



# SERVICE MANUAL

DUAL BAND FM TRANSCEIVER

**IC-2400A**

**IC-2400E**

**IC-2500A**

**IC-2500E**

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## INTRODUCTION

This service manual describes the latest information for the following transceivers at the time of publication.

MODEL	VERSION NO.	VERSION	SYMBOL
IC-2400E IC-2500E	#02	Europe	EUR
IC-2400A	#05	U.S.A.	USA
IC-2500A	#07	Australia	AUS
IC-2400A	#08	Asia	ASIA

To upgrade quality, any electric or mechanical part and internal circuits are subject to change without notice or obligation.

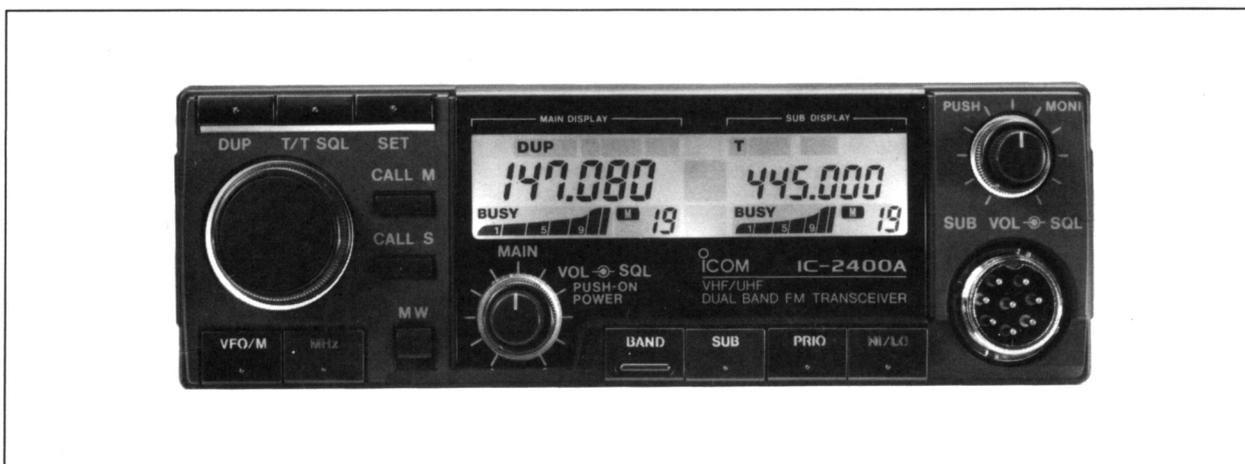
## DANGER

**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 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.



This picture shows the IC-2400A U.S.A. version.

## ORDERING PARTS

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>

1150000760 IC SC1054 IC-2400A/E, 2500A/E MAIN-A UNIT 5 pieces  
8810006010 Screw FH M3 x 6 ZK BS IC-2400A/E, 2500A/E Top cover 10 pieces

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

## REPAIR NOTE

1. Make sure a problem is internal before disassembling the transceiver.
2. **DO NOT** open the transceiver until the transceiver is disconnected from a 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

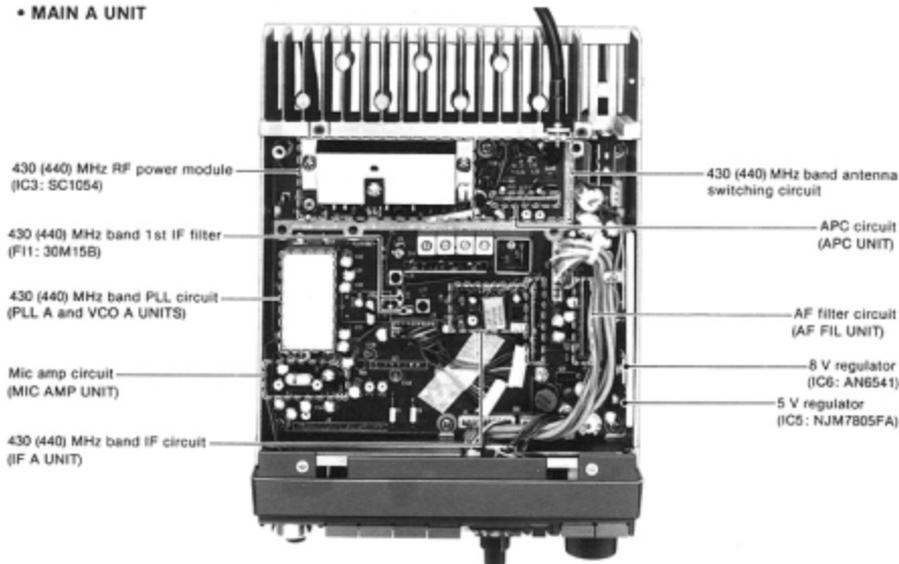
MODEL			IC-2400A/E		IC-2500A/E	
BAND			144 MHz	430 or 440 MHz	430 or 440 MHz	1200 MHz
Frequency coverage	U.S.A.	(Rx)	138~174*	440~450	440~450	1240~1300
		(Tx)	140~150*	440~450	440~450	1240~1300
	Australia, Asia (IC-2400A only)		144~148	430~440	430~440	1240~1300
	Europe		144~146	430~440	430~440	1240~1300
(Unit: MHz)			*Specifications guaranteed 144~148 MHz			
Tuning step increment	U.S.A.		5, 10, 15, 20 or 25 kHz			10 or 20 kHz
	Australia, Asia (IC-2400A only)					
	Europe		12.5 or 25 kHz		12.5 or 25 kHz	
Memory channels			40 and 2 call channels			
Mode			FM (F3)			
Antenna impedance			50 $\Omega$ (unbalanced)			
Power supply requirement			13.8 V DC $\pm$ 15% (negative ground)			
Current drain						
Transmit	HIGH		10.5 A	10.5 A	10.5 A	6.6 A
	LOW		4.5 A	5.0 A	5.0 A	4.0 A
Receive	Squelched		1.0 A	1.0 A	1.0 A	1.0 A
	Max. audio output		1.4 A	1.4 A	1.4 A	1.4 A
Usable temperature range			-10°C ~ +60°C (+14°F ~ +140°F)			
Dimensions (projections not included)			150 (W) $\times$ 50 (H) $\times$ 195 (D) mm 5.9 (W) $\times$ 2.0 (H) $\times$ 7.7 (D) in			
Weight			1.7 kg (3.7 lb)		1.8 kg (4.0 lb)	
Output power	HIGH		45 W	35 W	35 W	10 W
	LOW		5 W	5 W	5 W	1 W
Spurious emissions (less than)			-60 dB	-60 dB	-60 dB	-50 dB (at 10 W) -40 dB (at 1 W)
Microphone impedance			600 $\Omega$			
Intermediate frequencies	1st		17.2 MHz	30.875 MHz	30.875 MHz	136.6 MHz
	2nd		455 kHz	455 kHz	455 kHz	17.2 MHz
	3rd		—	—	—	455 kHz
Sensitivity (for 12 dB SINAD)			0.18 $\mu$ V	0.18 $\mu$ V	0.18 $\mu$ V	0.22 $\mu$ V
			Sensitivites are less than the above values.			
Spurious response rejection			Less than -60 dB (except 1/2 IF on 1200 MHz)			
Audio output power			More than 2.4 W at 10 % distortion with an 8 $\Omega$ load			
Audio output impedance			4~8 $\Omega$			

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

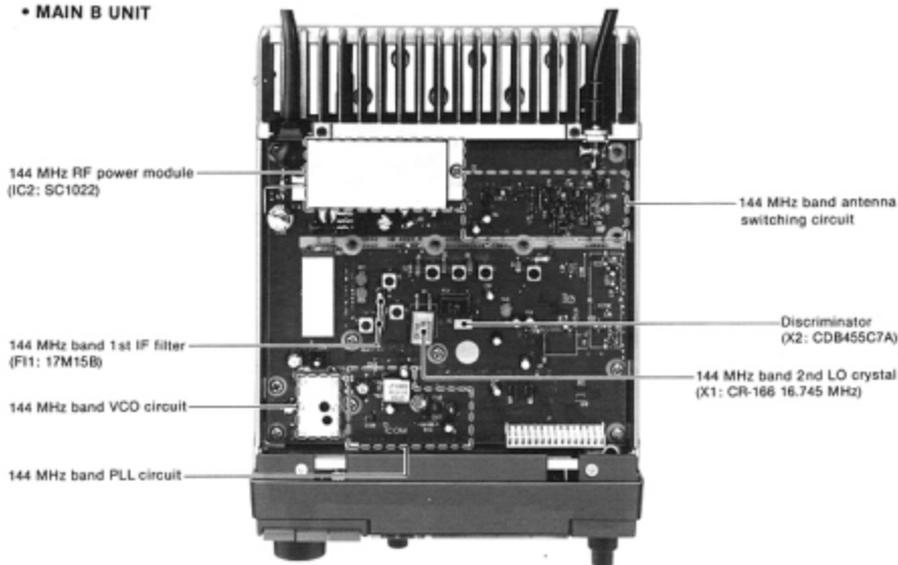
## SECTION 2 INSIDE VIEWS

### 2-1 IC-2400A/E

#### • MAIN A UNIT

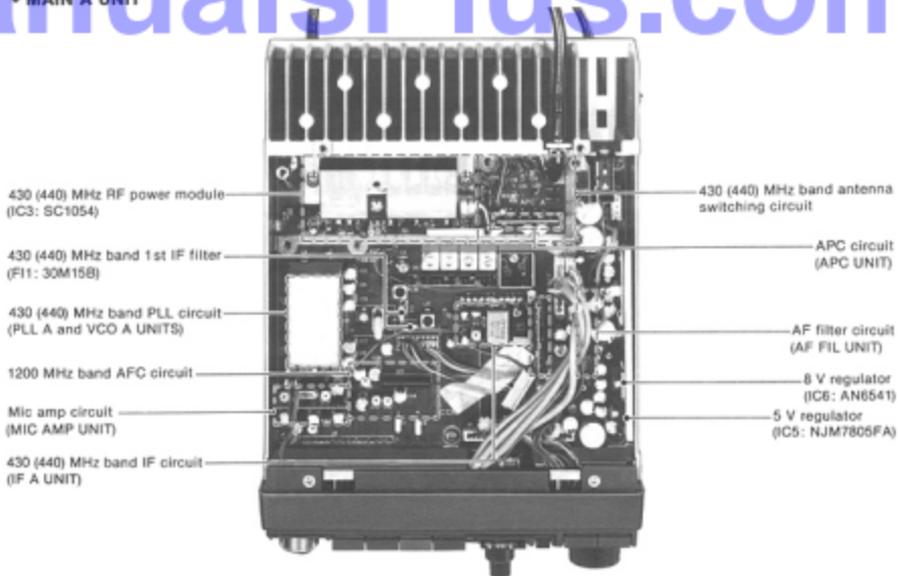


#### • MAIN B UNIT

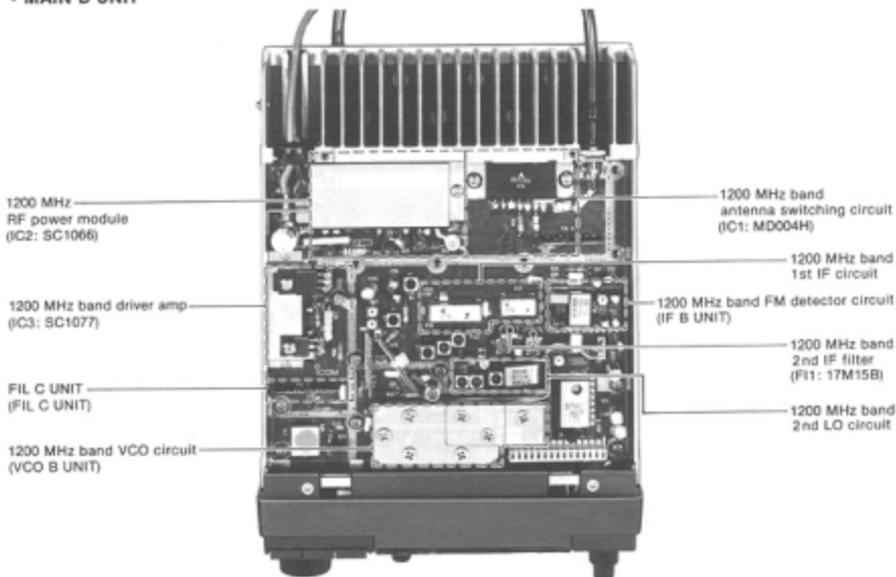


## 2-2 IC-2500A/E

### • MAIN A UNIT



### • MAIN B UNIT



## SECTION 3 CIRCUIT DESCRIPTION

### 3-1 144 MHz RECEIVER CIRCUITS (IC-2400A/E)

#### 3-1-1 ANTENNA SWITCHING CIRCUIT (MAIN B UNIT)

Received 144 MHz band signals enter the [ANT 144 MHz] connector and pass through a low-pass filter (L11, L13, L14, C71~C74). The signals are applied to an antenna switching circuit (D12~D14), and then to an RF circuit via a  $\pi$ -type low-pass filter (L9, L10, C68~C70).

The antenna switching circuit functions as a low-pass filter while in receiving and becomes a very high impedance while in transmitting.

#### 3-1-2 RF CIRCUIT (MAIN B UNIT)

The signals from the antenna switching circuit pass through a bandpass filter (L1, C1~C4, D1), and are applied to an RF amplifier (Q1). Amplified signals are applied to a 3-stage bandpass filter (L2~L4, C11~C14, C17~C19, C22, D2~D4), and are then applied to a 1st mixer (Q2). The bandpass filters suppress out-of-band signals.

D1~D4 are varactor diodes that track the bandpass filters and resonator circuits and are controlled by the lock voltage of the 144 MHz band PLL. These diodes tune the center frequency of RF circuits for wide bandwidth reception and good image response rejection.

#### 3-1-3 1ST MIXER CIRCUIT (MAIN B UNIT)

The 1st mixer circuit converts the received signal to a fixed frequency of the 1st IF signal using a PLL output frequency. By changing a PLL frequency, only the desired frequency can be passed through a crystal filter located at the next stage of the 1st mixer.

The signals from the RF circuit are mixed with a 1st LO signal from the 144 MHz band VCO circuit to produce a 17.2 MHz 1st IF signal.

#### 3-1-4 1ST IF CIRCUIT (MAIN B UNIT)

After passing through a matching circuit (L6, C27), the 1st IF signal is applied to a pair of crystal filters (F1) to suppress out-of-band signals. The 1st IF signal is amplified at an IF amplifier (Q3) and then enters a demodulator circuit. D5 functions as a limiter when a strong signal is received.

#### 3-1-5 2ND IF AND DEMODULATOR CIRCUITS (MAIN B UNIT)

The 2nd mixer circuit converts the 1st IF signal to a 2nd IF signal. A double superheterodyne system (which converts receive signals twice) improves the image rejection ratio and obtains stable receiver gain.

The 1st IF signal from Q3 is applied to a 2nd mixer section of IC1, and is mixed with a 2nd LO signal to be converted to a 455 kHz 2nd IF signal.

IC1 contains the 2nd mixer, local oscillator circuit, limiter amplifier and quadrature detector circuits. The local oscillator section and X1 generate 16.745 MHz for the 2nd LO signal.

The 2nd IF signal from the 2nd mixer (IC1, pin 4) passes through a ceramic filter (F12), where unwanted signals are suppressed. It is then amplified at the limiter amplifier section (IC1, pin 6) and applied to the quadrature detector section (IC1, pin 10 and ceramic discriminator X2) to demodulate the 2nd IF signal into an AF signal.

AF signal output from IC1 (pin 11) is applied to the DET SW UNIT and then selected by a main or sub AF signal using MAVB signal. The signal is applied to the AF FIL UNIT.

The AF signal is also selected by a main or sub AF signal using OPAVB signal. The signal is applied to the optional UT-40 for tone squelch or pocket beep operation.

#### 144 MHz DEMODULATOR CIRCUIT

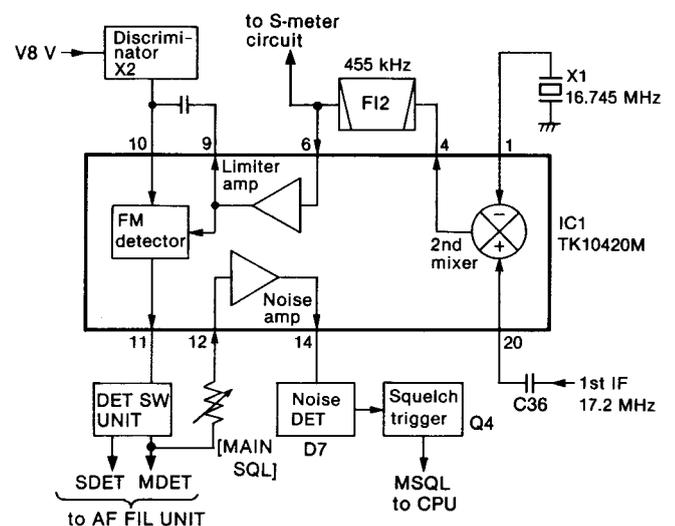


Fig. 1

### 3-2 430 (440) MHz RECEIVER CIRCUITS (IC-2400A/E, IC-2500A/E)

#### 3-2-1 ANTENNA SWITCHING CIRCUIT (MAIN A UNIT)

Received 430 (440) MHz band signals enter the [ANT 430 (440) MHz] connector and pass through a low-pass filter (L13~L15, C70~C75). The signals are applied to the antenna switching circuit (D7, D14, D15), and then to the RF circuit via a  $\pi$ -type low-pass filter (L23, L24, C117~C119).

#### 3-2-2 RF CIRCUIT (MAIN A UNIT)

The signals from the antenna switching circuit pass through a bandpass filter (L22, C111~C113), and are applied to an RF amplifier (Q21).

Amplified signals are applied to a bandpass filter (L20), an RF amplifier (Q20) and a bandpass filter (L19). The bandpass filters (L19, L20) consisting of helical coils suppress out-of-band signals. The signals are applied to the the 1st mixer circuit (Q17).

#### 3-2-3 1ST MIXER CIRCUIT (MAIN A UNIT)

The signals from the RF circuit are mixed with the 1st LO signal from the 430 (440) MHz band VCO circuit to produce a 30.875 MHz 1st IF signal.

#### 3-2-4 1ST IF CIRCUIT (MAIN A UNIT)

After passing through the matching circuit (L18, C93), the 1st IF signal is applied to a pair of crystal filters (F11) to suppress out-of-band signals. The 1st IF signal is amplified at an IF amplifier (Q14) and then applied to a 2nd mixer circuit on the IF A UNIT. D10 functions as a limiter when a strong signal is received.

#### 3-2-5 2ND IF AND DEMODULATOR CIRCUITS (IF A UNIT)

The 1st IF signal from Q14 on the MAIN A UNIT is applied to the 2nd mixer section of IC1, and is mixed with a 2nd LO signal to be converted to a 455 kHz 2nd IF signal.

IC1 contains the 2nd mixer, local oscillator circuit, limiter amplifier and quadrature detector circuits. The local oscillator section and X1 generate 30.42 MHz for the 2nd LO signal.

#### 430 (440) MHz RECEIVER CIRCUIT

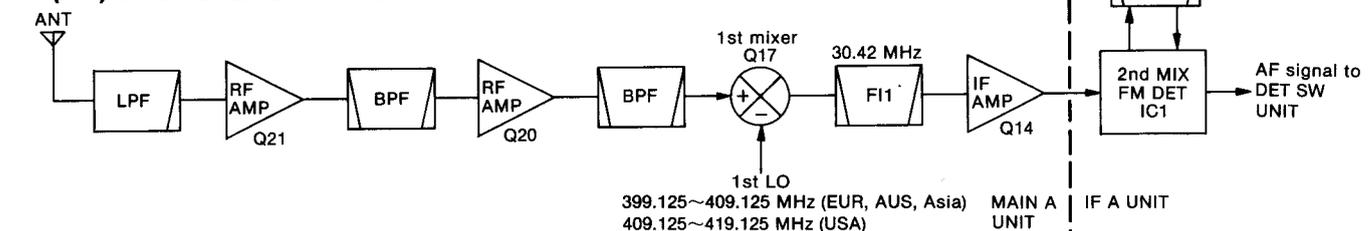


Fig. 2

The 2nd IF signal from the 2nd mixer (IC1, pin 4) passes through a ceramic filter (F11), where unwanted signals are suppressed. It is then amplified at the limiter amplifier section (IC1, pin 6) and applied to the quadrature detector section (IC1, pin 10 and ceramic discriminator X2) to demodulate the 2nd IF signal into an AF signal.

AF signal output from IC1 (pin 11) is applied to the DET SW UNIT and then selected by a main or sub AF signal using MAVB (MAHB)\* signal. The signal is applied to the AF FIL UNIT.

The AF signal is also selected by a main or sub AF signal using OPAVB (OPAHB)\* signal. The signal is applied to the optional UT-40 for tone squelch or pocket beep operation.

\* IC-2500A/E

### 3-3 1200 MHz RECEIVER CIRCUITS (IC-2500A/E)

#### 3-3-1 ANTENNA SWITCHING CIRCUIT (MAIN B UNIT)

Received 1200 MHz band signals enter the [ANT 1200 MHz] connector and pass through an antenna switching module (IC1). IC1 contains an antenna switching circuit. The signals are applied to the RF circuit.

#### 3-3-2 RF CIRCUIT (MAIN B UNIT)

The signals from the antenna switching circuit pass through a 1 GHz cut-off high-pass filter (FIL A UNIT), and are applied to an RF amplifier (Q6).

Amplified signals are applied to a dielectric filter (F12), an RF amplifier (Q7) and a dielectric filter (F13). The dielectric filters (F12, F13) suppress out-of-band signals. The signals are applied to the the 1st mixer circuit (Q8).

#### 3-3-3 1ST MIXER CIRCUIT (MAIN B UNIT)

The signals from the RF circuit are mixed with the 1st LO signal from the 1200 MHz band VCO circuit to produce a 136.6 MHz 1st IF signal.

### 3-3-4 IF CIRCUITS (MAIN B UNIT)

After passing through the matching circuit (L9), the 1st IF signal is applied to a IF amplifier (Q3) and then to a bandpass filter (L2~L4, C27, C28, C31~C33) to suppress out-of-band signals. The 1st IF signal is applied to a 2nd mixer circuit (Q4).

The 1st IF signal is mixed with the 2nd LO signal from the 2nd LO oscillator circuit to produce a 17.2 MHz 2nd IF signal. The 2nd IF signal is applied to a pair of crystal filters (F11) to suppress out-of-band signals. The 2nd IF signal is amplified at an IF amplifier (Q5) and then applied to a 3rd mixer circuit on the IF B UNIT.

### 3-3-5 2ND LO OSCILLATOR (MAIN B UNIT)

An overtone oscillator (Q9) generates 39.8 MHz and its harmonic frequency using X1. The signal is applied to the bandpass filter (L11~L13, C101~C105) which selects the 3rd harmonic frequency of 39.8 MHz. The resulting 119.4 MHz 2nd LO signal is applied to the 2nd mixer circuit (Q4).

### 3-3-6 3RD IF AND DEMODULATOR CIRCUITS (IF B UNIT)

The 2nd IF signal from Q5 on the MAIN B UNIT is applied to the 3rd mixer section of IC1 and is mixed with a 3rd LO signal to be converted to a 455 kHz 3rd IF signal.

IC1 contains the 3rd mixer, local oscillator circuit, limiter amplifier and quadrature detector circuits. The local oscillator section and X1 generate 16.745 MHz for the 3rd LO signal.

The 3rd IF signal from the 3rd mixer (IC1, pin 4) passes through a ceramic filter (F11) where unwanted signals are suppressed. It is then amplified at the limiter amplifier section (IC1, pin 6) and applied to the quadrature detector section (IC1, pin 10 and ceramic discriminator X2) to demodulate the 3rd IF signal into an AF signal.

AF signal output from IC1 (pin 11) is applied to the DET SW UNIT and then selected by a main or sub AF signal using an MAHB signal. The signal is applied to the AF FIL UNIT.

The AF signal is also selected by a main or sub AF signal using an OPAHB signal. The signal is applied to the optional UT-40 for tone squelch or pocket beep operation.

## 3-4 AF CIRCUITS (IC-2400A/E, IC-2500A/E)

### 3-4-1 AF AMPLIFIER (AF FIL AND MAIN A UNITS)

Main and sub band AF signals from the DET SW UNIT are applied to IC1 and IC2 on the AF FIL UNIT respectively. IC1 and IC2 are active filters that function as a high-pass filter to suppress tone signals for the tone squelch operation.

The filtered signal is applied to an active low-pass filter (Q1 or Q2) and an AF mute switch (Q33 or Q34) on the MAIN A UNIT. The high-pass and low-pass filters have frequency characteristics of -6 dB/octave and passband width of 300~3000 Hz. The AF signals are adjusted with the [MAIN VOL] or [SUB VOL] control and then power-amplified at a stereo AF power amplifier (IC11) to drive the main and sub band speakers.

The MRMUT and SRMUT signals from an output expander (IC10) control Q33 and Q34 respectively, and mute main or sub band AF output while receiving no signal or no specified tone signal.

When the sub band speaker is not connected, the amplified sub band AF output is attenuated at R108, and is then mixed with the main band AF input to provide 2 bands watching with 1 speaker.

### CURRENT OF THE MAIN BAND AF SIGNAL

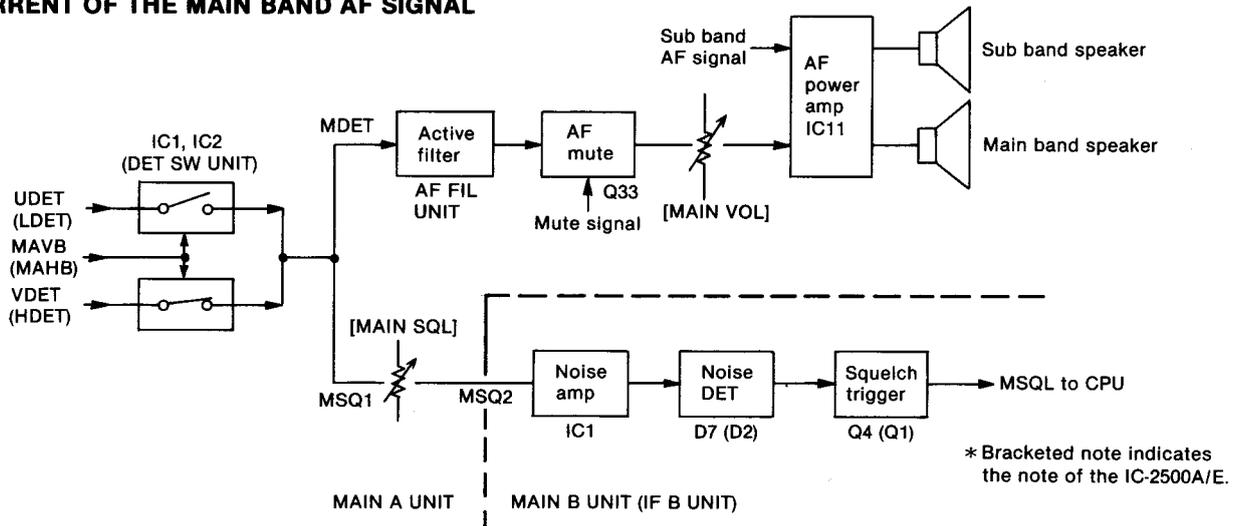


Fig. 3  
3 - 3

### 3-4-2 SQUELCH CIRCUIT (MAIN B, IF A AND IF B UNITS)

A squelch circuit cuts out AF signals when no RF signal is received. By detecting noise components in the AF signals, the squelch circuit switches the AF mute switches.

The main band squelch circuit uses the circuit on the IF A UNIT. The sub band squelch circuit uses the circuit on the MAIN B UNIT (IC-2400A/E) or on the IF A UNIT (IC-2500A/E).

Some of the noise components in the AF signals from IC1 (pin 11) are selected at the DET SW UNIT and are then adjusted with the [MAIN SQL] or [SUB SQL] control. The signals are applied to IC1 (pin 12) on the MAIN B, IF A, or IF B UNIT.

The active filter section in IC1 amplifies noise components of frequencies of 20 kHz and above, and outputs the resulting signals from pin 14. Output signals are rectified by D2 (IC-2400A/E MAIN B UNIT D7), and are converted to DC voltage. This voltage is applied to the squelch trigger circuit (Q1; IC-2400A/E MAIN B UNIT Q4).

The DC voltage triggers the squelch circuit. Q1 or Q4 outputs a "LOW" signal as the squelch signal. The signal is applied to the CPU (IC2, pin 27 or 28) on the LOGIC UNIT. The CPU outputs MRMUT and SRMUT signals using the output expander (IC10) on the MAIN A UNIT.

The MRMUT signal activates the AF mute switch (Q33) on the MAIN A UNIT to cut the main band AF signal from the AF FIL UNIT. The SRMUT signal activates the AF mute switch (Q34) on the MAIN A UNIT to cut the sub band AF signal from the AF FIL UNIT.

### 3-5 TRANSMITTER AF CIRCUITS (IC-2400A/E, IC-2500A/E)

#### 3-5-1 MICROPHONE AMPLIFIER (MIC AMP UNIT)

AF signals from the mic connector are amplified at Q2, are applied to IC3 (pin 5), and are pre-emphasized to +6 dB/octave through C13 and R14 which are connected to pin 6. IC3 functions as the microphone amplifier and the limiter.

The output signals from IC3 (pin 7) pass through the splatter filter circuit (IC3, pins 2 and 3) where signals of 3 kHz and above are attenuated. IC1 (pin 1) then outputs the signals. The signals are applied to a modulation circuit to produce an FM signal. A tone signal from a tone encoder (IC2) is also applied to the splatter filter circuit.

The VCO circuit oscillates the transmit frequency with AF signal modulation.

#### 3-5-2 SUBAUDIBLE TONE CIRCUIT (MIC AMP UNIT)

IC2 encodes subaudible tone frequency signals of 67.0 Hz~250.3 Hz. A tone is set by serial data from the CPU.

IC1 functions as a serial/parallel converter, applying 6-bit parallel data to IC2. The following table shows the relation between input data and the output frequency of IC2.

**SUBAUDIBLE TONE ENCODER FREQUENCY TABLE**

OUTPUT FREQUENCY [Hz]	IC2 INPUT PIN NUMBER						OUTPUT FREQUENCY [Hz]	IC2 INPUT PIN NUMBER						OUTPUT FREQUENCY [Hz]	IC2 INPUT PIN NUMBER					
	8	9	10	11	12	13		8	9	10	11	12	13		8	9	10	11	12	13
67.0	H	L	L	L	L	L	107.2	L	H	H	H	L	L	167.9	H	H	L	H	H	L
71.9	L	H	L	L	L	L	110.9	H	H	H	H	L	L	173.8	L	L	H	H	H	L
74.4	H	H	L	L	L	L	114.8	L	L	L	L	H	L	179.9	H	L	H	H	H	L
77.0	L	L	H	L	L	L	118.8	H	L	L	L	H	L	186.2	L	H	H	H	H	L
79.7	H	L	H	L	L	L	123.0	L	H	L	L	H	L	192.8	H	H	H	H	H	L
82.5	L	H	H	L	L	L	127.3	H	H	L	L	H	L	203.5	L	L	L	L	L	H
85.4	H	H	H	L	L	L	131.8	L	L	H	L	H	L	210.7	H	L	L	L	L	H
88.5	L	L	L	H	L	L	136.5	H	L	H	L	H	L	218.1	L	H	L	L	L	H
91.5	H	L	L	H	L	L	141.3	L	H	H	L	H	L	225.7	H	H	L	L	L	H
94.8	L	H	L	H	L	L	146.2	H	H	H	L	H	L	233.6	L	L	H	L	L	H
97.4	H	H	L	H	L	L	151.4	L	L	L	H	H	L	241.8	H	L	H	L	L	H
100.0	L	L	H	H	L	L	156.7	H	L	L	H	H	L	250.3	L	H	H	L	L	H
103.5	H	L	H	H	L	L	162.2	L	H	L	H	H	L							

H: HIGH L: LOW

## 3-6 144 MHz TRANSMITTER CIRCUITS (IC-2400A/E)

### 3-6-1 144 MHz DRIVE AMPLIFIER (MAIN B UNIT)

The 144 MHz band VCO output, buffer-amplified at Q9, is applied to the transmit/receive switching circuit (D18). The VCO output is then amplified at the drive amplifier (Q8) where 400 mW is obtained.

### 3-6-2 144 MHz RF POWER AMPLIFIER (MAIN B UNIT)

IC2 is a power module which provides a stable 45 W of output power.

The RF signal from the drive amplifier (Q8) is applied to IC2 (pin 1). The amplified signal is output from pin 4, and applied to the antenna connector through the diode switching and low-pass filter circuits.

Voltage controlled by a 144 MHz APC circuit is applied to Q8 and IC2 (pin 2) to protect the RF power module from damage by an antenna mismatch.

### 3-6-3 144 MHz APC CIRCUIT (MAIN B UNIT)

The 144 MHz APC circuit protects the power module (IC2) from a mismatched output load and selects HIGH and LOW output power.

The output power level from the power module (IC2) is detected at the APC detector (D15, D16). When antenna impedance is matched at 50  $\Omega$ , the detected level is at a minimum. However, when antenna impedance is mismatched, the detected voltage is higher than when it is matched.

When the antenna impedance is mismatched, the voltage of IC3 (pin 6) is higher than pin 5 (reference voltage). IC3 decreases the collector current of Q7 using Q11. The collector current of Q7 is used at the drive amplifier (Q8) and power module (IC2). Hence, when the antenna impedance is mismatched, the output power is decreased.

### 144 MHz APC CIRCUIT

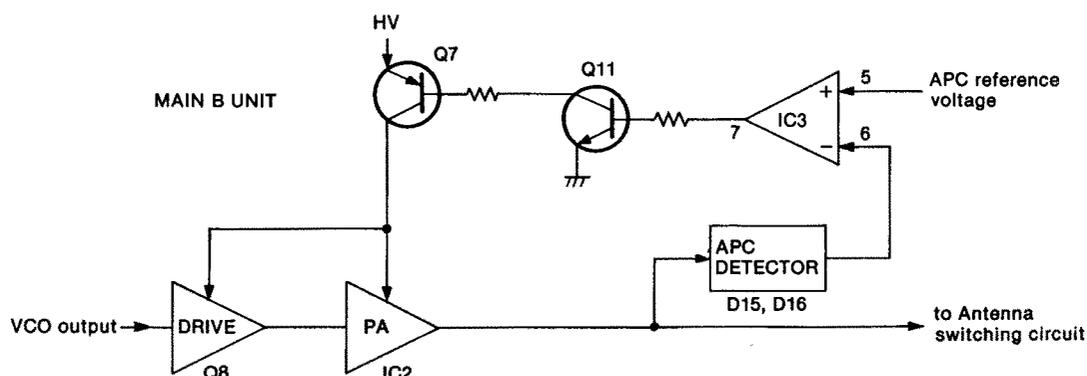


Fig. 4

The circuit which selects output power uses the APC circuit. Q10 selects the reference voltage using a VLOW signal from an output expander (IC4), changing the output power to HIGH or LOW.

### 3-6-4 144 MHz ANTENNA SWITCHING CIRCUIT (MAIN B UNIT)

The antenna switching circuit applies the received signal to the receiver circuit and the transmitter signal to the antenna connector.

When transmitting, D12~D14 are turned ON. The RF output signal is not applied to the receiver circuit, passing through D14, the low-pass filter (L11, L13, L14, C71~C74) and then to the antenna connector. The low-pass filter suppresses high harmonic components.

## 3-7 430 (440) MHz TRANSMITTER CIRCUITS (IC-2400A/E, IC-2500A/E)

### 3-7-1 430 (440) MHz DRIVE AMPLIFIER (MAIN A UNIT)

The 430 (440) MHz band VCO output, buffer-amplified at Q7, is applied to the transmit/receive switching circuit (D3). The VCO output is then amplified at the predrive amplifier (Q9) and the drive amplifier (Q10).

Voltage controlled by a 430 (440) MHz APC circuit is applied to the collector of Q10 and IC3 (pin 2) to protect the RF power module from damage by an antenna mismatch.

### 3-7-2 430 (440) MHz RF POWER AMPLIFIER (MAIN A UNIT)

IC3 is a power module which provides a stable 35 W of output power.

The RF signal from the drive amplifier (Q10) is applied to IC3 (pin 1). The amplified signal is output from pin 5, and applied to the antenna connector through the diode switching and low-pass filter circuits.

### 3-7-3 430 (440) MHz APC CIRCUIT (APC UNIT)

The 430 (440) MHz APC circuit protects the power module (IC3) on the MAIN A UNIT from a mismatched output load and selects HIGH and LOW output power.

The output power level from the power module is detected at the APC detector (D5, D6) on the MAIN A UNIT. IC1b compares the difference between the detected voltage and reference voltage (IC1, pin 3), and controls the collector current of Q11 on the MAIN A UNIT using Q1. Collector current of Q11 is used at the drive amplifier and power module to obtain a stable output power.

### 3-7-4 430 (440) MHz ANTENNA SWITCHING CIRCUIT (MAIN A UNIT)

When transmitting, D7, D14, and D15 are turned ON. The RF output signal is not applied to the receiver circuit, passing through D7, the low-pass filter (L13~L15, C70~C75) and then to the antenna. The low-pass filter suppresses high harmonic components.

## 3-8 1200 MHz TRANSMITTER CIRCUITS (IC-2500A/E)

### 3-8-1 1200 MHz DRIVE AMPLIFIER (MAIN B UNIT)

The 1200 MHz band RF signal from a doubler circuit (D16, D17) is applied to the transmit/receive switching circuit (D14, D15). The signal is applied to a bandpass filter (FIL C UNIT) to suppress out-of-band signals. The signal is amplified at a buffer amplifier (Q11) and a predrive amplifier (Q10) where 10 mW (10 dBm) is obtained.

The amplified signal is then applied to a drive amplifier (IC3). IC3 is a YGR module which provides a stable 1 W of output power.

Voltage controlled by a 1200 MHz APC circuit is applied to Q10 and IC3 (pin 3) to protect an RF power module (IC2) from damage by an antenna mismatch.

### 3-8-2 1200 MHz RF POWER AMPLIFIER (MAIN B UNIT)

IC2 is a power module which provides a stable 10 W of output power.

The RF signal from the drive amplifier (IC3) is applied to IC2 (pin 1). The amplified signal is output from pin 5, and applied to the antenna connector through the antenna switching module (IC1).

### 3-8-3 1200 MHz APC CIRCUIT (MAIN B UNIT)

The 1200 MHz APC circuit protects the power module (IC2) from a mismatched output load and selects HIGH and LOW output power.

The output power level from the power module is detected at the APC detector (D12) on the MAIN B UNIT. IC4b compares the difference between the detected voltage and reference voltage (IC4, pin 3), and controls the collector current of Q15 using Q16. The collector current of Q15 is used at the predrive amplifier and YGR module to obtain a stable output power.

### 3-8-4 1200 MHz ANTENNA SWITCHING CIRCUIT (MAIN B UNIT)

The IC-2500A/E uses the antenna switching module (IC1) at the antenna switching circuit.

When transmitting, the RF output signal is not applied to the receiver circuit, passing through a low-pass filter, and then to the antenna connector. The low-pass filter suppresses high harmonic components.

## 3-9 144 MHz PLL CIRCUITS (IC-2400A/E)

### 3-9-1 GENERAL (MAIN B UNIT)

A PLL circuit steadily oscillates the transmit frequency and the receive local frequency. The PLL output frequency is controlled by the divided ratio (N-data) of the programmable divider.

## 1200 MHz TRANSMITTER CIRCUITS

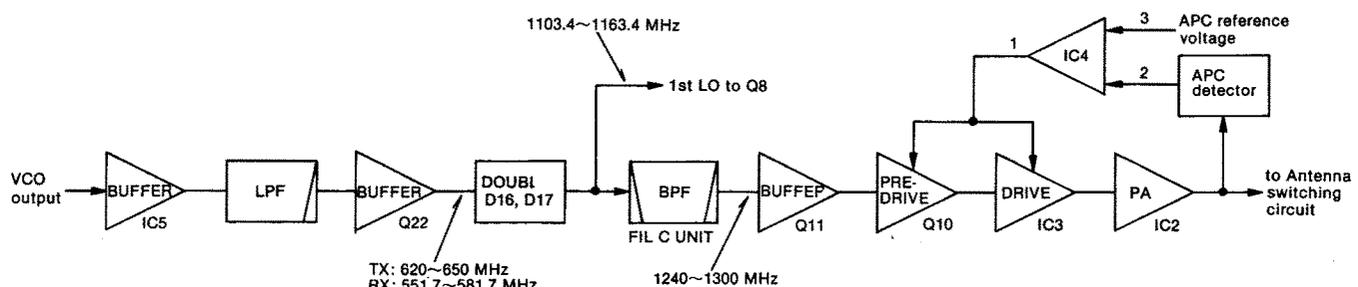


Fig. 5

The PLL circuit, using a one chip PLL IC (IC5), directly generates the transmit and 1st LO frequency with a Hartley VCO (Q12). The PLL IC sets the divided ratio based on serial data from the CPU, and compares the phases of a VCO signal and the reference oscillator frequency. The PLL IC detects the out-of-step phase and outputs from pins 5 and 12. The reference frequency is oscillated at X3.

### 3-9-2 REFERENCE OSCILLATOR CIRCUIT (MAIN B UNIT)

A reference frequency is produced by the local oscillator section of IC5 and X3. C153 provides frequency control.

### 3-9-3 CHARGE PUMP AND LOOP FILTER CIRCUITS (MAIN B UNIT)

Phase-detected signals from IC5 (pins 5 and 12) are converted to DC voltage by a charge pump (Q28 ~Q30) and a loop filter (R104~R106, R113, C129, C145~C147).

The frequency at which the VCO oscillates is controlled by varactor diodes (D20, D21). The converted voltage (PLL lock voltage) is provided through R83 and L22.

On the other hand, the output of the loop filter passes through a DC amplifier (Q24, Q25) and is used as the tuning voltage for Rx bandpass filters.

### 3-9-4 VCO CIRCUIT (MAIN B UNIT)

The VCO circuit (Q12, D20, D21) generates the receive 1st LO and transmit frequencies and provides an FM modulation. Varactor diodes (D20, D21) provide frequency control. D21 also provides FM modulation with a VMOD signal. The buffer amplifiers (Q9, Q13, Q15) protect the PLL output signal against VCO oscillation.

### 3-9-5 UNLOCK SENSOR CIRCUIT (MAIN B UNIT)

When the PLL circuit is unlocked, IC1 (pin 7) is "LOW" and a "LOW" signal is applied to Q31 and then to the CPU via a data selector (IC14) on the MAIN A UNIT as an unlock signal.

The signal is also applied to Q27 to turn ON Q26, changing the loop filter input impedance lower to speed up the lock-up time.

## 3-10 430 (440) MHz PLL CIRCUITS (IC-2400A/E, IC-2500A/E)

### 3-10-1 GENERAL (PLL A AND VCO A UNITS)

The PLL circuit, using a PLL IC (IC1) and dual modulus prescaler (IC2) on the PLL A UNIT, generates the transmit and receive local frequencies with a Colpitts VCO (Q1) on the VCO A UNIT. The PLL IC sets the dividing ratio based on serial data from the CPU and controls the dual modulus prescaler. The PLL IC compares the phases of a VCO signal and the reference oscillator frequency, and then detects the out-of-step phase and outputs from pins 22 and 23. The reference frequency, buffer-amplified at Q43 on the MAIN A UNIT, is applied to IC1 (pin 2).

### 3-10-2 REFERENCE OSCILLATOR CIRCUIT (MAIN A UNIT)

A reference frequency is produced by the oscillator (Q44) and X1. The reference frequency is applied to the PLL IC (IC1) on the PLL A UNIT via a buffer amplifier (Q43).

### 3-10-3 CHARGE PUMP AND LOOP FILTER CIRCUITS (PLL A UNIT)

Phase-detected signals from IC1 (pins 22 and 23) are converted to DC voltage by a loop filter consisting of an active filter (Q1, Q2).

The frequency at which the VCO oscillates is controlled by varactor diodes (D1, D2) on the VCO A UNIT. The converted voltage (PLL lock voltage) is provided through the integrator circuit (R1, C1).

30 V DC from the DC-DC converter circuit (IC1, Q1) is applied to a 15 V regulator (Q2) to obtain a stable 15 V DC. The voltage is used at the loop filter to provide wide range lock voltage.

### 144 MHz PLL CIRCUIT

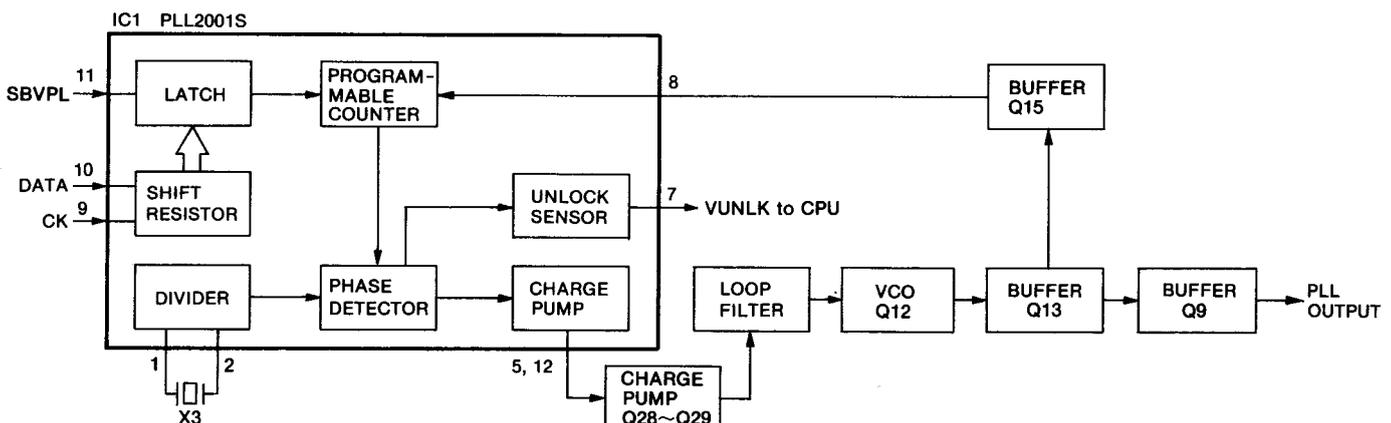


Fig. 6

### 3-10-4 VCO CIRCUIT (VCO A UNIT)

The VCO circuit (Q1, D1, D2) generates the receive and transmit frequencies and provides an FM modulation. Varactor diodes (D1, D2) provide frequency control. The buffer amplifier (Q2) protects the PLL output signal against VCO oscillation.

### 3-10-5 UNLOCK SENSOR CIRCUIT (PLL A UNIT)

When the PLL circuit is unlocked, IC1 (pin 16) is "HIGH" and a "HIGH" signal is applied to Q13 on the MAIN A UNIT and then to the CPU via the data selector (IC14) on the MAIN A UNIT as an unlock signal.

## 3-11 1200 MHz PLL CIRCUITS (IC-2500A/E)

### 3-11-1 GENERAL (MAIN B AND VCO B UNITS)

The PLL circuit, using a PLL IC (IC8) and dual modulus prescaler (IC9) on the MAIN B UNIT, generates half of the transmit and receive local frequency with a Colpitts VCO (Q1) on the VCO B UNIT. The PLL IC sets the dividing ratio based on serial data from the CPU and controls the dual modulus prescaler. The PLL IC compares the phases of a VCO signal and the reference oscillator frequency, and then detects the out-of-step phase and outputs from pins 22 and 23. The reference frequency from the REF B UNIT is applied to IC8 (pin 2).

### 3-11-2 REFERENCE OSCILLATOR CIRCUIT (REF B UNIT)

A constant temperature oven crystal unit with calibration control (CR-266) is used to maintain frequency stability within  $\pm 3$  ppm ( $-10^{\circ}\text{C}\sim+60^{\circ}\text{C}$ ;  $14^{\circ}\text{F}\sim+140^{\circ}\text{F}$ ). The reference frequency is applied to the PLL IC (IC8) on the MAIN B UNIT via a buffer amplifier (Q1).

The AFC, RIT or VXO control data from a shift register (IC2) are applied to the D/A converter circuit (IC2, R10) to obtain control voltage. The voltage is applied to the calibration terminal of X1.

### 3-11-3 CHARGE PUMP AND LOOP FILTER CIRCUITS (MAIN B UNIT)

Phase-detected signals from IC8 (pins 22 and 23) are converted to DC voltage by a loop filter (Q27, Q28).

The frequency at which the VCO oscillates is controlled by varactor diodes (D1~D4) on the VCO B UNIT. The converted voltage (PLL lock voltage) is provided through the integrator circuit (R1, C1) on the VCO B UNIT.

30 V DC from the DC-DC converter circuit (IC1, Q1) on the MAIN A UNIT is applied to a 20 V regulator (Q26) to obtain a stable 20 V DC. The voltage is used at the loop filter to provide wide range lock voltage.

### 3-11-4 VCO CIRCUIT (VCO B UNIT)

The VCO circuit (Q1, D1~D4) generates the receive and transmit frequencies and provides an FM modulation. Varactor diodes (D1~D4) provide frequency control. D3 and D4 also provide the FM modulation with an MOD signal. The buffer amplifier (Q2) protects the PLL output signal against VCO oscillation.

### 3-11-5 UNLOCK SENSOR CIRCUIT (MAIN B UNIT)

When the PLL circuit is unlocked, IC8 (pin 16) is "HIGH" and a "HIGH" signal is applied to Q29 on the MAIN B UNIT and then to the CPU via the data selector (IC14) on the MAIN A UNIT as an unlock signal.

### 3-11-6 DOUBLER CIRCUIT (MAIN B UNIT)

The 1200 MHz band VCO output (551.7~581.7 MHz or 620~650 MHz), buffer-amplified at IC5, is applied to a low-pass filter, buffer amplifier (Q22) and then to a doubler circuit (D16, D17). The resulting 1103.4~1163.4 MHz or 1260~1300 MHz signal is applied to a transmit/receive switching circuit (D14, D15).

## 3-12 POWER SUPPLY CIRCUITS (IC-2400A/E, IC-2500A/E)

### 3-12-1 VOLTAGE LINES

LINE	DESCRIPTION
HV	The external DC power from the DC power connector.
13.8 V	13.8 V DC passed through the [POWER] switch.
5V	Common 5 V converted from the 13.8 V line at IC5 on the MAIN A UNIT.
8V	430 (440) MHz band 8 V converted from the 13.8 V line at IC6 on the MAIN A UNIT.
V8V	144 MHz band 8 V converted from the 13.8 V line at Q37 and Q38 on the MAIN A UNIT using IC6 output as the reference voltage. (IC-2400A/E)
H8V	1200 MHz band 8 V converted from the 13.8 V line at Q37 and Q38 on the MAIN A UNIT using IC6 output as the reference voltage. (IC-2500A/E)
30 V	30 V DC converted from the 13.8 V line. IC1 on the MAIN A UNIT is a switching regulator IC and converts Q1 output into approx. 30 V DC.

### 3-12-2 CPU POWER SUPPLY CIRCUIT (LOGIC UNIT)

When the power switch is turned OFF, voltage is applied to the CPU (IC2, pin 73) via D21 from the lithium backup battery (BT1) installed in the transceiver to provide backup for the memory contents.

### 3-13 OTHER CIRCUITS (IC-2400A/E, IC-2500A/E)

#### 3-13-1 S/RF INDICATOR CIRCUIT (LOGIC UNIT)

The VSRF and USRF signals, \* detected at the S-meter detector or amplified at the RF meter amplifier, are applied to a comparator (IC4, pin 2 or IC5, pin 6) on the LOGIC UNIT.

\* IC-2500A/E: LSRF and HSRF signals

IC4 (pin 3) or IC5 (pin 5) receives an S-indicator reference signal from the shift register (IC3) using the D/A converter (R48). The shift register terminals increase the reference signal level.

When the D/A converted level becomes greater than the S-indicator level, IC4 (pin 1) or IC5 (pin 7) becomes "HIGH." The CPU detects the signal strength level using the shift register terminal outputs and the CPU indicates the signal strength level on the function display when receiving a "HIGH" signal.

While transmitting, the S/RF indicator indicates the detected output power in the APC circuit.

#### 3-13-2 CPU RESET CIRCUIT (LOGIC UNIT)

IC6 detects +5 voltage. When the +5 voltage line becomes 5 V, Q6 turns the RESET port "HIGH" and the CPU (IC2) restarts operation.

#### 3-13-3 DIMMER CIRCUIT (MAIN A UNIT)

The brightness of the function display is set at 1 of 4 levels using combinations of output level at an output expander (IC10; DIM1 and DIM0). By changing levels at DIM1 and DIM0, the base voltage and collector current of Q25 and Q26 changes. Therefore, the collector voltage is changed and the brightness of lamps DS1~DS4 on the LOGIC UNIT changes.

#### DIMMER CIRCUIT

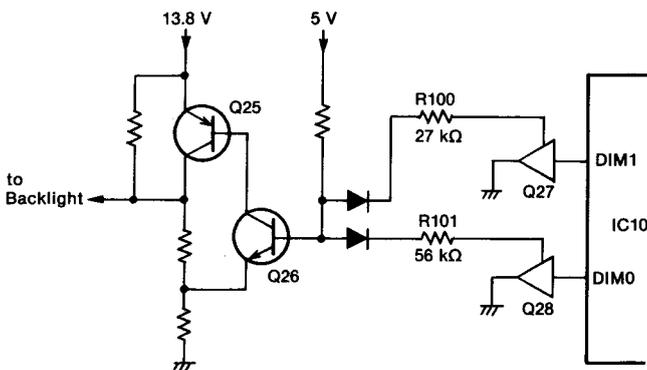


Fig. 7

BRIGHTNESS	DIM1	DIM0	INDICATION
↑ Bright	H	H	d-4
	H	L	d-3
↓ Dark	L	H	d-2
	L	L	d-1

#### 3-13-4 AFC CIRCUIT (IC-2500A/E MAIN A UNIT)

A portion of the 1200 MHz band AF signal is applied to an AFC circuit (IC7). IC7 is an FM/AM tuning indicator IC and uses as a frequency drift detector.

IC7 outputs the up/down control signal to the CPU via the data selector (IC14).

#### 3-13-5 KEY MATRIX (LOGIC UNIT)

##### • IC-2400A/E

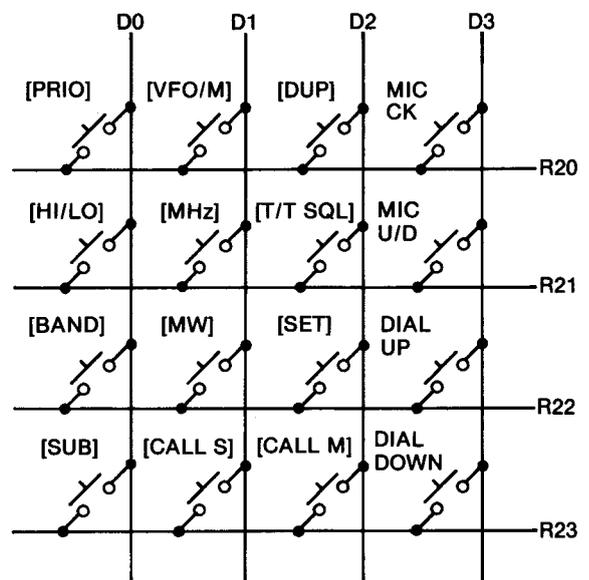


Fig. 8

##### • IC-2500A/E

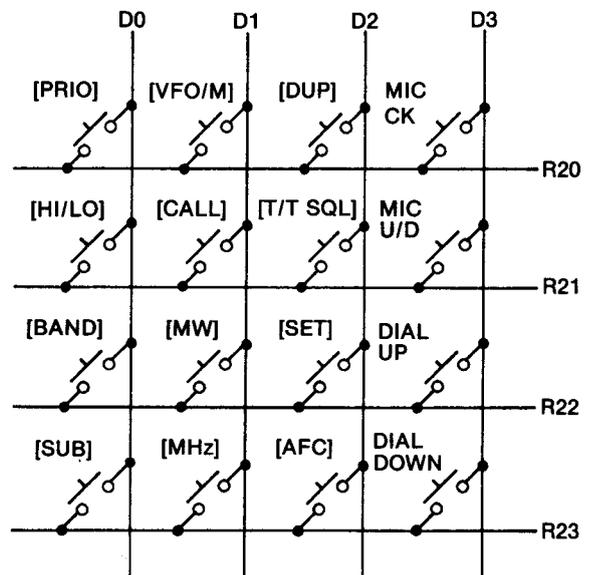


Fig. 9

### 3-14 CPU PORT ALLOCATIONS (LOGIC UNIT)

#### • INPUT PORT

PORT NAME	PIN NUMBER	DESCRIPTION
D10 [PTT]	7	Inputs a signal on the PTT line. This port becomes "HIGH" when the PTT switch is pushed.
D11, D12 [USRF,VSRF] ([LSRF,HSRF])*	8, 9	Inputs an S-meter-compared signal from IC4 and IC5 on the LOGIC UNIT to indicate the CPU counting level of the S-indicator in the function display.
R03 [DATA IN]	18	Inputs data from the data selector (IC14) on the MAIN A UNIT.
R20~R23	23~26	These are input ports for the initial and key matrices.
R31, R30 [MSQL,SSQL]	28, 27	Detects a main or sub squelch signal. The signal is "HIGH" when the squelch opens.
R32 [MONI]	29	Input port for the [MONI] switch.
R33 [INTI]	30	Input port for the backup mode. This port becomes "LOW," when the CPU enters the standby mode.
RESET	76	Inputs a signal for CPU resetting. The CPU program is reset when the port becomes "HIGH."

\*IC-2500A/E

#### • OUTPUT PORT

PORT NAME	PIN NUMBER	DESCRIPTION
D4~D7 [IST0~IST3]	1~4	Outputs a strobe signal for the initial matrix.
D8 [MBEP]	5	Outputs a main band beep tone.
D9 [SBEP]	6	Outputs a sub band beep tone.
R00 [SCK]	15	Outputs clock signals for the serial data.
R01 [CE]	16	Outputs a chip enable signal for the LCD driver.
R02 [DATA]	17	Outputs serial data synchronized with the SCK signal.
R10~R12 [STBA~STBC]	19~21	Outputs 3-bit data for the strobe signal generator (IC13) on the MAIN A UNIT.
D0~D3 [KST0~KST3]	77~80	Outputs a strobe signal for key matrix. These signals are also applied to the data selector (IC14) as a counting signal.

#### • DATA SELECTOR (IC14, MAIN A UNIT)

PORT NAME	PIN NUMBER	DESCRIPTION
D0, D1 [OPTA,OPTB]	1, 2	Input ports for the optional UT-40. This port becomes "LOW" when the UT-40 is installed.
D2, D3 [TSQLA,TSQLB]	3, 4	Input ports for the optional UT-40. This port becomes "HIGH" when the tone squelch opens.
D4, D5 [AFC UP] [AFC DN]	5, 6	Input ports for the AFC up/down signal. This port becomes "LOW" when the frequency is adjusted. (IC-2500A/E)
D6 [VUNLK]	7	Detects a 144 MHz band PLL unlock signal. When the signal is "HIGH," the PLL is unlocked. (IC-2400A/E)
D6 [HUNLK]	7	Detects a 1200 MHz band PLL unlock signal. When the signal is "HIGH," the PLL is unlocked. (IC-2500A/E)
D7 [UUNLK] ([LUNLK])*	9	Detects a 430 (440) MHz band PLL unlock signal. When the signal is "HIGH," the PLL is unlocked.

\*IC-2500A/E

#### • STROBE SIGNAL GENERATOR (IC13, MAIN A UNIT)

PORT NAME	PIN NUMBER	DESCRIPTION
Q1 [SBOPA]	14	Outputs a strobe signal for serial data to the UT-40, connected to P1 on the MAIN A UNIT.
Q2 [SBOPB]	2	Outputs a strobe signal for serial data to the UT-40, connected to P2 on the MAIN A UNIT.
Q3 [SBCOM]	15	Outputs a strobe signal for serial data to IC1 on the MIC AMP UNIT and IC10 on the MAIN A UNIT.
Q4 [SBUBC] ([SBLBC])*	1	Outputs a strobe signal for serial data to the 430 (440) MHz band control circuit.
Q5 [SBVBC]	6	Outputs a strobe signal for serial data to the 144 MHz band control circuit in the IC-2400A/E.
Q5 [SBHBC]	6	Outputs a strobe signal for serial data to the 1200 MHz band control circuit in the IC-2500A/E.
Q6 [SBUPL] ([SBLPL])*	7	Outputs a strobe signal for serial data to the 430 (440) MHz band PLL IC.
Q7 [SBVPL]	4	Outputs a strobe signal for serial data to the 144 MHz band PLL IC in the IC-2400A/E.
Q7 [SBHPL]	4	Outputs a strobe signal for serial data to the 1200 MHz band PLL IC in the IC-2500A/E.

\*IC-2500A/E

• **OUTPUT EXPANDER (IC4, MAIN A UNIT)**

PORT NAME	PIN NUMBER	DESCRIPTION
Q1 [BUSYM]	4	Outputs a signal for a check point. This port becomes "HIGH" while main band receiving. (squelch opens)
Q4 [ULOW] ([LLOW])*	7	Outputs a control signal for the 430 (440) MHz band output power selecting circuit. This port becomes "HIGH" when LOW output power is selected.
Q5 [UTX] ([LTX])*	14	Outputs a 430 (440) MHz band transmit switching signal. This port becomes "HIGH" while transmitting.
Q6 [ARX]	13	Outputs an A BAND UNIT switching signal. This port becomes "HIGH" while A BAND receiving.
Q7 [URX] ([LRX])*	12	Outputs a 430 (440) MHz band receive switching signal. This port becomes "HIGH" while 430 (440) MHz band receiving.
Q8 [UVCO] ([LVCO])*	11	Outputs a control signal for 430 (440) MHz band VCO regulator.

\*IC-2500A/E

• **OUTPUT EXPANDER (IC4, IC-2400A/E MAIN B UNIT)**

PORT NAME	PIN NUMBER	DESCRIPTION
Q4 [VLOW]	7	Outputs a control signal for the 144 MHz band output power selecting circuit. This port becomes "HIGH" when LOW output power is selected.
Q5 [VTX]	14	Outputs a 144 MHz band transmit switching signal. This port becomes "HIGH" while transmitting.
Q7 [VRX]	12	Outputs a 144 MHz band receive switching signal. This port becomes "HIGH" while receiving.
Q8 [VVCO]	11	Outputs a control signal for 144 MHz band VCO regulator.

• **OUTPUT EXPANDER (IC4, IC-2500A/E MAIN B UNIT)**  
 • **OUTPUT EXPANDER (IC4, IC-2400A/E MAIN B UNIT)**

PORT NAME	PIN NUMBER	DESCRIPTION
Q4 [HLOW]	7	Outputs a control signal for the 1200 MHz band output power selecting circuit. This port becomes "HIGH" when LOW output power is selected.
Q5 [HTX]	14	Outputs a 1200 MHz band transmit switching signal. This port becomes "HIGH" while transmitting.
Q7 [HRX]	12	Outputs a 1200 MHz band receive switching signal. This port becomes "HIGH" while receiving.
Q8 [HVCO]	11	Outputs a control signal for the 1200 MHz band VCO regulator.

• **OUTPUT EXPANDER (IC10, MAIN A UNIT)**

PORT NAME	PIN NUMBER	DESCRIPTION
Q2 [OPAVB]	5	Outputs a band selecting signal for the optional UT-40. This port becomes "HIGH" when the 144 MHz band signal is applied to P1 on the MAIN A UNIT. (IC-2400A/E)
Q2 [OPAHB]	5	Outputs a band selecting signal for the optional UT-40. This port becomes "HIGH" when the 1200 MHz band signal is applied to P1 on the MAIN A UNIT. (IC-2500A/E)
Q3, Q4 [DIM1, DIM0]	6, 7	Outputs signals for controlling the intensity of the function display.
Q5 [MAVB]	14	Outputs a band selecting signal for the AF signal. This port becomes "HIGH" when the main band is 144MHz band. (IC-2400A/E)
Q5 [MAHB]	14	Outputs a band selecting signal for the AF signal. This port becomes "HIGH" when the mainband is the 1200MHz band. (IC-2500A/E)
Q6 [SMUT]	13	Outputs a sub band AF mute signal for the sub band AF mute circuit.
Q7 [SRMUT]	12	Outputs a sub band receive mute signal for the AF mute circuit.
Q8 [MRMUT]	11	Outputs a main band receive mute signal for the AF mute circuit.

## SECTION 4 MECHANICAL PARTS AND DISASSEMBLY

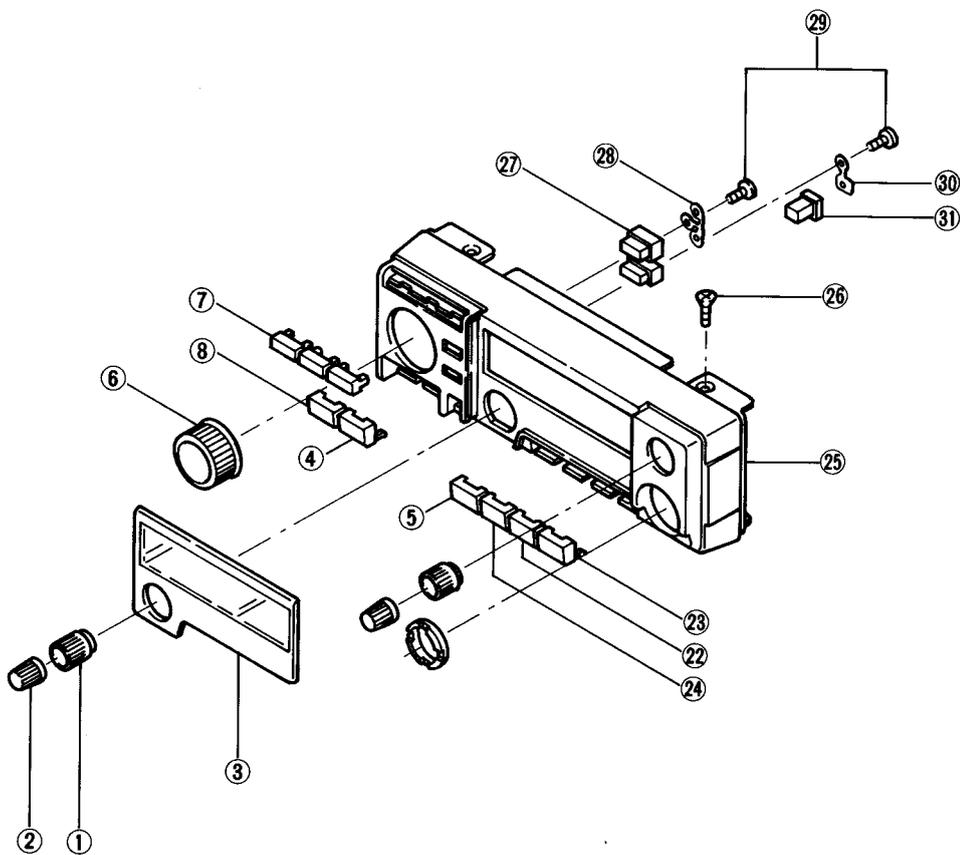
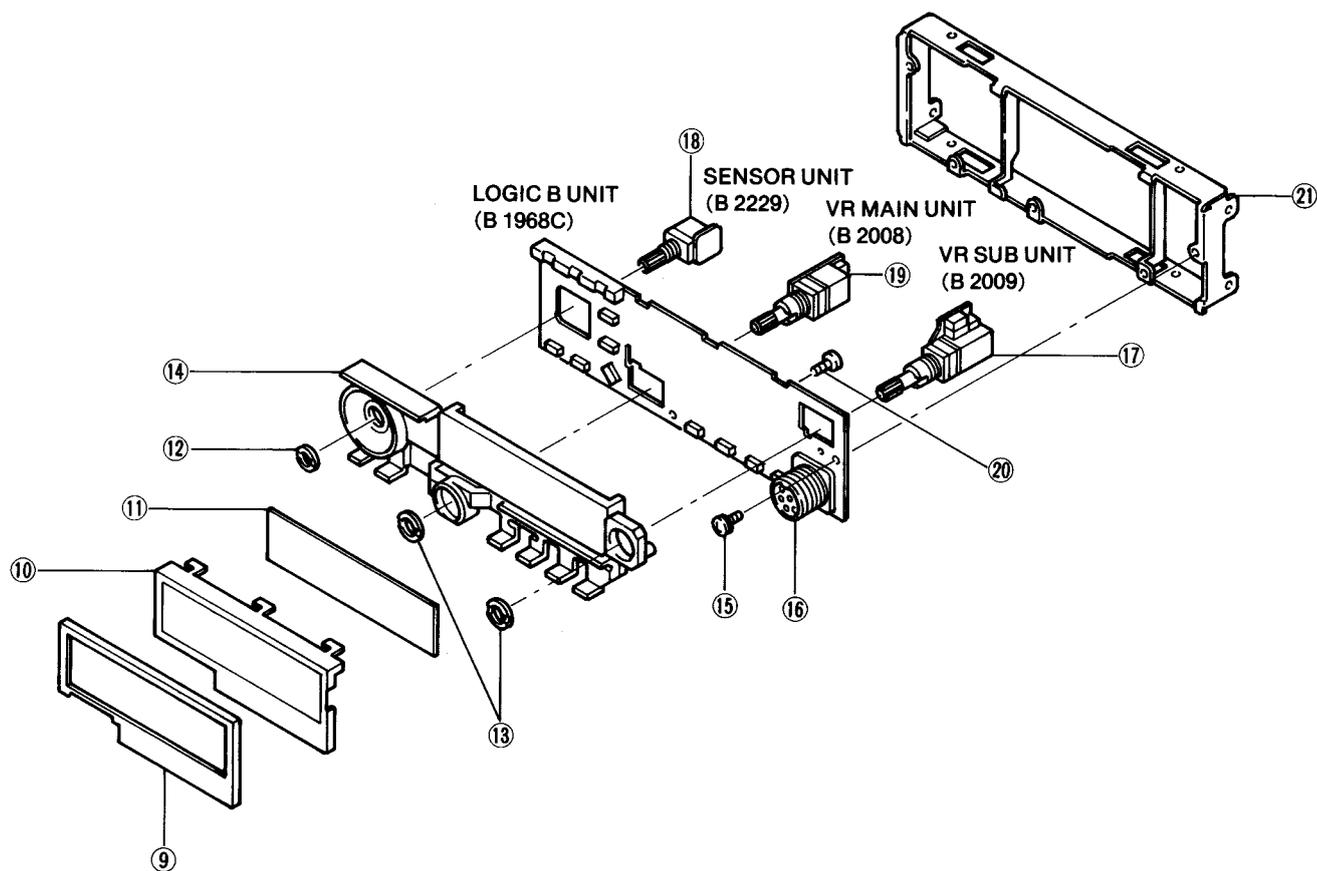
### 4-1 FRONT (IC-2400A/E, IC-2500A/E)

LABEL NUMBER	ORDER NO.	DESCRIPTION	QTY.
①	8610005750	Knob N144 [MAIN-SQL, SUB-SQL]	2
②	8610005740	Knob N143 [MAIN-VOL, SUB-VOL]	2
③	8310017270	676 Window plate (IC-2500A/E)	1
	8310017830	676 Window plate (C) (IC-2400A/E)	1
④	8610004350	Button K114 (A) [CALL] (IC-2500A/E)	1
	8610005950	Button K114 (H) [MHz] (IC-2400A/E)	1
⑤	8610004390	Button K115 [BAND]	1
⑥	8610005730	Knob N142 [MAIN DIAL]	1
⑦	8610004540	Button K117 [DUP, T/T SQL, SET]	3
⑧	8610004340	Button K114 [VFO/M]	1
⑨	8930015800	LCD cover	1
⑩	8930015110	LCD holder	1
⑪	8930015100	LCD filter	1
⑫	8830000550	VR nut (E)	1
⑬	8830000050	VR nut (B)	2
⑭	8010008690	676 Reflector plate	1
⑮	8810003960	Set screw A M 2.6 × 5	5
⑯	6510000290	Mic connector 8S-S-E (inc.Spring washer)	1
⑰	7210001570	Variable Resistor RK0972214001A [SUB VOL/SQL]	1
⑱	2260000880	Switch SRBM1L038A [MAIN DIAL]	1
⑲	7210001560	Variable Resistor RK0972212009A [MAIN VOL/SQL]	1
⑳	8810001240	Screw PH B1 M 2 × 5	3
㉑	8010008700	676 SUB chassis	1
㉒	8610004380	Button K114 (D) [PRIO]	1
㉓	8610004370	Button K114 (C) [HI/LO]	1
㉔	8610005700	Button K114 (G) [SUB]	1
㉕	8210004990	676 FRONT panel (A) IC2500A	1
	8210005000	676 FRONT panel (B) IC2500E	1
	8210005030	676 FRONT panel (D) IC2400A	1
	8210005010	676 FRONT panel (E) IC2400E	1
㉖	8810002100	Screw FH M 2.6 × 4	4
㉗	8610005720	Button K130 [AFC, MHz] (IC-2500A/E)	2
	8610005720	Button K130 [CALL M, CALL S] (IC-2400A/E)	2
㉘	8930013200	635 SW spring	1
㉙	8810000980	Screw PH B0 M 2 × 4	2
㉚	8930015120	676 Button spring	1
㉛	8610005711	Button K129-1 [MW]	1

Screw abbreviations

PH: Pan head

FH: Flat head



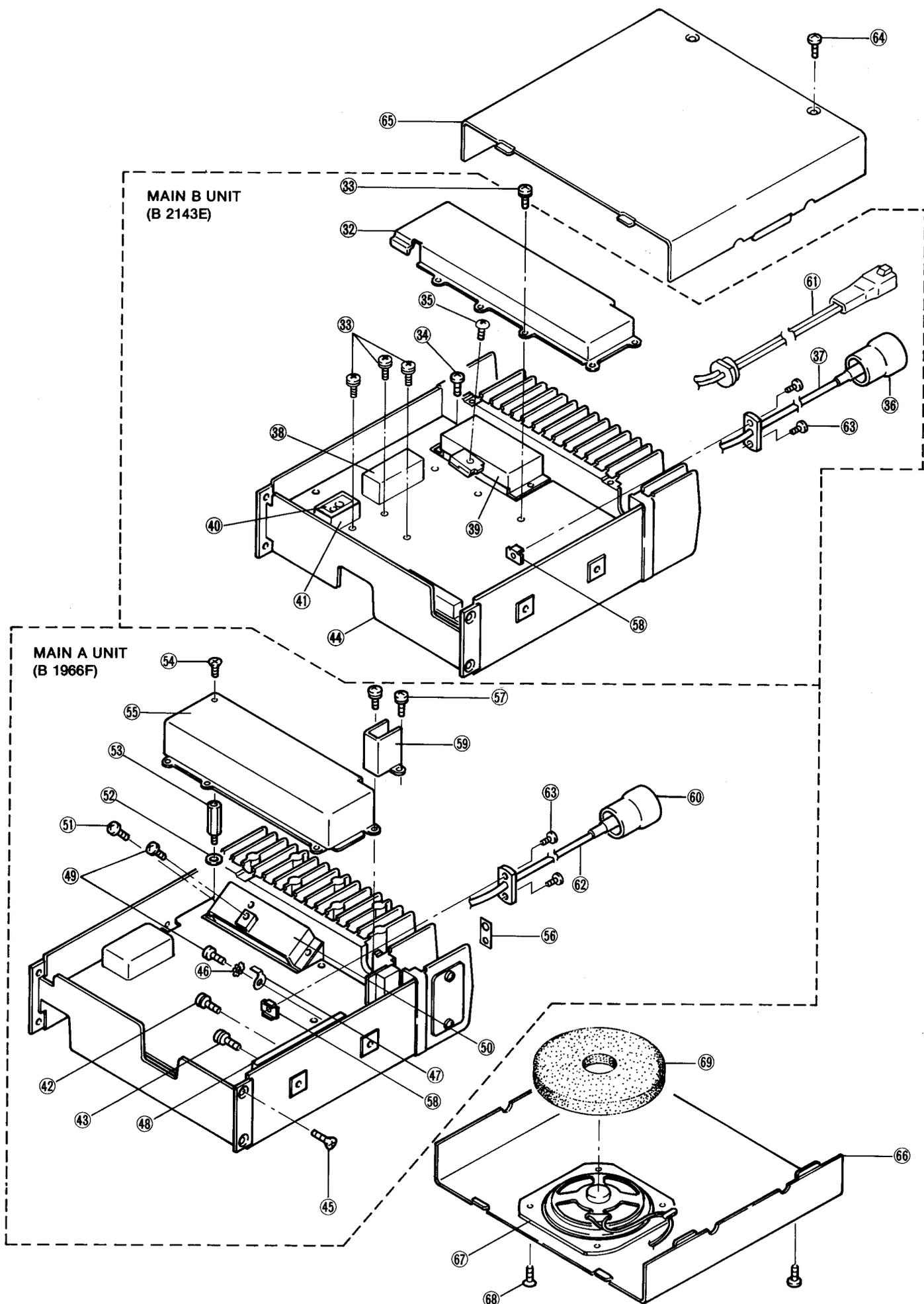
## 4-2 CHASSIS (IC-2400A/E)

LABEL NUMBER	ORDER NO.	DESCRIPTION	QTY.
32	8510005780	PAU shield plate	1
33	8810003160	Setscrew A M 3 × 6	13
34	8810001920	Screw PH M 3 × 8 Ni BS	2
35	8810003670	Icom screw A 6	1
36	6950000040	M type cap	1
37	8900002450	ANT cable OPC-223	1
38	8510000470	MIX shield case	1
39	8930015880	788 module plate	1
40	8510002250	VCO case cover	1
41	8510002210	VCO case	1
42	8810003150	Setscrew A M 3 × 5	1
43	8810003160	Setscrew A M 3 × 6	1
44	8410001320	676 Heatsink	1
45	8810002160	Screw FH M 3 × 5	4
46	8850000570	Star washer M 3	1
47	8860000130	Ground lug B 5 (M3) AG BS	1
48	8410001310	AF heatsink	1
49	8810003660	Icom screw A 5	2
50	8930015530	Module plate	1
51	8810003170	Setscrew A M 3 × 8	2
52	8850000420	Spring washer M 3 Ni	1
53	8930015780	Standoff (AY)	1
54	8810002160	Screw FH M 3 × 5	1
55	8510005791	PAL shield plate-1	1
56	8930015170	SP Jack plate	1
57	8810003160	Setscrew A M 3 × 6	10
58	8930007980	Cable stopper nut	2
59	8930015770	Jack plate	1
60	6950000030	N type cap-1	2
61	8900001520	DC power cable OPC-143	1
62	8900002340	ANT cable OPC-219	1
63	8810001920	Screw PH M 3 × 8 Ni BS	4
64	8810005510	Screw FH M 3 × 6 ZK BS	4
65	8110003340	676 top cover	1
66	8110003350	676 bottom cover	1
67	8930002651	57 speaker plate-1	1
68	8810002450	Screw FH M 2.6 × 5 ZK BS	4
69	8930005360	Sponge	1

## Screw abbreviations

PH: Pan head

FH: Flat head



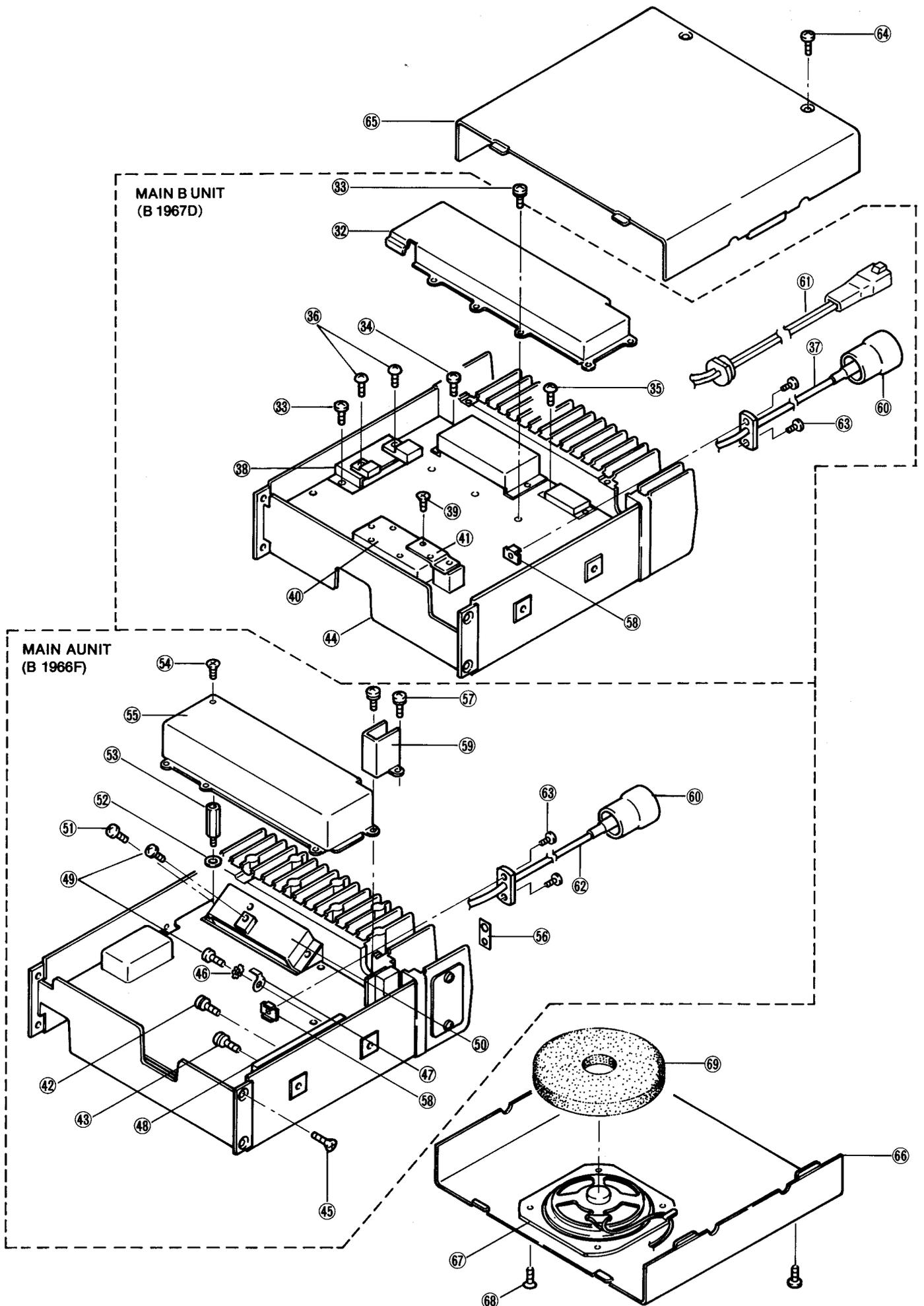
## 4-3 CHASSIS (IC-2500A/E)

LABEL NUMBER	ORDER NO.	DESCRIPTION	QTY.
32	8510005780	PAU shield plate	1
33	8810003160	Setscrew A M 3 × 6	13
34	8810001920	Screw PH M 3 × 8 Ni BS	2
35	8810003670	Icom screw A 6	2
36	8810001850	Screw PH M 2.6 × 8 Ni BS	2
37	8900001980	ANT cable OPC-188	1
38	8930015160	Driver amp plate	1
39	8810002160	Screw FH M 3 × 5	6
40	8510004670	566 VCO case cover	1
41	8510005930	676 shield plate	1
42	8810003150	Setscrew A M 3 × 5	1
43	8810003160	Setscrew A M 3 × 6	1
44	8410001320	676 heatsink	1
45	8810002160	Screw FH M 3 × 5	4
46	8850000570	Star washer M 3	1
47	8860000130	Ground lug B 5 (M3) AG BS	1
48	8410001310	AF heatsink	1
49	8810003660	Icom screw A 5	2
50	8930015530	Module plate	1
51	8810003170	Setscrew A M 3 × 8	2
52	8850000420	Spring washer M 3 Ni	1
53	8930015780	Standoff (AY)	1
54	8810002160	Screw FH M 3 × 5	1
55	8510005791	PAL shield plate-1	1
56	8930015170	SP Jack plate	1
57	8810003160	Setscrew A M 3 × 6	10
58	8930007980	Cable stopper nut	2
59	8930015770	Jack plate	1
60	6950000030	N type cap-1	2
61	8900001520	DC power cable OPC-143	1
62	8900002340	ANT cable OPC-219	1
63	8810001920	Screw PH M 3 × 8 Ni BS	4
64	8810005510	Screw FH M 3 × 6 ZK BS	4
65	8110003340	676 top cover	1
66	8110003350	676 bottom cover	1
67	8930002651	57 speaker plate-1	1
68	8810002450	Screw FH M 2.6 × 5 ZK BS	4
69	8930005360	Sponge	1

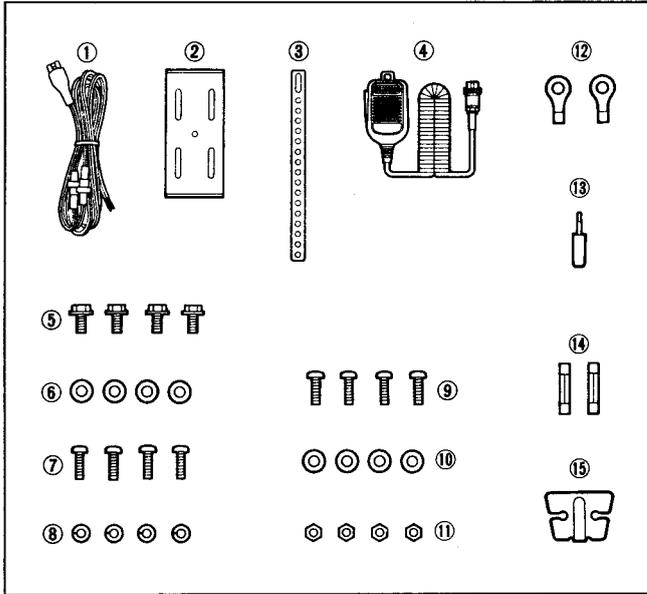
## Screw abbreviations

PH: Pan head

FH: Flat head



4-4 ACCESSORIES (IC-2400A/E, IC-2500A/E)



LABEL NUMBER	ORDER NO.	DESCRIPTION	QTY.
①	Optional product	DC power cable OPC-044 B	1
②	8010008710	150 Mobile mounting bracket	1
③	8010004060	Support bracket	1
④	Optional product	Microphone HM12 IC-2400A (AUS), IC-2500 (USA)	1
	Optional product	Microphone HM14 IC-2400A (USA, Asia), IC-2500 (USA)	1
	Optional product	Microphone HM15 IC-2400E (EUR), IC-2500 (USA)	1
⑤	8820000530	Mounting bolut	4
⑥	8850000150	Flat washer M 5 Ni BS	4
⑦	8810000950	Screw PH A M 5 × 16	4
⑧	8850000440	Spring washer M 5 Ni	4
⑨	8810000470	Screw PH M 5 × 12 (+ -)	4
⑩	8850000140	Flat washer M 4 Ni BS	4
⑪	8830000120	Nut M 5	4
⑫	6510003070	Cable lug R 5.5-8	2
⑬	5610000020	AP313 3.5φ CS plug	1
⑭	5210000120	Fuse FGB 15A	2
⑮	8930007300	Microphone hanger	1

Screw abbreviations

PH: Pan head

## SECTION 5 PARTS LIST

## 5-1 IC-2400A/E

## [SENSOR UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
S1	2260000880	Switch	SRBM1L038A [MAIN DIAL]
EP1	0910022970	P.C. Board	B 2229 (SENSOR)

## [VR SUB UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R1	7210001570	Variable Resistor	RK0972214001A [SUB SQL/SUB VOL]
EP1	0910020870	P.C. Board	B 2009 (VR SUB)

## [VR MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R1	7210001560	Variable Resistor	RK0972212009A [MAIN SQL/MAIN VOL]
EP1	0910020860	P.C. Board	B 2008 (VR MAIN)

## [LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1130004190	IC	LC7582A
IC2	1140001060	IC	HD404808A05H
IC3	1130000830	IC	$\mu$ PD4094BG-T1
IC4	1120000430	IC	LA6393M-TP-T1
IC5	1120000430	IC	LA6393M-TP-T1
IC6	1110001500	IC	S-8054ALR-LN-T1
Q1	1530000160	Transistor	2SC2712-Y (TE85R)
Q2	1530000160	Transistor	2SC2712-Y (TE85R)
Q3	1590000410	Transistor	RN2404 (TE85R)
Q4	1530000160	Transistor	2SC2712-Y (TE85R)
Q5	1530000160	Transistor	2SC2712-Y (TE85R)
Q6	1510000110	Transistor	2SA1162-Y (TE85R)
Q7	1530000160	Transistor	2SC2712-Y (TE85R)
D1	1750000050	Diode	1SS193 (TE85R) (EUROPE)
D1	1750000060	Diode	1SS196 (TE85R) (U.S.A.)
D1	1750000020	Diode	1SS184 (TE85R) (AUSTRALIA, ASIA)
D3	1750000060	Diode	1SS196 (TE85R) (EUROPE)
D3	1750000050	Diode	1SS193 (TE85R) (AUSTRALIA, ASIA)

## [LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
D4	1750000020	Diode	1SS184 (TE85R) (U.S.A.)
D5	1710000160	Diode	1SS133
D6	1710000160	Diode	1SS133
D7	1710000160	Diode	1SS133
D8	1710000160	Diode	1SS133 (EUROPE, AUSTRALIA, ASIA)
D9	1710000160	Diode	1SS133 (EUROPE, AUSTRALIA, ASIA)
D11	1710000160	Diode	1SS133 (EUROPE, AUSTRALIA, ASIA)
D12	1750000020	Diode	1SS184 (TE85R)
D13	1750000020	Diode	1SS184 (TE85R)
D14	1750000020	Diode	1SS184 (TE85R)
D15	1750000020	Diode	1SS184 (TE85R)
D16	1750000020	Diode	1SS184 (TE85R)
D17	1750000020	Diode	1SS184 (TE85R)
D18	1750000020	Diode	1SS184 (TE85R)
D19	1750000050	Diode	1SS193 (TE85R)
D20	1750000010	Diode	1SS181 (TE85R)
D21	1750000050	Diode	1SS193 (TE85R)
D22	1750000050	Diode	1SS193 (TE85R)
D23	1730000840	Zener	RD9.1M-T2B2
DS1	5080000170	LED	HRS7219A-Y2-30
DS2	5080000170	LED	HRS7219A-Y2-30
DS3	5080000170	LED	HRS7219A-Y2-30
DS4	5080000170	LED	HRS7219A-Y2-30
DS5	5030000430	LCD	LD-HU9369E (E-9489)
X1	6060000230	Crystal	FAR-C4CA-04194000 -M01
R1	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R2	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R3	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R4	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R5	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R6	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R7	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R8	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R9	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R10	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R11	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R12	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R13	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R14	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R15	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R16	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R17	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R18	7030000380	Resistor	MCR10EZHZ 1 k $\Omega$ (102)
R19	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R20	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R21	7030000590	Resistor	MCR10EZHZ 56 k $\Omega$ (563)
R22	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R23	7030000740	Resistor	MCR10EZHZ 1 M $\Omega$ (105)
R24	7030000660	Resistor	MCR10EZHZ 220 k $\Omega$ (224)
R25	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R26	7030000500	Resistor	MCR10EZHZ 10 k $\Omega$ (103)
R27	7030000260	Resistor	MCR10EZHZ 100 $\Omega$ (101)
R28	7030000740	Resistor	MCR10EZHZ 1 M $\Omega$ (105)
R29	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R30	7030000740	Resistor	MCR10EZHZ 1 M $\Omega$ (105)
R31	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R32	7030000740	Resistor	MCR10EZHZ 1 M $\Omega$ (105)
R33	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R34	7030000300	Resistor	MCR10EZHZ 220 $\Omega$ (221)

**[LOGIC UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION	
R35	7030000450	Resistor	MCR10EZHZJ 3.9 kΩ (392)
R36	7030000380	Resistor	MCR10EZHZJ 1 kΩ (102)
R37	7030000580	Resistor	MCR10EZHZJ 47 kΩ (473)
R38	7030000580	Resistor	MCR10EZHZJ 47 kΩ (473)
R39	7030000620	Resistor	MCR10EZHZJ 100 kΩ (104)
R40	7030000620	Resistor	MCR10EZHZJ 100 kΩ (104)
R41	7030000620	Resistor	MCR10EZHZJ 100 kΩ (104)
R42	7030000580	Resistor	MCR10EZHZJ 47 kΩ (473)
R43	7030000580	Resistor	MCR10EZHZJ 47 kΩ (473)
R44	7030000380	Resistor	MCR10EZHZJ 1 kΩ (102)
R45	7030000620	Resistor	MCR10EZHZJ 100 kΩ (104)
R46	7030000620	Resistor	MCR10EZHZJ 100 kΩ (104)
R47	7030000620	Resistor	MCR10EZHZJ 100 kΩ (104)
R48	7410000510	Resistor Array	RKM8L 104J
R49	7030000140	Resistor	MCR10EZHZJ 10 Ω (100)
R50	7030000580	Resistor	MCR10EZHZJ 47 kΩ (473)
R51	7030000240	Resistor	MCR10EZHZJ 68 Ω (680)
R52	7030000240	Resistor	MCR10EZHZJ 68 Ω (680)
C1	4030004690	Ceramic	C2012 SL 1H 331J- T-A
C2	4510001690	Electrolytic	6R3 MS7 47 μF
C3	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C4	4510001150	Electrolytic	50 MS7 R47 μF
C5	4510001690	Electrolytic	6R3 MS7 47 μF
C6	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C7	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C8	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C9	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C10	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C11	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C12	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C13	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C14	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C15	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C16	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C17	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C18	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
DS1	5080000170	LED	HRS7219A-Y2-30
DS2	5080000170	LED	HRS7219A-Y2-30
DS3	5080000170	LED	HRS7219A-Y2-30
DS4	5080000170	LED	HRS7219A-Y2-30
DS5	5030000430	LCD	LD-HU9369E (E-9489)
S1	2260000580	Switch	SKHLAD035A [PRIO]
S2	2260000580	Switch	SKHLAD035A [VFO/M]
S3	2260000580	Switch	SKHLAD035A [DUP]
S4	2260000580	Switch	SKHLAD035A [HI/LO]
S5	2260000580	Switch	SKHLAD035A [MHz]
S6	2260000580	Switch	SKHLAD035A [T/T SQL]
S7	2260000580	Switch	SKHLAD035A [BAND]
S8	2260000580	Switch	SKHLAD035A [MW]
S9	2260000580	Switch	SKHLAD035A [SET]
S10	2260000580	Switch	SKHLAD035A [SUB]
S11	2260000580	Switch	SKHLAD035A [CALL S]
S12	2260000580	Switch	SKHLAD035A [CALL M]
BT1	3020000020	Lithium Battery	BR2032-1T2
EP2	8930015080	LCD contact strip	SRCN-676B
EP3	8930015090	LCD contact strip	SRCN-676A
EP1	0910020713	P.C. Board	B 1968C (LOGIC)

**[MAIN A UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1110001700	IC	TL499ACPS
IC2	1130004200	IC	TC4S66F (TE85R)
IC3	1150000750	IC	SC1054
IC4	1130000830	IC	μPD4094BG-T1
IC5	1180000540	IC	NJM7805FA
IC6	1110000490	IC	AN6541
IC10	1130000830	IC	μPD4094BG-T1
IC11	1110001980	IC	TA8207K
IC12	1130003760	IC	TC4S81F (TE85R)
IC13	1130002370	IC	μPD4028BG-T1
IC14	1130002720	IC	μPD4512BG
Q1	1540000150	Transistor	2SD1225M R
Q2	1530000160	Transistor	2SC2712-Y (TE85R)
Q3	1530002050	Transistor	2SC3661-TA
Q4	1590000460	Transistor	RN1402 (TE85R)
Q5	1510000580	Transistor	2SA1362-GR (TE85R)
Q6	1530000160	Transistor	2SC2712-Y (TE85R)
Q7	1530002240	Transistor	2SC3775-3-TA
Q8	1510000580	Transistor	2SA1362-GR (TE85R)
Q9	1530002240	Transistor	2SC3775-3-TA
Q10	1590000390	Transistor	MRF559
Q11	1510000370	Transistor	2SA1359-Y
Q12	1590000420	Transistor	RN1404 (TE85R)
Q13	1590000690	Transistor	IMD6 T108
Q14	1530002020	Transistor	2SC3770-3-TA
Q15	1590000460	Transistor	RN1402 (TE85R)
Q16	1590000980	Transistor	DTB123EK T147
Q17	1580000350	FET	3SK140-Y (TE85R)
Q18	1590000460	Transistor	RN1402 (TE85R)
Q19	1590000980	Transistor	DTB123EK T147
Q20	1530002030	Transistor	2SC3772-3-TA
Q21	1580000360	FET	3SK177-T2B U73
Q22	1590000420	Transistor	RN1404 (TE85R)
Q25	1520000080	Transistor	2SB909M R
Q26	1530000160	Transistor	2SC2712-Y (TE85R)
Q27	1590000410	Transistor	RN2404 (TE85R)
Q28	1590000410	Transistor	RN2404 (TE85R)
Q29	1530002550	Transistor	2SC3326-B (TE85R)
Q30	1530002550	Transistor	2SC3326-B (TE85R)
Q31	1590000460	Transistor	RN1402 (TE85R)
Q32	1530002550	Transistor	2SC3326-B (TE85R)
Q33	1590000520	FET	2SJ106-GR (TE85R)
Q34	1590000520	FET	2SJ106-GR (TE85R)
Q35	1530002550	Transistor	2SC3326-B (TE85R)
Q36	1590000420	Transistor	RN1404 (TE85R)
Q37	1520000080	Transistor	2SB909M R
Q38	1530000160	Transistor	2SC2712-Y (TE85R)
Q39	1590000690	Transistor	IMD6 T108
Q40	1590000690	Transistor	IMD6 T108
Q41	1590000420	Transistor	RN1404 (TE85R)
Q42	1590000420	Transistor	RN1404 (TE85R)
Q43	1530000160	Transistor	2SC2712-Y (TE85R)
Q44	1530000160	Transistor	2SC2712-Y (TE85R)
D1	1730000970	Zener	RD15M-T2B2
D2	1750000050	Diode	1SS193 (TE85R)
D3	1790000450	Diode	MA862 (TX)
D4	1750000050	Diode	1SS193 (TE85R)
D5	1790000490	Diode	HSM88AS-TR
D6	1790000490	Diode	HSM88AS-TR
D7	1710000310	Diode	M1407
D8	1750000020	Diode	1SS184 (TE85R)
D10	1750000070	Diode	1SS226 (TE85R)
D11	1790000470	Diode	MA159 (TX)
D12	1790000450	Diode	MA862 (TX)
D13	1790000450	Diode	MA862 (TX)
D14	1710000290	Diode	M1308
D15	1710000290	Diode	M1308
D16	1750000050	Diode	1SS193 (TE85R)
D17	1750000010	Diode	1SS181 (TE85R)
D18	1790000470	Diode	MA159 (TX)
D19	1790000470	Diode	MA159 (TX)

## [MAIN A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
D20	1710000010	Diode	15CD11
D22	1750000050	Diode	1SS193 (TE85R)
D23	1750000020	Diode	1SS184 (TE85R)
D24	1750000050	Diode	1SS193 (TE85R)
X1	6050003690	Crystal	CR-206
FI1	2010000230	Filter	30M15B (FL-76)
L1	6180001120	Coil	FL 5H 101K
L2	6190000220	Coil	S0971136-101K
L3	6110001590	Coil	LA-242
L4	6110001520	Coil	LA-232
L5	6110001520	Coil	LA-232
L6	6110001980	Coil	LA-222
L7	6110001540	Coil	LA-234
L8	6110001980	Coil	LA-222
L9	6110001520	Coil	LA-232
L10	6110001520	Coil	LA-232
L11	6110001150	Coil	LA-153 (EUROPE, AUSTRALIA, ASIA)
L11	6110001520	Coil	LA-232 (U.S.A.)
L12	6170000180	Coil	LW-19
L13	6110001520	Coil	LA-232
L14	6110001980	Coil	LA-222
L15	6110001520	Coil	LA-232
L16	6180001210	Coil	LAL 03NA 8R2K
L17	6150003220	Coil	LS-320
L18	6150003220	Coil	LS-320
L19	6190000050	Coil	252MX-1550A
L20	6190000050	Coil	252MX-1550A
L21	6170000230	Coil	LW-25
L22	6110001830	Coil	LA-159
L23	6110001980	Coil	LA-222
L24	6110001980	Coil	LA-222
R1	7010004830	Resistor	R50XJ 4.7 $\Omega$
R2	7030000300	Resistor	MCR10EZHJ 220 $\Omega$ (221)
R3	7030000620	Resistor	MCR10EZHJ 100 k $\Omega$ (104)
R4	7030000460	Resistor	MCR10EZHJ 4.7 k $\Omega$ (472)
R5	7030000340	Resistor	MCR10EZHJ 470 $\Omega$ (471)
R6	7030000470	Resistor	MCR10EZHJ 5.6 k $\Omega$ (562)
R7	7030000220	Resistor	MCR10EZHJ 47 $\Omega$ (470)
R8	7010004270	Resistor	R20J 4.7 k $\Omega$
R9	7030000470	Resistor	MCR10EZHJ 5.6 k $\Omega$ (562)
R10	7030000260	Resistor	MCR10EZHJ 100 $\Omega$ (101)
R11	7030000480	Resistor	MCR10EZHJ 6.8 k $\Omega$ (682)
R12	7030000380	Resistor	MCR10EZHJ 1 k $\Omega$ (102)
R13	7030000420	Resistor	MCR10EZHJ 2.2 k $\Omega$ (222)
R14	7030000420	Resistor	MCR10EZHJ 2.2 k $\Omega$ (222)
R15	7030000460	Resistor	MCR10EZHJ 4.7 k $\Omega$ (472)
R16	7030000340	Resistor	MCR10EZHJ 470 $\Omega$ (471)
R17	7030000310	Resistor	MCR10EZHJ 270 $\Omega$ (271)
R18	7030000420	Resistor	MCR10EZHJ 2.2 k $\Omega$ (222)
R19	7010000940	Resistor	R25XJ 18 $\Omega$
R20	7030000310	Resistor	MCR10EZHJ 270 $\Omega$ (271)
R21	7030000070	Resistor	MCR10EZHJ 2.7 $\Omega$ (2R7)
R22	7030000070	Resistor	MCR10EZHJ 2.7 $\Omega$ (2R7)
R23	7030000340	Resistor	MCR10EZHJ 470 $\Omega$ (471)
R24	7030000460	Resistor	MCR10EZHJ 4.7 k $\Omega$ (472)
R25	7030000500	Resistor	MCR10EZHJ 10 k $\Omega$ (103)
R26	7030000390	Resistor	MCR10EZHJ 1.2 k $\Omega$ (122)
R27	7030000260	Resistor	MCR10EZHJ 100 $\Omega$ (101)
R28	7030000380	Resistor	MCR10EZHJ 1 k $\Omega$ (102)
R29	7030000280	Resistor	MCR10EZHJ 150 $\Omega$ (151)
R30	7030000380	Resistor	MCR10EZHJ 1 k $\Omega$ (102)
R32	7010004130	Resistor	R20J 330 $\Omega$
R33	7010004720	Resistor	R50XJ 100 $\Omega$
R34	7030000440	Resistor	MCR10EZHJ 3.3 k $\Omega$ (332)
R35	7030000280	Resistor	MCR10EZHJ 150 $\Omega$ (151)
R36	7030000280	Resistor	MCR10EZHJ 150 $\Omega$ (151)

## [MAIN A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R37	7030000440	Resistor	MCR10EZHJ 3.3 k $\Omega$ (332)
R38	7030000380	Resistor	MCR10EZHJ 1 k $\Omega$ (102)
R39	7030000380	Resistor	MCR10EZHJ 1 k $\Omega$ (102)
R40	7310001710	Trimmer	RH0421C14J0KA (103)
R41	7310001850	Trimmer	RH0421CS4J08A (473)
R42	7030000550	Resistor	MCR10EZHJ 27 k $\Omega$ (273)
R43	7030003870	Resistor	MTSR18 E15 J 103 (10K)
R44	7030000500	Resistor	MCR10EZHJ 10 k $\Omega$ (103)
R45	7030000260	Resistor	MCR10EZHJ 100 $\Omega$ (101)
R46	7030000500	Resistor	MCR10EZHJ 10 k $\Omega$ (103)
R47	7030000340	Resistor	MCR10EZHJ 470 $\Omega$ (471)
R48	7030000540	Resistor	MCR10EZHJ 22 k $\Omega$ (223)
R49	7030000460	Resistor	MCR10EZHJ 4.7 k $\Omega$ (472)
R50	7030000260	Resistor	MCR10EZHJ 100 $\Omega$ (101)
R52	7030000260	Resistor	MCR10EZHJ 100 $\Omega$ (101)
R53	7030000380	Resistor	MCR10EZHJ 1 k $\Omega$ (102)
R54	7030000300	Resistor	MCR10EZHJ 220 $\Omega$ (221)
R55	7030000500	Resistor	MCR10EZHJ 10 k $\Omega$ (103)
R56	7030000480	Resistor	MCR10EZHJ 6.8 k $\Omega$ (682)
R57	7030000380	Resistor	MCR10EZHJ 1 k $\Omega$ (102)
R58	7030000260	Resistor	MCR10EZHJ 100 $\Omega$ (101)
R60	7030000260	Resistor	MCR10EZHJ 100 $\Omega$ (101)
R61	7030000530	Resistor	MCR10EZHJ 18 k $\Omega$ (183)
R62	7030000440	Resistor	MCR10EZHJ 3.3 k $\Omega$ (332)
R63	7030000620	Resistor	MCR10EZHJ 100 k $\Omega$ (104)
R64	7030000260	Resistor	MCR10EZHJ 100 $\Omega$ (101)
R65	7030000250	Resistor	MCR10EZHJ 82 $\Omega$ (820)
R66	7030000560	Resistor	MCR10EZHJ 33 k $\Omega$ (333)
R68	7030000380	Resistor	MCR10EZHJ 1 k $\Omega$ (102)
R69	7030000440	Resistor	MCR10EZHJ 3.3 k $\Omega$ (332)
R70	7030000260	Resistor	MCR10EZHJ 100 $\Omega$ (101)
R71	7030000420	Resistor	MCR10EZHJ 2.2 k $\Omega$ (222)
R72	7310001710	Trimmer	RH0421C14J0KA (103)
R73	7310001710	Trimmer	RH0421C14J0KA (103)
R74	7030000550	Resistor	MCR10EZHJ 27 k $\Omega$ (273)
R75	7030000260	Resistor	MCR10EZHJ 100 $\Omega$ (101)
R76	7030000260	Resistor	MCR10EZHJ 100 $\Omega$ (101)
R77	7030000260	Resistor	MCR10EZHJ 100 $\Omega$ (101)
R86	7030000510	Resistor	MCR10EZHJ 12 k $\Omega$ (123)
R88	7030000620	Resistor	MCR10EZHJ 100 k $\Omega$ (104)
R89	7030000620	Resistor	MCR10EZHJ 100 k $\Omega$ (104)
R95	7030000260	Resistor	MCR10EZHJ 100 $\Omega$ (101)
R96	7030000550	Resistor	MCR10EZHJ 27 k $\Omega$ (273)
R97	7010004750	Resistor	R50XJ 220 $\Omega$
R98	7030000390	Resistor	MCR10EZHJ 1.2 k $\Omega$ (122)
R99	7030000410	Resistor	MCR10EZHJ 1.8 k $\Omega$ (182)
R100	7030000550	Resistor	MCR10EZHJ 27 k $\Omega$ (273)
R101	7030000590	Resistor	MCR10EZHJ 56 k $\Omega$ (563)
R102	7030000580	Resistor	MCR10EZHJ 47 k $\Omega$ (473)
R103	7030000580	Resistor	MCR10EZHJ 47 k $\Omega$ (473)
R104	7030000620	Resistor	MCR10EZHJ 100 k $\Omega$ (104)
R105	7030000620	Resistor	MCR10EZHJ 100 k $\Omega$ (104)
R106	7030000270	Resistor	MCR10EZHJ 120 $\Omega$ (121)
R107	7030000270	Resistor	MCR10EZHJ 120 $\Omega$ (121)
R108	7030000730	Resistor	MCR10EZHJ 820 k $\Omega$ (824)
R109	7030000510	Resistor	MCR10EZHJ 12 k $\Omega$ (123)
R110	7030000510	Resistor	MCR10EZHJ 12 k $\Omega$ (123)
R111	7030000510	Resistor	MCR10EZHJ 12 k $\Omega$ (123)
R112	7030000600	Resistor	MCR10EZHJ 68 k $\Omega$ (683)
R113	7030000600	Resistor	MCR10EZHJ 68 k $\Omega$ (683)
R114	7030000540	Resistor	MCR10EZHJ 22 k $\Omega$ (223)
R115	7030000380	Resistor	MCR10EZHJ 1 k $\Omega$ (102)
R116	7070000280	Resistor	CRH100X R-02J 2.2 $\Omega$ (2R2)
R117	7070000280	Resistor	CRH100X R-02J 2.2 $\Omega$ (2R2)
R118	7070000280	Resistor	CRH100X R-02J 2.2 $\Omega$ (2R2)
R119	7030000510	Resistor	MCR10EZHJ 12 k $\Omega$ (123)
R120	7030000550	Resistor	MCR10EZHJ 27 k $\Omega$ (273)
R121	7030000620	Resistor	MCR10EZHJ 100 k $\Omega$ (104)
R125	7030000340	Resistor	MCR10EZHJ 470 $\Omega$ (471)
R127	7030000340	Resistor	MCR10EZHJ 470 $\Omega$ (471)
R128	7030000620	Resistor	MCR10EZHJ 100 k $\Omega$ (104)
R129	7030000620	Resistor	MCR10EZHJ 100 k $\Omega$ (104)

## [MAIN A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R130	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R131	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R132	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R133	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R134	7010004670	Resistor	R50XJ 22 Ω
R135	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R136	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R137	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R138	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R139	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R140	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R141	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R142	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R143	7030000420	Resistor	MCR10EZHZ 2.2 kΩ (222)
R144	7030000420	Resistor	MCR10EZHZ 2.2 kΩ (222)
R145	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R146	7030000420	Resistor	MCR10EZHZ 2.2 kΩ (222)
R147	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R148	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R149	7030000420	Resistor	MCR10EZHZ 2.2 kΩ (222)
R150	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R151	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R152	7030000300	Resistor	MCR10EZHZ 220 Ω (221)
R153	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R154	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R155	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R156	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R157	7030000590	Resistor	MCR10EZHZ 56 kΩ (563)
R158	7030000590	Resistor	MCR10EZHZ 56 kΩ (563)
R159	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R160	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R161	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R162	7030000700	Resistor	MCR10EZHZ 470 kΩ (474)
R163	7310001710	Trimmer	RH0421C14J0KA (103)
R164	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
C1	4510003040	Electrolytic	16 SS 100 μF
C2	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C3	4510002780	Electrolytic	16 SS 10 μF
C4	4510002380	Electrolytic	16 SS 470 μF (10X1 2.5)
C5	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C6	4510003040	Electrolytic	16 SS 100 μF
C7	4550000320	Tantalum	DN 1V 0R1M
C9	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C10	4510002630	Electrolytic	50 SS 47 μF
C11	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C12	4510002780	Electrolytic	16 SS 10 μF
C13	4510002780	Electrolytic	16 SS 10 μF
C14	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C17	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C18	4510002780	Electrolytic	16 SS 10 μF
C20	4510002780	Electrolytic	16 SS 10 μF
C21	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C22	4510002780	Electrolytic	16 SS 10 μF
C23	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C24	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C25	4510002780	Electrolytic	16 SS 10 μF
C26	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C27	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C28	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C29	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C30	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C31	4030004420	Ceramic	C2012 SL 1H 050C- T-A
C32	4030004440	Ceramic	C2012 SL 1H 070D- T-A
C33	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C34	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C35	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C36	4030004440	Ceramic	C2012 SL 1H 070D- T-A
C37	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C38	4030004480	Ceramic	C2012 SL 1H 120J- T-A
C39	4030004420	Ceramic	C2012 SL 1H 050C- T-A
C40	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C41	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C42	4030004720	Ceramic	C2012 JB 1H 102K- T-A

## [MAIN A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C43	4030004570	Ceramic	C2012 SL 1H 470J- T-A
C44	4610000370	Trimmer	ECRGA006A30
C45	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C46	4030004420	Ceramic	C2012 SL 1H 050C- T-A
C47	4030004420	Ceramic	C2012 SL 1H 050C- T-A
C48	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C49	4030004570	Ceramic	C2012 SL 1H 470J- T-A
C50	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C51	4030004440	Ceramic	C2012 SL 1H 070D- T-A
C52	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C53	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C54	4510001350	Electrolytic	16 MS5 10 μF
C55	4030004440	Ceramic	C2012 SL 1H 070D- T-A
C56	4030004440	Ceramic	C2012 SL 1H 070D- T-A
C57	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C58	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C59	4550000260	Tantalum	DN 1V 100M
C60	4550000260	Tantalum	DN 1V 100M
C61	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C62	4550000260	Tantalum	DN 1V 100M
C63	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C64	4030004570	Ceramic	C2012 SL 1H 470J- T-A
C65	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C66	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C67	4010003830	Ceramic	DD06 SL 060D 500V
C68	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C69	4010003830	Ceramic	DD06 SL 060D 500V
C70	4010003860	Ceramic	DD06 SL 100D 500V
C71	4010003860	Ceramic	DD06 SL 100D 500V
C72	4010003930	Ceramic	DD06 SL 270K 500V
C73	4010003830	Ceramic	DD06 SL 060D 500V
C74	4010003870	Ceramic	DD06 SL 120K 500V
C75	4010003830	Ceramic	DD06 SL 060D 500V
C76	4510002940	Electrolytic	50 SS 1 μF
C77	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C78	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C79	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C82	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C83	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C84	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C85	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C86	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C87	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C89	4030004480	Ceramic	C2012 SL 1H 120J- T-A
C90	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C91	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C92	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C93	4030004570	Ceramic	C2012 SL 1H 470J- T-A
C94	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C95	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C96	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C97	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C98	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C99	4030004520	Ceramic	C2012 SL 1H 220J- T-A
C100	4030004380	Ceramic	C2012 SL 1H 010C- T-A
C101	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C103	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C104	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C105	4030004520	Ceramic	C2012 SL 1H 220J- T-A
C106	4030004400	Ceramic	C2012 SL 1H 030C- T-A
C107	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C109	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C110	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C111	4030004400	Ceramic	C2012 SL 1H 030C- T-A
C112	4610000370	Trimmer	ECRGA006A30
C113	4030004480	Ceramic	C2012 SL 1H 120J- T-A
C114	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C115	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C116	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C117	4030004420	Ceramic	C2012 SL 1H 050C- T-A
C118	4030004470	Ceramic	C2012 SL 1H 100D- T-A
C119	4010003820	Ceramic	DD06 SL 050C 500V
C120	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C121	4510002810	Electrolytic	16 SS 47 μF
C122	4510002780	Electrolytic	16 SS 10 μF

## [MAIN A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C123	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C124	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C125	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C126	4510002810	Electrolytic	16 SS 47 $\mu$ F
C127	4510002780	Electrolytic	16 SS 10 $\mu$ F
C128	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C129	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C130	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C131	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C132	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C133	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C134	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C135	4510002780	Electrolytic	16 SS 10 $\mu$ F
C136	4510002780	Electrolytic	16 SS 10 $\mu$ F
C137	4510002940	Electrolytic	50 SS 1 $\mu$ F
C138	4510002780	Electrolytic	16 SS 10 $\mu$ F
C141	4510001160	Electrolytic	50 MS7 1 $\mu$ F
C143	4510002940	Electrolytic	50 SS 1 $\mu$ F
C144	4510001160	Electrolytic	50 MS7 1 $\mu$ F
C145	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C146	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C147	4510002380	Electrolytic	16 SS 470 $\mu$ F (10X1 2.5)
C148	4510003040	Electrolytic	16 SS 100 $\mu$ F
C149	4550000390	Tantalum	DN 1V R22M
C150	4510002810	Electrolytic	16 SS 47 $\mu$ F
C151	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C152	4510002810	Electrolytic	16 SS 47 $\mu$ F
C153	4510001480	Electrolytic	50 MS5 2R2 $\mu$ F
C154	4510001480	Electrolytic	50 MS5 2R2 $\mu$ F
C155	4510002810	Electrolytic	16 SS 47 $\mu$ F
C156	4550000390	Tantalum	DN 1V R22M
C157	4510003040	Electrolytic	16 SS 100 $\mu$ F
C158	4510002380	Electrolytic	16 SS 470 $\mu$ F (10X1 2.5)
C159	4510002380	Electrolytic	16 SS 470 $\mu$ F (10X1 2.5)
C160	4510001170	Electrolytic	50 MS7 2R2 $\mu$ F
C161	4510001170	Electrolytic	50 MS7 2R2 $\mu$ F
C162	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C163	4510001150	Electrolytic	50 MS7 R47 $\mu$ F
C164	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C166	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C167	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C168	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C169	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C170	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C171	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C172	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C173	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C174	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C175	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C176	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C177	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C178	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C179	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C180	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C181	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C182	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C183	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C184	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C185	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C186	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C187	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C188	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C189	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C190	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C191	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C192	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C193	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C194	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C195	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C196	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C197	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C198	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C200	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C201	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C202	4030004720	Ceramic	C2012 JB 1H 102K- T-A

## [MAIN A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C203	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C204	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C206	4510002930	Electrolytic	50 SS R47 $\mu$ F
C208	4510002930	Electrolytic	50 SS R47 $\mu$ F
C209	4510002940	Electrolytic	50 SS 1 $\mu$ F
C210	4510002940	Electrolytic	50 SS 1 $\mu$ F
C211	4030004570	Ceramic	C2012 SL 1H 470J- T-A
C212	4010004120	Ceramic	DD07 B 102K 500V
C213	4030004620	Ceramic	C2012 SL 1H 121J- T-A
C214	4030004410	Ceramic	C2012 SL 1H 040C- T-A
C215	4510002730	Electrolytic	10 SS 100 $\mu$ F
C217	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C218	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C219	4030004570	Ceramic	C2012 SL 1H 470J- T-A
C220	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C221	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C222	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C223	4030004420	Ceramic	C2012 SL 1H 050C- T-A
C224	4030005000	Ceramic	C2012 CH 1H 121J- T-A
C225	4030004960	Ceramic	C2012 CH 1H 560J- T-A
C226	4030004920	Ceramic	C2012 CH 1H 270J- T-A
C227	4610000280	Trimmer	ECRGA010D30
C228	4550000360	Tantalum	DN 1V R47M
C229	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C230	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C231	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C232	4510002780	Electrolytic	16 SS 10 $\mu$ F
C233	4510001820	Electrolytic	10 MS5 10 $\mu$ F
EP1	0910020796	P.C. Board	B 1966F (MAIN A)

## [PLL A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1130003640	IC	TC9181F
IC2	1110001470	IC	MB504LPF-G-BND
Q1	1530000160	Transistor	2SC2712-Y (TE85R)
Q2	1560000360	FET	2SK209-Y (TE85R)
L1	6110001520	Coil	LA-232
L2	6180001410	Coil	LAL 02KR 100K
L3	6180001410	Coil	LAL 02KR 100K
R1	7030000480	Resistor	MCR10EZHZ 6.8 k $\Omega$ (682)
R2	7030000410	Resistor	MCR10EZHZ 1.8 k $\Omega$ (182)
R3	7030000390	Resistor	MCR10EZHZ 1.2 k $\Omega$ (122)
R4	7030000350	Resistor	MCR10EZHZ 560 $\Omega$ (561)
R5	7030000260	Resistor	MCR10EZHZ 100 $\Omega$ (101)
R6	7030000500	Resistor	MCR10EZHZ 10 k $\Omega$ (103)
R7	7030000420	Resistor	MCR10EZHZ 2.2 k $\Omega$ (222)
R8	7030000420	Resistor	MCR10EZHZ 2.2 k $\Omega$ (222)
C1	4550000530	Tantalum	TESVA 1V 104M1-8L
C2	4550000410	Tantalum	DN 1V 4R7M
C3	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C4	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C5	4550003030	Tantalum	TEMSVA 0J 475M-8L
C6	4030004440	Ceramic	C2012 SL 1H 070D- T-A
C7	4030004440	Ceramic	C2012 SL 1H 070D- T-A
C8	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C9	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C10	4030004710	Ceramic	C2012 JB 1H 471K- T-A

**[PLL A UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION	
C11	4550003030	Tantalum	TEMSVA 0J 475M-8L
C12	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C13	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C14	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C15	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C16	4030004720	Ceramic	C2012 JB 1H 102K- T-A
EP1	0910020285	P.C. Board	B 1940E (PLL A)

**[VCO A UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION	
Q1	1560000130	FET	2SK125
Q2	1530002030	Transistor	2SC3772-3-TA
D1	1720000220	Varicap	1SV166-T2B
D2	1720000220	Varicap	1SV166-T2B
L1	6180002420	Coil	LAL 02KR R39K
L2	6180002420	Coil	LAL 02KR R39K
L3	6180001380	Coil	LAL 02KR 1R0K
L4	6180001620	Coil	LAL 02KR R22K
L5	6110001530	Coil	LA-233
R1	7030000220	Resistor	MCR10EZHZ 47 Ω (470)
R2	7030000140	Resistor	MCR10EZHZ 10 Ω (100)
R3	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R4	7030000480	Resistor	MCR10EZHZ 6.8 kΩ (682)
R5	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R6	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R7	7030000520	Resistor	MCR10EZHZ 15 kΩ (153)
R8	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)
R9	7030000160	Resistor	MCR10EZHZ 15 Ω (150)
R10	7030000160	Resistor	MCR10EZHZ 15 Ω (150)
R11	7030000160	Resistor	MCR10EZHZ 15 Ω (150)
C1	4030004710	Ceramic	C2012 JB 1H 471K-T-A
C2	4510001840	Electrolytic	10 MS5 47 μF
C3	4030004710	Ceramic	C2012 JB 1H 471K-T-A
C4	4030004710	Ceramic	C2012 JB 1H 471K-T-A
C5	4030004710	Ceramic	C2012 JB 1H 471K-T-A
C6	4030004710	Ceramic	C2012 JB 1H 471K-T-A
C7	4510001840	Electrolytic	10 MS5 47 μF
C8	4030004710	Ceramic	C2012 JB 1H 471K-T-A
C9	4030004710	Ceramic	C2012 JB 1H 471K-T-A
C10	4030004580	Ceramic	C2012 SL 1H 560J-T-A
C11	4030004440	Ceramic	C2012 SL 1H 070D-T-A
C12	4030004710	Ceramic	C2012 JB 1H 471K-T-A
C13	4030004430	Ceramic	C2012 SL 1H 060D-T-A
C14	4030004370	Ceramic	C2012 SL 1H 0R5C-T-A
C15	4030004420	Ceramic	C2012 SL 1H 050C-T-A
C16	4030004710	Ceramic	C2012 JB 1H 471K-T-A
EP1	0910020275	P.C. Board	B 1939E (VCO A)

**[IF A UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1110001520	IC	TK10420M
Q1	1530000160	Transistor	2SC2712-Y (TE85R)
Q2	1530000160	Transistor	2SC2712-Y (TE85R)
Q3	1530000160	Transistor	2SC2712-Y (TE85R)
D1	1730000730	Zener	RD6.2M-T2B2
D2	1750000070	Diode	1SS226 (TE85R)
D3	1790000490	Diode	HSM88AS-TR
X1	6050002550	Crystal	CR-125
X2	6070000010	Discriminator	CDB455C7A
F11	2020000550	Ceramic Filter	CFUM455E
L1	6180002420	Coil	LAL 02KR R39K
R1	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)
R2	7030000400	Resistor	MCR10EZHZ 1.5 kΩ (152)
R3	7030000400	Resistor	MCR10EZHZ 1.5 kΩ (152)
R4	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R5	7030000400	Resistor	MCR10EZHZ 1.5 kΩ (152)
R6	7030000690	Resistor	MCR10EZHZ 390 kΩ (394)
R7	7030000470	Resistor	MCR10EZHZ 5.6 kΩ (562)
R8	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R9	7030000340	Resistor	MCR10EZHZ 470 Ω (471)
R10	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R11	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R12	7030000280	Resistor	MCR10EZHZ 150 Ω (151)
R13	7030000520	Resistor	MCR10EZHZ 15 kΩ (153)
R14	7030000650	Resistor	MCR10EZHZ 180 kΩ (184)
R15	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R16	7310001840	Trimmer	RH0421CS3J08A (472)
R17	7030000430	Resistor	MCR10EZHZ 2.7 kΩ (272)
R18	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R19	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R20	7030000430	Resistor	MCR10EZHZ 2.7 kΩ (272)
R21	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R22	7030000570	Resistor	MCR10EZHZ 39 kΩ (393)
R23	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
C1	4510001100	Electrolytic	16 MS7 10 μF
C2	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C3	4030004630	Ceramic	C2012 SL 1H 151J- T-A
C4	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C5	4030004470	Ceramic	C2012 SL 1H 100D- T-A
C6	4030004570	Ceramic	C2012 SL 1H 470J- T-A
C7	4030004560	Ceramic	C2012 SL 1H 390J- T-A
C8	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C9	4550000530	Tantalum	TESVA 1V 104M1-8L
C10	4030004600	Ceramic	C2012 SL 1H 820J- T-A
C11	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C12	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C13	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C14	4030004530	Ceramic	C2012 SL 1H 270J- T-A
C15	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C16	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C17	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C18	4510001150	Electrolytic	50 MS7 R47 μF
C19	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C20	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C21	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C22	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C23	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C24	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C25	4510001160	Electrolytic	50 MS7 1 μF
C26	4510001100	Electrolytic	16 MS7 10 μF

[IF A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
EP1	0910023686	P.C. Board	B 1969F (IF A)
EP2	6510008510	Lead Frame	PT2.54-1.0-20 (L)

[A BAND UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
Q1	1530002030	Transistor	2SC3772-3-TA
Q2	1530002030	Transistor	2SC3772-3-TA
D1	1790000450	Diode	MA862 (TX)
L1	6110001990	Coil	LA-223
L2	6110001980	Coil	LA-222
L3	6110001990	Coil	LA-223
L4	6110001990	Coil	LA-223
R1	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)
R2	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R3	7030000220	Resistor	MCR10EZHZ 47 Ω (470)
R4	7030000590	Resistor	MCR10EZHZ 56 kΩ (563)
R5	7030000340	Resistor	MCR10EZHZ 470 Ω (471)
R6	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R7	7030000220	Resistor	MCR10EZHZ 47 Ω (470)
R8	7030000220	Resistor	MCR10EZHZ 47 Ω (470)
R9	7030000300	Resistor	MCR10EZHZ 220 Ω (221)
R10	7030000340	Resistor	MCR10EZHZ 470 Ω (471)
R11	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)
C1	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C2	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C3	4030004470	Ceramic	C2012 SL 1H 100D- T-A
C4	4030004470	Ceramic	C2012 SL 1H 100D- T-A
C5	4030004410	Ceramic	C2012 SL 1H 040C- T-A
C6	4030004470	Ceramic	C2012 SL 1H 100D- T-A
C7	4030004450	Ceramic	C2012 SL 1H 080D- T-A
C8	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C9	4030004390	Ceramic	C2012 SL 1H 020C- T-A
C10	4030004450	Ceramic	C2012 SL 1H 080D- T-A
C11	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C12	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C13	4550000550	Tantalum	TESVA 1V 224M1-8L
C14	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C15	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C16	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C17	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C18	4550002890	Tantalum	TESVA 1A 225M1-8L
C19	4030004720	Ceramic	C2012 JB 1H 102K- T-A
EP1	0910023724	P.C. Board	B 2026D (A BAND)

[MIC AMP UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1130000830	IC	μPD4094BG-T1
IC2	1130000950	IC	S7116A
IC3	1110000960	IC	NJM4558M (T1)
Q1	1590000420	Transistor	RN1404 (TE85R)
Q2	1530000160	Transistor	2SC2712-Y (TE85R)
Q3	1590000520	FET	2SJ106-GR (TE85R)
Q4	1590000520	FET	2SJ106-GR (TE85R)

[MIC AMP UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
X1	6050003120	Crystal	RF-4A3 FAA NKD (3.579545M)
R1	7310002190	Trimmer	RH0422CS4J0BA (473)
R2	7030000560	Resistor	MCR10EZHZ 33 kΩ (333)
R3	7030000600	Resistor	MCR10EZHZ 68 kΩ (683)
R4	7030000600	Resistor	MCR10EZHZ 68 kΩ (683)
R5	7030000600	Resistor	MCR10EZHZ 68 kΩ (683)
R6	7030000640	Resistor	MCR10EZHZ 150 kΩ (154)
R7	7030000640	Resistor	MCR10EZHZ 150 kΩ (154)
R8	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R9	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R10	7030000540	Resistor	MCR10EZHZ 22 kΩ (223)
R11	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R12	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R13	7310002210	Trimmer	RH0422C15J06A (104)
R14	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R15	7030000670	Resistor	MCR10EZHZ 270 kΩ (274)
R16	7030000660	Resistor	MCR10EZHZ 220 kΩ (224)
R17	7030000300	Resistor	MCR10EZHZ 220 Ω (221)
R18	7030000320	Resistor	MCR10EZHZ 330 Ω (331)
R19	7030000470	Resistor	MCR10EZHZ 5.6 kΩ (562)
R20	7030001600	Resistor	MCR10EZHZ 1.2 MΩ (125)
C1	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C2	4030004560	Ceramic	C2012 SL 1H 390J- T-A
C3	4030004560	Ceramic	C2012 SL 1H 390J- T-A
C4	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C5	4030004630	Ceramic	C2012 SL 1H 151J- T-A
C6	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C7	4030004730	Ceramic	C2012 JB 1H 222K- T-A
C8	4550000460	Tantalum	TESVA 1C 105M1-8L
C9	4550000460	Tantalum	TESVA 1C 105M1-8L
C10	4550000460	Tantalum	TESVA 1C 105M1-8L
C11	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C12	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C13	4550000550	Tantalum	TESVA 1V 224M1-8L
C14	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C15	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C16	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C17	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C18	4550002890	Tantalum	TESVA 1A 225M1-8L
C19	4030004720	Ceramic	C2012 JB 1H 102K- T-A
EP1	0910023705	P.C. Board	B 1971E (MIC AMP)
EP2	6910001400	Lead Frame	VD2.54-0.7-7

[APC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1110001240	IC	μPC358G2-T1
Q1	1530000160	Transistor	2SC2712-Y (TE85R)
R1	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R2	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R3	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R4	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R5	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R6	7030000660	Resistor	MCR10EZHZ 220 kΩ (224)
R7	7030000510	Resistor	MCR10EZHZ 12 kΩ (123)
R8	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)
R9	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)

**[APC UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION	
R10	7030000540	Resistor	MCR10EZHZ 22 kΩ (223)
R11	7030000730	Resistor	MCR10EZHZ 820 kΩ (824)
R12	7030000520	Resistor	MCR10EZHZ 15 kΩ (153)
R13	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
C2	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C3	4510001820	Electrolytic	10 MS5 10 μF
C4	4510001820	Electrolytic	10 MS5 10 μF
C5	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C6	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C7	4030004710	Ceramic	C2012 JB 1H 471K- T-A
EP1	0910023714	P.C. Board	B 1973D (APC)
EP2	6910001400	Lead Frame	VD2.54-0.7-7

**[AF FIL UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION	
C17	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C18	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C19	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C20	4510001100	Electrolytic	16 MS7 10 μF
EP1	0910023693	P.C. Board	B 1970C (AF FIL)
EP2	6910001400	Lead Frame	VD2.54-0.7-7

**[DET SW UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1130001250	IC	μPD4066BG-T1
IC2	1130001250	IC	μPD4066BG-T1
IC3	1130001250	IC	μPD4066BG-T1
IC4	1130001250	IC	μPD4066BG-T1
Q1	1530002550	Transistor	2SC3326-B (TE85R)
Q2	1530002550	Transistor	2SC3326-B (TE85R)
Q3	1590000420	Transistor	RN1404 (TE85R)
Q4	1530002550	Transistor	2SC3326-B (TE85R)
Q5	1530002550	Transistor	2SC3326-B (TE85R)
Q6	1530002550	Transistor	2SC3326-B (TE85R)
Q7	1530002550	Transistor	2SC3326-B (TE85R)
Q8	1590000420	Transistor	RN1404 (TE85R)
Q9	1530002550	Transistor	2SC3326-B (TE85R)
Q10	1530002550	Transistor	2SC3326-B (TE85R)
R1	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)
R2	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R3	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R4	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R5	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R6	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)
R7	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R8	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R9	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R10	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
C1	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
EP1	0910023733	P.C. Board	B 2167C (DET SW)
EP2	6910001400	Lead Frame	VD2.54-0.7-7

**[AF FIL UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1110000960	IC	NJM4558M (T1)
IC2	1110000960	IC	NJM4558M (T1)
Q1	1530000160	Transistor	2SC2712-Y (TE85R)
Q2	1530000160	Transistor	2SC2712-Y (TE85R)
R1	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R2	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)
R3	7030000590	Resistor	MCR10EZHZ 56 kΩ (563)
R4	7030000590	Resistor	MCR10EZHZ 56 kΩ (563)
R5	7030000680	Resistor	MCR10EZHZ 330 kΩ (334)
R6	7030000680	Resistor	MCR10EZHZ 330 kΩ (334)
R7	7030000540	Resistor	MCR10EZHZ 22 kΩ (223)
R8	7030000630	Resistor	MCR10EZHZ 120 kΩ (124)
R9	7030000630	Resistor	MCR10EZHZ 120 kΩ (124)
R10	7030000590	Resistor	MCR10EZHZ 56 kΩ (563)
R11	7030000540	Resistor	MCR10EZHZ 22 kΩ (223)
R12	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R13	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)
R14	7030000590	Resistor	MCR10EZHZ 56 kΩ (563)
R15	7030000590	Resistor	MCR10EZHZ 56 kΩ (563)
R16	7030000680	Resistor	MCR10EZHZ 330 kΩ (334)
R17	7030000680	Resistor	MCR10EZHZ 330 kΩ (334)
R18	7030000540	Resistor	MCR10EZHZ 22 kΩ (223)
R19	7030000630	Resistor	MCR10EZHZ 120 kΩ (124)
R20	7030000630	Resistor	MCR10EZHZ 120 kΩ (124)
R21	7030000590	Resistor	MCR10EZHZ 56 kΩ (563)
R22	7030000540	Resistor	MCR10EZHZ 22 kΩ (223)
C1	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C2	4030004730	Ceramic	C2012 JB 1H 222K- T-A
C3	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C4	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C5	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C6	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C7	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C8	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C9	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C10	4510001100	Electrolytic	16 MS7 10 μF
C11	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C12	4030004730	Ceramic	C2012 JB 1H 222K- T-A
C13	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C14	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C15	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C16	4030004750	Ceramic	C2012 JB 1H 103K- T-A

## [MAIN B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1110001520	IC	TK10420M
IC2	1150000150	IC	SC1022
IC3	1110001240	IC	$\mu$ PC358G2-T1
IC4	1130000830	IC	$\mu$ PD4094BG-T1
IC5	1130003650	IC	PLL2001S
Q1	1580000360	FET	3SK177-T2B U73
Q2	1580000360	FET	3SK177-T2B U73
Q3	1560000430	FET	2SK302-GR (TE85R)
Q4	1530001950	Transistor	2SC2712-GR (TE85R)
Q5	1530001950	Transistor	2SC2712-GR (TE85R)
Q6	1530001950	Transistor	2SC2712-GR (TE85R)
Q7	1520000210	Transistor	2SB1019-O
Q8	1590000390	Transistor	MRF559
Q9	1530002030	Transistor	2SC3772-3-TA
Q10	1590000460	Transistor	RN1402 (TE85R)
Q11	1530001950	Transistor	2SC2712-GR (TE85R)
Q12	1560000130	FET	2SK125
Q13	1530002030	Transistor	2SC3772-3-TA
Q14	1530002050	Transistor	2SC3661-TA
Q15	1530002030	Transistor	2SC3772-3-TA
Q16	1590000530	Transistor	DTB143ES
Q17	1530001950	Transistor	2SC2712-GR (TE85R)
Q20	1590000460	Transistor	RN1402 (TE85R)
Q21	1590000530	Transistor	DTB143ES
Q22	1590000460	Transistor	RN1402 (TE85R)
Q23	1590000530	Transistor	DTB143ES
Q24	1560000420	FET	2SK209-GR (TE85R)
Q25	1510000500	Transistor	2SA1162-GR (TE85R)
Q26	1560000420	FET	2SK209-GR (TE85R)
Q27	1530001950	Transistor	2SC2712-GR (TE85R)
Q28	1510000500	Transistor	2SA1162-GR (TE85R)
Q29	1530001950	Transistor	2SC2712-GR (TE85R)
Q30	1530001950	Transistor	2SC2712-GR (TE85R)
Q31	1510000500	Transistor	2SA1162-GR (TE85R)
Q32	1530002550	Transistor	2SC3326-B (TE85R)
D1	1720000050	Varicap	1SV50E
D2	1720000050	Varicap	1SV50E
D3	1720000050	Varicap	1SV50E
D4	1720000050	Varicap	1SV50E
D5	1790000490	Diode	HSM88AS-TR
D6	1730000730	Zener	RD6.2M-T2B2
D7	1790000490	Diode	HSM88AS-TR
D8	1790000450	Diode	MA862 (TX)
D9	1750000020	Diode	1SS184 (TE85R)
D10	1710000050	Diode	1SS53
D11	1790000490	Diode	HSM88AS-TR
D12	1710000290	Diode	MI308
D13	1710000290	Diode	MI308
D14	1710000310	Diode	MI407
D15	1790000490	Diode	HSM88AS-TR
D16	1790000490	Diode	HSM88AS-TR
D17	1750000060	Diode	1SS196 (TE85R)
D18	1790000450	Diode	MA862 (TX)
D20	1720000050	Varicap	1SV50E
D21	1720000050	Varicap	1SV50E
D22	1750000060	Diode	1SS196 (TE85R)
D23	1750000030	Diode	1SS187 (TE85R)
D24	1730001060	Zener	RD20M-T2B2
D25	1750000060	Diode	1SS196 (TE85R)
X1	6050003010	Crystal	CR-166
X2	6070000010	Discriminator	CDB455C7A
X3	6050001990	Crystal	CR-69
FI1	2010000580	Filter	17M15B (FL-78)
FI2	2020000120	Ceramic	CFW455E
L1	6150002810	Coil	LS-291
L2	6150002810	Coil	LS-291
L3	6150002810	Coil	LS-291

## [MAIN B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
L4	6150002810	Coil	LS-291
L5	6180001620	Coil	LAL 02KR R22K
L6	6150003150	Coil	LS-331
L7	6150003150	Coil	LS-331
L8	6150003150	Coil	LS-331
L9	6110001550	Coil	LA-235
L10	6110001550	Coil	LA-235
L11	6110001610	Coil	LA-244
L12	6170000180	Coil	LW-19
L13	6110001550	Coil	LA-235
L14	6110001600	Coil	LA-243
L15	6170000180	Coil	LW-19
L16	6110001540	Coil	LA-234
L17	6110001550	Coil	LA-235
L18	6110001680	Coil	LA-254
L19	6110001540	Coil	LA-234
L20	6110001610	Coil	LA-244
L21	6180001470	Coil	LAL 02KR 3R3K
L22	6180001470	Coil	LAL 02KR 3R3K
L23	6130001500	Coil	LB-167
L24	6180001470	Coil	LAL 02KR 3R3K
L25	6180001470	Coil	LAL 02KR 3R3K
L26	6140001840	Coil	LR-220
L27	6180001470	Coil	LAL 02KR 3R3K
R1	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R2	7030000500	Resistor	MCR10EZHZ 10 k $\Omega$ (103)
R3	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R4	7030000500	Resistor	MCR10EZHZ 10 k $\Omega$ (103)
R5	7030000250	Resistor	MCR10EZHZ 82 $\Omega$ (820)
R6	7030000180	Resistor	MCR10EZHZ 22 $\Omega$ (220)
R7	7030000260	Resistor	MCR10EZHZ 100 $\Omega$ (101)
R8	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R9	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R10	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R11	7030000440	Resistor	MCR10EZHZ 3.3 k $\Omega$ (332)
R12	7030000310	Resistor	MCR10EZHZ 270 $\Omega$ (271)
R13	7030000260	Resistor	MCR10EZHZ 100 $\Omega$ (101)
R14	7030000420	Resistor	MCR10EZHZ 2.2 k $\Omega$ (222)
R15	7030000450	Resistor	MCR10EZHZ 3.9 k $\Omega$ (392)
R16	7030000260	Resistor	MCR10EZHZ 100 $\Omega$ (101)
R17	7030000380	Resistor	MCR10EZHZ 1 k $\Omega$ (102)
R18	7030000540	Resistor	MCR10EZHZ 22 k $\Omega$ (223)
R19	7030000400	Resistor	MCR10EZHZ 1.5 k $\Omega$ (152)
R20	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R21	7030000400	Resistor	MCR10EZHZ 1.5 k $\Omega$ (152)
R22	7030000540	Resistor	MCR10EZHZ 22 k $\Omega$ (223)
R23	7030000260	Resistor	MCR10EZHZ 100 $\Omega$ (101)
R24	7030000470	Resistor	MCR10EZHZ 5.6 k $\Omega$ (562)
R25	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R26	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R27	7030000690	Resistor	MCR10EZHZ 390 k $\Omega$ (394)
R28	7030000400	Resistor	MCR10EZHZ 1.5 k $\Omega$ (152)
R29	7030000220	Resistor	MCR10EZHZ 47 $\Omega$ (470)
R30	7030000310	Resistor	MCR10EZHZ 270 $\Omega$ (271)
R31	7030000170	Resistor	MCR10EZHZ 18 $\Omega$ (180)
R32	7030000310	Resistor	MCR10EZHZ 270 $\Omega$ (271)
R33	7030000380	Resistor	MCR10EZHZ 1 k $\Omega$ (102)
R36	7030000430	Resistor	MCR10EZHZ 2.7 k $\Omega$ (272)
R37	7030000400	Resistor	MCR10EZHZ 1.5 k $\Omega$ (152)
R38	7030000260	Resistor	MCR10EZHZ 100 $\Omega$ (101)
R39	7030000440	Resistor	MCR10EZHZ 3.3 k $\Omega$ (332) (EUROPE)
R39	7030000440	Resistor	MCR10EZHZ 3.3 k $\Omega$ (332) (U.S.A.)
R39	7030000440	Resistor	MCR10EZHZ 3.3 k $\Omega$ (332) (AUSTRALIA)
R40	7030000440	Resistor	MCR10EZHZ 3.3 k $\Omega$ (332) (EUROPE)
R40	7030000440	Resistor	MCR10EZHZ 3.3 k $\Omega$ (332) (U.S.A.)
R40	7030000440	Resistor	MCR10EZHZ 3.3 k $\Omega$ (332) (AUSTRALIA)
R41	7030000540	Resistor	MCR10EZHZ 22 k $\Omega$ (223)

## [MAIN B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
R42	7030000400	Resistor MCR10EZHZ 1.5 kΩ (152)
R43	7030000380	Resistor MCR10EZHZ 1 kΩ (102)
R44	7030000620	Resistor MCR10EZHZ 100 kΩ (104)
R45	7030000580	Resistor MCR10EZHZ 47 kΩ (473)
R47	7030000430	Resistor MCR10EZHZ 2.7 kΩ (272)
R48	7030000650	Resistor MCR10EZHZ 180 kΩ (184)
R49	7030000580	Resistor MCR10EZHZ 47 kΩ (473)
R50	7030000260	Resistor MCR10EZHZ 100 Ω (101)
R51	7030001070	Resistor MCR50JZHJ 33 Ω (330) (EUROPE)
R51	7030001070	Resistor MCR50JZHJ 33 Ω (330) (U.S.A.)
R51	7030001070	Resistor MCR50JZHJ 33 Ω (330) (AUSTRALIA)
R52	7030001070	Resistor MCR50JZHJ 33 Ω (330) (EUROPE)
R52	7030001070	Resistor MCR50JZHJ 33 Ω (330) (U.S.A.)
R52	7030001070	Resistor MCR50JZHJ 33 Ω (330) (AUSTRALIA)
R53	7030000320	Resistor MCR10EZHZ 330 Ω (331) (EUROPE)
R53	7030000320	Resistor MCR10EZHZ 330 Ω (331) (U.S.A.)
R53	7030000320	Resistor MCR10EZHZ 330 Ω (331) (AUSTRALIA)
R54	7030000320	Resistor MCR10EZHZ 330 Ω (331) (EUROPE)
R54	7030000320	Resistor MCR10EZHZ 330 Ω (331) (U.S.A.)
R54	7030000320	Resistor MCR10EZHZ 330 Ω (331) (AUSTRALIA)
R55	7010004110	Resistor R20J 220 Ω
R56	7030000280	Resistor MCR10EZHZ 150 Ω (151)
R57	7010004650	Resistor R50XJ 10 Ω
R59	7030000220	Resistor MCR10EZHZ 47 Ω (470)
R60	7030000420	Resistor MCR10EZHZ 2.2 kΩ (222)
R61	7030000380	Resistor MCR10EZHZ 1 kΩ (102)
R63	7030000330	Resistor MCR10EZHZ 390 Ω (391)
R64	7030000440	Resistor MCR10EZHZ 3.3 kΩ (332)
R65	7030000460	Resistor MCR10EZHZ 4.7 kΩ (472)
R66	7030000360	Resistor MCR10EZHZ 680 Ω (681)
R67	7030000220	Resistor MCR10EZHZ 47 Ω (470)
R68	7030000260	Resistor MCR10EZHZ 100 Ω (101)
R70	7030000290	Resistor MCR10EZHZ 180 Ω (181) (EUROPE)
R70	7030000290	Resistor MCR10EZHZ 180 Ω (181) (U.S.A.)
R70	7030000290	Resistor MCR10EZHZ 180 Ω (181) (AUSTRALIA)
R72	7030000450	Resistor MCR10EZHZ 3.9 kΩ (392)
R73	7030000540	Resistor MCR10EZHZ 22 kΩ (223)
R74	7030000520	Resistor MCR10EZHZ 15 kΩ (153)
R75	7030000260	Resistor MCR10EZHZ 100 Ω (101)
R76	7030000730	Resistor MCR10EZHZ 820 kΩ (824)
R77	7030000500	Resistor MCR10EZHZ 10 kΩ (103)
R78	7030000580	Resistor MCR10EZHZ 47 kΩ (473)
R79	7030000560	Resistor MCR10EZHZ 33 kΩ (333)
R80	7030000460	Resistor MCR10EZHZ 4.7 kΩ (472)
R81	7030000340	Resistor MCR10EZHZ 470 Ω (471)
R82	7030000430	Resistor MCR10EZHZ 2.7 kΩ (272)
R83	7030000340	Resistor MCR10EZHZ 470 Ω (471)
R84	7030000220	Resistor MCR10EZHZ 47 Ω (470)
R85	7030000220	Resistor MCR10EZHZ 47 Ω (470)
R86	7030000260	Resistor MCR10EZHZ 100 Ω (101)
R87	7030000460	Resistor MCR10EZHZ 4.7 kΩ (472)
R88	7030000220	Resistor MCR10EZHZ 47 Ω (470)
R89	7030000300	Resistor MCR10EZHZ 220 Ω (221)
R90	7030000360	Resistor MCR10EZHZ 680 Ω (681)
R91	7030000220	Resistor MCR10EZHZ 47 Ω (470)
R92	7030000460	Resistor MCR10EZHZ 4.7 kΩ (472)
R93	7030000460	Resistor MCR10EZHZ 4.7 kΩ (472)
R94	7030000260	Resistor MCR10EZHZ 100 Ω (101)
R95	7030000460	Resistor MCR10EZHZ 4.7 kΩ (472)
R96	7030000220	Resistor MCR10EZHZ 47 Ω (470)

## [MAIN B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
R97	7030000310	Resistor MCR10EZHZ 270 Ω (271)
R98	7030000170	Resistor MCR10EZHZ 18 Ω (180)
R99	7030000310	Resistor MCR10EZHZ 270 Ω (271)
R100	7030000360	Resistor MCR10EZHZ 680 Ω (681)
R101	7030000510	Resistor MCR10EZHZ 12 kΩ (123)
R102	7030000660	Resistor MCR10EZHZ 220 kΩ (224)
R103	7030000580	Resistor MCR10EZHZ 47 kΩ (473)
R104	7030000420	Resistor MCR10EZHZ 2.2 kΩ (222)
R105	7030000310	Resistor MCR10EZHZ 270 Ω (271)
R106	7030000500	Resistor MCR10EZHZ 10 kΩ (103)
R107	7030000660	Resistor MCR10EZHZ 220 kΩ (224)
R108	7030000970	Resistor MCR10EZHZ 2.2 MΩ (225)
R109	7030000140	Resistor MCR10EZHZ 10 Ω (100)
R110	7030000640	Resistor MCR10EZHZ 150 kΩ (154)
R111	7030000620	Resistor MCR10EZHZ 100 kΩ (104)
R112	7030000340	Resistor MCR10EZHZ 470 Ω (471)
R113	7030000380	Resistor MCR10EZHZ 1 kΩ (102)
R114	7010001260	Resistor R25XJ 6.8 kΩ
R115	7030000670	Resistor MCR10EZHZ 270 kΩ (274)
R116	7030000620	Resistor MCR10EZHZ 100 kΩ (104)
R117	7030000660	Resistor MCR10EZHZ 220 kΩ (224)
R118	7030000590	Resistor MCR10EZHZ 56 kΩ (563)
R119	7030000580	Resistor MCR10EZHZ 47 kΩ (473)
R120	7030000620	Resistor MCR10EZHZ 100 kΩ (104)
R121	7030000670	Resistor MCR10EZHZ 270 kΩ (274)
R122	7030000460	Resistor MCR10EZHZ 4.7 kΩ (472)
R123	7030000580	Resistor MCR10EZHZ 47 kΩ (473)
R124	7030000660	Resistor MCR10EZHZ 220 kΩ (224)
R125	7030000520	Resistor MCR10EZHZ 15 kΩ (153)
R126	7030000670	Resistor MCR10EZHZ 270 kΩ (274)
R127	7030000590	Resistor MCR10EZHZ 56 kΩ (563)
R128	7030000620	Resistor MCR10EZHZ 100 kΩ (104)
R129	7030000500	Resistor MCR10EZHZ 10 kΩ (103)
R130	7030000480	Resistor MCR10EZHZ 6.8 kΩ (682)
R131	7030000520	Resistor MCR10EZHZ 15 kΩ (153)
R150	7030000500	Resistor MCR10EZHZ 10 kΩ (103)
R151	7030000570	Resistor MCR10EZHZ 39 kΩ (393)
R152	7030000500	Resistor MCR10EZHZ 10 kΩ (103)
R153	7030000580	Resistor MCR10EZHZ 47 kΩ (473)
R154	7030000500	Resistor MCR10EZHZ 10 kΩ (103)
R155	7030000580	Resistor MCR10EZHZ 47 kΩ (473)
C1	4020000060	Cylinder UP125 SL 5R6K
C2	4030004370	Ceramic C2012 SL 1H 0R5C- T-A
C3	4030004590	Ceramic C2012 SL 1H 680J- T-A
C4	4030004520	Ceramic C2012 SL 1H 220J- T-A
C5	4030004720	Ceramic C2012 JB 1H 102K- T-A
C6	4030004720	Ceramic C2012 JB 1H 102K- T-A
C7	4030004720	Ceramic C2012 JB 1H 102K- T-A
C8	4030004720	Ceramic C2012 JB 1H 102K- T-A
C9	4030004720	Ceramic C2012 JB 1H 102K- T-A
C10	4030004720	Ceramic C2012 JB 1H 102K- T-A
C11	4030004470	Ceramic C2012 SL 1H 100D- T-A
C12	4030004380	Ceramic C2012 SL 1H 010C- T-A
C13	4030004370	Ceramic C2012 SL 1H 0R5C- T-A
C14	4030004470	Ceramic C2012 SL 1H 100D- T-A
C15	4030004720	Ceramic C2012 JB 1H 102K- T-A
C16	4030004720	Ceramic C2012 JB 1H 102K- T-A
C17	4030004380	Ceramic C2012 SL 1H 010C- T-A
C18	4030004370	Ceramic C2012 SL 1H 0R5C- T-A
C19	4030004470	Ceramic C2012 SL 1H 100D- T-A
C20	4030004720	Ceramic C2012 JB 1H 102K- T-A
C21	4030004720	Ceramic C2012 JB 1H 102K- T-A
C22	4030004370	Ceramic C2012 SL 1H 0R5C- T-A
C23	4030004390	Ceramic C2012 SL 1H 020C- T-A
C24	4030004440	Ceramic C2012 SL 1H 070D- T-A
C25	4030004370	Ceramic C2012 SL 1H 0R5C- T-A
C26	4030004720	Ceramic C2012 JB 1H 102K- T-A
C27	4030004590	Ceramic C2012 SL 1H 680J- T-A
C28	4030004720	Ceramic C2012 JB 1H 102K- T-A
C29	4030004720	Ceramic C2012 JB 1H 102K- T-A
C30	4030004600	Ceramic C2012 SL 1H 820J- T-A
C31	4030004400	Ceramic C2012 SL 1H 030C- T-A
C32	4030004590	Ceramic C2012 SL 1H 680J- T-A

## [MAIN B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
C33	4030004720	Ceramic C2012 JB 1H 102K- T-A
C34	4030004720	Ceramic C2012 JB 1H 102K- T-A
C35	4030004580	Ceramic C2012 SL 1H 560J- T-A
C36	4030004620	Ceramic C2012 SL 1H 121J- T-A
C37	4030004720	Ceramic C2012 JB 1H 102K- T-A
C38	4510001120	Electrolytic 25 MS7 4R7 $\mu$ F
C39	4030004570	Ceramic C2012 SL 1H 470J- T-A
C40	4030004620	Ceramic C2012 SL 1H 121J- T-A
C41	4550000530	Tantalum TESVA 1V 104M1-8L
C42	4030004760	Ceramic C2012 JF 1E 104Z- T-A
C43	4030004600	Ceramic C2012 SL 1H 820J- T-A
C44	4510001120	Electrolytic 25 MS7 4R7 $\mu$ F
C45	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C46	4510001150	Electrolytic 50 MS7 R47 $\mu$ F
C47	4030004530	Ceramic C2012 SL 1H 270J- T-A
C48	4030004720	Ceramic C2012 JB 1H 102K- T-A
C49	4030004720	Ceramic C2012 JB 1H 102K- T-A
C50	4030004720	Ceramic C2012 JB 1H 102K- T-A
C52	4030004720	Ceramic C2012 JB 1H 102K- T-A
C54	4030004610	Ceramic C2012 SL 1H 101J- T-A
C55	4030004720	Ceramic C2012 JB 1H 102K- T-A
C56	4030004720	Ceramic C2012 JB 1H 102K- T-A
C57	4030004720	Ceramic C2012 JB 1H 102K- T-A
C58	4030004720	Ceramic C2012 JB 1H 102K- T-A
C59	4030004720	Ceramic C2012 JB 1H 102K- T-A
C60	4510001100	Electrolytic 16 MS7 10 $\mu$ F
C61	4030004720	Ceramic C2012 JB 1H 102K- T-A
C62	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C63	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C64	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C65	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C66	4510001100	Electrolytic 16 MS7 10 $\mu$ F
C67	4030004720	Ceramic C2012 JB 1H 102K- T-A
C68	4010003890	Ceramic DD06 SL 180K 500V
C69	4030004560	Ceramic C2012 SL 1H 390J- T-A
C70	4030004520	Ceramic C2012 SL 1H 220J- T-A
C71	4010003830	Ceramic DD06 SL 060D 500V
C72	4010003940	Ceramic DD06 SL 300K 500V
C73	4010003940	Ceramic DD06 SL 300K 500V
C74	4010003880	Ceramic DD06 SL 150K 500V
C75	4010004120	Ceramic DD07 B 102K 500V
C76	4010003870	Ceramic DD06 SL 120K 500V
C77	4030004720	Ceramic C2012 JB 1H 102K- T-A
C78	4030004710	Ceramic C2012 JB 1H 471K- T-A
C79	4030004710	Ceramic C2012 JB 1H 471K- T-A
C80	4030004720	Ceramic C2012 JB 1H 102K- T-A
C81	4010004120	Ceramic DD07 B 102K 500V
C82	4030004720	Ceramic C2012 JB 1H 102K- T-A
C83	4030004720	Ceramic C2012 JB 1H 102K- T-A
C84	4510001970	Electrolytic 50 MS7 0R1 $\mu$ F
C85	4010003870	Ceramic DD06 SL 120K 500V
C86	4030004720	Ceramic C2012 JB 1H 102K- T-A
C87	4030004710	Ceramic C2012 JB 1H 471K- T-A
C88	4550000340	Tantalum DN 1C 100M
C89	4030004720	Ceramic C2012 JB 1H 102K- T-A
C90	4030004710	Ceramic C2012 JB 1H 471K- T-A
C91	4030004520	Ceramic C2012 SL 1H 220J- T-A
C92	4030004470	Ceramic C2012 SL 1H 100D- T-A
C94	4030004520	Ceramic C2012 SL 1H 220J- T-A
C95	4030004710	Ceramic C2012 JB 1H 471K- T-A
C96	4030004720	Ceramic C2012 JB 1H 102K- T-A
C99	4030004710	Ceramic C2012 JB 1H 471K- T-A
C100	4030004710	Ceramic C2012 JB 1H 471K- T-A
C101	4030004540	Ceramic C2012 SL 1H 300J- T-A
C102	4030004480	Ceramic C2012 SL 1H 120J- T-A
C103	4030004520	Ceramic C2012 SL 1H 220J- T-A
C104	4030004470	Ceramic C2012 SL 1H 100D- T-A
C105	4030004430	Ceramic C2012 SL 1H 060D- T-A
C106	4030004520	Ceramic C2012 SL 1H 220J- T-A
C107	4030004710	Ceramic C2012 JB 1H 471K- T-A
C108	4010003810	Ceramic DD06 SL 040C 500V
C109	4510002350	Electrolytic 16 MS9 220 $\mu$ F
C110	4030004720	Ceramic C2012 JB 1H 102K- T-A
C111	4030004720	Ceramic C2012 JB 1H 102K- T-A
C112	4030004720	Ceramic C2012 JB 1H 102K- T-A

## [MAIN B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
C113	4030004720	Ceramic C2012 JB 1H 102K- T-A
C114	4030004710	Ceramic C2012 JB 1H 471K- T-A
C115	4030004720	Ceramic C2012 JB 1H 102K- T-A
C116	4030004720	Ceramic C2012 JB 1H 102K- T-A
C117	4030004720	Ceramic C2012 JB 1H 102K- T-A
C118	4030004710	Ceramic C2012 JB 1H 471K- T-A
C119	4030004720	Ceramic C2012 JB 1H 102K- T-A
C120	4510001100	Electrolytic 16 MS7 10 $\mu$ F
C121	4030004720	Ceramic C2012 JB 1H 102K- T-A
C122	4510001120	Electrolytic 25 MS7 4R7 $\mu$ F
C123	4030004710	Ceramic C2012 JB 1H 471K- T-A
C124	4030004710	Ceramic C2012 JB 1H 471K- T-A
C125	4030004720	Ceramic C2012 JB 1H 102K- T-A
C126	4030004380	Ceramic C2012 SL 1H 010C- T-A
C127	4030004720	Ceramic C2012 JB 1H 102K- T-A
C128	4030004710	Ceramic C2012 JB 1H 471K- T-A
C129	4550000320	Tantalum DN 1V 0R1M
C130	4030004380	Ceramic C2012 SL 1H 010C- T-A
C131	4030004710	Ceramic C2012 JB 1H 471K- T-A
C132	4030004610	Ceramic C2012 SL 1H 101J- T-A
C133	4030004720	Ceramic C2012 JB 1H 102K- T-A
C134	4510001110	Electrolytic 16 MS7 47 $\mu$ F
C135	4030004720	Ceramic C2012 JB 1H 102K- T-A
C136	4030004520	Ceramic C2012 SL 1H 220J- T-A
C137	4030004420	Ceramic C2012 SL 1H 050C- T-A
C138	4030004720	Ceramic C2012 JB 1H 102K- T-A
C139	4030004720	Ceramic C2012 JB 1H 102K- T-A
C140	4030004720	Ceramic C2012 JB 1H 102K- T-A
C141	4030004720	Ceramic C2012 JB 1H 102K- T-A
C143	4030004720	Ceramic C2012 JB 1H 102K- T-A
C144	4030004710	Ceramic C2012 JB 1H 471K- T-A
C145	4550000260	Tantalum DN 1V 100M
C146	4550000260	Tantalum DN 1V 100M
C147	4550000310	Tantalum DN 1V 2R2M
C148	4510001180	Electrolytic 50 MS7 3R3 $\mu$ F
C149	4510000980	Electrolytic 25 MS9 47 $\mu$ F
C150	4510001120	Electrolytic 25 MS7 4R7 $\mu$ F
C151	4510001120	Electrolytic 25 MS7 4R7 $\mu$ F
C152	4030004530	Ceramic C2012 SL 1H 270J- T-A
C153	4610000380	Trimmer ECRGA020E30
C154	4030004500	Ceramic C2012 SL 1H 180J- T-A
C155	4030004720	Ceramic C2012 JB 1H 102K- T-A
C156	4030004720	Ceramic C2012 JB 1H 102K- T-A
C157	4030004720	Ceramic C2012 JB 1H 102K- T-A
C158	4030004720	Ceramic C2012 JB 1H 102K- T-A
C159	4030004720	Ceramic C2012 JB 1H 102K- T-A
C160	4030004720	Ceramic C2012 JB 1H 102K- T-A
C161	4030004570	Ceramic C2012 SL 1H 470J- T-A
C162	4030004570	Ceramic C2012 SL 1H 470J- T-A
C163	4030004570	Ceramic C2012 SL 1H 470J- T-A
C164	4030004570	Ceramic C2012 SL 1H 470J- T-A
C165	4030004720	Ceramic C2012 JB 1H 102K- T-A
C166	4030004720	Ceramic C2012 JB 1H 102K- T-A
C167	4030004720	Ceramic C2012 JB 1H 102K- T-A
C206	4510001100	Electrolytic 16 MS7 10 $\mu$ F
C207	4030004720	Ceramic C2012 JB 1H 102K- T-A
C208	4510001100	Electrolytic 16 MS7 10 $\mu$ F
C209	4030004720	Ceramic C2012 JB 1H 102K- T-A
C210	4030004720	Ceramic C2012 JB 1H 102K- T-A
C211	4030004720	Ceramic C2012 JB 1H 102K- T-A
EP1	0910022245	P.C. Board B 2143E (MAIN B)

## 5-2 IC-2500A/E

## [SENSOR UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
S1	2260000880	Switch	SRBM1L038A [MAIN DIAL]
EP1	0910022970	P.C. Board	B 2229 (SENSOR)

## [VR SUB UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R1	7210001570	Variable Resistor	RK0972214001A [SUB SQL/SUB VOL]
EP1	0910020870	P.C. Board	B 2009 (VR SUB)

## [VR MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R1	7210001560	Variable Resistor	RK0972212009A [MAIN SQL/MAIN VOL]
EP1	0910020860	P.C. Board	B 2008 (VR MAIN)

## [LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1130004190	IC	LC7582A
IC2	1140001070	IC	HD404808A06H
IC3	1130000830	IC	μPD4094BG-T1
IC4	1120000430	IC	LA6393M-TP-T1
IC5	1120000430	IC	LA6393M-TP-T1
IC6	1110001500	IC	S-8054ALR-LN-T1
Q1	1530000160	Transistor	2SC2712-Y (TE85R)
Q2	1530000160	Transistor	2SC2712-Y (TE85R)
Q3	1590000410	Transistor	RN2404 (TE85R)
Q4	1530000160	Transistor	2SC2712-Y (TE85R)
Q5	1530000160	Transistor	2SC2712-Y (TE85R)
Q6	1510000110	Transistor	2SA1162-Y (TE85R)
Q7	1530000160	Transistor	2SC2712-Y (TE85R)
D1	1750000050	Diode	1SS193 (TE85R) (EUROPE)
D1	1750000060	Diode	1SS196 (TE85R) (U.S.A.)
D1	1750000020	Diode	1SS184 (TE85R) (AUSTRALIA)
D3	1750000050	Diode	1SS193 (TE85R) (EUROPE)
D3	1750000060	Diode	1SS196 (TE85R) (U.S.A.)
D3	1750000020	Diode	1SS184 (TE85R) (AUSTRALIA)
D5	1710000160	Diode	1SS133
D6	1710000160	Diode	1SS133
D7	1710000160	Diode	1SS133
D8	1710000160	Diode	1SS133
D9	1710000160	Diode	1SS133

## [LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
D10	1710000160	Diode	1SS133
D11	1710000160	Diode	1SS133
D12	1750000020	Diode	1SS184 (TE85R)
D13	1750000020	Diode	1SS184 (TE85R)
D14	1750000020	Diode	1SS184 (TE85R)
D15	1750000020	Diode	1SS184 (TE85R)
D16	1750000020	Diode	1SS184 (TE85R)
D17	1750000020	Diode	1SS184 (TE85R)
D18	1750000020	Diode	1SS184 (TE85R)
D19	1750000050	Diode	1SS193 (TE85R)
D20	1750000010	Diode	1SS181 (TE85R)
D21	1750000050	Diode	1SS193 (TE85R)
D22	1750000050	Diode	1SS193 (TE85R)
D23	1730000840	Zener	RD9.1M-T2B2
DS1	5080000170	LED	HRS7219A-Y2-30
DS2	5080000170	LED	HRS7219A-Y2-30
DS3	5080000170	LED	HRS7219A-Y2-30
DS4	5080000170	LED	HRS7219A-Y2-30
DS5	5030000430	LCD	LD-HU9369E (E-9489)
X1	6060000230	Crystal	FAR-C4CA-04194000 -M01
R1	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R2	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R3	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R4	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R5	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R6	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R7	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R8	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R9	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R10	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R11	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R12	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R13	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R14	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R15	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R16	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R17	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R18	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R19	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R20	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R21	7030000590	Resistor	MCR10EZHZ 56 kΩ (563)
R22	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R23	7030000740	Resistor	MCR10EZHZ 1 MΩ (105)
R24	7030000660	Resistor	MCR10EZHZ 220 kΩ (224)
R25	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R26	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R27	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R28	7030000740	Resistor	MCR10EZHZ 1 MΩ (105)
R29	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R30	7030000740	Resistor	MCR10EZHZ 1 MΩ (105)
R31	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R32	7030000740	Resistor	MCR10EZHZ 1 MΩ (105)
R33	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R34	7030000300	Resistor	MCR10EZHZ 220 Ω (221)
R35	7030000450	Resistor	MCR10EZHZ 3.9 kΩ (392)
R36	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R37	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R38	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R39	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R40	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R41	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R42	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R43	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R44	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R45	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R46	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R47	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R48	7410000510	Resistor Array	RKM8L 104J
R49	7030000140	Resistor	MCR10EZHZ 10 Ω (100)

[LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R50	7030000580	Resistor	MCR10EZHZJ 47 kΩ (473)
R51	7030000240	Resistor	MCR10EZHZJ 68 Ω (680)
R52	7030000240	Resistor	MCR10EZHZJ 68 Ω (680)
C1	4030004690	Ceramic	C2012 SL 1H 331J- T-A
C2	4510001690	Electrolytic	6R3 MS7 47 μF
C3	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C4	4510001150	Electrolytic	50 MS7 R47 μF
C5	4510001690	Electrolytic	6R3 MS7 47 μF
C6	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C7	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C8	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C9	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C10	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C11	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C12	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C13	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C14	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C15	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C16	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C17	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C18	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
DS1	5080000170	LED	HRS7219A-Y2-30
DS2	5080000170	LED	HRS7219A-Y2-30
DS3	5080000170	LED	HRS7219A-Y2-30
DS4	5080000170	LED	HRS7219A-Y2-30
DS5	5030000430	LCD	LD-HU9369E (E-9489)
S1	2230000740	Switch	EVQ-QEC 05K [PRIO]
S2	2230000740	Switch	EVQ-QEC 05K [VFO/M]
S3	2230000740	Switch	EVQ-QEC 05K [DUP]
S4	2230000740	Switch	EVQ-QEC 05K [HI/LO]
S5	2230000740	Switch	EVQ-QEC 05K [CALL]
S6	2230000740	Switch	EVQ-QEC 05K [T/T SQL]
S7	2230000740	Switch	EVQ-QEC 05K [BAND]
S8	2230000740	Switch	EVQ-QEC 05K [MW]
S9	2230000740	Switch	EVQ-QEC 05K [SET]
S10	2230000740	Switch	EVQ-QEC 05K [SUB]
S11	2230000740	Switch	EVQ-QEC 05K [MHz]
S12	2230000740	Switch	EVQ-QEC 05K [AFC]
BT1	3020000020	Lithium Battery	BR2032-1T2
EP1	0910020713	P.C. Board	B 1968C (LOGIC)
EP2	8930015080	LCD contact strip	SRCN-676B
EP3	8930015090	LCD contact strip	SRCN-676A

[MAIN A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1110001700	IC	TL499ACPS
IC2	1130004200	IC	TC4S66F (TE85R)
IC3	1150000750	IC	SC1054
IC4	1130000830	IC	μPD4094BG-T1
IC5	1180000540	IC	NJM7805FA
IC6	1110000490	IC	AN6541
IC7	1110001160	IC	BA695
IC10	1130000830	IC	μPD4094BG-T1
IC11	1110001980	IC	TA8207K
IC12	1130003760	IC	TC4S81F (TE85R)
IC13	1130002370	IC	μPD4028BG-T1
IC14	1130002720	IC	μPD4512BG

[MAIN A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
Q1	1540000150	Transistor	2SD1225M R
Q2	1530000160	Transistor	2SC2712-Y (TE85R)
Q3	1530002050	Transistor	2SC3661-TA
Q4	1590000460	Transistor	RN1402 (TE85R)
Q5	1510000580	Transistor	2SA1362-GR (TE85R)
Q6	1530000160	Transistor	2SC2712-Y (TE85R)
Q7	1530002240	Transistor	2SC3775-3-TA
Q8	1510000580	Transistor	2SA1362-GR (TE85R)
Q9	1530002240	Transistor	2SC3775-3-TA
Q10	1590000390	Transistor	MRF559
Q11	1510000370	Transistor	2SA1359-Y
Q12	1590000420	Transistor	RN1404 (TE85R)
Q13	1590000690	Transistor	IMD6 T108
Q14	1530002020	Transistor	2SC3770-3-TA
Q15	1590000460	Transistor	RN1402 (TE85R)
Q16	1590000980	Transistor	DTB123EK T147
Q17	1580000350	Transistor	3SK140-Y (TE85R)
Q18	1590000460	Transistor	RN1402 (TE85R)
Q19	1590000980	Transistor	DTB123EK T147
Q20	1530002030	Transistor	2SC3772-3-TA
Q21	1580000360	FET	3SK177-T2B U73
Q22	1590000420	Transistor	RN1404 (TE85R)
Q25	1520000080	Transistor	2SB909M R
Q26	1530000160	Transistor	2SC2712-Y (TE85R)
Q27	1590000410	Transistor	RN2404 (TE85R)
Q28	1590000410	Transistor	RN2404 (TE85R)
Q29	1530002550	Transistor	2SC3326-B (TE85R)
Q30	1530002550	Transistor	2SC3326-B (TE85R)
Q31	1590000460	Transistor	RN1402 (TE85R)
Q32	1530002550	Transistor	2SC3326-B (TE85R)
Q33	1590000520	FET	2SJ106-GR (TE85R)
Q34	1590000520	FET	2SJ106-GR (TE85R)
Q35	1530002550	Transistor	2SC3326-B (TE85R)
Q36	1590000420	Transistor	RN1404 (TE85R)
Q37	1510000370	Transistor	2SA1359-Y
Q38	1530000160	Transistor	2SC2712-Y (TE85R)
Q39	1590000690	Transistor	IMD6 T108
Q40	1590000690	Transistor	IMD6 T108
Q41	1590000420	Transistor	RN1404 (TE85R)
Q42	1590000420	Transistor	RN1404 (TE85R)
Q43	1530000160	Transistor	2SC2712-Y (TE85R)
Q44	1530000160	Transistor	2SC2712-Y (TE85R)
D1	1730000970	Zener	RD15M-T2B2
D2	1750000050	Diode	1SS193 (TE85R)
D3	1790000450	Diode	MA862 (TX)
D4	1750000050	Diode	1SS193 (TE85R)
D5	1790000490	Diode	HSM88AS-TR
D6	1790000490	Diode	HSM88AS-TR
D7	1710000310	Diode	MI407
D8	1750000020	Diode	1SS184 (TE85R)
D10	1750000070	Diode	1SS226 (TE85R)
D11	1790000470	Diode	MA159 (TX)
D12	1790000450	Diode	MA862 (TX)
D13	1790000450	Diode	MA862 (TX)
D14	1710000290	Diode	MI308
D15	1710000290	Diode	MI308
D16	1750000050	Diode	1SS193 (TE85R)
D17	1750000010	Diode	1SS181 (TE85R)
D18	1790000470	Diode	MA159 (TX)
D19	1790000470	Diode	MA159 (TX)
D20	1710000010	Diode	15CD11
D22	1750000050	Diode	1SS193 (TE85R)
D23	1750000020	Diode	1SS184 (TE85R)
D24	1750000050	Diode	1SS193 (TE85R)
X1	6050003690	Crystal	CR-206
FI1	2010000230	Filter	30M15B (FL-76)
L1	6180001120	Coil	FL 5H 101K

## [MAIN A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
L2	6190000220	Coil	S0971136-101K
L3	6110001590	Coil	LA-242
L4	6110001520	Coil	LA-232
L5	6110001520	Coil	LA-232
L6	6110001980	Coil	LA-222
L7	6110001540	Coil	LA-234
L8	6110001980	Coil	LA-222
L9	6110001520	Coil	LA-232
L10	6110001520	Coil	LA-232
L11	6110001520	Coil	LA-232 (U.S.A.)
L11	6110001150	Coil	LA-153 (EUROPE, AUSTRALIA)
L12	6170000180	Coil	LW-19
L13	6110001520	Coil	LA-232
L14	6110001980	Coil	LA-222
L15	6110001520	Coil	LA-232
L16	6180001210	Coil	LAL 03NA 8R2K
L17	6150003220	Coil	LS-320
L18	6150003220	Coil	LS-320
L19	6190000050	Coil	252MX-1550A
L20	6190000050	Coil	252MX-1550A
L21	6170000230	Coil	LW-25
L22	6110001830	Coil	LA-159
L23	6110001980	Coil	LA-222
L24	6110001980	Coil	LA-222
R1	7010004830	Resistor	R50XJ 4.7 Ω
R2	7030000300	Resistor	MCR10EZJH 220 Ω (221)
R3	7030000620	Resistor	MCR10EZJH 100 kΩ (104)
R4	7030000460	Resistor	MCR10EZJH 4.7 kΩ (472)
R5	7030000340	Resistor	MCR10EZJH 470 Ω (471)
R6	7030000470	Resistor	MCR10EZJH 5.6 kΩ (562)
R7	7030000220	Resistor	MCR10EZJH 47 Ω (470)
R8	7010004270	Resistor	R20J 4.7 kΩ
R9	7030000470	Resistor	MCR10EZJH 5.6 kΩ (562)
R10	7030000260	Resistor	MCR10EZJH 100 Ω (101)
R11	7030000480	Resistor	MCR10EZJH 6.8 kΩ (682)
R12	7030000380	Resistor	MCR10EZJH 1 kΩ (102)
R13	7030000420	Resistor	MCR10EZJH 2.2 kΩ (222)
R14	7030000420	Resistor	MCR10EZJH 2.2 kΩ (222)
R15	7030000460	Resistor	MCR10EZJH 4.7 kΩ (472)
R16	7030000340	Resistor	MCR10EZJH 470 Ω (471)
R17	7030000310	Resistor	MCR10EZJH 270 Ω (271)
R18	7030000420	Resistor	MCR10EZJH 2.2 kΩ (222)
R19	7010000940	Resistor	R25XJ 18 Ω
R20	7030000310	Resistor	MCR10EZJH 270 Ω (271)
R21	7030000070	Resistor	MCR10EZJH 2.7 Ω (2R7)
R22	7030000070	Resistor	MCR10EZJH 2.7 Ω (2R7)
R23	7030000340	Resistor	MCR10EZJH 470 Ω (471)
R24	7030000460	Resistor	MCR10EZJH 4.7 kΩ (472)
R25	7030000500	Resistor	MCR10EZJH 10 kΩ (103)
R26	7030000390	Resistor	MCR10EZJH 1.2 kΩ (122)
R27	7030000260	Resistor	MCR10EZJH 100 Ω (101)
R28	7030000380	Resistor	MCR10EZJH 1 kΩ (102)
R29	7030000280	Resistor	MCR10EZJH 150 Ω (151)
R30	7030000380	Resistor	MCR10EZJH 1 kΩ (102)
R32	7010004130	Resistor	R20J 330 Ω
R33	7010004720	Resistor	R50XJ 100 Ω
R34	7030000440	Resistor	MCR10EZJH 3.3 kΩ (332)
R35	7030000280	Resistor	MCR10EZJH 150 Ω (151)
R36	7030000280	Resistor	MCR10EZJH 150 Ω (151)
R37	7030000440	Resistor	MCR10EZJH 3.3 kΩ (332)
R38	7030000380	Resistor	MCR10EZJH 1 kΩ (102)
R39	7030000380	Resistor	MCR10EZJH 1 kΩ (102)
R40	7310001710	Trimmer	RH0421C14J0KA (103)
R41	7310001850	Trimmer	RH0421CS4J08A (473)
R42	7030000550	Resistor	MCR10EZJH 27 kΩ (273)
R43	7030003870	Resistor	MTSR18 E15 J 103 (10K)
R44	7030000500	Resistor	MCR10EZJH 10 kΩ (103)
R45	7030000260	Resistor	MCR10EZJH 100 Ω (101)
R46	7030000500	Resistor	MCR10EZJH 10 kΩ (103)
R47	7030000340	Resistor	MCR10EZJH 470 Ω (471)
R48	7030000540	Resistor	MCR10EZJH 22 kΩ (223)
R49	7030000460	Resistor	MCR10EZJH 4.7 kΩ (472)

## [MAIN A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R50	7030000260	Resistor	MCR10EZJH 100 Ω (101)
R52	7030000260	Resistor	MCR10EZJH 100 Ω (101)
R53	7030000380	Resistor	MCR10EZJH 1 kΩ (102)
R54	7030000300	Resistor	MCR10EZJH 220 Ω (221)
R55	7030000500	Resistor	MCR10EZJH 10 kΩ (103)
R56	7030000480	Resistor	MCR10EZJH 6.8 kΩ (682)
R57	7030000380	Resistor	MCR10EZJH 1 kΩ (102)
R58	7030000260	Resistor	MCR10EZJH 100 Ω (101)
R60	7030000260	Resistor	MCR10EZJH 100 Ω (101)
R61	7030000530	Resistor	MCR10EZJH 18 kΩ (183)
R62	7030000440	Resistor	MCR10EZJH 3.3 kΩ (332)
R63	7030000620	Resistor	MCR10EZJH 100 kΩ (104)
R64	7030000260	Resistor	MCR10EZJH 100 Ω (101)
R65	7030000250	Resistor	MCR10EZJH 82 Ω (820)
R66	7030000560	Resistor	MCR10EZJH 33 kΩ (333)
R68	7030000380	Resistor	MCR10EZJH 1 kΩ (102)
R69	7030000440	Resistor	MCR10EZJH 3.3 kΩ (332)
R70	7030000260	Resistor	MCR10EZJH 100 Ω (101)
R71	7030000420	Resistor	MCR10EZJH 2.2 kΩ (222)
R72	7310001710	Trimmer	RH0421C14J0KA (103)
R73	7310001710	Trimmer	RH0421C14J0KA (103)
R74	7030000550	Resistor	MCR10EZJH 27 kΩ (273)
R75	7030000260	Resistor	MCR10EZJH 100 Ω (101)
R76	7030000260	Resistor	MCR10EZJH 100 Ω (101)
R77	7030000260	Resistor	MCR10EZJH 100 Ω (101)
R78	7030000260	Resistor	MCR10EZJH 100 Ω (101)
R79	7030000580	Resistor	MCR10EZJH 47 kΩ (473)
R80	7310001850	Trimmer	RH0421CS4J08A (473)
R81	7030000530	Resistor	MCR10EZJH 18 kΩ (183)
R82	7030000540	Resistor	MCR10EZJH 22 kΩ (223)
R83	7030000540	Resistor	MCR10EZJH 22 kΩ (223)
R84	7030000620	Resistor	MCR10EZJH 100 kΩ (104)
R86	7030000510	Resistor	MCR10EZJH 12 kΩ (123)
R88	7030000620	Resistor	MCR10EZJH 100 kΩ (104)
R89	7030000620	Resistor	MCR10EZJH 100 kΩ (104)
R90	7030000460	Resistor	MCR10EZJH 4.7 kΩ (472)
R95	7030000260	Resistor	MCR10EZJH 100 Ω (101)
R96	7030000550	Resistor	MCR10EZJH 27 kΩ (273)
R97	7010004750	Resistor	R50XJ 220 Ω
R98	7030000390	Resistor	MCR10EZJH 1.2 kΩ (122)
R99	7030000410	Resistor	MCR10EZJH 1.8 kΩ (182)
R100	7030000550	Resistor	MCR10EZJH 27 kΩ (273)
R101	7030000590	Resistor	MCR10EZJH 56 kΩ (563)
R102	7030000580	Resistor	MCR10EZJH 47 kΩ (473)
R103	7030000580	Resistor	MCR10EZJH 47 kΩ (473)
R104	7030000620	Resistor	MCR10EZJH 100 kΩ (104)
R105	7030000620	Resistor	MCR10EZJH 100 kΩ (104)
R106	7030000270	Resistor	MCR10EZJH 120 Ω (121)
R107	7030000270	Resistor	MCR10EZJH 120 Ω (121)
R108	7030000730	Resistor	MCR10EZJH 820 kΩ (824)
R109	7030000510	Resistor	MCR10EZJH 12 kΩ (123)
R110	7030000510	Resistor	MCR10EZJH 12 kΩ (123)
R111	7030000510	Resistor	MCR10EZJH 12 kΩ (123)
R112	7030000600	Resistor	MCR10EZJH 68 kΩ (683)
R113	7030000600	Resistor	MCR10EZJH 68 kΩ (683)
R114	7030000540	Resistor	MCR10EZJH 22 kΩ (223)
R115	7030000380	Resistor	MCR10EZJH 1 kΩ (102)
R116	7070000280	Resistor	CRH100X R-02J 2.2 Ω (2R2)
R117	7070000280	Resistor	CRH100X R-02J 2.2 Ω (2R2)
R118	7070000280	Resistor	CRH100X R-02J 2.2 Ω (2R2)
R119	7030000510	Resistor	MCR10EZJH 12 kΩ (123)
R120	7030000550	Resistor	MCR10EZJH 27 kΩ (273)
R121	7030000620	Resistor	MCR10EZJH 100 kΩ (104)
R125	7030000340	Resistor	MCR10EZJH 470 Ω (471)
R127	7030000340	Resistor	MCR10EZJH 470 Ω (471)
R128	7030000620	Resistor	MCR10EZJH 100 kΩ (104)
R129	7030000620	Resistor	MCR10EZJH 100 kΩ (104)
R130	7030000500	Resistor	MCR10EZJH 10 kΩ (103)
R131	7030000500	Resistor	MCR10EZJH 10 kΩ (103)
R132	7030000500	Resistor	MCR10EZJH 10 kΩ (103)
R133	7030000500	Resistor	MCR10EZJH 10 kΩ (103)
R134	7010004670	Resistor	R50XJ 22 Ω

## [MAIN A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R135	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R136	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R137	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R138	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R139	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R140	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R141	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R142	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R143	7030000420	Resistor	MCR10EZHZ 2.2 kΩ (222)
R144	7030000420	Resistor	MCR10EZHZ 2.2 kΩ (222)
R145	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R146	7030000420	Resistor	MCR10EZHZ 2.2 kΩ (222)
R147	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R148	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R149	7030000420	Resistor	MCR10EZHZ 2.2 kΩ (222)
R150	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R151	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R152	7030000300	Resistor	MCR10EZHZ 220 Ω (221)
R153	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R154	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R155	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R156	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R157	7030000590	Resistor	MCR10EZHZ 56 kΩ (563)
R158	7030000590	Resistor	MCR10EZHZ 56 kΩ (563)
R159	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R160	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R161	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R162	7030000700	Resistor	MCR10EZHZ 470 kΩ (474)
R163	7310001710	Trimmer	RH0421C14J0KA (103)
R164	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
C1	4510003040	Electrolytic	16 SS 100 μF
C2	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C3	4510002780	Electrolytic	16 SS 10 μF
C4	4510002380	Electrolytic	16 SS 470 μF (10X1 2.5)
C5	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C6	4510003040	Electrolytic	16 SS 100 μF
C7	4550000320	Tantalum	DN 1V 0R1M
C9	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C10	4510002630	Electrolytic	50 SS 47 μF
C11	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C12	4510002780	Electrolytic	16 SS 10 μF
C13	4510002780	Electrolytic	16 SS 10 μF
C14	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C17	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C18	4510002780	Electrolytic	16 SS 10 μF
C20	4510002780	Electrolytic	16 SS 10 μF
C21	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C22	4510002780	Electrolytic	16 SS 10 μF
C23	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C24	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C25	4510002780	Electrolytic	16 SS 10 μF
C26	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C27	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C28	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C29	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C30	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C31	4030004420	Ceramic	C2012 SL 1H 050C- T-A
C32	4030004440	Ceramic	C2012 SL 1H 070D- T-A
C33	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C34	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C35	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C36	4030004440	Ceramic	C2012 SL 1H 070D- T-A
C37	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C38	4030004480	Ceramic	C2012 SL 1H 120J- T-A
C39	4030004420	Ceramic	C2012 SL 1H 050C- T-A
C40	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C41	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C42	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C43	4030004570	Ceramic	C2012 SL 1H 470J- T-A
C44	4610000370	Trimmer	ECRGA006A30
C45	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C46	4030004420	Ceramic	C2012 SL 1H 050C- T-A
C47	4030004420	Ceramic	C2012 SL 1H 050C- T-A

## [MAIN A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C48	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C49	4030004570	Ceramic	C2012 SL 1H 470J- T-A
C50	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C51	4030004440	Ceramic	C2012 SL 1H 070D- T-A
C52	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C53	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C54	4510001350	Electrolytic	16 MS5 10 μF
C55	4030004440	Ceramic	C2012 SL 1H 070D- T-A
C56	4030004440	Ceramic	C2012 SL 1H 070D- T-A
C57	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C58	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C59	4550000260	Tantalum	DN 1V 100M
C60	4550000260	Tantalum	DN 1V 100M
C61	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C62	4550000260	Tantalum	DN 1V 100M
C63	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C64	4030004570	Ceramic	C2012 SL 1H 470J- T-A
C65	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C66	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C67	4010003830	Ceramic	DD06 SL 060D 500V
C68	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C69	4010003830	Ceramic	DD06 SL 060D 500V
C70	4010003860	Ceramic	DD06 SL 100D 500V
C71	4010003860	Ceramic	DD06 SL 100D 500V
C72	4010003930	Ceramic	DD06 SL 270K 500V
C73	4010003830	Ceramic	DD06 SL 060D 500V
C74	4010003870	Ceramic	DD06 SL 120K 500V
C75	4010003830	Ceramic	DD06 SL 060D 500V
C76	4510002940	Electrolytic	50 SS 1 μF
C77	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C78	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C79	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C82	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C83	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C84	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C85	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C86	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C87	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C89	4030004480	Ceramic	C2012 SL 1H 120J- T-A
C90	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C91	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C92	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C93	4030004570	Ceramic	C2012 SL 1H 470J- T-A
C94	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C95	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C96	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C97	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C98	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C99	4030004520	Ceramic	C2012 SL 1H 220J- T-A
C100	4030004380	Ceramic	C2012 SL 1H 010C- T-A
C101	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C103	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C104	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C105	4030004520	Ceramic	C2012 SL 1H 220J- T-A
C106	4030004400	Ceramic	C2012 SL 1H 030C- T-A
C107	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C109	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C110	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C111	4030004400	Ceramic	C2012 SL 1H 030C- T-A
C112	4610000370	Trimmer	ECRGA006A30
C113	4030004480	Ceramic	C2012 SL 1H 120J- T-A
C114	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C115	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C116	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C117	4030004420	Ceramic	C2012 SL 1H 050C- T-A
C118	4030004470	Ceramic	C2012 SL 1H 100D- T-A
C119	4010003820	Ceramic	DD06 SL 050C 500V
C120	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C121	4510002810	Electrolytic	16 SS 47 μF
C122	4510002780	Electrolytic	16 SS 10 μF
C123	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C124	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C125	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C126	4510002810	Electrolytic	16 SS 47 μF
C127	4510002780	Electrolytic	16 SS 10 μF

**[MAIN A UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION
C128	4030004760	Ceramic C2012 JF 1E 104Z- T-A
C129	4030004710	Ceramic C2012 JB 1H 471K- T-A
C130	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C131	4030004760	Ceramic C2012 JF 1E 104Z- T-A
C132	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C133	4030004760	Ceramic C2012 JF 1E 104Z- T-A
C134	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C135	4510002780	Electrolytic 16 SS 10 $\mu$ F
C136	4510002780	Electrolytic 16 SS 10 $\mu$ F
C137	4510002940	Electrolytic 50 SS 1 $\mu$ F
C138	4510002780	Electrolytic 16 SS 10 $\mu$ F
C139	4510002940	Electrolytic 50 SS 1 $\mu$ F
C140	4510002940	Electrolytic 50 SS 1 $\mu$ F
C141	4510001160	Electrolytic 50 MS7 1 $\mu$ F
C142	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C143	4510002940	Electrolytic 50 SS 1 $\mu$ F
C144	4510001160	Electrolytic 50 MS7 1 $\mu$ F
C145	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C146	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C147	4510002380	Electrolytic 16 SS 470 $\mu$ F (10X1 2.5)
C148	4510003040	Electrolytic 16 SS 100 $\mu$ F
C149	4550000390	Tantalum DN 1V R22M
C150	4510002810	Electrolytic 16 SS 47 $\mu$ F
C151	4030004760	Ceramic C2012 JF 1E 104Z- T-A
C152	4510002810	Electrolytic 16 SS 47 $\mu$ F
C153	4510001480	Electrolytic 50 MS5 2R2 $\mu$ F
C154	4510001480	Electrolytic 50 MS5 2R2 $\mu$ F
C155	4510002810	Electrolytic 16 SS 47 $\mu$ F
C156	4550000390	Tantalum DN 1V R22M
C157	4510003040	Electrolytic 16 SS 100 $\mu$ F
C158	4510002380	Electrolytic 16 SS 470 $\mu$ F (10X1 2.5)
C159	4510002380	Electrolytic 16 SS 470 $\mu$ F (10X1 2.5)
C160	4510001170	Electrolytic 50 MS7 2R2 $\mu$ F
C161	4510001170	Electrolytic 50 MS7 2R2 $\mu$ F
C162	4030004760	Ceramic C2012 JF 1E 104Z- T-A
C163	4510001150	Electrolytic 50 MS7 R47 $\mu$ F
C164	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C166	4030004610	Ceramic C2012 SL 1H 101J- T-A
C167	4030004610	Ceramic C2012 SL 1H 101J- T-A
C168	4030004610	Ceramic C2012 SL 1H 101J- T-A
C169	4030004610	Ceramic C2012 SL 1H 101J- T-A
C170	4030004610	Ceramic C2012 SL 1H 101J- T-A
C171	4030004610	Ceramic C2012 SL 1H 101J- T-A
C172	4030004610	Ceramic C2012 SL 1H 101J- T-A
C173	4030004610	Ceramic C2012 SL 1H 101J- T-A
C174	4030004610	Ceramic C2012 SL 1H 101J- T-A
C175	4030004610	Ceramic C2012 SL 1H 101J- T-A
C176	4030004610	Ceramic C2012 SL 1H 101J- T-A
C177	4030004610	Ceramic C2012 SL 1H 101J- T-A
C178	4030004610	Ceramic C2012 SL 1H 101J- T-A
C179	4030004610	Ceramic C2012 SL 1H 101J- T-A
C180	4030004610	Ceramic C2012 SL 1H 101J- T-A
C181	4030004610	Ceramic C2012 SL 1H 101J- T-A
C182	4030004610	Ceramic C2012 SL 1H 101J- T-A
C183	4030004610	Ceramic C2012 SL 1H 101J- T-A
C184	4030004610	Ceramic C2012 SL 1H 101J- T-A
C185	4030004610	Ceramic C2012 SL 1H 101J- T-A
C186	4030004610	Ceramic C2012 SL 1H 101J- T-A
C187	4030004610	Ceramic C2012 SL 1H 101J- T-A
C188	4030004610	Ceramic C2012 SL 1H 101J- T-A
C189	4030004610	Ceramic C2012 SL 1H 101J- T-A
C190	4030004610	Ceramic C2012 SL 1H 101J- T-A
C191	4030004610	Ceramic C2012 SL 1H 101J- T-A
C192	4030004610	Ceramic C2012 SL 1H 101J- T-A
C193	4030004610	Ceramic C2012 SL 1H 101J- T-A
C194	4030004610	Ceramic C2012 SL 1H 101J- T-A
C195	4030004610	Ceramic C2012 SL 1H 101J- T-A
C196	4030004610	Ceramic C2012 SL 1H 101J- T-A
C197	4030004610	Ceramic C2012 SL 1H 101J- T-A
C198	4030004610	Ceramic C2012 SL 1H 101J- T-A
C200	4030004760	Ceramic C2012 JF 1E 104Z- T-A
C201	4030004720	Ceramic C2012 JB 1H 102K- T-A
C202	4030004720	Ceramic C2012 JB 1H 102K- T-A
C203	4030004720	Ceramic C2012 JB 1H 102K- T-A
C204	4030004720	Ceramic C2012 JB 1H 102K- T-A

**[MAIN A UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION
C206	4510002930	Electrolytic 50 SS R47 $\mu$ F
C208	4510002930	Electrolytic 50 SS R47 $\mu$ F
C209	4510002940	Electrolytic 50 SS 1 $\mu$ F
C210	4510002940	Electrolytic 50 SS 1 $\mu$ F
C211	4030004570	Ceramic C2012 SL 1H 470J- T-A
C212	4010004120	Ceramic DD07 B 102K 500V
C213	4030004620	Ceramic C2012 SL 1H 121J- T-A
C214	4030004410	Ceramic C2012 SL 1H 040C- T-A
C215	4510002730	Electrolytic 10 SS 100 $\mu$ F
C217	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C218	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C219	4030004570	Ceramic C2012 SL 1H 470J- T-A
C220	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C221	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C222	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C223	4030004420	Ceramic C2012 SL 1H 050C- T-A
C224	4030005000	Ceramic C2012 CH 1H 121J- T-A
C225	4030004960	Ceramic C2012 CH 1H 560J- T-A
C226	4030004920	Ceramic C2012 CH 1H 270J- T-A
C227	4610000280	Trimmer ECRGA010D30
C228	4550000360	Tantalum DN 1V R47M
C229	4030004720	Ceramic C2012 JB 1H 102K- T-A
C230	4030004720	Ceramic C2012 JB 1H 102K- T-A
C231	4030004720	Ceramic C2012 JB 1H 102K- T-A
C232	4510002780	Electrolytic 16 SS 10 $\mu$ F
C233	4510001820	Electrolytic 10 MS5 10 $\mu$ F
EP9	8930005320	LCD contact strip
EP18	8930005200	LCD contact strip
EP1	0910020796	P.C. Board B 1966F (MAIN A)

**[PLL A UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION
IC1	1130003640	IC TC9181F
IC2	1110001470	IC MB504LPF-G-BND
Q1	1530000160	Transistor 2SC2712-Y (TE85R)
Q2	1560000360	FET 2SK209-Y (TE85R)
L1	6110001520	Coil LA-232
L2	6180001410	Coil LAL 02KR 100K
L3	6180001410	Coil LAL 02KR 100K
R1	7030000480	Resistor MCR10EZHJ 6.8 k $\Omega$ (682)
R2	7030000410	Resistor MCR10EZHJ 1.8 k $\Omega$ (182)
R3	7030000390	Resistor MCR10EZHJ 1.2 k $\Omega$ (122)
R4	7030000350	Resistor MCR10EZHJ 560 $\Omega$ (561)
R5	7030000260	Resistor MCR10EZHJ 100 $\Omega$ (101)
R6	7030000500	Resistor MCR10EZHJ 10 k $\Omega$ (103)
R7	7030000420	Resistor MCR10EZHJ 2.2 k $\Omega$ (222)
R8	7030000420	Resistor MCR10EZHJ 2.2 k $\Omega$ (222)
C1	4550000530	Tantalum TESVA 1V 104M1-8L
C2	4550000410	Tantalum DN 1V 4R7M
C3	4030004760	Ceramic C2012 JF 1E 104Z- T-A
C4	4030004710	Ceramic C2012 JB 1H 471K- T-A
C5	4550003030	Tantalum TEMSVA 0J 475M-8L
C6	4030004440	Ceramic C2012 SL 1H 070D- T-A
C7	4030004440	Ceramic C2012 SL 1H 070D- T-A
C8	4030004720	Ceramic C2012 JB 1H 102K- T-A
C9	4030004720	Ceramic C2012 JB 1H 102K- T-A
C10	4030004710	Ceramic C2012 JB 1H 471K- T-A
C11	4550003030	Tantalum TEMSVA 0J 475M-8L
C12	4030004720	Ceramic C2012 JB 1H 102K- T-A

**[PLL A UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION	
C13	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C14	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C15	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C16	4030004720	Ceramic	C2012 JB 1H 102K- T-A
EP1	0910020285	P.C. Board	B 1940E (PLL A)

**[VCO A UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION	
Q1	1560000130	FET	2SK125
Q2	1530002030	Transistor	2SC3772-3-TA
D1	1720000220	Varicap	1SV166-T2B
D2	1720000220	Varicap	1SV166-T2B
L1	6180002420	Coil	LAL 02KR R39K
L2	6180002420	Coil	LAL 02KR R39K
L3	6180001380	Coil	LAL 02KR 1R0K
L4	6180001620	Coil	LAL 02KR R22K
L5	6110001530	Coil	LA-233
R1	7030000220	Resistor	MCR10EZHZ 47 $\Omega$ (470)
R2	7030000140	Resistor	MCR10EZHZ 10 $\Omega$ (100)
R3	7030000260	Resistor	MCR10EZHZ 100 $\Omega$ (101)
R4	7030000480	Resistor	MCR10EZHZ 6.8 k $\Omega$ (682)
R5	7030000260	Resistor	MCR10EZHZ 100 $\Omega$ (101)
R6	7030000260	Resistor	MCR10EZHZ 100 $\Omega$ (101)
R7	7030000520	Resistor	MCR10EZHZ 15 k $\Omega$ (153)
R8	7030000460	Resistor	MCR10EZHZ 4.7 k $\Omega$ (472)
R9	7030000160	Resistor	MCR10EZHZ 15 $\Omega$ (150)
R10	7030000160	Resistor	MCR10EZHZ 15 $\Omega$ (150)
R11	7030000160	Resistor	MCR10EZHZ 15 $\Omega$ (150)
C1	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C2	4510001840	Electrolytic	10 MS5 47 $\mu$ F
C3	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C4	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C5	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C6	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C7	4510001840	Electrolytic	10 MS5 47 $\mu$ F
C8	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C9	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C10	4030004580	Ceramic	C2012 SL 1H 560J- T-A
C11	4030004440	Ceramic	C2012 SL 1H 070D- T-A
C12	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C13	4030004430	Ceramic	C2012 SL 1H 060D- T-A
C14	4030004370	Ceramic	C2012 SL 1H 0R5C- T-A
C15	4030004420	Ceramic	C2012 SL 1H 050C- T-A
C16	4030004710	Ceramic	C2012 JB 1H 471K- T-A
EP1	0910020275	P.C. Board	B 1939E (VCO A)

**[IF A UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1110001520	IC	TK10420M
Q1	1530000160	Transistor	2SC2712-Y (TE85R)
Q2	1530000160	Transistor	2SC2712-Y (TE85R)
Q3	1530000160	Transistor	2SC2712-Y (TE85R)
D1	1730000730	Zener	RD6.2M-T2B2
D2	1750000070	Diode	1SS226 (TE85R)
D3	1790000490	Diode	HSM88AS-TR
X1	6050002550	Crystal	CR-125
X2	6070000010	Discriminator	CDB455C7A
F11	2020000550	Ceramic Filter	CFUM455E
L1	6180002420	Coil	LAL 02KR R39K
R1	7030000460	Resistor	MCR10EZHZ 4.7 k $\Omega$ (472)
R2	7030000400	Resistor	MCR10EZHZ 1.5 k $\Omega$ (152)
R3	7030000400	Resistor	MCR10EZHZ 1.5 k $\Omega$ (152)
R4	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R5	7030000400	Resistor	MCR10EZHZ 1.5 k $\Omega$ (152)
R6	7030000690	Resistor	MCR10EZHZ 390 k $\Omega$ (394)
R7	7030000470	Resistor	MCR10EZHZ 5.6 k $\Omega$ (562)
R8	7030000500	Resistor	MCR10EZHZ 10 k $\Omega$ (103)
R9	7030000400	Resistor	MCR10EZHZ 1.5 k $\Omega$ (152)
R10	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R11	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R12	7030000280	Resistor	MCR10EZHZ 150 $\Omega$ (151)
R13	7030000520	Resistor	MCR10EZHZ 15 k $\Omega$ (153)
R14	7030000650	Resistor	MCR10EZHZ 180 k $\Omega$ (184)
R15	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R16	7310001840	Trimmer	RH0421CS3J08A (472)
R17	7030000430	Resistor	MCR10EZHZ 2.7 k $\Omega$ (272)
R18	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R19	7030000580	Resistor	MCR10EZHZ 47 k $\Omega$ (473)
R20	7030000430	Resistor	MCR10EZHZ 2.7 k $\Omega$ (272)
R21	7030000380	Resistor	MCR10EZHZ 1 k $\Omega$ (102)
R22	7030000570	Resistor	MCR10EZHZ 39 k $\Omega$ (393)
R23	7030000260	Resistor	MCR10EZHZ 100 $\Omega$ (101)
C1	4510001100	Electrolytic	16 MS7 10 $\mu$ F
C2	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C3	4030004630	Ceramic	C2012 SL 1H 151J- T-A
C4	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C5	4030004470	Ceramic	C2012 SL 1H 100D- T-A
C6	4030004570	Ceramic	C2012 SL 1H 470J- T-A
C7	4030004560	Ceramic	C2012 SL 1H 390J- T-A
C8	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C9	4550000530	Tantalum	TESVA 1V 104M1-8L
C10	4030004600	Ceramic	C2012 SL 1H 820J- T-A
C11	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C12	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C13	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C14	4030004530	Ceramic	C2012 SL 1H 270J- T-A
C15	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C16	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C17	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C18	4510001150	Electrolytic	50 MS7 R47 $\mu$ F
C19	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C20	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C21	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C22	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C23	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C24	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C25	4510001160	Electrolytic	50 MS7 1 $\mu$ F
C26	4510001100	Electrolytic	16 MS7 10 $\mu$ F

[IF A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
EP1	0910020356	P.C. Board	B 1969F (IF A)
EP2	6510008510	Lead Frame	PT2.54-1.0-20 (L)

[A BAND UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
Q1	1530002030	Transistor	2SC3772-3-TA
Q2	1530002030	Transistor	2SC3772-3-TA
D1	1790000450	Diode	MA862 (TX)
L1	6110001990	Coil	LA-223
L2	6110001980	Coil	LA-222
L3	6110001990	Coil	LA-223
L4	6110001990	Coil	LA-223
R1	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)
R2	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R3	7030000220	Resistor	MCR10EZHZ 47 Ω (470)
R4	7030000590	Resistor	MCR10EZHZ 56 kΩ (563)
R5	7030000340	Resistor	MCR10EZHZ 470 Ω (471)
R6	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R7	7030000220	Resistor	MCR10EZHZ 47 Ω (470)
R8	7030000220	Resistor	MCR10EZHZ 47 Ω (470)
R9	7030000300	Resistor	MCR10EZHZ 220 Ω (221)
R10	7030000340	Resistor	MCR10EZHZ 470 Ω (471)
R11	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)
C1	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C2	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C3	4030004470	Ceramic	C2012 SL 1H 100D- T-A
C4	4030004470	Ceramic	C2012 SL 1H 100D- T-A
C5	4030004410	Ceramic	C2012 SL 1H 040C- T-A
C6	4030004470	Ceramic	C2012 SL 1H 100D- T-A
C7	4030004450	Ceramic	C2012 SL 1H 080D- T-A
C8	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C9	4030004390	Ceramic	C2012 SL 1H 020C- T-A
C10	4030004450	Ceramic	C2012 SL 1H 080D- T-A
C11	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C12	4030004710	Ceramic	C2012 JB 1H 471K- T-A
EP1	0910022154	P.C. Board	B 2026D (A BAND)

[MIC AMP UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1130000830	IC	μPD4094BG-T1
IC2	1130000950	IC	S7116A
IC3	1110000960	IC	NJM4558M (T1)
Q1	1590000420	Transistor	RN1404 (TE85R)
Q2	1530000160	Transistor	2SC2712-Y (TE85R)
Q3	1590000520	FET	2SJ106-GR (TE85R)
Q4	1590000520	FET	2SJ106-GR (TE85R)

[MIC AMP UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
X1	6050003120	Crystal	RF-4A3 FAA NKD (3 .579545M)
R1	7310002190	Trimmer	RH0422CS4J0BA (473)
R2	7030000560	Resistor	MCR10EZHZ 33 kΩ (333)
R3	7030000600	Resistor	MCR10EZHZ 68 kΩ (683)
R4	7030000600	Resistor	MCR10EZHZ 68 kΩ (683)
R5	7030000600	Resistor	MCR10EZHZ 68 kΩ (683)
R6	7030000640	Resistor	MCR10EZHZ 150 kΩ (154)
R7	7030000640	Resistor	MCR10EZHZ 150 kΩ (154)
R8	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R9	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R10	7030000540	Resistor	MCR10EZHZ 22 kΩ (223)
R11	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R12	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R13	7310002210	Trimmer	RH0422C15J06A (104)
R14	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R15	7030000670	Resistor	MCR10EZHZ 270 kΩ (274)
R16	7030000660	Resistor	MCR10EZHZ 220 Ω (221)
R17	7030000300	Resistor	MCR10EZHZ 220 Ω (221)
R18	7030000320	Resistor	MCR10EZHZ 330 Ω (331)
R19	7030000470	Resistor	MCR10EZHZ 5.6 kΩ (562)
R20	7030001600	Resistor	MCR10EZHZ 1.2 MΩ (125)
C1	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C2	4030004560	Ceramic	C2012 SL 1H 390J- T-A
C3	4030004560	Ceramic	C2012 SL 1H 390J- T-A
C4	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C5	4030004630	Ceramic	C2012 SL 1H 151J- T-A
C6	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C7	4030004730	Ceramic	C2012 JB 1H 222K- T-A
C8	4550000460	Tantalum	TESVA 1C 105M1-8L
C9	4550000460	Tantalum	TESVA 1C 105M1-8L
C10	4550000460	Tantalum	TESVA 1C 105M1-8L
C11	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C12	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C13	4550000550	Tantalum	TESVA 1V 224M1-8L
C14	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C15	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C16	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C17	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C18	4550002890	Tantalum	TESVA 1A 225M1-8L
C19	4030004720	Ceramic	C2012 JB 1H 102K- T-A
EP1	0910020435	P.C. Board	B 1971E (MIC AMP)
EP2	6910001400	Lead Frame	VD2.54-0.7-7

[APC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1110001240	IC	μPC358G2-T1
Q1	1530000160	Transistor	2SC2712-Y (TE85R)
R1	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R2	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R3	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R4	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R5	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R6	7030000660	Resistor	MCR10EZHZ 220 kΩ (224)
R7	7030000510	Resistor	MCR10EZHZ 12 kΩ (123)
R8	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)
R9	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)

[APC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R10	7030000540	Resistor	MCR10EZHJ 22 kΩ (223)
R11	7030000730	Resistor	MCR10EZHJ 820 kΩ (824)
R12	7030000520	Resistor	MCR10EZHJ 15 kΩ (153)
R13	7030000260	Resistor	MCR10EZHJ 100 Ω (101)
C1	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C2	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C3	4510001820	Electrolytic	10 MS5 10 μF
C4	4510001820	Electrolytic	10 MS5 10 μF
C5	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C6	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C7	4030004710	Ceramic	C2012 JB 1H 471K- T-A
EP1	0910020364	P.C. Board	B 1973D (APC)
EP2	6910001400	Lead Frame	VD2.54-0.7-7

[AF FIL UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1110000960	IC	NJM4558M (T1)
IC2	1110000960	IC	NJM4558M (T1)
Q1	1530000160	Transistor	2SC2712-Y (TE85R)
Q2	1530000160	Transistor	2SC2712-Y (TE85R)
R1	7030000260	Resistor	MCR10EZHJ 100 Ω (101)
R2	7030000460	Resistor	MCR10EZHJ 4.7 kΩ (472)
R3	7030000590	Resistor	MCR10EZHJ 56 kΩ (563)
R4	7030000590	Resistor	MCR10EZHJ 56 kΩ (563)
R5	7030000680	Resistor	MCR10EZHJ 330 kΩ (334)
R6	7030000680	Resistor	MCR10EZHJ 330 kΩ (334)
R7	7030000540	Resistor	MCR10EZHJ 22 kΩ (223)
R8	7030000630	Resistor	MCR10EZHJ 120 kΩ (124)
R9	7030000630	Resistor	MCR10EZHJ 120 kΩ (124)
R10	7030000590	Resistor	MCR10EZHJ 56 kΩ (563)
R11	7030000540	Resistor	MCR10EZHJ 22 kΩ (223)
R12	7030000260	Resistor	MCR10EZHJ 100 Ω (101)
R13	7030000460	Resistor	MCR10EZHJ 4.7 kΩ (472)
R14	7030000590	Resistor	MCR10EZHJ 56 kΩ (563)
R15	7030000590	Resistor	MCR10EZHJ 56 kΩ (563)
R16	7030000680	Resistor	MCR10EZHJ 330 kΩ (334)
R17	7030000680	Resistor	MCR10EZHJ 330 kΩ (334)
R18	7030000540	Resistor	MCR10EZHJ 22 kΩ (223)
R19	7030000630	Resistor	MCR10EZHJ 120 kΩ (124)
R20	7030000630	Resistor	MCR10EZHJ 120 kΩ (124)
R21	7030000590	Resistor	MCR10EZHJ 56 kΩ (563)
R22	7030000540	Resistor	MCR10EZHJ 22 kΩ (223)
C1	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C2	4030004730	Ceramic	C2012 JB 1H 222K- T-A
C3	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C4	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C5	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C6	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C7	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C8	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C9	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C10	4510001100	Electrolytic	16 MS7 10 μF
C11	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C12	4030004730	Ceramic	C2012 JB 1H 222K- T-A
C13	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C14	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C15	4030004750	Ceramic	C2012 JB 1H 103K- T-A

[AF FIL UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C16	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C17	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C18	4030004750	Ceramic	C2012 JB 1H 103K- T-A
C19	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C20	4510001100	Electrolytic	16 MS7 10 μF
EP1	0910020423	P.C. Board	B 1970C (AF FIL)
EP2	6910001400	Lead Frame	VD2.54-0.7-7

[DET SW UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1130001250	IC	μPD4066BG-T1
IC2	1130001250	IC	μPD4066BG-T1
IC3	1130001250	IC	μPD4066BG-T1
IC4	1130001250	IC	μPD4066BG-T1
Q1	1530002550	Transistor	2SC3326-B (TE85R)
Q2	1530002550	Transistor	2SC3326-B (TE85R)
Q3	1590000420	Transistor	RN1404 (TE85R)
Q4	1530002550	Transistor	2SC3326-B (TE85R)
Q5	1530002550	Transistor	2SC3326-B (TE85R)
Q6	1530002550	Transistor	2SC3326-B (TE85R)
Q7	1530002550	Transistor	2SC3326-B (TE85R)
Q8	1590000420	Transistor	RN1404 (TE85R)
Q9	1530002550	Transistor	2SC3326-B (TE85R)
Q10	1530002550	Transistor	2SC3326-B (TE85R)
R1	7030000460	Resistor	MCR10EZHJ 4.7 kΩ (472)
R2	7030000580	Resistor	MCR10EZHJ 47 kΩ (473)
R3	7030000580	Resistor	MCR10EZHJ 47 kΩ (473)
R4	7030000580	Resistor	MCR10EZHJ 47 kΩ (473)
R5	7030000580	Resistor	MCR10EZHJ 47 kΩ (473)
R6	7030000460	Resistor	MCR10EZHJ 4.7 kΩ (472)
R7	7030000580	Resistor	MCR10EZHJ 47 kΩ (473)
R8	7030000580	Resistor	MCR10EZHJ 47 kΩ (473)
R9	7030000580	Resistor	MCR10EZHJ 47 kΩ (473)
R10	7030000580	Resistor	MCR10EZHJ 47 kΩ (473)
C1	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
EP1	0910022093	P.C. Board	B 2167C (DET SW)
EP2	6910001400	Lead Frame	VD2.54-0.7-7

[MAIN B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	6910001940	IC	MD004 H
IC2	1150000530	IC	SC1066
IC3	1150000630	IC	SC1077
IC4	1110001240	IC	μPC358G2-T1
IC5	1110001000	IC	μPC1651G
IC6	1130000830	IC	μPD4094BG-T1
IC8	1130003640	IC	TC9181F
IC9	1120000960	IC	TD6127BP

## [MAIN B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
Q1	1530002430	Transistor	2SC4315 (TE85R)
Q2	1580000350	FET	3SK140-Y (TE85R)
Q3	1530000370	Transistor	2SC3356-T2B
Q4	1580000350	FET	3SK140-Y (TE85R)
Q5	1530002020	Transistor	2SC3770-3-TA
Q6	1590000890	Transistor	MGF1502-15-A
Q7	1530002180	Transistor	2SC4095-T2
Q8	1580000360	FET	3SK177-T2B U73
Q9	1530002240	Transistor	2SC3775-3-TA
Q10	1530002240	Transistor	2SC3775-3-TA
Q11	1530002240	Transistor	2SC3775-3-TA
Q12	1530000160	Transistor	2SC2712-Y (TE85R)
Q13	1520000210	Transistor	2SB1019-O
Q15	1510000390	Transistor	2SA1359-O
Q16	1530000160	Transistor	2SC2712-Y (TE85R)
Q17	1590000420	Transistor	RN1404 (TE85R)
Q18	1510000580	Transistor	2SA1362-GR (TE85R )
Q19	1510000580	Transistor	2SA1362-GR (TE85R )
Q20	1510000580	Transistor	2SA1362-GR (TE85R )
Q21	1530002050	Transistor	2SC3661-TA
Q22	1530002260	Transistor	2SC3779-D
Q23	1590000420	Transistor	RN1404 (TE85R)
Q24	1590000420	Transistor	RN1404 (TE85R)
Q25	1590000420	Transistor	RN1404 (TE85R)
Q26	1530000660	Transistor	2SC1645B
Q27	1530000160	Transistor	2SC2712-Y (TE85R)
Q28	1560000360	FET	2SK209-Y (TE85R)
Q29	1590000690	Transistor	IMD6 T108
Q30	1530002550	Transistor	2SC3326-B (TE85R)
D1	1790000450	Diode	MA862 (TX)
D2	1790000450	Diode	MA862 (TX)
D3	1750000050	Diode	1S5193 (TE85R)
D4	1790000470	Diode	MA159 (TX)
D5	1750000070	Diode	1S5226 (TE85R)
D6	1790000450	Diode	MA862 (TX)
D8	1730000610	Zener	RD3.6M-T2B1
D9	1750000050	Diode	1S5193 (TE85R)
D11	1730000600	Zener	RD3.3M-T2B2
D12	1790000480	Diode	1S5101
D14	1790000450	Diode	MA862 (TX)
D15	1790000450	Diode	MA862 (TX)
D16	1710000580	Diode	1S5265
D17	1710000580	Diode	1S5265
D18	1750000050	Diode	1S5193 (TE85R)
D19	1730000030	Zener	RD5.6M-T2B2
D20	1730001060	Zener	RD20M-T2B2
X1	6050004880	Crystal	CR-240
F11	2010000580	Filter	17M15B (FL-78)
F12	2040000260	Filter	KDF-1270P060A
F13	2040000270	Filter	KDF-1270R060A
L1	6150002010	Coil	LS-265
L2	6150002810	Coil	LS-291
L3	6150002810	Coil	LS-291
L4	6150002810	Coil	LS-291
L6	6150002700	Coil	LS-272
L7	6150002700	Coil	LS-272
L8	6180001510	Coil	LAL 02NA 101K
L9	6150002010	Coil	LS-265
L10	6180000760	Coil	LAL 03NA R82M
L11	6150002810	Coil	LS-291
L12	6150002810	Coil	LS-291
L13	6150002810	Coil	LS-291
L14	6180001380	Coil	LAL 02KR 1R0K
L15	6140001490	Coil	LR-168
L16	6110001520	Coil	LA-232
L17	6180001380	Coil	LAL 02KR 1R0K
L19	6180001410	Coil	LAL 02KR 100K

## [MAIN B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R1	7030000480	Resistor	MCR10EZHZ 6.8 kΩ (682)
R2	7030000540	Resistor	MCR10EZHZ 22 kΩ (223)
R3	7030000300	Resistor	MCR10EZHZ 220 Ω (221)
R4	7010004190	Resistor	R20J 1 kΩ
R5	7030000340	Resistor	MCR10EZHZ 470 Ω (471)
R6	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R7	7030000280	Resistor	MCR10EZHZ 150 Ω (151)
R8	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R9	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R10	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R11	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R12	7030000410	Resistor	MCR10EZHZ 1.8 kΩ (182)
R13	7030000480	Resistor	MCR10EZHZ 6.8 kΩ (682)
R14	7030000300	Resistor	MCR10EZHZ 220 Ω (221)
R15	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R16	7030000300	Resistor	MCR10EZHZ 220 Ω (221)
R17	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R18	7030000440	Resistor	MCR10EZHZ 3.3 kΩ (332)
R19	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R20	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)
R21	7030000540	Resistor	MCR10EZHZ 22 kΩ (223)
R22	7030000340	Resistor	MCR10EZHZ 470 Ω (471)
R23	7030000280	Resistor	MCR10EZHZ 150 Ω (151)
R24	7030000430	Resistor	MCR10EZHZ 2.7 kΩ (272)
R25	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R26	7030000250	Resistor	MCR10EZHZ 82 Ω (820)
R27	7030001690	Resistor	MCR18EZHZ 220 Ω (221)
R28	7030000400	Resistor	MCR10EZHZ 1.5 kΩ (152)
R29	7010001030	Resistor	R25XJ 100 Ω
R30	7030000400	Resistor	MCR10EZHZ 1.5 kΩ (152)
R31	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R32	7010001150	Resistor	R25XJ 1 kΩ
R33	7030000480	Resistor	MCR10EZHZ 6.8 kΩ (682)
R34	7030000540	Resistor	MCR10EZHZ 22 kΩ (223)
R35	7030000300	Resistor	MCR10EZHZ 220 Ω (221)
R37	7030000340	Resistor	MCR10EZHZ 470 Ω (471)
R38	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R39	7030000280	Resistor	MCR10EZHZ 150 Ω (151)
R40	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R41	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R42	7030000400	Resistor	MCR10EZHZ 1.5 kΩ (152)
R43	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R44	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R45	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R46	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)
R47	7030000360	Resistor	MCR10EZHZ 680 Ω (681)
R51	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)
R52	7030003870	Resistor	MTSR18 E15 J 103 (10K)
R53	7010004730	Resistor	R50XJ 120 Ω
R54	7030000220	Resistor	MCR10EZHZ 47 Ω (470)
R55	7070000280	Resistor	CRH100X R-02J 2.2 Ω (2R2)
R56	7030001150	Resistor	MCR50JZHJ 150 Ω (151)
R57	7070000250	Resistor	CRH200 R-02J 4.7 Ω (4R7)
R58	7030000310	Resistor	MCR10EZHZ 270 Ω (271)
R59	7030000310	Resistor	MCR10EZHZ 270 Ω (271)
R60	7030000170	Resistor	MCR10EZHZ 18 Ω (180)
R61	7010000930	Resistor	R25XJ 15 Ω
R62	7030000290	Resistor	MCR10EZHZ 180 Ω (181)
R63	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R64	7030000440	Resistor	MCR10EZHZ 3.3 kΩ (332)
R65	7030000290	Resistor	MCR10EZHZ 180 Ω (181)
R66	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R67	7030000440	Resistor	MCR10EZHZ 3.3 kΩ (332)
R68	7010001150	Resistor	R25XJ 1 kΩ
R69	7030000340	Resistor	MCR10EZHZ 470 Ω (471)
R70	7030000680	Resistor	MCR10EZHZ 330 kΩ (334)
R71	7030000630	Resistor	MCR10EZHZ 120 kΩ (124)
R72	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R74	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
R75	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)
R76	7030000590	Resistor	MCR10EZHZ 56 kΩ (563)
R77	7030000410	Resistor	MCR10EZHZ 1.8 kΩ (182)
R78	7030000460	Resistor	MCR10EZHZ 4.7 kΩ (472)

## [MAIN B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R79	7030000530	Resistor	MCR10EZHJ 18 k $\Omega$ (183)
R80	7030000970	Resistor	MCR10EZHJ 2.2 M $\Omega$ (225)
R81	7030000500	Resistor	MCR10EZHJ 10 k $\Omega$ (103)
R82	7030000580	Resistor	MCR10EZHJ 47 k $\Omega$ (473)
R83	7010004160	Resistor	R20J 560 $\Omega$
R84	7030000500	Resistor	MCR10EZHJ 10 k $\Omega$ (103)
R85	7310001750	Trimmer	RH0421CJ3J09A (222)
R86	7030000350	Resistor	MCR10EZHJ 560 $\Omega$ (561)
R87	7310001840	Trimmer	RH0421CS3J08A (472)
R88	7030000420	Resistor	MCR10EZHJ 2.2 k $\Omega$ (222)
R89	7030000270	Resistor	MCR10EZHJ 120 $\Omega$ (121)
R90	7010000990	Resistor	R25XJ 47 $\Omega$
R91	7030000270	Resistor	MCR10EZHJ 120 $\Omega$ (121)
R92	7030000500	Resistor	MCR10EZHJ 10 k $\Omega$ (103)
R93	7030000500	Resistor	MCR10EZHJ 10 k $\Omega$ (103)
R94	7010001150	Resistor	R25XJ 1 k $\Omega$
R95	7030000380	Resistor	MCR10EZHJ 1 k $\Omega$ (102)
R96	7030000380	Resistor	MCR10EZHJ 1 k $\Omega$ (102)
R97	7030000380	Resistor	MCR10EZHJ 1 k $\Omega$ (102)
R98	7030000500	Resistor	MCR10EZHJ 10 k $\Omega$ (103)
R99	7010004320	Resistor	R20J 10 k $\Omega$
R100	7030000460	Resistor	MCR10EZHJ 4.7 k $\Omega$ (472)
R101	7030000310	Resistor	MCR10EZHJ 270 $\Omega$ (271)
R102	7030000170	Resistor	MCR10EZHJ 18 $\Omega$ (180)
R103	7030000310	Resistor	MCR10EZHJ 270 $\Omega$ (271)
R104	7030000190	Resistor	MCR10EZHJ 27 $\Omega$ (270)
R105	7030000460	Resistor	MCR10EZHJ 4.7 k $\Omega$ (472)
R106	7030000260	Resistor	MCR10EZHJ 100 $\Omega$ (101)
R107	7030000380	Resistor	MCR10EZHJ 1 k $\Omega$ (102)
R108	7030000480	Resistor	MCR10EZHJ 6.8 k $\Omega$ (682)
R109	7010003260	Resistor	ELR20J 68 $\Omega$
R110	7030000310	Resistor	MCR10EZHJ 270 $\Omega$ (271)
R111	7030000170	Resistor	MCR10EZHJ 18 $\Omega$ (180)
R112	7030000310	Resistor	MCR10EZHJ 270 $\Omega$ (271)
R113	7030000500	Resistor	MCR10EZHJ 10 k $\Omega$ (103)
R114	7030000430	Resistor	MCR10EZHJ 2.7 k $\Omega$ (272)
R115	7030000500	Resistor	MCR10EZHJ 10 k $\Omega$ (103)
R116	7030000430	Resistor	MCR10EZHJ 2.7 k $\Omega$ (272)
R117	7030000140	Resistor	MCR10EZHJ 10 $\Omega$ (100)
R118	7030000430	Resistor	MCR10EZHJ 2.7 k $\Omega$ (272)
R119	7030000500	Resistor	MCR10EZHJ 10 k $\Omega$ (103)
R120	7030000300	Resistor	MCR10EZHJ 220 $\Omega$ (221)
R121	7030000300	Resistor	MCR10EZHJ 220 $\Omega$ (221)
R122	7030000480	Resistor	MCR10EZHJ 6.8 k $\Omega$ (682)
R123	7030000440	Resistor	MCR10EZHJ 3.3 k $\Omega$ (332)
R124	7030000400	Resistor	MCR10EZHJ 1.5 k $\Omega$ (152)
R125	7030000420	Resistor	MCR10EZHJ 2.2 k $\Omega$ (222)
R126	7030000260	Resistor	MCR10EZHJ 100 $\Omega$ (101)
R127	7030000380	Resistor	MCR10EZHJ 1 k $\Omega$ (102)
R128	7030000350	Resistor	MCR10EZHJ 560 $\Omega$ (561)
R129	7030000400	Resistor	MCR10EZHJ 1.5 k $\Omega$ (152)
R130	7030000400	Resistor	MCR10EZHJ 1.5 k $\Omega$ (152)
R131	7030000530	Resistor	MCR10EZHJ 18 k $\Omega$ (183)
R132	7030000140	Resistor	MCR10EZHJ 10 $\Omega$ (100)
R133	7030000140	Resistor	MCR10EZHJ 10 $\Omega$ (100)
R134	7030000280	Resistor	MCR10EZHJ 150 $\Omega$ (151)
R135	7030000280	Resistor	MCR10EZHJ 150 $\Omega$ (151)
R136	7030000140	Resistor	MCR10EZHJ 10 $\Omega$ (100)
R137	7030000140	Resistor	MCR10EZHJ 10 $\Omega$ (100)
R138	7030000330	Resistor	MCR10EZHJ 390 $\Omega$ (391)
R139	7030000590	Resistor	MCR10EZHJ 56 k $\Omega$ (563)
R140	7030000300	Resistor	MCR10EZHJ 220 $\Omega$ (221)
R141	7030000340	Resistor	MCR10EZHJ 470 $\Omega$ (471)
R142	7010004320	Resistor	R20J 10 k $\Omega$
R144	7030000620	Resistor	MCR10EZHJ 100 k $\Omega$ (104)
R145	7030000500	Resistor	MCR10EZHJ 10 k $\Omega$ (103)
R146	7030000500	Resistor	MCR10EZHJ 10 k $\Omega$ (103)
R147	7010000880	Resistor	R25XJ 5.6 $\Omega$
R148	7030000290	Resistor	MCR10EZHJ 180 $\Omega$ (181)
C1	4030004390	Ceramic	C2012 SL 1H 020C- T-A
C2	4030004400	Ceramic	C2012 SL 1H 030C- T-A
C3	4030004410	Ceramic	C2012 SL 1H 040C- T-A
C5	4030004400	Ceramic	C2012 SL 1H 030C- T-A

## [MAIN B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C6	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C7	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C8	4030004400	Ceramic	C2012 SL 1H 030C- T-A
C9	4030004420	Ceramic	C2012 SL 1H 050C- T-A
C10	4030004370	Ceramic	C2012 SL 1H 0R5C- T-A
C11	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C12	4030004720	Ceramic	C2012 SL 1H 102K- T-A
C13	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C14	4030004370	Ceramic	C2012 SL 1H 0R5C- T-A
C15	4030004400	Ceramic	C2012 SL 1H 030C- T-A
C16	4030004370	Ceramic	C2012 SL 1H 0R5C- T-A
C17	4030008460	Ceramic	C2012 SL 1H 1R5C- T-A
C18	4030004390	Ceramic	C2012 SL 1H 020C- T-A
C19	4030004380	Ceramic	C2012 SL 1H 010C- T-A
C20	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C21	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C22	4030004490	Ceramic	C2012 SL 1H 150J- T-A
C23	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C24	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C25	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C26	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C27	4030004430	Ceramic	C2012 SL 1H 060D- T-A
C28	4030004370	Ceramic	C2012 SL 1H 0R5C- T-A
C29	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C30	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C31	4030004470	Ceramic	C2012 SL 1H 100D- T-A
C32	4030004370	Ceramic	C2012 SL 1H 0R5C- T-A
C33	4030004440	Ceramic	C2012 SL 1H 070D- T-A
C34	4030004420	Ceramic	C2012 SL 1H 050C- T-A
C35	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C36	4030004390	Ceramic	C2012 SL 1H 020C- T-A
C37	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C38	4030004520	Ceramic	C2012 SL 1H 220J- T-A
C39	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C40	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C41	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C42	4030004410	Ceramic	C2012 SL 1H 040C- T-A
C43	4030004590	Ceramic	C2012 SL 1H 680J- T-A
C44	4030004530	Ceramic	C2012 SL 1H 270J- T-A
C45	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C46	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C47	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C49	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C50	4030004370	Ceramic	C2012 SL 1H 0R5C- T-A
C53	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C55	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C56	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C57	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C58	4030004440	Ceramic	C2012 SL 1H 070D- T-A
C59	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C60	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C61	4510001120	Electrolytic	25 MS7 4R7 $\mu$ F
C62	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C63	4030004390	Ceramic	C2012 SL 1H 020C- T-A
C64	4030004410	Ceramic	C2012 SL 1H 040C- T-A
C66	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C67	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C68	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C69	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C70	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C71	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C72	4510001100	Electrolytic	16 MS7 10 $\mu$ F
C73	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C74	4020000820	Cylinder	UP125 SL 390J
C75	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C76	4510001100	Electrolytic	16 MS7 10 $\mu$ F
C77	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C78	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C79	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C80	4510001100	Electrolytic	16 MS7 10 $\mu$ F
C81	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C82	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C83	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C84	4030004410	Ceramic	C2012 SL 1H 040C- T-A
C85	4030004720	Ceramic	C2012 JB 1H 102K- T-A

## [MAIN B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
C86	4030004710	Ceramic C2012 JB 1H 471K- T-A
C87	4030004610	Ceramic C2012 SL 1H 101J- T-A
C88	4030004520	Ceramic C2012 SL 1H 220J- T-A
C89	4020000570	Cylinder UP050 SL 3R3K
C90	4030004500	Ceramic C2012 SL 1H 180J- T-A
C91	4030004720	Ceramic C2012 JB 1H 102K- T-A
C92	4030004720	Ceramic C2012 JB 1H 102K- T-A
C93	4030004710	Ceramic C2012 JB 1H 471K- T-A
C94	4030004610	Ceramic C2012 SL 1H 101J- T-A
C95	4030004890	Ceramic C2012 CH 1H 150J- T-A
C96	4610000820	Trimmer ECRGA035M30
C97	4030004710	Ceramic C2012 JB 1H 471K- T-A
C98	4030004720	Ceramic C2012 JB 1H 102K- T-A
C99	4030004940	Ceramic C2012 CH 1H 390J- T-A
C100	4030004950	Ceramic C2012 CH 1H 470J- T-A
C101	4030004470	Ceramic C2012 SL 1H 100D- T-A
C102	4030004370	Ceramic C2012 SL 1H 0R5C- T-A
C103	4030004490	Ceramic C2012 SL 1H 150J- T-A
C104	4030004370	Ceramic C2012 SL 1H 0R5C- T-A
C105	4030004480	Ceramic C2012 SL 1H 120J- T-A
C106	4030004400	Ceramic C2012 SL 1H 030C- T-A
C107	4030004710	Ceramic C2012 JB 1H 471K- T-A
C108	4030008450	Ceramic C2012 SL 1H R75C- T-A
C109	4610000350	Trimmer ECRMN002U12
C110	4030004710	Ceramic C2012 JB 1H 471K- T-A
C111	4030004710	Ceramic C2012 JB 1H 471K- T-A
C112	4550000260	Tantalum DN 1V 100M
C113	4030004710	Ceramic C2012 JB 1H 471K- T-A
C114	4550000260	Tantalum DN 1V 100M
C115	4030004710	Ceramic C2012 JB 1H 471K- T-A
C116	4030004710	Ceramic C2012 JB 1H 471K- T-A
C117	4550000260	Tantalum DN 1V 100M
C118	4030004710	Ceramic C2012 JB 1H 471K- T-A
C119	4550000340	Tantalum DN 1C 100M
C120	4030004710	Ceramic C2012 JB 1H 471K- T-A
C121	4030004710	Ceramic C2012 JB 1H 471K- T-A
C122	4030004710	Ceramic C2012 JB 1H 471K- T-A
C123	4030004710	Ceramic C2012 JB 1H 471K- T-A
C124	4030004710	Ceramic C2012 JB 1H 471K- T-A
C125	4550000340	Tantalum DN 1C 100M
C126	4030004400	Ceramic C2012 SL 1H 030C- T-A
C127	4030008460	Ceramic C2012 SL 1H 1R5C- T-A
C128	4030004410	Ceramic C2012 SL 1H 040C- T-A
C130	4030004710	Ceramic C2012 JB 1H 471K- T-A
C131	4030004710	Ceramic C2012 JB 1H 471K- T-A
C132	4030004710	Ceramic C2012 JB 1H 471K- T-A
C133	4030004710	Ceramic C2012 JB 1H 471K- T-A
C134	4030004710	Ceramic C2012 JB 1H 471K- T-A
C135	4030004710	Ceramic C2012 JB 1H 471K- T-A
C136	4030004390	Ceramic C2012 SL 1H 020C- T-A
C137	4030004380	Ceramic C2012 SL 1H 010C- T-A
C139	4510002350	Electrolytic 16 MS9 220 µF
C140	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C141	4030004720	Ceramic C2012 JB 1H 102K- T-A
C142	4030004710	Ceramic C2012 JB 1H 471K- T-A
C143	4510001120	Electrolytic 25 MS7 4R7 µF
C144	4030004710	Ceramic C2012 JB 1H 471K- T-A
C145	4030004490	Ceramic C2012 SL 1H 150J- T-A
C146	4030004710	Ceramic C2012 JB 1H 471K- T-A
C147	4030004710	Ceramic C2012 JB 1H 471K- T-A
C150	4030004710	Ceramic C2012 JB 1H 471K- T-A
C151	4030004720	Ceramic C2012 JB 1H 102K- T-A
C152	4510003670	Electrolytic 16 MS9 22 µF
C153	4030004710	Ceramic C2012 JB 1H 471K- T-A
C154	4030004710	Ceramic C2012 JB 1H 471K- T-A
C155	4510003680	Electrolytic 16 MS9 10 µF
C156	4030004710	Ceramic C2012 JB 1H 471K- T-A
C157	4030004710	Ceramic C2012 JB 1H 471K- T-A
C158	4020000100	Cylinder UP125 SL 220J
C159	4030004710	Ceramic C2012 JB 1H 471K- T-A
C160	4020000620	Cylinder UP050 SL 220J
C161	4020000620	Cylinder UP050 SL 220J
C162	4030004710	Ceramic C2012 JB 1H 471K- T-A
C163	4030004710	Ceramic C2012 JB 1H 471K- T-A
C164	4030004410	Ceramic C2012 SL 1H 040C- T-A

## [MAIN B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
C165	4030004390	Ceramic C2012 SL 1H 020C- T-A
C166	4030004410	Ceramic C2012 SL 1H 040C- T-A
C167	4030004710	Ceramic C2012 JB 1H 471K- T-A
C168	4030004710	Ceramic C2012 JB 1H 471K- T-A
C169	4510001100	Electrolytic 16 MS7 10 µF
C170	4030004710	Ceramic C2012 JB 1H 471K- T-A
C171	4030004710	Ceramic C2012 JB 1H 471K- T-A
C172	4510000970	Electrolytic 10 MS9 100 µF *
C173	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C174	4030004710	Ceramic C2012 JB 1H 471K- T-A
C175	4030004710	Ceramic C2012 JB 1H 471K- T-A
C176	4030004710	Ceramic C2012 JB 1H 471K- T-A
C177	4030004710	Ceramic C2012 JB 1H 471K- T-A
C178	4030004710	Ceramic C2012 JB 1H 471K- T-A
C179	4030004520	Ceramic C2012 SL 1H 080J- T-A
C180	4030004620	Ceramic C2012 SL 1H 121J- T-A
C181	4030004490	Ceramic C2012 SL 1H 150J- T-A
C182	4030004710	Ceramic C2012 JB 1H 471K- T-A
C183	4030004450	Ceramic C2012 SL 1H 080D- T-A
C184	4030004380	Ceramic C2012 SL 1H 010C- T-A
C185	4030004410	Ceramic C2012 SL 1H 040C- T-A
C186	4030004390	Ceramic C2012 SL 1H 020C- T-A
C187	4030004410	Ceramic C2012 SL 1H 040C- T-A
C188	4510001120	Electrolytic 25 MS7 4R7 µF
C189	4030004720	Ceramic C2012 JB 1H 102K- T-A
C190	4030004720	Ceramic C2012 JB 1H 102K- T-A
C191	4550002890	Tantalum TESVA 1A 225M1-8L
C192	4030004520	Ceramic C2012 SL 1H 220J- T-A
C193	4030004520	Ceramic C2012 SL 1H 220J- T-A
C194	4030004760	Ceramic C2012 JF 1E 104Z- T-A
C195	4030004720	Ceramic C2012 JB 1H 102K- T-A
C196	4510003660	Electrolytic 25 MS9 10 µF
C197	4030004710	Ceramic C2012 JB 1H 471K- T-A
C198	4550000370	Tantalum TESVC 1E 475M-12L
C199	4030004710	Ceramic C2012 JB 1H 471K- T-A
C200	4510003660	Electrolytic 25 MS9 10 µF
C201	4550001010	Tantalum TESVC 1E 335M-12L
C202	4030004760	Ceramic C2012 JF 1E 104Z- T-A
C203	4510001690	Electrolytic 6R3 MS7 47 µF
C204	4030004710	Ceramic C2012 JB 1H 471K- T-A
C205	4030004760	Ceramic C2012 JF 1E 104Z- T-A
C206	4510001470	Electrolytic 50 MS5 1 µF
C207	4030004760	Ceramic C2012 JF 1E 104Z- T-A
C208	4030004730	Ceramic C2012 JB 1H 222K- T-A
C209	4030004720	Ceramic C2012 JB 1H 102K- T-A
C210	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C211	4030006450	Ceramic C2012 JF 1H 103Z- T-A
C212	4030004730	Ceramic C2012 JB 1H 222K- T-A
C213	4030004710	Ceramic C2012 JB 1H 471K- T-A
C214	4510001820	Electrolytic 10 MS5 10 µF
C215	4030004720	Ceramic C2012 JB 1H 102K- T-A
C216	4030004710	Ceramic C2012 JB 1H 471K- T-A
C218	4030004710	Ceramic C2012 JB 1H 471K- T-A
C219	4510003690	Electrolytic 16 MS9 33 µF
C220	4030004390	Ceramic C2012 SL 1H 020C- T-A
C221	4030004390	Ceramic C2012 SL 1H 020C- T-A
C222	4030004720	Ceramic C2012 JB 1H 102K- T-A
C223	4020000730	Cylinder UP050 SL 150J
C224	4030004710	Ceramic C2012 JB 1H 471K- T-A
C225	4030004400	Ceramic C2012 SL 1H 030C- T-A
EP1	0910020774	P.C. Board B 1967D (MAIN B)

[FIL A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C1	4030008460	Ceramic	C2012 SL 1H 1R5C- T-A
C2	4030004400	Ceramic	C2012 SL 1H 030C- T-A
EP1	0910022950	P.C. Board	B 2234 (FIL A)
EP2	6910001400	Lead Frame	VD2.54-0.7-7

[FIL B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C1	4030004390	Ceramic	C2012 SL 1H 020C- T-A
C2	4030004370	Ceramic	C2012 SL 1H 0R5C- T-A
C3	4030004400	Ceramic	C2012 SL 1H 030C- T-A
C4	4030008460	Ceramic	C2012 SL 1H 1R5C- T-A
C5	4030008460	Ceramic	C2012 SL 1H 1R5C- T-A
C6	4030004410	Ceramic	C2012 SL 1H 040C- T-A
C7	4030004550	Ceramic	C2012 SL 1H 330J- T-A
C8	4030004390	Ceramic	C2012 SL 1H 020C- T-A
C10	4030004410	Ceramic	C2012 SL 1H 040C- T-A
EP1	0910022961	P.C. Board	B 2235A (FIL B)
EP2	6910001400	Lead Frame	VD2.54-0.7-7

[FIL C UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C1	4030004390	Ceramic	C2012 SL 1H 020C- T-A
C2	4030004370	Ceramic	C2012 SL 1H 0R5C- T-A
C3	4030004400	Ceramic	C2012 SL 1H 030C- T-A
C4	4030008460	Ceramic	C2012 SL 1H 1R5C- T-A
C5	4030008460	Ceramic	C2012 SL 1H 1R5C- T-A
C6	4030004410	Ceramic	C2012 SL 1H 040C- T-A
C7	4030004550	Ceramic	C2012 SL 1H 330J- T-A
C8	4030004390	Ceramic	C2012 SL 1H 020C- T-A
C9	4030004450	Ceramic	C2012 SL 1H 080D- T-A
C10	4030004410	Ceramic	C2012 SL 1H 040C- T-A
EP1	0910022961	P.C. Board	B 2235A (FIL C)
EP2	6910001400	Lead Frame	VD2.54-0.7-7

[IF B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1110001520	IC	TK10420M
Q1	1530000160	Transistor	2SC2712-Y (TE85R)
Q2	1530000160	Transistor	2SC2712-Y (TE85R)
Q3	1530000160	Transistor	2SC2712-Y (TE85R)
D1	1730000730	Zener	RD6.2M-T2B2

[IF B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
D2	1750000070	Diode	1SS226 (TE85R)
D3	1750000070	Diode	1SS226 (TE85R)
X1	6050003010	Crystal	CR-166
X2	6070000010	Discriminator	CDB455C7A
FI1	2020000550	Ceramic Filter	CFUM455E
R1	7030000540	Resistor	MCR10EZHZ 22 kΩ (223)
R2	7030000400	Resistor	MCR10EZHZ 1.5 kΩ (152)
R3	7030000400	Resistor	MCR10EZHZ 1.5 kΩ (152)
R4	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R5	7030000400	Resistor	MCR10EZHZ 1.5 kΩ (152)
R6	7030000690	Resistor	MCR10EZHZ 390 kΩ (394)
R7	7030000470	Resistor	MCR10EZHZ 5.6 kΩ (562)
R8	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R9	7030000220	Resistor	MCR10EZHZ 47 Ω (470)
R10	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R11	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R12	7030000280	Resistor	MCR10EZHZ 150 Ω (151)
R13	7030000500	Resistor	MCR10EZHZ 10 kΩ (103)
R14	7030000650	Resistor	MCR10EZHZ 180 kΩ (184)
R15	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R16	7310001840	Trimmer	RH0421CS3J08A (472)
R17	7030000430	Resistor	MCR10EZHZ 2.7 kΩ (272)
R18	7030000620	Resistor	MCR10EZHZ 100 kΩ (104)
R19	7030000580	Resistor	MCR10EZHZ 47 kΩ (473)
R20	7030000430	Resistor	MCR10EZHZ 2.7 kΩ (272)
R21	7030000380	Resistor	MCR10EZHZ 1 kΩ (102)
R23	7030000260	Resistor	MCR10EZHZ 100 Ω (101)
C1	4510001100	Electrolytic	16 MS7 10 μF
C2	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C5	4030004620	Ceramic	C2012 SL 1H 121J- T-A
C6	4030004570	Ceramic	C2012 SL 1H 470J- T-A
C8	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C9	4550000530	Tantalum	TESVA 1V 104M1-8L
C10	4030004600	Ceramic	C2012 SL 1H 820J- T-A
C11	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C12	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C13	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C14	4030004530	Ceramic	C2012 SL 1H 270J- T-A
C15	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C16	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C17	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C18	4510001150	Electrolytic	50 MS7 R47 μF
C19	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C20	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C21	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C22	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C23	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C24	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C25	4510001160	Electrolytic	50 MS7 1 μF
C26	4510001100	Electrolytic	16 MS7 10 μF
EP1	0910023892	P.C. Board	B 2315B (IF B)
EP2	6510008510	Lead Frame	PT2.54-1.0-20 (L)

[RF B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1180000010	IC	TA78L005AP
IC2	1130000830	IC	μPD4094BG-T1

**[RF B UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION	
Q1	1530000160	Transistor	2SC2712-Y (TE85F)
X1	6050005510	Crystal	CR-266
R1	7030002880	Resistor	MCR10EZHF 12 k $\Omega$ (123)
R2	7520000030	Posistor	PTH59F04BG222TS
R3	7310001850	Trimmer	RH0421CS4J08A (473)
R4	7030000460	Resistor	MCR10EZHZ 4.7 k $\Omega$ (472)
R5	7030003850	Resistor	MCR10EZHF 20 k $\Omega$ (203)
R6	7030000260	Resistor	MCR10EZHZ 100 $\Omega$ (101)
R7	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R8	7030000620	Resistor	MCR10EZHZ 100 k $\Omega$ (104)
R9	7030000420	Resistor	MCR10EZHZ 2.2 k $\Omega$ (222)
R10	7410000500	Resistor Array	RKM10L 103J
C1	4550000400	Tantalum	DN 1C 2R2M
C2	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C3	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
C4	4550000010	Tantalum	DN 1C 4R7M
C5	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C6	4030004420	Ceramic	C2012 SL 1H 050C- T-A
C7	4030004390	Ceramic	C2012 SL 1H 020C- T-A
C8	4030006450	Ceramic	C2012 JF 1H 103Z- T-A
C9	4030004610	Ceramic	C2012 SL 1H 101J- T-A
C10	4030004760	Ceramic	C2012 JF 1E 104Z- T-A
EP1	0910020453	P.C. Board	B 1972C (RF B)
EP2	6510008510	Lead Frame	PT2.54-1.0-20 (L)

**[VCO B UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION	
C5	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C6	4030004400	Ceramic	C2012 SL 1H 030C- T-A
C7	4030004400	Ceramic	C2012 SL 1H 030C- T-A
C8	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C9	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C10	4030004380	Ceramic	C2012 SL 1H 010C- T-A
C11	4030004720	Ceramic	C2012 JB 1H 102K- T-A
C12	4030004470	Ceramic	C2012 SL 1H 100D- T-A
C13	4030004410	Ceramic	C2012 SL 1H 040C- T-A
C14	4030004410	Ceramic	C2012 SL 1H 040C- T-A
EP1	0910021932	P.C. Board	B 1974B (VCO B)

**[VCO B UNIT]**

REF. NO.	ORDER NO.	DESCRIPTION	
Q1	1560000130	FET	2SK125
Q2	1530000370	Transistor	2SC3356-T2B
D1	1720000090	Varicap	1T25
D2	1720000090	Varicap	1T25
D3	1720000090	Varicap	1T25
D4	1720000090	Varicap	1T25
L1	6170000160	Coil	LW-17
L2	6180001380	Coil	LAL 02KR 1R0K
L3	6180001380	Coil	LAL 02KR 1R0K
L4	6110001980	Coil	LA-222
R1	7010004190	Resistor	R20J 1 k $\Omega$
R2	7010004370	Resistor	R20J 22 k $\Omega$
R3	7030000340	Resistor	MCR10EZHZ 470 $\Omega$ (471)
R4	7010003950	Resistor	R20J 10 $\Omega$
R5	7030000340	Resistor	MCR10EZHZ 470 $\Omega$ (471)
R6	7030000160	Resistor	MCR10EZHZ 15 $\Omega$ (150)
R7	7030000300	Resistor	MCR10EZHZ 220 $\Omega$ (221)
R8	7030000460	Resistor	MCR10EZHZ 4.7 k $\Omega$ (472)
R9	7030000400	Resistor	MCR10EZHZ 1.5 k $\Omega$ (152)
R10	7030000260	Resistor	MCR10EZHZ 100 $\Omega$ (101)
C1	4550000560	Tantalum	TESVA 1V 334M1-8L
C2	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C3	4030004710	Ceramic	C2012 JB 1H 471K- T-A
C4	4550000450	Tantalum	TESVC 1C 106M-12L

# SECTION 6 ADJUSTMENT PROCEDURES (IC-2400A/E)

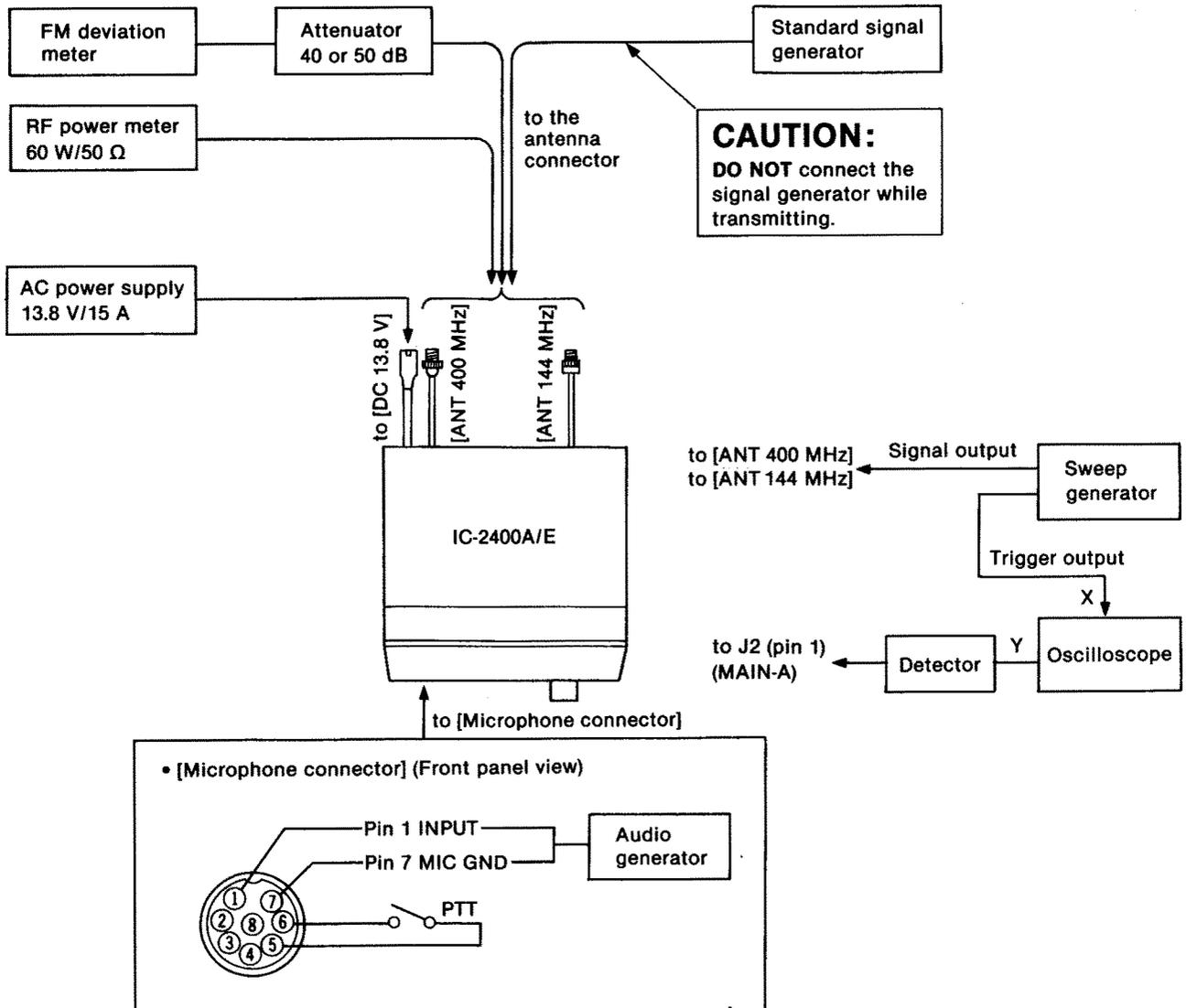
## 6-1 PREPARATION BEFORE SERVICING

### REQUIRED TEST EQUIPMENT

EQUIPMENT	GRADE AND RANGE	EQUIPMENT	GRADE AND RANGE
AC power supply	Output voltage : 13.8 V DC Current capacity : 15 A or more	Audio generator	Frequency range : 300~3000 Hz Output level : 1~500 mV
RF power meter (terminated type)	Measuring range : 1~60 W Frequency range : 0.1~500 MHz Impedance : 50 Ω SWR : Less than 1.2: 1	Attenuator	Power attenuation : 40 or 50 dB Capacity : 60 W or more
Frequency counter	Frequency range : 0.1~470 MHz Frequency accuracy : ±1 ppm or better Sensitivity : 100 mV or better	Sweep generator	Frequency range : 0.1~460 MHz Sweep bandwidth : At least 10 MHz Output impedance : 50 Ω
Oscilloscope	Frequency range : DC~20 MHz Measuring range : 0.01~10 V	Detector	
Standard signal generator (SSG)	Frequency range : 0.1~470 MHz Output level : -127~-17 dBm (0.1 μV~32 mV)		
DC voltmeter	Input impedance : 50 kΩ/DC or better		

CW: Clockwise  
CCW: Counterclockwise

### CONNECTION



## 6-2 PLL ADJUSTMENT

ADJUSTMENT		ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
			UNIT	LOCATION		UNIT	ADJUST
144 MHz LOCK VOLTAGE	1	<ul style="list-style-type: none"> <li>• Displayed frequency: 145.000 MHz</li> <li>• Receiving</li> </ul>	MAIN-B	Connect the DC voltmeter to CP.	9.0 V	MAIN-B (V-VCO)	L23
400 MHz LOCK VOLTAGE	1	<ul style="list-style-type: none"> <li>• Displayed frequency: 445.000 MHz (USA) 435.000 MHz (EUR, AUS, ASIA)</li> <li>• Receiving</li> </ul>	MAIN-A	Connect the DC voltmeter to R8.	6.5 V ± 0.5 V (USA) 6.0 V ± 0.5 V (EUR, AUS, ASIA)		Verify
144 MHz REFERENCE FREQUENCY	1	<ul style="list-style-type: none"> <li>• Displayed frequency: 145.000 MHz</li> <li>• Connect the RF power meter or a 50 Ω dummy load.</li> <li>• Simplex</li> <li>• Transmitting</li> </ul>	Rear panel	Loosely couple the frequency counter to the [ANT 144 MHz] connector.	145.000 MHz	MAIN-B	C153
400 MHz REFERENCE FREQUENCY	1	<ul style="list-style-type: none"> <li>• Displayed frequency: 445.000 MHz (USA) 435.000 MHz (EUR, AUS, ASIA)</li> <li>• Connect the RF power meter or a 50 Ω dummy load.</li> <li>• Simplex</li> <li>• Transmitting</li> </ul>	Rear panel	Loosely couple the frequency counter to the [ANT 400 MHz] connector.	445.000 MHz (USA) 435.000 MHz (EUR, AUS, ASIA)	MAIN-A	C227

• MAIN A UNIT

C227 400 MHz reference  
frequency adjustment

R8 400 MHz lock voltage  
check point



• MAIN B UNIT

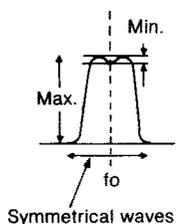
C153 144 MHz reference  
frequency adjustment

L23 144 MHz lock voltage  
adjustment

CP 144 MHz lock  
voltage check  
point

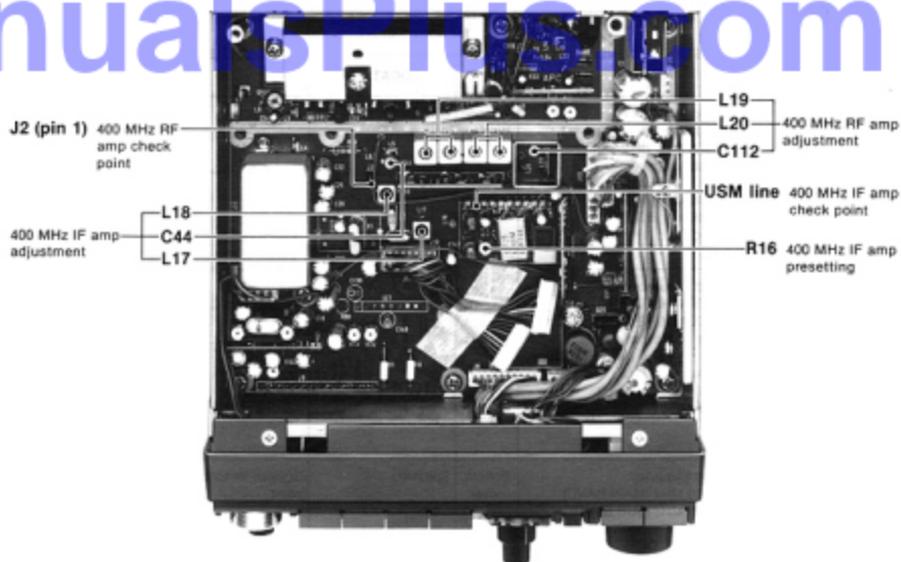


6-3 RECEIVER ADJUSTMENT

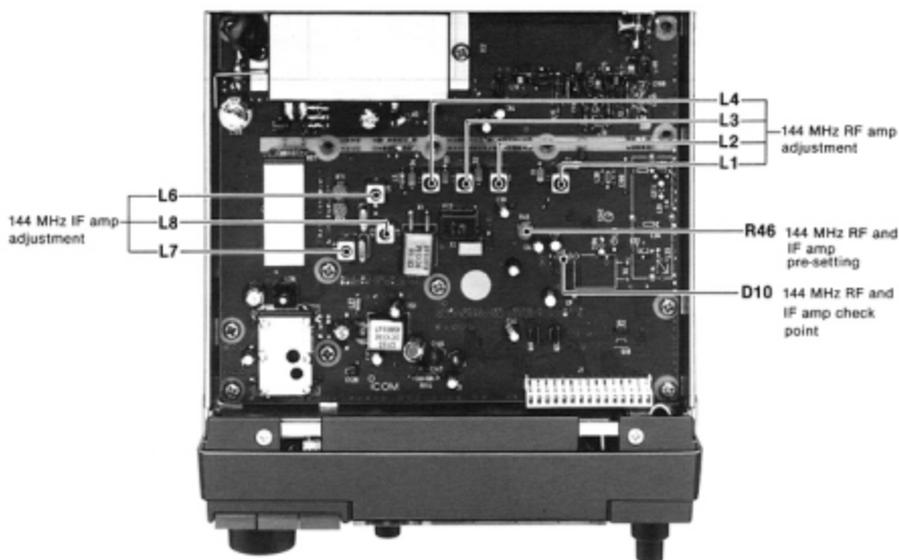
ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
		UNIT	LOCATION		UNIT	ADJUST
144 MHz RF AMP	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 146.000 MHz (IC-2400A) 145.000 MHz (IC-2400E)</li> <li>• Set the signal generator; Level : 1.0 <math>\mu</math>V* (-107 dBm) Modulation: 1 kHz Deviation : <math>\pm</math>3.5 kHz</li> <li>• R46 : Max. CW</li> <li>• [SQL] control : Max. CCW</li> <li>• Receiving</li> </ul>	MAIN-B	Connect the DC voltmeter to the cathode of D10.	Maximum	MAIN-B	Adjust in sequence L1, L2, L3, L4
NOTE: Adjust the signal generator output level for each time showing the DC voltmeter at 30 % of the lowest range full scale.						
144 MHz IF AMP	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 146.000 MHz (IC-2400A) 145.000 MHz (IC-2400E)</li> <li>• Set the signal generator; Level : 1.0 <math>\mu</math>V* (-107 dBm) Modulation: 1 kHz Deviation : <math>\pm</math>6.0 kHz</li> <li>• R46 : Max. CW</li> <li>• Receiving</li> </ul>	MAIN-B	Connect the DC voltmeter to the cathode of D10.	Maximum	MAIN-B	Adjust in sequence L6, L7, L8
NOTE: Adjust the signal generator output level for each time showing the DC voltmeter at 30 % of the lowest range full scale.						
400 MHz RF AMP	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 445.000 MHz (USA) 435.000 MHz (EUR, AUS, ASIA)</li> <li>• Set the sweep generator; Sweep level: 22 mV* (-20 dBm) Center frequency: Same as the displayed frequency Sweep band width: 10 MHz or 20 MHz</li> <li>• Receiving</li> </ul>	MAIN-A	Connect the oscilloscope to J2 (pin 1) via the detector.	Adjust as follows:  Symmetrical waves	MAIN-A	C112, L19, L20
400 MHz IF AMP	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 445.000 MHz (USA) 435.000 MHz (EUR, AUS, ASIA)</li> <li>• Set the signal generator; Level : 1.0 <math>\mu</math>V* (-107 dBm) Modulation: 1 kHz Deviation : <math>\pm</math>6.0 kHz</li> <li>• R16 (IF-A) : Max. CW</li> <li>• [SQL] control : Max. CCW</li> <li>• Receiving</li> </ul>	MAIN-A	Connect the DC voltmeter to the check point (USM line).	Maximum	MAIN-A	Adjust in sequence C44, L18, L17
NOTE: Adjust the signal generator output level for each time showing the DC voltmeter at 30 % of the lowest range full scale.						

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

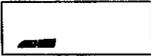
• MAIN A UNIT



• MAIN B UNIT



## RECEIVER ADJUSTMENT (CONTINUOUS)

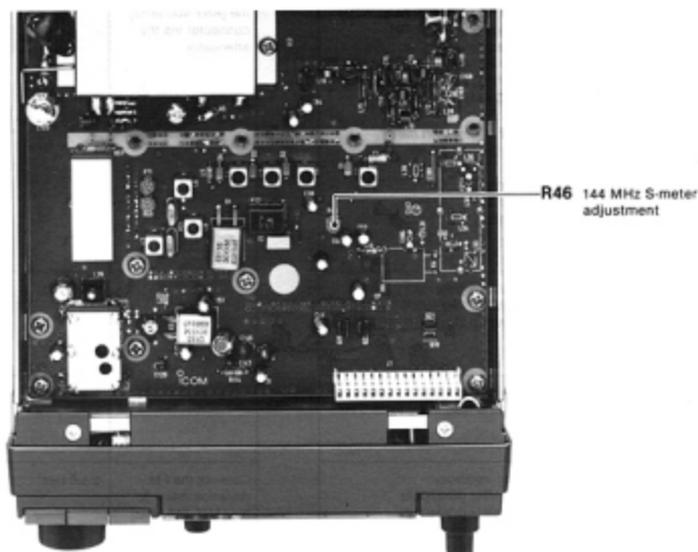
ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
		UNIT	LOCATION		UNIT	ADJUST
S-METER	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 146.000 MHz (IC-2400A) 145.000 MHz (IC-2400E)</li> <li>• Set the signal generator; Level : 1.0 <math>\mu</math>V* (-107 dBm) Modulation: 1 kHz Deviation : <math>\pm</math>3.5 kHz</li> <li>• Receiving</li> </ul>	Function display	S-indicator	2 dots (S3) 	MAIN-B	R46
	2 <ul style="list-style-type: none"> <li>• Displayed frequency: 445.000 MHz (USA) 435.000 MHz (EUR, AUS, ASIA)</li> <li>• Set the signal generator; Level : 1.0 <math>\mu</math>V* (-107 dBm) Modulation: 1 kHz Deviation : <math>\pm</math>3.5 kHz</li> <li>• Receiving</li> </ul>					
SQUELCH BALANCE	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 435.000 MHz (MAIN BAND) 145.000 MHz (SUB BAND)</li> <li>• Set the signal generator; Level : OFF</li> <li>• SUB SQL : Max. CW</li> <li>• Receiving</li> </ul>	Bottom cover	Speaker	Squelch threshold point	Function display	MAIN [SQL] VOLUME
	2 <ul style="list-style-type: none"> <li>• Displayed frequency: 145.000 MHz (MAIN BAND) 435.000 MHz (SUB BAND)</li> </ul>					MAIN-A

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

• MAIN A UNIT



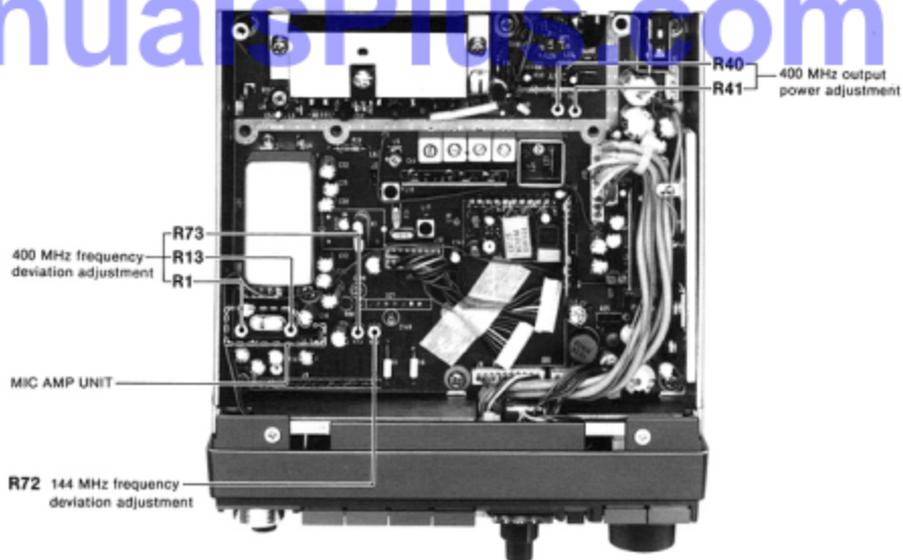
• MAIN B UNIT



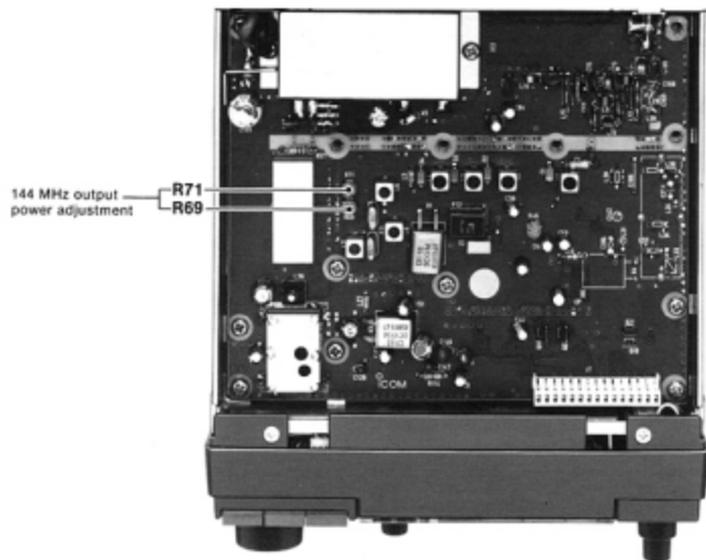
## 6-4 TRANSMITTER ADJUSTMENT

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT				
		UNIT	LOCATION		UNIT	ADJUST			
OUTPUT POWER	1	<ul style="list-style-type: none"> <li>Displayed frequency: 146.000 MHz (IC-2400A) 145.000 MHz (IC-2400E)</li> <li>Output power : HIGH</li> <li>Simplex</li> <li>Transmitting</li> </ul>	Rear panel	Connect the RF power meter to the [ANT 144 MHz] connector.	45 W	MAIN-B	R71		
	2	<ul style="list-style-type: none"> <li>Output power : LOW</li> </ul>					5.0 W	R69	
	3	Repeat steps 1 and 2 several times.							
	4	<ul style="list-style-type: none"> <li>Displayed frequency: 445.000 MHz (USA) 435.000 MHz (EUR, AUS, ASIA)</li> <li>Output power : HIGH</li> </ul>	Rear panel	Connect the RF power meter to the [ANT 400 MHz] connector.	35 W	MAIN-A	R41		
	5	<ul style="list-style-type: none"> <li>Output power: LOW</li> </ul>					5.0 W	R40	
	6	Repeat steps 4 and 5 several times.							
FREQUENCY DEVIATION	1	<ul style="list-style-type: none"> <li>Displayed frequency: 445.000 MHz (USA) 435.000 MHz (EUR, AUS, ASIA)</li> <li>Output power : HIGH</li> <li>Set the audio generator; 65 mV/1.0 kHz (USA) 20 mV/1.0 kHz (EUR, AUS, ASIA)</li> <li>R13 (MIC AMP) : Max. CW</li> <li>Tone : OFF</li> <li>Set the FM deviation meter. HPF : 50 Hz LPF : 20 kHz De-emphasis: OFF Detector : (P-P)/2</li> <li>Transmitting</li> </ul>	Rear Panel	Connect the FM deviation meter to the [ANT 400 MHz] connector via the attenuator.	$\pm 4.8$ kHz	MAIN-A	R73		
	2	<ul style="list-style-type: none"> <li>Set the audio generator; 6.5 mV/1.0 kHz (USA) 2.0 mV/1.0 kHz (EUR, AUS, ASIA)</li> </ul>					$\pm 3.5$ kHz	MAIN A (MIC) (AMP)	R13
	3	<ul style="list-style-type: none"> <li>Set the audio generator: OFF</li> <li>Set the tone frequency to 88.5 Hz.</li> </ul>					$\pm 0.75$ kHz		R1
	4	<ul style="list-style-type: none"> <li>Displayed frequency: 146.000 MHz (IC-2400A) 145.000 MHz (IC-2400E)</li> <li>Set the audio generator; 65 mV/1.0 kHz (USA) 20 mV/1.0 kHz (EUR, AUS, ASIA)</li> <li>Tone : OFF</li> </ul>					Connect the FM deviation meter to the [ANT 144 MHz] connector via the attenuator.	$\pm 4.8$ kHz	MAIN-A

• MAIN A AND MIC AMP UNITS



• MAIN B UNIT



# SECTION 7 ADJUSTMENT PROCEDURES (IC-2500A/E)

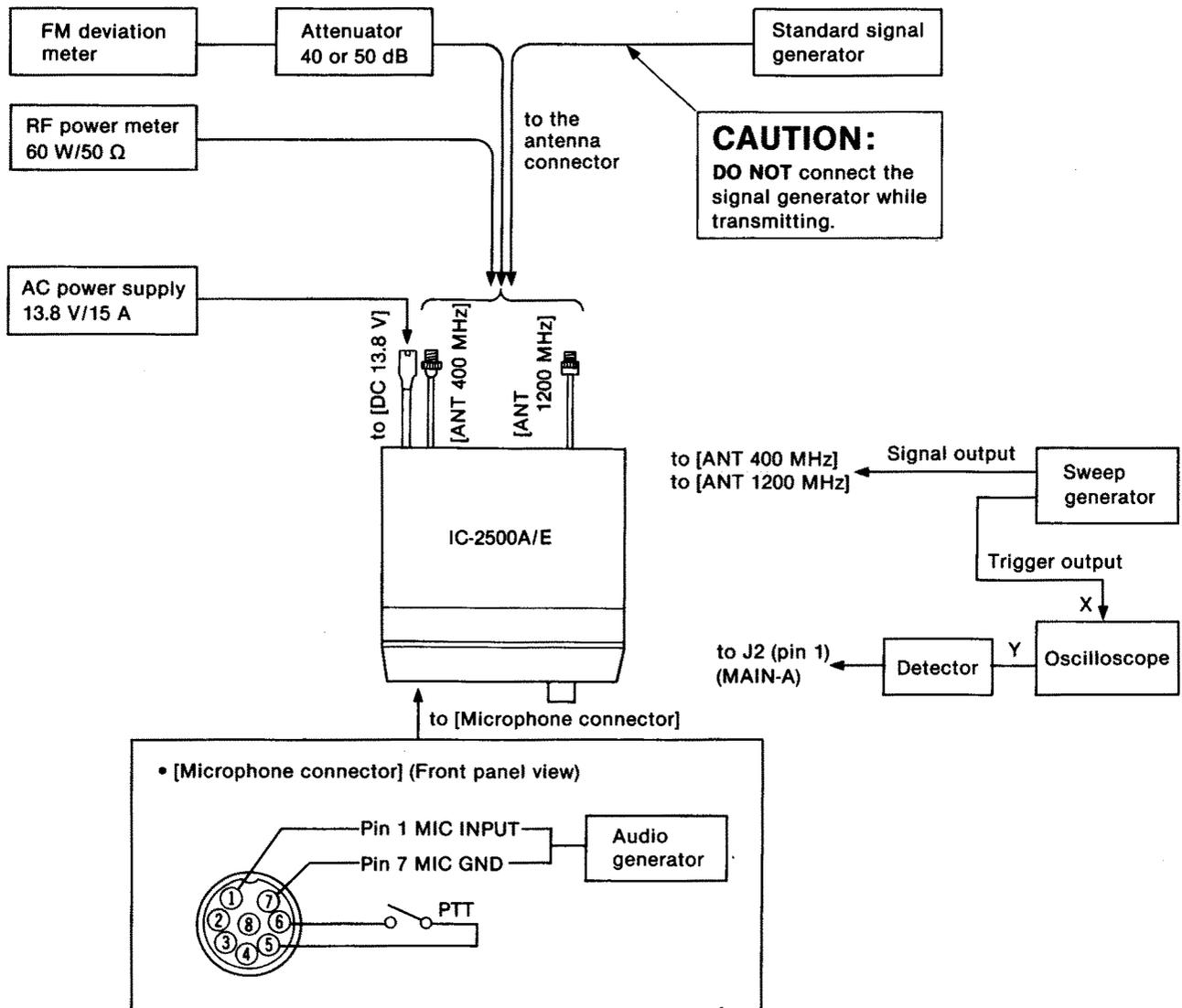
## 7-1 PREPARATION BEFORE SERVICING

### ■ REQUIRED TEST EQUIPMENT

EQUIPMENT	GRADE AND RANGE	EQUIPMENT	GRADE AND RANGE
AC power supply	Output voltage : 13.8 V DC Current capacity : 15 A or more	Audio generator	Frequency range : 300~3000 Hz Output level : 0~500 mV
RF power meter (terminated type)	Measuring range : 1~60 W Frequency range : 400~470 MHz 1200~1400 MHz	Attenuator	Power attenuation : 40 or 50 dB Capacity : 60 W or more
	Impedance : 50 Ω SWR : Less than 1.2: 1	Sweep generator	Frequency range : 0.1~460 MHz Sweep bandwidth : At least 10 MHz Output impedance : 50 Ω
Frequency counter	Frequency range : 0.1~1400 MHz Frequency accuracy : ±1 ppm or better Sensitivity : 100 mV or better	Detector	
Oscilloscope	Frequency range : DC~20 MHz Measuring range : 0.01~10 V		
Standard signal generator (SSG)	Frequency range : 0.1~1400 MHz Output level : -127~-17 dBm (0.1 μV~32 mV)		
DC voltmeter	Input impedance : 50 kΩ/DC or better		

CW: Clockwise  
CCW: Counterclockwise

### ■ CONNECTION



## 7-2 PLL ADJUSTMENT

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
		UNIT	LOCATION		UNIT	ADJUST
400 MHz LOCK VOLTAGE	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 445.000 MHz (USA) 435.000 MHz (EUR, AUS)</li> <li>• Receiving</li> </ul>	MAIN-A	Connect the DC voltmeter to R8.	11.0 V ± 0.5 V (USA) 10.0 V ± 0.5 V (EUR, AUS)		Verify
400 MHz REFERENCE FREQUENCY	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 445.000 MHz (USA) 435.000 MHz (EUR, AUS)</li> <li>• Connect the RF power meter or a 50 Ω dummy load.</li> <li>• Simplex</li> <li>• Transmitting</li> </ul>	Rear panel	Loosely couple the frequency counter to the [ANT 400 MHz] connector.	445.000 MHz (USA) 435.000 MHz (EUR, AUS)	MAIN-A	C227
1200 MHz REFERENCE FREQUENCY	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 1300.000 MHz</li> <li>• Connect the RF power meter or a 50 Ω dummy load.</li> <li>• Simplex</li> <li>• Transmitting</li> </ul>	Rear panel	Loosely couple the frequency counter to the [ANT 1200 MHz] connector.	1300.000 MHz	MAIN-B (REF. B)	R3

• MAIN A UNIT

C227 400 MHz reference  
frequency adjustment

R8 400 MHz lock voltage  
check point

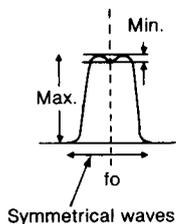


• MAIN B UNIT

R3 1200 MHz reference  
frequency adjustment

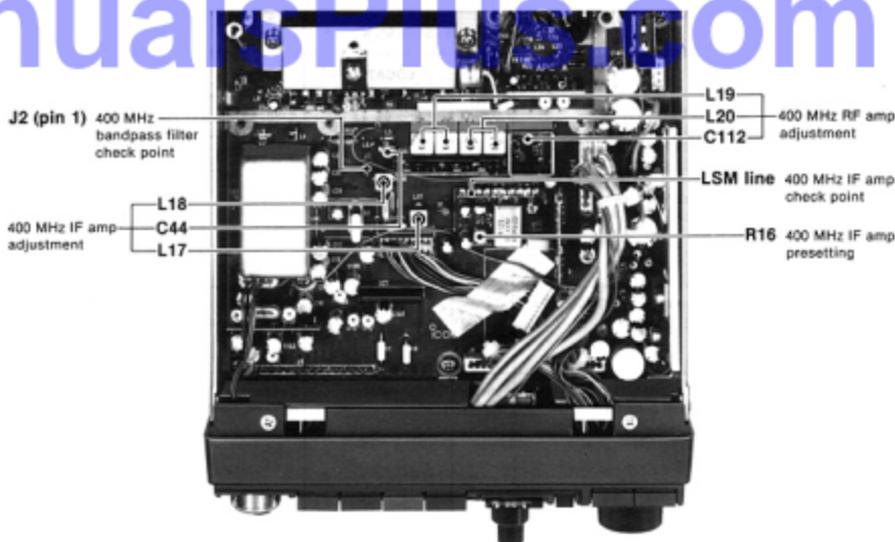


### 7-3 RECEIVER ADJUSTMENT

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
		UNIT	LOCATION		UNIT	ADJUST
400 MHz RF AMP	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 445.000 MHz (USA) 435.000 MHz (EUR, AUS)</li> <li>• Set the sweep generator; Sweep level: 22 mV* (-20 dBm) Center frequency: Same as the displayed frequency Sweep band width: 10 MHz or 20 MHz</li> <li>• Receiving</li> </ul>	MAIN-A	Connect the oscilloscope to J2 (pin 1) via the detector.	Adjust as follows:  	MAIN-A	C112, L19, L20
400 MHz IF AMP	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 445.000 MHz (USA) 435.000 MHz (EUR, AUS)</li> <li>• Set the signal generator; Level : 1.0 μV* (-107 dBm) Modulation: 1 kHz Deviation : ±6.0 kHz</li> <li>• R16 (IF-A) : Max. CW</li> <li>• [SQL] control : Max. CCW</li> <li>• Receiving</li> </ul>	MAIN-A	Connect the DC voltmeter to the check point (LSM line).	Maximum	MAIN-A	Adjust in sequence C44, L18, L17
NOTE: Adjust the signal generator output level for each time showing the DC voltmeter at 30 % of the lowest range full scale.						
1200 MHz 2nd Lo Frequency	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 1270.000 MHz</li> <li>• Receiving</li> </ul>	MAIN-B	Connect the frequency counter to R142.	119.400 MHz	MAIN-B	C96
1200 MHz IF AMP	1 <ul style="list-style-type: none"> <li>• Displayed frequency: 1270.000 MHz</li> <li>• Set the signal generator; Level : 1.0 μV* (-107 dBm) Modulation: 1 kHz Deviation : ±3.5 kHz</li> <li>• R16 (IF-B) : Max. CW</li> <li>• [SQL] control : Max. CCW</li> <li>• Receiving</li> </ul>	MAIN-B	Connect the DC voltmeter to the check point (HSRF line).	Maximum	MAIN-B	Adjust in sequence L9, L2, L3, L4
				Maximum		Adjust in sequence L11, L12, L13
	2	3	Connect the frequency counter to R142.	119.400 MHz	C96	
	NOTE: Adjust the signal generator output level for each time showing the DC voltmeter at 30 % of the lowest range full scale. If the signal generator output level reaches 0.18 μV (-122 dBm) or less, adjust R16 on the IF B UNIT for each time showing the DC voltmeter at 30 % of the lowest range full scale.					
4	<ul style="list-style-type: none"> <li>• Set the signal generator; Deviation : ±6.0 kHz</li> </ul>	MAIN-B	Connect the DC voltmeter to the check point (HSRF line).	Maximum		Adjust in sequence L6, L7

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

• MAIN A UNIT



• MAIN B UNIT



## RECEIVER ADJUSTMENT (CONTINUOUS)

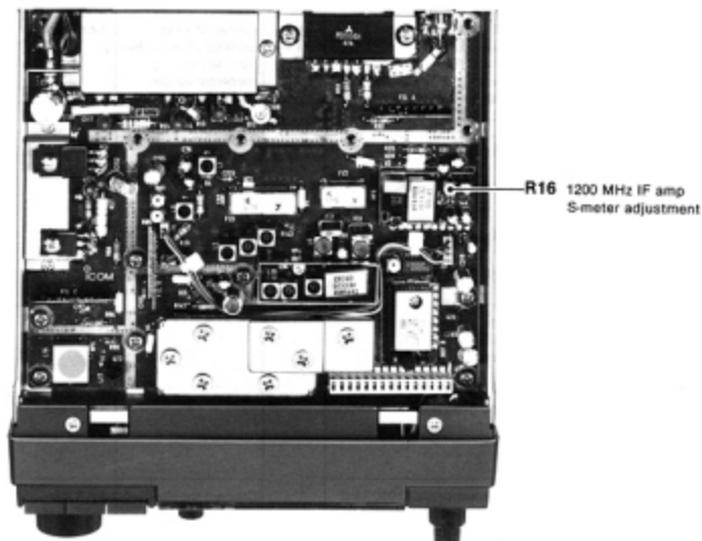
ADJUSTMENT		ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
			UNIT	LOCATION		UNIT	ADJUST
S-METER	1	<ul style="list-style-type: none"> <li>Displayed frequency: 445.000 MHz (USA) 435.000 MHz (EUR, AUS)</li> <li>Set the signal generator; Level : 1.0 V* (-107 dBm) Modulation: 1 kHz Deviation : ±3.5 kHz</li> <li>Receiving</li> </ul>	Function display	S-indicator	2 dots (S3)	MAIN-A (IF-A)	R16
	2	<ul style="list-style-type: none"> <li>Displayed frequency: 1270.000 MHz</li> </ul>			5 dots (S9)		
1200 MHz AFC	1	<ul style="list-style-type: none"> <li>Displayed frequency: 1270.000 MHz</li> <li>Set the signal generator; Level : OFF</li> <li>AFC : ON</li> <li>Receiving</li> </ul>	Function display	Center indicator	Center (AFC indicator turns OFF)	MAIN-A	R80
	2	<ul style="list-style-type: none"> <li>Set the signal generator; Level : 1.0 μV* (-107 dBm) Modulation: 1 kHz Deviation : ±3.5 kHz</li> </ul>					Verify
	3	<ul style="list-style-type: none"> <li>Shift the signal generator ±5.5 kHz.</li> </ul>					
SQUELCH BALANCE	1	<ul style="list-style-type: none"> <li>Displayed frequency: 435.000 MHz (MAIN BAND) 1270.000 MHz (SUB BAND)</li> <li>Set the signal generator; Level : OFF</li> <li>SUB SQL : Max. CW</li> <li>Receiving</li> </ul>	Bottom cover	Speaker	Squelch threshold point	Function display	MAIN [SQL] VOLUME
	2	<ul style="list-style-type: none"> <li>Displayed frequency: 1270.000 MHz (MAIN BAND) 435.000 MHz (SUB BAND)</li> </ul>					MAIN-A

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

• MAIN A UNIT



• MAIN B UNIT



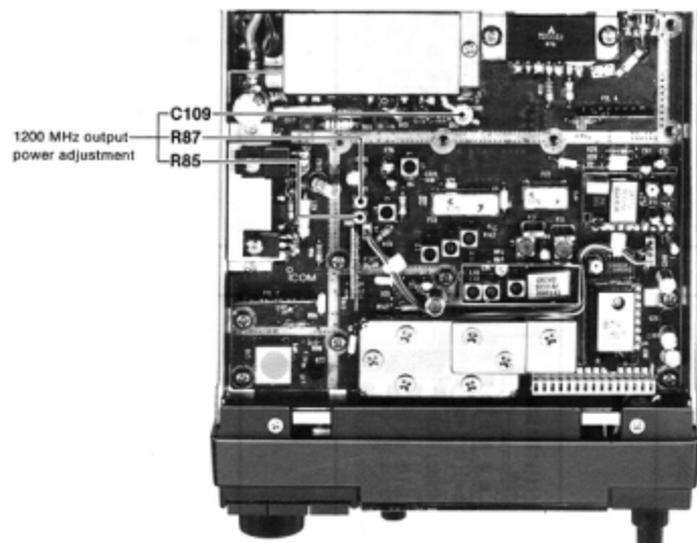
## 7-4 TRANSMITTER ADJUSTMENT

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT			
		UNIT	LOCATION		UNIT	ADJUST		
OUTPUT POWER	1	<ul style="list-style-type: none"> <li>Displayed frequency: 445.000 MHz (USA) 435.000 MHz (EUR, AUS)</li> <li>Output power : HIGH</li> <li>Simplex</li> <li>Transmitting</li> </ul>	Rear panel	Connect the RF power meter to the [ANT 400 MHz] connector.	35 W	MAIN-A	R41	
	2	<ul style="list-style-type: none"> <li>Output power : LOW</li> </ul>			5.0 W		R40	
	3	Repeat steps 1 and 2 several times.						
	4	<ul style="list-style-type: none"> <li>Displayed frequency: 1300.000 MHz</li> <li>R85 : Max. CW</li> </ul>	Rear panel	Connect the RF power meter to the [ANT 1200 MHz] connector.	Maximum	MAIN-B	C109	
	5	<ul style="list-style-type: none"> <li>Output power : HIGH</li> </ul>			10 W		R85	
	6	<ul style="list-style-type: none"> <li>Output power : LOW</li> </ul>			1.0 W		R87	
	7	Repeat steps 5 and 6 several times.						
FREQUENCY DEVIATION	1	<ul style="list-style-type: none"> <li>Displayed frequency: 445.000 MHz (USA) 435.000 MHz (EUR, AUS)</li> <li>Output power : HIGH</li> <li>Set the audio generator; 65 mV/1.0 kHz (USA) 20 mV/1.0 kHz (EUR, AUS)</li> <li>R13 (MIC AMP) : Max. CW</li> <li>Tone : OFF</li> <li>Set the FM deviation meter. HPF : 50 Hz LPF : 20 kHz De-emphasis: OFF Detector : (P-P)/2</li> <li>Transmitting</li> </ul>	Rear Panel	Connect the FM deviation meter to the [ANT 400 MHz] connector via the attenuator.	±4.8 kHz	MAIN-A	R73	
	2	<ul style="list-style-type: none"> <li>Set the audio generator; 6.5 mV/1.0 kHz (USA) 2.0 mV/1.0 kHz (EUR, AUS)</li> </ul>			±3.5 kHz		MAIN A (MIC AMP)	R13
	3	<ul style="list-style-type: none"> <li>Set the audio generator: OFF</li> <li>Set the tone frequency to 88.5 Hz.</li> </ul>			±0.75 kHz			R1
	4	<ul style="list-style-type: none"> <li>Displayed frequency: 1270.000 MHz</li> <li>Set the audio generator; 65 mV/1.0 kHz (USA) 20 mV/1.0 kHz (EUR, AUS)</li> <li>Tone : OFF</li> </ul>					Connect the FM deviation meter to the [ANT 1200 MHz] connector via the attenuator.	±4.8 kHz

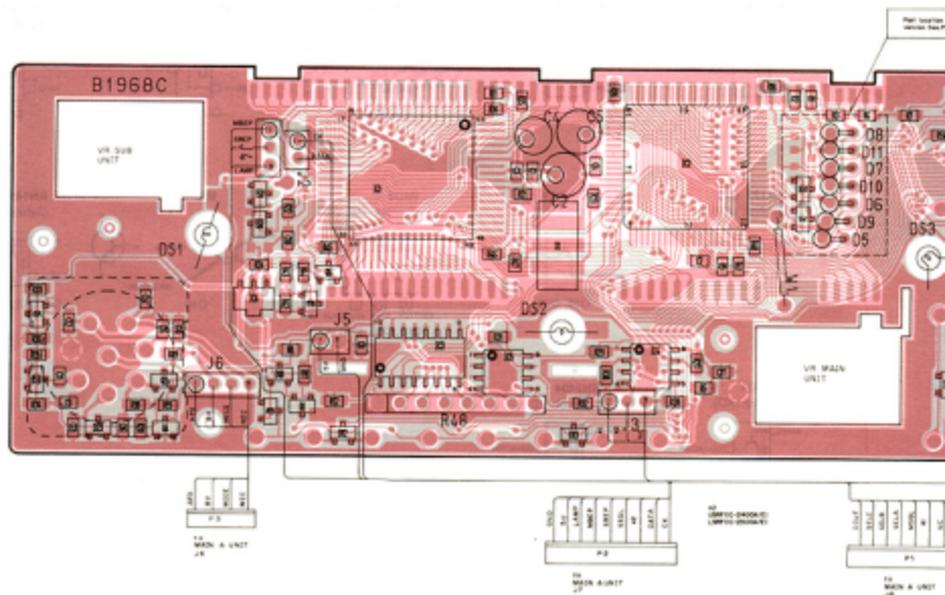
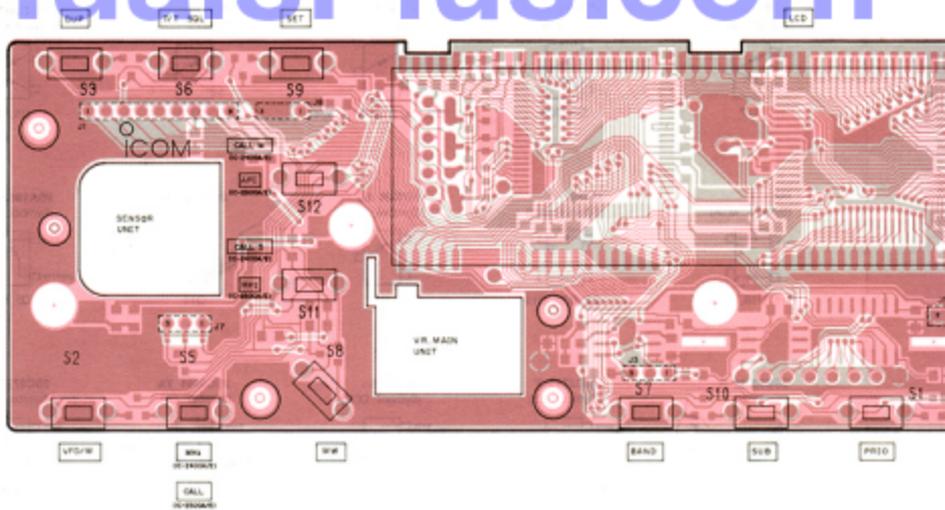
• MAIN A AND MIC AMP UNITS

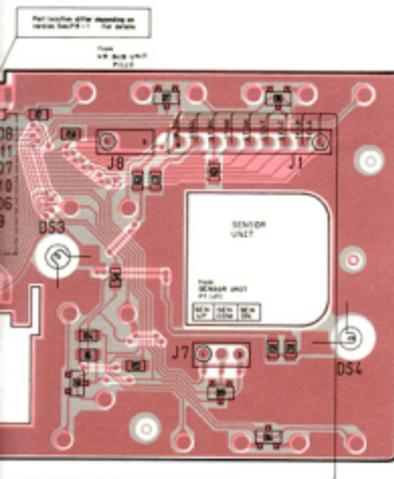
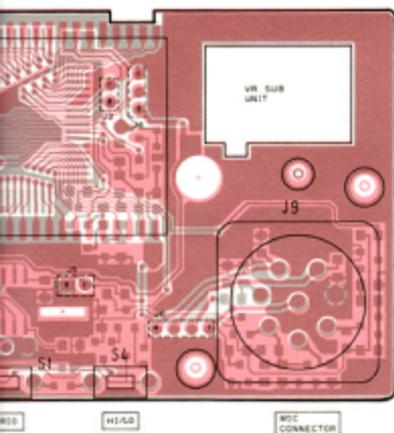


• MAIN B UNIT









001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020	021	022	023	024	025	026	027	028	029	030	031	032	033	034	035	036	037	038	039	040	041	042	043	044	045	046	047	048	049	050	051	052	053	054	055	056	057	058	059	060	061	062	063	064	065	066	067	068	069	070	071	072	073	074	075	076	077	078	079	080	081	082	083	084	085	086	087	088	089	090	091	092	093	094	095	096	097	098	099	100
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REF ID: A66443  
REF ID: A66443

TO MAIN UNIT  
J8

**15S181**  
(Symbol: A3)



D20

**2SA1162 Y**  
(Symbol: 5Y)



Q6

**15S184**  
(Symbol: B3)



D1 (Australia, Asia [IC-2400],  
D3 (Australia [IC-2500]),  
D4 (U.S.A. [IC-2400]),  
D12, D13, D14, D15,  
D16, D17, D18

**25C2712 Y**  
(Symbol: LY)



Q1, Q2, Q4, Q5, Q7

**15S193**  
(Symbol: F3)



D1 (Europe [IC-2400], [IC-2500]),  
D3 (Australia [IC-2400], Europe [IC-2500]),  
D19, D21, D22

**RN2404**  
(Symbol: YD)



Q3

**15S196**  
(Symbol: G3)



D1 (U.S.A.),  
D5 (Europe [IC-2400], U.S.A. [IC-2500])

**RD61M B2**  
(Symbol: 912)



D23

8-2 MAIN A UNIT (IC-2400A/E, IC-2500A/E)

**1SS181**  
(Symbol: A3)



D17

**1SS184**  
(Symbol: B3)



D8, D23

**1SS193**  
(Symbol: F3)



D2, D4, D16, D22, D24

**1SS226**  
(Symbol: C3)



D10

**HSM88AS**  
(Symbol: C1)



D5, D6

**MA159**  
(Symbol: M1A)



D11, D18, D19

**MA862**  
(Symbol: M11)



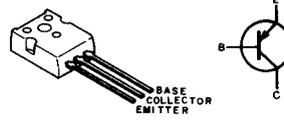
D3, D12, D13

**RD15M B2**  
(Symbol: 152)



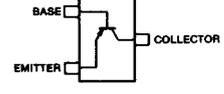
D1

**2SA1359 Y**



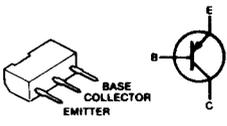
Q11

**2SA1382 GR**  
(Symbol: AEG)



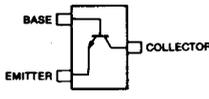
Q5, Q8

**2SB909M R**



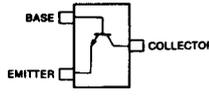
Q25, Q37

**2SC2712 Y**  
(Symbol: LY)



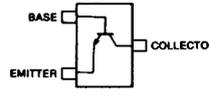
Q2, Q6, Q26, Q38,  
Q43, Q44

**2SC3326**  
(Symbol: CCB)



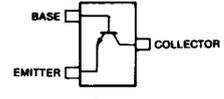
Q29, Q30, Q32, Q35

**2SC3661 TA**  
(Symbol: CP)



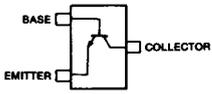
Q3

**2SC3770 3**  
(Symbol: JY3)



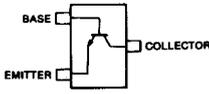
Q14

**2SC3772 3**  
(Symbol: LY3)



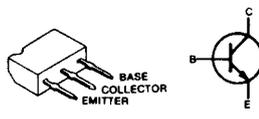
Q20

**2SC3775 3**  
(Symbol: OY3)



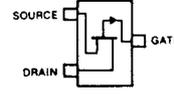
Q7, Q9

**2SD1225M R**



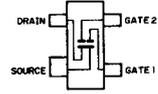
Q1

**2SJ106 GR**  
(Symbol: VG)



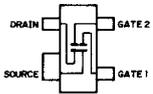
Q33, Q34

**3SK140 Y**  
(Symbol: UG)



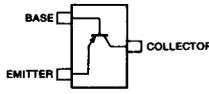
Q17

**3SK177 U73**  
(Symbol: U73)



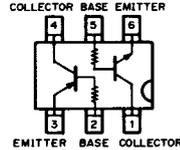
Q21

**DTB123EK**  
(Symbol: F12)



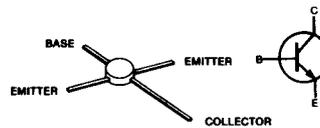
Q16, Q19

**IMD6**  
(Symbol: D6)



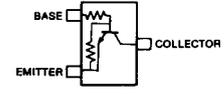
Q13, Q39, Q40

**MRF559**



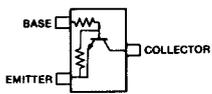
Q10

**RN1402**  
(Symbol: XB)



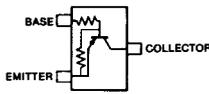
Q4, Q15, Q18, Q31

**RN1404**  
(Symbol: XD)

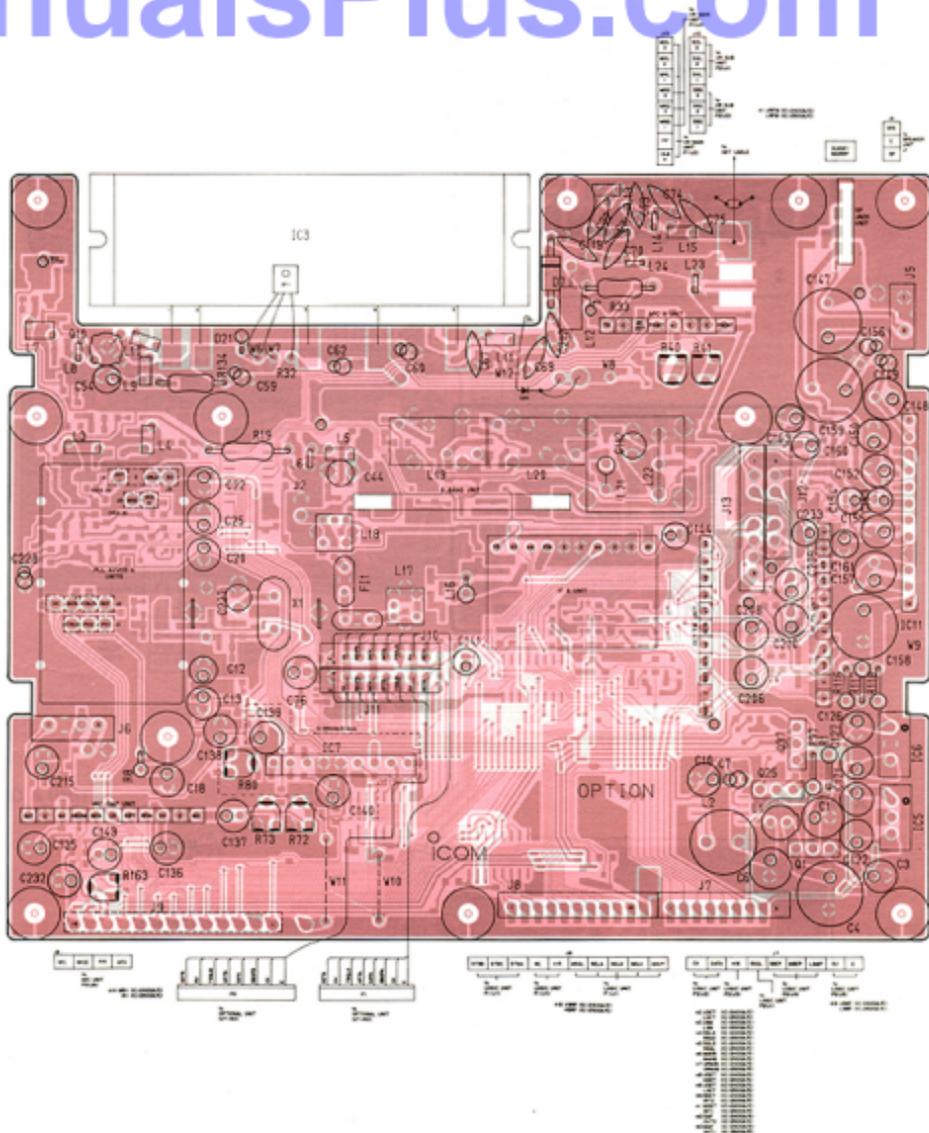


Q12, Q22, Q36, Q41,  
Q42

**RN2404**  
(Symbol: YD)



Q27, Q28

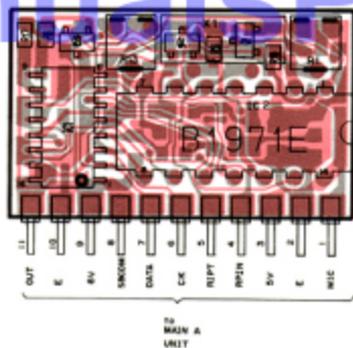




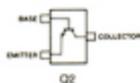




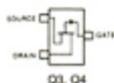
• MIC AMP UNIT



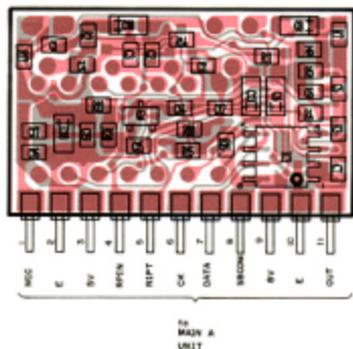
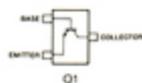
25C2712 Y  
(Symbol: LY)



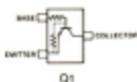
25J106 GR  
(Symbol: VQ)



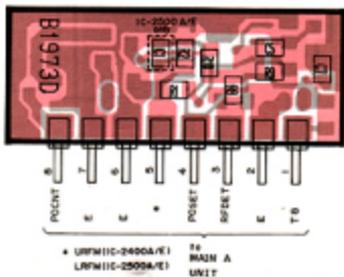
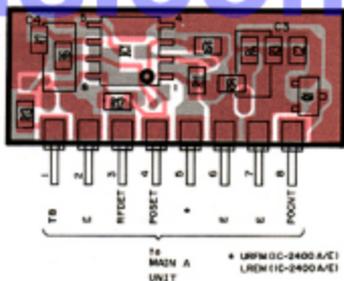
25C2712 Y  
(Symbol: LY)



RN1404  
(Symbol: XD)



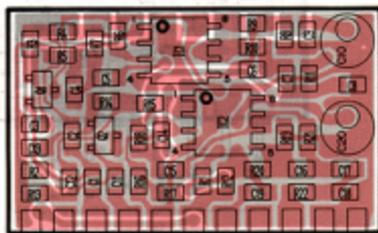
• APC UNIT



# MAIN A UNIT (IC-2400A/E, IC-2500A/E)

• AF FIL UNIT

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U    V    W    X    Y    Z    AA    AB    AC    AD    AE    AF    AG    AH    AI    AJ    AK    AL    AM    AN    AO    AP    AQ    AR    AS    AT    AU    AV    AW    AX    AY    AZ    BA    BB    BC    BD    BE    BF    BG    BH    BI    BJ    BK    BL    BM    BN    BO    BP    BQ    BR    BS    BT    BU    BV    BW    BX    BY    BZ    CA    CB    CC    CD    CE    CF    CG    CH    CI    CJ    CK    CL    CM    CN    CO    CP    CQ    CR    CS    CT    CU    CV    CW    CX    CY    CZ    DA    DB    DC    DD    DE    DF    DG    DH    DI    DJ    DK    DL    DM    DN    DO    DP    DQ    DR    DS    DT    DU    DV    DW    DX    DY    DZ    EA    EB    EC    ED    EE    EF    EG    EH    EI    EJ    EK    EL    EM    EN    EO    EP    EQ    ER    ES    ET    EU    EV    EW    EX    EY    EZ    FA    FB    FC    FD    FE    FF    FG    FH    FI    FJ    FK    FL    FM    FN    FO    FP    FQ    FR    FS    FT    FU    FV    FW    FX    FY    FZ    GA    GB    GC    GD    GE    GF    GG    GH    GI    GJ    GK    GL    GM    GN    GO    GP    GQ    GR    GS    GT    GU    GV    GW    GX    GY    GZ    HA    HB    HC    HD    HE    HF    HG    HH    HI    HJ    HK    HL    HM    HN    HO    HP    HQ    HR    HS    HT    HU    HV    HW    HX    HY    HZ    IA    IB    IC    ID    IE    IF    IG    IH    II    IJ    IK    IL    IM    IN    IO    IP    IQ    IR    IS    IT    IU    IV    IW    IX    IY    IZ    JA    JB    JC    JD    JE    JF    JG    JH    JI    JJ    JK    JL    JM    JN    JO    JP    JQ    JR    JS    JT    JU    JV    JW    JX    JY    JZ    KA    KB    KC    KD    KE    KF    KG    KH    KI    KJ    KK    KL    KM    KN    KO    KP    KQ    KR    KS    KT    KU    KV    KW    KX    KY    KZ    LA    LB    LC    LD    LE    LF    LG    LH    LI    LJ    LK    LL    LM    LN    LO    LP    LQ    LR    LS    LT    LU    LV    LW    LX    LY    LZ    MA    MB    MC    MD    ME    MF    MG    MH    MI    MJ    MK    ML    MO    MP    MQ    MR    MS    MT    MU    MV    MW    MX    MY    MZ    NA    NB    NC    ND    NE    NF    NG    NH    NI    NJ    NK    NL    NO    NP    NQ    NR    NS    NT    NU    NV    NW    NX    NY    NZ    OA    OB    OC    OD    OE    OF    OG    OH    OI    OJ    OK    OL    OM    ON    OO    OP    OQ    OR    OS    OT    OU    OV    OW    OX    OY    OZ    PA    PB    PC    PD    PE    PF    PG    PH    PI    PJ    PK    PL    PM    PN    PO    PP    PQ    PR    PS    PT    PU    PV    PW    PX    PY    PZ    QA    QB    QC    QD    QE    QF    QG    QH    QI    QJ    QK    QL    QM    QN    QO    QP    QQ    QR    QS    QT    QU    QV    QW    QX    QY    QZ    RA    RB    RC    RD    RE    RF    RG    RH    RI    RJ    RK    RL    RM    RN    RO    RP    RQ    RS    RT    RU    RV    RW    RX    RY    RZ    SA    SB    SC    SD    SE    SF    SG    SH    SI    SJ    SK    SL    SM    SN    SO    SP    SQ    SR    SS    ST    SU    SV    SW    SX    SY    SZ    TA    TB    TC    TD    TE    TF    TG    TH    TI    TJ    TK    TL    TM    TN    TO    TP    TQ    TR    TS    TU    TV    TW    TX    TY    TZ    UA    UB    UC    UD    UE    UF    UG    UH    UI    UJ    UK    UL    UM    UN    UO    UP    UQ    UR    US    UT    UY    UZ    VA    VB    VC    VD    VE    VF    VG    VH    VI    VJ    VK    VL    VM    VN    VO    VP    VQ    VR    VS    VT    VU    VV    VW    VX    VY    VZ    WA    WB    WC    WD    WE    WF    WG    WH    WI    WJ    WK    WL    WM    WN    WO    WP    WQ    WR    WS    WT    WU    WV    WW    WX    WY    WZ    XA    XB    XC    XD    XE    XF    XG    XH    XI    XJ    XK    XL    XM    XN    XO    XP    XQ    XR    XS    XT    XU    XV    XW    XX    XY    XZ    YA    YB    YC    YD    YE    YF    YG    YH    YI    YJ    YK    YL    YM    YN    YO    YP    YQ    YR    YS    YT    YU    YV    YW    YX    YZ    ZA    ZB    ZC    ZD    ZE    ZF    ZG    ZH    ZI    ZJ    ZK    ZL    ZM    ZN    ZO    ZP    ZQ    ZR    ZS    ZT    ZU    ZV    ZW    ZX    ZY    ZZ

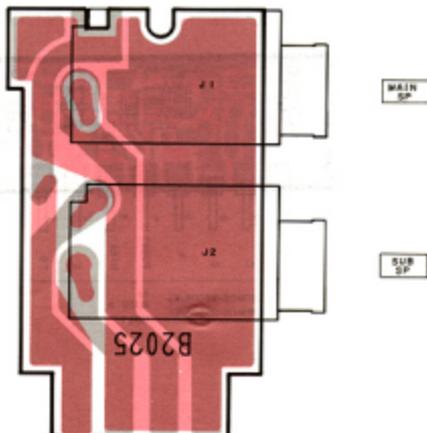
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|---|----------------|---|
| *1 M1P (IC-2400A/E)<br>O1P1 (IC-2500A/E)  | MAIN A<br>UNIT | *3 M2ET (IC-2400A/E)<br>INT1 (IC-2500A/E) |
| *2 S1AF (IC-2400A/E)<br>O2F1 (IC-2500A/E) |                | *4 S2ET (IC-2400A/E)<br>INT2 (IC-2500A/E) |

2SC2712 Y  
(Symbol: LY)

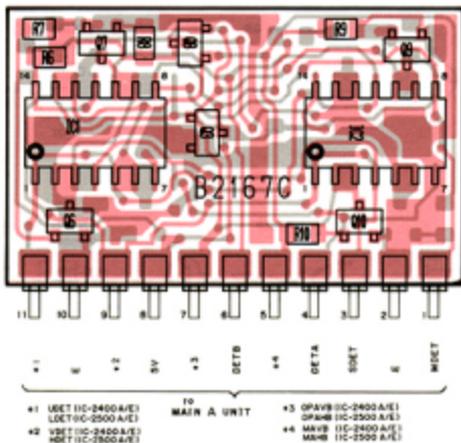
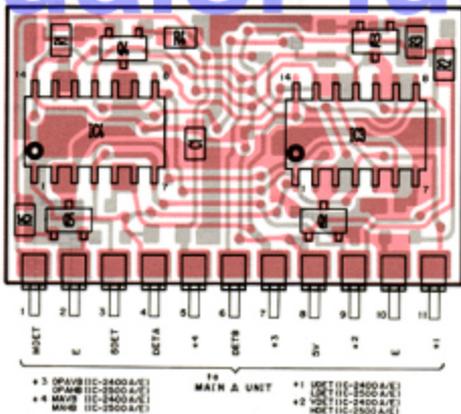


Q1, Q2

• SP JACK UNIT



TO MAIN A UNIT



2SC332B  
(Symbol: CCB)



Q1, Q2, Q4, Q5, Q6,  
Q7, Q9, Q10

RN1404  
(Symbol: XD)



Q3, Q8

8-3 MAIN B UNIT (IC-2400A/E)

**1SS184**  
(Symbol: B3)



D9

**1SS187**  
(Symbol: D3)



D23

**1SS196**  
(Symbol: G3)



D17, D22, D25

**HSM88AS**  
(Symbol: C1)



D5, D7, D11, D15, D16

**MA862**  
(Symbol: M11)



D8, D18

**RD20M B2**  
(Symbol: 202)



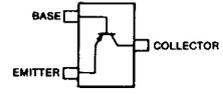
D24

**RD6.2M B2**  
(Symbol: 622)

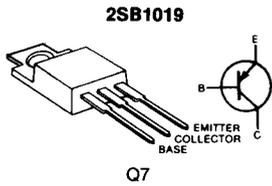


D6

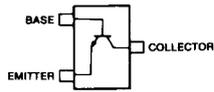
**2SA1162 GR**  
(Symbol: SG)



Q25, Q28, Q31

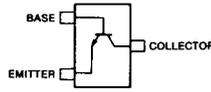


**2SC2712 GR**  
(Symbol: LG)



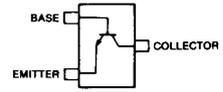
Q4, Q5, Q6, Q11, Q17,  
Q27, Q29, Q30

**2SC3328**  
(Symbol: CCB)



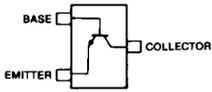
Q32

**2SC3861 TA**  
(Symbol: CP)



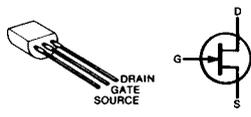
Q14

**2SC3772 3**  
(Symbol: LY3)

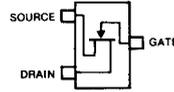


Q9, Q13, Q15

**2SK125**

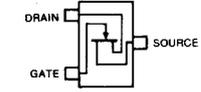


**2SK209 GR**



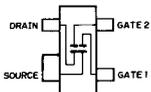
Q24, Q26

**2SK302 GR**  
(Symbol: TG)



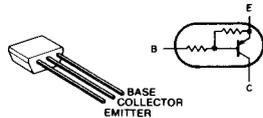
Q3

**3SK177 U73**  
(Symbol: U73)

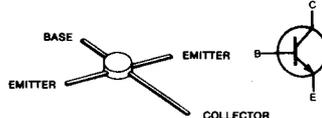


Q1, Q2

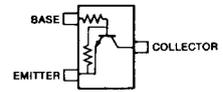
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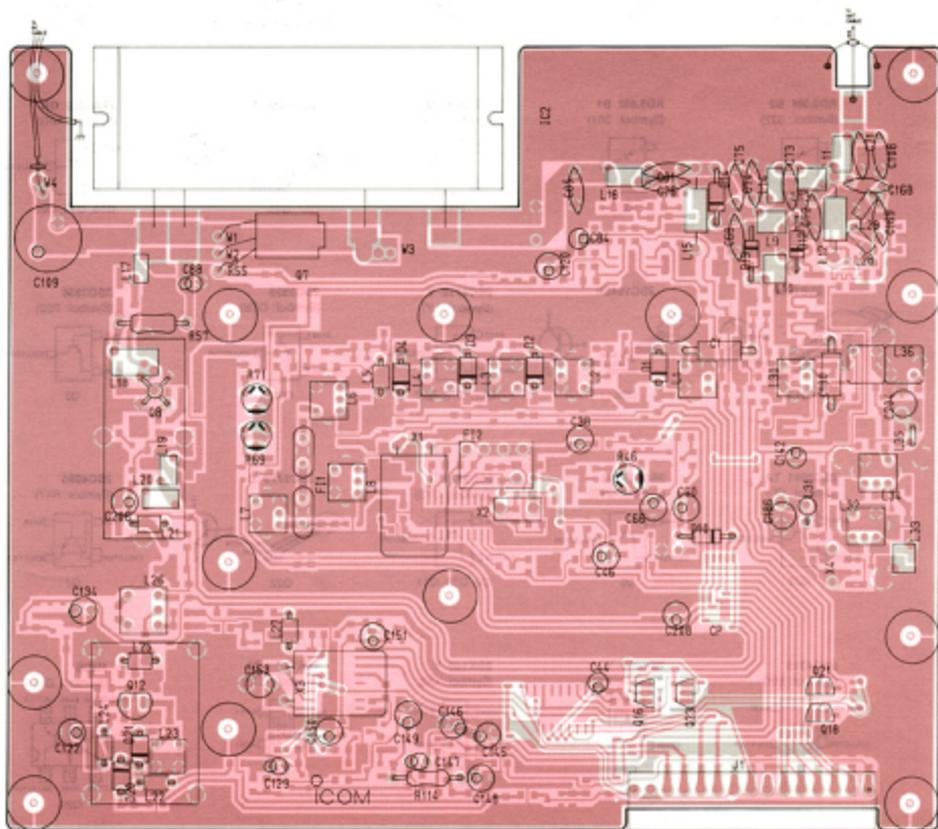
**MRF559**



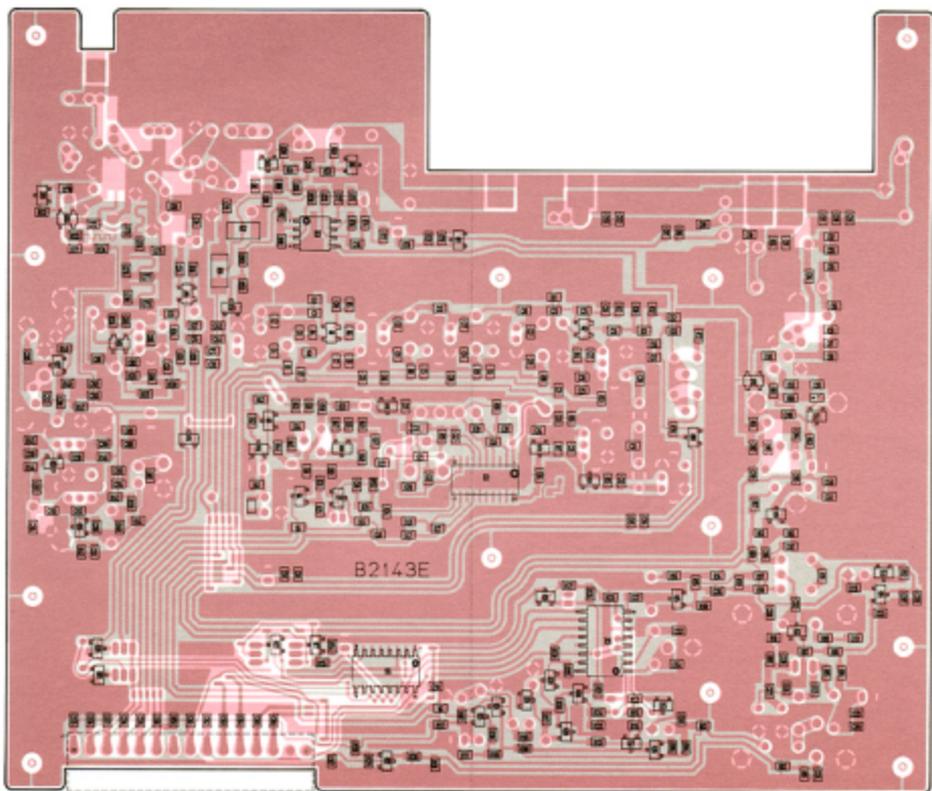
**RN1402**  
(Symbol: XB)



Q10, Q20, Q22



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8-4 MAIN B UNIT (IC-2500A/E)

**1SS193**  
(Symbol: F3)



D3, D9, D18

**1SS226**  
(Symbol: C3)



D5

**MA159**  
(Symbol: M1A)



D4

**MA862**  
(Symbol: M1)



D1, D2, D6, D14, D15

**RD20M B2**  
(Symbol: 202)



D20

**RD3.3M B2**  
(Symbol: 332)



D11

**RD3.6M B1**  
(Symbol: 361)



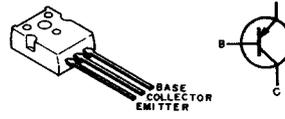
D8

**RD5.6M B2**  
(Symbol: 562)



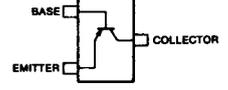
D19

**2SA1359 0**



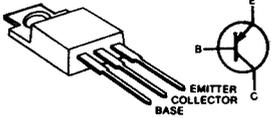
Q15

**2SA1362 GR**  
(Symbol: AEG)



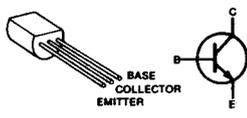
Q18, Q19, Q20

**2SB1019**



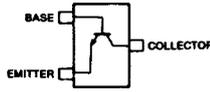
Q13

**2SC1645B**



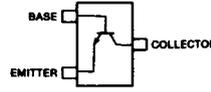
Q26

**2SC2712 Y**  
(Symbol: LY)



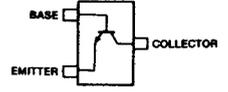
Q12, Q16, Q27

**2SC3326**  
(Symbol: CCB)



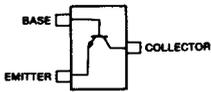
Q30

**2SC3356**  
(Symbol: R22)



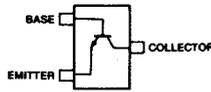
Q3

**2SC3661 TA**  
(Symbol: CP)



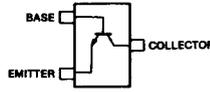
Q21

**2SC3770 3**  
(Symbol: JY3)



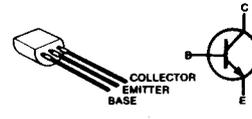
Q5

**2SC3775 3**  
(Symbol: OY3)



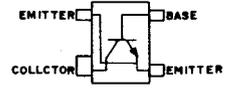
Q9, Q10, Q11

**2SC3779 D**



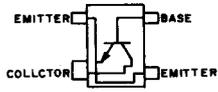
Q22

**2SC4095**  
(Symbol: R47)



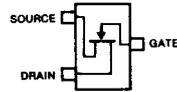
Q7

**2SC4315**  
(Symbol: MK)



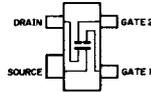
Q1

**2SK209 Y**  
(Symbol: XY)



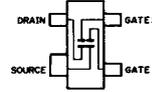
Q28

**3SK140 Y**  
(Symbol: UG)



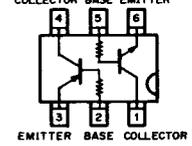
Q2, Q4

**3SK177 U73**  
(Symbol: U73)



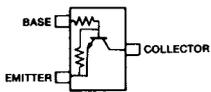
Q8

**IMD6**  
(Symbol: D6)



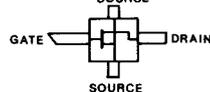
Q29

**RN1404**  
(Symbol: XD)

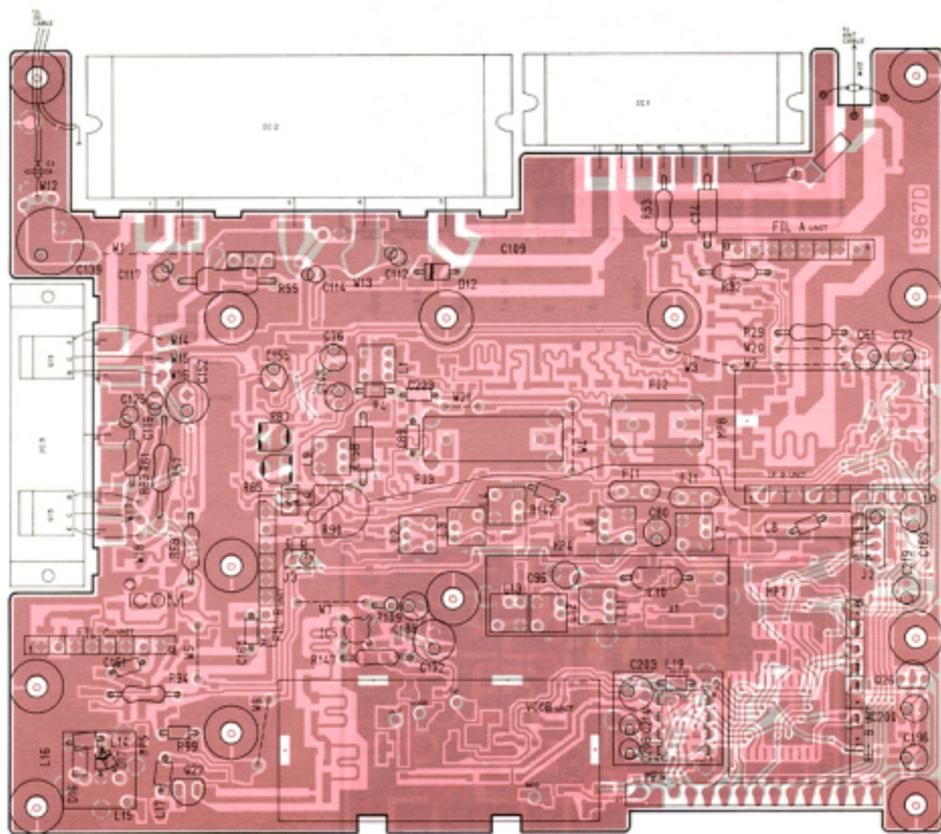


Q17, Q23, Q24, Q25

**MGF1502**  
(Symbol: 185)

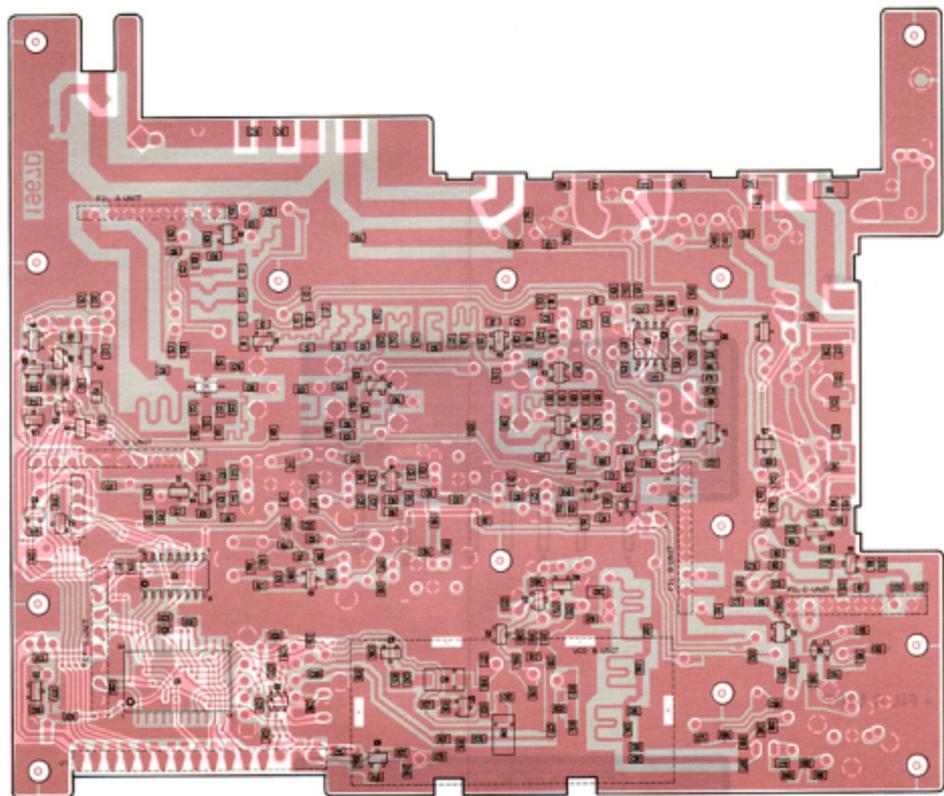


Q6

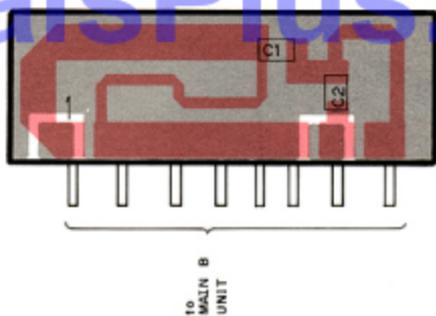


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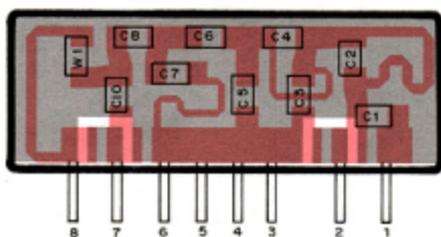
Rev. A user 1/81



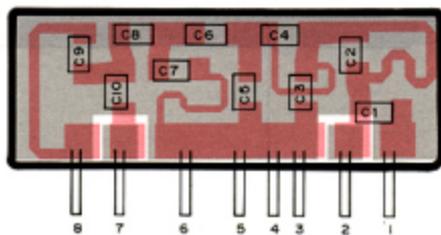
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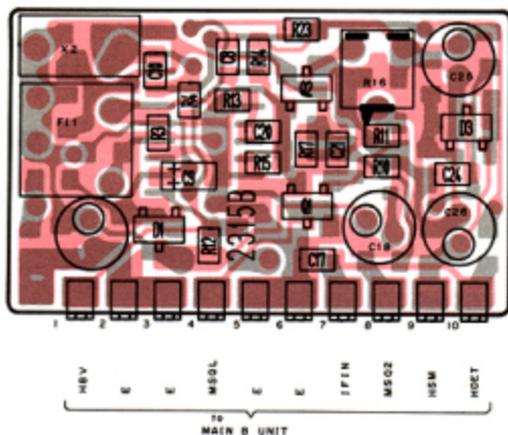


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• IF B UNIT

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1S5226  
(Symbol: C3)



D2, D3

RD4.2M B2  
(Symbol: 622)

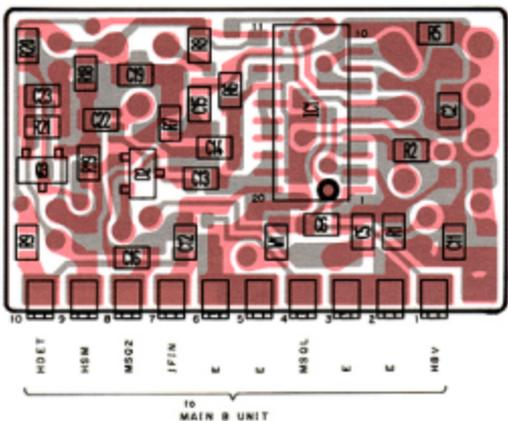


D1

25C2712 Y  
(Symbol: LY)

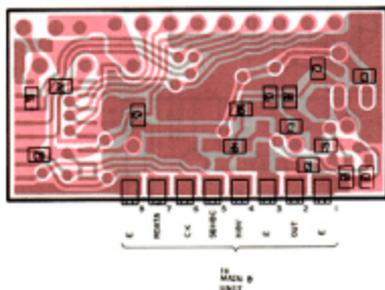
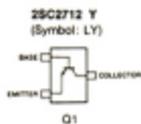
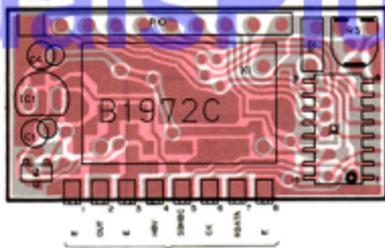


Q1, Q2, Q3

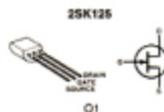
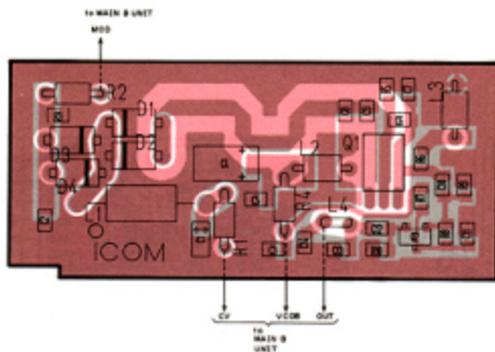


• RF B UNIT

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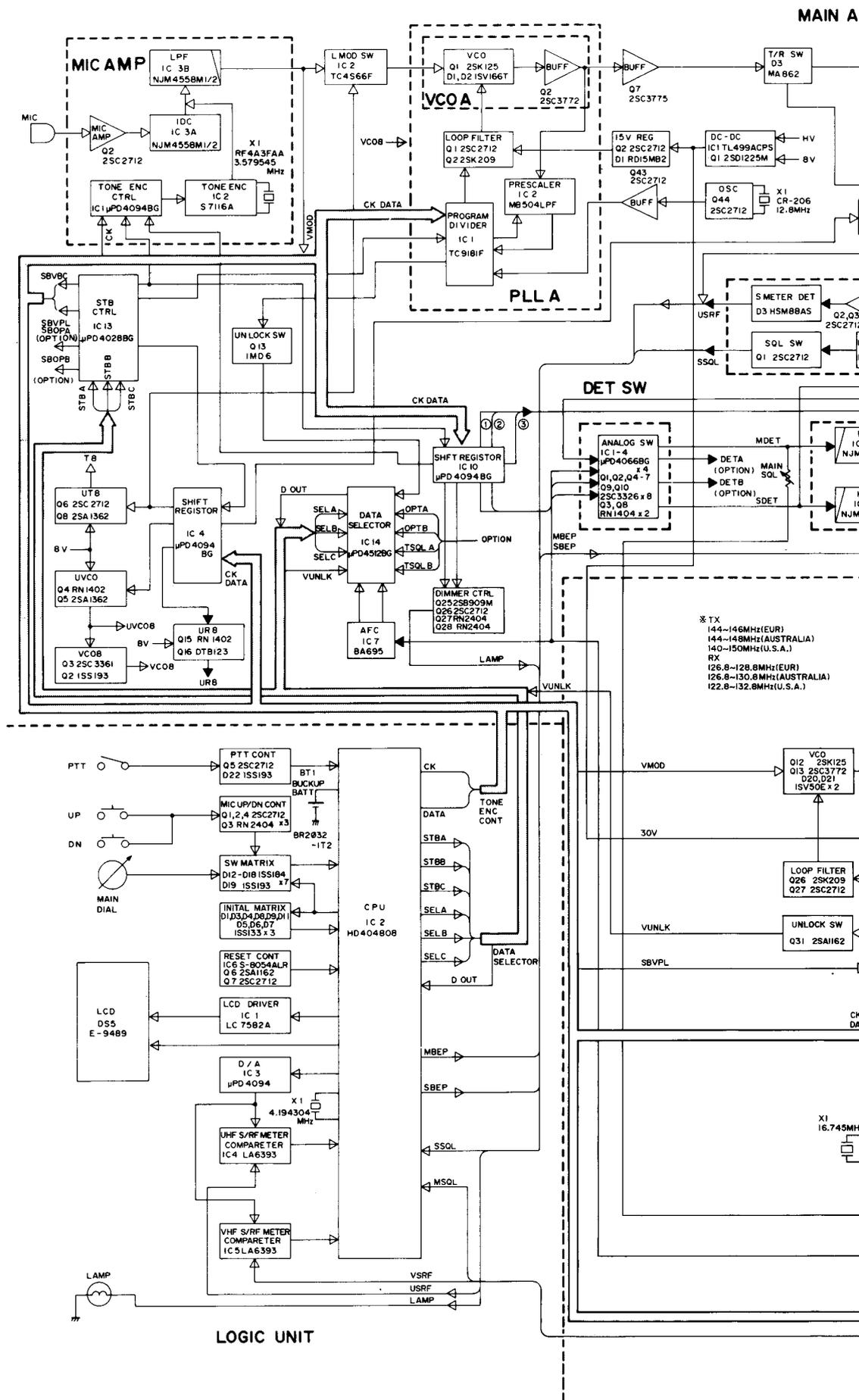
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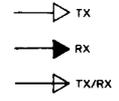
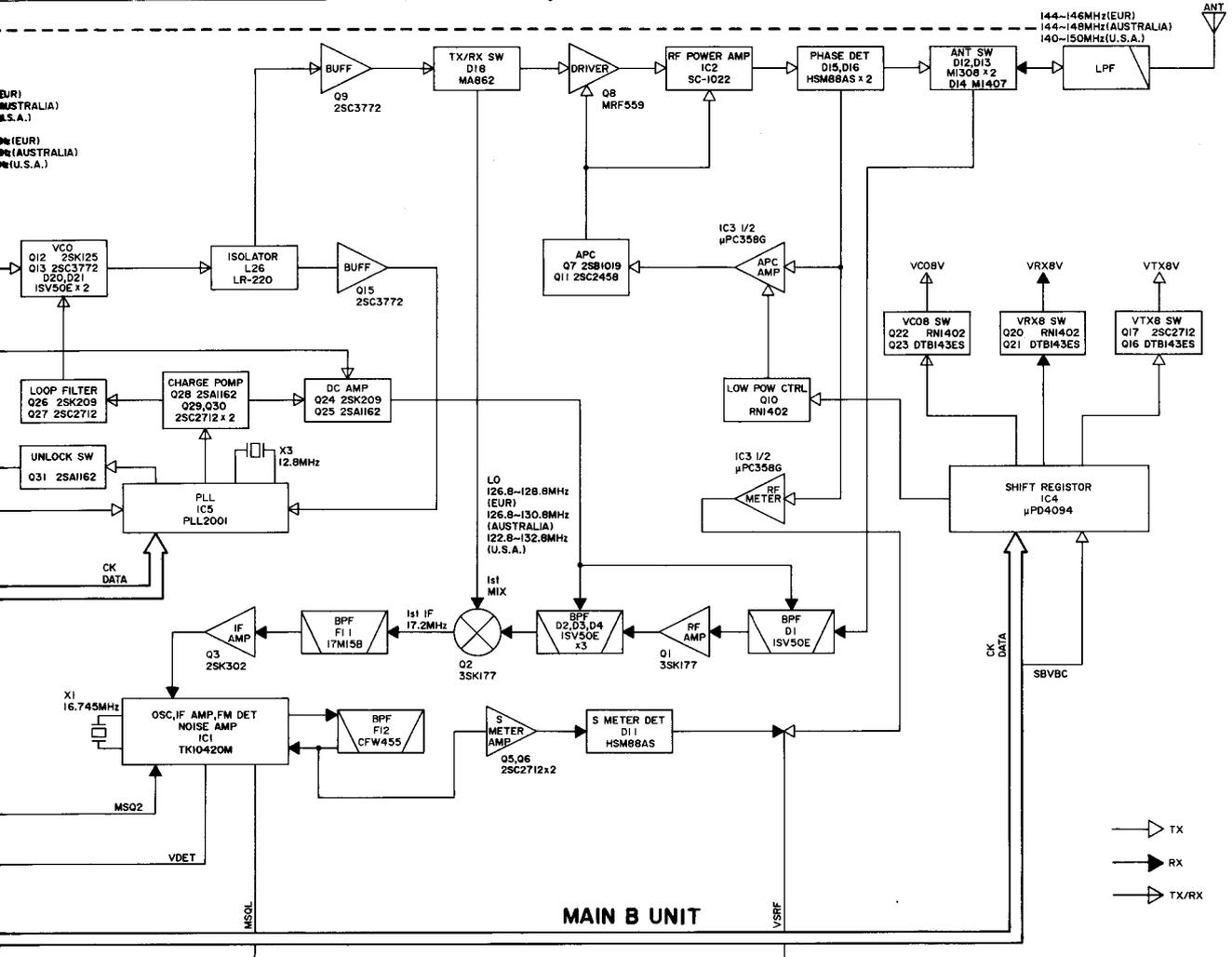
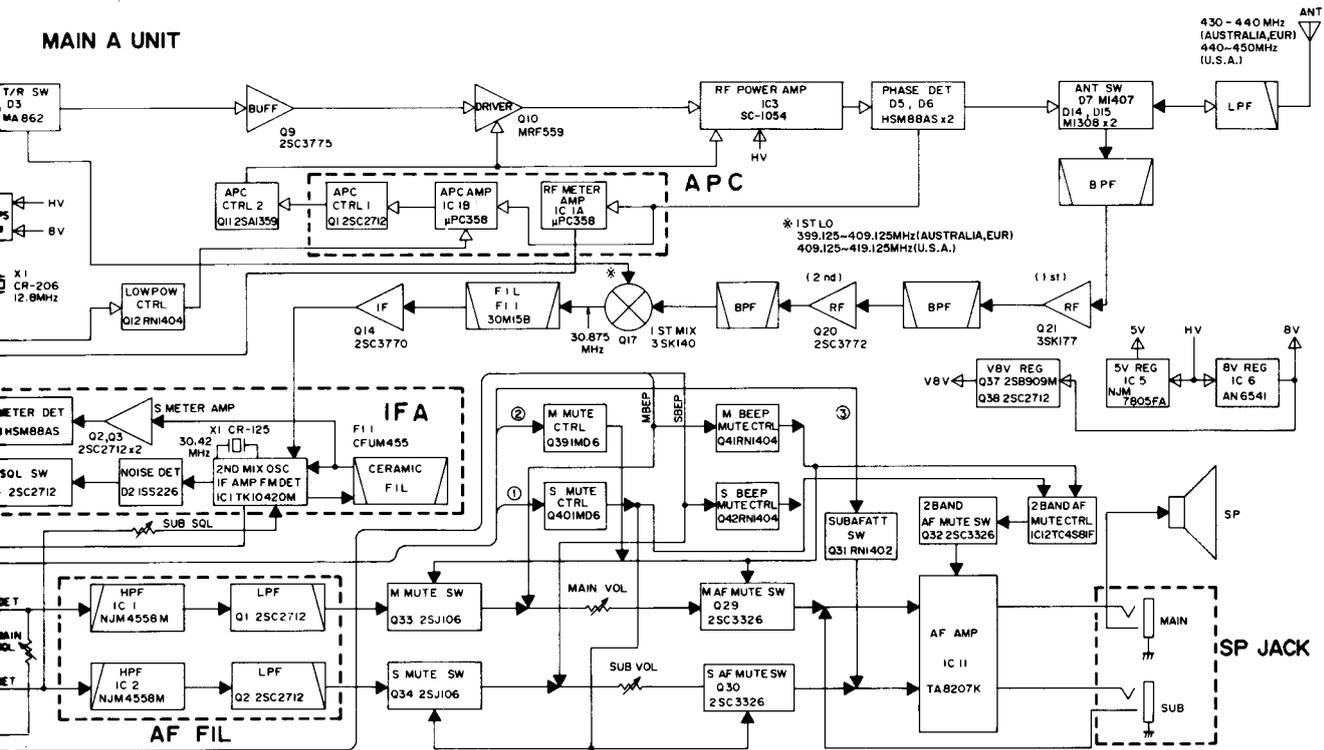


SECTION 10 BLOCK DIAGRAM

10-1 IC-2400A/E

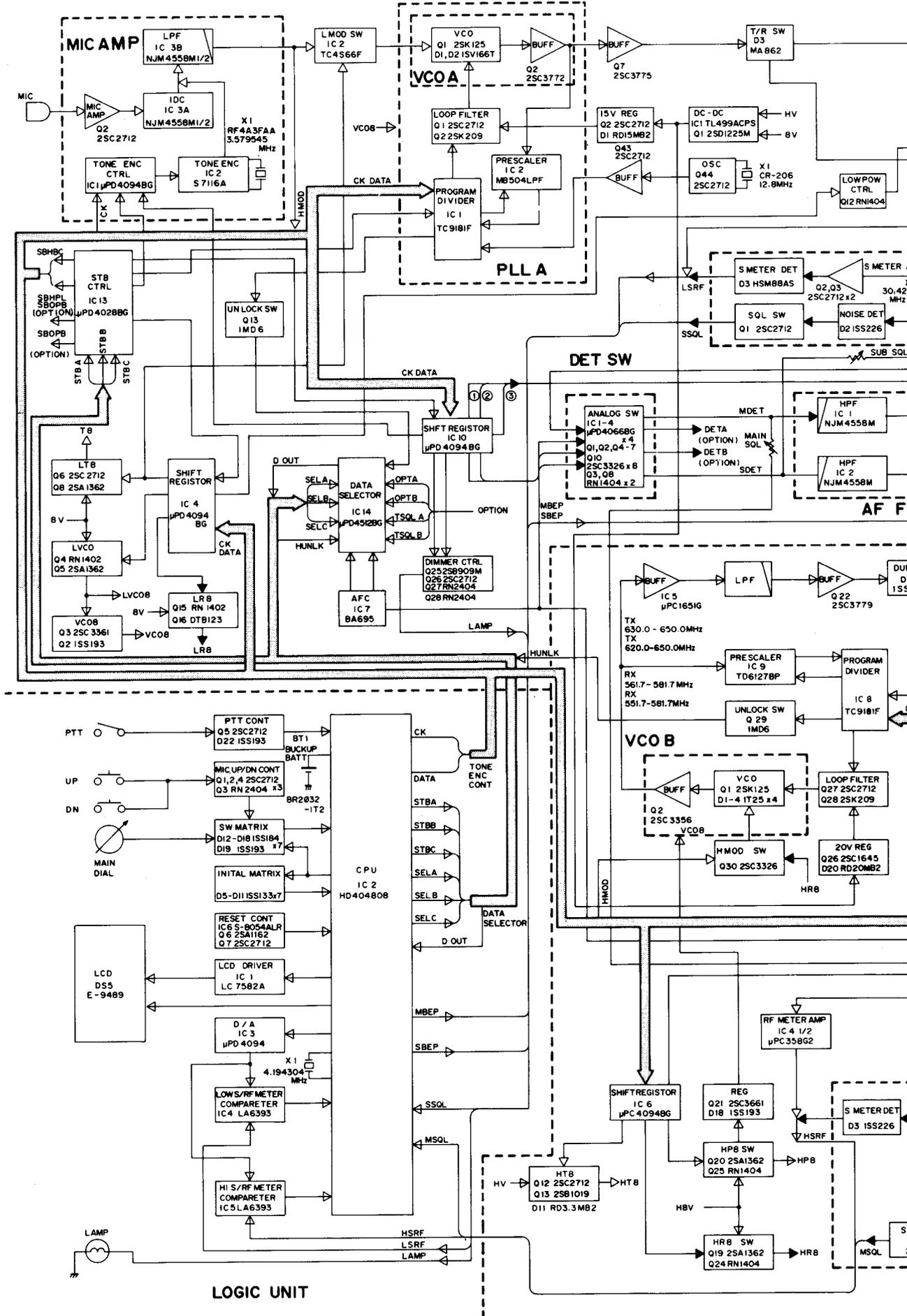


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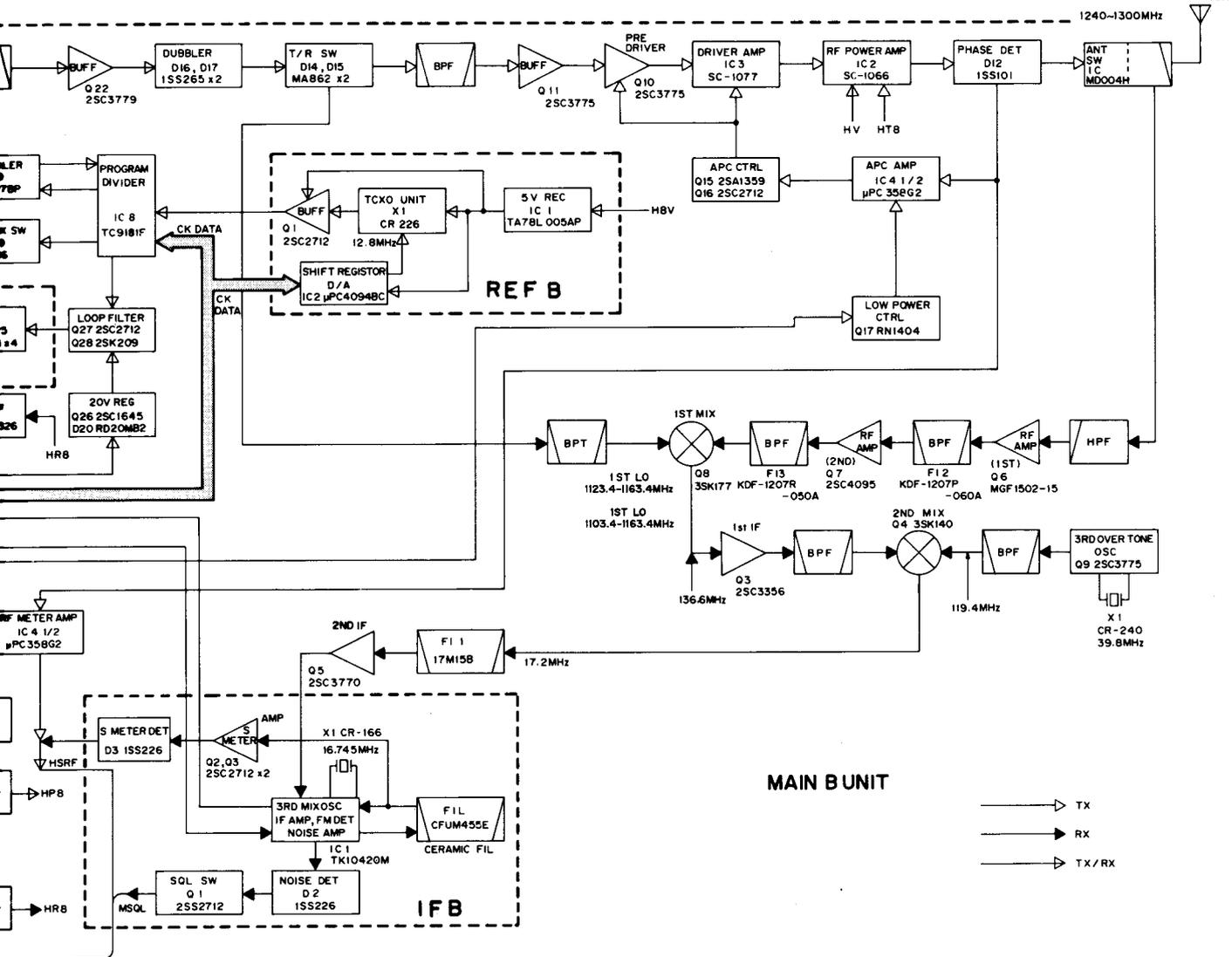
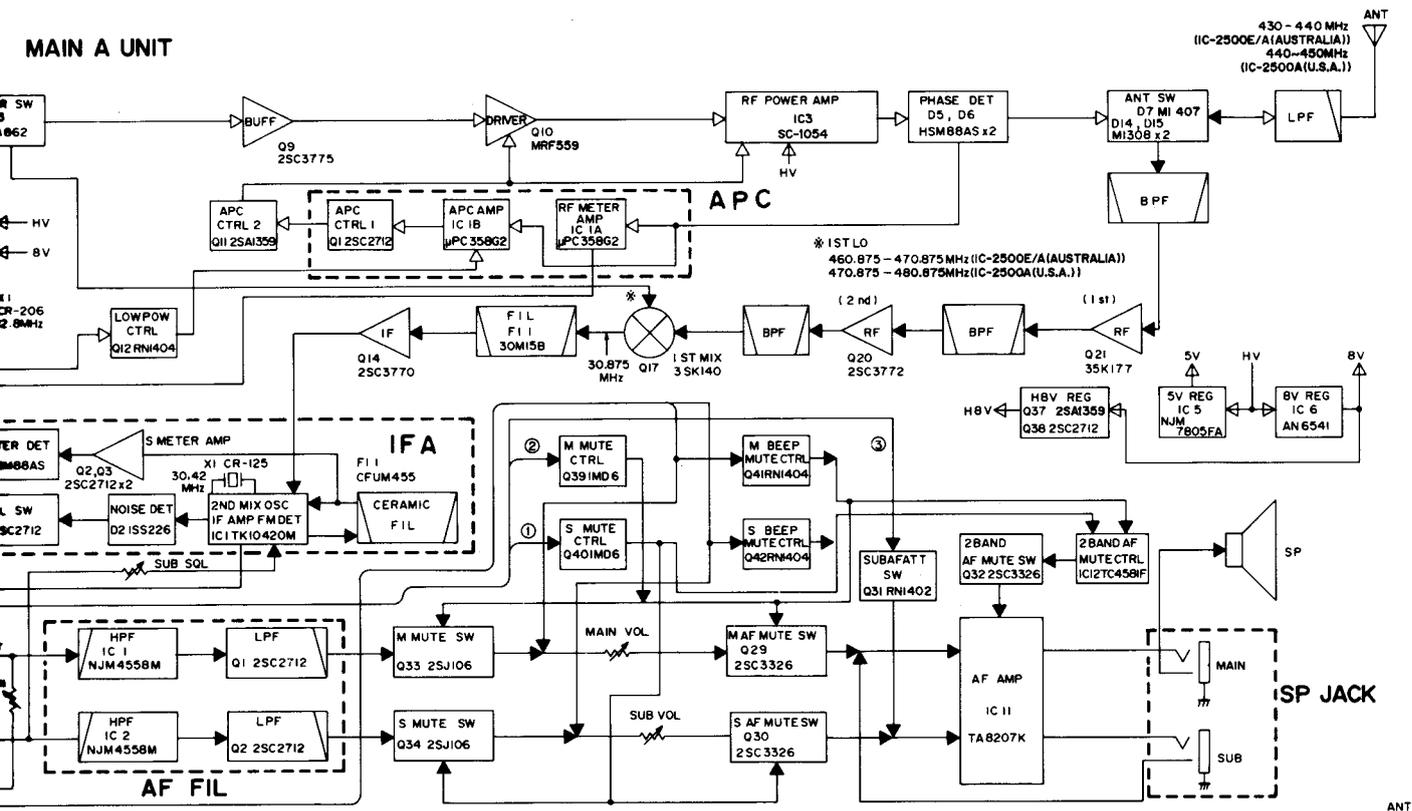


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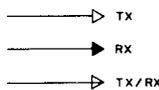
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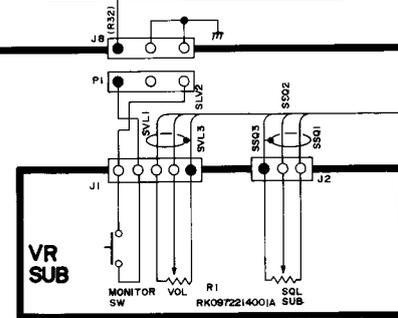
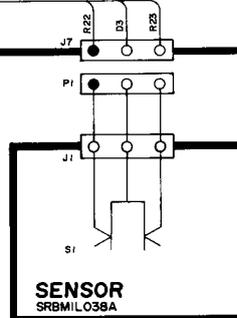
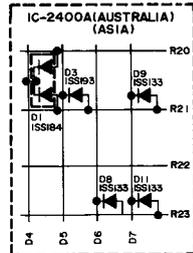
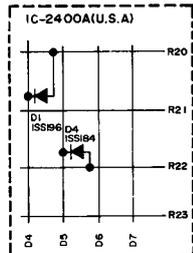
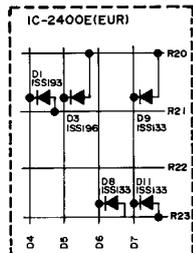
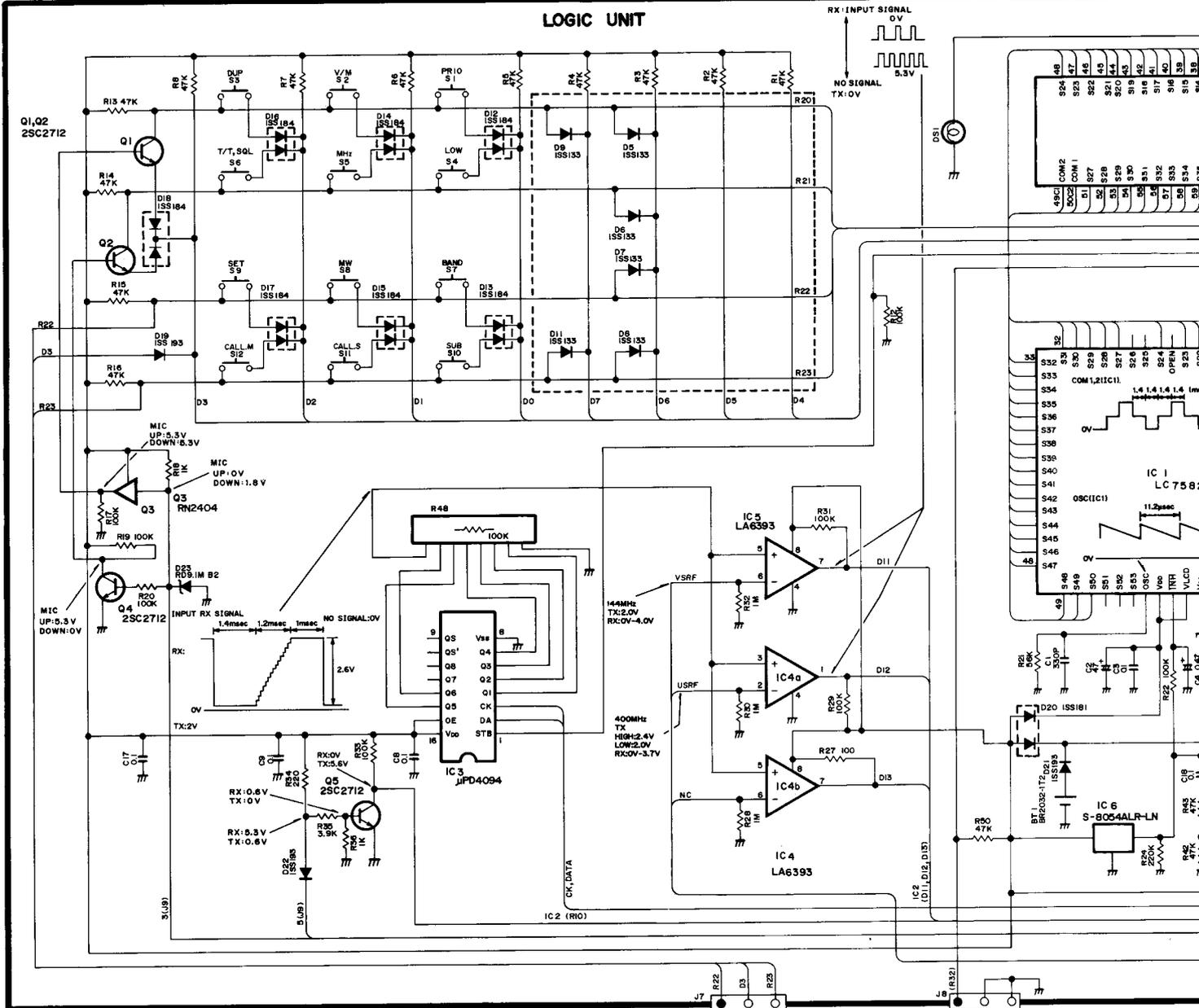


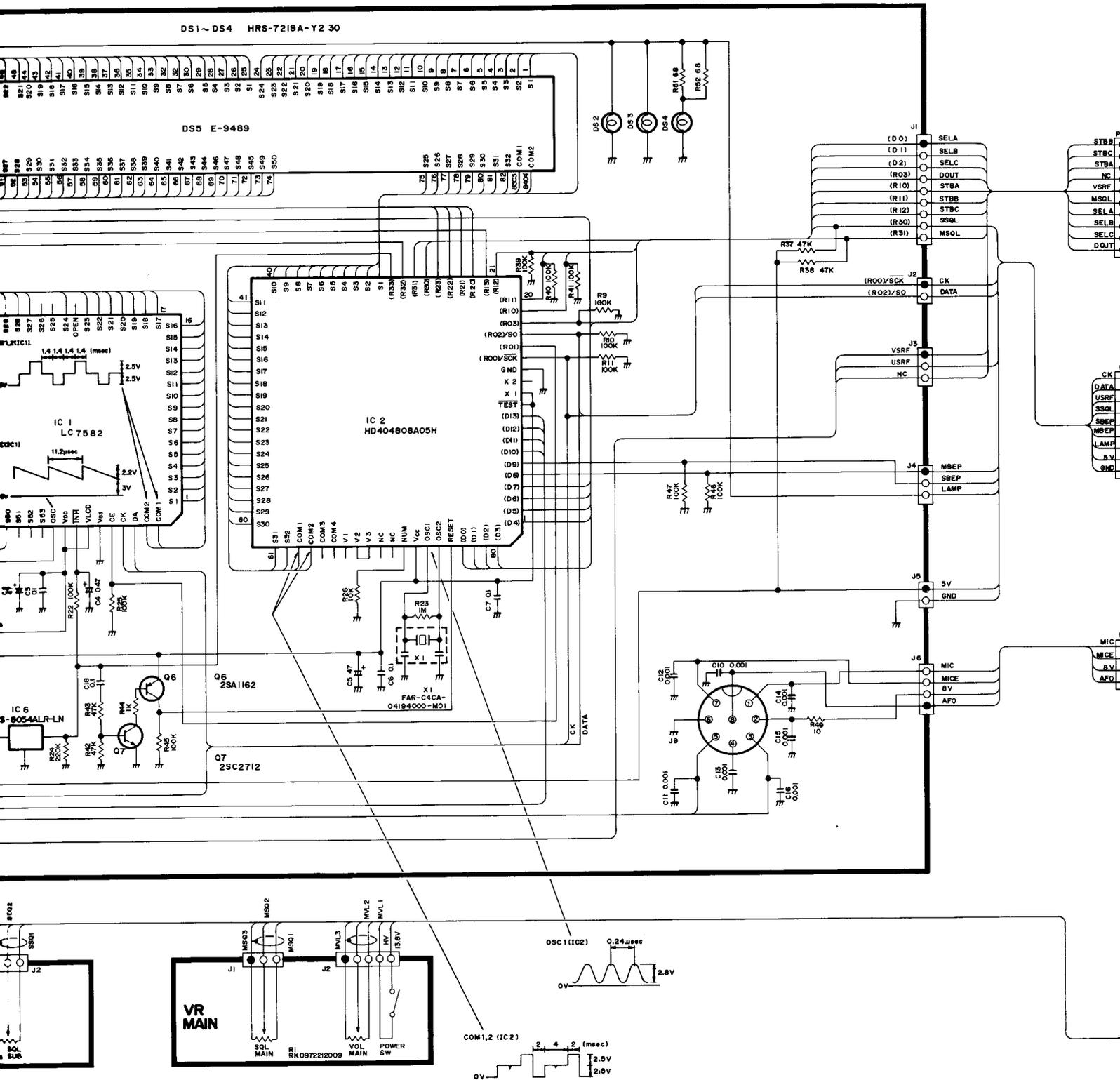
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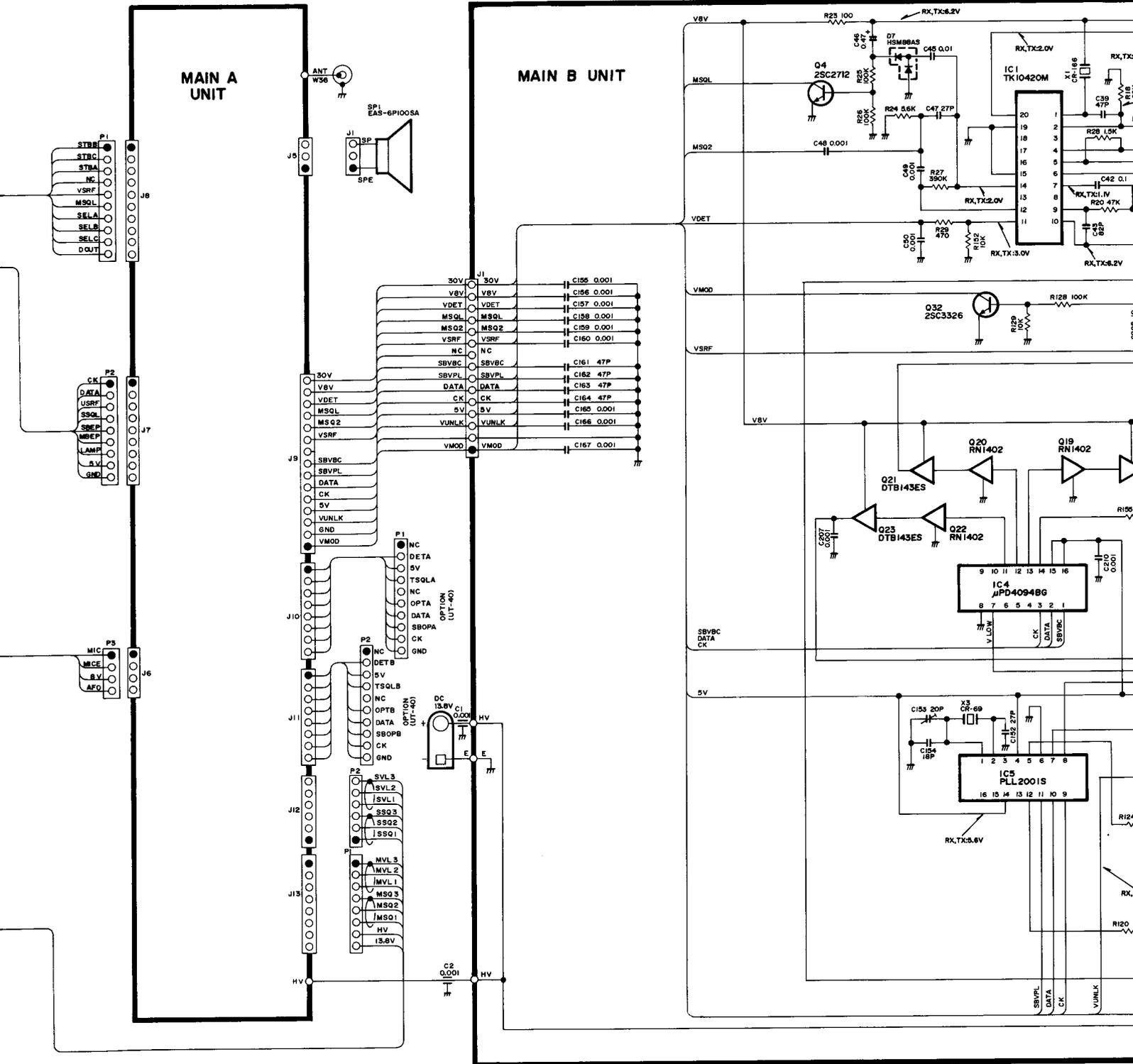


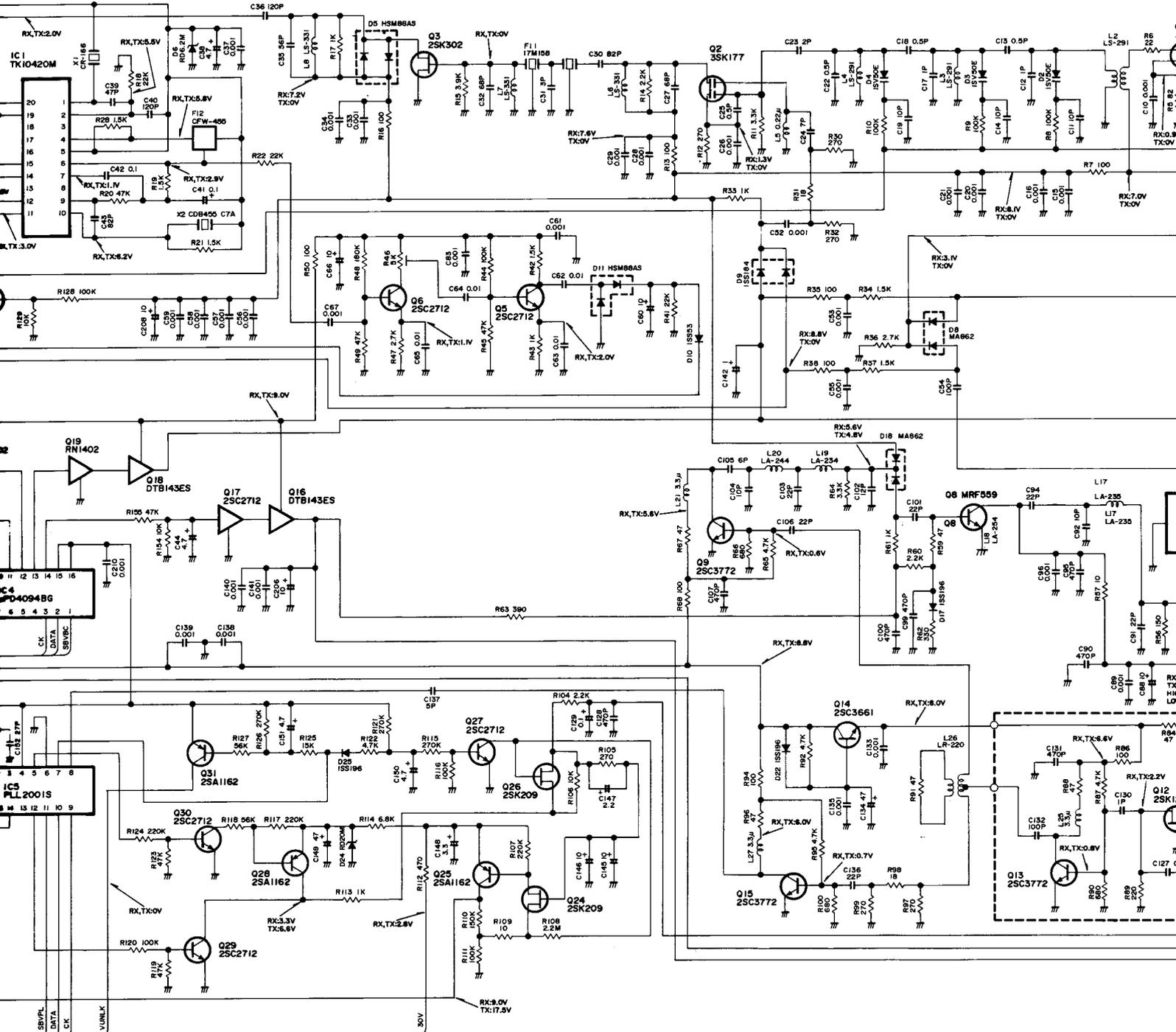
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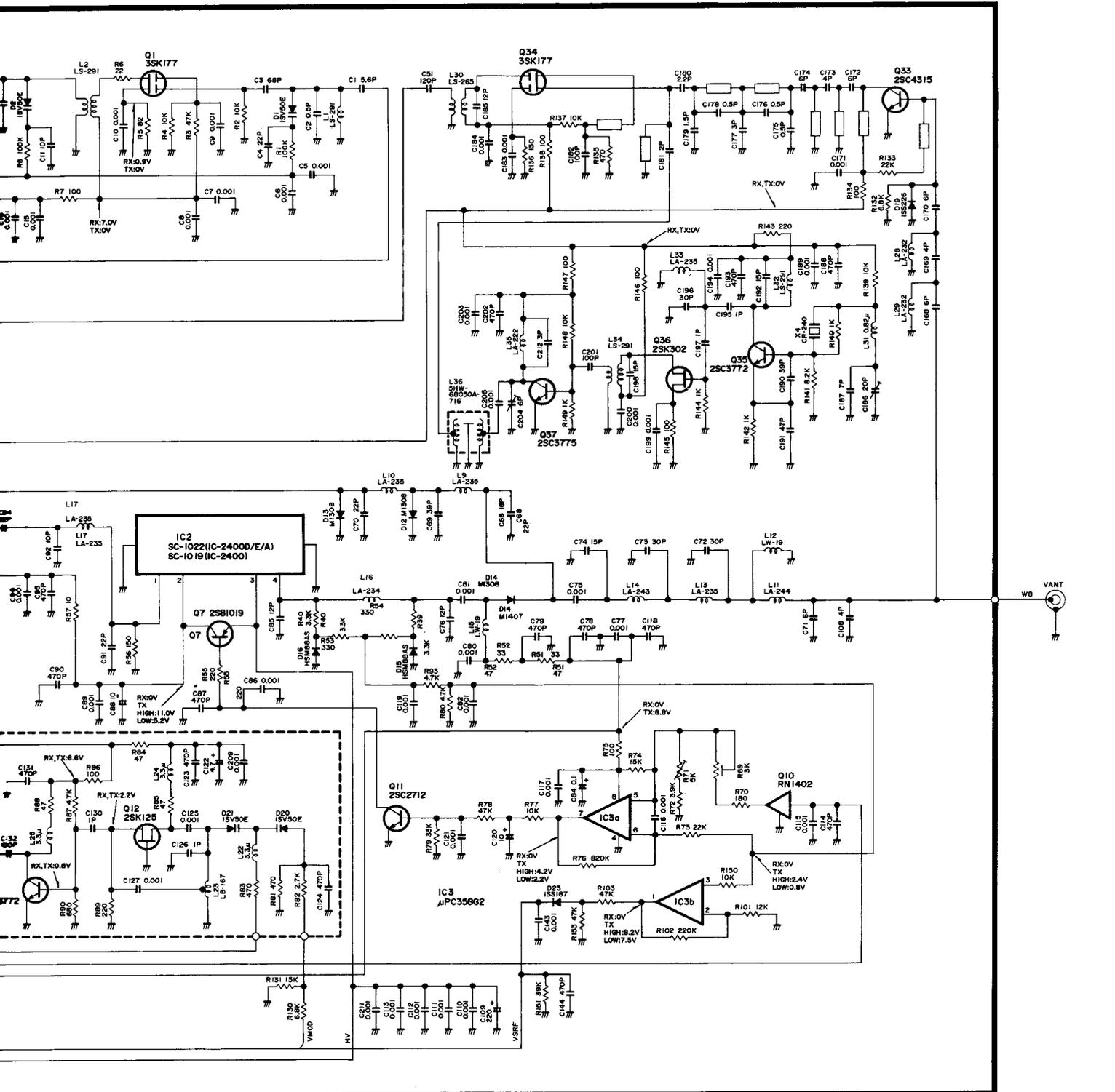
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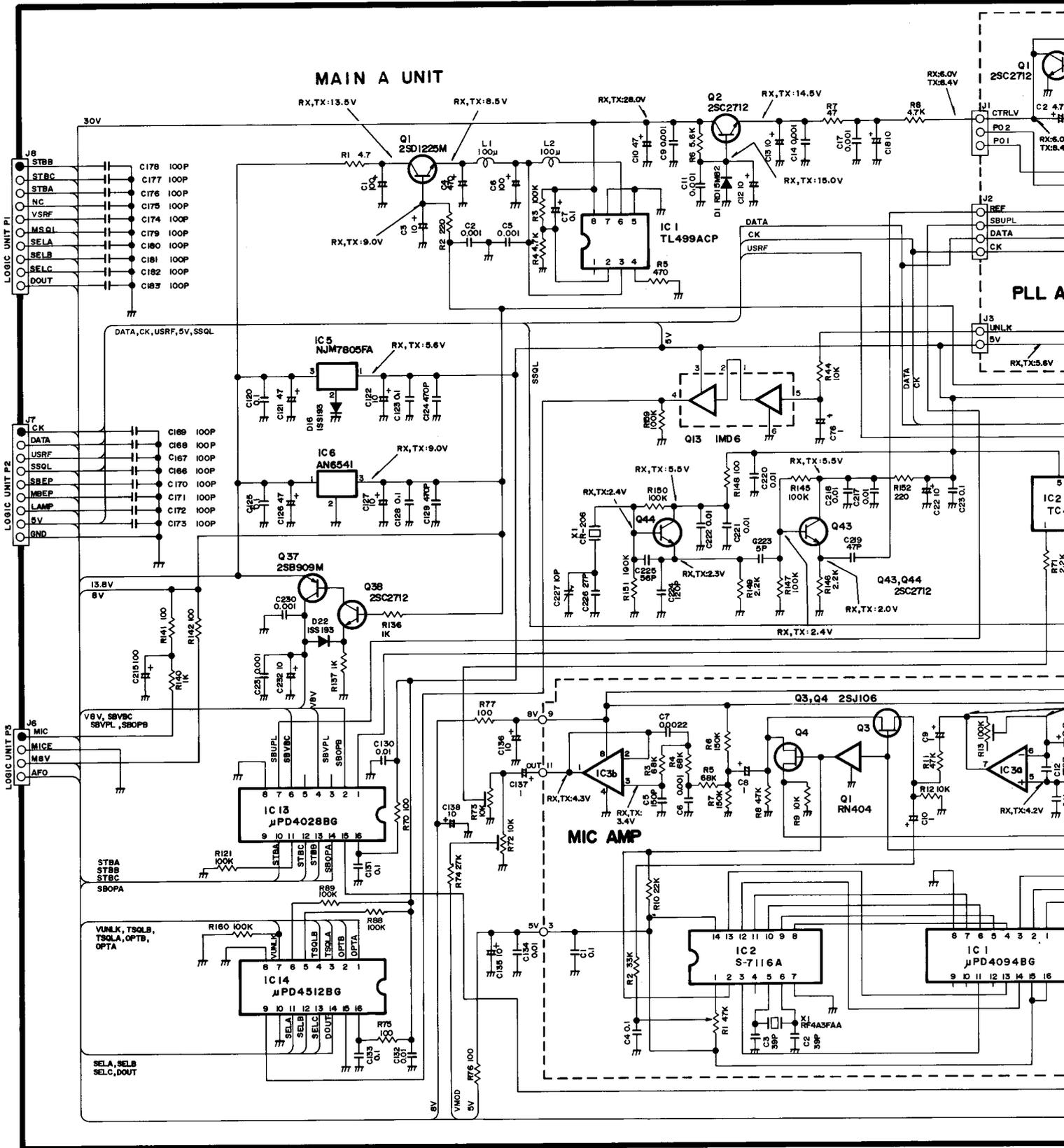




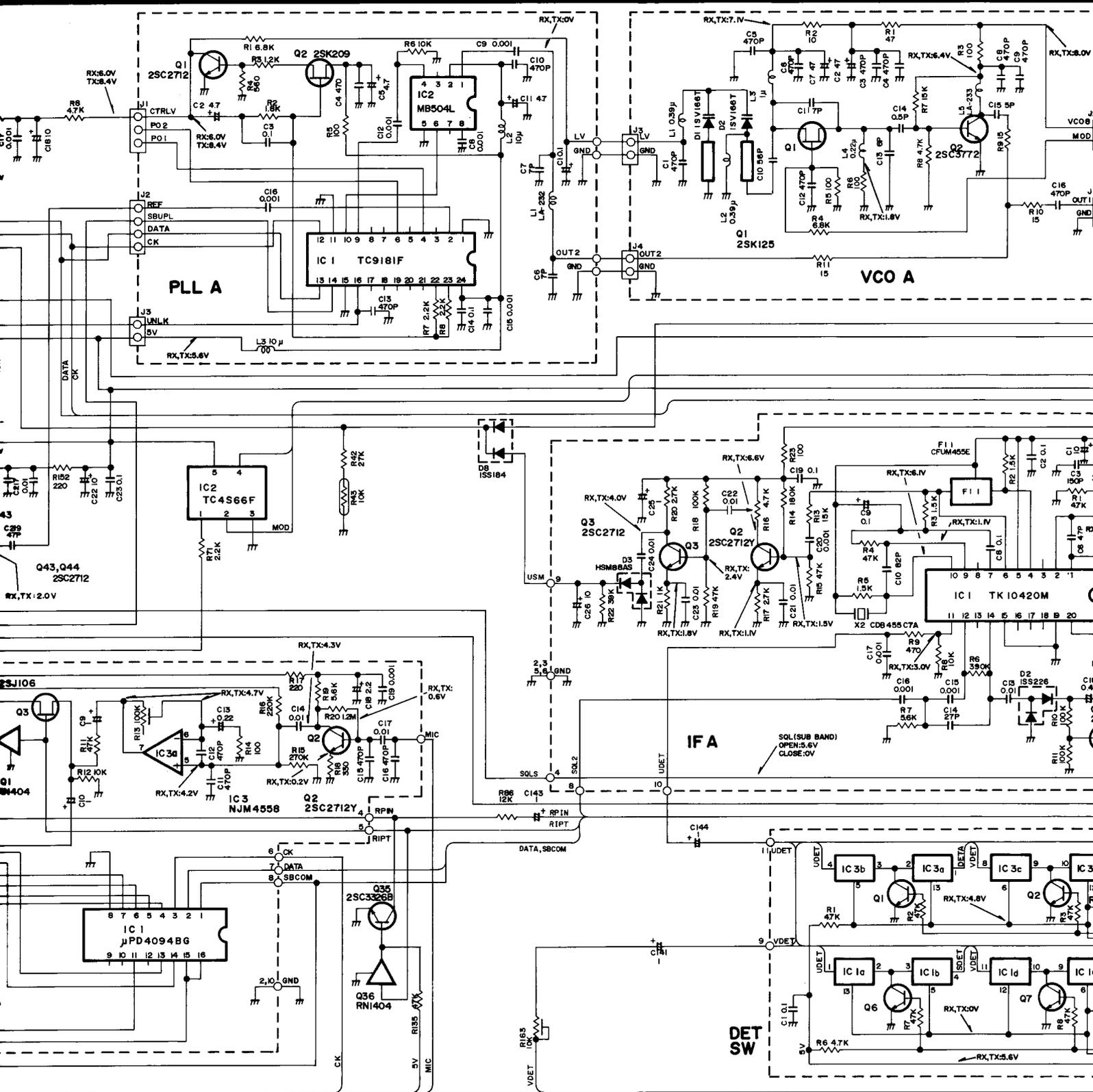




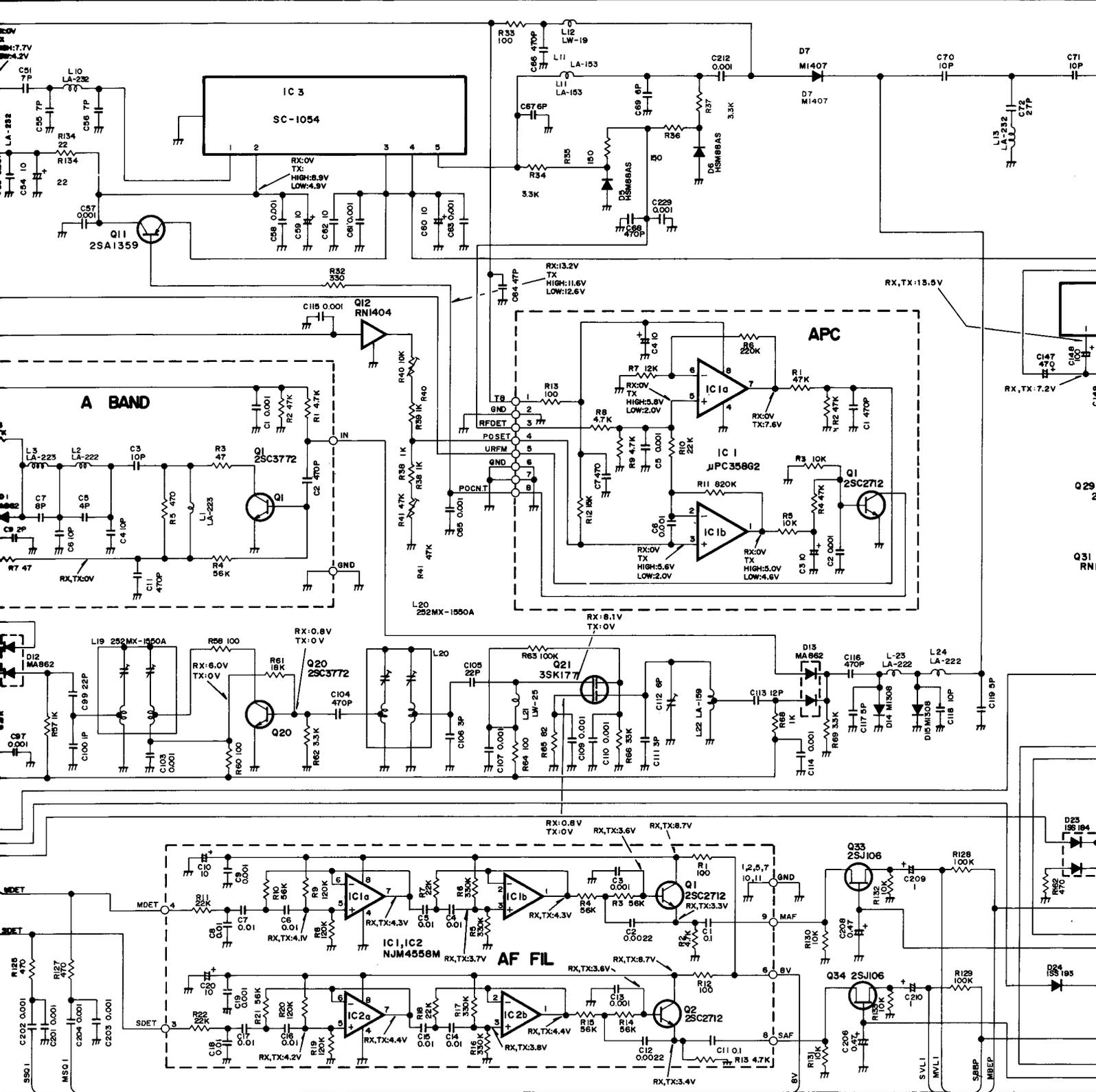


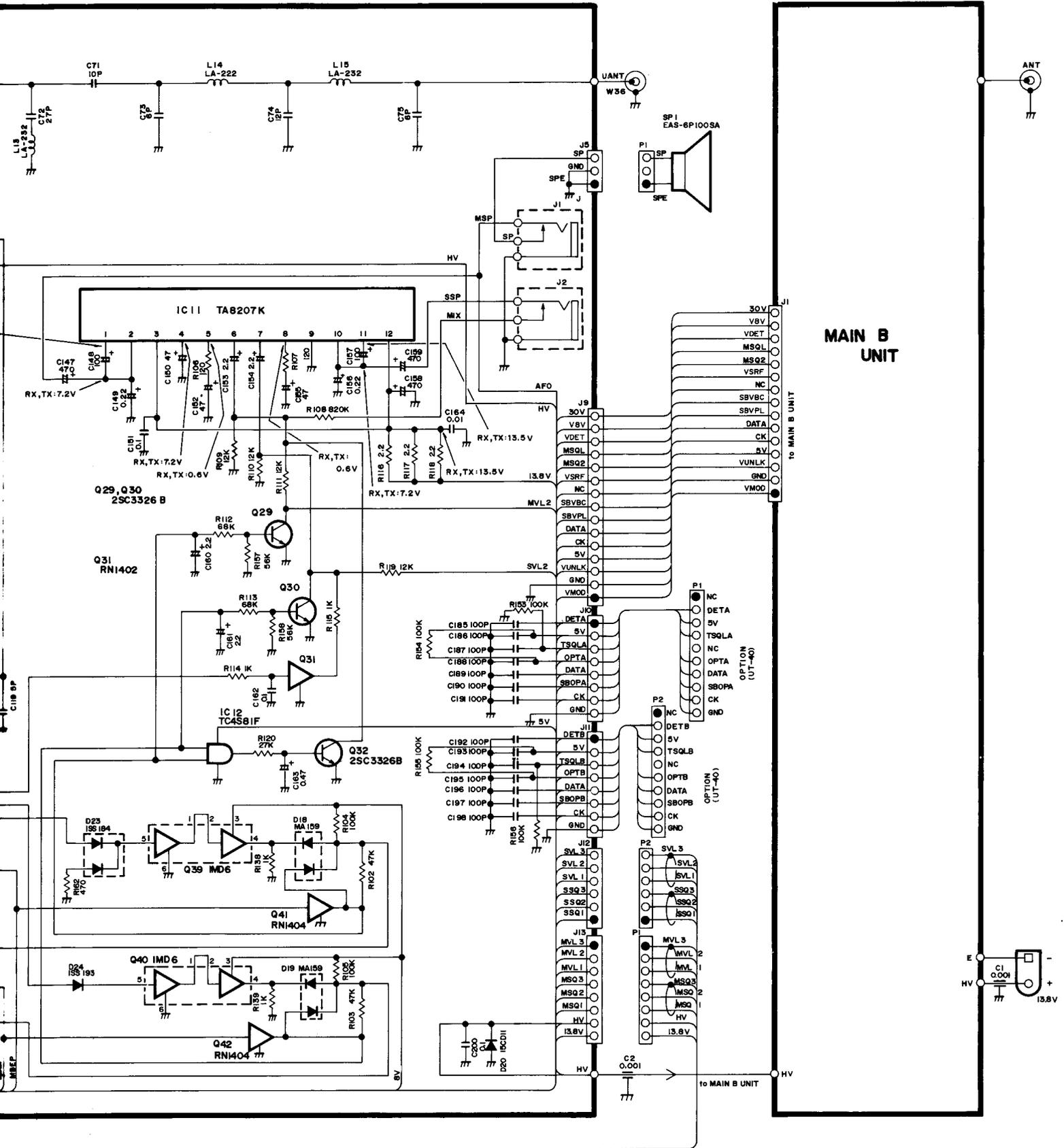


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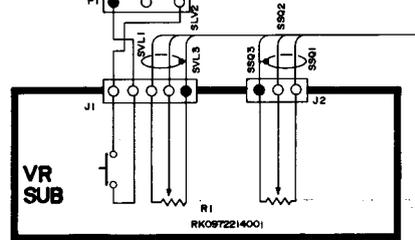
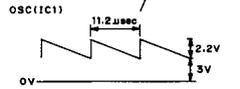
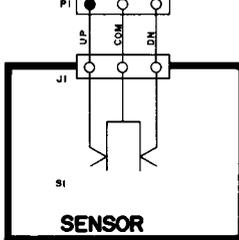
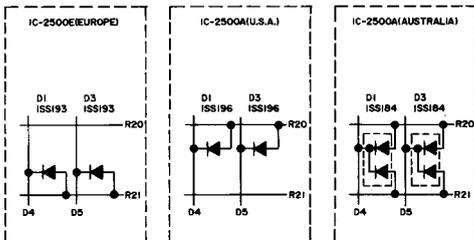
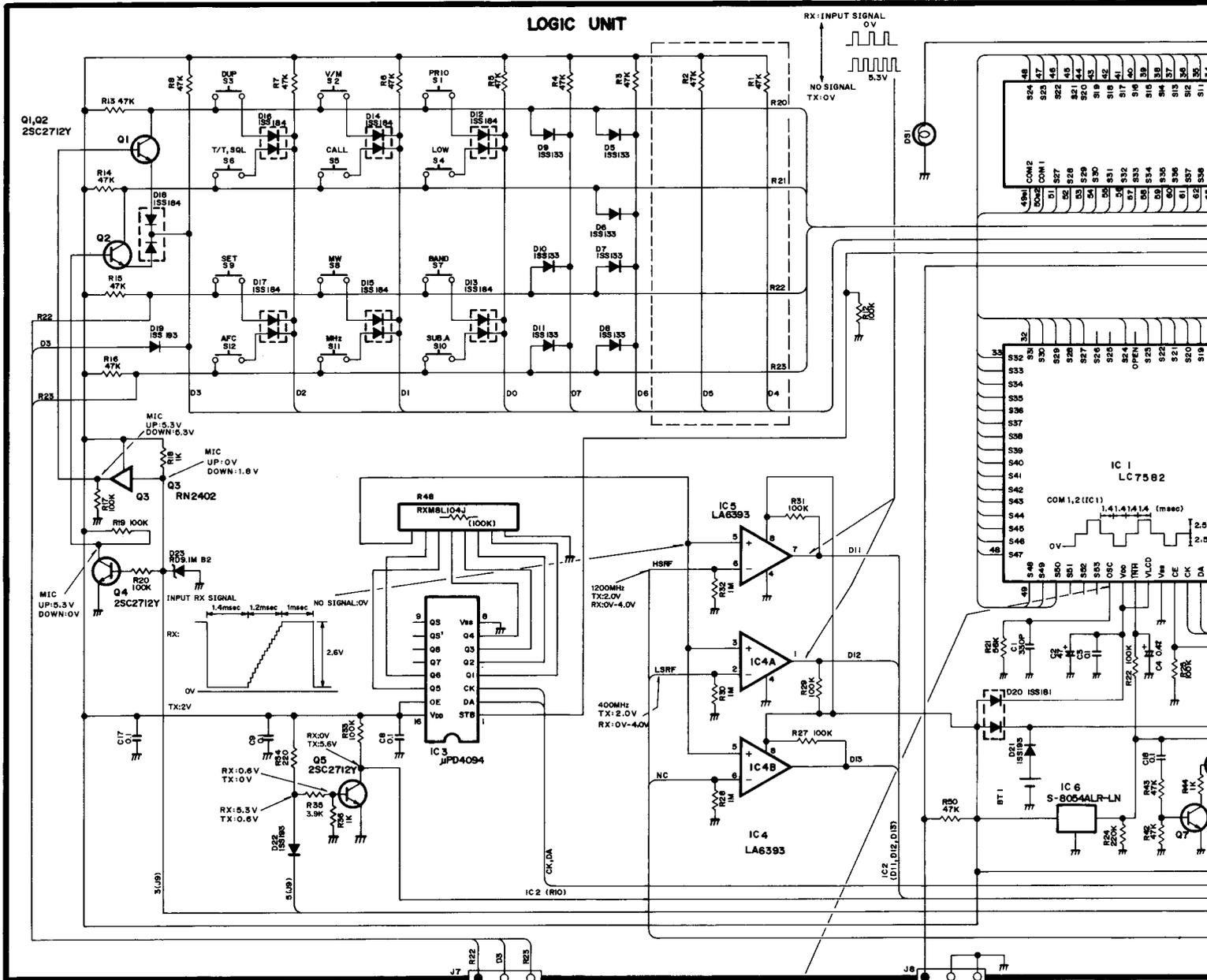


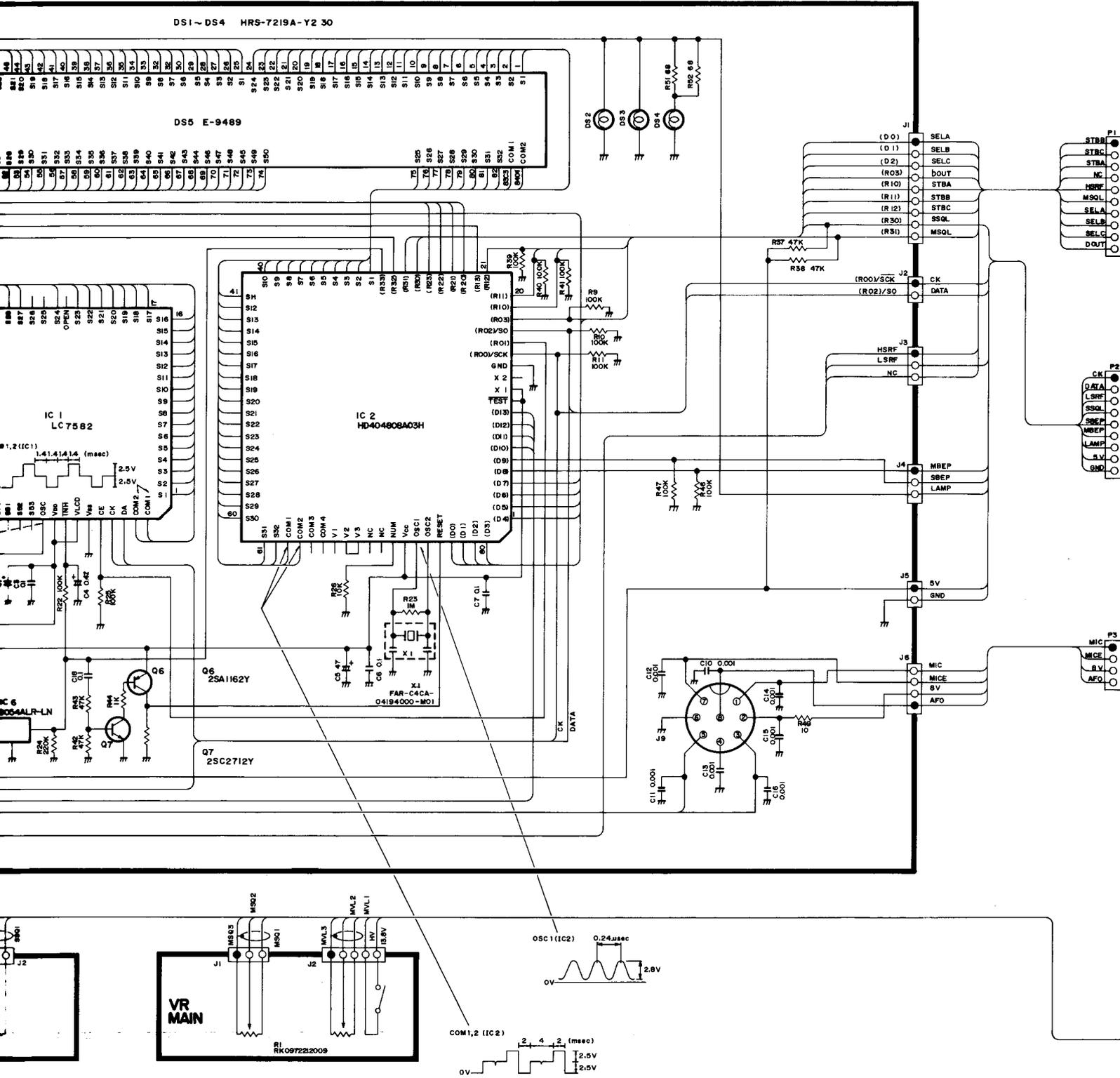




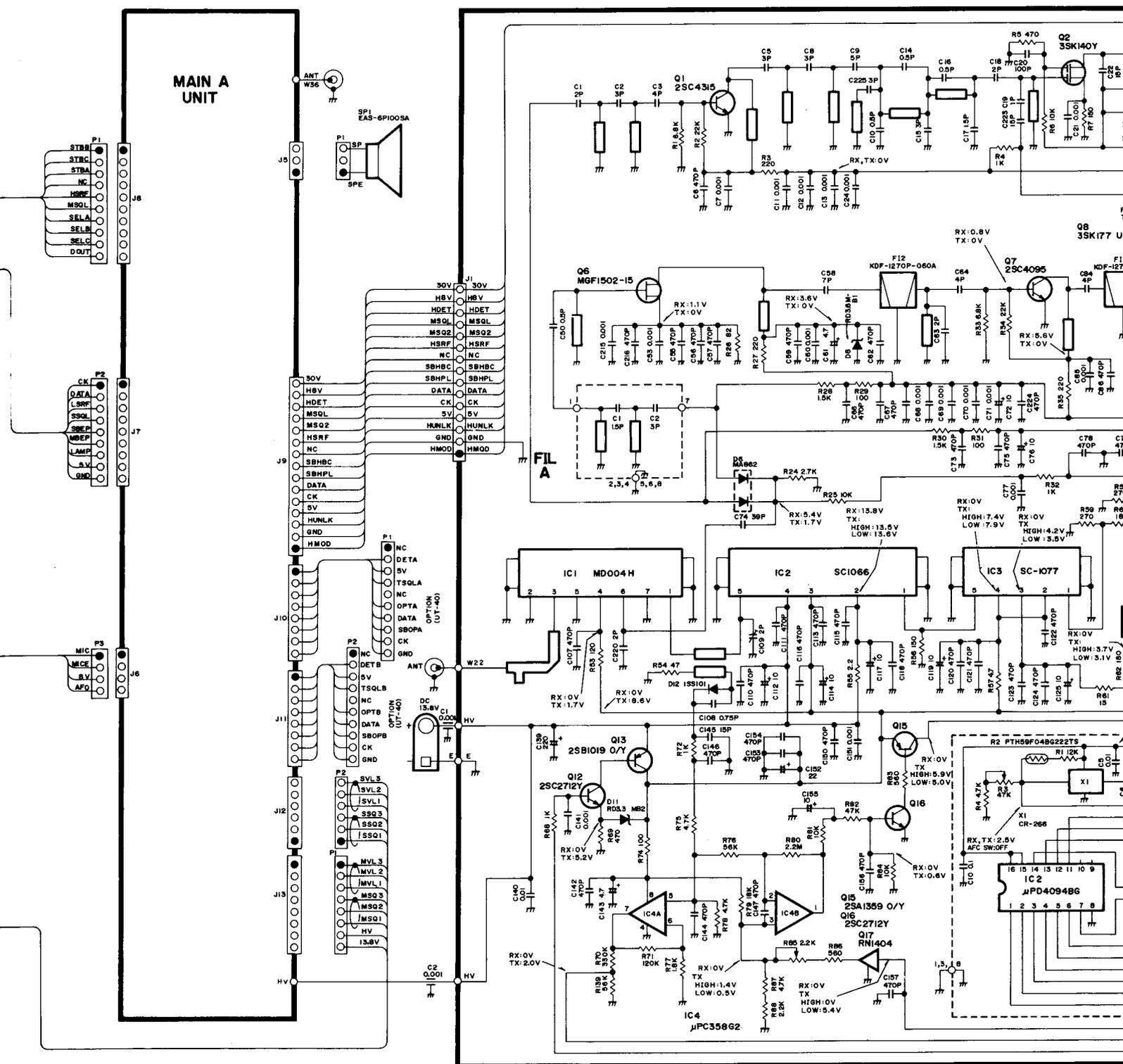
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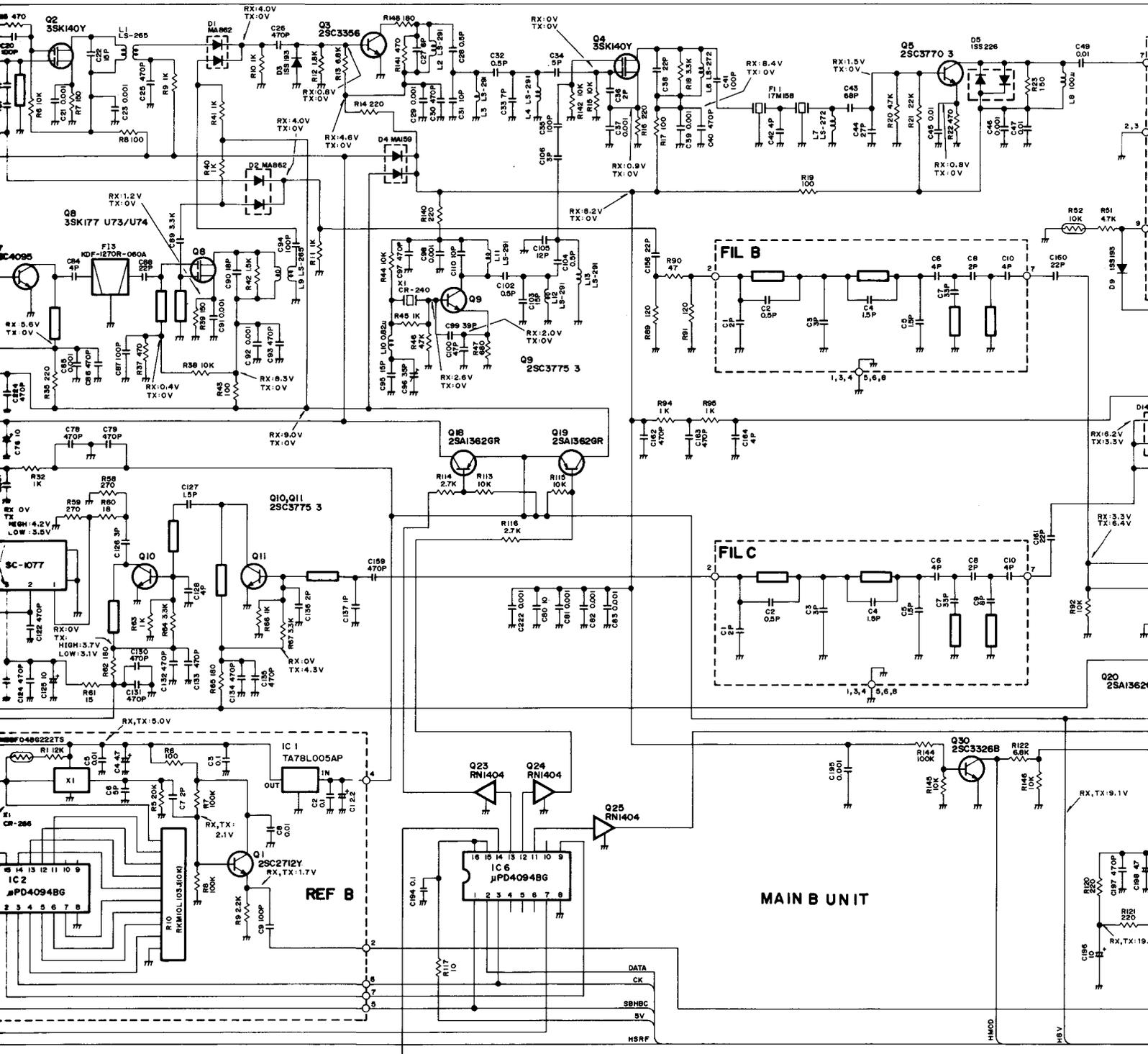
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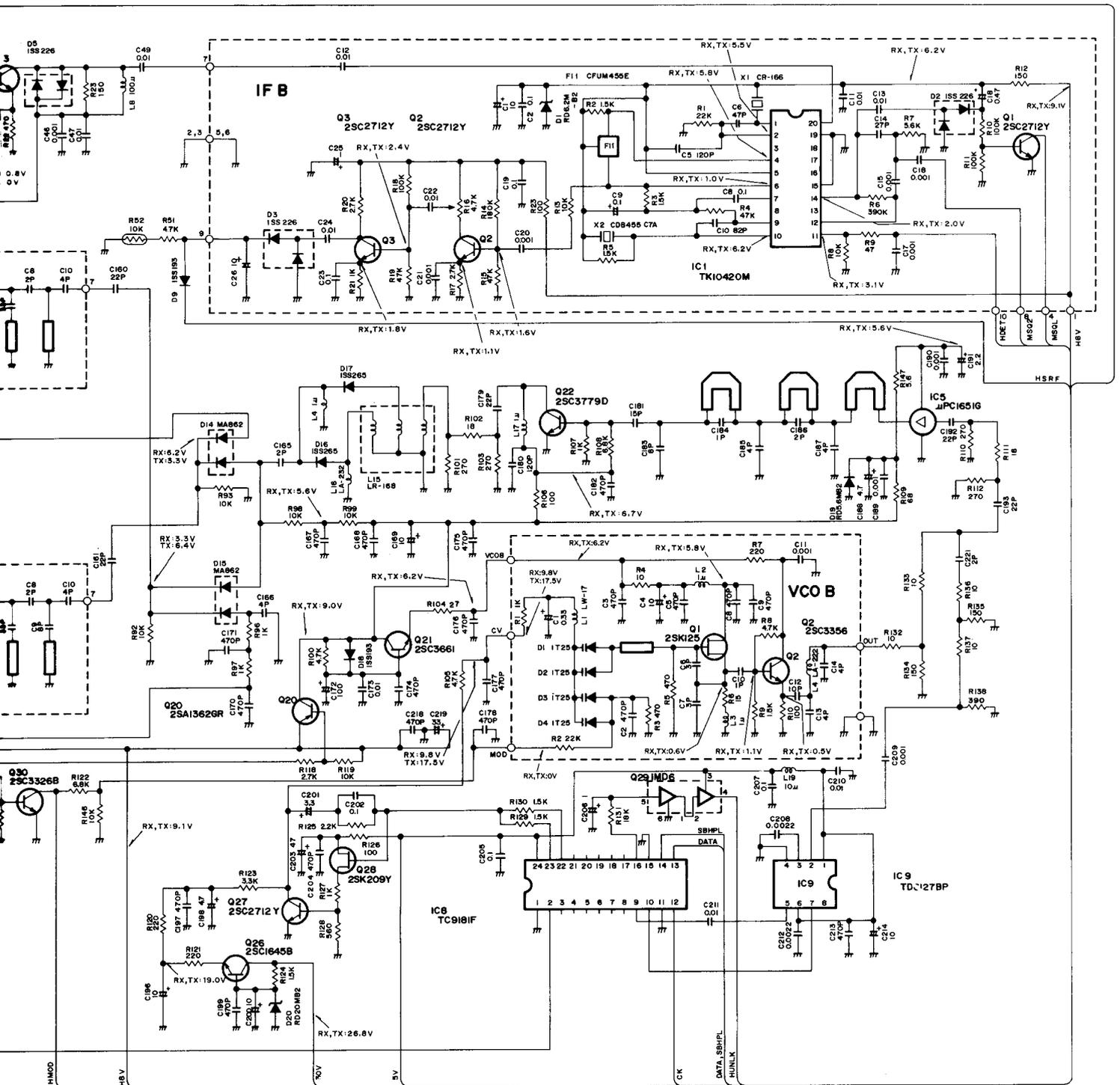




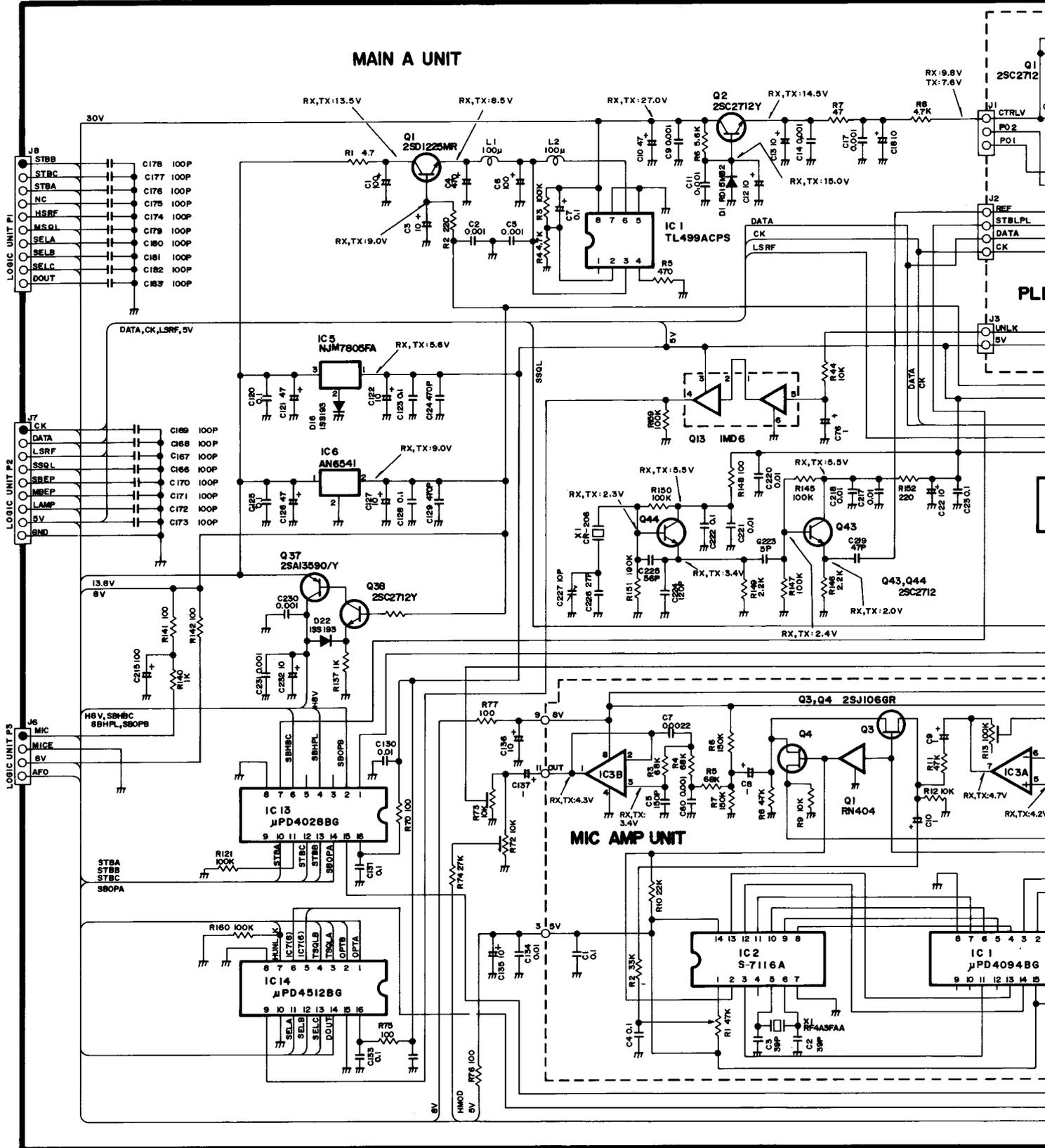
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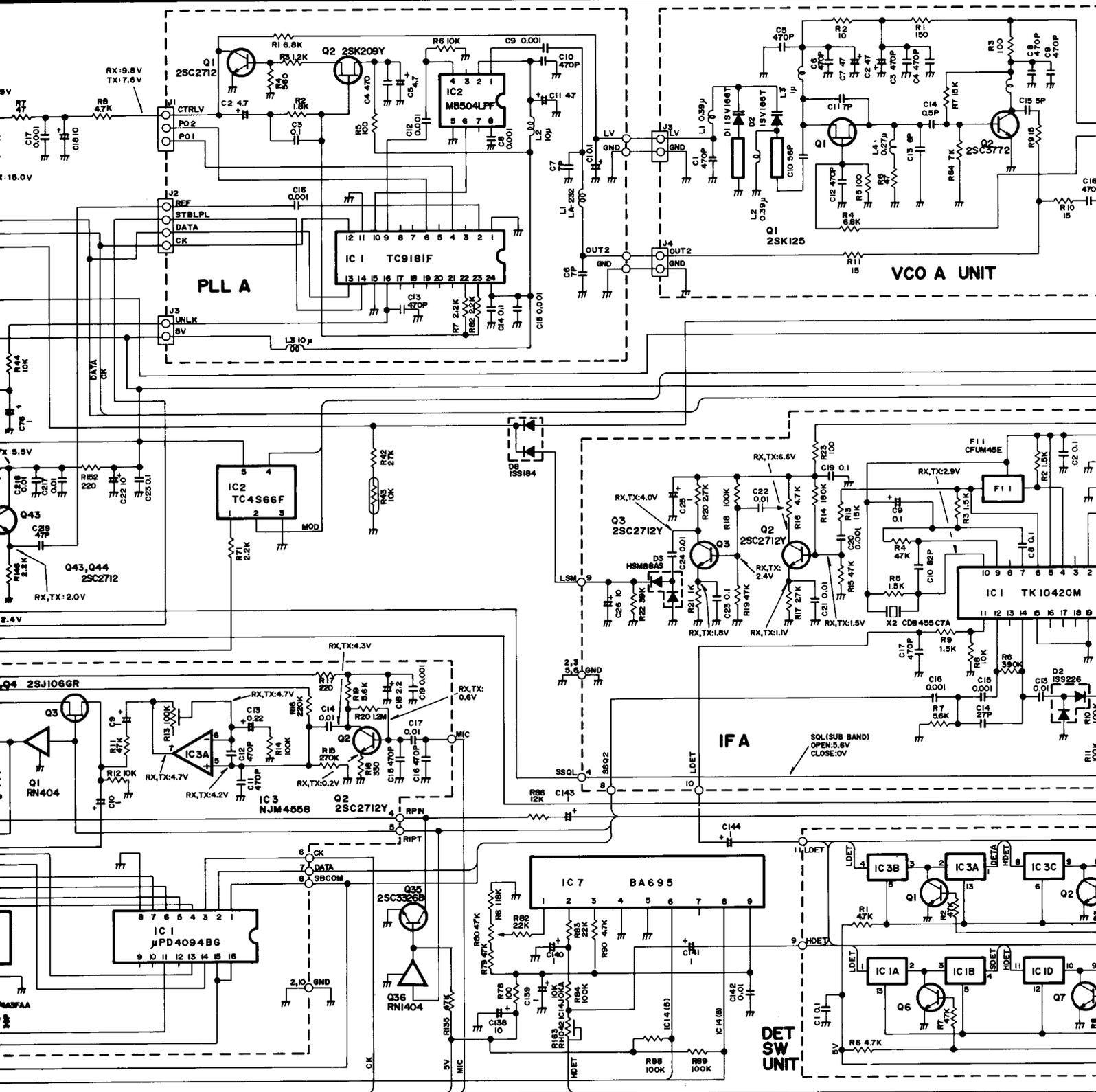


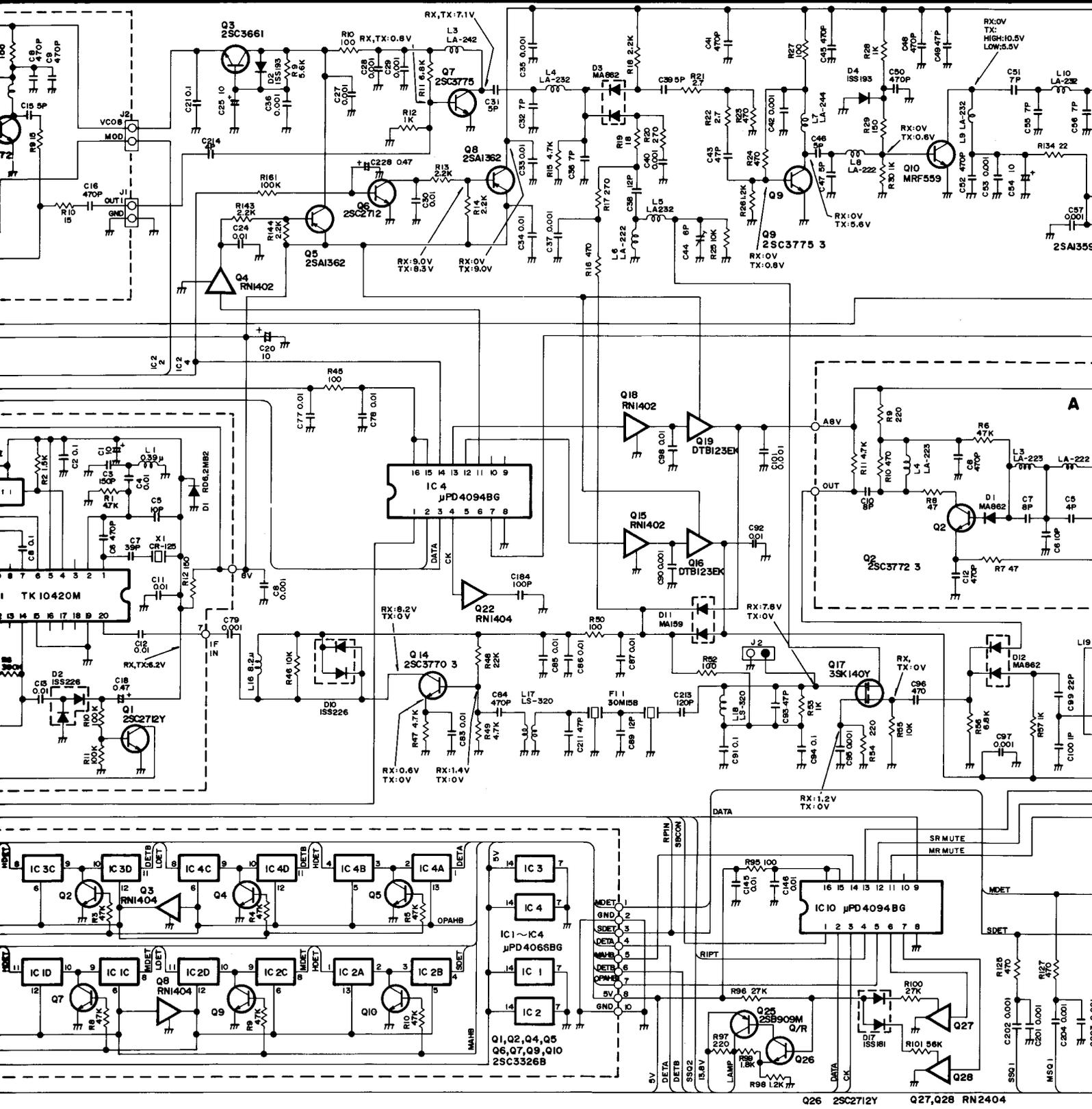


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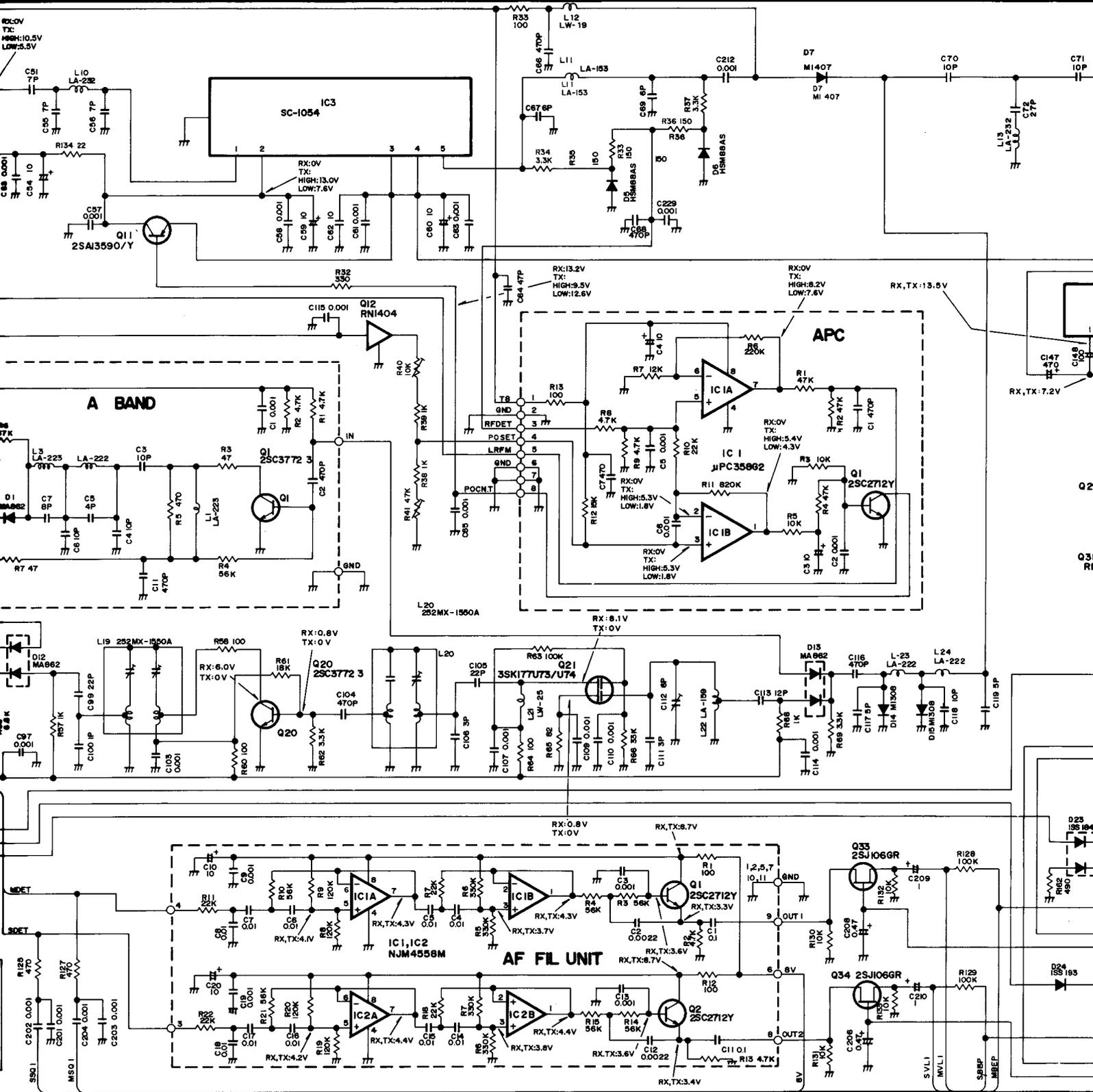


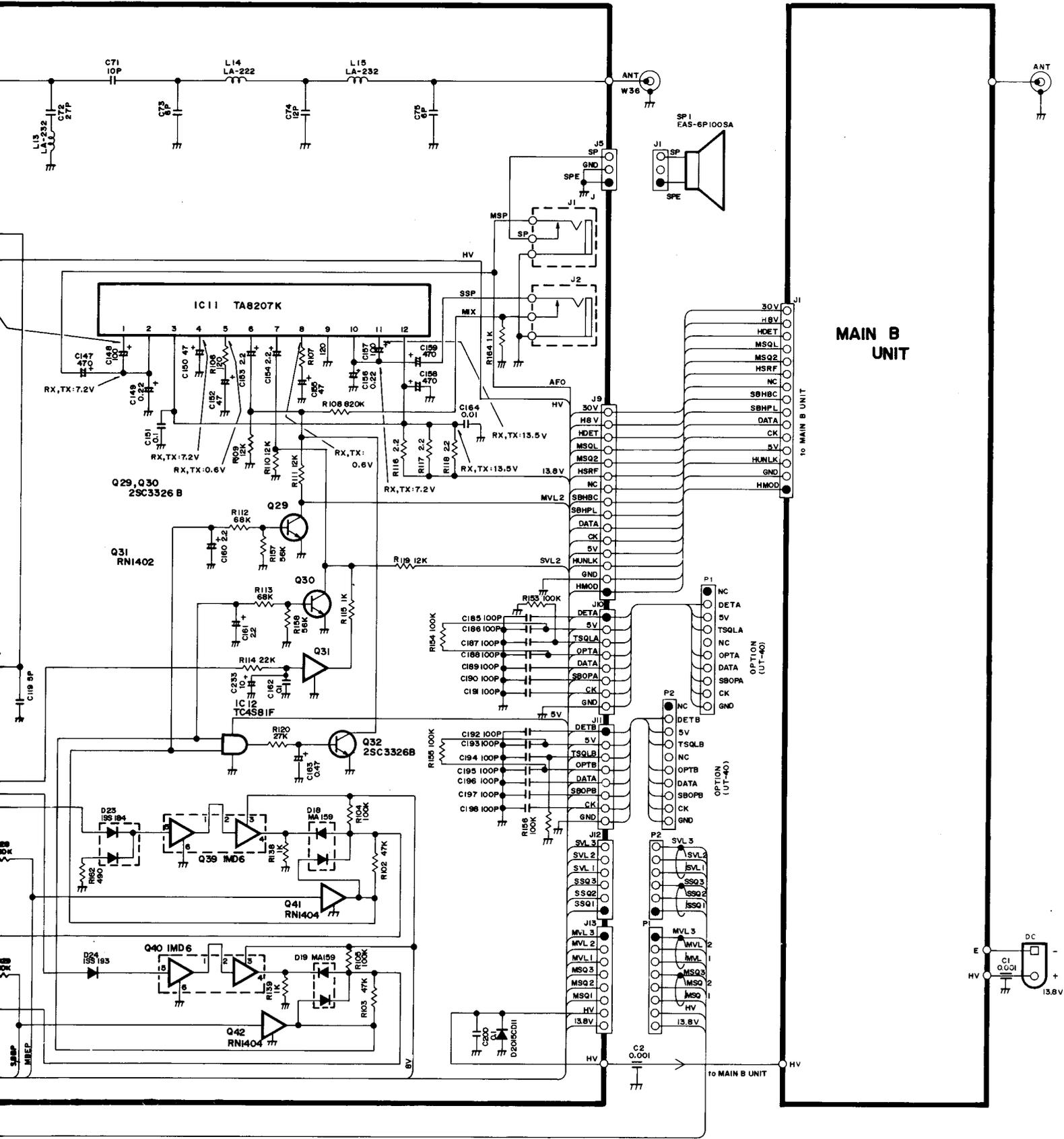
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VR SUB





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