

NEsesity v1.3 B.O.M updated 5/5/2021

Designator	Description	Part I.D.	Package	Digikey Part #	Alternate Part #	Price
	NEsesity PCB v1.3					
U1	Asynchronous SRAM 32k x 8 Parallel	55ns	DIP 28	1450-1033-ND		\$3.45
U2	Octal D Type-Transparent Latch; 3 State	74LS373	DIP 20	296-1660-5-ND		\$0.93
U2 Option		74HC373		TC74HC373APF-ND		\$0.56
U3	Dual 2-to-4 Line Decoder / Demultiplexer	74LS139	DIP 16	296-1640-5-ND		\$0.84
U3 Option		74HC139		296-8230-5-ND		\$0.43
U4	Asynchronous SRAM 32k x 8 Parallel	55ns	DIP 28	1450-1033-ND		\$3.45
U5	PPU	RP2C02	DIP 40	RP2C07 (PAL)	UA6528 (NTSC clone)	
U6	CPU	RP2A03	DIP 40	RP2A07 (PAL)	UA6527 (NTSC clone)	
U7	IC Inverter Dual 4,2-Input	74HC368	DIP 16	296-8308-5-ND		\$0.65
U8	IC Inverter Dual 4,2-Input	74HC368	DIP 16	296-8308-5-ND		\$0.65
U9	Hex Inverter	74HCU04	DIP 14	296-1566-5-ND		\$0.65
U10	105mw Stereo Headphone Amplifier	LM4808	SOIC 8	LM4808M/NOPB-ND		\$0.91
U11*	LM324 Quad Op Amp	LM324	SOIC 14	LM324AMX/NOPBCKR-ND		\$1.19
Option	40p DIP Socket Precision Pin		DIP 40	ED3033-ND		\$1.97
Option	40p DIP Socket Wiper Pin		DIP 40	609-4716-ND		\$0.62
	7 pin Right Angle Header Connector 2mm pitch			455-1739-1-ND		\$0.86
	7 pin Right Angle Header Connector 2mm pitch			455-1739-1-ND		\$0.86
	15 pin D Sub Connector Male Pins			AE10979-ND		\$0.88
	8p JST male connector 2.5mm pitch right angle			455-4231-ND		\$0.49
D1*	1N4148 Diode	1N4148		1N4148FS-ND		\$0.10
Q1	NPN Transistor	2N3904		2N3904-APCT-ND		\$0.18
Q2	PNP Transistor	2N3906		2N3906-APCT-ND		\$0.17
XTAL	21.47727 MHz Crystal (NTSC)			300-6043-ND	HC49US-21.47727-MABJ-UB	\$0.59
	26.601712 MHz Crystal (PAL)					
MIC*	Electret Condenser Microphone			102-1725-ND		\$0.91
TC1	Adjustable Capacitor	30p		2447-GKG30015-ND		\$0.77
C1	Ceramic Capacitor	10p		445-175534-ND		\$0.26
C2	Ceramic Capacitor	33p		445-173189-1-ND		\$0.24
C3	Ceramic Capacitor	68p		445-175351-ND		\$0.26
C4	Ceramic Capacitor	330p		445-181238-ND		\$0.22
C5	Ceramic Capacitor	330p		445-181238-ND		\$0.22
C6	Ceramic Capacitor	330p		445-181238-ND		\$0.22
C7	Ceramic Capacitor	330p		445-181238-ND		\$0.22
C8	Ceramic Capacitor	330p		445-181238-ND		\$0.22
C9	Ceramic Capacitor	10000pF		445-173264-1-ND		\$0.23
C10	Ceramic Capacitor	10000pF		445-173264-1-ND		\$0.23
C11	Ceramic Capacitor	0.1uF		445-173265-1-ND		\$0.18
C12	Ceramic Capacitor	0.1uF		445-173265-1-ND		\$0.18
C13	Ceramic Capacitor	0.1uF		445-173265-1-ND		\$0.18
C14	Ceramic Capacitor	0.1uF		445-173265-1-ND		\$0.18
C15	Ceramic Capacitor	0.1uF		445-173265-1-ND		\$0.18
C16	Ceramic Capacitor	0.1uF		445-173265-1-ND		\$0.18
C17	Ceramic Capacitor	0.1uF		445-173265-1-ND		\$0.18
C18	Ceramic Capacitor	0.1uF		445-173265-1-ND		\$0.18
C19	Ceramic Capacitor	0.1uF		445-173265-1-ND		\$0.18
C20*	Ceramic Capacitor	0.1uF		445-173265-1-ND		\$0.18
C21	Electrolytic Capacitor	0.47uF		50MH50.47MEFC4X5-ND		\$0.24
C22	Electrolytic Capacitor	1uF		493-5954-ND		\$0.24
C23*	Electrolytic Capacitor	1uF		493-5954-ND		\$0.24
C24	Electrolytic Capacitor	4.7uF		P974-ND		\$0.24
C25	Electrolytic Capacitor	4.7uF		P974-ND		\$0.24
C26	Electrolytic Capacitor	10uF		P19580CT-ND		\$0.27
C27	Electrolytic Capacitor	220uF		P19575CT-ND		\$0.26
C28	Electrolytic Capacitor	220uF		P19575CT-ND		\$0.26
C29	Electrolytic Capacitor	220uF		P19575CT-ND		\$0.26

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RN1	10k x 8 Bussed Resistor Array	10k	9 SIP	4609M-101-103LF-ND		\$0.59
RN2	10k x 8 Bussed Resistor Array	10k	9 SIP	4609M-101-103LF-ND		\$0.59
R1	1/4W Metal Film Resistor 1%	100 ohm		100XBK-ND		\$0.08
R2	1/4W Metal Film Resistor 1%	100 ohm		100XBK-ND		\$0.08
R3	1/4W Metal Film Resistor 1%	100 ohm		100XBK-ND		\$0.08
R4	1/4W Metal Film Resistor 1%	150 ohm		150XBK-ND		\$0.08
R5	1/4W Metal Film Resistor 1%	150 ohm		150XBK-ND		\$0.08
R6	1/4W Metal Film Resistor 1%	150 ohm		150XBK-ND		\$0.08
R7	1/4W Metal Film Resistor 1%	150 ohm		150XBK-ND		\$0.08
R8	1/4W Metal Film Resistor 1%	1.2k		1.21KXBK-ND		\$0.08
R9	1/4W Metal Film Resistor 1%	3.9k		3.92KXBK-ND		\$0.08
R10	1/4W Metal Film Resistor 1%	3.9k		3.92KXBK-ND		\$0.08
R11	1/4W Metal Film Resistor 1%	10k		10.0KXBK-ND		\$0.08
R12	1/4W Metal Film Resistor 1%	100k		100KXBK-ND		\$0.08
R13	1/4W Metal Film Resistor 1%	100k		100KXBK-ND		\$0.08
R14	1/4W Metal Film Resistor 1%	150k		150KXBK-ND		\$0.08
R15*	1/8W Carbon Resistor 5%	1k		CF18JT1K00CT-ND		\$0.05
R16*	1/8W Carbon Resistor 5%	1k		CF18JT1K00CT-ND		\$0.05
R17*	1/8W Carbon Resistor 5%	10k		CF18JT10K0CT-ND		\$0.05
R18*	1/8W Carbon Resistor 5%	10k		CF18JT10K0CT-ND		\$0.05
R19*	1/8W Carbon Resistor 5%	56k		CF18JT56K0CT-ND		\$0.05
R20*	1/8W Carbon Resistor 5%	100k		CF18JT100KCT-ND		\$0.05
R21*	1/8W Carbon Resistor 5%	100k		CF18JT100KCT-ND		\$0.05
VR1	Potentiometer	10k		3386P-103TLF-ND		\$2.48
VR2	Potentiometer	10k		3386P-103TLF-ND		\$2.48
VR1,2 (alternate)				3386F-103TLF-ND		
VR3	Potentiometer	50k		3386P-503TLF-ND		\$2.48
VR3 (alternate)				3386F-1-503TLF-ND		
VR4*	Potentiometer	100k		3362P-104LF-ND		\$1.02
LED*	Green LED 0805 SMT			160-1426-1-ND		\$0.28
					TOTAL:	\$39.87
	Power & A/V Board					
	5.5 x 2.1mm Power Input Jack			CP-202A-ND		\$0.60
	Yellow RCA Jack Right Angle			CP-1421-ND		\$1.36
	White RCA Jack Right Angle			CP-1420-ND		\$1.36
	Red RCA Jack Right Angle			CP-1419-ND		\$1.36
Option	SPDT On-On Right Angle Slide Switch			EG1916-ND		\$0.58
	8p JST male connector 2.5mm pitch			455-2232-ND		\$0.37
qty. 2	8p JST connector housing 2.5mm pitch			455-1902-ND		\$0.32
qty. 8	22 ga Pre-Crimped JST jumper wire 2in length			455-3239-ND		\$5.92
REG	+5v Linear Regulator 5v	7805		MC7805CT-BPMS-ND		\$0.46
	Heatsink (required for linear regulator)			532702B02500G-ND		\$1.97
REG (Option)	+5v Switching Regulator 1.5A	OKI-78SR		811-2196-5-ND		\$4.30
REL	DPDT 3A Relay 12v Coil			PB1073-ND		\$3.54
D2	1N4001 Diode	1N4001		1N4001GOS-ND		\$0.21
D3	2A Rectifier Diode			1655-1581-1-ND		\$0.28
D4	2A Rectifier Diode			1655-1581-1-ND		\$0.28
D5	2A Rectifier Diode			1655-1581-1-ND		\$0.28
D6	2A Rectifier Diode			1655-1581-1-ND		\$0.28
R28	1/4W Metal Film Resistor 1% Tolerance	510 ohm		511XBK-ND		\$0.08
C30	Electrolytic Capacitor	100uF		P833-ND		\$0.23
C31	Electrolytic Capacitor	100uF		P833-ND		\$0.23
C32	Electrolytic Capacitor	2200uF		1189-25PK2200MEFC12.5X20-ND		\$0.93
					TOTAL:	\$24.94
DB15 Hardware	Phillips Flat Head Screw M3 x 0.5mm, 14mm Long			91420A124		
	Steel Hex Nut M3 x 0.5mm			90591A121		
	Nylon Unthreaded Spacers 1/4" OD, 1/4" Long			90176A133		