

NHRC REPEATER CONTROLLERS

NHRC-3+ Repeater Controller

Bill Of Materials

Revised: Wednesday, August 21, 2002

Revision: B

NHRC Repeater Controllers

444 Micol Road

Pembroke, NH 03275

603-485-2248

Item	Qty.	Ref.	Schematic Value	Description	Mfg.	Mfg. P/N	Notes
1	9	C1,C2,C5,C6,C7,C13,C15,C16,C17	1uF	1uF 16V Tantalum Cap	Panasonic	ECS-F1CE105K	
2	1	C3	220uF	220uF 25V Aluminum Radial Electrolytic Cap	Panasonic	ECA-1EM221	
3	1	C4	22uF	22uF 25V Aluminum Radial Electrolytic Cap	Panasonic	ECA-1EM220	
4	11	C8,C10,C11,C14,C18,C19,C20,C22,C23,C24,C25	0.1uF	0.1uF 50V Z5U Ceramic Radial Cap	Panasonic	ECU-S1H104MEA	
5	1	C9	22uF	22uF 25V Aluminum Radial Electrolytic Cap	Panasonic	ECA-1EM221	
6	1	C12	0.0068uF	0.0068uF 50V X7R Ceramic Radial Cap	Panasonic	ECU-S1H682KBA	
7	1	C21	4.7uF	4.7uF 25V Aluminum Radial Electrolytic Cap	Panasonic	ECA-1EM220	
8	1	C26	33pF	33pF 100V C0G Ceramic Radial Cap	Panasonic	ECU-S2A330JCA	
9	2	C27,C28	22pF	22pF 100V C0G Ceramic Radial Cap	Panasonic	ECU-S2A220JCA	DNP
10	1	D1	LED	Red T1 1/4 LED	Lite-On	LTL-4203	
11	1	D2	LED	Yellow T1 1/4 LED	Lite-On	LTL-4253	
12	2	D3,D4	LED	Green T1 1/4 LED	Lite-On	LTL-4234	
13	3	JP1,JP2,JP4	JUMPER	2 Circuit Header, .100" Straight	Molex	22-03-2021	
14	1	JP3	2 WAY JUMPER	3 Circuit Header, .100" Straight	Molex	22-03-2031	
15	1	JTS64	HEADER 6	6 Circuit Header, .100" Straight w/ lock	Molex	22-23-2061	
16	1	J1	HEADER 4	4 Circuit Header, .100" Straight w/ lock	Molex	22-23-2041	
17	1	J2	HEADER 10	10 Circuit Header, .100" Straight w/ lock	Molex	22-23-2101	
18	1	J3	HEADER 8	8 Circuit Header, .100" Straight	Molex	22-03-2081	
19	2	Q1,Q3	IRF510	N Channel HEXFET	IRF	IRF510	
20	2	Q2,Q5	2N3904	NPN Transistor	Fairchild	2N3904	
21	1	Q4	MPF102	N Channel JFET	Fairchild	MPF102	
22	2	Q6,Q7	2N7000	N Channel MOSFET	Fairchild	2N7000	
23	2	R4,R1	100	100 1/4W 5% Carbon Film Resistor	Yaego	CFR-25JB 100R	
24	11	R2,R3,R15,R18,R22,R23,R27,R29,R30,R33,R35	10K	10K 1/4W 5% Carbon Film Resistor	Yaego	CFR-25JB 10K	
25	7	R5,R10,R11,R24,R31,R32,R34	100K	100K 1/4W 5% Carbon Film Resistor	Yaego	CFR-25JB 100K	
26	4	R6,R12,R20,R25	22K	22K 1/4W 5% Carbon Film Resistor	Yaego	CFR-25JB 22K	
27	1	R7	1K	1K 1/4W 5% Carbon Film Resistor	Yaego	CFR-25JB 1K0	
28	4	R8,R14,R21,R26	470	470 1/4W 5% Carbon Film Resistor	Yaego	CFR-25JB 470R	
29	1	R9	11.3K	11.3K 1/4W 1% Metal Film Resistor	Yaego	MFR-25FBB 11K3	
30	1	R13	93.1K	93.1K 1/4W 1% Metal Film Resistor	Yaego	MFR-25FBB 93K1	
31	1	R16	5.1K	5.1K 1/4W 5% Carbon Film Resistor	Yaego	CFR-25JB 5K1	
32	1	R17	33K	33K 1/4W 5% Carbon Film Resistor	Yaego	CFR-25JB 33K	
33	2	R19,R28	470K	470K 1/4W 5% Carbon Film Resistor	Yaego	CFR-25JB 470K	

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Item	Qty.	Ref.	Schematic Value		Description	Mfg.	Mfg. P/N	Notes
34	1	U1	LM7805CT		5V 1.0A Voltage Regulator	Nat'l Semi	LM340T-5.0	
35	1	U2	ISD2590P		90 sec. Voice Recorder/Playback	ISD	ISD2590P	
36	1	U3	TL062		Dual JFET Input Op-Amp	TI	TL062CP	
37	1	U4	M-8870-01		DTMF Decoder	Teltone	M-8870-01	
38	1	U5	PIC16F876-04/SP		Microcontroller w/ 8K Flash Memory	Microchip	PIC16F876-04/SP	
39	5	VR1,VR2,VR3,VR4,VR5	10K	POT	10K 6mm Carbon Trimpot	Panasonic	EVN-D8AA03B14	
40	1	VR6	500K	POT	500K 6mm Carbon Trimpot	Panasonic	EVN-D8AA03B55	
41	1	Y1	16MHz	DNP	16MHz Crystal	ECS	ECS-160-20-4	DNP
42	1	Y2	3.579MHz		3.579545MHz Crystal	ECS	ECS-35-17-4	
Additional Items								
43	1				NHRC-3+ PCB rev C	NHRC	NHRC-3+ PCB rev C	
44	1				28 Pin Narrow DIP Socket	Mill-Max	110-99-328-41-001	
45	1				28 Pin DIP Socket	Mill-Max	110-99-628-41-001	
46	1				8 Pin DIP Socket	Mill-Max	110-99-308-41-001	
47	1				18 Pin DIP Socket	Mill-Max	110-99-318-41-001	
48	1				10 Circuit Housing, .100" w/ lock and polarizer	Molex	22-01-3107	
49	1				6 Circuit Housing, .100" w/ lock and polarizer	Molex	22-01-3067	
50	1				4 Circuit Housing, .100" w/ lock and polarizer	Molex	22-01-3047	
51	20				Crimp Terminal for Molex Housing	Molex	08-50-0114	
52	5				Shorting Jumpers	3M	929950-00-I	