

FM EXCITER BOARD		
COMPONENT	DESCRIPTION	FORMAT
C1	100uF 16V	SMD
C2	100n	1206 SMD
C3	1N	1206 SMD
C4	1N	1206 SMD
C4	1N	1206 SMD
C5	33P	1206 SMD
C6	82P	1206 SMD
C7	100P	1206 SMD
C7	100P	1206 SMD
C8	100P	1206 SMD
C9	100N	1206 SMD
C10	100N	1206 SMD
C11	470N	1206 SMD
C12	100N	1206 SMD
C13	1N	1206 SMD
C15	1N	1206 SMD
C16	100N	1206 SMD
C17	100U 16V	SMD
C18	100N	1206 SMD
C19	470N	1206 SMD
C20	10U 16V	2512 SMD
C21	100N	1206 SMD
C22	1N	1206 SMD
C23	1N	1206 SMD
C24	330P	1206 SMD
C25	10P	1206 SMD
C25	1N	1206 SMD
C26	1N	1206 SMD
C27	1N	1206 SMD
C28	1N	1206 SMD
C30	1N	1206 SMD
C32	100N	1206 SMD
C33	100N	1206 SMD
C34	100N	1206 SMD
C35	1N	1206 SMD
C36	220P	1206 SMD
C37	1N	1206 SMD
C38	33P	1206 SMD
C39	220P	1206 SMD
C40	68P	1206 SMD
C41	1U	1206 SMD
C42	100P	1206 SMD
C43	1N	1206 SMD
C44	1N	1206 SMD
C45	100P	1206 SMD
C46	27P	1206 SMD
C47	27P	1206 SMD
C48	3P3	1206 SMD
C49	100P	1206 SMD
C51	100N	1206 SMD
C52	100U 16V	SMD
C53	100N	1206 SMD
C54	100N	1206 SMD
C55	100N	1206 SMD

C56	100N	1206 SMD
D1	BAT54S	SOT23 SMD
D2	BAT54S	SOT23 SMD
D3	BAT54S	SOT23 SMD
D4	BB153	SOT23 SMD
D5	BB153	SOT23 SMD
D6	BB153	SOT23 SMD
D7	BB153	SOT23 SMD
D8	BAW56	SOT23 SMD
DZ1	C9V1	SMD
IC1	LM358	SOIC8 SMD
IC2	MB1501	SOIC16 SMD
L1	100uH	2512 SMD
L10	1U	2512 SMD
L11	100N	2512 SMD
L12	220N	2512 SMD
L5	470N	2512 SMD
L6	2U2	2512 SMD
L8	1U	2512 SMD
L9	220N	2512 SMD
R01	470R	1206 SMD
R02	10K	1206 SMD
R03	330R	1206 SMD
R04	330R	1206 SMD
R05	100R	1206 SMD
R06	1M	1206 SMD
R07	1M	1206 SMD
R08	100K	1206 SMD
R09	2M2	1206 SMD
R10	1M	1206 SMD
R11	150K	1206 SMD
R12	220K	1206 SMD
R13	47K	1206 SMD
R14	100K	1206 SMD
R15	100K	1206 SMD
R16	220R	1206 SMD
R17	220R	1206 SMD
R18	100R	1206 SMD
R19	10K	1206 SMD
R20	15K	1206 SMD
R21	330R	1206 SMD
R22	0R0	1206 SMD
R23	0R0	1206 SMD
R24	0R0	1206 SMD
R25	330R	1206 SMD
R26	47R	1206 SMD
R27	100R	1206 SMD
R28	100R	1206 SMD
R29	10K	1206 SMD
R30	330R	1206 SMD
R31	22R	1206 SMD
R32	220R	1206 SMD
R33	27K	1206 SMD
R34	180R	1206 SMD
R35	47R	1206 SMD
R36	47R	1206 SMD

R37	47R	1206 SMD
R38	100R	1206 SMD
R39	100R	1206 SMD
R40	56R	1206 SMD
R41	1K	1206 SMD
R42	10R	1206 SMD
R44	1K	1206 SMD
R45	56R	1206 SMD
R46	1R	1206 SMD
R48	220K	1206 SMD
R49	2K2	1206 SMD
R50	10K	1206 SMD
R51	10K	1206 SMD
R52	1K5	1206 SMD
R53	10K	1206 SMD
R54	470R	1206 SMD
R55	470R	1206 SMD
R56	100R	1206 SMD
R57	1K	1206 SMD
R58	1K	1206 SMD
R59	1K5	1206 SMD
R60	3K3	1206 SMD
R61	4K7	1206 SMD
R62	4K7	1206 SMD
R63	4K7	1206 SMD
R64	100K	1206 SMD
R65	100K	1206 SMD
RT1	10K	SMD
TR1	BCR133	SOT23 SMD
TR2	BCR133	SOT23 SMD
TR3	BCR133	SOT23 SMD
TR4	BFR93A	SOT23 SMD
TR5	SST310	SOT23 SMD
TR6	SST310	SOT23 SMD
TR7	BFR93A	SOT23 SMD
TR8	BFR93A	SOT23 SMD
TR9	BSP122	SOT223 SMD
TR10	BSP122	SOT223 SMD
TXCO1	12.6MHZ	SMD

MAINBOARD		
COMPONENT	DESCRIPTION	FORMAT
C1	100U 25V	SMD
C2	100U 25V	SMD
C3	1N	1206 SMD
C4	1N	1206 SMD
C5	1N	1206 SMD
C6	1N	1206 SMD
C7	1N	1206 SMD
C8	220P	1206 SMD
C9	10P	1206 SMD
C10	10P	1206 SMD
C11	10P	1206 SMD
C12	10P	1206 SMD
C13	100N	1206 SMD
C13	22P	1206 SMD
C14	100N	1206 SMD
C15	100N	1206 SMD
C16	100N	1206 SMD
C17	100N	1206 SMD
C18	100N	1206 SMD
C21	1N	1206 SMD
C22	1N	1206 SMD
C23	1N	1206 SMD
C23	1N	1206 SMD
C24	100P	1206 SMD
C24	100P	1206 SMD
C24	100P	1206 SMD
C24	1N	1206 SMD
C25	100P	1206 SMD
C25	1N	1206 SMD
C26	100P	1206 SMD
C26	1N	1206 SMD
C27	1N	1206 SMD
C29	100N	1206 SMD
C30	100N	1206 SMD
C30	1N	1206 SMD
C31	100N	1206 SMD
C32	100N	1206 SMD
C33	4N7	1206 SMD
C33	22N	1206 SMD
C34	1N	1206 SMD
C36	470P	1206 SMD
C36	22N	1206 SMD
C37	47K	1206 SMD
C39	1N	1206 SMD
C41	100N	1206 SMD
C47	1U	1206 SMD
C48	1U	1206 SMD
C49	100N	1206 SMD
C50	100N	1206 SMD
C51	100N	1206 SMD
C54	100N	1206 SMD
C55	100N	1206 SMD
C56	100P	1206 SMD

C57	2N2	1206 SMD
C58	2N2	1206 SMD
C59	47P	1206 SMD
C60	47P	1206 SMD
C61	1N	1206 SMD
C62	1N	1206 SMD
C63	220P	1206 SMD
C64	47P	1206 SMD
C64	220P	1206 SMD
C65	2N2	1206 SMD
C66	2N2	1206 SMD
C68	47P	1206 SMD
C69	10N	1206 SMD
C70	10N	1206 SMD
C71	4N7	1206 SMD
C72	10N	1206 SMD
C73	8N2	1206 SMD
C74	10N	1206 SMD
C75	8N2	1206 SMD
C76	10N	1206 SMD
C77	100N	1206 SMD
C78	100N	1206 SMD
C79	100N	1206 SMD
C80	100N	1206 SMD
C81	100N	1206 SMD
C82	100N	1206 SMD
C83	47N	1206 SMD
C84	1N	1206 SMD
D1	BAV99	SOT23 SMD
D10	BAV99	SOT23 SMD
D11	BAW56	SOT23 SMD
D12	BAW56	SOT23 SMD
D13	BAW56	SOT23 SMD
D14	BAW56	SOT23 SMD
D15	BAV99	SOT23 SMD
D16	BAV99	SOT23 SMD
D17	BAV99	SOT23 SMD
D18	BAV99	SOT23 SMD
D2	BAV99	SOT23 SMD
D3	BAV99	SOT23 SMD
D4	BAV99	SOT23 SMD
D5	BAV99	SOT23 SMD
D6	C12V0	ZENER DIODE SMD
D7	C12V0	ZENER DIODE SMD
D8	C5V6	ZENER DIODE SMD
D9	BAV99	SOT23 SMD
DZ1	C12V0	ZENER DIODE SMD
DZ2	C12V0	ZENER DIODE SMD
DZ3	C5V1	ZENER DIODE SMD
DZ4	C6V2	ZENER DIODE SMD
DZ5	C6V2	ZENER DIODE SMD
IC1	TL074	SOIC14 SMD
IC2	TL074	SOIC14 SMD
IC3	MC34082	SOIC14 SMD
IC4	TL074	SOIC14 SMD

IC5	75155	SOIC14 SMD
IC7	TL072	SOIC14 SMD
IC8	TL1973	WSOIC20 SMD
IC8	TL072	SOIC14 SMD
IC9	4316	SOIC14 SMD
IC10	TL074	SOIC14 SMD
IC11	TL074	SOIC14 SMD
IC12	TL074	SOIC14 SMD
IC13	MC34084	SOIC14 SMD
IC14	4052B	SOIC16 SMD
IC15	4094B	SOIC16 SMD
J5	RS232 DB9F	
JP1	JUMPER3	
JP2	JUMPER3	
L1	1U	2512 SMD
L2	1U	2512 SMD
P1	IDC26	
P6	IDC10	
P9	IDC14	
R01	5K6	1206 SMD
R02	5K6	1206 SMD
R03	5K6	1206 SMD
R04	5K6	1206 SMD
R05	10K	1206 SMD
R06	82R	1206 SMD
R07	82R	1206 SMD
R08	560R	1206 SMD
R09	560R	1206 SMD
R10	100R	1206 SMD
R11	100R	1206 SMD
R12	100R	1206 SMD
R13	100R	1206 SMD
R14	100R	1206 SMD
R15	10K	1206 SMD
R15	100R	1206 SMD
R16	10K	1206 SMD
R17	10K	1206 SMD
R18	10K	1206 SMD
R19	5K6	1206 SMD
R19	5K6	1206 SMD
R20	5K6	1206 SMD
R20	5K6	1206 SMD
R24	4K7	1206 SMD
R25	4K7	1206 SMD
R26	220R	1206 SMD
R26	10K	1206 SMD
R27	10K	1206 SMD
R28	10K	1206 SMD
R33	470R	1206 SMD
R34	10K	1206 SMD
R35	4K7	1206 SMD
R36	56K	1206 SMD
R37	56K	1206 SMD
R38	270R	1206 SMD
R39	270R	1206 SMD

R40	10K	1206 SMD
R41	10K	1206 SMD
R42	1K	1206 SMD
R43	1K	1206 SMD
R44	3K9	1206 SMD
R45	3K9	1206 SMD
R46	1K	1206 SMD
R46	1K	1206 SMD
R47	1K	1206 SMD
R48	1K	1206 SMD
R49	100K	1206 SMD
R49	100K	1206 SMD
R50	100K	1206 SMD
R51	100R	1206 SMD
R52	56K	1206 SMD
R53	15K	1206 SMD
R54	3M3	1206 SMD
R56	1K5	1206 SMD
R57	470R	1206 SMD
R58	475R	1206 SMD
R59	475R	1206 SMD
R59	6K8	1206 SMD
R60	475R	1206 SMD
R60	15K	1206 SMD
R61	15K	1206 SMD
R62	15K	1206 SMD
R63	15K	1206 SMD
R64	10K	1206 SMD
R70	820R	1206 SMD
R71	820R	1206 SMD
R72	2K2	1206 SMD
R73	1K8	1206 SMD
R74	1K8	1206 SMD
R75	33R	1206 SMD
R76	33R	1206 SMD
R77	470R	1206 SMD
R78	470R	1206 SMD
R79	10K	1206 SMD
R80	10K	1206 SMD
R83	180R	1206 SMD
R84	180R	1206 SMD
R85	680R	1206 SMD
R86	680R	1206 SMD
R87	22K	1206 SMD
R88	22K	1206 SMD
R89	1M	1206 SMD
R90	1M	1206 SMD
R91	1K8	1206 SMD
R92	1K8	1206 SMD
R93	470R	1206 SMD
R94	1K8	1206 SMD
R95	3K3	1206 SMD
R96	470R	1206 SMD
R97	100K	1206 SMD
R98	5K6	1206 SMD

R99	220R	1206 SMD
R100	180R	1206 SMD
R101	560R	1206 SMD
R102	560R	1206 SMD
R103	6K8	1206 SMD
R104	1K8	1206 SMD
R105	470R	1206 SMD
R106	120R	1206 SMD
R107	120K	1206 SMD
R108	100R	1206 SMD
R109	180R	1206 SMD
R110	330R	1206 SMD
R111	270R	1206 SMD
R112	270R	1206 SMD
R113	220R	1206 SMD
R114	4K7	1206 SMD
R114	4K7	1206 SMD
R115	1K5	1206 SMD
R116	330R	1206 SMD
R116	470R	1206 SMD
R117	820R	1206 SMD
R117	330R	1206 SMD
R120	1K2	1206 SMD
R122	4K7	1206 SMD
R123	1K	1206 SMD
R124	100R	1206 SMD
R125	680R	1206 SMD
R126	1K	1206 SMD
R127	2K2	1206 SMD
R128	3K3	1206 SMD
R129	470R	1206 SMD
R130	82R	1206 SMD
R131	1K2	1206 SMD
R132	2K2	1206 SMD
R133	4K7	1206 SMD
R134	1K8	1206 SMD
R135	1K5	1206 SMD
R136	1K	1206 SMD
R137	5K6	1206 SMD
R140	2K2	1206 SMD
R142	4K7	1206 SMD
R142	47R	1206 SMD
R143	15K	1206 SMD
R144	15K	1206 SMD
R145	3K9	1206 SMD
R146	3K9	1206 SMD
R148	10K	1206 SMD
R149	10K	1206 SMD
RT1	20K	SMD
RT2	20K	SMD
RT3	10K	SMD
RT6	5K0	SMD
RT7	5K	SMD
RT8	10K	SMD
TR1	BCR133	SOT23 SMD

TR2	BCR133	SOT23 SMD
TR3	BCR133	SOT23 SMD
TR4	BCR133	SOT23 SMD
TR5	BCR133	SOT23 SMD
TR6	BCR133	SOT23 SMD
TR7	BCR198	SOT23 SMD
TR8	BCR198	SOT23 SMD

EM25CON CPU CONTROLLER BOARD		
COMPONENT	DESCRIPTION	FORMAT
BT1	3.0V CR2032	
C1	1N	
C10	100U 25V	ALUMINUM
C11	100U 25V	ALUMINUM
C12	1N	
C13	100N	MKT
C14	100N	MKT
C15	100N	MKT
C16	100N	MKT
C17	100N	MKT
C18	220U 35V	ALUMINUM
C19	220U 35V	ALUMINUM
C2	1N	
C20	4P7	
C21	22P	
C22	22P	
C24	150N	
C25	150N	
C3	1N	
C4	1N	
C5	1N	
C6	1N	
C7	100N	MKT
C8	100N	MKT
C9	4U7 16V	ALUMINUM
CT1	2-22P	
D1	SD101C	
D2	SD101C	
D3	SD101C	
D4	SD101C	
D5	SD101C	
D6	SD101C	
D7	1N4148	
D8	1N4148	
D9	1N5819	
DZ1	10V	ZENER DIODE
IC1	TL1431	
IC2	MC68HC705B16N	
IC3	4051B	DIP18
IC4	TL074	DIP14
IC6	PCF8583	DIP8
IC7	LM358	DIP8
IC8	LM393	DIP8
IC9	MCP130-D	
L1	10U	
L2	TOR12	
P1	IDC26	
P2	IDC20	
P3	IDC10	
R01	33R	0,5W 1%
R02	4K75	0,5W 1%
R03	4K75	0,5W 1%
R04	3K32	0,5W 1%

R05	1K	0,5W 1%
R06	1K	0,5W 1%
R07	1M	0,5W 1%
R08	4M7	0,25W 1%
R09	12K1	0,5W 1%
R10	12K2	0,5W 1%
R11	475K	0,5W 1%
R12	100K	0,5W 1%
R13	100K	0,5W 1%
R14	4K75	0,5W 1%
R15	1K	0,5W 1%
R16	18K2	0,5W 1%
R17	18K3	0,5W 1%
R18	45K3	0,5W 1%
R19	10K	0,5W 1%
R20	10K	0,5W 1%
R21	10K	0,5W 1%
R22	100K	0,5W 1%
R23	4K75	0,5W 1%
R24	4K75	0,5W 1%
R25	4K75	0,5W 1%
R27	47R5	0,5W 1%
R28	4K75	0,5W 1%
R28	825R	0,5W 1%
R29	100K	0,5W 1%
R30	1K	0,5W 1%
R31	1K	0,5W 1%
R32	47R5	0,5W 1%
R33	4K75	0,5W 1%
R34	1K75	0,5W 1%
R35	4K75	0,5W 1%
R36	14K7	0,5W 1%
R37	6K34	0,5W 1%
R38	22K1	0,5W 1%
R39	22K1	0,5W 1%
R40	22K1	0,5W 1%
R41	22K1	0,5W 1%
R42	221K	0,5W 1%
R43	1K21	0,5W 1%
R44	1M5	0,25W 1%
R45	475R	0,5W 1%
R46	475R	0,5W 1%
R47	2K21	0,5W 1%
R48	100R	0,5W 1%
R49	1R	0,5W 1%
RTH1	KTY10-6 2K	
SW1	PUSHBUTTON	
TR1	BC337	TO92
TR2	BS170	TO92
TR3	BC327	TO92
TR4	BD135	
XTAL1	4.0MHZ	
XTAL2	32768HZ	

EM25KEY KEYBOARD & DISPLAY		
COMPONENT	DESCRIPTION	FORMAT
C1	4U7 16V	ALUMINUM
C2	220N	SMD
D1	1N4148	
D2	1N4149	
D3	1N4150	
D4	1N4151	
D5	1N4152	
D6	1N4153	
D7	1N4154	
DL1	LED DIODE	
DL2	LED DIODE	
DL3	LED DIODE	
DL4	LED DIODE	
DL5	LED DIODE	
DL6	LED DIODE	
DL7	LED DIODE	
IC1	HC4094	
J1	IDC20	
R1	681R	SMD
R2	681R	SMD
R3	681R	SMD
R4	681R	SMD
R5	681R	SMD
R6	681R	SMD
R7	681R	SMD
RT1	10K	SMD
SW1	SWITCH PUSH BUTTON	
SW2	SWITCH PUSH BUTTON	
SW3	SWITCH PUSH BUTTON	
SW4	SWITCH PUSH BUTTON	
SW5	SWITCH PUSH BUTTON	
SW6	SWITCH PUSH BUTTON	
SW7	SWITCH PUSH BUTTON	

FAN CONTROLLER BOARD		
COMPONENT	DESCRIPTION	FORMAT
C1	1N	
C2	1N	
C3	100N	
C4	220U 35V	ALUMINUM
D1	C12V0	ZENER DIODE
IC1	LM358	
L1	1NDAS4410	
R1	15K	0,25W
R2	15K	0,25W
R3	10K	0,25W
R4	10K	0,25W
R5	681K	0,25W
R6	3K32	0,25W
TR1	MPS3055	

<i>FILTER 300W</i>		
COMPONENT	DESCRIPTION	FORMAT
C1	25pF 500V	MICA
C4	25pF 500V	MICA
C2	51pF 500V	MICA
C3	51pF 500V	MICA
C5	22pF	1206 SMD
C6	22pF	1206 SMD
C7	22pF	1206 SMD
C8	1nF	1206 SMD
C9	1nF	1206 SMD
C10	1nF	1206 SMD
C11	1nF	1206 SMD
C12	4.7pF 500V	2512 SMD
C13	9.1pF 500V	2512 SMD
C14	12pF 500V	2512 SMD
D1	BAT54	SMD
D2	BAT54	SMD
L1	4T DINT 9mm	
L2	3T DINT 9mm	
L3	3T DINT 9mm	
R1	51R 0.1W 5%	1206 SMD
R2	51R 0.1W 5%	1206 SMD
R3	51R 0.1W 5%	1206 SMD
R4	51R 0.1W 5%	1206 SMD
R5	1K 0.1W 5%	1206 SMD
R6	1K 0.1W 5%	1206 SMD
R7	10K 0.1W 5%	1206 SMD
R8	10K 0.1W 5%	1206 SMD
R9	120R 0.1W 5%	1206 SMD
R11	120R 0.1W 5%	1206 SMD
R10	100R 0.1W 5%	1206 SMD

MODPOT 300W		
COMPONENT	DESCRIPTION	FORMAT
C1	33pF 100V COG	1206 SMD
C2	470P 200V COG	2512 SMD
C11	470P 200V COG	2512 SMD
C12	470P 200V COG	2512 SMD
C13	470P 200V COG	2512 SMD
C14	470P 200V COG	2512 SMD
C3	1nF 100V COG	1206 SMD
C4	1nF 100V COG	1206 SMD
C5	1nF 100V COG	1206 SMD
C6	1nF 100V COG	1206 SMD
C16	1nF 100V COG	1206 SMD
C20	1nF 100V COG	1206 SMD
C7	150pF 100V COG	1206 SMD
C8	150pF 100V COG	1206 SMD
C15	100uF 50V	1206 SMD
C17	22nF 200V X7R	1206 SMD
C18	47pF 500V COG	2512 SMD
C19	15pF 500V COG	2512 SMD
D1	BAT54	SMD
D2	BAT54	SMD
D4	10Volt. 0.5W	SMD
L2	D _{int} =5, 12T	
L3	FERRITE AXIAL BL01RN1A1D2B	
L4	FERRITE AXIAL BL01RN1A1D2B	
L5	FT 8	
R2	22W	1206 SMD
R3	22W	1206 SMD
R4	1KW	1206 SMD
R5	1W 2W	
R6	10W	1206 SMD
R7	10W	1206 SMD
R10	10W 2W	
R11	330W	1206 SMD
R12	110W	1206 SMD
R14	1K8W	1206 SMD
R15	10W	1206 SMD
	OUTPUT TRANSFORMER	
TR1	M-1029-0002	
	INPUT TRANSFORMER	
TR2	M-1029-0001	

DRIVER 5W		
COMPONENT	DESCRIPTION	FORMAT
C1	100V 100nF	1206 SMD
C2	10uF 35V	SMD
C3	150pF 200V COG	2512 SMD
C4	270pF 200V COG	2512 SMD
C6	68pF 50V	1206 SMD
C7	1nF 100V	1206 SMD
C8	1nF 100V	1206 SMD
C9	10nF	1206 SMD
C10	10nF	1206 SMD
D1	1N5363B-30V	
D2	BAS16	SMD
D3	BZX84-C5V1	SMD
L1	50nH	
L2	50nH	
L3	100MHz 800Z B82114RA1	
L4	100MHz 800Z B82114RA1	
R1	1R 2W	
R2	1R 2W	
R3	1K8	0,5W
R4	15R	1206 SMD
R5	220R 1W	
R6	220R 1W	
R7	10R 1W	
R14	10R 1W	
R8	220R	1206 SMD
R9	220R	1206 SMD
R10	1K	1206 SMD
R12	1K	1206 SMD
R11	1K	1206 SMD
R13	820R	1206 SMD
R15	51R	1206 SMD