

# Bill Of Materials for Bomb Jack

**Design Title** Bomb Jack  
**Author**  
**Document Number**  
**Revision**  
**Design Created** 29 December 2019  
**Design Last Modified** 29 December 2019  
**Total Parts In Design** 280

## 0 Modules

<u>Quantity</u>	<u>References</u>	<u>Value</u>	<u>Stock Code</u>	<u>Unit Cost</u>	<u>Description</u>
Sub-totals:				S\$0.00	

## 1 Capacitors

<u>Quantity</u>	<u>References</u>	<u>Value</u>	<u>Stock Code</u>	<u>Unit Cost</u>	<u>Description</u>
1	C5	200p	Maplin WX60Q		220p Ceramic Capacitor
Sub-totals:				S\$0.00	

## 20 Resistors

<u>Quantity</u>	<u>References</u>	<u>Value</u>	<u>Stock Code</u>	<u>Unit Cost</u>	<u>Description</u>
16	R1-R16	PULLUP			Digital Primitive Model Of A Pull-Up Resistor
2	R21-R22	220			Generic resistor symbol
1	R104	100			Generic resistor symbol
1	R105	470			Generic resistor symbol
Sub-totals:				S\$0.00	

## 83 Integrated Circuits

<u>Quantity</u>	<u>References</u>	<u>Value</u>	<u>Stock Code</u>	<u>Unit Cost</u>	<u>Description</u>
40	U1-U4, U6-U8, U12, U19-U26, U29-U32, U36-U39, U41-U44, U46-U49, U54-U57, U59-U62	74157	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS157NE4?qs=sGAEpiMZZMtXONTBFicRfk9GpaUoLd0cMjAQzUGo2HI%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS157NE4?qs=sGAEpiMZZMtXONTBFicRfk9GpaUoLd0cMjAQzUGo2HI%3D</a>	S\$0.90	Quadruple 1-of-2 Data Selectors/Multiplexers
5	U5, U15, U17, U34, U52	7404	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN7404N?qs=sGAEpiMZZMutVWjHE%2FYQw0qCn7H6iZbYr4YOmhlJMg4%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN7404N?qs=sGAEpiMZZMutVWjHE%2FYQw0qCn7H6iZbYr4YOmhlJMg4%3D</a>	S\$0.72	Hex Inverters
3	U9, U13, U50	74LS00	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS00NE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaQkGmOjzVWLw0jaeE%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS00NE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaQkGmOjzVWLw0jaeE%3D</a>	S\$0.95	Quadruple 2-Input Positive-NAND Gates
4	U10, U14, U33, U51	7432	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS32NE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaQkGmO7x4PfQeTHF4%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS32NE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaQkGmO7x4PfQeTHF4%3D</a>	S\$0.87	Quad 2-input positive-OR gates
10	U11, U16, U18, U27-U28, U35, U40, U45, U53, U58	74LS373	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS373NE4?qs=sGAEpiMZZMu2QtOrmdJ1%2FRPDYI7IXkrB2H7gdWq7qaw%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS373NE4?qs=sGAEpiMZZMu2QtOrmdJ1%2FRPDYI7IXkrB2H7gdWq7qaw%3D</a>	S\$1.40	Octal D-Type Transparent Latches with 3-state Outputs
6	U63-U64, U68-U69, U74-U75	74LS283	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS283NE4?qs=sGAEpiMZZMuV4z%252BhZ4pm1L11UKYaBimF7vh839uxJBE%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS283NE4?qs=sGAEpiMZZMuV4z%252BhZ4pm1L11UKYaBimF7vh839uxJBE%3D</a>	S\$2.41	4-Bit Binary Full Adders With Fast Carry

4	U65-U66,U81-U82	74273	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS273NE4?qs=sGAEpiMZZMlxP%252Bvr8KwMwF73%2FSEETFlcw32YC66%252Bjxg%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS273NE4?qs=sGAEpiMZZMlxP%252Bvr8KwMwF73%2FSEETFlcw32YC66%252Bjxg%3D</a>	\$S\$0.90	Octal D-Type Positive-Edge-Triggered Flip-Flops With Clear
2	U67,U72	7408	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS08NE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaqkGmOfW4A%252BAFGONk%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS08NE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaqkGmOfW4A%252BAFGONk%3D</a>	\$S\$0.72	Quadruple 2-Input Positive-AND Gates
1	U70	74HC138	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS138NE4?qs=sGAEpiMZZMtxONTBFIcRfk9GpaUoLd0ck0Ao35GjMhY%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS138NE4?qs=sGAEpiMZZMtxONTBFIcRfk9GpaUoLd0ck0Ao35GjMhY%3D</a>	\$S\$0.72	3-Line to 8-Line Decoders/Demultiplexers
2	U71,U76	7485	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS85N?qs=%2Fha2pyFadujWUs9azztjOlPLCPvFTfozqJRbtmiwunU%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS85N?qs=%2Fha2pyFadujWUs9azztjOlPLCPvFTfozqJRbtmiwunU%3D</a>	\$S\$1.87	4-Bit Magnitude Comparator
1	U73	7402	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS02NE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaqkGmOw9uqInhsB60%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS02NE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaqkGmOw9uqInhsB60%3D</a>	\$S\$0.72	Quadruple 2-Input Positive-NOR Gates
3	U77-U79	6116FAST	<a href="https://www.mouser.sg/ProductDetail/IDT/6116SA20TPGI?qs=sGAepiMZZMt9mBA6nlyysK6VW3GrAnba45Kc6Apw0Go%3D">https://www.mouser.sg/ProductDetail/IDT/6116SA20TPGI?qs=sGAepiMZZMt9mBA6nlyysK6VW3GrAnba45Kc6Apw0Go%3D</a>	\$S\$7.08	16K (2Kx8) Static RAM (Fast)
1	U80	74126	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS126AN?qs=%2Fha2pyFadugdVCHOFYeUo9JntWnlZ2YoHaFSsm4H%2FRg%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS126AN?qs=%2Fha2pyFadugdVCHOFYeUo9JntWnlZ2YoHaFSsm4H%2FRg%3D</a>	\$S\$0.90	Quadruple Bus Buffer Gate With Tristate Outputs
1	U83	74161	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS161AN?qs=sGAepiMZZMtdY2G%252BSI3N4ULNly7IUD05%2FJSW%252B139gsI%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS161AN?qs=sGAepiMZZMtdY2G%252BSI3N4ULNly7IUD05%2FJSW%252B139gsI%3D</a>	\$S\$0.90	Synchronous 4-Bit Binary Counters
Sub-totals:				\$S\$107.88	
0 Transistors					
<u>Quantity</u>	<u>References</u>	<u>Value</u>	<u>Stock Code</u>	<u>Unit Cost</u>	<u>Description</u>
Sub-totals:				\$S\$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:				\$S\$0.00	
176 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	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS157NE4?qs=sGAEpiMZZMtxONTBFIcRfk9GpaUoLd0cMjAQzUGo2HI%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS157NE4?qs=sGAEpiMZZMtxONTBFIcRfk9GpaUoLd0cMjAQzUGo2HI%3D</a>	\$S\$0.90	Quadruple 1-of-2 Data Selectors/Multiplexers
2	1C,5M8	7427	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS27N?qs=sGAepiMZZMutXGli8Ay4kP28D9wZ8SQlwsPDjlqEADE%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS27N?qs=sGAepiMZZMutXGli8Ay4kP28D9wZ8SQlwsPDjlqEADE%3D</a>	\$S\$0.81	Triple 3-Input Positive NOR Gates

3	1S,2,4N	7410	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS10N?qs=sGAEpiMZZMutXGli8Ay4kBELeCaPbA6BixFJp4A71TE%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS10N?qs=sGAEpiMZZMutXGli8Ay4kBELeCaPbA6BixFJp4A71TE%3D</a>	\$S\$0.87	Triple 3-Input Positive-NAND Gates
6	1T,5,7A,7C,8C2,8C6	7408	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS08NE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaqkGmOfW4A%252BAFGonK%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS08NE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaqkGmOfW4A%252BAFGonK%3D</a>	\$S\$0.72	Quadruple 2-Input Positive-AND Gates
5	2A,2B,2C,2D,7N	74175	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS175NE4?qs=sGAEpiMZZMxP%252Bvr8KwMwF73%2FSEETFic4u4AUFSUKKQ%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS175NE4?qs=sGAEpiMZZMxP%252Bvr8KwMwF73%2FSEETFic4u4AUFSUKKQ%3D</a>	\$S\$0.90	Quadruple D-Type Positive-Edge-Triggered Flip-Flops With Clear
4	2F,3L6,7B2,7C2	74LS245	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS245NE4?qs=sGAEpiMZZMs9F6aVvY09bhwfQrNqig7qlcn1fgzui%2FY%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS245NE4?qs=sGAEpiMZZMs9F6aVvY09bhwfQrNqig7qlcn1fgzui%2FY%3D</a>	\$S\$0.89	Octal Bus Transceivers With Tristate Outputs
1	2R6	7420	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS20N?qs=sGAEpiMZZMtMa9IbYwD6ZOuZLcSXNpUa3nM3MdnqdeQ%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS20N?qs=sGAEpiMZZMtMa9IbYwD6ZOuZLcSXNpUa3nM3MdnqdeQ%3D</a>	\$S\$0.77	Dual 4-Input Positive-NAND Gates
3	2S,3M,7R	74S139	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS139AN?qs=sGAEpiMZZMtxONTBFicRfpKvrGTByBdi%2FBZhV6RAyCA%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS139AN?qs=sGAEpiMZZMtxONTBFicRfpKvrGTByBdi%2FBZhV6RAyCA%3D</a>	\$S\$0.93	Dual 2-Line to 4-Line Decoders/Demultiplexers
3	2T,4,4R	7404	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS04NE4?qs=sGAEpiMZZMutVWjHE%2FYQw8FcJMyir0Lqzet%252BOgibJR%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS04NE4?qs=sGAEpiMZZMutVWjHE%2FYQw8FcJMyir0Lqzet%252BOgibJR%3D</a>	\$S\$0.72	Hex Inverters
4	3A,3B,3C,3D	74LS258	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS258BN?qs=%2Fha2pyFadugYCoHUAkZ16e6lx0TI4e52u5IkASBqGrE%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS258BN?qs=%2Fha2pyFadugYCoHUAkZ16e6lx0TI4e52u5IkASBqGrE%3D</a>	\$S\$1.02	Quadruple 2-Line To 1-Line Data Selectors/Multiplexers With Tristate Outputs
7	3H,5P7,6N2,6N6,7B,7T,8S	7432	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS32NE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaqkGmO7x4PfQeTHF4%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS32NE4?qs=sGAEpiMZZMtMa9IbYwD6ZGuuqVaqkGmO7x4PfQeTHF4%3D</a>	\$S\$0.87	Quad 2-input positive-OR gates
1	3M8	74148	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS148N?qs=%2Fha2pyFaduh2M99jnePeauqUp%2FrlBfH7vdDEJ7aGS4Q%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS148N?qs=%2Fha2pyFaduh2M99jnePeauqUp%2FrlBfH7vdDEJ7aGS4Q%3D</a>	\$S\$2.46	8-Line To 3-Line Priority Encoders
4	3N,3P,3R,3S	74161	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS161AN?qs=sGAEpiMZZMtdY2G%252BSI3N4ULNly7IUD05%2FJSW%252B139gsI%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS161AN?qs=sGAEpiMZZMtdY2G%252BSI3N4ULNly7IUD05%2FJSW%252B139gsI%3D</a>	\$S\$0.90	Synchronous 4-Bit Binary Counters

1	3T	7474	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS74ANE4?qs=%2Fha2pyFaduisez8mmWidBAnd8e%2F0Kj57shzdZeHHc%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS74ANE4?qs=%2Fha2pyFaduisez8mmWidBAnd8e%2F0Kj57shzdZeHHc%3D</a>		Dual Positive-Edge-Triggered D-Type Flip-Flops With Clear And Preset
7	4A,4B,4C,4D,6A2,6B2,6C2	2114FAST	<a href="https://www.jameco.com/z/2114N-2-Major-Brands-IC-2114N-2-SRAM-1Kx4-DIP-18-pin-200ns_38973.html?CID=MERCH">https://www.jameco.com/z/2114N-2-Major-Brands-IC-2114N-2-SRAM-1Kx4-DIP-18-pin-200ns_38973.html?CID=MERCH</a>	\$5.00	4K Static RAM (1K x 4bit) (Fast)
2	4E,4F	74126	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS126AN?qs=%2Fha2pyFadugdvCHOFYeUo9JntWnlZ2YoHaFSsm4H%2FRg%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS126AN?qs=%2Fha2pyFadugdvCHOFYeUo9JntWnlZ2YoHaFSsm4H%2FRg%3D</a>	\$0.90	Quadruple Bus Buffer Gate With Tristate Outputs
6	4H,5R7,5T,6H,6P6,6R7	74LS86	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS86ANE4?qs=sGAEpiMZZMtMa9lbYwD6ZGuuqVaQkGmOhAIPhWJxBPY%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS86ANE4?qs=sGAEpiMZZMtMa9lbYwD6ZGuuqVaQkGmOhAIPhWJxBPY%3D</a>	\$1.02	Quadruple 2-Input Exclusive-OR Gates
7	4L6,5E2,5H,5L6,6E,6F,6S7	74273	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS273NE4?qs=sGAEpiMZZMtxP%252Bvr8KwMwF73%2FSEETFlcw32YC66%252Bjxg%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS273NE4?qs=sGAEpiMZZMtxP%252Bvr8KwMwF73%2FSEETFlcw32YC66%252Bjxg%3D</a>	\$0.90	Octal D-Type Positive-Edge-Triggered Flip-Flops With Clear
4	4M,5M,7S,8D2	74HC138	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS138NE4?qs=sGAEpiMZZMtxONTBFicRfk9GpaUoLd0ck0Ao35GjMhY%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS138NE4?qs=sGAEpiMZZMtxONTBFicRfk9GpaUoLd0ck0Ao35GjMhY%3D</a>	\$0.72	3-Line to 8-Line Decoders/Demultiplexers
7	4M6,5S7,6R,6S,7A2,7E,8B2	74LS174	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS174N?qs=%2Fha2pyFadugqDRhw3C%2FQ8X6a6hwoxKy6iKJc85BJA4M%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS174N?qs=%2Fha2pyFadugqDRhw3C%2FQ8X6a6hwoxKy6iKJc85BJA4M%3D</a>	\$0.90	Hex D-Type Positive-Edge-Triggered Flip-Flops With Clear
4	4P,4S,5P,E7P	7474	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS74ANE4?qs=%2Fha2pyFaduisez8mmWidBAnd8e%2F0Kj57shzdZeHHc%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS74ANE4?qs=%2Fha2pyFaduisez8mmWidBAnd8e%2F0Kj57shzdZeHHc%3D</a>	\$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	<a href="https://www.jameco.com/shop/StoreCatalogDrillDownView?langId=-1&amp;storeId=10001&amp;catalogId=10001&amp;freeText=eprom%202764&amp;search_type=jamecoall">https://www.jameco.com/shop/StoreCatalogDrillDownView?langId=-1&amp;storeId=10001&amp;catalogId=10001&amp;freeText=eprom%202764&amp;search_type=jamecoall</a>	\$5.00	64K (8Kx8) EPROM
10	4P7R,7JR,7LR,7MR,8E6R,8H6R,8K6R,8L7R,8N7R,8R7R	6264FAST	<a href="https://www.mouser.sg/ProductDetail/Alliance-Memory/AS6C6264-55PCN?qs=sGAEpiMZZMt9mBA6nlyysDfDw0vDQxSwL3Jgh6owPVw%3D">https://www.mouser.sg/ProductDetail/Alliance-Memory/AS6C6264-55PCN?qs=sGAEpiMZZMt9mBA6nlyysDfDw0vDQxSwL3Jgh6owPVw%3D</a>	\$4.01	64K (8Kx8) Static RAM
1	4T	74368	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS368AN?qs=%2Fha2pyFadug6ZOj3cmpD6YwUi6dGmUUQRqKJDT%2FBvsw%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS368AN?qs=%2Fha2pyFadug6ZOj3cmpD6YwUi6dGmUUQRqKJDT%2FBvsw%3D</a>		Hex Buffers/Line Drivers with Inverting Tristate Outputs

2	5E,5F	74283	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS283NE4?qs=sGAEpiMZZMuV4z%252BhZ4pm1L11UKYaBimF7vh839uxJBE%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS283NE4?qs=sGAEpiMZZMuV4z%252BhZ4pm1L11UKYaBimF7vh839uxJBE%3D</a>	\$S\$1.30	4-Bit Binary Full Adders With Fast Carry
4	5F8,5H8,5J8,5K8	74153	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS153N?qs=%2Fha2pyFaduiKvNoFphi6HlKGeKB98vZDSnL2nsGsGDQ%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS153N?qs=%2Fha2pyFaduiKvNoFphi6HlKGeKB98vZDSnL2nsGsGDQ%3D</a>	\$S\$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	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS194AN?qs=%2Fha2pyFadujYU8BF2jKu2xc2zIYRxCNCxtAdpWgTaU4%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS194AN?qs=%2Fha2pyFadujYU8BF2jKu2xc2zIYRxCNCxtAdpWgTaU4%3D</a>	\$S\$1.25	4-Bit Bidirectional Universal Shift Registers
2	5R,5S	7485	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS85N?qs=%2Fha2pyFadujWUs9azztjOlPLCPvFTfozqJRbtmiwunU%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS85N?qs=%2Fha2pyFadujWUs9azztjOlPLCPvFTfozqJRbtmiwunU%3D</a>	\$S\$1.87	4-Bit Magnitude Comparator
4	6A,6B,6C,6D	74163	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS163AN?qs=sGAEpiMZZMtdY2G%252BSI3N4aQvQNXOTGN6zp2qU1pEmtI%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS163AN?qs=sGAEpiMZZMtdY2G%252BSI3N4aQvQNXOTGN6zp2qU1pEmtI%3D</a>	\$S\$0.90	Synchronous 4-Bit Binary Counters
1	6LM6	6116FAST	<a href="https://www.mouser.sg/ProductDetail/IDT/6116SA20TPGI?qs=sGAEpiMZZMt9mBA6nlyysK6VW3GrAnba45Kc6Apw0Go%3D">https://www.mouser.sg/ProductDetail/IDT/6116SA20TPGI?qs=sGAEpiMZZMt9mBA6nlyysK6VW3GrAnba45Kc6Apw0Go%3D</a>	\$S\$7.08	16K (2Kx8) Static RAM (Fast)
1	7D	74LS21	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS21NE4?qs=sGAEpiMZZMtMa9lbYwD6ZGuuqVaqqGmOS8GB5LKZP7E%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS21NE4?qs=sGAEpiMZZMtMa9lbYwD6ZGuuqVaqqGmOS8GB5LKZP7E%3D</a>	\$S\$0.62	Dual 4-Input Positive-AND Gates
1	E6P	7402	<a href="https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS02NE4?qs=sGAEpiMZZMtMa9lbYwD6ZGuuqVaqqGmOw9uqlnhsB60%3D">https://www.mouser.sg/ProductDetail/Texas-Instruments/SN74LS02NE4?qs=sGAEpiMZZMtMa9lbYwD6ZGuuqVaqqGmOw9uqlnhsB60%3D</a>	\$S\$0.72	Quadruple 2-Input Positive-NOR Gates
1	EXPANSIONBUS	CONN-DIL34	<a href="https://www.mouser.sg/ProductDetail/3M-Electronic-Solutions-Division/929852-01-17-30?qs=sGAEpiMZZMs%252BGHIn7q6pm0R%252BlqgWC%252BQxCllq0Hg83cE%3D">https://www.mouser.sg/ProductDetail/3M-Electronic-Solutions-Division/929852-01-17-30?qs=sGAEpiMZZMs%252BGHIn7q6pm0R%252BlqgWC%252BQxCllq0Hg83cE%3D</a>	\$S\$4.54	0.1in pitch DIL connector strip
1	EXPANSIONBUS2	CONN-SIL2	<a href="https://www.mouser.sg/ProductDetail/3M-Electronic-Solutions-Division/929850-01-02-10?qs=sGAEpiMZZMs%252BGHIn7q6pm6DQXoV0bF8fkj%252FScW6NT6k%3D">https://www.mouser.sg/ProductDetail/3M-Electronic-Solutions-Division/929850-01-02-10?qs=sGAEpiMZZMs%252BGHIn7q6pm6DQXoV0bF8fkj%252FScW6NT6k%3D</a>	\$S\$1.28	0.1in pitch SIL connector strip
1	EXPANSIONBUS3	CONN-DIL8	<a href="https://www.mouser.sg/ProductDetail/Mill-Max/803-47-008-10-001000?qs=sGAEpiMZZMX3nhDDO4AEvDUxDP%252FxEU0g06CSv%252FFqg%3D">https://www.mouser.sg/ProductDetail/Mill-Max/803-47-008-10-001000?qs=sGAEpiMZZMX3nhDDO4AEvDUxDP%252FxEU0g06CSv%252FFqg%3D</a>	\$S\$8.11	0.1in pitch DIL connector strip

1	J1	CONN-DIL8	<a href="https://www.mouser.sg/ProductDetail/Mill-Max/803-47-008-10-001000?qs=sGAEpiMZZVMX3nhDDO4AEvDUxDP%2FxEU0g06CSv%2FFqg%3D">https://www.mouser.sg/ProductDetail/Mill-Max/803-47-008-10-001000?qs=sGAEpiMZZVMX3nhDDO4AEvDUxDP%2FxEU0g06CSv%2FFqg%3D</a>	S\$2.53	0.1in pitch DIL connector strip
1	JP1	JUMPER			Animated Jumper
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	ROWCOL	CONN-DIL20	<a href="https://www.mouser.sg/ProductDetail/3M-Electronic-Solutions-Division/929850-01-20-10?qs=sGAEpiMZZMs%252BGHIn7q6pmwu5ra4CY41iGmTOHot%252BMs%3D">https://www.mouser.sg/ProductDetail/3M-Electronic-Solutions-Division/929850-01-20-10?qs=sGAEpiMZZMs%252BGHIn7q6pmwu5ra4CY41iGmTOHot%252BMs%3D</a>	S\$4.48	0.1in pitch DIL connector strip
1	VIDCLK	555	<a href="https://www.mouser.sg/ProductDetail/CTS-Electronic-Components/MXO45HS-2C-12M0000?qs=sGAEpiMZZMt8zWNA7msRCvpTgpVI8f3UwUWPm0GFK9s%3D">https://www.mouser.sg/ProductDetail/CTS-Electronic-Components/MXO45HS-2C-12M0000?qs=sGAEpiMZZMt8zWNA7msRCvpTgpVI8f3UwUWPm0GFK9s%3D</a>		Timer/Oscillator
1	VSMDD1	VSMDIGITALDISPLAY			CRT Display with frequency detection
2	VSMDD2-VSMDD3	VSMDIGITALDATA			Digital Data Generator (Virtual Instrument)
1	X2	CRYSTAL	<a href="https://www.mouser.sg/ProductDetail/ECS/ECS-121-S-4X?qs=sGAEpiMZZMsBj6bBr9Q9aQVbz5FLOGxj6PW06GSXrZU%3D">https://www.mouser.sg/ProductDetail/ECS/ECS-121-S-4X?qs=sGAEpiMZZMsBj6bBr9Q9aQVbz5FLOGxj6PW06GSXrZU%3D</a>	S\$1.04	Quartz crystal
Sub-totals:				S\$270.48	
Totals:				S\$378.36	

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