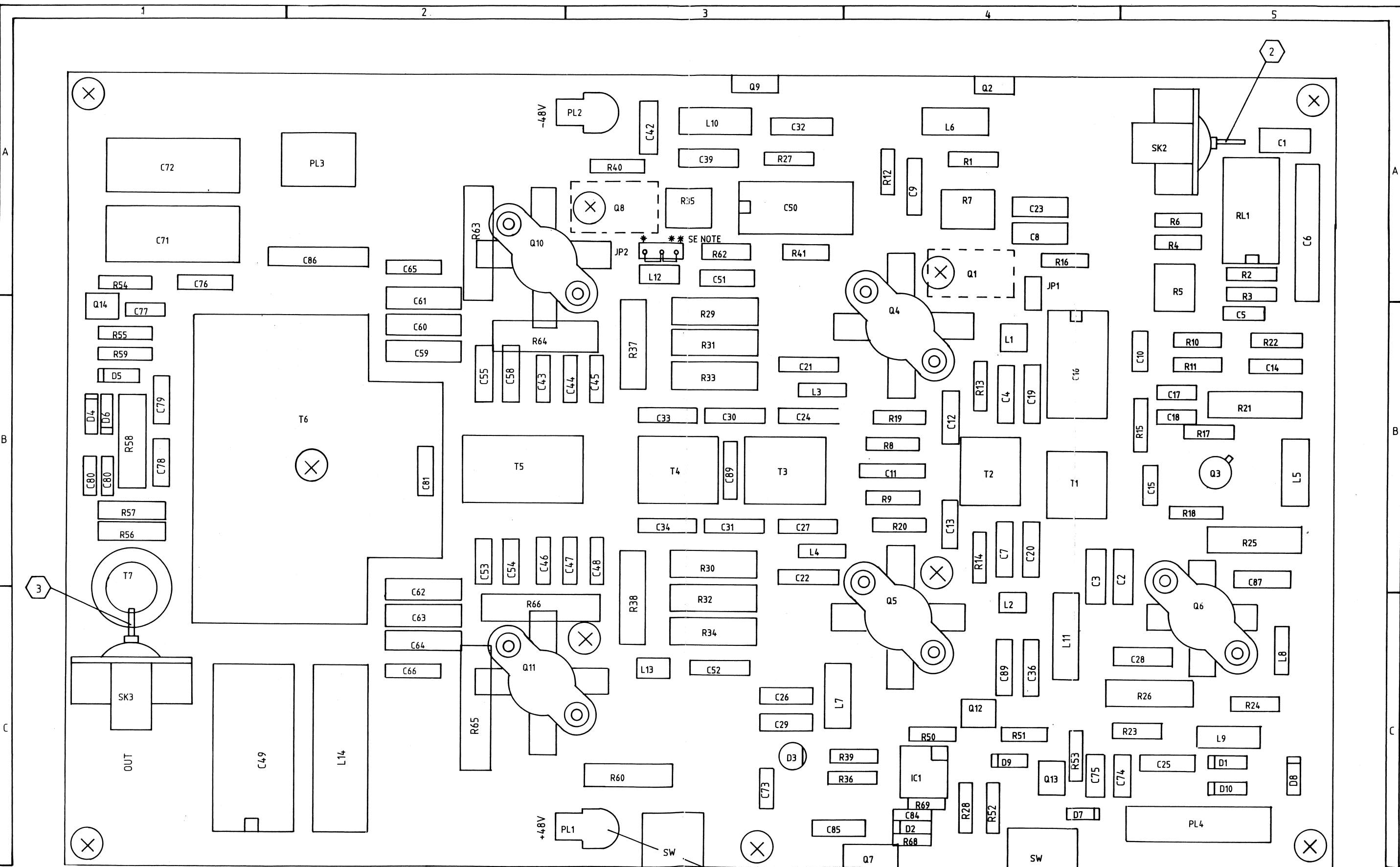


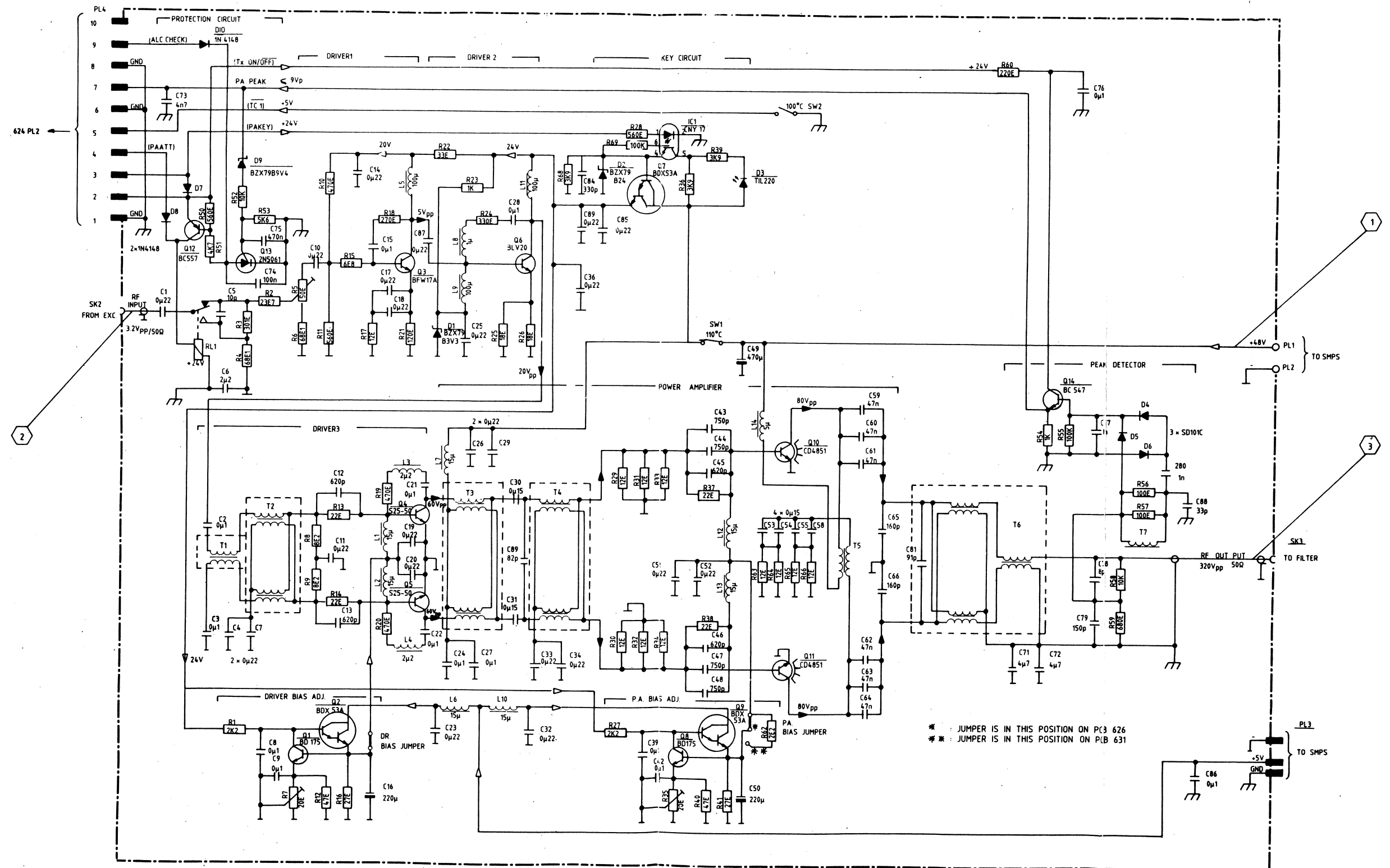
TECHNICAL DESCRIPTION

PCB 626 / 631 POWER AMPLIFIER BOARD

The Power Amplifier contains four active stages and has a total power gain of approx. 42 dB. The RF signal from the Exciter passes through the input-attenuator, where the gain may be adjusted within a 3 dB range, and where the gain is reduced by 14 dB when "Low Power" is activated or if a fault should occur in the ALC-loop. The signal is then amplified approx. 23 dB in the Class-A Driver stages 1 and 2 and approx. 12.5 dB in the Class-AB push-pull Driver stage 3, before being fed into the final Power Amplifier stage, which also works in Class-AB push-pull, with a gain of approx. 12.5 dB and the capability of delivering 250 W into a 50 ohm load. The DC output from the peak-detector, which monitors the reflected power and output voltage, is connected to the ALC-circuit on the microprocessor-board and to the input-attenuator via the protection-circuit. The input-power is then reduced via the ALC-loop if the reflected power from the load exceeds approx. 25 W during mismatch conditions. The Bias stabilizer circuits provide adjustable stabilized bias voltages from the 5 V source and supplies the bases of the Class-AB amplifier stages, so that the quiescent currents may be adjusted. The key-circuits give a 24 V stabilized voltage from the 48 V source, which supplies Driver 1 and 2 and enables the bias circuits whenever "Key" is activated. Thermoswitch SW2 will close and reduce the input power if the heatsink temperature exceeds 100 deg. C and thermoswitch SW1 will open and remove the supply voltage from Drivers 1, 2 and 3 if the heatsink temperature exceeds 110 deg. C.



NOTE: * JUMPER IS IN THIS POSITION ON PCB 626
* * // 631



TEST POINTS FOR PCB 626 631 POWER AMPLIFIER.

① 48 VDC - measured at PL1 relative to PL2.

In self test # 32 a signal of 4sec.
duration appears, during which following
test points can be tested:

Input:

② $\approx$ 2Vpp 2MHz

Output:

③ $\approx$ 300Vpp 2MHz

PARTS LIST FOR POWER AMPLIFIER BOARD 626 VERSION 6A

PARTS LIST FOR POWER AMPLIFIER BOARD 626 VERSION 6A

Printed Circuit Board Complete 626									
IC1	CNY17	107 562 62		R56,57	100 ohm	1%	0.5W MF	512 210 00	
Q1,8	BD175	842 017 50		R58	10 kohm	5%	2.5W MF	546 410 00	
Q2,7,9	BD645	842 064 50		R59	680 ohm	5%	1/4W Car.	501 268 00	
Q3	BFW 17A	840 001 70		R60	220 ohm	5%	1.5W MF	544 220 00	
Q4,5	S25-50	842 255 00		R61	0 ohm			501 000 00	
Q6	BLV20	842 002 00		R62	2.2 ohm	5%	1/2W Car.	502 022 00	
Q10,11	CD4851	842 485 10		R63-66	12 ohm		3W	516 112 00	
Q12	BC557B	840 055 70		C1	0.22 uF	10%	250V Polyes.	624 522 01	
Q13	2N5061	833 506 10		C2,3,8,9,21,22,24,27,28,39,42,75,76	0.1 uF	10%	100V Polyes.	623 510 01	
Q14	BC547B	840 054 70		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	
D1	BZX79B3V3	832 793 30		C5	10 pF	+ -10%	100V Polyes.	603 110 03	
D2	BZX79B24	832 792 41		C6	2.2 uF		100V	623 622 00	
D3	TIL220	823 000 02		C12,13,45,46	620 pF	5%	300V Mi	644 262 00	
D4,5,6	SD101C	830 010 10		C15,74	0.1 uF	10%	63V Polyes.	622 510 00	
D7,8,10	1N4148	830 414 80		C16,50	220 uF	+50-10%	10V W.alum.	651 822 00	
D9	BZX79B9V1	832 799 10		C17,18	0.22 uF	10%	63V Polyes.	622 522 01	
R1,27	2.2 kohm	502 322 00	Car.	C30,31,53-55,58	0.15 uF	10%	100V Polyes.	623 515 00	
R2	23.7 ohm	511 123 70	MF	C43,44,47,48	750 pF	5%	300V Mi	644 275 00	
R3	301 ohm	511 230 10	MF	C49	470 uF	+50-10%	63V W.alum.	652 847 02	
R4,6	68.1 ohm	511 168 10	MF	C51	0.22 uF	10%	63V Polyes.	622 522 00	
R5	50 ohm	582 150 00	Pot.	C59-64	47 nF	10%	160V Polyes.	623 447 01	
R7,35	20 ohm	582 120 00	Pot.	C65,66	160 pF	5%	300V Mi	644 216 00	
R8,9	8.2 ohm	501 082 00	Car.	C71,72	4.7 uF		100V	623 647 01	
R10,19,20	470 ohm	502 247 00	Car.	C73	4.7 nF	+ -10%	100V Cer.	602 347 02	
R11,50	560 ohm	502 256 00	Car.	C75	470 nF	10%	63V Polyes.	622 547 01	
R12,40	47 ohm	501 147 00	Car.	C77,80	1 nF	10%	100V Cer.	630 310 00	
R13,14	22 ohm	501 122 00	Car.	C78	8 pF	+ -1/2pF	300V Mi	644 080 00	
R15	6.8 ohm	501 068 00	Car.	C79	150 pF	5%	300V Mi	644 215 00	
R16,41	27 ohm	501 127 00	Car.	C81	91 pF	2%	1KV Mi	647 191 00	
R17	12 ohm	501 112 00	Car.	C84	100 pF	2%	100V Cer.	603 210 00	
R18	270 ohm	501 227 00	Car.	C86	0.1 uF	10%	250V Polyes.	624 510 00	
R21	120 ohm	546 212 00	Car.	C88	33 pF	2%	100V Cer.	603 133 00	
R22	33 ohm	502 133 00	Car.	C89	82 pF	2%	500V Mi	645 182 00	
R23	1 kohm	502 310 00	Car.	L1,2,6,7,10,12,13	15 uH			740 000 00	
R24	330 ohm	502 233 00	Car.	L3,4	2.2 uH			740 022 02	
R25,26	18 ohm	546 118 01	MF	L5,9,11	100 uH			740 210 00	
R28	560 ohm	544 256 00	MF	L8	1 uH			740 010 02	
R29-34	12 ohm	544 256 00	MF	L14	5 uH			740 050 00	
R36,39,68	3.9 kohm	501 339 00	Car.	T1				103 573 71	
R37,38	22 ohm	546 122 01	MF	T2				103 573 81	
R51	4.7 kohm	501 347 00	Car.						
R52	10 kohm	501 410 00	Car.						
R53	5.6 kohm	501 356 00	Car.						
R54	1 kohm	501 310 00	Car.						
R55,69	100 kohm	501 510 00	Car.						

PARTS LIST FOR POWER AMPLIFIER BOARD 626 VERSION 6A

T3	103 573 91
T4	103 574 01
T5	103 574 11
T6	103 574 24
T7	103 574 31
SW1	Thermoswitch 110 C
SW2	Thermoswitch 100 C

PARTS LIST FOR POWER AMPLIFIER BOARD 631 VERSION 6A

PARTS LIST FOR POWER AMPLIFIER BOARD 631 VERSION 6A

Printed Circuit Board Complete 631

IC1	CNV17	107 563 11	R56,57	100 ohm	1%	0.5W	MF	512 210 00
Q1,8	BD175	842 017 50	R58	10 kohm	5%	2.5W	MF	546 410 00
Q2,7,9	BD645	842 064 50	R59	680 ohm	5%	1/4W	Car.	501 268 00
Q3	BFW 17A	840 001 70	R60	220 ohm	5%	1.5W	MF	544 220 00
Q4,5	S25-50	842 255 00	R61	0 ohm				501 000 00
Q6	BLV20	842 002 00	R62	2.2 ohm	5%	1/2W	Car.	502 022 00
Q10,11	CD4851	842 485 10	R63-66	12 ohm		3W		516 112 00
Q12	BC557B	840 055 70	C1	0.22 uF	10%	250V	Polyes.	624 522 01
Q13	2N5061	833 506 10	C2,3,8,9,21,22,24,27,28,39,42,86	0.1 uF	10%	100V	Polyes.	623 510 01
Q14	BC547B	840 054 70	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
D1	BZX79B3V3	832 793 30	C5	10 pF	+10%	100V	Polyes.	603 110 03
D2	BZX79B24	832 792 41	C6	2.2 uF		100V		623 622 00
D3	TIL220	823 000 02	C12,13,45,46	620 pF	5%	300V	Mi	644 262 00
D4,5,6	SD101C	830 010 10	C15,74,76	0.1 uF	10%	63V	Polyes.	622 510 00
D7,8,10	1N4148	830 414 80	C16,50	220 uF	+50-10%	10V	W.alum.	651 822 00
D9	BZX79B9V1	832 799 10	C17,18	0.22 uF	10%	63V	Polyes.	622 522 01
R1,27	2.2 kohm	502 322 00	C30,31,53-55,58	0.15 uF	10%	100V	Polyes.	623 515 00
R2	30 ohm	501 130 00	C43,44,47,48	750 pF	5%	300V	Mi	644 275 00
R3	240 ohm	501 224 00	C49	470 uF	+50-10%	63V	W.alum.	652 847 02
R4	62 ohm	501 162 00	C51	0.22 uF	10%	63V	Polyes.	622 522 00
R5,7,35	20 ohm	582 120 00	C59-64	47 nF	10%	250V	Polyes.	624 447 00
R6	51 ohm	501 151 00	C65,66	160 pF	5%	300V	Mi	644 216 00
R8,9	8.2 ohm	501 082 00	C71,72	4.7 uF		100V		623 647 01
R10,19,20	470 ohm	502 247 00	C73	4.7 nF	+10%	100V	Cer.	602 347 02
R11,50	560 ohm	502 256 00	C75	470 nF	10%	63V	Polyes.	622 547 01
R12,40	47 ohm	501 147 00	C77,80	1 nF	10%	100V	Cer.	630 310 00
R13,14	22 ohm	501 122 00	C78	8 pF	+1/2pF	300V	Mi	644 080 00
R15	6.8 ohm	501 068 00	C79	150 pF	5%	300V	Mi	644 215 00
R16,41	27 ohm	501 127 00	C84	0.47 uF	10%	100V	Polyes.	623 547 00
R17	12 ohm	501 112 00	C88	100 pF	2%	100V	Cer.	603 210 00
R18	270 ohm	501 227 00	L1,2,6,7,10,12,13	15 uH				740 000 00
R21	120 ohm	546 212 00	L3,4	2.2 uH				740 022 02
R22	33 ohm	502 133 00	L5,9,11	100 uH				740 210 00
R23	1 kohm	502 310 00	L8	0.47 uH				740 004 70
R24	330 ohm	502 233 00	L14	5 uH				740 050 00
R25,26	18 ohm	546 118 01	T1					103 573 71
R28	560 ohm	544 256 00	T2					103 573 81
R29-34	12 ohm	546 112 00	T3					103 573 91
R36,39,68	3.9 kohm	501 339 00						
R37,38	22 ohm	546 122 01						
R51	4.7 kohm	501 347 00						
R52	10 kohm	501 410 00						
R53	5.6 kohm	501 356 00						
R54	1 kohm	501 310 00						
R55,69	100 kohm	501 510 00						

PARTS LIST FOR POWER AMPLIFIER BOARD 631 VERSION 6A

T4	103 574 01
T5	103 574 11
T6	103 574 22
T7	103 574 31
SW1	Thermoswitch 110 C
SW2	Thermoswitch 100 C
	769 000 02
	769 000 01