NHRC Repeater Controllers

NHRC-4 Repeater Controller
Bill Of Materials
PCB rev D

Item	Qty	Reference	Part	Description	Populate	Manufacturer	Manufacturer P/N	Digi-Key P/N	Notes
1	11	C1,C2,C3,C5,C6,C9,C10, C12,C13,C18,C21	1uF	1uF 16V Tantalum Cap	YES	Panasonic	ECS-F1CE105K	P2105-ND	
2	2	C11,C4	0.0068uF	0.0068uF 50V X7R Ceramic Radial Cap	NO	Panasonic	ECU-S1H682KBA	P4951-ND	*
3	1	C7	22uF	22uF 25V Aluminum Radial Electrolytic Cap	YES	Panasonic	ECA-1EM220	P5149-ND	
4	6	C8,C14,C16,C17,C19,C20	0.1uF	0.1uF 50V Z5U Ceramic Radial Cap	YES	Panasonic	ECU-S1H104MEA	P4924-ND	
5	1	C15	220uF	220uF 25V Aluminum Radial Electrolytic Cap	YES	Panasonic	ECA-1EM221	P5153-ND	
6	1	C22	100pF	100pF 100V C0G Ceramic Radial Cap	YES	Panasonic	ECU-S2A101JCA	P4849-ND	
7	2	D1,D3	LED RED	Red T1¾ LED	YES	Lite-On	LTL-4223	160-1127-ND	
8	2	D4,D2	LED GRN	Green T1¾ LED	YES	Lite-On	LTL-4233	160-1130-ND	
9	1	D5	LED YEL	Yellow T1¾ LED	YES	Lite-On	LTL-4253	160-1133-ND	
10	3	JP1,JP2,JP3	JUMPER	2 Circuit Header, .100" Straight	YES	Molex	22-03-2021	WM4000-ND	
11	1	J1	HEADER 8	8 Circuit Header, .100" Straight w/ lock	YES	Molex	22-23-2081	WM4206-ND	
12	2	J3,J2	HEADER 6	6 Circuit Header, .100" Straight w/ lock	YES	Molex	22-23-2061	WM4204-ND	
13	2	J5,J4	HEADER 4	4 Circuit Header, .100" Straight w/ lock	YES	Molex	22-23-2041	WM4202-ND	
14	3	Q1,Q2,Q6	IRF510	N Channel HEXFET 100V 5.6A	YES	International Rectifier	IRF510	IRF510-ND	
15	4	Q3,Q5,Q8,Q9	2N3904	NPN Transistor 40V 200mA	YES	Fairchild	2N3904	2N3904FS-ND	
16	2	Q4,Q7	MPF102	N Channel JFET 25V 10mA	YES	Fairchild	MPF102	MPF102-ND	
17	3	Q10,Q12,Q13	2N7000	N Channel MOSFET 60V 200mA	YES	Fairchild	2N7000	2N7000FS-ND	
18	13	R1,R2,R3,R7,R12,R17,R22, R26,R29,R30,R33,R36,R40	10K	10K ¼W 5% Carbon Film Resistor	YES	Yageo	CFR-25JB-10K	10KQBK-ND	
19	3	R4,R10,R19	100	100 ¼W 5% Carbon Film Resistor	YES	Yageo	CFR-25JB-100R	100QBK-ND	
20	11	R5,R6,R14,R15,R20,R21, R25,R32,R34,R35,R39	100K	100K ¼W 5% Carbon Film Resistor	YES	Yageo	CFR-25JB-100K	100KQBK-ND	**
21	2	R23,R8	33K	33K ¼W 5% Carbon Film Resistor	YES	Yageo	CFR-25JB-33K	33KQBK-ND	
22	5	R9,R16,R24,R27,R31	470	470 ¼W 5% Carbon Film Resistor	YES	Yageo	CFR-25JB-470R	470QBK-ND	
23	3	R11,R13,R18	22K	22K ¼W 5% Carbon Film Resistor	YES	Yageo	CFR-25JB-22K	22KQBK-ND	
24	1	R28	470K	470K ¼W 5% Carbon Film Resistor	YES	Yageo	CFR-25JB-470K	470KQBK-ND	
25	1	U1	TL064	Quad Op-Amp	YES	TI	TL064CN	296-1773-5-ND	
26	1	U2	LM7805CT	5V 1.0A Voltage Regulator	YES	Fairchild	LM7805CT	LM7805CT-ND	
27	1	U3	MT8870	DTMF Decoder	YES	Zarlink	MT8870DE		***
28	1	U4	PIC16F628-04/P	PIC Microcontroller (Blank)	YES	Microchip	PIC16F628-04/P	PIC16F628-04/P-ND	***
29	4	VR1,VR3,VR4,VR6	10K POT	10K 6mm Carbon Trimpot	YES	Panasonic	EVN-D8AA03B14	D4AA14-ND	
30	2	VR5,VR2	500K POT	500K 6mm Carbon Trimpot	YES	Panasonic	EVN-D8AA03B55	D4AA55-ND	
31	1	Y1	3.579MHz	3.579545MHz Crystal	YES	ECS	ECS-35-17-4	X079-ND	
Additional Items									
32	1			NHRC-4 PCB rev D		NHRC	NHRC-4 PCB rev D		***
33	2	R20,R5	510K	510K ¼W 5% Carbon Film Resistor		Yageo	CFR-25JB-510K	510KQBK-ND	**
34	2			18 Pin DIP Socket		Assmann	A18-LC-TT	AE8918-ND	
35	1			14 Pin DIP Socket		Assmann	A14-LC-TT	AE8914-ND	
36	1			8 Circuit Housing, .100" w/ lock and polarizer		Molex	22-01-3087	WM2006-ND	
37	2			6 Circuit Housing, .100" w/ lock and polarizer		Molex	22-01-3067	WM2004-ND	
38	2			4 Circuit Housing, .100" w/ lock and polarizer		Molex	22-01-3047	WM2002-ND	
39	28			Crimp Terminal for Molex Housing		Molex	08-50-0114	WM2200-ND	
40	5			Shorting Jumpers		3M	929950-00-I	929950-00-ND	

Notes

*   Populate parts C4 and/or C11 if deemphasis is required.

**   Populate 510K part for R20 and/or R5 if deemphasis is required.

***   U1, U3, U4 (Programmed) and PCB are included w/ the NHRC-4 kit.