



SERVICE MANUAL

144 MHz FM TRANSCEIVER

IC-T2H
IC-T2E-T

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INTRODUCTION

This service manual describes the latest service information for the IC-T2H/E-T FM TRANSCEIVER at the time of publication.

| MODEL | VERSION | SYMBOL |
|----------|-----------------|--------|
| IC-T2H | U.S.A. | USA |
| | Europe | EUR |
| | U.K. | UK |
| | Italy | ITA |
| | Asia | SEA |
| | C.S. America/-1 | CSA/-1 |
| | Taiwan | TWN |
| Asia-1 | ANI | |
| IC-T2E-T | Thailand | THA |

To upgrade quality, all electrical or mechanical parts 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. Such a connection could cause a fire hazard and/or electric shock.

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.

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>

1140006560 S.IC HD6433875A45H IC-T2H MAIN UNIT 1 piece
8810009560 Screw B0 2 × 6 ZK IC-T2H CHASSIS 6 pieces

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

REPAIR NOTES

1. Make sure a problem is internal before disassembling the transceiver.
2. **DO NOT** open the transceiver until the transceiver is disconnected from its 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 or 50 dB attenuator between the transceiver and a deviation meter or spectrum analyser when using such test equipment.
8. **READ** the instructions of test equipment thoroughly before connecting equipment to the transceiver.



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SECTION 1 SPECIFICATIONS

■ GENERAL

- Frequency coverage

| Version | Transmit | Receive |
|-----------------------------|----------------------|----------------------|
| U.S.A. | 140.000–150.000 MHz* | 136.000–174.000 MHz* |
| Europe, U.K. Thailand | 144.000–146.000 MHz | 144.000–146.000 MHz |
| Italy, Asia, ANI, C.S.A. | 136.000–174.000 MHz* | 136.000–174.000 MHz* |
| Taiwan | 145.000–146.000 MHz | 145.000–146.000 MHz |

Guaranteed frequency range: * 144–148 MHz

- Mode : FM (F2, F3)
- Current drain (at 9.6 V DC) : Transmit at 6.0 W 1.6 A (typical)
at 5.0 W 1.5 A (typical) [Thailand]
at 1.0 W 0.7 A (typical)
Receive max. audio 210 mA (typical)
power saved 25 mA (typical)
standby 80 mA (typical)
- Frequency stability : ± 10 ppm (0°C to +50°C; 32°F to 122°F)
- Usable temperature range : -10°C to 60°C; 14°F to 140°F
- Antenna connector : BNC (50 Ω)
- No. of memory channels : 43 ch (40 regulator, 2 scan edges and 1 call)
- Acceptable power supply : 9.6 V DC (supplied Ni-Cd cells; negative ground)
- Frequency resolution : 5 kHz and 12.5 kHz
- Dimensions (Projections not included) : 58(W) \times 140.5(H) \times 32.3(D) mm; 2⁹/₃₂(W) \times 5¹⁷/₃₂(H) \times 1⁹/₃₂(D) inch
- Weight (with BP-199) : 420 g; 14.8 oz

■ TRANSMITTER

- Output power (9.6 V DC) : 6 W typical (high)
5 W typical (high) [Thailand] only
0.7 W typical (low)
- Modulation system : Variable reactance frequency modulation
- Max. frequency deviation : ± 5 kHz
- Spurious emissions : Less than -60 dB
- External microphone connector : 3-conductor 2.5 (d) mm (1/10") / 2 k Ω

■ RECEIVER

- Receive system : Double conversion superheterodyne
- Intermediate frequencies : 1st 30.85 MHz
2nd 450 kHz
- Sensitivity (12 dB SINAD) : Less than 0.18 μ V (-122 dBm)
- Squelch sensitivity (threshold) : Less than 0.18 μ V (-122 dBm)
- Selectivity : More than 15 kHz/-6 dB
Less than 30 kHz/-60 dB
- Spurious and image refection ratio (except 2nd IF image frequency) : 60 dB (typical)
- Audio output power (at 9.6 V DC) : 500 mW (typical at 10% distortion with an 8 Ω load)
- External speaker connector : 3-conductor 3.5 (d) mm (1/8") / 8 Ω

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

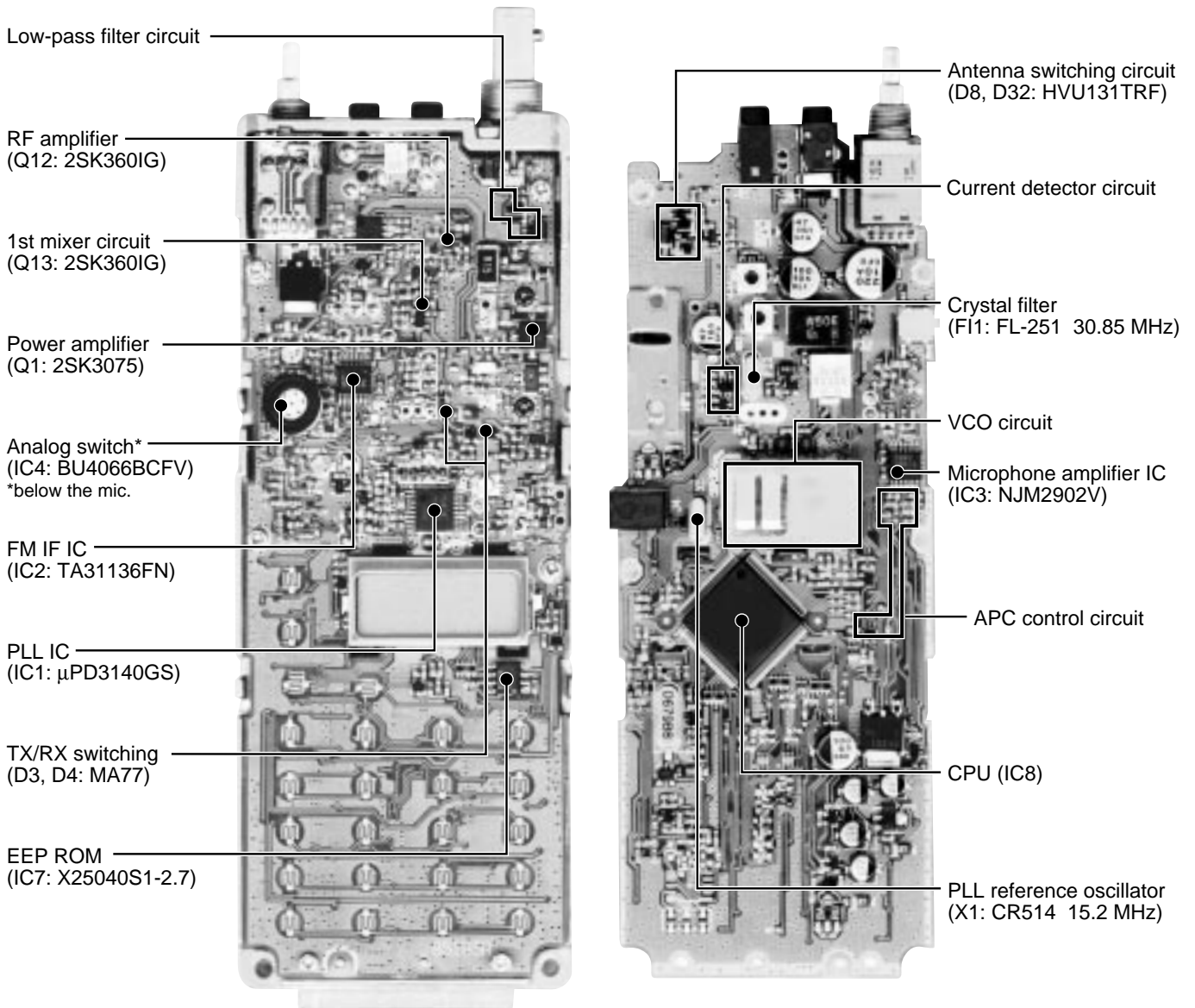
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SECTION 2 INSIDE VIEWS

• MAIN UNIT

TOP VIEW

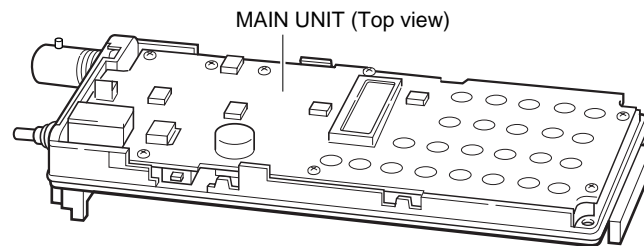
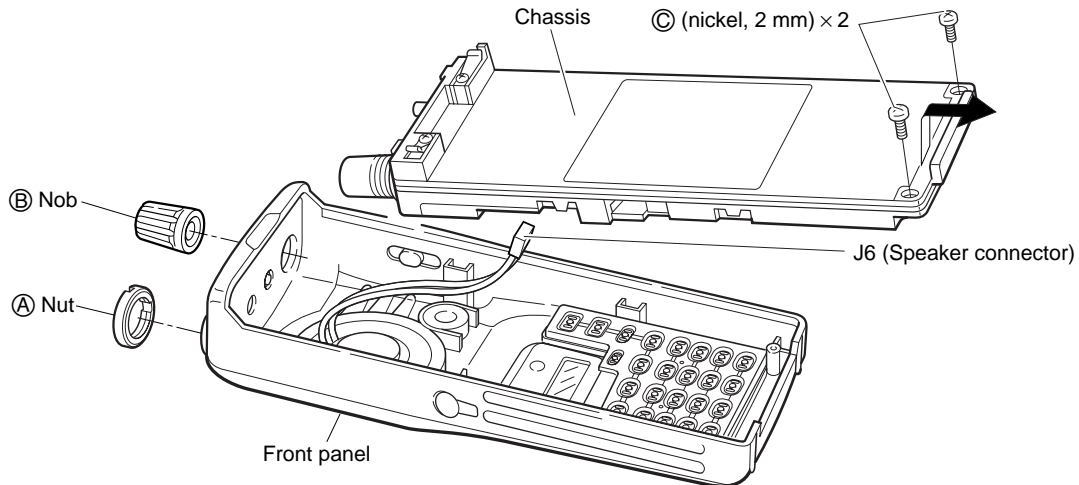
BOTTOM VIEW



SECTION 3 DISASSEMBLY INSTRUCTIONS

• Removing the chassis panel

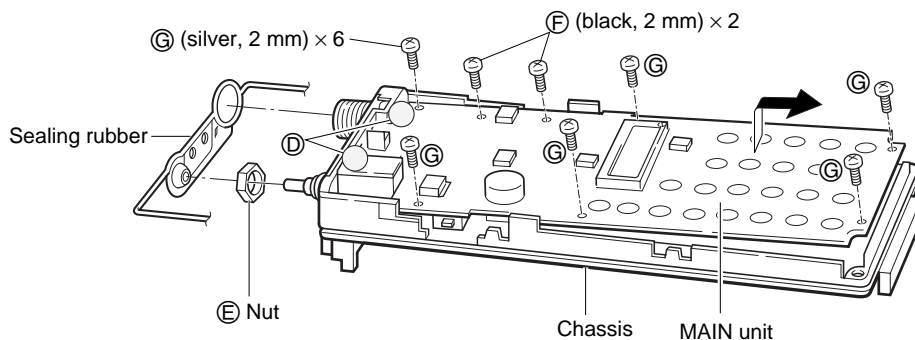
- ① Unscrew 1 nut, (A), and remove 1 nob, (B).
- ② Unscrew 2 screws, (C).
- ③ Remove the the chassis in the direction of the arrow.
- ④ Unplug J6 to separate front panel and chassis.



[chassis panel]

• Removing the MAIN unit

- ① Remove the sealing rubber.
- ② Unsolder 2 points, (D), and unscrew 1 nut, (E).
- ③ Unscrew 2 screws, (F), and 6 screws, (G) (silver, 2 mm), to separate the chassis and MAIN unit.
- ④ Remove the MAIN unit in the direction of the arrow.



SECTION 4 CIRCUIT DESCRIPTION

4-1 RECEIVER CIRCUITS

4-1-1 ANTENNA SWITCHING CIRCUIT

Received signals passed through the low-pass filter (L1–L3, C1–C7). The filtered signals are applied to the $\lambda/4$ type antenna switching circuit (D8, D32, L15, L16, C76–C78).

The antenna switching circuit functions as a low-pass filter while transmitting. However, its impedance becomes very high while D8 and D32 are turned ON. Thus transmit signals are blocked from entering the receiver circuits. The antenna switching circuit employs a $\lambda/4$ type diode switching system. The passed signals are then applied to the RF amplifier circuit.

4-1-2 RF CIRCUIT

The RF circuit amplifies signals within the range of frequency coverage and filters out-of-band signals.

The signals from the antenna switching circuit pass through a bandpass filter (D10, L26) after being amplified at the RF amplifier (Q29). The filtered signals are amplified at another RF amplifier (Q12), then applied to the 1st mixer circuit after out-of-band signals are suppressed at the bandpass filter (D11, D12, L18, L19, C92, C94, C96, C236).

D10–D12 employ varactor diodes that track the bandpass filters and are controlled by the T4/PWR signal from the CPU (IC8, pins 54–59). These diodes tune the center frequency of an RF passband for wide bandwidth receiving and good image response rejection.

4-1-3 1ST MIXER AND 1ST IF CIRCUITS

The 1st mixer circuit converts the received signal to a fixed frequency of the 1st IF signal with a PLL output frequency. By changing the PLL frequency, only the desired frequency will pass through a crystal filter at the next stage of the 1st mixer.

The signals from the RF circuit are mixed at the 1st mixer (Q13) with a 1st LO signal coming from the VCO circuit to produce a 30.85 MHz 1st IF signal.

The 1st IF signal is applied to a crystal filter (F11) to suppress out-of-band signals. The filtered 1st IF signal is applied to the IF amplifier (Q14), then applied to the 2nd mixer circuit (IC2, pin 16).

4-1-4 2ND IF AND DEMODULATOR CIRCUITS

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

The 1st IF signal from the IF amplifier is applied to the 2nd mixer section of the FM IF IC (IC2, pin 16), and is mixed with the 2nd LO signal to be converted to a 450 kHz 2nd IF signal.

The FM IF IC contains the 2nd mixer, limiter amplifier, quadrature detector and active filter circuits. A 30.4 MHz 2nd LO signal is produced at the PLL circuit by doubling its reference frequency.

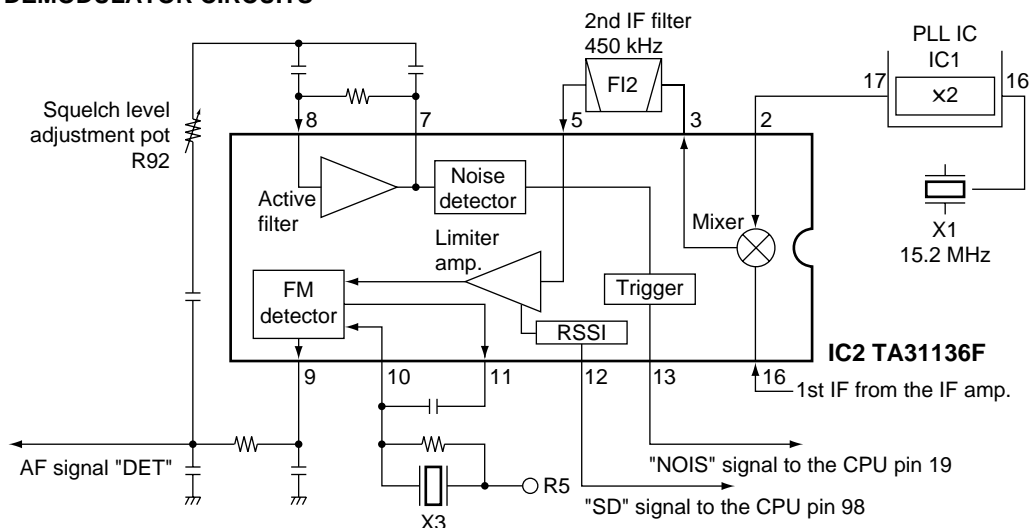
The 2nd IF signal from the 2nd mixer (IC2, pin 3) passes through a ceramic filter (F12) to remove unwanted heterodyned frequencies. It is then amplified at the limiter amplifier (IC2, pin 5) and applied to the quadrature detector (IC2, pins 10, 11) to demodulate the 2nd IF signal into AF signals.

4-1-5 AF CIRCUIT

The AF amplifier circuit amplifies the demodulated AF signals to drive a speaker.

AF signals from the FM IF IC (IC2, pin 9) are applied to the analog switch (IC4, pin 1) via the AF filter circuit (IC3b, pins 6, 7). The output signals from pin 11 are applied to the AF power amplifier (IC5, pin 4) after passing through the [VOL] control (VR board, R1).

•2nd IF AND DEMODULATOR CIRCUITS



The AF signals from the [VOL] control are applied to the AF power amplifier circuit (IC5, pin 4) to obtain the specified audio level. The amplified AF signals, output from pin 10, are applied to the internal speaker (SP1) via the [SP] jack when no plug is connected to the jack.

4-1-6 SQUELCH CIRCUIT

A squelch circuit cuts out AF signals when no RF signals are received. By detecting noise components in the AF signals, the squelch switches the analog switch.

A portion of the AF signals from the FM IF IC (IC2, pin 9) are applied to the active filter section (IC2, pin 8) where noise components are amplified and detected with an internal noise detector. The squelch input level adjustment pot (R92) is connected in parallel to the active filter input (pin 8) to control the input noise level.

The trigger circuit converts the detected signals to a HIGH or LOW signal and applies this (from pin 13) to the CPU (IC8, pin 19) as the NOIS signal. When the CPU receives a HIGH level NOIS signal, the CPU controls the RMUT line to cut the AF signals at the analog switch IC (IC4). At the same time, the AFON line controls the AF regulator circuit (Q15, Q16) to cut out the VCC power source for the AF power amplifier (IC5).

4-2 TRANSMITTER CIRCUITS

4-2-1 MICROPHONE AMPLIFIER CIRCUIT

The microphone amplifier circuit amplifies audio signals with +6 dB/octave pre-emphasis characteristics from the microphone to a level needed for the modulation circuit.

The AF signals from the microphone are applied to the microphone amplifier circuit (IC3c, pin 10). The amplified AF signals are passed through the low-pass filter circuit (IC3d, pins 13, 14) via the analog switch (IC4, pins 2, 3). The filtered AF signals are applied to the modulator circuit after passing through the analog switch (IC4, pins 8, 9) and the deviation adjustment pot (R119).

4-2-2 MODULATION CIRCUIT

The modulation circuit modulates the VCO oscillating signal (RF signal) using the microphone audio signal.

The audio signals (SHIFT) change the reactance of D6 to modulate an oscillated signal at the VCO (Q7, Q8). The oscillated signal is amplified at the buffer-amplifiers (Q4, Q6), then applied to the T/R switching circuit (D3, D4).

4-2-3 DRIVE/POWER AMPLIFIER CIRCUITS

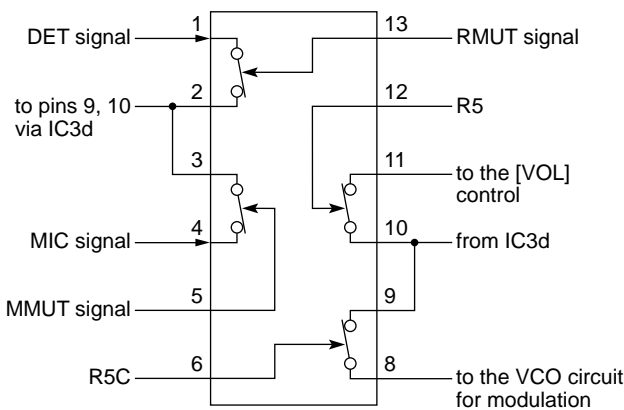
The signal from the VCO circuit passes through the T/R switching circuit (D3) and is amplified at the buffer (Q3), drive (Q2) and power (Q1) amplifiers to obtain 5.5 W (4.5 W: Thailand only) of RF power (at 9.6 V DC/typical). The amplified signal passes through the antenna switching circuit (D1), and low-pass filter (L1-L3, C1-C7) and is then applied to the antenna connector (J1).

The bias current of the drive (Q2) and power (Q1) amplifiers is controlled by the APC circuit to stabilize the output power.

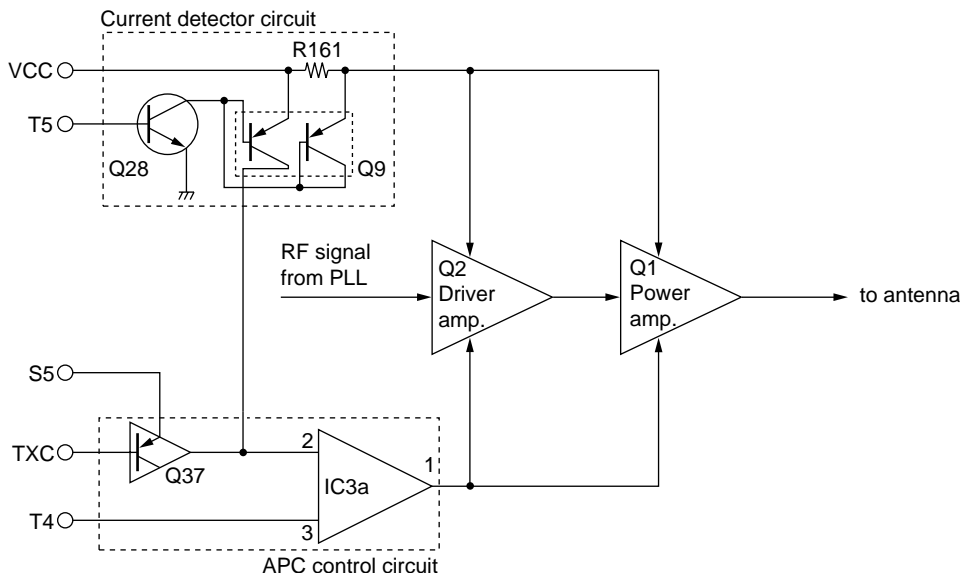
4-2-4 CURRENT DETECTOR CIRCUIT

The current detector circuit (Q9, Q28, R161) detects total driving current of the drive and the power amplifiers, using the current sensor (R161). The differential amplifier (Q9) detects voltage differences between the current sensor input and output voltages, then outputs control voltage to the APC circuit.

• Analog switch (IC4)



• APC circuit



4-2-5 APC CIRCUIT

The APC circuit (IC3a, Q37) protects drive and power amplifiers from excessive currents and selects HIGH or LOW output power.

The output voltage from the current detector circuit is applied to the inverting amplifier (IC3a, pin 2), and the T4/PWR signal from the CPU (IC8, pins 54–59) is applied to the other input for reference.

When the driving current increases, the input voltage of the differential amplifier (Q9, pin 1) will be decreased. In such cases, input voltage of the inverting amplifier (pin 2) is increased to decrease the output power.

Q37 is controlled by the TXC signal from the CPU (IC8, pin 50) to select HIGH or LOW output power.

4-3 PLL CIRCUIT

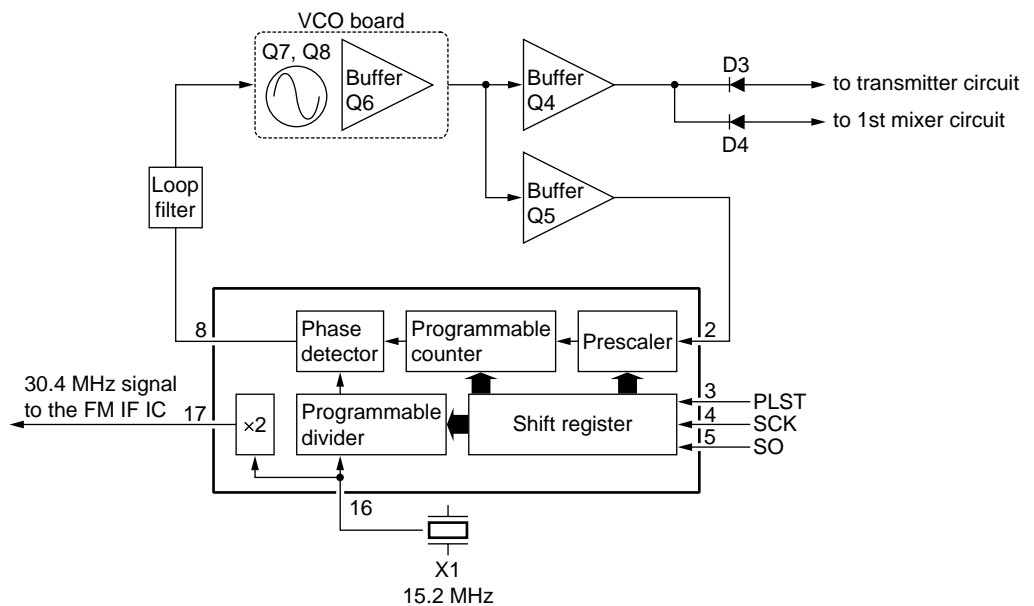
A PLL circuit provides stable oscillation of the transmit frequency and receive 1st LO frequency. The PLL output compares the phase of the divided VCO frequency to the reference frequency. The PLL output frequency is controlled by the divided ratio (N-data) of a programmable divider.

The PLL circuit contains the VCO circuit (Q7, Q8, D6). The oscillated signal is amplified at the buffer-amplifiers (Q5, Q6) and then applied to the PLL IC (IC1, pin 2).

The PLL IC contains a prescaler, programmable counter, programmable divider, phase detector and charge pump, etc. The entered signal is divided at the prescaler and programmable counter section by the N-data ratio from the CPU. The divided signal is detected on phase at the phase detector using the reference frequency.

If the oscillated signal drifts, its phase changes from the reference frequency, causing a lock voltage change to compensate for the drift in the oscillated frequency.

• PLL circuit



A portion of the VCO signal is amplified at the buffer-amplifier (Q4, Q6) and is then applied to the receive 1st mixer or transmit buffer-amplifier circuit via the T/R switching diode (D3, D4).

4-4 POWER SUPPLY CIRCUITS VOLTAGE LINE

| Line | Description |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BATT | The voltage from the attached battery pack/case. |
| VCC | The same voltage as the BATT line controlled by the [PWR/VOL] control. |
| CPU5 | Common 5 V converted from the VCC line by the reference regulator circuit (IC6). The output voltage is applied to the CPU (IC8) and the 5V regulator circuit, etc. |
| 5V | Common 5 V converted from the VCC line at the 5 V regulator circuit (Q18, Q19) using the CPU5 line voltage for reference. |
| T5 | Transmit 5 V converted from the VCC line at the T5 regulator circuit (Q22, Q40). |
| R5 | Receive 5 V converted from the 5 V line at the R5 regulator circuit (Q21). The regulated voltage is applied to the receiver circuits. |
| S5 | Common 5 V converted from the 5V line by the S5 regulator circuit (Q20). |
| OPT | The same voltage as the 5V line for the optional HM-75A or HS-51 through a resistor (R132). |

4-5 PORT ALLOCATIONS

CPU (IC8)

| Pin number | Port name | Description |
|------------|-----------|--------------------------------------------------------------------------------------------------------------|
| 1 | CIN | Input port for CTCSS signal for decoding. |
| 9 | RESET | Input port for the reset signal. |
| 11 | CSIFT | Output reference oscillator for the CPU control signal. |
| 12 | SCK | Output clock signal to the PLL (IC1) and EEPROM (IC7) ICs, etc. |
| 13 | SI | Input port for the data signals from EEPROM (IC7), etc. |
| 14 | SO | Output data signal to the PLL (IC1) and EEPROM (IC7) ICs, etc. |
| 15 | UNLK | Input port for PLL unlock signal from the PLL IC (IC1). High: During unlock |
| 16 | CLIN | Input port for the cloning signal. |
| 17 | CLOUT | Output port for the cloning signal. |
| 18 | PLST | Outputs strobe signals to the PLL IC (IC1). |
| 19 | NOIS | Input port for noise signals (pulse type) from the FM IF IC (IC2, pin 13). |
| 26 | CONT | Outputs LCD contrast control signal. High: When normal level is selected. |
| 36–41 | KS0–KS5 | Output ports for key matrix. |
| 42 | MMUT | Outputs the analog switch (IC4) control signal. Low : While DTMF or ANI signals are output. |
| 43 | RMUT | Outputs the analog switch (IC4) control signal. Low : While muted. |
| 44–47 | KR0–KR5 | Input ports for key matrix. |
| 48 | R5C | Outputs R5 regulator control signal. Low : While receiving |
| 49 | S5C | Output S5 regulator control signal. Low : While power is ON. |
| 50 | TXC | Outputs transmit output power select (HIGH or LOW) signal. Low : HIGH power is selected. |
| 51 | T5C | Input ports for the [PTT] switch. High: While [PTT] is pushed |
| 52 | LIGHT | Outputs LCD backlight control signal. High: When backlighting is ON |
| 53 | AFON | Outputs the regulator circuit control signal for the AF amplifier. High: While AF amplifier is activated. |

| Pin number | Port name | Description |
|------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 54–60 | T4/PWR | Output ports for: •tunable bandpass filter control signal while receiving. •reference signal for the APC circuit while transmitting. |
| 90 | BEEP | Outputs beep audio signals. |
| 91 | DTMF | Outputs DTMF signals while pushing the keypad during transmit. |
| 94 | PTT | Input port for the [PTT] switch. |
| 96 | TEMP | Input port for internal temperature detection. |
| 98 | SD | Input port for the S-meter signal from the FM IF IC (IC2, pin 12). |
| 100 | VIN | Input port for overvoltage detection from the connected power supply or battery pack. |

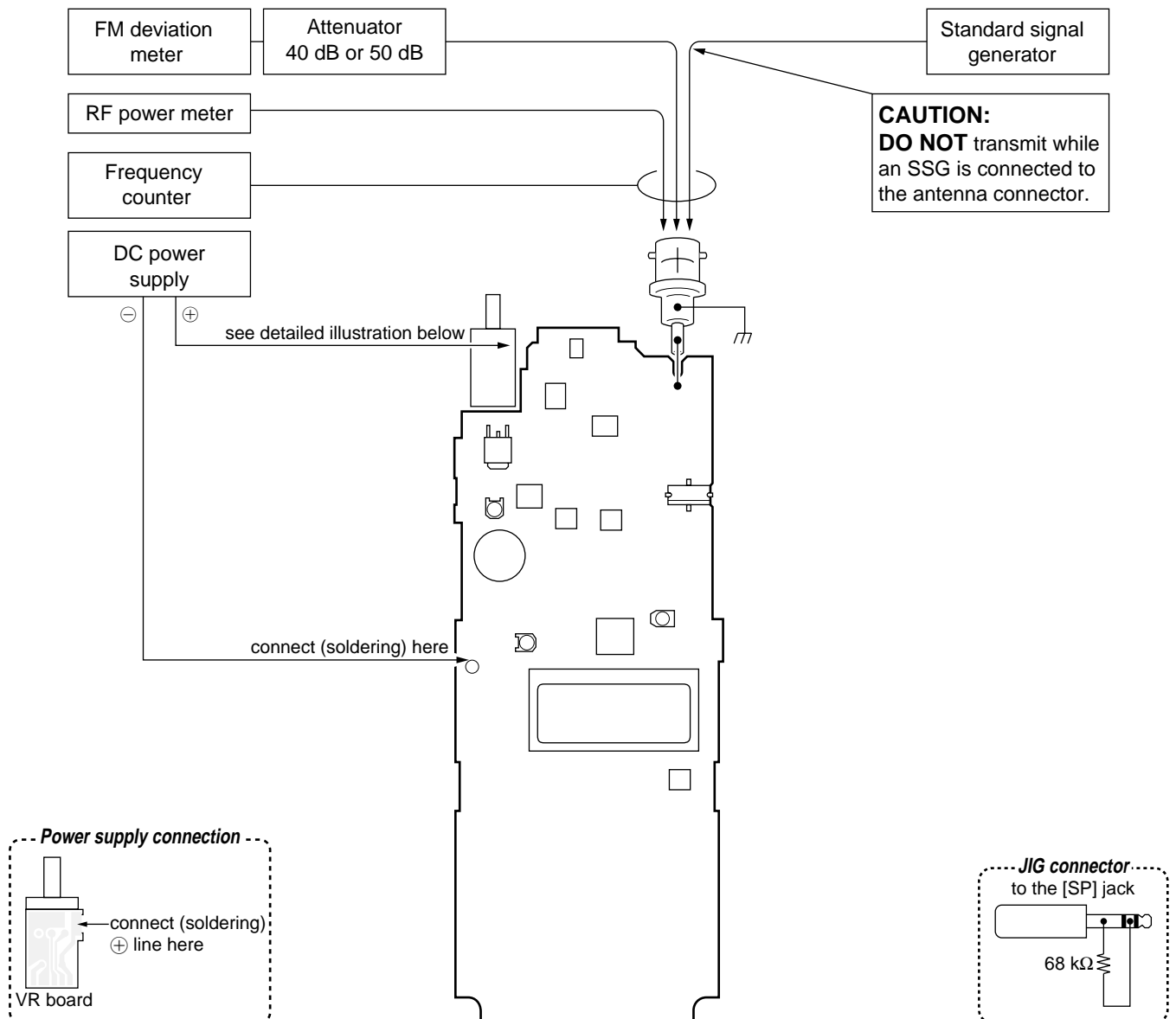
SECTION 5 ADJUSTMENT PROCEDURES

5-1 PREPARATION

■ REQUIRED TEST EQUIPMENT

| EQUIPMENT | GRADE AND RANGE | EQUIPMENT | GRADE AND RANGE |
|----------------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------------------|
| DC power supply | Output voltage : 9.6 V DC Current capacity : 5 A or more | Audio generator | Frequency range : 300–3000 Hz Measuring range : 1–500 mV |
| RF power meter (terminated type) | Measuring range : 1–10 W Frequency range : 120–300 MHz Impedance : 50 Ω SWR : Less than 1.2 : 1 | Attenuator | Power attenuation : 40 or 50 dB Capacity : 10 W or more |
| Frequency counter | Frequency range : 0.1–300 MHz Frequency accuracy : ±1 ppm or better Sensitivity : 100 mV or better | Standard signal generator (SSG) | Frequency range : 0.1–300 MHz Output level : 0.1 μV–32 mV (–127 to –17 dBm) |
| FM deviation meter | Frequency range : DC–300 MHz Measuring range : 0 to 5 kHz | DC voltmeter | Input impedance : 50 kΩ/V DC or better |
| Digital multimeter | Input impedance : 10 MΩ/V DC or better | Oscilloscope | Frequency range : DC–20 MHz Measuring range : 0.01–20 V |
| | | AC millivoltmeter | Measuring range : 10 mV–10 V |

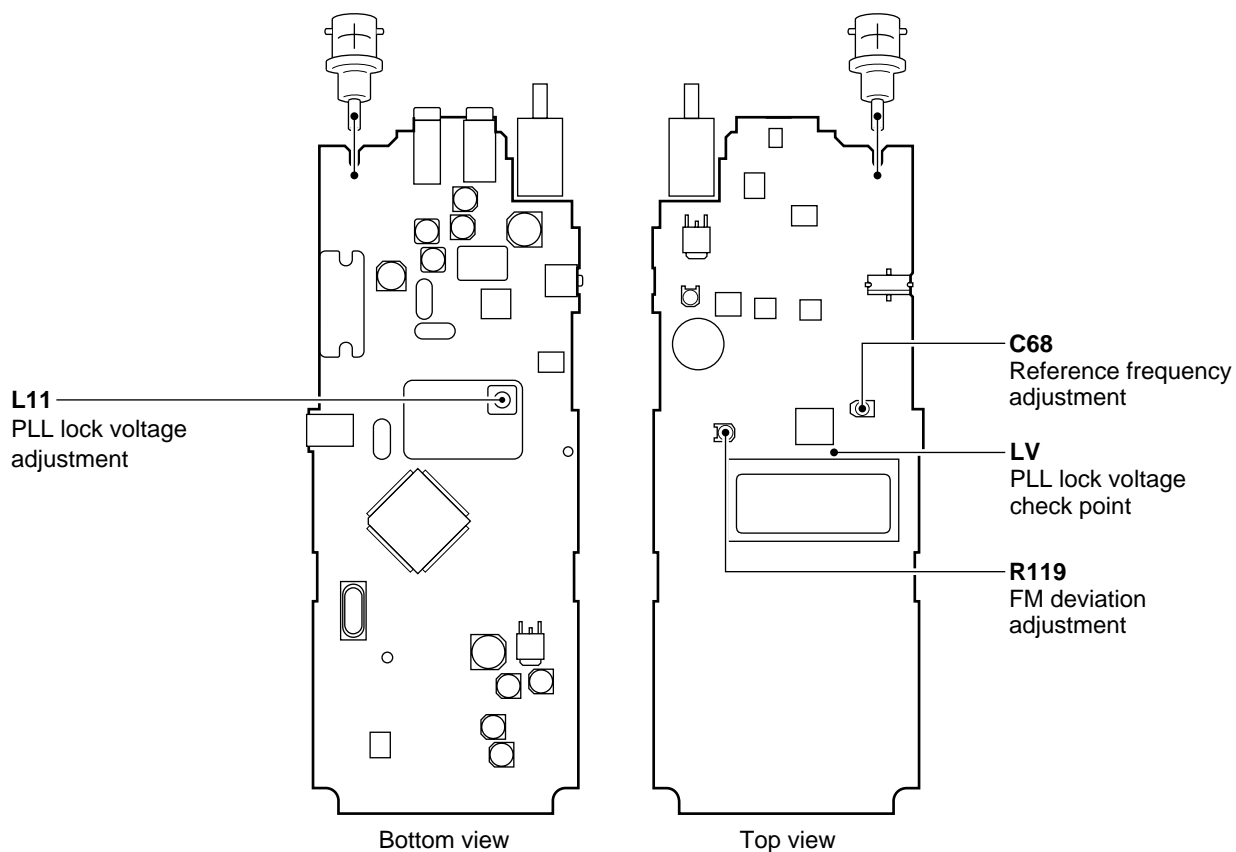
■ CONNECTIONS



5-2 PLL AND TRANSMITTER ADJUSTMENTS

| ADJUSTMENT | ADJUSTMENT CONDITION | MEASUREMENT | | VALUE | ADJUSTMENT POINT | |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------|------------------------------|------------------|--------------------------------------------|
| | | UNIT | LOCATION | | UNIT | ADJUST |
| PLL LOCK VOLTAGE | 1 <ul style="list-style-type: none"> • Operating frequency : 146.000 MHz • Receiving | MAIN | Connect a digital multi-meter to the check point LV. | 1.40 V | VCO board | L11 |
| REFERENCE FREQUENCY | 1 <ul style="list-style-type: none"> • Operating frequency : 146.000 MHz • Transmitting | Top panel | Connect an RF power meter or a terminator to the antenna connector and loosely couple a frequency counter. | 146.000000 MHz | MAIN | C68 |
| OUTPUT POWER | 1 <ul style="list-style-type: none"> • Operating frequency : 146.000 MHz • HIGH/LOW switch : HIGH • Connect the "JIG" to the [SP] jack. • Transmitting | Top panel | Connect an RF power meter to the antenna connector. | 4.5 W [THA] 5.5 W [other] | Front Panel | Push [▲] or [▼] switch while transmitting. |
| | 2 <ul style="list-style-type: none"> • HIGH/LOW switch : LOW • Transmitting | | | 1.0 W | | |
| FM DEVIATION | 1 <ul style="list-style-type: none"> • Operating frequency : 146.000 MHz • HIGH/LOW switch : HIGH • Connect an audio generator to the [MIC] jack and set as : 1 kHz/90 mV • Set an FM deviation meter as: HPF : OFF LPF : 20 KHz De-emphasis : OFF Detector : (P-P)/2 • Transmitting | Top panel | Connect an FM deviation meter to the antenna connector through an attenuator. | ±4.5 kHz | MAIN | R119 |

• MAIN unit

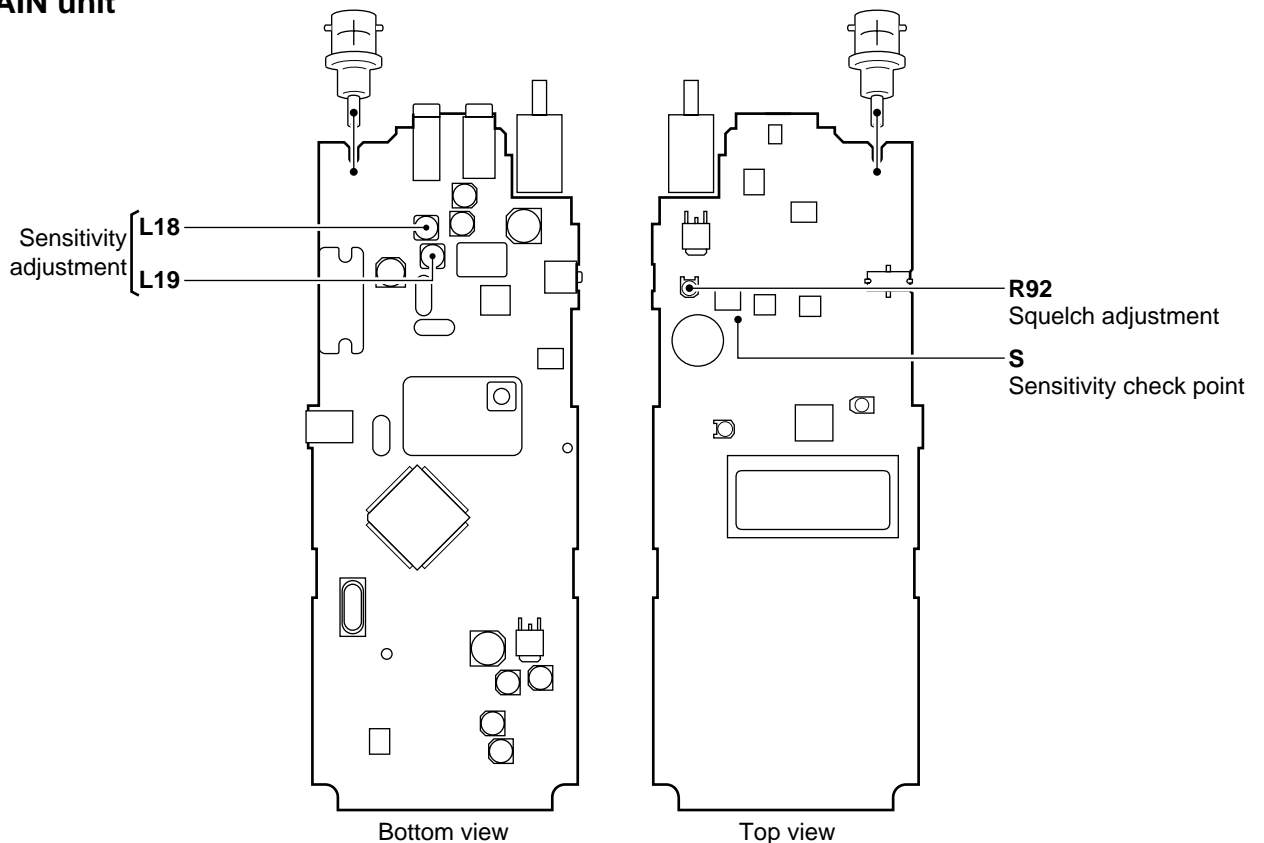


5-3 RECEIVER ADJUSTMENT

| ADJUSTMENT | ADJUSTMENT CONDITION | MEASUREMENT | | VALUE | ADJUSTMENT POINT | |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------------------|---------------------------------------------------|------------------|-------------------------------|
| | | UNIT | LOCATION | | UNIT | ADJUST |
| SENSITIVITY | 1 <ul style="list-style-type: none"> Operating freq. : 146.000 MHz Connect an SSG to the antenna connector and set as: <ul style="list-style-type: none"> Frequency : 146.000 MHz Level : 1 μV* (-107 dBm) Modulation : 1 kHz Deviation : \pm3.5 kHz Receiving | MAIN | Connect a digital voltmeter to check point S. | Maximum level | MAIN | Adjust in sequence L18, L19 |
| S-METER | 1 <ul style="list-style-type: none"> Operating freq. : 146.000 MHz Connect the "JIG" to the [SP] jack. Connect an SSG to the antenna connector and set as: <ul style="list-style-type: none"> Frequency : 146.000 MHz Level : 0.5 μV* (-113 dBm) Modulation : OFF Receiving | Front panel | LCD | | Front panel | Push and hold the [◀] switch. |
| | 2 <ul style="list-style-type: none"> Set an SSG output level for the S-meter to S3 (3 dot). | SSG | Output level | 0.89–0.28 μ V (-106 to -118 dBm) | | Verify |
| SQUELCH | 1 <ul style="list-style-type: none"> Operating freq. : 146.000 MHz SQL set : Auto Connect an SSG to the antenna connector and set as: <ul style="list-style-type: none"> Frequency : 146.000 MHz Level : 0.1 μV* (-127 dBm) Modulation : 1 kHz Deviation : \pm3.5 kHz Receiving | Speaker | | At the point where the AF signals just disappear. | MAIN | R92 |

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

• MAIN unit



SECTION 6 PARTS LIST

[MAIN UNIT]

| REF NO. | ORDER NO. | DESCRIPTION | | |
|---------|------------|--------------|---------------------|---------------------------|
| IC1 | 1130007610 | S.IC | μPD3140GS-E1 (DS8) | |
| IC2 | 1110003490 | S.IC | TA31136FN (D/EL) | |
| IC3 | 1110003780 | S.IC | NJM2902V-TE1 | |
| IC4 | 1130008090 | S.IC | BU4066BCFV-E1 | |
| IC5 | 1110001810 | S.IC | TA7368F (TP1) | |
| IC6 | 1180001080 | S.IC | S-81250PG-PD-T1 | |
| IC7 | 1140006050 | S.IC | X25040SI-2.7T6 | |
| IC8 | 1140006470 | S.IC | HD6433875A41H | [THA] only |
| | 1140006560 | S.IC | HD6433875A45H | other |
| IC9 | 1130007560 | S.IC | LC73881M-TLM | [ANI] only |
| IC10 | 1130004170 | S.IC | TC4S01F (TE85R) | [ANI] only |
| IC11 | 1110003500 | S.IC | S-80742SL-A6-T1 | |
| Q1 | 1560001060 | S.FET | 2SK3075 (TE12L) | |
| Q2 | 1560001100 | S.FET | 2SK3074 (TE12L) | |
| Q3 | 1530000371 | S.TRANSISTOR | 2SC3356 R25-T2B | |
| Q4 | 1530002560 | S.TRANSISTOR | 2SC4403-3-TL | |
| Q5 | 1530002920 | S.TRANSISTOR | 2SC4226-T2 R25 | |
| Q9 | 1590002160 | S.TRANSISTOR | XP6401-(TX) | |
| Q12 | 1560000800 | S.FET | 2SK360IG-TR (D/E) | |
| Q13 | 1560000800 | S.FET | 2SK360IG-TR (D/E) | |
| Q14 | 1530002600 | S.TRANSISTOR | 2SC4215-O (TE85R) | |
| Q15 | 1520000650 | S.TRANSISTOR | 2SB1201-S-TL | |
| Q16 | 1590001190 | S.TRANSISTOR | XP6501-(TX).AB | |
| Q17 | 1520000430 | S.TRANSISTOR | 2SB1462-R(TX) | |
| Q18 | 1520000650 | S.TRANSISTOR | 2SB1201-S-TL | |
| Q19 | 1590001190 | S.TRANSISTOR | XP6501-(TX).AB | |
| Q20 | 1510000670 | S.TRANSISTOR | 2SA1588-GR (TE85R) | |
| Q21 | 1510000670 | S.TRANSISTOR | 2SA1588-GR (TE85R) | |
| Q22 | 1520000460 | S.TRANSISTOR | 2SB1132 T100 R | |
| Q23 | 1530002280 | S.TRANSISTOR | 2SC4081 T107 S | |
| Q25 | 1530002280 | S.TRANSISTOR | 2SC4081 T107 S | |
| Q27 | 1520000460 | S.TRANSISTOR | 2SB1132 T100 R | |
| Q28 | 1530002280 | S.TRANSISTOR | 2SC4081 T107 S | |
| Q29 | 1530002920 | S.TRANSISTOR | 2SC4226-T2 R25 | |
| Q31 | 1590000660 | S.TRANSISTOR | DTC144TU T107 | |
| Q32 | 1590001070 | S.TRANSISTOR | UN521D (TX) | |
| Q33 | 1530002280 | S.TRANSISTOR | 2SC4081 T107 S | |
| Q34 | 1560000540 | S.FET | 2SK880-Y (TE85R) | |
| Q35 | 1530002280 | S.TRANSISTOR | 2SC4081 T107 S | |
| Q36 | 1530002280 | S.TRANSISTOR | 2SC4081 T107 S | |
| Q37 | 1590000720 | S.TRANSISTOR | DTA144EUA T106 | |
| Q39 | 1590001060 | S.TRANSISTOR | DTA114TUA T106 | [ANI] only |
| Q40 | 1590001170 | S.TRANSISTOR | XP1501-(TX).AB | |
| D1 | 1790000620 | S.DIODE | MA77 (TX) | |
| D3 | 1790000620 | S.DIODE | MA77 (TX) | |
| D4 | 1790000620 | S.DIODE | MA77 (TX) | |
| D8 | 1710000870 | S.DIODE | HVU131TRF | |
| D10 | 1720000370 | S.VARICAP | HVU350TRF | |
| D11 | 1720000370 | S.VARICAP | HVU350TRF | |
| D12 | 1720000370 | S.VARICAP | HVU350TRF | |
| D14 | 1790001260 | S.DIODE | MA2S077-(TX) | |
| D15 | 1790001280 | S.DIODE | MA111 (TX) | |
| D16 | 1790001200 | S.DIODE | MA6S121 (TX) | |
| D17 | 1790001200 | S.DIODE | MA6S121 (TX) | |
| D18 | 1790001280 | S.DIODE | MA111 (TX) | except [THA] |
| D20 | 1790001280 | S.DIODE | MA111 (TX) | [ANI] only |
| D22 | 1160000050 | S.DIODE | DAP202U T107 | [USA] |
| | 1750000220 | S.DIODE | DA113W T107 | [ITA], [CSA/CSA-1], [TWN] |
| D23 | 1750000240 | S.DIODE | DA112 T107 | [EUR], [UK], [THA] |
| D24 | 1750000130 | S.DIODE | DA112 T107 | [THA], [TWN] |
| D25 | 1750000130 | S.DIODE | DA204U T107 | |
| D27 | 1750000130 | S.DIODE | SB07-03C-TB | |
| D27 | 1750000130 | S.DIODE | DA204U T107 | |
| D31 | 1790001280 | S.DIODE | MA111(TX) | [ANI] only |
| D32 | 1710000870 | S.DIODE | HVU131TRF | |
| D33 | 1790001280 | S.DIODE | MA111(TX) | [TWN] only |
| D34 | 1790001280 | S.DIODE | MA111(TX) | |
| F11 | 2020001300 | XTAL | FL-251 (30.850 MHz) | |
| F12 | 2020001270 | CERAMIC | CFWM450E | |

[MAIN UNIT]

| REF NO. | ORDER NO. | DESCRIPTION | |
|---------|------------|-----------------|-----------------------------------------|
| X1 | 6050009420 | XTAL | CR-514 (15.200000 MHz) |
| X2 | 6050010110 | S.XTAL | CR-584 (6.79966 MHz) |
| X3 | 6050009020 | S.CERAMIC | EFOS4194E3 [ANI] only |
| X4 | 6070000210 | S.DISCRIMINATOR | CDBCA450CX24 |
| L1 | 6200008260 | S.COIL | 0.30-1.7-8TL 60N |
| L2 | 6200008260 | S.COIL | 0.30-1.7-8TL 60N |
| L3 | 6200008260 | S.COIL | 0.30-1.7-8TL 60N |
| L4 | 6200008710 | S.COIL | 0.28-1.1-4TR 14.3N |
| L5 | 6200008480 | S.COIL | 0.30-1.4-5TR 25N |
| L6 | 6200002820 | S.COIL | LQN 1A 47NJ04 |
| L7 | 6200006990 | S.COIL | ELJRE 56NG-F |
| L8 | 6200006990 | S.COIL | ELJRE 56NG-F |
| L10 | 6200003640 | S.COIL | MLF1608K 100K-T |
| L13 | 6200002930 | S.COIL | ELJFC 1R5K-F |
| L14 | 6200007000 | S.COIL | ELJRE 82NG-F |
| L15 | 6200008260 | S.COIL | 0.30-1.7-8TL 60N |
| L16 | 6200008500 | S.COIL | 0.30-1.3-6TL 28N |
| L17 | 6200005700 | S.COIL | ELJRE 22NG-F |
| L18 | 6150004960 | S.COIL | LS-523 |
| L19 | 6150004960 | S.COIL | LS-523 |
| L20 | 6200004950 | S.COIL | NL 252018T-1R8J |
| L21 | 6200003550 | S.COIL | MLF1608A 4R7K-T |
| L22 | 6200002710 | S.COIL | ELJFC 1R8K-F |
| L24 | 6200004480 | S.COIL | MLF1608D R82K-T |
| L25 | 6200002930 | S.COIL | ELJFC 1R5K-F |
| L26 | 6200006990 | S.COIL | ELJRE 56NG-F |
| L30 | 6200006990 | S.COIL | ELJRE 56NG-F |
| L31 | 6200005730 | S.COIL | ELJRE 39NG-F |
| L32 | 6200006990 | S.COIL | ELJRE 56NG-F |
| L33 | 6200005720 | S.COIL | ELJRE 33NG-F |
| L34 | 6200003640 | S.COIL | MLF1608K 100K-T |
| L35 | 6200006980 | S.COIL | ELJRE R10G-F |
| | | | [EUR], [UK], [ITA], [USA] |
| R2 | 7030005320 | S.RESISTOR | RR0816P-103-D (10 kΩ) |
| R3 | 7030005390 | S.RESISTOR | RR0816P-102-D (1 kΩ) |
| R5 | 7030003280 | S.RESISTOR | ERJ3GEYJ 470 V (47 Ω) |
| R7 | 7030003380 | S.RESISTOR | ERJ3GEYJ 331 V (330 Ω) |
| R9 | 7030003290 | S.RESISTOR | ERJ3GEYJ 560 V (56 Ω) |
| R10 | 7030003200 | S.RESISTOR | ERJ3GEYJ 100 V (10 Ω) |
| R11 | 7030003460 | S.RESISTOR | ERJ3GEYJ 152 V (1.5 kΩ) |
| R12 | 7030003490 | S.RESISTOR | ERJ3GEYJ 272 V (2.7 kΩ) |
| R13 | 7030003270 | S.RESISTOR | ERJ3GEYJ 390 V (39 Ω) |
| R15 | 7030003320 | S.RESISTOR | ERJ3GEYJ 101 V (100 Ω) |
| R16 | 7030003370 | S.RESISTOR | ERJ3GEYJ 271 V (270 Ω) |
| R18 | 7030003590 | S.RESISTOR | ERJ3GEYJ 183 V (18 kΩ) |
| R20 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R21 | 7030003320 | S.RESISTOR | ERJ3GEYJ 101 V (100 Ω) |
| R30 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R32 | 7030003520 | S.RESISTOR | ERJ3GEYJ 472 V (4.7 kΩ) |
| R33 | 7030003460 | S.RESISTOR | ERJ3GEYJ 152 V (1.5 kΩ) |
| R34 | 7030003420 | S.RESISTOR | ERJ3GEYJ 681 V (680 Ω) |
| R45 | 7030003340 | S.RESISTOR | ERJ3GEYJ 151 V (150 Ω) |
| R46 | 7030003290 | S.RESISTOR | ERJ3GEYJ 560 V (56 Ω) |
| R47 | 7030003330 | S.RESISTOR | ERJ3GEYJ 121 V (120 Ω) |
| R48 | 7030003360 | S.RESISTOR | ERJ3GEYJ 221 V (220 Ω) |
| R49 | 7030003660 | S.RESISTOR | ERJ3GEYJ 683 V (68 kΩ) |
| R52 | 7030003800 | S.RESISTOR | ERJ3GEYJ 105 V (1 MΩ) |
| R53 | 7030003560 | S.RESISTOR | ERJ3GEYJ 103 V (100 kΩ) |
| R54 | 7030008050 | S.RESISTOR | RR0816R-184-D (180 kΩ) |
| R55 | 7030003440 | S.RESISTOR | ERJ3GEYJ 102 V (1 kΩ) |
| R58 | 7030003240 | S.RESISTOR | ERJ3GEYJ 220 V (22 Ω) |
| R59 | 7030003220 | S.RESISTOR | ERJ3GEYJ 150 V (15 Ω) |
| R61 | 7030003380 | S.RESISTOR | ERJ3GEYJ 331 V (330 Ω) |
| R62 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R64 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R66 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R68 | 7030003300 | S.RESISTOR | ERJ3GEYJ 680 V (68 Ω) |
| | | | [SEA], [THA], [CSA/CSA-1], [TWN], [ANI] |
| R69 | 7030003410 | S.RESISTOR | ERJ3GEYJ 561 V (560 Ω) |
| | | | [SEA], [THA], [CSA/CSA-1], [TWN], [ANI] |
| | 7030003460 | S.RESISTOR | ERJ3GEYJ 152 V (1.5 kΩ) |
| | | | [EUR], [UK], [ITA], [USA] |

S.=Surface mount

[MAIN UNIT]

| REF NO. | ORDER NO. | DESCRIPTION |
|---------|------------|--------------------------------------|
| R70 | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R71 | 7030003290 | S.RESISTOR ERJ3GEYJ 560 V (56 Ω) |
| R76 | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R77 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R79 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R80 | 7030003670 | S.RESISTOR ERJ3GEYJ 823 V (82 kΩ) |
| R81 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R82 | 7030003450 | S.RESISTOR ERJ3GEYJ 122 V (1.2 kΩ) |
| R83 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R84 | 7030003390 | S.RESISTOR ERJ3GEYJ 391 V (390 Ω) |
| R85 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R86 | 7030003670 | S.RESISTOR ERJ3GEYJ 823 V (82 kΩ) |
| R87 | 7030003460 | S.RESISTOR ERJ3GEYJ 152 V (1.5 kΩ) |
| R88 | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ) |
| R89 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R90 | 7510000890 | S.THERMISTOR NTCCF2012 3NH 153KC-T |
| R91 | 7030003580 | S.RESISTOR ERJ3GEYJ 153 V (15 kΩ) |
| R92 | 7310002760 | S.TRIMMER RV-152 (RH03A3AJ4X0HA) 223 |
| R93 | 7030003570 | S.RESISTOR ERJ3GEYJ 123 V (12 kΩ) |
| R94 | 7030003770 | S.RESISTOR ERJ3GEYJ 564 V (560 kΩ) |
| R95 | 7030003750 | S.RESISTOR ERJ3GEYJ 394 V (390 kΩ) |
| R96 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R97 | 7030003710 | S.RESISTOR ERJ3GEYJ 184 V (180 kΩ) |
| R98 | 7030003710 | S.RESISTOR ERJ3GEYJ 184 V (180 kΩ) |
| R99 | 7030003540 | S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ) |
| R100 | 7030003470 | S.RESISTOR ERJ3GEYJ 182 V (1.8 kΩ) |
| R101 | 7030003800 | S.RESISTOR ERJ3GEYJ 105 V (1 MΩ) |
| R102 | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω) |
| R103 | 7030003570 | S.RESISTOR ERJ3GEYJ 123 V (12 kΩ) |
| R104 | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R105 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R106 | 7030003570 | S.RESISTOR ERJ3GEYJ 123 V (12 kΩ) |
| R107 | 7030003710 | S.RESISTOR ERJ3GEYJ 184 V (180 kΩ) |
| R108 | 7030003750 | S.RESISTOR ERJ3GEYJ 394 V (390 kΩ) |
| R109 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R112 | 7030003800 | S.RESISTOR ERJ3GEYJ 105 V (1 MΩ) |
| R114 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R115 | 7030003690 | S.RESISTOR ERJ3GEYJ 124 V (120 kΩ) |
| R116 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R117 | 7030003460 | S.RESISTOR ERJ3GEYJ 152 V (1.5 kΩ) |
| R118 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R119 | 7310002600 | S.TRIMMER RV-110 (RH03A3AS4X0AA) 473 |
| R120 | 7030003580 | S.RESISTOR ERJ3GEYJ 153 V (15 kΩ) |
| R121 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R122 | 7030003470 | S.RESISTOR ERJ3GEYJ 182 V (1.8 kΩ) |
| R123 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R125 | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ) |
| R126 | 7030003570 | S.RESISTOR ERJ3GEYJ 123 V (12 kΩ) |
| R127 | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω) |
| R128 | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω) |
| R130 | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R131 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R132 | 7030000340 | S.RESISTOR MCR10EZJH 470 Ω (471) |
| R133 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R134 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R137 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R139 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R141 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R144 | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ) |
| R146 | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R147 | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ) |
| R148 | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R149 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R151 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R155 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R156 | 7030000170 | S.RESISTOR MCR10EZJH 18 Ω (180) |
| R157 | 7030000170 | S.RESISTOR MCR10EZJH 18 Ω (180) |
| R158 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R159 | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R160 | 7030000270 | S.RESISTOR MCR10EZJH 120 Ω (121) |
| R161 | 7030007330 | S.RESISTOR ERJ1WRSJR15U (0.15 Ω) |
| R162 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R163 | 7030003580 | S.RESISTOR ERJ3GEYJ 153 V (15 kΩ) |
| R166 | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R167 | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R168 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R169 | 7030003550 | S.RESISTOR ERJ3GEYJ 822 V (8.2 kΩ) |
| R174 | 7030003580 | S.RESISTOR ERJ3GEYJ 153 V (15 kΩ) |
| R176 | 7030003530 | S.RESISTOR ERJ3GEYJ 562 V (5.6 kΩ) |
| R178 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R181 | 7030005870 | S.RESISTOR RR0816R-104-D (100 kΩ) |
| R182 | 7510000910 | S.THERMISTOR NTCCF2012 4AH 473KC-T |

[MAIN UNIT]

| REF NO. | ORDER NO. | DESCRIPTION |
|---------|------------|-----------------------------------------------------------------------------------------------------|
| R183 | 7030003380 | S.RESISTOR ERJ3GEYJ 331 V (330 Ω) |
| R186 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R191 | 7030003590 | S.RESISTOR ERJ3GEYJ 183 V (18 kΩ) |
| R192 | 7030003590 | S.RESISTOR ERJ3GEYJ 183 V (18 kΩ) |
| R195 | 7030003590 | S.RESISTOR ERJ3GEYJ 183 V (18 kΩ) |
| R196 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R197 | 7030003780 | S.RESISTOR ERJ3GEYJ 684 V (680 kΩ) |
| R199 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R200 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R202 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R203 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R204 | 7030003580 | S.RESISTOR ERJ3GEYJ 153 V (15 kΩ) |
| R205 | 7030003580 | S.RESISTOR ERJ3GEYJ 153 V (15 kΩ) |
| R207 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R208 | 7030003650 | S.RESISTOR ERJ3GEYJ 563 V (56 kΩ) |
| R209 | 7030003770 | S.RESISTOR ERJ3GEYJ 564 V (560 kΩ) |
| R210 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R213 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R214 | 7030003570 | S.RESISTOR ERJ3GEYJ 123 V (12 kΩ) |
| R215 | 7030005520 | S.RESISTOR RR0816R-334-D (330 kΩ) |
| R216 | 7030005630 | S.RESISTOR RR0816R-154-D (150 kΩ) |
| R217 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) [ANI] only |
| R218 | 7030003630 | S.RESISTOR ERJ3GEYJ 393 V (39 kΩ) |
| R219 | 7030003660 | S.RESISTOR ERJ3GEYJ 683 V (68 kΩ) |
| R220 | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ) |
| R221 | 7030003740 | S.RESISTOR ERJ3GEYJ 334 V (330 kΩ) |
| R224 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R226 | 7410000950 | S.ARRAY EXB-V8V 102JV |
| R227 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R229 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R230 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R231 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R234 | 7030003670 | S.RESISTOR ERJ3GEYJ 823 V (82 kΩ) |
| R235 | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R236 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R237 | 7410000750 | S.ARRAY EXB-V4V 104JV (100 kΩ) |
| R238 | 7030003220 | S.RESISTOR ERJ3GEYJ 150 V (15 Ω) |
| R239 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R240 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) [SEA], [THA], [CSA/CSA-1], [TWN], [ANI] [EUR], [UK], [ITA], [USA] |
| R242 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R243 | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R245 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R246 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R247 | 7030003670 | S.RESISTOR ERJ3GEYJ 823 V (82 kΩ) |
| R248 | 7030003710 | S.RESISTOR ERJ3GEYJ 184 V (180 kΩ) |
| R249 | 7030003740 | S.RESISTOR ERJ3GEYJ 334 V (330 kΩ) |
| R252 | 7410000770 | S.ARRAY EXB-V4V 102JV (1 kΩ) |
| R253 | 7410000950 | S.ARRAY EXB-V8V 102JV |
| R254 | 7410000770 | S.ARRAY EXB-V4V 102JV (1 kΩ) |
| R255 | 7410000950 | S.ARRAY EXB-V8V 102JV |
| R256 | 7410000950 | S.ARRAY EXB-V8V 102JV |
| R257 | 7410000770 | S.ARRAY EXB-V4V 102JV (1 kΩ) |
| R258 | 7030003780 | S.RESISTOR ERJ3GEYJ 684 V (680 kΩ) |
| R259 | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R260 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R261 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R262 | 7030003580 | S.RESISTOR ERJ3GEYJ 153 V (15 kΩ) |
| R263 | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ) |
| R264 | 7030005520 | S.RESISTOR RR0816R-334-D (330 kΩ) |
| R266 | 7030003340 | S.RESISTOR ERJ3GEYJ 151 V (150 Ω) |
| R267 | 7030003540 | S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ) |
| R268 | 7030003570 | S.RESISTOR ERJ3GEYJ 123 V (12 kΩ) |
| R269 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R272 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R279 | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R280 | 7030003250 | S.RESISTOR ERJ3GEYJ 270 V (27 Ω) |
| R281 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R282 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R283 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R284 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R285 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R286 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R287 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R289 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R290 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R291 | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) [ANI] only |
| R292 | 7030003290 | S.RESISTOR ERJ3GEYJ 560 V (56 Ω) |
| R294 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |

S.=Surface mount

[MAIN UNIT]

| REF NO. | ORDER NO. | DESCRIPTION | |
|---------|------------|-------------|----------------------------------------------------------------------|
| R295 | 7030003440 | S.RESISTOR | ERJ3GEYJ 102 V (1 kΩ) |
| R296 | 7030003440 | S.RESISTOR | ERJ3GEYJ 102 V (1 kΩ) |
| R297 | 7030003440 | S.RESISTOR | ERJ3GEYJ 102 V (1 kΩ) |
| R298 | 7030003240 | S.RESISTOR | ERJ3GEYJ 220 V (22 Ω) |
| C1 | 4030006980 | S.CERAMIC | C1608 CH 1H 070D-T-A |
| C2 | 4030009520 | S.CERAMIC | C1608 CH 1H 020B-T-A |
| C3 | 4030007040 | S.CERAMIC | C1608 CH 1H 180J-T-A |
| C4 | 4030006980 | S.CERAMIC | C1608 CH 1H 070D-T-A |
| C5 | 4030007050 | S.CERAMIC | C1608 CH 1H 220J-T-A |
| C6 | 4030009910 | S.CERAMIC | C1608 CH 1H 040B-T-A |
| C7 | 4030007030 | S.CERAMIC | C1608 CH 1H 150J-T-A |
| C8 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C9 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C10 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C11 | 4030007100 | S.CERAMIC | C1608 CH 1H 560J-T-A |
| C13 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C14 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C15 | 4030007070 | S.CERAMIC | C1608 CH 1H 330J-T-A |
| C17 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C19 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C20 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C21 | 4510004640 | S.ELECTROL | ECEV1CA470SP |
| C22 | 4030007030 | S.CERAMIC | C1608 CH 1H 150J-T-A |
| C23 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C24 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C25 | 4030007060 | S.CERAMIC | C1608 CH 1H 270J-T-A |
| C26 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C27 | 4030007070 | S.CERAMIC | C1608 CH 1H 330J-T-A |
| C28 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C30 | 4030007040 | S.CERAMIC | C1608 CH 1H 180J-T-A |
| C31 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C32 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C46 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C47 | 4550006360 | S.TANTALUM | ECST1VY104R |
| C48 | 4550006160 | S.TANTALUM | ECST1CY155R |
| C51 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C53 | 4030009520 | S.CERAMIC | C1608 CH 1H 020B-T-A |
| C54 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C56 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C63 | 4030007080 | S.CERAMIC | C1608 CH 1H 390J-T-A |
| C64 | 4030007050 | S.CERAMIC | C1608 CH 1H 220J-T-A |
| C65 | 4030009910 | S.CERAMIC | C1608 CH 1H 040B-T-A |
| C66 | 4030007010 | S.CERAMIC | C1608 CH 1H 100D-T-A |
| C67 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C68 | 4610002140 | S.TRIMMER | CTZ3S-20C-WI-PF |
| C69 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C70 | 4030009920 | S.CERAMIC | C1608 CH 1H 050B-T-A |
| C71 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C73 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C75 | 4030006900 | S.CERAMIC | C1608 JB 1E 103K-T-A |
| C76 | 4030007050 | S.CERAMIC | C1608 CH 1H 220J-T-A |
| C77 | 4030007040 | S.CERAMIC | C1608 CH 1H 180J-T-A |
| C78 | 4030009530 | S.CERAMIC | C1608 CH 1H 030B-T-A |
| C79 | 4030007080 | S.CERAMIC | C1608 CH 1H 390J-T-A |
| C80 | 4030007080 | S.CERAMIC | C1608 CH 1H 390J-T-A |
| C81 | 4030007150 | S.CERAMIC | C1608 CH 1H 151J-T-A |
| C85 | 4030007080 | S.CERAMIC | C1608 CH 1H 390J-T-A |
| C87 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C90 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C92 | 4030007090 | S.CERAMIC | C1608 CH 1H 470J-T-A |
| C94 | 4030009500 | S.CERAMIC | C1608 CH 1H 0R5B-T-A |
| C95 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C96 | 4030007090 | S.CERAMIC | C1608 CH 1H 470J-T-A |
| C97 | 4030009560 | S.CERAMIC | C1608 CH 1H R75B-T-A |
| C99 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C102 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| | | | [SEA], [THA], [CSA/CSA-1], [TWN], [ANI] [EUR], [UK], [ITA], [USA] |
| C105 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C106 | 4030007030 | S.CERAMIC | C1608 CH 1H 150J-T-A |
| C107 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C108 | 4030006900 | S.CERAMIC | C1608 JB 1E 103K-T-A |
| C110 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C111 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C112 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C113 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C114 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C116 | 4030007010 | S.CERAMIC | C1608 CH 1H 100D-T-A |
| C117 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |

[MAIN UNIT]

| REF NO. | ORDER NO. | DESCRIPTION | |
|---------|------------|-------------|----------------------|
| C118 | 4030006900 | S.CERAMIC | C1608 JB 1E 103K-T-A |
| C119 | 4030008680 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C120 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C121 | 4030006850 | S.CERAMIC | C1608 JB 1H 471K-T-A |
| C122 | 4030006850 | S.CERAMIC | C1608 JB 1H 471K-T-A |
| C123 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C124 | 4030006900 | S.CERAMIC | C1608 JB 1E 103K-T-A |
| C125 | 4030008650 | S.CERAMIC | C1608 JB 1H 332K-T-A |
| C126 | 4030008850 | S.CERAMIC | C1608 JB 1C 123K-T-A |
| C128 | 4030008680 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C129 | 4550006680 | S.TANTALUM | ECST0JY156R |
| C131 | 4030006900 | S.CERAMIC | C1608 JB 1E 103K-T-A |
| C132 | 4030006870 | S.CERAMIC | C1608 JB 1H 222K-T-A |
| C133 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C134 | 4030007140 | S.CERAMIC | C1608 CH 1H 121J-T-A |
| C135 | 4030007170 | S.CERAMIC | C1608 CH 1H 221J-T-A |
| C136 | 4030006870 | S.CERAMIC | C1608 JB 1H 222K-T-A |
| C137 | 4030008920 | S.CERAMIC | C1608 JB 1C 473K-T-A |
| C138 | 4550006600 | S.TANTALUM | ECST0JY335R |
| C139 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C140 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C141 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C142 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C144 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C145 | 4510007120 | S.ELECTROL | ECEV1AA101SP |
| C146 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C147 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C148 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C149 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C150 | 4550006700 | S.TANTALUM | ECST1AY106R |
| C151 | 4030007090 | S.CERAMIC | C1608 CH 1H 470J-T-A |
| C152 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C153 | 4510005370 | S.ELECTROL | ECEV1AA221P |
| C154 | 4550006200 | S.TANTALUM | ECST0JY106R |
| C155 | 4510004630 | S.ELECTROL | ECEV1CA100SR |
| C156 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C157 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C158 | 4510005320 | S.ELECTROL | ECEV0JA101SP |
| C159 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C160 | 4030006900 | S.CERAMIC | C1608 JB 1E 103K-T-A |
| C161 | 4030006900 | S.CERAMIC | C1608 JB 1E 103K-T-A |
| C162 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C163 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C164 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C165 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C166 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C167 | 4030007050 | S.CERAMIC | C1608 CH 1H 220J-T-A |
| C169 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C170 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C171 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C172 | 4030006850 | S.CERAMIC | C1608 JB 1H 471K-T-A |
| C173 | 4510004640 | S.ELECTROL | ECEV1CA470SP |
| C174 | 4510005430 | S.ELECTROL | ECEV0JA220SR |
| C175 | 4510005430 | S.ELECTROL | ECEV0JA220SR |
| C176 | 4510005430 | S.ELECTROL | ECEV0JA220SR |
| C177 | 4550006680 | S.TANTALUM | ECST0JY156R |
| C179 | 4030006900 | S.CERAMIC | C1608 JB 1E 103K-T-A |
| C193 | 4030006970 | S.CERAMIC | C1608 CH 1H 060D-T-A |
| C194 | 4030007060 | S.CERAMIC | C1608 CH 1H 270J-T-A |
| C195 | 4030007040 | S.CERAMIC | C1608 CH 1H 180J-T-A |
| C196 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C197 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C198 | 4030006900 | S.CERAMIC | C1608 JB 1E 103K-T-A |
| C199 | 4030006900 | S.CERAMIC | C1608 JB 1E 103K-T-A |
| C200 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C201 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C202 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C203 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C204 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C205 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C211 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C212 | 4030006900 | S.CERAMIC | C1608 JB 1E 103K-T-A |
| C213 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C217 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C218 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C220 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C222 | 4030008920 | S.CERAMIC | C1608 JB 1C 473K-T-A |
| C225 | 4030008850 | S.CERAMIC | C1608 JB 1C 123K-T-A |
| C226 | 4030008920 | S.CERAMIC | C1608 JB 1C 473K-T-A |
| C227 | 4030008890 | S.CERAMIC | C1608 JB 1C 273K-T-A |
| C228 | 4030008650 | S.CERAMIC | C1608 JB 1H 332K-T-A |
| C230 | 4550006140 | S.TANTALUM | ECST1EY474R |

S.=Surface mount

[MAIN UNIT]

| REF NO. | ORDER NO. | DESCRIPTION | |
|---------|------------|-------------|-----------------------|
| C231 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C232 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C233 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C234 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C236 | 4030009530 | S.CERAMIC | C1608 CH 1H 030B-T-A |
| C243 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C245 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C246 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C247 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C248 | 4030006900 | S.CERAMIC | C1608 JB 1E 103K-T-A |
| C249 | 4030006900 | S.CERAMIC | C1608 JB 1E 103K-T-A |
| C250 | 4030006900 | S.CERAMIC | C1608 JB 1E 103K-T-A |
| C251 | 4030006900 | S.CERAMIC | C1608 JB 1E 103K-T-A |
| C252 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C256 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C258 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C260 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C264 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C272 | 4030006900 | S.CERAMIC | C1608 JB 1E 103K-T-A |
| C278 | 4550006680 | S.TANTALUM | ECST0JY156R |
| C279 | 4030007120 | S.CERAMIC | C1608 CH 1H 820J-T-A |
| C281 | 4030007030 | S.CERAMIC | C1608 CH 1H 150J-T-A |
| C285 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C290 | 4030009000 | S.CERAMIC | C2012 JB 1C 224K-T-A |
| C291 | 4550006150 | S.TANTALUM | ECST1CY105R |
| C295 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C296 | 4030011600 | S.CERAMIC | C1608 JB 1C 104KT-N |
| C298 | 4030007070 | S.CERAMIC | C1608 CH 1H 330J-T-A |
| C299 | 4030007090 | S.CERAMIC | C1608 CH 1H 470J-T-A |
| C300 | 4550006650 | S.TANTALUM | ECST1CY685R |
| J2 | 6450001680 | CONNECTOR | HSJ1122-010010 |
| J3 | 6450001690 | CONNECTOR | HSJ1456-01-220 |
| J4 | 6450000870 | CONNECTOR | HEC2711-01-020 |
| J5 | 6510007080 | CONNECTOR | PI28A-02M |
| J6 | 6910010850 | CONNECTOR | IMSA-9230B-1-05Z080-T |
| DS1 | 5030001460 | LCD | LM-1462B |
| DS2 | 5010000160 | S.LED | LNJ310M6URA |
| DS3 | 5010000160 | S.LED | LNJ310M6URA |
| DS4 | 5040002190 | S.LED | LNJ808R8ERA |
| MC1 | 7700002160 | MICROPHON | KUC3523-040245 |
| S1 | 2230000900 | S.SWITCH | JPM1990-2013R |
| W1 | 7030003860 | S.JUMPER | ERJ3GE JPW V |
| W10 | 7030003860 | S.JUMPER | ERJ3GE JPW V |
| EP1 | 910050712 | PCB | B 5193B |
| EP2 | 8930042590 | LCD CONTACT | SRCN-1922-SP-N-W |

[ANI] only

[VCO BOARD]

| REF NO. | ORDER NO. | DESCRIPTION | |
|---------|------------|--------------|-------------------------|
| Q6 | 1530002920 | S.TRANSISTOR | 2SC4226-T2 R25 |
| Q7 | 1530002920 | S.TRANSISTOR | 2SC4226-T2 R25 |
| Q8 | 1530002920 | S.TRANSISTOR | 2SC4226-T2 R25 |
| D5 | 1720000370 | S.VARICAP | HVU350TRF |
| D6 | 1790000620 | S.DIODE | MA77 (TX) |
| L10 | 6200006670 | S.COIL | ELJRE 68NG-F |
| L11 | 6130002760 | S.COIL | LB-312 |
| L12 | 6200004480 | S.COIL | MLF1608D R82K-T |
| R22 | 7030003610 | S.RESISTOR | ERJ3GEYJ 273 V (27 kΩ) |
| R23 | 7030003340 | S.RESISTOR | ERJ3GEYJ 151 V (150 Ω) |
| R24 | 7030003360 | S.RESISTOR | ERJ3GEYJ 221 V (220 Ω) |
| R25 | 7030003540 | S.RESISTOR | ERJ3GEYJ 682 V (6.8 kΩ) |
| R26 | 7030003540 | S.RESISTOR | ERJ3GEYJ 682 V (6.8 kΩ) |
| R27 | 7030003360 | S.RESISTOR | ERJ3GEYJ 221 V (220 Ω) |
| R28 | 7030003320 | S.RESISTOR | ERJ3GEYJ 101 V (100 Ω) |
| R29 | 7030003460 | S.RESISTOR | ERJ3GEYJ 152 V (1.5 kΩ) |
| C33 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C34 | 4030009500 | S.CERAMIC | C1608 CH 1H 0R5B-T-A |
| C35 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C36 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C37 | 4030009510 | S.CERAMIC | C1608 CH 1H 010B-T-A |
| C38 | 4030009510 | S.CERAMIC | C1608 CH 1H 010B-T-A |
| C39 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C40 | 4030009510 | S.CERAMIC | C1608 CH 1H 010B-T-A |
| C41 | 4030007060 | S.CERAMIC | C1608 CH 1H 270J-T-A |
| C44 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C45 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C259 | 4030007160 | S.CERAMIC | C1608 CH 1H 181J-T-A |
| J1 | 6910010840 | CONNECTOR | IMSA-9230B-1-05Z057-T |
| EP1 | 910050691 | PCB | B 5195A |

[VR BOARD]

| REF NO. | ORDER NO. | DESCRIPTION | |
|---------|------------|-------------|----------------------|
| R1 | 7210002950 | VARIABLE | RV-312 (RK0971110) |
| C1 | 4030006860 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| EP1 | 910050701 | PCB | B 5196A |

S.=Surface mount

SECTION 7 MECHANICAL PARTS AND DISASSEMBLY

7-1 CABINET PARTS

[CHASSIS PARTS]

| REF NO. | ORDER NO. | DESCRIPTION | QTY. |
|---------|------------|---------------------------------------------------|------|
| J1 | 6510020350 | ANT connector BNC-R148 | 1 |
| SP 1 | 2510000960 | Speaker K036NA500-26 | 1 |
| MP1 | 8010017200 | 2078 Chassis | 1 |
| MP2 | 8210014430 | 1902 Front panel | 1 |
| MP3 | 8210014340 | 1922 PTT panel | 1 |
| MP4 | 8210014330 | 1922 Contact base | 1 |
| MP5 | 8610010420 | Knob N261 | 1 |
| MP6 | 8930048080 | 1922 10-Key (A) | 1 |
| MP7 | 8930042070 | 1922 MIC cap | 1 |
| MP8 | 8930042050 | 1922 DC cap | 1 |
| MP10 | 8930042090 | 1922 Plus terminal | 1 |
| MP11 | 8930042080 | 1922 Minus terminal | 1 |
| MP13 | 8930011900 | SP net (A) FX573 | 1 |
| MP14 | 8930042060 | 1922 LCD holder | 1 |
| MP15 | 8210014380 | 1922 Reflector | 1 |
| MP16 | 8310040680 | 1922 Window plate (E) | 1 |
| MP17 | 8930042680 | 1902 MIC seal | 1 |
| MP18 | 8930042790 | 1902 Rear sheet (C) [THA] | 1 |
| | 8930047930 | 1902 Rear sheet (J) [SEA], [CSA/-1], [TWN], [ANI] | 1 |
| | 8930047940 | 1902 Rear sheet (K) [USA] | 1 |
| | 8930047950 | 1902 Rear sheet (L) [EUR], [UK], [ITA] | 1 |
| MP19 | 8830001250 | Nut antenna connector-101 | 1 |
| MP20 | 8810000100 | Screw PH M2x4 ZK | 2 |
| MP21 | 8810009510 | Screw PH BT M2x4 NI-ZU | 6 |
| MP22 | 8810009510 | Screw PH BT M2x4 NI-ZU | 1 |

Screw abbreviations: PH: Pan head B0: Self-tapping
NI: Nickel ZK: Black

[CHASSIS PARTS]

| REF NO. | ORDER NO. | DESCRIPTION | QTY. |
|---------|------------|-------------------------------------------|------|
| MP23 | 8810009510 | Screw PH BT M2x4 NI-ZU | 2 |
| MP24 | 8810009560 | Screw PH BT M2x6 ZK | 2 |
| MP25 | 8810009560 | Screw PH BT M2x6 ZK | 2 |
| MP26 | 8830001010 | Hex nut (A) | 1 |
| MP28 | 8510011170 | 1902 VCO cover | 1 |
| MP30 | 8510011241 | 1902 PA shield plate-1 [EUR], [UK], [ITA] | 1 |
| MP31 | 8930043730 | Isolating sheet FB [EUR], [UK], [ITA] | 1 |
| MP32 | 8930043610 | Isolating sheet EZ | 1 |
| MP33 | 8930046430 | 1902 MIC sponge | 1 |
| MP34 | 8930048150 | Sponge (FZ) | 1 |
| MP35 | 8510012000 | 2191 VR rug plate | 1 |

[MAIN UNIT]

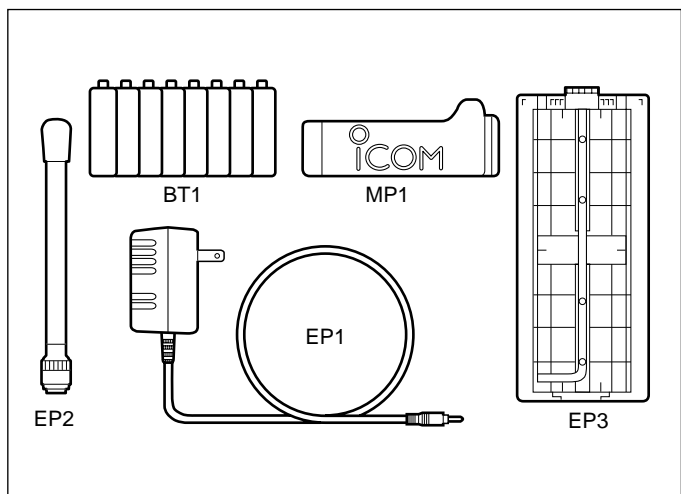
| REF NO. | ORDER NO. | DESCRIPTION | QTY. |
|---------|------------|------------------------------|------|
| DS 1 | 5030001460 | LM-1462B | 1 |
| EP 2 | 8930042590 | LCD contact SRCN-1922-SP-N-W | 1 |
| MP1 | 8410002230 | 2078 PA heat sink | 1 |

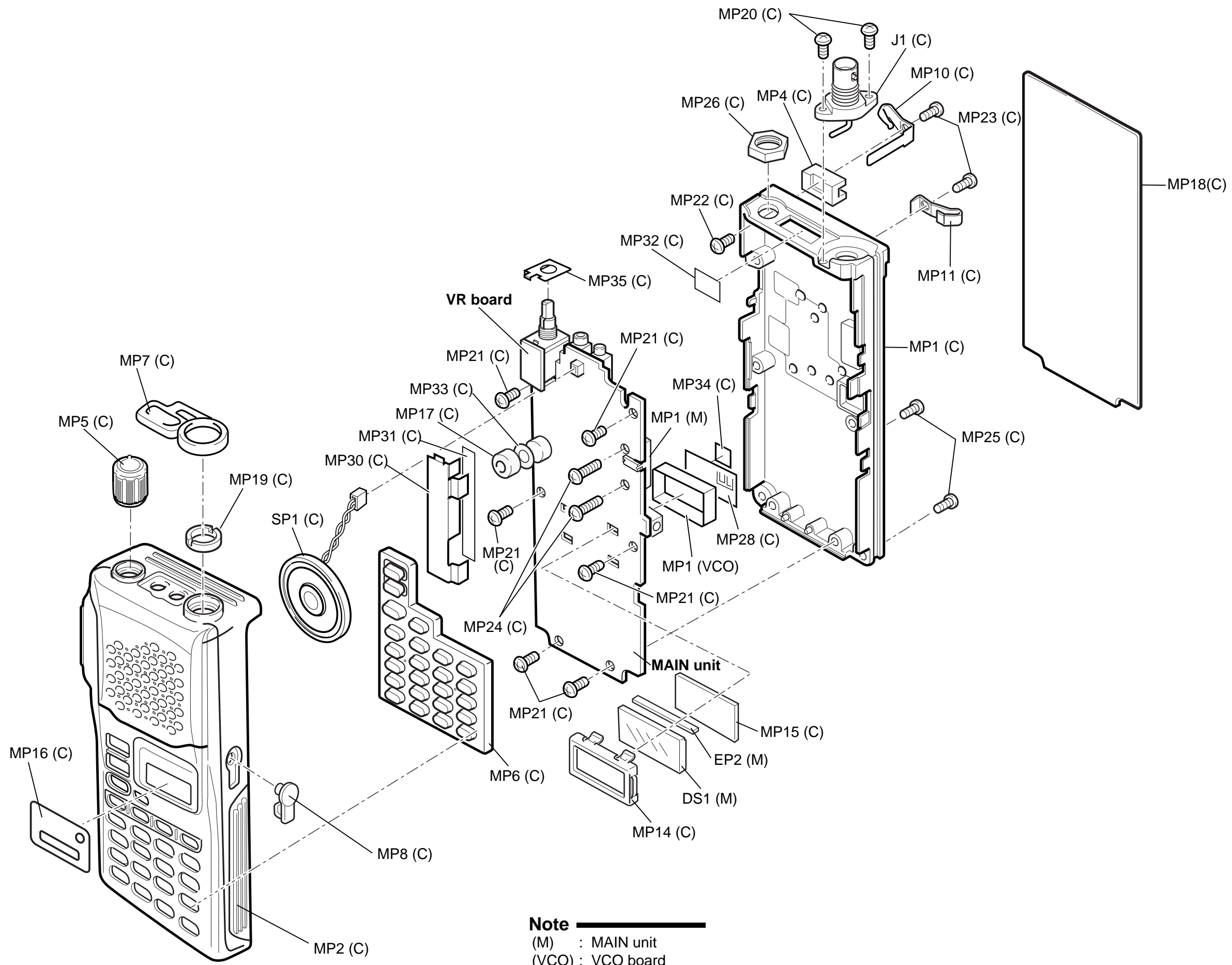
[VCO BOARD]

| REF NO. | ORDER NO. | DESCRIPTION | QTY. |
|---------|------------|---------------|------|
| MP1 | 8510010920 | 1902 VCO case | 1 |

7-2 ACCESSORIES

| REF NO. | ORDER NO. | DESCRIPTION | QTY. |
|---------|-------------------|-------------------------------------------------------------|------|
| BT 1 | 3030000420 | NICD cel-KR0.7AAUR SAFT [USA], [EUR], [UK], [ITA], [CSA/-1] | 8 |
| | 3030000450 | NICD cel-KR0.7AAUR ASIA [SEA], [THA], [TWN], [ANI] | 8 |
| EP 1 | Optional products | Charger BC-110A [USA], [CSA], [TWN] | 1 |
| | Optional products | Charger BC-110D [EUR], [ITA], [SEA], [THA], [ANI] | 1 |
| | Optional products | Charger BC-110C [CSA/-1] | 1 |
| EP 2 | 3310001790 | Antenna FA-B2C ACC | 1 |
| EP 3 | 8010016831 | Battery case BP-194 | 1 |
| MP1 | 8930042040 | 1922 Belt clip | 1 |





Note

(M) : MAIN unit
 (VCO) : VCO board
 (C) : CHASSIS

SECTION 8 SEMI-CONDUCTOR INFORMATION

8 - 1 TRANSISTORS

| NAME | SYMBOL | INSIDE VIEW |
|-----------------------------------------------------------------------------|-------------------------------|-------------|
| 2SA1588 - GR | ZG | |
| 2SB1132 - R | BAR | |
| 2SB1201-S | 2M | |
| 2SC3356 - R25 2SC4081 - S 2SC4215 - O 2SC4226 - R25 2SC4403 - 3 | R25 BS QO R25 LY3 | |
| 2SK3074 | WA | |
| 2SK3075 | RF72 | |
| 2SK360IG - TR | IG | |

| NAME | SYMBOL | INSIDE VIEW |
|----------------------------------|----------------|-------------|
| 2SK880 - Y | XY | |
| DTA114TU DTC144TU DTC144EU | 94 06 26 | |
| UN521D | 8M | |
| XP1501 - AB | 5R | |
| XP6401 | 5O | |

8 - 2 DIODES

| NAME | SYMBOL | INSIDE VIEW |
|------------------|---------|-------------|
| DA112 | AZ | |
| DA113W | AY | |
| DA204U | P | |
| DAP202U | P | |
| HVU131TRF | P1 | |
| HVU350TRF | 4 | |
| MA111 MA2S077 | 1B S | |

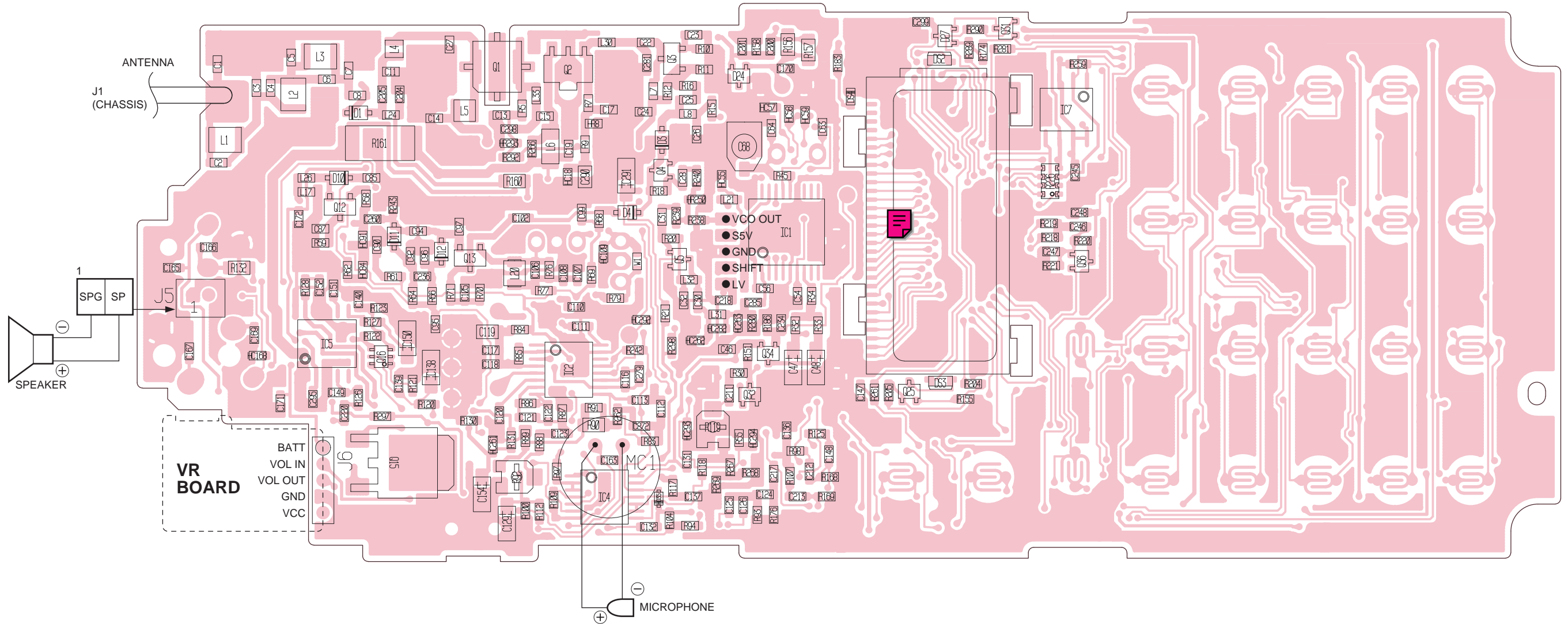
| NAME | SYMBOL | INSIDE VIEW |
|-------------|--------|-------------|
| MA6S121 | M2D | |
| MA77 | 4B | |
| SB07-03C-TB | J | |

SECTION 9 BOARD LAYOUTS

9 - 1 MAIN UNIT

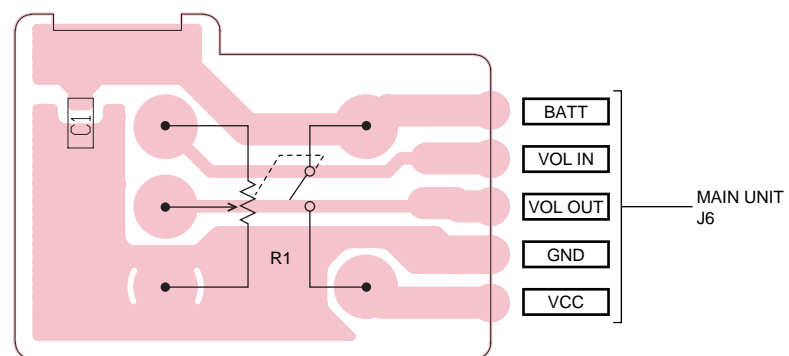
The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.

• TOP VIEW



9 - 2 VR BOARD

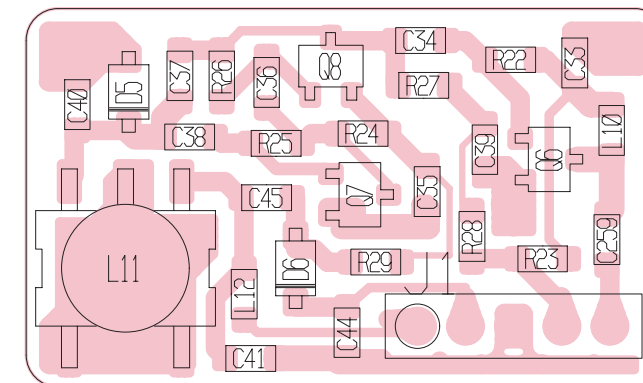
• TOP VIEW



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9 - 3 VCO BOARD

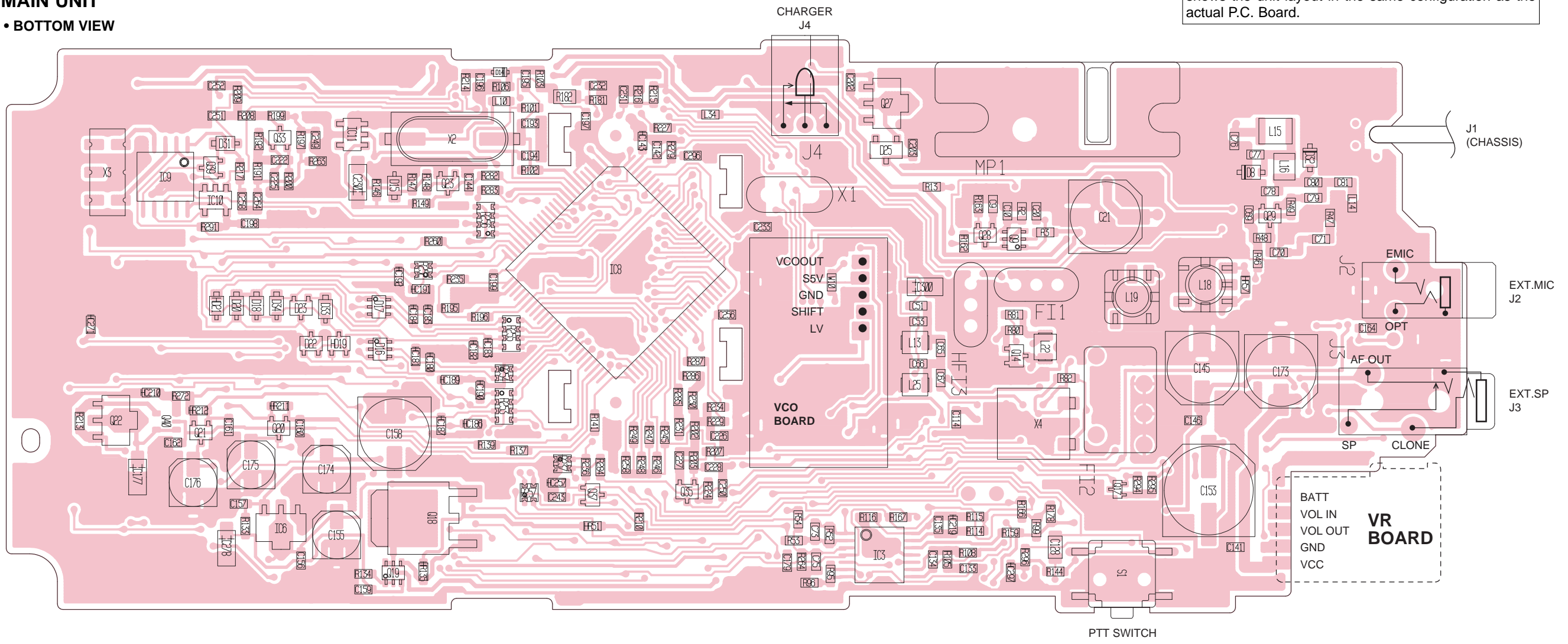
• TOP VIEW



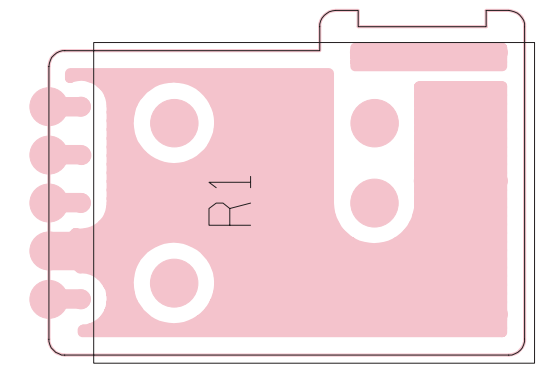
LV
SHIFT
GND
S5V
VCO OUT

MAIN UNIT
• **BOTTOM VIEW**

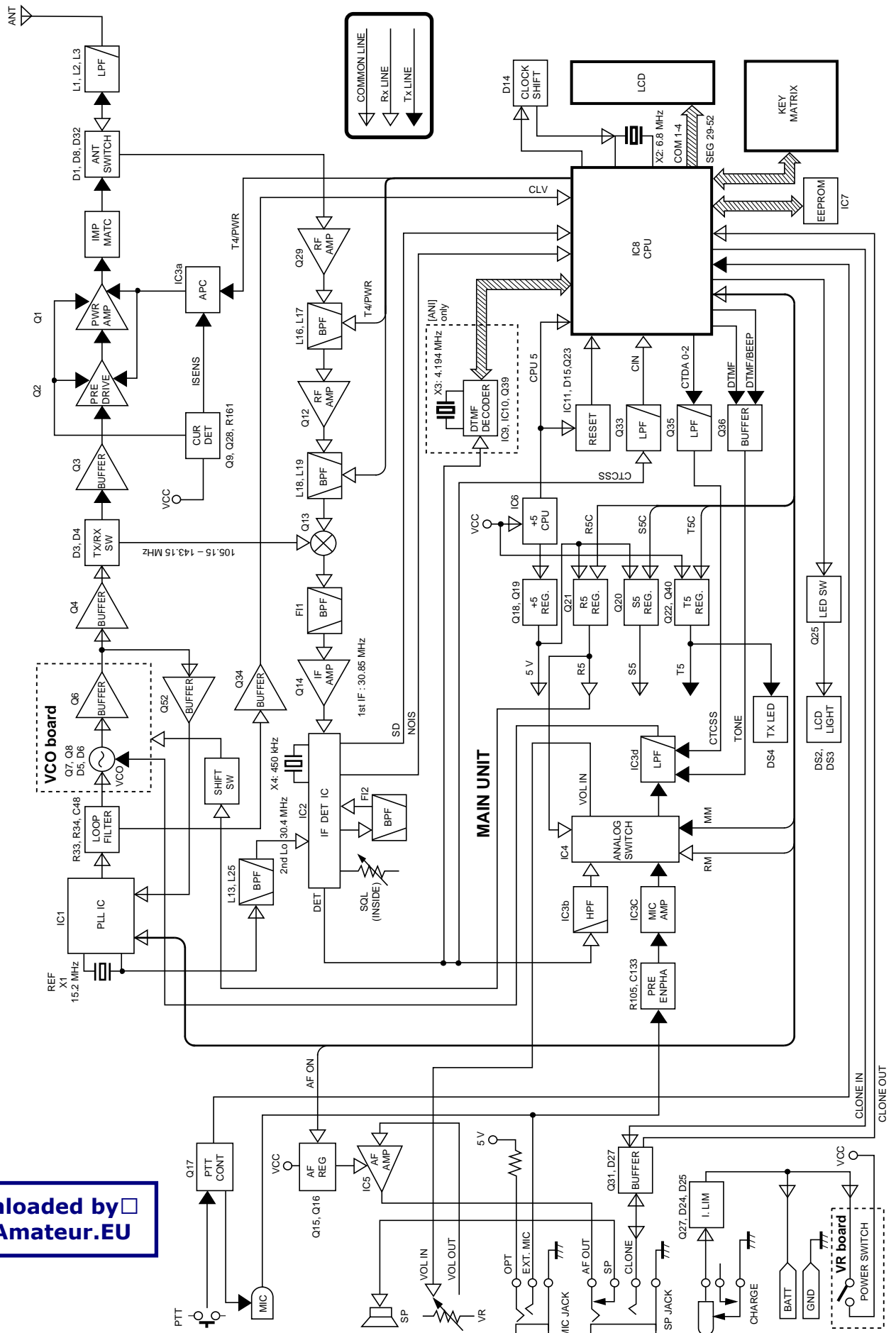
The combination of this page and the previous page shows the unit layout in the same configuration as the actual P.C. Board.



VR BOARD
• **BOTTOM VIEW**

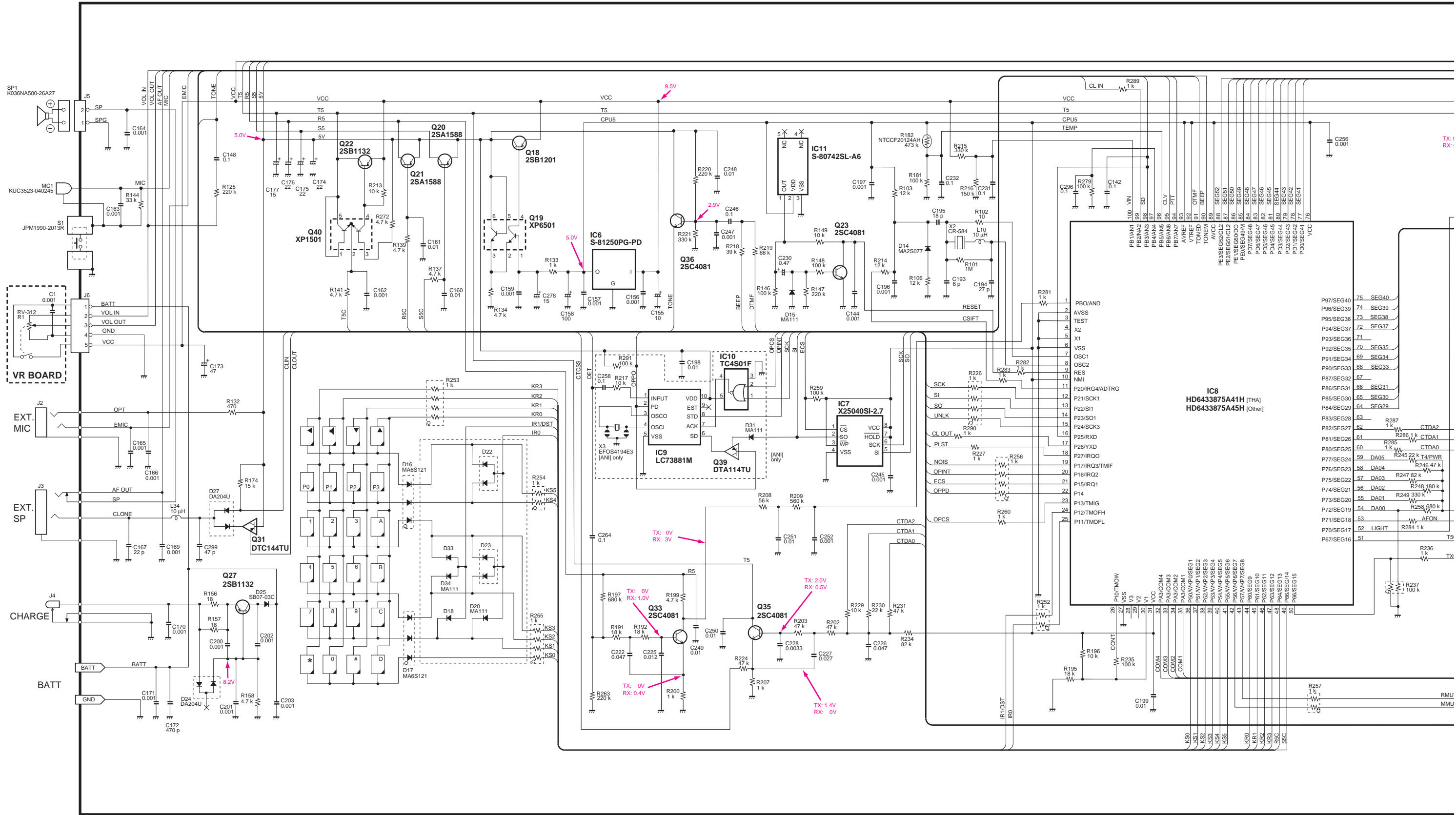


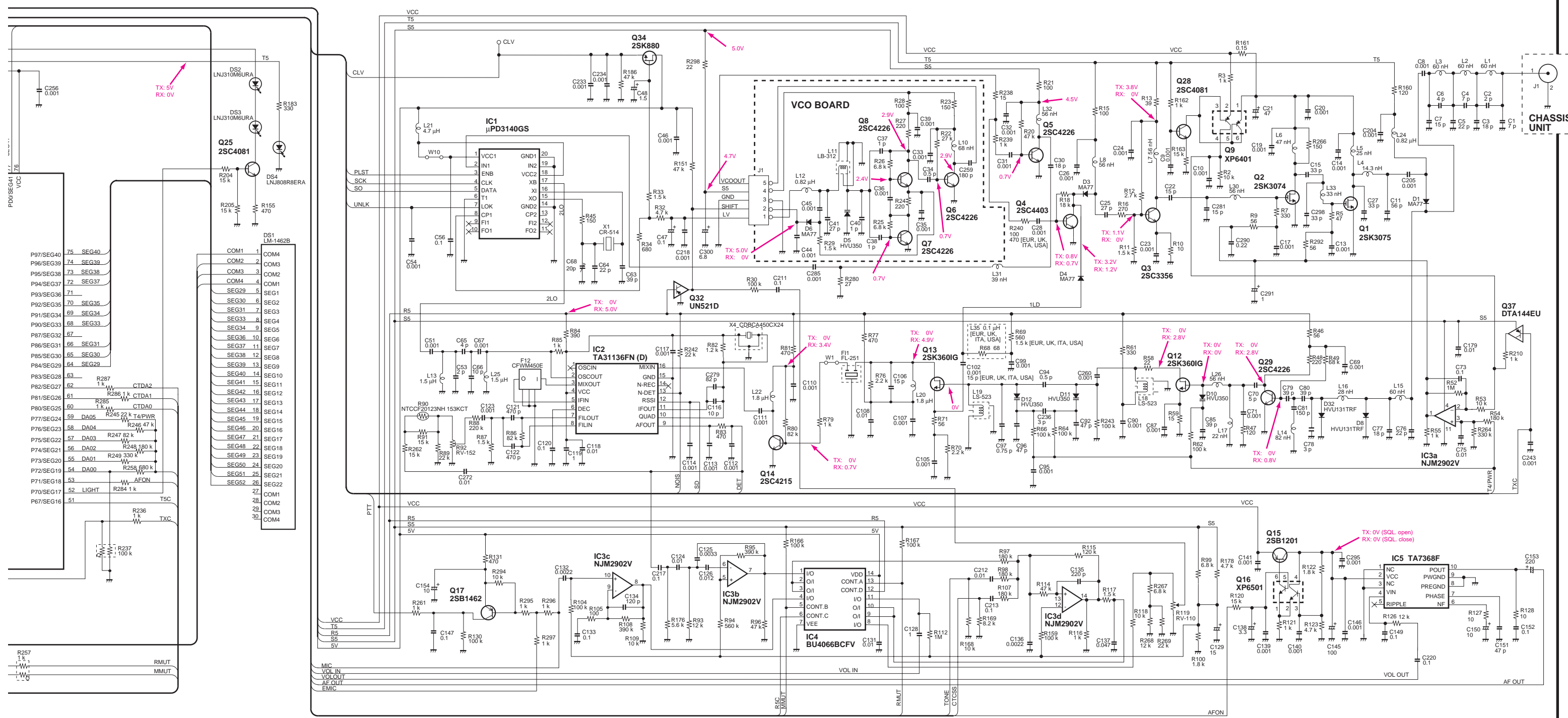
SECTION 10 BLOCK DIAGRAM



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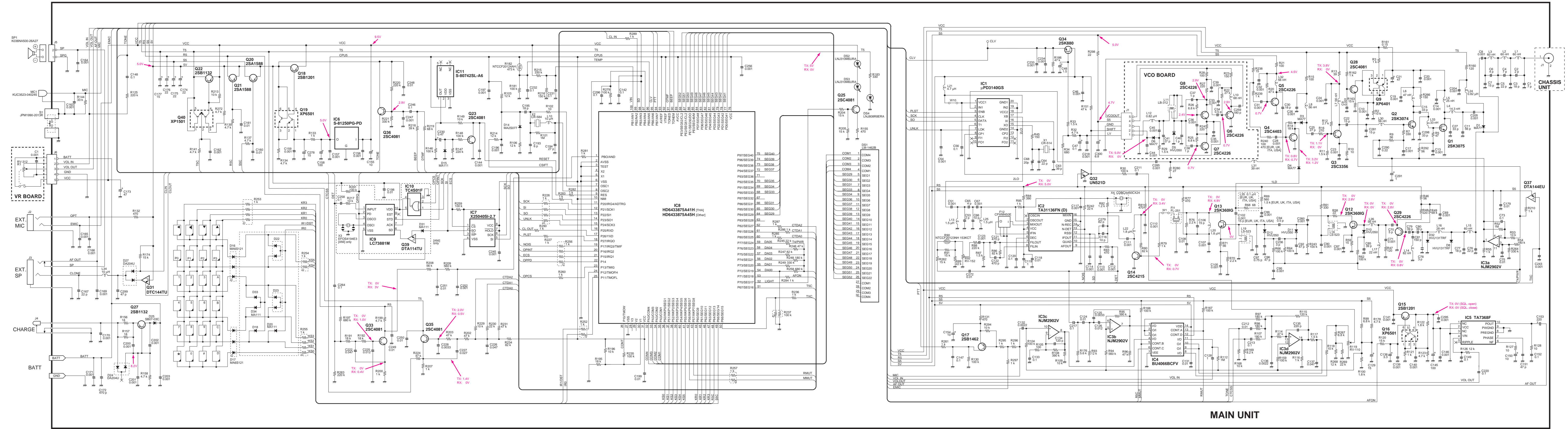
SECTION 11 VOLTAGE DIAGRAM





MAIN UNIT

SECTION 11 VOLTAGE DIAGRAM



LEFT SIDE

RIGHT SIDE

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