



# SERVICE MANUAL

COMMUNICATIONS RECEIVER

## IC-R5

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## INTRODUCTION

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This service manual describes the latest service information for the **IC-R5 COMMUNICATIONS RECEIVER** at the time of publication.

| MODEL | Version   | SYMBOL | AC ADAPTER |
|-------|-----------|--------|------------|
| IC-R5 | Europe    | EUR    | BC-149D    |
|       | U.K.      | UK     | —          |
|       | Italy     | ITA    | —          |
|       | U.S.A.    | USA    | BC-149A    |
|       | France    | FRA    | BC-149D    |
|       | Spain     | ESP    | BC-149D    |
|       | Export-01 | EXP-01 | BC-136A    |
|       | Export-02 | EXP-02 | BC-136D    |
|       | Canada    | CAN    | BC-149A    |

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

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## DANGER

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**NEVER** connect the receiver to an AC outlet or to a DC power supply that uses more than 6.5 V. Such a connection could cause a fire hazard and/or electric.

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

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

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

8930058920 LCD contact IC-R5 LOGIC UNIT 5 pieces  
8810009560 Screw PH BO M2x6 ZK IC-R5 CHASSIS 10 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 receiver.
2. **DO NOT** open the receiver until the receiver 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 turning tool **MUST** be used for all adjustments.
5. **DO NOT** keep power ON for a long time when the receiver is defective.
6. **READ** the instructions of test equipment thoroughly before connecting equipment to the receiver.

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# SECTION 1 SPECIFICATIONS

## ■ GENERAL

- Frequency range :

| Version                                       | Receive Frequencies (MHz)   |
|---|---|
| EUR, U.K.,<br>ITA, ESP, CAN<br>EXP-01, EXP-02 | 0.495 – 1309.995  |
| U.S.A.  | 0.150–823.995, 849.000–868.995,<br>894.000–1309.995   |
| FRA   | 0.150–29.995, 50.200–51.200,<br>87.500–108.000, 144.000–146.000<br>430.000–440.000, 1240.000–1300.000 |

- Mode : FM, WFM, AM
- No. of memory channel : 1250 channel  
(incl. scan edge and auto memory right ch.)
- Frequency stability :  $\pm 6$  ppm max.  
( $-10^{\circ}\text{C}$  to  $+60^{\circ}$ )
- Tuning steps : 5, 6.25, 10, 12.5, 15, 20,  
25, 30, 50, and 100 kHz
- Antenna Impedance : 50  $\Omega$
- Power supply requirement : 2  $\times$  AA(R6) Ni-Cd, alkaline  
cells or external power  
supply (BC-136, CP-17)
- Polarity : Negative ground
- Frequency resolution : 5 kHz, 6.25 kHz
- Current drain (at 3.0 V) :  
Rated audio 170 mA typical  
Standby 100 mA typical  
Power saved 41 mA typical  
(Power save ratio is 1 : 4)
- Usable temperature range :  $-10^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$   
( $-14^{\circ}\text{F}$  to  $+140^{\circ}\text{F}$ )
- Dimensions : 58(W)  $\times$  86(H)  $\times$  27(D) mm;  
(projections not included)  $2\frac{3}{32}$  (W)  $\times$   $3\frac{3}{8}$  (H)  $\times$   $1\frac{1}{16}$ (D) in
- Weight (with antenna and battery) : 185 (g); 6.5 (oz)
- External SP connector : 3-conductor 3.5(d) mm  
( $\frac{1}{8}$ " ) / 8 $\Omega$

## ■ RECEIVER

- Receiver system : Triple super heterodyne
- Intermediate frequency : 1st 266.7 MHz  
2nd 19.65 MHz  
3rd 450 kHz
- Sensitivity\* : (except spurious points)

| Frequency (MHz)     | FM                 | WFM                | AM                 |
|---------------------|--------------------|--------------------|--------------------|
| 0.495 – 1.625       | —                  | —                  | 1.3 $\mu\text{V}$  |
| 1.625 – 4.995       | 0.32 $\mu\text{V}$ |                    | 0.71 $\mu\text{V}$ |
| 5.000 – 29.995      | 0.2 $\mu\text{V}$  | —                  | —                  |
| 30.000 – 75.995     |                    |                    |                    |
| 76.000 – 108.000    |                    | 0.89 $\mu\text{V}$ | —                  |
| 108.000 – 117.995   |                    |                    |                    |
| 118.000 – 136.000   | 0.18 $\mu\text{V}$ | —                  | 0.56 $\mu\text{V}$ |
| 136.000 – 175.000   |                    |                    | —                  |
| 175.000 – 221.995   |                    | 0.71 $\mu\text{V}$ | —                  |
| 222.000 – 246.995   | 0.2 $\mu\text{V}$  | —                  | 0.56 $\mu\text{V}$ |
| 247.000 – 329.995   |                    |                    | 0.61 $\mu\text{V}$ |
| 330.000 – 469.995   | 0.18 $\mu\text{V}$ | 1.0 $\mu\text{V}$  | —                  |
| 470.000 – 770.000   | 0.28 $\mu\text{V}$ |                    |                    |
| 770.000 – 999.995   |                    | —                  |                    |
| 1000.000 – 1309.995 | 0.35 $\mu\text{V}$ | —                  | —                  |

\* FM and WFM are measured at 12 dB SINAD; AM is measured at 10 dB S/N.

- Squelch Sensitivity :

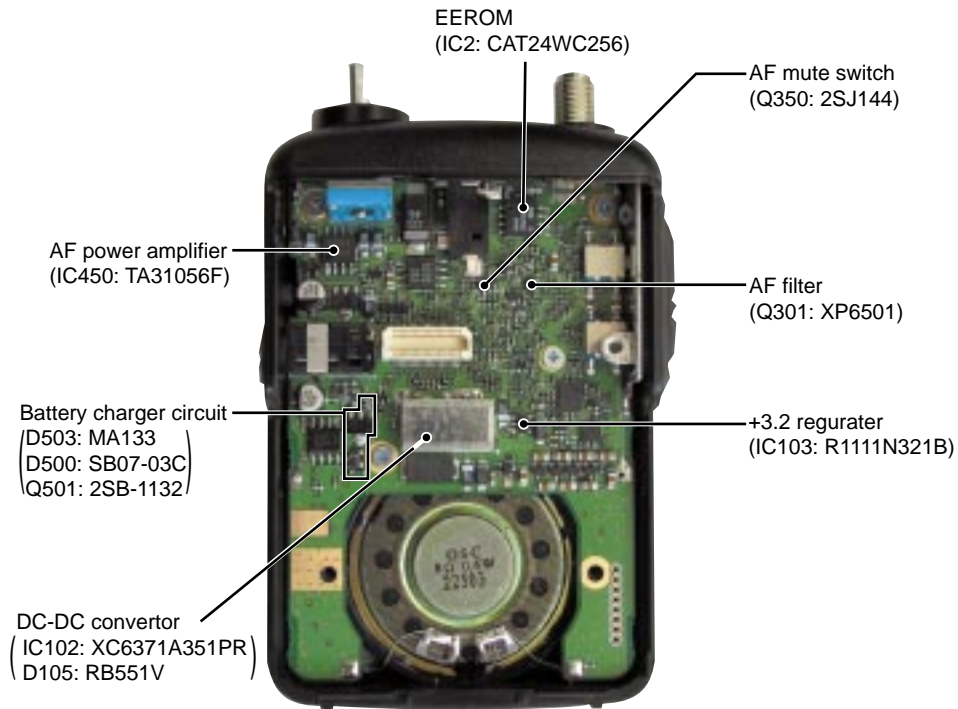
| Frequency (MHz)  | FM                 | WFM                | AM                |
|------------------|--------------------|--------------------|-------------------|
| 0.495 – 1.625    | —                  | —                  | 2.5 $\mu\text{V}$ |
| 1.625 – 5.0      | 0.56 $\mu\text{V}$ |                    | 1.8 $\mu\text{V}$ |
| 5.0 – 30.0       | 0.4 $\mu\text{V}$  | —                  | —                 |
| 30.0 – 76.0      |                    |                    |                   |
| 76.0 – 108.0     |                    | 5.6 $\mu\text{V}$  | —                 |
| 108.0 – 118.0    |                    | —                  | 1.8 $\mu\text{V}$ |
| 118.0 – 136.0    |                    |                    |                   |
| 136.0 – 175.0    |                    | 5.6 $\mu\text{V}$  | —                 |
| 175.0 – 222.0    |                    |                    |                   |
| 222.0 – 247.0    |                    | 0.56 $\mu\text{V}$ | —                 |
| 247.0 – 330.0    |                    |                    |                   |
| 330.0 – 470.0    | 5.6 $\mu\text{V}$  |                    | —                 |
| 470.0 – 770.0    |                    |                    |                   |
| 770.0 – 833.0    | 0.79 $\mu\text{V}$ | —                  | —                 |
| 833.0 – 1309.995 |                    |                    |                   |

- Selectivity :  
AM / FM : more than 15 kHz /  $-6$  dB  
less than 30 kHz /  $-60$  dB  
WFM : more than 150 kHz /  $-6$  dB
- Audio output power : 100 mW typical at 10 %  
distortion with an 8  $\Omega$  load

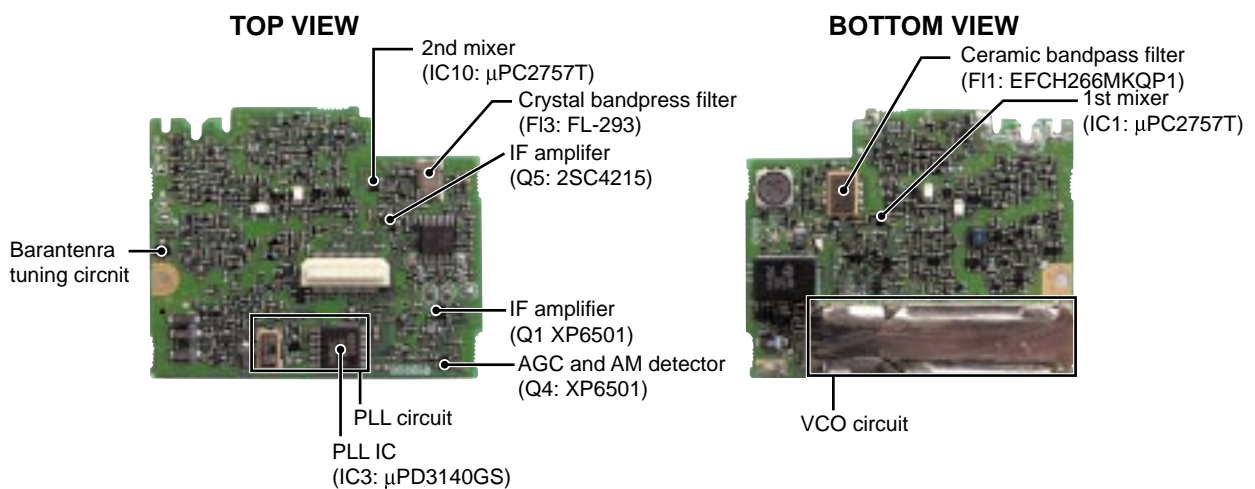
All stated specifications are subject to change without notice or obligation.

## SECTION 2 INSIDE VIEWS

### • LOGIC UNIT



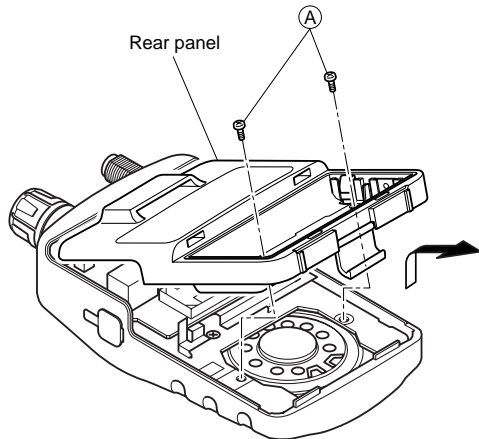
### • RF UNIT



## SECTION 3 DISASSEMBLY INSTRUCTIONS

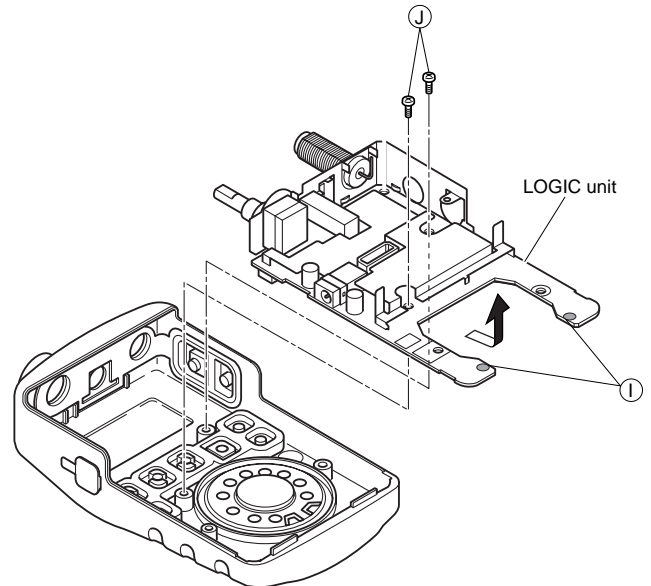
### ● REMOVING THE REAR PANEL

- ① Unscrew 2 screws, (A).
- ② Remove the rear panel in the direction of the arrow.



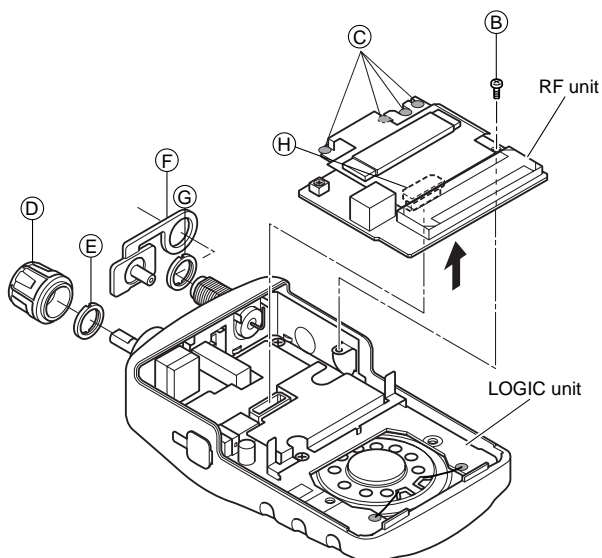
### ● REMOVING THE LOGIC UNIT

- ① Unsolder 2 points, (I).
- ② Unscrew 2 screws, (J), and then remove the LOGIC unit.
- ③ Remove the LOGIC unit in the direction of the arrow.



### ● REMOVING THE RF UNIT

- ① Unscrew 1 screw, (B).
- ② Unsolder 4 points, (C).
- ③ Remove 1 knob, and 1 cap (G).  
Unscrew 2 nuts, (E) and (F).
- ④ Unplug, (H), to separate the LOGIC unit, and then remove the RF unit.



# SECTION 4 CIRCUIT DESCRIPTION

## 4-1 RECEIVER CIRCUITS

### 4-1-1 BAND SWITCHING CIRCUIT (RF UNIT)

The RF signals from the antenna connector pass through the limiter (D68) and an attenuator (D69). The signals are then applied to the antenna switching circuit (D13, D31, D73, D75) which suppress out-of-band signals.

### 4-1-2 RF CIRCUIT (RF UNIT)

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

#### (1) 0.150 MHz–29.999 MHz

RF signals (0.150–29.999MHz) from an antenna switching circuit (D73) pass through a low-pass filter (C511–C515, L81, L82). The filtered signals are amplified at an RF amplifier (Q505) passing through each filters depending on the receiving frequency. The amplified signals are then applied to the 1st mixer circuit (IC1, pin 1) after being amplified at another RF amplifier (IC11) via the band switching diode (D71).

The signals below 1.9 MHz pass through a low-pass filter (C534, C535, C657, C658, L88, L89) via the band switching diode (D66), and are then applied to the RF amplifier circuit (Q505) via the band switching diode (D67).

The 1.9 MHz–14.995 MHz signals pass through the band switching diode (D65) and bandpass filter (C522–C531, L85–L87, L91), and are then applied to the RF amplifier circuit (Q505) via the band switching diode (D70).

The 15 MHz–29.995 MHz signals pass through the band switching diode (D63) and high-pass filter (C516–C520, L83, L84) and are then applied to the RF amplifier circuit (Q505) via the band switching diode (D64).

#### (2) 118 MHz–174.995 MHz, 330 MHz–832.995 MHz

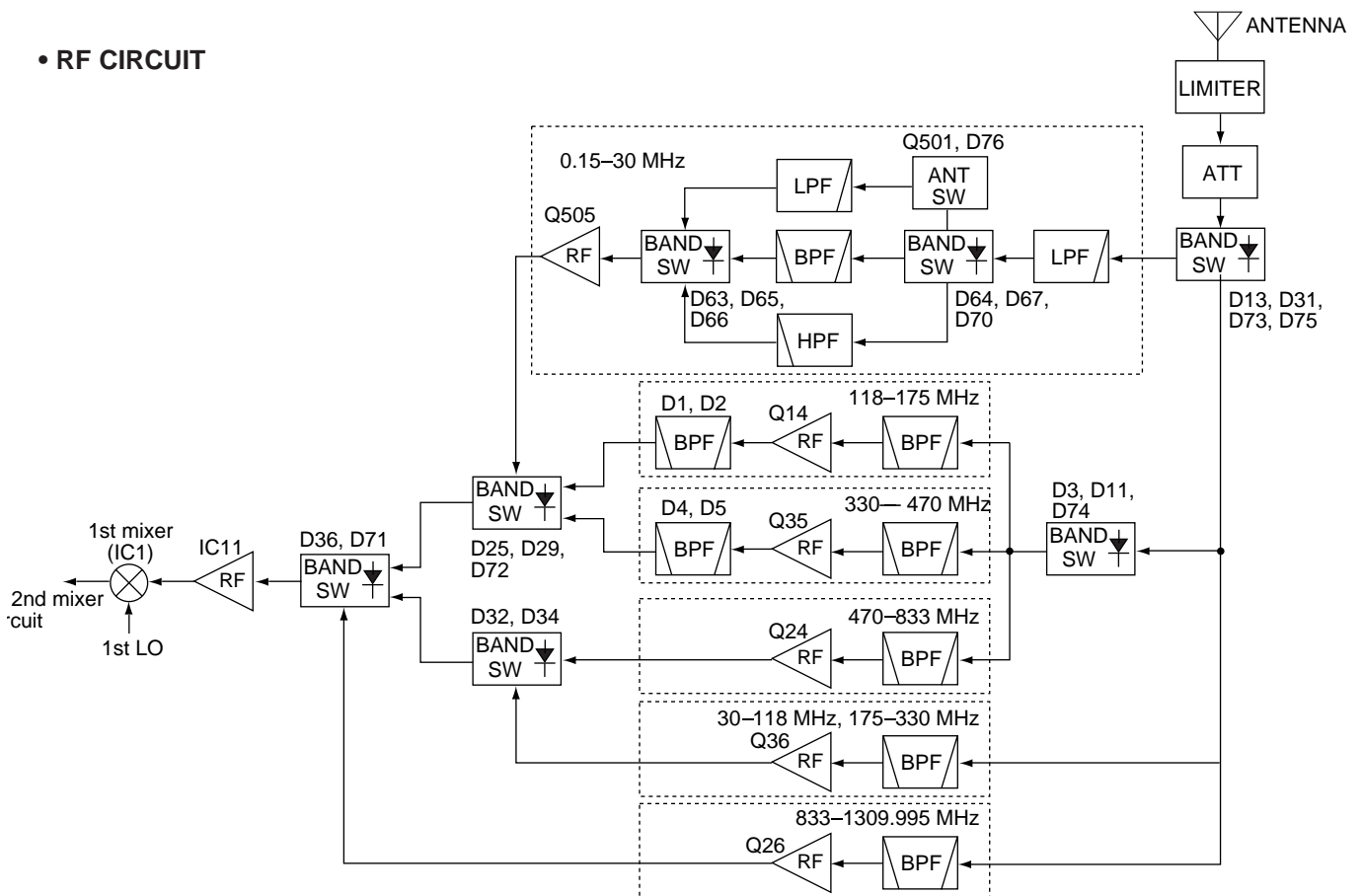
RF signals (118 MHz–174.995 MHz, 330 MHz–832.995 MHz) from an antenna switching diode (D75) are passed through each bandpass filter and RF amplifier, and are then applied to the 1st mixer circuit (IC1) via the band switching diode (D71) and RF amplifier (IC11).

The 118 MHz–174.995 MHz signals pass through the band switching diode (D74) and low-pass filter (C8–C13, C67, C416, L14, L57–L59, L70), and are then amplified at RF amplifier (Q14). The amplified signal passes through the tunable band-pass filters (D1, D2) and band switching diode (D25).

The 330 MHz–469.995 MHz signals are amplified at RF amplifier (Q35) via the band switching diode (D3) and band-pass filter (C19–C23, C216, L2–L5). The amplified signal passes through the tunable band-pass filters (D4, D5) and band switching diode (D29).

The 470 MHz–832.995 MHz signals are amplified at RF amplifier (Q24) via the band-pass filter (C32, C33, C35–C37, C39, C145), between the band switching diode (D11, D32).

### • RF CIRCUIT



**(3) 30–117.995 MHz, 175–329.995 MHz**

The 30 MHz–117.95 MHz, 175 MHz–329.995 MHz signals pass through the band switching circuit and low-pass filter (C40–C43, C665, C666, L9, L10, L92), and are then applied to the RF amplifier (Q36). The amplified signals are amplified at the RF amplifier (IC11, pin 1) via band switching diodes (D34, D71). The amplified signals are applied to the 1st mixer circuit (IC1, pin 1).

**(4) 833 MHz–1309.995 MHz**

The 833 MHz–1309.995 MHz signals pass through the band switching diode (D13) and bandpass filter (C5, C45–51, L11–L13, L43), and are then applied to the RF amplifier (Q26). The amplified signals are amplified at the RF amplifier (IC11, pin 1) via band switching diodes (D36). The amplified signals are applied to 1st mixer circuit (IC1, pin 1).

**4-1-3 1ST MIXER CIRCUIT (RF UNIT)**

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

The filtered RF signals are mixed with 1st LO signals at the 1st mixer circuit (IC1) to produce a 266.7 MHz 1st IF signal. The 1st IF signal is output from pin 6, and passed through the bandpass filter (F11) to suppress unwanted harmonic components. The filtered 1st IF signal is applied to the 2nd mixer circuit.

The 1st LO signals are generated at the 1st VCO (Q28, Q30, D54) and are applied to the 1st mixer (IC1, pin 3) directly or passing through the doubler circuit (Q31) after being amplified at the buffer amplifiers (IC4, Q40).

**4-1-4 1ST IF AND 2ND MIXER CIRCUITS (RF UNIT)**

The 2nd mixer circuit converts the 1st IF signal to a 2nd IF signal.

The filtered 266.7 MHz 1st IF signal from the bandpass filter is mixed with the 2nd LO signal at the 2nd mixer circuit (IC10, pin 1) to produce a 19.65 MHz 2nd IF signal. The 2nd IF signal pass through (except WFM mode) or bypass (WFM mode) the bandpass filter (F13), and is then amplified at the 2nd IF amplifier (Q5). The amplified signal is applied to the demodulator circuit.

**4-1-5 DEMODULATOR CIRCUITS (RF UNIT)**

The demodulator circuit converts the 2nd IF signal into AF signals.

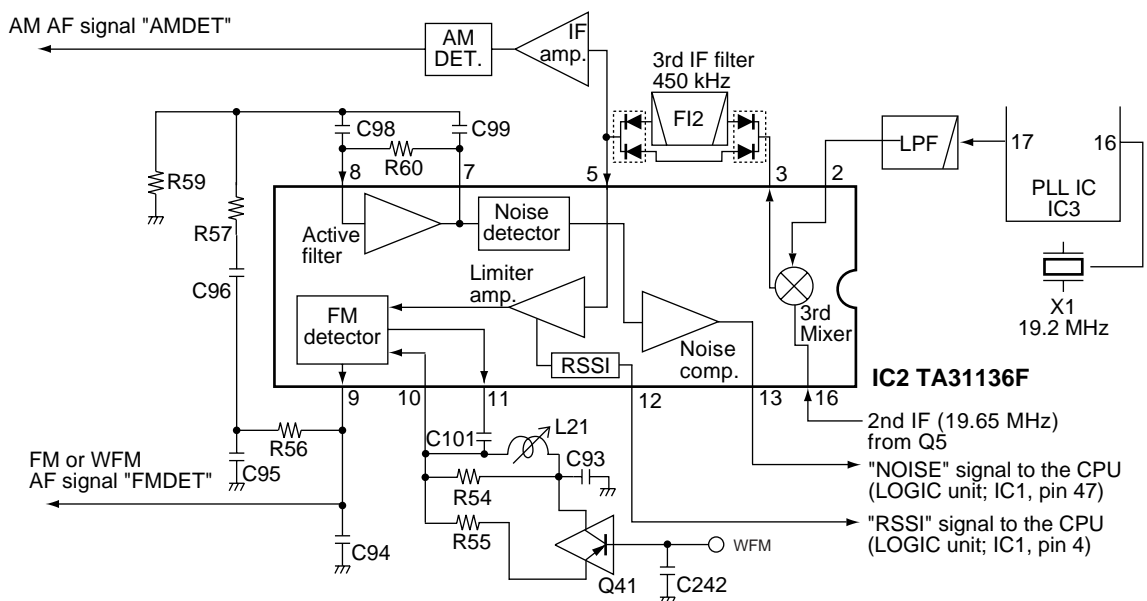
The 19.65 MHz 2nd IF signal from the 2nd IF amplifier (Q5) is applied to the 3rd mixer section of the FM IF IC (IC2, pin 16) and is then mixed with the 3rd LO signal for conversion into a 450 kHz 3rd IF signal.

IC2 contains the 3rd mixer, limiter amplifier, quadrature detector and S-meter detector, etc. A frequency from the PLL reference oscillator is used for the 3rd LO signal (19.20 MHz).

**(1) FM mode**

The 3rd IF signal is output from the FM IF IC (IC2, pin 3) and passes through the ceramic bandpass filter (F12). The filtered signal is fed back and amplified at the limiter amplifier section (pin 5), then demodulated AF signals at the quadrature detector section (pins 10, 11) and detector coil (L21). The demodulated AF signals are output from pin 9 and are applied to the AF circuit (LOGIC unit) via the "FMDET" signal.

**• DEMODULATOR CIRCUIT**





**(2) WFM mode**

The 3rd IF signal from the 3rd mixer bypasses the ceramic filter (FI2) and fed back to the limiter amplifier section (pin 5). The amplified signal is demodulated at the quadrature detector section (pins 10, 11) and detector coil (L21). The AF signals are output from pin 9 and are applied to the AF circuit (LOGIC unit) via the "FMDET" signal.

By connecting R55 to R54 in parallel, the output characteristics of pin 12, "RSSI", change gradually. Therefore, the FM IF IC can detect WFM components.

**(3) AM mode**

The filtered 3rd IF signal from the bandpass filter (FI2) is amplified at the 3rd IF amplifier (Q1). The amplified IF signal is applied to the AM detector circuit (Q4) to converted into AF signals, and the signals are applied to the AF circuit (LOGIC unit) via the "AMDET" signal.

**4-1-6 AF AMPLIFIER CIRCUIT (LOGIC UNIT)**

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

While in FM mode, AF signals from the demodulator circuit (RF unit) are passed through the de-emphasis circuit (R323, C316, C318) with frequency characteristics of -6 dB/octave, and are then applied to the pre-amplifier (Q300) via the high-pass filter (Q301).

While in AM mode, AF signals are pass through the high-pass filter (Q301) and are then applied to the pre-amplifier (Q300).

While in WFM mode, AF signals are applied to the pre-amplifier (Q300) directly via the mode switch (Q302).

The pre-amplified AF signals pass through the AF mute circuit (Q350) and are then applied to the electronic volume control circuit (IC400, pin 6). The level controlled AF signals are output from pin 7 and applied to the AF power amplifier (Q452 and IC450, pin 1) via the buffer amplifier (Q400). The power amplified AF signals are applied to the internal speaker via the [EXT SP] jack.

The electronic volume control circuit controls AF gain, therefore, the AF output level is according to the [VOL] setting and also the squelch conditions.

**4-1-7 SQUELCH CIRCUIT (LOGIC AND RF UNITS)**

**• NOISE SQUELCH**

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

A portion of the "NOISE" signals from the FM IF IC (RF unit; IC2, pin 13) are applied to the CPU (LOGIC unit; IC1, pin 47). The CPU analyzes the noise condition and outputs the "AMUTE" signal (from pin 50) to the AF mute switch (LOGIC unit; Q350).

**• TONE SQUELCH**

The tone squelch circuit detects AF signals and opens the squelch only when receiving a signal containing a matching subaudible tone (CTCSS). When tone squelch is in use, and a signal with a mismatched or no subaudible tone is received, the tone squelch circuit mutes the AF signals even when noise squelch is open.

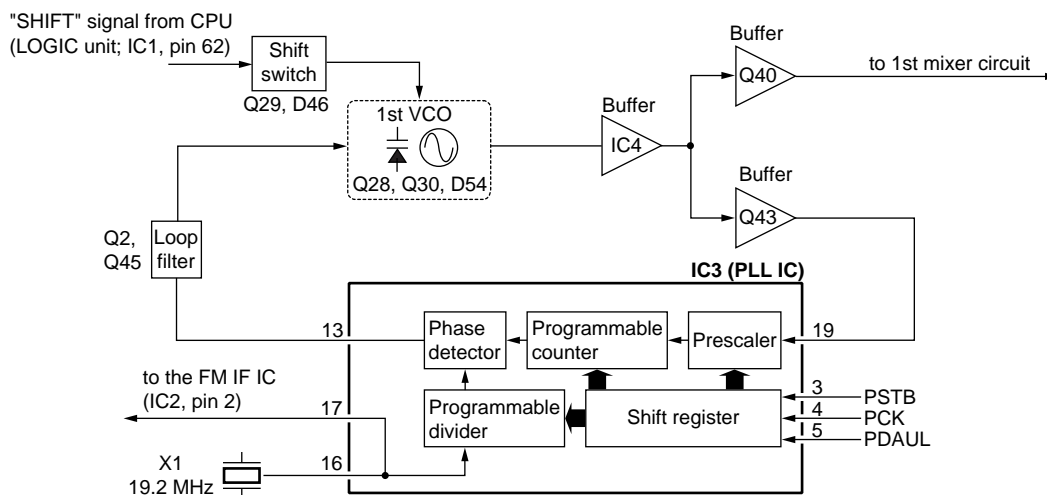
A portion of the AF signals from the FM IF IC (IC2, pin 9) passes through the low-pass filter (LOGIC unit; IC200, pin 5) via the "FMDET" line to remove AF (voice) signals and is applied to the CTCSS decoder inside the CPU (LOGIC unit; IC1, pin 7) via the "RTONE" line to control the AF mute switch.

**4-2 PLL CIRCUITS**

**4-2-1 PLL CIRCUIT (RF UNIT)**

A PLL circuit provides stable oscillation of the receive 1st/2nd LO frequencies. The PLL circuit 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.

**• PLL CIRCUIT**



An oscillated signal from the 1st VCO passes through the buffer amplifiers (IC4, Q43) is applied to the PLL IC (IC3, pin 19) and is prescaled in the PLL IC based on the divided ratio (N-data). The PLL IC detects the out-of-step phase using the reference frequency and outputs it from pin 13. The output signal is passed through the loop filter (Q2, Q45) and is then applied to the 1ST VCO circuit as the lock voltage.

#### 4-2-2 REFERENCE OSCILLATOR CIRCUIT (RF UNIT)

The reference oscillator circuit (X1, D18) generates a 19.2 MHz reference frequency which is stabilized within the temperature range  $-10^{\circ}\text{C}$  ( $+14^{\circ}\text{F}$ ) to  $+60^{\circ}\text{C}$  ( $+140^{\circ}\text{F}$ ). The reference frequency is applied to the PLL IC (IC3, pin 16) and the signal is output from the pin 17, and is then applied to the FM IF IC (IC2, pin 2) via the low-pass filter.

#### 4-2-3 1ST VCO CIRCUIT (RF UNIT)

The oscillated signal is applied to the buffer amplifiers (IC4, Q40). The amplified signal is applied to the 1st mixer circuit (IC1) via the RX LO switch circuit (D42–D44) and doubler circuit (Q31).

The 1st VCO circuit (Q28, Q30, D54) oscillates 266.85 MHz–380 MHz (normal) and 380 MHz–550 MHz (shifted) by switching the SHIFT switch (Q29, D46) “High” and “Low” respectively.

A portion of the signal from IC4 is amplified at the buffer amplifier (Q43) and is then fed back to the PLL IC (IC3, pin 19) as the comparison signal.

#### 4-2-4 DOUBLER CIRCUIT (RF UNIT)

The doubler circuit composes doubler1, doubler2 and bypass circuits.

##### • DOUBLER1 CIRCUIT

The oscillated signal at the VCO circuit is amplified at the buffer amplifier (IC4), and then applied to the other buffer amplifier (Q40). The amplified 266.85–400 MHz signal passes through the LO switch (D43), and is then applied to the doubler circuit (Q31, pin 5). The signal is applied to the 1st mixer circuit (IC1, pin 3) via the LO switch (D50).

##### • DOUBLER2 CIRCUIT

The oscillated signal at the VCO circuit is amplified at the buffer amplifier (IC4), and then applied to the other buffer amplifier (Q40). The amplified 380.45–549.85 MHz signal passes through the LO switch (D44), and is then applied to the doubler circuit (Q31, pin 6). The signal is applied to the 1st mixer circuit (IC1, pin 3) via the LO switch (D47).

##### • BYPASS CIRCUIT

The oscillated signal at the VCO circuit is amplified at the buffer amplifier (IC4), and then applied to the other buffer amplifier (Q40). The amplified 266.85–550 MHz signal bypasses doubler circuit via the LO switch (D42, D52), and is then applied to the 1st mixer circuit (IC1, pin 3).

#### 4-2-5 2ND VCO CIRCUIT (RF UNIT)

The 2nd LO circuit generates the 2nd LO frequencies, and the signals are applied to the 2nd mixer circuit.

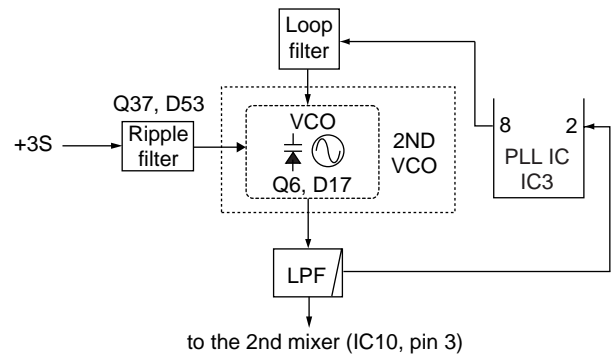
The 2nd VCO circuit (Q6, D17, L45, C80, C207, C208) oscillates 247.05 MHz and 286.35 MHz. The oscillated signal is applied to the 2nd mixer (IC10, pin 3), and is then mixed with the 1st IF signal.

An oscillated signal from the 2nd VCO passes through the low-pass filter (C154, C250–C252, L69), and is applied to the PLL IC (IC3, pin 2), and is then output from pin 8.

#### 4-2-6 3RD LO CIRCUIT (RF UNIT)

The PLL IC (IC3) and X1 oscillate the 19.2 MHz LO signal. The signal is applied to the PLL IC (pin 16), and is then applied to the buffer amplifier section of the IC. The amplified signal is output from pin 17, and is then applied to the 3rd mixer section of the FM IF IC (IC2, pin 2) as 3rd LO signal.

#### • 2ND VCO CIRCUIT



#### 4-3 OTHER CIRCUITS

##### 4-3-1 BATTERY CHARGER CIRCUIT (LOGIC UNIT)

When the battery charger function is switched ON, the battery charger control signal becomes high, and is then output from the CPU (IC1, pin 48) as “CHGC” signal. The signal is applied to the battery charger controller (Q502), and its output controls the battery charger circuit (Q501, D500, D503) to output 120 mA charging current.

##### 4-3-2 BAR ANTENNA TUNING CIRCUIT (LOGIC AND RF UNITS)

When switching to the AM bar antenna while AM band receiving, the AM bar antenna switching signal is output from the CPU (LOGIC unit; IC1, pin 44) as “ANTSW” signal. The signal is applied to the antenna switching circuit (Q510, D76), and then switches to the AM bar antenna.

The CPU (LOGIC unit; IC1) outputs the “TRAC” bar antenna control signal from pin 141. The signal is applied to the level convertor (RF unit Q513), and is then applied to the AM bar antenna tune circuit (D100). The circuit tunes to the desire frequency to change the D100’s capacity.

**4-3-3 EAR PHONE ANTENNA CIRCUIT  
(LOGIC AND RF UNITS)**

When switching to the ear phone antenna while WFM band receiving, the received RF signal passes through the external speaker jack (LOGIC unit; J2). The signal is applied to the D101's anode side (RF unit), and is then applied to the RF circuit.

**4-3-4 RESET CIRCUIT (LOGIC UNIT)**

When power switch is ON, +3CPU signal from the +3.2 regulator (IC103) is applied to the reset IC (IC3, pin 2). The IC outputs reset signal via the "RESET" line, and the signal is applied to the CPU (IC1, pin 19) to reset it.

**4-3-5 LCD BACK LIGHT CIRCUIT (LOGIC UNIT)**

When the LCD back lights ON, the LCD back light control signal becomes high, and is output from the CPU (IC1, pin 69) as "LIGHT" signal. The signal is applied to the light switch (Q5), and is then applied to the LCD light LED (EP3).

**4-4 POWER SUPPLY CIRCUITS  
VOLTAGE LINE**

| LINE  | DESCRIPTION  |
|-------|--|
| HV    | The voltage from the external power supply or attached battery.  |
| VCC   | The same voltage as the "HV" line (external power supply or battery pack).   |
| VP    | Common 14 V converted from the clock signal (LOGIC unit; IC1, pin 40) by the DC-DC converters (LOGIC unit; IC100, D100–D103). The output voltage is applied to the PLL circuit, etc (RF unit).                 |
| +3CPU | Common 3 V converted from the "VCC" line by the +3.2 regulator IC (LOGIC unit; IC103). The output voltage is supplied to the CPU, reset IC (LOGIC unit; IC3), EEPROM (LOGIC unit; IC2), etc.                   |
| +3V   | Common 3 V converted by the +3 controller (LOGIC unit; Q103) using the "PCON" signal from the CPU. The output voltage is supplied to the PLL IC (RF unit; IC3), etc.   |
| +3S   | Common 3 V converted by the +3S controller (LOGIC unit; Q101, Q102) using the "PCON" and "+3SC" signals from the CPU. The output voltage is supplied to the ripple filter (RF unit, Q37), etc.                 |
| R3V   | Common 3 V converted by the R3V controller (LOGIC unit; Q104) using the "+3SC" signal from the CPU. The output voltage is supplied to the buffer amplifier (LOGIC unit, Q400), AM detector (RF unit; Q4), etc. |

## 4-5 PORT ALLOCATIONS

### 4-5-1 CPU (LOGIC UNIT; IC1)

| Pin number | Port name | Description   |
|------------|-----------|---|
| 2          | K2        | Input port for the [▲], [▼] switches.   |
| 3          | K1        | Input port for the [BAND], [V/M], [MODE] switches.  |
| 4          | RSSI      | Input port for the RSSI signal from the FM IF IC (RF unit; IC2, pin 12) to detect receiving signal strength.                                    |
| 5          | VIN       | Input port for the power supply voltage.  |
| 6          | CTONE     | <ul style="list-style-type: none"> <li>• Input port for the antenna canceller signal.</li> <li>• Input port for the WX alert signal.</li> </ul> |
| 7          | RTONE     | Input port for the CTCSS decode signal (67–254.1 Hz).   |
| 14         | ESIO      | I/O port for the data signals from/to the EEPROM (LOGIC unit; IC2, pin 5).  |
| 15         | ECK       | Outputs clock signal to the EEPROM IC (LOGIC unit; IC2, pin 6).   |
| 19         | RESET     | Outputs reset signal to the CPU (LOGIC unit; IC1, pin 19).<br>High: The CPU is reset.   |
| 25         | POWER     | Input port for the [POWER] switch.<br>Low: [POWER] switch is pushed.  |
| 26         | HVDET     | Input port for the external power supply detecting signal.<br>Low: While external power supply is connected.                                    |
| 28         | CLS       | Outputs clock shift control signal.<br>High: While clock is shifting.   |
| 30         | CLIN      | Input port for the cloning data.  |
| 31         | CLOUT     | Outputs the cloning data.   |
| 32         | PDAUL     | Outputs data signal to the PLL IC.  |
| 33         | PSTB      | Outputs strobe signals to the PLL IC (RF unit; IC3, pin 3).   |
| 34         | PCK       | Outputs clock signal to the PLL IC (RF unit; IC3, pin 4).   |
| 43         | UHFC      | Outputs control signal for the UHF band receiving.<br>Low: While receiving UHF band.  |
| 44         | ANTSW     | Outputs the AM bar antenna control signal.<br>High: The AM bar ant. is selected.  |
| 45         | WFM       | Outputs control signal for the WFM circuit.<br>Low: While receiving WFM mode.   |
| 46         | AM        | Outputs control signal for the AM circuit.<br>Low: While receiving AM mode.   |
| 47         | NOISE     | Input port for the SQL detection noise signal.  |

| Pin number | Port name    | Description   |
|------------|--------------|---|
| 48         | CHGC         | Outputs the battery charger circuit control signal.<br>High: While the battery is charging.     |
| 49         | TCON         | Outputs control signal for the CTCSS regulator circuit.<br>Low: While CTCSS is ON.              |
| 50         | AMUTE        | Outputs control signal for the AF mute circuit.<br>High: While muting.                          |
| 51         | VHFC         | Outputs control signal for the VHF band receiving.<br>Low: While receiving VHF band.            |
| 52         | PCON         | Outputs the power switch control signal.<br>Low: IC-R5 is power ON.                             |
| 53         | +3SC         | Outputs control signal for +3S and R3V regulator circuits.<br>Low: Receiving.                   |
| 54         | B3C          | Outputs control signal for the 15–30 MHz receiving.<br>Low: While receiving 15–30 MHz band.     |
| 55         | BEEP         | Outputs beep audio signals.   |
| 58         | B2C          | Outputs control signal for the 1.9–15 MHz receiving.<br>Low: While receiving 1.9–15 MHz band.   |
| 59<br>60   | DBL2<br>DBL1 | Outputs control signal for the LO doubler circuits.   |
| 61         | ATT          | Outputs the attenuator control signal.<br>Low: While attenuator is ON.                          |
| 62         | SHIFT        | Outputs control signal for the VCO shift circuit.   |
| 63         | HFC          | Outputs control signal for the 1.9–30 MHz receiving.<br>Low: While receiving 1.9–30 MHz band.   |
| 64         | B1C          | Outputs control signal for the 0.5–1.9 MHz receiving.<br>Low: While receiving 0.5–1.9 MHz band. |
| 65         | 800MC        | Outputs control signal for the 800 MHz receiving.<br>Low: While receiving 800 MHz band.         |
| 66         | 300MC        | Outputs control signal for the 300 MHz receiving.<br>Low: While receiving 300 MHz band.         |
| 67         | GC           | Outputs control signal for the 1200 MHz receiving.<br>Low: While receiving 1200 MHz band.       |
| 68         | AFON         | Outputs control signal for the AF amplifier regulator.  |

**CPU (Continued)**

| Pin number             | Port name                       | Description  |
|------------------------|---------------------------------|--|
| 69                     | LIGHT                           | Outputs LCD back light control signal.<br>High: Lights ON.   |
| 73                     | DCK                             | Input port for the clock signal from the [DIAL].   |
| 74                     | DUD                             | Input port for the up, down signals from the [DIAL].   |
| 75                     | SQL                             | Input port for the [SQL] switch.<br>Low: [SQL] switch is pushed.   |
| 76                     | FUNC                            | Input port for the [FUNC] switch.<br>Low: [FUNC] switch is pushed.   |
| 77                     | MODE                            | Input port for the [MODE] switch.<br>Low: [MODE] switch is pushed.   |
| 80–85                  | RXF1,<br>RXF0,<br>B3–B0         | Input port for the band matrix.  |
| 88–90,<br>92,<br>94–96 | SEC37–35,<br>SEG34,<br>SEC33–31 | Outputs LCD segment data.  |
| 97<br>98               | CONT1<br>CONT0                  | Outputs LCD contrast control signal.   |
| 99–127                 | SEG28–0                         | Outputs LCD segment data.  |
| 138                    | VRC                             | Outputs audio volume level control signal.   |
| 139                    | FSET                            | Outputs frequency control signal.  |
| 141                    | TRAC                            | <ul style="list-style-type: none"><li>• Outputs vari-cap tuning control signal.</li><li>• Outputs bar antenna tuning control signal.</li></ul> |

## SECTION 5    ADJUSTMENT PROCEDURES

### 5-1 PREPARATION

Some adjustments must be adjusted on the adjustment mode. When entering the adjustment mode, the 68 kΩ terminator is required.

#### ■ REQUIRED TEST EQUIPMENT

| EQUIPMENT          | GRADE AND RANGE   | EQUIPMENT         | GRADE AND RANGE   |
|--------------------|---|-------------------|---|
| DC power supply    | Output voltage : 3.0 V DC<br>Current capacity : 1 A or more | Frequency counter | Frequency range : 0.1–1000 MHz<br>Frequency accuracy : ±1 ppm or better<br>Sensitivity : 100 mV or better |
| DC voltmeter       | Input impedance : 50 kΩ/V DC or better                      |                   | Standard signal generator (SSG)   |
| Digital multimeter | Input impedance : 10 kΩ/V DC or better                      |                   |   |

#### ■ ENTERING THE ADJUSTMENT MODE

- ① Connect a 68 kΩ terminator to the [SP] jack.
- ② Push and hold the [FUNC] key, and then turn power ON.

**NOTE:** Entering adjustment mode, keep on entering adjustment mode until dis-connect the 68 kΩ terminator and turn power OFF.

#### ■ OPERATION ON THE ADJUSTMENT MODE

- Change the adjustment channel or item [UP] : [BAND] key
- Change the adjustment channel or item [DOWN] : [TS] key
- Change the adjustment value : [DIAL]
- Verify the adjustment value : Push and hold [FUNC] key, and then push [BAND] key.

When entering adjustment mode, some adjustments need to push [V/M] or [FUNC] and [V/M] keys to write the adjustment value to the CPU.

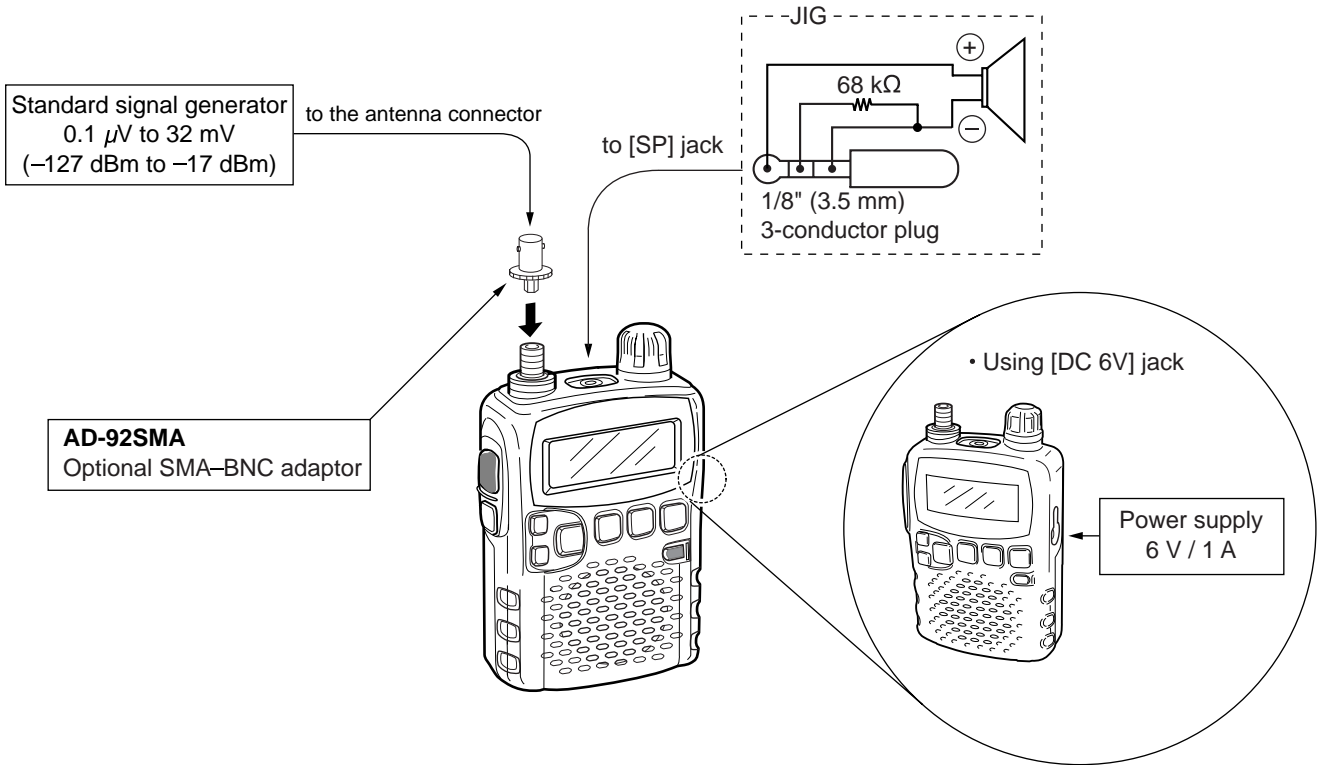
| Pushing key | Operation  |
|-------------|--|
| [V/M]       | Start VHF and UHF SENSITIVITY ADJUSTMENTS automatically. |
|             | Set the REFERENCE FREQUENCY ADJUSTMENT value.            |
|             | Set the S-METER ADJUSTMENT value.                        |

| Pushing key  | Operation   |
|--|---|
| Push and hold the [FUNC] key, and then push the [V/M] key. | Set the VHF and UHF SENSITIVITY ADJUSTMENTS value when manual adjustment. |

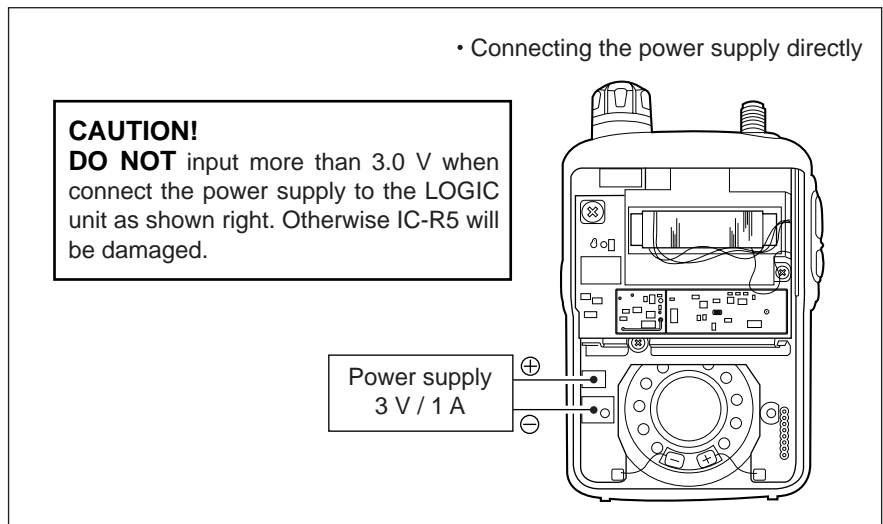
#### ■ CONVENIENT!–AUTOMATICALLY ADJUSTMENT

BAR ANTENNA, VHF SENSITIVITY and UHF SENSITIVITY ADJUSTMENTS can be adjusted automatically. The detail shows at page 5-8.

• CONNECTION



POWER SUPPLY CONNECTION  
(IC-R5 has two pattern.)



## 5-2 PLL ADJUSTMENT

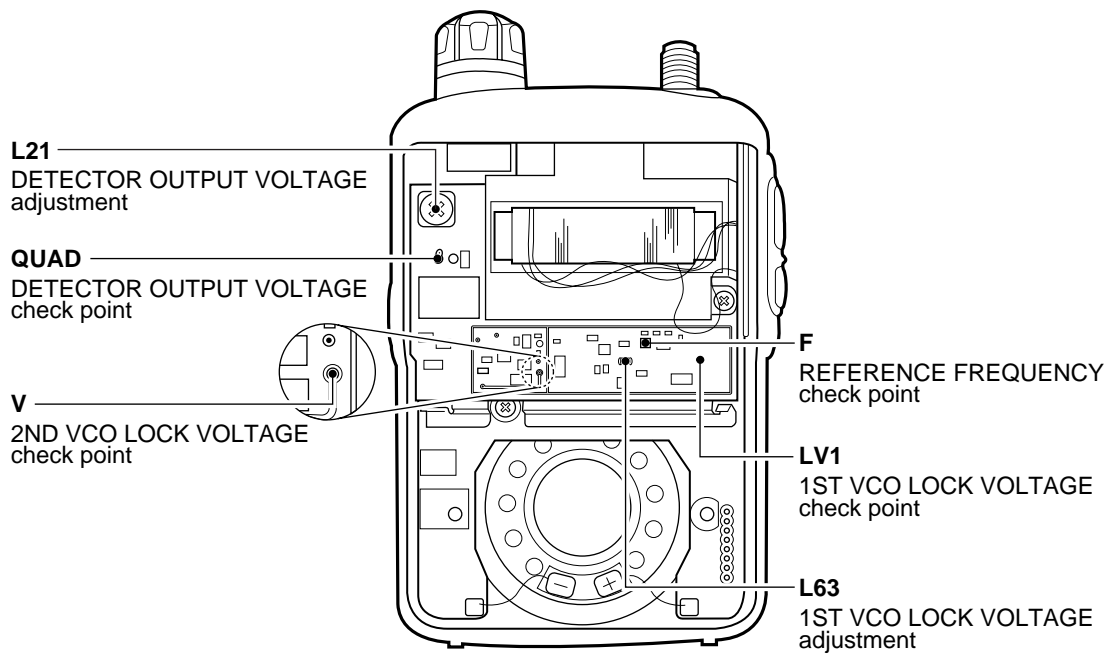
“REFERENCE FREQUENCY” adjustment must be performed at “ADJUSTMENT MODE”.

| ADJUSTMENT              | ADJUSTMENT CONDITION  | MEASUREMENT |   | VALUE                       | ADJUSTMENT POINT |        |
|-------------------------|---|-------------|---|-----------------------------|------------------|--------|
|                         |   | UNIT        | LOCATION  |                             | UNIT             | ADJUST |
| 1ST VCO LOCK VOLTAGE    | 1 • Displayed frequency :<br>493.300 MHz<br>• Receiving   | RF          | Connect the digital multi-meter to the check point LV1. | 1.8 V – 2.8 V               | RF               | L63    |
|                         | 2 • Displayed frequency :<br>493.300 MHz<br>• Receiving   |             |   | 1.8 V – 2.8 V               |                  | Verify |
|                         | 3 • Displayed frequency :<br>282.900 MHz<br>• Receiving   |             |   | less than 12 V              |                  | Verify |
|                         | 4 • Displayed frequency :<br>0.150 MHz<br>• Receiving   |             |   | 1.4 V – 2.4 V               |                  | Verify |
|                         | 5 • Displayed frequency :<br>493.295 MHz<br>• Receiving   |             |   | less than 12 V              |                  | Verify |
| 2ND VCO LOCK VOLTAGE    | 1 • Displayed frequency :<br>430.000 MHz<br>• Receiving   | RF          | Connect the digital multi-meter to the check point V.   | 0.4 V – 1.0 V               |                  | Verify |
|                         | 2 • Displayed frequency :<br>493.300 MHz<br>• Receiving   |             |   | less than 2.6 V             |                  |        |
| REFERENCE FREQUENCY     | 1 • Displayed frequency :<br>(Fr ch) 439.800 MHz<br>• Receiving   | RF          | Connect the frequency counter to the check point F.     | 706.4999 MHz – 706.5001 MHz | LOGIC            | [DIAL] |
| DETECTOR OUTPUT VOLTAGE | 1 • Displayed frequency :<br>145.600 MHz<br>• Connect an SSG to the antenna connector and set as:<br>Level : 1 mV* (-47 dBm)<br>Modulation : OFF<br>• Receiving | RF          | Connect the digital multi-meter to check point QUAD.    | 1.0 V                       | RF               | L21    |

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



• RF UNIT



Bottom view

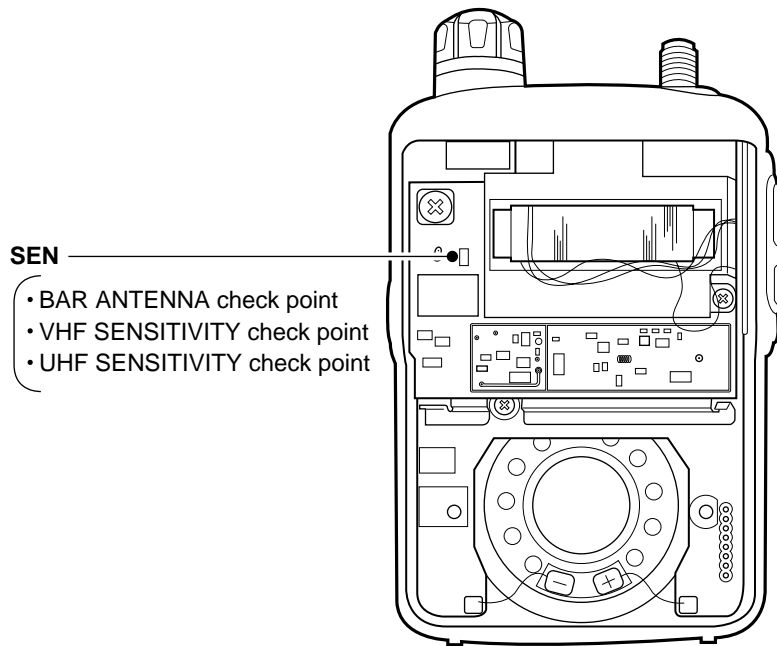
### 5-3 ADJUSTMENT MODE ADJUSTMENTS

- The following adjustments must be performed at “ADJUSTMENT MODE”.
- The following adjustments can be adjusted automatically. The detail shows “AUTOMATICALLY ADJUSTMENT” (at page 5-8).

| ADJUSTMENT      | ADJUSTMENT CONDITION | MEASUREMENT  |          | VALUE   | ADJUSTMENT POINT |        |        |
|-----------------|----------------------|--|----------|---|------------------|--------|--------|
|                 |                      | UNIT   | LOCATION |   | UNIT             | ADJUST |        |
| BAR ANTENNA     | 1                    | <ul style="list-style-type: none"> <li>• Displayed frequency : (trL ch) 0.495 MHz</li> <li>• Connect an SSG to the antenna connector and set as:<br/>Level : 40 mV* (-15 dBm)<br/>Modulation : OFF</li> <li>• Receiving</li> </ul>                 | RF       | Connect DC voltmeter to the check point SEN.            | Maximum voltage  | LOGIC  | [DIAL] |
|                 | 2                    | • Push and hold the [FUNC] key, and then push the [V/M] key.   |          |   |                  |        |        |
|                 | 3                    | <ul style="list-style-type: none"> <li>• Displayed frequency : (trH ch) 1.620 MHz</li> <li>• Set the SSG as<br/>Level : 50 mV* (-13 dBm)</li> <li>• Receiving</li> </ul>   | RF       | Connect DC voltmeter to the check point SEN.            | Maximum voltage  | LOGIC  | [DIAL] |
|                 | 4                    | • Push and hold the [FUNC] key, and then push the [V/M] key.   |          |   |                  |        |        |
| VHF SENSITIVITY | 1                    | <ul style="list-style-type: none"> <li>• Displayed frequency : (trL ch) 118.100 MHz</li> <li>• Connect an SSG to the antenna connector and set as:<br/>Level : 1 <math>\mu</math>V* (-107dBm)<br/>Modulation : OFF</li> <li>• Receiving</li> </ul> | RF       | Connect the digital multi-meter to the check point SEN. | Maximum voltage  | LOGIC  | [DIAL] |
|                 | 2                    | • Push and hold the [FUNC] key, and then push the [V/M] key.   |          |   |                  |        |        |
|                 | 3                    | <ul style="list-style-type: none"> <li>• Displayed frequency : (trH ch) 174.900 MHz</li> <li>• Receiving</li> </ul>  | RF       | Connect DC voltmeter to the check point SEN.            | Maximum voltage  | LOGIC  | [DIAL] |
|                 | 4                    | • Push and hold the [FUNC] key, and then push the [V/M] key.   |          |   |                  |        |        |
| UHF SENSITIVITY | 1                    | <ul style="list-style-type: none"> <li>• Displayed frequency : (trL ch) 330.100 MHz</li> <li>• Connect an SSG to the antenna connector and set as:<br/>Level : 1 <math>\mu</math>V* (-107dBm)<br/>Modulation : OFF</li> <li>• Receiving</li> </ul> | RF       | Connect the digital multi-meter to the check point SEN. | Maximum voltage  | LOGIC  | [DIAL] |
|                 | 2                    | • Push and hold the [FUNC] key, and then push the [V/M] key.   |          |   |                  |        |        |
|                 | 3                    | <ul style="list-style-type: none"> <li>• Displayed frequency : (trH ch) 469.900 MHz</li> <li>• Receiving</li> </ul>  | RF       | Connect DC voltmeter to the check point SEN.            | Maximum voltage  | LOGIC  | [DIAL] |
|                 | 4                    | • Push and hold the [FUNC] key, and then push the [V/M] key.   |          |   |                  |        |        |

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

• RF UNIT



**Bottom view**

## ADJUSTMENT MODE ADJUSTMENTS (Continued)

- The following adjustments must be performed at "ADJUSTMENT MODE".

| ADJUSTMENT | ADJUSTMENT CONDITION   | OPERATION   |
|------------|--|---|
| S-METER    | 1 <ul style="list-style-type: none"> <li>• Displayed frequency : (SM ch) 14.100 MHz</li> <li>• Connect the SSG to the antenna connector and set as :               <ul style="list-style-type: none"> <li>Level : 0.5 <math>\mu</math>V* (-113 dBm)</li> <li>Modulation : OFF</li> </ul> </li> <li>• Mode : FM</li> <li>• Receiving</li> </ul> | Push and hold the [MOD] key.<br><ul style="list-style-type: none"> <li>• Verify that S-Meter shows S4 (3dots).</li> </ul> |
|            | 2 <ul style="list-style-type: none"> <li>• Set the SSG as :Level: 1.6 <math>\mu</math>V* (-103 dBm)</li> <li>• Mode : WFM</li> <li>• Receiving</li> </ul>  |   |
|            | 3 <ul style="list-style-type: none"> <li>• Displayed frequency : (SM ch) 145.100 MHz</li> <li>• Set the SSG level : 0.5 <math>\mu</math>V* (-113 dBm)</li> <li>• Mode : FM</li> <li>• Receiving</li> </ul>   |   |
|            | 4 <ul style="list-style-type: none"> <li>• Set the SSG level : 1.6 <math>\mu</math>V* (-103 dBm)</li> <li>• Mode : WFM</li> <li>• Receiving</li> </ul>   |   |
|            | 5 <ul style="list-style-type: none"> <li>• Displayed frequency : (SM ch) 200.100 MHz</li> <li>• Set the SSG level : 0.5 <math>\mu</math>V* (-113 dBm)</li> <li>• Mode : FM</li> <li>• Receiving</li> </ul>   |   |
|            | 6 <ul style="list-style-type: none"> <li>• Set the SSG level : 1.6 <math>\mu</math>V* (-103 dBm)</li> <li>• Mode : WFM</li> <li>• Receiving</li> </ul>   |   |
|            | 7 <ul style="list-style-type: none"> <li>• Displayed frequency : (SM ch) 435.100 MHz</li> <li>• Set the SSG level : 0.5 <math>\mu</math>V* (-113 dBm)</li> <li>• Mode : FM</li> <li>• Receiving</li> </ul>   |   |
|            | 8 <ul style="list-style-type: none"> <li>• Set the SSG level : 1.6 <math>\mu</math>V* (-103 dBm)</li> <li>• Mode : WFM</li> <li>• Receiving</li> </ul>   |   |
|            | 9 <ul style="list-style-type: none"> <li>• Displayed frequency : (SM ch) 650.100 MHz</li> <li>• Set the SSG Level : 0.5 <math>\mu</math>V* (-113 dBm)</li> <li>• Receiving</li> </ul>  |   |
|            | 10 <ul style="list-style-type: none"> <li>• Set the SSG level : 1.6 <math>\mu</math>V* (-103 dBm)</li> <li>• Mode : WFM</li> <li>• Receiving</li> </ul>  |   |
|            | 11 <ul style="list-style-type: none"> <li>• Displayed frequency : (SM ch) 1100.100 MHz</li> <li>• Set the SSG level : 1 <math>\mu</math>V* (-107 dB<math>\mu</math>)</li> <li>• Receiving</li> </ul>   |   |
|            | 12 <ul style="list-style-type: none"> <li>• Set the SSG level : 3.2 <math>\mu</math>V* (-97 dBm)</li> <li>• Mode : WFM</li> <li>• Receiving</li> </ul>   |   |

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

## 5-4 AUTOMATICALLY ADJUSTMENTS

- The following adjustments must be performed at “ADJUSTMENT MODE”.
- The following adjustments can be adjusted automatically.
- In case of be finished to adjust “BAR ANTENNA”, “VHF SENSITIVITY” and “UHF SENSITIVITY” ADJUSTMENTS already, **DO NOT** need to perform the following adjustment.

| ADJUSTMENT      |   | ADJUSTMENT CONDITION   | OPERATION           |
|-----------------|---|--|---------------------|
| BAR ANTENNA     | 1 | <ul style="list-style-type: none"> <li>• Displayed frequency : (trL ch) 0.495 MHz</li> <li>• Connect the SSG to the antenna connector and set as :<br/> Level : 40 mV* (-15 dBm)<br/> Modulation : OFF</li> <li>• Receiving</li> </ul> | Push the [V/M] key. |
|                 | 2 | <ul style="list-style-type: none"> <li>• Displayed frequency : (trH ch) 1.620 MHz</li> <li>• Set the SSG level : 50 mV* (-13 dBm)</li> <li>• Receiving</li> </ul>  | Push the [V/M] key. |
| VHF SENSITIVITY | 1 | <ul style="list-style-type: none"> <li>• Displayed frequency : (trL ch) 118.100 MHz</li> <li>• Set the SSG level : 1.0 <math>\mu</math>V* (-107 dBm)</li> <li>• Receiving</li> </ul>   | Push the [V/M] key. |
|                 | 2 | <ul style="list-style-type: none"> <li>• Displayed frequency : (trH ch) 174.900 MHz</li> <li>• Receiving</li> </ul>  | Push the [V/M] key. |
| UHF SENSITIVITY | 1 | <ul style="list-style-type: none"> <li>• Displayed frequency : (trL ch) 330.100 MHz</li> <li>• Set the SSG level : 1.0 <math>\mu</math>V* (-107 dBm)</li> <li>• Receiving</li> </ul>   | Push the [V/M] key. |
|                 | 2 | <ul style="list-style-type: none"> <li>• Displayed frequency : (trH ch) 469.900 MHz</li> <li>• Receiving</li> </ul>  | Push the [V/M] key. |

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

# SECTION 6 PARTS LIST

## [LOGIC UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION  |                             |
|---------|------------|--------------|-----------------------------|
| IC1     | 1140010860 | S.IC         | M30220MA-121RP [USA]        |
|         | 1140010870 | S.IC         | M30220MA-120RP except [USA] |
| IC2     | 1130011140 | S.IC         | CAT24WC256K1.8              |
| IC3     | 1110005820 | S.IC         | R3112N281A-TR               |
| IC100   | 1130007110 | S.IC         | TC7W04FU (TE12L)            |
| IC102   | 1110004790 | S.IC         | XC6371A351PR                |
| IC103   | 1180002370 | S.REG        | R1111N321B-TR               |
| IC104   | 1180002370 | S.REG        | R1111N321B-TR               |
| IC200   | 1110003800 | S.IC         | NJM2904V-TE1                |
| IC400   | 1110004520 | S.IC         | M5222FP 600C                |
| IC450   | 1190000710 | S.IC         | TA31056F (TP1)              |
| Q1      | 1590001940 | S.TRANSISTOR | DTC144EE TL                 |
| Q2      | 1590002150 | S.TRANSISTOR | DTC144TE TL                 |
| Q4      | 1590001940 | S.TRANSISTOR | DTC144EE TL                 |
| Q5      | 1530002280 | S.TRANSISTOR | 2SC4081 T106 S              |
| Q100    | 1530002280 | S.TRANSISTOR | 2SC4081 T106 S              |
| Q101    | 1590001190 | S.TRANSISTOR | XP6501-(TX) .AB             |
| Q102    | 1510000670 | S.TRANSISTOR | 2SA1588-GR (TE85R)          |
| Q103    | 1510000670 | S.TRANSISTOR | 2SA1588-GR (TE85R)          |
| Q104    | 1510000670 | S.TRANSISTOR | 2SA1588-GR (TE85R)          |
| Q105    | 1590002430 | S.TRANSISTOR | DTA144EE TL                 |
| Q200    | 1590002430 | S.TRANSISTOR | DTA144EE TL                 |
| Q300    | 1530002280 | S.TRANSISTOR | 2SC4081 T106 S              |
| Q301    | 1590001190 | S.TRANSISTOR | XP6501-(TX) .AB             |
| Q302    | 1590001390 | S.FET        | 2SJ144-Y (TE85R)            |
| Q303    | 1590002430 | S.TRANSISTOR | DTA144EE TL                 |
| Q350    | 1590001390 | S.FET        | 2SJ144-Y (TE85R)            |
| Q400    | 1530002280 | S.TRANSISTOR | 2SC4081 T106 S              |
| Q450    | 1590001170 | S.TRANSISTOR | XP1501-(TX) .AB             |
| Q451    | 1520000460 | S.TRANSISTOR | 2SB1132 T100 R              |
| Q452    | 1510000670 | S.TRANSISTOR | 2SA1588-GR (TE85R)          |
| Q500    | 1590002950 | S.FET        | HAT1023R-EL                 |
| Q501    | 1520000460 | S.TRANSISTOR | 2SB1132 T100 R              |
| Q502    | 1590001940 | S.TRANSISTOR | DTC144EE TL                 |
| D1      | 1790001250 | S.DIODE      | MA2S111-(TX)                |
| D2      | 1790001250 | S.DIODE      | MA2S111-(TX)                |
| D3      | 1730002510 | S.ZENER      | MA8027-H (TX)               |
| D100    | 1790001560 | S.DIODE      | 1SS372 (TE85R)              |
| D101    | 1790001560 | S.DIODE      | 1SS372 (TE85R)              |
| D102    | 1790001560 | S.DIODE      | 1SS372 (TE85R)              |
| D103    | 1790001560 | S.DIODE      | 1SS372 (TE85R)              |
| D105    | 1750000880 | S.DIODE      | RB551V-30TE-17              |
| D300    | 1790001250 | S.DIODE      | MA2S111-(TX)                |
| D301    | 1790000850 | S.DIODE      | MA132WK (TX)                |
| D500    | 1790000670 | S.DIODE      | SB07-03C-TB                 |
| D501    | 1790001240 | S.DIODE      | MA2S728-(TX)                |
| D502    | 1750000880 | S.DIODE      | RB551V-30TE-17              |
| D503    | 1790000860 | S.DIODE      | MA133 (TX)                  |
| X1      | 6060000800 | S.CERAMIC    | CSTCR6M75G53                |
| L100    | 6190001570 | S.COIL       | CDRH5D28-101NC              |
| R1      | 7030005050 | S.RESISTOR   | ERJ2GEJ 103 X (10 kΩ)       |
| R2      | 7030005070 | S.RESISTOR   | ERJ2GEJ 683 X (68 kΩ)       |
| R3      | 7030005310 | S.RESISTOR   | ERJ2GEJ 124 X (120 kΩ)      |
| R4      | 7030005240 | S.RESISTOR   | ERJ2GEJ 473 X (47 kΩ)       |
| R5      | 7030005240 | S.RESISTOR   | ERJ2GEJ 473 X (47 kΩ)       |
| R6      | 7030005240 | S.RESISTOR   | ERJ2GEJ 473 X (47 kΩ)       |
| R7      | 7030005120 | S.RESISTOR   | ERJ2GEJ 102 X (1 kΩ)        |
| R8      | 7030005120 | S.RESISTOR   | ERJ2GEJ 102 X (1 kΩ)        |
| R9      | 7030005120 | S.RESISTOR   | ERJ2GEJ 102 X (1 kΩ)        |
| R10     | 7030005120 | S.RESISTOR   | ERJ2GEJ 102 X (1 kΩ)        |
| R11     | 7030005120 | S.RESISTOR   | ERJ2GEJ 102 X (1 kΩ)        |
| R12     | 7030005120 | S.RESISTOR   | ERJ2GEJ 102 X (1 kΩ)        |
| R13     | 7030005120 | S.RESISTOR   | ERJ2GEJ 102 X (1 kΩ)        |
| R14     | 7030005120 | S.RESISTOR   | ERJ2GEJ 102 X (1 kΩ)        |
| R15     | 7030005120 | S.RESISTOR   | ERJ2GEJ 102 X (1 kΩ)        |
| R16     | 7030005120 | S.RESISTOR   | ERJ2GEJ 102 X (1 kΩ)        |

## [LOGIC UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION |                        |
|---------|------------|-------------|------------------------|
| R17     | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| R18     | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| R19     | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| R20     | 7030007340 | S.RESISTOR  | ERJ2GEJ 153 X (15 kΩ)  |
| R21     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R22     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R23     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R24     | 7030004980 | S.RESISTOR  | ERJ2GEJ 101 X (100 Ω)  |
| R25     | 7030004980 | S.RESISTOR  | ERJ2GEJ 101 X (100 Ω)  |
| R26     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R27     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R28     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R29     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R30     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R31     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R32     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R33     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R34     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R35     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R36     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R37     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R38     | 7030004980 | S.RESISTOR  | ERJ2GEJ 101 X (100 Ω)  |
| R39     | 7030004980 | S.RESISTOR  | ERJ2GEJ 101 X (100 Ω)  |
| R40     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R41     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R42     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R43     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R44     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R45     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R46     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R47     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R48     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R49     | 7030006610 | S.RESISTOR  | ERJ2GEJ 394 X (390 kΩ) |
| R50     | 7030005100 | S.RESISTOR  | ERJ2GEJ 154 X (150 kΩ) |
| R51     | 7030005230 | S.RESISTOR  | ERJ2GEJ 334 X (330 kΩ) |
| R52     | 7030005310 | S.RESISTOR  | ERJ2GEJ 124 X (120 kΩ) |
| R53     | 7030005310 | S.RESISTOR  | ERJ2GEJ 124 X (120 kΩ) |
| R54     | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| R55     | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R56     | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R57     | 7030005040 | S.RESISTOR  | ERJ2GEJ 472 X (4.7 kΩ) |
| R58     | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (4.7 kΩ) |
| R59     | 7030005580 | S.RESISTOR  | ERJ2GEJ 560 X (56 Ω)   |
| R61     | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R62     | 7030005090 | S.RESISTOR  | ERJ2GEJ 104 X (100 kΩ) |
| R63     | 7030008300 | S.RESISTOR  | ERJ2GEJ 184 X (180 kΩ) |
| R64     | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R65     | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R100    | 7030005080 | S.RESISTOR  | ERJ2GEJ 823 X (82 kΩ)  |
| R101    | 7030007300 | S.RESISTOR  | ERJ2GEJ 332 X (3.3 kΩ) |
| R102    | 7030005290 | S.RESISTOR  | ERJ2GEJ 682 X (6.8 kΩ) |
| R103    | 7030007290 | S.RESISTOR  | ERJ2GEJ 222 X (2.2 kΩ) |
| R104    | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| R105    | 7030005060 | S.RESISTOR  | ERJ2GEJ 333 X (33 kΩ)  |
| R106    | 7030005040 | S.RESISTOR  | ERJ2GEJ 472 X (4.7 kΩ) |
| R107    | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| R108    | 7030005040 | S.RESISTOR  | ERJ2GEJ 472 X (4.7 kΩ) |
| R109    | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| R110    | 7030005530 | S.RESISTOR  | ERJ2GEJ 100 X (10 Ω)   |
| R111    | 7030005530 | S.RESISTOR  | ERJ2GEJ 100 X (10 Ω)   |
| R200    | 7030005160 | S.RESISTOR  | ERJ2GEJ 105 X (1 MΩ)   |
| R201    | 7030005170 | S.RESISTOR  | ERJ2GEJ 474 X (470 kΩ) |
| R202    | 7030005070 | S.RESISTOR  | ERJ2GEJ 683 X (68 kΩ)  |
| R203    | 7030005160 | S.RESISTOR  | ERJ2GEJ 105 X (1 MΩ)   |
| R204    | 7030005070 | S.RESISTOR  | ERJ2GEJ 683 X (68 kΩ)  |
| R205    | 7030005080 | S.RESISTOR  | ERJ2GEJ 823 X (82 kΩ)  |
| R206    | 7030005080 | S.RESISTOR  | ERJ2GEJ 823 X (82 kΩ)  |
| R207    | 7030005080 | S.RESISTOR  | ERJ2GEJ 823 X (82 kΩ)  |
| R208    | 7030005160 | S.RESISTOR  | ERJ2GEJ 105 X (1 MΩ)   |
| R209    | 7030005170 | S.RESISTOR  | ERJ2GEJ 474 X (470 kΩ) |
| R300    | 7030005530 | S.RESISTOR  | ERJ2GEJ 100 X (10 Ω)   |
| R301    | 7030007290 | S.RESISTOR  | ERJ2GEJ 222 X (2.2 kΩ) |
| R302    | 7030009280 | S.RESISTOR  | ERJ2GE                 |
| R303    | 7030008300 | S.RESISTOR  | ERJ2GEJ 184 X (180 kΩ) |
| R304    | 7030008300 | S.RESISTOR  | ERJ2GEJ 184 X (180 kΩ) |
| R305    | 7030005080 | S.RESISTOR  | ERJ2GEJ 823 X (82 kΩ)  |

S.=Surface mount

[LOGIC UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION |                        |
|---------|------------|-------------|------------------------|
| R306    | 7030007340 | S.RESISTOR  | ERJ2GEJ 153 X (15 kΩ)  |
| R307    | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R308    | 7030008290 | S.RESISTOR  | ERJ2GEJ 183 X (18 kΩ)  |
| R309    | 7030008290 | S.RESISTOR  | ERJ2GEJ 183 X (18 kΩ)  |
| R310    | 7030005310 | S.RESISTOR  | ERJ2GEJ 124 X (120 kΩ) |
| R311    | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| R312    | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| R313    | 7030005160 | S.RESISTOR  | ERJ2GEJ 105 X (1 MΩ)   |
| R314    | 7030008300 | S.RESISTOR  | ERJ2GEJ 184 X (180 kΩ) |
| R315    | 7030008300 | S.RESISTOR  | ERJ2GEJ 184 X (180 kΩ) |
| R316    | 7030005040 | S.RESISTOR  | ERJ2GEJ 472 X (4.7 kΩ) |
| R317    | 7030005170 | S.RESISTOR  | ERJ2GEJ 474 X (470 kΩ) |
| R318    | 7030005080 | S.RESISTOR  | ERJ2GEJ 823 X (82 kΩ)  |
| R319    | 7030005170 | S.RESISTOR  | ERJ2GEJ 474 X (470 kΩ) |
| R320    | 7030007350 | S.RESISTOR  | ERJ2GEJ 393 X (39 kΩ)  |
| R321    | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R322    | 7030005720 | S.RESISTOR  | ERJ2GEJ 563 X (56 kΩ)  |
| R323    | 7030007350 | S.RESISTOR  | ERJ2GEJ 393 X (39 kΩ)  |
| R324    | 7030005090 | S.RESISTOR  | ERJ2GEJ 104 X (100 kΩ) |
| R325    | 7030005090 | S.RESISTOR  | ERJ2GEJ 104 X (100 kΩ) |
| R350    | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| R351    | 7030005160 | S.RESISTOR  | ERJ2GEJ 105 X (1 MΩ)   |
| R400    | 7030009290 | S.RESISTOR  | ERJ2GEJ 562 X (5.6 kΩ) |
| R401    | 7030005060 | S.RESISTOR  | ERJ2GEJ 333 X (33 kΩ)  |
| R402    | 7030005310 | S.RESISTOR  | ERJ2GEJ 124 X (120 kΩ) |
| R403    | 7030005060 | S.RESISTOR  | ERJ2GEJ 333 X (33 kΩ)  |
| R404    | 7030005210 | S.RESISTOR  | ERJ2GEJ 822 X (8.2 kΩ) |
| R405    | 7030005060 | S.RESISTOR  | ERJ2GEJ 333 X (33 kΩ)  |
| R406    | 7030005080 | S.RESISTOR  | ERJ2GEJ 823 X (82 kΩ)  |
| R407    | 7030007340 | S.RESISTOR  | ERJ2GEJ 153 X (15 kΩ)  |
| R408    | 7030005110 | S.RESISTOR  | ERJ2GEJ 224 X (220 kΩ) |
| R409    | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R450    | 7030005040 | S.RESISTOR  | ERJ2GEJ 472 X (4.7 kΩ) |
| R451    | 7030005000 | S.RESISTOR  | ERJ2GEJ 471 X (470 Ω)  |
| R500    | 7030005090 | S.RESISTOR  | ERJ2GEJ 104 X (100 kΩ) |
| R501    | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R502    | 7030000090 | S.RESISTOR  | MCR10EZJH 3.9 Ω (3R9)  |
| C1      | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C2      | 4030016930 | S.CERAMIC   | ECJ0EB1A104K           |
| C3      | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C4      | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C5      | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C6      | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C7      | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C8      | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C9      | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C10     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C11     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C12     | 4030017390 | S.CERAMIC   | ECJ0EC1H180J           |
| C13     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C14     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C17     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C18     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C20     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C21     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C22     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C23     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C24     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C25     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C26     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C27     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C28     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C29     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C30     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C31     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C32     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C34     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C35     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C40     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C43     | 4030016790 | S.CERAMIC   | ECJ0EB1C103K           |
| C45     | 4030016930 | S.CERAMIC   | ECJ0EB1A104K           |
| C46     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C47     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C48     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C49     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C51     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C53     | 4030017680 | S.CERAMIC   | ECJ0EC1H820J           |
| C100    | 4030017510 | S.CERAMIC   | ECJ0EC1H680J           |
| C101    | 4030008680 | S.CERAMIC   | C2012 JF 1C 105Z-T     |
| C102    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |

[LOGIC UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION    |                    |
|---------|------------|----------------|--------------------|
| C103    | 4030008680 | S.CERAMIC      | C2012 JF 1C 105Z-T |
| C104    | 4030008680 | S.CERAMIC      | C2012 JF 1C 105Z-T |
| C105    | 4030017460 | S.CERAMIC      | ECJ0EB1E102K       |
| C106    | 4030008680 | S.CERAMIC      | C2012 JF 1C 105Z-T |
| C107    | 4030008680 | S.CERAMIC      | C2012 JF 1C 105Z-T |
| C108    | 4030008680 | S.CERAMIC      | C2012 JF 1C 105Z-T |
| C109    | 4030008680 | S.CERAMIC      | C2012 JF 1C 105Z-T |
| C110    | 4030008680 | S.CERAMIC      | C2012 JF 1C 105Z-T |
| C113    | 4030008680 | S.CERAMIC      | C2012 JF 1C 105Z-T |
| C114    | 4550006840 | S.TANTALUM     | TEMSVA 1E 225M-8R  |
| C115    | 4030011810 | S.CERAMIC      | C1608 JB 1A 224K-T |
| C116    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C118    | 4550006320 | S.TANTALUM     | ECST0JY475R        |
| C120    | 4030017460 | S.CERAMIC      | ECJ0EB1E102K       |
| C121    | 4030017460 | S.CERAMIC      | ECJ0EB1E102K       |
| C123    | 4030017460 | S.CERAMIC      | ECJ0EB1E102K       |
| C126    | 4030017460 | S.CERAMIC      | ECJ0EB1E102K       |
| C127    | 4030017460 | S.CERAMIC      | ECJ0EB1E102K       |
| C128    | 4550006970 | S.TANTALUM     | TEMSVA 0G 476M8R   |
| C129    | 4550006620 | S.TANTALUM     | ECST0JY226R        |
| C130    | 4550006620 | S.TANTALUM     | ECST0JY226R        |
| C131    | 4510007970 | S.ELECTROLYTIC | ECEV1AA330WR       |
| C132    | 4030017460 | S.CERAMIC      | ECJ0EB1E102K       |
| C133    | 4550006620 | S.TANTALUM     | ECST0JY226R        |
| C134    | 4550006250 | S.TANTALUM     | TEMSVA 1A 106M-8L  |
| C135    | 4510008040 | S.ELECTROLYTIC | EEFCD 0K 330R      |
| C136    | 4030017460 | S.CERAMIC      | ECJ0EB1E102K       |
| C200    | 4030017460 | S.CERAMIC      | ECJ0EB1E102K       |
| C202    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C203    | 4030017440 | S.CERAMIC      | ECJ0EC1H221J       |
| C204    | 4030017460 | S.CERAMIC      | ECJ0EB1E102K       |
| C205    | 4030017910 | S.CERAMIC      | ECJ0EB1H152K       |
| C207    | 4030016970 | S.CERAMIC      | ECJ0EB1C223K       |
| C208    | 4030016970 | S.CERAMIC      | ECJ0EB1C223K       |
| C209    | 4030016790 | S.CERAMIC      | ECJ0EB1C103K       |
| C210    | 4030017490 | S.CERAMIC      | C1608 JB 1A 105K-T |
| C301    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C303    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C304    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C305    | 4030008680 | S.CERAMIC      | C2012 JF 1C 105Z-T |
| C306    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C307    | 4030017780 | S.CERAMIC      | ECJ0EB1E472K       |
| C308    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C309    | 4030017760 | S.CERAMIC      | ECJ0EB1H222K       |
| C310    | 4030017790 | S.CERAMIC      | ECJ0EB1E682K       |
| C311    | 4030017790 | S.CERAMIC      | ECJ0EB1E682K       |
| C312    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C313    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C314    | 4030016960 | S.CERAMIC      | ECJ0EB1C183K       |
| C315    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C316    | 4030016960 | S.CERAMIC      | ECJ0EB1C183K       |
| C317    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C318    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C319    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C320    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C321    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C322    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C351    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C352    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C400    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C401    | 4030008680 | S.CERAMIC      | C2012 JF 1C 105Z-T |
| C402    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C403    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C404    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C405    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C406    | 4030017780 | S.CERAMIC      | ECJ0EB1E472K       |
| C450    | 4550006140 | S.TANTALUM     | ECST1EY474R        |
| C451    | 4550002950 | S.TANTALUM     | TESVA 0J 335M1-8L  |
| C452    | 4550006550 | S.TANTALUM     | TEMSVD 0G 227M-12R |
| C453    | 4510007970 | S.ELECTROLYTIC | ECEV1AA330WR       |
| C454    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C455    | 4030016930 | S.CERAMIC      | ECJ0EB1A104K       |
| C456    | 4030017430 | S.CERAMIC      | ECJ0EC1H101J       |
| C457    | 4550006320 | S.TANTALUM     | ECST0JY475R        |
| C458    | 4550006320 | S.TANTALUM     | ECST0JY475R        |
| C500    | 4030017460 | S.CERAMIC      | ECJ0EB1E102K       |
| C501    | 4030017460 | S.CERAMIC      | ECJ0EB1E102K       |
| C503    | 4030017460 | S.CERAMIC      | ECJ0EB1E102K       |
| C504    | 4030017460 | S.CERAMIC      | ECJ0EB1E102K       |
| C505    | 4030017780 | S.CERAMIC      | ECJ0EB1E472K       |

S.=Surface mount

**[LOGIC UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION |   |
|---------|------------|-------------|---|
| J2      | 6450002010 | S.CONNECTOR | HSJ1501-011010                                  |
| J3      | 6510020560 | S.CONNECTOR | AXK5S40340P                                     |
| J500    | 6450002130 | CONNECTOR   | 04-730A1-02BKA                                  |
| DS1     | 5030001990 | LCD         | TTR5169 UPFDHW                                  |
| S6      | 2250000390 | ENCODER     | TP90N00E20-16F-1995                             |
| S9      | 2230001070 | S.SWITCH    | JPM1990-2711R                                   |
| S10     | 2230001070 | S.SWITCH    | JPM1990-2711R                                   |
| W2      | 7030010040 | S.JUMPER    | ERJ2GE-JPW [EUR], [FRA] only                    |
| W3      | 7030010040 | S.JUMPER    | ERJ2GE-JPW [USA], [UK] only                     |
| W4      | 7030010040 | S.JUMPER    | ERJ2GE-JPW [USA], [FRA], [ESP] only             |
| W5      | 7030010040 | S.JUMPER    | ERJ2GE-JPW except [EUR], [UK], [USA] [FRA] only |
| W7      | 7030010040 | S.JUMPER    | ERJ2GE-JPW                                      |
| W14     | 7030010040 | S.JUMPER    | ERJ2GE-JPW                                      |
| W16     | 7030003860 | S.JUMPER    | ERJ3GE JPW V                                    |
| W17     | 7030010040 | S.JUMPER    | ERJ2GE-JPW                                      |
| W200    | 7030010040 | S.JUMPER    | ERJ2GE-JPW                                      |
| W600    | 9026050001 | WIRE        | 71/98/036/X98/X98                               |
| EP1     | 6910012350 | S.BEAD      | MMZ1608Y 102BT                                  |
| EP2     | 6910012350 | S.BEAD      | MMZ1608Y 102BT                                  |
| EP3     | 6910014600 | E.OTHER     | CV1071 RX2605                                   |
| EP4     | 8930058920 | LCD CONTACT | SRCN-2605-SP-N-W                                |
| EP5     | 0910055724 | PCB         | B 5887D   |
| EP9     | 6910013310 | S.BEAD      | MMZ1608D121B                                    |
| EP10    | 6910014680 | S.BEAD      | MMZ1608Y 121BT                                  |
| EP11    | 6910014680 | S.BEAD      | MMZ1608Y 121BT                                  |
| EP12    | 6910014690 | S.BEAD      | MPZ1608S221A-T                                  |
| EP13    | 6910014690 | S.BEAD      | MPZ1608S221A-T                                  |

**[RF UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION  |                    |
|---------|------------|--------------|--------------------|
| IC1     | 1110005230 | S.IC         | µPC2757TB-E3       |
| IC2     | 1110003200 | S.IC         | TA31136FN (EL)     |
| IC3     | 1130007610 | S.IC         | µPD3140GS-E1 (DS8) |
| IC4     | 1110005180 | S.IC         | µPC2746TB-E3       |
| IC10    | 1110005230 | S.IC         | µPC2757TB-E3       |
| IC11    | 1110005180 | S.IC         | µPC2746TB-E3       |
| Q1      | 1590001190 | S.TRANSISTOR | XP6501-(TX) .AB    |
| Q2      | 1560000540 | S.FET        | 2SK880-Y (TE85R)   |
| Q4      | 1590001190 | S.TRANSISTOR | XP6501-(TX) .AB    |
| Q5      | 1530002600 | S.TRANSISTOR | 2SC4215-O (TE85R)  |
| Q6      | 1530003610 | S.TRANSISTOR | FH102-TL           |
| Q14     | 1530003610 | S.TRANSISTOR | FH102-TL           |
| Q24     | 1530003590 | S.TRANSISTOR | 2SC5277D2-TL       |
| Q26     | 1530003590 | S.TRANSISTOR | 2SC5277D2-TL       |
| Q28     | 1530003260 | S.TRANSISTOR | 2SC5006-T1         |
| Q29     | 1590001940 | S.TRANSISTOR | DTC144EE TL        |
| Q30     | 1530003260 | S.TRANSISTOR | 2SC5006-T1         |
| Q31     | 1530003610 | S.TRANSISTOR | FH102-TL           |
| Q33     | 1590001810 | S.TRANSISTOR | XP1113 (TX)        |
| Q35     | 1590002650 | S.TRANSISTOR | UPA805T-T1         |
| Q36     | 1530003580 | S.TRANSISTOR | 2SC5231C8-TL       |
| Q37     | 1530003630 | S.TRANSISTOR | 2SC4617 TLS        |
| Q40     | 1530003580 | S.TRANSISTOR | 2SC5231C8-TL       |
| Q41     | 1590002430 | S.TRANSISTOR | DTA144EE TL        |
| Q43     | 1530003580 | S.TRANSISTOR | 2SC5231C8-TL       |
| Q44     | 1590001660 | S.TRANSISTOR | XP4312 (TX)        |
| Q45     | 1530003010 | S.TRANSISTOR | 2SC4117-GR (TE85R) |
| Q46     | 1590001660 | S.TRANSISTOR | XP4312 (TX)        |
| Q501    | 1590002430 | S.TRANSISTOR | DTA144EE TL        |
| Q502    | 1590001810 | S.TRANSISTOR | XP1113 (TX)        |
| Q503    | 1590001810 | S.TRANSISTOR | XP1113 (TX)        |
| Q504    | 1590001810 | S.TRANSISTOR | XP1113 (TX)        |
| Q505    | 1530002600 | S.TRANSISTOR | 2SC4215-O (TE85R)  |

**[RF UNIT]**

| REF NO. | ORDER NO.  | DESCRIPTION  |                                |
|---------|------------|--------------|--------------------------------|
| Q506    | 1590002430 | S.TRANSISTOR | DTA144EE TL                    |
| Q507    | 1530003590 | S.TRANSISTOR | 2SC5277D2-TL                   |
| Q508    | 1590001660 | S.TRANSISTOR | XP4312 (TX)                    |
| Q509    | 1590002430 | S.TRANSISTOR | DTA144EE TL                    |
| Q510    | 1590001540 | S.TRANSISTOR | UMD6N TR                       |
| Q513    | 1590001650 | S.TRANSISTOR | XP4601 (TX)                    |
| Q514    | 1590001540 | S.TRANSISTOR | UMD6N TR                       |
| Q515    | 1590001940 | S.TRANSISTOR | DTC144EE TL                    |
| D1      | 1720000780 | S.VARICAP    | HVU350B TRF                    |
| D2      | 1720000780 | S.VARICAP    | HVU350B TRF                    |
| D3      | 1790001620 | S.DIODE      | 1SV308 (TPL3)                  |
| D4      | 1720000780 | S.VARICAP    | HVU350B TRF                    |
| D5      | 1720000780 | S.VARICAP    | HVU350B TRF                    |
| D11     | 1790001620 | S.DIODE      | 1SV308 (TPL3)                  |
| D13     | 1790001620 | S.DIODE      | 1SV308 (TPL3)                  |
| D17     | 1720000700 | S.VARICAP    | 1SV305 (TPL3)                  |
| D18     | 1720000780 | S.VARICAP    | HVU350B TRF                    |
| D20     | 1790001590 | S.DIODE      | MA6S718 (TX)                   |
| D21     | 1790001590 | S.DIODE      | MA6S718 (TX)                   |
| D25     | 1790001620 | S.DIODE      | 1SV308 (TPL3)                  |
| D29     | 1790001620 | S.DIODE      | 1SV308 (TPL3)                  |
| D31     | 1790000850 | S.DIODE      | MA132WK (TX)                   |
| D32     | 1790001620 | S.DIODE      | 1SV308 (TPL3)                  |
| D34     | 1790001620 | S.DIODE      | 1SV308 (TPL3)                  |
| D36     | 1790001620 | S.DIODE      | 1SV308 (TPL3)                  |
| D42     | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| D43     | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| D44     | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| D46     | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| D47     | 1790001620 | S.DIODE      | 1SV308 (TPL3)                  |
| D50     | 1790001620 | S.DIODE      | 1SV308 (TPL3)                  |
| D52     | 1790001620 | S.DIODE      | 1SV308 (TPL3)                  |
| D53     | 1790001250 | S.DIODE      | MA2S111-(TX)                   |
| D54     | 1720000650 | S.VARICAP    | 1SV286 (TPH3)                  |
| D55     | 1790000850 | S.DIODE      | MA132WK (TX)                   |
| D56     | 1790000850 | S.DIODE      | MA132WK (TX)                   |
| D57     | 1790000660 | S.DIODE      | MA728 (TX)                     |
| D58     | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| D59     | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| D60     | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| D61     | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| D62     | 1790000660 | S.DIODE      | MA728 (TX)                     |
| D63     | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| D64     | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| D65     | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| D66     | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| D67     | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| D68     | 1720000240 | S.DIODE      | 1SV172 (TE85R)                 |
| D69     | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| D70     | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| D71     | 1790001620 | S.DIODE      | 1SV308 (TPL3)                  |
| D72     | 1790001620 | S.DIODE      | 1SV308 (TPL3)                  |
| D73     | 1790001620 | S.DIODE      | 1SV308 (TPL3)                  |
| D74     | 1790001620 | S.DIODE      | 1SV308 (TPL3)                  |
| D75     | 1790001620 | S.DIODE      | 1SV308 (TPL3)                  |
| D76     | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| D100    | 1720000820 | S.VARICAP    | SVC347S/T-TL                   |
| D101    | 1790001260 | S.DIODE      | MA2S077-(TX)                   |
| F11     | 2040001200 | S.SAW        | EFCH266MKQP1                   |
| F12     | 2020001270 | CERAMIC      | CFWLB450KE2A-B0 (CFWM450E)     |
| F13     | 2010002280 | S.MONOLITH   | FL-293 (19.650 MHz)            |
| X1      | 6050010210 | S.XTAL       | CR-593 (19.200 MHz)            |
| L1      | 6200007740 | S.COIL       | LQW2BHN47NJ01L (LQN21A 47NJ04) |
| L2      | 6200005720 | S.COIL       | ELJRE 33NG-F                   |
| L3      | 6200005700 | S.COIL       | ELJRE 22NG-F                   |
| L4      | 6200005700 | S.COIL       | ELJRE 22NG-F                   |
| L5      | 6200005680 | S.COIL       | ELJRE 15NG-F                   |
| L7      | 6200005710 | S.COIL       | ELJRE 27NG-F                   |
| L8      | 6200005630 | S.COIL       | ELJRE 5N6Z-F                   |
| L9      | 6200005720 | S.COIL       | ELJRE 33NG-F                   |
| L10     | 6200005700 | S.COIL       | ELJRE 22NG-F                   |
| L11     | 6200005680 | S.COIL       | ELJRE 15NG-F                   |
| L12     | 6200005660 | S.COIL       | ELJRE 10NG-F                   |
| L13     | 6200005630 | S.COIL       | ELJRE 5N6Z-F                   |

S.=Surface mount



## [RF UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION |                                |
|---------|------------|-------------|--------------------------------|
| L14     | 6200006990 | S.COIL      | ELJRE 56NG-F                   |
| L15     | 6200005740 | S.COIL      | ELJRE 47NG-F                   |
| L17     | 6200007170 | S.COIL      | MLF1608A 3R3K-T                |
| L20     | 6200005740 | S.COIL      | ELJRE 47NG-F                   |
| L21     | 6150004840 | S.COIL      | LS-510                         |
| L28     | 6200008090 | S.COIL      | LQW2BHN68NJ01L (LQN21A 68NJ04) |
| L39     | 6200005730 | S.COIL      | ELJRE 39NG-F                   |
| L40     | 6200005650 | S.COIL      | ELJRE 8N2Z-F                   |
| L41     | 6200006980 | S.COIL      | ELJRE R10G-F                   |
| L42     | 6200005630 | S.COIL      | ELJRE 5N6Z-F                   |
| L43     | 6200005620 | S.COIL      | ELJRE 4N7Z-F                   |
| L44     | 6200005620 | S.COIL      | ELJRE 4N7Z-F                   |
| L45     | 6200007670 | S.COIL      | LQW2BHN10NJ01L (LQN21A 10NJ04) |
| L50     | 6200005710 | S.COIL      | ELJRE 27NG-F                   |
| L51     | 6200005690 | S.COIL      | ELJRE 18NG-F                   |
| L52     | 6200005690 | S.COIL      | ELJRE 18NG-F                   |
| L53     | 6200005670 | S.COIL      | ELJRE 12NG-F                   |
| L54     | 6200005670 | S.COIL      | ELJRE 12NG-F                   |
| L55     | 6200005660 | S.COIL      | ELJRE 10NG-F                   |
| L56     | 6200005640 | S.COIL      | ELJRE 6N8Z-F                   |
| L57     | 6200005740 | S.COIL      | ELJRE 47NG-F                   |
| L58     | 6200006990 | S.COIL      | ELJRE 56NG-F                   |
| L59     | 6200006990 | S.COIL      | ELJRE 56NG-F                   |
| L60     | 6200008570 | S.COIL      | LQW2BHN6N8D01L (LQN21A 6N8D04) |
| L61     | 6200008570 | S.COIL      | LQW2BHN6N8D01L (LQN21A 6N8D04) |
| L62     | 6200008510 | S.COIL      | 0.30-0.9-4TR 10.5N             |
| L63     | 6200008490 | S.COIL      | 0.30-0.9-3TR 7.5N              |
| L68     | 6910011690 | S.COIL      | ACB1608M-600-T                 |
| L69     | 6200005700 | S.COIL      | ELJRE 22NG-F                   |
| L70     | 6200004720 | S.COIL      | MLF1608D R10K-T                |
| L73     | 6200006960 | S.COIL      | MLF1608A 2R7K-T                |
| L74     | 6200005740 | S.COIL      | ELJRE 47NG-F                   |
| L77     | 6200005650 | S.COIL      | ELJRE 8N2Z-F                   |
| L80     | 6200005630 | S.COIL      | ELJRE 5N6Z-F                   |
| L81     | 6200004940 | S.COIL      | MLF1608D R27K-T                |
| L82     | 6200005140 | S.COIL      | MLF1608D R33K-T                |
| L83     | 6200004790 | S.COIL      | MLF1608D R47K-T                |
| L84     | 6200004790 | S.COIL      | MLF1608D R47K-T                |
| L85     | 6200006970 | S.COIL      | MLF1608A 3R9K-T                |
| L86     | 6200004790 | S.COIL      | MLF1608D R47K-T                |
| L87     | 6200003630 | S.COIL      | MLF1608D R68K-T                |
| L88     | 6200007170 | S.COIL      | MLF1608A 3R3K-T                |
| L89     | 6200007170 | S.COIL      | MLF1608A 3R3K-T                |
| L90     | 6200002040 | S.COIL      | NL 252018T-101J                |
| L91     | 6200006970 | S.COIL      | MLF1608A 3R9K-T                |
| L92     | 6200005180 | S.COIL      | MLF1608D R39K-T                |
| R1      | 7030007280 | S.RESISTOR  | ERJ2GEJ 331 X (330 Ω)          |
| R4      | 7030007280 | S.RESISTOR  | ERJ2GEJ 331 X (330 Ω)          |
| R5      | 7030005290 | S.RESISTOR  | ERJ2GEJ 682 X (6.8 kΩ)         |
| R6      | 7030005710 | S.RESISTOR  | ERJ2GEJ 121 X (120 Ω)          |
| R8      | 7030007340 | S.RESISTOR  | ERJ2GEJ 153 X (15 kΩ)          |
| R9      | 7030005290 | S.RESISTOR  | ERJ2GEJ 682 X (6.8 kΩ)         |
| R10     | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)          |
| R11     | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)          |
| R13     | 7030007340 | S.RESISTOR  | ERJ2GEJ 153 X (15 kΩ)          |
| R14     | 7030005290 | S.RESISTOR  | ERJ2GEJ 682 X (6.8 kΩ)         |
| R15     | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)          |
| R16     | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)          |
| R18     | 7030007340 | S.RESISTOR  | ERJ2GEJ 153 X (15 kΩ)          |
| R19     | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)          |
| R20     | 7030005710 | S.RESISTOR  | ERJ2GEJ 121 X (120 Ω)          |
| R26     | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)          |
| R27     | 7030005220 | S.RESISTOR  | ERJ2GEJ 223 X (22 kΩ)          |
| R28     | 7030005160 | S.RESISTOR  | ERJ2GEJ 105 X (1 MΩ)           |
| R29     | 7030005170 | S.RESISTOR  | ERJ2GEJ 474 X (470 kΩ)         |
| R30     | 7030005030 | S.RESISTOR  | ERJ2GEJ 152 X (1.5 kΩ)         |
| R31     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)           |
| R34     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)           |
| R35     | 7030007340 | S.RESISTOR  | ERJ2GEJ 153 X (15 kΩ)          |
| R36     | 7030005290 | S.RESISTOR  | ERJ2GEJ 682 X (6.8 kΩ)         |
| R37     | 7030005030 | S.RESISTOR  | ERJ2GEJ 152 X (1.5 kΩ)         |
| R38     | 7030004980 | S.RESISTOR  | ERJ2GEJ 101 X (100 Ω)          |
| R39     | 7030005090 | S.RESISTOR  | ERJ2GEJ 104 X (100 kΩ)         |
| R40     | 7030005090 | S.RESISTOR  | ERJ2GEJ 104 X (100 kΩ)         |
| R41     | 7030004980 | S.RESISTOR  | ERJ2GEJ 101 X (100 Ω)          |
| R42     | 7030004980 | S.RESISTOR  | ERJ2GEJ 101 X (100 Ω)          |
| R43     | 7030004980 | S.RESISTOR  | ERJ2GEJ 101 X (100 Ω)          |
| R46     | 7030007340 | S.RESISTOR  | ERJ2GEJ 153 X (15 kΩ)          |
| R49     | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)          |
| R50     | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)          |

## [RF UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION |                        |
|---------|------------|-------------|------------------------|
| R54     | 7030005220 | S.RESISTOR  | ERJ2GEJ 223 X (22 kΩ)  |
| R55     | 7030007300 | S.RESISTOR  | ERJ2GEJ 332 X (3.3 kΩ) |
| R56     | 7030005000 | S.RESISTOR  | ERJ2GEJ 471 X (470 Ω)  |
| R57     | 7030007340 | S.RESISTOR  | ERJ2GEJ 153 X (15 kΩ)  |
| R58     | 7030005010 | S.RESISTOR  | ERJ2GEJ 681 X (680 Ω)  |
| R59     | 7030005030 | S.RESISTOR  | ERJ2GEJ 152 X (1.5 kΩ) |
| R60     | 7030005090 | S.RESISTOR  | ERJ2GEJ 104 X (100 kΩ) |
| R61     | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| R62     | 7030005570 | S.RESISTOR  | ERJ2GEJ 820 X (82 kΩ)  |
| R64     | 7030009280 | S.RESISTOR  | ERJ2GE                 |
| R65     | 7030009290 | S.RESISTOR  | ERJ2GEJ 562 X (5.6 kΩ) |
| R66     | 7030005220 | S.RESISTOR  | ERJ2GEJ 223 X (22 kΩ)  |
| R67     | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R68     | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| R78     | 7030007280 | S.RESISTOR  | ERJ2GEJ 331 X (330 Ω)  |
| R79     | 7030005040 | S.RESISTOR  | ERJ2GEJ 472 X (4.7 kΩ) |
| R81     | 7030007290 | S.RESISTOR  | ERJ2GEJ 222 X (2.2 kΩ) |
| R88     | 7030007280 | S.RESISTOR  | ERJ2GEJ 331 X (330 Ω)  |
| R89     | 7030005040 | S.RESISTOR  | ERJ2GEJ 472 X (4.7 kΩ) |
| R91     | 7030007290 | S.RESISTOR  | ERJ2GEJ 222 X (2.2 kΩ) |
| R93     | 7030005710 | S.RESISTOR  | ERJ2GEJ 121 X (120 Ω)  |
| R95     | 7030007290 | S.RESISTOR  | ERJ2GEJ 222 X (2.2 kΩ) |
| R98     | 7030007290 | S.RESISTOR  | ERJ2GEJ 222 X (2.2 kΩ) |
| R99     | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R100    | 7030008010 | S.RESISTOR  | ERJ2GEJ 123 X (12 kΩ)  |
| R101    | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| R102    | 7030007290 | S.RESISTOR  | ERJ2GEJ 222 X (2.2 kΩ) |
| R103    | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R104    | 7030005040 | S.RESISTOR  | ERJ2GEJ 472 X (4.7 kΩ) |
| R105    | 7030005590 | S.RESISTOR  | ERJ2GEJ 680 X (68 Ω)   |
| R106    | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| R108    | 7030007290 | S.RESISTOR  | ERJ2GEJ 222 X (2.2 kΩ) |
| R110    | 7030008010 | S.RESISTOR  | ERJ2GEJ 123 X (12 kΩ)  |
| R112    | 7030007290 | S.RESISTOR  | ERJ2GEJ 222 X (2.2 kΩ) |
| R116    | 7030005100 | S.RESISTOR  | ERJ2GEJ 154 X (150 kΩ) |
| R120    | 7030005040 | S.RESISTOR  | ERJ2GEJ 472 X (4.7 kΩ) |
| R121    | 7030007280 | S.RESISTOR  | ERJ2GEJ 331 X (330 Ω)  |
| R123    | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| R124    | 7030005710 | S.RESISTOR  | ERJ2GEJ 121 X (120 Ω)  |
| R125    | 7030005290 | S.RESISTOR  | ERJ2GEJ 682 X (6.8 kΩ) |
| R128    | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R129    | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R130    | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R131    | 7030005220 | S.RESISTOR  | ERJ2GEJ 223 X (22 kΩ)  |
| R132    | 7030005220 | S.RESISTOR  | ERJ2GEJ 223 X (22 kΩ)  |
| R133    | 7030005040 | S.RESISTOR  | ERJ2GEJ 472 X (4.7 kΩ) |
| R134    | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R135    | 7030005040 | S.RESISTOR  | ERJ2GEJ 472 X (4.7 kΩ) |
| R136    | 7030004980 | S.RESISTOR  | ERJ2GEJ 101 X (100 Ω)  |
| R147    | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R151    | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R152    | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R154    | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R156    | 7030009140 | S.RESISTOR  | ERJ2GEJ 272 X (2.7 kΩ) |
| R159    | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R160    | 7030009140 | S.RESISTOR  | ERJ2GEJ 272 X (2.7 kΩ) |
| R162    | 7030005290 | S.RESISTOR  | ERJ2GEJ 682 X (6.8 kΩ) |
| R163    | 7030005710 | S.RESISTOR  | ERJ2GEJ 121 X (120 Ω)  |
| R169    | 7030007270 | S.RESISTOR  | ERJ2GEJ 151 X (150 Ω)  |
| R170    | 7030005080 | S.RESISTOR  | ERJ2GEJ 823 X (82 kΩ)  |
| R171    | 7030004990 | S.RESISTOR  | ERJ2GEJ 221 X (220 Ω)  |
| R172    | 7030007340 | S.RESISTOR  | ERJ2GEJ 153 X (15 kΩ)  |
| R174    | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R177    | 7030005090 | S.RESISTOR  | ERJ2GEJ 104 X (100 kΩ) |
| R179    | 7030007340 | S.RESISTOR  | ERJ2GEJ 153 X (15 kΩ)  |
| R187    | 7030009140 | S.RESISTOR  | ERJ2GEJ 272 X (2.7 kΩ) |
| R188    | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R196    | 7030007270 | S.RESISTOR  | ERJ2GEJ 151 X (150 Ω)  |
| R197    | 7030004990 | S.RESISTOR  | ERJ2GEJ 221 X (220 Ω)  |
| R198    | 7030005720 | S.RESISTOR  | ERJ2GEJ 563 X (56 kΩ)  |
| R199    | 7030008010 | S.RESISTOR  | ERJ2GEJ 123 X (12 kΩ)  |
| R200    | 7030008250 | S.RESISTOR  | RR0510P-562-D (5.6 kΩ) |
| R201    | 7030005820 | S.RESISTOR  | RR0510P-103-D (10 kΩ)  |
| R202    | 7030004990 | S.RESISTOR  | ERJ2GEJ 221 X (220 Ω)  |
| R203    | 7030005580 | S.RESISTOR  | ERJ2GEJ 560 X (56 Ω)   |
| R204    | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R205    | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R207    | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R208    | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R209    | 7030005030 | S.RESISTOR  | ERJ2GEJ 152 X (1.5 kΩ) |
| R210    | 7030007260 | S.RESISTOR  | ERJ2GEJ 330 X (33 Ω)   |
| R215    | 7030007260 | S.RESISTOR  | ERJ2GEJ 330 X (33 Ω)   |

S.=Surface mount

## [RF UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION |                        |
|---------|------------|-------------|------------------------|
| R216    | 7030007290 | S.RESISTOR  | ERJ2GEJ 222 X (2.2 kΩ) |
| R220    | 7030005300 | S.RESISTOR  | ERJ2GEJ 150 X (15 Ω)   |
| R221    | 7030007280 | S.RESISTOR  | ERJ2GEJ 331 X (330 Ω)  |
| R222    | 7030007290 | S.RESISTOR  | ERJ2GEJ 222 X (2.2 kΩ) |
| R223    | 7030007290 | S.RESISTOR  | ERJ2GEJ 222 X (2.2 kΩ) |
| R224    | 7030007300 | S.RESISTOR  | ERJ2GEJ 332 X (3.3 kΩ) |
| R225    | 7030007290 | S.RESISTOR  | ERJ2GEJ 222 X (2.2 kΩ) |
| R226    | 7030007290 | S.RESISTOR  | ERJ2GEJ 222 X (2.2 kΩ) |
| R228    | 7030004980 | S.RESISTOR  | ERJ2GEJ 101 X (100 Ω)  |
| R229    | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| R230    | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R231    | 7030005040 | S.RESISTOR  | ERJ2GEJ 472 X (4.7 kΩ) |
| R232    | 7030007280 | S.RESISTOR  | ERJ2GEJ 331 X (330 Ω)  |
| R233    | 7030005570 | S.RESISTOR  | ERJ2GEJ 820 X (82 Ω)   |
| R234    | 7030005570 | S.RESISTOR  | ERJ2GEJ 820 X (82 Ω)   |
| R235    | 7030005030 | S.RESISTOR  | ERJ2GEJ 152 X (1.5 kΩ) |
| R236    | 7030005050 | S.RESISTOR  | ERJ2GEJ 103 X (10 kΩ)  |
| R237    | 7030009140 | S.RESISTOR  | ERJ2GEJ 272 X (2.7 kΩ) |
| R238    | 7030005090 | S.RESISTOR  | ERJ2GEJ 104 X (100 kΩ) |
| R239    | 7030007290 | S.RESISTOR  | ERJ2GEJ 222 X (2.2 kΩ) |
| R240    | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R241    | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R243    | 7030005090 | S.RESISTOR  | ERJ2GEJ 104 X (100 kΩ) |
| R245    | 7030005220 | S.RESISTOR  | ERJ2GEJ 223 X (22 kΩ)  |
| R246    | 7030005290 | S.RESISTOR  | ERJ2GEJ 682 X (6.8 kΩ) |
| R247    | 7030004980 | S.RESISTOR  | ERJ2GEJ 101 X (100 Ω)  |
| R319    | 7030005300 | S.RESISTOR  | ERJ2GEJ 150 X (15 Ω)   |
| R320    | 7030005300 | S.RESISTOR  | ERJ2GEJ 150 X (15 Ω)   |
| R321    | 7030007260 | S.RESISTOR  | ERJ2GEJ 330 X (33 Ω)   |
| R323    | 7030005710 | S.RESISTOR  | ERJ2GEJ 121 X (120 Ω)  |
| R324    | 7030005570 | S.RESISTOR  | ERJ2GEJ 820 X (82 Ω)   |
| R325    | 7030004980 | S.RESISTOR  | ERJ2GEJ 101 X (100 Ω)  |
| R326    | 7030005570 | S.RESISTOR  | ERJ2GEJ 820 X (82 Ω)   |
| R327    | 7030005030 | S.RESISTOR  | ERJ2GEJ 152 X (1.5 kΩ) |
| R329    | 7030005090 | S.RESISTOR  | ERJ2GEJ 104 X (100 kΩ) |
| R330    | 7030007340 | S.RESISTOR  | ERJ2GEJ 153 X (15 kΩ)  |
| R331    | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R332    | 7030005120 | S.RESISTOR  | ERJ2GEJ 102 X (1 kΩ)   |
| R334    | 7030005220 | S.RESISTOR  | ERJ2GEJ 223 X (22 kΩ)  |
| R335    | 7030005240 | S.RESISTOR  | ERJ2GEJ 473 X (47 kΩ)  |
| C1      | 4030017670 | S.CERAMIC   | ECJ0EC1H390J           |
| C2      | 4030011810 | S.CERAMIC   | C1608 JB 1A 224K-T     |
| C5      | 4030017730 | S.CERAMIC   | ECJ0EB1E471K           |
| C8      | 4030017390 | S.CERAMIC   | ECJ0EC1H180J           |
| C9      | 4030017560 | S.CERAMIC   | ECJ0EC1H2R5B           |
| C10     | 4030017550 | S.CERAMIC   | ECJ0EC1H1R5B           |
| C11     | 4030017400 | S.CERAMIC   | ECJ0EC1H220J           |
| C12     | 4030017420 | S.CERAMIC   | ECJ0EC1H470J           |
| C13     | 4030017650 | S.CERAMIC   | ECJ0EC1H270J           |
| C14     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C15     | 4030017340 | S.CERAMIC   | ECJ0EC1H010B           |
| C16     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C18     | 4030016790 | S.CERAMIC   | ECJ0EB1C103K           |
| C19     | 4030017630 | S.CERAMIC   | ECJ0EC1H120J           |
| C20     | 4030017660 | S.CERAMIC   | ECJ0EC1H330J           |
| C21     | 4030017360 | S.CERAMIC   | ECJ0EC1H030B           |
| C22     | 4030017590 | S.CERAMIC   | ECJ0EC1H070C           |
| C23     | 4030017380 | S.CERAMIC   | ECJ0EC1H050B           |
| C27     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C28     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C30     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C32     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K           |
| C33     | 4030017660 | S.CERAMIC   | ECJ0EC1H330J           |
| C35     | 4030017620 | S.CERAMIC   | ECJ0EC1H100C           |
| C36     | 4030017620 | S.CERAMIC   | ECJ0EC1H100C           |
| C37     | 4030017560 | S.CERAMIC   | ECJ0EC1H2R5B           |
| C39     | 4030017570 | S.CERAMIC   | ECJ0EC1H040B           |
| C40     | 4030017640 | S.CERAMIC   | ECJ0EC1H150J           |
| C41     | 4030017380 | S.CERAMIC   | ECJ0EC1H050B           |
| C42     | 4030017370 | S.CERAMIC   | ECJ0EC1H3R5B           |
| C43     | 4030017430 | S.CERAMIC   | ECJ0EC1H101J           |
| C44     | 4030016790 | S.CERAMIC   | ECJ0EB1C103K           |
| C45     | 4030016790 | S.CERAMIC   | ECJ0EB1C103K           |
| C46     | 4030017360 | S.CERAMIC   | ECJ0EC1H030B           |
| C47     | 4030017580 | S.CERAMIC   | ECJ0EC1H060C           |
| C48     | 4030017580 | S.CERAMIC   | ECJ0EC1H060C           |
| C49     | 4030017360 | S.CERAMIC   | ECJ0EC1H030B           |
| C50     | 4030017340 | S.CERAMIC   | ECJ0EC1H010B           |
| C51     | 4030017360 | S.CERAMIC   | ECJ0EC1H030B           |
| C52     | 4030017730 | S.CERAMIC   | ECJ0EB1E471K           |

## [RF UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION |                    |
|---------|------------|-------------|--------------------|
| C54     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C55     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C58     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C59     | 4030017350 | S.CERAMIC   | ECJ0EC1H020B       |
| C60     | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C61     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C62     | 4550006200 | S.TANTALUM  | ECST0JY106R        |
| C63     | 4030017700 | S.CERAMIC   | ECJ0EC1H151J       |
| C64     | 4030017640 | S.CERAMIC   | ECJ0EC1H150J       |
| C65     | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C66     | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C67     | 4030017660 | S.CERAMIC   | ECJ0EC1H330J       |
| C69     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C70     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C71     | 4030017360 | S.CERAMIC   | ECJ0EC1H030B       |
| C73     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C74     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C75     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C78     | 4550006910 | S.TANTALUM  | TESVSP 1C 334M-8R  |
| C79     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C80     | 4030017420 | S.CERAMIC   | ECJ0EC1H470J       |
| C81     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C82     | 4550006200 | S.TANTALUM  | ECST0JY106R        |
| C84     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C85     | 4030017390 | S.CERAMIC   | ECJ0EC1H130J       |
| C86     | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C87     | 4030017420 | S.CERAMIC   | ECJ0EC1H470J       |
| C88     | 4030017420 | S.CERAMIC   | ECJ0EC1H470J       |
| C89     | 4030017420 | S.CERAMIC   | ECJ0EC1H470J       |
| C90     | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C92     | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C93     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C94     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C95     | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C96     | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C97     | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C98     | 4030017730 | S.CERAMIC   | ECJ0EB1E471K       |
| C99     | 4030017730 | S.CERAMIC   | ECJ0EB1E471K       |
| C100    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C101    | 4030017620 | S.CERAMIC   | ECJ0EC1H100C       |
| C102    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C103    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C104    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C105    | 4550003220 | S.TANTALUM  | TEMSVA 1E 105M-8L  |
| C106    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C107    | 4030011810 | S.CERAMIC   | C1608 JB 1A 224K-T |
| C108    | 4030011810 | S.CERAMIC   | C1608 JB 1A 224K-T |
| C118    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C119    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C121    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C134    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C135    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C136    | 4030017590 | S.CERAMIC   | ECJ0EC1H070C       |
| C138    | 4030017730 | S.CERAMIC   | ECJ0EB1E471K       |
| C139    | 4030017620 | S.CERAMIC   | ECJ0EC1H100C       |
| C141    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C142    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C145    | 4030017730 | S.CERAMIC   | ECJ0EB1E471K       |
| C147    | 4030017560 | S.CERAMIC   | ECJ0EC1H2R5B       |
| C148    | 4030017730 | S.CERAMIC   | ECJ0EB1E471K       |
| C150    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C151    | 4030017570 | S.CERAMIC   | ECJ0EC1H040B       |
| C153    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C154    | 4030017620 | S.CERAMIC   | ECJ0EC1H100C       |
| C155    | 4030017380 | S.CERAMIC   | ECJ0EC1H050B       |
| C156    | 4030017550 | S.CERAMIC   | ECJ0EC1H1R5B       |
| C158    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C160    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C162    | 4550006200 | S.TANTALUM  | ECST0JY106R        |
| C163    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C164    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C165    | 4030017350 | S.CERAMIC   | ECJ0EC1H020B       |
| C166    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C167    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C168    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C169    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C170    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C171    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C172    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C173    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C174    | 4030017420 | S.CERAMIC   | ECJ0EC1H470J       |
| C175    | 4030017420 | S.CERAMIC   | ECJ0EC1H470J       |

S.=Surface mount

## [RF UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION |                    |
|---------|------------|-------------|--------------------|
| C176    | 4030017420 | S.CERAMIC   | ECJ0EC1H470J       |
| C178    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C180    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C182    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C183    | 4030017550 | S.CERAMIC   | ECJ0EC1H1R5B       |
| C186    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C188    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C190    | 4030017360 | S.CERAMIC   | ECJ0EC1H030B       |
| C191    | 4030017570 | S.CERAMIC   | ECJ0EC1H040B       |
| C192    | 4030017590 | S.CERAMIC   | ECJ0EC1H070C       |
| C193    | 4030017630 | S.CERAMIC   | ECJ0EC1H120J       |
| C194    | 4030017670 | S.CERAMIC   | ECJ0EC1H390J       |
| C195    | 4030017550 | S.CERAMIC   | ECJ0EC1H1R5B       |
| C196    | 4030017360 | S.CERAMIC   | ECJ0EC1H030B       |
| C197    | 4030017380 | S.CERAMIC   | ECJ0EC1H050B       |
| C198    | 4030017610 | S.CERAMIC   | ECJ0EC1H090C       |
| C199    | 4030017650 | S.CERAMIC   | ECJ0EC1H270J       |
| C200    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C201    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C202    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C203    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C206    | 4030017370 | S.CERAMIC   | ECJ0EC1H3R5B       |
| C207    | 4030017660 | S.CERAMIC   | ECJ0EC1H330J       |
| C208    | 4030017420 | S.CERAMIC   | ECJ0EC1H470J       |
| C209    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C210    | 4550000530 | S.TANTALUM  | TESVA 1V 104M1-8L  |
| C211    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C214    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C216    | 4030017630 | S.CERAMIC   | ECJ0EC1H120J       |
| C218    | 4030017340 | S.CERAMIC   | ECJ0EC1H010B       |
| C221    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C233    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C234    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C235    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C236    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C237    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C239    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C241    | 4030011810 | S.CERAMIC   | C1608 JB 1A 224K-T |
| C242    | 4030011810 | S.CERAMIC   | C1608 JB 1A 224K-T |
| C243    | 4030017390 | S.CERAMIC   | ECJ0EC1H180J       |
| C244    | 4030017380 | S.CERAMIC   | ECJ0EC1H050B       |
| C248    | 4550003220 | S.TANTALUM  | TEMSVA 1E 105M-8L  |
| C249    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C250    | 4030017600 | S.CERAMIC   | ECJ0EC1H080C       |
| C251    | 4030017570 | S.CERAMIC   | ECJ0EC1H040B       |
| C252    | 4030017600 | S.CERAMIC   | ECJ0EC1H080C       |
| C256    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C257    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C258    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C259    | 4030017430 | S.CERAMIC   | ECJ0EC1H101J       |
| C264    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C402    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C410    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C414    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C416    | 4030017650 | S.CERAMIC   | ECJ0EC1H270J       |
| C417    | 4030017420 | S.CERAMIC   | ECJ0EC1H470J       |
| C423    | 4550003220 | S.TANTALUM  | TEMSVA 1E 105M-8L  |
| C424    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C427    | 4030017400 | S.CERAMIC   | ECJ0EC1H220J       |
| C429    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C430    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C431    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C432    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C433    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C434    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C435    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C436    | 4030017360 | S.CERAMIC   | ECJ0EC1H030B       |
| C503    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C504    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C505    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C507    | 4030017700 | S.CERAMIC   | ECJ0EC1H151J       |
| C510    | 4030017350 | S.CERAMIC   | ECJ0EC1H020B       |
| C511    | 4030017660 | S.CERAMIC   | ECJ0EC1H330J       |
| C512    | 4030017660 | S.CERAMIC   | ECJ0EC1H330J       |
| C513    | 4030017680 | S.CERAMIC   | ECJ0EC1H820J       |
| C514    | 4030017700 | S.CERAMIC   | ECJ0EC1H151J       |
| C515    | 4030017430 | S.CERAMIC   | ECJ0EC1H101J       |
| C516    | 4030017440 | S.CERAMIC   | ECJ0EC1H221J       |
| C517    | 4030017710 | S.CERAMIC   | ECJ0EC1H181J       |
| C518    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C519    | 4030017910 | S.CERAMIC   | ECJ0EB1H152K       |
| C520    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |

## [RF UNIT]

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|---------|------------|-------------|--------------------|
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| C522    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C523    | 4030017910 | S.CERAMIC   | ECJ0EB1H152K       |
| C524    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C525    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C526    | 4030016940 | S.CERAMIC   | ECJ0EB1A393K       |
| C527    | 4030017680 | S.CERAMIC   | ECJ0EC1H820J       |
| C528    | 4030017650 | S.CERAMIC   | ECJ0EC1H270J       |
| C529    | 4030017700 | S.CERAMIC   | ECJ0EC1H151J       |
| C530    | 4030017720 | S.CERAMIC   | ECJ0EB1H331K       |
| C531    | 4030017710 | S.CERAMIC   | ECJ0EC1H181J       |
| C532    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C534    | 4030017720 | S.CERAMIC   | ECJ0EB1H331K       |
| C535    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C536    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C537    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C538    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C539    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C540    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C541    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C542    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C543    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C544    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C545    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C546    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C548    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C550    | 4030017600 | S.CERAMIC   | ECJ0EC1H080C       |
| C554    | 4030017420 | S.CERAMIC   | ECJ0EC1H470J       |
| C558    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C560    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C561    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C562    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C563    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C566    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C567    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C568    | 4030017420 | S.CERAMIC   | ECJ0EC1H470J       |
| C569    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C570    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C571    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C654    | 4030011810 | S.CERAMIC   | C1608 JB 1A 224K-T |
| C655    | 4550000510 | S.TANTALUM  | TESVA 1V 473M1-8L  |
| C656    | 4030017600 | S.CERAMIC   | ECJ0EC1H080C       |
| C657    | 4030018100 | S.CERAMIC   | ECJ0EB1H681K       |
| C658    | 4030017760 | S.CERAMIC   | ECJ0EB1H222K       |
| C659    | 4550006200 | S.TANTALUM  | ECST0JY106R        |
| C662    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C663    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C664    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C665    | 4030017430 | S.CERAMIC   | ECJ0EC1H101J       |
| C666    | 4030018140 | S.CERAMIC   | ECJ0EB1H391K       |
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| C668    | 4030016790 | S.CERAMIC   | ECJ0EB1C103K       |
| C669    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C671    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C672    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
| C673    | 4030017460 | S.CERAMIC   | ECJ0EB1E102K       |
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| C675    | 4030016930 | S.CERAMIC   | ECJ0EB1A104K       |
| C676    | 4030017400 | S.CERAMIC   | ECJ0EC1H220J       |
| J1      | 6510020120 | S.CONNECTOR | AXK6S40545P        |
| EP1     | 0910055732 | PCB         | B 5886B            |
| EP2     | 3310003010 | ANTENNA     | KY-058-006-2 <KAI> |

S.=Surface mount

# SECTION 7 MECHANICAL PARTS AND DISASSEMBLY

## 7-1 CABINET PARTS [CHASSIS PARTS]

| REF. NO. | ORDER NO.  | DESCRIPTION                | QTY. |
|----------|------------|----------------------------|------|
| J1       | 6510020951 | Connector SMA-R226-1       | 1    |
| SP1      | 2510000960 | Speaker K036NA500-26A27    | 1    |
| MP1      | 8210019070 | 2605 Front panel           | 1    |
| MP2      | 8210019152 | 1995 Rear panel (A)-2      | 1    |
| MP3      | 8110007841 | 1995 BATT cover (A)-1      | 1    |
| MP4      | 8930058320 | 2605 7-key                 | 1    |
| MP5      | 8930058410 | 2605 PTT rubber            | 1    |
| MP6      | 8930047610 | 2127 Jack cap              | 1    |
| MP7      | 8310054250 | 2605 Window plate          | 1    |
| MP8      | 8010019090 | 2605 Chassis               | 1    |
| MP9      | 8930011900 | Sheet SP net (A)           | 1    |
| MP10     | 8830000570 | Screw (A)                  | 1    |
| MP11     | 8830001090 | Screw (D)                  | 1    |
| MP13     | 8110007851 | 1995 Lock cover (A)-1      | 1    |
| MP14     | 8610010990 | Knob N-284                 | 1    |
| MP15     | 8930044250 | 1995 BATT seal             | 1    |
| MP17     | 8930044260 | 1995 A-terminal            | 1    |
| MP18     | 8930044270 | 1995 B-terminal            | 1    |
| MP19     | 8930044280 | 1995 C-terminal            | 1    |
| MP20     | 8860001101 | 1995 ANT rug-1             | 1    |
| MP22     | 8810008640 | Screw FH B0 2X4 NI-ZU (BT) | 3    |
| MP23     | 8810009560 | Screw PH B0 2X6 ZK (BT)    | 2    |
| MP24     | 8930019791 | 891 T-rubber-1             | 2    |
| MP26     | 8930058980 | Sponge (GY)                | 1    |
| MP28     | 8930058310 | 2605 DC cap                | 1    |

|                   |                         |                          |                          |
|-------------------|-------------------------|--------------------------|--------------------------|
| Optional products | Nicd cel P-3GPT/BA2     | [EXP] only               | 2                        |
| Optional products | Nicd cel P-3GPA/BA2     |                          | 2                        |
| Optional products | Nicd cel P-3GPA/BA2     | [USA], [CAN]             | 2                        |
| Optional products | Nicd cel KRO.7AAUR SAFT |                          | 2                        |
| Optional products | Nicd cel KRO.7AAUR SAFT | [FRA], [ESP]             | 2                        |
| EP1               | Optional products       | Antenna FA-270C          | 1                        |
| EP2               | Optional products       | Charger BC-149A          | [USA], [CAN] only        |
|                   | Optional products       | Charger BC-149D          | [EUR], [FRA], [ESP] only |
|                   | Optional products       | Charger BC-136A          | [EXP-01] only            |
|                   | Optional products       | Charger BC-136D          | [EXP-02] only            |
| EP3               | Optional products       | Bead ZCAT2436-1330A-BK-M | 1                        |
| MP1               | 8930044191              | Clip 1995 BELT CLIP-1    | 1                        |
| MP2               | 8010011960              | Handle Strap belt HK-005 | 1                        |

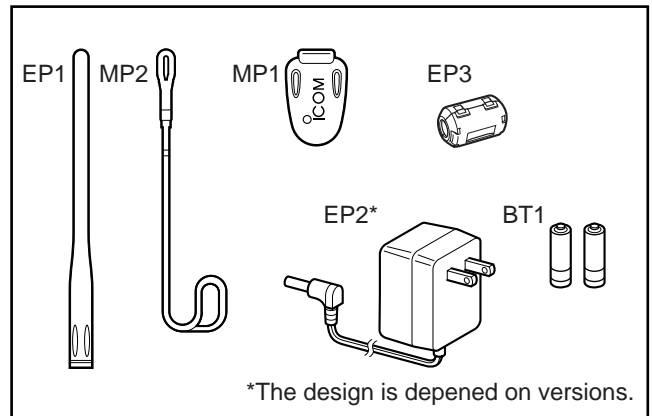
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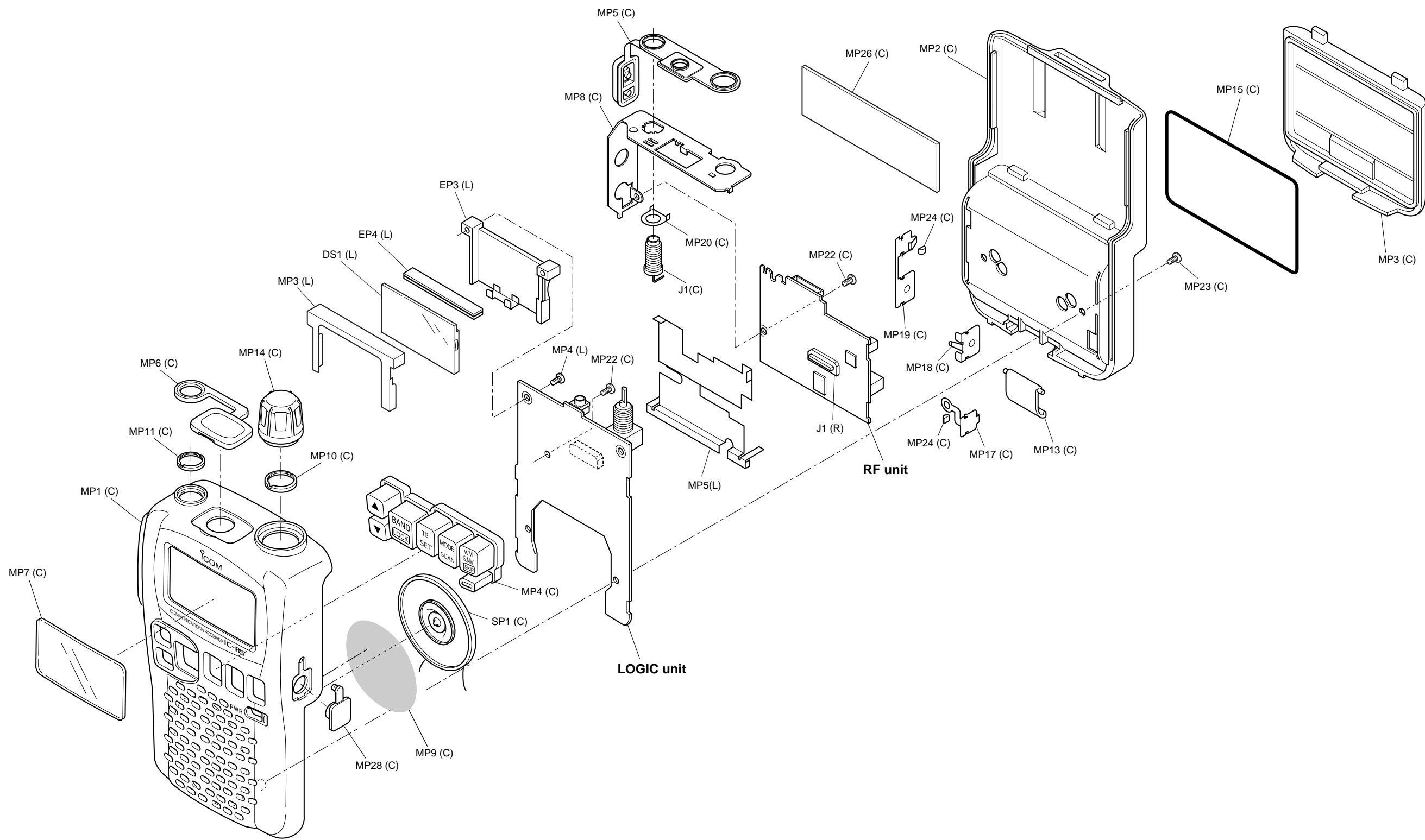
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|----------|------------|----------------------------|------|
| DS1      | 5030001990 | LCD TTR5169                | 1    |
| EP3      | 6910014600 | E.Other CV1071             | 1    |
| EP4      | 8930058920 | LCD contact                | 1    |
| MP3      | 8930058400 | 2605 LCD holder            | 1    |
| MP4      | 8810008640 | Screw FH B0 2X4 NI-ZU (BT) | 2    |
| MP5      | 8510014970 | 2605 Logic shield          | 1    |

## [RF UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION             | QTY. |
|----------|------------|-------------------------|------|
| J1       | 6510020120 | S.Connector AXK6S40545P | 1    |

**Screw abbreviations** A, B0, BT: Self-tapping  
 PH: Pan head  
 FH: Flat head  
 ZK: Black  
 NI-ZU: Nickel-Zinc

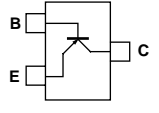
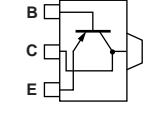
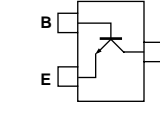
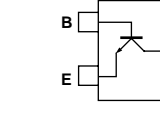
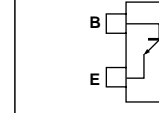
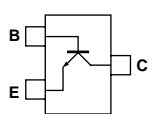
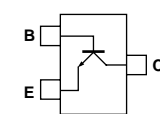
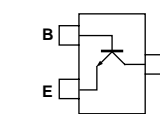
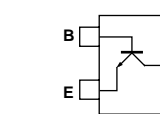
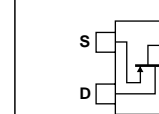
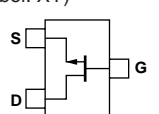
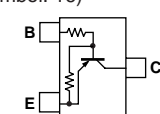
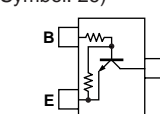
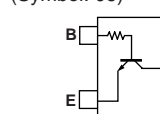
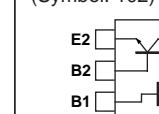
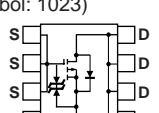
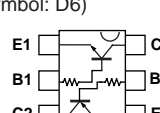
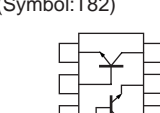
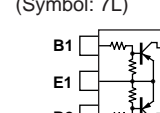
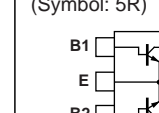
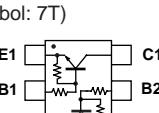
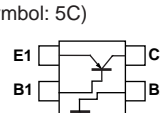
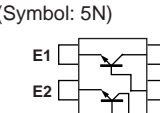




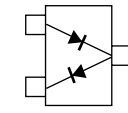
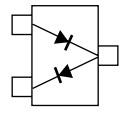
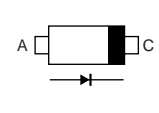
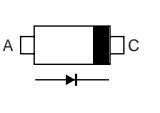
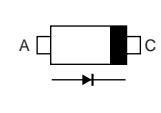
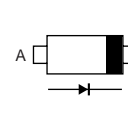
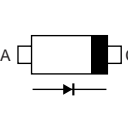
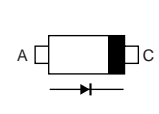
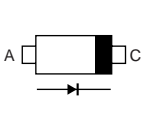
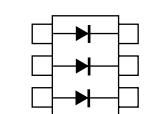
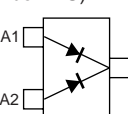
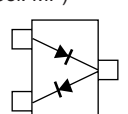
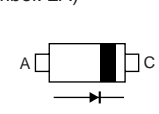
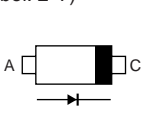
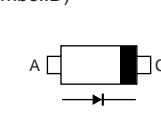
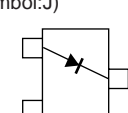
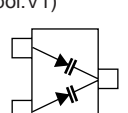
UNIT abbreviation (C): CHASSIS PARTS, (R): RF UNIT, (L): LOGIC UNIT

# SECTION 8 SEMI-CONDUCTOR INFORMATION

## TRANSISTOR AND FET'S

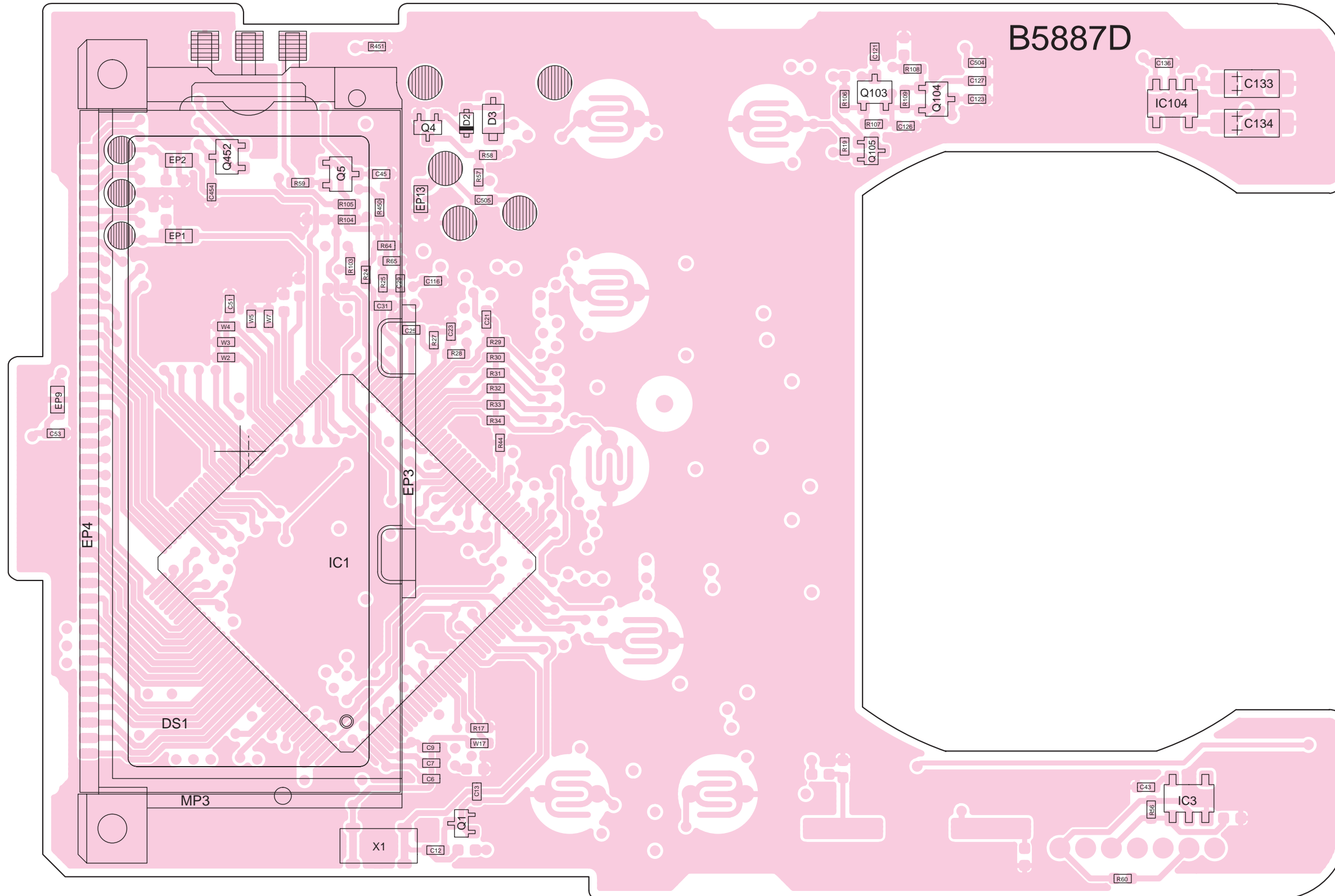
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|---|--|---|---|---|
| <b>2SA1588 GR</b><br>(Symbol: ZG)<br>  | <b>2SB1132 R</b><br>(Symbol: BAR)<br> | <b>2SC4081 S</b><br>(Symbol: BS)<br>   | <b>2SC4117 GR</b><br>(Symbol: DG)<br> | <b>2SC4215 O</b><br>(Symbol: QO)<br> |
| <b>2SC4617 S</b><br>(Symbol: BR)<br>   | <b>2SC5006</b><br>(Symbol: 24)<br>    | <b>2SC5231 C8</b><br>(Symbol: C8)<br>  | <b>2SC5277 D2</b><br>(Symbol: D2)<br> | <b>2SJ144 Y</b><br>(Symbol: VX)<br>  |
| <b>2SK880 Y</b><br>(Symbol: XY)<br>    | <b>DTA144 EE</b><br>(Symbol: 16)<br>  | <b>DTC144 EE</b><br>(Symbol: 26)<br>   | <b>DTC144 TE</b><br>(Symbol: 06)<br>  | <b>FH102</b><br>(Symbol: 102)<br>    |
| <b>HAT1023 R</b><br>(Symbol: 1023)<br> | <b>UMD6</b><br>(Symbol: D6)<br>       | $\mu$ PA805T<br>(Symbol: T82)<br>      | <b>XP1113</b><br>(Symbol: 7L)<br>     | <b>XP1501 AB</b><br>(Symbol: 5R)<br> |
| <b>XP4312</b><br>(Symbol: 7T)<br>    | <b>XP4601</b><br>(Symbol: 5C)<br>   | <b>XP6501 AB</b><br>(Symbol: 5N)<br> |   |   |

## • DIODES

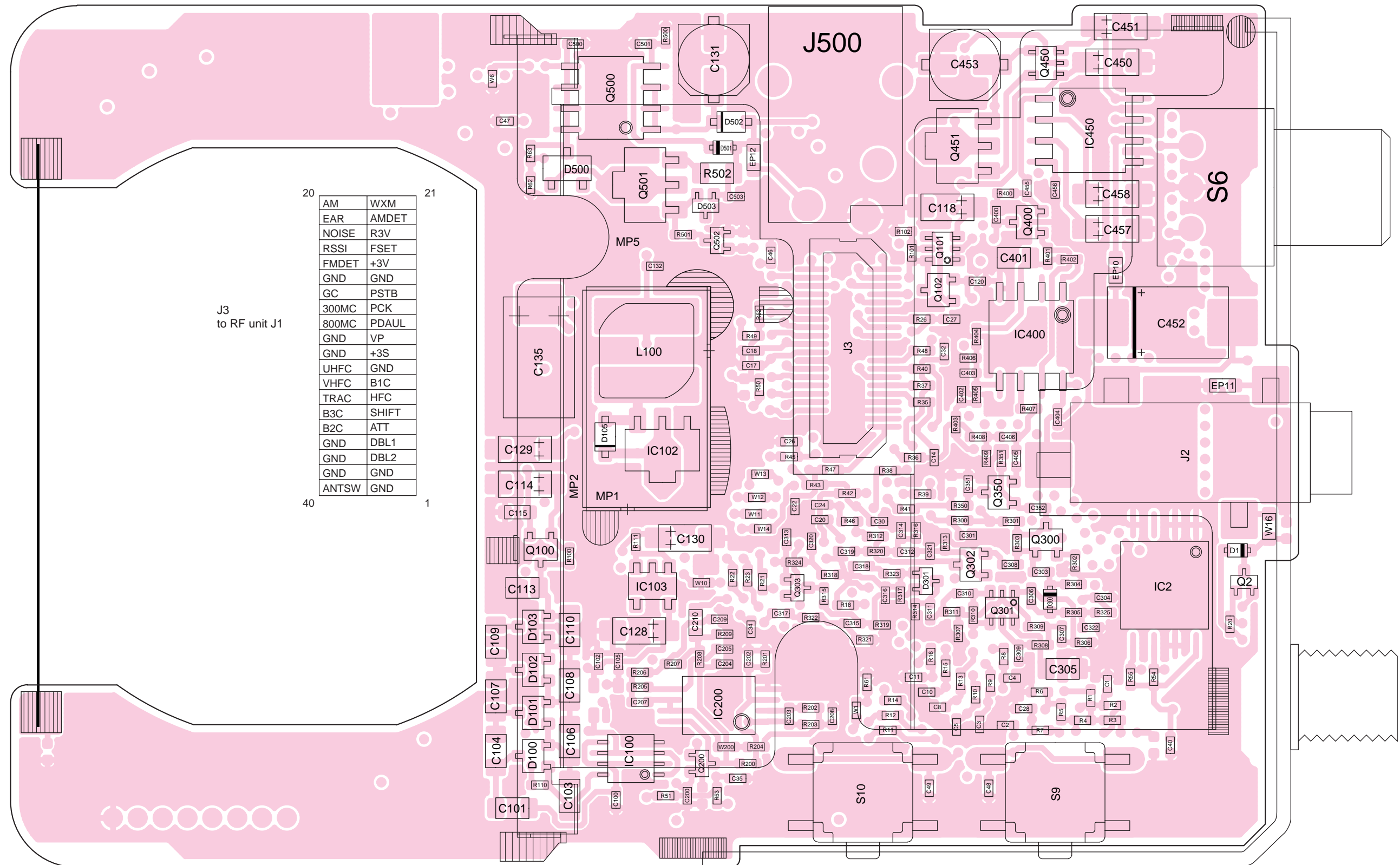
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|---|--|--|---|--|
| <b>1SS372</b><br>(Symbol: N9)<br>  | <b>1SV172</b><br>(Symbol: BE)<br> | <b>1SV286</b><br>(Symbol: T7)<br> | <b>1SV305</b><br>(Symbol: TV)<br>    | <b>1SV308</b><br>(Symbol: TX)<br>   |
| <b>HVU350B</b><br>(Symbol: BO)<br> | <b>MA2S077</b><br>(Symbol: S)<br> | <b>MA2S111</b><br>(Symbol: A)<br> | <b>MA2S728</b><br>(Symbol: B)<br>    | <b>MA6S718</b><br>(Symbol: M2N)<br> |
| <b>MA132WK</b><br>(Symbol: MU)<br> | <b>MA133</b><br>(Symbol: MP)<br>  | <b>MA728</b><br>(Symbol: 2A)<br>  | <b>MA8027 H</b><br>(Symbol: 2^7)<br> | <b>RB551V-30</b><br>(Symbol: D)<br> |
| <b>SB07-03C</b><br>(Symbol: J)<br> | <b>SVC347</b><br>(Symbol: V1)<br> |  |   |  |

# SECTION 9 BOARD LAYOUTS

## 9 - 1 LOGIC UNIT • TOP VIEW

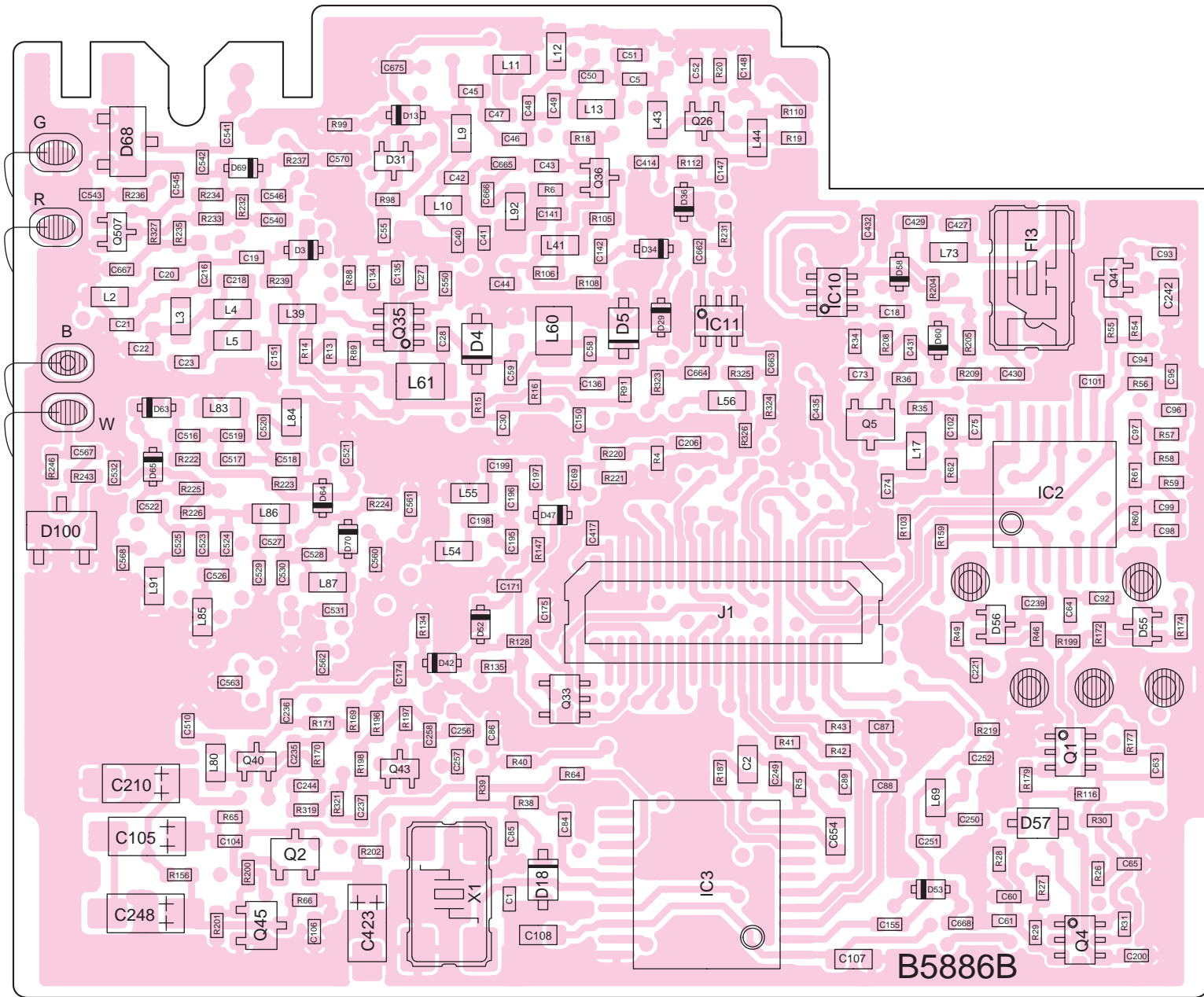


• BOTTOM VIEW





9 - 2 RF UNIT  
• TOP VIEW

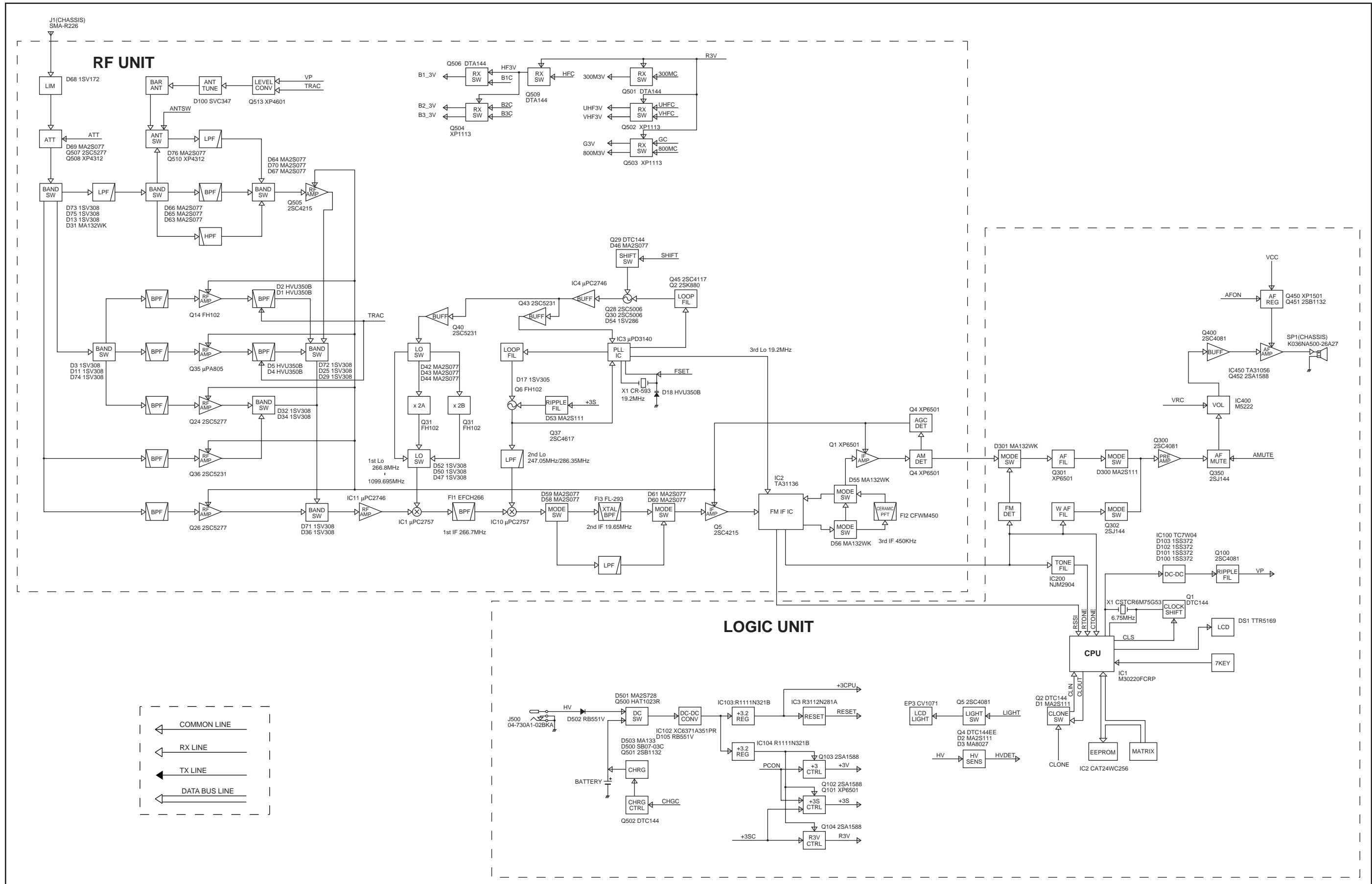


|       |        |    |
|-------|--------|----|
| 1     | ANTSW  | 20 |
| GND   | GND    |    |
| GND   | GND    |    |
| DBL2  | GND    |    |
| DBL1  | GND    |    |
| ATT   | R2C    |    |
| SHIFT | R3C    |    |
| HFC   | TRAC   |    |
| B1C   | VHFC   |    |
| GND   | UHFC   |    |
| +3S   | GND    |    |
| VP    | GND    |    |
| PDAUL | 800MC  |    |
| PCK   | 300MC  |    |
| PSTB  | GC     |    |
| GND   | GND    |    |
| +3V   | FMDDET |    |
| FSET  | RSSI   |    |
| R3V   | NOISE  |    |
| AMDET | EAR    |    |
| WFM   | AM     |    |
| 40    |        | 21 |

J1  
to Logic unit J3

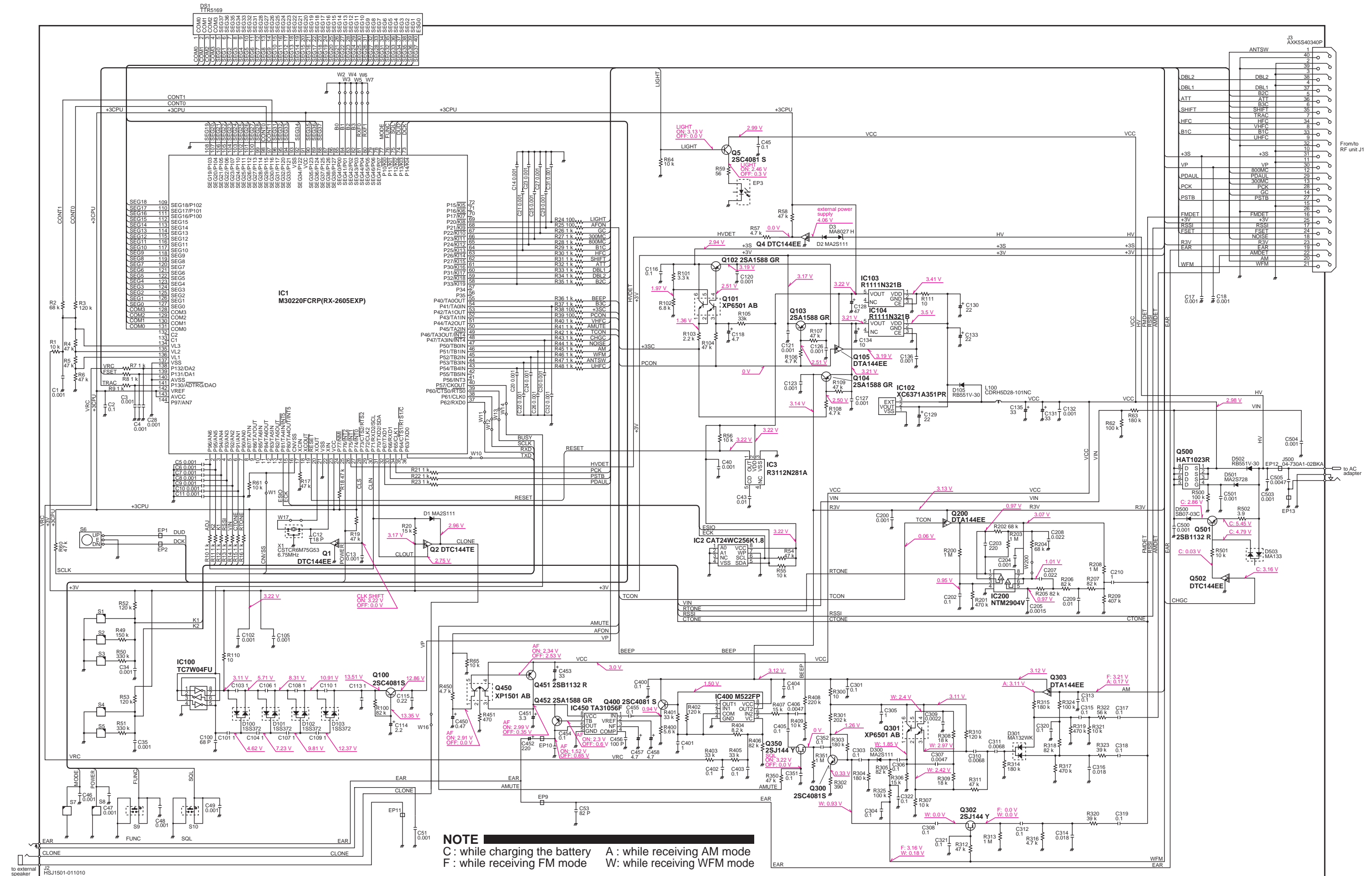


# SECTION 10 BLOCK DIAGRAM



# SECTION 11 VOLTAGE DIAGRAM

## • LOGIC UNIT







**Count on us!**

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