



# SERVICE MANUAL

UHF SRBR

# IC-F4SR

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## INTRODUCTION

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This service manual describe the latest information for the IC-F4SR at the time of publication.

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## DANGER

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

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## ORDERING PARTS

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

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

**<SAMPLE ORDER>**

1110001810 S.IC TA7368F IC-F4SR MAIN UNIT 1 piece  
 8810009510 Screw B0 2 x 4 NI-ZU IC-F4SR MAIN PCB 6 pieces

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




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## REPAIR NOTES

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1. Make sure a problem is internal before disassembling the transceiver.
2. DO NOT open the transceiver until the transceiver is disconnected from 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                    | : 461.2625–461.4875 MHz [UK]<br>446.9500–446.9875 MHz [FRA]<br>444.6000–444.9750 MHz [SWE] |
| • Mode                                  | : 16K0F3E [SWE]<br>8K50F3E [UK], [FRA]   |
| • Acceptable power supply               | : 9.6 V DC nominal (negative ground)   |
| • Usable temperature range              | : –20°C to +55°C   |
| • Frequency stability                   | : ±2.0 kHz [SWE]<br>±1.5 kHz [UK], [FRA]   |
| • Current drain (approx.)               | : Transmit 0.9 A<br>Receive stand-by 60 mA<br>max. audio 250 mA<br>power saved 20 mA       |
| • Antenna impedance                     | : 50 Ω nominal   |
| • Dimensions (projections not included) | : 57(W) × 140(H) × 37(D) mm  |
| • Weight (with BP-195)                  | : 370 g  |

### ■ TRANSMITTER

|                                  |   |
|----------------------------------|---|
| • Output power (at 9.6 V DC)     | : 0.5 W ERP (1.5 W)                       |
| • Modulation                     | : Variable reactance frequency modulation |
| • Maximum frequency deviation    | : ±5.0 kHz [SWE]<br>±2.5 kHz [UK], [FRA]  |
| • Spurious emissions             | : 0.25 μW                                 |
| • Adjacent channel power         | : 70 dB [SWE]<br>60 dB [UK], [FRA]        |
| • Residual modulation            | : 40 dB                                   |
| • Limiting charact of modulation | : 70–100 % of maximum deviation           |
| • External microphone connector  | : 3-conductor 2.5 (d) mm/2 kΩ             |

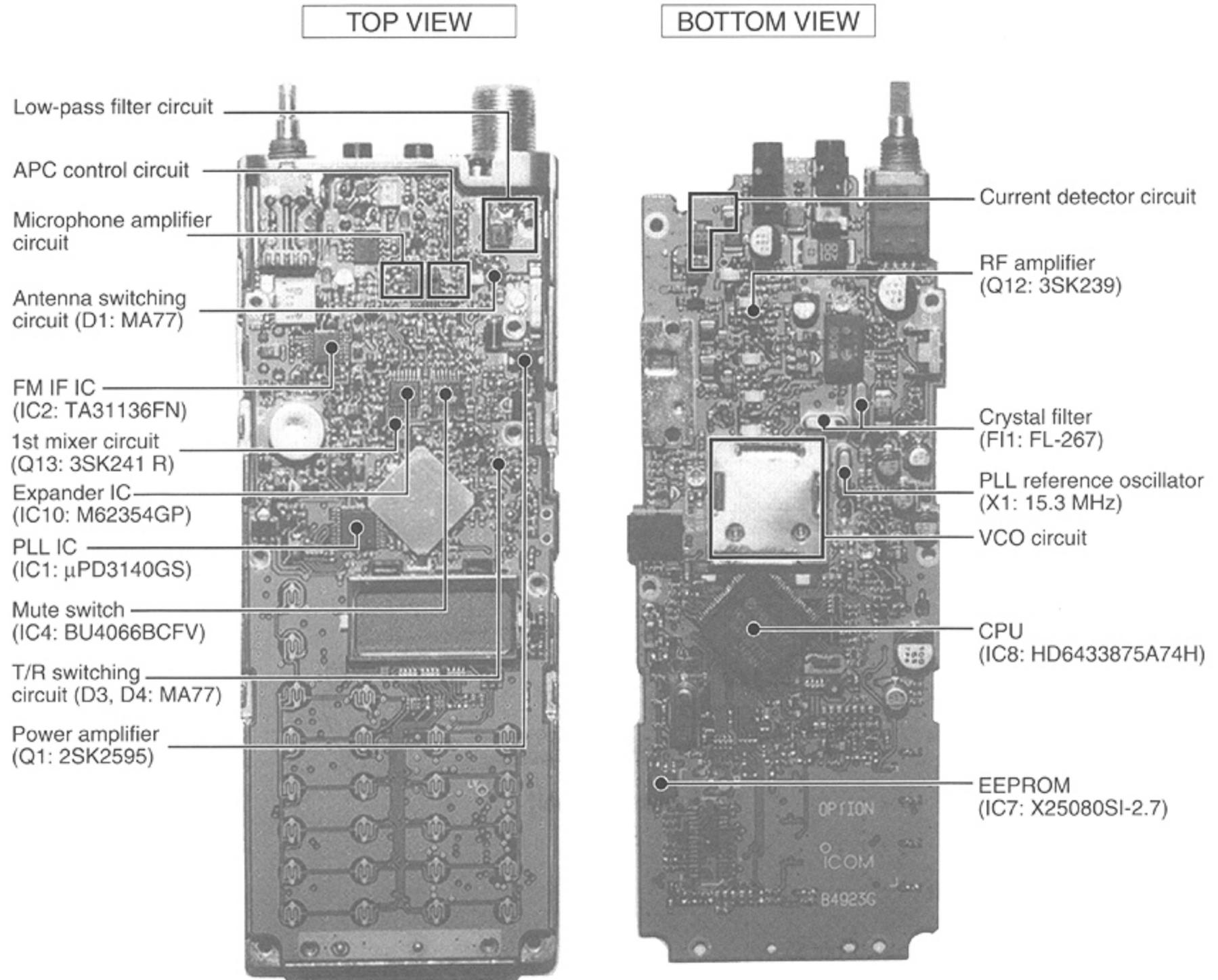
### ■ RECEIVER

|                                    |  |
|------------------------------------|--|
| • Receive system                   | : Double conversion superheterodyne system             |
| • Intermediate frequencies         | : 1st 46.35 MHz<br>2nd 450 kHz                         |
| • Sensitivity                      | : 0.30 μV at 12 dB SINAD<br>0.79 μV emf at 20 dB SINAD |
| • Squelch sensitivity              | : 0.30 μV typical (at threshold)                       |
| • Adjacent channel selectivity     | : 70 dB [SWE]<br>60 dB [UK], [FRA]                     |
| • Spurious response                | : 70 dB  |
| • Intermodulation rejection ratio  | : 65 dB  |
| • Hum and noise                    | : 40 dB  |
| • 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/8 Ω                           |

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

## SECTION 2 INSIDE VIEWS

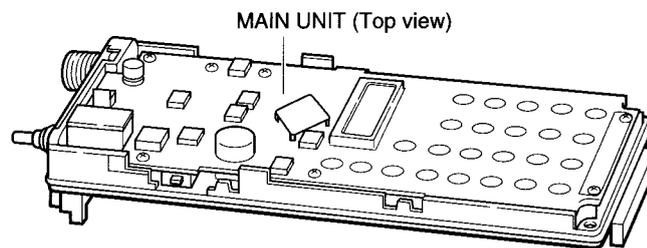
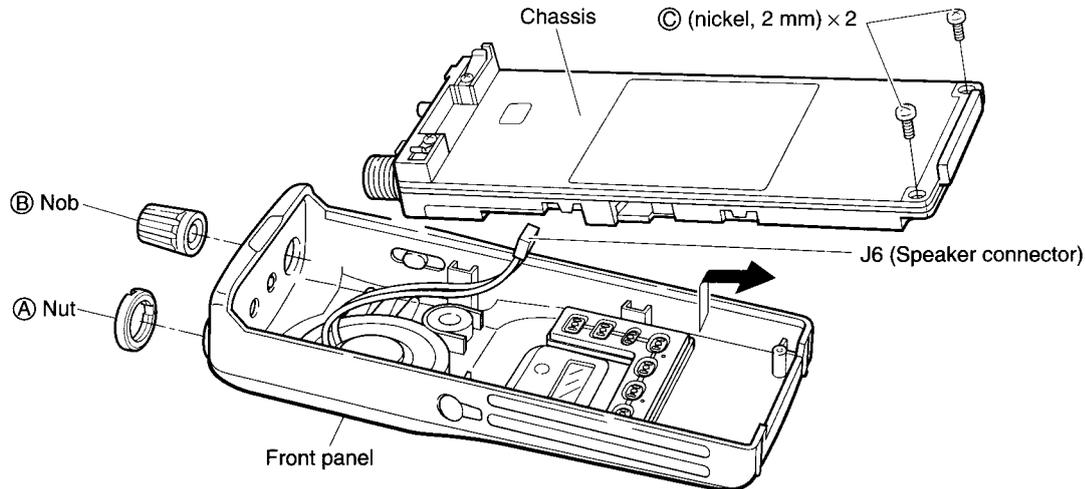
### • MAIN UNIT



## SECTION 3 DISASSEMBLY INSTRUCTIONS

### • Removing the chassis panel

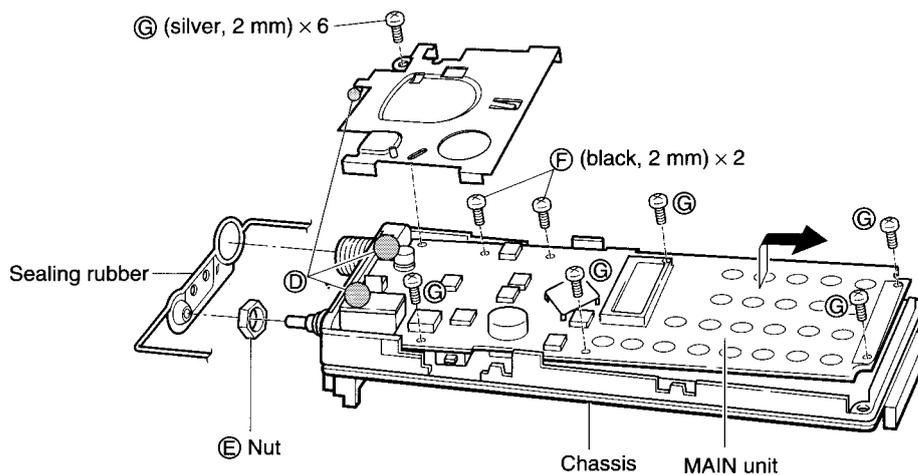
- ① Unscrew 1 nut (A), and remove 1 nob (B).
- ② Unscrew 2 screws, (C).
- ③ Take off the chassis in the direction of the arrow.
- ④ Unplug J6 to separate front panel and chassis.



[chassis panel]

### • Removing the MAIN unit

- ① Remove the sealing rubber.
- ② Unsolder 3 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 Take off 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 are passed through the low-pass filter (L1–L3, C3, C5, C7). The filtered signals are applied to the ¼ type antenna switching circuit (D406, D8).

The antenna switching circuit functions as a low-pass filter while receiving. However, its impedance becomes very high while D406 and D8 are turned ON (transmitting). Thus transmit signals are blocked from entering the receiver circuits. 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 are amplified at the RF amplifier (Q12) after passing through the tuneable bandpass filter (D10, L413, C79). The amplified signals are applied to the 1st mixer circuit (Q13) after out-of-band signals are suppressed at the tuneable bandpass filter (D11, D12, D401, C94).

Varactor diodes are employed at the bandpass filters that track the filters and are controlled by the CPU (IC8) via the expander IC (IC10) using T1–T4 signals. These diodes tune the centre 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 be passed 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 46.35 MHz 1st IF signal.

The 1st IF signal is applied to a pair of crystal filters (F11) to suppress out-of-band signals. The filtered 1st IF signal is applied to the IF amplifier (Q400), 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 signals 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 2nd LO signal (45.9 MHz) is produced at the PLL circuit by dividing its reference frequency.

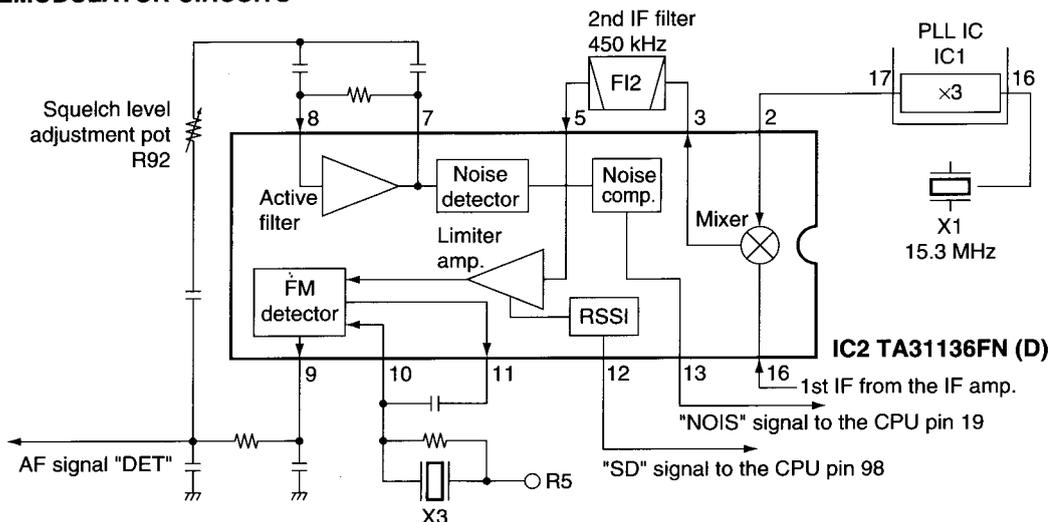
The 2nd IF signal from the 2nd mixer (IC2, pin 3) passes through a ceramic filter (F12) to remove unwanted heterodyned frequencies. It is then amplified at the limiter amplifier (IC2, pin 5) and applied to the quadrature detector (IC2, pins 10, 11) to demodulate the 2nd IF signal into AF signals.

### 4-1-5 AF CIRCUIT

AF signals from the demodulator circuit are applied to the analog switch (IC4, pin 1) via the high-pass filter (IC3b, pins 6, 7). The switched signals from pin 2 of the analog switch are passed through the low-pass filter (IC3d, pins 13, 14). The filtered signals are fed back to the analog switch (IC4, pins 10, 11) then applied to the AF power amplifier (IC5, pin 4) after passing through the [VOL] control (VR board, R1).

The AF power amplifier (IC5) amplifies the applied AF signals to a level needed to drive a speaker. The amplified AF signals are output from pin 10 and applied to the internal speaker (SP1) via the external [SP] jack (J3).

### •2nd IF AND DEMODULATOR CIRCUITS



#### 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 CPU controls one of the analog switches (IC4, pin 1, 2) as an AF mute 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 level adjustment pot (R92) is connected in parallel to the active filter input (pin 8) to control the input noise level.

The active filter section amplifies noise components. The filtered signals are rectified at the noise detector section and converted into "NOIS" (pulse type) signals at the noise comparator section. The "NOIS" signal is applied to the CPU (IC8, pin 19).

The CPU detects the receiving signal strength from the number of the pulses, and outputs an "RM" signal from pin 43. This signal controls the mute switch (IC4) to cut the AF signal line.

### 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 3, 4). The filtered AF signals are applied to the modulator circuit after being passed 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 change the reactance of a diode (D404) to modulate an oscillated signal at the VCO circuit (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, Q403), drive (Q2) and power (Q1) amplifiers to obtain 1.5 W of RF power (at 9.6 V DC). The amplified signal passes through the antenna switching circuit (D1), and low-pass filter and is then applied to the antenna connector.

The bias current of the drive (Q2) and the power amplifier (Q1) is controlled by the APC circuit.

#### 4-2-4 CURRENT DETECTOR CIRCUIT

The current detector circuit (Q9, Q28) detects the total driving current of the drive and the power amplifiers, using the current sensor (R161). The differential amplifier (Q9) detects the voltage difference of the current sensor input and output voltages, then outputs control voltage to the CPU (IC8, pin 97).

#### 4-2-5 POWER DETECTOR CIRCUIT

The power detector circuit (D2) detects the transmit power output level and converts it to DC voltage. The detected signal is applied to the APC circuit.

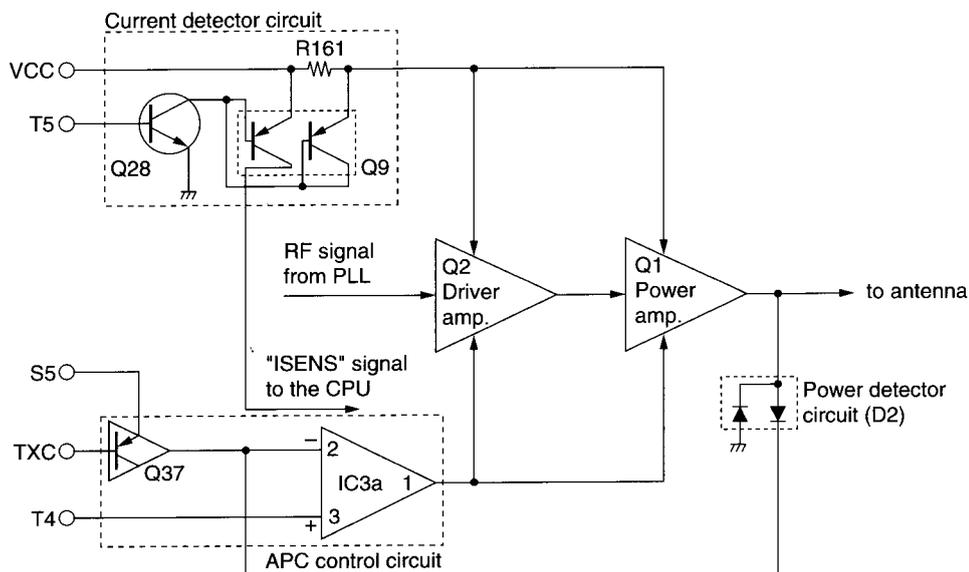
#### 4-2-6 APC CIRCUIT

The APC circuit (IC3a, Q37) provides stable output power from the power amplifier even when the input voltage changes.

The signal output from the power detector circuit (D2) is applied to the differential amplifier (IC3a, pin 2), and the "T4" signal from the expander (IC10, pin 14), controlled by the CPU (IC8), is applied to the other input for reference.

When the output power is increased, input voltage of the differential amplifier (pin 2) will be increased. In such cases, the differential amplifier output voltage (pin 1) is decreased to reduce the bias voltage for the drive and power amplifies.

#### • APC circuit



### 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). The oscillated signal is amplified at the buffer-amplifiers (Q5, Q6) and then applied to the PLL IC (IC1, pin 2).

The PLL IC (IC1) contains a prescaler, programmable counter, 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 that of the reference frequency, causing a lock voltage change to compensate for the drift in the oscillated frequency.

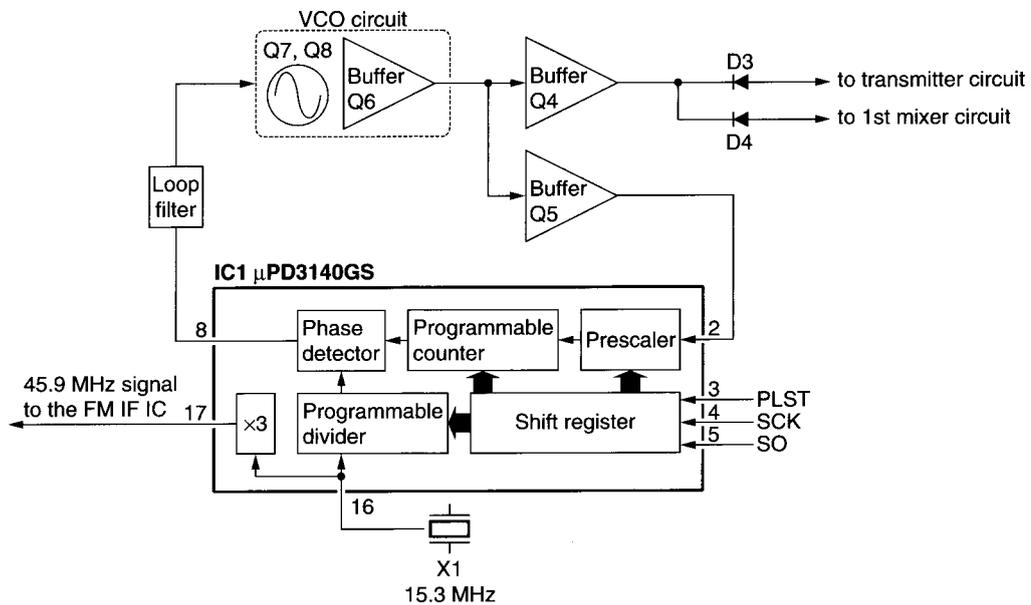
A portion of the VCO signal is amplified at the buffer-amplifier (Q4) and is then applied to the receive 1st mixer or transmit buffer-amplifier circuit via the T/R switching diode (D3, D4).

### 4-4 POWER SUPPLY CIRCUITS

#### VOLTAGE LINE

| Line | Description   |
|------|---|
| HV   | The voltage from the attached battery pack.   |
| VCC  | The same voltage as the HV line (battery voltage) which is controlled by the power switch ([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. |
| 5V   | Common 5 V converted from the VCC line by the 5 V regulator circuit (Q18, Q19) using the reference regulator (IC6).   |
| T5   | 5 V for transmitter circuits regulated by the T5 regulator circuit (Q22).   |
| R5   | 5 V for receiver circuits regulated by the R5 regulator circuit (Q21).  |
| S5   | Common 5 V converted from the 5V line by the S5 regulator circuit (Q20).  |

• PLL circuit



## 4-5 PORT ALLOCATIONS

### 4-5-1 CPU (IC8)

| Pin number | Port name   | Description   |
|------------|-------------|---|
| 1          | CTCIN       | Input port for CTCSS/DTCS signals.  |
| 12         | SCK         | Outputs clock signal to the PLL IC (IC1), EEPROM (IC7) and output expander IC (IC10), etc.                    |
| 13         | SI          | Input port for the data signal from EEPROM (IC7), etc.  |
| 14         | SO          | Outputs data signal to the PLL IC (IC1), EEPROM (IC7) and output expander IC (IC10), etc.                     |
| 15         | UNLK        | Input port for PLL unlock signal from the PLL IC (IC1).<br>High: While unlock.                                |
| 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).  |
| 26         | CONT        | Outputs LCD contrast control signal.<br>High: When normal level is selected                                   |
| 36–41      | KS0–KS5     | Output ports for key matrix.  |
| 42         | MM          | Outputs mic. mute control signal.<br>High: When muted   |
| 43         | RM          | Outputs RX mute control signal.<br>High: When squelched, etc.   |
| 44–47      | KR0–KR3     | Input ports for key matrix.   |
| 48         | R5C         | Outputs R5 regulator control signal.<br>Low: While receiving  |
| 49         | S5C         | Outputs S5 regulator control signal.<br>Low: While power is ON  |
| 50         | TXC         | Outputs T5 regulator control signal.<br>High: While transmitting  |
| 51         | T5C         | Outputs T5 regulator control signal.<br>Low: While transmitting   |
| 52         | LIGHT       | Outputs LCD backlight control signal.<br>High: Lights ON  |
| 53         | AFON        | Outputs the regulator circuit for the AF power amplifier control signal.<br>High: While AF amp. is activated. |
| 54         | DST         | Outputs strobe signals to the output expander IC (IC10).  |
| 60–62      | CTDA0–CTDA2 | Outputs CTCSS and DTCS encode signals (3-bit, D/A type).  |
| 63         | DUSE        | Outputs filter switch control signal for the CTCSS and DTCS (Q38).<br>High: DTCS is activated.                |
| 90         | MTONE       | Output port for:<br>Beep audio while receiving.<br>2/5-tone signals while transmitting.                       |

### 4-5-2 OUTPUT EXPANDER IC (IC10)

| Pin number | Port name | Description  |
|------------|-----------|--|
| 2          | DST       | Input port for strobe signals.   |
| 3          | SCK       | Input port for clock signal.   |
| 4          | SO        | Input port for data signal.  |
| 11–13      | T1–T3     | Output tuneable bandpass filter control voltage.   |
| 14         | T4        | Output port for:<br>Tuneable bandpass filter control signal while receiving<br>RF output power reference signal while transmitting |

# 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<br>Current capacity : 3 A or more  | Audio generator                 | Frequency range : 300–3000 Hz<br>Output level : 1–500 mV                       |
| RF power meter (terminated type) | Measuring range : 1–10 W<br>Frequency range : 120–500 MHz<br>Impedance : 50 Ω<br>SWR : Less than 1.2 : 1 | Attenuator                      | Power attenuation : 40 or 50 dB<br>Capacity : 10 W or more                     |
| Frequency counter                | Frequency range : 0.1–500 MHz<br>Frequency accuracy : ±1 ppm or better<br>Sensitivity : 100 mV or better | Standard signal generator (SSG) | Frequency range : 120–500 MHz<br>Output level : 0.1 μV–32 mV (–127 to –17 dBm) |
| FM deviation meter               | Frequency range : 30–500 MHz<br>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<br>Measuring range : 0.01–20 V                     |
|                                  |  | AC millivoltmeter               | Measuring range : 10 mV–10 V   |

### ■ TRIMMER ADJUSTMENT

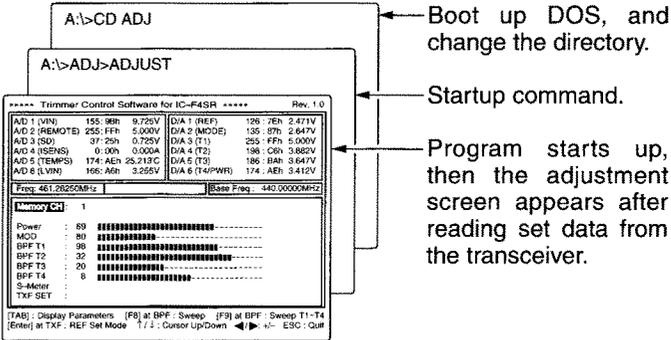
When you adjust the contents on page 5-4, TRIMMER ADJUSTMENT, the optional EX-2126 FIELD PROGRAMMING SOFTWARE (Rev. 1.0 or later) and OPC-478 CLONING CABLE are required.

#### • STARTING TRIMMER ADJUSTMENT

Turn ON power to the transceiver, connect a computer to the [SP] jack using the optional OPC-478 CLONING CABLE, then start up the “ADJUST” program in EX-2126.

#### • STARTING THE PROGRAM

- ① Boot up DOS.
- ② Insert the EX-2126 backup disk into drive A.
- ③ Type the following to start up the program:  
 ADJ>ADJUST [Enter]
  - The adjustment screen appears after reading set data from the transceiver.
- ④ After the adjustment screen appears, set or modify the data as desired.



**NOTE:** When the EEPROM (IC7) is replaced or the transceiver displays an error message and beeps, the following operation is necessary before starting the ADJUSTMENT.

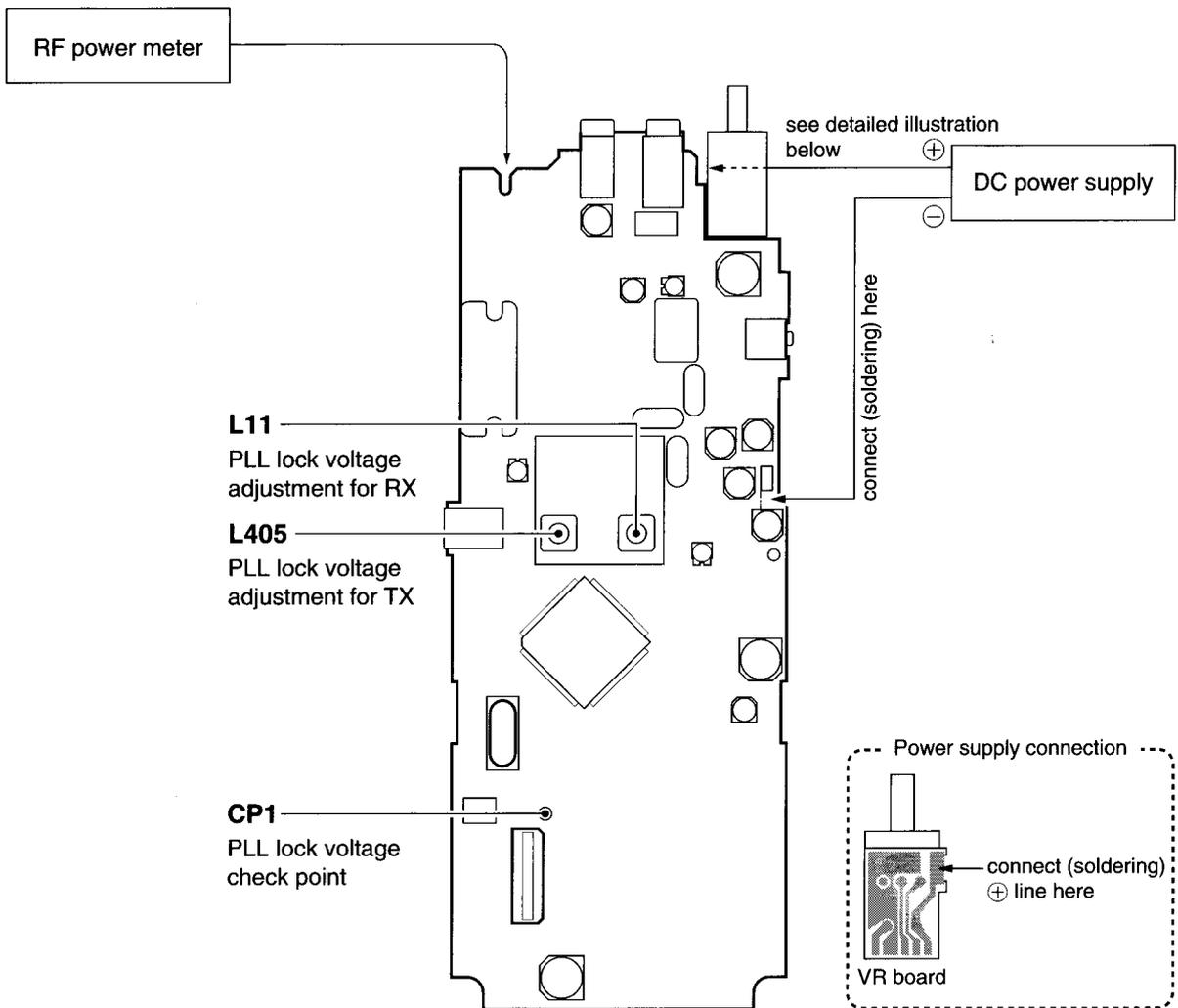
1. Download the programmed data using the EX-2126 FIELD PROGRAMMING SOFTWARE (Rev. 1.0 or later) from an exact same version of the transceiver, then save it. (See the instructions for detailed operation.)
2. Set the cursor to the [MODEL] and push the [↓] key on the computer keyboard.
3. Type “RESERVE” then push [Enter].  
 “Reserved” indicator flashes at the right hand, top corner on the computer screen.
4. Connect the transceiver which has been repaired, then write the data to the transceiver.



5-2 PLL ADJUSTMENT

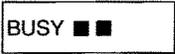
| ADJUSTMENT       | ADJUSTMENT CONDITIONS  | MEASUREMENT |  | VALUE                                    | ADJUSTMENT |        |
|------------------|--|-------------|--|--|------------|--------|
|                  |  | UNIT        | LOCATION                                 |  | UNIT       | ADJUST |
| PLL LOCK VOLTAGE | 1 • Operating freq.:<br>461.4750 MHz (UK)<br>446.9750 MHz (FRA)<br>444.8000 MHz (SWE)<br>• Receiving | MAIN        | Connect a multimeter to check point CP1. | 3.3 V [UK]<br>2.0 V [FRA]<br>1.8 V [SWE] | MAIN       | L11    |
|                  | 2 • Transmitting   |             |  |  |            | L405   |

• MAIN unit



### 5-3 TRIMMER ADJUSTMENT

Select an item using [↑]/[↓] keys on the connected computer keyboard.

| ADJUSTMENT   | ADJUSTMENT CONDITIONS   | MEASUREMENT |  | VALUE  | OPERATION  |
|--|---|-------------|--|--|--|
|  |   | UNIT        | LOCATION   |  |  |
| REFERENCE FREQUENCY  | 1 <ul style="list-style-type: none"> <li>• Operating freq. :<br/>461.4750 MHz (UK)<br/>446.9750 MHz (FRA)<br/>444.8000 MHz (SWE)</li> <li>• Transmitting</li> </ul>   | Top panel   | Loosely couple a frequency counter to the antenna connector.                                 | 461.47500 MHz (UK)<br>446.97500 MHz (FRA)<br>444.80000 MHz (SWE)                                       | Push [←] or [→] keys on the computer key board.                    |
| OUTPUT POWER   | 1 <ul style="list-style-type: none"> <li>• Operating freq. :<br/>461.4750 MHz (UK)<br/>446.9750 MHz (FRA)<br/>444.8000 MHz (SWE)</li> <li>• Transmitting</li> </ul>   | Top panel   | Connected computer screen "Power (Hi)".  | 180  | Push [←] or [→] keys on the computer key board.                    |
|  |   |             | Connect an RF power meter to the antenna connector.  | Maximum output   | Adjust C467 on the MAIN unit. (see detailed illustration at right) |
| BPF1–BPF4  | 1 <ul style="list-style-type: none"> <li>• Operating freq. :<br/>461.4750 MHz (UK)<br/>446.9750 MHz (FRA)<br/>444.8000 MHz (SWE)</li> <li>• Set an SSG as:<br/>Level : 10 μV* (–87 dBm)<br/>Modulation : 1 kHz<br/>Deviation : ±1.75 kHz (UK, FRA)<br/>±3.5 kHz (SWE)</li> <li>• Receiving</li> </ul> | Top panel   | Connect an SSG to the antenna connector and a SINAD meter with an 8 Ω load to the [SP] jack. | Minimum distortion level   | Push [←] or [→] keys on the computer key board.                    |
|  |   |             |  |  |  |
| CONVENIENT: The BPF1–BPF4 can be adjusted automatically. <ol style="list-style-type: none"> <li>①-1 Set each to 0, then push the [F9] key. (The cursor must be set to the BPF1 position.)</li> <li>②-1 The connected PC tunes BPF1–BPF4 to peak levels.</li> </ol> or <ol style="list-style-type: none"> <li>③-2 Set the cursor to one of BPF1, 2, 3 or 4 as desired.</li> <li>④-2 Push [F8] to start tuning.</li> <li>⑤-2 Repeat ①-2 and ②-2 to perform additional BPF tuning.</li> </ol> |   |             |  |  |  |
| S-METER  | 1 <ul style="list-style-type: none"> <li>• Operating freq. :<br/>461.4750 MHz (UK)<br/>446.9750 MHz (FRA)<br/>444.8000 MHz (SWE)</li> <li>• Set an SSG as:<br/>Level : 0.5 μV* (–113 dBm)<br/>Modulation : OFF</li> <li>• Receiving</li> </ul>  | Top panel   | Connect an SSG to the antenna connector and a SINAD meter with an 8 Ω load to the [SP] jack. | Display shows<br> | Push [Enter] key on the computer key-board.                        |

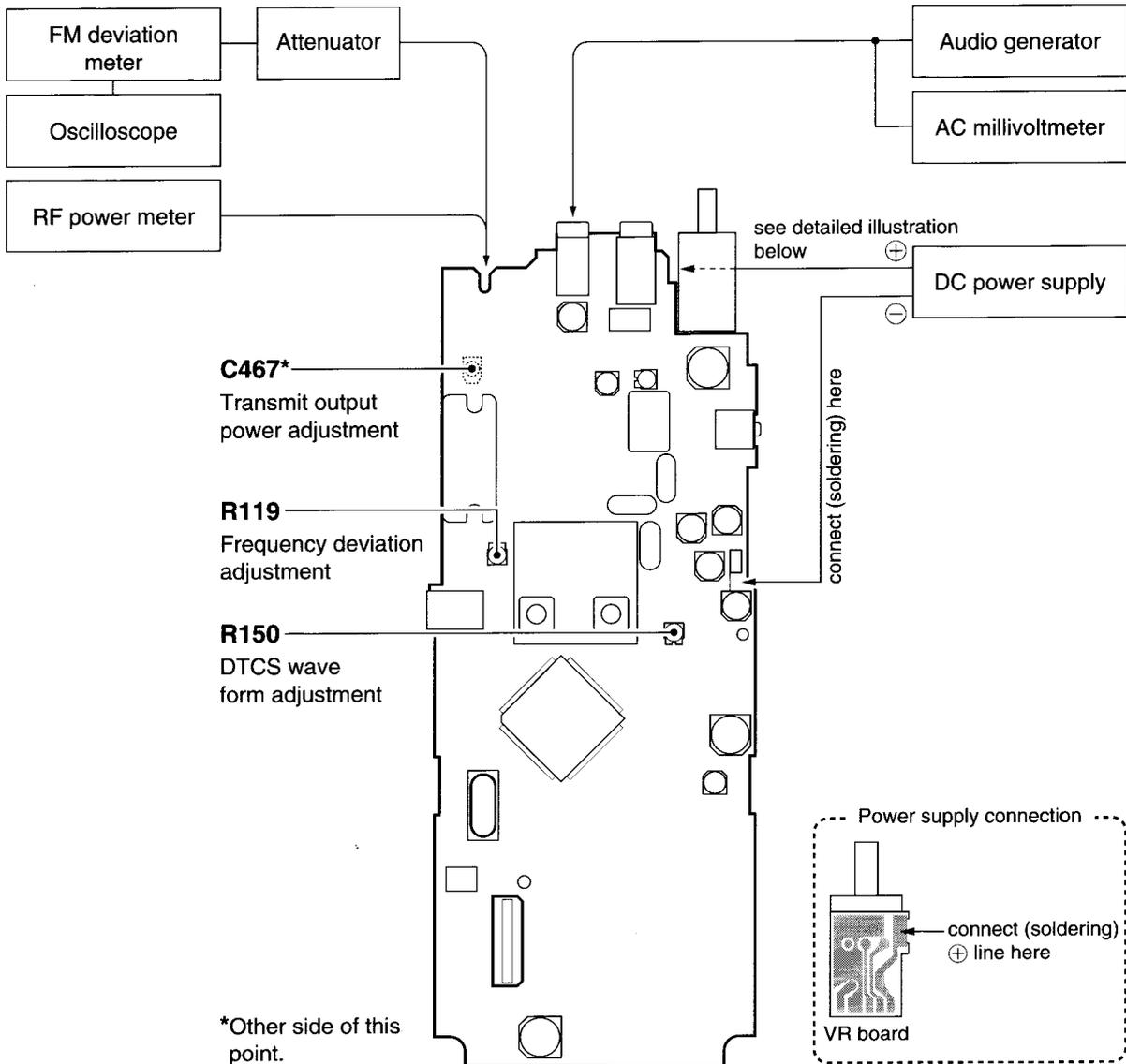
\*The output level of the standard signal generator (SSG) is indicated as SSG's open circuit.

### 5-4 TRANSMITTER ADJUSTMENT

The following adjustment must be performed after "REFERENCE FREQUENCY ADJUSTMENT" in section 5-3.

| ADJUSTMENT     | ADJUSTMENT CONDITIONS   | MEASUREMENT |  | VALUE  | ADJUSTMENT |        |
|----------------|---|-------------|--|--|------------|--------|
|                |   | UNIT        | LOCATION   |  | UNIT       | ADJUST |
| FM DEVIATION   | 1 <ul style="list-style-type: none"> <li>• Operating freq. :<br/>461.4750 MHz (UK)<br/>446.9750 MHz (FRA)<br/>444.8000 MHz (SWE)</li> <li>• Connect an audio generator to the [MIC] jack and set as:<br/>1 kHz/150 mV</li> <li>• Set an FM deviation meter as:<br/>HPF : OFF<br/>LPF : 20 kHz<br/>De-emphasis : OFF<br/>Detector : (P-P)/2</li> <li>• Transmitting</li> </ul> | Top panel   | Connect an FM deviation meter to the antenna connector through an attenuator.                      | ±2.1 kHz (UK, FRA)<br>±4.1 kHz (SWE)   | MAIN       | R119   |
| DTCS WAVE FORM | 1 <ul style="list-style-type: none"> <li>• Operating freq. :<br/>461.4750 MHz (UK)<br/>446.9750 MHz (FRA)<br/>444.8000 MHz (SWE)</li> <li>• No audio applied to the [MIC] jack.</li> <li>• DTCS code : 007</li> <li>• Transmitting</li> </ul>   | Top panel   | Connect an FM deviation meter with an oscilloscope to the antenna connector through an attenuator. | Set to flat wave form<br> | MAIN       | R150   |

• MAIN unit

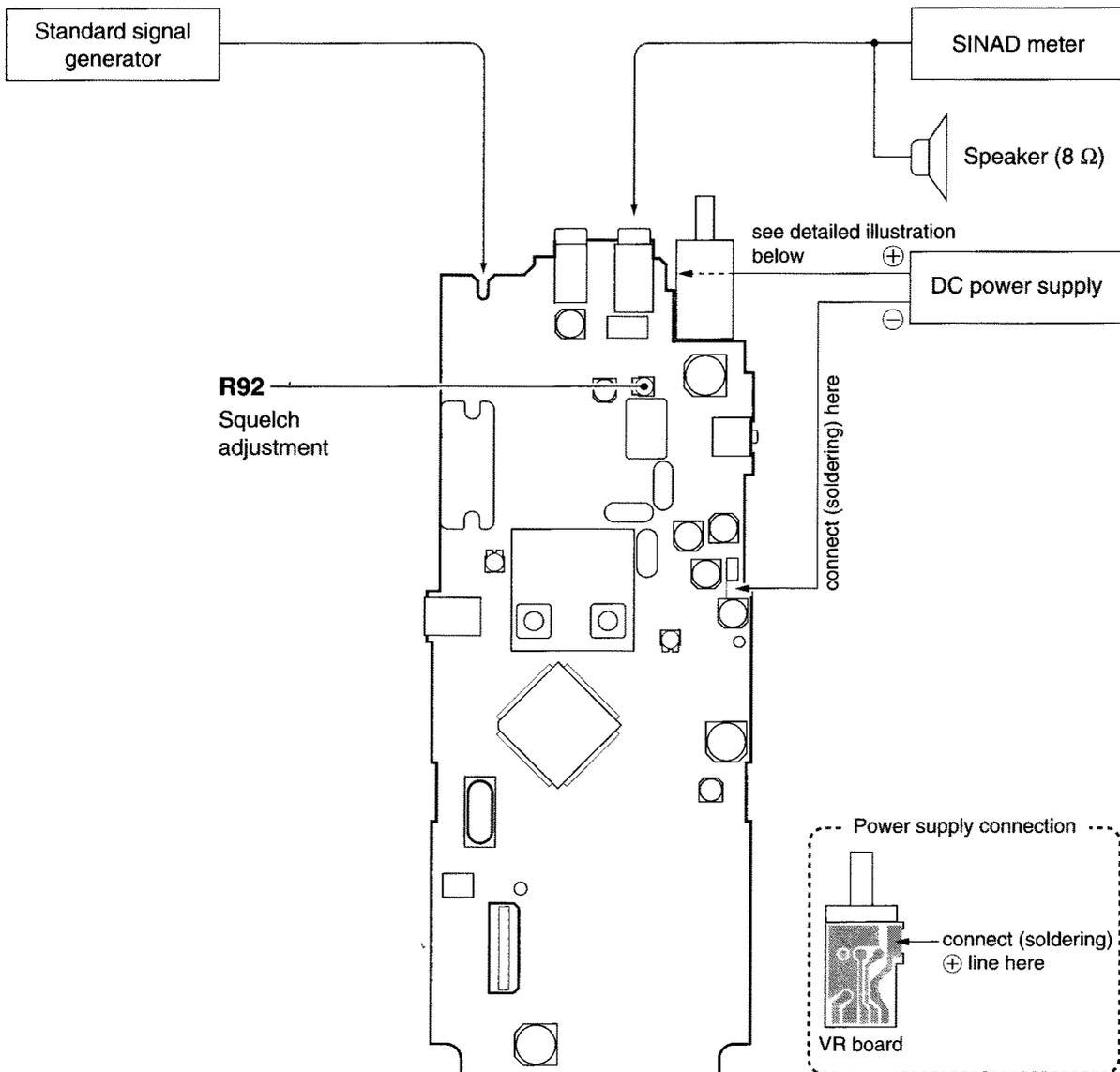


### 5-5 RECEIVER ADJUSTMENT

The following adjustment must be performed after "BPF1-BPF4 ADJUSTMENT" in section 5-3.

| ADJUSTMENT    | ADJUSTMENT CONDITIONS   | MEASUREMENT |  | VALUE  | ADJUSTMENT |              |
|---------------|---|-------------|--|--|------------|--------------|
|               |   | UNIT        | LOCATION   |  | UNIT       | ADJUST       |
| SQUELCH LEVEL | 1 • Operating freq.:<br>461.4750 MHz (UK)<br>446.9750 MHz (FRA)<br>444.8000 MHz (SWE)<br>• Set the SSG as:<br>Modulation : 1kHz<br>Deviation : ±1.75 kHz (UK, FRA)<br>±3.5 kHz (SWE)<br>• Receiving | Top panel   | Connect an SSG to the antenna connector and SINAD meter with an 8 Ω load to the [SP] jack. | 12 dB SINAD  | SSG        | Output level |
|               | 2 • Turn R92 clockwise to close squelch.<br>• Receiving   | Top panel   |  | At the point where the audio signals just appears. | MAIN       | R92          |

• 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         |
| IC7     | 1140005620 | S.IC         | X25080SI-2.7         |
| IC8     | 1140007130 | S.IC         | HD6433875A74H        |
| IC10    | 1110003690 | S.IC         | M62354GP 75EC        |
| IC11    | 1110003500 | S.IC         | S-80742SL-A6-T1      |
| Q1      | 1560000950 | S.FET        | 2SK2595AXTB          |
| Q2      | 1560000960 | S.FET        | 2SK2596BXTL          |
| Q3      | 1530002620 | S.TRANSISTOR | 2SC3585 R44-T2B      |
| Q4      | 1530003310 | S.TRANSISTOR | 2SC5107-O (TE85R)    |
| Q5      | 1530003310 | S.TRANSISTOR | 2SC5107-O (TE85R)    |
| Q6      | 1530003310 | S.TRANSISTOR | 2SC5107-O (TE85R)    |
| Q7      | 1530002920 | S.TRANSISTOR | 2SC4226-T2 R25       |
| Q8      | 1530002920 | S.TRANSISTOR | 2SC4226-T2 R25       |
| Q9      | 1590002160 | S.TRANSISTOR | XP6401-(TX)          |
| Q11     | 1530002060 | S.TRANSISTOR | 2SC4081 T107 R       |
| Q12     | 1580000610 | S.FET        | 3SK239XR-TL          |
| Q13     | 1580000680 | S.FET        | 3SK241-R(TX)         |
| Q15     | 1520000460 | S.TRANSISTOR | 2SB1132 T100 R       |
| Q16     | 1590001190 | S.TRANSISTOR | XP6501-(TX).AB       |
| Q17     | 1590002530 | S.TRANSISTOR | UN911H(TX)           |
| Q18     | 1520000460 | S.TRANSISTOR | 2SB1132 T100 R       |
| Q19     | 1590001190 | S.TRANSISTOR | XP6501-(TX).AB       |
| Q20     | 1510000580 | S.TRANSISTOR | 2SA1362-GR (TE85R)   |
| Q21     | 1510000580 | S.TRANSISTOR | 2SA1362-GR (TE85R)   |
| Q22     | 1510000580 | S.TRANSISTOR | 2SA1362-GR (TE85R)   |
| Q23     | 1530002060 | S.TRANSISTOR | 2SC4081 T107 R       |
| Q25     | 1530000160 | S.TRANSISTOR | 2SC2712-Y (TE85RTEM) |
| Q26     | 1590000430 | S.TRANSISTOR | DTC144EU T107        |
| Q27     | 1520000460 | S.TRANSISTOR | 2SB1132 T100 R       |
| Q28     | 1530002060 | S.TRANSISTOR | 2SC4081 T107 R       |
| Q31     | 1590000660 | S.TRANSISTOR | DTC144TU T107        |
| Q33     | 1590001650 | S.TRANSISTOR | XP4601(TX)           |
| Q34     | 1560000540 | S.FET        | 2SK880-Y (TE85R)     |
| Q35     | 1530002060 | S.TRANSISTOR | 2SC4081 T107 R       |
| Q36     | 1530002060 | S.TRANSISTOR | 2SC4081 T107 R       |
| Q37     | 1590000720 | S.TRANSISTOR | DTA144EU T107        |
| Q38     | 1590000430 | S.TRANSISTOR | DTC144EU T107        |
| Q400    | 1530002600 | S.TRANSISTOR | 2SC4215-O (TE85R)    |
| Q401    | 1590001400 | S.TRANSISTOR | XP1214(TX)           |
| Q402    | 1590000430 | S.TRANSISTOR | DTC144EU T107        |
| Q403    | 1530003310 | S.TRANSISTOR | 2SC5107-O (TE85R)    |
| Q404    | 1530002850 | S.TRANSISTOR | 2SC4116-BL (TE85R)   |
| Q405    | 1590000430 | S.TRANSISTOR | DTC144EU T107        |
| D1      | 1790000620 | S.DIODE      | MA77(TW)             |
| D2      | 1790000490 | S.DIODE      | HSM88AS-TR           |
| D3      | 1790000620 | S.DIODE      | MA77(TW)             |
| D4      | 1790000620 | S.DIODE      | MA77(TW)             |
| D5      | 1720000370 | S.VARICAP    | HVU350TRF            |
| D7      | 1720000670 | S.VARICAP    | HVU17TRF             |
| D8      | 1790000620 | S.DIODE      | MA77(TW)             |
| D10     | 1720000370 | S.VARICAP    | HVU350TRF            |
| D11     | 1720000370 | S.VARICAP    | HVU350TRF            |
| D12     | 1720000370 | S.VARICAP    | HVU350TRF            |
| D15     | 1790001280 | S.DIODE      | MA111(TX)            |
| D16     | 1790001200 | S.DIODE      | MA6S121(TX)          |
| D17     | 1790001200 | S.DIODE      | MA6S121(TX)          |
| D24     | 1750000130 | S.DIODE      | DA204U T107          |
| D25     | 1790000670 | S.DIODE      | SB07-03C-TB          |
| D26     | 1160000060 | S.DIODE      | DAN202U T107         |
| D27     | 1750000130 | S.DIODE      | DA204U T107          |
| D400    | 1790001210 | S.DIODE      | 1SS375-TL            |
| D401    | 1720000370 | S.VARICAP    | HVU350TRF            |
| D402    | 1790001210 | S.DIODE      | 1SS375-TL            |
| D403    | 1720000370 | S.VARICAP    | HVU350TRF            |
| D404    | 1720000520 | S.VARICAP    | 1T365-01-T8A         |
| D405    | 1720000360 | S.DIODE      | HSU88TRF             |
| D406    | 1790000620 | S.DIODE      | MA77(TW)             |

## [MAIN UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION     |                                |
|---------|------------|-----------------|--------------------------------|
| F11     | 2010002100 | XTAL            | FL-267 (46.35 MHz) [UK], [FRA] |
|         | 2010002120 | XTAL            | FL-271 (46.35 MHz) [SW]        |
| F12     | 2020001270 | CERAMIC         | CFWM450E [SW]                  |
|         | 2020001410 | CERAMIC         | CFWM450G [UK], [FRA]           |
| X1      | 6050009990 | XTAL            | CR-576 (15.3 MHz)              |
| X2      | 6050008840 | S.XTAL          | CR-463 (6.8 MHz)               |
| X3      | 6070000210 | S.DISCRIMINATOR | CDBCA450CX24                   |
| L1      | 6200005780 | S.COIL          | 33CS-Y655LY-03K=P3             |
| L2      | 6200005770 | S.COIL          | 33CS-Y655LY-04K=P3             |
| L3      | 6200005770 | S.COIL          | 33CS-Y655LY-04K=P3             |
| L5      | 6110003230 | S.COIL          | LA-515                         |
| L6      | 6200006770 | S.COIL          | ELJRE 1N5Z-F                   |
| L7      | 6200005670 | S.COIL          | ELJRE 12NG-F                   |
| L8      | 6200005400 | S.COIL          | LL1608-F27NJ                   |
| L9      | 6200005400 | S.COIL          | LL1608-F27NJ                   |
| L11     | 6200003690 | S.COIL          | MC152-E558ANA-100051=P3        |
| L12     | 6200003550 | S.COIL          | MLF1608A 4R7K-T                |
| L13     | 6200003960 | S.COIL          | MLF1608A 1R0K-T                |
| L14     | 6200002450 | S.COIL          | LL2012-F15NK                   |
| L15     | 6200002100 | S.COIL          | LQN 1A 17NJ04                  |
| L17     | 6200002320 | S.COIL          | LQN 1A 8N8J04                  |
| L18     | 6200002320 | S.COIL          | LQN 1A 8N8J04                  |
| L19     | 6200002320 | S.COIL          | LQN 1A 8N8J04                  |
| L20     | 6200004480 | S.COIL          | MLF1608D R82K-T                |
| L21     | 6200005430 | S.COIL          | LL1608-F47NJ                   |
| L22     | 6200004660 | S.COIL          | MLF1608A 1R8K-T                |
| L24     | 6200004480 | S.COIL          | MLF1608D R82K-T                |
| L25     | 6200004480 | S.COIL          | MLF1608D R82K-T                |
| L26     | 6200003590 | S.COIL          | EXCCL3225U1                    |
| L27     | 6200003590 | S.COIL          | EXCCL3225U1                    |
| L400    | 6200003540 | S.COIL          | MLF1608D R22K-T                |
| L401    | 6200002100 | S.COIL          | LQN 1A 17NJ04                  |
| L402    | 6200002320 | S.COIL          | LQN 1A 8N8J04                  |
| L403    | 6200004780 | S.COIL          | MLF1608A 1R5K-T                |
| L404    | 6200004780 | S.COIL          | MLF1608A 1R5K-T                |
| L405    | 6200004110 | S.COIL          | MC152-E558ANA-100050           |
| L406    | 6200004780 | S.COIL          | MLF1608A 1R5K-T                |
| L407    | 6200003550 | S.COIL          | MLF1608A 4R7K-T                |
| L409    | 6200003550 | S.COIL          | MLF1608A 4R7K-T                |
| L410    | 6200003960 | S.COIL          | MLF1608A 1R0K-T                |
| L411    | 6200005400 | S.COIL          | LL1608-F27NJ                   |
| L412    | 6200003960 | S.COIL          | MLF1608A 1R0K-T                |
| L413    | 6200005370 | S.COIL          | LL1608-F15NK                   |
| L414    | 6200003540 | S.COIL          | MLF1608D R22K-T                |
| L415    | 6200007220 | S.COIL          | EXCCL4532U1                    |
| L416    | 6200003540 | S.COIL          | MLF1608D R22K-T                |
| R1      | 7030003670 | S.RESISTOR      | ERJ3GEYJ 823 V (82 kΩ)         |
| R2      | 7030003560 | S.RESISTOR      | ERJ3GEYJ 103 V (10 kΩ)         |
| R3      | 7030003440 | S.RESISTOR      | ERJ3GEYJ 102 V (1 kΩ)          |
| R5      | 7030000220 | S.RESISTOR      | MCR10EZHU 47 Ω (470)           |
| R7      | 7030003320 | S.RESISTOR      | ERJ3GEYJ 101 V (100 Ω)         |
| R8      | 7030003540 | S.RESISTOR      | ERJ3GEYJ 682 V (6.8 kΩ)        |
| R9      | 7030003560 | S.RESISTOR      | ERJ3GEYJ 103 V (10 kΩ)         |
| R12     | 7030003560 | S.RESISTOR      | ERJ3GEYJ 103 V (10 kΩ)         |
| R13     | 7030003200 | S.RESISTOR      | ERJ3GEYJ 100 V (10 Ω)          |
| R14     | 7030003320 | S.RESISTOR      | ERJ3GEYJ 101 V (100 Ω)         |
| R15     | 7030003560 | S.RESISTOR      | ERJ3GEYJ 103 V (10 kΩ)         |
| R17     | 7030003520 | S.RESISTOR      | ERJ3GEYJ 472 V (4.7 kΩ)        |
| R18     | 7030003640 | S.RESISTOR      | ERJ3GEYJ 473 V (47 kΩ)         |
| R19     | 7030003320 | S.RESISTOR      | ERJ3GEYJ 101 V (100 Ω)         |
| R20     | 7030003660 | S.RESISTOR      | ERJ3GEYJ 683 V (68 kΩ)         |
| R21     | 7030003360 | S.RESISTOR      | ERJ3GEYJ 221 V (220 Ω)         |
| R22     | 7030003660 | S.RESISTOR      | ERJ3GEYJ 683 V (68 kΩ)         |
| R23     | 7030003360 | S.RESISTOR      | ERJ3GEYJ 221 V (220 Ω)         |
| R32     | 7030003540 | S.RESISTOR      | ERJ3GEYJ 682 V (6.8 kΩ)        |
| R33     | 7030003520 | S.RESISTOR      | ERJ3GEYJ 472 V (4.7 kΩ)        |
| R34     | 7030003440 | S.RESISTOR      | ERJ3GEYJ 102 V (1 kΩ)          |
| R40     | 7030003780 | S.RESISTOR      | ERJ3GEYJ 684 V (680 kΩ)        |
| R41     | 7030003290 | S.RESISTOR      | ERJ3GEYJ 560 V (56 Ω)          |
| R42     | 7410000950 | S.ARRAY         | EXB-V8V 102JV                  |
| R44     | 7030003450 | S.RESISTOR      | ERJ3GEYJ 122 V (1.2 kΩ)        |

S.=Surface mount

## [MAIN UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION                                    |
|---------|------------|--|
| R45     | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)              |
| R46     | 7030004050 | S.RESISTOR ERJ3GEYJ 1R0 V (1 Ω)                |
| R48     | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)             |
| R49     | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)              |
| R50     | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)             |
| R51     | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ)             |
| R52     | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)             |
| R53     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)              |
| R54     | 7030003700 | S.RESISTOR ERJ3GEYJ 154 V (150 kΩ)             |
| R55     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)               |
| R59     | 7030003340 | S.RESISTOR ERJ3GEYJ 151 V (150 Ω)              |
| R62     | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ)             |
| R63     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)              |
| R64     | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ)             |
| R65     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)              |
| R66     | 7030003700 | S.RESISTOR ERJ3GEYJ 154 V (150 kΩ)             |
| R67     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)              |
| R68     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)              |
| R69     | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)               |
| R70     | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)             |
| R72     | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)              |
| R75     | 7030003370 | S.RESISTOR ERJ3GEYJ 271 V (270 Ω)              |
| R77     | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)              |
| R82     | 7030003450 | S.RESISTOR ERJ3GEYJ 122 V (1.2 kΩ) [SW]        |
|         | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) [UK], [FRA] |
| R83     | 7030003380 | S.RESISTOR ERJ3GEYJ 331 V (330 Ω)              |
| R84     | 7030003280 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω)               |
| R85     | 7030003460 | S.RESISTOR ERJ3GEYJ 152 V (1.5 kΩ)             |
| R86     | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) [UK], [FRA] |
|         | 7030003690 | S.RESISTOR ERJ3GEYJ 124 V (120 kΩ) [SW]        |
| R87     | 7030003470 | S.RESISTOR ERJ3GEYJ 182 V (1.8 kΩ) [SW]        |
|         | 7030003500 | S.RESISTOR ERJ3GEYJ 332 V (3.3 kΩ) [UK], [FRA] |
| R88     | 7030003690 | S.RESISTOR ERJ3GEYJ 124 V (120 kΩ)             |
| R89     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)              |
| R90     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) [UK], [FRA]  |
|         | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ) [SW]         |
| R92     | 7310004110 | S.TRIMMER EVM-1YSX50 B54 (503)                 |
| R93     | 7030003610 | S.RESISTOR ERJ3GEYJ 273 V (27 kΩ)              |
| R94     | 7030003800 | S.RESISTOR ERJ3GEYJ 105 V (1 MΩ)               |
| R95     | 7030003800 | S.RESISTOR ERJ3GEYJ 105 V (1 MΩ)               |
| R96     | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)              |
| R97     | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ)             |
| R98     | 7030003880 | S.RESISTOR ERJ3GEYJ 244 V (240 kΩ)             |
| R99     | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 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    | 7030003590 | S.RESISTOR ERJ3GEYJ 183 V (18 kΩ)              |
| R104    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)             |
| R105    | 7030003370 | S.RESISTOR ERJ3GEYJ 271 V (270 Ω) [SW]         |
|         | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) [UK], [FRA]  |
| R107    | 7030003690 | S.RESISTOR ERJ3GEYJ 124 V (120 kΩ) [UK], [FRA] |
|         | 7030003730 | S.RESISTOR ERJ3GEYJ 274 V (270 kΩ) [SW]        |
| R108    | 7030003700 | S.RESISTOR ERJ3GEYJ 154 V (150 kΩ) [SW]        |
|         | 7030003710 | S.RESISTOR ERJ3GEYJ 184 V (180 kΩ) [UK], [FRA] |
| R109    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)              |
| R112    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)             |
| R113    | 7030003660 | S.RESISTOR ERJ3GEYJ 683 V (68 kΩ)              |
| R114    | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 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    | 7030004050 | S.RESISTOR ERJ3GEYJ 1R0 V (1 Ω)                |
| R119    | 7310004090 | S.TRIMMER EVM-1YSX50 B14 (103)                 |
| R120    | 7030003660 | S.RESISTOR ERJ3GEYJ 683 V (68 kΩ)              |
| R121    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)               |
| R122    | 7030003490 | S.RESISTOR ERJ3GEYJ 272 V (2.7 kΩ)             |
| R123    | 7030003500 | S.RESISTOR ERJ3GEYJ 332 V (3.3 kΩ)             |
| R125    | 7030003610 | S.RESISTOR ERJ3GEYJ 273 V (27 kΩ)              |
| R126    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 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    | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω)              |
| R133    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)               |
| R134    | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ)             |
| R135    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 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)             |

## [MAIN UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION                                   |
|---------|------------|---|
| R142    | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)             |
| 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)             |
| R150    | 7310004110 | S.TRIMMER EVM-1YSX50 B54 (503)                |
| R153    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)              |
| R154    | 7030003540 | S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ)            |
| R155    | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω)             |
| R156    | 7030000160 | S.RESISTOR MCR10EZHJ 15 Ω (150)               |
| R157    | 7030000160 | S.RESISTOR MCR10EZHJ 15 Ω (150)               |
| R158    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)             |
| R159    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)            |
| R160    | 7030003340 | S.RESISTOR ERJ3GEYJ 151 V (150 Ω)             |
| R161    | 7030007330 | S.RESISTOR ERJ1WRSJR15U (0.15 Ω)              |
| R162    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)              |
| R163    | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)             |
| R164    | 7030003490 | S.RESISTOR ERJ3GEYJ 272 V (2.7 kΩ)            |
| R165    | 7030003470 | S.RESISTOR ERJ3GEYJ 182 V (1.8 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    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)             |
| R170    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)             |
| R174    | 7030003580 | S.RESISTOR ERJ3GEYJ 153 V (15 kΩ)             |
| R176    | 7030003510 | S.RESISTOR ERJ3GEYJ 392 V (3.9 kΩ)            |
| R178    | 7030003510 | S.RESISTOR ERJ3GEYJ 392 V (3.9 kΩ)            |
| R181    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)            |
| R182    | 7510000910 | S.THERMISTOR NTCCF2012 4AH 473KC-T            |
| R183    | 7030003410 | S.RESISTOR ERJ3GEYJ 561 V (560 Ω)             |
| R184    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)             |
| R185    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)              |
| R186    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)             |
| R190    | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)             |
| R191    | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)             |
| R192    | 7030003650 | S.RESISTOR ERJ3GEYJ 563 V (56 kΩ)             |
| R193    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)            |
| R194    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)            |
| R195    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)            |
| R196    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)            |
| R197    | 7030003710 | S.RESISTOR ERJ3GEYJ 184 V (180 kΩ)            |
| R199    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)              |
| R200    | 7030003360 | S.RESISTOR ERJ3GEYJ 221 V (220 Ω)             |
| R202    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)             |
| R203    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)             |
| R204    | 7030003500 | S.RESISTOR ERJ3GEYJ 332 V (3.3 kΩ)            |
| R205    | 7030003460 | S.RESISTOR ERJ3GEYJ 152 V (1.5 kΩ)            |
| R207    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)             |
| R208    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)            |
| R209    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)            |
| R210    | 7030003480 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ)            |
| R214    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)              |
| R215    | 7030005520 | S.RESISTOR RR0816R-334-D (330 kΩ)             |
| R216    | 7030005630 | S.RESISTOR RR0816R-154-D (150 kΩ)             |
| R218    | 7030003660 | S.RESISTOR ERJ3GEYJ 683 V (68 kΩ)             |
| R220    | 7030003730 | S.RESISTOR ERJ3GEYJ 274 V (270 kΩ)            |
| R221    | 7030003740 | S.RESISTOR ERJ3GEYJ 334 V (330 kΩ)            |
| R224    | 7030003610 | S.RESISTOR ERJ3GEYJ 273 V (27 kΩ) [SW]        |
|         | 7030003660 | S.RESISTOR ERJ3GEYJ 683 V (68 kΩ) [UK], [FRA] |
| R225    | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)             |
| R226    | 7410000950 | S.ARRAY EXB-V8V 102JV                         |
| R227    | 7030004050 | S.RESISTOR ERJ3GEYJ 1R0 V (1 Ω)               |
| R228    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)            |
| R229    | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)             |
| R230    | 7030003650 | S.RESISTOR ERJ3GEYJ 563 V (56 kΩ)             |
| R231    | 7030003710 | S.RESISTOR ERJ3GEYJ 184 V (180 kΩ)            |
| R234    | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)             |
| R235    | 7030003780 | S.RESISTOR ERJ3GEYJ 683 V (680 kΩ)            |
| R236    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)              |
| R237    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)            |
| R400    | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)            |
| R401    | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)            |
| R402    | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)             |
| R403    | 7030004040 | S.RESISTOR ERJ3GEYJ 4R7 V (4.7 Ω)             |
| R404    | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ)            |
| R405    | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)             |
| R406    | 7030003330 | S.RESISTOR ERJ3GEYJ 121 V (120 Ω) [UK], [FRA] |
|         | 7030003390 | S.RESISTOR ERJ3GEYJ 391 V (390 Ω) [SW]        |
| R407    | 7030003690 | S.RESISTOR ERJ3GEYJ 124 V (120 kΩ)            |
| R408    | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)              |

S.=Surface mount

[MAIN UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION    |                                     |
|---------|------------|----------------|-------------------------------------|
| R409    | 7030003200 | S.RESISTOR     | ERJ3GEYJ 100 V (10 Ω)               |
| R410    | 7030003500 | S.RESISTOR     | ERJ3GEYJ 332 V (3.3 kΩ)             |
| R411    | 7030003490 | S.RESISTOR     | ERJ3GEYJ 272 V (2.7 kΩ)             |
| R412    | 7030004050 | S.RESISTOR     | ERJ3GEYJ 1R0 V (1 Ω)                |
| R413    | 7030004040 | S.RESISTOR     | ERJ3GEYJ 4R7 V (4.7 Ω)              |
| R414    | 7030003400 | S.RESISTOR     | ERJ3GEYJ 471 V (470 Ω)              |
| R415    | 7030003200 | S.RESISTOR     | ERJ3GEYJ 100 V (10 Ω)               |
| R416    | 7030003500 | S.RESISTOR     | ERJ3GEYJ 332 V (3.3 kΩ)             |
| R417    | 7030003500 | S.RESISTOR     | ERJ3GEYJ 332 V (3.3 kΩ)             |
| R419    | 7030004040 | S.RESISTOR     | ERJ3GEYJ 4R7 V (4.7 Ω)              |
| R420    | 7030003370 | S.RESISTOR     | ERJ3GEYJ 271 V (270 Ω)              |
| R421    | 7030003560 | S.RESISTOR     | ERJ3GEYJ 103 V (10 kΩ)              |
| R422    | 7030003720 | S.RESISTOR     | ERJ3GEYJ 224 V (220 kΩ)             |
| R424    | 7030003680 | S.RESISTOR     | ERJ3GEYJ 104 V (100 kΩ)             |
| R425    | 7410000950 | S.ARRAY        | EXB-V8V 102JV                       |
| R426    | 7410000950 | S.ARRAY        | EXB-V8V 102JV                       |
| R427    | 7410000770 | S.ARRAY        | EXB-V4V 102JV (1 kΩ)                |
| R428    | 7410000950 | S.ARRAY        | EXB-V8V 102JV                       |
| R429    | 7410000950 | S.ARRAY        | EXB-V8V 102JV                       |
| R430    | 7410000950 | S.ARRAY        | EXB-V8V 102JV                       |
| R431    | 7410000770 | S.ARRAY        | EXB-V4V 102JV (1 kΩ)                |
| R432    | 7030003680 | S.RESISTOR     | ERJ3GEYJ 104 V (100 kΩ)             |
| R433    | 7410000950 | S.ARRAY        | EXB-V8V 102JV                       |
| R434    | 7030003560 | S.RESISTOR     | ERJ3GEYJ 103 V (10 kΩ)              |
| R436    | 7030003470 | S.RESISTOR     | ERJ3GEYJ 182 V (1.8 kΩ)             |
| R437    | 7030003640 | S.RESISTOR     | ERJ3GEYJ 473 V (47 kΩ)              |
| R438    | 7030003740 | S.RESISTOR     | ERJ3GEYJ 334 V (330 kΩ)             |
| R439    | 7030003650 | S.RESISTOR     | ERJ3GEYJ 563 V (56 kΩ)              |
| R440    | 7030003690 | S.RESISTOR     | ERJ3GEYJ 124 V (120 kΩ)             |
| R441    | 7510000930 | S.THERMISTOR   | NTCCF2012 3NH 103KC-T               |
| R442    | 7030003560 | S.RESISTOR     | ERJ3GEYJ 103 V (10 kΩ)              |
| R443    | 7030003560 | S.RESISTOR     | ERJ3GEYJ 103 V (10 kΩ)              |
| R444    | 7030003560 | S.RESISTOR     | ERJ3GEYJ 103 V (10 kΩ)              |
| R445    | 7030003360 | S.RESISTOR     | ERJ3GEYJ 221 V (220 Ω)              |
| R446    | 7030003650 | S.RESISTOR     | ERJ3GEYJ 563 V (56 kΩ)              |
| R447    | 7030003400 | S.RESISTOR     | ERJ3GEYJ 471 V (470 Ω)              |
| R448    | 7030003210 | S.RESISTOR     | ERJ3GEYJ 120 V (12 Ω)               |
| R449    | 7030003400 | S.RESISTOR     | ERJ3GEYJ 471 V (470 Ω)              |
| R450    | 7030003480 | S.RESISTOR     | ERJ3GEYJ 222 V (2.2 kΩ)             |
| R451    | 7030003800 | S.RESISTOR     | ERJ3GEYJ 105 V (1 MΩ)               |
| R452    | 7030003440 | S.RESISTOR     | ERJ3GEYJ 102 V (1 kΩ)               |
| R453    | 7030003640 | S.RESISTOR     | ERJ3GEYJ 473 V (47 kΩ) [SW]         |
|         | 7030003650 | S.RESISTOR     | ERJ3GEYJ 563 V (56 kΩ) [UK], [FRA]  |
| R454    | 7030004050 | S.RESISTOR     | ERJ3GEYJ 1R0 V (1 Ω)                |
| R455    | 7030003670 | S.RESISTOR     | ERJ3GEYJ 823 V (82 kΩ) [SW]         |
|         | 7030003690 | S.RESISTOR     | ERJ3GEYJ 124 V (120 kΩ) [UK], [FRA] |
| R456    | 7030003460 | S.RESISTOR     | ERJ3GEYJ 152 V (1.5 kΩ)             |
| R457    | 7030003590 | S.RESISTOR     | ERJ3GEYJ 183 V (18 kΩ)              |
| R458    | 7030003610 | S.RESISTOR     | ERJ3GEYJ 273 V (27 kΩ)              |
| R459    | 7030003560 | S.RESISTOR     | ERJ3GEYJ 103 V (10 kΩ)              |
| R460    | 7030003360 | S.RESISTOR     | ERJ3GEYJ 221 V (220 Ω)              |
| R461    | 7030003640 | S.RESISTOR     | ERJ3GEYJ 473 V (47 kΩ)              |
| R464    | 7030003440 | S.RESISTOR     | ERJ3GEYJ 102 V (1 kΩ)               |
| R465    | 7030003240 | S.RESISTOR     | ERJ3GEYJ 220 V (22 Ω)               |
| R466    | 7030003600 | S.RESISTOR     | ERJ3GEYJ 223 V (22 kΩ)              |
| R468    | 7030003540 | S.RESISTOR     | ERJ3GEYJ 682 V (6.8 kΩ)             |
| R469    | 7030003490 | S.RESISTOR     | ERJ3GEYJ 272 V (2.7 kΩ)             |
| C3      | 4030007020 | S.CERAMIC      | C1608 CH 1H 120J-TA                 |
| C5      | 4030006990 | S.CERAMIC      | C1608 CH 1H 080D-TA                 |
| C7      | 4030009910 | S.CERAMIC      | C1608 CH 1H 040B-TA                 |
| C8      | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA                 |
| C9      | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-TA                 |
| C10     | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-TA                 |
| C11     | 4030004850 | S.CERAMIC      | C2012 CH 1H 080D-TA                 |
| C13     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA                 |
| C14     | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA                 |
| C15     | 4030009990 | S.CERAMIC      | C1608 CH 1H 200J-TA                 |
| C17     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA                 |
| C18     | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-TA                 |
| C19     | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA                 |
| C20     | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-TA                 |
| C21     | 4510005310 | S.ELECTROLYTIC | ECEV1CA220SR                        |
| C22     | 4030006990 | S.CERAMIC      | C1608 CH 1H 080J-TA                 |
| C24     | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-TA                 |
| C25     | 4030009910 | S.CERAMIC      | C1608 CH 1H 040B-TA                 |
| C26     | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-TA                 |
| C27     | 4030009920 | S.CERAMIC      | C1608 CH 1H 050B-TA                 |
| C28     | 4030007020 | S.CERAMIC      | C1608 CH 1H 120J-TA                 |
| C30     | 4030007020 | S.CERAMIC      | C1608 CH 1H 120J-TA                 |
| C31     | 4030009920 | S.CERAMIC      | C1608 CH 1H 050B-TA                 |

[MAIN UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION |                                 |
|---------|------------|-------------|---------------------------------|
| C32     | 4030006850 | S.CERAMIC   | C1608 JB 1H 471K-TA             |
| C33     | 4030006850 | S.CERAMIC   | C1608 JB 1H 471K-TA             |
| C42     | 4030006850 | S.CERAMIC   | C1608 JB 1H 471K-TA             |
| C47     | 4550006360 | S.TANTALUM  | ECST1VY104R                     |
| C48     | 4550006450 | S.TANTALUM  | ECST1EY105R                     |
| C51     | 4030007010 | S.CERAMIC   | C1608 CH 1H 100D-TA             |
| C52     | 4030006900 | S.CERAMIC   | C1608 JB 1E 103K-TA             |
| C53     | 4030009920 | S.CERAMIC   | C1608 CH 1H 050B-TA             |
| C54     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-TA             |
| C55     | 4030006900 | S.CERAMIC   | C1608 JB 1E 103K-TA             |
| C56     | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N             |
| C57     | 4030007050 | S.CERAMIC   | C1608 CH 1H 220J-TA             |
| C58     | 4030007130 | S.CERAMIC   | C1608 CH 1H 101J-TA             |
| C59     | 4030007130 | S.CERAMIC   | C1608 CH 1H 101J-TA             |
| C60     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-TA             |
| C61     | 4030011770 | S.CERAMIC   | C1608 CH 1H 060B-TA             |
| C62     | 4030011770 | S.CERAMIC   | C1608 CH 1H 060B-TA             |
| C63     | 4030007100 | S.CERAMIC   | C1608 CH 1H 560J-TA             |
| C64     | 4030007020 | S.CERAMIC   | C1608 CH 1H 120J-TA             |
| C65     | 4030009910 | S.CERAMIC   | C1608 CH 1H 040B-TA             |
| C66     | 4030009910 | S.CERAMIC   | C1608 CH 1H 040B-TA             |
| C67     | 4030009530 | S.CERAMIC   | C1608 CH 1H 030B-TA             |
| C69     | 4030007070 | S.CERAMIC   | C1608 CH 1H 330J-TA             |
| C70     | 4030006900 | S.CERAMIC   | C1608 JB 1E 103K-TA             |
| C71     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-TA             |
| C72     | 4550006320 | S.TANTALUM  | ECST0JY475R                     |
| C73     | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N             |
| C75     | 4030006900 | S.CERAMIC   | C1608 JB 1E 103K-TA             |
| C76     | 4030006980 | S.CERAMIC   | C1608 CH 1H 070D-TA             |
| C77     | 4030007100 | S.CERAMIC   | C1608 CH 1H 560J-TA             |
| C78     | 4030006980 | S.CERAMIC   | C1608 CH 1H 070D-TA             |
| C79     | 4030009550 | S.CERAMIC   | C1608 CH 1H 2R5B-TA             |
| C84     | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-TA             |
| C85     | 4030011770 | S.CERAMIC   | C1608 CH 1H 060B-TA             |
| C86     | 4030009920 | S.CERAMIC   | C1608 CH 1H 050B-TA             |
| C87     | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-TA             |
| C88     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-TA             |
| C89     | 4030009500 | S.CERAMIC   | C1608 CH 1H 0R5B-TA             |
| C90     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-TA             |
| C91     | 4030006980 | S.CERAMIC   | C1608 CH 1H 070D-TA             |
| C92     | 4030006980 | S.CERAMIC   | C1608 CH 1H 070D-TA             |
| C93     | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-TA             |
| C94     | 4030009500 | S.CERAMIC   | C1608 CH 1H 0R5B-TA             |
| C95     | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-TA             |
| C96     | 4030006980 | S.CERAMIC   | C1608 CH 1H 070D-TA             |
| C97     | 4030009920 | S.CERAMIC   | C1608 CH 1H 050B-TA             |
| C98     | 4030007050 | S.CERAMIC   | C1608 CH 1H 220J-TA             |
| C99     | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-TA             |
| C105    | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-TA             |
| C106    | 4030007010 | S.CERAMIC   | C1608 CH 1H 100D-TA [SW]        |
|         | 4030011770 | S.CERAMIC   | C1608 CH 1H 060B-TA [UK], [FRA] |
| C107    | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-TA             |
| C108    | 4030006900 | S.CERAMIC   | C1608 JB 1E 103K-TA             |
| C109    | 4030006990 | S.CERAMIC   | C1608 CH 1H 080D-TA [UK], [FRA] |
|         | 4030007010 | S.CERAMIC   | C1608 CH 1H 100D-TA [SW]        |
| C112    | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-TA             |
| C113    | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-TA             |
| C114    | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-TA             |
| C115    | 4030007130 | S.CERAMIC   | C1608 CH 1H 101J-TA             |
| C116    | 4030007100 | S.CERAMIC   | C1608 CH 1H 560J-TA [SW]        |
|         | 4030007130 | S.CERAMIC   | C1608 CH 1H 101J-TA [UK], [FRA] |
| C117    | 4550006320 | S.TANTALUM  | ECST0JY475R                     |
| C118    | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-TA             |
| C120    | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N             |
| C121    | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-TA             |
| C122    | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-TA             |
| C123    | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-TA             |
| C124    | 4030006900 | S.CERAMIC   | C1608 JB 1E 103K-TA             |
| C125    | 4030009980 | S.CERAMIC   | C1608 JB 1H 152K-TA             |
| C126    | 4030010770 | S.CERAMIC   | C1608 JB 1H 392K-TA             |
| C128    | 4030008680 | S.CERAMIC   | C2012 JF 1C 105Z-TA             |
| C129    | 4550006680 | S.TANTALUM  | ECST0JY156R                     |
| C131    | 4030006900 | S.CERAMIC   | C1608 JB 1E 103K-TA             |
| C132    | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-TA             |
| C133    | 4030011600 | S.CERAMIC   | C1608 JB 1C 104KT-N             |
| C134    | 4030007150 | S.CERAMIC   | C1608 CH 1H 151J-TA [SW]        |
|         | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-TA [UK], [FRA] |
| C135    | 4030007130 | S.CERAMIC   | C1608 CH 1H 101J-TA [SW]        |
|         | 4030007140 | S.CERAMIC   | C1608 CH 1H 121J-TA [UK], [FRA] |
| C136    | 4030006880 | S.CERAMIC   | C1608 JB 1H 472K-TA             |
| C137    | 4030008900 | S.CERAMIC   | C1608 JB 1C 333K-TA             |

S.=Surface mount

## [MAIN UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION    |                     |
|---------|------------|----------------|---------------------|
| C139    | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N |
| C140    | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N |
| C141    | 4030008630 | S.CERAMIC      | C1608 JF 1C 104Z-TA |
| C142    | 4030008630 | S.CERAMIC      | C1608 JF 1C 104Z-TA |
| C143    | 4030007130 | S.CERAMIC      | C1608 CH 1H 101J-TA |
| C144    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C145    | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR        |
| C146    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C147    | 4030008630 | S.CERAMIC      | C1608 JF 1C 104Z-TA |
| C148    | 4030008630 | S.CERAMIC      | C1608 JF 1C 104Z-TA |
| C149    | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N |
| C150    | 4550006200 | S.TANTALUM     | ECST0JY106R         |
| C151    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA |
| C152    | 4030008920 | S.CERAMIC      | C1608 JB 1C 473K-TA |
| C153    | 4550006670 | S.TANTALUM     | ECST1AD107R         |
| C154    | 4550006200 | S.TANTALUM     | ECST0JY106R         |
| C155    | 4510004630 | S.ELECTROLYTIC | ECEV1CA100SR        |
| C156    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C157    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C158    | 4510005320 | S.ELECTROLYTIC | ECEV0JA101SP        |
| C159    | 4550006320 | S.TANTALUM     | ECST0JY475R         |
| C160    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA |
| C161    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA |
| C162    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA |
| C163    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C164    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA |
| C165    | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-TA |
| C166    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C167    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA |
| C168    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C169    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C170    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C171    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C172    | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-TA |
| C173    | 4510004640 | S.ELECTROLYTIC | ECEV1CA470SP        |
| C174    | 4510005430 | S.ELECTROLYTIC | ECEV0JA220SR        |
| C175    | 4510005430 | S.ELECTROLYTIC | ECEV0JA220SR        |
| C176    | 4550006370 | S.TANTALUM     | ECST0JX226R         |
| C177    | 4510005430 | S.ELECTROLYTIC | ECEV0JA220SR        |
| C179    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA |
| C180    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA |
| C181    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA |
| C182    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA |
| C183    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA |
| C184    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA |
| C185    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA |
| C186    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C187    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C189    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C190    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C192    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C193    | 4030006990 | S.CERAMIC      | C1608 CH 1H 080D-TA |
| C194    | 4030007020 | S.CERAMIC      | C1608 CH 1H 120J-TA |
| C195    | 4030007080 | S.CERAMIC      | C1608 CH 1H 390J-TA |
| C196    | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-TA |
| C197    | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-TA |
| C199    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA |
| C200    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C201    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C202    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C204    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C205    | 4030007040 | S.CERAMIC      | C1608 CH 1H 180J-TA |
| C206    | 4030009570 | S.CERAMIC      | C1608 CH 1H 0R3B-TA |
| C207    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C208    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA |
| C209    | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N |
| C210    | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N |
| C211    | 4550006320 | S.TANTALUM     | ECST0JY475R         |
| C212    | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N |
| C213    | 4550006320 | S.TANTALUM     | ECST0JY475R         |
| C214    | 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-TA |
| C221    | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N |
| C222    | 4030008770 | S.CERAMIC      | C1608 JB 1H 562K-TA |
| C223    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA |
| C224    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA |
| C225    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA |
| C226    | 4030009630 | S.CERAMIC      | C1608 JB 1H 822K-TA |
| C227    | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N |
| C228    | 4030009490 | S.CERAMIC      | C1608 JB 1H 821K-TA |

## [MAIN UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION    |                                 |
|---------|------------|----------------|---------------------------------|
| C229    | 4030011600 | S.CERAMIC      | C1608 JB 1C 104KT-N             |
| C230    | 4550006140 | S.TANTALUM     | ECST1EY474R                     |
| C231    | 4030008630 | S.CERAMIC      | C1608 JF 1C 104Z-TA             |
| C232    | 4030008630 | S.CERAMIC      | C1608 JF 1C 104Z-TA             |
| C233    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA             |
| C234    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA             |
| C237    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA             |
| C238    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA             |
| C239    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA             |
| C240    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA             |
| C241    | 4550006200 | S.TANTALUM     | ECST0JY106R                     |
| C242    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA             |
| C243    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA             |
| C244    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA             |
| C245    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA             |
| C247    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA             |
| C248    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA             |
| C249    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA             |
| C250    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C251    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C252    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C253    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C254    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C255    | 4030007050 | S.CERAMIC      | C1608 CH 1H 220J-TA             |
| C256    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA             |
| C257    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C400    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C401    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C402    | 4030006990 | S.CERAMIC      | C1608 CH 1H 080D-TA             |
| C403    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C404    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA             |
| C405    | 4030011770 | S.CERAMIC      | C1608 CH 1H 060B-TA             |
| C406    | 4030006990 | S.CERAMIC      | C1608 CH 1H 080D-TA             |
| C407    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C408    | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-TA             |
| C410    | 4030006980 | S.CERAMIC      | C1608 CH 1H 070D-TA             |
| C411    | 4030009570 | S.CERAMIC      | C1608 CH 1H 0R3B-TA             |
| C412    | 4030008200 | S.CERAMIC      | C1608 UJ 1H 050C-TA             |
| C413    | 4030006980 | S.CERAMIC      | C1608 CH 1H 070D-TA             |
| C414    | 4030006990 | S.CERAMIC      | C1608 CH 1H 080D-TA             |
| C415    | 4030006900 | S.CERAMIC      | C1608 JB 1E 103K-TA             |
| C416    | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-TA             |
| C417    | 4030009500 | S.CERAMIC      | C1608 CH 1H 0R5B-TA             |
| C418    | 4030007000 | S.CERAMIC      | C1608 CH 1H 090J-TA             |
| C419    | 4030009560 | S.CERAMIC      | C1608 CH 1H R75B-TA             |
| C421    | 4030008210 | S.CERAMIC      | C1608 UJ 1H 060D-TA             |
| C422    | 4030006980 | S.CERAMIC      | C1608 CH 1H 070D-TA             |
| C423    | 4030011770 | S.CERAMIC      | C1608 CH 1H 060B-TA             |
| C424    | 4030006850 | S.CERAMIC      | C1608 JB 1H 471K-TA             |
| C426    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA             |
| C427    | 4030009500 | S.CERAMIC      | C1608 CH 1H 0R5B-TA             |
| C428    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C429    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C430    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C431    | 4550006300 | S.TANTALUM     | ECST1AY475R                     |
| C432    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA             |
| C433    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C434    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA             |
| C435    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA             |
| C436    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA             |
| C438    | 4030008630 | S.CERAMIC      | C1608 JF 1C 104Z-TA             |
| C439    | 4030008630 | S.CERAMIC      | C1608 JF 1C 104Z-TA             |
| C440    | 4030008630 | S.CERAMIC      | C1608 JF 1C 104Z-TA             |
| C441    | 4030008630 | S.CERAMIC      | C1608 JF 1C 104Z-TA             |
| C442    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C443    | 4030008920 | S.CERAMIC      | C1608 JB 1C 473K-TA             |
| C444    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA             |
| C446    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C447    | 4510004420 | S.ELECTROLYTIC | ECEV0JV330SR                    |
| C448    | 4030007030 | S.CERAMIC      | C1608 CH 1H 150J-TA             |
| C449    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |
| C450    | 4030009510 | S.CERAMIC      | C1608 CH 1H 010B-TA [SW]        |
|         | 4030009520 | S.CERAMIC      | C1608 CH 1H 020B-TA [UK], [FRA] |
| C451    | 4030006990 | S.CERAMIC      | C1608 CH 1H 080D-TA [SW]        |
|         | 4030009990 | S.CERAMIC      | C1608 CH 1H 200J-TA [UK], [FRA] |
| C452    | 4030009530 | S.CERAMIC      | C1608 CH 1H 030B-TA             |
| C454    | 4030006860 | S.CERAMIC      | C1608 JB 1H 102K-TA             |
| C455    | 4030007010 | S.CERAMIC      | C1608 CH 1H 100D-TA             |
| C456    | 4550006200 | S.TANTALUM     | ECST0JY106R                     |
| C457    | 4030009520 | S.CERAMIC      | C1608 CH 1H 020B-TA             |
| C458    | 4030007090 | S.CERAMIC      | C1608 CH 1H 470J-TA             |

S.=Surface mount

**[MAIN UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION |                                  |
|---------|------------|-------------|----------------------------------|
| C459    | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A             |
| C460    | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A [UK], [FRA] |
|         | 4030009970 | S.CERAMIC   | C1608 JB 1H 182K-T-A [SW]        |
| C463    | 4030006900 | S.CERAMIC   | C1608 JB 1E 103K-T-A             |
| C464    | 4030006860 | S.CERAMIC   | C1608 JB 1H 102K-T-A             |
| C465    | 4030006870 | S.CERAMIC   | C1608 JB 1H 222K-T-A             |
| C466    | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A             |
| C467    | 4610001590 | S.TRIMMER   | TZC03R100A110 10P                |
| C468    | 4030008680 | S.CERAMIC   | C2012 JF 1C 105Z-T-A             |
| C469    | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A             |
| C470    | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A             |
| C471    | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A             |
| C472    | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A             |
| C473    | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A             |
| C474    | 4030006900 | S.CERAMIC   | C1608 JB 1E 103K-T-A             |
| C475    | 4030009540 | S.CERAMIC   | C1608 CH 1H 1R5B-T-A             |
| C476    | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A             |
| C477    | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A             |
| C479    | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A             |
| C481    | 4030006850 | S.CERAMIC   | C1608 JB 1H 471K-T-A             |
| C482    | 4030006850 | S.CERAMIC   | C1608 JB 1H 471K-T-A             |
| C483    | 4030006850 | S.CERAMIC   | C1608 JB 1H 471K-T-A             |
| C486    | 4030009920 | S.CERAMIC   | C1608 CH 1H 050B-T-A             |
| C487    | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A             |
| C488    | 4030006870 | S.CERAMIC   | C1608 JB 1H 222K-T-A             |
| C489    | 4030008860 | S.CERAMIC   | C1608 JB 1C 153K-T-A             |
| C490    | 4030007170 | S.CERAMIC   | C1608 CH 1H 221J-T-A             |
| C491    | 4550006450 | S.TANTALUM  | ECST1EY105R                      |
| C492    | 4030007010 | S.CERAMIC   | C1608 CH 1H 100D-T-A             |
| C493    | 4030008920 | S.CERAMIC   | C1608 JB 1C 473K-T-A             |
| C495    | 4030006850 | S.CERAMIC   | C1608 JB 1H 471K-T-A             |
| C496    | 4030006850 | S.CERAMIC   | C1608 JB 1H 471K-T-A             |
| C497    | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A             |
| C498    | 4030007100 | S.CERAMIC   | C1608 CH 1H 560J-T-A             |
| C499    | 4030007090 | S.CERAMIC   | C1608 CH 1H 470J-T-A             |
| DS1     | 5030001460 | LCD         | LM-1462B                         |
| DS2     | 5010000160 | S.LED       | LNJ310M6URA                      |
| DS3     | 5010000160 | S.LED       | LNJ310M6URA                      |
| DS4     | 5040002190 | S.LED       | LNJ808R8ERA                      |
| S1      | 2230000990 | SWITCH      | EVQ-PJ705K                       |
| J2      | 6450001680 | CONNECTOR   | HSJ1122-010010                   |
| J3      | 6450001690 | CONNECTOR   | HSJ1456-01-220                   |
| J4      | 6450000870 | CONNECTOR   | HEC2711-01-020                   |
| J6      | 6510007080 | CONNECTOR   | PI28A-02                         |
| J7      | 6910010850 | CONNECTOR   | IMSA-9230B-1-05Z080-T            |
| W1      | 7030003860 | S.JUMPER    | ERJ3GE JPW V                     |
| W2      | 7030003860 | S.JUMPER    | ERJ3GE JPW V                     |
| W6      | 7120000480 | S.JUMPER    | MJP-0.4-T                        |
| SP1     | 2510000960 | SPEAKER     | K036NA500-26                     |
| MC1     | 7700002160 | MICROPHONE  | KUC3523-040245                   |
| EP1     | 0910048567 | PCB         | B 4923G                          |
| EP2     | 8930042590 | LCD CONTACT | SRCN-1922-SP-N-W                 |

**[VR BOARD]**

| REF NO. | ORDER NO.  | DESCRIPTION |         |
|---------|------------|-------------|---------|
| R1      | 7210002950 | VARIABLE    | RV-312  |
| EP1     | 0910048851 | PCB         | B 4968A |

S.=Surface mount

# SECTION 7 MECHANICAL PARTS AND DISASSEMBLY

## 7-1 CABINET PARTS [CHASSIS PARTS]

| REF NO. | ORDER NO.  | DESCRIPTION                   | QTY. |
|---------|------------|-------------------------------|------|
| MP1     | 8010017200 | 2078 Chassis                  | 1    |
| MP2     | 8210015160 | 2066 Front panel (A) assembly | 1    |
| MP4     | 8210014330 | 1922 Contact base             | 1    |
| MP5     | 8610010420 | Knob N-261                    | 1    |
| MP6     | 8930046390 | 2065 7-key (C)                | 1    |
| MP7     | 8930042070 | 1922 MIC cap                  | 1    |
| MP9     | 8930042030 | 1922 Main seal                | 1    |
| MP11    | 8930042050 | 1922 DC cap                   | 1    |
| MP12    | 8930042090 | 1922 Plus terminal            | 1    |
| MP13    | 8930042080 | 1922 Minus terminal           | 1    |
| MP17    | 8310043270 | 1922 Window plate (G)         | 1    |
| MP19    | 8930046060 | 2068 Rear sheet (A)           | 1    |
| MP21    | 8930042350 | 1922 MIC sheet                | 1    |
| MP24    | 8830001250 | Nut                           | 1    |
| MP25    | 8830001010 | Hex nut (A)                   | 1    |
| MP26    | 8810000100 | Screw PH M2 x 4 ZK            | 2    |
| MP27    | 8810009510 | Screw B0 2 x 4 NI-ZU (BT)     | 6    |
| MP28    | 8810009510 | Screw PH B0 2 x 4 NI-ZU (BT)  | 1    |
| MP29    | 8810009510 | Screw PH B0 2 x 4 NI-ZU (BT)  | 2    |
| MP30    | 8810009560 | Screw PH B0 2 x 6 ZK (BT)     | 2    |
| MP31    | 8810009560 | Screw PH B0 2 x 6 ZK (BT)     | 2    |
| MP34    | 8930043210 | 1922 A-rear sheet             | 1    |
| MP36    | 8950004670 | ANT connector-101             | 1    |
| MP37    | 8510011260 | 1923 Shield cover             | 1    |
| MP38    | 8930043760 | 1923 MIC seal                 | 1    |
| MP40    | 8930043610 | Isolating plate (EZ)          | 1    |

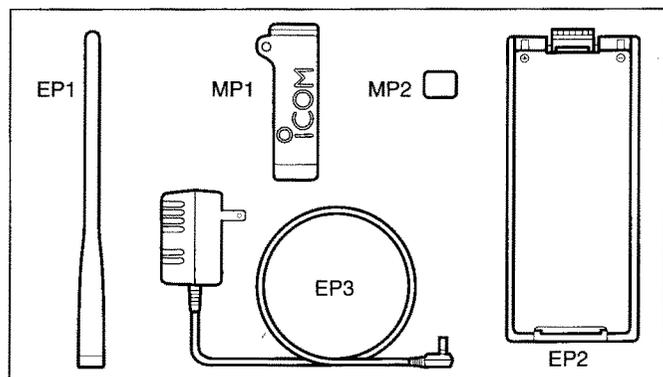
## [MAIN UNIT]

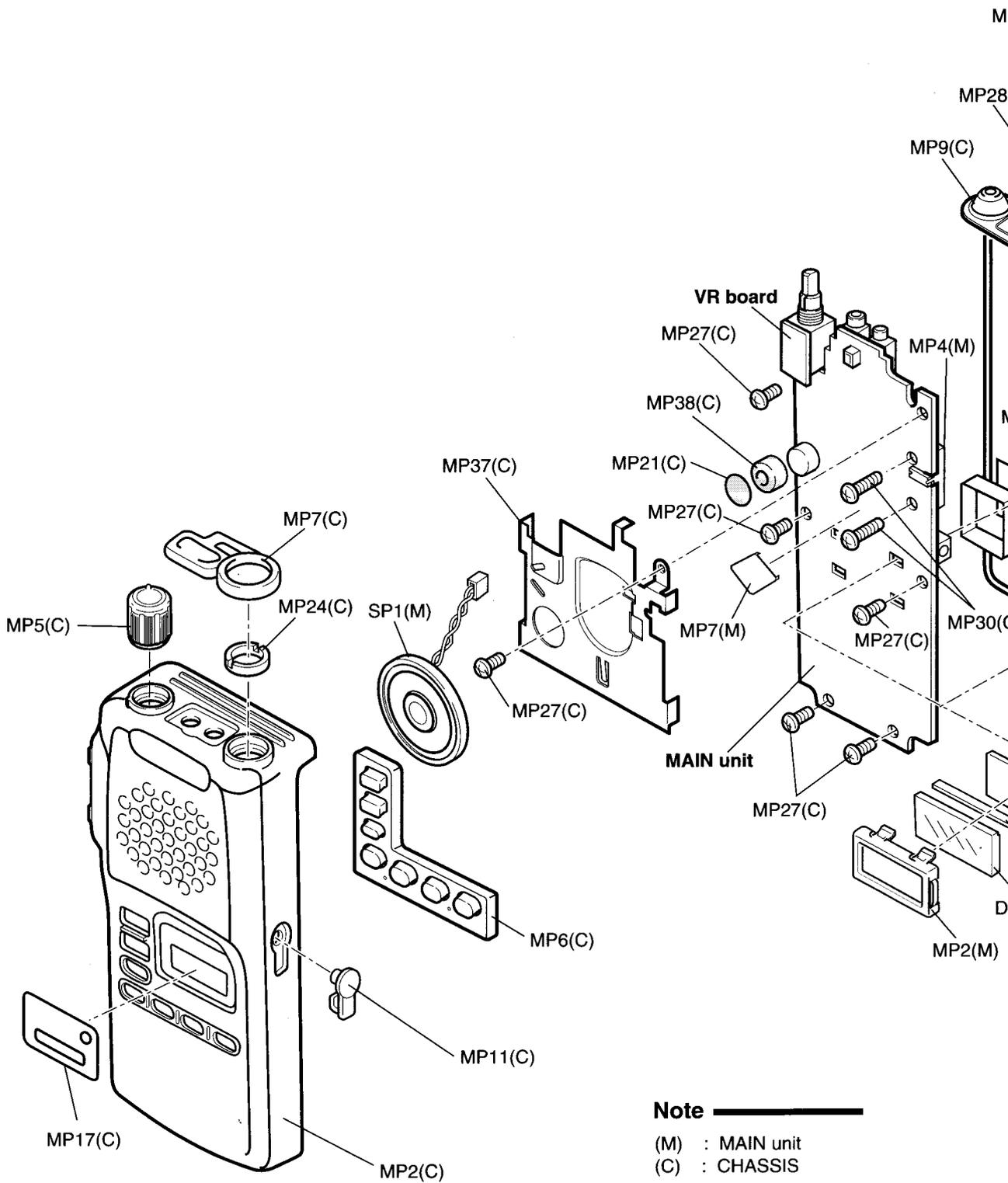
| REF NO. | ORDER NO.  | DESCRIPTION                  | QTY. |
|---------|------------|------------------------------|------|
| DS1     | 5030001460 | LCD LM-1462B                 | 1    |
| EP2     | 8930042590 | LCD contact SRCN-1922-SP-N-W | 1    |
| MP1     | 8510011111 | 1922 VCO case-1              | 1    |
| MP2     | 8930042060 | 1922 LCD holder              | 1    |
| MP3     | 8210014380 | 1922 Reflector               | 1    |
| MP4     | 8410002080 | 1922 PA heatsink             | 1    |
| MP6     | 8510011180 | 1922 VCO cover               | 1    |
| MP7     | 8510011230 | 1923 VCO shield              | 1    |
| MP8     | 8930046590 | Sponge (FO)                  | 1    |
| SP1     | 2510000960 | K036NA500-26A27              | 1    |

**Screw abbreviations:** PH: Pan head A0, B0: Self-tapping  
NI: Nickel ZK: Black

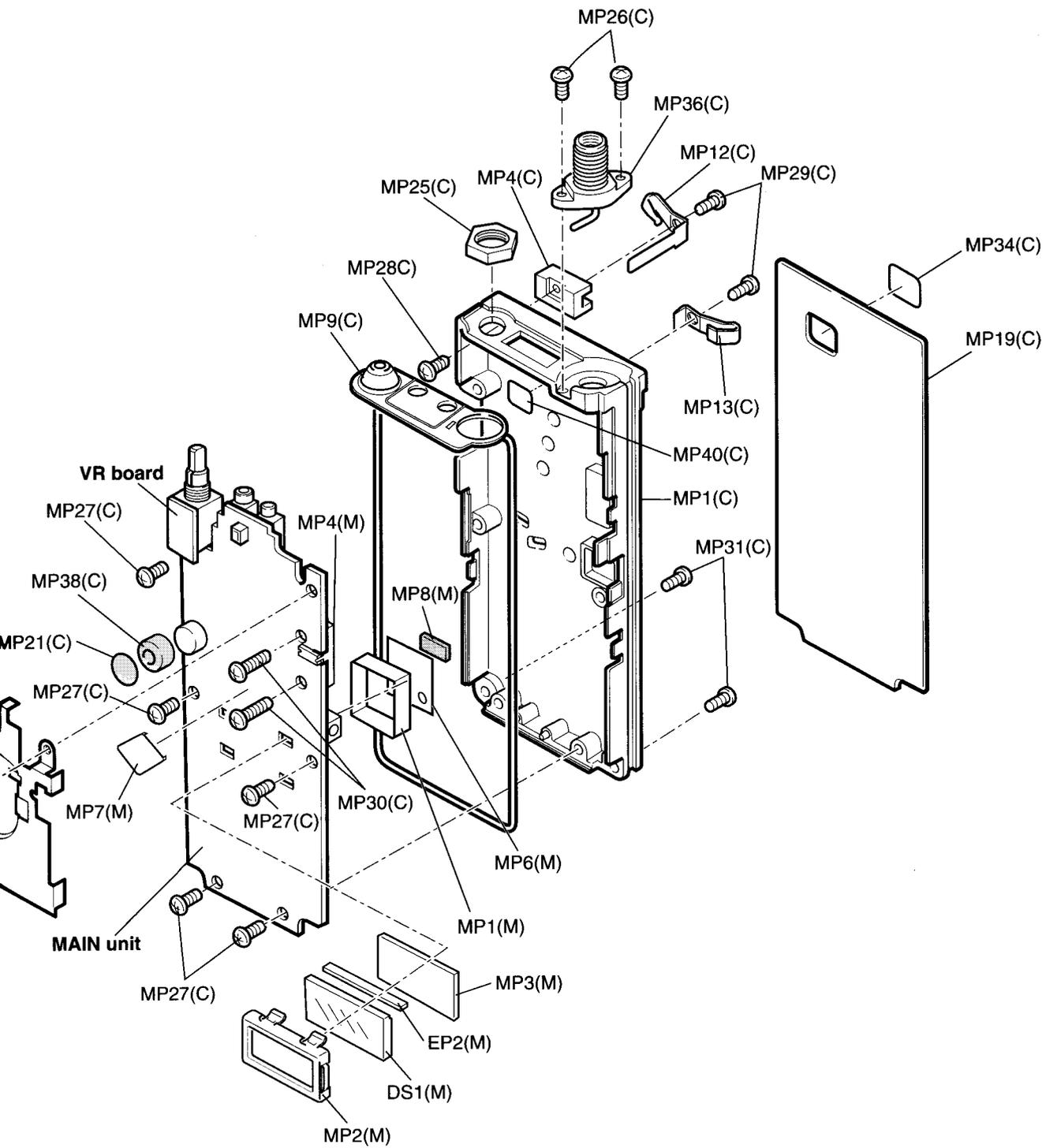
## 7-2 ACCESSORIES

| REF NO. | ORDER NO.        | DESCRIPTION                       | QTY. |
|---------|------------------|-----------------------------------|------|
| EP1     | Optional product | Antenna FA-SC56U-1                | 1    |
| EP2     | Optional product | Battery BP-195                    | 1    |
| EP3     | Optional product | Wall charger BC-110D [FRA], [SWE] | 1    |
| MP1     | Optional product | MB-68                             | 1    |
| MP2     | 8930043210       | 1922 A-rear sheet                 | 1    |





**Note** \_\_\_\_\_  
 (M) : MAIN unit  
 (C) : CHASSIS

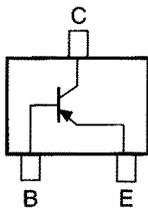
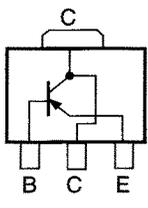
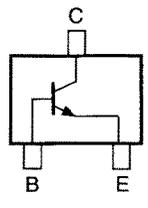
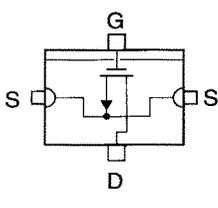
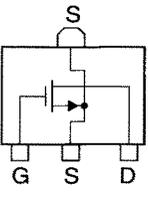
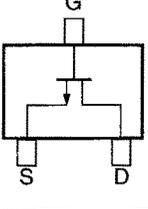
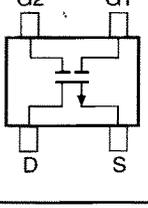


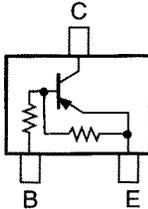
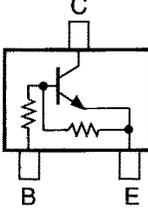
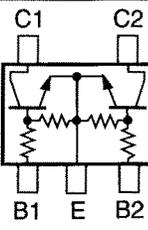
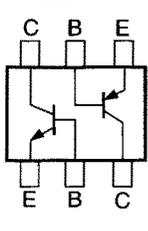
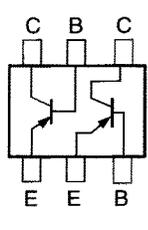
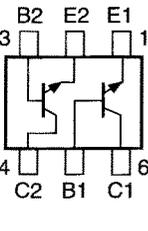
**Note** \_\_\_\_\_

- (M) : MAIN unit
- (C) : CHASSIS

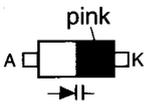
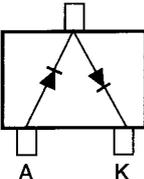
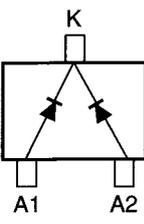
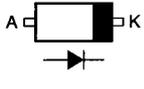
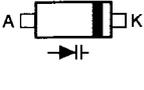
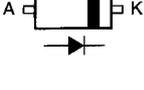
**SECTION 8 SEMI-CONDUCTOR INFORMATION**

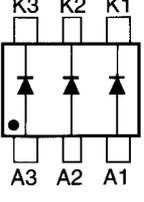
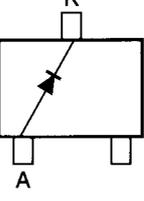
**8 - 1 CABINET PARTS**

| NAME   | SYMBOL                                    | INSIDE VIEW   |
|--|---|---|
| 2SA1362-GR   | AEG                                       |    |
| 2SB1132 - R  | BAR                                       |    |
| 2SC2712 - Y<br>2SC3585 R44<br>2SC4081 - R<br>2SC4116-BL<br>2SC4215 - O<br>2SC4226 - R25<br>2SC5107 - O | LY<br>R44<br>BR<br>LB<br>QO<br>R25<br>MFO |   |
| 2SK2595AXTB  | AX  |  |
| 2SK2596BXTL  | BX  |  |
| 2SK880 - Y   | XY  |  |
| 3SK239XR - TL<br>3SK241-R  | XR<br>DU                                  |  |

| NAME               | SYMBOL   | INSIDE VIEW   |
|--------------------|----------|---|
| DTA144EU<br>UN911H | 16<br>6P |    |
| DTC144EU           | 26       |    |
| XP1214             | 9H       |   |
| XP4601             | 5C       |  |
| XP6401             | 5O       |  |
| XP6501 - AB        | 5N       |  |

8 - 2 DIODES

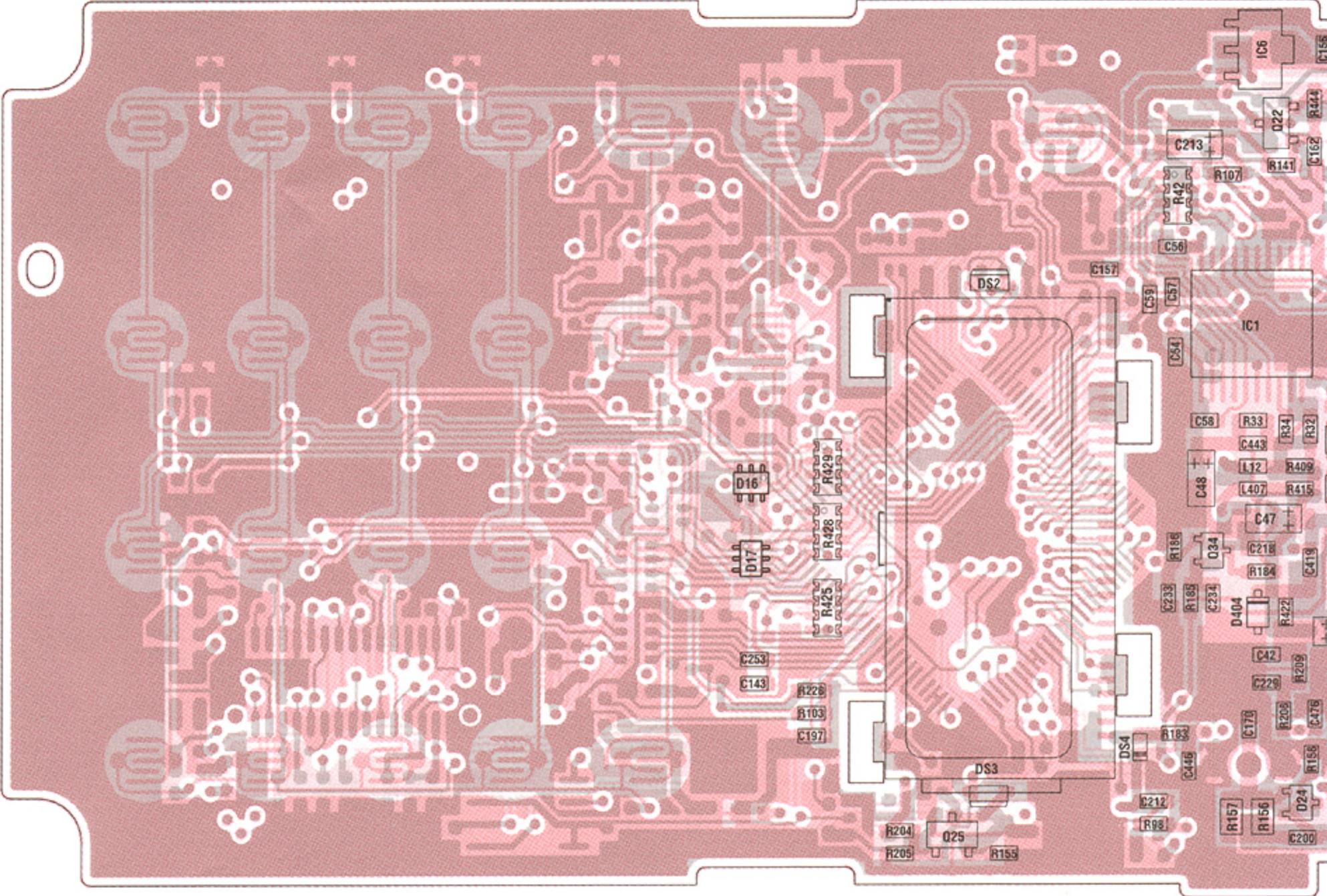
| NAME                        | SYMBOL        | INSIDE VIEW   |
|-----------------------------|---------------|---|
| 1T365-01                    | pink line     |    |
| 1SS375<br>DA204U<br>HSM88AS | FH<br>K<br>C1 |    |
| DAN202U                     | N             |   |
| HSU88TRF<br>HVU17TRF        | 9<br>E        |  |
| HVU350TRF                   | 4             |  |
| MA77                        | 4B            |  |
| MA111                       | 1B            |  |

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

# SECTION 9 BOARD LAYOUTS

## 9 - 1 MAIN UNIT

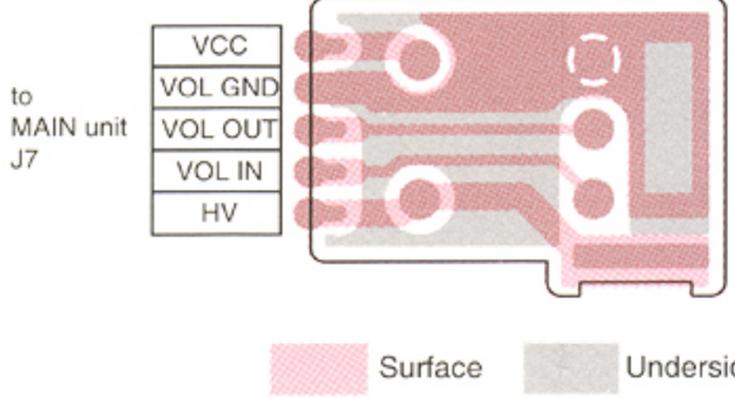
• TOP VIEW



Surface
  Inside-1
  Inside-2
  Underside

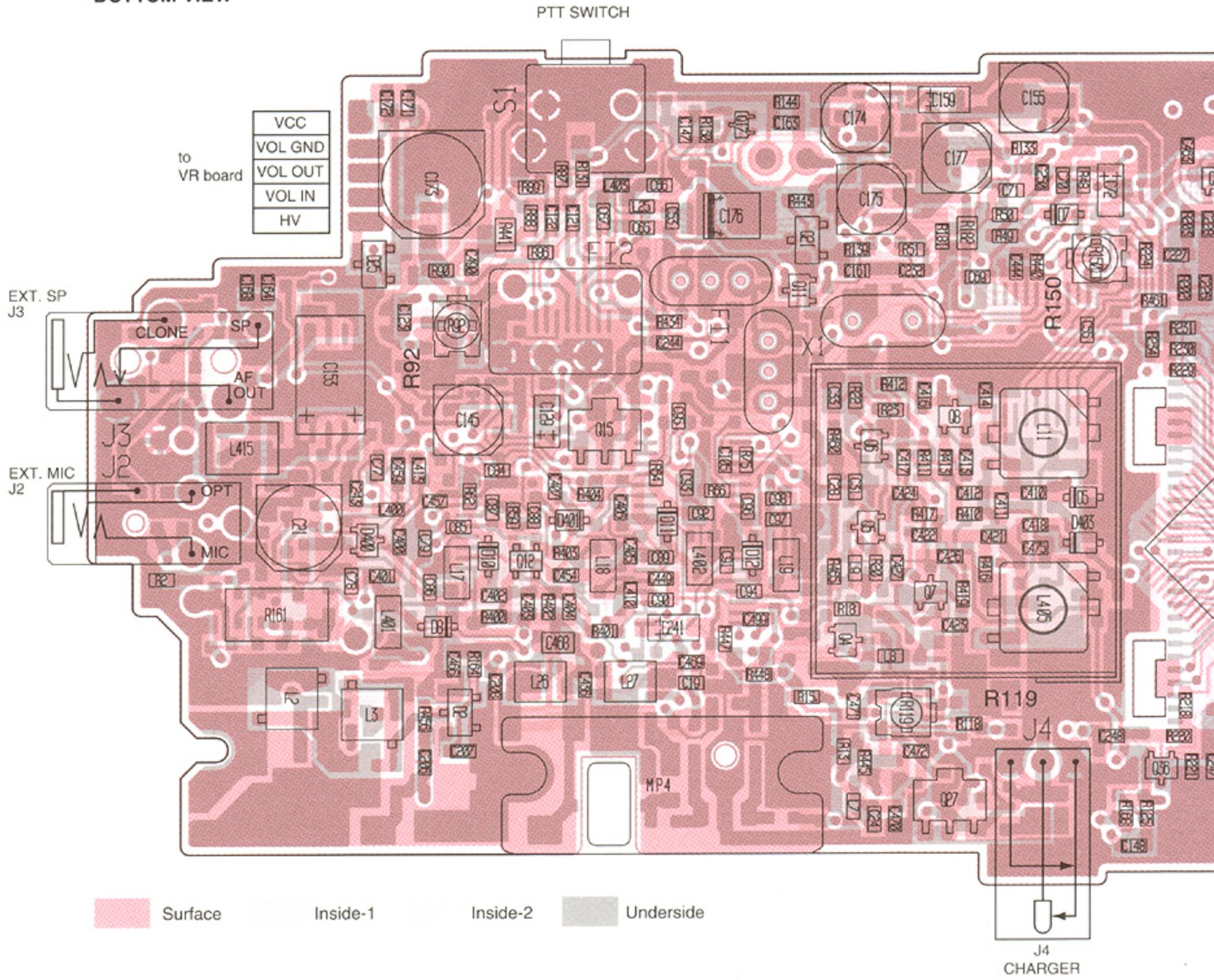
## 9 - 2 VR BOARD (common)

• TOP VIEW

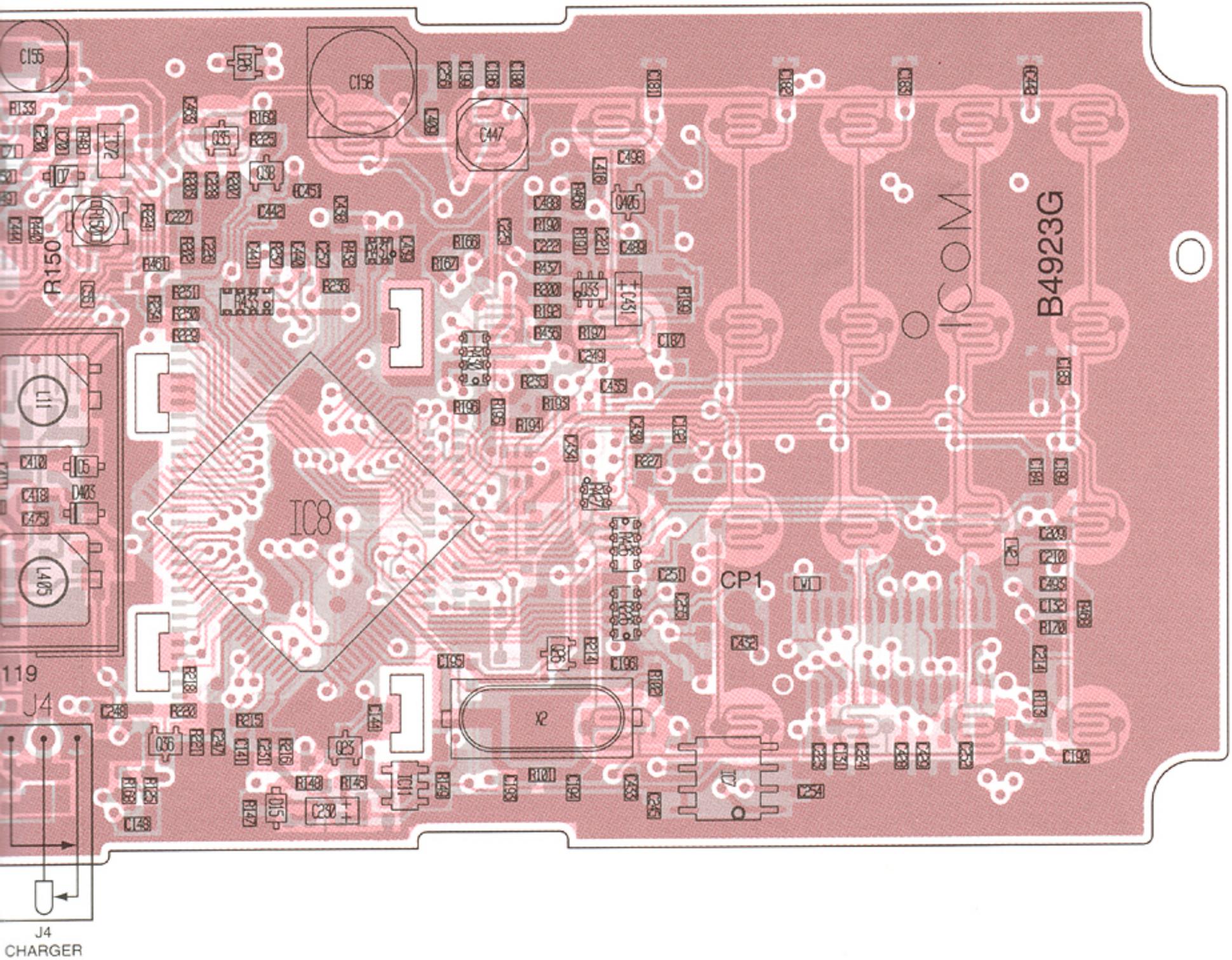




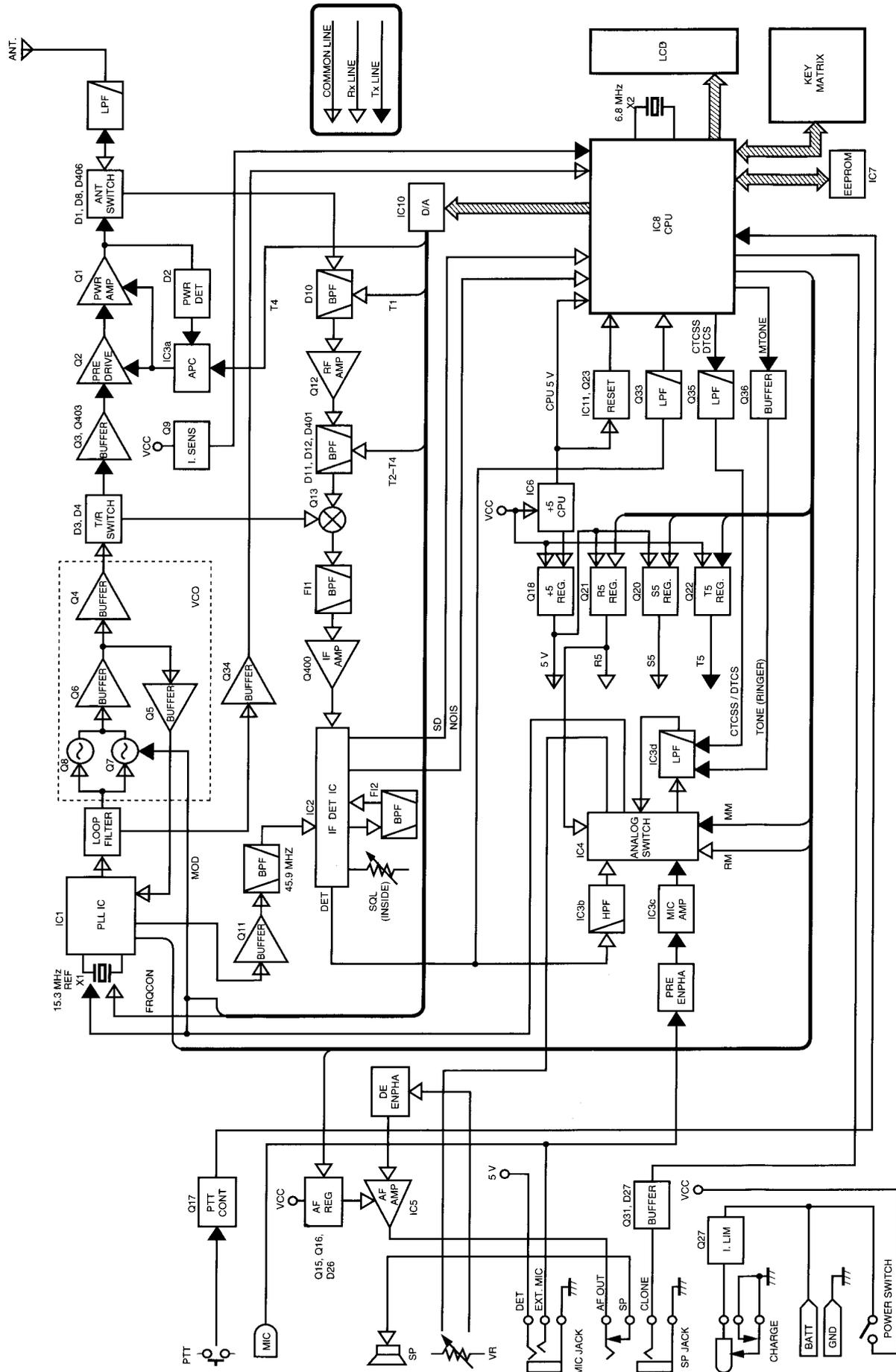
• BOTTOM VIEW



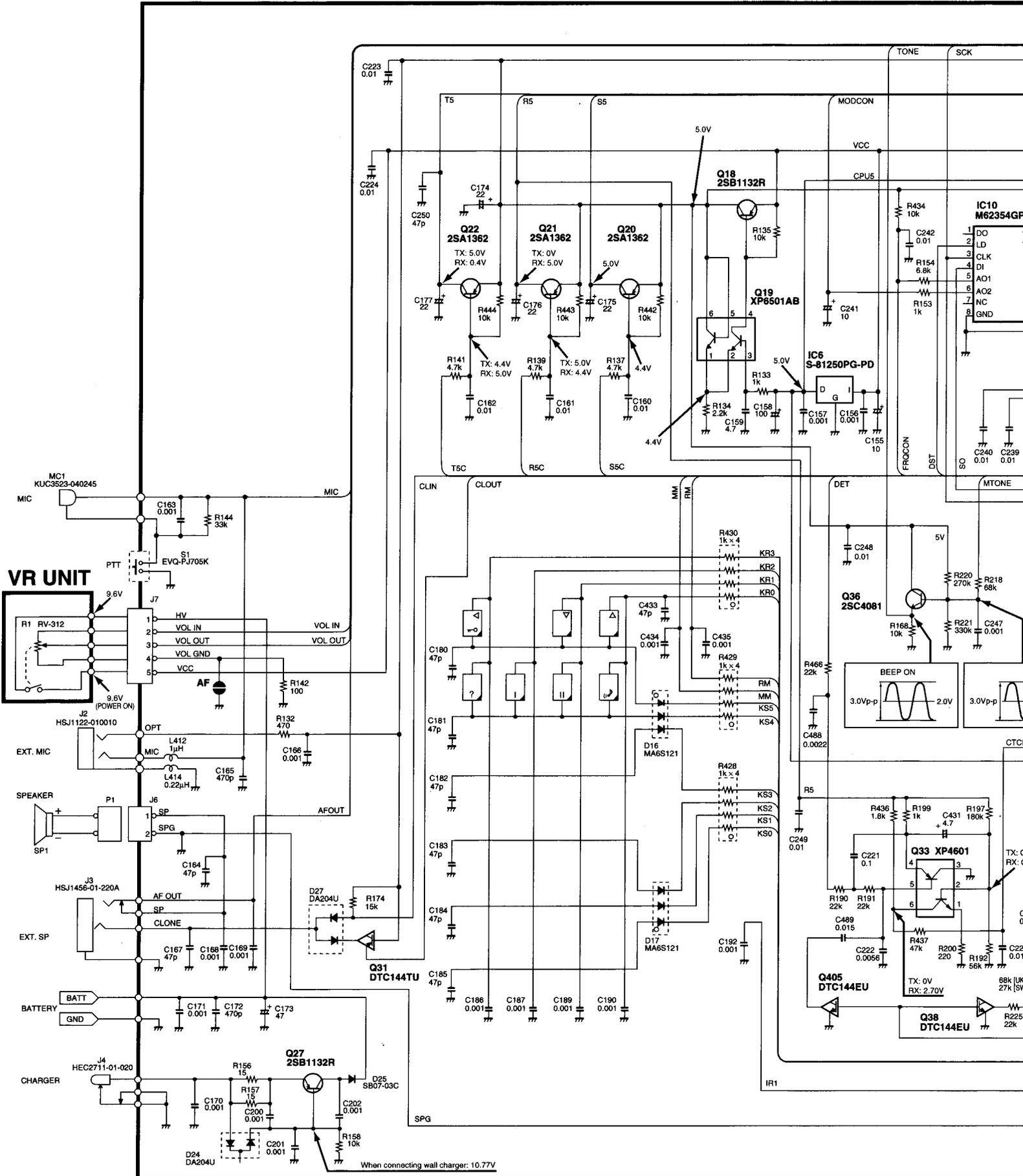
The combination of this page and the previous page shows the unit layout in the same configuration as the actual P.C. Board.



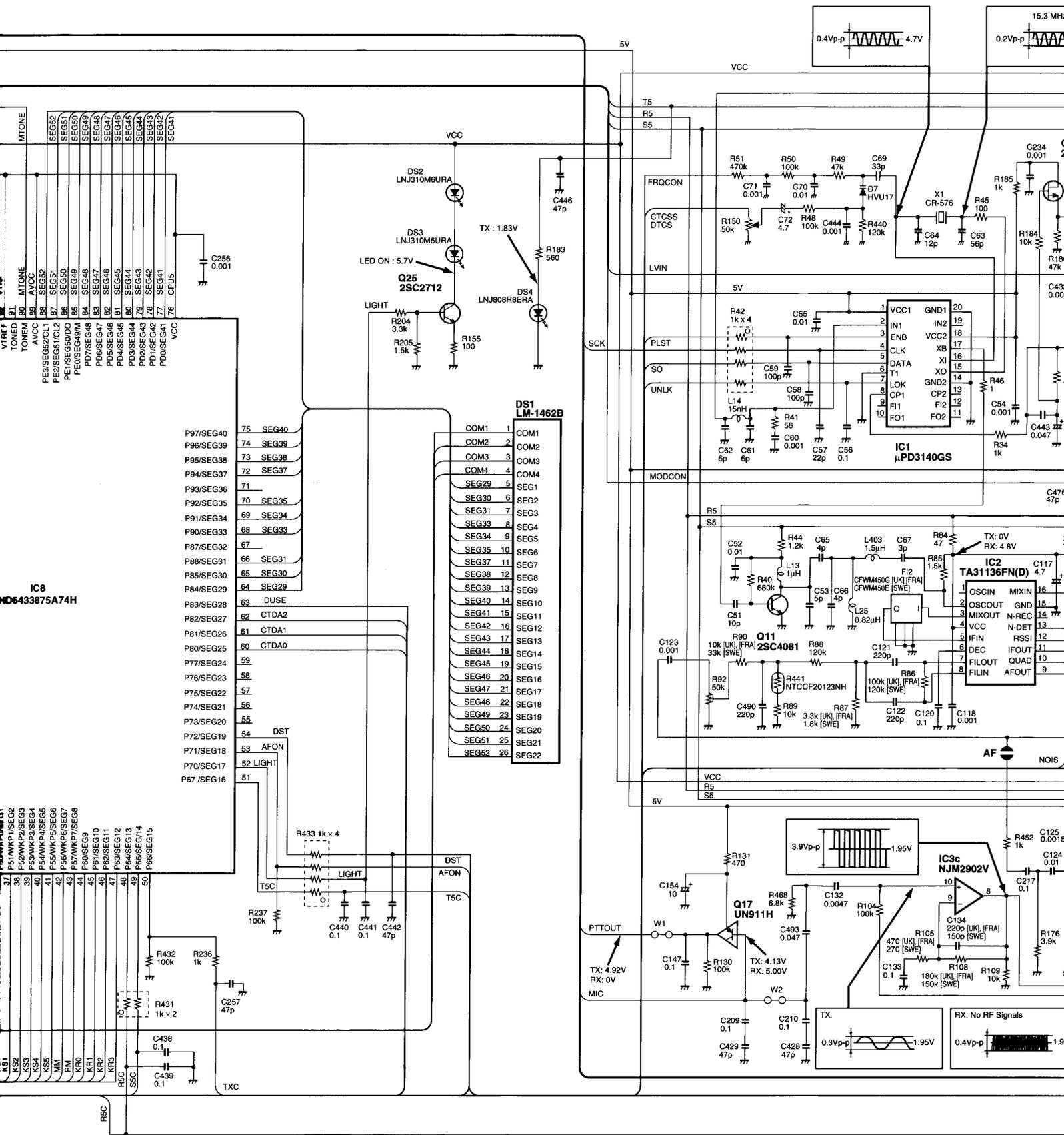
SECTION 10 BLOCK DIAGRAM



SECTION 11 VOLTAGE DIAGRAM







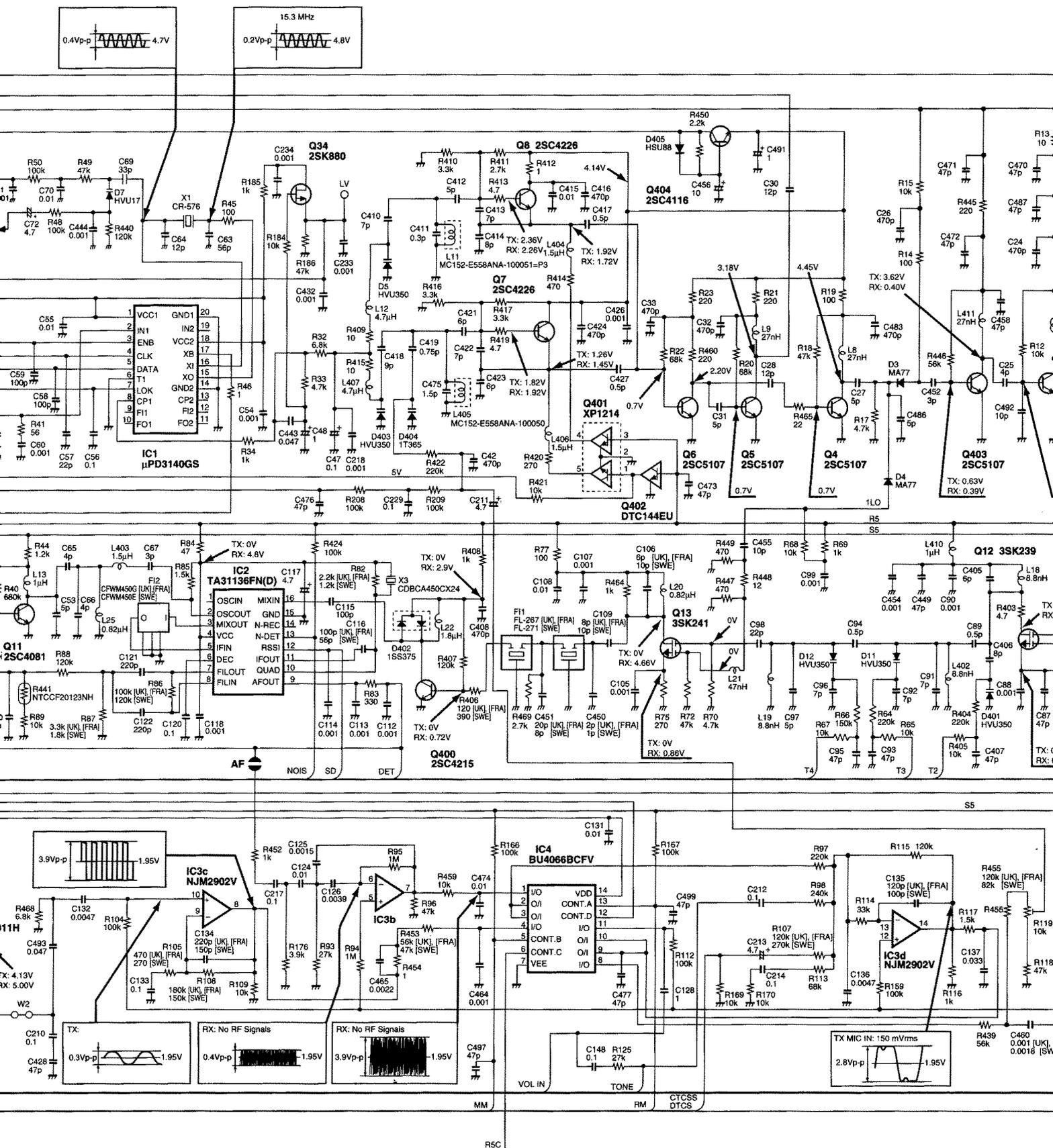
IC8  
MD6433875A74H

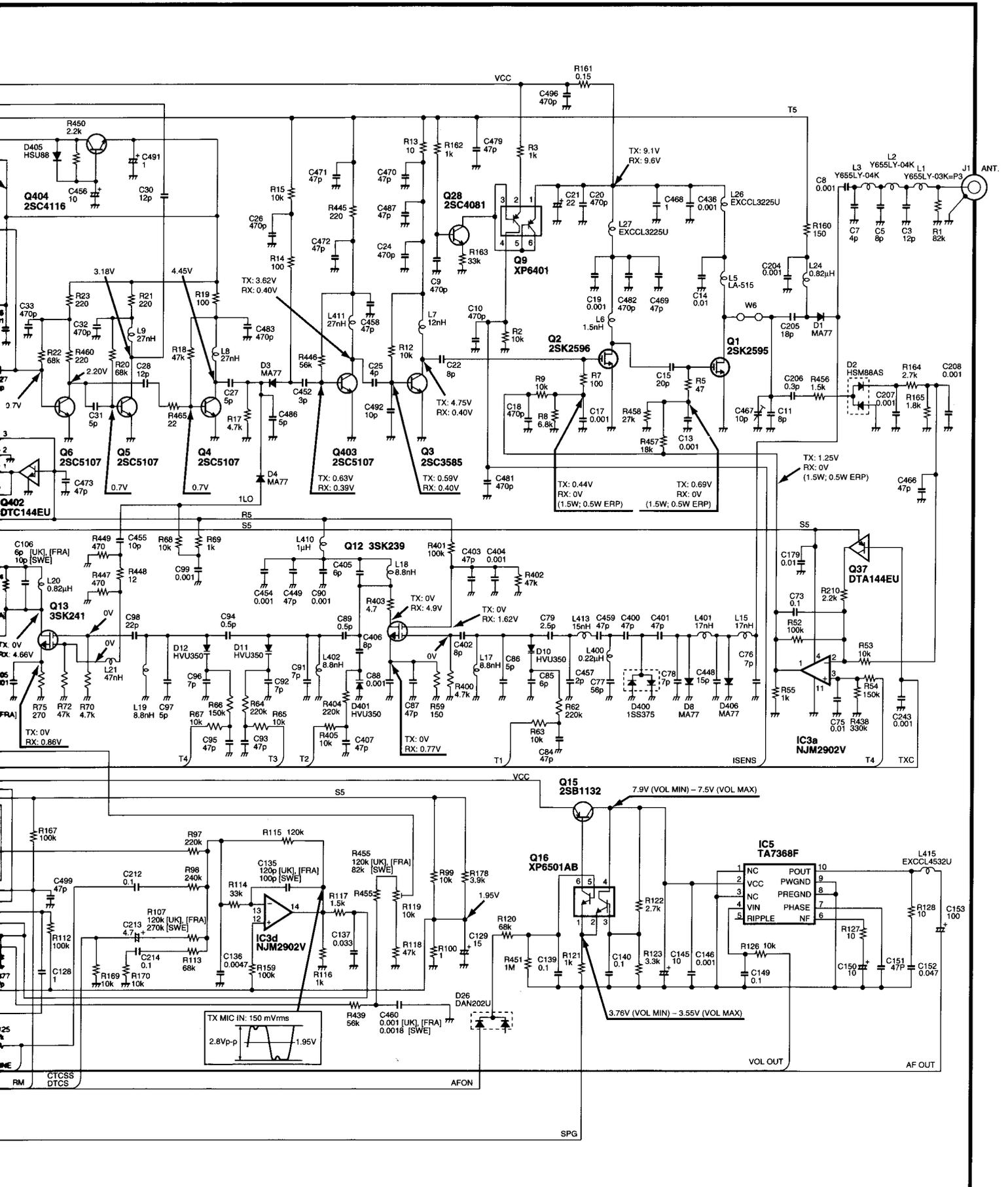
**DS1 LM-1462B**

|       |    |       |
|-------|----|-------|
| COM1  | 1  | COM1  |
| COM2  | 2  | COM2  |
| COM3  | 3  | COM3  |
| COM4  | 4  | COM4  |
| SEG29 | 5  | SEG1  |
| SEG30 | 6  | SEG2  |
| SEG31 | 7  | SEG3  |
| SEG33 | 8  | SEG4  |
| SEG34 | 9  | SEG5  |
| SEG35 | 10 | SEG6  |
| SEG37 | 11 | SEG7  |
| SEG38 | 12 | SEG8  |
| SEG39 | 13 | SEG9  |
| SEG40 | 14 | SEG10 |
| SEG41 | 15 | SEG11 |
| SEG42 | 16 | SEG12 |
| SEG43 | 17 | SEG13 |
| SEG44 | 18 | SEG14 |
| SEG45 | 19 | SEG15 |
| SEG46 | 20 | SEG16 |
| SEG47 | 21 | SEG17 |
| SEG48 | 22 | SEG18 |
| SEG49 | 23 | SEG19 |
| SEG50 | 24 | SEG20 |
| SEG51 | 25 | SEG21 |
| SEG52 | 26 | SEG22 |

|           |    |       |
|-----------|----|-------|
| P97/SEG40 | 75 | SEG40 |
| P96/SEG39 | 74 | SEG39 |
| P95/SEG38 | 73 | SEG38 |
| P94/SEG37 | 72 | SEG37 |
| P93/SEG36 | 71 | SEG36 |
| P92/SEG35 | 70 | SEG35 |
| P91/SEG34 | 69 | SEG34 |
| P90/SEG33 | 68 | SEG33 |
| P89/SEG32 | 67 | SEG32 |
| P88/SEG31 | 66 | SEG31 |
| P85/SEG30 | 65 | SEG30 |
| P84/SEG29 | 64 | SEG29 |
| P83/SEG28 | 63 | DUSE  |
| P82/SEG27 | 62 | CTDA2 |
| P81/SEG26 | 61 | CTDA1 |
| P80/SEG25 | 60 | CTDA0 |
| P77/SEG24 | 59 |       |
| P76/SEG23 | 58 |       |
| P75/SEG22 | 57 |       |
| P74/SEG21 | 56 |       |
| P73/SEG20 | 55 |       |
| P72/SEG19 | 54 | DST   |
| P71/SEG18 | 53 | AFON  |
| P70/SEG17 | 52 | LIGHT |
| P67/SEG16 | 51 |       |

|      |     |                 |
|------|-----|-----------------|
| KS1  | 37  | FR2/MK67/SEG6   |
| KS2  | 38  | FR2/MK67/SEG7   |
| KS3  | 39  | FR2/MK67/SEG8   |
| KS4  | 40  | FR2/MK67/SEG9   |
| KS5  | 41  | FR2/MK67/SEG10  |
| KS6  | 42  | FR2/MK67/SEG11  |
| KS7  | 43  | FR2/MK67/SEG12  |
| KS8  | 44  | FR2/MK67/SEG13  |
| KS9  | 45  | FR2/MK67/SEG14  |
| KS10 | 46  | FR2/MK67/SEG15  |
| KS11 | 47  | FR2/MK67/SEG16  |
| KS12 | 48  | FR2/MK67/SEG17  |
| KS13 | 49  | FR2/MK67/SEG18  |
| KS14 | 50  | FR2/MK67/SEG19  |
| KS15 | 51  | FR2/MK67/SEG20  |
| KS16 | 52  | FR2/MK67/SEG21  |
| KS17 | 53  | FR2/MK67/SEG22  |
| KS18 | 54  | FR2/MK67/SEG23  |
| KS19 | 55  | FR2/MK67/SEG24  |
| KS20 | 56  | FR2/MK67/SEG25  |
| KS21 | 57  | FR2/MK67/SEG26  |
| KS22 | 58  | FR2/MK67/SEG27  |
| KS23 | 59  | FR2/MK67/SEG28  |
| KS24 | 60  | FR2/MK67/SEG29  |
| KS25 | 61  | FR2/MK67/SEG30  |
| KS26 | 62  | FR2/MK67/SEG31  |
| KS27 | 63  | FR2/MK67/SEG32  |
| KS28 | 64  | FR2/MK67/SEG33  |
| KS29 | 65  | FR2/MK67/SEG34  |
| KS30 | 66  | FR2/MK67/SEG35  |
| KS31 | 67  | FR2/MK67/SEG36  |
| KS32 | 68  | FR2/MK67/SEG37  |
| KS33 | 69  | FR2/MK67/SEG38  |
| KS34 | 70  | FR2/MK67/SEG39  |
| KS35 | 71  | FR2/MK67/SEG40  |
| KS36 | 72  | FR2/MK67/SEG41  |
| KS37 | 73  | FR2/MK67/SEG42  |
| KS38 | 74  | FR2/MK67/SEG43  |
| KS39 | 75  | FR2/MK67/SEG44  |
| KS40 | 76  | FR2/MK67/SEG45  |
| KS41 | 77  | FR2/MK67/SEG46  |
| KS42 | 78  | FR2/MK67/SEG47  |
| KS43 | 79  | FR2/MK67/SEG48  |
| KS44 | 80  | FR2/MK67/SEG49  |
| KS45 | 81  | FR2/MK67/SEG50  |
| KS46 | 82  | FR2/MK67/SEG51  |
| KS47 | 83  | FR2/MK67/SEG52  |
| KS48 | 84  | FR2/MK67/SEG53  |
| KS49 | 85  | FR2/MK67/SEG54  |
| KS50 | 86  | FR2/MK67/SEG55  |
| KS51 | 87  | FR2/MK67/SEG56  |
| KS52 | 88  | FR2/MK67/SEG57  |
| KS53 | 89  | FR2/MK67/SEG58  |
| KS54 | 90  | FR2/MK67/SEG59  |
| KS55 | 91  | FR2/MK67/SEG60  |
| KS56 | 92  | FR2/MK67/SEG61  |
| KS57 | 93  | FR2/MK67/SEG62  |
| KS58 | 94  | FR2/MK67/SEG63  |
| KS59 | 95  | FR2/MK67/SEG64  |
| KS60 | 96  | FR2/MK67/SEG65  |
| KS61 | 97  | FR2/MK67/SEG66  |
| KS62 | 98  | FR2/MK67/SEG67  |
| KS63 | 99  | FR2/MK67/SEG68  |
| KS64 | 100 | FR2/MK67/SEG69  |
| KS65 | 101 | FR2/MK67/SEG70  |
| KS66 | 102 | FR2/MK67/SEG71  |
| KS67 | 103 | FR2/MK67/SEG72  |
| KS68 | 104 | FR2/MK67/SEG73  |
| KS69 | 105 | FR2/MK67/SEG74  |
| KS70 | 106 | FR2/MK67/SEG75  |
| KS71 | 107 | FR2/MK67/SEG76  |
| KS72 | 108 | FR2/MK67/SEG77  |
| KS73 | 109 | FR2/MK67/SEG78  |
| KS74 | 110 | FR2/MK67/SEG79  |
| KS75 | 111 | FR2/MK67/SEG80  |
| KS76 | 112 | FR2/MK67/SEG81  |
| KS77 | 113 | FR2/MK67/SEG82  |
| KS78 | 114 | FR2/MK67/SEG83  |
| KS79 | 115 | FR2/MK67/SEG84  |
| KS80 | 116 | FR2/MK67/SEG85  |
| KS81 | 117 | FR2/MK67/SEG86  |
| KS82 | 118 | FR2/MK67/SEG87  |
| KS83 | 119 | FR2/MK67/SEG88  |
| KS84 | 120 | FR2/MK67/SEG89  |
| KS85 | 121 | FR2/MK67/SEG90  |
| KS86 | 122 | FR2/MK67/SEG91  |
| KS87 | 123 | FR2/MK67/SEG92  |
| KS88 | 124 | FR2/MK67/SEG93  |
| KS89 | 125 | FR2/MK67/SEG94  |
| KS90 | 126 | FR2/MK67/SEG95  |
| KS91 | 127 | FR2/MK67/SEG96  |
| KS92 | 128 | FR2/MK67/SEG97  |
| KS93 | 129 | FR2/MK67/SEG98  |
| KS94 | 130 | FR2/MK67/SEG99  |
| KS95 | 131 | FR2/MK67/SEG100 |





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