

KENWOOD

SERVICE MANUAL

6m ALL MODE TRANSCEIVER

Model TS-600

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TS-600 SPECIFICATIONS

SPECIFICATIONS

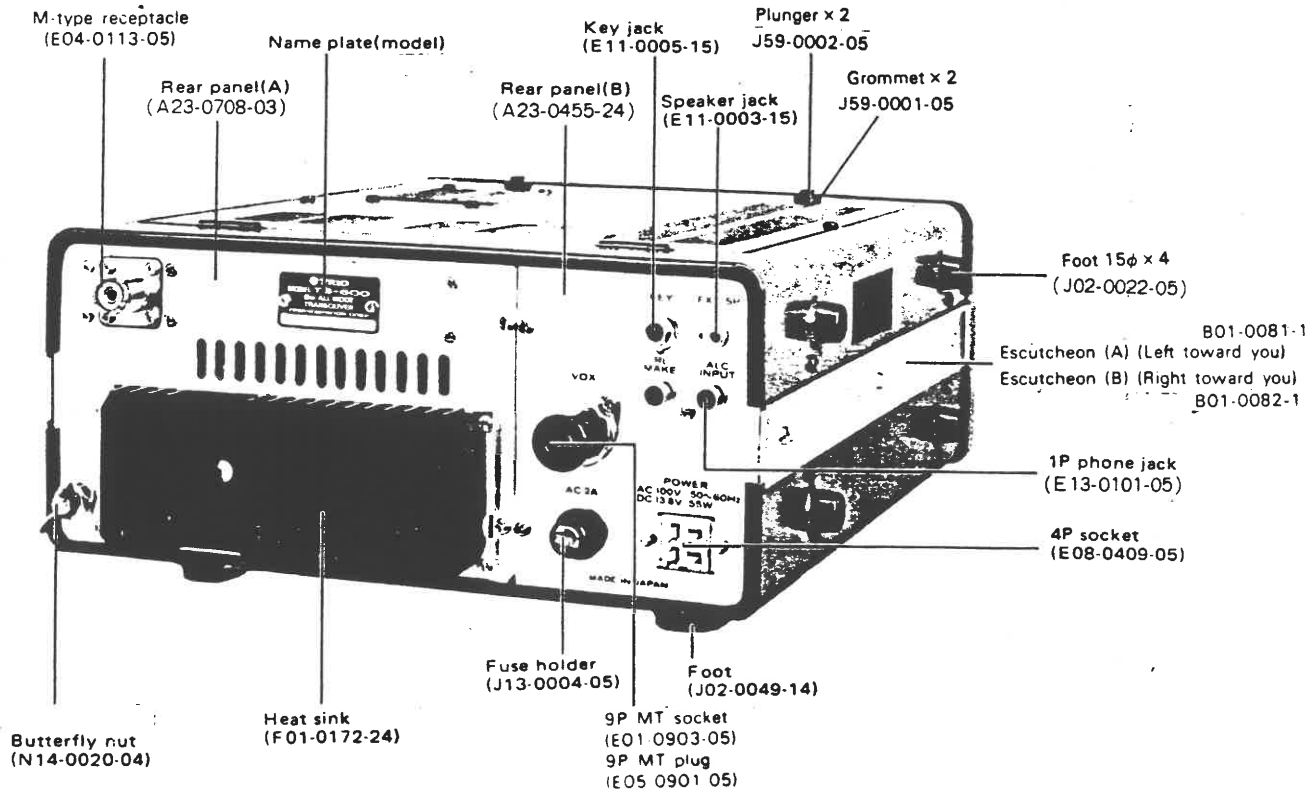
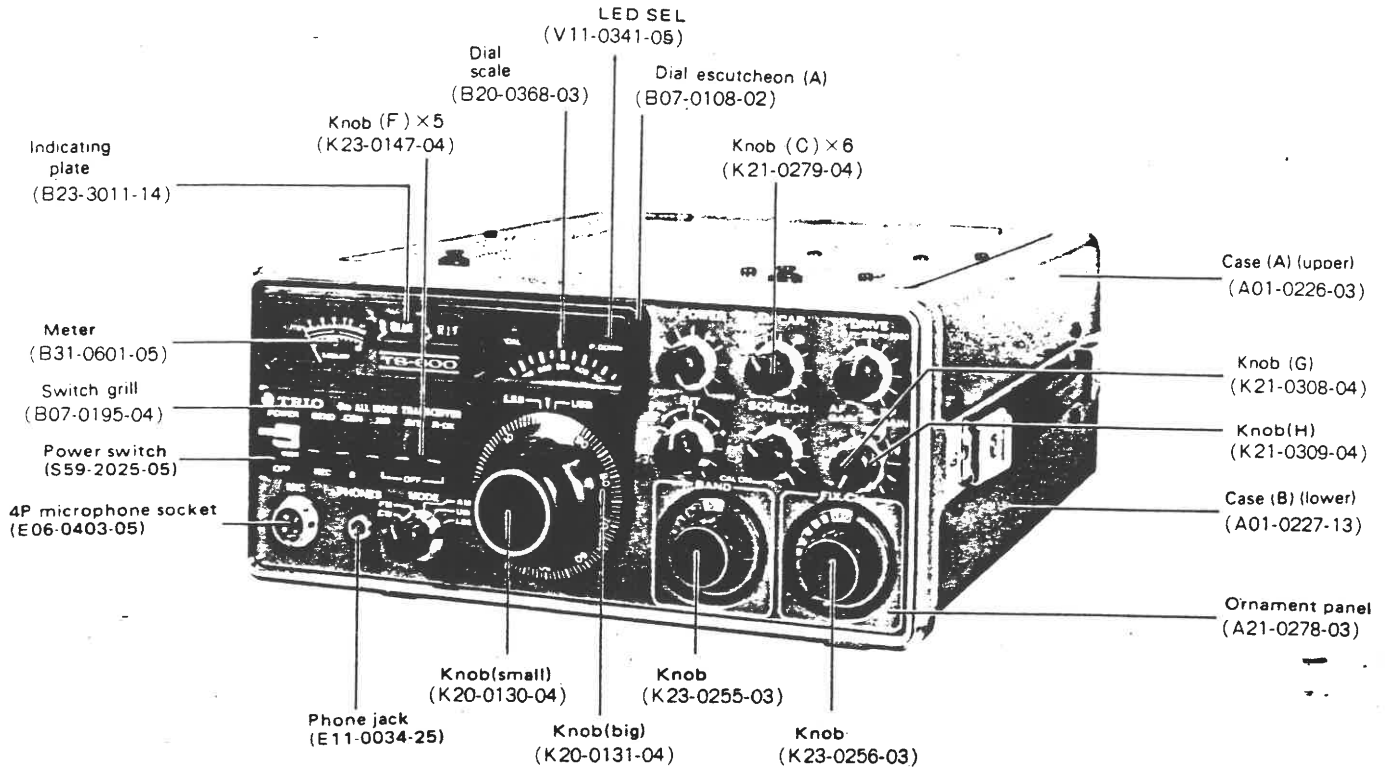
TRANSMIT/RECEIVE FREQUENCY RANGE	50 ~ 54 MHz
MODE	SSB, FM, CW, AM
RF OUTPUT	10 watts for SSB, CW and FM 5 watts for AM
ANTENNA IMPEDANCE	50 Ω (unbalanced)
CARRIER SUPPRESSION	Better than 40 dB
SIDE-BAND SUPPRESSION	Better than 40 dB
SPURIOUS RADIATION	Less than -60 dB
MAX. FREQUENCY DEVIATION (FM)	\pm 5 kHz
MODULATION	Balanced modulation for SSB Variable reactance frequency shift for FM Low power modulation for AM
MICROPHONE	Dynamic microphone, 500 Ω
AUDIO FREQUENCY RESPONSE	400 ~ 2600 Hz, within -9 dB
POWER CONSUMPTION	Transmit mode: 95W (AC 120/220), 4A (DC 13.8V), max. Receive mode (no signal): 45W (AC 120/220V), 0.8A (DC 13.8V)
POWER REQUIREMENTS	AC 120/220V, 50/60 Hz DC 12V ~ 16V (13.8V as reference)
DIMENSIONS	278(W) x 124(H) x 325(D) mm
WEIGHT	11 kg
RECEIVING SYSTEM	SSB, CW: Single-superheterodyne AM, FM: Double-superheterodyne
INTERMEDIATE FREQUENCY	SSB, CW, . . . 10.7 MHz FM, AM: 1st IF . . . 10.7 MHz 2nd IF: . . . 455 kHz
RECEIVING SENSITIVITY	SSB, CW: S/N = 10 dB or better at 0.25 μ V FM: S/N = 30 dB or better at 1 μ V 20 dB noise quieting = Less than 0.4 μ V AM: S/N = 10 dB or better at 0.5 μ V
IMAGE RATIO	Better than 70 dB
IF REJECTION	Better than 70 dB
PASS-BAND WIDTH	SSB, CW: More than 2.4 kHz at -6 dB AM: More than 4 kHz at -6dB FM: More than 12 kHz at -6 dB
RECEIVER SELECTIVITY	SSB, CW: Less than 4.8 kHz at -60 dB AM: Less than 12 kHz at -40 dB FM: Less than 32 kHz at -60 dB
SQUELCH SENSITIVITY	0.25 μ V
AUDIO OUTPUT	More than 2.5W at 4 Ω load (10% distortion)
RECEIVER LOAD IMPEDANCE	8 Ω
FREQUENCY STABILITY	Within \pm 2 kHz during one hour after one minute of warm-up, and within 150 Hz during any 30 minute period thereafter.

The above specifications are subject to change without notice for improvement.

SECTION 1. TS-600 FEATURES

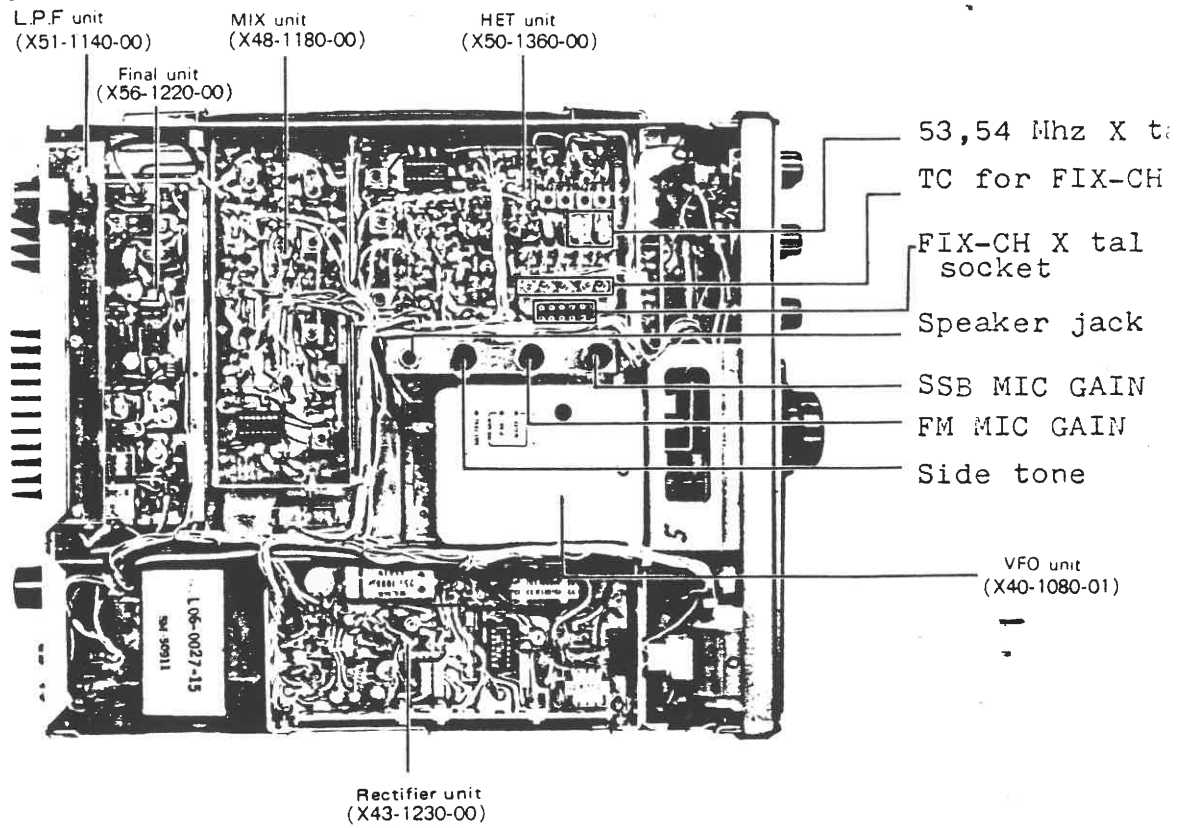
1. The Model TS-600 is a fully solid-state, all-mode amateur band transceiver designed to provide high quality communications on SSB, FM, AM and CW bands.
2. Bascially engineered for fixed station operation but is also used for mobile station operation because of the employment of AC/DC two-way power system.
3. The single and doubleconversion type transceiver incorporates its own built-in VFO that continuously covers the frequency range of 50.00 to 54.00MHz in 4 bands.
4. A newly developed two-speed dial mechanism facilitates tuning: MAIN TUNING knob (inner) for closer tuning covers a change of 25kHz by one complete rotation, and QUICK TUNING knob (outer) covers a change of 100kHz similarly. You can tune in quickly with pin-point accuracy. This feature is very useful in receiving SSB signals.
5. The main dial is graduated at 1kHz intervals and provides accurate readings up to 100kHz, while the sub-dial is graduated at 50 and 100kHz intervals for reading frequencies up to 1MHz per rotation.
6. A total of 20 fixed channels (5 channels for each band) for all-mode operation. All the necessary crystal oscillator elements are available as optional accessories. Each of working channels can be visually checked by the KENWOOD's unique channel indicator.
7. A noise blanker (NB) circuit of the type normally found in many other HF products of our make is included to eliminate pulse noise such as ignition noise.
8. For improved FM-mode operation, a squelch circuit combined with a noise detector circuit and Schmidt circuit is added to the FM unit.
9. A tuner which uses a voltage variable capacitor is built in the receiver RF stage to minimize cross-talk and spurious interference, and a high "Q" tuning circuit in the antenna input stage for excellent selectivity.
10. Speaker output is free from distortion because of the use of amplification type AGC circuit. Signals transmitted are accompanied by little or no splutter and free from distortion thanks to the adoption of ALC circuit. The AGC circuit comprises such time-constant element that this constant is "slow" in SSB mode but "fast" in FM, AM or CW mode.
11. The built-in marker signal circuit enables you to calibrate the tuning dial precisely at 100kHz intervals. By setting the CALIBRATE switch to ON' the receiver RF input circuit is disabled, thus permitting frequency calibration without being disturbed by external signals.
12. The unique "S" meter provides accurate reading without causing "scale-out" even when unusually strong FM signal comes in. By manipulating the center meter switch, this meter functions as a center meter (tuning meter) for pin-point tuning of FM stations.
13. The built-in RIT circuit is very useful during reception, particularly in SSB and CW modes. It is designed to be used for both VFO and fixed channel operations.
14. The transceiver operates on AC 120/220V or on DC 13.8V. It includes DC voltage multiplier of our own development, contributing much to the space-saving design of the model.
15. Significant improvements are embodied in the panel design for making this transceiver much easier to control and use. Dials and knobs are of more advanced type in visual and functional senses. Meter illumination and pilot lighting are included assuming night-time use of the transceiver.
16. Visual aspects are taken as an important criterion in the designing of this transceiver. Mechanical features too have been treated similiary, with particular emphasis on their reliability.
17. For assuring easier access to the internals, the transceiver enclosure or case is in two parts, complete with special mechanical details to allow the front-control panel to be detached. The final unit is also arranged so that it can be removed from the rear panel.
18. VOX operation is also available. The transceiver has provision for connection of VOX-3 obtained from KENWOOD as optional accessory.

OUTSIDE VIEWS

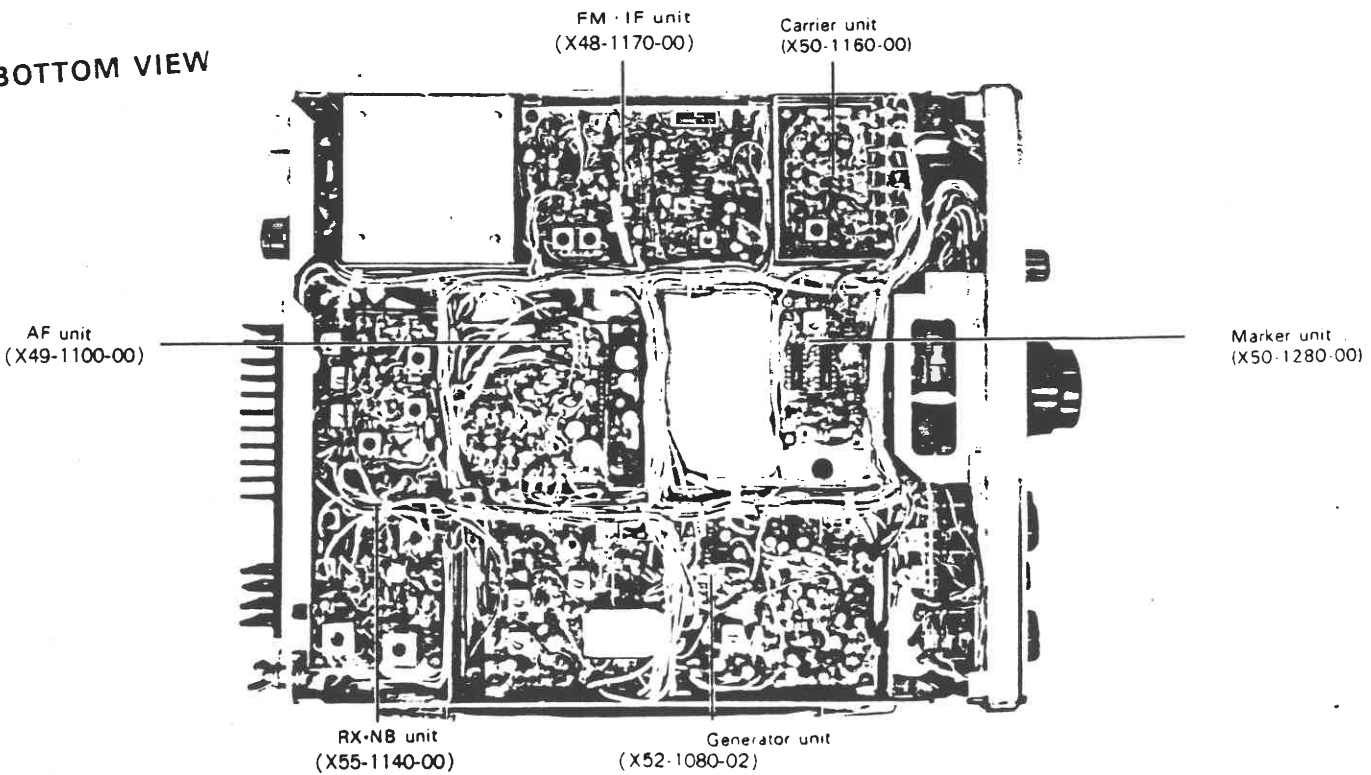


INSIDE VIEWS

TOP VIEWS

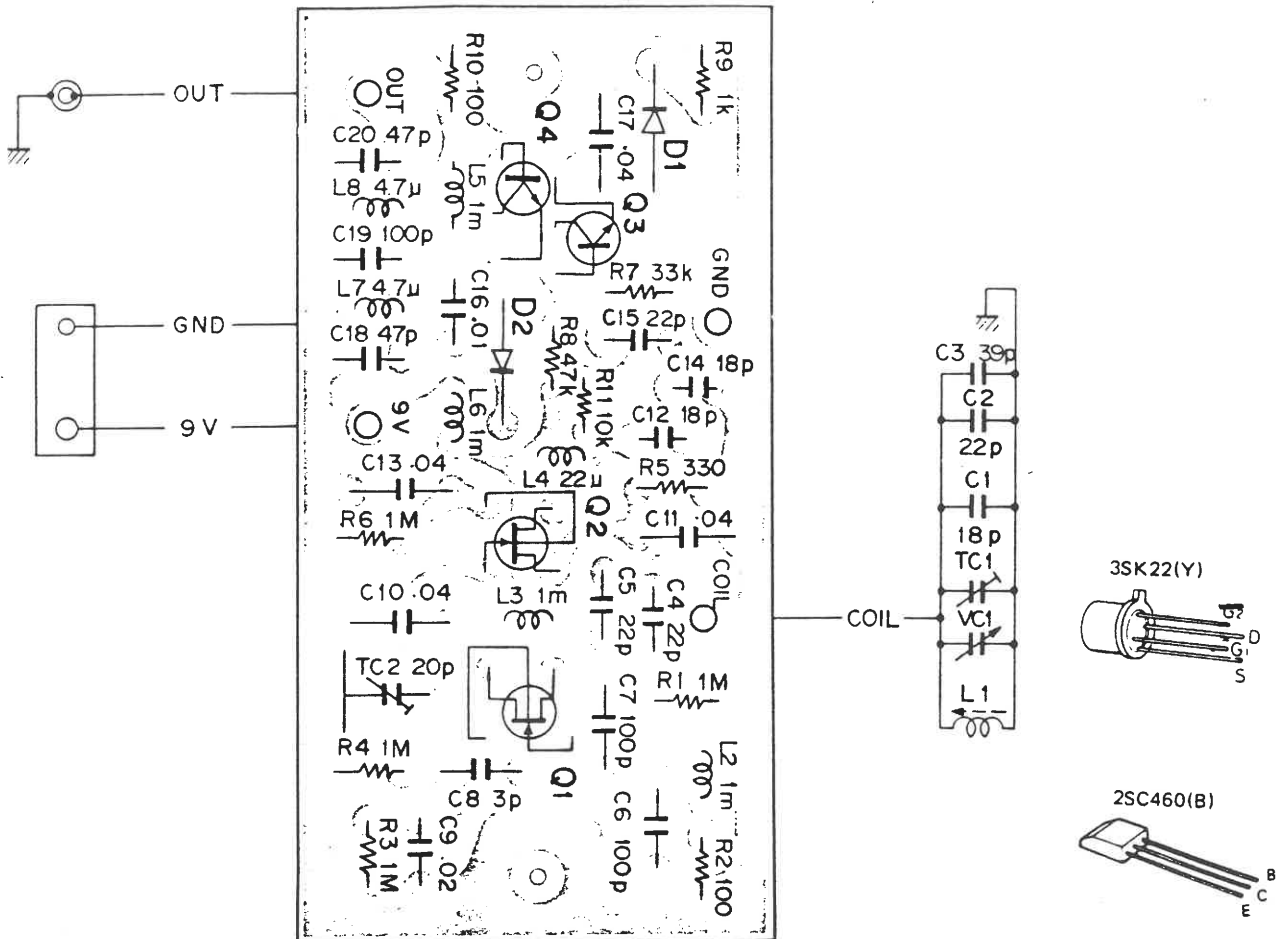


BOTTOM VIEW



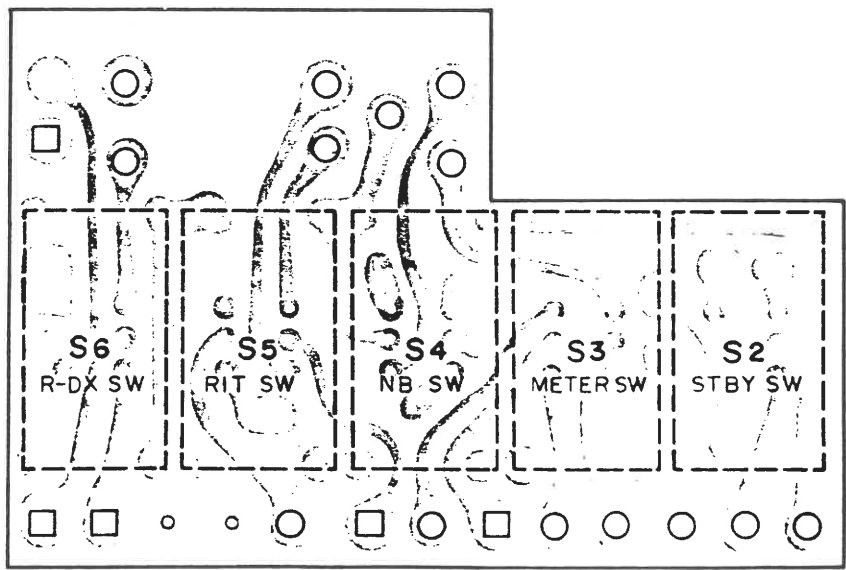
PC BOARD

▼ VFO UNIT (X40-1080-01)



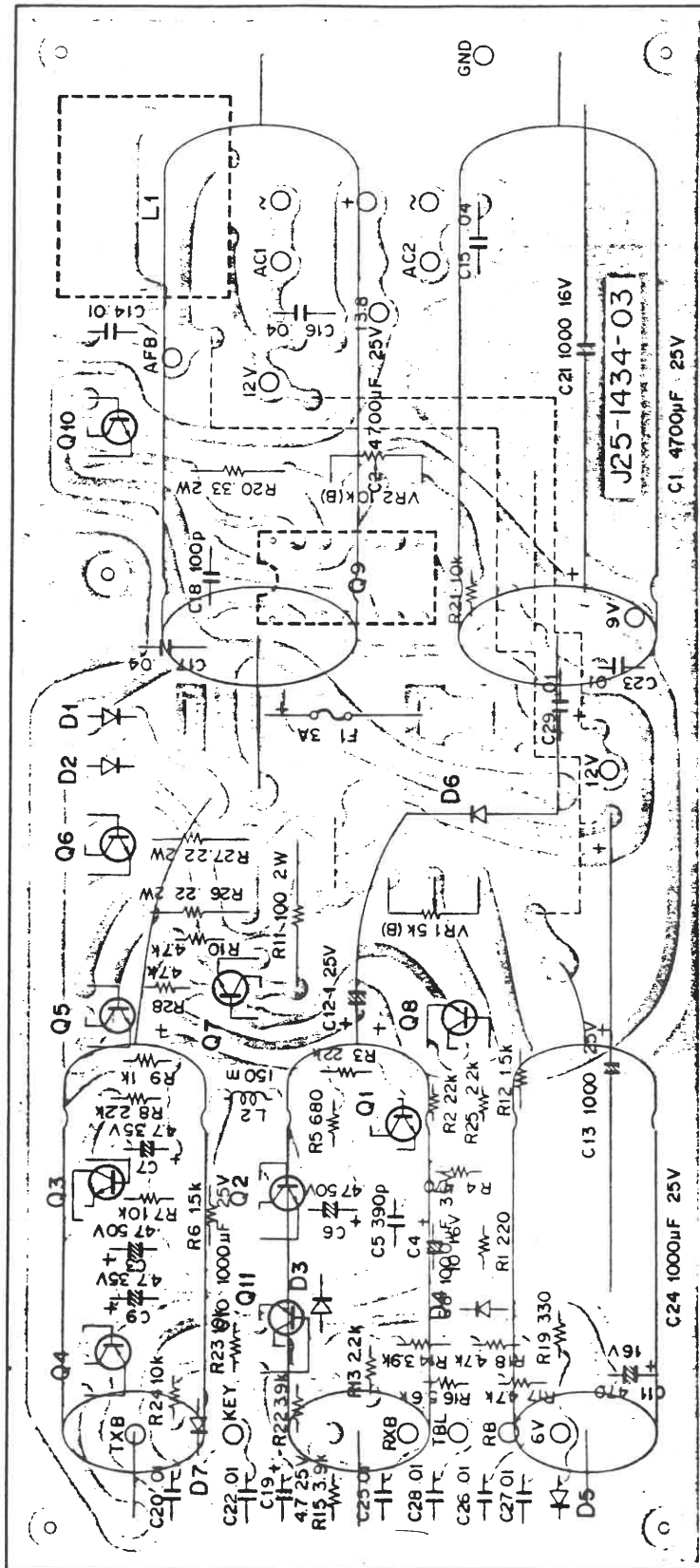
Q1, 2:3SK22(Y), Q3, 4:2SC460(B), D1, 2:1N60

▼ SWITCH UNIT (X41-1060-00)

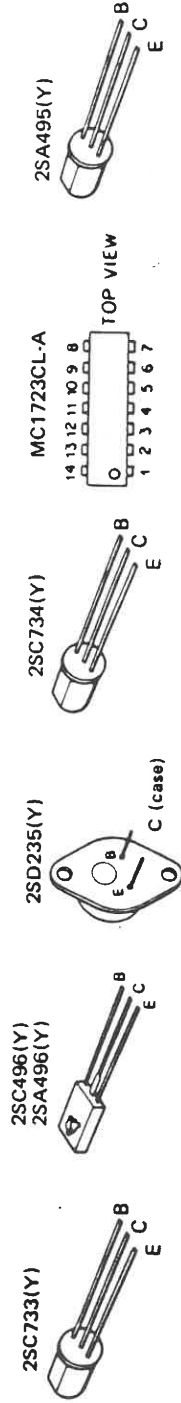


PC BOARD

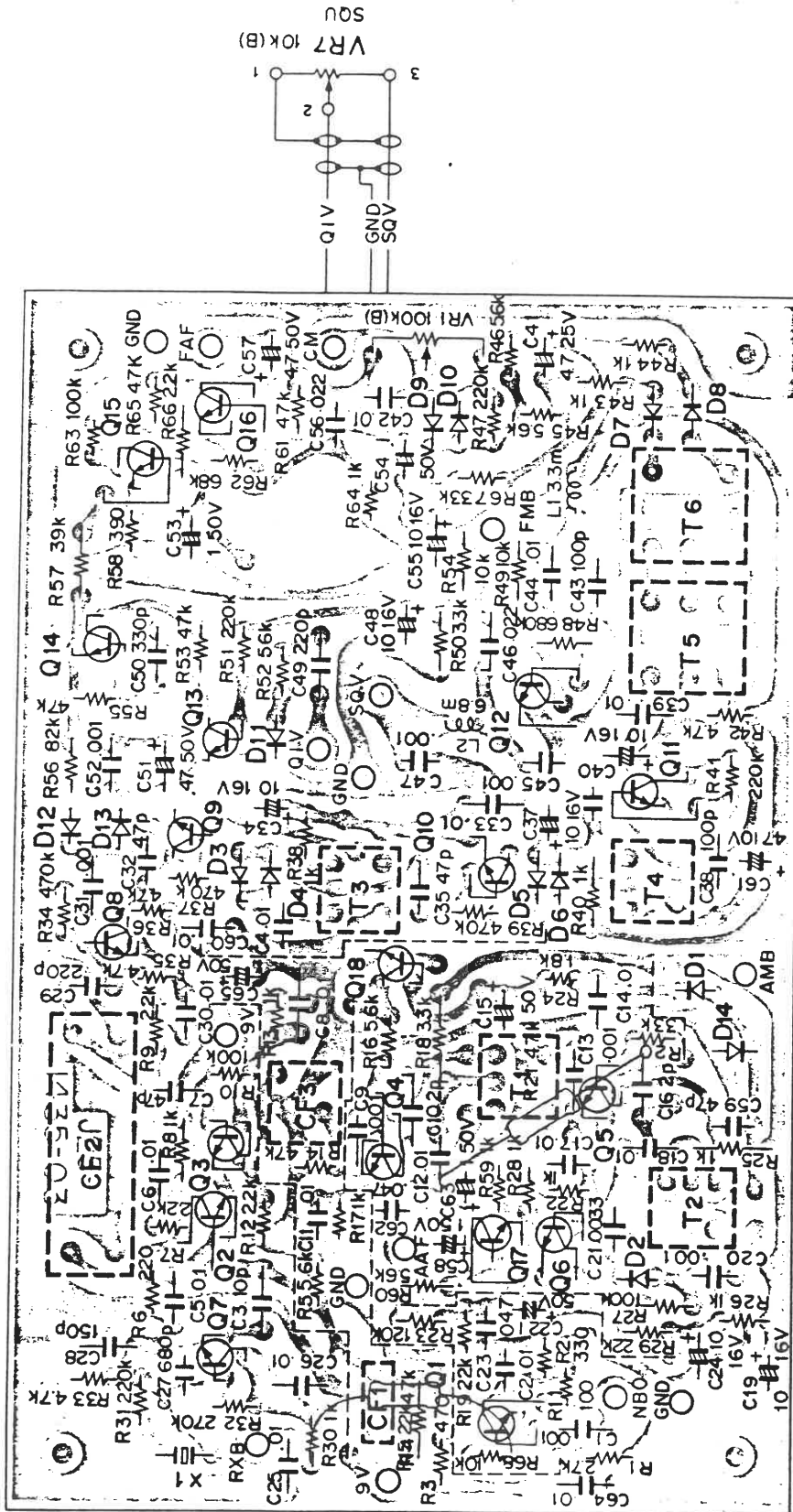
▼ RECTIFIER UNIT(X43-1230-00)



Q1, 2:2SC733(Y), Q3, 7:2SC496(Y), Q4:2SA496(Y), Q5, 6, 10:2SD235(Y), Q8:2SC734(Y), Q9:MC1723CL-A,
 Q11:2SA495(Y), D1~4, 6:V06B(YEL), D5:WZ-061, D7:1S1555, D8:M4C-6



▼ FM·IF UNIT (X48-1170-00)

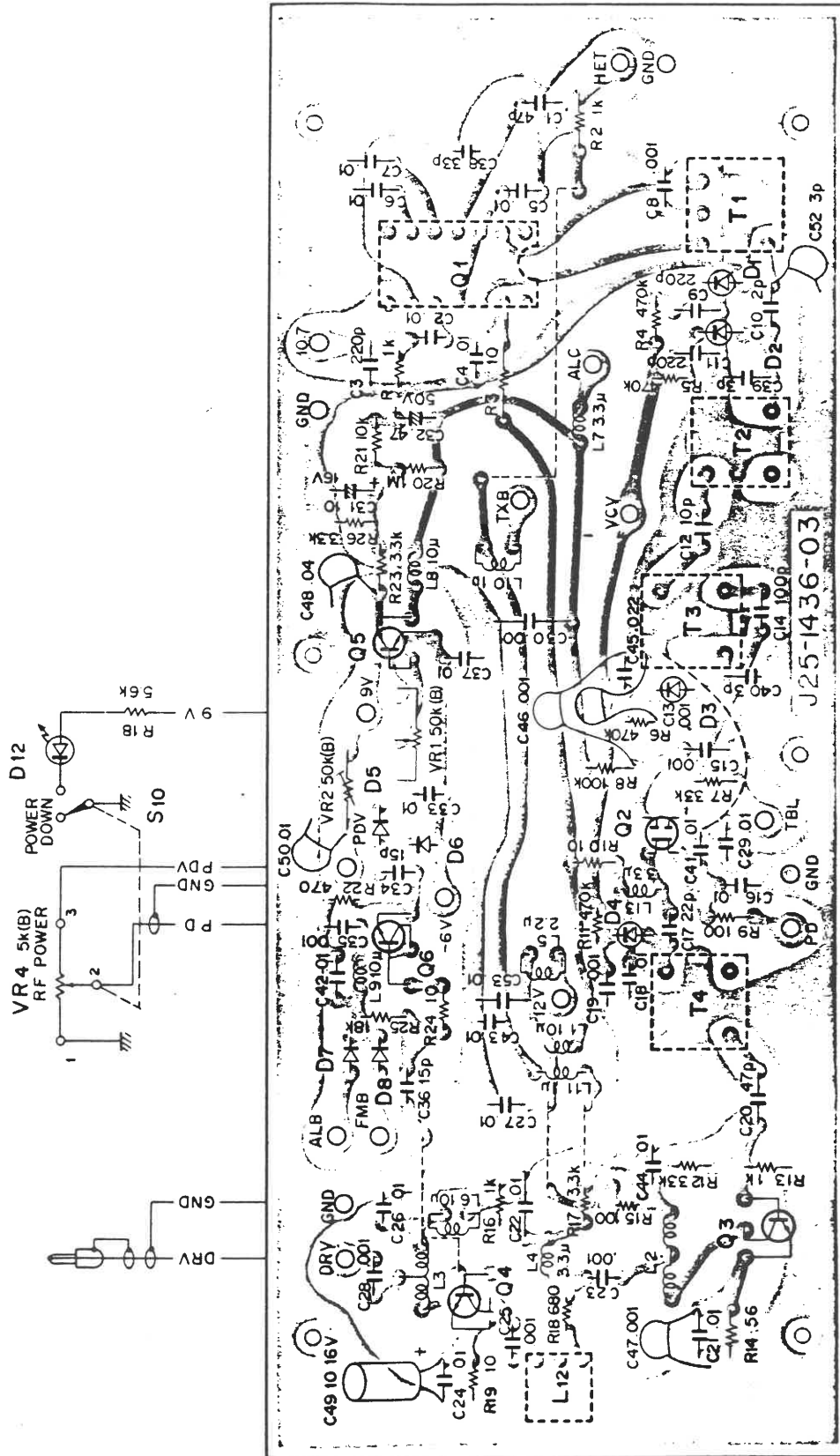


Q1~11, 18:2SC460(B), Q12~17:2SC733(Y), D1, 2, 7, 8, 12~14:1N60, D3~6, 9~11:1S1555

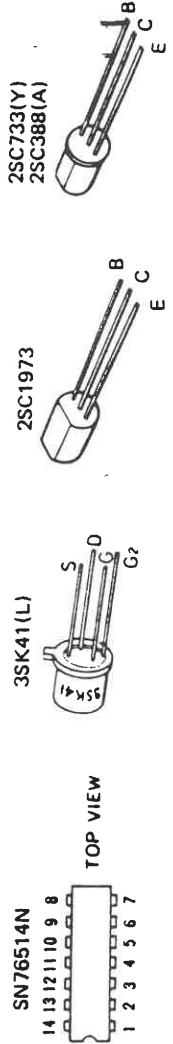


PC BOARD

▼ MIX UNIT (X48-1180-00)

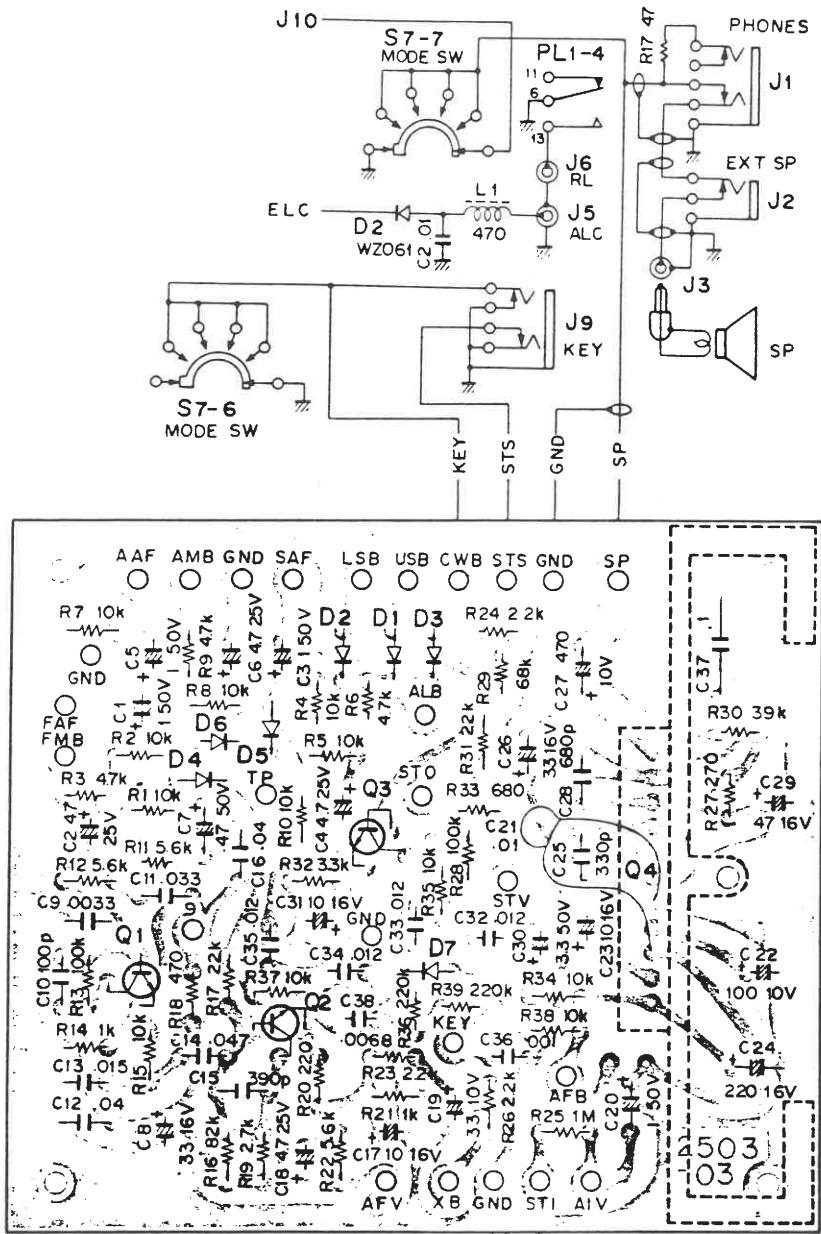


Q1:SN76514N, Q2:3SK41(L), Q3, 4:2SC1973, Q5:2SC733(Y), Q6:2SC388A, D1~4:1SV50, D5, 6:1N60, D7, 8:1S1555



PC BOARD

▼ AF UNIT (X49-1100-00)



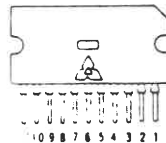
Q1, 2:2SC733(O), Q3:2SC733(Y),
Q4:AN315, D1~7:1S1555

2SC733(O)
2SC733(Y)



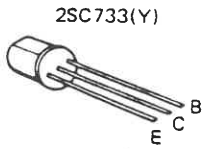
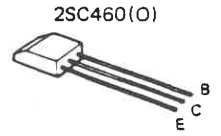
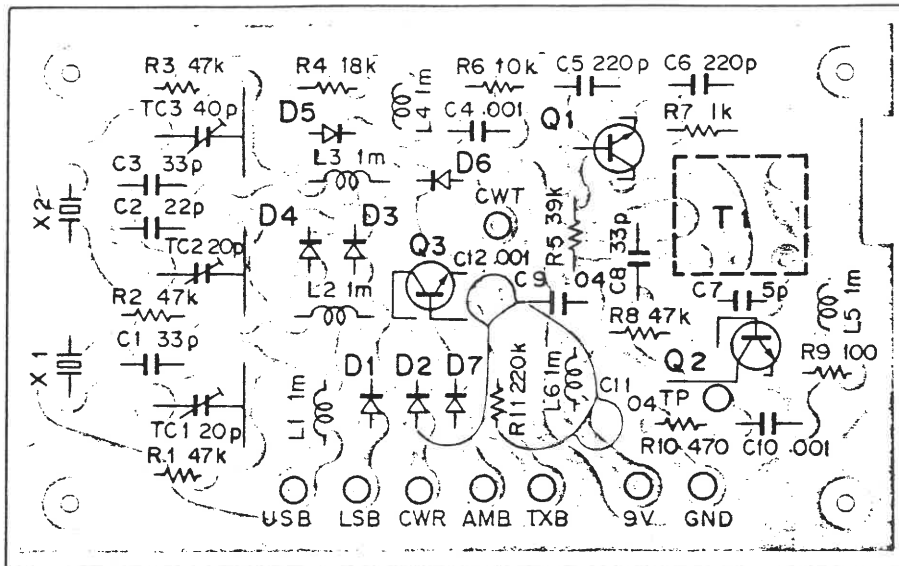
VR1
50k(B)

AN315

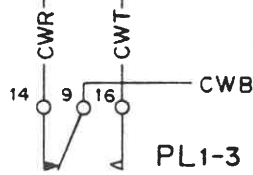


PC BOARD

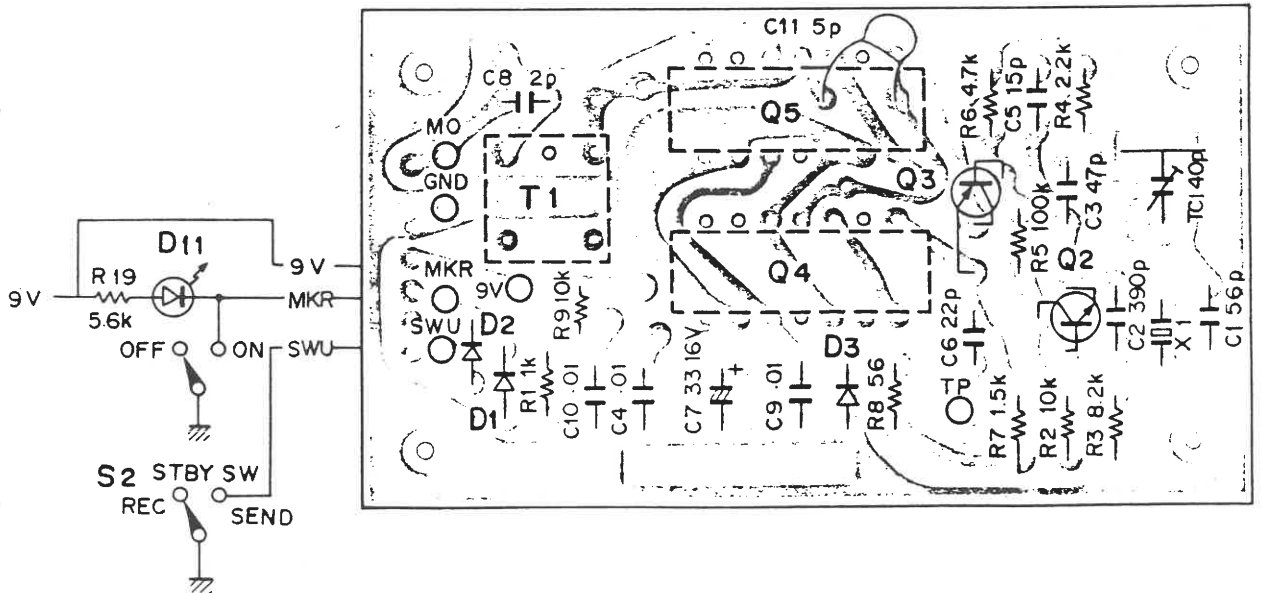
▼CAR UNIT (X50-1160-00)



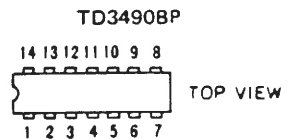
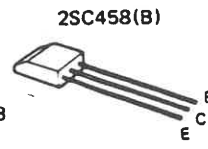
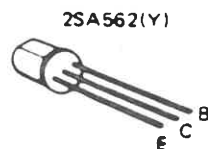
Q1: 2SC460(O),
Q2, 3: 2SC733(Y),
D1~7: 1S1555



▼MKR UNIT (X50-1280-00)

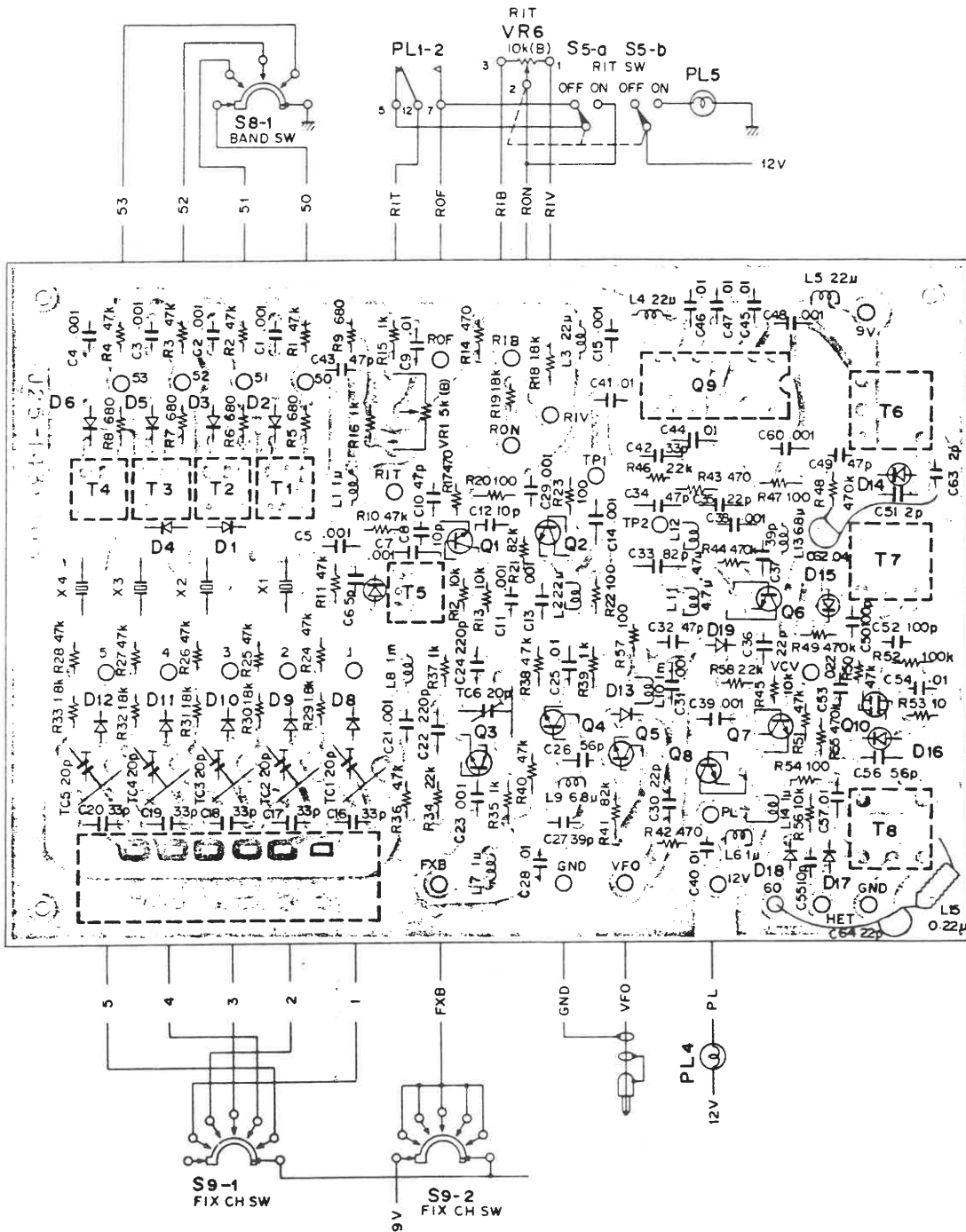


Q1: 2SA562(Y), Q2: 2SC458(B), Q3: 2SA495(Y),
Q4, 5: TD3490BP, D1, 2: 1S1555, D3: BZ-052

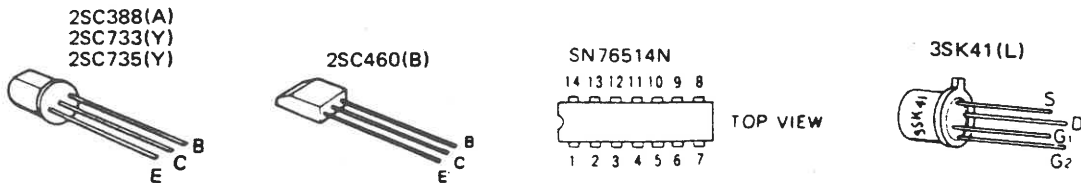


PC BOARD

▼ HET UNIT (X50-1360-00)



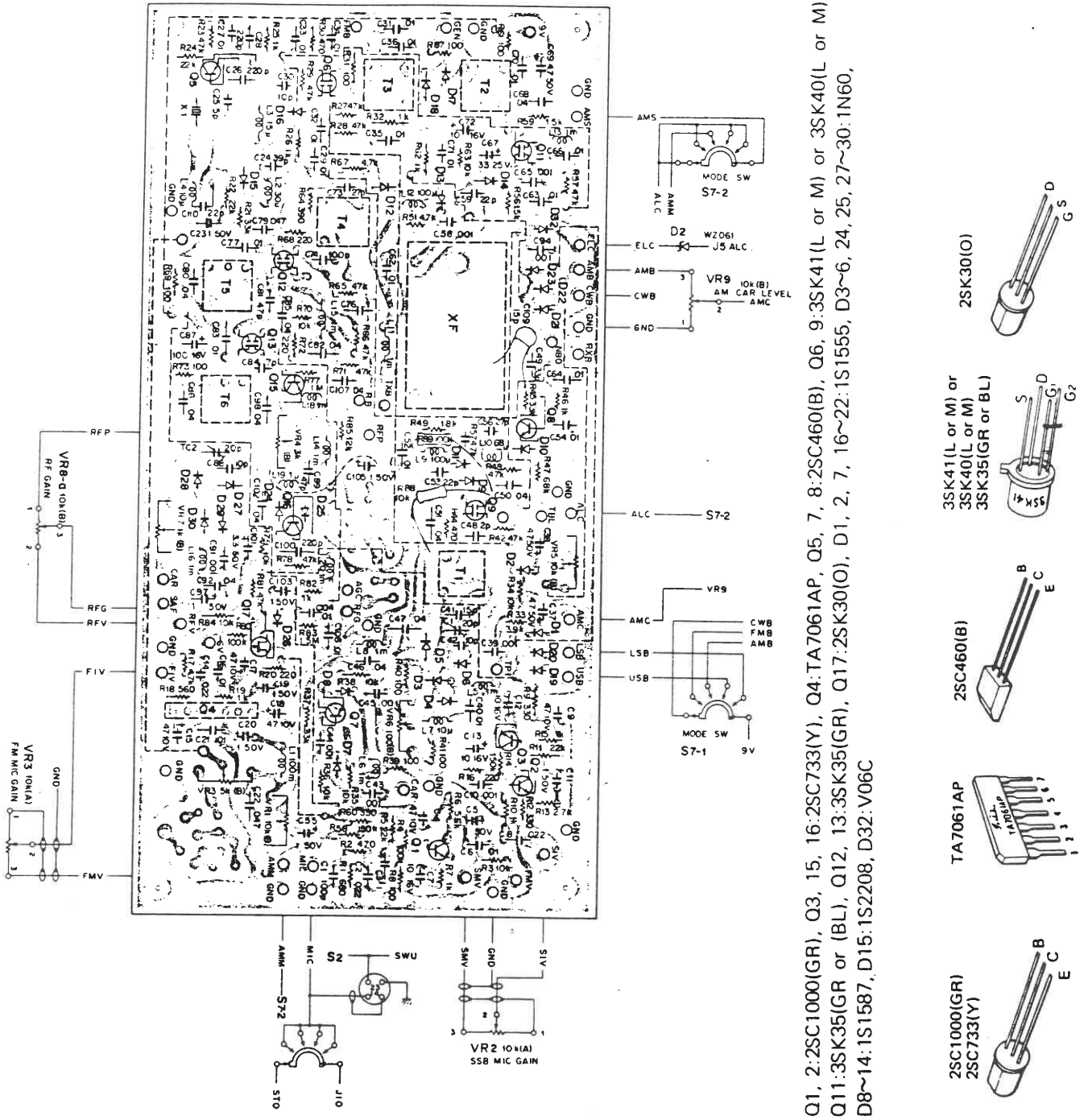
Q1:2SC388(A), Q2~6:2SC460(B), Q7:2SC733(Y), Q8:2SC735(Y), Q9:SN76514N, Q10:3SK41(L),
D1~6, 8~12, 17, 18:1S1555, D7:1S2208, D14~16:1SV50, D13, 19:1N60



PC BOARD

GENERATOR UNIT

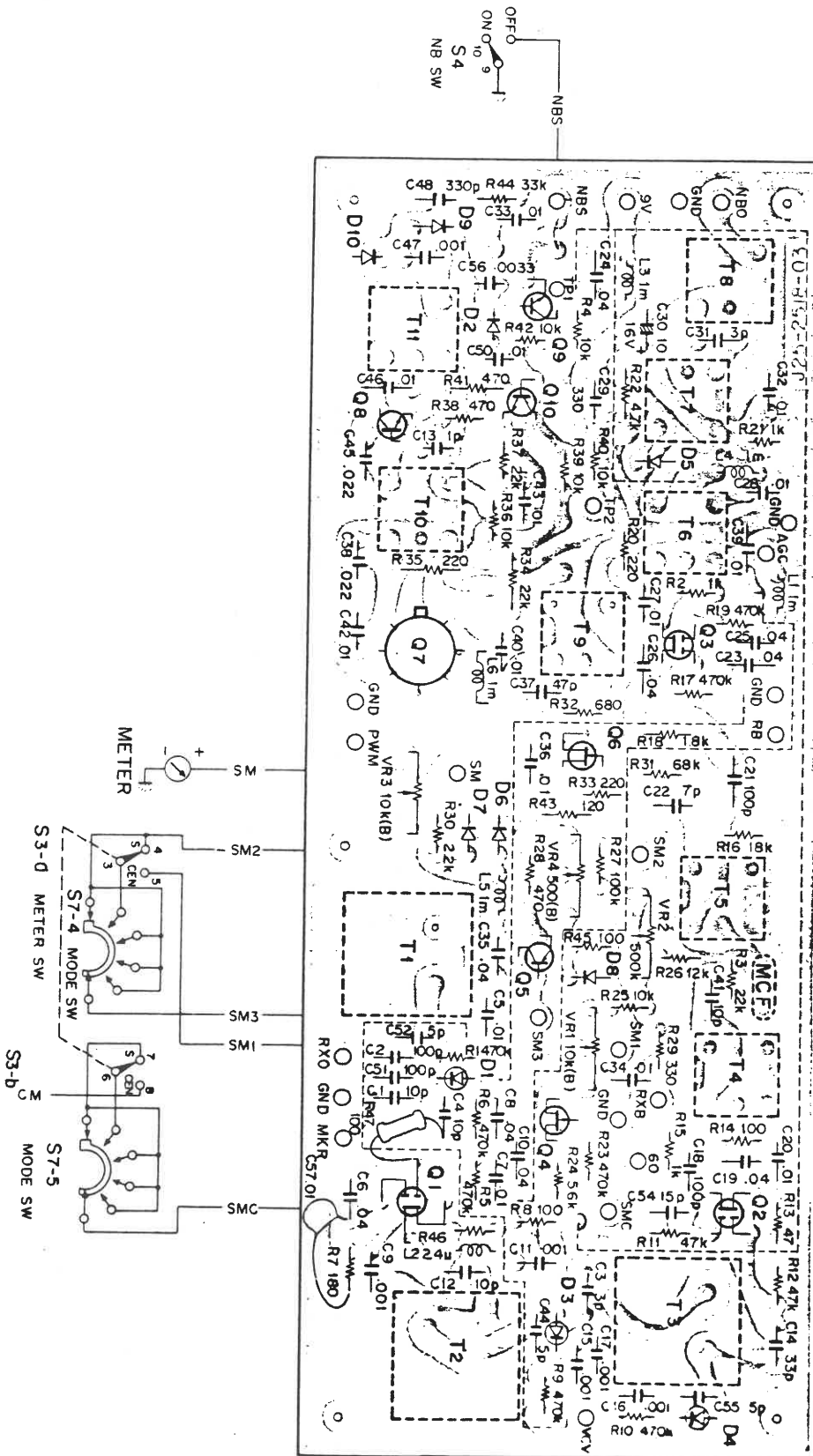
(X52-1080-02)



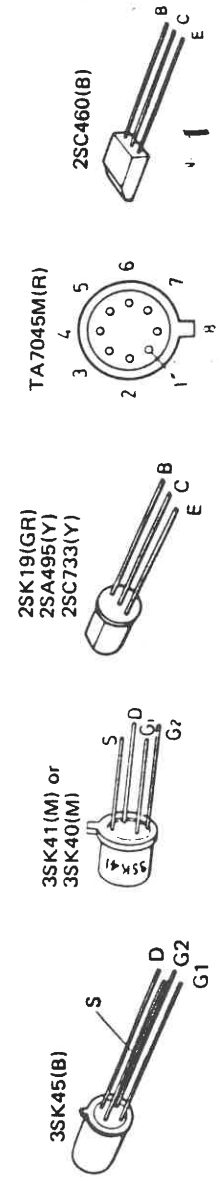
Q1, 2:2SC1000(GR), Q3, 15, 16:2SC733(Y), Q4:TA7061AP, Q5, 7, 8:2SC460(B), Q6, 9:3SK41(L or M) or 3SK40(L or M),
 Q11:3SK35(GR or BL), Q12, 13:3SK35(GR), Q17:2SK30(O), D1, 2, 7, 16~22:1S1555, D3~6, 24, 25, 27~30:1N60,
 D8~14:1S1587, D15:1S2208, D32:V06C

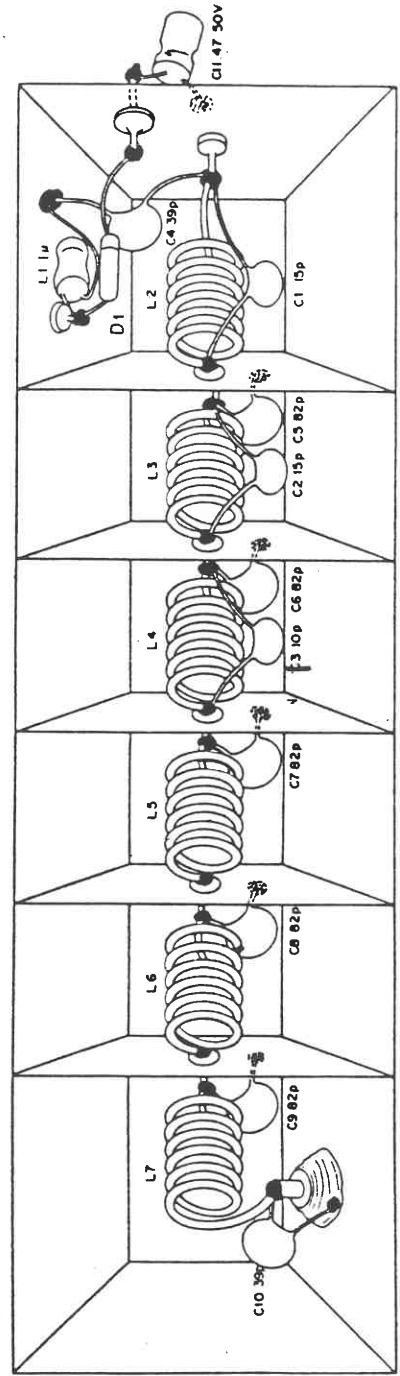
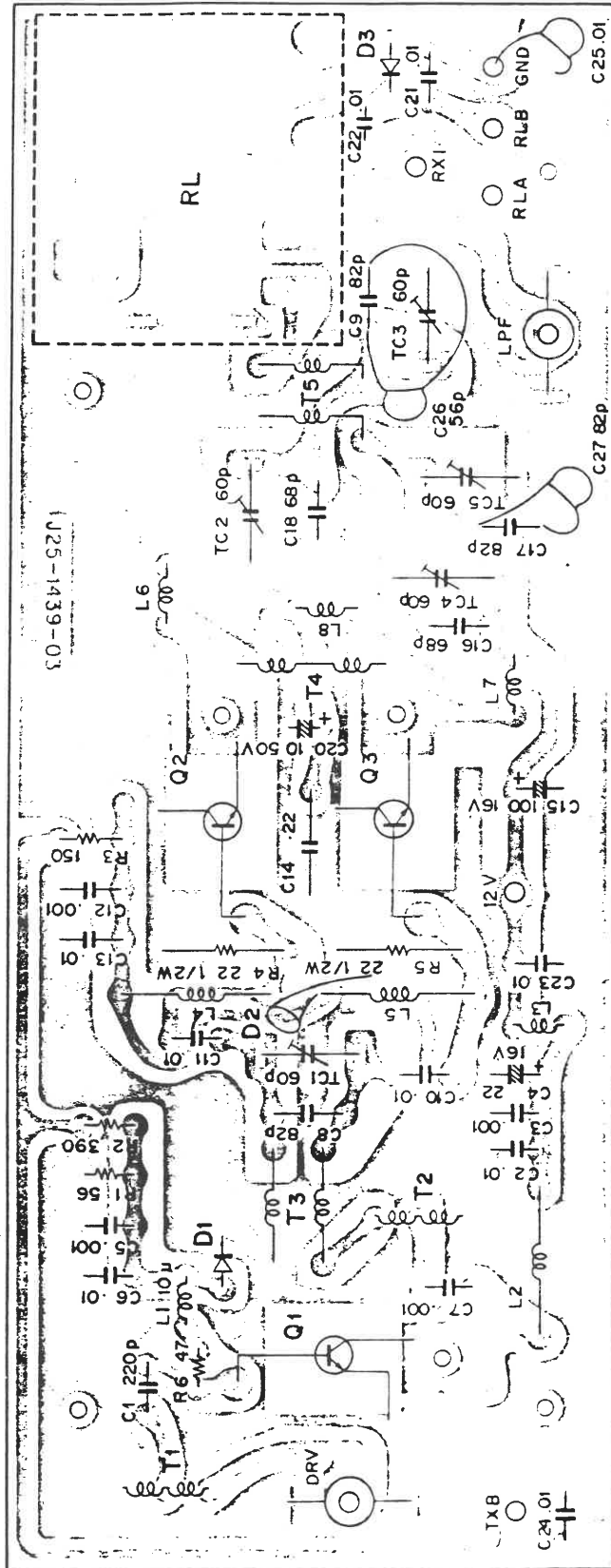
PC BOARD

▼ RX·NB UNIT (X55-1140-00)

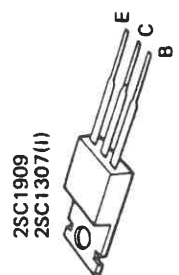


Q1, 3: 3SK45(B), Q2: 3SK41(M) or 3SK40(M), Q4, 6: 2SK19(GR), Q5: 2SA495(Y), Q7: 1A7045M(R), Q8: 2SC460(B), Q9, 10: 2SC733(Y), D1, 3, 4: 1SV50, D2, 6, 7, 9, 10: 1N60, D5: 1SS16, D8: 1S1555





Q1:2SC1909, Q2,3:2SC1307(I), D1,2:VD120, D3:V06J(GRN)



PARTS LIST

Note 1:

Only special type of resistors (example: cement, metal film, etc.) and capacitors (example: electrolytic, tantalum, mylar, temp. coeff. capacitors) are detailed in the PARTS LIST. For the value of all common type components refer to the schematic diagram or the PC board illustration. Resistors not otherwise detailed are carbon type (1/4 or 1/8W).

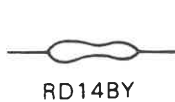
Order carbon resistors and capacitors according to the following example:

A carbon resistor's part number is RD14BY 2E222J.

A ceramic capacitor's number is CK45F1H103Z. CC45TH1H220J.

1. Type of the carbon resistor

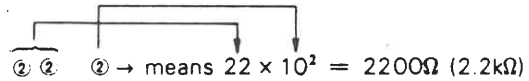
3. Resistance value



RD14BY



RD14CY



Significant figure

Multiplier

2. Wattage

1/4W → 2E

1/8W → 2B

Example: 221 → 220Ω 224 → 220kΩ

222 → 2.2kΩ 225 → 2.2MΩ

223 → 22kΩ

4. Tolerance

J = ±5% (Gold)

K = ±10% (Silver)

Note 2:

K: U.S.A.

W: Europe

T: Britain

CAPACITORS

Type I

CK	45	F	1H	103	Z
1	2	3	4	5	6

Type II

CC	45	TH	1H	220	J
1'	2'	3'	4'	5'	6'

1 = Type Ceramic, Electrolytic etc.

2 = Shape Round, Square etc.

3 = Temp range

3' = Temp coeff

4 = Voltage rating

5 = Value

6 = Tolerance

6. Tolerance

Type	C	D	G	J	K	M	X	Z	P	No Type
(%)	±0.25	±0.5	±2	±5	±10	±20	+40 -20	+80 -20	+100 -0	More than 10μF -10 ~ +50 Less than 4.7μF -10 ~ +75

6

Cord	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

(Value less than 10 pF)

CK45F

Ceramic capacitor (type I) 3

Cord	B	D	E	F
Operating temperature °C	-30 +85	-30 +85	-30 +85	-10 +70

5. Capacitor value

Example: 010 → 1pF

100 → 10pF

101 → 100pF

102 → 1000pF = 0.001μF

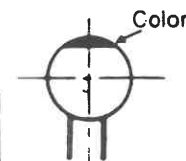
103 → 0.01μF

CC4500....

Ceramic capacitor (type II) temperature coeff. capacitor 1' 3'

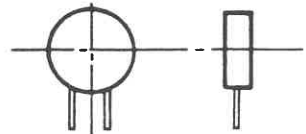
Color	CH (Black)	LH (Red)	PH (Orange)	RH (Yellow)	SL (Green)	TH (Blue)	UH (Violet)
ppm/°C	0	-80	-150	-220	-330	-470	-750

CC45



Type II

CK45



Type I

PARTS LIST

Caution
Condenser

Mylar ——— M
Ceramic ——— C
Electrolytic ——— E
Tantalum ——— T

* New parts

Ref. No.	Parts No.	Description	Re- marks	Ref. No.	Parts No.	Description	Re- mark
(Y54-1240-00) GENERAL							
C1	C90-0402-00	0.001 AC150V	*		B10-0140-14	Front glass	
C2	CK45E1H103P	0.01μF +100%, -0%			B19-0156-04	Filter x2 (BAND, FIX)	
C3	CK45F1H103Z	0.01μF +80%, -20%			B20-0368-03	Dial plate	
C4~9	C90-0194-05				B21-3033-04	Dial pointer	
C10~12	C90-0402-00	0.001μF AC150V			B23-3011-14	Indicating plate	
R1~19	PD148Y2B000J OR PD148Y2E000J	000Ω ± 5% 1/8W 000Ω ± 5% 1/4W			B23-9006-04	Knob plate 100kHz)	
D1	V11-0318-05	Diode V06J			B30-0007-05	Lamp (dial indication)	
D2	V11-0243-05	Zener diode WZ-061			B30-0079-05	Pilot lamp BAND, FIXCH, ON AIR, RT	
D3~10	V11-0051-05	Diode 1N60			B31-0601-05	Meter	
D11, 12	V11-0341-05	LED TLR-102	*		B40-1428-04	Name plate (Model)	
VR1	R01-0402-05	50kΩ (B) SIDE TONE	*		B42-0666-04	Name plate (Adjustment)	
VR2, 3	R01-3020-05	10kΩ (A) FM, SSB, MIC	*		B43-0260-04	Name plate	
VR4	R03-0401-05	5kΩ (B) POWER, DOWN,	*		B46-0007-00	Warranty card	
VR5, 6	R03-3055-05	10kΩ (B) RT, DRV, AMCAR	*		B50-2523-00	Operating manual	
VR7	R01-0401-05	10kΩ (B) SQU,	*	J1	E11-0034-15	Phone jack	
VR8	R08-9010-05	50kΩ (A) AF, RF, 10kΩ (B)		J2	E11-0003-15	Speaker jack	
VR9	R03-3055-05	10kΩ (B) RT, DRV, AMCAR		J3, 6, 7	E13-0101-05	1P Pin jack x 3	
VR10	R12-2017-05	5kΩ (B)		J4	E06-0403-05	4P Microphone socket	
VR11, 12	R12-3036-05	10kΩ (B)		J8	E08-0409-05	4P square socket	
VR13	R12-2015-05	5kΩ (B)		J9	E11-0005-15	Key jack	
VR14, 15	R12-3025-05	10kΩ (B)		J10	E01-0903-05	9P MT socket	
S1	S59-2025-05	Power switch			E05-0901-09	9P MT plug	
S7	S01-4402-05	Rotary (MODE (4-8-5)	*		E09-0204-05	2P plug	
S8	S01-2036-05	Rotary (BAND 2-5-4)			E12-0001-05	Earphone plug	
S9	S01-2401-05	Rotary (Fixed channel (2-4-6)	*		E14-0101-05	1P Pin plug x 6	
L1	L40-4711-03	Ferri-inductor 470μH			E15-0038-05	Lamp socket	
L2, 3	L33-0601-05	Choke coil			E22-0207-05	Lug plate 1L2P	
T1	L06-0027-25	Power transformer			E22-0405-05	Lug plate 1L4P	
RL1	S51-4017-15	Relay			E23-0001-05	Terminal	
X1	L77-0562-05	Crystal quartz 50MHz			E23-0015-04	Earth lag	
X2	L77-0563-05	Crystal Quartz 51MHz			E23-0046-04	Terminal	
	A01-0226-03	Case (Upper)			E33-0606-00	Wire kit	*
	A01-0227-13	Case (Lower)			E33-0623-00	Wire kit	*
	A13-0080-03	Frame (A)			F05-2023-00	Fuse (2A) x 2	
	A13-0081-03	Frame (B)			F05-3022-05	Fuse (3A) x 2	
	A13-0169-02	Frame (C)	*		F05-5022-05	Fuse (5A)	
	A13-0170-03	Frame (D)	*		F10-0419-04	MIX SHIELD COVER	*
	A13-0601-03	Frame (E)	*		F10-0420-04	POWER SHIELD PLATE	*
	A21-0278-03	Ornament panel	*		F10-1204-04	CAR SHIELD PLATE	*
	A23-0455-24	Rear panel (A)	*		F11-0704-04	CAR SHIELD CASE	*
	A23-0708-03	Rear panel (B)	*		F14-0072-04	Socket	
	A30-0113-04	Dial back plate	*		F15-0164-14	Speaker mask	
	B01-0081-13	Escutcheon			F15-0165-04	Switch mask	
	B01-0082-13	Escutcheon (Handle side)			G01-0230-04	Coil spring	
	B01-0109-05	Panel escutcheon					
	B07-0108-02	Dial escutcheon ass'y					
	B07-0195-04	Switch grill					

PARTS LIST

Ref No.	Parts No.	Description	Re- marks	Ref. No.	Parts No.	Description	Re- marks
-	J 02-0022-05	Foot x4 15φ		C8	CC45CH1H030D	MICA 3pF ±0.5pF	
-	J 02-0049-14	Foot x6 28φ		C9	CK45E1H203P	0.02μF +100%, -0%	
-	J 13-0004-05	Fuse holder (rear panel)		C10, 11	CK45E1H403P	0.04μF +100%, -0%	
-	J 19-0381-04	Meter stopper		C12	CC45CH1H180J	18pF ±5%	
-	J 19-0382-04	Socket retainer		C13	CK45E1H403P	0.04μF +100%, -0%	
-	J 19-0383-04	Lamp retainer		C14	CC45CH1H180J	18pF ±5%	
-	J 21-0392-04	Lead wire retainer		C15	CC45CH1H220J	22pF ±5%	
-	J 21-0448-04	Speaker retainer		C16	CK45E1H103P	0.01μF +100%, -0%	
-	J 21-1192-04	Rotary switch retainer		C17	CK45E1H403P	0.04μF +100%, -0%	
-	J 21-1193-04	Mounting metal		C18	CC45SL1H470J	47pF ±5%	
-				C19	CC45SL1H101J	100pF ±5%	
-				C20	CC45SL1H470J	47pF ±5%	
-	J 30-0061-04	Rubber spacer x2		R1-11	PD14CY2E000J	000Ω ±5% ¼W	
-	J 30-0501-04	spacer x 2		Q1, 2	V09-0020-05	3SK22(Y)	
-	J 32-0220-04	Hex. boss		Q3, 4	V03-0079-05	2SC460(B)	
-	J 32-1030-14	Round boss x2 (front foot)		D1, 2	V11-0051-05	1N60	
-	J 39-0028-04	Spacer hardware x2		L1	L32-0166-05	OSC COIL	
-	J 59-0001-05	Grommet x2		L2, 3	L40-1021-03	Ferri-inductor 102K	
-	J 59-0002-05	Plunger x2		L4	L40-2201-03	Ferri-inductor 220K	
-				L5, 6	L40-1021-03	Ferri-inductor 102K	
-	K01-0063-05	Handle		L7, 8	L40-4791-02	Ferri-inductor 47K	
-	K20-0130-04	Knob (big) main (A)		TC1	C03-0001-05	VC	
-	K20-0131-04	Knob (small) main (B)		TC2	C05-0013-15	20p	
-	K21-0279-04	Knob (C)		VC1	C01-0196-05	VC	
-	K21-0308-04	Knob (G) AF		-	A01-0169-23	VFO case	
-	K21-0309-04	Knob (H) RF		-	B42-0010-04	Name plate	
-	K23-0057-04	Knob x3 pcs Rubber		-	D22-0011-05	Shaft coupling	
-	K23-0147-03	Knob F		-	E08-0204-05	2P jack	
-	K23-0255-03	Knob (BAND)		-	E13-0101-05	1P jack	
-	K23-0256-03	Knob (FIX)		-	E22-0207-05	Lug	
-	T13-0051-05	Speaker		-	E23-0015-04	Oval lug terminal x 2	
-	T91-0029-05	Microphone		-	E23-0046-04	Wrapping terminal x 4	
-	X40-0080-01	VFO unit		-	F07-0231-24	VFO cover	
-	X41-1060-00	Switch unit		-	F10-0249-14	VFO shield plate	
-	X42-1040-00	AC power cord ass'y		-	F11-0010-04	VFO box (G)	
-	X42-1050-00	DC power cord ass'y		-	G03-0009-04	Spring	
-	X43-1230-00	Rectifier unit		-	J 21-0895-03	VFO variable capacitor retainer	
-	X48-1170-00	FM-IF unit		-	J 21-1156-13	VFO mounting fitting	
-	X48-1180-00	MIX unit		-	X41-1020-00	Gear unit	
-	X49-1100-00	AF unit		SWITCH (X41-1060-00)			
-	X50-1160-00	CAR unit		S2-6	S36-2026-15		
-	X50-1280-00	MARCAR unit		-	E23-0046-04		
-	X50-1360-00	HET unit					
-	X51-1140-00	LPF unit					
-	X52-1080-02	GEN unit					
-	X55-1140-00	RX-NB unit					
-	X56-1220-00	FINAL unit					
VFO(X40-1080-01)							
C1	CC45CH1H180J	18pF ±5%					
C2	CC45CH1H220J	22pF ±5%					
C3	CC45PG1H390J	39pF ±5%					
C4	CC45PG1H220J	22pF ±5%					
C5	CC45LG1H220J	22pF ±5%					
C6, 7	CM93F2A101J(DM)	MICA 100pF ±5%					

PARTS LIST

Ref. No.	Parts No.	Description	Re- marks
-	E23-0047-04	TERMINAL	
DC CORD ASS'Y (X42-1050-00)			
-	E09-0426-05	4P PLUG	
-	F05-5022-05	FUSE 5A	
-	J13-0029-05	FUSE HOLDER	
-	J41-0006-00	Cord bushing	
POWER SUPPLY CORD ASS'Y (X42-1040-20)			
-	E09-0426-05	4P PLUG	Δ*
-	E30-0545-05	AC CABLE	Δ
-	J41-0006-00	Cord bushing	Δ
POWER SOURCE (X43-1230-00)			
C1, 2	CE02W1C472	E 4700μF 16WV	
C3	CE04W1HR47(RL)	E 0.47μF 50WV	
C4	CE04W1C100(RL)	E 10μF 16WV	
C5	CC45SL1H101J	100pF ± 5%	
C6	CE04W1HR47(RL)	E 0.47μF 50WV	
C7	CE04W1V4R7(RL)	E 4.7μF	
C8	CE02W1V102	E 1000μF	
C9	CE04W1V4R7(RL)	E 4.7μF	
C10	CE02W1E102	E 1000μF 25WV	
C11	CE04W1C471(RL)	E 470μF 16WV	
C12	CE04W1E010(RL)	E 1μF 25WV	
C13	CE02W1E102	E 1000μF 25WV	
C14	CK45F1H103Z	0.01μF +80%, -20%	
C15-17	CK45F1H403Z	0.04μF +80%, -20%	
C18	CC45SL1H391J	390pF ± 5%	
C19	CE04W1E4R7(RL)	E 4.7μF 25WV	
C20	CK45F1H103Z	0.01μF +80%, -20%	
C21	CE02W1C102	E 1000μF 16WV	
C22, 23	CK45F1H103Z	0.01μF +80%, -20%	
C24	CE02W1E102	E 1000μF 25WV	
C25-29	CK45F1H103Z	0.01μF +80%, -20%	
R1-28	PD14CY2E000J OR	000Ω ± 5% ¼W	
R11	RN14AB3D000K	000Ω ± 5% 2W	*
R20	R92-0602-25	0.32Ω	*
R26, 27	R92-0601-05	0.22Ω	*
Q1	V03-0123-05	TR 2SC733(Y)	
Q2	V03-0126-05	2SC734(Y)	
Q3	V03-0336-05	2SC496(Y)	
Q4	V01-0113-05	2SA496(Y)	
Q5, 6	V04-0046-05	2SD235(Y)	
Q7	V03-0336-05	2SC496(Y)	
Q8	V03-0128-05	2SC734(Y)	
Q9	V30-0218-05	IC μC1723(CL-A)	*
Q10	V04-0046-05	TR 2SD235(Y)	
Q11	V01-0037-05	2SA495(O) OR (Y)	
D1-4	V11-0219-05	DIODE V06B	

Ref. No.	Parts No.	Description	Re- marks
D5	V11-0243-05	DIODE WZ-061	
D6	V11-0219-05	V06B	
D7	V11-0076-05	1S1555	
D8	V30-0209-05	M4C-6	*
VR1	R12-2014-05	5kΩ (B)	
VR2	R12-3022-05	10kΩ (B)	
L1	L15-0016-05	CHOKE	
L2	L40-1545-06	Férry-inductor 154V	
-	E02-1401-05	IC SOCKET	
-	E23-0047-04	TERMINAL	
-	E23-0048-04	TERMINAL	
-	F05-3022-05	FUSE 3A	
-	F11-0253-03	SHIELD CASE	
-	F20-0078-05	MICA	
-	J13-0401-05	FUSE HOLDER x 2	*
-			
I F (X48-1170-00)			
C1	CK45D1H102M	0.001μF ± 20%	
C2	CK45D1H103M	0.01μF +80%, -20%	
C3	CC45SL1H100D	10pF ± 0.5pF	
C4-6	CK45D1H102M	0.001μF ± 20%	
C7	CC45SL1H470J	47pF ± 5%	
C8	CK45D1H103M	0.01μF +80%, -20%	
C9	CK45D1H102M	0.01μF ± 20%	
C10	CC45SL1H100D	10pF ± 0.5pF	
C11	CQ92M1H103K	M 0.01μF ± 10%	
C12	CK45D1H103Z	0.01μF +80%, -20%	
C13	CK45D1H102M	0.001μF ± 20%	
C14	CK45D1H103Z	0.01μF +80%, -20%	
C15	CE04W1H010(RL)	E 1μF 50WV	
C16	CC45SL1H020D	2pF ± 0.5pF	
C17	CQ92M1H103K	M 0.01μF ± 10%	
C18	CK45D1H103Z	0.01μF +80%, -20%	
C19	CE04W1C100(RL)	E 10μF 16WV	
C20	CK45D1H102M	0.001μF ± 20%	
C21	CQ92M1H332K	M 0.0033μF ± 10%	
C22	CE04W1H010(RL)	E 1μF 50WV	
C23	CQ92M1H473K	M 0.047μF ± 10%	
C24	CE04W1C100(RL)	E 10μF 16WV	
C25, 26	CK45D1H103Z	0.01μF +80%, -20%	
C27	CM9301H151J(DM)	MICA 150pF ± 5%	
C28	CM9301H681J(DM)	MICA 680pF ± 5%	
C29	CC45SL1H221J	220pF ± 5%	
C30	CK45D1H103Z	0.01μF +80%, -20%	
C31	CK45D1H102M	0.001μF ± 20%	
C32	CC45SL1H100D	10pF ± 0.5pF	
C33	CK45D1H103Z	0.01μF +80%, -20%	
C34	CE04W1C100(RL)	E 10μF 16WV	
C35	CC45SL1H100D	10pF ± 0.5pF	
C36	CK45D1H103Z	0.01μF +80%, -20%	
C37	CE04W1C100(RL)	E 10μF 16WV	
C38	CC45SL1H101J	100pF ± 5%	
C39	CK45D1H103Z	0.01μF +80%, -20%	
C40	CE04W1C100(RL)	E 10μF 16WV	

PARTS LIST

Ref. No.	Parts No.	Description	Re- marks
C41	CE04W1E4R7(RL)	E 4.7 μ F 25WV	
C42	CK45D1H103Z	0.01 μ F +80%, -20%	
C43	CC45SL1H101J	100pF \pm 5%	
C44	CK45D1H103Z	0.01 μ F +80%, -20%	
C45	CK45D1H102M	0.001 μ F \pm 20%	
C47	CK45D1H102M	0.001 μ F \pm 20%	
C48	CE04W1C100(RL)	E 10 μ F 16WV	
C49	CC45SL1H221J	220pF \pm 5%	
C50	CC45SL1H331J	330 μ F 50WV	
C51	CE04W1HR47(RL)	E 0.4 μ F 50WV	
C52	CK45D1H102J	0.001 μ F \pm 20%	
C53, 54	CE04W1H010(RL)	E 1 μ F 50WV	
C56	CE04W1C100(RL)	E 10 μ F 16WV	
C57	CE04W1H4R7(RL)	E 4.7 μ F 50WV	
C58	CE04W1H010(RL)	E 1 μ F 50WV	
C59	CC45SL1H100D	10pF \pm 0.5pF	
C60	CK45D1H102M	0.001 μ F \pm 20%	
C61	CK45D1H103Z	0.01 μ F +80%, -20%	
C62	CQ92M1H473K	M 0.047 μ F \pm 10%	
C63	CE04W1H010(RL)	E 1 μ F 50WV	
C64	CK45D1H103Z	0.01 μ F +80%, -20%	
C65	CE04W1H010(RL)	E 1 μ F 50WV	
R1~67	PD14CY2E000J OR	000 Ω \pm 5% $\frac{1}{4}$ W	
R15, 21	PD14BY2E000J	000 Ω \pm 5% $\frac{1}{4}$ W	
Q1~11	V03-0079-05	2SC460(B)	
Q12, 13	V03-0123-00	2SC733(Y)	
Q14	V03-0094-05	2SC458(B)	
Q15~17	V03-0123-00	2SC733(Y)	
Q18	V03-0079-05	2SC460(B)	
D1, 2	V11-0051-05	1N60	
D3~6	V11-0076-05	1S1555	
D7, 8	V11-0051-05	1N60	
D9~11	V11-0076-05	1S1555	
D12~12	V11-0051-05	1N60	
VR1	R12-5014-05	100k Ω (B)	
T1, 2	L30-0294-05		*
T3, 4	L30-0199-05		
T5	L30-0006-05		
T6	L30-0007-05		
L1	L40-3325-04	3.3mH	
L2	L40-6825-04	6.8mH	
CF1	L72-0014-05	Filter SFE10.7MA5	
CF2	L72-0024-05	do CFR-445E	
CF3	L72-0044-05	do CFU-4551	*
X1	L77-0714-05	X'tal 11.155MHz	
E	E23-0047-04	Terminal	

Ref. No.	Parts No.	Description	Re- marks
MIX(X48-1180-00)			
C1	CC45SL1H100D	10pF \pm 0.5pF	
C2	CK45F1H103Z	0.01 μ F +80%, -20%	
C3	CC45SL1H221J	220pF \pm 5%	
C4~7	CK45F1H103Z	0.01 μ F +80%, -20%	
C8	CK45D1H102M	0.001 μ F \pm 20%	
C9	CC45SL1H221J	220pF \pm 5%	
C10	CC45SL1H020D	2pF \pm 0.5pF	
C11	CC45SL1H221J	220pF \pm 5%	
C12	CC45SL1H100D	10pF \pm 0.5pF	
C13	CK45D1H102M	0.001 μ F \pm 20%	
C14	CC45SL1H101J	100pF \pm 5%	
C15	CK45D1H102M	0.001 μ F \pm 20%	
C16	CK45F1H103Z	0.01 μ F +80%, -20%	
C17	CC45SL1H220J	22pF \pm 5%	
C18	CK45F1H103Z	0.01 μ F +80%, -20%	
C19	CK45D1H102M	0.001 μ F \pm 20%	
C20	CC45SL1H100D	10pF \pm 0.5pF	
C21, 22	CK45F1H103Z	0.01 μ F +80%, -20%	
C23	CK45D1H102M	0.001 μ F \pm 20%	
C24	CK45F1H103Z	0.01 μ F +80%, -20%	
C25	CK45D1H102M	0.001 μ F +80%, -20%	
C26, 27	CK45F1H103Z	0.01 μ F \pm 20%	
C28	CK45D1H102M	0.001 μ F +80%, -20%	
C29	CK45F1H103Z	0.0 μ F \pm 20%	
C30	CK45D1H102M	0.001 μ F \pm 20%	
C31	CE04W1C100(RL)	E 10 μ F 16WV	
C32	CE04W1HR47(RL)	E 0.47 μ F 50WV	
C33	CK45F1H103Z	0.01 μ F +80%, -20%	
C34	CC45SL1H100D	10pF \pm 0.5%	
C35	CK45D1H102M	0.001 μ F \pm 20%	
C37	CK45F1H103Z	0.01 μ F +80%, -20%	
C38	CC45SL1H330J	33pF \pm 5%	
C39, 40	CC45SL1H030D	3pF \pm 0.5pF	
C41~45	CK45F1H103Z	M 0.01 μ F +80%, -20%	
C45	CQ92M1H223K	M 0.022 μ F \pm 100%	
C46, 47	CK45D1H102M	0.001 μ F \pm 20%	
C48	CK45F1H403Z	0.04 μ F +80%, -20%	
C49	CE04W1C100(RL)	E 10 μ F 16WV	
C51	CK45D1H102M	0.001 μ F \pm 20%	
C52	CC45SL1H030D	E 3pF \pm 0.5pF	
R1~26	PD14CY2E000J	000 Ω \pm 5% $\frac{1}{4}$ W	
Q1	V30-0153-05	SN76514N	
Q2	V09-0057-05	3SK41	
Q3, 4	V03-0476-05	2SC1973	*
Q5	V03-0123-05	2SC733(Y)	
Q6	V03-0053-05	2SC388A	
D1~4	V11-0447-05	1SV50	
D5, 6	V11-0051-05	1N60	
D7, 8	V11-0076-05	1S1555	
VR1	R12-2014-05	5k Ω (B)	
VR2	R12-4020-05	50k Ω (B)	
L1	L40-1001-05	10 μ H	
L2, 3	L34-0587-05		*

PARTS LIST

Ref. No.	Parts No.	Description	Re- marks	参照番号	Parts No.	Description	Re- marks
L4	L40-3391-03	3.3 μ H		Q3	V03-0123-05	2SC733(Y)	
L5	L40-2291-03	2.2 μ H		Q4	V30-0208-05	IC AN315	*
L6	L40-1001-03	10 μ H		D1~7	V11-0076-05	1S1555	
L7	L40-3391-03	3.3 μ H		-	E23-0047-04		
L8,9	L40-1001-03	10 μ H		-	F01-0701-04	HEAT SINK	*
L10,11	L40-1091-03	1 μ H		CAR(X50-1160-00)			
L12	L34-0586-05	Coil	*	C1	CC45TH1H330J	33pF \pm 5%	
L13	L40-3391-03	3.3 μ H		C2	CC45TH1H220J	22pF \pm 5%	
T1~3	L34-0608-05		*	C3	CC45SL1H330J	33pF \pm 5%	
T4	L34-0585-05		*	C4	CC45E1H102P	0.001 μ F +100%, -0%	
-	E02-1401-05	IC SOCKET		C5,6	CC45SL1H221J	220pF \pm 5%	
-	E23-0047-04			C7	CC45SL1H050D	5pF \pm 0.5pF	
-	L92-0101-05	CORE		C8	CC45SL1H330J	33pF \pm 5%	
A F (X49-1100-00)				C9	CK45F1H403Z	0.04 μ F +80%, -20%	
C1	CE04W1H010(RL)	E 1 μ F 50WV		C10	CK45F1H103Z	0.01 μ F +80%, -20%	
C2	CE04W1E4R7(RL)	E 4.7 μ F 25WV		C11	CK45F1H403Z	0.04 μ F +80%, -20%	
C3	CE04W1H010(RL)	E 1 μ F 50WV		R1~11	PD14CY2E000J	000 Ω \pm 5% 1/4W	
C4	CE04W1E4R7(RL)	E 4.7 μ F 25WV		Q1	V03-0079-05	2SC460(B)	
C5	CE04W1H010(RL)	E 1 μ F 50WV		Q2,3	V03-0123-05	2SC733(Y)	
C6	CE04W1E4R7(RL)	E 4.7 μ F 25WV		D1~7	V11-0076-05	1S1555	
C7	CE04W1HR47(RL)	E 0.47 μ F 50WV		L1~6	L40-1021-03	FERRI INDUCTOR 102K	
C8	CE04W1E4R7(RL)	E 4.7 μ F 25WV		T1	L30-0265-05	IFT 10.7MHz	
C9	CQ92M1H332K	M 0.002 μ F \pm 10%		TC1,2	C05-0013-15	20P	
C10	CC45SL1H101J	100pF \pm 5%		TC3	C05-0015-15	40P	
C11	CQ92M1H333K	M 0.033 μ F \pm 10%		X1	L77-0355-05	X'tal 10.6985MHz	*
C12	CK45F1H403Z	0.04 μ F +80%, -20%		X2	L77-0356-05	X'tal 10.7515MHz	*
C13	CQ92M1H153K	M 0.015 μ F \pm 10%		-	E23-0047-04	TERMINAL	
C14	CQ92M1H473K	M 0.047 μ F \pm 10%		MKR(X50-1280-00)			
C15	CC45SL1H391J	390pF \pm 5%		C1	CC45CH1H560J	56pF \pm 5%	
C16	CK45F1H403Z	0.04 μ F +80%, -20%		C2	CC45SL1H391J	390pF \pm 5%	
C17	CE04W1C100(RL)	E 10 μ F 16WV		C3	CC45CH1H470J	47pF \pm 5%	
C19	CE04W1A330(RL)	E 33 μ F 10WV		C4	CK45F1H103Z	0.01 μ F +80%, -20%	
C20	CE04W1H010(RL)	E 1 μ F 50WV		C5	CC45CH1H150J	15pF \pm 5%	
C21	CK45F1H103Z	0.01 μ F +80%, -20%		C6	CC45SL1H220J	22pF \pm 5%	
C22	CE04W1A101(RL)	E 100 μ F 10WV		C7	CK04W1C330(RL)	33 μ F 16WV	
C23	CE04W1C100(RL)	E 10 μ F 16WV		C8	CC45SL1H020D	2pF \pm 0.5pF	
C24	CE04W1C221(RL)	E 220 μ F 16WV		C9,10	CK45F1H103Z	0.01 μ F +80%, -20%	
C25	CC45SL1H331J	330pF \pm 5%		C11	CC45SL1H050D	5pF \pm 0.5pF	
C26	CE04W1E4R7(RL)	E 4.7 μ F 25WV		R1~9	PD14CY2E000J	000 Ω \pm 5% 1/4W	
C27	CE04W1A471(RL)	E 470 μ F 10WV		Q1,2	V03-0123-05	2SC733(O)	
C28	CC45SL1H681J	680pF \pm 5%					
C29	CE04W1C470(RL)	E 47 μ F 16WV					
C30	CE04W1H3R3(RL)	E 3.3 μ F 50WV					
C31	CE04W1C100(RL)	E 10 μ F 16WV					
C32~35	CQ92M1H123K	M 0.012 μ F \pm 10%					
C36	CK45D1H102M	0.001 μ F \pm 20%					
C37	CQ92M1H104K	M 0.4 μ F \pm 10%					
C38	CQ92M1H682K	M 0.0068 μ F \pm 10%					
R1~39	PD14CY2E000J	000 Ω \pm 5%					
Q1,2	V03-0123-05	2SC733(O)					

PARTS LIST

Ref. No.	Parts No.	Description	Re- marks	Ref. No.	Parts No.	Description	Re- marks
Q1	V01-0032-05	2SA562(Y)		C58, 59	CC45SL1H010D	1pF ±0.5pF	
Q2	V03-0093-05	2SC458(B)		C60	CK45B1H102K	0.001μF ±10%	
Q3	V01-0037-05	2SA495(Y)		C61	CK45F1H103Z	0.01μF +80%, -20%	
Q4, 5	V30-0151-05	TD3490BP	*	C62	CK45F1H403Z	0.04μF +80%, -20%	
D1, 2	V11-0076-05	1S1555		C63	CC45CH1H020D	2pF ±0.5pF	
D3	V11-0418-05	BZ-052	*	C64	CC45SL1H220J	22pF ±5%	
X1	L77-0482-05	10MHz HC-18/U	*	R1-57	PD14CY2E000Ω	000Ω ±5% ¼W	
T1	L30-0264-05	I F T 10.7MHz		Q1	V03-0053-05	2SC388(A)	
TC1	C05-0015-15	Ceramic trimmer		Q2-6	V03-0079-05	2SC460(B)	
	E23-0047-04	Terminal 6	*	Q7	V03-0123-05	2SC733(Y)	
HET(X50-1360-00)				Q8	V03-0241-05	2SC735(Y)	
C1-5	CK45B1H102K	0.001μF ±10%		Q9	V30-0153-05	I C SN76514N	
C6	CC45PH1H050D	5pF ±0.5pF		Q10	V09-0057-05	F E T 3SK41(L)	
C7	CK45B1H102K	0.001μF ±10%		D1-6	V11-0076-05	1S1555	
C8	CC45PH1H050D	5pF ±0.5pF		D7	V11-0273-05	1S2208	
C9	CK45F1H103Z	0.01μF +80%, -20%		D8-12	V11-0076-05	1S1555	
C10	CC45TH1H470J	47pF ±5%		D13	V11-0051-05	1N60	
C11	CK45B1H102K	0.001μF ±10%		D14-16	V11-0447-05	1SV50	
C12	CC45SL1H100D	10pF ±0.5pF		D17, 18	V11-0076-05	1S1555	
C13-15	CK45B1H102K	0.001μF ±10%		D19	V11-0051-05	1N60	
C16-20	CC45SL1H330J	33pF ±5%		VR1	R12-2014-05	5kΩ (B)	
C21	CK45B1H102K	0.001μF ±10%		L1	L40-1091-03	Ferri-inductor 1μH	
C22	CC45SL1H221J	22pF ±5%		L2-5	L40-2201-03	22μH	
C23	CK45B1H102K	0.001μF ±10%		L6, 7	L40-1091-03	1μH	
C24	CC45SL1H221J	22pF ±5%		L8	L40-1021-03	1mH	
C25	CK45F1H103Z	0.01μF +80%, -20%		L9	L40-6891-02	6.8μH	
C26	CC45SL1H560J	56pF ±5%		L10	L40-1021-03	1mH	
C27	CC45SL1H390J	39pF ±5%		L11, 12	L40-4791-02	4.7μH	
C28	CK45F1H103Z	0.01μF +80%, -20%		L13	L40-6891-02	6.8μH	
C29	CK45B1H102K	0.001μF ±10%		L14	L40-1091-03	1μH	
C30	CC45SL1H100D	22pF ±5%		L15	L33-0074-05	Choke coil	
C31	CK45B1H102K	0.001μF ±10%		T1-4	L34-0490-05		*
C32	CC45SL1H470J	47pF ±5%		T5	L34-0573-05		*
C33	CC45SL1H820J	82pF ±5%		T6-8	L34-0575-05		*
C34	CC45SL1H470J	47pF ±5%		TC1-6	C05-0013-15	20pF	
C35, 36	CC45SL1H220J	22pF ±5%		-	E02-1401-05	Ic Socket	
C37	CC45SL1H390J	39pF ±5%		-	E18-0201-05	X'tal Socket	
C38, 39	CK45B1H102K	0.001μF ±10%		-	E18-0601-05	X'tal Socket	*
C40, 41	CK45F1H103K	0.01μF +80%, -20%		-	E23-0047-04	Terminal	
C42	CC45SL1H330J	33pF ±5%		-	F10-0330-04	Shield Plate	*
C43	CC45SL1H470J	47pF ±5%		LPF(X51-1140-00)			
C44-47	CK45F1H103Z	0.01μF +80%, -20%		C1, 2	CC45CH1H150J	15pF ±5%	
C48	CK45B1H102K	0.001μF ±10%		C3	CC45CH1H100J	10pF ±5%	
C49	CC45SL1H470J	47pF ±5%		C4	CC45CH1H390J	39pF ±5%	
C50	CC45SL1H101J	100pF ±5%		C5-9	CC45CH1H820J	82pF ±5%	
C51	CC45SL1H020D	2pF ±0.5pF		C10	CC45CH1H390J	39pF ±5%	
C52	CC45SL1H101J	100pF ±5%		C11	CK04W1HR46(RL)	E 0.47μF 50WV	
C53	Q922M1H223K	0.022μF ±10%	M				
C54	CK45F1H103Z	0.01μF +80%, -20%					
C55	CC45SL1H100D	10pF ±0.5pF					
C56	CC45SL1H560J	56pF ±5%					
C57	CK45F1H103Z	0.01μF +80%, -20%					

PARTS LIST

Ref No.	Parts No.	Description	Re- marks	Ref. No.	Parts No.	Description	Re- marks
CK1	C90-0194-05.	0.001 μ F		C62-64	CK45F1H103Z	0.01 μ F +80%. -20%	
D1	V11-0051-05	1N60		C65	CK45D1H102M	0.01 μ F \pm 20%	
L1	L40-1092-02	Ferri-inductor	*	C66	CK45F1H103Z	0.01 μ F +80%. -20%	
L2-7	L34-0576-05			C67	CE04W1E330(RL)	E 33 μ F 25WV	
-	E04-0109-15	M type receptacle ANT		C68	CK45F1H403Z	0.04 μ F +80%. -20%	
-	E23-0001-05			C69	CE04W1H4R7(RL)	E 4.7 μ F 50WV	
-	F10-0421-04	Shield Cover	*	C70, 71	CK45F1H103Z	0.01 μ F +80%. -20%	
-	F11-0254-03	Shield Case	*	C72	CE04W1C100(RL)	E 10 μ F 16WV	
GEN(X52-1080-02)				C73	CC45SL1H270J	27pF \pm 5 %	
C1	CC45SL1H101J	100pF \pm 5 %		C74	CC45SL1H101J	100pF \pm 5 %	
C2	CQ92M1H223K	M 0.0022 μ F \pm 10%		C76	CQ92M1H104K	M 0.1 μ F \pm 10%	
C3	C90-0076-05	T 0.0 μ F 25V		C77	C91-0013-05	103K 50V	*
C4	CE04W1A470(RL)	4.7 μ F 10WV		C79	CQ92M1H473K	M 0.047 μ F \pm 10%	
C5	CE04W1H010(RL)	1 μ F 50WV		C80	CK45F1H403Z	0.04 μ F +80%. -20%	
C6	CQ92M1H103K	M 0.01 μ F \pm 10%		C81	CC45SL1H470J	47pF \pm 5 %	
C7	CE04W1C100(RL)	10 μ F 16WV		C82	CK45F1H403Z	0.04 μ F +80%. -20%	
C8	CQ92M1H223K	M 0.022 μ F \pm 10%		C83	C91-0013-05	103K 50V	*
C9	CE04W1A470(RL)	E 47 μ F 10WV		C84	CC45SL1H070D	7pF \pm 0.5pF	
C10	CQ92M1H102K	M 0.001 μ F \pm 10%		C85, 86	CK45F1H403Z	0.04 μ F +80%. -20%	
C11	CE04W1H010(RL)	E 1 μ F 50WV		C87	CE04W1C101(RL)	E 100 μ F 16WV	
C12, 13	CE04W1C100(RL)	E 10 μ F 16WV		C88, 89	CC45SL1H100D	10pF \pm 0.5pF	
C14	CQ92M1H223K	M 0.022 μ F \pm 10%		C91	CK45D1H102M	0.001 μ F \pm 20%	
C15	CE04W1A470(RL)	E 47 μ F 10WV		C92	CK45F1H403Z	0.4 μ F +80%. -20%	
C16	CK45F1H103Z	0.01 μ F +80%. -20%		C94	CK45D1H102M	0.001 μ F \pm 20%	
C17, 18	CE94W1A470(RL)	E 47 μ F 10WV		C96	CE04W1H4R7(RL)	E 4.7 μ F 50WV	
C19, 20	CE04W1H010(RL)	E 1 μ F 50WV		C97	CE04W1H010(RL)	E 1 μ F 50WV	
C21	CQ92M1H103K	M 0.01 μ F \pm 10%		C98	CK45F1H303Z	0.04 μ F +80%. -20%	
C22	CQ92M1H473K	M 0.047 μ F \pm 10%		C99	CC45SL1H470J	47pF \pm 5 %	
C23	CE04W1H010(RL)	E 1 μ F 50WV		C100	CC45SL1H221J	220pF \pm 5 %	
C24	CC45UJ1H220J	22pF \pm 5 %		C101	CE04W1H3R3(RL)	E 3.3 μ F 50WV	
C25	CC45UJ1H050D	5pF \pm 0.5pF		C102	CK45F1H403Z	0.04 μ F +80%. -20%	
C26	CC45SL1H221J	220pF \pm 5 %		C103	CE04W1H010(BR)	E 1 μ F 50WV	
C27	CK45F1H103Z	0.01 μ F +80%. -20%		C104	CK45F1H103Z	0.01 μ F +80%. -20%	
C28	CC45SL1H221J	220pF \pm 5 %		C105	CE04W1H010(RL)	E 1 μ F 50WV	
C29	CK45F1H103Z	0.01 μ F +80%. -20%		C106	C91-0013-05	103K 50V	*
C31-36	CK45F1H103Z	0.01 μ F +80%. -20%		C107	CC45F1H403Z	0.04 μ F +80%. -20%	
C37, 38	CE04W1H4R7(RL)	E 4.7 μ F 50WV		C108	CK45F1H223Z	0.022 μ F +80%. -20%	
C39	CK45D1H102M	0.001 μ F \pm 20%		C109	CC45SL1H150J	15pF \pm 5 %	
C40	C91-0013-05	103K50V	*	C110	CC45UJ1H220J	22pF \pm 5 %	
C41	CC45CH1H150J	15pF \pm 5 %		C111	CC45CH1H050D	5pF \pm 0.5pF	
C42	CC45CH1H100D	10pF \pm 0.5pF		R1-87	PD14CY2E000J	000 Ω \pm 5 % $\frac{1}{4}$ W	
C43-45	CK45D1H102M	0.001 μ F \pm 20%			or		
C46, 47	CK45F1H403Z	0.04 μ F +80%. -20%		R83	PC05GF2H000J	000 Ω \pm 5 % $\frac{1}{4}$ W	
C48	CC45SL1H020J	2pF \pm 0.25%		R88, 89	PD14BY2E000J	000 Ω \pm 5 % $\frac{1}{4}$ W	
C49	CC45CH1H390J	39pF \pm 5 %		Q1, 2	V03-0299-05	2SC1000(GR)	
C50, 51	CK45F1H403Z	0.04 μ F +80%. -20%		Q3	V03-0123-05	2SC733(Y)	
C52	CK45F1H103Z	0.01 μ F +80%. -20%		Q4	V30-0039-05	TA7061AP	
C53	CC45SL1H220J	22pF \pm 5 %		Q5	V03-0079-05	2SC460(B)	
C54	CK45F1H103Z	0.01 μ F +80%. -20%		Q6	V09-0057-05	3SK41(LまたはM)	
C55	CE04W1H010(RL)	E 1 μ F 50WV		Q7, 8	V03-0079-05	2SC460(B)	
C56	CC45SL1H270J	E 27pF \pm 5 %		Q9	V09-0057-05	3SK41(LまたはM)	
C57, 58	CK45D1H102M	0.001 μ F \pm 20%		Q11	V09-0036-05	3SK35(GRまたはBL)	
C59	CC45SL1H220J	E 22pF \pm 5 %		Q12, 13	V09-0036-05	3SK35(GR)	
				Q15, 16	V03-0123-05	2SC733(Y)	

PARTS LIST

Ref. No.	Parts No.	Description	Re- marks	Ref. No.	Parts No.	Description	Re- marks
D1, 2	V11-0076-05	1S1555		C1	CC45SL1H100D	C 10pF ± 0.5pF	
D3~6	V11-0051-05	1N60		C2	CC45SL1H101J	C 100pF ± 5%	
D7	V11-0076-05	1S1555		C3	CC45SL1H030D	C 3pF ± 0.5pF	
D8~14	V11-0370-05	1S1587		C4	CC45SL1H100D	C 10pF ± 0.5pF	
D15	V11-0273-05	1S2208		C5	CK45F1H103Z	C 0.01μF +80%, -20%	
D16~23	V11-0076-05	1S1555		C6	CK45F1H403Z	C 0.04μF +80%, -20%	
D24, 25	V11-0051-05	1N60		C7	C90-0013-05	C 0.01μF +80%, -20%	
D26	V11-0076-05	1S1555		C8	CK45F1H403Z	C 0.04μF +80%, -20%	
D27~30	V11-0051-05	1N60		C9	CK45D1H102M	C 0.002μF ±20%	
D32	V11-0219-05	V06C		C10	CK45F1H403Z	C 0.04μF +80%	
VR1	R12-3025-05	10kΩ (B)		C11	CK45D1H102M	C 0.001μF ±20%	
VR3	R12-2015-05	5kΩ (B)		C12	CC45SL1H100D	C 10pF ± 0.5pF	
VR4	R12-1016-05	3kΩ (B)		C13	CC45SL1H010D	C 1pF ± 0.5pF	
VR5	R12-3025-05	10kΩ (B)		C14	CC45SL1H330J	C 33pF ± 5%	
VR6	R12-0054-05	100Ω (B)		C15~17	CK45D1H102M	C 0.001μF ±20%	
VR7	R12-1020-05	1kΩ (B)		C18	CC45SL1H101J	C 100pF ± 5%	
L1	L40-1045-06	Ferri-inductor 100mH		C19	CK45F1H403Z	C 0.04μF +80%, -20%	
L2	L33-0264-05	Choke coil 30μH	*	C20	CK45F1H103Z	C 0.01μF +80%, -20%	
L3	L39-0069-05	VR-inductor LV1-100 15μH	*	C21	CC45SL1H101J	C 100pF ± 5%	
L4	L33-0236-05	choke coil 10μH		C22	CC45SL1H070D	C 7pF ± 0.5pF	
L5, 6	L40-1021-03	Ferri-inductor 1mH		C23~26	CK45F1H403Z	C 0.04μF +80%, -20%	
L7	L40-1001-03	do 10μH		C27, 28	CK45F1H103Z	C 0.01μF +80%, -20%	
L8	L40-1021-03	do 1mH		C29	CK45F1H403Z	C 0.04μF +80%, -20%	
L9	L40-1011-03	do 100μH		C30	CE04W1C100(RL)	C 10μF 50WV	
L10	L40-6801-03	do 68μH		C31	CC45SL1H030D	C 3pF ± 0.5pF	
L11	L40-1021-03	do 1mH		C32~34	CK45F1H103Z	C 0.01μF +80%, -20%	
L12	L40-1011-03	do 100μH		C35	CK45F1H403Z	C 0.04μF +80%, -20%	
L13~18	L40-1021-03	do 1mH		C36	CK45F1H103Z	C 0.01μF +80%, -20%	
L19	L40-1091-03	Ferri-inductor 1μH		C37	CC45SL1H470J	C 47pF ± 5%	
L20	L40-1021-03	do 1mH		C38	CK45D1H102M	C 0.001μF ±20%	
T1~6	L30-0264-05	10.7MHz		C39	C90-0013-05	C 0.01μF +80%, -20%	
TC1, 2	C05-0030-15	20P		C40	CK45F1H103Z	C 0.01μF +80%, -20%	
-	L71-0022-05	Crystal filter 10.7MHz		C41	CC45SL1H100D	C 10pF ± 0.5pF	
X1	L77-0710-05	Crystal osc 10.715MHz		C42, 43	CK45F1H103Z	C 0.01μF +80%, -20%	
-	E23-0047-04	Terminal		C44	CC45SL1H050D	C 5pF ± 0.5pF	
-	F10-0330-04	Shield Plate		C45	CK45F1H223Z	C 0.022μF +80%, -20%	
-	F10-0334-04	do		C46	CK45F1H103Z	C 0.01μF +80%, -20%	
-			*	C47	CK45D1H102M	C 0.001μF ±20%	
				C48	CC45SL1H331J	C 330pF +80%, -20%	
				C49	CK45F1H103Z	C 0.01μF +80%, -20%	
				C50	CK45F1H103Z	C 0.01μF +80%, -20%	
				C51	CC45SL1H101J	C 100pF ± 5%	

PARTS LIST

Ref. No.	Parts No.	Description	Re- marks	Ref. No.	Parts No.	Description	Re- marks
C52	CC45SL1H050D	C 5pF ±0.5pF		C11	CE04W1H010(RL)	E 1μF 50WV	
C53	CK45D1H102M	C 0.001μF ±20%		C12, 13	CE04W1C100(RL)	E 10μF 16WV	
C54	CC45SL1H070D	C 7pF ±0.5pF		C14	CQ92M1H223K	M 0.022μF ±10%	
C55	CC45SL1H050D	C 5pF ±0.5pF		C15	CE04W1A470(RL)	E 22μF 16WV	
C56	CQ92M1G332K	Mylar 3300pF ±10%		C16	CC45CH1H680J	C 68pF ±5%	
C57	CK45F1H403Z	c 0.04μF +80%, -20%		C17	CC45CH1H820J	C 82pF ±5%	
C58	CK45F1H103Z	C 0.01μF +80%, -20%		C18	CC45CH1H680J	C 68pF ±5%	
R1~47	PD14CY2E000J	000Ω ±5% ¼W		C19	CK45F1H103Z	c 0.01μF +80%, -20%	
Q1	V09-0113-05	3SK45(B)		C20	CE04W1H100(RL)	C 10μF 50WV	
Q2	V09-0069-05	3SK41(M) or 3SK40(M)		C21~25	CK45F1H103Z	E 0.01μF +80%, -20%	
Q3	V09-0113-05	3SK45(B)		C26	CC45CH1H560J	C 56pF ±5%	
Q4	V09-0012-05	2SK19(GR)		R1~6	PD14CY2E000J	000Ω ±5% ¼W	
Q5	V01-0037-05	2SA495(O) or (Y)		or			
Q6	V09-0012-05	2SK19(GR)		R4, 5	PC05GF2H000J	000Ω ±5% ¼W	
Q7	V30-0006-00	TA7045M(R)		Q1	V03-0474-05	2SC1909	*
Q8	V03-0079-05	2SC460(B)		Q2, 3	V03-0475-05	2SC1307	*
Q9, 10	V03-0123-05	2SC733(Y)		D1, 2	V21-0015-05	VD1220	*
D1	V11-0447-05	1SV50		D3	V11-0294-05	V06J	
D2	V11-0051-05	1N60		L1	L40-0001-03	10μH	
D3, 4	V11-0447-05	1SV50		L2	L33-0220-05	Choke coil 2.36μH	
D5	V11-0374-05	ISS16		L3	L33-0222-05	do 0.236μH	
D6, 7	V11-0051-05	1N60		L4, 5	L33-0220-05	do 2.36μH	
D8	V11-0076-05	1S1555		L6, 7	L34-0354-05	Ferri-inductor :	*
D9, 10	V11-0051-05	1N60		0			
VR1	R12-3025-05	10kΩ (B)		T1, 2	L34-0582-05	(A)	*
VR2	R12-7013-05	500kΩ (B)		T3	L34-0583-05	(B)	*
VR3	R12-3025-05	10kΩ (B)		T4	L34-0581-05		*
VR4	R12-0042-05	500Ω (B)		T5	L34-0583-05	(B)	*
L1	L40-1021-03	Ferri-inductor 102K		TC1~5	C05-0054-05	60P	
L2	L33-0220-05	Choke coil		RL1	S51-1401-05	Relay	*
L3~6	L40-1021-03	Ferri-inductor 102K		-	E13-0161-05	1P phone jack	
T1~3	L34-0578-05	COIL 50MHz	*	-	E23-0047-04	Terminal (square)	
T4, 5	L30-0265-05	I F T 10.7MHz		-	F01-0172-24	Heat sink	
T6~8	L30-0264-05	I F T 10.7MHz		-	F01-0257-03	Heat sink	*
T9~11	L30-0265-05	I F T 10.7MHz		-	J32-0701-04	Hex-boss × 4	*
T12	L71-0021-05	Monolithic filter 10F20AG		-	J32-0702-04	do × 3	*
-	E23-0047-04	Terminal × 24		-	L92-0101-05	core × 4	*
-	F11-0113-04	Shield Case	*				
FINAL (X56-1220-00)							
C1	CC45SL1H101J	C 100pF ±5%					
C2	CQ92M1H223K	Mylar 0.022μF ±10%					
C3	C90-0076-05	Tantalum 0.1μF 25WV					
C4	CE04W1A470(RL)	Electrolytic 47μF 10WV					
C5	CE04W1H010(RL)	Electrolytic 1μF 50WV					
C6	CQ92M1H103K	Mylar 0.03μF ±10%					
C7	CE04W1C100(RL)	C 10μF 16WV					
C8	CQ92M1H223K	Mylar 0.022μF ±10%					
C9	CE04W1A470(RL)	Electrolytic 47μF 10WV					
C10	CQ92M1H102K	Mylar 0.001μF ±10%					

DISASSEMBLY

1. Separating the upper and lower cases

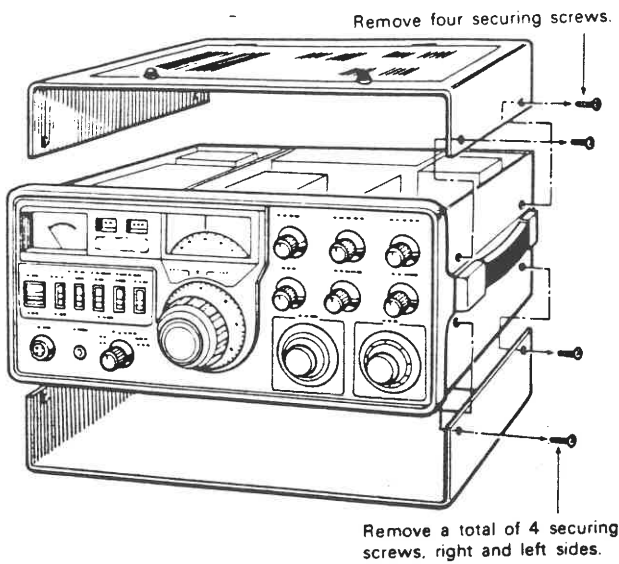


Fig. 1

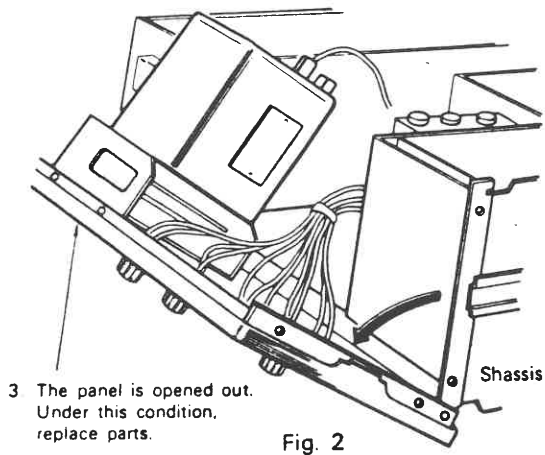


Fig. 2

2. VFO removal

Procedure

1. Remove the double knob on the panel. At the same time, remove the dial scale, the spring and the knob flange.
2. Remove the 4 screws securing the VFO mounting fixtures on top and bottom of the panel escutcheons.
3. Remove the lamp holder. (The holder may be removed first.)

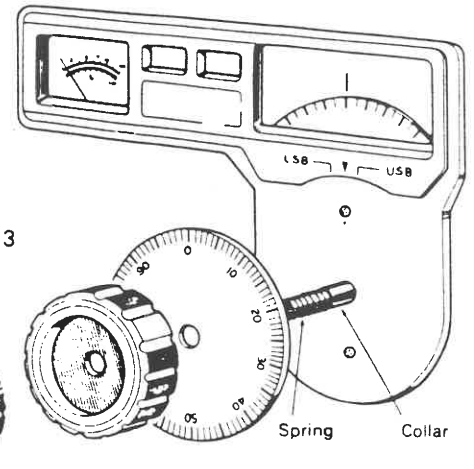


Fig. 3

3. Dial escutcheon replacement

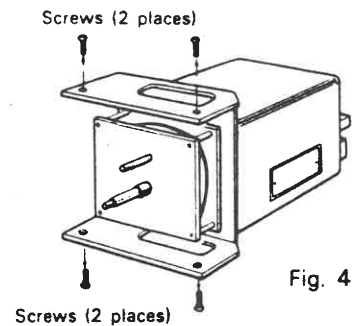


Fig. 4

Remove the double knob and the knob flange on the VFO gear.

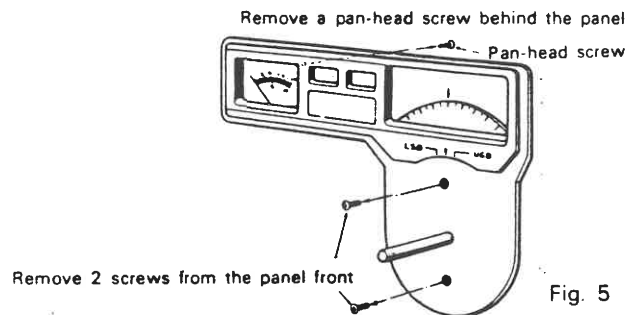


Fig. 5

4. Replacement of Power Switch and Lever Switch

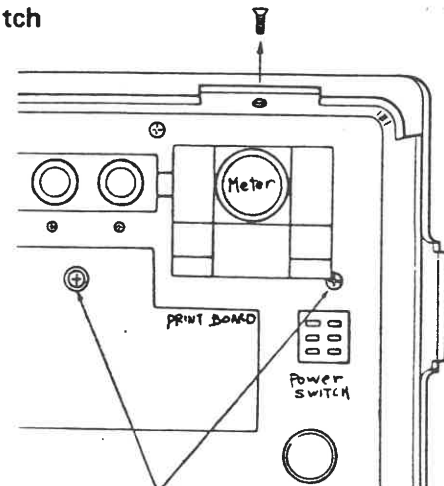


Fig. 6

DISASSEMBLY

5. Replacement of Power Switch

After removing the switch grille, push the switch out to the front by holding down its mounting fingers.

Lever switch replacement

After removing the switch grille, remove 4 screws securing the switch to the panel.

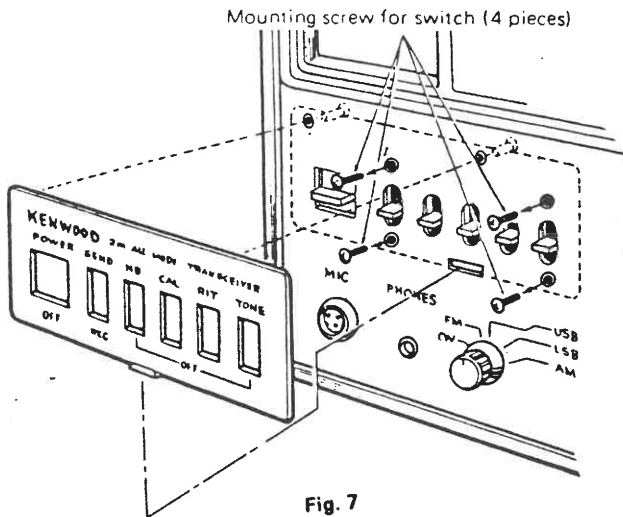


Fig. 7

6. Removing the Power Unit

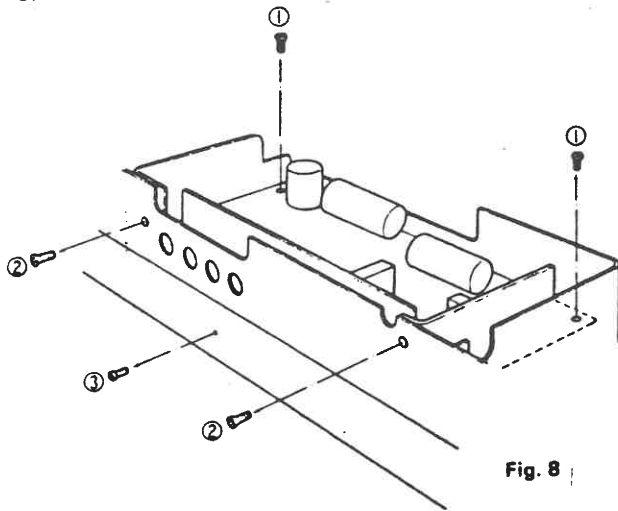


Fig. 8

7. Replacement of Final Transistor

- 1) Unsolder 6 wires on TR₁-----Fig 9
- 2) Remove 5 screws on RX-NB.--Fig 10. ②
- 3) Remove 3 screws.-----Fig 10. ③
- 4) Remove 4 screws.-----Fig 10. ④
- 5) Remove 5 screws.-----Fig 10. ⑤
- 6) Remove FINAL UNIT-----Fig 10
- 7) Unsolder 3 position and replace
-----Fig 11

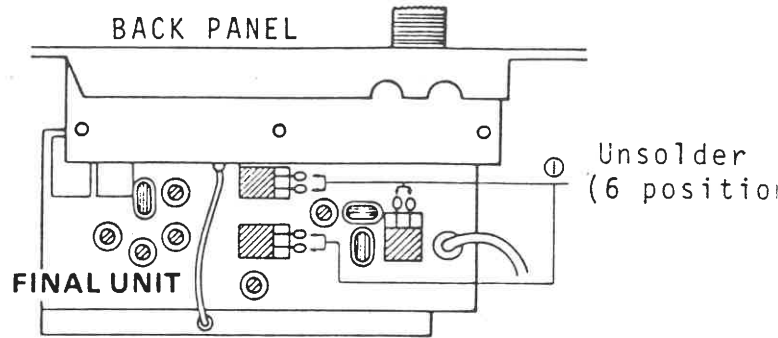


Fig. 9

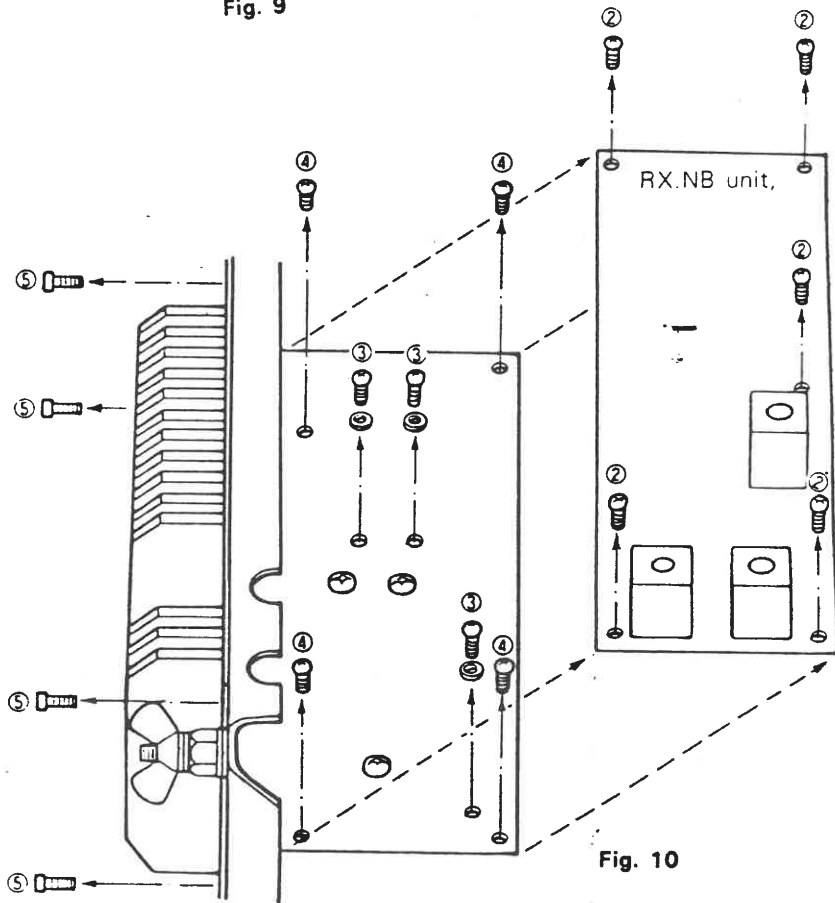


Fig. 10

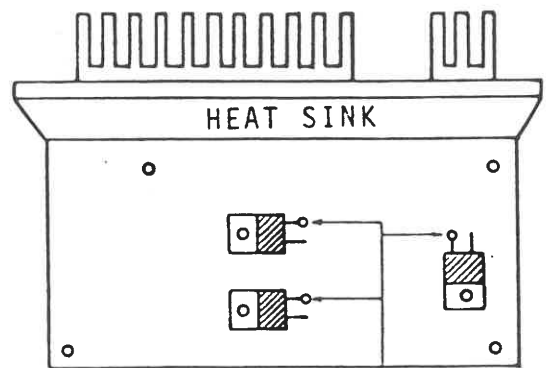
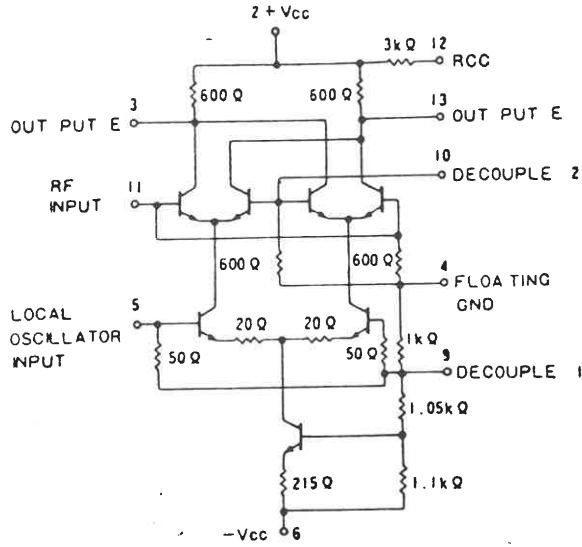
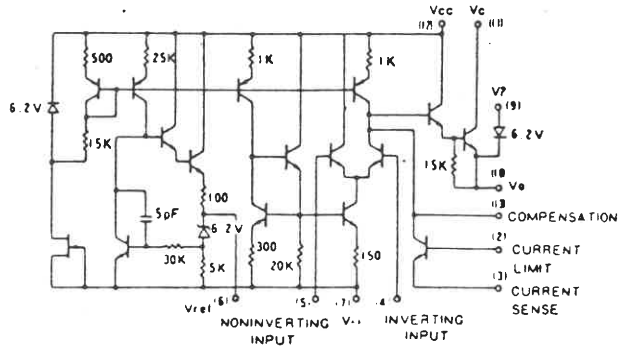


Fig. 11 Unsolder (3 position)

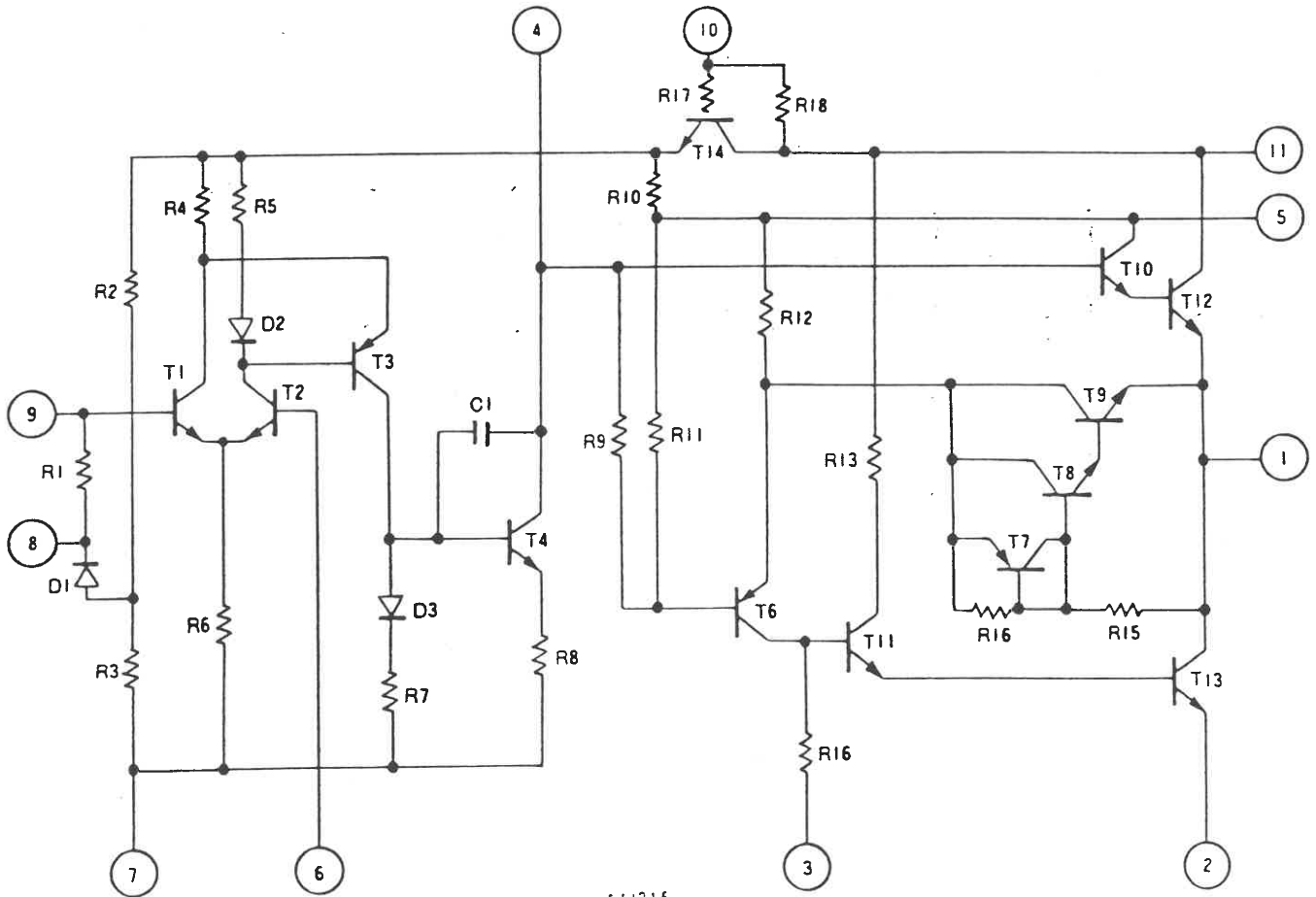
SEMICONDUCTORS DATA



SN76514N



MC1723 CL-A



AN315

ADJUSTMENT

Measuring instruments

- (1) **Tester**
 - Use a high input impedance tester.
- (2) **RF VTVM**
 - Input impedance: More than 1 M Ω , less than 20PF
 - Voltage range: F.S = 10 mV – 300 V
 - Measurable frequencies: Up to 100 MHz
- (3) **Frequency counter**
 - Input sensitivity: About 50 mV
 - Measurable frequencies: Up to 80 MHz
- (4) **DC power supply**
 - Voltage: 10 V – 17 V, adjustable
 - Current: More than 5 A
- (5) **Power meter**
 - Power measured: About 20 W
 - Input impedance: 50 Ω
 - Measurable frequencies: Up to 50 MHz
- (6) **AF VTVM**
 - Input impedance: More than 1 M Ω
 - Voltage range: F.S = 1 mV – 30 V
 - Measurable frequencies: 50 Hz – 10 kHz
- (7) **AF generator (AG)**
 - Output frequency: 100 Hz – 10 kHz
 - Output voltage: 0.5 mV – 1 V
- (8) **Linear detector**
 - Measurable frequencies: 50 MHz
- (9) **Field strength meter**
 - Measurable frequencies: 50 MHz
- (10) **Directional coupler**
- (11) **Oscilloscope**
 - Use a high sensitivity oscilloscope with horizontal input terminal.
- (12) **SSG**
 - SSG capable of producing 50 MHz band frequencies with amplitude and frequency modulations.
 - Output level: -20dB to 100 dB
- (13) **Dummy resistor**
 - 8 ohms, 5 W
- (14) **Noise generator**
 - Noise generator capable of producing noise similar to ignition noise and containing high frequency component of more than 50 MHz.

NOTE TO TECHNICAL PERSONNEL

Before attempting alignment, be sure that proper test equipment is available. It is best before tuning factory sealed adjustments, to verify the gain of the circuit in question.

Preparation

- (1) Unless otherwise noted, knobs and switches should be set as shown in **Table 3**.

POWER switch	ON
STBY switch	REC REC
NB switch	OFF
RIT switch	OFF
FIX. CH switch	VFO
RF POWER	Clockwise end
RF GAIN	Full clockwise
SQUELCH knob	Full counterclockwise
AF knob	Full counterclockwise

Table 3 Set Positions of Knobs

- (2) For adjustment (trimmers, coils, etc.), use an insulated rod such as a bakelite rod.
- (3) During adjustment of receiver section, do not set the STBY switch to SEND for protection of signal generator.
- (4) When connecting power cord, make sure that the power switch in OFF position.

1. Power Supply Adjustment (x43-1230-00)

- (1) Connect a voltmeter to the appropriate terminal.

9 V terminal -----	Adjust VR-2	9.0 V
12 V terminal -----	Adjust VR-1	12.0 V

- (2) Regulation Check. Connect to dummy load, transmit FM and check the power supply regulation at the following points.

12 V terminal -----	12 V \pm 0.5 V
-6 V terminal -----	-6 V \pm 0.5 V
TBL terminal -----	-4 V \pm 0.5 V

- (3) BAND SWITCH to 51 MHz position.

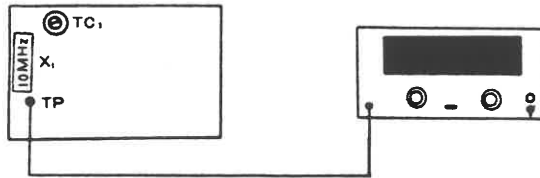
DRIVE control centered.

VCV terminal on HET UNIT ----- 5.5 V + 0.5 V, -0.1V.

2. MARKER UNIT CALIBRATION (X50-1280-00)

CAL SWITCH ----- ON
RIT SWITCH ----- OFF

Connect a frequency counter to the TP terminal on the Marker unit, and adjust TC-1 to read 10000.00 KHZ on the counter.



3. CAR UNIT ADJUSTMENT

- (1) Connect the TS-600 to a dummy load, place the FIX-CH switch to an empty position, (not VFO). Place the standby switch to SEND.
- (2) Connect the RF VTVM to the TP as shown and adjust T-1 for maximum, about 1.0 V rms.

- (3) Connect the frequency counter to the TP, and adjust trimmers for each mode as shown in the chart.
- (4) Check to see that in the AM position the frequency changes from 10.70060 TX to 10.70150 in receive.

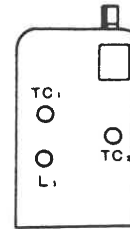
MODE	STBY	ADJ	OUTPUT RF VOLTAGE OR FREQUENCY
LSB	REC	TC1	10.6985 MHz
USB	REC	TC2	10.7015 MHz
CW	SEND	TC3	10.7006 MHz

Carrier Oscillator Frequency

4. VFO Unit Frequency Adjustment (X40-1080-01)

- (1) Connect frequency counter to Het Unit TP-2.
- (2) Adjust the VFO dial one turn of the small tuning knob from fully clockwise. Adjust the dial and set screw so the pointer indicated "0" and the freq. counter should read 9,20000 MHz.
- (3) Verify tracking VFO per the chart.

Caribration	Adjustment parts	Frequency	Pointer
1000	L1	8.200 MHz	1000
0	TC1	9.200 MHz	0



5. Het Unit Adjustment (x50-1360-00)

- (1) Position controls as follows.

BAND ----- 51
 FIX CH ----- Empty position
 VFO DIAL ----- 500

- (2) Connect RF VTVM to TP-1
- (3) When switching between the 50 and 51 MHz band, output level difference should be within 1.5 db.
- (4) Place the Fix ch. control to VFO.
- (5) Connect the RF VTVM to TP-2. Level should be between 0.25 and 0.3 V.
- (6) Connect the RF VTVM to the Het Unit terminal "60"
- (7) Adjust T6, T7 and T8 for Maximum RF VTVM reading. (about 0.09 Vrms)

6. Fixed Channel Adjustment (X50-1360-00)

With the frequency counter connected to TP2, adjust each fixed channel trimmer to obtain the crystal frequency indicated.

Confirm that crystals perform in all channels and the fix ch. pilot lamp lights.

Crystal output level can be measured by connecting an RF VTVM to 60 terminal of Het Unit.

When switching between VFO and FIX ch. output level difference should be within ± 0.2 V.

Frequency	FM. A.M. CW f_0 (MHz)	f_{USB}	f_{LSB}
50/51/52/53.00	9.2000	9.1985	9.2015
.04	9.1600	9.1585	9.1615
.18	9.1200	9.1185	9.1215
.12	9.0800	9.0785	9.0815
.16	9.0400	9.0385	9.0415
.20	9.0000	8.9985	9.0015
.24	8.9600	8.9585	8.9615
.28	8.9200	8.9185	8.9215
.32	8.8800	8.8785	8.8815
.36	8.8400	8.8385	8.8415
.40	8.8000	8.7985	8.8015
.42	8.7800	8.7785	8.7815
.44	8.7600	8.7585	8.7615
.46	8.7400	8.7385	8.7415
.48	8.7200	8.7185	8.7215
.50	8.7000	8.6985	8.7015
.52	8.6800	8.6785	8.6815
.56	8.6400	8.6385	8.6415
.60	8.6000	8.5985	8.6015
.64	8.5600	8.5585	8.5615
.68	8.5200	8.5185	8.5215
.72	8.4800	8.4785	8.4815
.76	8.4400	8.4385	8.4415
.80	8.4000	8.3985	8.4015
.84	8.3600	8.3585	8.3615
.88	8.3200	8.3185	8.3215
.92	8.2800	8.2985	8.2815
.96	8.2400	8.2385	8.2415
51/52/53/54.00	8.2000	8.1985	8.2015

7. HET OSC Frequency Adjustment

(1) Position Knobs as Follows.

VFO DIAL ----- 500
 DRIVE CONTROL ----- CENTERED
 RIT CONTROL ----- CENTERED
 RIT SWITCH ----- ON
 BAND SWITCH ----- 50

(2) Connect frequency counter to TP-1.

(3) T5----- Full clockwise.

(4) Adjust frequency as follows.

BAND	adjustment	frequency (MHz)
50	L1	69.9000
51	L2	70.9000
52	L3	71.9000
53	L4	72.9000

8. RIT Adjustment

- (1) Position knobs as follows.

RIT SWITCH ----- OFF
BAND SWITCH----- 51

- (2) Connect Frequency Counter to TP-1 (Het Unit) and adjust VR-1 for 70.900 MHZ.
(3) Maximum RIT frequency shift should be greater than ± 2 KHZ.

9. Adjustment of FM Carrier

- (1) Position knobs as follows.

MODE SWITCH ----- FM
FIX CHANNEL ----- Empty Position
STAND BY ----- SEND

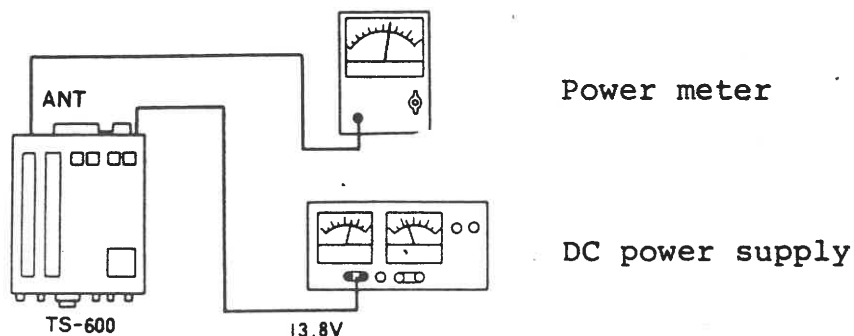
- (2) Connect Frequency Counter to GEN terminal on GEN UNIT (X52-1080-02).
(3) Adjust L3 for 10.700 MHZ reading on the frequency counter.

10. GEM UNIT Adjustment (X52-1080-02)

- (1) Position knobs as follows.

VFO DIAL POSITION ----- 500 KHZ
DRIVE CONTROL ----- CENTERED
FIX CH. ----- Empty Position
MODE SWITCH ----- FM
BAND SWITCH ----- 51
STAND BY ----- SEND

- (2) Connect Power meter and DC power supply as follows.



- (3) Connect the RF-VTVM to the GEN Terminal on GEN UNIT and adjust T-3 for maximum. (More than 0.1 Vrms).
- (4) Place the MODE SWITCH to the CW position.
- (5) Adjust T-1 and T-2 for maximum reading on the RF-VTVM. Adjust to the same level as in step number 3 by VR-5.

11. MIX UNIT Adjustment (X48-1180-00)

This adjustment must be performed after GEN UNIT adjustment.

- (1) FIX·CH SWITCH to VFO position.
- (2) Adjust VR-1 on the MIX UNIT fully clockwise. (ALC off)
- (3) Adjust T-6, T-7 and T-8 on the HET UNIT and T-1, T-2, T-3 and T-4 on the MIX UNIT for maximum reading on the RF-VTVM. (Repeat the procedure two or three times.)
- (4) Confirm that peak level position is at the center range of the DRIVE control.

12. VCV Adjustment.

- (1) Place the BAND SWITCH to 50 MHZ.
- (2) Adjust VR-10 for maximum on the power meter.
- (3) Place the BAND SWITCH to 52, then 53 MHZ.
- (4) Adjust VR-11, then VR-12 (same as VR-10).
- (5) Confirm peak level position is at the center range of the DRIVE control.

13. FINAL UNIT Adjustment.

- (1) Position controls as follows:

BAND SWITCH-----52
VFO DIAL-----500
DRIVE CONTROL-----RX Meter maximum position
MODE SWITCH-----CW
STAND BY SWITCH----SEND

- (2) ALC off, Same as adjustment 11 (2).
- (3) Adjust TC-1, TC-5 for maximum power meter reading.
- (4) Confirm that power is more than 12W for each band.

14. DRIVE Readjustment

- (1) RF POWER control centered.
- (2) Adjust T-6, T-8 on the HET UNIT ofr maximum reading on RF meter.
- (3) Adjust T-1, T-4 on the MIX UNIT for maximum RF meter reading.
- (4) Confirm RF output peaks at Drive control center position.

15. ALC Adjustment

- (1) Position controls as follows:

BAND SWITCH ----- 52
VFO DIAL ----- 500
DRIVE CONTROL ----- Centered

- (2) Adjust VR-1 on the MIX UNIT (ALC adjustment) for 12W output power.
- (3) Set the RF POWER control to the 9 o'clock position and adjust VR-2 for 1W output power.

16. Confirm AM output power (Must be performed after step 15).

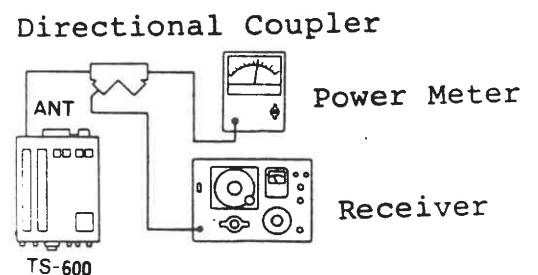
- (1) Set the MODE SWITCH to the AM position, and set the RF POWER control fully clockwise.
- (2) Confirm power is more than 10 W when the AM CAR control is fully clockwise.

17. A: CARRIER SUPPRESSION Adjustment

- (1) Position controls as follows:

MODE SWITCH ----- USB
BAND SWITCH ----- 51
FIX . CH SWITCH ----- VFO
VFO DIAL ----- 500
DRIVE CONTROL ----- Centered (MAC POWER)
SSB MIC GAIN CONTROL -- Fully clockwise

- (2) Connect as follow:
- (3) Connect Audio Generator (AG) to the MIC terminal and set for 2 mV / 1500Hz.



- (4) Tune an external receiver for maximum S-meter reading. (Receiver must have more than 40 db difference between maximum and minimum "S" meter readings).
- (5) Set the SSB MIC GAIN control fully clockwise and adjust TC-1 and VR-6 on the GEN UNIT for minimum reading on the receiver, "S" meter.
- (6) Set the MODE SWITCH to the LSB position.
- (7) Confirm carrier suppression level for LSB.

17. B. Simple Carrier Suppression Adjustment

- (1) Position controls as in 17-A.
- (2) Take off the RF POWER METER and connect the RF-VTVM to the ANT TERMINAL.
- (3) Set the SSB MIC GAIN control fully clockwise. Adjust TC-1 and VR-6 on the GEN UNIT for RF-VTVM minimum reading.
- (4) Set the MODE SWITCH to LSB and confirm LSB Carrier Suppression.

18. SSB MIC GAIN Adjustment (must be performed after step 17).

Connect the AG (2mV / 1500Hz) to the MIC terminal and adjust the SSB MIC GAIN control for 8W, RF output power.

19. AM MODULATION Adjustment

- (1) Position controls as follows:

MODE SWITCH ----- AM
 FIX · CH SWITCH ----- Empty Channel
 FM MIC GAIN CONTROL ---- Fully Clockwise

- (2) Connect the AG at the MIC terminal.
- (3) Connect the AF-VTVM to the AMM terminal on the GEN UNIT.
- (4) Adjust VR-1 for 250 mV on the AF-VTVM.

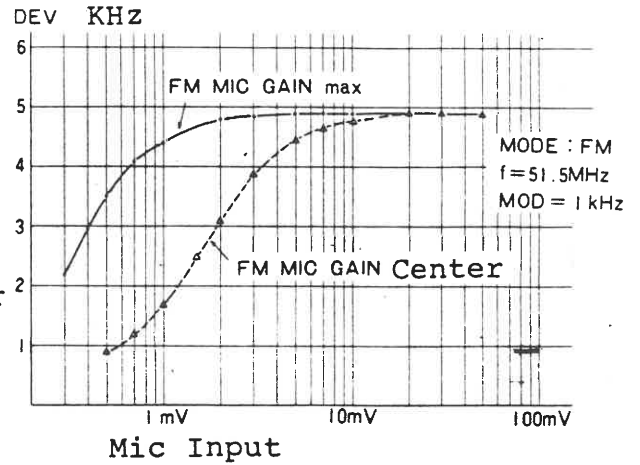
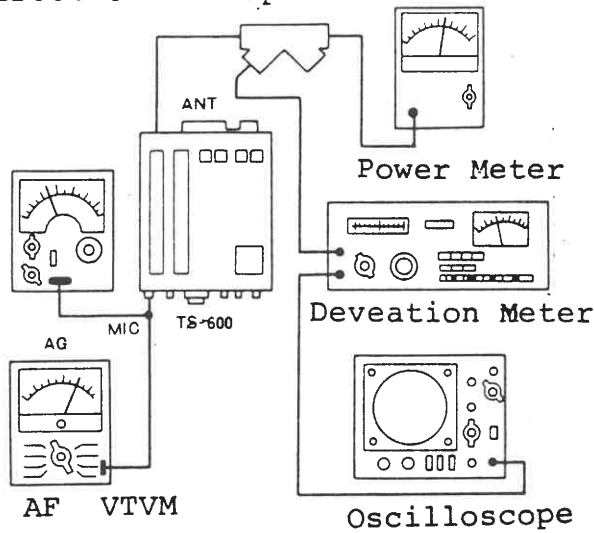
20. A. FM MODULATION Adjustment

- (1) Position controls as follows:

MODE SWITCH ----- FM
 BAND SWITCH ----- 51
 VFO DIAL ----- 500
 FM MIC GAIN ----- Centered

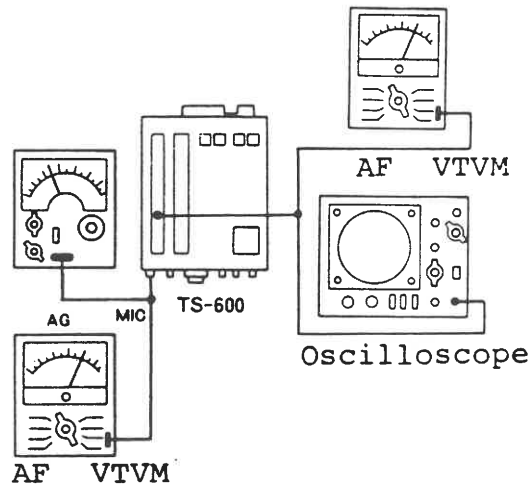
- (2) Connect as shown.
- (3) Connect the AG at the MIC terminal.
- (4) Adjust VR-3 (MAX DEV Adjustment) for ± 5 KHz deviation on the Deviation Meter.
- (5) Reduce AG output to 2mV and adjust the FM MIC GAIN CONTROL for ± 3 KHz deviation on the Deviation Meter.

Directional Coupler



20. B. Simple FM MODULATION Adjustment

- (1) Position controls as for 20-A.
- (2) Connect as follows:



- (3) Connect the AG (20mV / 1000Hz output) to the MIC terminal.
- (4) Adjust VR-3 (MAX DEV Adjustment) on the GEN UNIT for 0.5 V on the AF-VTVM.
- (5) Reduce AG output to 2mV and adjust the FM MIC GAIN CONTROL for 0.25V reading on the AF-VTVM.

21. RF METER Adjustment.

- (1) Position controls as follows:

MODE SWITCH	-----	FM
BAND SWITCH	-----	51
VFO DIAL	-----	500

- (2) Adjust VR-3 the RF METER Adjustment on the RX-NB UNIT for "8" on the RF METER.

Receiver Section

22. SSB SENSITIVITY Adjustment (GEN UNIT Adjustment).

- (1) Position Controls as follows:

METER SWITCH	-----	S
BAND SWITCH	-----	51
DIAL CONTROL	-----	500
DRIVE CONTROL	-----	Centered
MODE SWITCH	-----	USB

- (2) Adjust T-4 thru T-6 on the GEN UNIT for Maximum S-METER reading.

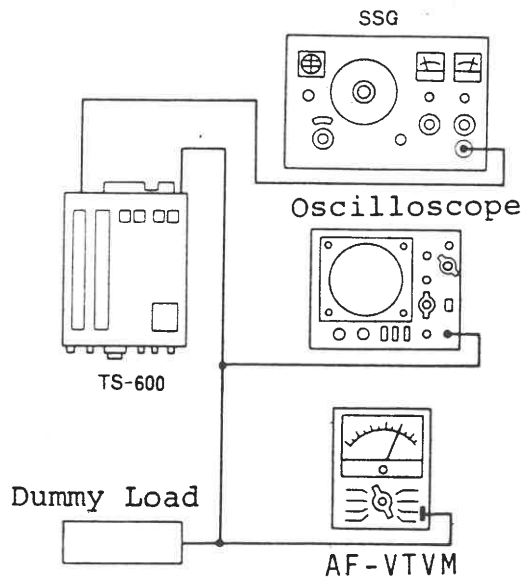
23. S-METER START Adjustment.

- (1) Position controls as follows:

METER SWITCH	-----	S
BAND SWITCH	-----	51
DIAL CONTROL	-----	500
DRIVE CONTROL	-----	Centered
MODE SWITCH	-----	USB

- (2) Confirm that the S-METER pins high when the RF GAIN CONTROL is fully clockwise, and fully down scale when the control is fully clockwise.
- (3) After confirming RF GAIN CONTROL operation keep the control fully clockwise.

- (4) With antenna input shorted or open, adjust VR-4 on the RX·NB unit for "S" meter zero. Set to just below the point where Deflection begins.



24. RX·NB UNIT Adjustment (Must be performed after step 23).

- (1) Connect the SSG to the TS-600 and tune the signal. (At 51.5 MHz / 5 mV signal).
- (2) Reduce the SSG output level to 2.5 mV for an "S" Meter reading.
- (3) Adjust T-1 thru T-3 for maximum S-METER reading.
- (4) Confirm that S-meter peak occurs at center position of the Drive Control.
- (5) Adjust T-4 thru T-8 for maximum S-Meter reading.

25. VCV ADJUSTMENT

- (1) Position controls as follows:

BAND SWITCH ----- 50
DRIVE CONTROL ----- Centered

- (2) Receive 50.5 MHz from the SSG
- (3) Adjust VR-13 on the rotary switch board for maximum S-Meter reading.

- (4) Reset the band switch to 52 MHZ (Receiving 52.5 MHZ).
Adjust VR-14 for maximum S-Meter reading.
- (5) Reset the band switch to 53 MHZ (Receiving 53.5 MHZ).
Adjust VR-15 for maximum S-Meter reading.

26. Noise Blanker Adjustment

- (1) Position controls as follows:

BAND SWITCH ----- 51
NB SWITCH ----- ON

- (2) Connect a DC-Voltage meter (10 V scale) to TP-2 on the RX-NB UNIT.
- (3) Receive a signal at 51.5 MHZ from the SSG (about 5mV output).
- (4) Adjust T-9 thru 11 for minimum DC voltmeter reading.
- (5) Connect a noise generator to the ANT terminal and confirm NB circuit operation.

27. Discriminator Adjustment

- (1) Place the MODE SWITCH to FM.
- (2) Receive a signal from the SSG (0.5 mV, MOD=1 KHz, DEV=± 5 KHz).
- (3) Adjust T-5 and T-6 for maximum reading on the AF-VTVM.

28. S-Meter Adjustment

- (1) SSG output = 0.5mV and no modulation tune to the SSG for peak S-Meter reading.
- (2) Adjust VR-4 on the GEN UNIT for an S-Meter reading of S-1.
- (3) Raise the SSG output to 50mV.
- (4) Adjust VR-2 on the GEN UNIT for an S-9 S-Meter reading.
- (5) Repeat steps 1 through 4, two or three times.

29. Center Meter Adjustment

- (1) Position controls as follows:

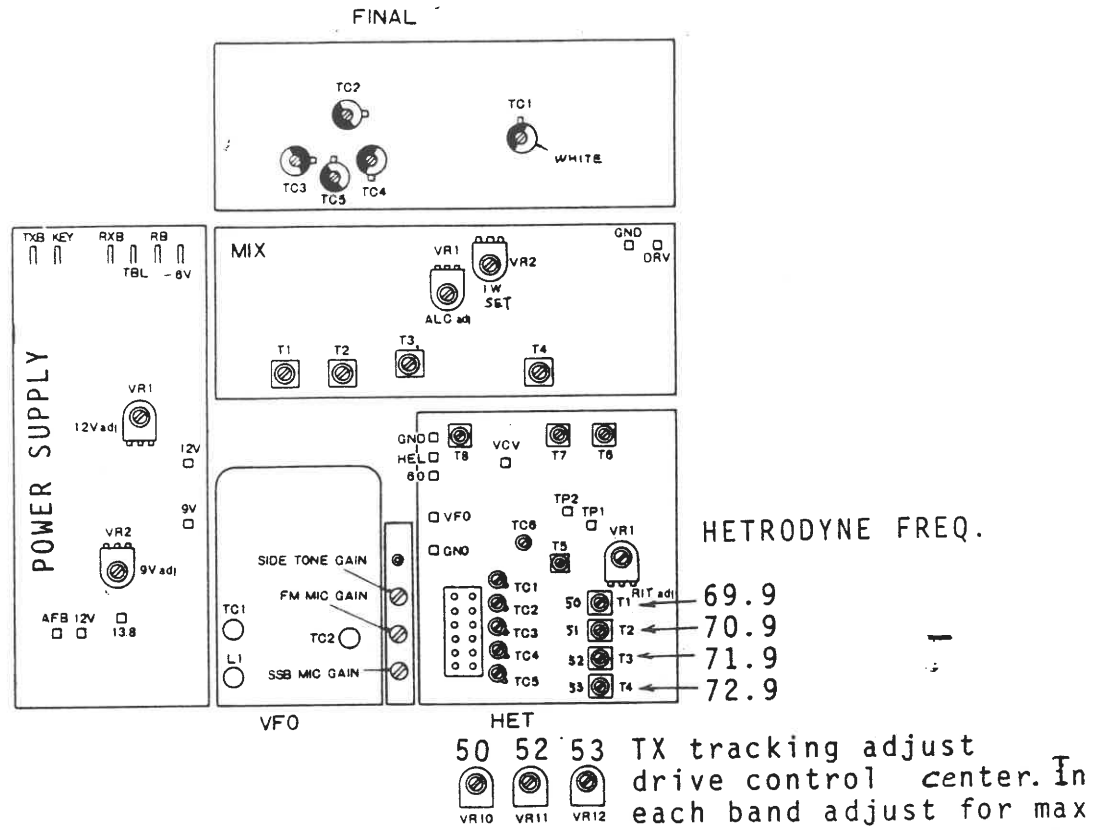
MODE SWITCH ----- FM
METER SWITCH ----- CEN

- (2) Ground the SMC terminal on the RX-NB UNIT.
- (3) Adjust VR-1 on the RX-NB UNIT for an S-5 reading.
- (4) Remove the ground jumper from the SMC terminal and ground the Antenna terminal.
- (5) Adjust T-6 on the IF UNIT for "5" scale reading on the center meter.
- (6) Set SSG output for 5mV.
- (7) Adjust the main tuning for "5" on center meter. Scale when tuning to the SSG.
- (8) Readjust the main tuning for maximum + swing on the center meter. Adjust VR-1 on the IF UNIT for an "8" \pm 1 reading on the center meter.
- (9) Readjust the main tuning for maximum - swing on the center meter. Confirm a center meter reading of "2" \pm 1.

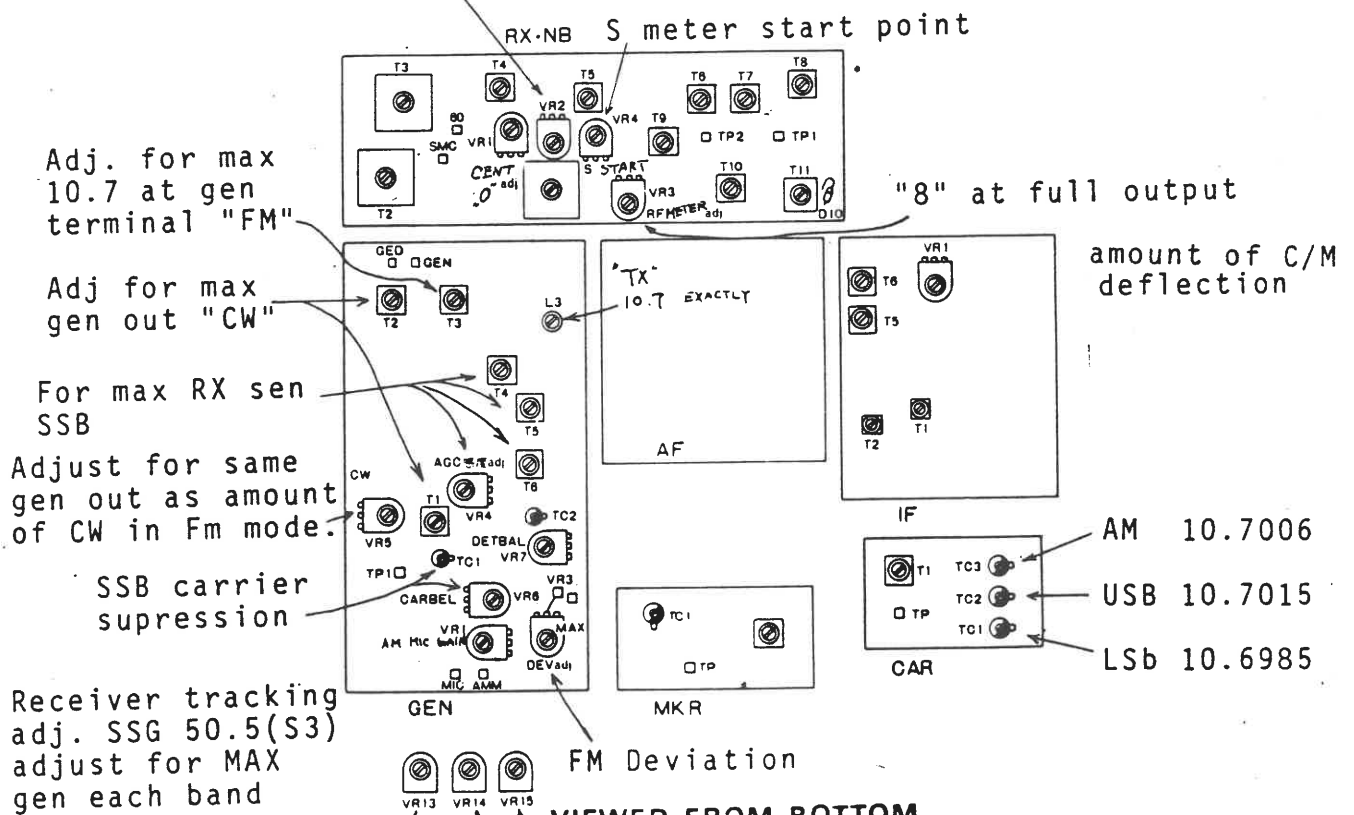
31. AM Sensitivity Adjustment.

- (1) Place the Mode Switch to AM.
- (2) Set the SSG for 0.5mV output, 30% MOD 1KHz.
- (3) Adjust T-1 and T-2 for maximum reading on the S-Meter.

ADJUSTMENTS



S "9" adjust **VIEWED FROM TOP**

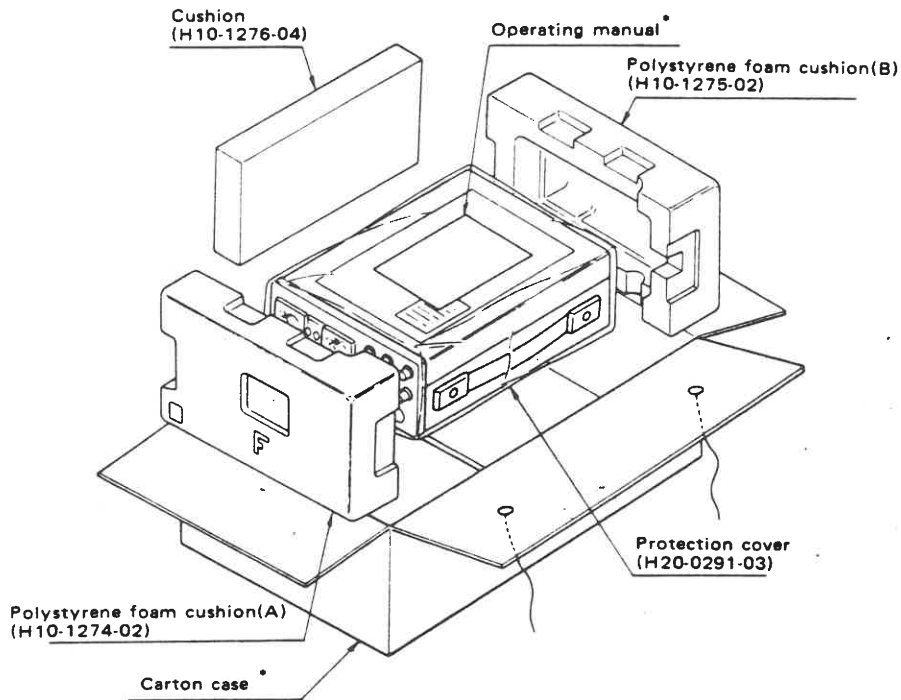


VIEWED FROM BOTTOM

50.5 52.5 53.5

PACKING

PACKING



ACCESSORIES

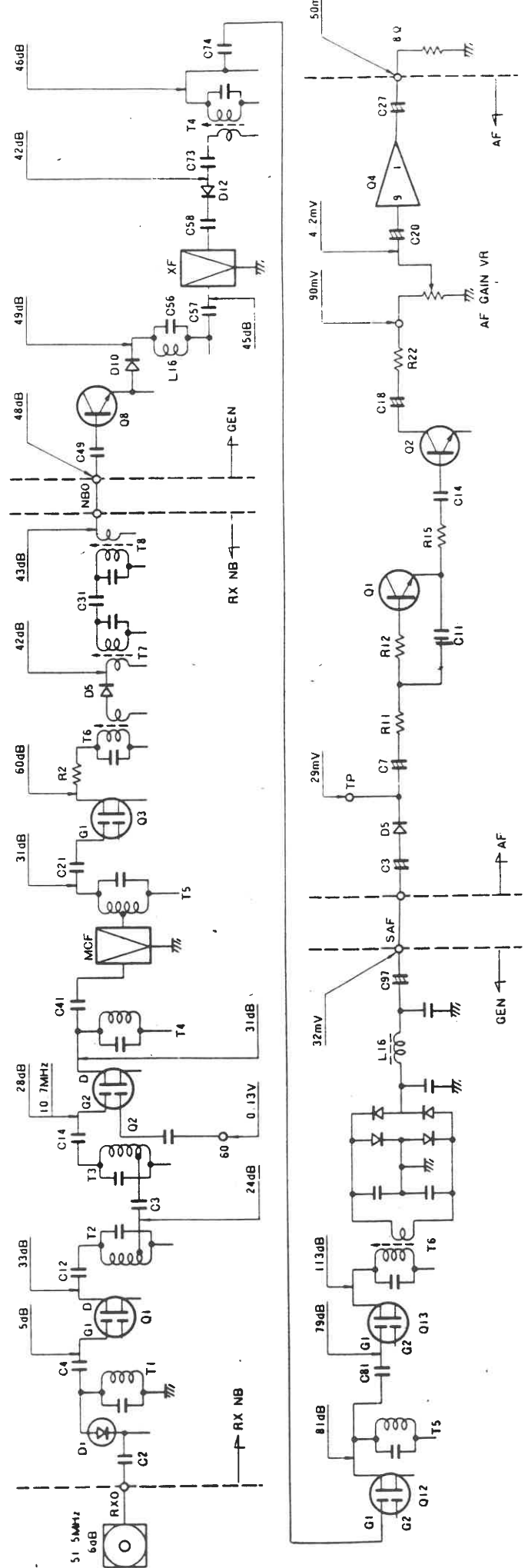
The Model TS-600 transceiver is supplied with the following accessories. After unpacking, check the accessories against the list:

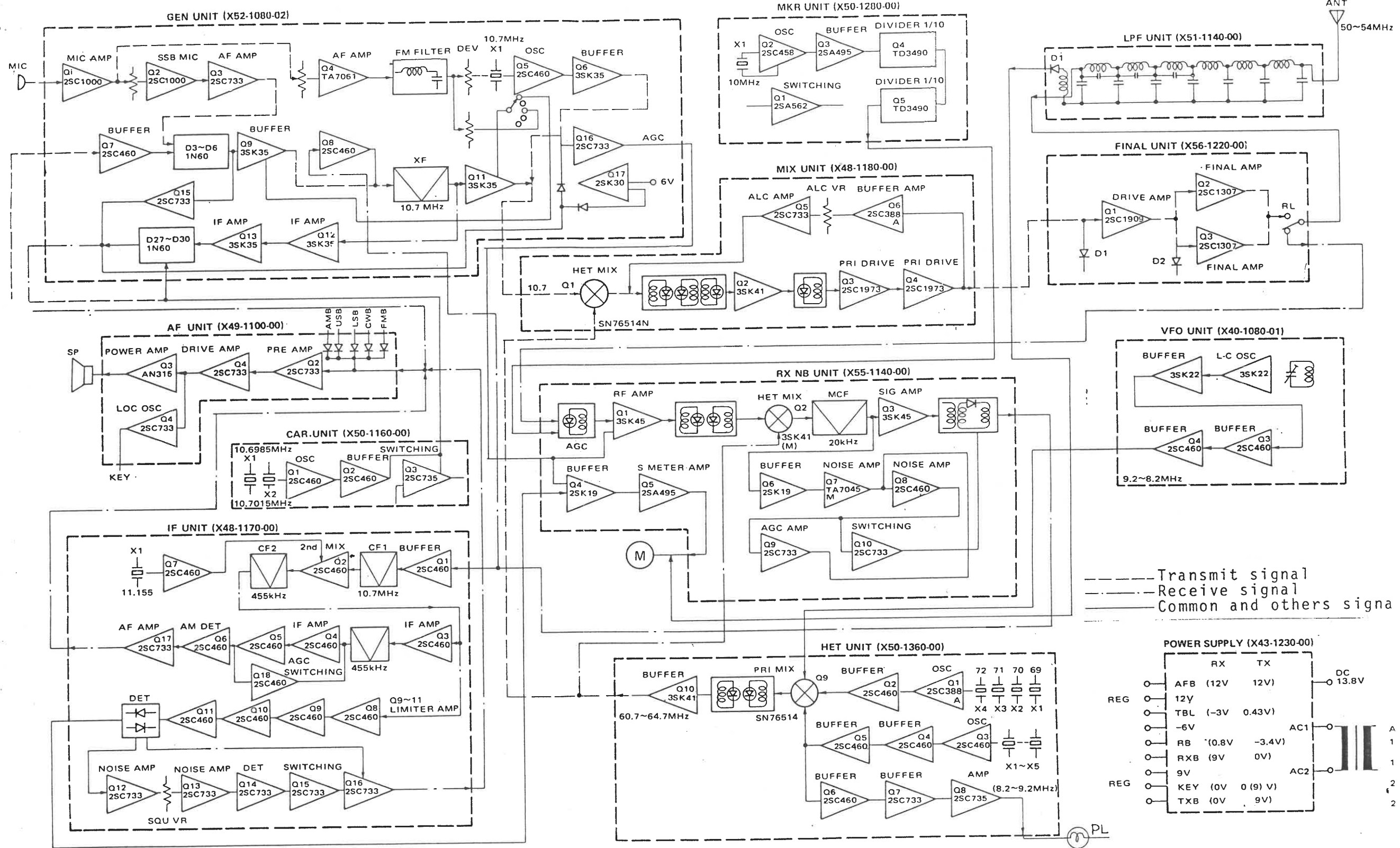
Operating manual	1
RCA plug connector	2
Feet with screws	2
Fuse: 1A (AC 220V)	1
2A (AC 120V)	1
3A (DC 12V)	1
5A (DC cord)	1
Microphone with hook, 500 ohm	1
AC power cord with connector	1
DC power cord with connector	1
VOX plug (installed)	1
Speaker plug	1

LEVEL DIAGRAM

RECEIVING LEVEL (MODE→USB)

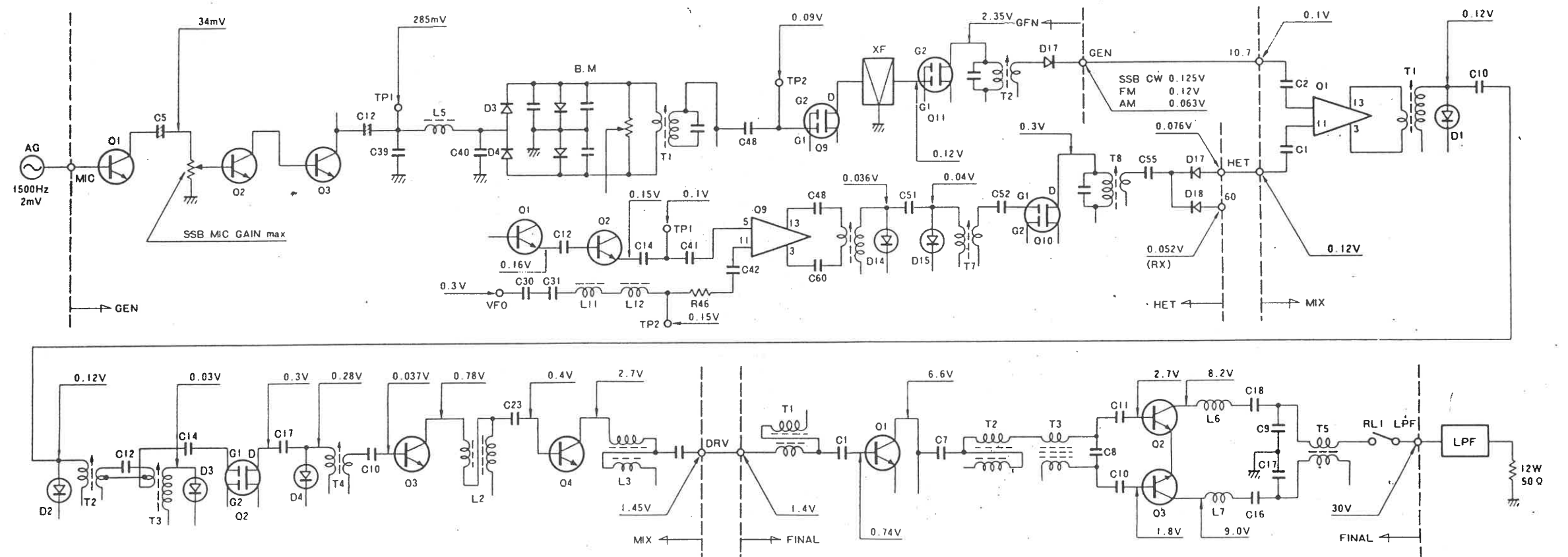
43A-

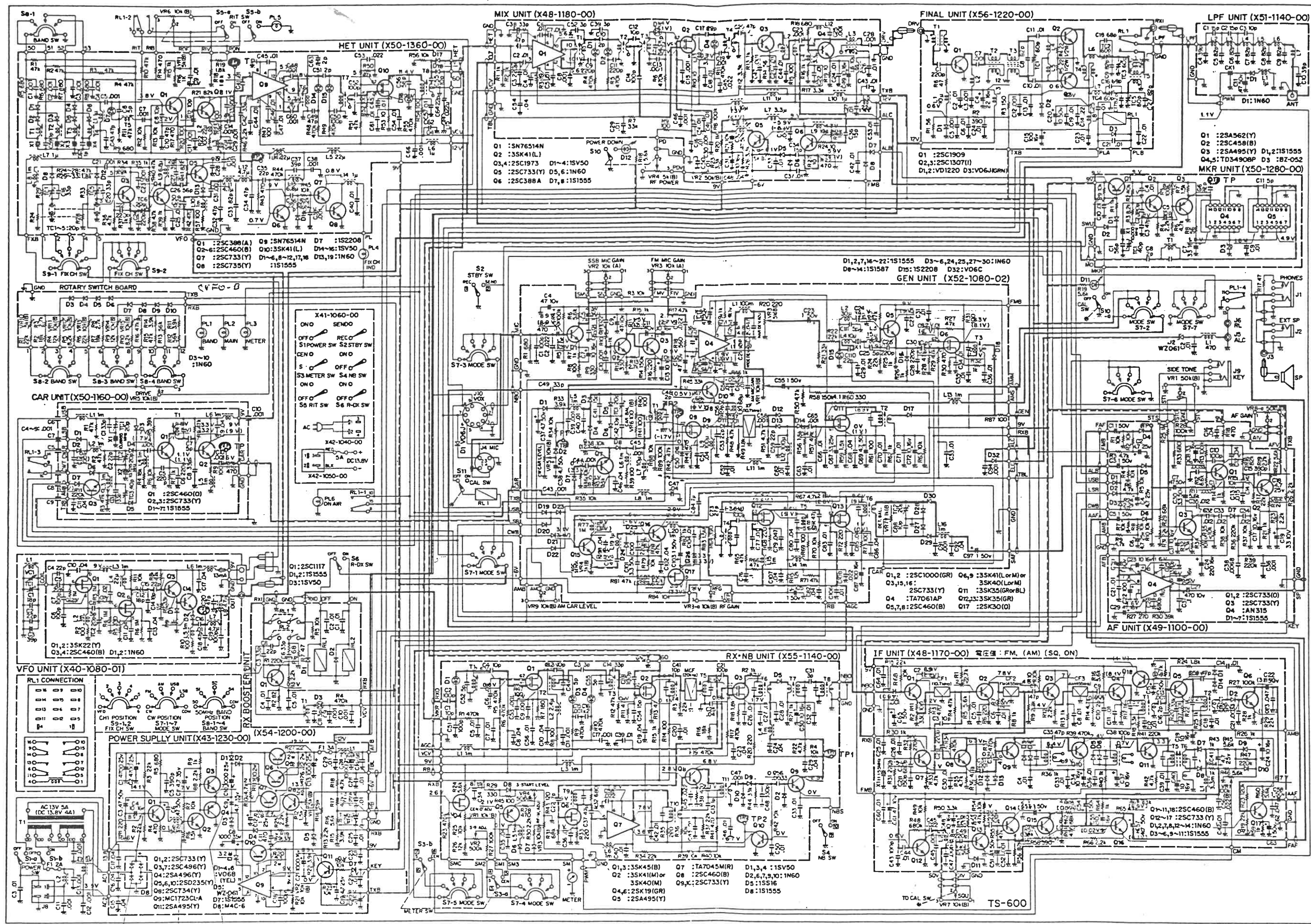




LEVEL DIAGRAM

TRANSMITTING LEVEL (MODE-CW)





- 3SK22(Y)
- 2SC460(B)
- 2SC460(O)
- 2SC458(B)
- 2SC733(Y)
- 2SA562(Y)
- 2SC734(Y)
- 2SC735(Y)
- 2SC388(A)
- 2SC1000(GR)
- 2SA495(Y)
- 2SK19(GR)
- 2SC733(O)
- 2SC496(Y)
- 2SA496(Y)
- 2SD235(Y)
- MC1723CL-A
- TOP VIEW
- SN76514N
- TD34908P
- TOP VIEW
- 3SK41(L or M)
- 3SK40(L or M)
- 3SK35(GR)
- 2SC1973
- AN315
- TA7061AP
- 2SK30(O)
- 2SC1117
- 3SK45(B)
- TA7045M(R)
- 2SC1909
- 2SC1307(H)

