

## 8. PARTS LISTS AND CIRCUIT DIAGRAMS

### 8.1 Symbol Explanation

#### 8.1.1 Arrows

A black arrow on a line indicates in which direction an AC signal flows.

A white arrow on a line indicates in which direction the information of a DC signal flows. An exception from this rule is the supply lines and their connections, which are always indicated by a supply voltage level or its associated label.

#### 8.1.2 Logic circuits

A small circle at an external input means that the specific input is active LOW, i.e. it produces the desired function, in conjunction with other inputs if its voltage is the lower of the two logic levels in the system, otherwise the specific input is HIGH.

A clock input is indicated by an open triangle. A small circle at a clock input means that the outputs change on the HIGH to LOW clock transition.

A small circle at an output indicates that when the function designated is true, the output is LOW.

Inputs and outputs are labelled with mnemonic letters as described in table 8.1.

#### 8.1.3 Logic Functions

Logic functions are labelled with mnemonic letters in brackets. An active LOW function is given a bar over the label.

#### 8.1.4 Voltages

Typical DC voltages are indicated on the circuit diagrams next to the points to which they refer and are marked with a "V".

Typical logic levels are indicated in brackets (LOW/HIGH) on the circuit diagrams next to the point to which they refer and are marked with a "V".

Typical AC voltages are likewise indicated on the circuit diagrams. They are marked with "Vpp" or "mVpp".

## ABBREVIATIONS

A	= ampere, amperes
B	= battery, motor
C	= capacitor
Car.	= carbon
Cer.	= ceramic
D	= diode
F	= farad, fan
FS	= fuse
H	= henry
IC	= integrated circuit
k	= kilo or $10^3$
L	= inductor
LS	= loudspeaker
lin.	= linear
log.	= logarithmic
m	= milli or $10^{-3}$
M	= mega or $10^6$
ME	= instrument
MF	= metal film
Mi	= mica
MP	= metallized paper
u	= micro or $10^{-6}$
n	= nano or $10^{-9}$
NP0	= temp. coefficient 0
N150	= temp. coefficient -150
NTC	= neg. temp. coefficient
p	= pico or $10^{-12}$
PL	= connector (plug or cable with plug)
Polyes.	= polyester
Polyst.	= polystyrene
PTC	= pos. temp. coefficient
Q	= transistor
R	= resistor
RL	= relay
SW	= switch
SK	= connector (socket or cable with socket)
SL	= lamp
T	= transformer
Tan	= tantalum electrolytic capacitor
V	= working voltage DC or volts
V1	= valve
Vac.	= working voltage AC
Var.	= variable
Vpp	= peak to peak voltage
Varicap	= variable capacitance diode
ww	= wire wound
W	= watt, watts
W.alum.	= wet aluminium electrolytic
X	= crystal, crystal osc. or crystal filter

Label	Short for	Meaning
A	Trig Input	triggers one-shot on falling edge
Ax	Address	selects a memory location (data word) or a multiplexer input
B	Trig Input	triggers one-shot on rising edge
B/D	Binary /Decimal	selects counting mode (modulus 16 or 10)
BI	Blank Input	deactivates BCD-to-7 segment decoder (blanks connected display)
CxY	Control Signal	programmable bidirectional hand-shake signal to/from peripheral
CEP, CET	Clock Enable	enables clock signal to counter
CP	Clock Pulse	edge activated input for updating synchronous circuit
CSx	Chip Select	selects a memory or peripheral circuit (bus slave)
Dx	Data	input to D flip-flop and register or bidirectional information path for bus connected device
E	Enable Input	enables clock signal
EO	Enable Output	activates output(s) from combinatorical circuit
EQ	Enable Output	activates output(s) from sequential circuit
HLT	Halt	suspends MPU activity and releases busses
IxY	Input Data	input for combinatorical circuit
IRQy	Interrupt Request	wired-OR flag from peripheral to MPU indicating interrupt detected

Table 8.1

Label	Short for	Meaning
J, K	Data	input to J-K flip-flop
Kx	Mode Select	selects counting mode for programmable counter
LE	Latch Enable	updates latching register
LT	Lamp Test	activates all outputs on BCD-to-7 segment decoder
MR	Master Reset	input for initializing MPU or clearing programmable registers in peripheral circuit
MRDY	Memory Ready	hand-shake flag to MPU indicating new bus cycle may be started
NMI	Non-maskable Interrupt	flag to MPU, which cannot be masked softwarewise indicating interrupt detected
Ox	Output	output from combinatorical circuit
PxY	Data (bidirectional)	input to programmable counter or programmable bidirectional signal to/from peripheral
PE	Parallel Enable	loads Px data into programmable counter
Qx	Output	output from sequential circuit
R	Reset	forces flip-flop(s) to LOW state
RBI	Ripple Blank Input	deactivates BCD-to-7 segment decoder (blanks connected display) if data correspond to leading zero, when decoders are cascaded
RSx	Register Select	addresses programmable registers in peripheral circuit
S	Set	forces flip-flop(s) to HIGH state
Sy	Select Data	selects data path through multiplexer

Table 8.1 (continued)

Label	Short for	Meaning
SYNC	Synchronize	issued from bus master (MPU) to synchronize data transfer
TC	Terminate Count	output from counter indicating new cycle started (corresponds to carry or borrow depending on counting direction)
U/D	Up/Down	selects counting direction
VMA	Valid Memory Address	issued from bus master (MPU) to indicate stable address bus
WI	Write Input	input to bus slave to make it accept data from master
WQ	Write Output	output from master (MPU) when it is a data source

Table 8.1 (continued)

- (1) "x" is a numerical index (zero origin indexing) corresponding to bit position
- (2) "y" is a alphabetical index used for multiple ports

PARTS LIST  
FOR  
MICROPHONE AMPLIFIER BOARD 450 VERSION 2A

Printed Circuit Board Complete	<span style="border: 1px solid black; padding: 0 2px;">450</span>					107 445 01
450C1	47nF	10%	100V	Polyes.		623 447 00
C2,3	10nF	10%	100V	Polyes.		623 410 00
C4,6	22uF	20%	15V	W.alum.		651 722 00
C5	1nF	10%	25V	Cer.		602 310 00
C7,8	0.22uF	5%	63V	Polyes.		622 522 02
450Q1	BC547B					840 054 70
450R1	22 kohm	5%	1/3W	Car.		501 422 00
R2	5.6 kohm	5%	1/3W	Car.		501 356 00
R3	820 ohm	5%	1/3W	Car.		501 282 00
R4	27 ohm	5%	1/3W	Car.		501 127 00
R5	150 ohm	5%	1/3W	Car.		501 215 00
R6	2.2 kohm	5%	1/3W	Car.		501 322 00
450S1	Micro Switch					764 000 05

PARTS LIST  
FOR  
CONTROL BOARD 600 VERSION 3A

Printed Circuit Board Complete 600 107 560 01  
(specify program version when ordering)

IC1	74C42				850 744 20
IC2	CNY17-4				825 000 01
IC3	74LS74				850 747 40
IC4	74C00				850 740 01
IC5	4093BC				850 409 30
IC6	CD4066BC				850 406 60
IC7	6803				850 680 30
IC8	1488P				850 148 80
IC9	1489P				850 148 90
IC10	74LS373				857 437 30
IC11	74LS138				857 413 80
IC12	74LS08				850 740 80
IC13	74LS132				857 413 21
IC14	TMS27128-4				383 65X X1
	(XX denotes program version number)				
IC15	74LS04				850 740 41
IC16	2532-45 (unprogrammed)				852 532 45
IC17	4334P-4				850 433 40
IC18	74LS05				850 740 51
IC19	8279-5				850 827 90
IC20,21	CD4516BC				850 451 60
IC22	74C161				857 416 11
IC23	CD4040BC				850 404 00
IC24	74C374				857 437 40
IC25	74C906				857 490 60
IC26	146818				851 468 18
IC27	CD4059A				850 405 90
IC28	6850				850 685 00
IC29	6885				850 688 50
IC30	74LS48				850 744 81
IC31,32	ULN2803				850 280 30
IC33,34	74C08				850 740 81
IC35,36,50,53	74LS145				857 414 50
IC37-49	MAN82	DISPLAY			824 008 20
IC51,52,54,55	MV53164				823 000 05
Q1,6-37	BC327				840 032 70
Q2-5	BF240				840 024 00
D1-11,13-18,53	1N4148				830 414 80
D12	AA143				830 014 30
D19-52	MV5374	G.E. YELLOW			823 000 04
X1	4MHz	CRYSTAL			812 000 00
X2	32.768KHz	CRYSTAL			812 000 01
R2	680 ohm	5%	1/8W	MF	500 268 00
R3,17-21,30,33, 36,39,40,92	10 kohm	5%	1/8W	MF	500 410 00

CONTROL BOARD 600 VERSION 3A

R4	2.7 kohm	5%	1/8W	MF	500 327 00
R5,24	100 ohm	5%	1/8W	MF	500 210 00
R6,98	2.2 kohm	5%	1/8W	MF	500 322 00
R7,8,48-51	47 kohm	5%	1/8W	MF	500 447 00
R9	68 ohm	5%	1/8W	MF	500 168 00
R10,14,37,43,45	12 kohm	5%	1/8W	MF	500 412 00
R11,42	470 kohm	5%	1/8W	MF	500 547 00
R12,16	15 kohm	5%	1/8W	MF	500 415 00
R13,15	56 kohm	5%	1/8W	MF	500 456 00
R22,35	1 kohm	5%	1/8W	MF	500 310 00
R23,31,32	3.3 kohm	5%	1/8W	MF	500 333 00
R25	330 ohm	5%	1/8W	MF	500 233 00
R26	6.8 kohm	5%	1/8W	MF	500 368 00
R27,34	220 ohm	5%	1/8W	MF	500 222 00
R28	3.9 kohm	5%	1/8W	MF	500 339 00
R29	820 ohm	5%	1/8W	MF	500 282 00
R38,41,46,47	4.7 kohm	5%	1/8W	MF	500 347 00
R44	10 Mohm	5%	1/4W	Car.	501 710 00
R52-59	3.3 ohm	5%	1/8W	MF	500 033 00
R60-72	22 ohm	5%	1/8W	MF	500 122 00
R73-91	33 ohm	5%	1/8W	MF	500 133 00
R93-95	9x1 kohm			SIL.	530 000 10
R96,99	9x12 kohm			SIL.	530 000 09
R97	220 kohm	5%	1/8W	Car.	500 522 00
C1	2.2 uF	20%	35V	Tan.	652 622 01
C2,5	100 uF	+50-10%	25V	W.alum.	652 810 00
C3,4,6,9,10,12, 24,25,28-33,36, 49,55,58, 60-63,65-71,81, 82,111,112	1 nF	10%	63V	Cer.	602 310 02
C7,8	10 nF	10%	250V	Polyes.	624 410 01
C11	22 uF	20%	16V	W.alum.	651 722 01
C13,18,21,23, 26,34,35,37,38, 41-45,48,52,53, 56,59,64,73,75, 78,79,109	0.1 uF	10%	63V	Polyes.	622 510 00
C14,19,20	10 nF	10%	63V	Polyes.	622 410 01
C15	39 pF	2%	63V	N150	602 139 01
C16	180 pF	10%	63V	Cer.	602 218 00
C17	1.2 nF	10%	100V	Cer.	602 312 00
C22,40,72,74	6.8 uF	20%	25V	Sol.al.	652 668 01
C27,57	220 pF	10%	63V	Cer.	602 222 00
C39	1 uF	10%	63V	MKT	622 610 02
C47	4-18 pF		63V	Var.	682 118 01
C50	18 pF	2%	63V	N150	602 118 00
C51,110	33 pF	10%	63V	Cer.	602 133 00
C54	470 pF	10%	63V	Cer.	602 247 00
C76,77	470 uF	+50-10%	16V	W.alum.	651 847 00



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C80	6.8 uF	20%	25V	Tan.	652 668 00
C108	4.7 nF		32V	Cer.	602 347 00
L1,3	22 uH				740 122 00
L2	25 uH		3A		740 125 00
CON1/SK1	34 Pol.	RIBBON CABLE			373 604 0X
PL1	18 Pol.				751 001 25
B1	TL2100		3.4V		890 000 02

PARTS LIST  
FOR  
AUDIO PROCESSING BOARD 601 VERSION 3A

Printed Circuit Board Complete 601

107 560 11

IC1	SG3524		850 352 40
IC2-4	UH78L12AC	12V	850 781 21
IC5-7	LM79L12C	12V	850 791 21
IC8-9	UH78L06C	6V	850 780 61
IC10,15	CD40106B		854 010 60
IC11,16	CD4520B		850 452 00
IC12	74C164		857 416 40
IC13	74C906		857 490 60
IC14,18,22	MC1458N		850 145 81
IC17	CD4066BC		850 406 60
IC19,33	4017B		850 401 70
IC20	AD7523JN		850 752 30
IC21,26	4094B		850 409 40
IC23,31	4071B		850 407 10
IC24	4051B		850 405 10
IC25	4529B		850 452 90
IC27	4528B		850 452 80
IC28,34-35	LF353		850 035 30
IC29-30	4081B		850 408 10
IC32	TDA2006H		850 200 60
Q1	BD645		842 064 50
Q2	BD646		842 064 60
Q3,9-10,14,16, 18,20,22-24	BC547B		840 054 70
Q4-6,13,17,19,21	BC557B		840 055 70
Q7	2N2907A		840 290 70
Q8	BUV27		842 002 70
Q11	MPSA14		840 001 40
Q12,15	J112		843 011 20
D1	10D4		831 010 40
D2,5-8,17,21-25, 27-28,31	1N4148		830 414 80
D3	BYS26		831 002 60
D4	ICTE-5		839 000 51
D9-16	BZX79C11		832 791 10
D18	SD101C		830 010 10
D19-20	BZX75C3V6		832 753 60
D26	LM329DZ		830 032 90
D29-30	10D05		831 100 51

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R1-2	470 kohm	5%	1/4W	MF	502 247 00
R3,119	8.2 kohm	5%	1/8W	MF	500 382 00
R4,28,129,131, 132,134,137,147, 171	22 kohm	5%	1/8W	MF	500 422 00
R5-6,170	1 ohm	5%	2W	ww	525 010 00
R7-8,10,95,113,120, 144-145,172-173	4.7 kohm	5%	1/8W	MF	500 347 00
R9,124,151,159	15 kohm	5%	1/8W	MF	500 415 00
R11,149	3.9 kohm	5%	1/8W	MF	500 339 00
R12,168-169	2.2 kohm	5%	1/8W	MF	500 322 00
R13,23,31-34,40, 51-52,64,71,87, 91-92,100,122, 130,133	47 kohm	5%	1/8W	MF	500 447 00
R14,135	220 ohm	5%	1/8W	MF	500 222 00
R15,106	10 ohm	5%	1/8W	MF	500 110 01
R16,163	2.7 kohm	5%	1/8W	MF	500 327 00
R17	3.9 ohm	5%	1/8W	MF	500 039 00
R18	0.082 ohm		1W	ww	523 000 80
R19	2.2 kohm			Pot.	583 322 00
R20,120,138	12 kohm	5%	1/8W	MF	500 412 00
R21	150 kohm	5%	1/8W	MF	500 515 00
R22,24,26,29, 35-39,41,53-58, 67-70,76-77,81, 97,102-104,117-118, 143,146	10 kohm	5%	1/8W	MF	500 410 00
R25,42,125	270 ohm	5%	1/8W	MF	500 227 00
R27,30	20.5 kohm	1%		MF	511 420 50
R43,50	499 kohm	1%		MF	511 549 90
R44,49	178 kohm	1%		MF	511 517 80
R45,48	118 kohm	1%		MF	511 511 80
R46-47,108	100 kohm	1%		MF	511 510 00
R59,73,142	1 kohm	5%	1/8W	MF	500 310 00
R60-61	5.6 kohm	5%	1/8W	MF	500 356 00
R62-63	680 ohm	5%	1/8W	MF	500 268 00
R65	14.7 kohm	1%		MF	511 414 70
R66	7.5 kohm	1%		MF	511 375 00
R72	10.5 kohm	1%		MF	511 410 50
R74	3.48 kohm	1%		MF	511 334 80
R75	3.65 kohm	1%		MF	511 336 50
R78,80,140, 150,160	1.5 kohm	5%	1/8W	MF	500 315 00
R79,82-83,86,89, 98,114,128,148, 156-157,164-165	100 kohm	5%	1/8W	MF	500 510 00

R84-85,107	1 Mohm	5%	1/8W	MF	500 610 01
R88	39 kohm	5%	1/8W	MF	500 439 00
R90,96,115	27 kohm	5%	1/8W	MF	500 427 01
R93-94	47 kohm			Pot.	583 447 01
R99	56 kohm	5%	1/8W	MF	500 456 00
R105	47 ohm	5%	1/8W	MF	500 147 00
R109	12.1 kohm	1%		MF	511 412 10
R110,112,116	180 kohm	5%	1/8W	MF	500 518 00
R111	10 kohm			MF	511 410 00
R121	1.8 kohm	5%	1/8W	MF	500 318 00
R123	470 ohm	5%	1/4W	Car.	501 247 00
R126	82 kohm	5%	1/8W	MF	500 482 00
R127	18 kohm	5%	1/8W	MF	500 418 00
R136	33 kohm	5%	1/8W	MF	500 433 00
R139	10 Mohm	5%	1/4W	Car.	501 710 00
R141	1 kohm			Pot.	581 310 00
R152	390 ohm	5%	1/8W	MF	500 239 00
R153	14.0 kohm	1%		MF	511 414 00
R154	1.0 kohm	1%		MF	511 310 00
R155	15.0 kohm	1%		MF	511 415 00
R158	270 ohm	5%	1/4W	Car.	501 227 00
R161-162,166-167	619 ohm	1%		MF	511 261 90
C1,10,43,73,76, 80-81,92-93,101,107, 117,120,134-137,139	1 nF	10%	63V	Cer.	602 310 02
C2-4	100 uF		25V	Tan.	652 810 00
C5-6,53-57,131-132	47 nF	20%	63V	Polyes.	622 447 01
C7	100 uF	-10+50%	40V	W.alum.	651 810 04
C8	220 uF	-10+50%	40V	W.alum.	651 822 02
C9,11-16,18-35, 37,58-60,65-66,74, 77-79,83-84,87-89, 91,97,99,104,112, 118-119,121-122, 133	0.1 uF	20%	63V	Polyes.	622 510 00
C17,	2.2 nF	10%	63V	Cer.	602 322 00
C36	1000 uF		16V	W.alum.	651 910 00
C38,75,82,85,100	1 uF	10%	63V	Polyes.	622 610 02
C39-40	0.33 uF	20%	63V	Polyes.	622 533 01
C41-42,63,102, 114,129-130	0.22 uF	20%	63V	Polyes.	622 522 01
C44,67,86,94,108	2.2 uF		35V	Tan.	652 622 01
C45-49	4.7 nF	10%	63V	Cer.	602 347 02
C50-52,95	6.8 nF	1%	63V	Polyst.	612 368 00
C61	1.5 nF	1%	160V	Polyst.	613 315 01
C62,64	15 nF	1%	160V	Polyst.	613 415 00
C68,70,113,139	0.47 uF	10%	63V	Polyes.	622 547 01
C69	47 nF	1%	160V	Polyst.	613 447 00
C71	1 nF	1%	125V	Polyst.	613 310 02

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C72	68 nF	20%	63V	Polyes.	622 468 00
C90	22 nF	20%	63V	Polyes.	622 422 00
C96	2.2 uF	20%	250V	Polyes.	624 622 02
C98,106	100 pF	2%	63V	N150	602 210 00
C102,138	0.68 uF	10%	63V	Polyes.	622 568 01
C105	470 pF	10%	63V	Cer.	602 247 00
C109	33 uF	-20+40Z%	10V	Tan.	651 733 00
C110	2.2 nF	1%	125V	Polyst.	613 322 00
C111	6.8 uF	-20+40%	25V	Tan.	652 668 00
C115	56 pF	2%	63V	N150	602 156 00
C116	220 pF	10%	63V	Cer.	602 222 00
C123,126	6.8 uF		25V	Sol.al.	652 688 01
C124-125	470 uF		40V	Tan.	652 847 00
C127	680 pF	1%	250V	Polyst.	614 468 00
C128	82 pF	2%	63V	N150	602 182 00
L1	10 uH				740 110 00
L2	144 uH				383 576 7X
L3-10	1 mH	5%			740 310 03
T1	TRANSFORMER				103 576 81
FS1	2A/125V				720 320 02
PL1	34 POL HEADER				756 034 01
PL2	10 POL HEADER				756 010 02
PL3,5	5 POL				751 001 42
PL4	2 POL				751 001 41

PARTS LIST  
FOR  
SQUELCH BOARD 602 VERSION 1A

Printed Circuit Board Complete	<span style="border: 1px solid black; padding: 0 2px;">602</span>					107	560	21
IC1	LF353					850	035	30
IC2	NE555					850	055	50
IC3	CD4520B					850	452	00
IC4	4013B					850	401	30
IC5	CD4029B					850	402	90
IC6	CD4066BC					850	406	60
D1-6	1N4148					830	414	80
R1	1.2 kohm	5%	1/8W	MF		500	312	00
R2	10 kohm	5%	1/8W	MF		500	410	00
R3	1.5 kohm	5%	1/8W	MF		500	315	00
R4	820 kohm	5%	1/8W	MF		500	582	00
R5,6	1 kohm	5%	1/8W	MF		500	310	00
R7,14,16	1 Mohm	5%	1/8W	MF		500	610	00
R8	12 kohm	5%	1/8W	MF		500	412	00
R9-12	47 kohm	5%	1/8W	MF		500	447	00
R13,15,17	22 kohm	5%	1/8W	MF		500	422	00
C1,2	0.15 uF	10%	63V	Polyes.		622	515	00
C3	1 nF	10%	63V	Cer.		602	310	02
C4,9-12,14	0.1 uF	10%	63V	Polyes.		622	510	00
C5	0.47 uF	10%	63V	Polyes.		622	547	01
C6	47 pF	+ -2%	63V	Cer.		602	147	00
C7,13	2.2 uF	20%	25V	Tan.		652	622	02
C8	10 nF	-20+50%	63V	Cer.		602	410	01
C15	0.33 uF	20%	63V	Polyes.		622	533	01
CON1/SK1	RIBBON CABLE 10 POL.					373	596	01

PARTS LIST  
FOR  
LINE TRANSFORMER BOARD 603 VERSION 1A

Printed Circuit Board Complete	<span style="border: 1px solid black; padding: 0 2px;">603</span>	107 560 31
TS1	TERMINAL STRIP	770 000 30
T1-3	TRANSFORMER TD3293	802 000 00

## PARTS LIST

FOR

RX/EX SIGNAL PATH BOARD 610 VERSION 3A

Printed Circuit Board Complete 610

107 561 01

IC1	LM348	850 034 80
IC2	CM1	850 000 10
IC3	HPF505	850 000 11
IC4,8	ULN2083A	850 208 30
IC5	TBA120	850 012 00
IC6	MC1350	850 135 00
IC7,10	MC1458N	850 145 80
IC9	LM1496CN	850 149 60
IC11	4069UB	850 406 90
IC12-13	74C165	857 416 50
IC14-17	4094B	850 409 40
IC18	4011	850 401 10
IC19	4071B	850 407 10
IC20	4081B	850 408 10
IC21-25	2003A	850 200 30
IC26-27	MA7812	850 781 20
IC28	MA7805	850 780 50
Q1	BC327	840 032 70
Q2	BFR96	840 009 60
Q3,19,21	BF240	840 024 00
Q4	BFX89	840 089 00
Q5	BFW17A	840 001 70
Q6,10,14,18,24	BC547B	840 054 70
Q7	BD645	842 064 50
Q8,16,22-23,29-30	BC557	840 055 70
Q9,20,25,27,32	BC337	840 033 70
Q12,31	J310	840 031 02
Q13,17	J310	840 031 03
Q15	BF981	843 098 10
Q26,28	BD234	842 023 40
D1,3-5,7-11,18-20, 41,50,52-54,56-57, 60-62,64,67-72, 74-85,87-88	1S920	830 192 00
D2,26-28,30,32-33, 38-40,45,47-48,55, 59,63,65-66,73,86, 89,92-106,108,113, 118	1N4148	830 414 80
D6,14-17,24-25, 43-44	BA379	833 037 90
D12-13,21-23	BA423	830 042 30
D29,31	A114D	830 011 40
D34-37	BA282	830 028 20
D42	BZX79B18V	832 791 81
D46,90-91	BZX75C3V6	832 753 60
D49,112,114,116	BZX79C4V7	832 794 70



RX/EX SIGNAL PATH BOARD 610 VERSION 3A

D51	BZX79B6V2				832 796 20
D58	BZX79B5V1				832 795 11
D107,109	BZX79C6V8				832 796 80
D110-111	BZX79C12				832 791 21
D115,117	BZX79B12				832 791 20
VR1	NEON LAMP				722 000 00
X1	2.7 KHZ		45MHZ		383 571 01
X2					
X3					385 201 01
X4					385 247 63
X5					385 112 03
RL1		12V	DIL		780 000 25
R1,9,60,186, 262,274,281	33 kohm	5%	1/4W	Car.	501 433 00
R2,11,36,69, 71,75,79,108, 118,123,171	47 ohm	5%	1/4W	Car.	501 147 00
R3,5,8,10,15, 23,41,68,73,152, 196,214,247, 251,286	2.2 kohm	5%	1/4W	Car.	501 322 00
R4,52,107,191, 216,218,239,253, 271,284,291,306, 307	10 kohm	5%	1/4W	Car.	501 410 00
R6	590 ohm	1%		MF	511 259 00
R7,25	1.5 kohm	5%	1/4W	Car.	501 315 00
R12	248 ohm	1%		MF	511 234 80
R13,130	237 ohm	1%		MF	511 223 70
R14,74,76,147, 209,280	220 ohm	5%	1/4W	Car.	501 222 00
R16,222	10 ohm	1%		MF	511 110 00
R17,22,43,46,61, 127,173,228, 229	470 ohm	5%	1/4W	Car.	501 247 00
R18-19,32,35,109	330 ohm	5%	1/4W	Car.	501 233 00
R20-21,26,34,84, 185,277-278	270 ohm	5%	1/4W	Car.	501 227 00
R24,203,267,288, 295	680 ohm	5%	1/4W	Car.	501 268 00
R27,38-39,116,	100 ohm	5%	1/4W	Car.	501 210 00

119,125,132,139,  
145,159,164-165,  
170,177,180,184,  
195,202,207,211,  
215,250,282,301,  
302,315

R28,314	10 ohm	5%	1/4W	Car.	501 110 00
R29	390 ohm	5%	1/4W	Car.	501 239 00
R30,78,111,120, 179,190,283,318, 322	8.2 kohm	5%	1/4W	Car.	501 382 00
R31,48,55,219, 236,266,299,300	4.7 kohm	5%	1/4W	Car.	501 347 00
R33,45,104,174, 200,212,221	27 ohm	5%	1/4W	Car.	501 127 00
R37,268	22 ohm	5%	1/4W	Car.	501 122 00
R40,47,51,80,189, 319	560 ohm	5%	1/4W	Car.	501 256 00
R42,112,114,136, 156,240	1.2 kohm	5%	1/4W	Car.	501 312 00
R44	18 ohm	5%	1/4W	Car.	501 118 00
R49,54,292	120 kohm	5%	1/4W	Car.	501 512 00
R50,67,91,94, 192,194,217	56 ohm	5%	1/4W	Car.	501 156 00
R53,293	270 kohm	5%	1/4W	Car.	501 527 00
R56,66,320	12 kohm	5%	1/4W	Car.	501 412 00
R57,59,252,257, 273	47 kohm	5%	1/4W	Car.	501 447 00
R58,101-102,153, 204,261,312	3.3 kohm	5%	1/4W	Car.	501 333 00
R62,259,263,269, 272,287	100 kohm	5%	1/4W	Car.	501 510 00
R63,99,121,175, 199	15 kohm	5%	1/4W	Car.	501 415 00
R64,133,193,198, 208,296	1.8 kohm	5%	1/4W	Car.	501 318 00
R65,113,117,128, 134-135,137-138, 140-141,149,157-158, 160-163,169,178, 181-183,270	5.6 kohm	5%	1/4W	Car.	501 356 00
R70,92,95,316	820 ohm	5%	1/4W	Car.	501 282 00

RX/EX SIGNAL PATH BOARD 610 VERSION 3A

R72,276	10 Mohm	5%	1/4W	Car.	501 710 00
R77,86	27.4 kohm	1%		MF	511 427 40
R81	560 kohm	5%	1/4W	Car.	501 556 00
R82	15.4 kohm	1%		MF	511 415 00
R83	332 kohm	1%		MF	511 533 20
R85,103	22 kohm	5%	1/4W	Car.	501 422 00
R87	10 kohm			Pot.	583 410 01
R88	1.00 kohm	1%		MF	511 310 00
R89	6.81 kohm	1%		MF	511 368 10
R90,206	3.9 kohm	5%	1/4W	Car.	501 339 00
R93	3.16 kohm	1%		MF	511 331 60
R96	68 ohm	5%	1/4W	Car.	501 168 00
R97,105,110,122, 150 201	120 ohm	5%	1/4W	Car.	501 212 00
R98,155,308-311, 321	56 kohm	5%	1/4W	Car.	501 456 00
R100,275	82 kohm	5%	1/4W	Car.	501 482 00
R106,205,210,220, 264	1 kohm	5%	1/4W	Car.	501 310 00
R124	220 ohm			Pot.	583 222 00
R126,172,313	33 ohm	5%	1/4W	Car.	501 133 00
R129	226 ohm	1%		MF	511 222 60
R131	75 ohm	1%		MF	511 175 00
R142,144,265	68 kohm	5%	1/4W	Car.	501 468 00
R143,148,154,197, 227,238,245, 246	2.7 kohm	5%	1/4W	Car.	501 327 00
R146,151	15 ohm	5%	1/4W	Car.	501 115 00
R166	56.2 kohm	1%		MF	511 156 20
R167	178.0 ohm	1%		MF	511 217 80
R168	316 ohm	1%		MF	511 231 60
R176	470 ohm			Pot.	583 247 01
R187	76.8 ohm	1%		MF	511 176 80
R188	93.1 ohm	1%		MF	511 193 10
R213	4.7 kohm			Pot.	583 347 02
R223,244	1.87 kohm	1%		MF	511 318 70
R224	33.2 kohm	1%		MF	511 133 20
R225	562 ohm	1%		MF	511 256 20
R226	825 ohm	1%		MF	511 282 50
R230-231	487 ohm	1%		MF	511 248 70
R232	3.48 kohm	1%		MF	511 334 80
R233-234	10 kohm	1%		MF	511 410 00
R235,243	82.5 kohm	1%		MF	511 482 50
R237	5.62 kohm	1%		MF	511 356 20
R241-242	180 ohm	5%	1/4W	Car.	501 218 00
R248	27 kohm	5%	1/4W	Car.	501 427 00
R249	2.2 Mohm	5%	1/4W	Car.	501 622 00
R254	220 kohm			Pot.	583 522 20
R255,279	470 kohm	5%	1/4W	Car.	501 547 00
R256,285	6.8 kohm	5%	1/4W	Car.	501 368 00

R258,260	619 ohm	1%		MF	511 261 90
R289,294	270 ohm	5%	1/2W	Car.	502 227 00
R297-298,303-305	56 kohm			Sil	530 000 13
R317	18 kohm	5%	1/4W	Car.	501 418 00
C1,279	8.2 pF	+ -0.25	63V	Cer.	602 082 00
C2,5,9,11,13,20, 22-23,33-35,40, 47,53,60,63,76, 78-79,82-83,85, 93-94,96-97,112, 116,118,122,124, 127,130,136,143-164, 166-182,185-187, 191,196,198-199, 201-202,204-205, 209-210,218-223, 228-231,233,235, 241,248,250,256, 258-261,264,266,267, 270-278,284-287, 289,290-292	0.1 uF	10%	63V	Polyes.	622 510 00
C3,6,10,132	2-9 pF		100V	Var.	683 009 00
C4,8	12 pF	2%	63V	N150	602 112 00
C7,18-19,80,91 268,281-283,288	0.47 uF	10%	63V	Polyes.	622 547 01
C12,25,48,59,73	22 pF	2%	63V	N150	602 122 00
C14,24,38,75,98	2-18 pF		100V	Var.	683 118 00
C15,37,57,133	27 pF	2%	63V	N150	602 127 00
C16,30-31,280	0.22 uF	10%	63V	Polyes.	622 522 01
C17,42-43,45, 224-225	2.2 uF		35V	Tan.	652 622 01
C21,290	10 pF	2%	63V	N150	602 110 00
C26,66,217	1.2 nF	1%	500V	Polyst.	615 312 00
C27,87,226	2.2 nF	1%	125V	Polyst.	613 322 00
C28	8.2 nF	1%	125V	Polyst.	613 382 00
C29,41,62,69, 70,88,99,101-102, 104,107-108,115, 119-121,125,129, 137-138,140-142, 165,190,193,197, 200,206-208,211-213, 211-213,215,232, 245	10 nF	10%	63V	Polyes.	622 410 01
C32,103,243-244	6.8 uF		25V	Tan.	652 668 01
C36,67,100,117, 134	56 pF	2%	63V	N150	602 156 00

RX/EX SIGNAL PATH BOARD 610 VERSION 3A

C39,242	910 pF	1%	500V	Polyst.	615 291 00
C44	33 nF	10%	63V	Polyes.	622 433 00
C46,54,56,106	150 pF	2%	63V	N150	602 215 00
C49,64	5.6 nF	1%	125V	Polyst.	613 356 00
C50,86,236	22 nF	10%	63V	Polyes.	622 422 00
C51	0.33 uF	20%	63V	Polyes.	622 533 01
C52,55	0.15 uF	10%	63V	Polyes.	622 515 00
C58	680 pF	1%	500V	Polyst.	615 268 00
C61,84,194,214	220 pF	1%	500V	Polyst.	615 222 00
C65,131	82 pF	2%	63V	N150	602 182 00
C68	2.7 nF	1%	125V	Polyst.	613 327 00
C71	330 pF	1%	500V	Polyst.	615 233 00
C72,184,188	120 pF	2%	63V	N150	602 212 00
C74,113	47 pF	2%	63V	N150	602 147 00
C77	220 pF	+/-10%	63V	Cer.	602 220 00
C81	2.2 uF		25V	Sol.al.	652 622 03
C89	0.22 uF	10%	250V	Polyst.	624 522 01
C90,92	4.7 nF		44V	Cer.	602 347 01
C95	100 uF		25V	Sol.al.	652 810 00
C105	15 pF	2%	63V	N150	602 115 00
C109,126,128	33 pF	2%	63V	N150	602 133 01
C110	180 pF	1%	500V	Polyst.	615 218 00
C111	68 pF	2%	63V	N150	602 168 00
C114,139,216,237, 251-255,257,262, 293	1 nF	10%	63V	Cer.	602 310 02
C123	6.8 pF	+/-0.25pF		N150	602 068 00
C135,192,246	22 uF		16V	Tan.	651 722 01
C183	270 pF	1%	500V	Polyst.	615 227 00
C189,203	470 pF	1%	500V	Polyst.	615 247 00
C195	100 pF	2%	63V	N150	602 210 00
C227	1 nF	1%	500V	Polyst.	615 310 00
C234,239,240	10 uF		63V	Sol.al.	652 710 02
C247,249,263,265, 269	6.8 uF		25V	Sol.al.	652 668 01
L1-2	3.9 uH	10%		IM4	740 039 01
L3,6	5.6 uH	10%		IM4	740 056 00
L4-5,8,18,31,68	1 mH	5%			740 310 03
L7,20,22	1 uH				740 010 01
L9-10,15,43,51	47 uH	5%			740 147 02
L11,41	0.22 uH	10%		IM2	740 002 20
L12	8.2 uH	10%		IM4	740 082 00
L13,38	100 uH	5%			740 210 07
L14	3.3 uH	10%			740 033 01
L16,21	2.7 uH	10%		IM2	740 027 00
L17,69	470 uH	5%			740 247 01
L19,44	12 uH	10%		IM4	740 112 00
L23	3.9 uH	10%		IM2	740 039 00
L24	68 uH	5%			740 168 01
L25-26	6.8 uH	10%			740 068 00
L27,61-62,64	22 uH	10%			740 122 03
L28-29	33 uH				740 133 01
L30					103 578 41

L34	0.27 uF	10%	IM2	740 002 70
L35,66-67	220 uH			740 222 01
L36-37,42	1.8 uH	10%	IM2	740 018 00
L39,54,56	0.1 uH	10%	IM2	740 001 00
L40	0.18 uH	10%	IM2	740 001 80
L45	5 mH			740 350 00
L46	1.2 uH	10%	IM4	740 012 00
L47-49	10 uH	10%		740 110 01
L50,52-53,55	0.33 uH	10%	IM2	740 003 30
L57	0.15 uH	10%	IM2	740 001 50
L58	0.33 uH	10%	IM4	740 003 31
L59			Ferritp.	739 000 00
L60,63	4.7 uH	10%		740 047 01
L65				103 578 51
T1				103 578 31
T2				103 577 81
T3				103 577 91
T4				103 578 01
T5				103 578 11
T6				103 578 21
PL1	40 POL			756 040 04
PL2-3	2 POL			750 001 45

PARTS LIST  
FOR  
SYNTHESIZER BOARD 611 VERSION 3A

Printed Circuit Board Complete	<span style="border: 1px solid black; padding: 0 2px;">611</span>	107 561 11
IC1	7912CU	850 791 20
IC2	MA7805	850 780 50
IC3	MA7812	850 781 20
IC4,10,36	MC74HC00N	850 740 04
IC5	MC74HC10N	850 741 03
IC6,12,19,23	CD4099BCN	850 409 90
IC7,11,24,38, 47	MC74HC74N	850 747 42
IC8,16,41,42	CD40174BCN	854 017 40
IC9,17,22,40, 43	CD4008BCN	850 400 80
IC13	LM318N	850 031 80
IC14	HEF4016BP	850 401 60
IC15	NE5009N	850 500 90
IC18	CD4528B	850 452 80
IC20,35	LF353	850 035 30
IC21	CD40175BCN	854 017 50
IC26,37	NE5007	850 500 70
IC28	MC145146P	851 451 46
IC29,45	LF356	850 035 60
IC30	CD4066BC	850 406 60
IC31	SAA1059P	850 105 90
IC32	74C160	857 416 01
IC33	CD4013B	850 401 30
IC34	CD4046B	850 404 60
IC39	MC74HC161N	857 416 10
IC44	MC3393P	850 339 30
IC46	MC145145P	851 451 45
Q1,32,37,40	BC557B	840 055 70
Q2	J112	843 011 20
Q3,6,16,18, 20-23,25-31	BF240	840 024 00
Q4,7-12,14,19, 33,35,38,39	BC547B	840 054 70
Q5	BFX89	840 089 00
Q13	J310	840 031 03
Q15	BSX20	840 002 00
Q17,24	BFW17A	840 001 70
Q34,36	J112 MATCHED	843 011 21
D1-4,6-10, 19,20,25-27, 32	1N4148	830 414 80
D5	BZX79C5V6	832 795 61
D11,12	SD101C	830 010 10
D13,14,18, 28-31	BB109	833 010 90
D15-17	BZX79C12	832 791 21

SYNTHESIZER BOARD 611 VERSION 3A

D21-24	BA282					830 028 20
D33	BZX75C3V6					832 753 60
X1	14.5333MHZ					383 570 71
R1,4,9,13,14, 17,19,22,24,25, 39,40,45-48, 52-53,102,106-108, 115,118,136,158,163, 172,195	10 kohm	5%	1/8W	MF		500 410 01
R2,42,111,126,128, 151,155	100 kohm	5%	1/8W	MF		500 510 00
R3,28,100,152	6.8 kohm	5%	1/8W	MF		500 368 00
R5	1.27 kohm	1%	1/4W	MF		511 312 70
R6,20,43,79,83, 150	1 kohm	5%	1/8W	MF		500 310 00
R7	1.05 kohm	1%	1/4W	MF		511 310 50
R8,10,12,15,16, 36,62,68,75, 117,178,179	47 kohm	5%	1/8W	MF		500 447 00
R11,33,95,103,143	56 ohm	5%	1/8W	MF		500 156 00
R18	1.2 Mohm	5%	1/4W	MF		501 612 00
R21	2.7 Mohm	5%	1/4W	MF		501 627 00
R23	150 kohm	5%	1/8W	MF		500 515 00
R26,30,160,165	150 ohm	5%	1/8W	MF		500 215 00
R27,141	10 ohm	5%	1/8W	MF		500 110 01
R29,38,49,50-51, 101,133	2.2 kohm	5%	1/8W	MF		500 322 00
R31	715 ohm	1%	1/4W	MF		511 271 50
R32,57,69,93, 164,190	1.5 kohm	5%	1/8W	MF		500 315 00
R34	220 ohm			Pot.		583 222 00
R35	681 ohm	1%	1/4W	MF		511 268 10
R37,112,129,134, 137	100 ohm	5%	1/8W	MF		500 210 00
R41,106,114,116	33 kohm	5%	1/8W	MF		500 433 00
R44,185,187	820 ohm	5%	1/8W	MF		500 282 00
R54,56,60,67,82, 92,182,183,191	1.2 kohm	5%	1/8W	MF		500 312 00
R55,59,139,153	470 ohm	5%	1/8W	MF		500 247 00
R58,64,70	470 ohm	5%	1/2W	Car.		502 247 00
R61,63,65,73,84, 89,140,175	3.3 kohm	5%	1/8W	MF		500 333 00
R66,98,193,194,	27 ohm	5%	1/8W	MF		500 127 00
R71	820 kohm	5%	1/8W	MF		500 582 00
R72	180 kohm	5%	1/8W	MF		500 518 00
R74	15 ohm	5%	1/8W	MF		500 115 00



R76	2.2 ohm	5%	1/4W	Car.	501 022 00
R77	180 ohm	5%	1/8W	MF	500 218 01
R78	330 ohm	5%	1/8W	MF	500 233 00
R80,162	39 kohm	5%	1/8W	MF	500 439 00
R81,105,135,145, 180,181	5,6 kohm	5%	1/8W	MF	500 356 00
R85	56 kohm	5%	1/8W	MF	500 456 00
R86,90	120 ohm	5%	1/8W	MF	500 212 00
R87	12 ohm	5%	1/8W	MF	500 112 00
R88	270 ohm	5%	1/8W	MF	500 227 00
R91,96,121,173	220 ohm	5%	1/8W	MF	500 222 00
R94,166	680 ohm	5%	1/8W	MF	500 268 00
R97,149,169	220 kohm	5%	1/8W	MF	500 522 00
R99	100 ohm	5%	1/4W	Car.	501 210 00
R104	680 kohm	5%	1/4W	MF	500 568 00
R109	237 kohm	1%	1/4W	MF	511 523 70
R110	47 kohm			Pot.	583 447 01
R113,125,196	470 kohm	5%	1/8W	MF	500 547 00
R119,130,170,152	68 kohm	5%	1/8W	MF	500 468 00
R120,156	15 kohm	5%	1/8W	MF	500 415 00
R122-123,159	2.7 kohm	5%	1/8W	MF	500 327 00
R124,132,188	4.7 kohm	5%	1/8W	MF	500 347 00
R127,146	12 kohm	5%	1/8W	MF	500 412 00
R131,144,154	22 kohm	5%	1/8W	MF	500 422 00
R138	47 ohm	5%	1/8W	MF	500 147 00
R142	150 ohm	5%	1/2W	Car.	502 215 00
R147	270 kohm	5%	1/8W	MF	500 527 00
R148	18 kohm	5%	1/8W	MF	500 418 00
R157	27 kohm	5%	1/8W	MF	500 427 00
R161	560 ohm	5%	1/8W	MF	500 256 00
R167,168	4.22 kohm	1%	1/4W	MF	511 342 20
R171	2.49 kohm	1%	1/4W	MF	511 349 00
R174	3.9 kohm	5%	1/8W	MF	500 339 00
R176,186	390 ohm	5%	1/8W	MF	500 239 00
R177	48.7 ohm	1%	1/4W	MF	511 148 70
R184,189	120 kohm	5%	1/8W	MF	500 512 00
R192	1.8 kohm	5%	1/8W	MF	500 318 00
R197	1 Mohm	5%	1/8W	MF	500 610 00
C1,3,5	6.8 uF	-20+50%	25V	Sol.al.	652 668 01
C2,4,6,22,31, 141,147,148,190	0.22 uF	10%	63V	Polyes.	622 522 01
C7,9,12,18-21, 24-30,33,34, 36-37,40-46, 48-54,68,76, 80-82,84-85, 89-90,93,95, 101-111,114-115, 139,142-143, 150-151,160,167	0.1 uF	10%	63V	Polyes.	622 510 00
C8,205	150 pF	2%	63V	N150	602 215 00

SYNTHESIZER BOARD 611 VERSION 3A

C10	330 pF	1%	125V	Microp.	613 233 00
C11	1.5 nF	1%	500V	Microp.	613 315 00
C14,55,57,60, 65,70,75,78,83, 86,88,91-92,96-99, 120,134,136,138, 157-159,163,209, 210	10 nF	-20+50%	100V	Cer.	602 410 01
C13	10 pF	2%	63V	N150	602 110 00
C15,58,119	1 nF	1%	125V	Microp.	613 310 00
C16,35,38,47, 112	22 uF	20%	25V	Tan.	652 722 00
C17	100 nF	10%	250V	MKP	624 510 02
C23,32,164	33 pF	2%	63V	N150	602 133 01
C39,144	6.8 nF	1%	63V	Microp.	612 368 00
C56,145	47 nF	10%	250V	Polyes.	624 447 01
C59,118,123,146	0.47 uF	10%	63V	Polyes.	622 547 01
C61,79	3.3 pF	+/-0.25pF	63V	NPO	602 033 01
C62,64,66,74,100	6.8 uF	-20+50%	25V	Tan.	652 668 00
C63	82 pF	2%	63V	N150	602 182 01
C67	100 pF	2%	63V	N150	602 210 01
C69	27 pF	2%	63V	N150	602 127 01
C71-72,152,155, 165	47 nF	10%	63V	Polyes.	622 447 00
C73	18 pF	2%	63V	N150	602 118 01
C77	6.8 pF	+/-0.25pF	63V	N150	602 068 01
C87,153	82 pF	2%	63V	N150	602 182 00
C94,161	33 nF	20%	63V	Polyes.	622 433 00
C116	4.7 nF	1%	63V	Microp.	612 347 00
C117	680 pF	1%	125V	Microp.	613 268 00
C121,122,127,128, 137,140,156	4.7 nF	10%	100V	Cer.	602 347 02
C124,130	15 nF	20%	63V	Polyes.	622 415 01
C125	56 pF	2%	63V	N150	602 156 00
C126	1.8 nF	1%	125V	Microp.	613 318 00
C129	100 pF	2%	63V	N150	602 210 00
C131,208	2.7 pF	+/-0.25pF	63V	NPO	602 027 00
C132	180 pF	1%	500V	Microp.	615 218 00
C133	220 pF	1%	125V	Microp.	613 222 00
C135	22 nF	20%	63V	Polyes.	622 422 00
C149	10 nF	20%	63V	Polyes.	622 410 01
C154	1.2 nF	1%	125V	Microp.	613 312 00
C162	27 pF	2%	63V	N150	602 127 00
C166	0.33 uF	20%	63V	Polyes.	622 533 01
C168-203	1 nF	+/-10%	100V	Cer.	603 310 00
C204	2.2 uF	20%	25V	Tan.	652 622 02
C206	47 pF	2%	63V	N150	602 147 00
C207	330 pF	10%	63V	Cer.	602 233 00
L1,2,9,10,15	10 uH				740 110 01
L3,5,12,17,20	100 uH				740 210 07

L4	Var.		Coil	103 577 02
L6	Var.		Coil	103 577 32
L7	Var.		Coil	103 577 22
L8	Var.		Coil	103 577 12
L11,16	22 uH			740 122 03
L13,14	Var.		Coil	103 577 52
L18	Var.		Coil	103 577 62
L19	220 uH			740 222 01
T1				103 577 72
T2				103 577 42
PL1	40POL	MOLEX		756 040 04
PL2-6	2POL	3M		750 001 45
PL7	2POL	MOLEX		750 001 46

PARTS LIST  
FOR  
MASTER OSCILLATOR BOARD 612 VERSION 2A

Printed Circuit Board Complete 612

107 561 21

IC1,7	MC74HC00N					850 740 04
IC2,4,6	MC74HC161N					857 416 10
IC3	LM78L12ACP					850 741 20
IC5	LM78L05ACP					850 780 52
Q1	BC557B					840 055 70
Q2	BC547B					840 054 70
D1-4	1N4148					830 414 80
R2-3,7	1 kohm	5%	1/8W	MF		500 310 00
R4	100 kohm	5%	1/8W	MF		500 510 00
R5	180 ohm	5%	1/4W	Car.		501 218 00
R6,9,11	10 kohm	5%	1/8W	MF		500 410 00
R8	330 kohm	5%	1/8W	MF		500 533 00
R10	47 kohm	5%	1/8W	MF		500 447 00
C1-2	6.8 uF	-20+50%	25V	Sol.al.		652 668 01
C3,7,17	100 pF	2%	63V	N150		602 210 00
C4,9	0.33 uF	20%	63V	Polyes.		622 533 01
C5	22 uF	20%	25V	Tan.		652 722 00
C6,8	0.1 uF	10%	63V	Polyes.		622 510 00
C10	10 nF	-20+50%	63V	Cer.		602 410 01
C11	150 pF	2%	63V	N150		602 215 00
C12-16	0.47 uF	10%	63V	Polyes.		622 457 01
L1	33 uH					740 133 01
TCX0	10.24 MHz					383 570 11
PL5,6,8,9	2 POL					750 001 45
PL7	2 POL					750 001 46

PARTS LIST  
FOR  
MASTER OSCILLATOR BOARD 613 VERSION 2A

Printed Circuit Board Complete 613 107 561 31

IC1,7	MC74HC00N	850 740 04
IC2,4,6	MC74HC161N	857 416 10
IC3	LM78L12ACP	850 741 20
IC5	LM78L05ACP	850 780 52

Q1	BC557B	840 055 70
Q2	BC547B	840 054 70

D1-4	1N4148	830 414 80
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R2-3,7	1 kohm	5%	1/8W	MF	500 310 00
R4	100 kohm	5%	1/8W	MF	500 510 00
R5	180 ohm	5%	1/4W	Car.	501 218 00
R6,9,11	10 kohm	5%	1/8W	MF	500 410 00
R8	330 kohm	5%	1/8W	MF	500 533 00
R10	47 kohm	5%	1/8W	MF	500 447 00

C1-2	6.8 uF	-20+50%	25V	Sol.al.	652 668 01
C3,7,17	100 pF	2%	63V	N150	602 210 00
C4,9	0.33 uF	20%	63V	Polyes.	622 533 01
C5	22 uF	20%	25V	Tan.	652 722 00
C6,8	0.1 uF	10%	63V	Polyes.	622 510 00
C10	10 nF	-20+50%	63V	Cer.	602 410 01
C11	150 pF	2%	63V	N150	602 215 00
C12-16	0.47 uF	10%	63V	Polyes.	622 457 01

L1	33 uH	740 133 01
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TCXO	10.24 MHz	383 570 21
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TCXO HEATER PCB <span style="border: 1px solid black; padding: 0 2px;">699</span>		107 569 91
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PL5,6,8,9	2 POL	750 001 45
PL7	2 POL	750 001 46

PARTS LIST  
FOR  
MASTER OSCILLATOR BOARD 614 VERSION 2A

Printed Circuit Board Complete	<span style="border: 1px solid black; padding: 0 2px;">614</span>		107 561 41
IC1,7	MC74HC00N		850 740 04
IC2,4,6	MC74HC161N		857 416 10
IC3	LM78L12ACP		850 741 20
IC5	LM78L05ACP		850 780 52
Q1	BC557B		840 055 70
Q2	BC547B		840 054 70
D1-4	1N4148		830 414 80
R2-3,7	1 kohm	5%	1/8W MF 500 310 00
R4	100 kohm	5%	1/8W MF 500 510 00
R5	180 ohm	5%	1/4W Car. 501 218 00
R6,9,11	10 kohm	5%	1/8W MF 500 410 00
R8	330 kohm	5%	1/8W MF 500 533 00
R10	47 kohm	5%	1/8W MF 500 447 00
C1-2	6.8 uF	+50-20%	25V Sol.al. 652 668 01
C3,7,17	100 pF	2%	63V N150 602 210 00
C4,9	0.33 uF	20%	63V Polyes. 622 533 01
C5	22 uF	20%	25V Tan. 652 722 00
C6,8	0.1 uF	10%	63V Polyes. 622 510 00
C10	10 nF	-20+50%	63V Cer. 602 410 01
C11	150 pF	2%	63V N150 602 215 00
C12-16	0.47 uF	10%	63V Polyes. 622 457 01
L1	33 uH		740 133 01
TCXO	10.24 MHz		383 570 31
PL5,6,8,9	2 POL		750 001 45
PL7	2 POL		750 001 46

PARTS LIST  
FOR  
TCXO HEATER PCB 699 VERSION 1A

Printed Circuit Board Complete <span style="border: 1px solid black; padding: 0 2px;">699</span>						107 569 91
Q1	BC557B					840 055 70
Q2	MPSA14					840 001 40
R1	22 kohm	5%	1/8W	MF		500 422 00
R2,4	47 kohm	5%	1/8W	MF		500 447 00
R3	1 kohm	+/-10%		NTC		591 310 00
R5	180 kohm	5%	1/8W	MF		500 518 00
R6-13	1 kohm	5%	1/8W	MF		501 310 00
R14-21	1.8 kohm	5%	1/8W	MF		500 318 00
C1-2	1 nF	10%	100V	Cer.		602 310 02

PARTS LIST  
FOR  
INTERCONNECTION BOARD 620 VERSION 2A

Printed Circuit Board Complete	<span style="border: 1px solid black; padding: 0 2px;">620</span>					107 562 01
D1	TIL220					823 000 02
R1	1 kohm	5%	1/4W	Car.		501 310 00
RL1						780 000 17
C1-12,15-18,21 23,24,26,27	10 nF	10%	63V	Polyes.		622 410 01
C19,20,22,25	1 nF	10%	63V	Cer.		602 310 02
C13,14	47 uF	+50-10%	25V	W.alum.		652 747 01
C28,29	10 nF	10%	250V	Polyes.		624 410 01
L1-3,6	25 uH					740 125 00
L4,5	1 mH					
L7	100 uH					740 210 03
SK1						373 587 11
PL1						751 001 34
PL2						751 001 03
TS1,3						770 000 31
TS2						770 000 32



PARTS LIST  
FOR  
VOLTAGE CONVERTER BOARD 621 VERSION 1A

Printed Circuit Board Complete <span style="border: 1px solid black; padding: 0 2px;">621</span>					107 562 10
IC1	LM358				850 035 80
IC2	4001UB				850 400 11
IC3	4020B				850 402 00
IC4	4082B				850 408 20
IC5	40175				854 017 50
Q1	BSS89				843 008 90
Q2	BC640				840 064 00
Q3,4	BC557				840 055 70
Q5,6,8	BC337				840 033 70
Q7,9	BC327				840 032 70
Q10,11	IRF530				843 053 00
D1,2	BZX79C10				832 791 00
D3-6	1N4148				830 414 80
D7-10,13,14	BYV28				831 002 80
D11,12,15,16	BYS26				831 002 60
D17	1N5401				831 540 10
R1,8	4.7 kohm	5%	1/4W	Car.	501 347 00
R2	10 kohm	5%	1/4W	Car.	501 410 00
R3	22 kohm	5%	1/4W	Car.	501 422 00
R4	2.2 kohm	5%	1/4W	Car.	501 322 00
R5	2.2 kohm	5%	1.6W	MF	544 322 00
R6,12	100 kohm	5%	1/4W	Car.	501 510 00
R7	8.2 kohm	5%	1/4W	Car.	501 382 00
R9	47 kohm	5%	1/4W	Car.	501 447 00
R10	18 kohm	5%	1/4W	Car.	501 418 00
R11	12.1kohm	1%	1/4W	MF	511 412 10
R13	470 ohm	5%	1/4W	Car.	501 247 00
R14,15	1.2 kohm	5%	1/4W	Car.	501 312 00
R16	33 ohm	5%	1/4W	Car.	501 133 00
R17	330 ohm	5%	1/4W	Car.	501 233 00
R18,19	10 ohm	5%	1/4W	Car.	501 110 00
R20	0.18 ohm	2%	3W	ww	526 001 80
R21	47 ohm	5%	1/4W	Car.	501 147 00
R22	82 ohm	5%	1/4W	Car.	501 182 00
R23,24	12 ohm	5%	1/4W	Car.	501 112 00
R25	2.2 kohm	5%	1/2W	MF	512 322 00
R26,27	1 kohm	5%	1/2W	MF	512 310 00
R28,29	470 ohm	5%	1/2W	MF	512 247 00
C1,2	0.33 uF	10%	250V	Polyes.	624 533 00
C3	10 uF	20%	16V	Sol.al.	651 710 01
C4	0.1 uF	10%	63V	Polyes.	622 510 00
C5	330 pF	1%	500V	Microp.	615 233 00
C6,8	820 pF	10%	63V	Cer.	602 282 00
C7,12,13	220 uF	-10+50%	63V	W.alum.	652 822 02
C9,10	2.2 nF	10%	63V	Cer.	602 322 00
C11	100 uF	-10+50%	40V	W.alum.	652 810 01

VOLTAGE CONVERTER BOARD 621 VERSION 1A

C14,15	470 uF	-10+50%	40V	W.alum.	652 847 01
C16-20	0.47 uF	10%	63V	Polyes.	622 547 01
L1,4,5	5 uH				373 574 4X
L2	36 uH				103 574 51
L3	9 uH				103 574 61
T1					383 604 61
PL1					106 601 80
SK1	MOLEX SOCKET	6 POL.			106 601 60
SK2	MOLEX SOCKET	3 POL.			106 601 70

PARTS LIST  
FOR  
SWITCHED MODE POWER SUPPLY SMPS VERSION 2A

Q15,Q21	BUV27					840 002 70
Q17,Q18	BUV20					840 002 01
D43,44	BYW31					831 311 50
RL2			12V			780 000 33
R38	100 ohm	5%	15W	ww		528 210 00
R62,63	12 ohm	5%	1/2W	MF		512 112 00
C4,5	6.8 uF	10%	100V	Polyes.		623 668 01
C7	10 uF	10%	63V	Polyes.		622 710 00
C9	6,8 uF	10%	63V	Polyes.		622 668 01
C21,22	2800 uF	20%	55V	Elko		652 928 00
C11,12,15,17	47 nF	10%	250V	Polyes.		624 447 00
C28,29	2,2 nF	1%	250V	Microp.		614 322 00
C32,33	4700 uF	+50/-10%	63V	Elko		652 947 03
L1						732 000 39
L2,3	0.95 uH					103 575 01
L4	Transformer					373 584 81
L5	2.6 uH					103 575 21
T1	Transformer					383 584 71
T2,3	8.7 mH					103 574 91
FS3	16 AF					720 416 01
FS4	4 AF					720 340 00

PARTS LIST  
FOR  
SMPS CONTROL BOARD 622 VERSION 2A

Printed Circuit Board Complete 622 107 562 21

IC1,3,4,	TL 431C				850 043 10
IC2	ULN2083				850 208 30
IC5	CD4047B				850 404 70
IC6	LM2903				850 290 30
Q1,2,6,9,10	BC547B				840 054 70
Q3,4	BC557B				840 055 70
Q5,11,19	BC639				840 063 90
Q7	TIP42C				842 004 21
Q8,13,23	BD140				841 014 00
Q12,20	2N2907A				840 290 70
Q25	BRY39				844 003 90
D1,32	BZX79B9V1				832 799 10
D2-5,15,16,19,22, 23-25,49	1N4148				830 414 80
D7,8	BZX79C15				832 791 50
D9,10,12,14	BZX79B8V2				832 798 20
D17,18	BYV27				831 272 00
D20	BZX79B5V6				832 796 20
D21	BZX79C12				832 791 20
D27,28	BZX46C1V5				832 461 50
D29	BZX79B6V2				832 796 20
D30	BZX79C3V3				832 793 30
D31	BZX79C24				832 792 40
D33,41,47,48	1N4448				830 444 80
D45	TIL 220				823 000 02
D46	BZX79C39				832 793 90
RL1					780 000 34
R1,47	10 kohm			Pot.	582 410 00
R2	44.2 kohm	1%	1/4W	MF	511 444 20
R3,9	2.7 kohm	5%	1/4W	Car.	501 327 00
R4,10,75	18 kohm	5%	1/4W	Car.	501 418 00
R5,48	39 kohm	5%	1/4W	Car.	501 439 00
R6	100 kohm	5%	1/4W	Car.	501 510 00
R7,13	10 kohm	5%	1/4W	Car.	501 410 00
R8	10 kohm	5%	1/8W	MF	500 410 00
R11,17	27 kohm	5%	1/4W	Car.	501 427 00
R12	27 kohm	5%	1/8W	MF	500 427 00
R14 15	150 ohm	5%	1/4W	Car.	501 215 00
R16,24	1.8 kohm	5%	1/4W	Car.	501 318 00
R18,23	511 ohm	1%	1/4W	MF	511 251 10
R19	15.4kohm	1%	1/4W	MF	511 415 40
R20,36,76	47 kohm	5%	1/4W	Car.	501 447 00

SMPS CONTROL BOARD 622 VERSION 2A

R21	3.9 kohm	5%	1/4W	Car.	501 339 00
R22	8.2 kohm	5%	1/4W	Car.	501 382 00
R25	30.1kohm	1%	1/4W	MF	511 430 10
R26	5.36 kohm	1%	1/4W	MF	511 353 60
R27	1.96kohm	1%	1/4W	MF	511 319 60
R28,29	21.5kohm	1%	1/4W	MF	511 421 50
R30,46	4.7 kohm	5%	1/4W	Car.	501 347 00
R31	10 ohm	5%	1/4W	Car.	501 110 00
R32	332 ohm	1%	1/4W	MF	511 233 20
R33	270 ohm	5%	1/4W	Car.	501 227 00
R34,77	27.4kohm	1%	1/4W	MF	511 427 40
R35	0.18 ohm	2%	3W	ww	526 001 80
R37,40	2.2 kohm	5%	1/4W	Car.	501 322 00
R39,41,45,78	1 kohm	5%	1/4W	Car.	501 310 00
R42	3.9 ohm	5%	1/2W	MF	512 039 00
R43	1 kohm	5%	1/8W	MF	500 310 00
R44	39 ohm	5%	1/4W	Car.	501 139 00
R49	6.8 kohm	5%	1/4W	Car.	501 368 00
R50	15 kohm	5%	1/4W	Car.	501 415 00
R51,52,64,67	220 ohm	5%	1/4W	Car.	501 222 00
R54,69	330 ohm	5%	1/4W	Car.	501 233 00
R55,70	33 ohm	5%	4W	ww	526 133 01
R57,73	12 ohm	5%	1/4W	Car.	501 112 00
R72	1.5 kohm	5%	1/4W	Car.	501 315 00
R74	82 kohm	5%	1/4W	Car.	501 482 00
C1,8,16,36,14,19 23,34,39	0.1 uF	10%	63V	Polyes.	622 510 00
C6	1 nF	10%	63V	Cer.	602 310 02
C13,18,37	330 pF	1%	63V	Microp.	615 233 00
C10,35	33 uF	20%	10V	Sol.al.	651 733 00
C20	10 nF	+50/-20%	63V	Cer.	602 410 02
C2,3	2.2 uF	20%	25V	Sol.al.	652 622 04
C38	2.2 uF	20%	35V	Tan.	650 622 01
FS1,2	1A	SUPER FAST			720 310 02
PL1-3					751 001 31
PL4					751 001 32

PARTS LIST  
FOR  
SMPS DRIVER BOARD 623 VERSION 1A

Printed Circuit Board Complete	<span style="border: 1px solid black; padding: 0 2px;">623</span>					107 562 31
Q14,24	BC636					840 063 60
Q16,22	TIP42A					842 004 20
D27,35-40,42, 47-50	BYV27-150					831 271 50
R53	0.22 ohm	10%	1W	ww		523 002 20
R56,71	390 ohm	5%	1/4W	Car.		501 239 00
R59,65	12 ohm	5%	1/4W	Car.		501 112 00
R58,60,66,68	100 ohm	5%	1/4W	Car.		501 210 00
R61	4.7 ohm	5%	1W	MF		544 047 00
C24-26	33 uF	20%	10V	Sol.al.		651 733 01
C27,30,31	4.7 nF	20%	400V	Polycar.		625 347 00

PARTS LIST  
FOR  
TRANSCEIVER CONTROL BOARD 624 VERSION 4A

Printed Circuit Board Complete 624 107 562 41  
(specify program version when ordering)

IC1-4,38	74C904				857 490 40
IC5	CD4070BC				850 407 00
IC6	4020B				850 402 00
IC7	SN74LS93				850 749 32
IC8,39	74C04				850 740 42
IC9,44	CD4066BC				850 406 60
IC10	1489P				850 148 90
IC11	1488P				850 148 80
IC12	6803				850 680 30
IC13	74LS373				857 437 30
IC14	74LS138				857 413 80
IC15	27128				383 66X X1
	(XX denotes program version number)				
IC16	9124C				850 912 40
IC17	CD4040BC				850 404 00
IC18,20	74LS32				850 743 20
IC21	SN74LS20				850 740 21
IC22	74LS04				850 740 41
IC23,25,31-33, 36,45,49	74C374				857 437 40
IC24,26,46	NE5007				850 500 70
IC27-29,40,41,48	MC1458N				850 145 80
IC30,47	NE555				850 055 50
IC34	UDN2981				850 298 10
IC35	ULN2003A				850 200 30
IC37	74C00				850 740 01
IC42	LF353				850 035 30
IC43	74C906				857 490 60
IC50	74C150				857 415 00
IC51,52	MA7805				850 780 50
Q1-4	BF240				840 024 00
D1-10,13-16,19, 20,23-25,27-29	1N4148				830 414 80
D26	LM329DZ				830 032 90
D11,12,17,18,21,22	AA143				830 014 30
D30,31	BZX79C4V7				832 794 70
X1	4MHz	CRYSTAL			812 000 00
R1,6,110,97-99	1 kohm	5%	1/8W	MF	500 310 00
R2-4,26,28,35, 50,52,55,68,69, 90-96	10 kohm	5%	1/8W	MF	500 410 00
R5,37,116,117	2.2 kohm	5%	1/8W	MF	500 322 00

TRANSCEIVER CONTROL BOARD 624 VERSION 4A

R7,16,17	3.3 kohm	5%	1/8W	MF	500 333 00
R8	6.8 kohm	5%	1/8W	MF	500 368 00
R9,18,103	220 ohm	5%	1/8W	MF	500 222 00
R10	100 ohm	5%	1/8W	MF	500 210 00
R11,39	330 ohm	5%	1/8W	MF	500 233 00
R12	3.9 kohm	5%	1/8W	MF	500 339 00
R13	820 ohm	5%	1/8W	MF	500 282 00
R14,102	15 kohm	5%	1/8W	MF	500 415 00
R15,48,53,101	56 kohm	5%	1/8W	MF	500 456 00
R19,46,56,70-72,100	47 kohm	5%	1/8W	MF	500 447 00
R21,24,25,76,78	5.62 kohm	1%	1/4W	MF	511 356 20
R22,30,77	5.6 kohm	5%	1/8W	MF	500 356 00
R23,80	2.87 kohm	1%	1/4W	MF	511 328 70
R27,51	3.3 Mohm	5%	1/4W	Car.	501 633 00
R29,32	22 kohm	5%	1/8W	MF	500 422 00
R36	31.6 kohm	1%	1/4W	MF	511 431 60
R38	61.9 kohm	1%	1/4W	MF	511 461 90
R40	12 kohm	5%	1/8W	MF	500 412 00
R41-44,104-107	56 ohm	5%	1/2W	MF	512 156 00
R45,47	100 kohm	5%	1/8W	MF	500 510 00
R49,54	27 kohm	5%	1/8W	MF	500 427 00
R58	39 kohm	5%	1/8W	MF	500 439 00
R57	82 kohm	5%	1/8W	MF	500 482 00
R59	33 kohm	5%	1/8W	MF	500 433 00
R60,108	220 kohm	5%	1/8W	MF	500 522 00
R61,64	27.4 kohm	1%	1/4W	MF	511 427 40
R62,65	274 kohm	1%	1/4W	MF	511 527 40
R67	1 Mohm	5%	1/8W	MF	500 610 00
R73,85	22.6 kohm	1%	1/4W	MF	511 422 60
R74	30.1 kohm	1%	1/4W	MF	511 430 10
R75	21.5 kohm	1%	1/4W	MF	511 421 50
R79	33.2 kohm	1%	1/4W	MF	511 433 20
R81	1.0 kohm	1%	1/4W	MF	511 310 00
R82	34.8 kohm	1%	1/4W	MF	511 434 80
R83	1.2 kohm	5%	1/8W	MF	500 312 00
R84	46.4 kohm	1%	1/4W	MF	511 446 00
R86	8.2 kohm	5%	1/8W	MF	500 382 00
R87	6.81 kohm	1%	1/4W	MF	511 368 10
R88	2.74 kohm	1%	1/4W	MF	511 327 40
R89	5 kohm			Pot.	582 310 02
R109	3.16 kohm	1%	1/4W	MF	511 331 60
R111	2.2 kohm			Sil.	530 000 12
R112	47 kohm			Sil.	530 000 11
R113	4.7 kohm			Sil.	530 000 06
R114	562 ohm	1%	1/4W	MF	511 256 20
R115	5.36 kohm	1%	1/4W	MF	511 353 60
C1-46,60,62,65,89, 90-97,99-109, 116,117,119,120,127, 130-135,137,138,140, 144-150,156-159,163, 164,165	1 nF	10%	100V	Cer.	603 310 00
C47,52,54,55,75, 81,85,118,124	10 nF	10%	63V	Polys.	622 410 01



C48,56,58,61,63, 66-70,72,74,76-80, 83,86-88,98,111,112, 121-123,125,128,129, 142,160	0.1 uF	10%	63V	Polyes.	622 510 00
C49	39 pF	2%	63V	N150	602 139 01
C50	1.2 nF	10%	100V	Cer.	602 312 00
C51	180 pF	10%	63V	Cer.	602 218 00
C57,82,141,155	6.8 uF	20%	25V	Sol.al.	652 668 01
C59,64,136,139	220 pF	10%	100V	Cer.	603 222 00
C71,84,126	2.2 nF	1%	125V	Polyst.	613 322 00
C110	10 uF	+50-10%	16V	W.alum.	651 710 01
C113,161	2.2 uF	20%	35V	Tantal	652 622 01
C143,154	0.47 uF	10%	63V	Polyes.	622 547 01
C151-153	100 uF	20%	25V	W.alum.	652 810 00
C162	10 nF	-20+50%	100V	Cer.	602 410 01
L1,L3	22 uH				740 122 00
L2	100 uH				740 210 06
PL1	40 Pol.				756 040 04
PL2,3	10 Pol.				756 010 02
PL4	34 Pol.				756 034 01

PARTS LIST  
FOR  
POWER AMPLIFIER BOARD 626 VERSION 3A

Printed Circuit Board Complete	<span style="border: 1px solid black; padding: 0 2px;">626</span>	107 562 62
IC1	CNY17	825 000 00
Q1,8	BD175	842 017 50
Q2,7,9	BD645	842 064 50
Q3	BFW 17A	840 001 70
Q4,5	S25-50	842 255 00
Q6	BLV20	842 002 00
Q10,11	CD4851	842 485 10
Q12	BC557B	840 055 70
Q13	2N5061	833 506 10
Q14	BC547B	840 054 70
D1	BZX79B3V3	832 793 30
D2	BZX79B24	832 792 41
D3	TIL220	823 000 02
D4,5,6	SD101C	830 010 10
D7,8,10	1N4148	830 414 80
D9	BZX79B9V1	832 799 10
R1,27	2.2 kohm 5%	1/2W Car. 502 322 00
R2	30 ohm 5%	1/4W MF 501 130 00
R3	240 ohm 5%	1/4W MF 501 224 00
R4	62 ohm 5%	1/4W MF 501 162 00
R5,7,35	20 ohm	Pot. 582 120 00
R6	51 ohm 5%	1/4W MF 501 151 00
R8,9	8.2 ohm 5%	1/4W Car. 501 082 00
R10,19,20	470 ohm 5%	1/2W Car. 502 247 00
R11,50	560 ohm 5%	1/2W Car. 502 256 00
R12,40	47 ohm 5%	1/4W Car. 501 147 00
R13,14	22 ohm 5%	1/4W Car. 501 122 00
R15	6.8 ohm 5%	1/4W Car. 501 068 00
R16,41	27 ohm 5%	1/4W Car. 501 127 00
R17	12 ohm 5%	1/4W Car. 501 112 00
R18	270 ohm 5%	1/4W Car. 501 227 00
R21	120 ohm 5%	2.5W Car. 546 212 00
R22	33 ohm 5%	1/2W Car. 502 133 00
R23	1 kohm 5%	1/2W Car. 502 310 00
R24	330 ohm 5%	1/2W Car. 502 233 00
R25,26	18 ohm 5%	2.5W MF 546 118 01
R28	560 ohm 5%	1.5W MF 544 256 00
R29-34	12 ohm 5%	2.5W MF 546 112 00
R36,39	3.9 kohm 5%	1/4W Car. 501 339 00
R37,38	22 ohm 5%	2.5W MF 546 122 01
R51	4.7 kohm 5%	1/4W Car. 501 347 00
R52	10 kohm 5%	1/4W Car. 501 410 00
R53	5.6 kohm 5%	1/4W Car. 501 356 00
R54	1 kohm 5%	1/4W Car. 501 310 00
R55	100 kohm 5%	1/4W Car. 501 510 00
R56,57	100 ohm 1%	0.5W MF 512 210 00

POWER AMPLIFIER BOARD 626 VERSION 3A

R58	10 kohm	5%	2.5W	MF	546 410 00
R59	680 ohm	5%	1/4W	Car.	501 268 00
R60	220 ohm	5%	1.5W	MF	544 220 00
R61	0 ohm				501 000 00
R62	2.2 ohm	5%	1/2W	Car.	502 022 00
R63-66	12 ohm		3W		516 112 00
R67	12 kohm	5%	1/4W	Car.	501 412 00
C1	0.22 uF	10%	250V	Polyes.	624 522 01
C2,3,8,9,21,22, 24,27,28,39,42, 86	0.1 uF	10%	100V	Polyes.	623 510 01
C4,7,10,11,14, 19,20,23,25,26, 29,32-34,36-38, 40,41,52,85,87	0.22 uF	10%	63V	Polyes.	622 522 00
C5	10 pF	+/-10%	100V	Polyes.	603 110 03
C6	1.5 uF	10%	100V	Polyes.	623 615 00
C12,13,45,46	620 pF	5%	300V	Mi	644 262 00
C15,74,76	0.1 uF	10%	63V	Polyes.	622 510 00
C16,50	220 uF	+50-10%	10V	W.alum.	651 822 00
C17,18	0.22 uF	10%	63V	Polyes.	622 522 01
C30,31,53-55,58	0.15 uF	10%	100V	Polyes.	623 515 00
C43,44,47,48	750 pF	5%	300V	Mi	644 275 00
C49	470 uF	+50-10%	63V	W.alum.	652 847 02
C51	0.22 uF	10%	63V	Polyes.	622 522 00
C59-64	47 nF	10%	250V	Polyes.	624 447 00
C65,66	160 pF	5%	300V	Mi	644 216 00
C71,72	2.2 uF	10%	250V	Polyes.	624 622 01
C73	4.7 nF	+/-10%	100V	Cer.	602 347 02
C75	470 nF	10%	63V	Polyes.	622 547 01
C77,80	1 nF	10%	100V	Cer.	630 310 00
C78	8 pF	+/-1/2pF	300V	Mi	644 080 00
C79	150 pF	5%	300V	Mi	644 215 00
C81	0.47 uF	10%	100V	Polyes.	623 547 00
C84	100 pF	2%	100V	Cer.	603 210 00
C88	33 pF	2%	100V	Cer.	603 133 00
L1,2,6,7,10,12,13	15 uH				740 000 00
L3,4	2.2 uH				740 022 02
L5,9,11	100 uH				740 210 00
L8	0.47 uH				740 004 70
L14	5 uH				740 050 00
T1					103 573 71
T2					103 573 81
T3					103 573 91
T4					103 574 01
T5					103 574 11
T6					103 574 22
T7					103 574 31

SW1	Thermoswitch 110 C	769 000 02
SW2	Thermoswitch 100 C	769 000 01

PARTS LIST  
FOR  
P.A.FILTER MARINE BANDS. BOARD 627 VERSION 1A

Printed Circuit Board Complete <span style="border: 1px solid black; padding: 0 2px;">627</span>					107 562 71
D3,4	SD101C				830 010 10
RL1-3,5-7			24V		780 000 32
R4,5,8,9	100 ohm	1%	1/2W	MF	512 210 00
R10	9.09kohm	1%	1/4W	MF	511 390 90
C1,85	1 nF	10%	63V	Cer.	602 310 03
C2-4,79-82,	0,1 uF	10%	63V	Polyes.	622 510 00
C6,39	160 pF	2%	500V	Mi	645 216 01
C7,14,44	27 pF	2%	500V	Mi	645 127 00
C8	220 pF	2%	500V	Mi	645 222 02
C9	43 pF	2%	500V	Mi	645 143 00
C10,54,61	390 pF	2%	500V	Mi	645 239 01
C11,20,27,48,55	91 pF	2%	500V	Mi	645 191 00
C13,22,43,50,57,73	180 pF	2%	500V	Mi	645 218 02
C15,24,45,52,75	270 pF	2%	500V	Mi	645 227 02
C18,25,46,53,60,67	47 pF	2%	500V	Mi	645 147 00
C19,26,47	360 pF	2%	500V	Mi	645 236 01
C23,51,58	30 pF	2%	500V	Mi	645 130 00
C28,29	300 pF	2%	500V	Mi	645 230 01
C30,31	51 pF	2%	500V	Mi	645 151 00
C32,33	430 pF	2%	500V	Mi	645 243 00
C34	75 pF	2%	500V	Mi	645 175 00
C35	82 pF	2%	500V	Mi	645 182 00
C36,37	620 pF	2%	300V	Mi	644 262 01
C38	150 pF	2%	500V	Mi	645 215 00
C59	240 pF	2%	500V	Mi	645 224 02
C62	100 pF	2%	500V	Mi	645 210 01
C64	200 pF	2%	500V	Mi	645 220 01
C65	39 pF	2%	500V	Mi	645 139 00
C66	330 pF	2%	500V	Mi	645 233 01
C68	430 pF	2%	500V	Mi	645 243 00
C69	120 pF	2%	500V	Mi	645 212 00
C71	130 pF	2%	500V	Mi	645 213 01
C72	18 pF	+-1/2pF	500V	Mi	645 118 00
C74	36 pF	2%	500V	Mi	645 136 00
C76	68 pF	2%	500V	Mi	645 168 00
C83	8 pF	+-1/2pF	500V	Mi	645 080 00
C84	33 pF	2%	63V	Cer.	602 133 02
L1	1.0 uH				373 572 1X
L2	0.0 uH				103 575 41

P.A.FILTER MARINE BANDS. BOARD 627 VERSION 1A

L3,18	1.6 uH	373 572 2X
L4,17	0.3 uH	103 575 51
L5,20	2.3 uH	373 573 2X
L6,14	0.5 uH	103 576 11
L9	0.95 uH	373 572 2X
L10	0.17 uH	103 575 61
L11	1.4 uH	373 572 6X
L12	0.26 uH	103 575 71
L13	1.9 uH	373 572 9X
L16	1.1 uH	373 572 4X
L17	0.2 uH	103 575 51
L19	0.3 uH	103 575 91
L21	0.6 uH	103 576 21
T2		103 576 51
T3		103 576 61
PL1	BNC	373 605 6X
SK1	RIBBON CABLE 10 POL.	373 602 71
SK2,3	S0239	750 000 29

PARTS LIST  
FOR  
P.A.FILTER MARINE BANDS. BOARD 628 VERSION 1A

Printed Circuit Board Complete 628 107 562 81

D1,2,3,4 SD101C 830 010 10

RL1-7 24V 780 000 32

R2	1.4 kohm	1%	1/4W	MF	511 314 00
R3	12 kohm	1%	1W	MF	513 412 10
R4,5,6,7,8,9	100 ohm	1%	1/2W	MF	512 210 00
R10	9.09kohm	1%	1/4W	MF	511 390 90

C1,81,85	1 nF	10%	63V	Cer.	602 310 03
C2-5,79-82,	0,1 uF	10%	63V	Polyes.	622 510 00
C6,39	160 pF	2%	500V	Mi	645 216 01
C7,14,44	27 pF	2%	500V	Mi	645 127 00
C8	220 pF	2%	500V	Mi	645 222 02
C9	43 pF	2%	500V	Mi	645 143 00
C10,54,61	390 pF	2%	500V	Mi	645 239 01
C11,20,27,48,55	91 pF	2%	500V	Mi	645 191 00
C12,21,41,63	2200pF	2%	500V	Mi	645 322 00
C13,22,43,50,57,73	180 pF	2%	500V	Mi	645 218 02
C15,24,45,52,75	270 pF	2%	500V	Mi	645 227 02
C18,25,46,53,60,67	47 pF	2%	500V	Mi	645 147 00
C19,26,47,56	360 pF	2%	500V	Mi	645 236 01
C23,51,58	30 pF	2%	500V	Mi	645 130 00
C28,29	300 pF	2%	500V	Mi	645 230 01
C30,31	51 pF	2%	500V	Mi	645 151 00
C32,33	430 pF	2%	500V	Mi	645 243 00
C34	75 pF	2%	500V	Mi	645 175 00
C35	82 pF	2%	500V	Mi	645 182 00
C36,37	620 pF	2%	300V	Mi	644 262 01
C38	150 pF	2%	500V	Mi	645 215 00
C40,49,70	2000pF	2%	500V	Mi	645 320 00
C42	820 pF	2%	300V	Mi	644 282 01
C59	240 pF	2%	500V	Mi	645 224 02
C62	100 pF	2%	500V	Mi	645 210 01
C64	200 pF	2%	500V	Mi	645 220 01
C65	39 pF	2%	500V	Mi	645 139 00
C66	330 pF	2%	500V	Mi	645 233 01
C68	430 pF	2%	500V	Mi	645 243 00
C69	120 pF	2%	500V	Mi	645 212 00
C71	130 pF	2%	500V	Mi	645 213 01
C72	18 pF	+-1/2pF	500V	Mi	645 118 00
C74	36 pF	2%	500V	Mi	645 136 00
C76	68 pF	2%	500V	Mi	645 168 00
C77,78	560 pF	2%	300V	Mi	644 256 01

P.A.FILTER MARINE BANDS. BOARD 628 VERSION 1A

C83	8 pF	$\pm 1/2$ pF	500V	Mi	645 080 00
C84	33 pF	2%	63V	Cer.	602 133 02
L1	1.0 uH				373 572 1X
L2	0.0 uH				103 575 41
L3,18	1.6 uH				373 572 2X
L4,17	0.3 uH				103 575 51
L5,20	2.3 uH				373 573 2X
L6,14	0.5 uH				103 576 11
L7,22	9.3 uH				373 573 6X
L9	0.95 uH				373 572 2X
L10	0.17 uH				103 575 61
L11	1.4 uH				373 572 6X
L12	0.26 uH				103 575 71
L13	1.9 uH				373 572 9X
L15	7.9 uH				103 573 51
L16	1.1 uH				373 572 4X
L17	0.2 uH				103 575 51
L19	0.3 uH				103 575 91
L21	0.6 uH				103 576 21
T1,3					103 576 61
T2					103 576 51
PL1	BNC				373 605 6X
SK1	RIBBON CABLE 10 POL.				373 602 71
SK2,3	S0239				750 000 29



PARTS LIST  
FOR  
P.A.FILTER CONTINUOUS COVERAGE. BOARD 629 VERSION 1A

Printed Circuit Board Complete 629 107 562 91

D1,2 SD101C 830 010 10

RL1-8 780 000 32

R1-4	100 ohm	1%	MF	512 210 00
R5	9.09kohm	1%	MF	511 390 90

C1,135	1 nF	10%	63V	Cer.	602 310 02
C2-5,129-132	0.1 uF	10%	63V	Polyes.	622 510 00
C6,14,32 104,128	120 pF	2%	500V	Mi	645 212 00
C7,41,114	20 pF	+ -1/2pF	500V	Mi	645 120 00
C8,16,24,54	160 pF	2%	500V	Mi	645 216 01
C9	33 pF	2%	500V	Mi	645 133 00
C10,18,26,34	240 pF	2%	500V	Mi	645 224 02
C11,45,77-79	27 pF	2%	500V	Mi	645 127 00
C12,20,28,92,139	360 pF	2%	500V	Mi	645 236 01
C13,94-96,	82 pF	2%	500V	Mi	645 182 00
C15,23,31	22 pF	+ -1/2pF	500V	Mi	645 122 00
C17,25,33,122	36 pF	2%	500V	Mi	645 136 00
C19,27,35,89-91	56 pF	2%	500V	Mi	645 156 01
C21,29,37	75 pF	2%	500V	Mi	645 175 00
C22,30	110 pF	2%	500V	Mi	645 211 01
C36,86	220 pF	2%	500V	Mi	645 222 02
C38,61,68,113,102	100 pF	2%	500V	Mi	645 210 01
C39,74,110,126	91 pF	2%	500V	Mi	645 191 00
C40,	18 pF	+ -1/2pF	500V	Mi	645 118 00
C42,43,115,62,137	130 pF	2%	500V	Mi	645 213 01
C44,116,136,138	30 pF	2%	500V	Mi	645 130 00
C46,56,63,75,76 80-82,105,121	180 pF	2%	500V	Mi	645 218 02
C47,69,97,117,123	200 pF	2%	500V	Mi	645 220 01
C48,49,85,118	43 pF	2%	500V	Mi	645 143 00
C50	260 pF	2%	500V	Mi	645 226 00
C51,58,65,71	300 pF	2%	500V	Mi	645 230 01
C52,53,59,66,72 100,120	62 pF	2%	500V	Mi	645 162 00
C55	24 pF	+ -1/2pF	500V	Mi	645 124 00
C57,64,70,98,106	47 pF	2%	500V	Mi	645 147 00
C60,67,109	430 pF	2%	500V	Mi	645 243 00
C73,93,101,125	390 pF	2%	500V	Mi	645 239 01
C83,84	39 pF	2%	500V	Mi	645 139 00
C87,88,99,107,119	270 pF	2%	500V	Mi	645 227 02

P.A.FILTER CONTINUOUS COVERAGE. BOARD 629 VERSIO

C103	560 pF	2%	300V	Mi	644 256 01
C108,124	68 pF	2%	500V	Mi	645 168 00
C111,127	620 pF	2%	300V	Mi	644 262 01
C112	150 pF	2%	500V	Mi	645 215 00
C134	33 pF	2%	63V	Cer.	602 133 02
C133	12 pF	+ -1/2pF	500V	Mi	645 112 00
L1,17	0.8 uH				373 572 0X
L2	0.15 uH				103 575 31
L3,25	1.0 uH				373 572 1X
L4	0.2 uH				103 575 41
L5,21	1.6 uH				373 572 7X
L6	0.3 uH				103 575 81
L7,29	2.1 uH				373 573 0X
L8,12,22	0.4 uH				103 576 01
L9	1.1 uH				373 572 3X
L10,20,26	0.26 uH				103 575 71
L11	1.6 uH				373 572 8X
L13	2.3 uH				373 573 1X
L14,24,30	0.5 uH				103 576 11
L15	3.4 uH				373 573 4X
L16,32	0.7 uH				103 576 31
L18	0.18 uH				103 575 61
L19	1.1 uH				373 572 4X
L23	2.3 uH				373 573 2X
L27	1.5 uH				373 572 5X
L28	0.3 uH				103 575 91
L31	3.1 uH				373 573 3X
T1					103 576 51
T2					103 576 61
PL1	COAXCABLE				373 613 4X
SK1	RIBBON CABLE 10 POL.				373 602 71
SK2	S0239				750 000 29

PARTS LIST  
FOR  
50 OHM ANTENNA RELAY BOARD 630 VERSION 2A

Printed Circuit Board Complete	<span style="border: 1px solid black; padding: 0 2px;">630</span>					107 563 00
Q1	BC327					840 032 70
D1	LED F209 RED					823 000 00
D2	1N4148					830 414 80
D3	BZX79C9V1					832 799 11
RL1	1022					373 590 01
RL2	1023					373 589 81
R1,3	1 kohm	5%	1/2W	Car.		502 310 00
R2	470 ohm	5%	1/4W	Car.		501 247 00
C1-2	0.1 uF	10%	100V	Polyes.		623 510 01
C3	10 pF	+/-1/2pF	500V	Mi		645 110 00
C4	12 pF	+/-1/2pF	500V	Mi		645 112 00
PL1	PLUG COAXCABLE					373 607 6X
PL2	PLUG BNC FLANGE					750 000 51
SK1	BNC 290/U					750 000 10

PARTS LIST  
FOR  
POWER AMPLIFIER BOARD 631 VERSION 3A

Printed Circuit Board Complete <span style="border: 1px solid black; padding: 0 2px;">631</span>		107 563 11
IC1	CNY17	825 000 00
Q1,8	BD175	842 017 50
Q2,7,9	BD645	842 064 50
Q3	BFW 17A	840 001 70
Q4,5	S25-50	842 255 00
Q6	BLV20	842 002 00
Q10,11	CD4851	842 485 10
Q12	BC557B	840 055 70
Q13	2N5061	833 506 10
Q14	BC547B	840 054 70
D1	BZX79B3V3	832 793 30
D2	BZX79B24	832 792 41
D3	TIL220	823 000 02
D4,5,6	SD101C	830 010 10
D7,8,10	1N4148	830 414 80
D9	BZX79B9V1	832 799 10
R1,27	2.2 kohm 5%	1/2W Car. 502 322 00
R2	30 ohm 5%	1/4W MF 501 130 00
R3	240 ohm 5%	1/4W MF 501 224 00
R4	62 ohm 5%	1/4W MF 501 162 00
R5,7,35	20 ohm	Pot. 582 120 00
R6	51 ohm 5%	1/4W MF 501 151 00
R8,9	8.2 ohm 5%	1/4W Car. 501 082 00
R10,19,20	470 ohm 5%	1/2W Car. 502 247 00
R11,50	560 ohm 5%	1/2W Car. 502 256 00
R12,40	47 ohm 5%	1/4W Car. 501 147 00
R13,14	22 ohm 5%	1/4W Car. 501 122 00
R15	6.8 ohm 5%	1/4W Car. 501 068 00
R16,41	27 ohm 5%	1/4W Car. 501 127 00
R17	12 ohm 5%	1/4W Car. 501 112 00
R18	270 ohm 5%	1/4W Car. 501 227 00
R21	120 ohm 5%	2.5W Car. 546 212 00
R22	33 ohm 5%	1/2W Car. 502 133 00
R23	1 kohm 5%	1/2W Car. 502 310 00
R24	330 ohm 5%	1/2W Car. 502 233 00
R25,26	18 ohm 5%	2.5W MF 546 118 01
R28	560 ohm 5%	1.5W MF 544 256 00
R29-34	12 ohm 5%	2.5W MF 546 112 00
R36,39	3.9 kohm 5%	1/4W Car. 501 339 00
R37,38	22 ohm 5%	2.5W MF 546 122 01
R51	4.7 kohm 5%	1/4W Car. 501 347 00
R52	10 kohm 5%	1/4W Car. 501 410 00
R53	5.6 kohm 5%	1/4W Car. 501 356 00
R54	1 kohm 5%	1/4W Car. 501 310 00
R55	100 kohm 5%	1/4W Car. 501 510 00
R56,57	100 ohm 1%	0.5W MF 512 210 00

POWER AMPLIFIER BOARD 631 VERSION 3A

R58	10 kohm	5%	2.5W	MF	546 410 00
R59	680 ohm	5%	1/4W	Car.	501 268 00
R60	220 ohm	5%	1.5W	MF	544 220 00
R61	0 ohm				501 000 00
R62	2.2 ohm	5%	1/2W	Car.	502 022 00
R63-66	12 ohm		3W		516 112 00
R67	12 kohm	5%	1/4W	Car.	501 412 00
C1	0.22 uF	10%	250V	Polyes.	624 522 01
C2,3,8,9,21,22, 24,27,28,39,42, 86	0.1 uF	10%	100V	Polyes.	623 510 01
C4,7,10,11,14, 19,20,23,25,26, 29,32-34,36-38, 40,41,52,85,87	0.22 uF	10%	63V	Polyes.	622 522 00
C5	10 pF	+ -10%	100V	Polyes.	603 110 03
C6	1.5 uF	10%	100V	Polyes.	623 615 00
C12,13,45,46	620 pF	5%	300V	Mi	644 262 00
C15,74,76	0.1 uF	10%	63V	Polyes.	622 510 00
C16,50	220 uF	+50-10%	10V	W.alum.	651 822 00
C17,18	0.22 uF	10%	63V	Polyes.	622 522 01
C30,31,53-55,58	0.15 uF	10%	100V	Polyes.	623 515 00
C43,44,47,48	750 pF	5%	300V	Mi	644 275 00
C49	470 uF	+50-10%	63V	W.alum.	652 847 02
C51	0.22 uF	10%	63V	Polyes.	622 522 00
C59-64	47 nF	10%	250V	Polyes.	624 447 00
C65,66	160 pF	5%	300V	Mi	644 216 00
C71,72	2.2 uF	10%	250V	Polyes.	624 622 01
C73	4.7 nF	+ -10%	100V	Cer.	602 347 02
C75	470 nF	10%	63V	Polyes.	622 547 01
C77,80	1 nF	10%	100V	Cer.	630 310 00
C78	8 pF	+ -1/2pF	300V	Mi	644 080 00
C79	150 pF	5%	300V	Mi	644 215 00
C81	0.47 uF	10%	100V	Polyes.	623 547 00
C84	100 pF	2%	100V	Cer.	603 210 00
C88	33 pF	2%	100V	Cer.	603 133 00
L1,2,6,7,10,12,13	15 uH				740 000 00
L3,4	2.2 uH				740 022 02
L5,9,11	100 uH				740 210 00
L8	0.47 uH				740 004 70
L14	5 uH				740 050 00
T1					103 573 71
T2					103 573 81
T3					103 573 91
T4					103 574 01
T5					103 574 11
T6					103 574 22
T7					103 574 31

POWER AMPLIFIER BOARD 631 VERSION 3A

SW1  
SW2

Thermoswitch 110 C  
Thermoswitch 100 C

769 000 02  
769 000 01

PARTS LIST  
FOR  
ANTENNA TUNING UNIT BOARD 640 VERSION 4A

Printed Circuit Board Complete <span style="border: 1px solid black; padding: 0 2px;">640</span>					107 564 01
IC1	LM317T	5V3			850 031 70
IC2	1489P				850 148 90
IC3	1488P				850 148 80
IC4	HPF505				850 000 11
IC5	MC1458C				850 145 80
IC6	LM358N				850 035 80
IC7	LM2901				850 290 10
IC8	MC6805R3	(programmed)			856 805 30
IC9-12	74C174				857 417 40
IC13-16	2003A				850 200 30
Q1	2N5484				840 548 40
Q2-5	BF240				840 024 00
D1,2,7,12-41,70	1N4148				830 414 80
D3-6,8,9	SD101C				830 010 10
D10,11	BZX79B5V1				832 795 11
D42-69	LD464				823 000 06
X1	4MHz	CRYSTAL			812 000 00
RL1	24V				780 000 32
RL2-9,18-20	REED RELAY	500V			373 588 51
RL10-17,25-26	REED RELAY	5KV			373 588 41
RL21-24	REED RELAY	2,5kV			373 588 61
RL27-29	REED RELAY	10kV			373 588 71
R1	237 ohm	1%	1/4W	MF	511 223 70
R2	750 ohm	1%	1/4W	MF	511 275 00
R3,4	300 ohm	5%	5W	MF	547 230 00
R5,6	75 ohm	5%	5W	MF	547 175 00
R7	150 ohm	5%	5W	MF	547 215 00
R8,16	75 ohm	1%	1/4W	MF	511 175 00
R9,11,31-33,39,40,43	1 kohm	5%	1/4W	Car.	501 310 00
R10	121 ohm	1%	1/4W	MF	511 212 10
R12-14,57,58,74,150,151	100 ohm	5%	1/8W	Car.	500 210 00
R15,118-143	56 ohm	5%	1/4W	Car.	501 156 00
R17,35,36,148,149	6.8 kohm	5%	1/4W	Car.	501 368 00
R18	4.7 kohm	5%	1/4W	Car.	501 347 00
R19	53.6 ohm	1%	1/4W	MF	511 153 60
R20,34,53-56,85,145-147	100 ohm	5%	1/4W	Car.	501 210 00

ANTENNA TUNING UNIT BOARD 640 VERSION 4A

R21,24	82.5 ohm	1%	1/4W	MF	511 182 50
R22	95.3 ohm	1%	1/4W	MF	511 195 30
R23,25	51 ohm	5%	2W	MF	546 151 00
R26	2.2 Mohm	5%	1/4W	Car.	541 622 00
R27	2.2 kohm	5%	1/4W	Car.	501 322 00
R28	27.4 kohm	1%	1/4W	MF	511 427 40
R29	17.8 kohm	1%	1/4W	MF	511 417 80
R30,38,65	27 kohm	5%	1/8W	MF	500 427 00
R37,60	33 kohm	5%	1/8W	MF	500 433 00
R41	39 kohm	5%	1/8W	MF	500 439 00
R42,45	82 kohm	5%	1/4W	Car.	501 482 00
R44	56 kohm	5%	1/4W	Car.	501 456 00
R46,47	39 kohm	5%	1/4W	Car.	501 439 00
R48,61-63,82	10 kohm	5%	1/8W	MF	500 410 00
R49	18 kohm	5%	1/8W	MF	500 418 00
R50	220 kohm	5%	1/8W	MF	500 522 00
R51,52	470 ohm	5%	1/8W	MF	500 247 00
R59	100 kohm	5%	1/8W	MF	500 510 00
R64	39 kohm	5%	1/8E	MF	500 439 00
R66,68	1 kohm	5%	1/8W	MF	500 310 00
R67	120 kohm	5%	1/8W	MF	500 512 00
R69	6.8 kohm	5%	1/8W	MF	500 368 00
R70	3.3 kohm	5%	1/8W	MF	500 333 00
R71,75	3.9 kohm	5%	1/8W	MF	500 339 00
R72	56 kohm	5%	1/8W	MF	500 456 00
R73	220 ohm	5%	1/8W	MF	500 222 00
R76	330 ohm	5%	1/8W	MF	500 233 00
R77	330 kohm	5%	1/8W	MF	500 533 00
R78	820 ohm	5%	1/8W	MF	500 282 00
R79	47 kohm	5%	1/8W	MF	500 447 00
R80	5.6 kohm	5%	1/8W	MF	500 356 00
R81	1.8 kohm	5%	1/8W	MF	500 318 00
R83	270 kohm	5%	1/8W	MF	500 527 00
R84	9x12 kohm			Sil	530 000 16
R86-113	10 ohm	5%	1/8W	MF	500 110 01
R114-116	8x8.2 kohm			Sil	530 000 15
R117	6x8.2 kohm			Sil	530 000 14
R144	27 ohm	5%	1/4W	Car.	501 127 00
R152-156	3.3 Mohm	5%	1W	Car.	523 633 00
C1,2,5,8,18, 26,27,35,41,42, 48,51,57,60, 62,63,65,71-82, 201-204,218-222	0.1 uF	20%	63V	Polyes.	622 510 00
C3	100 uF		25V	W.alum.	652 810 00
C6,7,9,13-16, 34,36,49,50,54,59, 61,83-110,198-200, 213-216	10 nF	-20+50%	100V	Cer.	602 410 01
C10,11,113-128,	0.1 uF	10%	100V	Polyes.	623 510 01



ANTENNA TUNING UNIT BOARD 640 VERSION 4A

149-168,184-197,  
207-212

C12,22,31,33,112	1 nF	10%	63V	Cer.	602 310 02
C17,205,206,217	220 pF	10%	63V	Cer.	602 222 00
C19,25,30,32,37, 38	10 nF	20%	63V	Polyes.	622 410 01
C20	1.8 pF	$\pm 0.25\text{pF}$	400V	Cer.	605 018 00
C21	2.2 pF	$\pm 0.26\text{pF}$	400V	Cer.	605 022 00
C23,70	0.22 uF	20%	63V	Polyes.	622 522 01
C24	680 pF	1%	125V	Microp.	615 268 00
C28,29,44,66-69, 111,	4.7 nF	10%	100V	Cer.	602 347 02
C39,40	56 pF	10%	63V	Cer.	602 156 00
C43	10 uF	20%	16V	Sol.al	651 710 03
C45	1 uF	10%	63V	Polyes.	623 610 01
C46,47	47 nF	20%	63V	Polyes.	622 447 01
C53	39 pF	10%	63V	Cer.	602 139 01
C55	1.2 nF	10%	63V	Cer.	602 312 00
C56	180 pF	10%	63V	Cer.	602 218 00
C58	100 pF	2%	100V	Cer.	602 210 00
C64	0.47 uF	10%	63V	Polyes.	622 547 01
C133	5 x 790 pF	2%	500V	Mi	645 279 00
C141	2 x 18 pF	$\pm 1/2\text{pF}$	500V	Mi	645 118 01
C142	2 x 35 pF	2%	500V	Mi	645 135 00
C143	2 x 68 pF	2%	500V	Mi	645 168 00
C144	2 x 130 pF	2%	500V	Mi	645 213 01
C145	2 x 260 pF	2%	500V	Mi	645 226 00
C146	2 x 510 pF	2%	500V	Mi	645 251 02
C148	2 x 680 pF	2%	500V	Mi	645 268 02
plus	650 pF	2%	500V	Mi	645 265 00
C177	870 pF	10%	2kV	Cer	608 287 00
alternative	2 x 300 pF	10%	1.6kV	Cer	607 230 00
plus	270 pF	10%	1.6kV	Cer	607 227 01
C178	450 pF	10%	2kV	Cer	608 245 00
alternative	3 x 150 pF	10%	1.6kV	Cer	607 215 00
C179	240 pF	10%	2kV	Cer	608 224 00
alternative	2 x 120 pF	10%	1.6kV	Cer	607 212 00
C180	124 pF	10%	2kV	Cer	608 212 40
alternative	56 pF	10%	1.6kV	Cer	607 156 00
plus	68 pF	10%	1.6kV	Cer	607 168 01
C181	60 pF	10%	2kV	Cer	608 160 03
alternative	27 pF	10%	1.6kV	Cer	607 127 01
plus	33 pF	10%	1.6kV	Cer	607 133 00
C182	30 pF	10%	2kV	Cer	608 130 02
alternative	2 x 15 pF	10%	1.6kV	Cer	607 115 01

ANTENNA TUNING UNIT BOARD 640 VERSION 4A

C183	15 pF	10%	2kV	Cer	608 115 00
alternative	15 pF	10%	1.6kV	Cer	607 115 01
L1	10 uH				740 110 00
L2-4	4.7 uH				740 047 01
L5	100 uH				740 210 07
L6	10 uH				740 110 01
L7	6.8 uH				740 068 00
L8	75 nH				103 579 11
L9	137 nH				103 579 21
L10	260 nH				103 579 31
L11	490 nH				103 579 41
L12	950 nH				103 579 51
L13	1.8 uH				103 579 61
L14	3.6 uH				103 579 71
L15	7 uH				103 579 81
L16	14 uH				103 579 91
L17	26 uH				103 580 01
L18	51 uH				103 580 11
T1, T2	DIRECTIONAL COUPLER				107 600 80
T3	TRANSFORMER				103 578 61
T4	TRANSFORMER				103 578 71
SW1-3					762 000 24
SW4					762 000 25
SW5					762 000 23
SW6	THERMO SWITCH				769 000 03
PL1, 3-6	SPADE				750 001 51
PL2	8 POL. MOLEX				751 000 98
PL7, 8	SPADE				750 000 21
PL9	4 POL. MOLEX				751 001 50
TS1	TERMINAL STRIP				770 000 19

## PARTS LIST

FOR

ANTENNA RELAY BOARD 641 VERSION 2A

Printed Circuit Board Complete	<span style="border: 1px solid black;">641</span>					107 564 11
IC1	2003					850 200 30
Q1	BC547					850 054 70
RL1	REED RELAY					373 589 81
RL2	REED RELAY					373 590 01
RL3	REED RELAY					373 590 0X
RL4	RELAY					780 000 35
R1	68 ohm	5%	1/4W	Car.		501 168 00
R5,7	100 ohm	5%	1/4W	Car.		501 210 00
R2	1.8 kohm	5%	1/4W	Car.		501 318 00
R3,6	2.7 kohm	5%	1/4W	Car.		501 327 00
R4	390 ohm	5%	1/4W	Car.		501 239 00
R8	3.3 kohm	5%	1/4W	Car.		501 333 00
R9-12	27 ohm	5%	1/4W	Car.		501 127 00
R13,14	22 ohm	5%	5W	MF		547 122 00
R15	47 kohm	5%	1/4W	Car.		501 447 00
R16	3.9 kohm	5%	1/4W	Car.		501 339 00
R17	10 kohm	5%	1/4W	Car.		501 410 00
C1-6,8-11	10 nF	-20+50%	63V	Cer.		602 410 02
C7,12-19	0.1 uF	10%	100V	Polyes.		623 510 01
L1	3.3 uH	10%				740 033 02
T1						103 580 21
SK1						106 602 70
SK2-5						106 602 80

PARTS LIST  
FOR  
50 OHM ATU RELAY BOARD 644 VERSION 1A

Printed Circuit Board Complete 644						107 564 41
Q1	BC547B					840 054 70
Q2	BC327					840 032 70
D1,2	1N4148					830 414 80
RL1	RELAY	1022				373 590 0X
RL2	RELAY	1023				373 589 8X
R1	10 kohm	5%	1/4W	Car.		501 410 00
R2	5.6 kohm	5%	1/4W	Car.		501 356 00
R3	6.8 kohm	5%	1/4W	Car.		501 368 00
C1,3	0.1 uF	10%	100V	Polyes.		623 510 01
C2	10 nF	-20+50%	100V	Cer.		602 410 01
C4	10 pF	+ -1/2pF	500V	Mi		645 110 00
L1	10 uH	1582/25				740 110 00
PL1,2	PLUG COAXCABLE					373 617 8X
PL3	PLUG COAXCABLE					373 617 9X
SK1	SOCKET 2-WIRE CABLE					106 605 50

PARTS LIST  
FOR  
AC POWER SUPPLY UNIT VERSION 2A

D1,2	PH70					831 007 00
R1	470 ohm	5%	2W	Carbon		503 247 00
R2	220Kohm	5%	1W	Carbon		504 522 00
C1,2	10 mF		63V			652 910 51
C3,5	47 nF	10%	630V	Polyes.		626 447 01
C4	470 nF	10%	630V	Polyes.		626 547 01
C6,7,8	4.7 uF	10%	100V	Polyes.		623 647 00
SL1	LAMP					754 000 04
T1	TRANSFORMER					383 597 31
SW1	SWITCH					760 000 00
TS1	TERMINAL STRIP					770 000 14
TS2	TERMINAL STRIP					770 000 24
FS1	FUSE 6.3 AMP. SLOW BLOW					720 363 02