



Exhibit 11: Tuning Procedure and **Parts List**

External Radio Frequency
Power Amplifier ACOM 1500

Model 1500

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4-4. Tuning

Tuning is possible only in operate mode, so you may need to press the OPER button in order to illuminate the LED above it (unless Auto-Operate is active).

a) Preliminary information.

Tuning the amplifier is a procedure of matching the impedance of the currently used antenna to the optimum tube load resistance. This will ensure maximum plate efficiency and RF gain at nominal output power, with minimum IMD at that.

Please note, that the REFLECTED POWER readings and the measured VSWR depend on the antenna impedance only, and not on the amplifier tuning. If the antenna impedance is different from 50-Ohm pure resistive (nominal), the REFLECTED POWER reading will always indicate reflected power presence (even at a perfect tuning). Proper tuning will allow operation at greater power without distortion or danger to the amplifier.

Note also that the real OUTPUT POWER in the load is equal to the difference between the FORWARD- and REFLECTED- readings. For instance, at a reading of FORWARD 1500W and REFLECTED 250W, the real OUTPUT POWER will be equal to their difference - 1250W (into a 2.4:1 VSWR load). At very high VSWR (no antenna or badly mismatched antenna), the FORWARD and REFLECTED readings will be almost equal, while the real OUTPUT POWER (the difference between them) will be practically zero.

The amplifier can operate safely if the following rule is obeyed: "REFLECTED POWER < 300W". Matching is assured for loads with VSWR up to 3:1. Nevertheless, for some loads and bands matching is possible at even higher VSWR. The maximum usable forward power at VSWR 3:1 is 1200W with 300W reflected. For higher than 300W reflected power you'll get the ** REFLECTED POWER ** soft-fault protection trip. For instance, this can happen at full-scale 1500W forward and 375W reflected power, into an antenna having a VSWR of 3:1 or worse.

CAUTION

Using a feeder of coaxial cable at VSWR > 3:1 on HF, and particularly on the and 6 meters bands, is not recommended. At such high values of VSWR, the high voltages, high currents, and heat associated with line losses, risk to permanently damage your coaxial cable or antenna switch.

Update amplifier tuning when you change the band or between CW and SSB segments within the same band. Update it each time when you change the antenna, even in the same band, as well as periodically, even though you may have not changed band or antenna. Be on the alert in particular when a significant change in the environment occurs (snow, ice, newly appeared or removed massive objects, alien wires nearby etc.) that would cause significant changes in the antenna impedance and eventually an increased VSWR.

NOTE

If you use more than one antenna per band, it is necessary that you select the proper antenna BEFORE the next step. Retune after selecting a different antenna for the same band, since the impedances may differ substantially (unless their VSWR is excellent, i.e. below 1.2:1 for both).

CAUTION

Do not switch the BAND switch knob while transmitting with the amplifier! Hot switching (while transmitting) will eventually destroy the band switch, not covered by the warranty!

CAUTION

When tuning, do not apply continuous drive longer than 3 minutes and after that pause 1-2 minutes for tube cooling.

We recommend that you tune-up at the center frequencies of the preferred frequency band. First select the band switch and the correct antenna number (never with RF applied!). Then use table 4-1 in order to achieve an approximate preset for both TUNE capacitor and LOAD capacitor knobs:

Band, MHz	Tune Knob Dial	Load Knob Dial
1.8 - 2	62 - 30	65 - 38
3.5 - 4	59 - 40	72 - 53
7 - 7.3	57 - 55	65 - 60
10.1 - 10.2	15 - 14	27 - 26
14 - 14.35	60 - 50	32 - 30
18 - 18.2	70 - 68	67 - 65
21 - 21.45	19 - 15	47 - 44
24.9 - 25	67 - 66	60 - 59
28 - 29.7	26 - 12	46 - 39
50 - 54	32 - 13	24 - 20

Table 4-I. Approximate tuning presets

b) Selecting the plate-load True Resistance Indicator (TRI) tuning aid.

You may select TRI scale in three different ways:

- By pressing simultaneously the PREV+NEXT buttons shortly. This will insert a 6dB attenuator between the driver and the amplifier's input (the ATT LED will light), so you'll not need to reduce the drive power during tuning. Press PREV+NEXT buttons momentarily again to switch the attenuator off the input and to return to the old screen. If you use any of PREV or NEXT buttons only, the attenuator would be switched off too, but the information screen would change to respectively previous or next.
- By pressing repeatedly either PREV or NEXT button (whichever is nearest), until you reach the TRI scale. This will not insert the attenuator, so you'll have to use less than 20W drive (unless the amplifier is near correct tuning), otherwise the next step would be executed automatically:
- By simply applying a normal working (60-85W) drive power, while the amplifier is not yet tuned. This will automatically invoke the TRI tuning aid and will insert the input attenuator (the ATT LED will light) after one second. The attenuator will be switched off, and the old screen will be returned automatically, after you release the PTT shortly. If you have achieved meanwhile a nearly good tuning, the attenuator would not be inserted again. If the old screen was the same (TRI, selected manually earlier), you'll then be able to precisely tune the amplifier also at nominal power, without changing drive at all. Use this hint to shorten the tuning process duration.

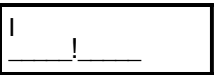
c) Tuning Procedure.

While a continuous (CW) signal at the desired frequency is still applied:

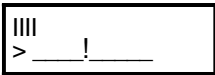
- Look at the upper scale (forward power); obtain maximum power using the upper (TUNE) knob;
- Look at the lower (Load Cap) scale and turn the lower (LOAD) knob in order to center the triangle marker at the "!" mark.
- Release the PTT shortly in order to disable the attenuator, then repeat both steps at nominal power. - Always finish by peaking with the TUNE knob.

NOTE

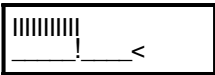
Appearance of an arrow on either left or right TRI scale edges means that the LOAD knob is too far from the proper position. To correct this, turn the LOAD knob to the prompted direction until the triangle marker appears inside the scale field.



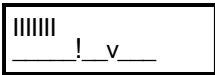
no marker:
use TUNE knob for
max. P to get any
marker.



marker is a far left:
turn LOAD knob
pointer to right until
marker inside.



marker is a far right:
turn LOAD knob
pointer to left until
marker inside.



marker inside:
turn LOAD knob
slightly left to
center it.



LOAD is tuned:
turn TUNE knob to
peak Forward
Power & finish.

Fig. 4-I. Using TRI tuning aid

Please note also, that the TRI mark will not appear until at least 5W drive is applied, and at least 20W forward power is achieved.

If, for some reason, matching cannot be accomplished successfully, check the BAND switch position and proper antenna selection. Then check the antenna VSWR at the same drive frequency.

d) Tuning hints.

While turning the knobs, you'll note that both tunings would be virtually independent. This is a benefit of the TRI. The plate-load resistance increases to the right and decreases to the left of the TRI center.

The scale center corresponds to the proper LOAD capacitor tuning, which presents an optimum load resistance to the tube.

If you tune to the right, you'll obtain more gain, but less undistorted output power will be attainable. You may prefer to use this hint when your drive power is insufficient or when you need less output but better efficiency, for instance at heavy duty modes (RTTY, SSTV etc) where less heat is wanted (not only in the amplifier but also in the transceiver).

Tuning to the left of the center would lead to the opposite: less gain and more power attainable. Of course, this requires more drive power, more plate current, and more plate heat, which shortens tube's-expected life, as its cathode would be faster exhausted.

You might use the off-center tuning hint also to compensate for mains voltage variations in order to maintain tube efficiency: tune to the right when mains is higher, or tune to the left if it's lower than the nominal voltage. Please see S.2-2 (Line Voltage Selection) for more than 5% difference from the nominal.

ACOM1500 PARTS LIST

Item No	Description	Qty
1	Capacitor aluminium electrolytic SNAP-IN 100uF 300V 10mm (max Φ 25x31,5mm)	2
2	Capacitor aluminium electrolytic SNAP-IN 220uF 450V 10mm (Φ 30mm x 43mm max)	8
3	Capacitor aluminium electrolytic 22uF 20% 250V 5mm (max Φ 12,5x20,5mm)	1
4	Capacitor aluminium electrolytic 4,7uF 400V 5mm (max Φ 10x16,5mm)	1
5	Capacitor aluminium electrolytic 1uF 20% 10V 2mm (max Φ 5x12mm)	3
6	Capacitor aluminium electrolytic 10uF 20% 10V 2mm (max Φ 5x12mm)	2
7	Capacitor aluminium electrolytic 10uF 20% 35V 2mm (max Φ 5x12mm)	2
8	Capacitor aluminium electrolytic 100uF 20% 10V 2mm (max Φ 5,5x12mm)	3
9	Capacitor aluminium electrolytic 100uF 20% 35V 3,5mm (max Φ 9mm)	2
10	Capacitor aluminium electrolytic 1000uF 20% 35V 5mm (max Φ 12,5x32mm)	1
11	Capacitor aluminium electrolytic 22uF 20% 10V 2mm (max Φ 5mm)	1
12	Capacitor aluminium electrolytic 2200uF 20% 35V 7,62mm (max Φ 16x31,5mm)	1
13	Capacitor aluminium electrolytic 3300uF 20% 25V 7,62mm (max Φ 16x32mm)	1
14	Capacitor aluminium electrolytic 470uF 20% 35V 5mm (max Φ 10x32mm)	1
15	Capacitor ceramic K15U-1a 100pF \pm 10% 6kV M1500 7kVA	1
16	Capacitor ceramic 1500pF \pm 20% 5kV	1
17	Capacitor ceramic 47pF 10% NP0 3.5kV	1
18	Capacitor ceramic 47pF \pm 10% 6kV M1500 7kVA	1
19	Capacitor ceramic 10pF \pm 5% NPO 500VDC;	4
20	Capacitor ceramic NP0 100pF \pm 5% 500V	1
21	Capacitor ceramic SMD 0805 10nF 10% X7R 200V	4
22	Capacitor ceramic SMD 1206 10nF \pm 10% 500V X7R	2

23	Capacitor ceramic 10nF $\pm 10\%$ 5mm 1kVDC (Y5U) 13mm;	19
24	Capacitor ceramic Y2/X1 10nF 250V AC;	1
25	Capacitor ceramic NPO 130pF $\pm 5\%$ 8kV/4kVA ($\phi 26\text{mm}$)	5
26	Capacitor ceramic 1,5nF $\pm 10\%$ 500V 5mm	1
27	Capacitor ceramic 1pF NPO 500VDC; 5mm	1
28	Capacitor ceramic NP0 22pF $\pm 5\%$ 500V 5mm	2
29	Capacitor ceramic 2,2nF $\pm 20\%$ 3kVDC $\phi 22\text{mm}$ 10mm	1
30	Capacitor ceramic SMD 1206 2,2nF 10% X7R 1000V	2
31	Capacitor ceramic 2,2nF $\pm 20\%$ 10mm	2
32	Capacitor ceramic 22nF $\pm 20\%$ 1kV 5mm	2
33	Capacitor ceramic NP0 27pF $\pm 5\%$ 500V 5mm	2
34	Capacitor ceramic 2,7pF $\pm 0,5\text{pF}$ NP0 5kVDC 5mm	4
35	Capacitor ceramic NP0 39pF $\pm 5\%$ 500V 5mm	3
36	Capacitor ceramic - 4,7pF $\pm 5\%$ NPO 500VDC; 5mm	2
37	Capacitor ceramic 47nF $\pm 10\%$ X7R 250(500)VDC 5mm	7
38	Capacitor ceramic NP0 47pF $\pm 5\%$ 500V 5mm	1
39	Capacitor ceramic multilayer 1nF $\pm 10\%$ 50V 5mm	1
40	Capacitor ceramic multilayer 10nF $\pm 10\%$ 50V 5mm	14
41	Capacitor ceramic multilayer 100nF $\pm 20\%$ 50V 5mm	9
42	Capacitor ceramic multilayer 1,8nF 630V NP0 стъпка 5mm	1
43	Capacitor ceramic multilayer 220nF $\pm 20\%$ 50V 5mm	2
44	Capacitor ceramic multilayer 2,7nF 630V NP0 стъпка 5mm	1
45	Capacitor ceramic multilayer 47nF $\pm 20\%$ 100V 5mm	10
46	Capacitor ceramic SMD 0603 1nF $\pm 10\%$ 50V X7R	8
47	Capacitor ceramic SMD 0805 1nF $\pm 10\%$ 100V	4
48	Capacitor ceramic SMD 0603 10nF $\pm 10\%$ 50V X7R	12
49	Capacitor ceramic multilayer 0,1uF 10% 50V X7R 0603	14

50	Capacitor ceramic SMD 0603 150pF $\pm 5\%$ 50V NP0	1
51	Capacitor ceramic SMD 1206 220pF 10% 2kV X7R	36
52	Capacitor ceramic SMD 0603 27pF $\pm 5\%$ 50V NPO	2
53	Capacitor ceramic SMD 0603 47nF $\pm 10\%$ 50V X7R	31
54	Capacitor ceramic SMD 0805 47nF $\pm 10\%$ 100V X7R	2
55	Capacitor ceramic SMD 0805 68pF $\pm 5\%$ 200V NP0	1
56	Capacitor 100nF $\pm 20\%$ 630VDC 16,5mm	2
57	LED 3mm green TLHG4400	1
58	LED 3mm orange TLHO4400	1
59	LED 3mmred TLHR4400	1
60	LED 3mm yellow TLHY4400	3
61	Diode 1N4148 6,35mm	2
62	Diode 1N4448W (BAS16W, BAS16H) SOD-123;	4
63	Diode SMD SOT-23 BAS16	4
64	Diode pair CC SMD SOT-23 BAV70	1
65	Diode pair series SMD SOT-23 BAV99	2
66	Diode schottky 1N5711	3
67	Diode schottky pair series SMD SOT23 BAS70-04	2
68	Diode schottky 30V 200mA BAR43S SOT-23	1
69	Diode protective TVS SMAJ36CA 42Vdc@1mA SMA (DO-214AC)	4
70	Diode 1N4002	10
71	Diode 1N4004	4
72	Diode 1N4007	5
73	Diode SMD DO214AC (DO214BA, DO214AA)	2
74	Diode SMD S3M, DO214AB (SMC)	1
75	Diode zenner 10V/1,3W BZV85C10 9mm (1W 1N4740A)	1
76	Diode zenner 100V SMD SOD106A BZG 03C100	1

77	Diode zenner 130V/3W BZT03C130 9mm	1
78	Diode zenner 3,9V SMD SOT-23 BZX84C3V9	1
79	Diode zenner 4,7V 5% 350mW BZX84C4V7 SOT-23	11
80	Diode zenner 7,5V/0,4W BZX79C7V5 6,35mm	2
81	Fuse HOLDER PANEL MOUNT 3AG 20A/250V 1/4" QC 342-828A	2
82	Fuse holder 20mm ZH1 Fuse HOLDER	3
83	Fuse 15A (16A) 250V 6,3x32mm Quick Blow, 1-1/4 inch Cartridge Fuse, Size "0";	2
84	Fuse 20A 250V 6,3x32mm Quick Blow, 1-1/4 inch Cartridge Fuse, Size "0";	2
85	Fuse 0,2A 250V SLOW BLOW Φ 5x20mm 218.200	1
86	Fuse 2A 250V SLOW BLOW Φ 5x20mm 218002	2
87	Double aperture ferrite core (Doppellochkerne); μ =125; 20x22x10mm	2
88	Ferrite toroid μ =50 K25x15x10mm	1
89	Ferrite toroid μ =800...2200 K7x4x4	3
90	Ferrite core CT Φ 4,4x1,6x10mm μ =2000	1
91	Phono Jack PC Snap-Fit 90 Deg	2
92	UHF Coaxial Connectors Panel Mount SO239	1
93	UHF Coaxial Connectors Panel Mount (TFE Insul.) SO239/A	3
94	Coaxial connector BNC (UG-1094/U)	1
95	PCB Terminal Block LP5,08/2/135	6
96	MATE-N-LOK UL94-V2 Cap in-line	1
97	Shorting Jumpers (Shunts)	3
98	CONNECTOR SL-156 Housings White 3 Circuits AMP p/n 640250-3	1
99	Connector cable 3 receptacles MTA100 3 IDC Contacts White (AWG24) 3-643814-3	3
100	Connector cable 5 receptacles MTA100 5 IDC Receptacle white (AWG24) 3-643814-5	3
101	Connector cable 6 receptacles MTA100 6 IDC Receptacle white (AWG24) 3-643814-6	1
102	Connector Housing cable 8 receptacles . CONNECTOR CST-100 Crimp housings	1
103	Connector cable 10 rH. white MTA100 10 IDC Receptacle white (AWG24)	4

104	MATE-N-LOK UL94-V2 Plug in-line	1
105	PIN HEADER MTA156 3 STRAIGHT POST FRICTION LOCK	1
106	PIN HEADER MTA100 3 STRAIGHT POST FRICTION LOCK	3
107	PIN HEADER MTA100 5 STRAIGHT POST FRICTION LOCK	1
108	PIN HEADER MTA100 5 STRAIGHT POST FRICTION LOCK	3
109	PIN HEADER MTA100 6 STRAIGHT POST FRICTION LOCK	2
110	PIN HEADER MTA100 8 STRAIGHT POSTS FRICTION LOCK	6
111	PIN HEADER MTA100 10 STRAIGHT POST FRICTION LOCK	4
112	Strain Relief Straps CWN-SR-14	1
113	Flat Cable DIP14 Connector CWR-130-14-0000	1
114	Connector Straight Dual Row Male,	1
115	Flat cable connector 2x7x2,54mm	1
116	Socket IC DIL 14	1
117	Socket IC DIL 28	1
118	Connector housing FASTON 6.35x0,8mm, 22-18AWG red	6
119	Connector housing FASTON 6,35mm 22-18AWG red	2
120	Connector pin CST-100 Crimp Contacts 22-26AWG	4
121	Connector pin MATE-N-LOK 20-14AWG	2
122	Connector housing TV18-10BL	9
123	Connector housing 6.35mm/1,5-2,5 sq.mm	1
124	Connector pin MATE-N-LOK 20-14AWG AMP p/n 350547-1	2
125	Connector (AMP FASTON TAB 6,3mmx0,8mm)	2
126	Relay 29x12.7x15.7mm 2x8A	2
127	Relay AZ733-2A-24DE	2
128	Relay A-12WK (TQ2E-12V)	3
129	Choke 10uH	3
130	Choke 2,2uH 1A	2

131	Choke 22uH	6
132	Choke SMD 1210 10uH 10% (20%) 900mA 0,2 Ohm	1
133	Choke SMD 1210 10uH	16
134	Choke SMD 1210 2,2uH	1
135	Fan Auxilary Optional 24VDC 92x92mm	1*
136	Core SU114b	1
137	Cable tie 98x2,5mm	37
138	Cable tags 0, 1...8	9
139	VFD green acrylic filter	1
140	Resistor 10 Ohm $\pm 5\%$ 0,25W	1
141	Resistor 1kOhm $\pm 5\%$ 0,25W	6
142	Resistor 100kOhm $\pm 5\%$ 0,25W	2
143	Resistor 13kOhm 1% (5%) 0,25W	1
144	Resistor 120kOhm $\pm 5\%$ 0,25W	1
145	Resistor 1,5kOhm $\pm 5\%$ 0,25W	1
146	Resistor 15kOhm $\pm 5\%$ 0,25W	3
147	Resistor 2,2kOhm $\pm 5\%$ 0,25W	8
148	Resistor 22kOhm $\pm 5\%$ 0,25W	1
149	Resistor 2,2 Ohm $\pm 5\%$ 0,25W	2
150	Resistor 33kOhm $\pm 5\%$ 0,25W	1
151	Resistor 330kOhm $\pm 5\%$ 0,25W	2
152	Resistor 470 Ohm $\pm 5\%$ 0,25W	4
153	Resistor 4,7kOhm $\pm 5\%$ 0,25W	6
154	Resistor 47kOhm $\pm 5\%$ 0,25W	1
155	Resistor 6,2kOhm $\pm 5\%$ 0,25W	3
156	Resistor 68kOhm $\pm 5\%$ 0,25W	2
157	Resistor 680kOhm $\pm 5\%$ 0,25W	1

158	Resistor 82kOhm $\pm 5\%$ 0,25W	1
159	Resistor 10kOhm $\pm 1\%$ 0,25W	1
160	Resistor 100kOhm $\pm 1\%$ 0,25W	2
161	Resistor 200kOhm $\pm 1\%$ 0,25W	1
162	Resistor 40,2Ohm $\pm 1\%$ 0,25W	4
163	Resistor 49,9kOhm $\pm 1\%$ 0,25W	1
164	Resistor 61.9kOhm (62kOhm) 1% (5%) 0,25W	2
165	Resistor 68,1 Ohm $\pm 1\%$ 0,25W	2
166	Resistor 82,5kOhm $\pm 1\%$ 0,25W	1
167	Resistor 100 Ohm $\pm 5\%$ 0,5W	1
168	Resistor 2,7kOhm $\pm 5\%$ 0,5W	1
169	Resistor 27kOhm $\pm 5\%$ 0,5W	1
170	Resistor 100 Ohm $\pm 5\%$ 1W	2
171	Resistor 1MOhm $\pm 5\%$ 2W	5
172	Resistor 180 Ohm $\pm 5\%$ 0,5W	4
173	Resistor 10kOhm $\pm 5\%$ 2W	1
174	Resistor 100kOhm $\pm 5\%$ 2W	2
175	Resistor 160 Ohm $\pm 5\%$ 2W 20mm	2
176	Resistor 2,2kOhm $\pm 5\%$ 2W	1
177	Resistor 47 Ohm $\pm 5\%$ 2W 20mm	3
178	Resistor 4,7kOhm $\pm 5\%$ 2W	1
179	Resistor 68kOhm $\pm 5\%$ 2W	1
180	Resistor 150kOhm $\pm 5\%$ 3W	8
181	Resistor 220 Ohm $\pm 5\%$ 3W	2
182	Resistor 330 Ohm $\pm 5\%$ 3W 25mm	1
183	Resistor 3 MOhm $\pm 10\%$ 5W	1
184	Resistor 10 Ohm $\pm 10\%$ 2W;	3

185	Resistor 2,2 Ohm $\pm 10\%$ 1W	3
186	Resistor 10 Ohm $\pm 10\%$ 10W	2
187	Resistor 30 Ohm 5% 100W 25x25mm	1
188	Resistor 10kOhm 1% 20W 500V TO-220	2
189	Resistor SMD 0603 1kOhm $\pm 5\%$	3
190	Resistor SMD 0603 10kOhm $\pm 5\%$	17
191	Resistor SMD 0603 100kOhm 5%	6
192	Resistor SMD 0603 1,3kOhm $\pm 5\%$	2
193	Resistor SMD 0603 180 Ohm $\pm 5\%$	2
194	Resistor SMD, 1206 220 Ohm $\pm 5\%$	6
195	Resistor SMD 0603 2,2kOhm $\pm 5\%$;	12
196	Resistor SMD 1206 2,2kOhm $\pm 5\%$	1
197	Resistor SMD 0603 22kOhm $\pm 5\%$	4
198	Resistor SMD, 1206 22kOhm $\pm 5\%$	5
199	Resistor SMD 0603 220kOhm $\pm 5\%$	4
200	Resistor SMD 0603 2,4kOhm $\pm 5\%$	1
201	Resistor SMD 0603 330 Ohm $\pm 5\%$	5
202	Resistor SMD 0603 3,3kOhm $\pm 5\%$	1
203	Resistor SMD 0603 33kOhm $\pm 5\%$	2
204	Resistor SMD 0603 39 Ohm $\pm 5\%$	1
205	Resistor SMD 0603 390 Ohm $\pm 5\%$	2
206	Resistor SMD 0603 47 Ohm $\pm 5\%$	1
207	Resistor SMD 0603 470 Ohm $\pm 5\%$	5
208	Resistor SMD 0603 4,7kOhm $\pm 5\%$	8
209	Resistor SMD 0603 47kOhm $\pm 5\%$	1
210	Resistor SMD, 1206 47kOhm $\pm 5\%$	1
211	Resistor SMD 0603 560 Ohm $\pm 5\%$	1

212	Resistor SMD 0603 56kOhm $\pm 5\%$	1
213	Resistor SMD 0603 6,8kOhm 5%; RMCF 1/16 6.8K 5% R	4
214	Resistor SMD 0603 1kOhm $\pm 1\%$	1
215	Resistor SMD 0603 10kOhm $\pm 1\%$	2
216	Resistor SMD 0603 2kOhm $\pm 1\%$	1
217	Resistor SMD 0603 200kOhm $\pm 1\%$	1
218	Resistor SMD 0603 316kOhm $\pm 1\%$	1
219	Trimmer 10kOhm Type Piher PT6V	3
220	Trimmer 50kOhm Type Piher PT6V	3
221	Varistor 360VDC 20mm 100A@595V ERZ-V20D361	1
222	Switch ITT ISOSTAT 532-010-001 (E-SWITCH 520-02-1)	4
223	Microswitch	1
224	Mains switch 2x20a RGSC701-R-B-B-0	1
225	Transistor n-MOSFET SMD, SOT-23 BSS138	1
226	Transistor n-MOSFET SMD, SOT-223 ZVN4424G (BSP88/89/297)	1
227	Transistor STQ3N45K3-AP (STP7N20, IRF710)	1
228	Transistor MOSFET IRFBE30PBF TO-220AB	1
229	Transistor STP3N80FI ISOWATT 220 (IRFBE30)	1
230	Transistor npn SOT-23 BCX19	6
231	Transistor BD139	2
232	Transistor BF469 (BF459, BF471)	1
233	Transistor 2N3904	5
234	Transistor 2N5551	1
235	Transistor BF423 (KF423)	2
236	Transistor pnp SOT-23 BCX17	1
237	Transformer 2x110-2x10,5V 18VA	1
238	Optron IC TIL111	1

239	IC LM358	2
240	IC uA723	1
241	IC uA7805 TO-220	1
242	IC 27C512 (EPROM 120ns DIL28)	1
243	IC SMD QFP80 PCB80C552-5-16H	1
244	VFD MODULE CU20025ECPB-W1	1
245	IC SMD SO14 CD74HCT132M	2
246	IC SMD SO16 CD74HCT238M	1
247	IC SMD SO8 LM336D	1
248	IC SMD SO8 LM358D	1
249	IC SMD SO8 LM393D	3
250	IC SMD SO16 ULN2003D	3
251	IC SMD SO20 M74HCT573M1	3
252	IC SMD SOT-23 MAX810MTRG 4,38V	1
253	IC SMD SO8 ST24C01M1R (EEPROM)	1
254	Electron tube 4CX1000A	1
255	Quartz crystal 16000kHz HC49/US	1
256	Grid choke (A1010)	1
257	Knob variable capacitor	2
258	Knob bandswitch	1
259	Plate choke	1
260	Antenna choke 60uH	1
261	Coil L section	1
262	Blower A2000	1
263	Air coil 1200	1
264	Coil 4.5uH	1
265	Coil Pi section 1200	1

266	Bandswitch 1200	1
267	Cathode choke	1
268	Input transformer	1
269	Antenna switch	1
270	Front panel	1
271	HF load 30 ohm	1
272	4CX1000A socket	1
273	Air coil L1	1
274	Air coil L3	1
275	Air coil L4	1
276	Air coil L5	1
277	Air coil L6	1
278	Air coil L7	1
279	Air coil L8	1
280	Air coil L9	1