



# SERVICE MANUAL

HF/50MHz ALL MODE TRANSCEIVER

## IC-726

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## INTRODUCTION

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This service manual describes the latest service information for the **IC-726** HF/50 MHz ALL MODE TRANSCEIVER at the time of publication.

To upgrade quality, all electrical or mechanical parts and internal circuits are subject to change without notice or obligation.

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## DANGER

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**NEVER** connect the transceiver to an AC outlet or to a DC power supply that uses more than 16 V. This will ruin the transceiver.

**DO NOT** expose the transceiver to rain, snow or any liquids.

**DO NOT** reverse the polarities of the DC power supply when connecting the transceiver.

**DO NOT** apply an RF signal of more than 20 dBm (100 mW) to the antenna connector. This could damage the transceiver's front end.



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## ORDERING PARTS

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Be sure to include the following four points when ordering replacement parts:

1. 10-digit order numbers
2. Component part number and name
3. Equipment model name and unit name
4. Quantity required

### <SAMPLE ORDER>

1110001310 IC  $\mu$ PC577HA IC-726 MAIN UNIT 5 pieces  
8810005510 Screw PH M3  $\times$  6 ZK BS IC-726 Top cover 10 pieces

Addresses are provided on the inside back cover for your convenience.

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## REPAIR NOTE

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1. Make sure a problem is internal before disassembling the transceiver.
2. **DO NOT** open the transceiver until the transceiver is disconnected from the power source.
3. **DO NOT** force any of the variable components. Turn them slowly and smoothly.
4. **DO NOT** short any circuits or electronic parts. An insulated tuning tool **MUST** be used for all adjustments.
5. **DO NOT** keep power ON for a long time when the transceiver is defective.
6. **DO NOT** transmit power into a signal generator or a sweep generator.
7. **ALWAYS** connect a 40 dB~50 dB attenuator between the transceiver and a deviation meter or spectrum analyzer when using such test equipment.
8. **READ** the instructions of test equipment thoroughly before connecting equipment to the transceiver.

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# SECTION 1 SPECIFICATIONS

## GENERAL

- Frequency coverage : Receive 500 kHz~30 MHz, 50 MHz~54 MHz  
 Transmit 160-m band 1.8~2.0 MHz 17-m band 18.068~18.168 MHz  
           80-m band 3.5~4.0 MHz 15-m band 21.0 ~21.45 MHz  
           40-m band 7.0~7.3 MHz 12-m band 24.89 ~24.99 MHz  
           30-m band 10.1~10.15 MHz 10-m band 28.0 ~29.7 MHz  
           20-m band 14.0~14.35 MHz 6-m band 50.0 ~54.0 MHz
- Modes : SSB (A3J), CW (A1), AM (A3), FM (F3)
- Number of memory channels : 26
- Antenna impedance : 50  $\Omega$  unbalanced
- Usable temperature range :  $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$  ( $+14^{\circ}\text{F} \sim +140^{\circ}\text{F}$ )
- Frequency stability : Less than  $\pm 200$  Hz up to one hour after power is turned ON.  
                                   Less than  $\pm 30$  Hz after one hour at  $+25^{\circ}\text{C}$  ( $+77^{\circ}\text{F}$ ).  
                                   Less than  $\pm 350$  Hz at  $0^{\circ}\text{C} \sim +50^{\circ}\text{C}$  ( $+32^{\circ}\text{F} \sim +122^{\circ}\text{F}$ ).
- Power supply requirement : 13.8 V DC  $\pm 15\%$  (negative ground)
- Current drain (at 13.8 V DC) : Receive squelched 1.3 A max. audio output 1.6 A  
                                   Transmit 20 A
- Dimensions : 241 (W)  $\times$  94 (H)  $\times$  239 (D) mm 9.5 (W)  $\times$  3.7 (H)  $\times$  9.4 (D) in  
                                   (Projections not included)
- Weight : 4.8 kg (10.6 lb)

## TRANSMITTER

- Output power : SSB, CW, FM (HF) 100 W max., (50 MHz) 10 W max.  
                   AM (HF) 40 W max., (50 MHz) 4W max.
- Spurious emissions : 1.8~30 MHz Less than  $-50$  dB  
                           50~54 MHz Less than  $-60$  dB
- Carrier suppression : Less than  $-40$  dB
- Unwanted sideband : Less than  $-50$  dB with 1000 Hz modulation
- Microphone impedance : 600  $\Omega$

## RECEIVER

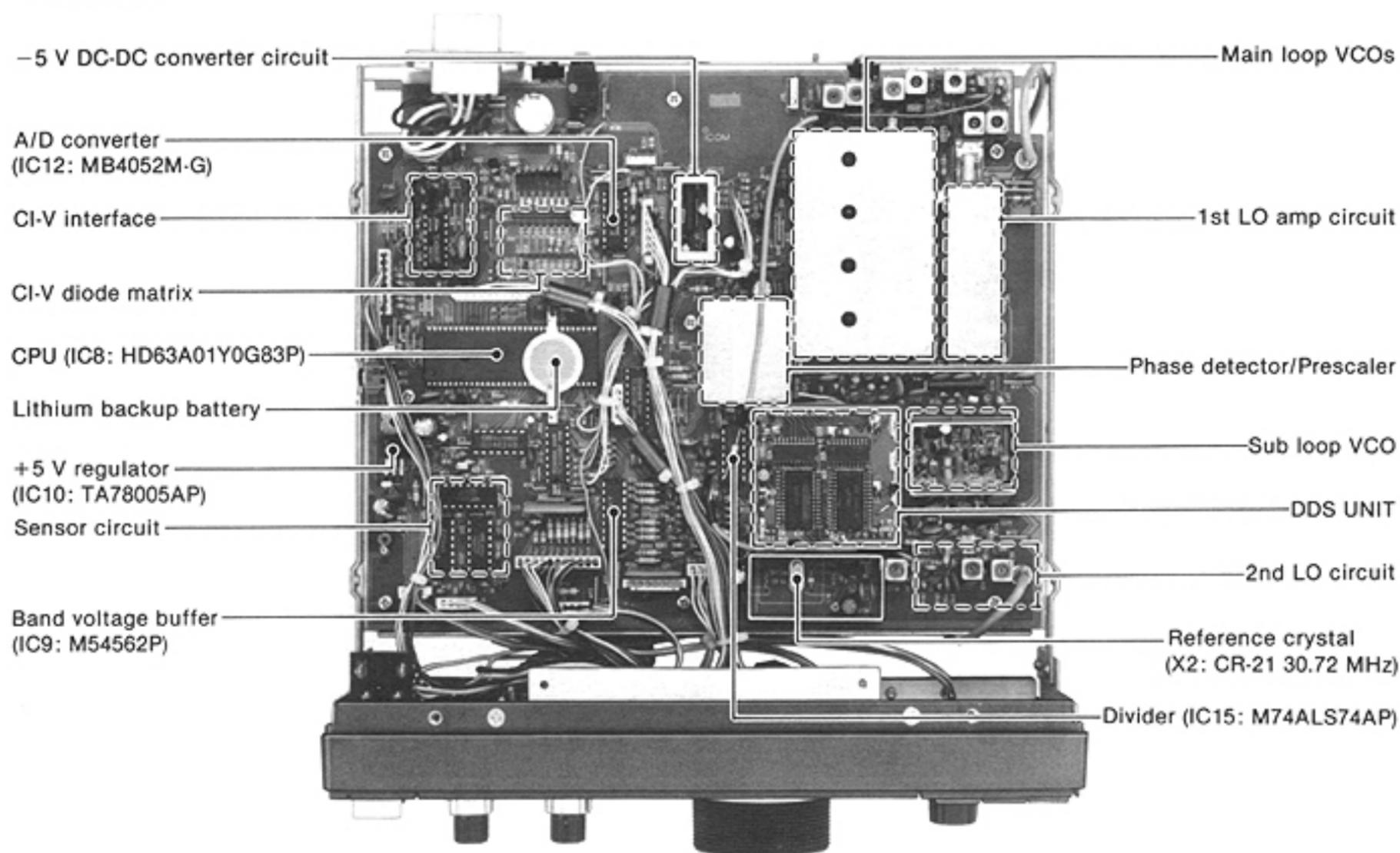
- Receive system : SSB, CW, AM Double-conversion superheterodyne  
                   FM Triple-conversion superheterodyne
- Intermediate frequencies : 1st SSB 70.4515 MHz  
                                   CW 70.4506 MHz  
                                   AM, FM 75.4500 MHz  
                   2nd SSB 9.0115 MHz  
                                   CW 9.0106 MHz  
                                   AM, FM 9.0100 MHz  
                   3rd FM 455 kHz
- Sensitivity (preamplifier ON) : (1.8~30 MHz) SSB, CW Less than  $0.16 \mu\text{V}$  for 10 dB S/N  
                                   AM Less than  $2.0 \mu\text{V}$  for 10 dB S/N  
                                   (28~30 MHz) FM Less than  $0.5 \mu\text{V}$  for 12 dB SINAD  
                                   (50~54 MHz) SSB, CW Less than  $0.13 \mu\text{V}$  for 10 dB S/N  
                                   AM Less than  $2.0 \mu\text{V}$  for 10 dB S/N  
                                   FM Less than  $0.3 \mu\text{V}$  for 12 dB SINAD
- FM squelch sensitivity : Less than  $0.3 \mu\text{V}$   
   (preamp. ON)
- Selectivity : SSB, CW More than 2.3 kHz/ $-6$  dB Less than 4.0 kHz/ $-60$  dB  
                   AM More than 6.0 kHz/ $-6$  dB Less than 20.0 kHz/ $-40$  dB  
                   FM More than 15 kHz/ $-6$  dB Less than 30 kHz/ $-50$  dB
- Spurious response rejection : More than 70 dB
- Audio output impedance : 8  $\Omega$
- Audio output power : More than 2.6 W at 10 % distortion with an 8  $\Omega$  load
- RIT variable range : More than  $\pm 1.2$  kHz

All stated specifications are subject to change without notice or obligation.

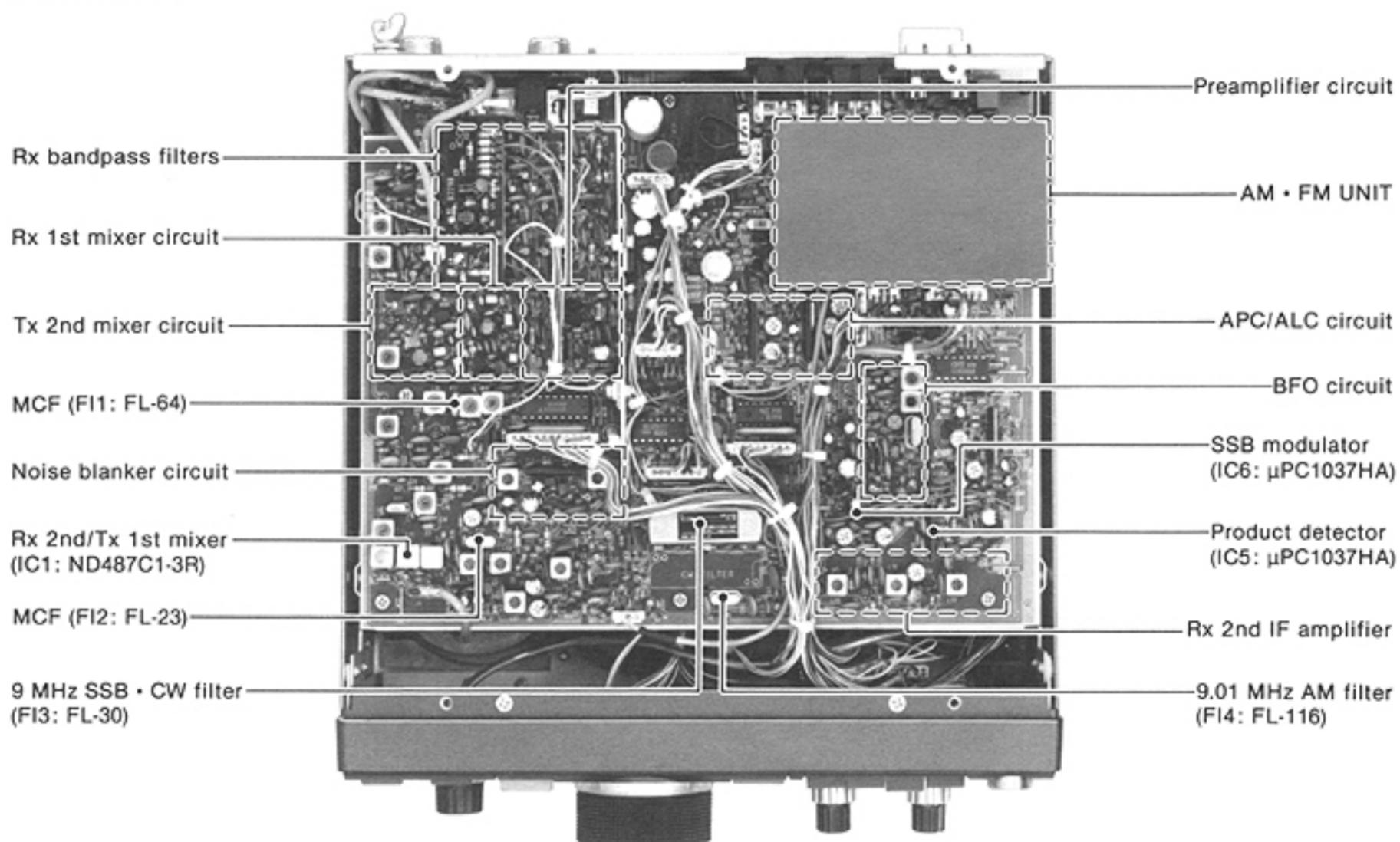
## SECTION 2 INSIDE VIEWS

### 2-1 PLL AND MAIN UNITS

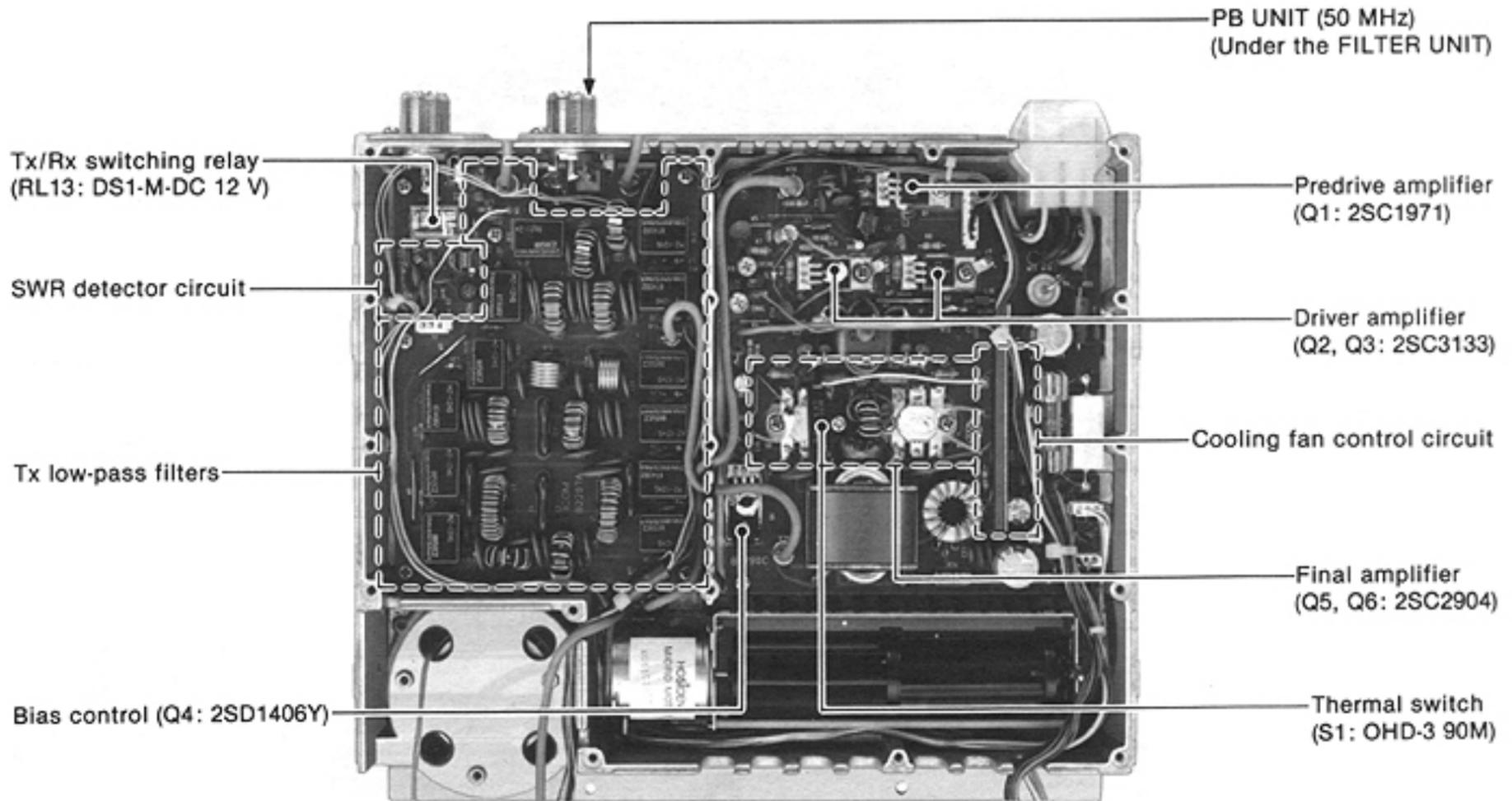
#### • PLL UNIT



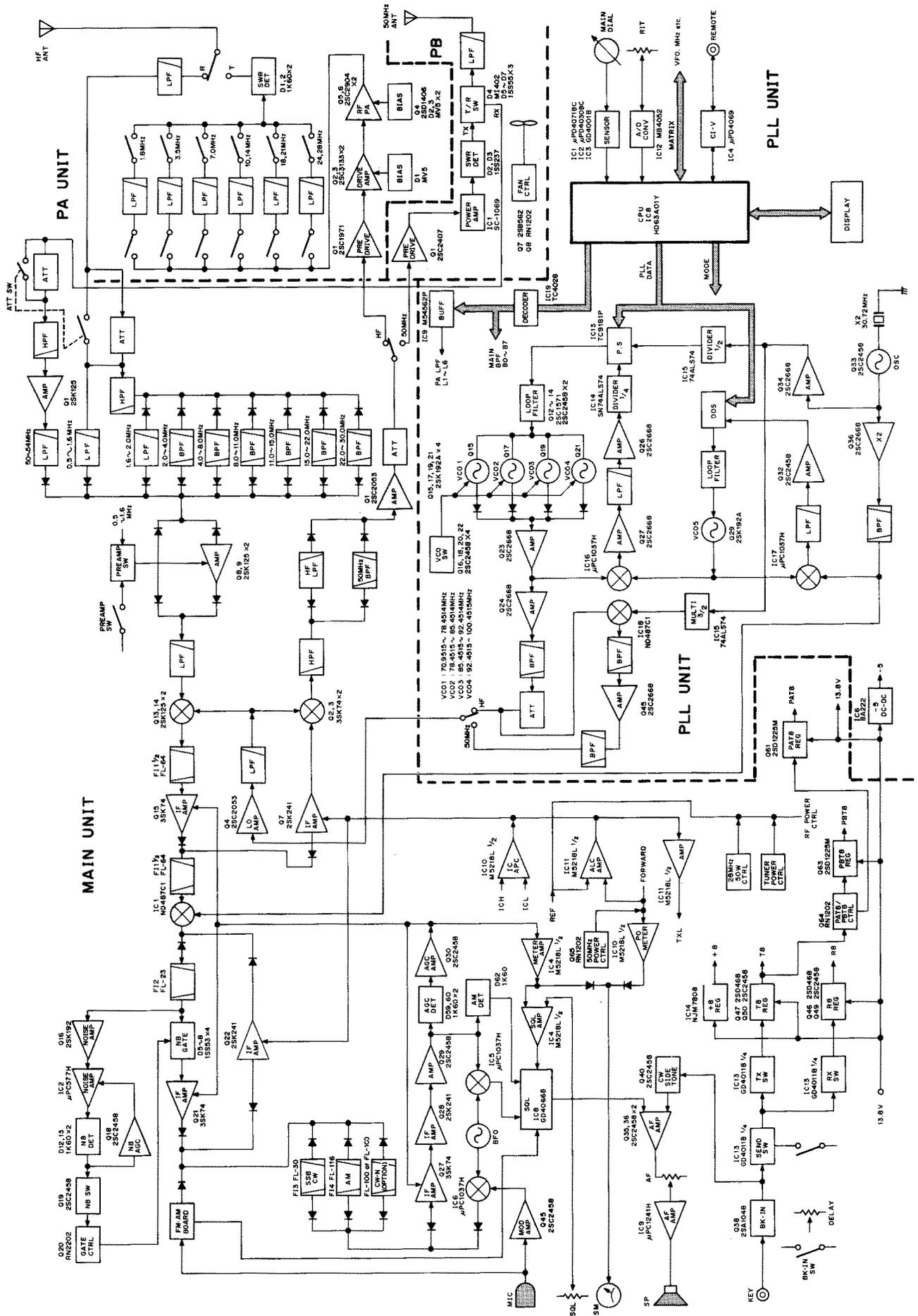
#### • MAIN UNIT



## 2-2 PA, PB AND FILTER UNITS



# SECTION 3 BLOCK DIAGRAM

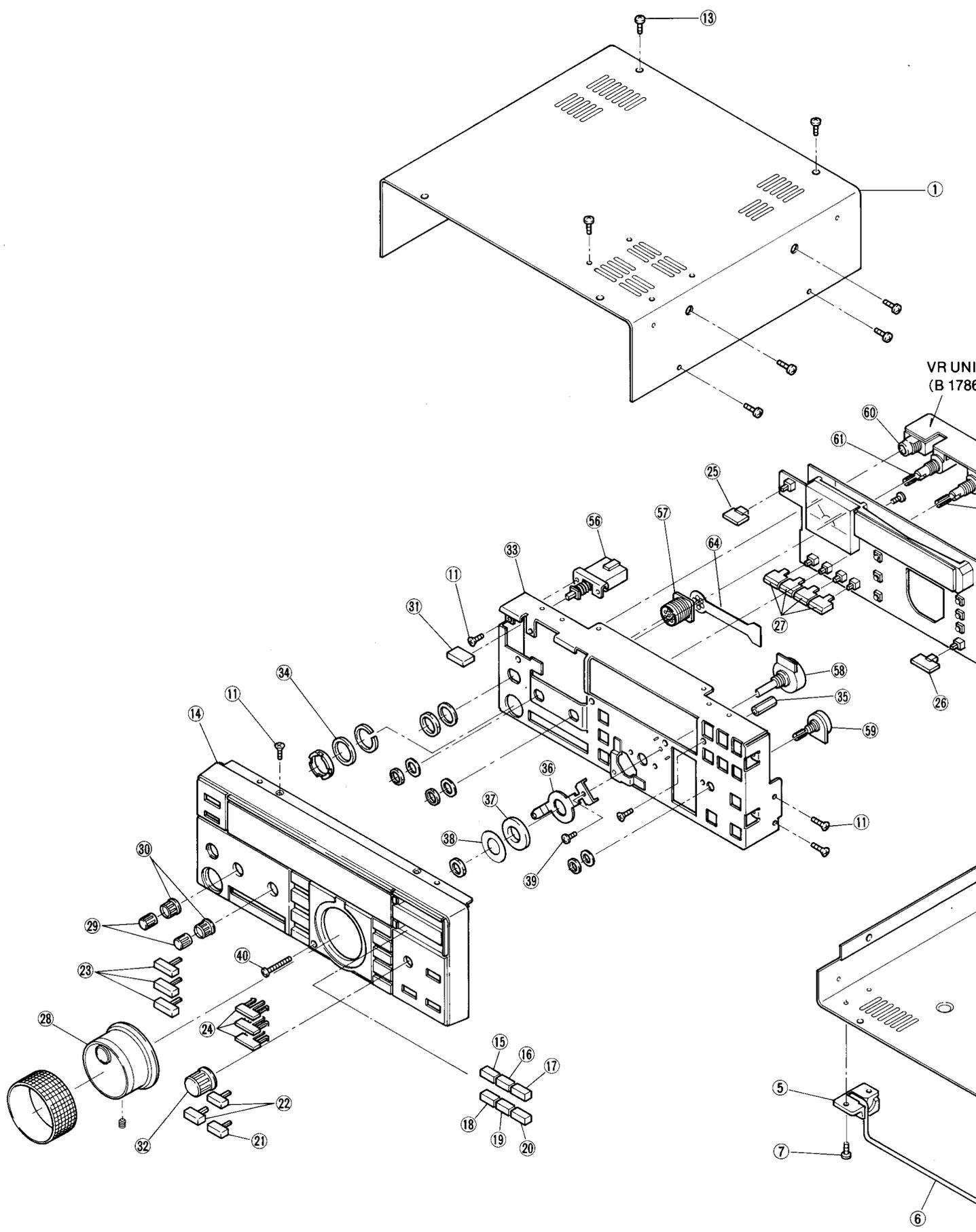


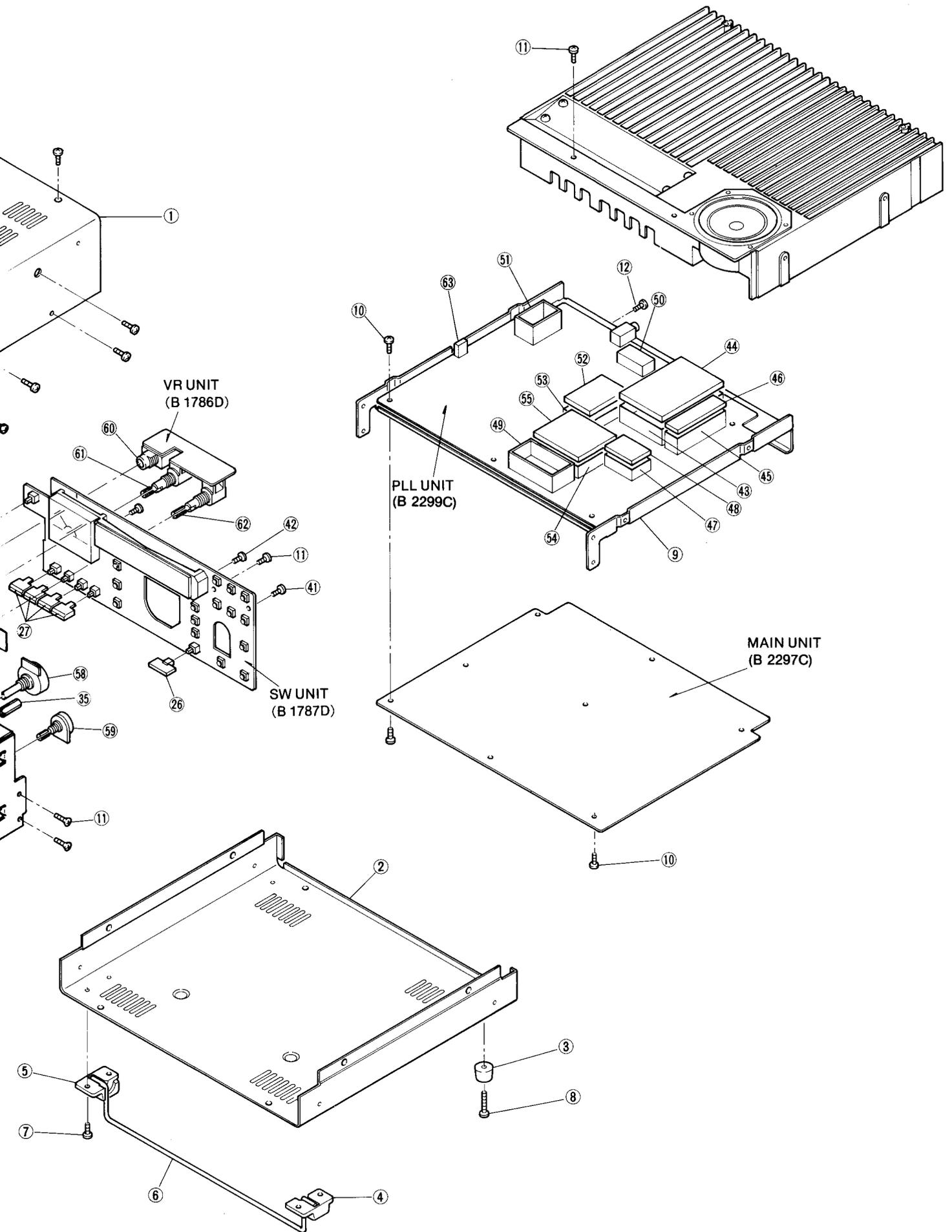
# SECTION 4 MECHANICAL PARTS AND DISASSEMBLY

## 4-1 FRAME DISASSEMBLY

LABEL NUMBER	ORDER NO.	DESCRIPTION	QTY.	LABEL NUMBER	ORDER NO.	DESCRIPTION	QTY.
①	8110003270	Top cover	1	③⑤	8930000720	Thread spacer (V)	4
②	8110003280	Bottom cover	1	③⑥	8930013990	610 Brake plate	1
③	8930002900	Rubber foot (A)	2	③⑦	8930014030	610 Brake pad	1
④	8930005790	Foot (A)	1	③⑧	8930013940	610 Brake sheet	1
⑤	8930005800	Foot (B)	1	③⑨	8810001110	PH B0 M3×6	1
⑥	8010001520	Stand (C)	1	④⑩	8810005470	PH M2.6×14 ZK	1
⑦	8810005520	PH B1 M3×8 ZK	4	④①	8810001650	PH FT M3×6	9
⑧	8810005540	PH B1 M4×10	2	④②	8810001320	PH B1 M2.6×6 Ni	4
⑨	8010007851	610 Chassis-1	1	④③	8510001330	79 shield case	1
⑩	8810001350	PH B1 M3×6	16	④④	8510001340	79 shield case cover	1
⑪	8810002160	FH M3×5	16	④⑤	8510001060	Shield case	1
⑫	8810003670	ICOM screw A 6	2	④⑥	8510001740	Shield case cover	1
⑬	8810005510	FH M3×6 ZK BS	16	④⑦	8510000881	194 VCO case-1	1
⑭	8210004670	610 Front panel (B)	1	④⑧	8510003460	194 VCO case cover (A)	1
⑮	8610004640	Button K119 [VFO]	1	④⑨	8510000230	220 shield case	1
⑯	8610004650	Button K119 (A) [SPLIT]	1	⑤⑩	8510002200	VCO case	1
⑰	8610004660	Button K119 (B) [UP]	1	⑤①	8510000881	194 VCO case-1	1
⑱	8610004670	Button K119 (C) [MEMO]	1	⑤②	8510002690	PA shield case (B)	1
⑲	8610004680	Button K119 (D) [MW]	1	⑤③	8510004360	PA shield case (B) cover (A)	1
⑳	8610004690	Button K119 (E) [DOWN]	1	⑤④	8510005310	DDS shield case	1
㉑	8610004700	Button K119 (F) [FUNC]	1	⑤⑤	8510005320	DDS shield case cover	1
㉒	8610004710	Button K119 (G) [RIT, TUNER]	2	⑤⑥	2230000120	Switch [POWER] SDDSA3159A	1
㉓	8610004720	Button K120 [SSB, CW/N, AM/FM]	3	⑤⑦	6510000190	Connector [MIC] FM214-8SS (P)	1
㉔	8610004730	Button K121 [kHz, MHz, BAND]	3	⑤⑧	7600000100	Rotary encoder EC24B50B0013A	1
㉕	8610003850	Button K98 [TRANSMIT]	1	⑤⑨	7210000570	Variable resistor [RIT]	1
㉖	8610004741	Button K122-1 [LOCK]	1	⑥⑩	6450000810	Connector [PHONES] HLJ4306-01-3070	1
㉗	8610004751	Button K123-1 [NB, ATT, PRE, AGC]	4				
㉘	8610004760	Dial N104 (A) (incl. rubber ring and screw)	1	⑥①	7210001320	Variable resistor [AF/SQL] RK124221002DA	1
㉙	8610004770	Knob N45C [AF, MIC]	2	⑥②	7210001550	Variable resistor [MIC/RF PWR] RK1242210032A	1
⑳	8610000500	Knob N69 [SQL, RF PWR]	2				
㉑	8610001560	Button K42 [POWER]	1	⑥③	7210001530	Variable resistor [RIT] RK09K1110AEGA	1
㉒	8610004780	Knob N87 (B) [RIT]	1				
㉓	8010007860	610 Sub chassis	1	⑥④	0910006330	Flexible cable P.C. Board B 792	1
㉔	8930003200	Spacer (P)	1				

**Screw abbreviations** PH: Pan head FH: Flat head B0, B1, FT: Self-tapping screw ZK: Black Ni: Nickel  
BS: Brass







• PA UNIT

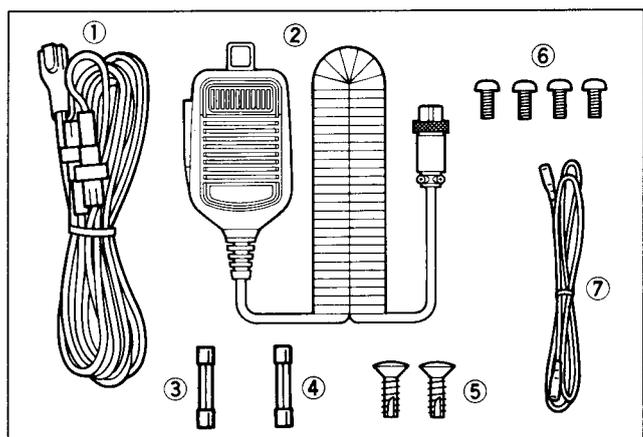
LABEL NUMBER	ORDER NO.	DESCRIPTION	QTY.
①	8410000781	401 Heatsink-1	1
②	8510005462	PA cover-2	1
③	8810001910	PH M3×6 Ni BS	4
④	8850000420	Spring washer M3 Ni	4
⑤	8810001350	PH B1 M3×6	24
⑥	8810003170	Setscrew A M3×8	7
⑦	6910000310	Bushing B312D	1
⑧	8810003670	ICOM screw A6	2
⑨	8810003210	Setscrew A M3×15	1
⑩	8810000220	PH M3×5	4
⑪	8810001980	PH M5×16 Ni BS	1
⑫	8850000590	Star washer M5	1
⑬	8850000440	Spring washer M5 Ni	1
⑭	8830000210	Nut M5 Ni BS	1
⑮	8850000150	Flat washer M5 Ni BS	2
⑯	8830000360	Wing nut M5 Ni	1
⑰	6510004880	ANT connector MR-DS-E 01	2
⑱	2510000040	Speaker C065K1210810	1
⑲	6510003780	DC power socket LLR-6	1
⑳	8810001350	PH B1 M3×6	4

**Screw abbreviations** PH: Pan head B1: Self-tapping screw Ni: Nickel BS: Brass

• ACCESSORIES

LABEL NUMBER	ORDER NO.	DESCRIPTION	QTY.
①	Optional product	DC power cable OPC-025 A	1
②	Optional product	Hand microphone HM-12	1
③	5210000080	Spare fuse FGB 20A	1
④	5210000130	Spare fuse FGB 4A	1
⑤	8810005500	FH B1 M4×12 CR	2
⑥	8810001600	PH ST M3×6	4
⑦	8970016530	Jumper wire #795-AC	1

**Screw abbreviations** PH: Pan head FH: Flat head B1, ST: Self-tapping screw



# SECTION 5 PARTS LIST

## [FRONT UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1130000790	IC	μPD7225G
Q1	1520000230	Transistor	2SB909M Q
Q2	1530000110	Transistor	2SC2458-GR
Q3	1530000110	Transistor	2SC2458-GR
Q4	1530000110	Transistor	2SC2458-GR
Q5	1590000350	Transistor	RN1204
Q6	1530000110	Transistor	2SC2458-GR
D1	1730000180	Zener	RD8.2E B2
D2	1710000160	Diode	1SS133
D3	1710000160	Diode	1SS133
D4	1710000160	Diode	1SS133
D5	1710000160	Diode	1SS133
D6	1710000160	Diode	1SS133
D7	1710000160	Diode	1SS133
D8	1710000160	Diode	1SS133
D9	1710000160	Diode	1SS133
D10	1710000160	Diode	1SS133
D11	1710000160	Diode	1SS133
D12	1710000160	Diode	1SS133
D13	1710000160	Diode	1SS133
D14	1710000160	Diode	1SS133
D15	1710000160	Diode	1SS133
D16	1710000160	Diode	1SS133
D17	1710000160	Diode	1SS133
D18	1710000160	Diode	1SS133
D19	1710000160	Diode	1SS133
L1	6180000900	Coil	LAL 03NA 101K
L2	6180000900	Coil	LAL 03NA 101K
L3	6180000900	Coil	LAL 03NA 101K
L4	6180000900	Coil	LAL 03NA 101K
L5	6180000900	Coil	LAL 03NA 101K
L6	6180000900	Coil	LAL 03NA 101K
L7	6180000900	Coil	LAL 03NA 101K
L8	6180000900	Coil	LAL 03NA 101K
R1	7210001320	Variable Resistor	RK124221002DA (AF/SQL)
R2	7210001550	Variable Resistor	RK1242210032A 10KB · 10KB (MIC/RF PWR)
R3	7010004030	Resistor	R20J 47 Ω
R4	7010004190	Resistor	R20J 1 kΩ
R5	7010003280	Resistor	ELR20J 100 Ω
R6	7010003280	Resistor	ELR20J 100 Ω
R7	7010004720	Resistor	R50XJ 100 Ω
R8	7010004720	Resistor	R50XJ 100 Ω
R9	7010003400	Resistor	ELR20J 1 kΩ
R10	7010003520	Resistor	ELR20J 8.2 kΩ
R11	7010003480	Resistor	ELR20J 4.7 kΩ
R12	7010003400	Resistor	ELR20J 1 kΩ
R13	7010004250	Resistor	R20J 3.3 kΩ
R14	7010004320	Resistor	R20J 10 kΩ
R15	7010004320	Resistor	R20J 10 kΩ
R16	7010004480	Resistor	R20J 180 kΩ
R17	7010004410	Resistor	R20J 47 kΩ
R18	7010004320	Resistor	R20J 10 kΩ
R19	7010004320	Resistor	R20J 10 kΩ
R20	7010004170	Resistor	R20J 680 Ω
R21	7010004320	Resistor	R20J 10 kΩ
R22	7010004320	Resistor	R20J 10 kΩ
R23	7210000570	Variable Resistor	RK1631110D5FA (RIT)
R24	7010004320	Resistor	R20J 10 kΩ
R25	7010001400	Resistor	R25J 100 kΩ
R26	7010004450	Resistor	R20J 100 kΩ

## [FRONT UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C1	4510000970	Electrolytic	10 MS9 100 μF
C2	4510001150	Electrolytic	50 MS7 R47 μF
C3	4010000520	Ceramic	DD108 B 472K 50V
C4	4010000520	Ceramic	DD108 B 472K 50V
C5	4040000260	Barrier Layer	UZE 08X 104M
C6	4010000520	Ceramic	DD108 B 472K 50V
C7	4010000520	Ceramic	DD108 B 472K 50V
C8	4020000250	Cylinder	UP125 X 472M
C9	4020000250	Cylinder	UP125 X 472M
C10	4010000520	Ceramic	DD108 B 472K 50V
DS1	5030000380	LCD	HLC9599-01-3210
DS2	5040001290	LED	SLP153B
DS3	5040001300	LED	SLP253B
DS4	5080000170	LED	HRS7219A-Y2-30
DS5	5080000170	LED	HRS7219A-Y2-30
DS7	5080000170	LED	HRS7219A-Y2-30
ME1	5510000300	Meter	KL-218U-43 (M610)
S1	2230000120	Switch	SDDSA3159A [POWER]
S2	2230000550	Switch	SPPH23079A [ATT]
S3	2230000550	Switch	SPPH23079A [PRE]
S4	2230000550	Switch	SPPH23079A [NB]
S5	2230000550	Switch	SPPH23079A [AGC]
S6	2230000550	Switch	SPPH23079A [LOCK]
S7	2230000550	Switch	SPPH23079A [TRANSMIT]
S8	2260000070	Switch	SKHHAK013A [M-CH UP]
S9	2260000070	Switch	SKHHAK013A [M-CH DOWN]
S10	2260000070	Switch	SKHHAK013A [VFO]
S11	2260000070	Switch	SKHHAK013A [MEMO]
S12	2260000070	Switch	SKHHAK013A [RIT]
S13	2260000070	Switch	SKHHAK013A [MW]
S14	2260000070	Switch	SKHHAK013A [FUNC]
S15	2260000070	Switch	SKHHAK013A [SPLIT]
S16	2260000070	Switch	SKHHAK013A [TUNER]
S17	2260000060	Switch	SKHHAJ025A [BAND]
S18	2260000060	Switch	SKHHAJ025A [MHz]
S19	2260000060	Switch	SKHHAJ025A [kHz]
S20	2260000070	Switch	SKHHAK013A [AM/FM]
S21	2260000070	Switch	SKHHAK013A [CW/N]
S22	2260000070	Switch	SKHHAK013A [SSB]
S23	7600000100	Switch	EC24B50B0013A [MAIN DIAL]
EP1	0910019544	P.C. Board	B 1786D (VR)
EP2	0910019524	P.C. Board	B 1787D (SW)
EP3	0910019550	P.C. Board	B 1868 (SPEC)
EP4	0910006330	Flexible Cable	B 792
EP5	0910019931	P.C. Board	B 1932A (LED)
EP9	6910000630	Ferrite Bead	FSOH070RN
EP10	6910000630	Ferrite Bead	FSOH070RN
EP11	6910000630	Ferrite Bead	FSOH070RN

[MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1790000050	IC	ND487C1-3R
IC2	1110001310	IC	μPC577HA
IC4	1110000330	IC	M5218L
IC5	1110001320	IC	μPC1037HA
IC6	1110001320	IC	μPC1037HA
IC8	1130003900	IC	GD4066B
IC9	1110000890	IC	μPC1241H
IC10	1110000330	IC	M5218L
IC11	1110000330	IC	M5218L
IC13	1130003880	IC	GD4011B
IC14	1180000470	IC	NJM7808A
IC15	1110000290	IC	BA618
IC16	1120000970	IC	M54562P
Q1	1530000810	Transistor	2SC2053
Q2	1580000100	FET	3SK74 K
Q3	1580000100	FET	3SK74 K
Q4	1530000810	Transistor	2SC2053
Q5	1520000230	Transistor	2SB909M Q
Q6	1590000340	Transistor	RN1202
Q7	1560000100	FET	2SK241-Y
Q8	1560000130	FET	2SK125
Q9	1560000130	FET	2SK125
Q10	1590000360	Transistor	RN2202
Q11	1530000110	Transistor	2SC2458-GR
Q12	1590000340	Transistor	RN1202
Q13	1560000130	FET	2SK125
Q14	1560000130	FET	2SK125
Q15	1580000110	FET	3SK74 M
Q16	1560000080	FET	2SK192A-Y
Q17	1510000080	Transistor	2SA1048-GR
Q18	1530000110	Transistor	2SC2458-GR
Q19	1530000110	Transistor	2SC2458-GR
Q20	1590000360	Transistor	RN2202
Q21	1580000110	FET	3SK74 M
Q22	1560000100	FET	2SK241-Y
Q23	1590000340	Transistor	RN1202
Q24	1590000360	Transistor	RN2202
Q25	1590000360	Transistor	RN2202
Q26	1530000110	Transistor	2SC2458-GR
Q27	1580000110	FET	3SK74 M
Q28	1560000100	FET	2SK241-Y
Q29	1530000110	Transistor	2SC2458-GR
Q30	1530000110	Transistor	2SC2458-GR
Q31	1530000110	Transistor	2SC2458-GR
Q32	1590000340	Transistor	RN1202
Q33	1590000350	Transistor	RN1204
Q34	1590000340	Transistor	RN1202
Q35	1530000110	Transistor	2SC2458-GR
Q36	1530000110	Transistor	2SC2458-GR
Q37	1530000110	Transistor	2SC2458-GR
Q38	1510000080	Transistor	2SA1048-GR
Q39	1590000350	Transistor	RN1204
Q40	1530000110	Transistor	2SC2458-GR
Q41	1590000360	Transistor	RN2202
Q42	1530000110	Transistor	2SC2458-GR
Q44	1530000110	Transistor	2SC2458-GR
Q45	1530000110	Transistor	2SC2458-GR
Q46	1540000070	Transistor	2SD468C
Q47	1540000070	Transistor	2SD468C
Q48	1540000150	Transistor	2SD1225M R
Q49	1530000110	Transistor	2SC2458-GR
Q50	1530000110	Transistor	2SC2458-GR
Q51	1590000340	Transistor	RN1202
Q52	1540000150	Transistor	2SD1225M R
Q53	1510000080	Transistor	2SA1048-GR
Q54	1590000350	Transistor	RN1204
Q55	1590000350	Transistor	RN1204
Q56	1530000110	Transistor	2SC2458-GR
Q61	1540000150	Transistor	2SD1225M R
Q62	1520000230	Transistor	2SB909M Q
Q63	1540000150	Transistor	2SD1225M R
Q64	1590000340	Transistor	RN1202
Q65	1590000340	Transistor	RN1202

[MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
Q66	1590000340	Transistor	RN1202
Q67	1590000360	Transistor	RN2202
D1	1710000050	Diode	1SS53
D2	1710000050	Diode	1SS53
D3	1710000050	Diode	1SS53
D4	1710000050	Diode	1SS53
D5	1710000050	Diode	1SS53
D6	1710000050	Diode	1SS53
D7	1710000050	Diode	1SS53
D8	1710000050	Diode	1SS53
D9	1710000050	Diode	1SS53
D10	1710000160	Diode	1SS133
D11	1710000160	Diode	1SS133
D12	1710000330	Diode	1K60
D13	1710000330	Diode	1K60
D14	1710000160	Diode	1SS133
D15	1710000050	Diode	1SS53
D16	1710000050	Diode	1SS53
D17	1710000160	Diode	1SS133
D18	1710000050	Diode	1SS53
D19	1710000050	Diode	1SS53
D20	1710000050	Diode	1SS53
D21	1710000050	Diode	1SS53
D22	1710000160	Diode	1SS133
D23	1710000050	Diode	1SS53
D24	1710000050	Diode	1SS53
D25	1710000050	Diode	1SS53
D26	1710000050	Diode	1SS53
D27	1710000160	Diode	1SS133
D28	1710000050	Diode	1SS53
D29	1710000050	Diode	1SS53
D30	1710000050	Diode	1SS53
D31	1710000050	Diode	1SS53
D32	1710000050	Diode	1SS53
D33	1710000050	Diode	1SS53
D34	1710000160	Diode	1SS133
D35	1710000050	Diode	1SS53
D36	1710000050	Diode	1SS53
D37	1710000050	Diode	1SS53
D38	1710000050	Diode	1SS53
D39	1710000050	Diode	1SS53
D40	1710000050	Diode	1SS53
D41	1710000050	Diode	1SS53
D42	1710000050	Diode	1SS53
D43	1710000050	Diode	1SS53
D44	1710000050	Diode	1SS53
D45	1710000050	Diode	1SS53
D46	1710000050	Diode	1SS53
D47	1710000050	Diode	1SS53
D48	1710000050	Diode	1SS53
D49	1710000050	Diode	1SS53
D50	1710000050	Diode	1SS53
D51	1710000050	Diode	1SS53
D52	1710000050	Diode	1SS53
D55	1710000160	Diode	1SS133
D56	1710000330	Diode	1K60
D57	1710000160	Diode	1SS133
D58	1710000160	Diode	1SS133
D59	1710000330	Diode	1K60
D60	1710000330	Diode	1K60
D61	1710000160	Diode	1SS133
D62	1710000330	Diode	1K60
D63	1710000050	Diode	1SS53
D64	1710000160	Diode	1SS133
D65	1710000160	Diode	1SS133
D66	1710000160	Diode	1SS133
D67	1710000050	Diode	1SS53
D68	1710000050	Diode	1SS53
D69	1710000050	Diode	1SS53
D70	1710000050	Diode	1SS53
D71	1710000050	Diode	1SS53
D72	1710000160	Diode	1SS133
D73	1710000160	Diode	1SS133

[MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
D75	1710000160	Diode	1SS133
D76	1710000160	Diode	1SS133
D77	1710000160	Diode	1SS133
D78	1710000160	Diode	1SS133
D79	1710000160	Diode	1SS133
D80	1730000070	Zener	RD3.9E B2
D81	1710000160	Diode	1SS133
D82	1710000160	Diode	1SS133
D83	1710000160	Diode	1SS133
D84	1710000160	Diode	1SS133
D85	1710000160	Diode	1SS133
D86	1710000160	Diode	1SS133
D87	1710000160	Diode	1SS133
D88	1710000160	Diode	1SS133
D89	1710000160	Diode	1SS133
D90	1710000160	Diode	1SS133
D91	1710000160	Diode	1SS133
D92	1710000160	Diode	1SS133
D93	1710000160	Diode	1SS133
D94	1710000160	Diode	1SS133
D95	1710000160	Diode	1SS133
D96	1710000160	Diode	1SS133
D97	1710000030	Diode	1S1555
D98	1710000160	Diode	1SS133
D99	1710000160	Diode	1SS133
D101	1710000050	Diode	1SS53
D102	1710000050	Diode	1SS53
D103	1710000050	Diode	1SS53
D104	1710000050	Diode	1SS53
D105	1710000050	Diode	1SS53
D106	1710000160	Diode	1SS133
D107	1710000160	Diode	1SS133
F11	2010000500	Filter	70M15B (FL-64)
F12	2010000270	Filter	9M15A (FL-23)
F13	2010000320	Filter	9M22D2 (FL-30)
F14	2010000950	Filter	9M6A1 (FL-116)
X1	6050001800	Crystal	CR-49
L1	6140000080	Coil	LR-20
L2	6180002520	Coil	LAL 02NA R27K
L3	6180001290	Coil	LAL 02NA R33K
L4	6180000860	Coil	LAL 03NA 5R6K
L5	6180000960	Coil	LAL 03NA 102K
L6	6140002050	Coil	LR-224
L7	6150001770	Coil	LS-198
L8	6110001620	Coil	LA-245
L9	6180000900	Coil	LAL 03NA 101K
L10	6110001640	Coil	LA-247
L11	6110001570	Coil	LA-237
L12	6180000710	Coil	LAL 03NA R33M
L13	6180000690	Coil	LAL 03NA R22M
L14	6150000990	Coil	LS-114
L16	6150002430	Coil	LS-254
L17	6150002430	Coil	LS-254
L18	6140002060	Coil	LR-225
L19	6140002060	Coil	LR-225
L20	6180000900	Coil	LAL 03NA 101K
L21	6150001640	Coil	LS-180B
L22	6150000700	Coil	LS-90A
L23	6150000700	Coil	LS-90A
L24	6180000950	Coil	LAL 03NA 150K
L25	6150001590	Coil	LS-175
L26	6150001590	Coil	LS-175
L27	6140000640	Coil	LR-86
L28	6140001540	Coil	LR-169
L29	6110001640	Coil	LA-247
L30	6110001570	Coil	LA-237
L31	6140002050	Coil	LR-224
L32	6180000880	Coil	LAL 03NA 100K
L33	6150001770	Coil	LS-198

[MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
L34	6150002430	Coil	LS-254
L35	6150002430	Coil	LS-254
L36	6150000990	Coil	LS-114
L37	6150001470	Coil	LS-163
L38	6180000940	Coil	LAL 03NA 270K
L39	6180000930	Coil	LAL 03NA 220K
L40	6180000900	Coil	LAL 03NA 101K
L41	6180000900	Coil	LAL 03NA 101K
L42	6180000850	Coil	LAL 03NA 4R7K
L43	6180000840	Coil	LAL 03NA 3R9K
L44	6180000900	Coil	LAL 03NA 101K
L45	6180000870	Coil	LAL 03NA 6R8K
L46	6180000850	Coil	LAL 03NA 4R7K
L47	6180000900	Coil	LAL 03NA 101K
L48	6180000820	Coil	LAL 03NA 2R7M
L49	6180000810	Coil	LAL 03NA 2R2M
L50	6180000820	Coil	LAL 03NA 2R7M
L51	6180000830	Coil	LAL 03NA 3R3K
L52	6180000900	Coil	LAL 03NA 101K
L53	6180000800	Coil	LAL 03NA 1R8M
L54	6180000780	Coil	LAL 03NA 1R2M
L55	6180000790	Coil	LAL 03NA 1R5M
L56	6180000790	Coil	LAL 03NA 1R5M
L57	6180000900	Coil	LAL 03NA 101K
L58	6180000780	Coil	LAL 03NA 1R2M
L59	6180000770	Coil	LAL 03NA 1R0M
L60	6180000760	Coil	LAL 03NA R82M
L61	6180000760	Coil	LAL 03NA R82M
L62	6180000900	Coil	LAL 03NA 101K
L63	6180000760	Coil	LAL 03NA R82M
L64	6180000750	Coil	LAL 03NA R68M
L65	6180000750	Coil	LAL 03NA R68M
L66	6180000740	Coil	LAL 03NA R56M
L67	6180000900	Coil	LAL 03NA 101K
L68	6180000730	Coil	LAL 03NA R47M
L69	6180000730	Coil	LAL 03NA R47M
L70	6180000730	Coil	LAL 03NA R47M
L71	6180000730	Coil	LAL 03NA R47M
L72	6180000900	Coil	LAL 03NA 101K
L73	6180000700	Coil	LAL 03NA R27M
L74	6180000700	Coil	LAL 03NA R27M
L75	6180000710	Coil	LAL 03NA R33M
L76	6180001290	Coil	LAL 02NA R33K
L77	6150001590	Coil	LS-175
L78	6150001470	Coil	LS-163
L79	6150001590	Coil	LS-175
L80	6170000140	Coil	LW-15
L81	6180000690	Coil	LAL 03NA R22M
L82	6150001220	Coil	LS-134
L83	6150001210	Coil	LS-133A
L85	6180000900	Coil	LAL 03NA 101K
L86	6180000900	Coil	LAL 03NA 101K
L87	6180000900	Coil	LAL 03NA 101K
L88	6180000880	Coil	LAL 03NA 100K
L89	6180000950	Coil	LAL 03NA 150K
L90	6180000950	Coil	LAL 03NA 150K
L91	6180000900	Coil	LAL 03NA 101K
L92	6180000900	Coil	LAL 03NA 101K
L93	6910000670	Coil	BT01RN1-A61-001
L94	6180000900	Coil	LAL 03NA 101K
L95	6180000900	Coil	LAL 03NA 101K
L96	6910000670	Coil	BT01RN1-A61-001
L97	6180000900	Coil	LAL 03NA 101K
L98	6910000670	Coil	BT01RN1-A61-001
L99	6180000900	Coil	LAL 03NA 101K
L100	6180000900	Coil	LAL 03NA 101K
L101	6180000900	Coil	LAL 03NA 101K
L102	6910000670	Coil	BT01RN1-A61-001
L103	6180000900	Coil	LAL 03NA 101K
L104	6180002460	Coil	LAL 02KR 150K
L111	6150001770	Coil	LS-198
L112	6150001770	Coil	LS-198
L114	6170000230	Coil	LW-25
L115	6180000900	Coil	LAL 03NA 101K
L116	6180000760	Coil	LAL 03NA R82M

[MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
L117	6180000760	Coil	LAL 03NA R82M
R1	7010004150	Resistor	R20J 470 Ω
R2	7010003960	Resistor	R20J 12 Ω
R3	7010003360	Resistor	ELR20J 470 Ω
R4	7010000950	Resistor	R25J 22 Ω
R5	7010004310	Resistor	R20J 8.2 kΩ
R6	7010003920	Resistor	R20J 5.6 Ω
R7	7010004170	Resistor	R20J 680 Ω
R8	7010003250	Resistor	ELR20J 56 Ω
R9	7010003660	Resistor	ELR20J 100 kΩ
R10	7010003660	Resistor	ELR20J 100 kΩ
R11	7010003530	Resistor	ELR20J 10 kΩ
R12	7010003240	Resistor	ELR20J 47 Ω
R13	7010003160	Resistor	ELR20J 10 Ω
R14	7010004170	Resistor	R20J 680 Ω
R15	7010003490	Resistor	ELR20J 5.6 kΩ
R16	7010003260	Resistor	ELR20J 68 Ω
R17	7010004070	Resistor	R20J 100 Ω
R18	7010004300	Resistor	R20J 6.8 kΩ
R19	7010000790	Resistor	R25J 1 Ω
R20	7010004230	Resistor	R20J 2.2 kΩ
R21	7010003510	Resistor	ELR20J 6.8 kΩ
R22	7010004090	Resistor	R20J 150 Ω
R23	7010004270	Resistor	R20J 4.7 kΩ
R24	7010003330	Resistor	ELR20J 270 Ω
R25	7010003330	Resistor	ELR20J 270 Ω
R26	7010003190	Resistor	ELR20J 18 Ω
R27	7010003460	Resistor	ELR20J 3.3 kΩ
R28	7010004230	Resistor	R20J 2.2 kΩ
R29	7010004230	Resistor	R20J 2.2 kΩ
R30	7010001190	Resistor	R25J 2.2 kΩ
R31	7010003320	Resistor	ELR20J 220 Ω
R32	7010000990	Resistor	R25J 47 Ω
R33	7010003740	Resistor	ELR20J 470 kΩ
R34	7010003580	Resistor	ELR20J 22 kΩ
R35	7510000110	Thermistor	ERT-D2FGL251S
R36	7010004130	Resistor	R20J 330 Ω
R37	7010003280	Resistor	ELR20J 100 Ω
R38	7010004450	Resistor	R20J 100 kΩ
R39	7010003280	Resistor	ELR20J 100 Ω
R40	7010004070	Resistor	R20J 100 Ω
R41	7010003950	Resistor	R20J 10 Ω
R42	7010003480	Resistor	ELR20J 4.7 kΩ
R43	7010003660	Resistor	ELR20J 100 kΩ
R45	7010003620	Resistor	ELR20J 47 kΩ
R46	7010003660	Resistor	ELR20J 100 kΩ
R47	7010003530	Resistor	ELR20J 10 kΩ
R48	7010003510	Resistor	ELR20J 6.8 kΩ
R49	7010004130	Resistor	R20J 330 Ω
R50	7010003580	Resistor	ELR20J 22 kΩ
R51	7010003400	Resistor	ELR20J 1 kΩ
R52	7010004320	Resistor	R20J 10 kΩ
R53	7010004320	Resistor	R20J 10 kΩ
R54	7010004230	Resistor	R20J 2.2 kΩ
R55	7010004230	Resistor	R20J 2.2 kΩ
R56	7010003460	Resistor	ELR20J 3.3 kΩ
R57	7010004230	Resistor	R20J 2.2 kΩ
R58	7010004070	Resistor	R20J 100 Ω
R59	7010004230	Resistor	R20J 2.2 kΩ
R60	7010003440	Resistor	ELR20J 2.2 kΩ
R61	7010004230	Resistor	R20J 2.2 kΩ
R62	7010003440	Resistor	ELR20J 2.2 kΩ
R63	7010001030	Resistor	R25J 100 Ω
R64	7010004230	Resistor	R20J 2.2 kΩ
R65	7010001110	Resistor	R25J 470 Ω
R66	7010004110	Resistor	R20J 220 Ω
R67	7010003990	Resistor	R20J 22 Ω
R68	7010003320	Resistor	ELR20J 220 Ω
R69	7010000870	Resistor	R25J 4.7 Ω
R70	7010003440	Resistor	ELR20J 2.2 kΩ
R71	7010003400	Resistor	ELR20J 1 kΩ
R72	7010003400	Resistor	ELR20J 1 kΩ
R73	7010003360	Resistor	ELR20J 470 Ω

[MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R74	7010003360	Resistor	ELR20J 470 Ω
R75	7010003530	Resistor	ELR20J 10 kΩ
R76	7010004030	Resistor	R20J 47 Ω
R77	7010004090	Resistor	R20J 150 Ω
R78	7010001530	Resistor	R25J 1 MΩ
R79	7010003990	Resistor	R20J 22 Ω
R80	7010004090	Resistor	R20J 150 Ω
R81	7010000990	Resistor	R25J 47 Ω
R82	7010003440	Resistor	ELR20J 2.2 kΩ
R83	7010004230	Resistor	R20J 2.2 kΩ
R84	7010004030	Resistor	R20J 47 Ω
R85	7310000750	Trimmer	RH0651C14J2WA (103)
R86	7010004070	Resistor	R20J 100 Ω
R87	7010004950	Resistor	R20J 1.5 MΩ
R88	7010003360	Resistor	ELR20J 470 Ω
R89	7510000100	Thermistor	ERT-D2FGL601S
R90	7010003530	Resistor	ELR20J 10 kΩ
R91	7010004030	Resistor	R20J 47 Ω
R92	7010003340	Resistor	ELR20J 330 Ω
R93	7010001110	Resistor	R25J 470 Ω
R94	7010000330	Resistor	ELR25J 470 Ω
R95	7010004070	Resistor	R20J 100 Ω
R96	7010004070	Resistor	R20J 100 Ω
R97	7010004070	Resistor	R20J 100 Ω
R98	7010004070	Resistor	R20J 100 Ω
R99	7010004070	Resistor	R20J 100 Ω
R100	7010004070	Resistor	R20J 100 Ω
R101	7410000180	Resistor Array	RMX- 8 103K
R102	7010003350	Resistor	ELR20J 390 Ω
R103	7010004040	Resistor	R20J 56 Ω
R104	7010003620	Resistor	ELR20J 47 kΩ
R105	7010000870	Resistor	R25J 4.7 Ω
R106	7010004270	Resistor	R20J 4.7 kΩ
R107	7010003740	Resistor	ELR20J 470 kΩ
R108	7010004370	Resistor	R20J 22 kΩ
R109	7010004420	Resistor	R20J 56 kΩ
R110	7310000750	Trimmer	RH0651C14J2WA (103)
R111	7010004320	Resistor	R20J 10 kΩ
R112	7010001030	Resistor	R25J 100 Ω
R113	7010003820	Resistor	ELR20J 3.3 MΩ
R114	7010004570	Resistor	R20J 1 MΩ
R115	7010004370	Resistor	R20J 22 kΩ
R116	7310000750	Trimmer	RH0651C14J2WA (103)
R117	7010003580	Resistor	ELR20J 22 kΩ
R118	7010005170	Resistor	R20J 4.7 MΩ
R119	7010003530	Resistor	ELR20J 10 kΩ
R120	7010004070	Resistor	R20J 100 Ω
R121	7010004320	Resistor	R20J 10 kΩ
R122	7010004250	Resistor	R20J 3.3 kΩ
R123	7010003360	Resistor	ELR20J 470 Ω
R124	7010003480	Resistor	ELR20J 4.7 kΩ
R125	7010003550	Resistor	ELR20J 15 kΩ
R126	7010003510	Resistor	ELR20J 6.8 kΩ
R127	7010003640	Resistor	ELR20J 68 kΩ
R128	7010003660	Resistor	ELR20J 100 kΩ
R129	7010003400	Resistor	ELR20J 1 kΩ
R130	7010004150	Resistor	R20J 470 Ω
R131	7010003700	Resistor	ELR20J 220 kΩ
R132	7010004340	Resistor	R20J 15 kΩ
R133	7010004300	Resistor	R20J 6.8 kΩ
R134	7010004250	Resistor	R20J 3.3 kΩ
R135	7010003240	Resistor	ELR20J 47 Ω
R136	7010004030	Resistor	R20J 47 Ω
R137	7010004070	Resistor	R20J 100 Ω
R138	7310000740	Trimmer	RH0651CS3J2KA (472)
R139	7010003530	Resistor	ELR20J 10 kΩ
R140	7510000120	Thermistor	ERT-D2FGL332S
R141	7010004070	Resistor	R20J 100 Ω
R142	7010003300	Resistor	ELR20J 150 Ω
R143	7010004150	Resistor	R20J 470 Ω
R144	7010004410	Resistor	R20J 47 kΩ
R145	7010001030	Resistor	R25J 100 Ω
R146	7010004230	Resistor	R20J 2.2 kΩ
R147	7010003440	Resistor	ELR20J 2.2 kΩ
R148	7010003530	Resistor	ELR20J 10 kΩ

**[MAIN UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION
R149	7010003830	Resistor R20J 1 Ω
R150	7010003300	Resistor ELR20J 150 Ω
R151	7010003400	Resistor ELR20J 1 kΩ
R152	7010003530	Resistor ELR20J 10 kΩ
R153	7010004320	Resistor R20J 10 kΩ
R154	7010003530	Resistor ELR20J 10 kΩ
R155	7010004320	Resistor R20J 10 kΩ
R156	7010004190	Resistor R20J 1 kΩ
R157	7010003480	Resistor ELR20J 4.7 kΩ
R158	7010001150	Resistor R25J 1 kΩ
R159	7010003400	Resistor ELR20J 1 kΩ
R160	7010004390	Resistor R20J 33 kΩ
R161	7010003990	Resistor R20J 22 Ω
R162	7010003400	Resistor ELR20J 1 kΩ
R164	7010003660	Resistor ELR20J 100 kΩ
R165	7010004070	Resistor R20J 100 Ω
R166	7010004450	Resistor R20J 100 kΩ
R167	7010001400	Resistor R25J 100 kΩ
R168	7010003660	Resistor ELR20J 100 kΩ
R169	7010003440	Resistor ELR20J 2.2 kΩ
R170	7010004230	Resistor R20J 2.2 kΩ
R171	7010003440	Resistor ELR20J 2.2 kΩ
R172	7010004230	Resistor R20J 2.2 kΩ
R173	7010003480	Resistor ELR20J 4.7 kΩ
R174	7010004260	Resistor R20J 3.9 kΩ
R175	7010003420	Resistor ELR20J 1.5 kΩ
R176	7010003660	Resistor ELR20J 100 kΩ
R177	7310000750	Trimmer RH0651C14J2WA (103)
R178	7010003660	Resistor ELR20J 100 kΩ
R179	7310000750	Trimmer RH0651C14J2WA (103)
R180	7010004490	Resistor R20J 220 kΩ
R181	7010003440	Resistor ELR20J 2.2 kΩ
R182	7010003480	Resistor ELR20J 4.7 kΩ
R183	7010003530	Resistor ELR20J 10 kΩ
R184	7010004230	Resistor R20J 2.2 kΩ
R185	7010003720	Resistor ELR20J 330 kΩ
R186	7310000790	Trimmer RH0651C15J1UA (104)
R187	7010004410	Resistor R20J 47 kΩ
R188	7010003620	Resistor ELR20J 47 kΩ
R189	7010001110	Resistor R25J 470 Ω
R190	7010004190	Resistor R20J 1 kΩ
R191	7010004410	Resistor R20J 47 kΩ
R192	7010003620	Resistor ELR20J 47 kΩ
R193	7010004390	Resistor R20J 33 kΩ
R194	7310000750	Trimmer RH0651C14J2WA (103)
R195	7010003600	Resistor ELR20J 33 kΩ
R196	7010003780	Resistor ELR20J 1 MΩ
R197	7010004150	Resistor R20J 470 Ω
R198	7010004570	Resistor R20J 1 MΩ
R199	7010005220	Resistor ELR20J 10 MΩ
R200	7010004570	Resistor R20J 1 MΩ
R201	7010004270	Resistor R20J 4.7 kΩ
R202	7010004150	Resistor R20J 470 Ω
R203	7010004430	Resistor R20J 68 kΩ
R204	7010003720	Resistor ELR20J 330 kΩ
R205	7010003360	Resistor ELR20J 470 Ω
R206	7010003650	Resistor ELR20J 82 kΩ #03
R206	7010003650	Resistor ELR20J 82 kΩ #04
R206	7010003480	Resistor ELR20J 4.7 kΩ #01
R206	7010003480	Resistor ELR20J 4.7 kΩ #02
R207	7010003510	Resistor ELR20J 6.8 kΩ
R208	7310000740	Trimmer RH0651CS3J2KA (472)
R209	7010003530	Resistor ELR20J 10 kΩ
R210	7310000790	Trimmer RH0651C15J1UA (104)
R211	7010004530	Resistor R20J 470 kΩ
R212	7010003480	Resistor ELR20J 4.7 kΩ
R213	7010003810	Resistor ELR20J 2.2 MΩ
R214	7010003360	Resistor ELR20J 470 Ω
R215	7010001050	Resistor R25J 150 Ω
R216	7010003530	Resistor ELR20J 10 kΩ
R217	7010004450	Resistor R20J 100 kΩ
R218	7010004190	Resistor R20J 1 kΩ
R220	7010003740	Resistor ELR20J 470 kΩ
R221	7010003740	Resistor ELR20J 470 kΩ
R222	7010003530	Resistor ELR20J 10 kΩ

**[MAIN UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION
R223	7010004070	Resistor R20J 100 Ω
R224	7010003530	Resistor ELR20J 10 kΩ
R225	7010000090	Resistor ELR25J 4.7 Ω
R226	7010000370	Resistor ELR25J 1 kΩ
R227	7010000090	Resistor ELR25J 4.7 Ω
R228	7010000370	Resistor ELR25J 1 kΩ
R229	7010000090	Resistor ELR25J 4.7 Ω
R230	7010004190	Resistor R20J 1 kΩ
R231	7410000140	Resistor Array RMX- 6 472K
R232	7010004110	Resistor R20J 220 Ω
R233	7010003480	Resistor ELR20J 4.7 kΩ
R234	7010003480	Resistor ELR20J 4.7 kΩ
R235	7010003490	Resistor ELR20J 5.6 kΩ
R236	7010004310	Resistor R20J 8.2 kΩ
R237	7010003380	Resistor ELR20J 680 Ω
R238	7310000860	Trimmer RH1051D13J0JA (102)
R239	7010003540	Resistor ELR20J 12 kΩ
R240	7010003440	Resistor ELR20J 2.2 kΩ
R241	7310000750	Trimmer RH0651C14J2WA (103)
R242	7010004320	Resistor R20J 10 kΩ
R243	7010001030	Resistor R25J 100 Ω
R244	7210001540	Variable Resistor RK09K1110AEFA
R245	7010004320	Resistor R20J 10 kΩ
R246	7010004190	Resistor R20J 1 kΩ
R247	7010004300	Resistor R20J 6.8 kΩ
R248	7010004570	Resistor R20J 1 MΩ
R249	7010001030	Resistor R25J 100 Ω
R250	7010004030	Resistor R20J 47 Ω
R251	7010003440	Resistor ELR20J 2.2 kΩ
R252	7010003660	Resistor ELR20J 100 kΩ
R253	7010003660	Resistor ELR20J 100 kΩ
R254	7010001280	Resistor R25J 10 kΩ
R255	7010004190	Resistor R20J 1 kΩ
R256	7010004270	Resistor R20J 4.7 kΩ
R257	7010003480	Resistor ELR20J 4.7 kΩ
R258	7010001360	Resistor R25J 47 kΩ
R259	7010004270	Resistor R20J 4.7 kΩ
R260	7010003400	Resistor ELR20J 1 kΩ
R261	7010003360	Resistor ELR20J 470 Ω
R262	7010003460	Resistor ELR20J 3.3 kΩ
R263	7010004230	Resistor R20J 2.2 kΩ
R264	7010003580	Resistor ELR20J 22 kΩ
R265	7010003530	Resistor ELR20J 10 kΩ
R266	7010001150	Resistor R25J 1 kΩ
R267	7010003480	Resistor ELR20J 4.7 kΩ
R268	7010003360	Resistor ELR20J 470 Ω
R269	7010003120	Resistor ELR20J 4.7 Ω
R270	7010004300	Resistor R20J 6.8 kΩ
R271	7010004320	Resistor R20J 10 kΩ
R272	7010003380	Resistor ELR20J 680 Ω
R273	7010004450	Resistor R20J 100 kΩ
R274	7010004320	Resistor R20J 10 kΩ
R275	7010003040	Resistor ELR20J 1 Ω
R281	7010004210	Resistor R20J 1.5 kΩ
R282	7010003360	Resistor ELR20J 470 Ω
R283	7010004210	Resistor R20J 1.5 kΩ
R284	7010004140	Resistor R20J 390 Ω
R285	7010003250	Resistor ELR20J 56 Ω
R287	7010003480	Resistor ELR20J 4.7 kΩ
R288	7010004190	Resistor R20J 1 kΩ
R289	7010003490	Resistor ELR20J 5.6 kΩ
R290	7010004190	Resistor R20J 1 kΩ
R291	7310000790	Trimmer RH0651C15J1UA (104)
R292	7010003530	Resistor ELR20J 10 kΩ
R293	7310000750	Trimmer RH0651C14J2WA (103)
R294	7010004270	Resistor R20J 4.7 kΩ
C1	4010000520	Ceramic DD108 B 472K 50V
C2	4040000260	Barrier Layer UZE 08X 104M
C3	4010000410	Ceramic DD107 SL 331J 50V
C4	4010000260	Ceramic DD104 SL 470J 50V
C5	4010000380	Ceramic DD107 SL 221J 50V
C6	4010000150	Ceramic DD104 SL 150J 50V
C7	4010000350	Ceramic DD106 SL 151J 50V

[MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
C8	4040000110	Barrier Layer UAT 04X 222K
C9	4040000260	Barrier Layer UZE 08X 104M
C10	4040000130	Barrier Layer UAT 05X 332K
C11	4010000050	Ceramic DD104 SL 030C 50V
C12	4020000730	Cylinder UP050 SL 150J
C13	4010000340	Ceramic DD105 SL 121J 50V
C14	4010000520	Ceramic DD108 B 472K 50V
C15	4010000520	Ceramic DD108 B 472K 50V
C16	4010000020	Ceramic DD104 SL 010C 50V
C17	4010000150	Ceramic DD104 SL 150J 50V
C18	4010000080	Ceramic DD104 SL 060D 50V
C19	4010000010	Ceramic DD104 SL 0R5C 50V
C20	4010000500	Ceramic DD104 B 102K 50V
C21	4010000330	Ceramic DD105 SL 101J 50V
C23	4010000220	Ceramic DD104 SL 330J 50V
C25	4010000500	Ceramic DD104 B 102K 50V
C26	4010000100	Ceramic DD104 SL 080D 50V
C27	4040000150	Barrier Layer UAT 05X 472K
C28	4010000520	Ceramic DD108 B 472K 50V
C29	4010000500	Ceramic DD104 B 102K 50V
C30	4010000520	Ceramic DD108 B 472K 50V
C31	4010003320	Ceramic DD104 UJ 080D 50V
C32	4010003320	Ceramic DD104 UJ 080D 50V
C33	4010000300	Ceramic DD104 SL 680J 50V
C35	4010000520	Ceramic DD108 B 472K 50V
C36	4010000430	Ceramic DD109 SL 471J 50V
C37	4010000340	Ceramic DD105 SL 121J 50V
C38	4020000030	Cylinder UP125 SL 2R2K
C39	4010000070	Ceramic DD104 SL 050C 50V
C40	4040000260	Barrier Layer UZE 08X 104M
C42	4040000260	Barrier Layer UZE 08X 104M
C43	4010000520	Ceramic DD108 B 472K 50V
C44	4010000520	Ceramic DD108 B 472K 50V
C46	4010000520	Ceramic DD108 B 472K 50V
C47	4010000200	Ceramic DD104 SL 270J 50V
C49	4010000520	Ceramic DD108 B 472K 50V
C50	4040000150	Barrier Layer UAT 05X 472K
C51	4510001100	Electrolytic 16 MS7 10 µF
C52	4040000150	Barrier Layer UAT 05X 472K
C53	4040000150	Barrier Layer UAT 05X 472K
C54	4040000150	Barrier Layer UAT 05X 472K
C55	4010000520	Ceramic DD108 B 472K 50V
C56	4010000520	Ceramic DD108 B 472K 50V
C58	4010000340	Ceramic DD105 SL 121J 50V
C59	4010000180	Ceramic DD104 SL 220J 50V
C60	4510001100	Electrolytic 16 MS7 10 µF
C61	4510002640	Electrolytic 25 SS 47 µF
C62	4040000260	Barrier Layer UZE 08X 104M
C64	4010000520	Ceramic DD108 B 472K 50V
C65	4010000520	Ceramic DD108 B 472K 50V
C66	4040000260	Barrier Layer UZE 08X 104M
C67	4040000150	Barrier Layer UAT 05X 472K
C68	4040000150	Barrier Layer UAT 05X 472K
C69	4040000260	Barrier Layer UZE 08X 104M
C70	4040000250	Barrier Layer UAT 08X 473M
C71	4040000250	Barrier Layer UAT 08X 473M
C72	4010000330	Ceramic DD105 SL 101J 50V
C73	4040000250	Barrier Layer UAT 08X 473M
C74	4040000250	Barrier Layer UAT 08X 473M
C75	4040000250	Barrier Layer UAT 08X 473M
C77	4010000160	Ceramic DD104 SL 180J 50V
C78	4010000340	Ceramic DD105 SL 121J 50V
C79	4010000280	Ceramic DD104 SL 560J 50V
C80	4010000280	Ceramic DD104 SL 560J 50V
C81	4040000260	Barrier Layer UZE 08X 104M
C82	4010000120	Ceramic DD104 SL 100D 50V
C83	4010004840	Ceramic DD305 F 104Z 12V
C84	4010004840	Ceramic DD305 F 104Z 12V
C85	4010000500	Ceramic DD104 B 102K 50V
C86	4040000260	Barrier Layer UZE 08X 104M
C87	4010000070	Ceramic DD104 SL 050C 50V
C89	4010000100	Ceramic DD104 SL 080D 50V
C90	4010000100	Ceramic DD104 SL 080D 50V
C91	4040000260	Barrier Layer UZE 08X 104M
C92	4010000520	Ceramic DD108 B 472K 50V

[MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
C93	4010000080	Ceramic DD104 SL 060D 50V
C94	4010000520	Ceramic DD108 B 472K 50V
C95	4510001150	Electrolytic 50 MS7 R47 µF
C96	4010000520	Ceramic DD108 B 472K 50V
C97	4510001180	Electrolytic 50 MS7 3R3 µF
C99	4010000520	Ceramic DD108 B 472K 50V
C100	4510002640	Electrolytic 25 SS 47 µF
C101	4040000260	Barrier Layer UZE 08X 104M
C102	4010000500	Ceramic DD104 B 102K 50V
C109	4510001100	Electrolytic 16 MS7 10 µF
C110	4310000060	Mylar F2D 50V 223K
C112	4510001100	Electrolytic 16 MS7 10 µF
C113	4510001160	Electrolytic 50 MS7 1 µF
C114	4010000520	Ceramic DD108 B 472K 50V
C115	4510002640	Electrolytic 25 SS 47 µF
C116	4010000330	Ceramic DD105 SL 101J 50V
C117	4010000350	Ceramic DD106 SL 151J 50V
C118	4010000520	Ceramic DD108 B 472K 50V
C119	4010000520	Ceramic DD108 B 472K 50V
C120	4040000260	Barrier Layer UZE 08X 104M
C121	4010000520	Ceramic DD108 B 472K 50V
C122	4010000520	Ceramic DD108 B 472K 50V
C123	4010000380	Ceramic DD107 SL 221J 50V
C124	4510001140	Electrolytic 50 MS7 R22 µF
C125	4040000250	Barrier Layer UAT 08X 473M
C126	4010000520	Ceramic DD108 B 472K 50V
C127	4010000520	Ceramic DD108 B 472K 50V
C128	4010000350	Ceramic DD106 SL 151J 50V
C129	4010000180	Ceramic DD104 SL 220J 50V
C130	4010000520	Ceramic DD108 B 472K 50V
C132	4010000520	Ceramic DD108 B 472K 50V
C133	4010000520	Ceramic DD108 B 472K 50V
C135	4010000520	Ceramic DD108 B 472K 50V
C136	4010000520	Ceramic DD108 B 472K 50V
C137	4010000180	Ceramic DD104 SL 220J 50V
C138	4010000520	Ceramic DD108 B 472K 50V
C139	4010000500	Ceramic DD104 B 102K 50V
C140	4010000520	Ceramic DD108 B 472K 50V
C141	4010000520	Ceramic DD108 B 472K 50V
C142	4010000080	Ceramic DD104 SL 060D 50V
C143	4040000080	Barrier Layer UAT 04X 122K
C144	4040000170	Barrier Layer UAT 05X 682K
C145	4040000460	Barrier Layer RAU 08SA 821K
C146	4040000210	Barrier Layer UAT 06X 153K
C147	4040000090	Barrier Layer UAT 04X 152K
C148	4040000070	Barrier Layer UAT 04X 102K
C149	4020000630	Cylinder UP050 B 101K
C150	4040000070	Barrier Layer UAT 04X 102K
C151	4040000250	Barrier Layer UAT 08X 473M
C152	4040000260	Barrier Layer UZE 08X 104M
C153	4040000260	Barrier Layer UZE 08X 104M
C154	4010000520	Ceramic DD108 B 472K 50V
C155	4040000090	Barrier Layer UAT 04X 152K
C156	4040000110	Barrier Layer UAT 04X 222K
C157	4010000410	Ceramic DD107 SL 331J 50V
C158	4010000520	Ceramic DD108 B 472K 50V
C159	4040000080	Barrier Layer UAT 04X 122K
C160	4010000360	Ceramic DD106 SL 181J 50V
C161	4040000080	Barrier Layer UAT 04X 122K
C162	4040000110	Barrier Layer UAT 04X 222K
C163	4040000210	Barrier Layer UAT 06X 153K
C164	4040000080	Barrier Layer UAT 04X 122K
C165	4040000250	Barrier Layer UAT 08X 473M
C166	4010000520	Ceramic DD108 B 472K 50V
C167	4010000440	Ceramic DD109 SL 511J 50V
C168	4010000330	Ceramic DD105 SL 101J 50V
C169	4010000430	Ceramic DD109 SL 471J 50V
C170	4040000080	Barrier Layer UAT 04X 122K
C171	4040000160	Barrier Layer UAT 05X 562K
C172	4040000460	Barrier Layer RAU 08SA 821K
C173	4040000250	Barrier Layer UAT 08X 473M
C174	4010000520	Ceramic DD108 B 472K 50V
C175	4010000410	Ceramic DD107 SL 331J 50V
C176	4010000270	Ceramic DD104 SL 510J 50V
C177	4010000410	Ceramic DD107 SL 331J 50V

[MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
C178	4010000410	Ceramic DD107 SL 331J 50V
C179	4040000320	Barrier Layer UAT 05V 272K
C180	4010000410	Ceramic DD107 SL 331J 50V
C181	4040000250	Barrier Layer UAT 08X 473M
C182	4010000520	Ceramic DD108 B 472K 50V
C183	4010000410	Ceramic DD107 SL 331J 50V
C184	4010000260	Ceramic DD104 SL 470J 50V
C185	4010000380	Ceramic DD107 SL 221J 50V
C186	4010000380	Ceramic DD107 SL 221J 50V
C187	4040000100	Barrier Layer UAT 04X 182K
C188	4010000370	Ceramic DD106 SL 201J 50V
C189	4040000250	Barrier Layer UAT 08X 473M
C190	4010000520	Ceramic DD108 B 472K 50V
C191	4010000380	Ceramic DD107 SL 221J 50V
C192	4010000160	Ceramic DD104 SL 180J 50V
C193	4010000330	Ceramic DD105 SL 101J 50V
C194	4010000380	Ceramic DD107 SL 221J 50V
C195	4040000080	Barrier Layer UAT 04X 122K
C196	4010000350	Ceramic DD106 SL 151J 50V
C197	4040000250	Barrier Layer UAT 08X 473M
C198	4010000520	Ceramic DD108 B 472K 50V
C199	4010000220	Ceramic DD104 SL 330J 50V
C200	4010000340	Ceramic DD105 SL 121J 50V
C201	4010000240	Ceramic DD104 SL 390J 50V
C202	4010000300	Ceramic DD104 SL 680J 50V
C203	4010000340	Ceramic DD105 SL 121J 50V
C204	4040000460	Barrier Layer RAU 08SA 821K
C205	4010000330	Ceramic DD105 SL 101J 50V
C206	4040000250	Barrier Layer UAT 08X 473M
C207	4010000520	Ceramic DD108 B 472K 50V
C208	4530000350	Capacitor Array B8ZC0111-32N
C209	4010000520	Ceramic DD108 B 472K 50V
C210	4510002380	Electrolytic 16 SS 470 $\mu$ F (10X12.5)
C211	4040000260	Barrier Layer UZE 08X 104M
C212	4510003040	Electrolytic 16 SS 100 $\mu$ F
C213	4510000310	Electrolytic 16 MS16 1000 $\mu$ F (12.5X16)
C214	4510002730	Electrolytic 10 SS 100 $\mu$ F
C215	4510002640	Electrolytic 25 SS 47 $\mu$ F
C216	4040000250	Barrier Layer UAT 08X 473M
C217	4510001140	Electrolytic 50 MS7 R22 $\mu$ F
C218	4510002730	Electrolytic 10 SS 100 $\mu$ F
C219	4040000110	Barrier Layer UAT 04X 222K
C220	4310000060	Mylar F2D 50V 223K
C221	4510001100	Electrolytic 16 MS7 10 $\mu$ F
C222	4510002640	Electrolytic 25 SS 47 $\mu$ F
C223	4510001170	Electrolytic 50 MS7 2R2 $\mu$ F
C224	4040000150	Barrier Layer UAT 05X 472K
C225	4510001150	Electrolytic 50 MS7 R47 $\mu$ F
C226	4040000210	Barrier Layer UAT 06X 153K
C227	4010000520	Ceramic DD108 B 472K 50V
C228	4040000150	Barrier Layer UAT 05X 472K
C229	4040000150	Barrier Layer UAT 05X 472K
C230	4010000840	Ceramic DD105 CH 390J 50V
C231	4010001020	Ceramic DD111 CH 221J 50V
C232	4010001020	Ceramic DD111 CH 221J 50V
C233	4010000520	Ceramic DD108 B 472K 50V
C234	4010000520	Ceramic DD108 B 472K 50V
C235	4010000520	Ceramic DD108 B 472K 50V
C236	4040000250	Barrier Layer UAT 08X 473M
C237	4010000180	Ceramic DD104 SL 220J 50V
C238	4010000520	Ceramic DD108 B 472K 50V
C239	4010000520	Ceramic DD108 B 472K 50V
C240	4010000520	Ceramic DD108 B 472K 50V
C241	4010000220	Ceramic DD104 SL 330J 50V
C242	4310000060	Mylar F2D 50V 223K
C243	4310000060	Mylar F2D 50V 223K
C244	4310000060	Mylar F2D 50V 223K
C245	4510001100	Electrolytic 16 MS7 10 $\mu$ F
C246	4510002850	Electrolytic 25 SS 22 $\mu$ F
C247	4040000150	Barrier Layer UAT 05X 472K
C248	4510002640	Electrolytic 25 SS 47 $\mu$ F
C249	4510001160	Electrolytic 50 MS7 1 $\mu$ F
C250	4510001170	Electrolytic 50 MS7 2R2 $\mu$ F
C251	4510001160	Electrolytic 50 MS7 1 $\mu$ F

[MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
C252	4510001160	Electrolytic 50 MS7 1 $\mu$ F
C253	4010000520	Ceramic DD108 B 472K 50V
C254	4010000520	Ceramic DD108 B 472K 50V
C255	4010000520	Ceramic DD108 B 472K 50V
C256	4010000520	Ceramic DD108 B 472K 50V
C257	4010000520	Ceramic DD108 B 472K 50V
C258	4010000330	Ceramic DD105 SL 101J 50V
C259	4010000520	Ceramic DD108 B 472K 50V
C260	4040000260	Barrier Layer UZE 08X 104M
C261	4510001100	Electrolytic 16 MS7 10 $\mu$ F
C262	4040000250	Barrier Layer UAT 08X 473M
C263	4010000500	Ceramic DD104 B 102K 50V
C264	4510001160	Electrolytic 50 MS7 1 $\mu$ F
C265	4040000190	Barrier Layer UAT 05X 103K
C266	4040000190	Barrier Layer UAT 05X 103K
C267	4510001150	Electrolytic 50 MS7 R47 $\mu$ F
C268	4510001150	Electrolytic 50 MS7 R47 $\mu$ F
C269	4510002810	Electrolytic 16 SS 47 $\mu$ F
C270	4040000260	Barrier Layer UZE 08X 104M
C271	4510002810	Electrolytic 16 SS 47 $\mu$ F
C272	4530000350	Capacitor Array B8ZC0111-32N
C273	4510001160	Electrolytic 50 MS7 1 $\mu$ F
C274	4010000460	Ceramic DD104 B 471K 50V
C275	4010000520	Ceramic DD108 B 472K 50V
C276	4510001770	Electrolytic 16 RBP 10 $\mu$ F
C277	4510002740	Electrolytic 10 SS 220 $\mu$ F
C278	4510001120	Electrolytic 25 MS7 4R7 $\mu$ F
C279	4040000150	Barrier Layer UAT 05X 472K
C280	4040000150	Barrier Layer UAT 05X 472K
C281	4010000240	Ceramic DD104 SL 390J 50V
C282	4010000160	Ceramic DD104 SL 180J 50V
C283	4510001150	Electrolytic 50 MS7 R47 $\mu$ F
C284	4010000520	Ceramic DD108 B 472K 50V
C285	4010000520	Ceramic DD108 B 472K 50V
C286	4010000520	Ceramic DD108 B 472K 50V
C287	4010000520	Ceramic DD108 B 472K 50V
C288	4010000520	Ceramic DD108 B 472K 50V
C289	4010000520	Ceramic DD108 B 472K 50V
C290	4010000520	Ceramic DD108 B 472K 50V
C291	4010000430	Ceramic DD109 SL 471J 50V
C292	4010000520	Ceramic DD108 B 472K 50V
C293	4510001140	Electrolytic 50 MS7 R22 $\mu$ F
C294	4610001200	Trimmer CVSSE3001
C295	4010000500	Ceramic DD104 B 102K 50V
C297	4040000250	Barrier Layer UAT 08X 473M
C298	4040000260	Barrier Layer UZE 08X 104M
C299	4040000260	Barrier Layer UZE 08X 104M
C300	4040000250	Barrier Layer UAT 08X 473M
C301	4010000520	Ceramic DD108 B 472K 50V
C311	4040000250	Barrier Layer UAT 08X 473M
C312	4030000910	Ceramic GRM40 CH 120J 50PT
C313	4010000600	Ceramic DD104 CK 010C 50V
C314	4030000910	Ceramic GRM40 CH 120J 50PT
C315	4040000250	Barrier Layer UAT 08X 473M
C316	4010004840	Ceramic DD305 F 104Z 12V
C319	4010000500	Ceramic DD104 B 102K 50V
C320	4610000780	Trimmer CV38D 2001
C321	4020000250	Cylinder UP125 X 472M
C322	4310000090	Mylar F2D 50V 333K
RL1	6330000800	Relay G5A-237P DC12V
RL2	6330000560	Relay OUC-SH-114D
S1	2220000360	Switch ESD-1111212
S2	2230000700	Switch SPPJ31309A [BK IN]
SO1	6510006640	Switch 50864-1
EP1	0910024033	P.C. Board B 2297C (MAIN)

[PLL UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1130000670	IC	μPD4071BC
IC2	1130000970	IC	μPD4030BC
IC3	1130003870	IC	GD4001B
IC4	1130001270	IC	μPD4069UBC
IC5	1130003890	IC	GD4024B
IC6	1110000240	IC	BA222-V
IC7	1110001680	IC	S-8054ALB
IC8	1140001210	IC	HD63A01YORK10P
IC9	1120000970	IC	M54562P
IC10	1180000340	IC	TA78005AP
IC11	1130001360	IC	TC4021BP
IC12	1130003860	IC	MB4052M-G
IC13	1130002960	IC	TC9181P
IC14	1120001620	IC	M74ALS74AP
IC15	1120001620	IC	M74ALS74AP
IC16	1110001320	IC	μPC1037HA
IC17	1110001320	IC	μPC1037HA
IC18	1790000050	IC	ND487C1-3R
IC19	1130000070	IC	TC4028BP
Q1	1530000110	Transistor	2SC2458-GR
Q2	1530000110	Transistor	2SC2458-GR
Q3	1530000110	Transistor	2SC2458-GR
Q4	1530000110	Transistor	2SC2458-GR
Q5	1530000110	Transistor	2SC2458-GR
Q6	1530000110	Transistor	2SC2458-GR
Q7	1530000110	Transistor	2SC2458-GR
Q8	1530000110	Transistor	2SC2458-GR
Q9	1530000110	Transistor	2SC2458-GR
Q10	1530000110	Transistor	2SC2458-GR
Q11	1530000110	Transistor	2SC2458-GR
Q12	1530000940	Transistor	2SC1571G
Q13	1530000110	Transistor	2SC2458-GR
Q14	1530000110	Transistor	2SC2458-GR
Q15	1560000090	FET	2SK192A-GR
Q16	1530000110	Transistor	2SC2458-GR
Q17	1560000090	FET	2SK192A-GR
Q18	1530000110	Transistor	2SC2458-GR
Q19	1560000090	FET	2SK192A-GR
Q20	1530000110	Transistor	2SC2458-GR
Q21	1560000090	FET	2SK192A-GR
Q22	1530000110	Transistor	2SC2458-GR
Q23	1530000150	Transistor	2SC2668-O
Q24	1530000150	Transistor	2SC2668-O
Q25	1590000340	Transistor	RN1202
Q26	1530000150	Transistor	2SC2668-O
Q27	1530000150	Transistor	2SC2668-O
Q29	1560000090	FET	2SK192A-GR
Q30	1530000150	Transistor	2SC2668-O
Q31	1590000360	Transistor	RN2202
Q32	1530000100	Transistor	2SC2458-Y
Q33	1530000110	Transistor	2SC2458-GR
Q34	1530000150	Transistor	2SC2668-O
Q35	1590000340	Transistor	RN1202
Q36	1530000150	Transistor	2SC2668-O
Q37	1510000080	Transistor	2SA1048-GR
Q44	1590000340	Transistor	RN1202
Q45	1530000150	Transistor	2SC2668-O
D1	1710000160	Diode	1SS133
D3	1710000160	Diode	1SS133
D4	1710000160	Diode	1SS133
D5	1710000160	Diode	1SS133
D8	1710000160	Diode	1SS133
D9	1710000160	Diode	1SS133
D10	1730000100	Zener	RD5.1E B2
D11	1710000160	Diode	1SS133
D12	1710000160	Diode	1SS133
D13	1710000160	Diode	1SS133
D14	1710000160	Diode	1SS133
D15	1710000160	Diode	1SS133
D16	1710000160	Diode	1SS133
D17	1710000160	Diode	1SS133

[PLL UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
D18	1710000160	Diode	1SS133
D19	1710000160	Diode	1SS133
D20	1710000160	Diode	1SS133
D21	1710000160	Diode	1SS133
D22	1710000160	Diode	1SS133
D23	1710000160	Diode	1SS133
D24	1710000160	Diode	1SS133
D25	1710000160	Diode	1SS133
D26	1710000160	Diode	1SS133
D27	1710000160	Diode	1SS133
D28	1710000160	Diode	1SS133
D29	1710000050	Diode	1SS53
D30	1710000050	Diode	1SS53
D31	1710000050	Diode	1SS53
D32	1710000050	Diode	1SS53
D33	1710000050	Diode	1SS53
D34	1710000050	Diode	1SS53
D35	1710000160	Diode	1SS133
D36	1710000160	Diode	1SS133
D37	1710000160	Diode	1SS133
D38	1710000160	Diode	1SS133
D39	1710000160	Diode	1SS133
D40	1710000160	Diode	1SS133
D41	1710000160	Diode	1SS133
D42	1710000160	Diode	1SS133
D43	1710000040	Diode	1S953
D44	1710000050	Diode	1SS53
D45	1710000160	Diode	1SS133
D46	1710000160	Diode	1SS133
D47	1710000050	Diode	1SS53
D48	1720000050	Varicap	1SV50E
D49	1710000050	Diode	1SS53
D50	1720000050	Varicap	1SV50E
D51	1710000050	Diode	1SS53
D52	1720000050	Varicap	1SV50E
D53	1710000050	Diode	1SS53
D54	1720000050	Varicap	1SV50E
D55	1710000050	Diode	1SS53
D56	1720000050	Varicap	1SV50E
D60	1710000160	Diode	1SS133
D61	1710000160	Diode	1SS133
D62	1710000160	Diode	1SS133
D64	1710000160	Diode	1SS133
D65	1710000050	Diode	1SS53
D79	1710000160	Diode	1SS133
D80	1710000050	Diode	1SS53
D81	1710000030	Diode	1S1555
X1	6060000120	Crystal	CSA4.91MG
X2	6050001520	Crystal	CR-21
L1	6180000880	Coil	LAL 03NA 100K
L2	6140000580	Coil	LR-79
L3	6130000990	Coil	LB-135
L4	6170000180	Coil	LW-19
L5	6140000580	Coil	LR-79
L6	6130000990	Coil	LB-135
L7	6170000180	Coil	LW-19
L8	6140000580	Coil	LR-79
L9	6130000990	Coil	LB-135
L10	6170000180	Coil	LW-19
L11	6140000580	Coil	LR-79
L12	6130000990	Coil	LB-135
L13	6170000180	Coil	LW-19
L14	6180000900	Coil	LAL 03NA 101K
L15	6180000900	Coil	LAL 03NA 101K
L16	6180000740	Coil	LAL 03NA R56M
L17	6110001560	Coil	LA-236
L18	6110001560	Coil	LA-236
L19	6110001550	Coil	LA-235
L20	6180000900	Coil	LAL 03NA 101K
L21	6180000880	Coil	LAL 03NA 100K
L22	6180000880	Coil	LAL 03NA 100K

[PLL UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
L23	6180000720	Coil	LAL 03NA R39M
L24	6180000700	Coil	LAL 03NA R27M
L25	6180000690	Coil	LAL 03NA R22M
L26	6180000960	Coil	LAL 03NA 102K
L27	6180000900	Coil	LAL 03NA 101K
L28	6180000900	Coil	LAL 03NA 101K
L29	6180000900	Coil	LAL 03NA 101K
L30	6110001650	Coil	LA-248
L31	6170000180	Coil	LW-19
L32	6180000850	Coil	LAL 03NA 4R7K
L33	6910000670	Coil	BT01RN1-A61-001
L34	6170000180	Coil	LW-19
L35	6150000760	Coil	LS-94
L36	6180000900	Coil	LAL 03NA 101K
L37	6180000900	Coil	LAL 03NA 101K
L38	6150000990	Coil	LS-114
L39	6150000990	Coil	LS-114
L40	6910003570	Coil	2943-666663
L41	6110001640	Coil	LA-247
L42	6180000880	Coil	LAL 03NA 100K
L43	6180000900	Coil	LAL 03NA 101K
L44	6910000670	Coil	BT01RN1-A61-001
L45	6180000960	Coil	LAL 03NA 102K
L46	6910003570	Coil	2943-666663
L47	6180000900	Coil	LAL 03NA 101K
L48	6180000960	Coil	LAL 03NA 102K
L49	6110001560	Coil	LA-236
L50	6180000960	Coil	LAL 03NA 102K
L51	6180000960	Coil	LAL 03NA 102K
L52	6150001770	Coil	LS-198
L53	6150001770	Coil	LS-198
L54	6150001770	Coil	LS-198
L55	6110001630	Coil	LA-246
L56	6140002050	Coil	LR-224
L57	6140002050	Coil	LR-224
L58	6150002880	Coil	LS-302
L59	6150002880	Coil	LS-302
L60	6150002880	Coil	LS-302
L61	6150002880	Coil	LS-302
L62	6180000880	Coil	LAL 03NA 100K
R1	7010003780	Resistor	ELR20J 1 MΩ
R2	7010003550	Resistor	ELR20J 15 kΩ
R3	7010004320	Resistor	R20J 10 kΩ
R4	7010003810	Resistor	ELR20J 2.2 MΩ
R5	7010003780	Resistor	ELR20J 1 MΩ
R6	7010003550	Resistor	ELR20J 15 kΩ
R7	7010001400	Resistor	R25J 100 kΩ
R8	7010003700	Resistor	ELR20J 220 kΩ
R9	7010003660	Resistor	ELR20J 100 kΩ
R10	7010003700	Resistor	ELR20J 220 kΩ
R11	7010003660	Resistor	ELR20J 100 kΩ
R12	7010003660	Resistor	ELR20J 100 kΩ
R13	7010004320	Resistor	R20J 10 kΩ
R14	7010001280	Resistor	R25J 10 kΩ
R15	7010004210	Resistor	R20J 1.5 kΩ
R16	7010003530	Resistor	ELR20J 10 kΩ
R17	7010003620	Resistor	ELR20J 47 kΩ
R18	7010004450	Resistor	R20J 100 kΩ
R19	7010003620	Resistor	ELR20J 47 kΩ
R20	7010003620	Resistor	ELR20J 47 kΩ
R21	7010004320	Resistor	R20J 10 kΩ
R22	7010003620	Resistor	ELR20J 47 kΩ
R23	7010003400	Resistor	ELR20J 1 kΩ
R24	7010003400	Resistor	ELR20J 1 kΩ
R25	7010003400	Resistor	ELR20J 1 kΩ
R26	7010003400	Resistor	ELR20J 1 kΩ
R27	7010003400	Resistor	ELR20J 1 kΩ
R28	7010003400	Resistor	ELR20J 1 kΩ
R29	7010001150	Resistor	R25J 1 kΩ
R30	7010001150	Resistor	R25J 1 kΩ
R31	7010001150	Resistor	R25J 1 kΩ
R32	7010001150	Resistor	R25J 1 kΩ
R33	7010001150	Resistor	R25J 1 kΩ

[PLL UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R34	7010001150	Resistor	R25J 1 kΩ
R35	7010005230	Resistor	ELR20J 750 Ω
R36	7010003430	Resistor	ELR20J 1.8 kΩ
R37	7010003460	Resistor	ELR20J 3.3 kΩ
R38	7010003490	Resistor	ELR20J 5.6 kΩ
R39	7010003530	Resistor	ELR20J 10 kΩ
R40	7010003480	Resistor	ELR20J 4.7 kΩ
R41	7010004190	Resistor	R20J 1 kΩ
R42	7010004190	Resistor	R20J 1 kΩ
R43	7010001150	Resistor	R25J 1 kΩ
R44	7010001150	Resistor	R25J 1 kΩ
R45	7010001150	Resistor	R25J 1 kΩ
R46	7010001150	Resistor	R25J 1 kΩ
R47	7010001150	Resistor	R25J 1 kΩ
R48	7010001150	Resistor	R25J 1 kΩ
R49	7010004670	Resistor	R50XJ 22 Ω
R50	7010003530	Resistor	ELR20J 10 kΩ
R51	7010003240	Resistor	ELR20J 47 Ω
R52	7010003660	Resistor	ELR20J 100 kΩ
R53	7010003530	Resistor	ELR20J 10 kΩ
R54	7010004030	Resistor	R20J 47 Ω
R55	7010003480	Resistor	ELR20J 4.7 kΩ
R56	7010003440	Resistor	ELR20J 2.2 kΩ
R57	7010003620	Resistor	ELR20J 47 kΩ
R58	7010003620	Resistor	ELR20J 47 kΩ
R59	7010004410	Resistor	R20J 47 kΩ
R60	7010001400	Resistor	R25J 100 kΩ
R61	7010004410	Resistor	R20J 47 kΩ
R62	7010004410	Resistor	R20J 47 kΩ
R63	7010004410	Resistor	R20J 47 kΩ
R64	7010004410	Resistor	R20J 47 kΩ
R65	7010001360	Resistor	R25J 47 kΩ
R66	7410000180	Resistor Array	RMX-8 103K
R67	7010003530	Resistor	ELR20J 10 kΩ
R68	7010001360	Resistor	R25J 47 kΩ
R69	7010003640	Resistor	ELR20J 68 kΩ
R70	7210001530	Variable Resistor	RK09K1110AEGA (RIT)
R71	7010003460	Resistor	ELR20J 3.3 kΩ
R72	7010004070	Resistor	R20J 100 Ω
R73	7010004670	Resistor	R50XJ 22 Ω
R74	7010003400	Resistor	ELR20J 1 kΩ
R75	7010003700	Resistor	ELR20J 220 kΩ
R76	7010003440	Resistor	ELR20J 2.2 kΩ
R77	7010001150	Resistor	R25J 1 kΩ
R78	7010003660	Resistor	ELR20J 100 kΩ
R79	7010003660	Resistor	ELR20J 100 kΩ
R80	7010001060	Resistor	R25J 180 Ω
R81	7010004090	Resistor	R20J 150 Ω
R82	7010003660	Resistor	ELR20J 100 kΩ
R83	7010003660	Resistor	ELR20J 100 kΩ
R84	7010003310	Resistor	ELR20J 180 Ω
R85	7010003660	Resistor	ELR20J 100 kΩ
R86	7010004450	Resistor	R20J 100 kΩ
R87	7010003310	Resistor	ELR20J 180 Ω
R88	7010003660	Resistor	ELR20J 100 kΩ
R89	7010003660	Resistor	ELR20J 100 kΩ
R90	7010003310	Resistor	ELR20J 180 Ω
R91	7010004090	Resistor	R20J 150 Ω
R92	7010004250	Resistor	R20J 3.3 kΩ
R93	7010004090	Resistor	R20J 150 Ω
R94	7010004250	Resistor	R20J 3.3 kΩ
R95	7010003300	Resistor	ELR20J 150 Ω
R96	7010004250	Resistor	R20J 3.3 kΩ
R97	7010003300	Resistor	ELR20J 150 Ω
R98	7010003460	Resistor	ELR20J 3.3 kΩ
R99	7010003780	Resistor	ELR20J 1 MΩ
R100	7010003780	Resistor	ELR20J 1 MΩ
R101	7010003360	Resistor	ELR20J 470 Ω
R102	7010003530	Resistor	ELR20J 10 kΩ
R103	7010000990	Resistor	R25J 47 Ω
R104	7010003480	Resistor	ELR20J 4.7 kΩ
R105	7010004110	Resistor	R20J 220 Ω
R106	7010003340	Resistor	ELR20J 330 Ω
R107	7010003990	Resistor	R20J 22 Ω
R108	7010003530	Resistor	ELR20J 10 kΩ

[PLL UNIT]

[PLL UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
R109	7010003580	Resistor ELR20J 22 kΩ
R110	7010004070	Resistor R20J 100 Ω
R111	7010003200	Resistor ELR20J 22 Ω
R112	7010003320	Resistor ELR20J 220 Ω
R113	7010003330	Resistor ELR20J 270 Ω
R114	7010003980	Resistor R20J 18 Ω
R115	7010003330	Resistor ELR20J 270 Ω
R116	7010001150	Resistor R25J 1 kΩ
R117	7010001150	Resistor R25J 1 kΩ
R118	7010004190	Resistor R20J 1 kΩ
R119	7010001070	Resistor R25J 220 Ω
R121	7010003480	Resistor ELR20J 4.7 kΩ
R123	7010003280	Resistor ELR20J 100 Ω
R124	7010004150	Resistor R20J 470 Ω
R125	7010003620	Resistor ELR20J 47 kΩ
R126	7010003420	Resistor ELR20J 1.5 kΩ
R127	7010004110	Resistor R20J 220 Ω
R128	7010003360	Resistor ELR20J 470 Ω
R129	7010004110	Resistor R20J 220 Ω
R130	7010004190	Resistor R20J 1 kΩ
R131	7010004190	Resistor R20J 1 kΩ
R132	7010004190	Resistor R20J 1 kΩ
R133	7010001230	Resistor R25J 4.7 kΩ
R134	7010003160	Resistor ELR20J 10 Ω
R136	7010003580	Resistor ELR20J 22 kΩ
R137	7010003660	Resistor ELR20J 100 kΩ
R138	7010004090	Resistor R20J 150 Ω
R139	7010003440	Resistor ELR20J 2.2 kΩ
R140	7010003530	Resistor ELR20J 10 kΩ
R141	7010003480	Resistor ELR20J 4.7 kΩ
R142	7010003340	Resistor ELR20J 330 Ω
R143	7010004110	Resistor R20J 220 Ω
R144	7010003280	Resistor ELR20J 100 Ω
R145	7010003240	Resistor ELR20J 47 Ω
R146	7010003280	Resistor ELR20J 100 Ω
R147	7010003530	Resistor ELR20J 10 kΩ
R149	7010004070	Resistor R20J 100 Ω
R150	7010004190	Resistor R20J 1 kΩ
R151	7010003600	Resistor ELR20J 33 kΩ
R152	7010003440	Resistor ELR20J 2.2 kΩ
R153	7010003280	Resistor ELR20J 100 Ω
R155	7010004190	Resistor R20J 1 kΩ
R156	7010003480	Resistor ELR20J 4.7 kΩ
R157	7010003550	Resistor ELR20J 15 kΩ
R158	7010003360	Resistor ELR20J 470 Ω
R159	7010003240	Resistor ELR20J 47 Ω
R160	7010003320	Resistor ELR20J 220 Ω
R161	7010003530	Resistor ELR20J 10 kΩ
R162	7010003410	Resistor ELR20J 1.2 kΩ
R163	7010003530	Resistor ELR20J 10 kΩ
R164	7010004370	Resistor R20J 22 kΩ
R165	7010003300	Resistor ELR20J 150 Ω
R166	7010001030	Resistor R25J 100 Ω
R167	7010003530	Resistor ELR20J 10 kΩ
R168	7010003530	Resistor ELR20J 10 kΩ
R169	7010003530	Resistor ELR20J 10 kΩ
R170	7010003530	Resistor ELR20J 10 kΩ
R171	7010003620	Resistor ELR20J 47 kΩ
R172	7010004410	Resistor R20J 47 kΩ
R173	7010004150	Resistor R20J 470 Ω
R174	7010004320	Resistor R20J 10 kΩ
R175	7010004190	Resistor R20J 1 kΩ
R176	7010003360	Resistor ELR20J 470 Ω
R177	7010003360	Resistor ELR20J 470 Ω
R178	7010003360	Resistor ELR20J 470 Ω
R179	7010003400	Resistor ELR20J 1 kΩ
R180	7010003460	Resistor ELR20J 3.3 kΩ
R181	7010003760	Resistor ELR20J 680 kΩ
R182	7010004320	Resistor R20J 10 kΩ
R190	7010004190	Resistor R20J 1 kΩ
R191	7010003530	Resistor ELR20J 10 kΩ
R193	7010003480	Resistor ELR20J 4.7 kΩ
R194	7010003480	Resistor ELR20J 4.7 kΩ
R195	7010003480	Resistor ELR20J 4.7 kΩ
R196	7010003530	Resistor ELR20J 10 kΩ

REF. NO.	ORDER NO.	DESCRIPTION
R197	7010003280	Resistor ELR20J 100 Ω
R198	7010003580	Resistor ELR20J 22 kΩ
R199	7010001030	Resistor R25J 100 Ω
R200	7010003280	Resistor ELR20J 100 Ω
R201	7010004030	Resistor R20J 47 Ω
R202	7010001150	Resistor R25J 1 kΩ
R203	7010004340	Resistor R20J 15 kΩ
R204	7010001320	Resistor R25J 22 kΩ
C1	4010000500	Ceramic DD104 B 102K 50V
C2	4010000500	Ceramic DD104 B 102K 50V
C3	4510001150	Electrolytic 50 MS7 R47 μF
C4	4010000520	Ceramic DD108 B 472K 50V
C5	4010000500	Ceramic DD104 B 102K 50V
C6	4010000500	Ceramic DD104 B 102K 50V
C8	4010000500	Ceramic DD104 B 102K 50V
C9	4310000010	Mylar F2D 50V 102K
C10	4510001100	Electrolytic 16 MS7 10 μF
C11	4510001100	Electrolytic 16 MS7 10 μF
C12	4550000350	Tantalum DN 1V 010M
C13	4550000400	Tantalum DN 1C 2R2M
C14	4040000260	Barrier Layer UZE 08X 104M
C15	4010000810	Ceramic DD105 CH 300J 50V
C16	4010000810	Ceramic DD105 CH 300J 50V
C17	4550000400	Tantalum DN 1C 2R2M
C18	4510002640	Electrolytic 25 SS 47 μF
C19	4040000260	Barrier Layer UZE 08X 104M
C20	4510003040	Electrolytic 16 SS 100 μF
C21	4530000150	Capacitor Array B7ZC0711-32N
C22	4010000520	Ceramic DD108 B 472K 50V
C23	4530000270	Capacitor Array B8XC0114-32N
C24	4040000250	Barrier Layer UAT 08X 473M
C25	4040000260	Barrier Layer UZE 08X 104M
C26	4010000520	Ceramic DD108 B 472K 50V
C27	4510003040	Electrolytic 16 SS 100 μF
C28	4010000500	Ceramic DD104 B 102K 50V
C29	4510001750	Electrolytic 50 RBP 2.2 μF
C31	4010003460	Ceramic DD104 UJ 330J 50V
C32	4040000250	Barrier Layer UAT 08X 473M
C33	4010000940	Ceramic DD107 CH 101J 50V
C34	4010000770	Ceramic DD104 CH 200J 50V
C35	4610001130	Trimmer CVSSA1001
C36	4010000900	Ceramic DD107 CH 680J 50V
C37	4510002640	Electrolytic 25 SS 47 μF
C38	4010000720	Ceramic DD104 CH 120J 50V
C39	4010000720	Ceramic DD104 CH 120J 50V
C40	4010000520	Ceramic DD108 B 472K 50V
C41	4010000520	Ceramic DD108 B 472K 50V
C42	4010000020	Ceramic DD104 SL 010C 50V
C43	4010000500	Ceramic DD104 B 102K 50V
C44	4010000900	Ceramic DD107 CH 680J 50V
C45	4010000740	Ceramic DD104 CH 150J 50V
C46	4610001130	Trimmer CVSSA1001
C47	4010000860	Ceramic DD106 CH 470J 50V
C48	4510002640	Electrolytic 25 SS 47 μF
C49	4010000720	Ceramic DD104 CH 120J 50V
C50	4010000720	Ceramic DD104 CH 120J 50V
C51	4010000520	Ceramic DD108 B 472K 50V
C52	4010000520	Ceramic DD108 B 472K 50V
C53	4010000020	Ceramic DD104 SL 010C 50V
C54	4010000260	Ceramic DD104 SL 470J 50V
C55	4010000270	Ceramic DD104 SL 510J 50V
C56	4010000500	Ceramic DD104 B 102K 50V
C57	4010000870	Ceramic DD106 CH 510J 50V
C58	4010000700	Ceramic DD104 CH 100D 50V
C59	4610001000	Trimmer CVSSA0701
C60	4010000860	Ceramic DD106 CH 470J 50V
C61	4510002640	Electrolytic 25 SS 47 μF
C62	4010000680	Ceramic DD104 CH 080D 50V
C63	4010000720	Ceramic DD104 CH 120J 50V
C64	4010000520	Ceramic DD108 B 472K 50V
C65	4010000520	Ceramic DD108 B 472K 50V
C66	4010000020	Ceramic DD104 SL 010C 50V
C67	4010000500	Ceramic DD104 B 102K 50V

[PLL UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
C68	4010000860	Ceramic DD106 CH 470J 50V
C69	4010000630	Ceramic DD104 CJ 030C 50V
C70	4610001000	Trimmer CVSSA0701
C71	4010000820	Ceramic DD105 CH 330J 50V
C72	4510002640	Electrolytic 25 SS 47 $\mu$ F
C73	4010000660	Ceramic DD104 CH 060D 50V
C74	4010000720	Ceramic DD104 CH 120J 50V
C75	4010000520	Ceramic DD108 B 472K 50V
C76	4040000260	Barrier Layer UZE 08X 104M
C77	4510002730	Electrolytic 10 SS 100 $\mu$ F
C78	4010000520	Ceramic DD108 B 472K 50V
C79	4010000020	Ceramic DD104 SL 010C 50V
C80	4010000500	Ceramic DD104 B 102K 50V
C81	4010000260	Ceramic DD104 SL 470J 50V
C82	4040000150	Barrier Layer UAT 05X 472K
C83	4010000460	Ceramic DD104 B 471K 50V
C84	4040000250	Barrier Layer UAT 08X 473M
C85	4010000380	Ceramic DD107 SL 221J 50V
C86	4010000500	Ceramic DD104 B 102K 50V
C87	4010000240	Ceramic DD104 SL 390J 50V
C88	4010000150	Ceramic DD104 SL 150J 50V
C89	4010000240	Ceramic DD104 SL 390J 50V
C90	4010000160	Ceramic DD104 SL 180J 50V
C91	4010000200	Ceramic DD104 SL 270J 50V
C92	4010000230	Ceramic DD104 SL 360J 50V
C93	4010000180	Ceramic DD104 SL 220J 50V
C94	4010000120	Ceramic DD104 SL 100D 50V
C95	4040000150	Barrier Layer UAT 05X 472K
C96	4010000520	Ceramic DD108 B 472K 50V
C97	4040000150	Barrier Layer UAT 05X 472K
C98	4010000520	Ceramic DD108 B 472K 50V
C99	4010000300	Ceramic DD104 SL 680J 50V
C100	4010000080	Ceramic DD104 SL 060D 50V
C101	4010000320	Ceramic DD104 SL 820J 50V
C102	4010000160	Ceramic DD104 SL 180J 50V
C103	4010000310	Ceramic DD104 SL 750J 50V
C104	4010000520	Ceramic DD108 B 472K 50V
C105	4040000260	Barrier Layer UZE 08X 104M
C106	4010000520	Ceramic DD108 B 472K 50V
C107	4040000250	Barrier Layer UAT 08X 473M
C108	4010000520	Ceramic DD108 B 472K 50V
C109	4010000460	Ceramic DD104 B 471K 50V
C110	4010000210	Ceramic DD104 SL 300J 50V
C111	4010000410	Ceramic DD107 SL 331J 50V
C112	4020000260	Cylinder TP125 X 103M
C113	4040000260	Barrier Layer UZE 08X 104M
C114	4550000400	Tantalum DN 1C 2R2M
C115	4010000520	Ceramic DD108 B 472K 50V
C116	4010000740	Ceramic DD104 CH 150J 50V
C117	4010000810	Ceramic DD105 CH 300J 50V
C118	4010000900	Ceramic DD107 CH 680J 50V
C119	4010000720	Ceramic DD104 CH 120J 50V
C120	4010000720	Ceramic DD104 CH 120J 50V
C121	4040000150	Barrier Layer UAT 05X 472K
C122	4510001100	Electrolytic 16 MS7 10 $\mu$ F
C123	4010000500	Ceramic DD104 B 102K 50V
C124	4010000520	Ceramic DD108 B 472K 50V
C125	4010000520	Ceramic DD108 B 472K 50V
C126	4010000380	Ceramic DD107 SL 221J 50V
C127	4040000260	Barrier Layer UZE 08X 104M
C128	4040000260	Barrier Layer UZE 08X 104M
C129	4040000150	Barrier Layer UAT 05X 472K
C130	4010000500	Ceramic DD104 B 102K 50V
C131	4040000260	Barrier Layer UZE 08X 104M
C132	4510002640	Electrolytic 25 SS 47 $\mu$ F
C133	4010000270	Ceramic DD104 SL 510J 50V
C134	4610001120	Trimmer CVSSC2001
C135	4010003100	Ceramic DD106 TH 820J 50V
C136	4010000520	Ceramic DD108 B 472K 50V
C137	4010000520	Ceramic DD108 B 472K 50V
C138	4010003100	Ceramic DD106 TH 820J 50V
C139	4550000320	Tantalum DN 1V 0R1M
C140	4040000150	Barrier Layer UAT 05X 472K
C141	4010000500	Ceramic DD104 B 102K 50V
C142	4010000500	Ceramic DD104 B 102K 50V

[PLL UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
C143	4010000500	Ceramic DD104 B 102K 50V
C144	4010000380	Ceramic DD107 SL 221J 50V
C145	4040000260	Barrier Layer UZE 08X 104M
C146	4010000100	Ceramic DD104 SL 080D 50V
C147	4010000520	Ceramic DD108 B 472K 50V
C148	4010000010	Ceramic DD104 SL 0R5C 50V
C149	4010000100	Ceramic DD104 SL 080D 50V
C150	4010000520	Ceramic DD108 B 472K 50V
C151	4040000260	Barrier Layer UZE 08X 104M
C152	4040000260	Barrier Layer UZE 08X 104M
C153	4510000310	Electrolytic 16 MS16 1000 $\mu$ F (12.5X16)
C154	4040000190	Barrier Layer UAT 05X 103K
C155	4040000190	Barrier Layer UAT 05X 103K
C156	4040000190	Barrier Layer UAT 05X 103K
C157	4010000520	Ceramic DD108 B 472K 50V
C158	4040000150	Barrier Layer UAT 05X 472K
C159	4010000520	Ceramic DD108 B 472K 50V
C160	4020000180	Cylinder UP125 B 471K
C161	4040000190	Barrier Layer UAT 05X 103K
C162	4010000210	Ceramic DD104 SL 300J 50V
C163	4010000180	Ceramic DD104 SL 220J 50V
C164	4010000210	Ceramic DD104 SL 300J 50V
C165	4020000260	Cylinder TP125 X 103M
C166	4040000250	Barrier Layer UAT 08X 473M
C167	4040000250	Barrier Layer UAT 08X 473M
C168	4040000250	Barrier Layer UAT 08X 473M
C171	4040000150	Barrier Layer UAT 05X 472K
C172	4010000650	Ceramic DD104 CH 050C 50V
C173	4010000680	Ceramic DD104 CH 080D 50V
C174	4010000620	Ceramic DD104 CK 020C 50V
C175	4010000740	Ceramic DD104 CH 150J 50V
C176	4010000620	Ceramic DD104 CK 020C 50V
C177	4010000700	Ceramic DD104 CH 100D 50V
C178	4010000330	Ceramic DD105 SL 101J 50V
C179	4010000280	Ceramic DD104 SL 560J 50V
C180	4010000330	Ceramic DD105 SL 101J 50V
C181	4010000770	Ceramic DD104 CH 200J 50V
C182	4010000620	Ceramic DD104 CK 020C 50V
C183	4010000760	Ceramic DD104 CH 180J 50V
C184	4010000340	Ceramic DD105 SL 121J 50V
C185	4010000430	Ceramic DD109 SL 471J 50V
C186	4010000760	Ceramic DD104 CH 180J 50V
C187	4040000150	Barrier Layer UAT 05X 472K
C188	4010000620	Ceramic DD104 CK 020C 50V
C189	4010000770	Ceramic DD104 CH 200J 50V
C193	4010000520	Ceramic DD108 B 472K 50V
C194	4010000520	Ceramic DD108 B 472K 50V
C195	4010000520	Ceramic DD108 B 472K 50V
C196	4550000400	Tantalum DN 1C 2R2M
C197	4010000050	Ceramic DD104 SL 030C 50V
C198	4010000520	Ceramic DD108 B 472K 50V
RL1	6330000800	Relay G5A-237P DC12V
BT1	3020000020	Lithium Battery BR2032-1T2
EP1	6910000600	Ferrite Bead FSOH050RN
EP2	0910024013	P.C. Board B 2299C (PLL)

[DDS UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1140000500	IC	SC1051
IC2	1130002600	IC	SC1052
IC3	1130002610	IC	SC1053
IC4	1130002460	IC	TC74HCT374F
IC5	1130002460	IC	TC74HCT374F
X1	6050003230	Crystal	CR-180
L1	6200000040	Coil	LQN 5N 331K
L2	6200000040	Coil	LQN 5N 331K
L3	6200000040	Coil	LQN 5N 331K
R1	7030000740	Resistor	MCR10EZHZ 1 MΩ (105)
R2	7030000360	Resistor	MCR10EZHZ 680 Ω (681)
R3	7030000420	Resistor	MCR10EZHZ 2.2 kΩ (222)
R4	7410000320	Resistor Array	GF 5096
R5	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R6	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R7	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
C1	4610000520	Trimmer	TZB04N100BA006
C2	4030000950	Ceramic	GRM40 CH 330J 50PT
C3	4030001150	Ceramic	GRM40 F 104Z 25PT
C7	4030000720	Ceramic	GRM40 SL 680J 50PT
C8	4030000560	Ceramic	GRM40 SL 020C 50PT
C9	4030000750	Ceramic	GRM40 SL 121J 50PT
C10	4030000610	Ceramic	GRM40 SL 070D 50PT
C11	4030000750	Ceramic	GRM40 SL 121J 50PT
C12	4030000640	Ceramic	GRM40 SL 120J 50PT
C13	4030000720	Ceramic	GRM40 SL 680J 50PT
C14	4030001150	Ceramic	GRM40 F 104Z 25PT
C15	4030001150	Ceramic	GRM40 F 104Z 25PT
C16	4030001150	Ceramic	GRM40 F 104Z 25PT
C17	4030001150	Ceramic	GRM40 F 104Z 25PT
C18	4030002430	Ceramic	GRM40 TH 220J 50PT
C19	4030001100	Ceramic	GRM40 B 102K 50PT
C20	4030001100	Ceramic	GRM40 B 102K 50PT
EP1	0910022511	P.C. Board	B 2203A (DDS)

[PA UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
Q1	1530000790	Transistor	2SC1971
Q2	1530000190	Transistor	2SC3133
Q3	1530000190	Transistor	2SC3133
Q4	1540000200	Transistor	2SD1406 Y
Q5	1530000200	Transistor	2SC2904
Q6	1530000200	Transistor	2SC2904
Q7	1520000060	Transistor	2SB562C
Q8	1590000340	Transistor	RN1202
Q9	1590000340	Transistor	RN1202
Q10	1590000360	Transistor	RN2202
D1	1790000010	Diode	MV5
D2	1790000010	Diode	MV5
D3	1790000010	Diode	MV5
D4	1710000010	Diode	15CD11
D5	1710000030	Diode	1S1555
D6	1710000030	Diode	1S1555
L1	6140001170	Coil	LR-142

[PA UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
L2	6910000670	Coil	BT01RN1-A61-001
L3	6910000670	Coil	BT01RN1-A61-001
L4	6140001300	Coil	LR-155
L5	6140000610	Coil	LR-83
L6	6140001310	Coil	LR-156
L7	6140002030	Coil	LR-230 (SK-10M-15Y 120)
L8	6180001230	Coil	LAL 04NA 8R2K
L9	6180001570	Coil	LAL 04NA 4R7K
L10	6910000670	Coil	BT01RN1-A61-001
L11	6910000670	Coil	BT01RN1-A61-001
L12	6180000880	Coil	LAL 03NA 100K
L13	6910000670	Coil	BT01RN1-A61-001
L14	6910000670	Coil	BT01RN1-A61-001
L15	6910000670	Coil	BT01RN1-A61-001
L16	6910000670	Coil	BT01RN1-A61-001
L17	6180000900	Coil	LAL 03NA 101K
L18	6180000900	Coil	LAL 03NA 101K
R1	7010000310	Resistor	ELR25J 330 Ω
R2	7010001050	Resistor	R25J 150 Ω
R3	7010000290	Resistor	ELR25J 220 Ω
R4	7010000330	Resistor	ELR25J 470 Ω
R5	7010004830	Resistor	R50XJ 4.7 Ω
R6	7010004120	Resistor	R20J 270 Ω
R7	7010004730	Resistor	R50XJ 120 Ω
R8	7310000680	Trimmer	RH0651C12J04A (101)
R9	7010000990	Resistor	R25J 47 Ω
R10	7010000990	Resistor	R25J 47 Ω
R11	7010004730	Resistor	R50XJ 120 Ω
R12	7010004730	Resistor	R50XJ 120 Ω
R13	7010004650	Resistor	R50XJ 10 Ω
R14	7080000650	Resistor	RSS1P 3R3 Ω
R15	7080000650	Resistor	RSS1P 3R3 Ω
R16	7080000650	Resistor	RSS1P 3R3 Ω
R17	7080000650	Resistor	RSS1P 3R3 Ω
R18	7010004730	Resistor	R50XJ 120 Ω
R19	7310000710	Trimmer	RH0651C13J1YA (102)
R20	7010004650	Resistor	R50XJ 10 Ω
R21	7010004650	Resistor	R50XJ 10 Ω
R22	7080000650	Resistor	RSS1P 3R3 Ω
R23	7080000650	Resistor	RSS1P 3R3 Ω
R24	7070000250	Resistor	CRH200 R-02J 4.7 Ω (4R7)
R25	7010000370	Resistor	ELR25J 1 kΩ
R26	7100000510	Resistor	CP-5AJ 0.012 Ω
R27	7010000370	Resistor	ELR25J 1 kΩ
R28	7010001090	Resistor	R25J 330 Ω
R29	7010004150	Resistor	R20J 470 Ω
R30	7010004190	Resistor	R20J 1 kΩ
R31	7010003490	Resistor	ELR20J 5.6 kΩ
R32	7510000070	Thermistor	ERT-D2FHL503S
R33	7010003610	Resistor	ELR20J 39 kΩ
R34	7010004020	Resistor	R20J 39 Ω
C1	4010000520	Ceramic	DD108 B 472K 50V
C2	4010000510	Ceramic	DD106 B 222K 50V
C3	4040000250	Barrier Layer	UAT 08X 473M
C4	4040000250	Barrier Layer	UAT 08X 473M
C5	4040000250	Barrier Layer	UAT 08X 473M
C6	4040000250	Barrier Layer	UAT 08X 473M
C7	4310000110	Mylar	F2D 50V 472K
C8	4310000110	Mylar	F2D 50V 472K
C9	4010000380	Ceramic	DD107 SL 221J 50V
C10	4040000250	Barrier Layer	UAT 08X 473M
C11	4010000500	Ceramic	DD104 B 102K 50V
C12	4030001370	Ceramic	GR44 CH 682K
C13	4030001370	Ceramic	GR44 CH 682K
C14	4040000250	Barrier Layer	UAT 08X 473M
C15	4040000250	Barrier Layer	UAT 08X 473M
C16	4510002720	Electrolytic	10 SS 47 μF
C17	4030001340	Ceramic	GR44 CH 102K
C18	4010000420	Ceramic	DD108 SL 391J 50V
C19	4010004070	Ceramic	DD12 SL 221K 500V
C20	4320000220	Dip Mica	DM19C 681J5

[PA UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C21	4030001340	Ceramic	GR44 CH 102K
C22	4010004070	Ceramic	DD12 SL 221K 500V
C23	4510002640	Electrolytic	25 SS 47 μF
C24	4010000520	Ceramic	DD108 B 472K 50V
C25	4510000310	Electrolytic	16 MS16 1000 μF (12.5X16)
C26	4040000260	Barrier Layer	UZE 08X 104M
C27	4010000380	Ceramic	DD107 SL 221J 50V
C28	4040000250	Barrier Layer	UAT 08X 473M
C29	4510000310	Electrolytic	16 MS16 1000 μF (12.5X16)
C30	4040000250	Barrier Layer	UAT 08X 473M
C31	4040000260	Barrier Layer	UZE 08X 104M
C32	4010000380	Ceramic	DD107 SL 221J 50V
C33	4010000520	Ceramic	DD108 B 472K 50V
C34	4510002780	Electrolytic	16 SS 10 μF
C35	4010000520	Ceramic	DD108 B 472K 50V
C36	4510002440	Electrolytic	16 SS 220 μF (8X11)
C37	4040000250	Barrier Layer	UAT 08X 473M
C38	4010000520	Ceramic	DD108 B 472K 50V
C39	4010000520	Ceramic	DD108 B 472K 50V
C40	4030001340	Ceramic	GR44 CH 102K
C41	4510002640	Electrolytic	25 SS 47 μF
C42	4010000520	Ceramic	DD108 B 472K 50V
F1	5210000130	Fuse	FGB 4A
F2	5220000020	Holder	S-N5051
F3	5220000020	Holder	S-N5051
S1	6910000060	Thermostat	OHD-3 90M
SP1	2S10000040	Speaker	CO65K12I0810
MF1	2710000160	Fan Motor	HMK2605-01-100
EP1	6910000600	Ferrite Bead	FSOH050RN
EP2	6910000600	Ferrite Bead	FSOH050RN
EP3	6910000600	Ferrite Bead	FSOH050RN
EP4	6910000600	Ferrite Bead	FSOH050RN
EP5	6910000600	Ferrite Bead	FSOH050RN
EP6	6910000600	Ferrite Bead	FSOH050RN
EP13	0910019444	P.C. Board	B 1790D (PA)
EP15	6910000600	Ferrite Bead	FSOH050RN
EP16	6910000600	Ferrite Bead	FSOH050RN
EP20	6910000630	Ferrite Bead	FSOH070RN
EP21	6910000630	Ferrite Bead	FSOH070RN

[FILTER UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
L4	6140001790	Coil	LR-215
L5	6140001800	Coil	LR-216
L6	6140001800	Coil	LR-216
L7	6140001810	Coil	LR-217
L8	6140001820	Coil	LR-218
L9	6140002010	Coil	LR-228
L10	6140002020	Coil	LR-229
L11	6110001490	Coil	LA-196
L12	6110001500	Coil	LA-197
L13	6180000900	Coil	LAL 03NA 101K
L14	6180000900	Coil	LAL 03NA 101K
L15	6180000900	Coil	LAL 03NA 101K
L16	6180000900	Coil	LAL 03NA 101K
L17	6180000900	Coil	LAL 03NA 101K
L18	6180000900	Coil	LAL 03NA 101K
L19	6180000900	Coil	LAL 03NA 101K
L20	6180000900	Coil	LAL 03NA 101K
L21	6180000880	Coil	LAL 03NA 100K
L22	6180000880	Coil	LAL 03NA 100K
L23	6180000880	Coil	LAL 03NA 100K
L24	6180000880	Coil	LAL 03NA 100K
L25	6180000900	Coil	LAL 03NA 101K
L26	6140001460	Coil	LR-170
L27	6140001340	Coil	LR-163
R1	7010004010	Resistor	R20J 33 Ω
R2	7010004320	Resistor	R20J 10 kΩ
R3	7010003530	Resistor	ELR20J 10 kΩ
R4	7010003620	Resistor	ELR20J 47 kΩ
R5	7010004320	Resistor	R20J 10 kΩ
R6	7010003530	Resistor	ELR20J 10 kΩ
R7	7010003620	Resistor	ELR20J 47 kΩ
R8	7540000010	Absorber	DSA-301LA
R9	7010004390	Resistor	R20J 33 kΩ
C1	4320000290	Dip Mica	DM20C 152J5
C2	4010004040	Ceramic	DD10 SL 151K 500V
C3	4010004100	Ceramic	DD14 SL 331K 500V
C4	4320000330	Dip Mica	DM20C 272J5
C5	4010004030	Ceramic	DD10 SL 121K 500V
C6	4320000290	Dip Mica	DM20C 152J5
C7	4010004070	Ceramic	DD12 SL 221K 500V
C8	4010004050	Ceramic	DD12 SL 181K 500V
C9	4010004040	Ceramic	DD10 SL 151K 500V
C10	4010004070	Ceramic	DD12 SL 221K 500V
C11	4320000280	Dip Mica	DM20C 122J5
C12	4010003990	Ceramic	DD09 SL 680K 500V
C13	4010004070	Ceramic	DD12 SL 221K 500V
C14	4010004070	Ceramic	DD12 SL 221K 500V
C15	4010004070	Ceramic	DD12 SL 221K 500V
C16	4010004070	Ceramic	DD12 SL 221K 500V
C17	4010004050	Ceramic	DD12 SL 181K 500V
C18	4010004010	Ceramic	DD09 SL 101K 500V
C19	4010004070	Ceramic	DD12 SL 221K 500V
C20	4010004070	Ceramic	DD12 SL 221K 500V
C21	4010004070	Ceramic	DD12 SL 221K 500V
C22	4010003950	Ceramic	DD06 SL 330K 500V
C23	4010004070	Ceramic	DD12 SL 221K 500V
C24	4010004050	Ceramic	DD12 SL 181K 500V
C25	4010004030	Ceramic	DD10 SL 121K 500V
C26	4010004020	Ceramic	DD09 SL 111K 500V
C28	4010004030	Ceramic	DD10 SL 121K 500V
C29	4010004050	Ceramic	DD12 SL 181K 500V
C30	4010003960	Ceramic	DD06 SL 390K 500V
C31	4010004050	Ceramic	DD12 SL 181K 500V
C32	4010004010	Ceramic	DD09 SL 101K 500V
C33	4010003870	Ceramic	DD06 SL 120K 500V
C34	4010004070	Ceramic	DD12 SL 221K 500V
C35	4010003950	Ceramic	DD06 SL 330K 500V
C36	4010004010	Ceramic	DD09 SL 101K 500V
C37	4010003990	Ceramic	DD09 SL 680K 500V
C38	4010003960	Ceramic	DD06 SL 390K 500V
C39	4010004040	Ceramic	DD10 SL 151K 500V

[FILTER UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
D1	1710000330	Diode	1K60
D2	1710000330	Diode	1K60
D3	1710000030	Diode	1S1555
D4	1710000030	Diode	1S1555
D5	1710000030	Diode	1S1555
D6	1710000030	Diode	1S1555
D7	1710000030	Diode	1S1555
D8	1710000030	Diode	1S1555
D9	1710000030	Diode	1S1555
L1	6140001990	Coil	LR-226
L2	6140002000	Coil	LR-227
L3	6140001780	Coil	LR-214

[FILTER UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C40	4010003870	Ceramic	DD06 SL 120K 500V
C41	4010003990	Ceramic	DD09 SL 680K 500V
C42	4040000250	Barrier Layer	UAT 08X 473M
C43	4040000250	Barrier Layer	UAT 08X 473M
C44	4040000250	Barrier Layer	UAT 08X 473M
C45	4040000250	Barrier Layer	UAT 08X 473M
C46	4040000250	Barrier Layer	UAT 08X 473M
C47	4040000250	Barrier Layer	UAT 08X 473M
C48	4010000520	Ceramic	DD108 B 472K 50V
C49	4010000520	Ceramic	DD108 B 472K 50V
C50	4010000520	Ceramic	DD108 B 472K 50V
C51	4010000520	Ceramic	DD108 B 472K 50V
C52	4010000520	Ceramic	DD108 B 472K 50V
C53	4010000520	Ceramic	DD108 B 472K 50V
C54	4610001120	Trimmer	CVSSC2001
C55	4010000410	Ceramic	DD107 SL 331J 50V
C56	4010000410	Ceramic	DD107 SL 331J 50V
C57	4010000430	Ceramic	DD109 SL 471J 50V
C58	4010000430	Ceramic	DD109 SL 471J 50V
C59	4040000250	Barrier Layer	UAT 08X 473M
C60	4010000330	Ceramic	DD105 SL 101J 50V
C61	4010000120	Ceramic	DD104 SL 100D 50V
C62	4010000330	Ceramic	DD105 SL 101J 50V
RL1	6330000180	Relay	MZ-12HG
RL2	6330000180	Relay	MZ-12HG
RL3	6330000180	Relay	MZ-12HG
RL4	6330000180	Relay	MZ-12HG
RL5	6330000180	Relay	MZ-12HG
RL6	6330000180	Relay	MZ-12HG
RL7	6330000180	Relay	MZ-12HG
RL8	6330000180	Relay	MZ-12HG
RL9	6330000180	Relay	MZ-12HG
RL10	6330000180	Relay	MZ-12HG
RL11	6330000180	Relay	MZ-12HG
RL12	6330000180	Relay	MZ-12HG
RL13	6330000720	Relay	DS1-M-DC12V (AG2013)
EP1	0910022833	P.C. Board	B 2207C (FILTER)
EP2	6910000630	Ferrite Bead	FSOH070RN

[PB UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
L2	6110001640	Coil	LA-247
L3	6110001650	Coil	LA-248
L4	6140002040	Coil	LR-231
L5	6170000180	Coil	LW-19
L6	6170000180	Coil	LW-19
L7	6110001640	Coil	LA-247
L8	6110001650	Coil	LA-248
L9	6170000180	Coil	LW-19
L10	6110001650	Coil	LA-248
L12	6180000880	Coil	LAL 03NA 100K
L14	6180000880	Coil	LAL 03NA 100K
R1	7010004240	Resistor	R20J 2.7 kΩ
R2	7010003240	Resistor	ELR20J 47 Ω
R3	7010003160	Resistor	ELR20J 10 Ω
R5	7010003330	Resistor	ELR20J 270 Ω
R6	7010000960	Resistor	R25J 27 Ω
R7	7010004210	Resistor	R20J 1.5 kΩ
R8	7010004100	Resistor	R20J 180 Ω
R9	7010004270	Resistor	R20J 4.7 kΩ
R11	7010004270	Resistor	R20J 4.7 kΩ
R13	7010004120	Resistor	R20J 270 Ω
R14	7540000010	Absorber	DSA-301LA
R15	7010003120	Resistor	ELR20J 4.7 Ω
R18	7010003480	Resistor	ELR20J 4.7 kΩ
R19	7010003610	Resistor	ELR20J 39 kΩ
C1	4010000260	Ceramic	DD104 SL 470J 50V
C3	4040000190	Barrier Layer	UAT 05X 103K
C4	4010000520	Ceramic	DD108 B 472K 50V
C5	4040000190	Barrier Layer	UAT 05X 103K
C6	4010000520	Ceramic	DD108 B 472K 50V
C7	4040000190	Barrier Layer	UAT 05X 103K
C8	4010000520	Ceramic	DD108 B 472K 50V
C9	4010000340	Ceramic	DD105 SL 121J 50V
C10	4010000340	Ceramic	DD105 SL 121J 50V
C11	4010000340	Ceramic	DD105 SL 121J 50V
C13	4040000190	Barrier Layer	UAT 05X 103K
C14	4010000520	Ceramic	DD108 B 472K 50V
C15	4550000260	Tantalum	DN 1V 100M
C16	4040000250	Barrier Layer	UAT 08X 473M
C17	4040000190	Barrier Layer	UAT 05X 103K
C18	4550000260	Tantalum	DN 1V 100M
C20	4010000520	Ceramic	DD108 B 472K 50V
C21	4510002020	Electrolytic	25 MS7 47 μF
C22	4010000520	Ceramic	DD108 B 472K 50V
C23	4610001120	Trimmer	CVSSC2001
C24	4010000330	Ceramic	DD105 SL 101J 50V
C25	4010000350	Ceramic	DD106 SL 151J 50V
C26	4010000380	Ceramic	DD107 SL 221J 50V
C27	4010000380	Ceramic	DD107 SL 221J 50V
C28	4040000250	Barrier Layer	UAT 08X 473M
C29	4010003960	Ceramic	DD06 SL 390K 500V
C30	4010003900	Ceramic	DD06 SL 200K 500V
C31	4010004000	Ceramic	DD09 SL 820K 500V
C32	4010003870	Ceramic	DD06 SL 120K 500V
C33	4010003970	Ceramic	DD07 SL 470K 500V
C34	4010000520	Ceramic	DD108 B 472K 50V
C35	4010003970	Ceramic	DD07 SL 470K 500V
C36	4010003800	Ceramic	DD06 SL 030C 500V
C37	4010003970	Ceramic	DD07 SL 470K 500V
C44	4040000156	Barrier Layer	UAT 05X 472K
C45	4020000250	Cylinder	UP125 X 472M
C46	4040000250	Barrier Layer	UAT 08X 473M
C47	4040000190	Barrier Layer	UAT 05X 103K
C48	4040000250	Barrier Layer	UAT 08X 473M
C49	4010003930	Ceramic	DD06 SL 270K 500V
RL1	6330000720	Relay	DS1-M-DC12V (AG2013)
EP1	6910000970	Ferrite Bead	DL 2OP 2.6-3-1.2H

[PB UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1150000570	IC	SC1069
Q1	1530000640	Transistor	2SC2407(A)
Q2	1510000370	Transistor	2SA1359-Y
Q3	1530000110	Transistor	2SC2458-GR
Q4	1590000360	Transistor	RN2202
D1	1710000050	Diode	1SS53
D2	1790000070	Diode	1SS237
D3	1790000070	Diode	1SS237
D4	1710000300	Diode	MI402
D5	1710000060	Diode	1SS55
D6	1710000060	Diode	1SS55
D7	1710000060	Diode	1SS55
D8	1710000050	Diode	1SS53
D9	1710000030	Diode	1S1555
D10	1710000050	Diode	1SS53
D11	1730000160	Zener	RD7.5E B2
L1	6110001770	Coil	LA-266

[PB UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
EP2	6910000970	Ferrite Bead DL 2OP 2.6-3-1.2H
EP3	6910000970	Ferrite Bead DL 2OP 2.6-3-1.2H
EP4	0910022883	P.C. Board B 2206C (PB)
EP6	6910000630	Ferrite Bead FSOH070RN

[BPF UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
Q1	1560000130	FET 2SK125
D1	1790000070	Diode 1SS237
L2	6180000670	Coil LAL 02NA R22K
L3	6180001290	Coil LAL 02NA R33K
L5	6180002380	Coil LAL 02NA 2R2K
L6	6140002050	Coil LR-224
L7	6110001630	Coil LA-246
R1	7010003990	Resistor R20J 22 Ω
R2	7010003910	Resistor R20J 4.7 Ω
R3	7010004410	Resistor R20J 47 kΩ
R4	7010003040	Resistor ELR20J 1 Ω
R5	7010004410	Resistor R20J 47 kΩ
C2	4020000870	Cylinder UP050 SL 510J
C3	4020000870	Cylinder UP050 SL 510J
C4	4020000840	Cylinder UP050 B 181K
C5	4020000850	Cylinder EP050 Y 103M
C6	4010000250	Ceramic DD104 SL 430J 50V
C7	4010000150	Ceramic DD104 SL 150J 50V
C10	4020000860	Cylinder UP050 SL 430J
C12	4040000150	Barrier Layer UAT 05X 472K
EP1	0910023991	P.C. Board B 2298A (BPF)

[AM · FM UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
IC1	1110000630	IC MC3357P
IC2	1110001310	IC μPC577HA
IC3	1110000250	IC BA401
IC4	1110001320	IC μPC1037HA
IC5	1110000330	IC M5218L
Q1	1530000591	Transistor 2SC2785 EL
Q2	1590000340	Transistor RN1202
Q3	1590000340	Transistor RN1202
Q4	1530000110	Transistor 2SC2458-GR
Q5	1590000340	Transistor RN1202
Q6	1590000360	Transistor RN2202
Q7	1590000340	Transistor RN1202
Q8	1590000340	Transistor RN1202
Q9	1590000360	Transistor RN2202
Q10	1590000340	Transistor RN1202
Q11	1530000110	Transistor 2SC2458-GR
Q12	1590000360	Transistor RN2202
Q13	1530000110	Transistor 2SC2458-GR

[AM · FM UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
Q14	1590000340	Transistor RN1202
D1	1710000050	Diode 1SS53
D2	1730000100	Zener RD5.1E B2
D3	1710000040	Diode 1S953
D4	1710000040	Diode 1S953
D8	1720000060	Varicap 1SV50(1)E
D9	1710000050	Diode 1SS53
D10	1710000160	Diode 1SS133
D11	1710000160	Diode 1SS133
D12	1710000160	Diode 1SS133
D13	1710000160	Diode 1SS133
F11	2020000120	Ceramic Filter CFW455E
X1	6050001340	Crystal CR- 1
X2	6070000010	Discriminator CDB455C7A
X3	6050000280	Crystal HC-12U 9.0105
L1	6180001710	Coil LAL 03NA 561K
L2	6180001680	Coil LAL 03NA 151K
L3	6150001200	Coil LS-133
L4	6180000950	Coil LAL 03NA 150K
L5	6180000880	Coil LAL 03NA 100K
L6	6180000880	Coil LAL 03NA 100K
L7	6180000900	Coil LAL 03NA 101K
L8	6180000900	Coil LAL 03NA 101K
L9	6180000960	Coil LAL 03NA 102K
R1	7010003400	Resistor ELR20J 1 kΩ
R2	7010001030	Resistor R25J 100 Ω
R3	7010003550	Resistor ELR20J 15 kΩ
R4	7010003420	Resistor ELR20J 1.5 kΩ
R5	7010003620	Resistor ELR20J 47 kΩ
R6	7010003420	Resistor ELR20J 1.5 kΩ
R7	7010003550	Resistor ELR20J 15 kΩ
R8	7010003580	Resistor ELR20J 22 kΩ
R9	7010003540	Resistor ELR20J 12 kΩ
R10	7510000090	Thermistor ERT-D2FGL202S
R11	7010003360	Resistor ELR20J 470 Ω
R12	7010004230	Resistor R20J 2.2 kΩ
R13	7010003400	Resistor ELR20J 1 kΩ
R14	7310000760	Trimmer RH0651CJ4J01A (223)
R15	7010004230	Resistor R20J 2.2 kΩ
R16	7010003280	Resistor ELR20J 100 Ω
R17	7510000120	Thermistor ERT-D2FGL332S
R18	7010003510	Resistor ELR20J 6.8 kΩ
R19	7010003580	Resistor ELR20J 22 kΩ
R20	7010003740	Resistor ELR20J 470 kΩ
R21	7010003480	Resistor ELR20J 4.7 kΩ
R22	7010003510	Resistor ELR20J 6.8 kΩ
R23	7010001320	Resistor R25J 22 kΩ
R24	7010004370	Resistor R20J 22 kΩ
R25	7010003420	Resistor ELR20J 1.5 kΩ
R26	7310000710	Trimmer RH0651C13J1YA (102)
R27	7010003420	Resistor ELR20J 1.5 kΩ
R28	7010004190	Resistor R20J 1 kΩ
R29	7010004950	Resistor R20J 1.5 MΩ
R30	7010003400	Resistor ELR20J 1 kΩ
R31	7010003780	Resistor ELR20J 1 MΩ
R32	7010004190	Resistor R20J 1 kΩ
R33	7010003410	Resistor ELR20J 1.2 kΩ
R34	7010005090	Resistor ELR20J 910 Ω
R35	7010003440	Resistor ELR20J 2.2 kΩ
R36	7010003530	Resistor ELR20J 10 kΩ
R37	7010004430	Resistor R20J 68 kΩ
R38	7010004430	Resistor R20J 68 kΩ
R39	7010003640	Resistor ELR20J 68 kΩ
R40	7010003950	Resistor R20J 10 Ω
R41	7310000740	Trimmer RH0651CS3J2KA (472)

## [AM · FM UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R42	7010004230	Resistor	R20J 2.2 kΩ
R43	7010004270	Resistor	R20J 4.7 kΩ
R44	7310000750	Trimmer	RH0651C14J2WA (103)
R45	7010003530	Resistor	ELR20J 10 kΩ
R46	7010003470	Resistor	ELR20J 3.9 kΩ
R47	7310000750	Trimmer	RH0651C14J2WA (103)
R48	7010004310	Resistor	R20J 8.2 kΩ
R49	7010004370	Resistor	R20J 22 kΩ
R50	7010003810	Resistor	ELR20J 2.2 MΩ
R51	7010003550	Resistor	ELR20J 15 kΩ
R52	7010003400	Resistor	ELR20J 1 kΩ
R53	7310000740	Trimmer	RH0651CS3J2KA (472)
R54	7010003360	Resistor	ELR20J 470 Ω
R55	7010003360	Resistor	ELR20J 470 Ω
R56	7010003490	Resistor	ELR20J 5.6 kΩ
R57	7010004520	Resistor	R20J 390 kΩ
R58	7010004270	Resistor	R20J 4.7 kΩ
R59	7010004190	Resistor	R20J 1 kΩ
C1	4010000260	Ceramic	DD104 SL 470J 50V
C2	4010000520	Ceramic	DD108 B 472K 50V
C3	4010000810	Ceramic	DD105 CH 300J 50V
C4	4010000370	Ceramic	DD106 SL 201J 50V
C5	4040000260	Barrier Layer	UZE 08X 104M
C6	4040000260	Barrier Layer	UZE 08X 104M
C7	4010000320	Ceramic	DD104 SL 820J 50V
C8	4040000260	Barrier Layer	UZE 08X 104M
C9	4510001120	Electrolytic	25 MS7 4R7 μF
C10	4010000180	Ceramic	DD104 SL 220J 50V
C11	4040000250	Barrier Layer	UAT 08X 473M
C12	4040000460	Barrier Layer	RAU 08SA 821K
C13	4040000250	Barrier Layer	UAT 08X 473M
C14	4040000250	Barrier Layer	UAT 08X 473M
C15	4040000250	Barrier Layer	UAT 08X 473M
C16	4040000190	Barrier Layer	UAT 05X 103K
C17	4040000260	Barrier Layer	UZE 08X 104M
C18	4510000960	Electrolytic	10 MS9 47 μF
C19	4310000110	Mylar	F2D 50V 472K
C20	4310000110	Mylar	F2D 50V 472K
C21	4040000250	Barrier Layer	UAT 08X 473M
C22	4010000520	Ceramic	DD108 B 472K 50V
C23	4010000520	Ceramic	DD108 B 472K 50V
C24	4010000140	Ceramic	DD104 SL 120J 50V
C25	4010000090	Ceramic	DD104 SL 070D 50V
C26	4010000940	Ceramic	DD107 CH 101J 50V
C27	4010000940	Ceramic	DD107 CH 101J 50V
C28	4010000520	Ceramic	DD108 B 472K 50V
C29	4040000150	Barrier Layer	UAT 05X 472K
C30	4010000520	Ceramic	DD108 B 472K 50V
C31	4010000460	Ceramic	DD104 B 471K 50V
C32	4040000250	Barrier Layer	UAT 08X 473M
C33	4010000520	Ceramic	DD108 B 472K 50V
C34	4010000520	Ceramic	DD108 B 472K 50V
C35	4010000520	Ceramic	DD108 B 472K 50V
C36	4010000520	Ceramic	DD108 B 472K 50V
C37	4510001150	Electrolytic	50 MS7 R47 μF
C38	4310000050	Mylar	F2D 50V 222K
C39	4510001100	Electrolytic	16 MS7 10 μF
C40	4510001100	Electrolytic	16 MS7 10 μF
C41	4510001100	Electrolytic	16 MS7 10 μF
C42	4010000500	Ceramic	DD104 B 102K 50V
C43	4040000110	Barrier Layer	UAT 04X 222K
C44	4010000340	Ceramic	DD105 SL 121J 50V
C45	4510001140	Electrolytic	50 MS7 R22 μF
C46	4510001760	Electrolytic	25 RBP 4.7 μF
C47	4510001970	Electrolytic	50 MS7 0R1 μF
C48	4510001160	Electrolytic	50 MS7 1 μF
C49	4010000330	Ceramic	DD105 SL 101J 50V
C50	4510001180	Electrolytic	50 MS7 3R3 μF
C51	4510001770	Electrolytic	16 RBP 10 μF
C52	4010000520	Ceramic	DD108 B 472K 50V
C53	4020000670	Cylinder	UP050 SL 470J
C54	4010000500	Ceramic	DD104 B 102K 50V
C55	4040000090	Barrier Layer	UAT 04X 152K

## [AM · FM UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C56	4010000220	Ceramic	DD104 SL 330J 50V
C57	4010004840	Ceramic	DD305 F 104Z 12V
C58	4040000190	Barrier Layer	UAT 05X 103K
EP1	0910019702	P.C. Board	B 1880B (AM · FM)

# SECTION 6 ADJUSTMENT PROCEDURES

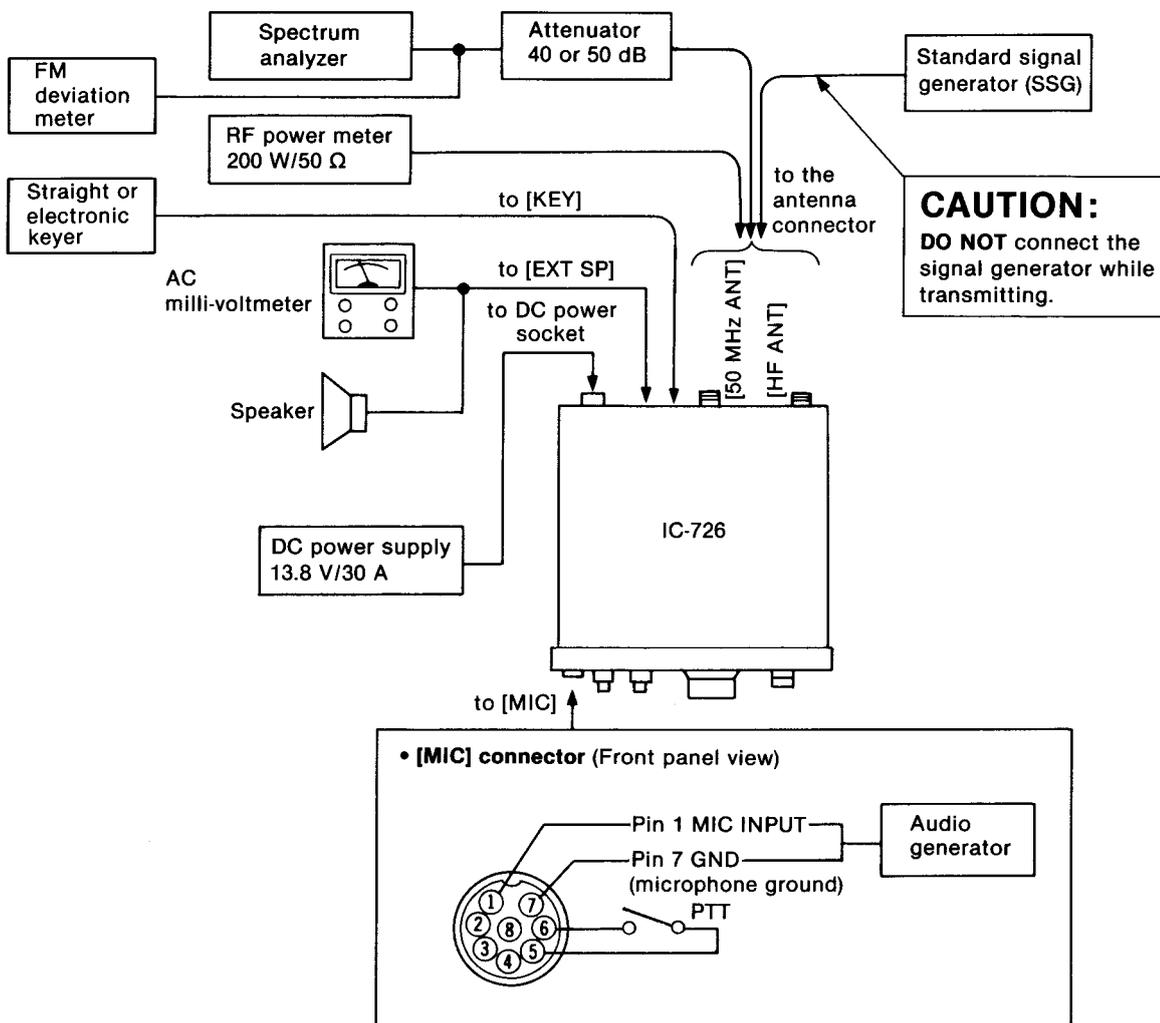
## 6-1 PREPARATION BEFORE SERVICING

### ■ REQUIRED TEST EQUIPMENT

EQUIPMENT	GRADE AND RANGE	EQUIPMENT	GRADE AND RANGE
DC power supply	Output voltage : 13.8 V DC	DC voltmeter	Input impedance : 50 k $\Omega$ /DC or better
	Current capacity : 30 A or more	AC milli-voltmeter	Measuring range : 10 mV~10 V
RF power meter (terminated type)	Measuring range : 10~200 W	External speaker	Impedance : 8 $\Omega$
	Frequency range : 1.8~50 MHz	Ammeter	Measurement capability: 1 A and 30 A
	Impedance : 50 $\Omega$	Audio generator	Frequency range : 300~3000 Hz
	SWR : Less than 1.2 : 1	Attenuator	Output level : 1~500 mV
Frequency counter	Frequency range : 0.1~100 MHz	Attenuator	Power attenuation : 40 or 50 dB
	Frequency accuracy : $\pm 1$ ppm or better	Capacity : 150 W or more	
RF voltmeter	Frequency range : 0.1~100 MHz	FM deviation meter	Frequency range : 1.8~50 MHz
	Measuring range : 0.01~10 V	Measuring range : 0~ $\pm 10$ kHz	
Oscilloscope	Frequency range : DC~20 MHz	Spectrum analyzer	Frequency range : At least 90 MHz
	Measuring range : 0.01~10 V		Spectrum bandwidth : $\pm 100$ kHz or more
Standard signal generator (SSG)	Frequency range : 0.1~100 MHz		
	Output level : -127~-17 dBm (0.1 $\mu$ V~32 mV)		

CW: Clockwise  
CCW: Counterclockwise

### ■ CONNECTION



## 6-2 PLL ADJUSTMENT

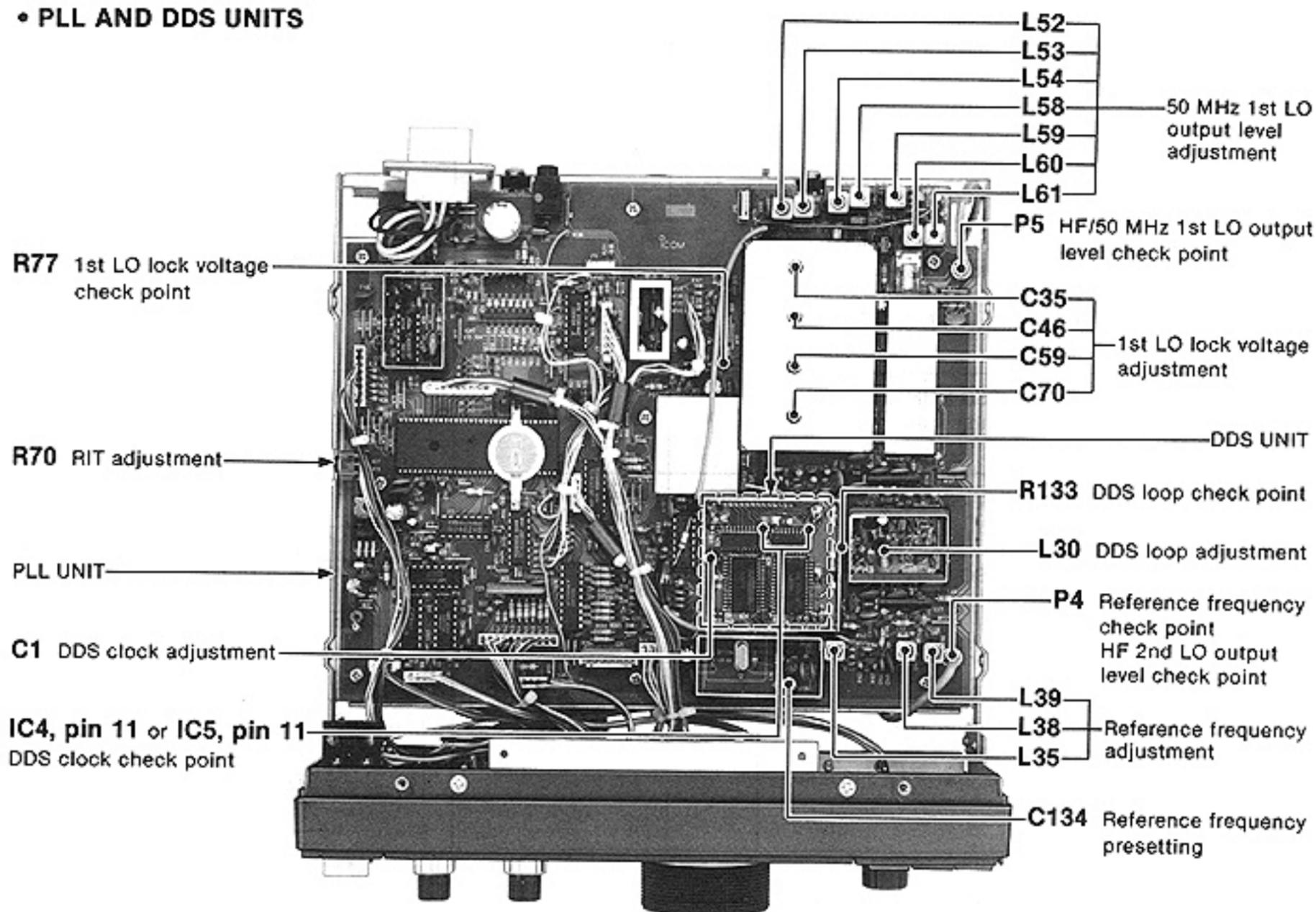
ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT			
		UNIT	LOCATION		UNIT	ADJUST		
DDS CLOCK	1	<ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : USB</li> <li>Receiving</li> </ul>	DDS	Connect the frequency counter to IC4, pin 11 or IC5, pin 11.	5.24288 MHz	DDS	C1	
REFERENCE FREQUENCY	1	<ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : USB</li> <li>Ground P4 with a 50 <math>\Omega</math> resistor.</li> <li>Receiving</li> </ul>	PLL	Connect the RF voltmeter to P4.	Preset to center as shown below.	PLL	C134	
	2				Maximum level (More than +3 dBm)			L38, L39
	3				Connect the frequency counter to P4.			61.4400 MHz
	4	After adjustment, remove the resistor from P4 and re-plug P4.						
DDS LOOP	1	<ul style="list-style-type: none"> <li>Displayed frequency: 14.12650 MHz</li> <li>Mode : AM</li> <li>Receiving</li> </ul>	PLL	Connect the oscilloscope to R133 (rear panel side).	1.0 V DC	PLL	L30	
	2	<ul style="list-style-type: none"> <li>Displayed frequency: 14.12649 MHz</li> </ul>			Approx. 2.0 V DC			Verify
	3	After adjustment, fix the L30 in place with paraffin.						
HF 1st LO LOCK VOLTAGE	1	<ul style="list-style-type: none"> <li>Displayed frequency: 7.99999 MHz</li> <li>Mode : USB</li> <li>Receiving</li> </ul>	PLL	Connect the oscilloscope to R77 (shielding case side).	6.5 V DC	PLL	C35	
	2	<ul style="list-style-type: none"> <li>Displayed frequency: 14.99999 MHz</li> </ul>			6.5 V DC		C46	
	3	<ul style="list-style-type: none"> <li>Displayed frequency: 21.99999 MHz</li> </ul>			6.5 V DC		C59	
	4	<ul style="list-style-type: none"> <li>Displayed frequency: 33.00000 MHz</li> </ul>			7.5 V DC		C70	
	5	<ul style="list-style-type: none"> <li>Displayed frequencies: 0.50000 MHz, 8.00000 MHz, 15.00000 MHz and 22.00000 MHz</li> </ul>			More than 2.0 V DC		Verify	
50 MHz 1st LO OUTPUT LEVEL	1	<ul style="list-style-type: none"> <li>Displayed frequency: 53.00000 MHz</li> <li>Mode : USB</li> <li>Terminate P5 with a 50 <math>\Omega</math> resistor.</li> <li>Receiving</li> </ul>	PLL	Connect the RF voltmeter to P5.	Maximum level (More than +3 dBm)	PLL	Adjust in sequence L52, L53, L54, L58, L59, L60, L61	
	2	<ul style="list-style-type: none"> <li>Shift the frequency between 50.00000 MHz and 54.00000 MHz.</li> </ul>			Adjust the output level within +2 dBm.		Adjust in sequence L58, L59, L60, L61	
	3	After adjustment, remove the resistor from P5 and re-plug P5.						

## PLL ADJUSTMENT (CONTINUED)

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT		
		UNIT	LOCATION		UNIT	ADJUST.	
HF 1st LO OUTPUT LEVEL	1	<ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : USB</li> <li>Terminate P5 with a 50 Ω resistor.</li> <li>Receiving</li> </ul>	PLL	Connect the RF voltmeter to P5.	More than 0 dBm	PLL	Verify
	2	After confirmation, remove the resistor from P5 and re-plug P5.					
HF 2nd LO OUTPUT LEVEL	1	<ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : USB</li> <li>Terminate P4 with a 50 Ω resistor.</li> <li>Receiving</li> </ul>	PLL	Connect the RF voltmeter to P4.	Maximum level (More than +3 dBm)	PLL	Verify
	2	After confirmation, remove the resistor from P4 and re-plug P4.					
RIT	1	<ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : USB</li> <li>Attach the SSG to the [HF ANT] connector and set as:</li> </ul>	Top Cover	Speaker	Preset to center.	Front panel	[RIT] control
	2	<ul style="list-style-type: none"> <li>Level : 50 μV* (-73 dBm)</li> <li>Modulation: OFF</li> <li>[RIT] switch : ON and OFF</li> <li>Receiving</li> </ul>			Same tone pitch on both conditions.	PLL	R70

\* This output level of the standard signal generator (SSG) is indicated as SSG's open circuit.

### • PLL AND DDS UNITS

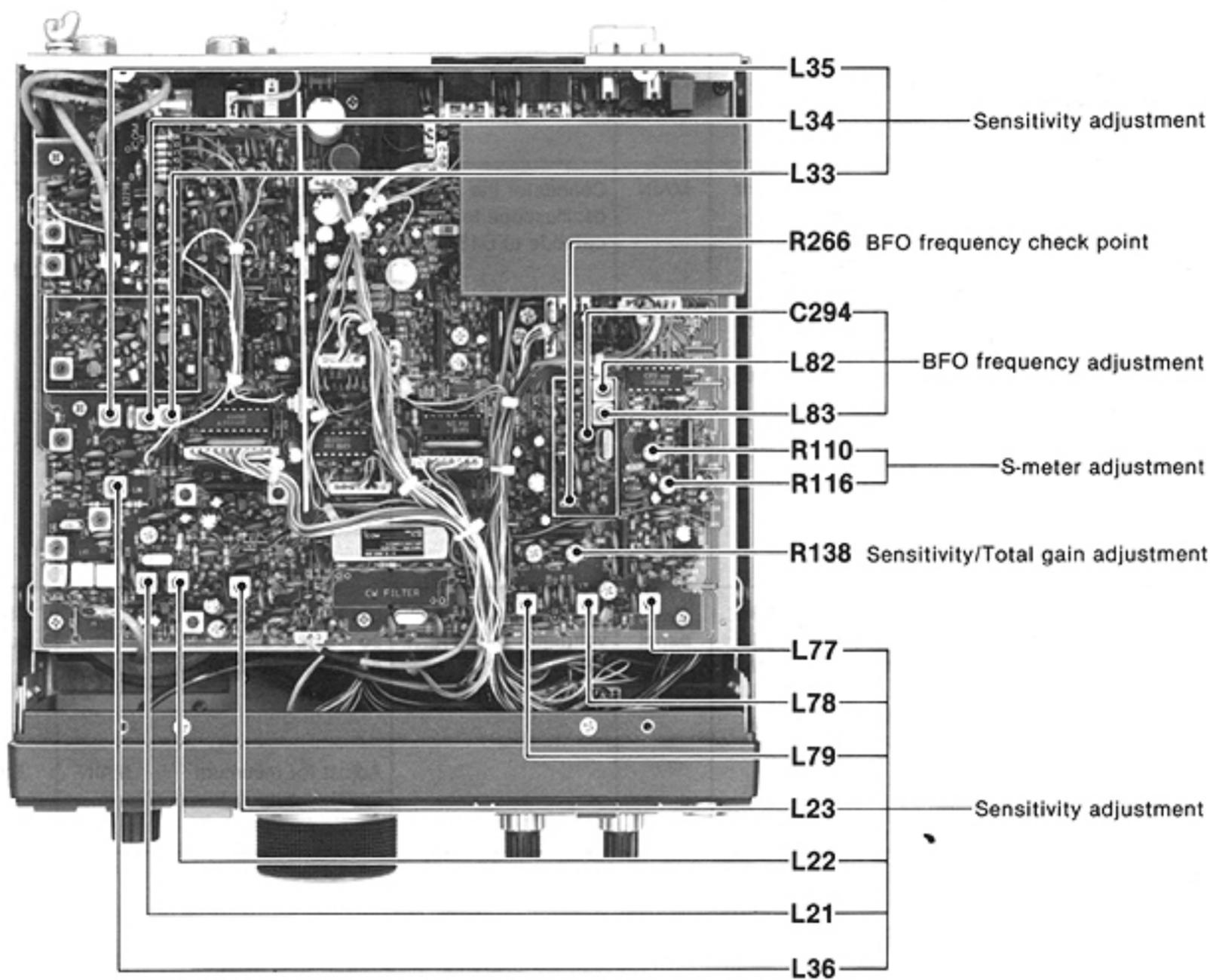


## 6-3 RECEIVER ADJUSTMENT

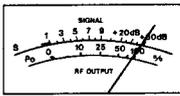
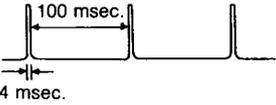
ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT			
		UNIT	LOCATION		UNIT	ADJUST		
BFO FREQUENCY	1	<ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : USB</li> <li>Receiving</li> </ul>	MAIN	Connect the frequency counter to R266.	9.01300 MHz	MAIN	C294	
	2	<ul style="list-style-type: none"> <li>Mode : CW</li> <li>Transmitting</li> <li>Connect a key to the [KEY] jack and key down.</li> </ul>					L83	
	3	<ul style="list-style-type: none"> <li>Mode : LSB</li> <li>Receiving</li> </ul>					L82	
	4	<ul style="list-style-type: none"> <li>Mode : CW</li> <li>Receiving</li> </ul>					Verify	
	5	<ul style="list-style-type: none"> <li>Mode : AM</li> <li>Receiving</li> </ul>					No output	
SENSITIVITY	1	<ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : USB</li> <li>[RIT] switch : OFF</li> <li>[AGC] switch : FAST</li> <li>[ATT] switch : OFF</li> <li>[NB] switch : OFF</li> <li>[PRE] switch : ON</li> <li>[SQL] control : Max. CCW</li> <li>Attach the SSG to the [HF ANT] connector and set as: Level : 0.16 <math>\mu</math>V* (−123 dBm) Modulation: OFF</li> <li>Receiving</li> </ul>	Rear panel	Connect the AC millivoltmeter to the [EXT SP] jack with an 8 $\Omega$ load.	Preset to max. CW.  Maximum audio output level	MAIN	R138	
							Adjust in sequence L33, L34, L35, L36, L21, L22, L23, L79, L78, L77	
TOTAL GAIN	1	<ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : USB</li> <li>[RIT] switch : OFF</li> <li>[AGC] switch : FAST</li> <li>[ATT] switch : OFF</li> <li>[NB] switch : OFF</li> <li>[PRE] switch : OFF</li> <li>Attach the SSG to the [HF ANT] connector and set as: Level : 1.0 mV* (−47 dBm) Modulation: OFF</li> <li>Receiving</li> </ul>	Rear panel	Connect the AC millivoltmeter to the [EXT SP] jack with an 8 $\Omega$ load.	1.0 V (0 dB)	Front panel	[AF] control	
	2	<ul style="list-style-type: none"> <li>Attach the SSG to the [HF ANT] connector and set as: Level : OFF</li> </ul>					30 mV (−30 dB)	MAIN
S-METER	1	<ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : USB</li> <li>[PRE] switch : OFF</li> <li>Attach the SSG to the [HF ANT] connector and set as: Level : 50 <math>\mu</math>V* (−73 dBm) Modulation: OFF</li> <li>Receiving</li> </ul>	Front panel	S-METER	S9	MAIN	R116	
	2	<ul style="list-style-type: none"> <li>Attach the SSG to the [HF ANT] connector and set as: Level : 50 mV* (−13 dBm)</li> </ul>					S9 + 60 dB	R110
	3	Repeat step 1 and 2 several times.						

\* This output level of the standard signal generator (SSG) is indicated as SSG's open circuit.

• MAIN UNIT



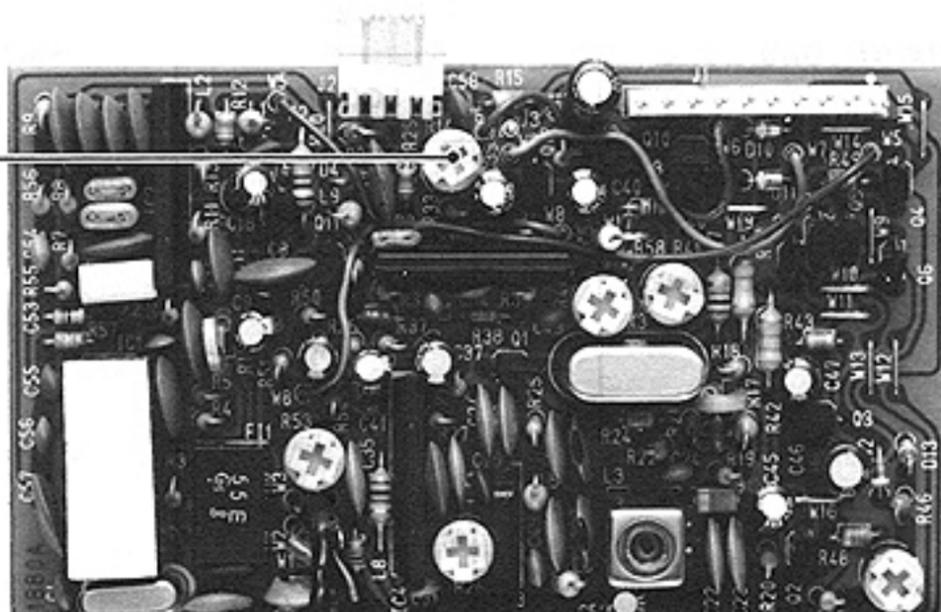
## RECEIVER ADJUSTMENT (CONTINUED)

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
		UNIT	LOCATION		UNIT	ADJUST
FM S-METER	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 53.00000 MHz</li> <li>• Mode : FM</li> <li>• Attach the SSG to the [50 MHz ANT] connector and set as:               <ul style="list-style-type: none"> <li>Level : 3.2 mV* (-37 dBm)</li> <li>Modulation: 1 kHz</li> <li>Deviation : ±3.5 kHz</li> </ul> </li> <li>• Receiving</li> </ul>	Front panel	S-METER	S9+60 dB 	AM•FM	R14
NOISE BLANKER	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 14.10000 MHz</li> <li>• Mode : USB</li> <li>• [NB] switch : ON</li> <li>• Attach the SSG to the [HF ANT] connector and set as:               <ul style="list-style-type: none"> <li>Level : 3.2 μV* (-97 dBm)</li> <li>Modulation: OFF</li> </ul> </li> <li>• Apply the following signal into the SSG's output.</li> <li>• Receiving</li> </ul> 	MAIN	Connector the oscilloscope to the cathode of D13.	Preset to max. CW.	MAIN	R293
	2 <ul style="list-style-type: none"> <li>• Attach the SSG to the [HF ANT] connector and set as:               <ul style="list-style-type: none"> <li>Level : 3.2 μV* (-97 dBm)</li> <li>Modulation: OFF</li> </ul> </li> <li>• Apply the following signal into the SSG's output.</li> <li>• Receiving</li> </ul>			Adjust for maximum waveform on the oscilloscope.		L25, L26
IF TRAP	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 52.90000 MHz</li> <li>• Mode : USB</li> <li>• Attach the SSG to the [50 MHz ANT] connector and set as:               <ul style="list-style-type: none"> <li>Frequency : 70.45150 MHz</li> <li>Modulation: OFF</li> </ul> </li> </ul>	Rear panel	Connect the AC millivoltmeter to the [EXT SP] jack with a speaker (8 Ω).	Set SSG's output level so that the signal is audible through the speaker.		SSG's output
				Adjust for minimum speaker output.	MAIN	C320

\*This output level of the standard signal generator (SSG) is indicated as SSG's open circuit.

• AM • FM UNIT

R14 FM S-meter  
adjustment



• MAIN UNIT

C320 IF Trap adjustment

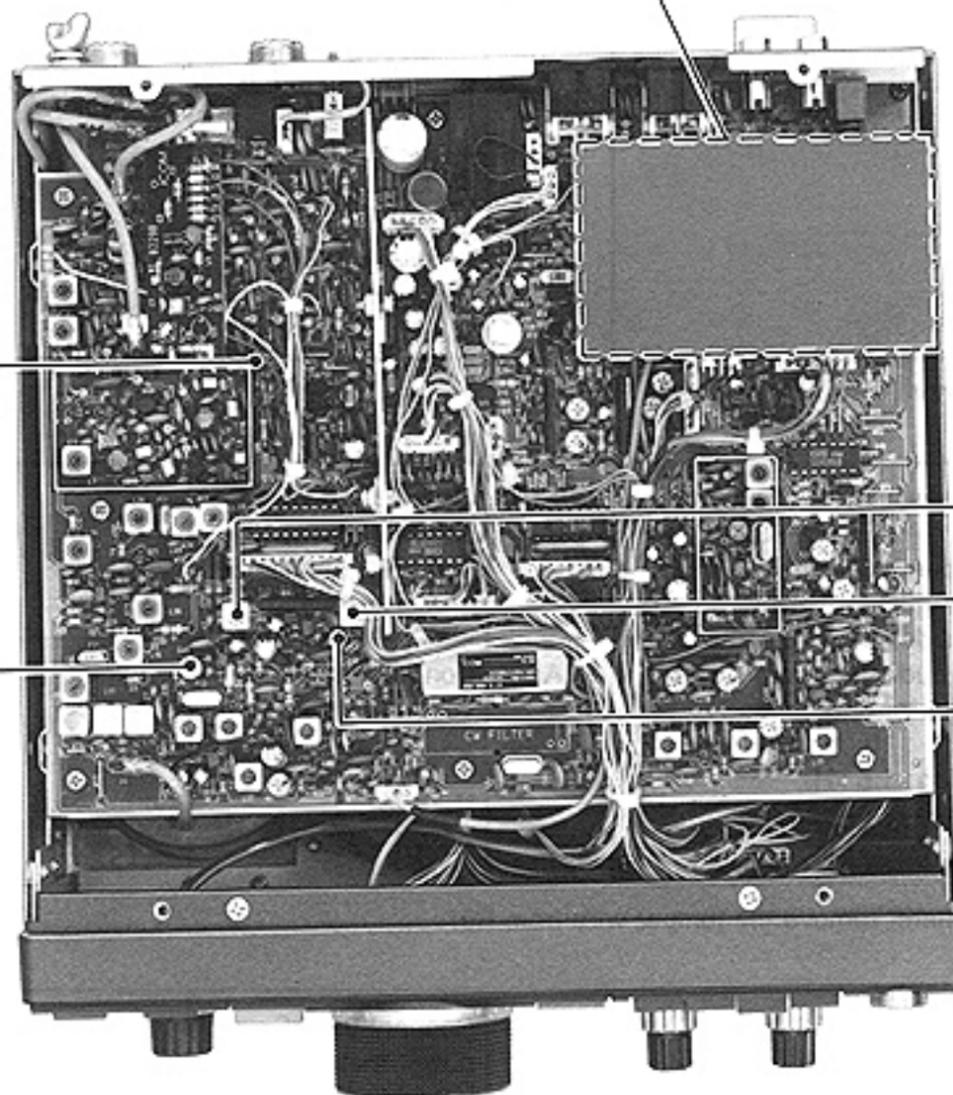
R293 Noise blanker  
presetting

L25

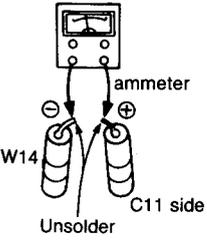
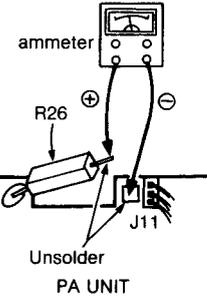
L26

Noise blanker  
adjustment

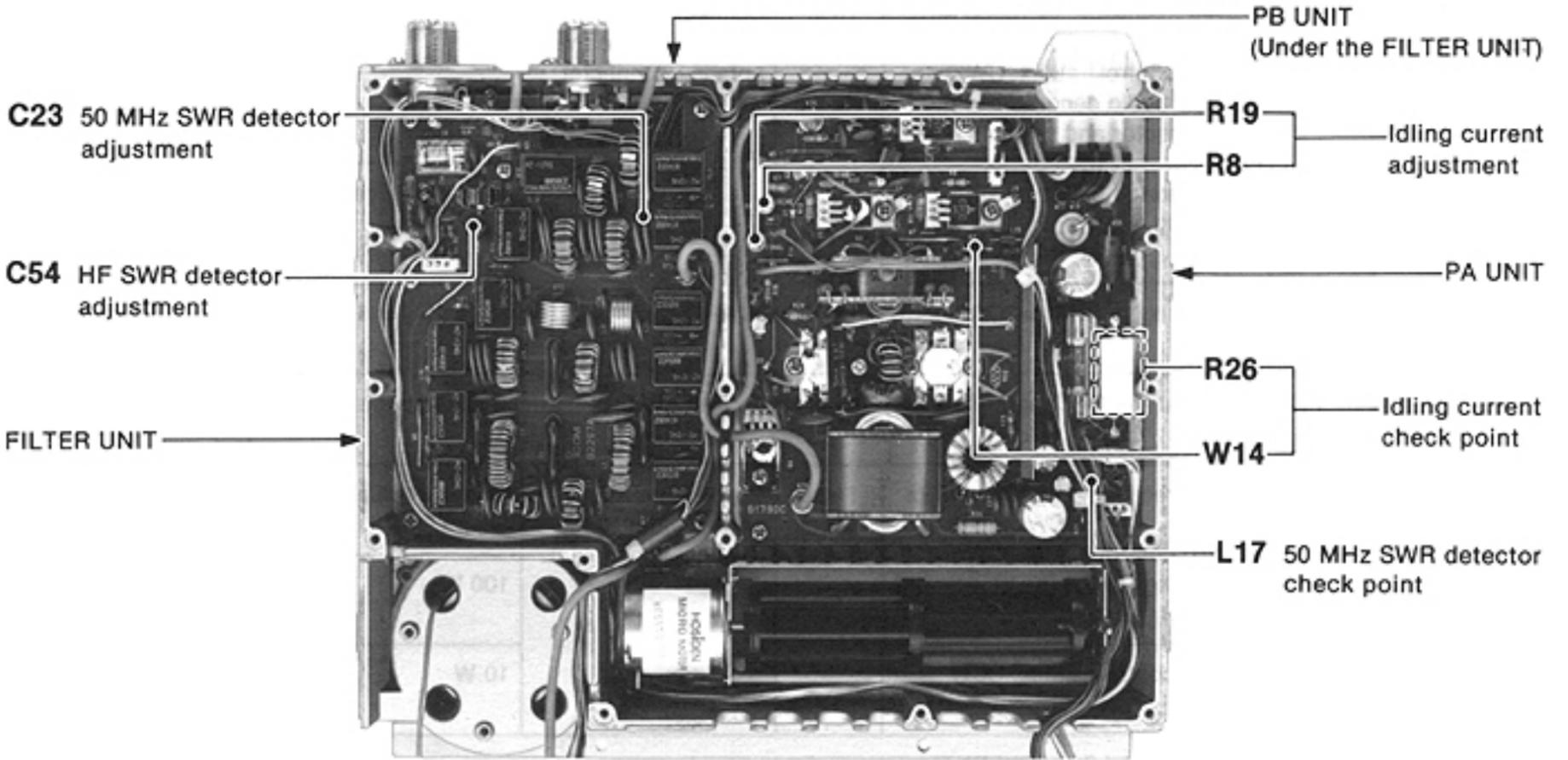
D13 Noise blanker  
check point



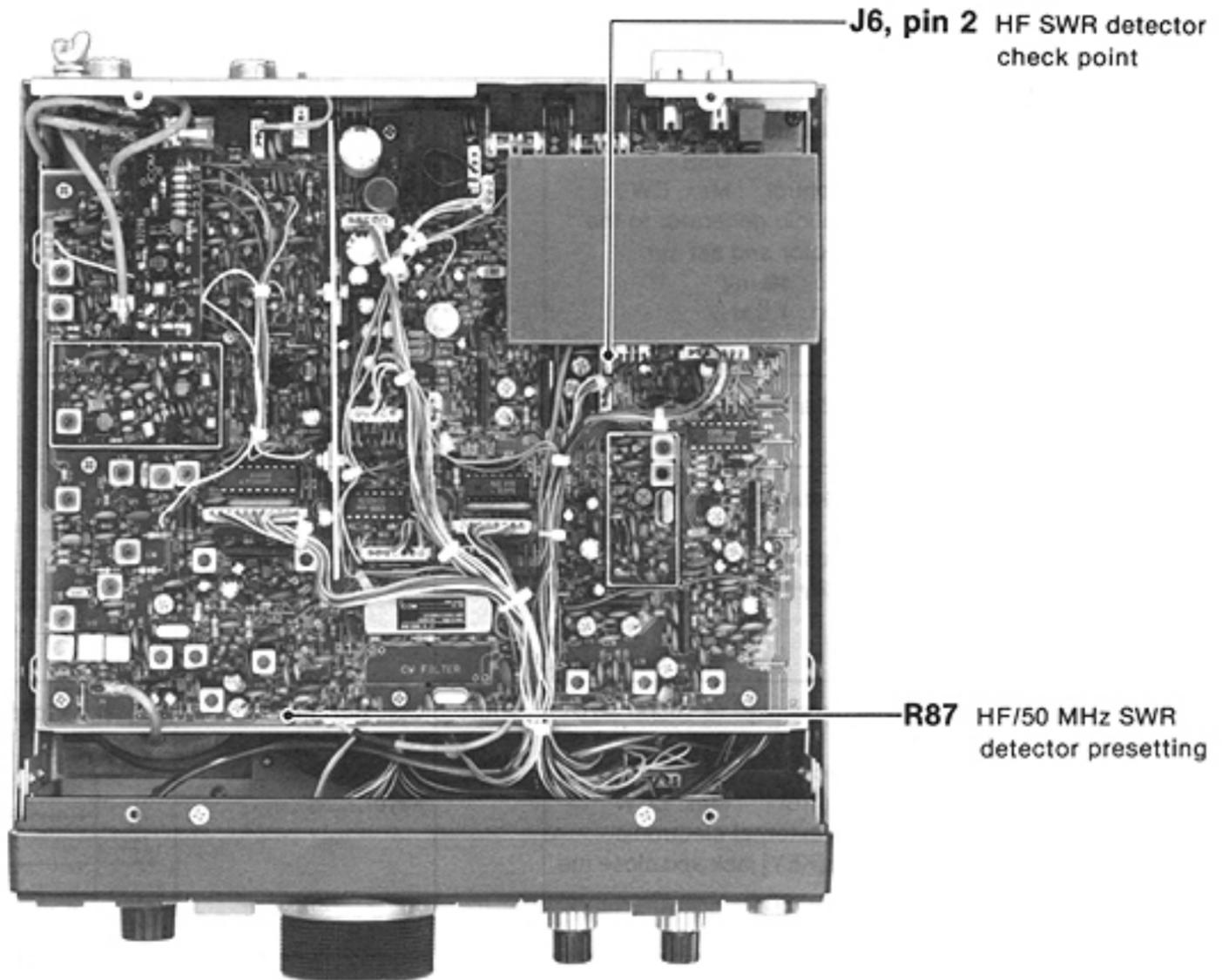
## 6-4 TRANSMITTER ADJUSTMENT

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
		UNIT	LOCATION		UNIT	ADJUST
IDLING CURRENT Ⓐ For drive transistors	<ul style="list-style-type: none"> <li>• Displayed frequency: 14.10000 MHz</li> <li>• Mode : CW</li> <li>• [TRANSMIT] switch: IN</li> <li>• [KEY] jack : No connection</li> </ul>	PA	Unsolder W14 and connect the ammeter to the unsoldering points. 	50 mA	PA	R8
		Ⓑ For final transistors	PA	Unsolder R26 and connect the ammeter to the unsoldering points. 	300 mA	PA
After adjustment, re-solder W14 and R26.						
HF SWR DETECTOR	<ul style="list-style-type: none"> <li>• Displayed frequency: 14.10000 MHz</li> <li>• Mode : USB</li> <li>• [RF PWR] control : Max. CW</li> <li>• Connect the jumper wire between R87 (front side) and a ground.</li> <li>• Attach the audio generator to the [MIC] connector and set as;               <ul style="list-style-type: none"> <li>Level : 10 mV</li> <li>Modulation: 1.5 kHz</li> </ul> </li> <li>• Transmitting</li> </ul>	Rear panel	Connect the RF power meter to the [HF ANT] connector.	100 W	Front panel	[MIC] control
		MAIN	Connect the DC voltmeter to J6, pin 2.	Minimum	FILTER	C54
	3	After adjustment, remove the jumper wire from R87.				
50 MHz SWR DETECTOR	<ul style="list-style-type: none"> <li>• Displayed frequency: 52.00000 MHz</li> <li>• Mode : USB</li> <li>• [RF PWR] control : Max. CW</li> <li>• Connect the jumper wire between R87 (front side) and a ground.</li> <li>• Attach the audio generator to the [MIC] connector and set as;               <ul style="list-style-type: none"> <li>Level : 10 mV</li> <li>Modulation: 1.5 kHz</li> </ul> </li> <li>• Transmitting</li> </ul>	Rear panel	Connect the RF power meter to the [50 MHz ANT] connector.	10 W	Front panel	[MIC] control
		FILTER	Connect the DC voltmeter to L17.	Minimum	PB	C23
	3	After adjustment, remove the jumper wire from R87.				

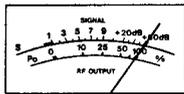
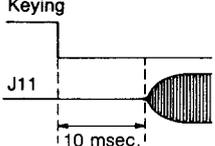
• PA, FILTER AND PB UNITS



• MAIN UNIT



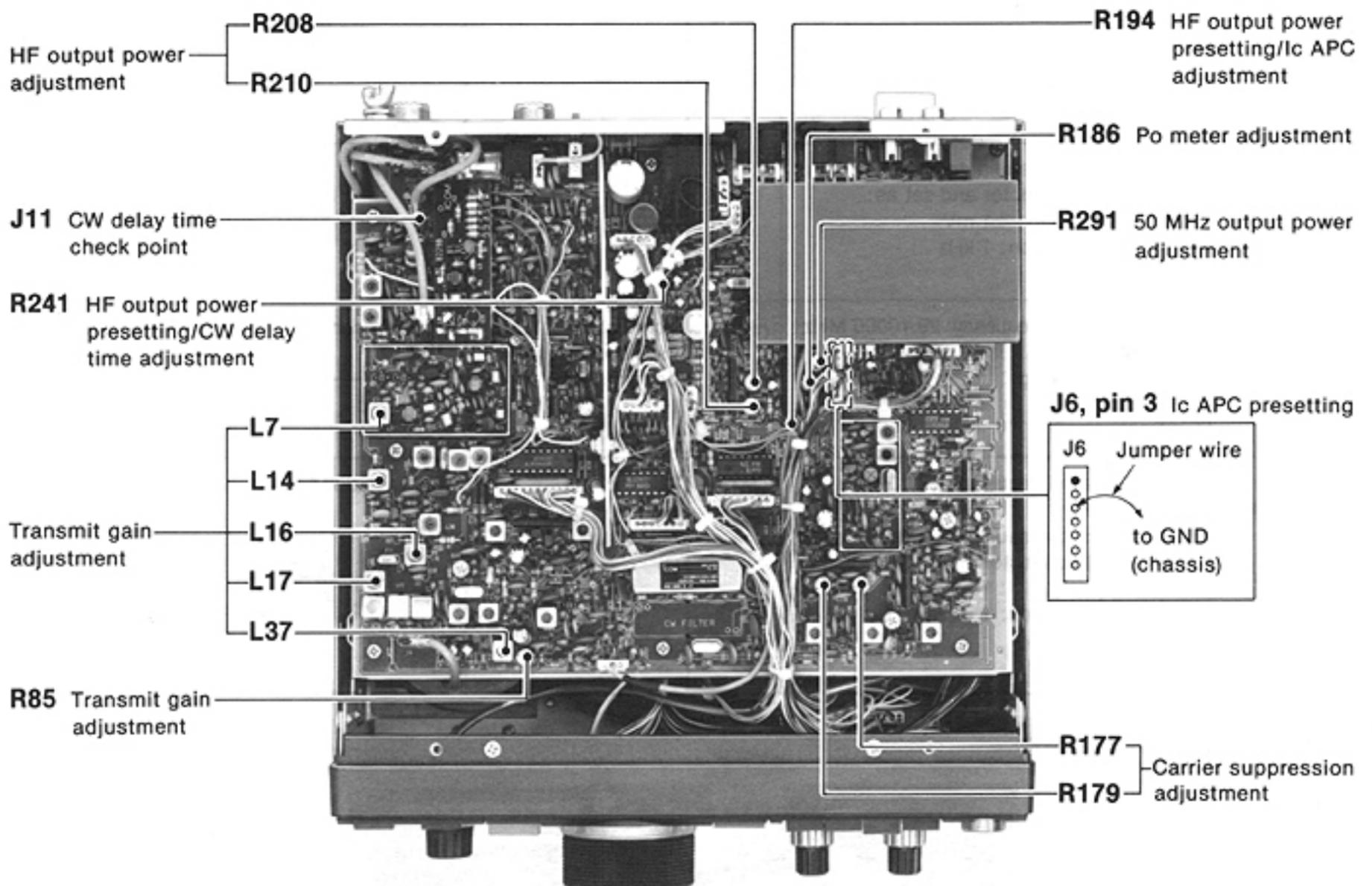
## TRANSMITTER ADJUSTMENT (CONTINUED)

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT		
		UNIT	LOCATION		UNIT	ADJUST	
TRANSMIT GAIN	1 <ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : USB</li> <li>[RF PWR] control : Max. CW</li> <li>Attach the audio generator to the [MIC] connector and set as: <ul style="list-style-type: none"> <li>Level : 1 mV</li> <li>Modulation: 1.5 kHz</li> </ul> </li> <li>Transmitting</li> </ul>	Rear panel	Connect the RF power meter to the antenna connector.	Preset to max. CW.	MAIN	R85	
				50 W	Front panel	[MIC] control	
	Maximum level			MAIN	L37, L17, L16, L14, L7		
	50 W				R85		
2	<ul style="list-style-type: none"> <li>[MIC] control : Max. CW</li> </ul>						
NOTE: Adjust the [MIC] control to keep the output power at 50 W for each adjustment.							
HF OUTPUT POWER	1	<ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : CW</li> <li>[RF PWR] control : Max. CW</li> <li>Connect a key to the [KEY] jack and key down.</li> </ul>	Rear panel	Connect the RF power meter to the [HF ANT] connector.	Preset to max. CCW.	MAIN	R194, R241
	2				100 W		R210
	3				<ul style="list-style-type: none"> <li>[RF PWR] control : Max. CCW</li> </ul>		10 W
	4	Repeat step 2 and 3 several times.					
Ic APC	1	<ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : CW</li> <li>[RF PWR] control : Max. CW</li> <li>Connect the jumper wire between pin 3 of J6 and a ground.</li> <li>Connect a key to the [KEY] jack and key down.</li> </ul>	Rear panel	Connect the ammeter between the DC power supply and IC-726.	22 A	MAIN	R194
	2	After adjustment, remove the jumper wire from J6, pin 3.					
50 MHz OUTPUT POWER	1	<ul style="list-style-type: none"> <li>Displayed frequency: 50.00000 MHz</li> <li>Mode : USB</li> <li>[RF PWR] control : Max. CW</li> <li>Attach the audio generator to the [MIC] connector and set as: <ul style="list-style-type: none"> <li>Level : 10 mV</li> <li>Modulation: 1.5 kHz</li> </ul> </li> <li>Transmitting</li> </ul>	Rear panel	Connect the RF power meter to the [50 MHz ANT] connector.	Preset to max. CCW.	MAIN	R291
	2				Maximum level	Front panel	[MIC] control
	3				10 W	MAIN	R291
	4	Repeat step 2 and 3 several times.					
Po METER	1	<ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : CW</li> <li>[RF PWR] control : Max. CW</li> <li>Connect a key to the [KEY] jack and key down.</li> </ul>	Front panel	S-METER	100 %	MAIN	R186
							
CW DELAY TIME	1	<ul style="list-style-type: none"> <li>Displayed frequency: 14.10000 MHz</li> <li>Mode : CW</li> <li>[BK IN] switch : ON</li> <li>[DELAY] control : Max. CCW</li> <li>Connect an external electronic keyer to the [KEY] jack and close the key.</li> </ul>	MAIN	Connect the oscilloscope to J11 and the electronic keyer.	Adjust as follows:	MAIN	R241
						<p>Keying</p> 	

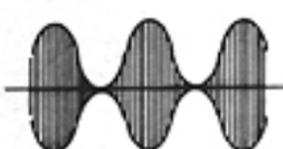
## TRANSMITTER ADJUSTMENT (CONTINUED)

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
		UNIT	LOCATION		UNIT	ADJUST
CARRIER SUPPRESSION	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 14.10000 MHz</li> <li>• Mode : USB and LSB</li> <li>• [MIC] control : Max. CCW</li> <li>• Apply no signal to the [MIC] connector.</li> <li>• Transmitting</li> </ul>	Rear panel	Connect the spectrum analyzer to the antenna connector via the attenuator.	Minimum carrier level (Less than -50 dB)	MAIN	R177, R179 (Alternate adjustment)

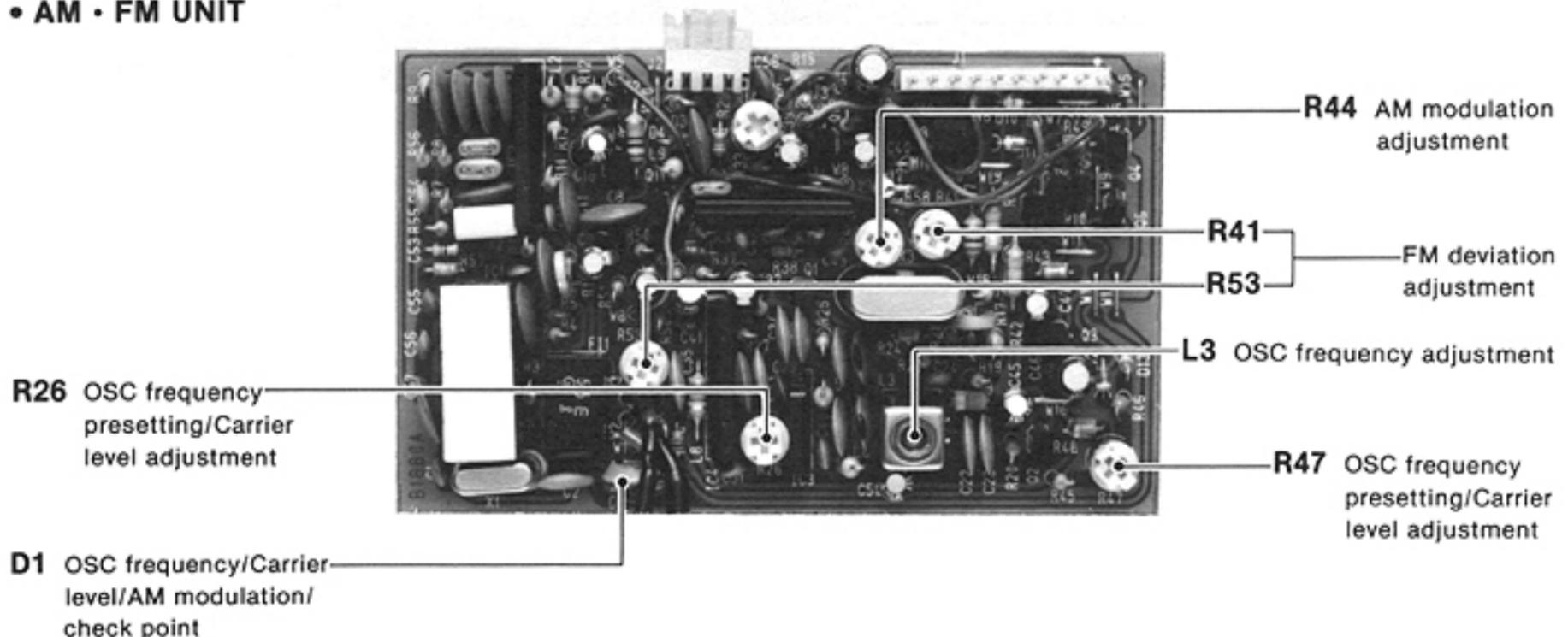
### • MAIN UNIT



## TRANSMITTER ADJUSTMENT (CONTINUED)

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT		
		UNIT	LOCATION		UNIT	ADJUST	
OSC FREQUENCY	<ul style="list-style-type: none"> <li>• Displayed frequency: 29.10000 MHz</li> <li>• Mode : FM</li> <li>• Transmitting</li> </ul>	AM • FM	Connect the frequency counter to the cathode of D1.	Preset to max. CW.	AM • FM	R26	
						Preset to max. CCW.	R47
						9.01000 MHz	L3
FM DEVIATION	<ul style="list-style-type: none"> <li>• Displayed frequency: 29.10000 MHz</li> <li>• Mode : FM</li> <li>• [RF PWR] control : Center</li> <li>• Attach the audio generator to the [MIC] connector and set as:                             <ul style="list-style-type: none"> <li>Level : 10 mV</li> <li>Modulation: 1 kHz</li> </ul> </li> <li>• Set the FM deviation meter as:                             <ul style="list-style-type: none"> <li>HPF : 50 Hz</li> <li>LPF : 20 kHz</li> <li>De-emphasis: OFF</li> <li>Detector : (P-P)/2</li> </ul> </li> <li>• Transmitting</li> </ul>	Rear panel	Attach the FM deviation meter to the [50 MHz ANT] connector via the attenuator.	±4.8 kHz	AM • FM	R41	
	<ul style="list-style-type: none"> <li>• Attach the audio generator to the [MIC] connector and set as:                             <ul style="list-style-type: none"> <li>Level : 1 mV</li> <li>Modulation: 1 kHz</li> </ul> </li> </ul>			±3.5 kHz		R53	
CARRIER LEVEL	<ul style="list-style-type: none"> <li>• Displayed frequency: 29.10000 MHz</li> <li>• Mode : FM</li> <li>• Transmitting</li> </ul>	AM • FM	Connect the oscilloscope to the cathode of D1.	Preset to center.	AM • FM	R26	
				350 mVp-p		R47	
AM MODULATION	<ul style="list-style-type: none"> <li>• Displayed frequency: 29.10000 MHz</li> <li>• Mode : AM</li> <li>• Attach the audio generator to the [MIC] connector and set as:                             <ul style="list-style-type: none"> <li>Level : 10 mV</li> <li>Modulation: 1 kHz</li> </ul> </li> <li>• Transmitting</li> </ul>	AM • FM	Connect the oscilloscope to the cathode of D1.	100 % modulation 	AM • FM	R44	

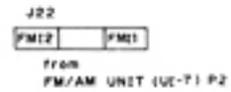
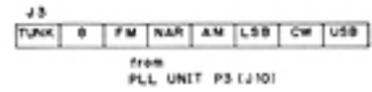
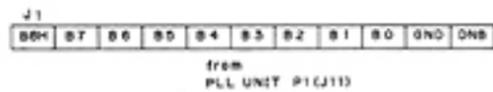
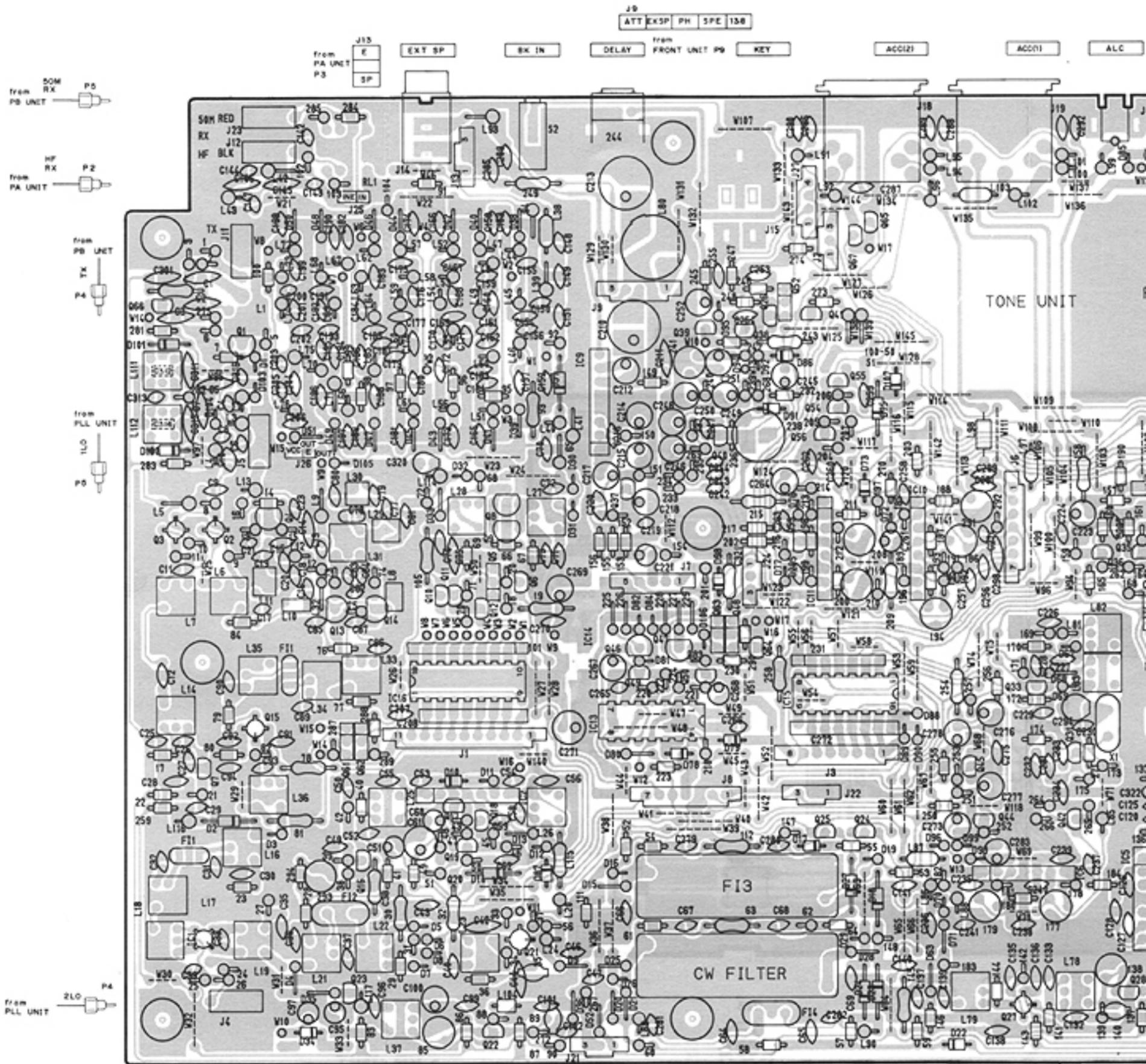
### • AM • FM UNIT







# MAIN UNIT

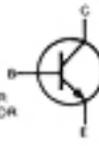
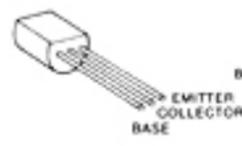


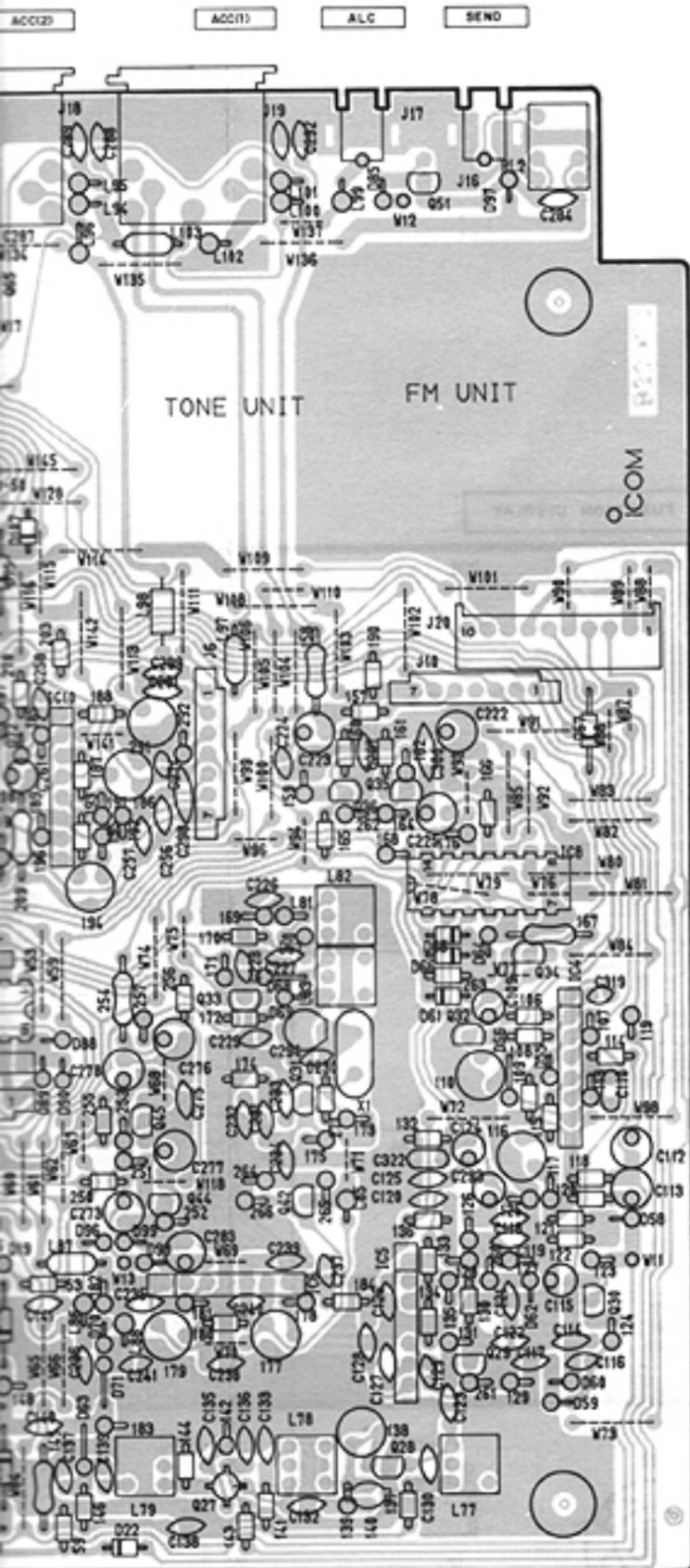
**2SA1048 GR**  
Q17, Q38, Q53

**2SB909M Q**  
Q5, Q62

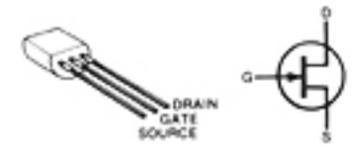
**2SC2053**  
Q1, Q4

**2SC2458 GR**  
Q11, Q18, Q19, Q26, Q29, Q30,  
Q31, Q35, Q36, Q37, Q40, Q42,  
Q44, Q45, Q49, Q50, Q56

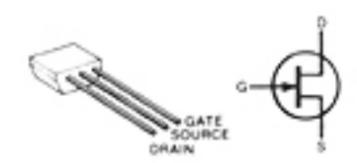




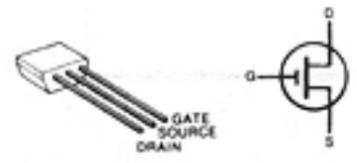
**2SK125**  
Q8, Q9, Q13, Q14



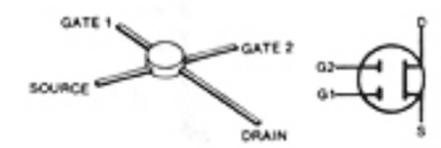
**2SK192A-Y**  
Q16



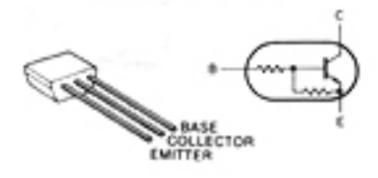
**2SK241 Y**  
Q7, Q22, Q28



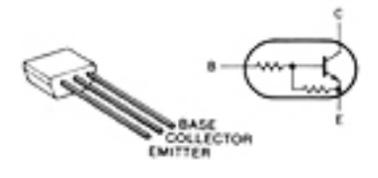
**3SK74 K/M**  
Q2, Q3, Q15,  
Q21, Q27



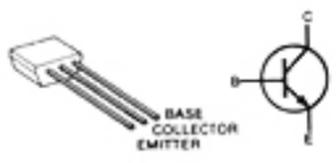
**RN1202**  
Q6, Q12, Q23,  
Q32, Q34, Q51,  
Q64, Q65, Q66



**RN1204**  
Q33, Q39, Q54,  
Q55



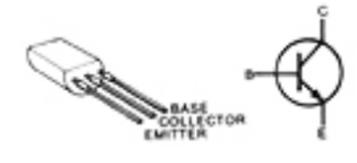
**2SC2458 GR**  
Q11, Q18, Q19, Q26, Q29, Q30,  
Q31, Q35, Q36, Q37, Q40, Q42,  
Q44, Q45, Q49, Q50, Q56



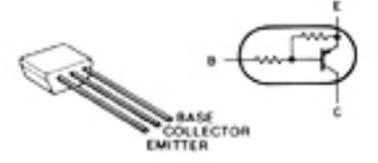
**2SD1225M R**  
Q48, Q52, Q61,  
Q63



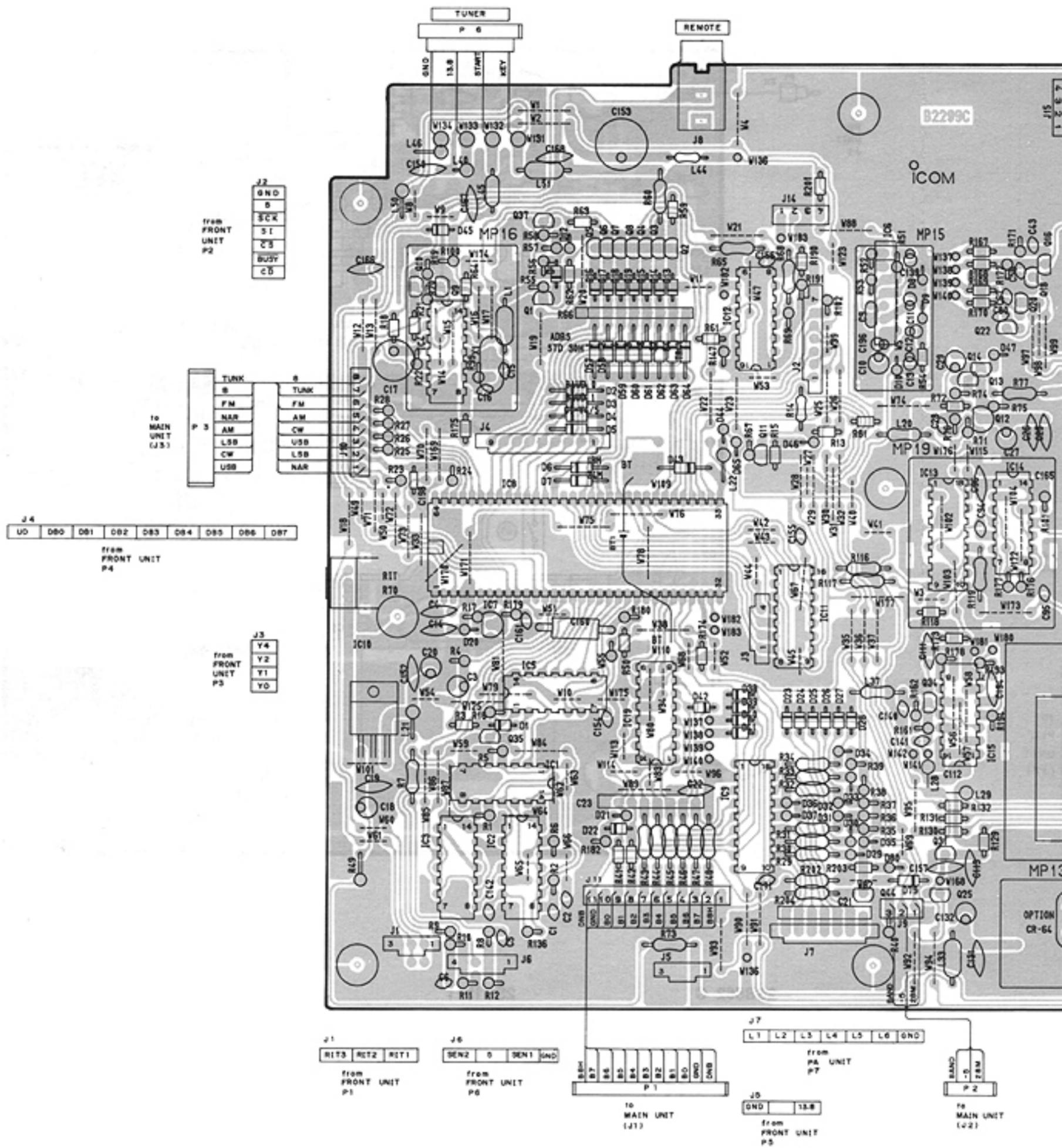
**2SD468C**  
Q46, Q47

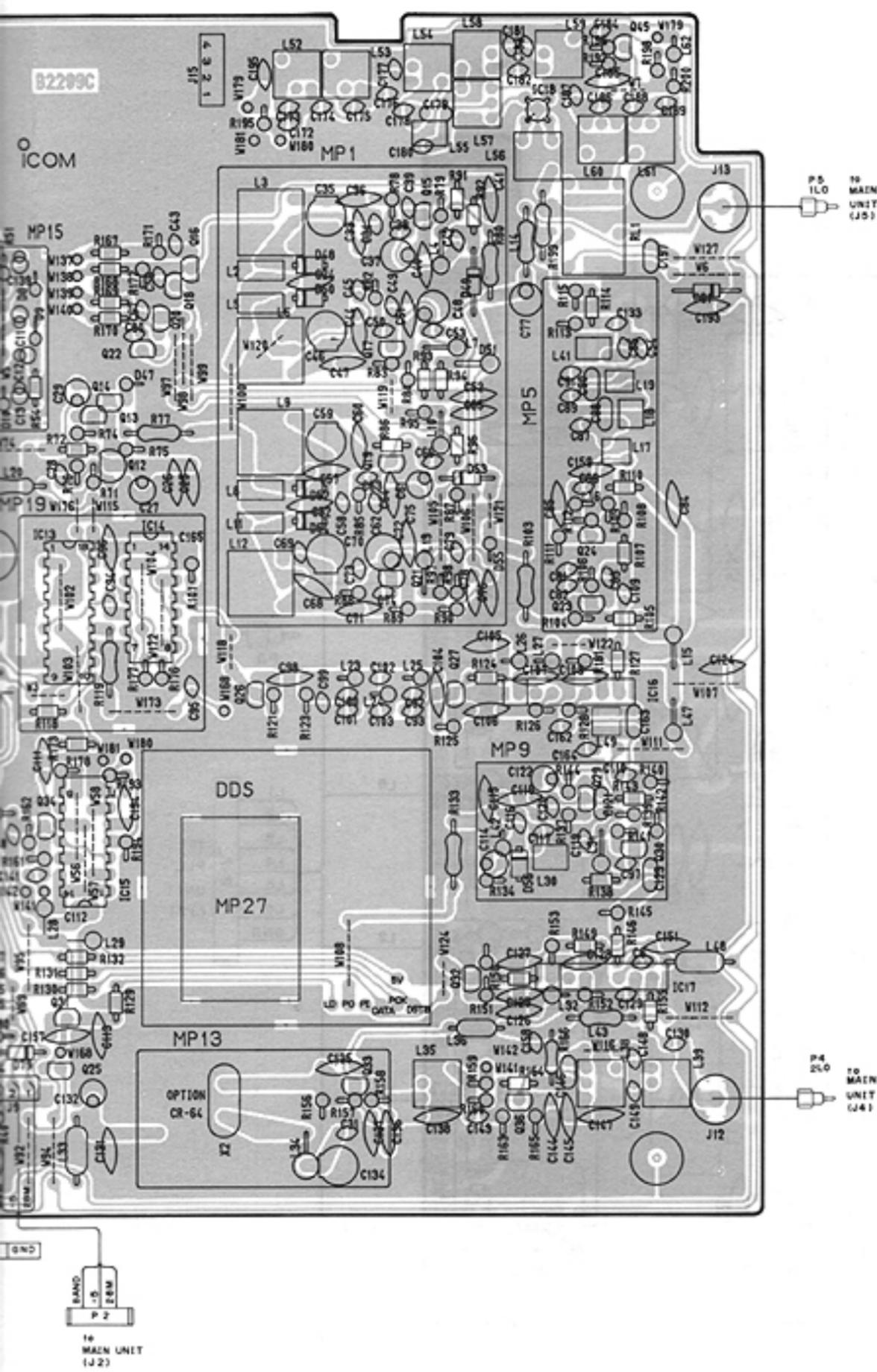


**RN2202**  
Q10, Q20, Q24,  
Q25, Q41, Q67



# PLL UNIT





**2SA1048 GR**  
Q37



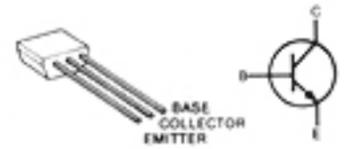
**2SC1571G**  
Q12



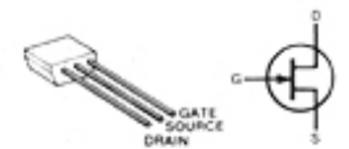
**2SC2458 GR/Y**  
Q1, Q2, Q3,  
Q4, Q5, Q6,  
Q7, Q8, Q9,  
Q10, Q11, Q13,  
Q14, Q16, Q18,  
Q20, Q22, Q32,  
Q33



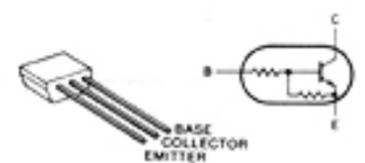
**2SC2688 O**  
Q23, Q24, Q26,  
Q27, Q30, Q34,  
Q36, Q45



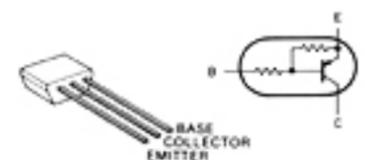
**2SK192A GR**  
Q15, Q17, Q19,  
Q21, Q29



**RN1202**  
Q25, Q35, Q44

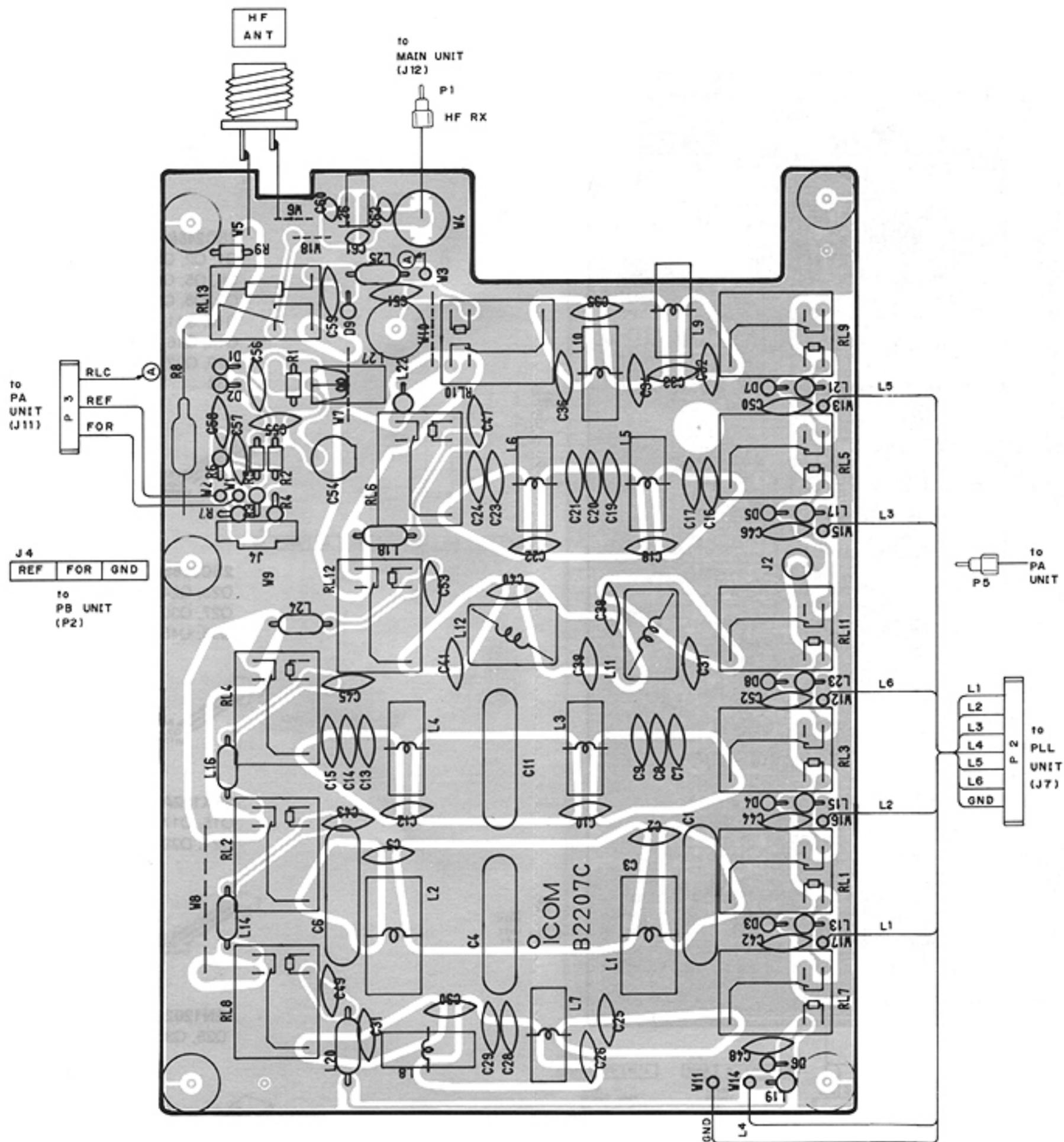


**RN2202**  
Q31

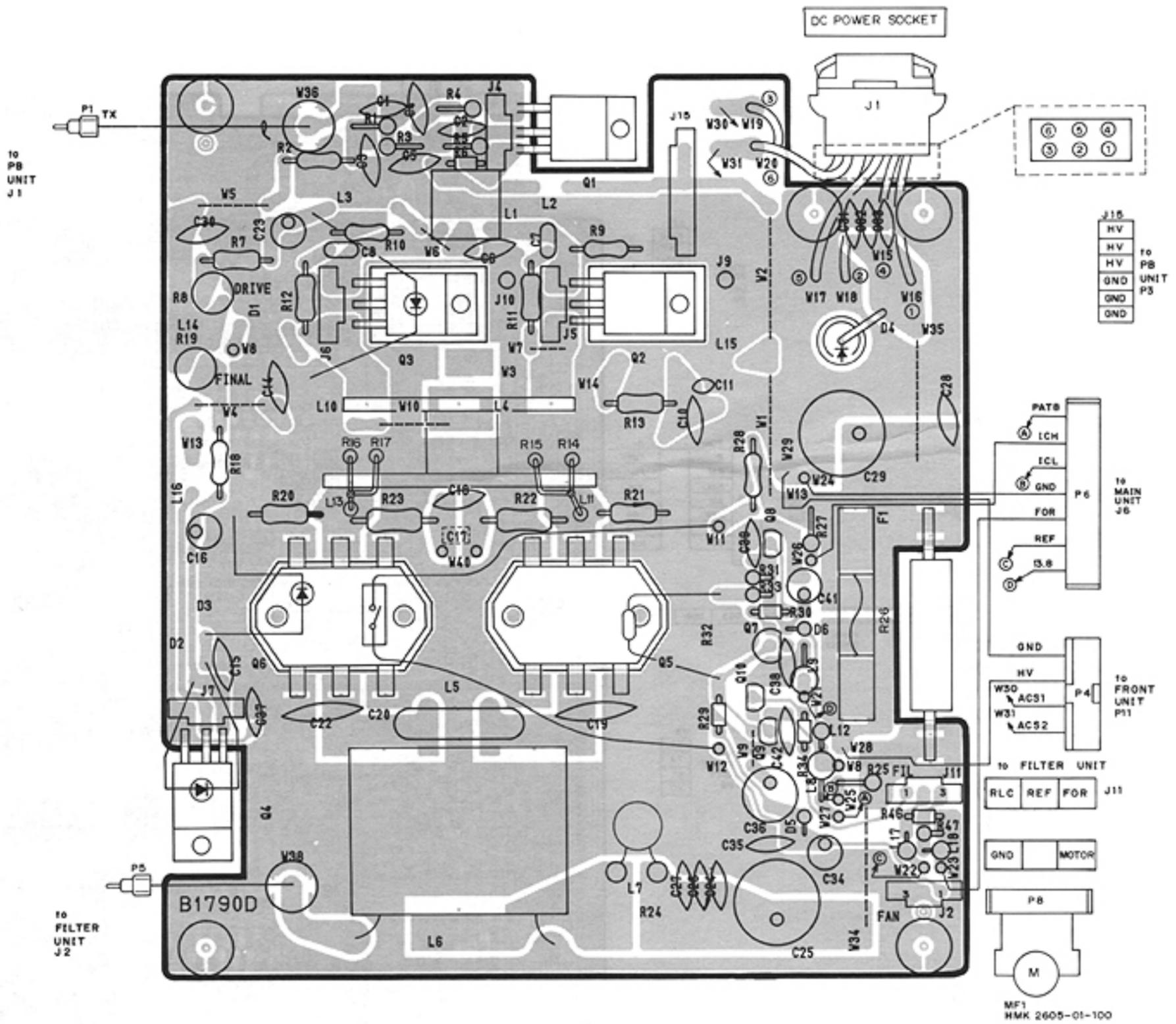


# 7-4 PA UNIT

## • FILTER UNIT



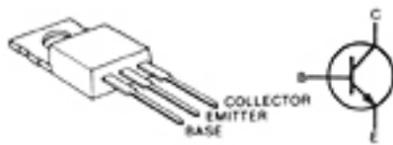
• PA UNIT



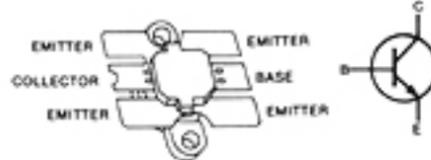
2SB562 C  
Q7



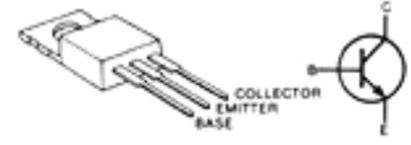
2SC1971  
Q1



2SC2904  
Q5, Q6



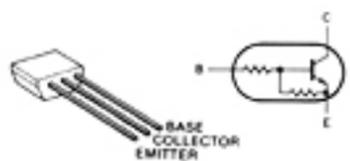
2SC3133  
Q2, Q3



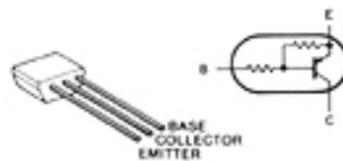
2SD1406 Y  
Q4



RN1202  
Q8, Q9

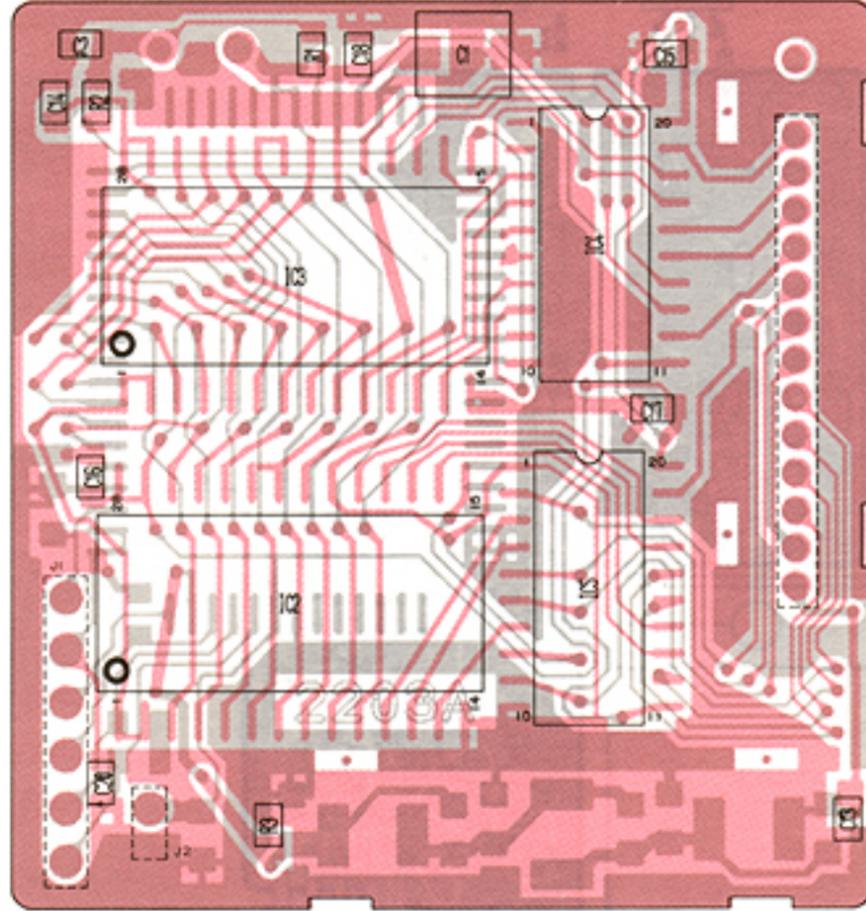


RN2202  
Q10

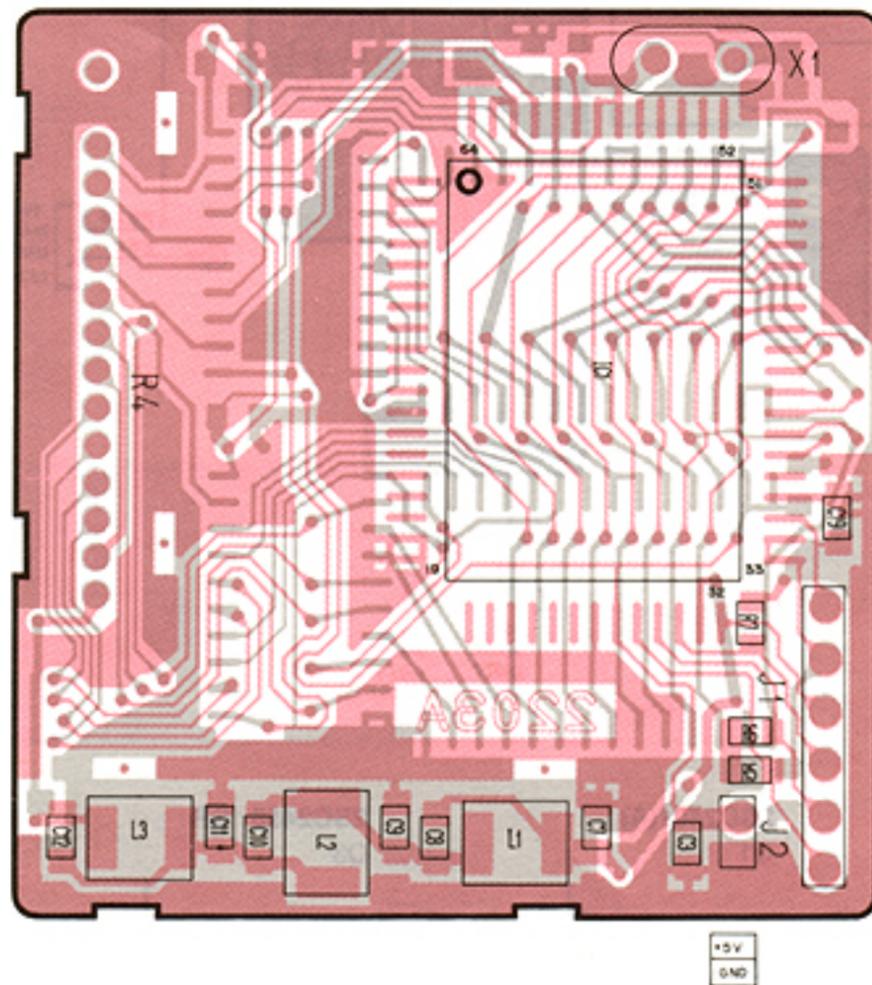


## 7-5 DDS, AM • FM AND BPF UNITS

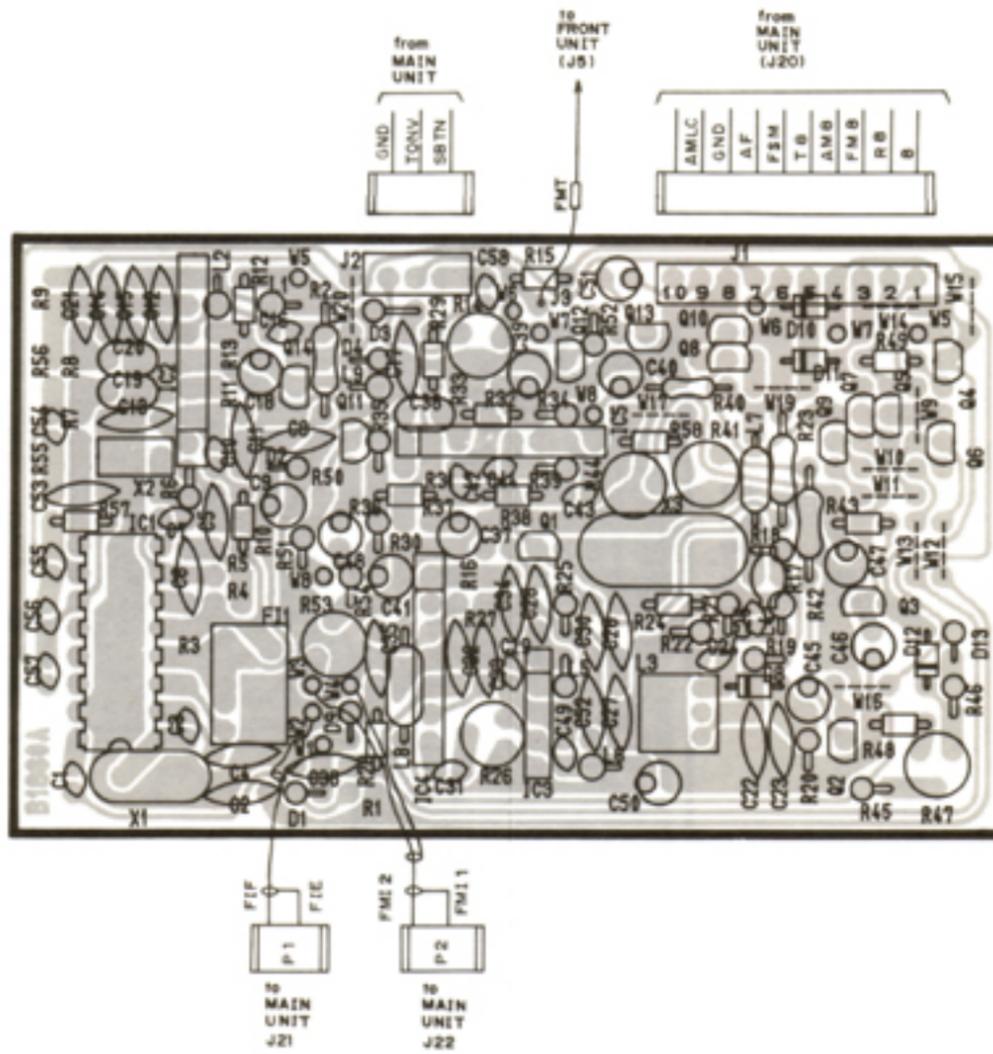
- DDS UNIT  
COMPONENT SIDE



FOIL SIDE



• AM • FM UNIT



**2SC2458 GR**  
Q4, Q11, Q13



**2SC2785 EL**  
Q1



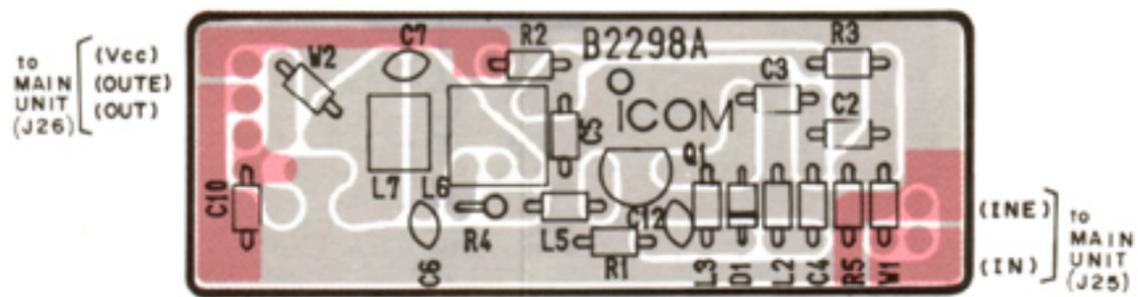
**RN1202**  
Q2, Q3, Q5, Q7,  
Q8, Q10, Q14



**RN2202**  
Q6, Q9, Q12



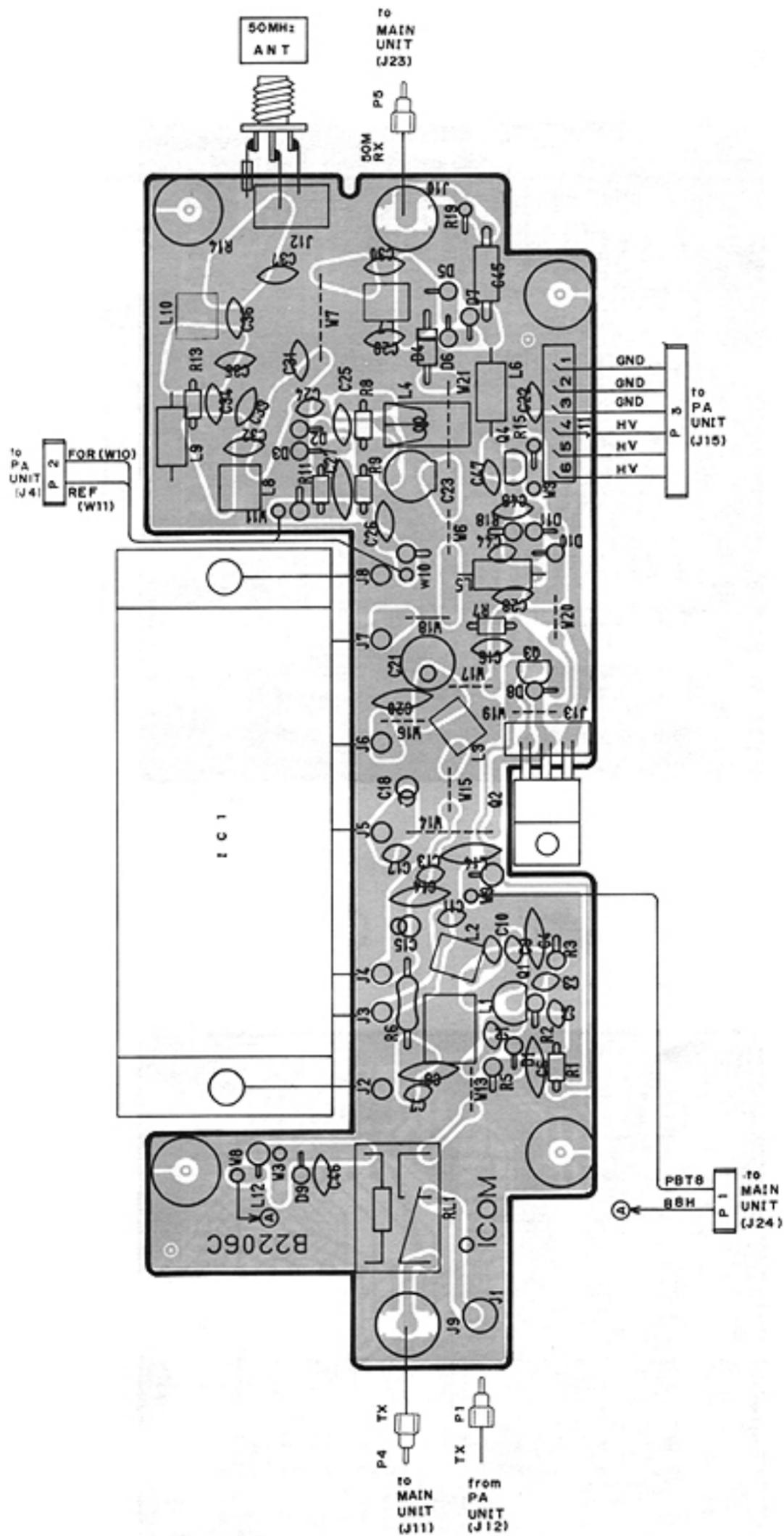
• BPF UNIT



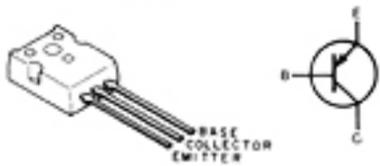
**2SK125**  
Q1



# 7-6 PB UNIT



**2SA1359 Y**  
Q2



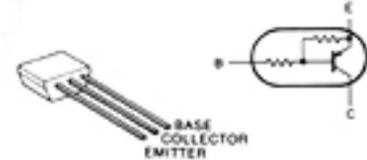
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Q1



**2SC2458 GR**  
Q3

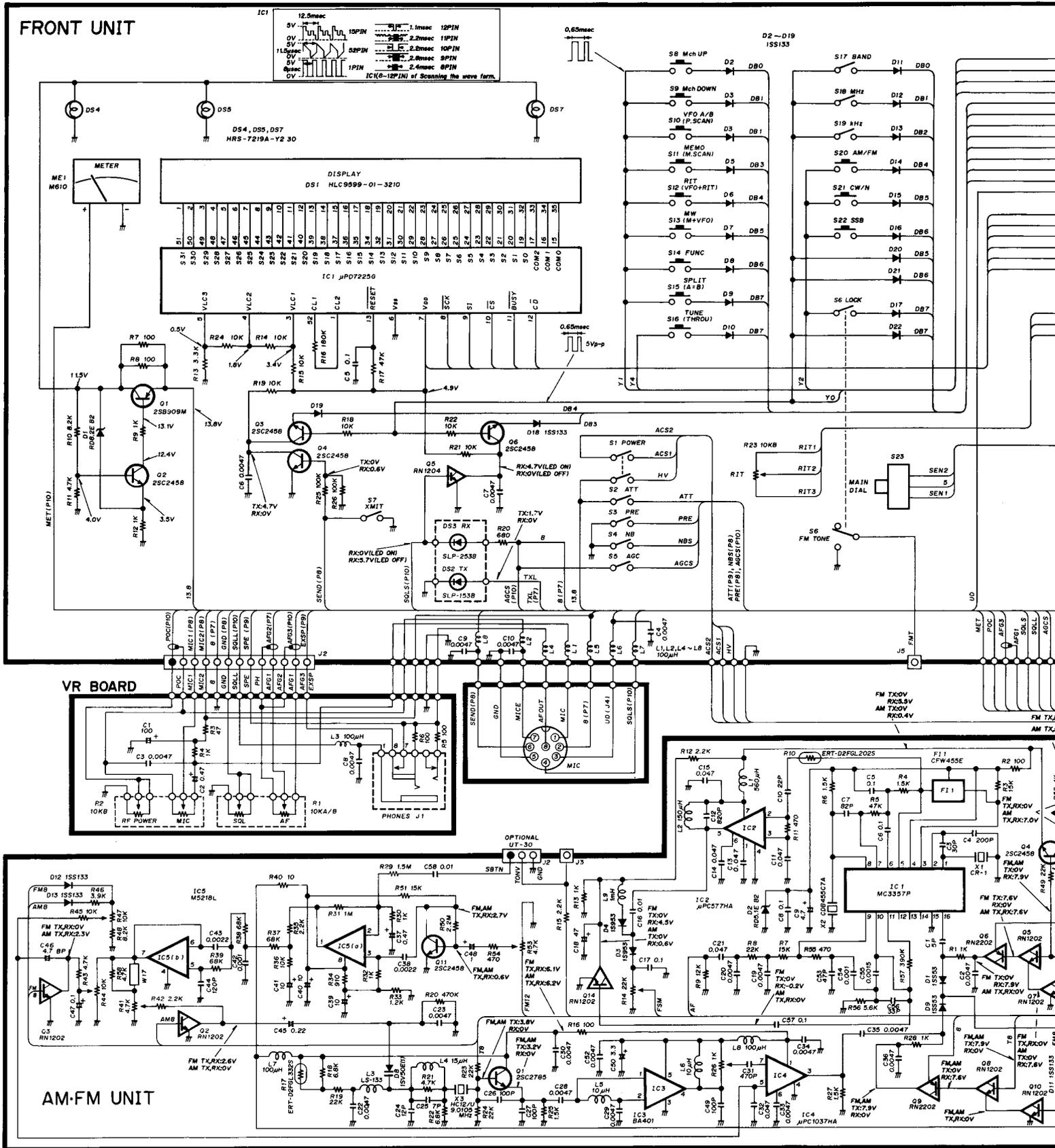


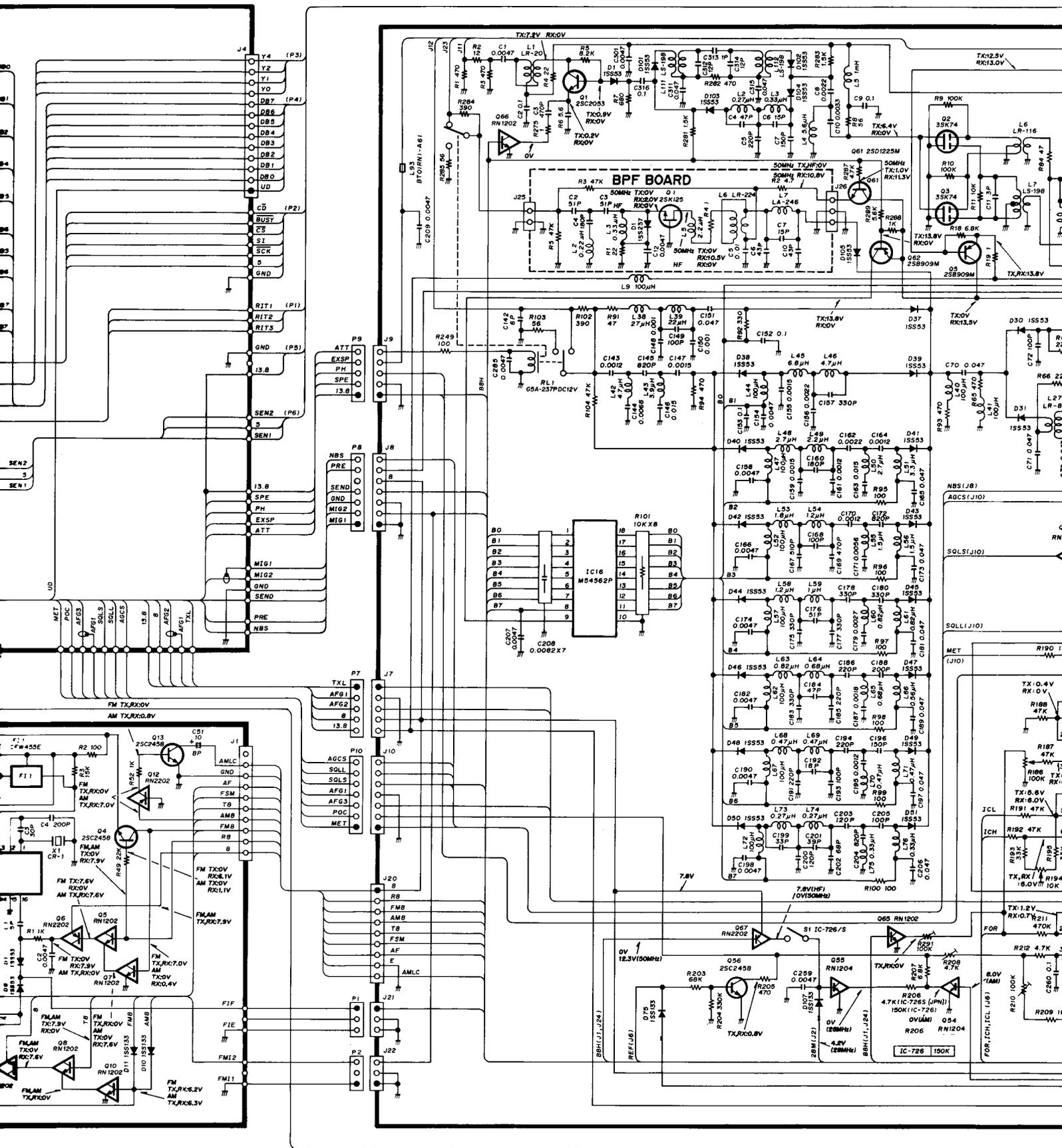
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Q4



# SECTION 8 VOLTAGE DIAGRAMS

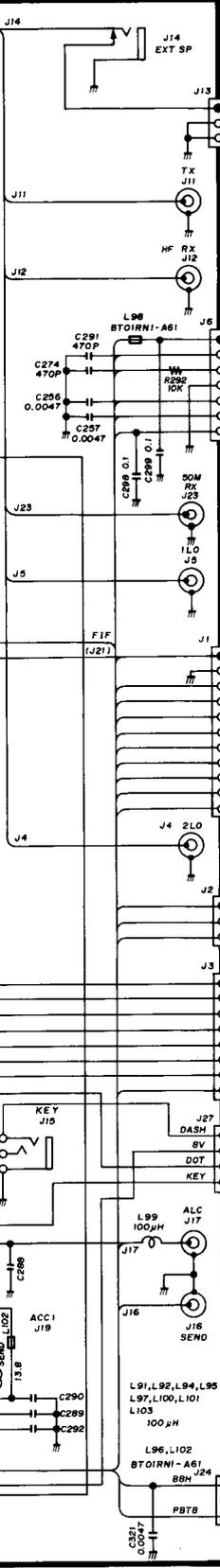
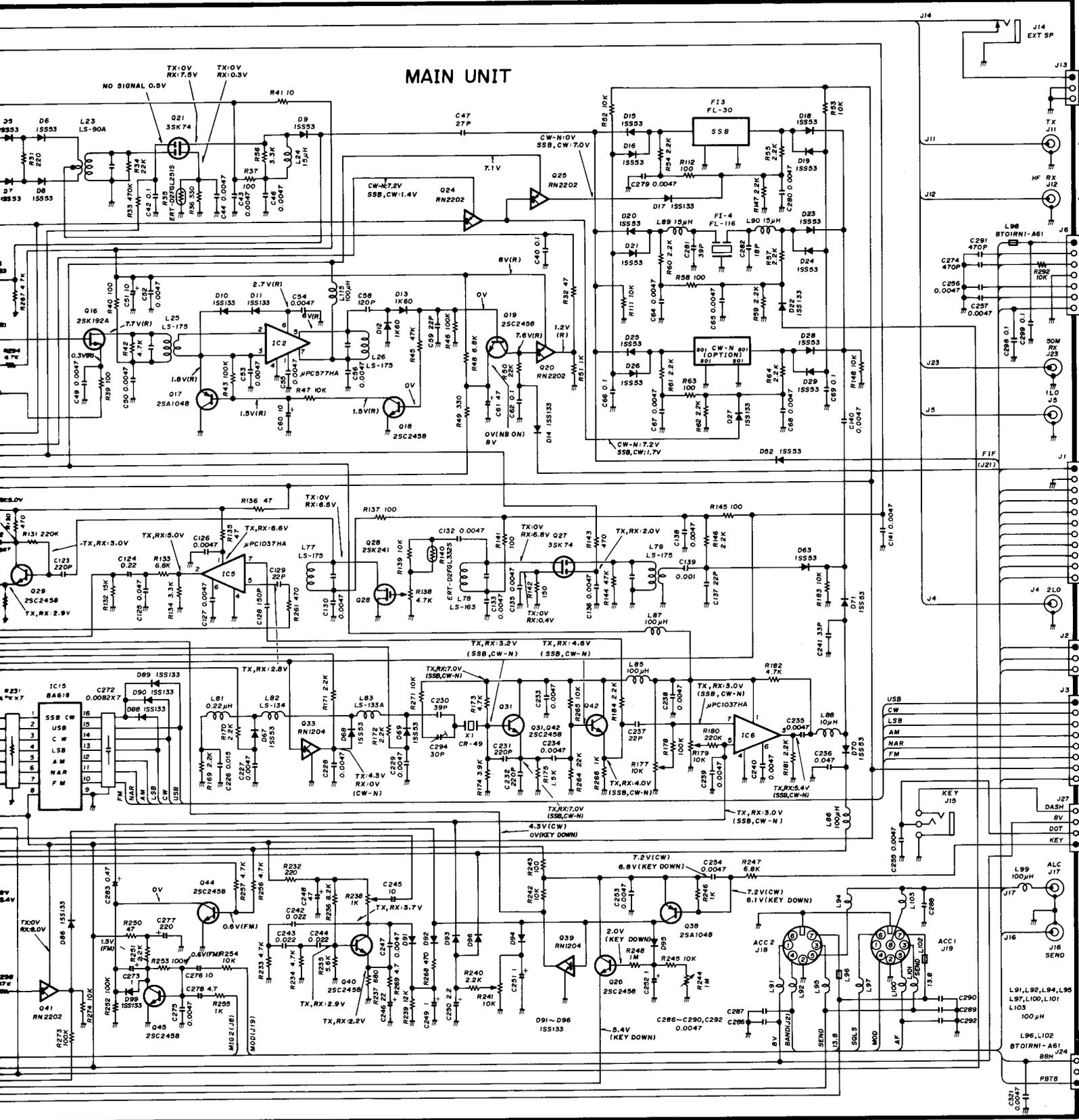
## 8-1 FRONT AND MAIN UNITS

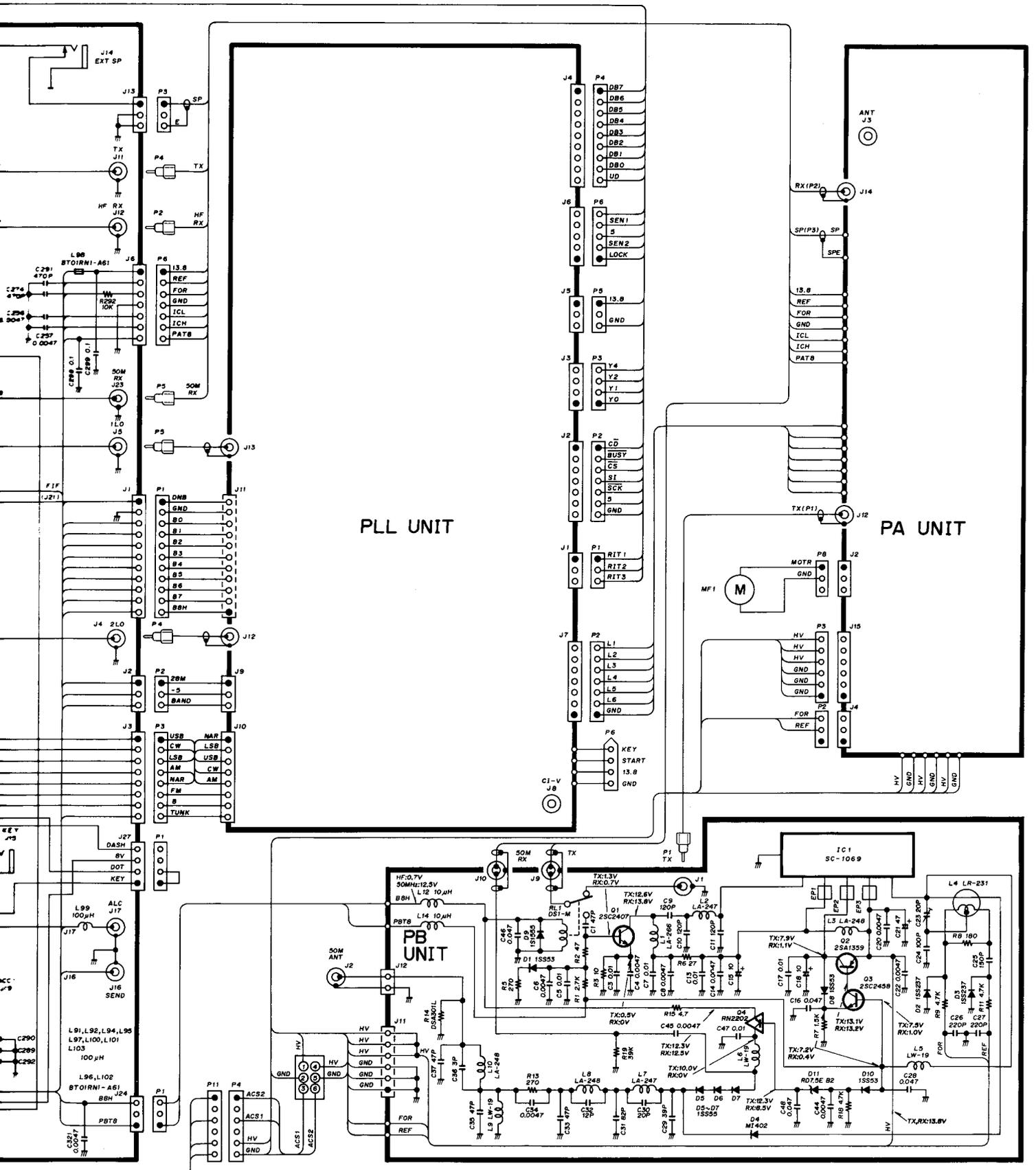






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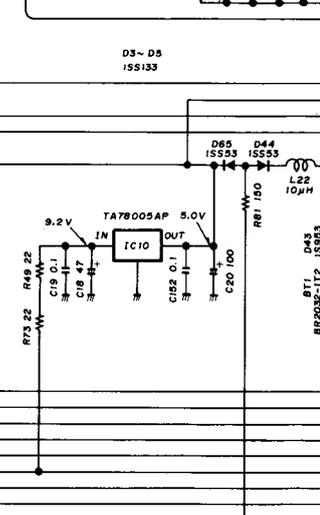
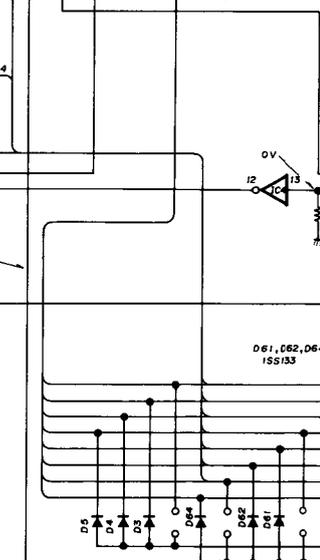
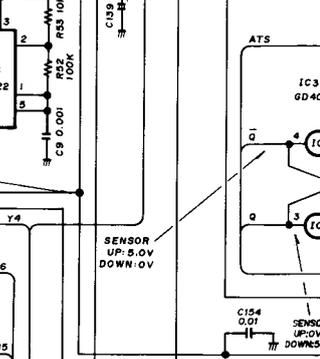
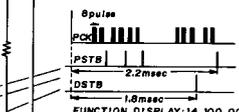
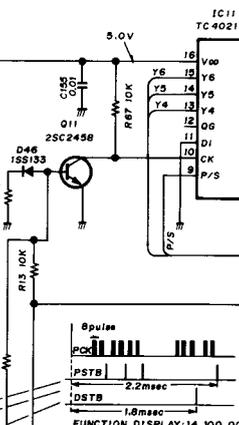
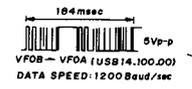
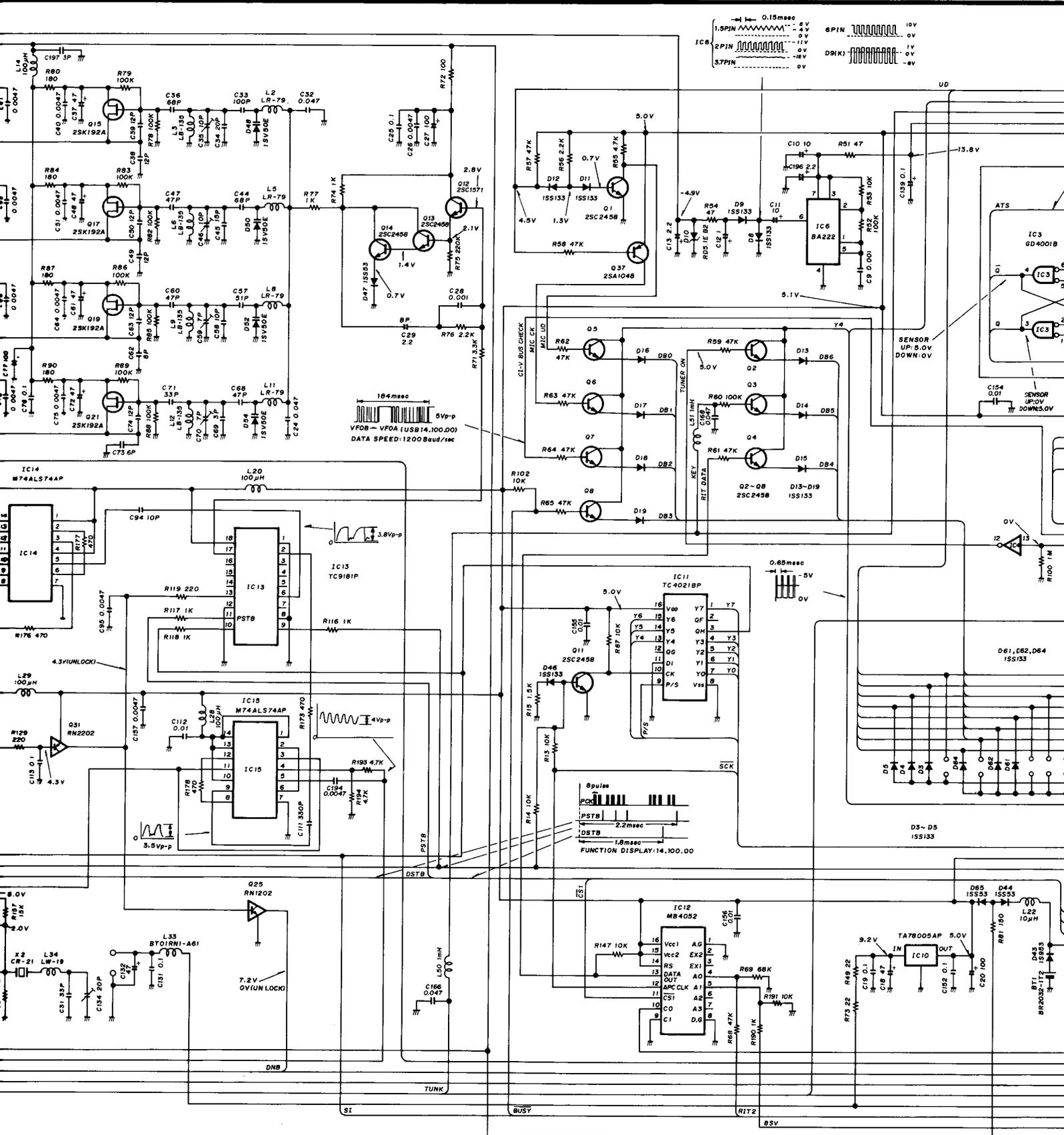


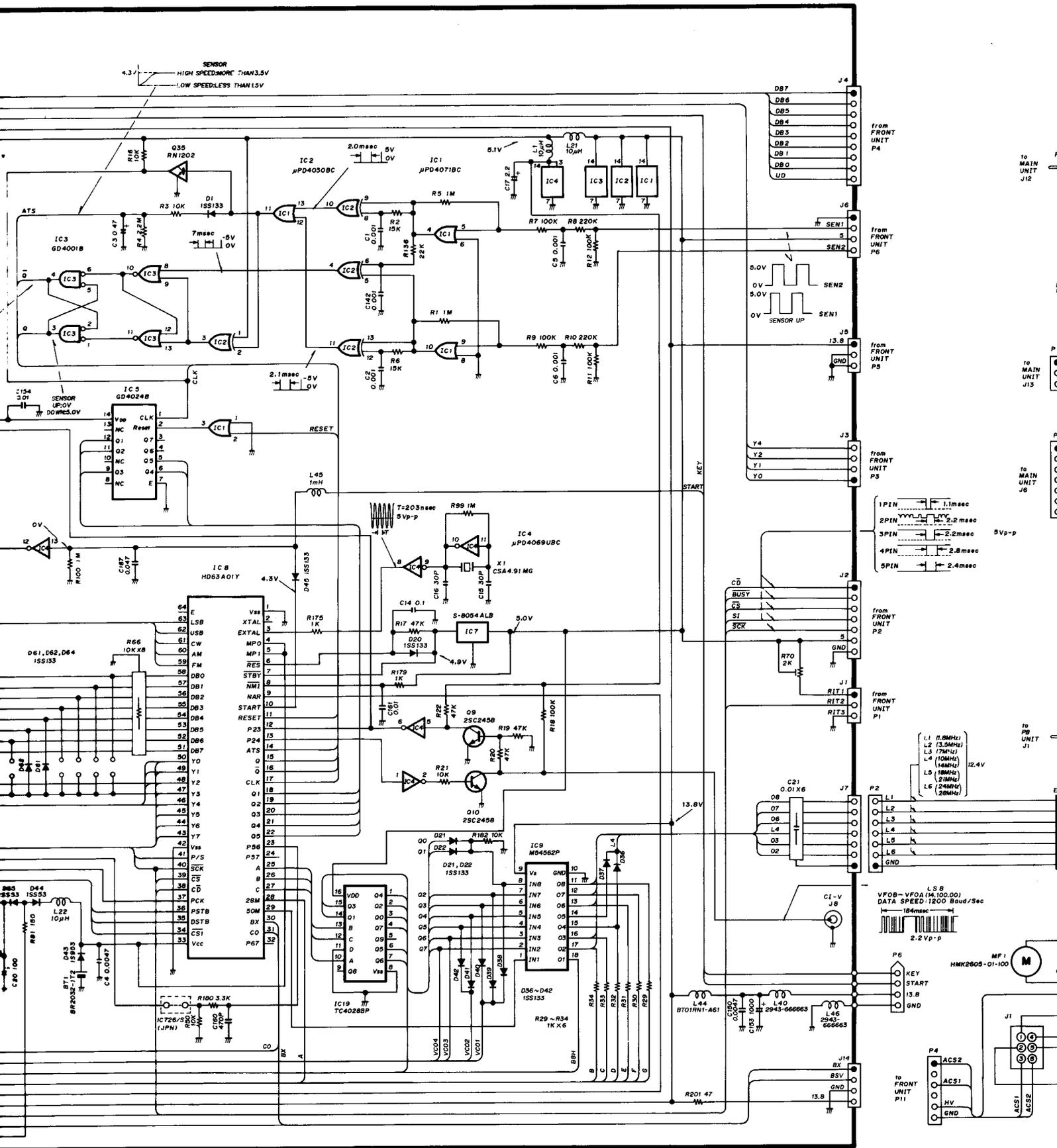
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PA UNIT

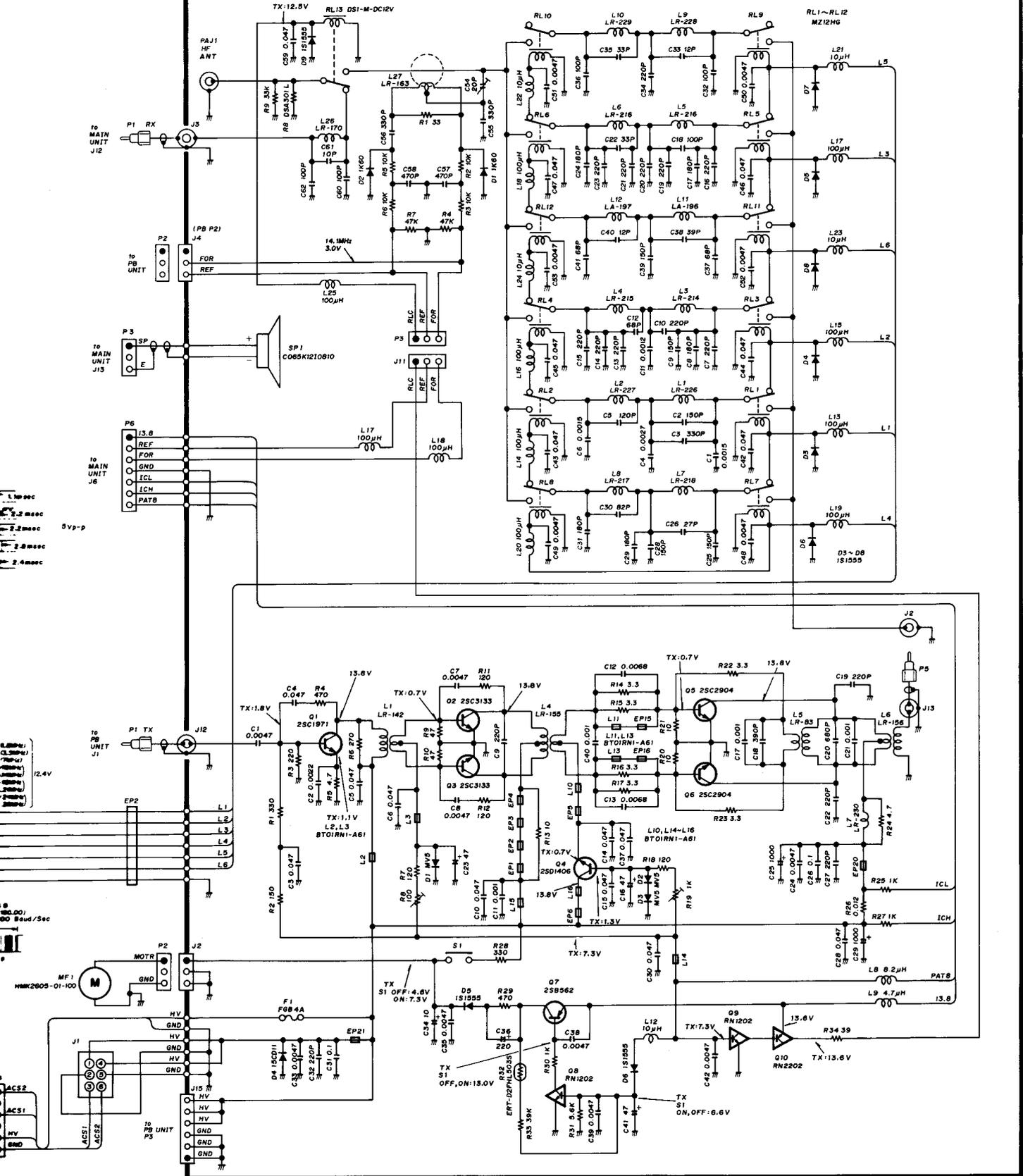
PB UNIT







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