M%3D	£0.90	Hex D-Type Positive-Edge-Triggered Flip-Flops With Clear
4	4P,4S,5P,E7P	7474	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS74ANE4?qs=%2Fha2pyFadusezm8mwWidBAnd8e%2F0Kj57shzdZeHHc%3D	£0.72	Dual Positive-Edge-Triggered D-Type Flip-Flops With Clear And Preset
10	4P7,7J,7L,7M, 8E6,8H6,8K6,8L7, 8N7,8R7	2764	https://www.jameco.com/shop/StoreCatalogDrillDownView?langId=-1&storeId=10001&catalogId=10001&freeText=eprom%202764&search_type=jamecoall	£5.00	64K (8Kx8) EPROM
1	4T	74368	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS368AN?qs=%2Fha2pyFadug6ZOj3cmpD6YwUi6dGmUUQRqKJDT%2FBvsw%3D		Hex Buffers/Line Drivers with Inverting Tristate Outputs

2	5E,5F	74283	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS283NE4?qs=sGAEpiMZZMuV4z%252BhZ4pm1L11UKYaBimF7vh839uxJBE%3D	£1.30	4-Bit Binary Full Adders With Fast Carry
4	5F8,5H8,5J8,5K8	74153	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS153N?qs=%2Fha2pyFaduiKvNoFphi6HIKGeKB98vZDSnL2nsGsGDQ%3D	£0.98	Dual 1-of-4 Data Selectors/Multiplexers
18	5J,5K,5L,6J,6K,6L,7D6,7E6,7F6,7H6,7J6,7K6,7L7,7M7,7N7,7P7,7R7,7S7	74194	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS194AN?qs=%2Fha2pyFadujYU8BF2jKu2xc2zIYRxRNCxtAdpWgTaU4%3D	£1.25	4-Bit Bidirectional Universal Shift Registers
2	5R,5S	7485	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS85N?qs=%2Fha2pyFadujWUs9azztjOlPLCPvFTfOzqJRbtmiwunU%3D	£1.87	4-Bit Magnitude Comparator
4	6A,6B,6C,6D	74163	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS163AN?qs=sGAEpiMZZMtdY2G%252BSI3N4aQvQNXOTGN6zp2qU1pEml%3D	£0.90	Synchronous 4-Bit Binary Counters
1	6LM6	6116	https://www.jameco.com/z/6116P-70-Major-Brands-IC-6116P-70-Static-RAM-2Kx8-DIP-24-pin-70-ns_242675.html	£7.08	16K (2Kx8) Static RAM
1	7D	74LS21	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS21NE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaQkGmOS8GB5LKZP7E%3D	£0.62	Dual 4-Input Positive-AND Gates
2	BTN1-BTN2	BUTTON			SPST Push Button
1	E6P	7402	https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS02NE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaQkGmOw9uqInhsB60%3D	£0.72	Quadruple 2-Input Positive-NOR Gates
1	EXPANSIONBUS	CONN-DIL34	https://www.mouser.sg/ProductDetail/TE-Connectivity/1658525-2?qs=sGAEpiMZZMs%252BGHln7q6pm4Fqf7MuBHLT6rOqfDeotQQ%3D	£8.89	0.1in pitch DIL connector strip
1	EXPANSIONBUS2	CONN-SIL2	https://www.mouser.sg/ProductDetail/Harwin/M20-8900805?qs=%2Fha2pyFadujRVQMSBz%252BYoUCy7UbNMVFTNss7gWmWe0o%3D		0.1in pitch SIL connector strip
1	J1	CONN-DIL8	https://www.mouser.sg/ProductDetail/Mill-Max/803-47-008-10-001000?qs=sGAEpiMZZVMX3nhDDO4AEvDUxDP%2FxEU0g06CSv%2FFqg%3D	£2.53	0.1in pitch DIL connector strip
1	JP1	JUMPER	https://www.mouser.sg/ProductDetail/Harwin/M20-8900805?qs=%2Fha2pyFadujRVQMSBz%252BYoUCy7UbNMVFTNss7gWmWe0o%3D		Animated Jumper
3	PATTERN DATA, PATTERN HI, PATTERN LO				Pattern Generator (Virtual Instrument)
3	RB1, RG1, RR1	250			Generic resistor symbol

6	RB2, RB5, RG2, RG5, RR2, RR5	500		Generic resistor symbol
3	RB3, RG3, RR3	1k		Generic resistor symbol
3	RB4, RG4, RR4	2k		Generic resistor symbol
1	VIDCLK	555	https://www.mouser.sg/ProductDetail/CTS-Electronic-Components/MXO45HS-2C-12M000?qs=sGAEpiMZZMt8zWNA7msRCvpTgpVI8f3UwUWPm0GFK9s%3D	Timer/Oscillator
1	VSMDD1	VSMDIGITALDISPLAY		CRT Display with frequency detection
1	X2	CRYSTAL	https://www.mouser.sg/ProductDetail/ECS/ECS-121-S-4X?qs=sGAEpiMZZMsBj6bBr9Q9aQVbz5FLOGxj6PW06GSXrZU%3D	Quartz crystal
Sub-totals:				£235.55
Totals:				£235.55

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