

**BIIS 1200**  
**Compatible**

**iCOM<sup>®</sup>**

**SERVICE  
MANUAL**

VHF FM TRANSCEIVER

**IC-F1610**

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Icom Inc.

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## INTRODUCTION

This service manual describes the latest service information for the **IC-F1610** VHF FM TRANSCEIVER at the time of publication.

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

## DANGER

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

**DO NOT** expose the transceiver to rain, snow or any liquids. **DO NOT** reverse the polarities of the power supply when connecting the transceiver.

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

MODEL	VERSION	FREQ.RANGE (MHz)	TX PWR (W)	CH. SPACING (kHz)	UNIT* <sup>1</sup>	SPEAKER* <sup>1</sup>	MEMORY* <sup>1</sup>
IC-F1610	EUR-7	136-155	25/10/2	25/12.5	None	None	None
	EUR-8	146-174					
	EUR-9		10/5/2				
	EUR-10	136-155	25/10/2				
	EUR-11	146-174	10/5/2		UT-96* <sup>2</sup>	SP-22	
	EUR-12						
	EUR-13		20/12.5				
	EUR-02		25/12.5		None	None	
	FRG-02		20/12.5				
	EUR-72		25/12.5				
	FRG-72	20/12.5	UT-103* <sup>3</sup>		SP-22	EX-1761	

\*<sup>1</sup>: Accessories    \*<sup>2</sup>: Same as that supplied with the [5-tone] version    \*<sup>3</sup>: Same as that supplied with the [BIIS] version



## ORDERING PARTS

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

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

### <SAMPLE ORDER>

1110003571 S.IC MC3372SVM IC-F1610 MAIN UNIT 5 pieces  
8810009370 Screw PH BT M3x12 ZK IC-F1610 Bottom cover 10 pieces

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

## REPAIR NOTES

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

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## EXPLICIT DEFINITIONS

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### FREQUENCY COVERAGE

Lo-band	136–155 MHz
Hi-band	146–174 MHz

### CHANNEL SPACING

Narrow/Wide-type	12.5/25 kHz
Narrow/Middle-type	12.5/20 kHz

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## TABLE OF CONTENTS

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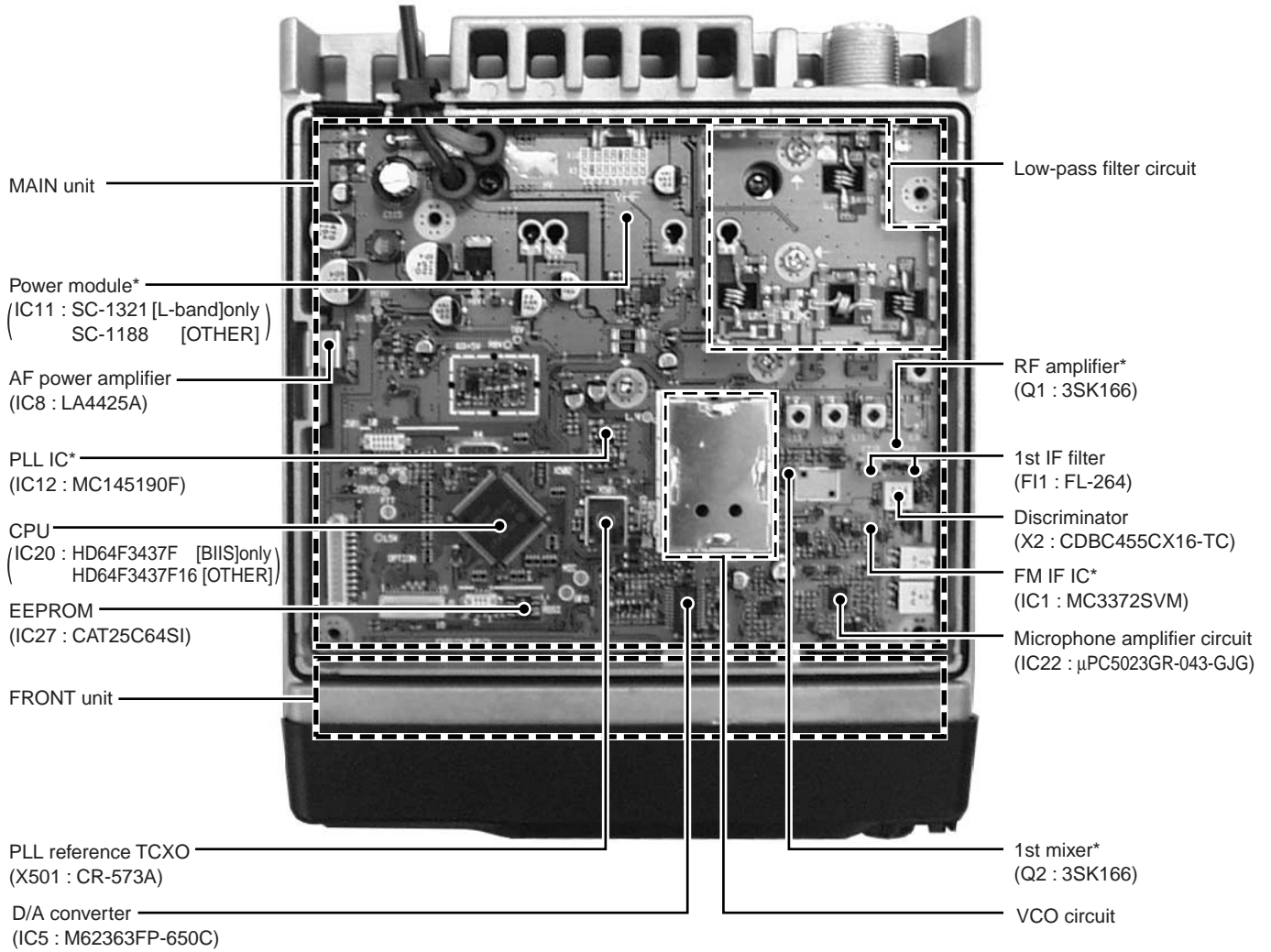
<b>SECTION 1</b>	<b>SPECIFICATIONS</b>	
<b>SECTION 2</b>	<b>INSIDE VIEW</b>	
<b>SECTION 3</b>	<b>DISASSEMBLY AND OPTION INSTRUCTIONS</b>	
<b>SECTION 4</b>	<b>CIRCUIT DESCRIPTION</b>	
4 - 1	RECEIVER CIRCUITS .....	.4 - 1
4 - 2	TRANSMITTER CIRCUITS .....	.4 - 2
4 - 3	PLL CIRCUITS .....	.4 - 3
4 - 4	POWER SUPPLY CIRCUITS .....	.4 - 3
4 - 5	UT-103 CIRCUIT DESCRIPTION .....	.4 - 5
4 - 6	PORT ALLOCATIONS .....	.4 - 6
<b>SECTION 5</b>	<b>ADJUSTMENT PROCEDURES</b>	
5 - 1	PREPARATION .....	.5 - 1
5 - 2	INITIAL SET MODE .....	.5 - 2
5 - 3	PLL ADJUSTMENT .....	.5 - 3
5 - 4	RECEIVER ADJUSTMENT .....	.5 - 4
5 - 5	TRANSMITTER ADJUSTMENT .....	.5 - 5
<b>SECTION 6</b>	<b>PARTS LIST</b>	
<b>SECTION 7</b>	<b>MECHANICAL PARTS AND DISASSEMBLY</b>	
<b>SECTION 8</b>	<b>SEMI-CONDUCTOR INFORMATION</b>	
<b>SECTION 9</b>	<b>BOARD LAYOUTS</b>	
9 - 1	FRONT UNIT .....	.9 - 1
9 - 2	MAIN UNIT .....	.9 - 3
<b>SECTION 10</b>	<b>BLOCK DIAGRAM</b>	
<b>SECTION 11</b>	<b>VOLTAGE DIAGRAM</b>	
11 - 1	FRONT UNIT .....	.11 - 1
11 - 2	MAIN UNIT .....	.11 - 2
<b>SECTION 12</b>	<b>OPTIONAL UNIT UT-103</b>	

# SECTION 1 SPECIFICATIONS

GENERAL	Measurement method	ETS 300 086		
	Frequency coverage	136–155 MHz ([EUR-7], [EUR-10] only), 146–174 MHz ([OTHER])		
	Number of channels	128 ch: 16 ch × 8 banks (256 ch: 16 ch × 16 banks [EX-1761 is mounted only])		
	Type of emission	16K0F3E (25 kHz; [Wide]), 14K0F3E (20 kHz; [Middle]) 8K50F3E (12.5 kHz; [Narrow])		
	Operating temperature range	–20°C to +55°C		
	Power supply voltage	13.2 V DC (negative ground)		
	Current drain (approx.)	TX	max. power	7.0 A
			max. audio	1.2 A
		RX	stand-by	700 mA
	Antenna connector	SO-239 (50 Ω)		
	Dimensions (proj. not included)	150(W) × 50(H) × 180(D) mm		
Weight	1.5 kg			
TRANSMITTER	Output power	25 W/10 W/2.2 W ([25 W] type), 10 W/5 W/2.2 W ([10 W] type)		
	Modulation system	Variable reactance frequency modulation		
	Max. frequency deviation	±5.0 kHz [Wide], ±4.0 kHz [Middle] ±2.5 kHz [Narrow]		
	Frequency error	±5 ppm		
	Spurious emissions	0.25 μW (≤ 1 GHz), 1.00 μV (> 1 GHz)		
	Adjacent channel power	70 dB [Wide], [Middle] 60 dB [Narrow]		
	Audio frequency response	+2 dB to –5 dB of 6 dB/octave range from 300 Hz to 3000 Hz [Wide], [Middle]/from 300 Hz to 2550 Hz [Narrow]		
	Audio harmonic distortion	5 % (40 % Dev.)		
	Residual modulation (with CCITT filter)	45 dB minimum: 55 dB typical [Wide], 43 dB minimum: 53 dB typical [Middle] 40 dB minimum: 50 dB typical [Narrow]		
	Limiting	70–100 % of maximum deviation		
	Microphone connector	8-pin modular (600 Ω)		
	RECEIVER	Intermediate frequency	1st: 21.75 MHz 2nd: 455 kHz	
Sensitivity		–2 dBμV emf (at 20 dB SINAD)		
Squelch sensitivity		–6 dBμV emf (Threshold)		
Adjacent channel selectivity		70 dB [Wide], [Middle] 60 dB [Narrow]		
Spurious response		70 dB		
Intermodulation		70 dB typical		
Audio frequency response		+2 dB to –5 dB of 6 dB/octave range from 300 Hz to 3000 Hz [Wide], [Middle]/from 300 Hz to 2550 Hz [Narrow]		
Hum and noise (with CCITT filter)		45 dB minimum: 55 dB typical [Wide], 43 dB minimum: 53 dB typical [Middle] 40 dB minimum: 50 dB typical [Narrow]		
Audio output power		3.5 W at 10% distortion with a 4 Ω load		
External SP connector		2-conductor 3.5 (d) mm (1/8")/4 Ω		

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

## SECTION 2 INSIDE VIEW

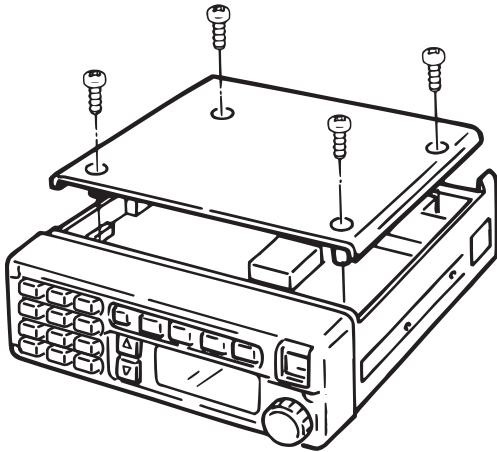


\*Located under side of the point

# SECTION 3 DISASSEMBLY AND OPTION INSTRUCTIONS

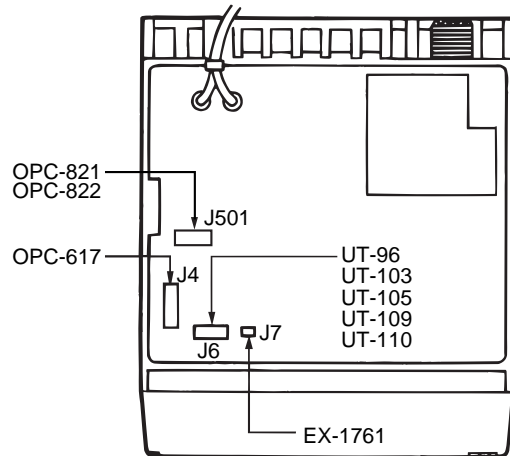
## • Opening cover

Remove 4 screws from bottom cover.

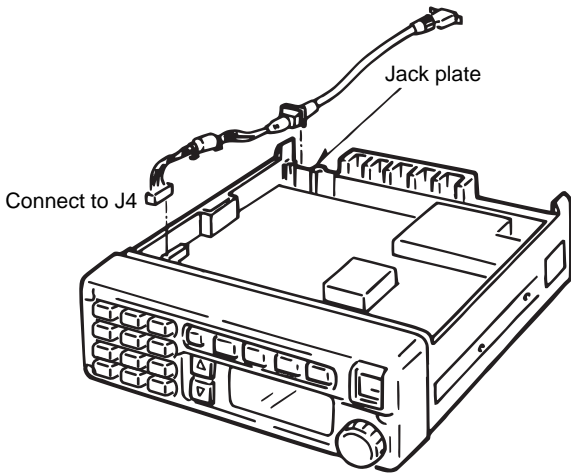


## • Installation location

- OPC-617 ACC CABLE
- OPC-821 AVL CONNECT CABLE
- OPC-822 RS-232C INTERFACE CABLE
- UT-96 5-TONE UNIT
- UT-103 FFSK Logic Board
- UT-105 SmarTrunk II™ Logic Board
- UT-109 VOICE SCRAMBLER UNIT (Nonrolling type)
- UT-110 VOICE SCRAMBLER UNIT (Rolling type)
- EX-1761 MEMORY EXPANSION UNIT

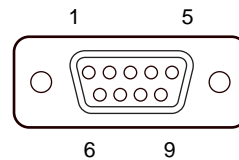


## • OPC-617 connection



Break the jack plate using cutting pliers to connect the OPC-617.

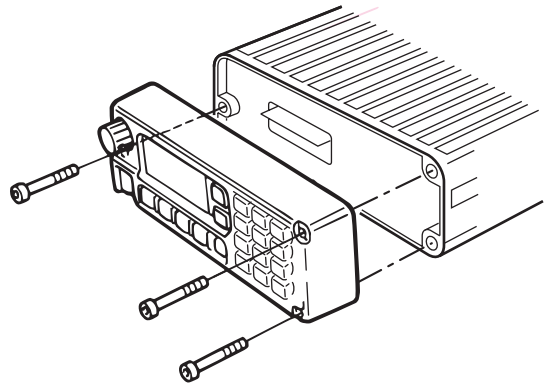
## PIN ASSIGNMENT



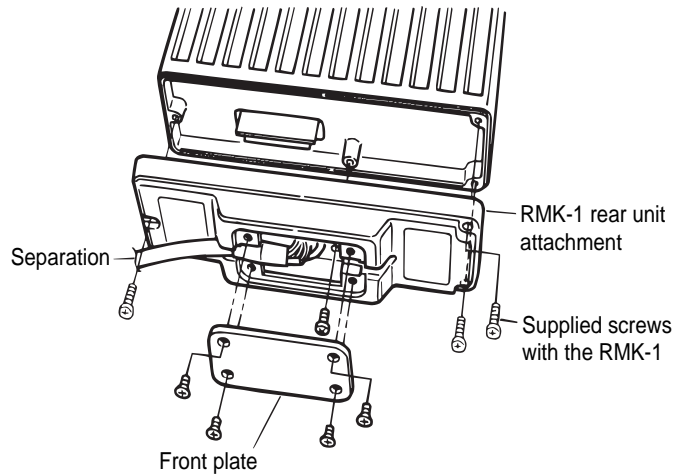
Pin No.	Terminal name	Description	Specification
1	DIM	Backlight control input	+5 to +30 V for dark
2	PAAF	AF output for public address and Ext SP functions	0 to 330 mV rms/ 47 kΩ
3	DISC	AF output for a terminal unit	330 mV rms/100 kΩ
4	IN	AF input for a terminal unit	330 mV rms/1200 bps
5	PTT	PTT control input	0 V for transmit
6	HORN	Grounded when receiving the specified call	Less than 50 mA when grounded
7	PAAF ⊖	Ground for PAAF	—
8	DISC ⊖	Ground for terminal output	—
9	IN ⊖	Ground for terminal input	—

• **RMK-1 connection**

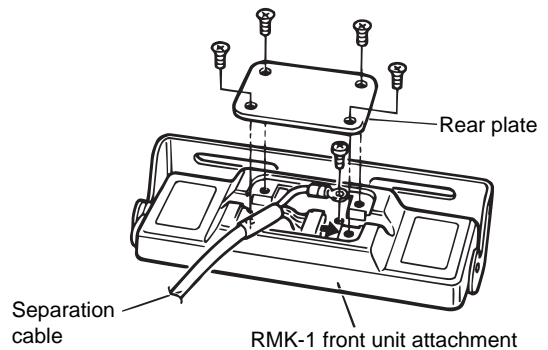
- ① Remove 3 allen-socket bolts from the front plate using an allen-wrench (1/32 in).
- ② Separate the front unit from the transceiver main unit.



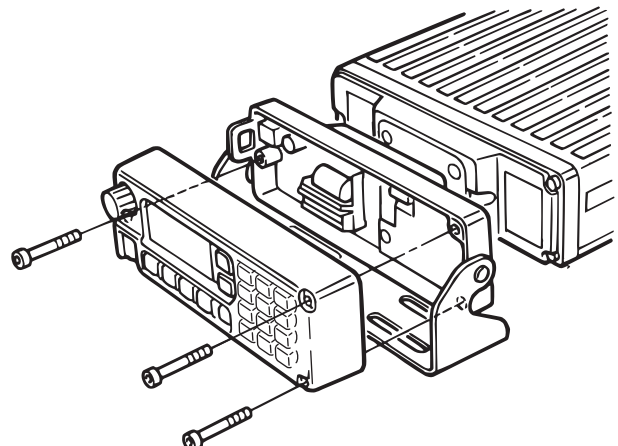
- ③ Attach the 'RMK-1 rear unit attachment' to the transceiver main unit using the supplied screws.
- ④ Remove 4 screws from the attachment to open the front plate.
- ⑤ Connect an optional separation cable OPC-609 (1.9 m) to the inside of the front plate and tighten the cable lug using the screw.
- ⑥ Re-attach the front plate.



- ⑦ Remove 4 screws from the 'RMK-1 front unit attachment' to open the rear plate.
- ⑧ Connect the other end of the optional separation cable to the attachment and tighten the cable lug using the screw.
- ⑨ Re-attach the rear plate.



- ⑩ Attach the front unit and attachment with the 3 removed allen-socket bolts.



## SECTION 4 CIRCUIT DESCRIPTION

### 4-1 RECEIVER CIRCUITS

#### 4-1-1 ANTENNA SWITCHING CIRCUIT

The antenna switching circuit functions as a low-pass filter while receiving and a resonator circuit while transmitting. The circuit does not allow transmit signals to enter receiver circuits.

Received signals enter the antenna connector (J1) and pass through the low-pass filters (L1–L3, C2, C3, C8–C10). The filtered signals are passed through the  $\lambda/4$  type antenna switching circuit (D5, D6, L5) and then applied to the RF circuit.

#### 4-1-2 RF CIRCUIT

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

The signals from the antenna switching circuit pass through the tunable bandpass filter (D7, L8). The filtered signals are amplified at the RF amplifier (Q1) and then enter the another three-stage bandpass filters (D9–D11, L12, L13) to suppress unwanted signals. The filtered signals are applied to the 1st mixer circuit.

D7, D9–D11 employ varactor diodes, that are controlled by the PLL lock voltage, to track the bandpass filter. These varactor diodes tune the center frequency of an RF pass band for wide bandwidth receiving and good image response rejection.

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

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

The RF signals from the bandpass filter are mixed with the 1st LO signals, which come from the Rx VCO circuit via the buffer amplifier (Q3), at the 1st mixer circuit (Q2) to produce a 21.75 MHz 1st IF signal. The 1st IF signal is passed through the matching circuit (L15, L52) and a pair of crystal filters (F11) in order to obtain selection capability and to pass only the desired signals. The filtered signal is applied to the 2nd IF circuit after being amplified at the 1st IF amplifier (Q4).

#### 4-1-4 2ND IF AND DEMODULATOR CIRCUITS

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

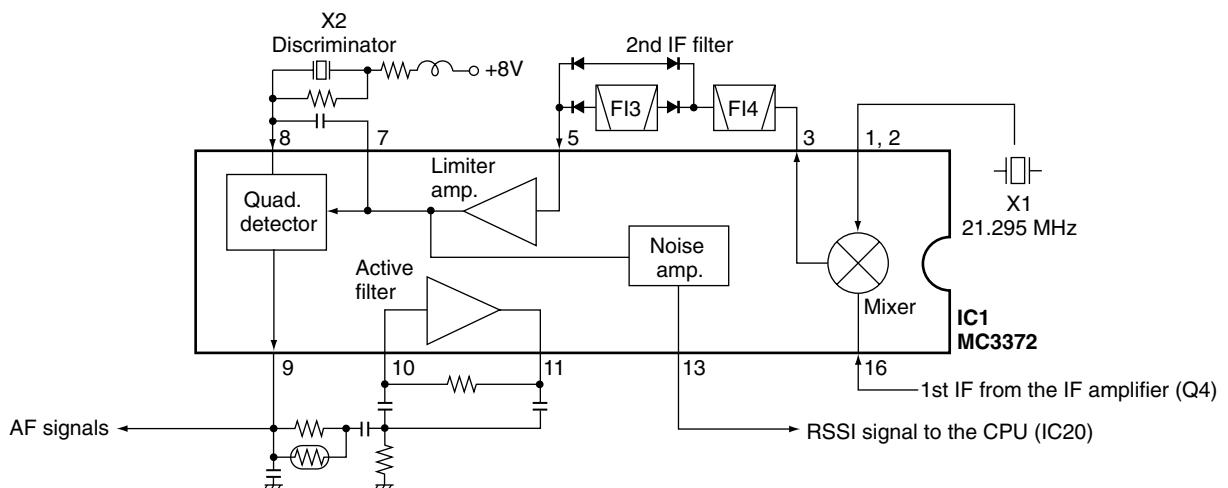
The 1st IF signal from the IF amplifier (Q4) is applied to the 2nd mixer section of the FM IF IC (IC1, pin 16) and is then mixed with the 2nd LO signal for conversion into 455 kHz 2nd IF signal.

IC1 contains the 2nd mixer, 2nd local oscillator, limiter amplifier, quadrature detector, active filter and noise amplifier circuit. The local oscillator section and X1 generates the 21.295 MHz 2nd LO signal.

The 2nd IF signal from the 2nd mixer (IC1 pin 3) passes through the ceramic filters (F13 and F14) during narrow channel spacing selection or passes through F14 (bypassing F13) only during wide channel spacing selection to suppress unwanted heterodyne frequencies signals via the N/W switches (D501, D502).

The filtered signal is applied to the quadrature detector section in the FM IF IC to demodulate the 2nd IF signal into AF signals using the ceramic discriminator (X2) after being amplified at the limiter amplifier section (pin 5). The demodulated AF signals are output from pin 9 of the IC and applied to the AF circuit via the receiver mute circuit.

#### • 2ND IF AND DEMODULATOR CIRCUIT





The N/W switches (D501, D502) select a ceramic filter (F13 or bypass), and the other N/W switch (Q61) adjusts the input level to the FM IF IC (IC1, pin 8) to switch the bandwidth depending on the “NWC” signal from the CPU (IC20, pins 57) when “NWC” signal is high, bandwidth setting is wide.

#### 4-1-5 AF AMPLIFIER CIRCUIT

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

The AF signals from the FM IF IC (IC1, pin 9) are amplified at the AF amplifier (IC2) and are then applied to the high-pass filter circuit (IC3a/b). The high-pass filter characteristics are controlled by the “HFSW” signal from the CPU (IC20, pin 60). When “HFSW” signal is high, the cut-off frequency is shifted higher to remove CTCSS or DTCS signals.

The filtered AF signals from the high-pass filter (IC3, pin 1) are passed through the de-emphasis circuit (R68, C74) with frequency characteristics of  $-6$  dB/octave, and are then applied to the electronic volume controller (IC7, pin 2) via the AF mute switch (Q6).

The output AF signals from the electronic volume controller (IC7, pin 9) are applied to the AF power amplifier (IC8) to drive the speaker.

#### 4-1-6 RECEIVE MUTE CIRCUITS

##### • NOISE SQUELCH

A 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.

Some noise components in the AF signals from the FM IF IC (IC1, pin 9) are passed through the active filter section in the IC (pins 10, 11). The N/W switch (Q62) adjusts the input noise level to the IC between wide and narrow bandwidth. When “NWC” signal which is applied to Q62 is High, bandwidth setting is wide.

The noise signals from FM IF IC (IC1, pin 11) are passed through the level controller (IC5, pins 21, 22) and are then converted into the pulse-type signals (NOIS) at the noise detector circuit (Q9, Q10).

The NOIS signal from the noise detector (Q10) is applied to the CPU (IC20, pin 32). The CPU then analyzes the noise condition and controls the AMUT (pin 56) and SP (pin 79) ports to toggle the AF mute switches (Q6, Q7).

##### • CTCSS AND DTCS

The tone squelch circuit detects AF signals and opens the squelch only when receiving a signal containing a matching subaudible tone (CTCSS or DTCS). 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 AF amplifier (IC2) pass through the low-pass filter (Q503) and are then applied to the CTCSS decoder inside the CPU (IC20, pin 43) via the CDEC line to control the AMUT and SP ports.

#### 4-2 TRANSMITTER CIRCUITS

##### 4-2-1 MICROPHONE AMPLIFIER CIRCUIT

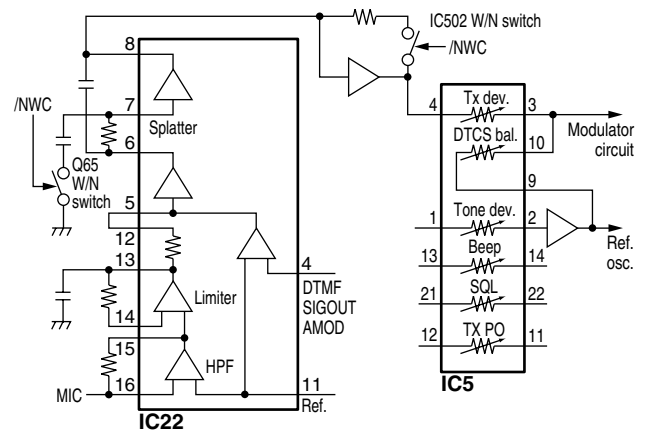
The microphone amplifier circuit amplifies audio signals from the microphone, within  $+6$  dB/octave pre-emphasis characteristics, to a level needed for the modulation circuit.

AF signals (MIC) from the FRONT unit via J5 (pin 10) are applied to the audio switch (IC25). While transmitting, the “MCON” signal from the CPU is high and the AF signals are passed through IC25 to the microphone amplifier circuit.

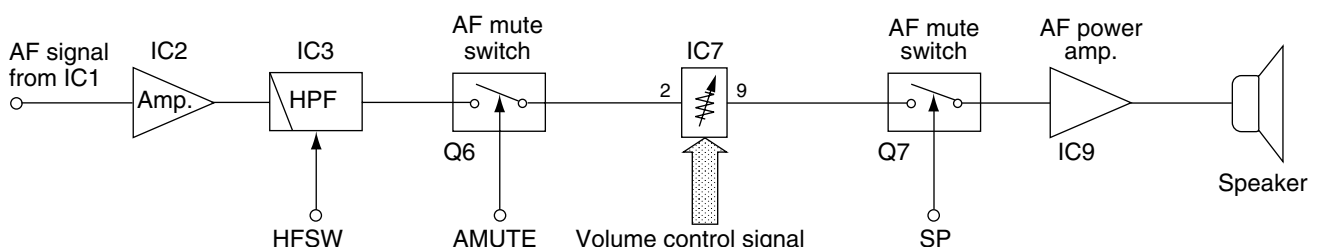
The AF signals from IC25 are applied to the microphone amplifier (IC22) via the pre-amplifier (IC21b). The amplified signals are applied to the limiter amplifier in IC22.

The entered signals are pre-emphasized with  $+6$ dB/octave at a limiter amplifier, then passed through a splatter filter section in IC22. The output signals from pin 8 pass through the level controller (IC5, pins 4, 3) and are then applied to the modulation circuit (D23, D46).

##### • MICROPHONE AMPLIFIER CIRCUIT



##### • AF CIRCUIT



The N/W switch is connected to the input lines of the splatter filter circuit (N/W switch; Q65) and buffer amplifier (IC503) (N/W switch; IC-502). The N/W switches (Q65, IC502) are controlled by the "/NWC" signal from Q505 to adjust filter cut-off frequency (by Q65) and maximum frequency deviation (by IC502).

#### 4-2-2 MODULATION CIRCUIT

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

The AF signals from the level controller (IC5) change the reactance of varactor diodes (D23 and D46) to modulate the oscillated signal at the Tx VCO circuit (Q23). The modulated VCO signal is amplified at the buffer amplifiers (Q19, Q20) and is then applied to the drive amplifier circuit via the T/R switch (D17).

The CTCSS/DTCS signals from the CPU (IC20, pin 44) are amplified at the buffer amplifier (Q504). The amplified signals pass through the level controller (IC5, pins 1, 2) and are then applied to VCO circuit via the low-pass filter (IC21a).

When signals (/NWC), which is applied to N/W switch (Q64), are High, Q64 changes the input level of the level controller (IC5), thus narrowing the bandwidth.

#### 4-2-3 DRIVE/POWER AMPLIFIER CIRCUITS

The amplifier circuit amplifies the VCO oscillation signal to an output power level.

The signal from the buffer amplifier (Q20) passes through the Tx/Rx switch (D17), and is amplified by the driver amplifiers (Q17–Q15) and the power module (IC11) to obtain 25 W of RF power.

The amplified signal is passed through the antenna switching circuit (D4), low-pass filter and APC detector, and is then applied to the antenna connector.

The collector voltages for drivers (Q16) come from the MT8V regulator (Q38, D28). The transmit mute switch (Q39) controls the regulator when transmit mute is necessary.

#### 4-2-4 APC CIRCUIT

The APC circuit protects the power module (IC11) from a mismatched output load and stabilizes the output power.

The APC detector circuit detects forward signals and reflection signals at D3 and D1 respectively. The combined voltage is at a minimum level when the antenna impedance is matched at 50 Ω and is increased when it is mismatched.

The detected voltage is applied to the inverse amplifier (IC10b, pin 5), and the power setting voltage (PSET) is applied to the other input (IC10b, pin 6) via the amplifier (IC10a). When antenna impedance is mismatched, the detected voltage exceeds the power setting voltage. Then the output voltage of the inverse amplifier (IC10b, pin 7) controls the input current of the power module (IC11) to reduce the output power via the APC driver (Q11).

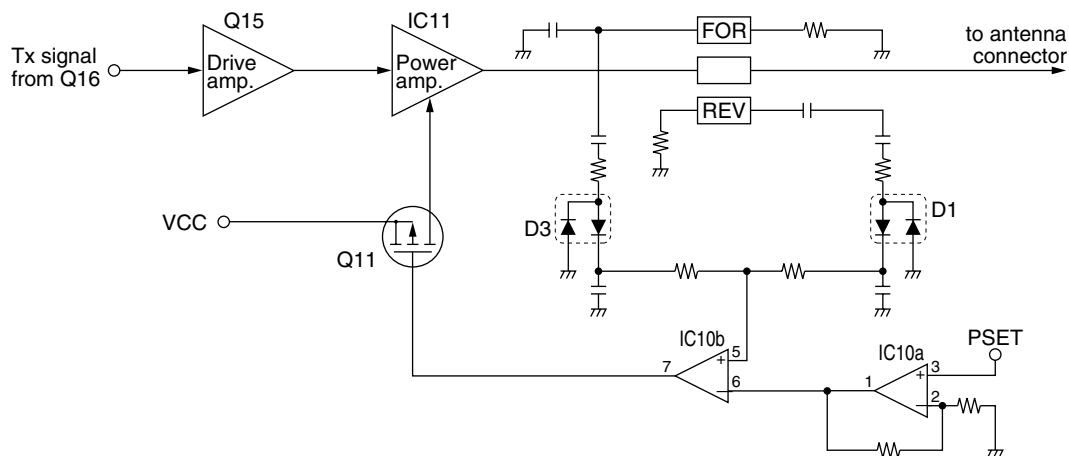
#### 4-3 PLL CIRCUITS

##### 4-3-1 PLL CIRCUIT

A PLL circuit provides stable oscillation of the transmit frequency and the receive 1st LO frequency. The PLL circuit consists of the PLL IC (IC12), charge pump, loop filter and reference oscillator and employs a pulse swallow counter.

Oscillated signals from the VCO via the buffer amplifier (Q19, Q18) are prescaled in the PLL IC (IC12, pin 11) 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 6 (IC12). The output signal is passed through the charge pump (Q30–Q33) and loop filters (R154/C181, R153/C179), and is then applied to the VCO circuit as the lock voltage.

#### • APC CIRCUIT



The accelerator switch (IC13a/b) selects the effective loop filter to accelerate the PLL lock up speed.

The lock voltage is also used for the receiver tunable band-pass filters to match the filter's center frequency to the desired receive frequency. The lock voltage is amplified at the buffer amplifier (Q29) and is then applied to the band-pass filters (D7, D9–D11).

### 4-3-2 VCO CIRCUIT

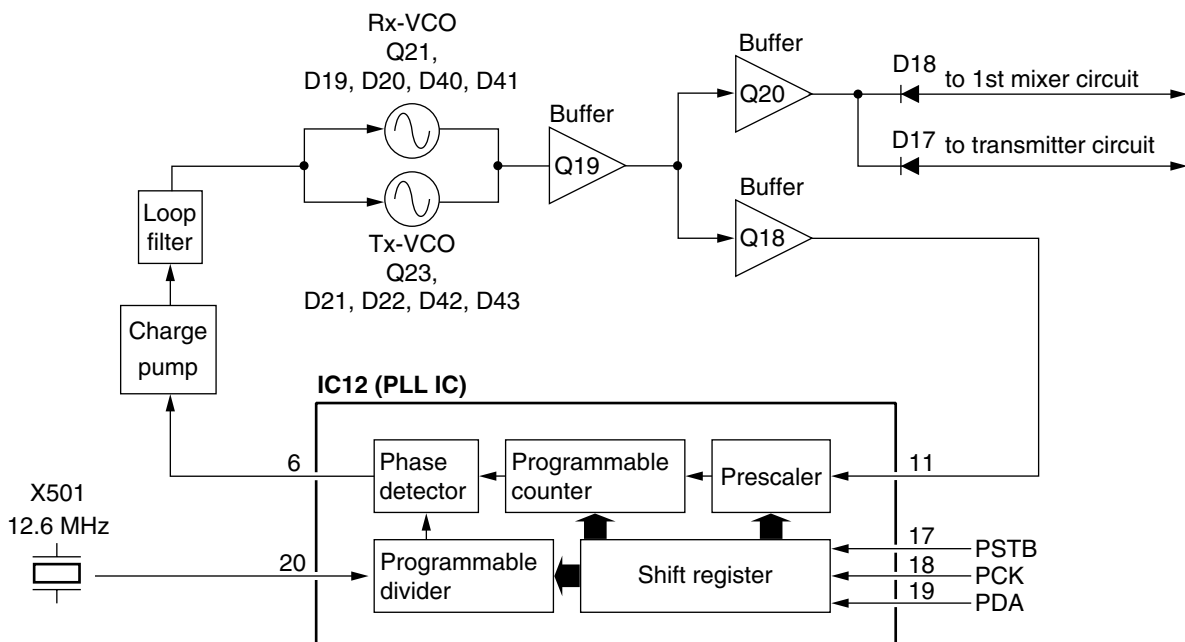
The VCO circuit contains a separate Rx VCO (Q21, D19, D20, D40, D41) and Tx VCO (Q23, D21, D22, D42, D43). The oscillated signal is amplified at the buffer amplifiers (Q19, Q20) and is then applied to the Tx/Rx switch (D17, D18). Then the receive 1st LO (Rx) signal is applied to the 1st mixer (Q2) via the amplifier (Q3) and the transmit (Tx) signal to the driver (Q17).

A portion of the signal from the buffer amplifier (Q19) is fed back to the PLL IC (IC12, pin 11) via the buffer amplifier (Q18) as the comparison signal.

## 4-4 POWER SUPPLY CIRCUIT VOLTAGE LINE

LINE	DESCRIPTION
HV	The voltage from the external power connector.
VCC	Same voltage as the HV line passed through the power control circuit (Q12) controlled by PWON signal from the CPU (IC20, pin 77).
CPU5V	Common 5 V converted from the HV line at the 5V regulator circuit (IC17). This voltage is supplied to the CPU regardless of the power switch.
+5V	Common 5 V converted from the VCC line at the +5V regulator circuit (Q42, Q43, D30) using the CPU5V line voltage as the reference.
+8V	Common 8 V converted from the VCC line at the +8V regulator circuit (IC16).
R8V	Receive 8 V converted from the VCC line at the R8V regulator circuit (Q36, D27) using the +8V line voltage as the reference and controlled by VRX signal from the CPU (IC20, pin 76).
T8V	Transmit 8 V converted from the VCC line at the T8V regulator circuit (Q40, D29) using the +8V line voltage as the reference and controlled by VTX signal from the the CPU (IC20, pin 75).
MT8V	Transmit 8 V converted from the VCC line at the MT8V regulator circuit (Q38, D28) using the +8V line voltage as the reference and controlled by TMUT signal from the the CPU (IC20, pin 62).

### • PLL CIRCUIT



## 4-5 UT-103 CIRCUIT DESCRIPTION

### 4-5-1 GENERAL

IC1 is the FFSK modem IC which is controlled by serial data bus line ("CCS", "SI", "SO", "SCK", "CIRQ" signals) from the IC-F1610's CPU. The IC is composed FFSK transmitting and receiving circuit, data register circuits, transmitting and receiving data buffer circuits, and so on.

X1 is oscillated 4.032 MHz reference signal to the IC1.

### 4-5-2 DECODEING CIRCUIT

The input signal from the J1, pin 23 (IC-F1610's MAIN unit) via the "DISC IN" signal is applied to the FFSK modem IC (IC1, pin 10), and is then detected bit synchronization detection within 16 bit.

### 4-5-3 ENCODEING CIRCUIT

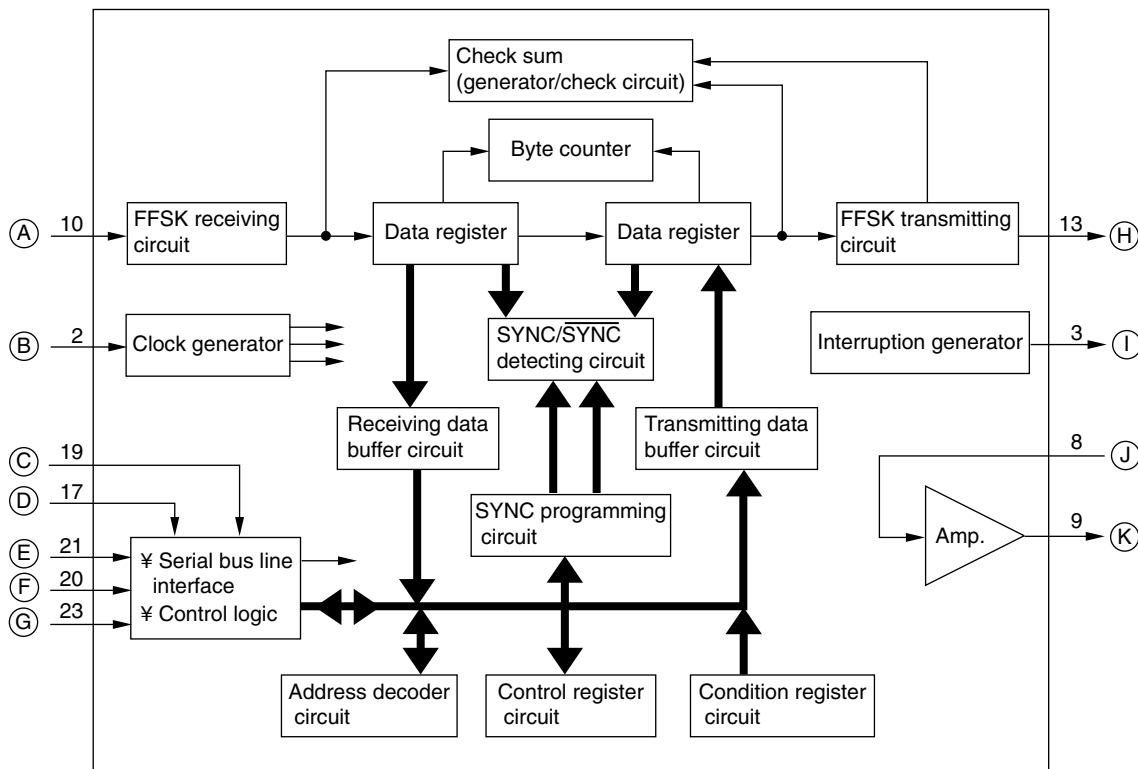
The 8 bit FFSK signal is made by serial data bus line signals, and is then output from the FFSK modem IC (IC1, pin 13).

In case of the FFSK signal is used for the PM modulation, the FM/PM switch (IC2) is changed to pin 7.

In case of the FFSK signal is used for the FM modulation, the FM/PM switch (IC2) is changed to pin 6.

The output signal from IC2, pin 1 is applied to the IC1's amplifier function (pin 8). The amplified signal is output from pin 9, and is then applied to the IC22, pin 4 (IC-F1610's MAIN unit) as "SIG OUT" signal. The signal is amplified at the buffer amplifier (IC-F1610's MAIN unit; IC503, pin 3), and is applied to the D/A convertor IC (IC-F1610's MAIN unit; IC5, pin 4). The signal is applied to the amplifier (IC-F1610's MAIN unit; Q52), and is then applied to the IC-F1610's modulation circuit (IC-F1610's MAIN unit; Q23, D21, D22, D42, D43) via the "MOD" signal.

### • UT-103 BLOCK DIAGRAM



- |                           |                           |
|---------------------------|---------------------------|
| (A) : Receiving signal    | (H) : Transmitting signal |
| (B) : Clock signal        | (I) : IRQ signal          |
| (C) : Chip select signal  | (J) : Amplifier input     |
| (D) : Reply data signal   | (K) : Amplifier output    |
| (E) : Serial clock signal |                           |
| (F) : Command data signal |                           |
| (G) : Wake signal         |                           |

## 4-6 PORT ALLOCATIONS

### CPU (MAIN UNIT; IC20)

Pin number	Port name	Description
20	PTTO	Outputs the PTT control signal. Low : While transmitting
21	PTTI	Input port for the PTT control signal from PTTO port.
22	AFON	Input port for the AF amplifier ON signal from an optional unit.
24	BUSY	Outputs busy signal for an optional unit.
25	POSW	Input port for the power switch. Low : While power switch is pushed
30	MMUT	Input port for microphone audio mute control signal from an optional unit.
31	RMUT	Input port for receive audio mute control signal from an optional unit.
32	NOIS	Input port for noise signals (pulse-type) for noise squelch operation.
38	AFV	Input port for the volume control.
40	RSSI	Input port for receiving signal strength level detection.
43	CDEC	Input port for CTCSS/DTCS decoding.
44	CENC	Output ports for CTCSS/DTCS signals.
47, 48	ECS2, ECS1	Output ports for EEPROM select signals. ECS1: For internal EEPROM (IC27) ECS2: For optional EEPROM
49	ECK	Outputs clock signal for EEPROMs.
50	ESI	Input port for serial signal from EEPROMs.
51	ESO	Outputs serial signal for EEPROMs.
53	BEEP	Outputs beep audio signals.
55	MCON	Outputs mic. audio mute control signal to the audio switch (IC25). High : While DTMF signals are being transmitted, etc.
56	AMUT	Outputs the AF mute switch (Q6) control signal. High : While squelched, etc.
25	NWC	Outputs N/W switch control signals. High : While wide is selected
57	HFSW	Outputs high-pass filter's characteristics select signal. High : During CTCSS operation
60	PA	Outputs mic. audio select signal to the audio switch (IC25). High : While "Public-address" function is ON
62	TMUT	Outputs MT8V regulator circuit (Q38, D27) control signal. High : While transmit is muted.

Pin number	Port name	Description
64	DSTB	Outputs strobe signals for the level controller. (IC5)
65	DDA	Outputs data signal for the level controller (IC5).
66	DCK	Outputs clock signal for the level controller (IC5).
67	PSTB	Outputs strobe signals for the PLL IC (IC12).
68	PDA	Outputs data signal for the PLL IC (IC12).
69	PCK	Outputs clock signal for the PLL IC (IC12).
72	UNLK	Input port for the PLL unlock signal. High : During unlock
73	PLLT	Outputs PLL accelerator control signal. High : While scanning, etc.
75	VTX	Outputs the T8V regulator circuit (Q38, D28) control signal. Low : While transmitting
76	VRX	Outputs the R8V regulator circuit (Q36, D27) control signal. Low : While receiving
77	PWON	Outputs the power control circuit (Q12) control signal. High : During power ON
78	PASP	Outputs "Public-address" mute signal. High : While PA and Ext. SP functions are not used
79	SP	Outputs the mute switch (Q7) control signal (incl. beep). High : While squelched, etc.
80	DIM	Input port for an external LCD backlight brightness control signal. Low : LCD backlight is dimmed
82-89	DTR1-DTR4, DTC4-DTC1	Outputs DTMF audio signals.
93	HORN	Outputs high level control signal for the pre-set time to the connected external unit when matched 2- or 5-tone code is received.
99	SIFT	Outputs CPU clock shift signal.

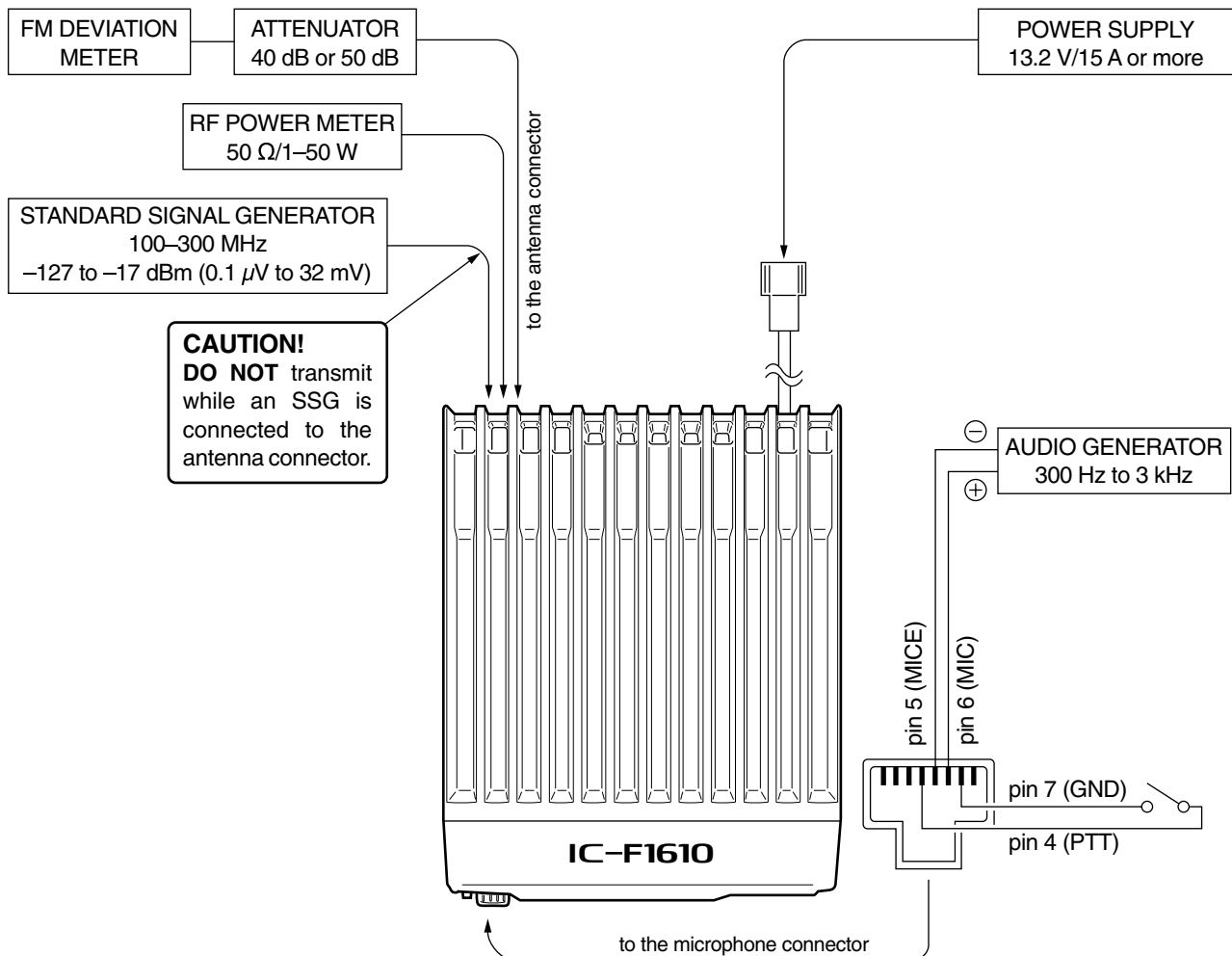
# SECTION 5 ADJUSTMENT PROCEDURES

## 5-1 PREPARATION

### ■ REQUIRED TEST EQUIPMENT

EQUIPMENT	GRADE AND RANGE	EQUIPMENT	GRADE AND RANGE
DC power supply**	Output Voltage : 13.2 V DC Current capacity : 15 A or more	Standard signal generator (SSG)**	Frequency range : 0.1–600 MHz Output level : 0.1 $\mu$ V –32 mV (–127 to –17 dBm)
RF power meter** (terminated type)	Measuring range : 1–50 W Frequency range : 100–300 MHz Impedance : 50 $\Omega$ SWR : Less than 1.2 : 1	Oscilloscope**	Frequency range : DC–20 MHz Measuring range : 0.01–20 V
Frequency counter**	Frequency range : 0.1–600 MHz Frequency accuracy: $\pm$ 1 ppm or better Sensitivity : 100 mV or better	DC voltmeter	Input impedance : 50 k $\Omega$ /V DC or better
RF voltmeter	Frequency range : 0.1–600 MHz Measuring range : 0.01–10 V	Digital multimeter	Measuring range : 10 mV –10 V
FM deviation meter**	Frequency range : DC–600 MHz Measuring range : 0 to $\pm$ 10 kHz	AC millivoltmeter	Input impedance : 10 M $\Omega$ /V DC or better
Audio generator**	Frequency range : 300–3000 Hz Measuring range : 1–500 mV	External speaker	Input impedance : 4 $\Omega$ Capacity : 5 W or more
		Attenuator	Power attenuation : 40 dB or 50 dB Capacity : 50 W or more
		Terminator	Impedance : 50 $\Omega$ Capacity : 50 W or more

### ■ CONNECTION



## 5-2 INITIAL SET MODE

The following items can be adjusted via *Initial Set Mode* without opening the transceiver's case.

### ■ ENTERING INITIAL SET MODE

- ① Turn the transceiver power OFF.
- ② While pushing  $\triangle$  and  $\nabla$ , turn power ON.
  - Bank number appears regardless of the channel separation type, 'bank' or 'free'.
- ③ Push  $P_0$  to cycle through the initial set mode items.

**NOTE:** Initial Set Mode access can be inhibited through PC programming. In such case,  $P_0$  cannot be used and only 'DISPLAY' setting is available. Ask your Dealer or Icom Service Center for PC programming.

### ■ SELECTABLE ITEMS

No.	ITEM	SELECTABLE CONDITIONS		
		$P_1$	$P_2$	$P_3$
1	DISPLAY	Backlight	—	Contrast
2	AF/SQUELCH	—	Squelch level	Minimum AF level
3	BEEP TONES	Link ON/OFF	Beep tones ON/OFF	Beep level
4	DEVIATION	DTCS balance	Tone deviation	Max. voice deviation
5	S-METER	Indicate the received signal level regardless of $P_1$ to $P_3$ keys.		
6	TX POWER	Low 1	Low 2	High

### ■ SELECTION METHOD

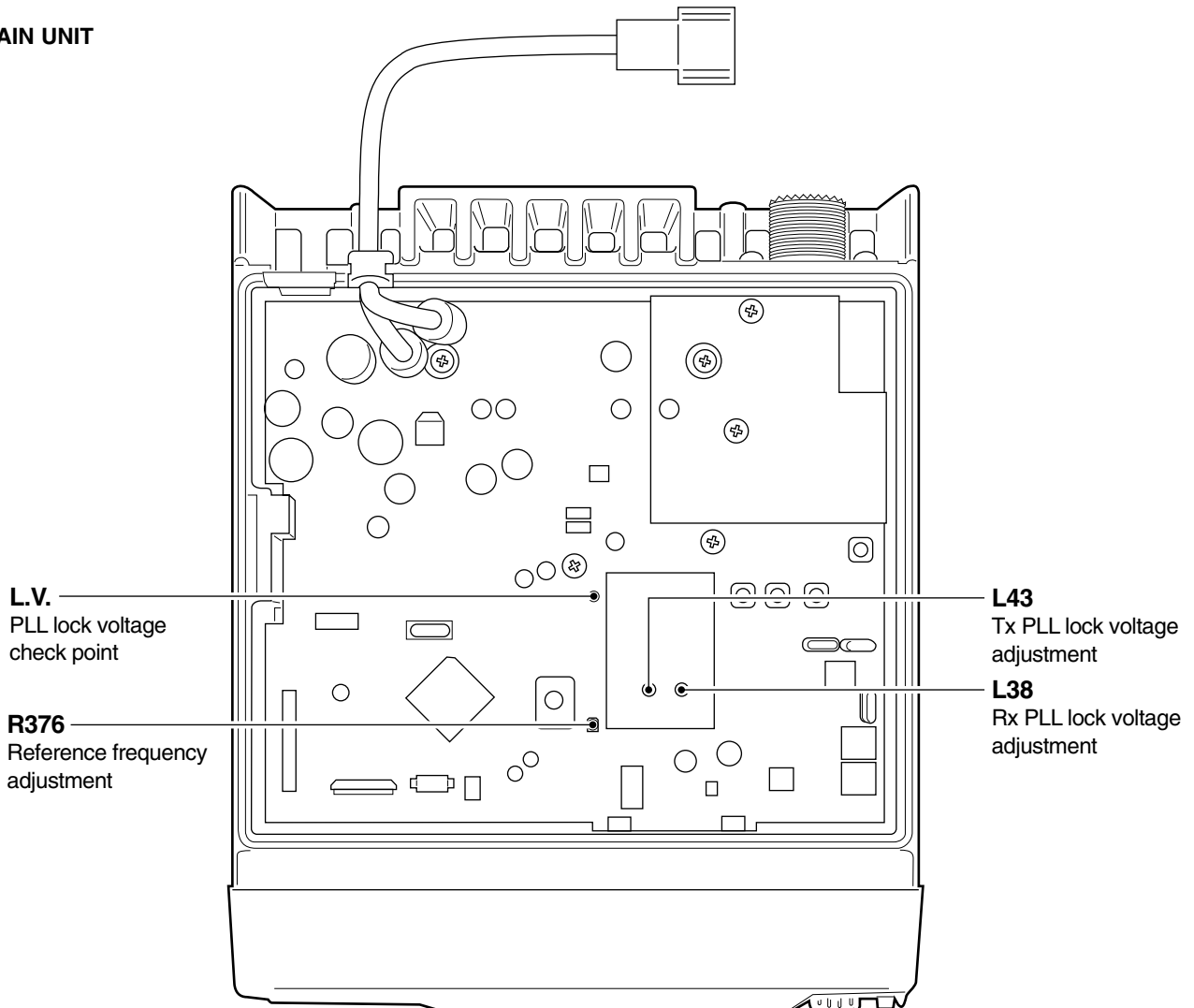
MODE No.	ITEM	METHOD	NOTE
1	Display backlight	Push $P_1$ to select 'bright', 'dark' or 'off'.	
	Display contrast	Rotate the volume control while pushing $P_3$ .	
2	Squelch level	Rotate the volume control while pushing $P_2$ .	
	Minimum AF level	Rotate the volume control while pushing $P_3$ .	
3	Link/unlink beep tones with the volume control	Push $P_1$ to select 'link' or 'unlink'.	2 beeps: link      1 beep: unlink
	Beep ON/OFF	Push $P_2$ to turn beeps ON and OFF.	2 beeps: ON      1 beep: OFF Effective after exiting Initial Set Mode
	Maximum beep level	Rotate the volume control while pushing $P_3$ .	
4	DTCS balance	Rotate the volume control while pushing $P_1$ .	Automatic transmission while pushing the key.
	CTCSS/DTCS Tone deviation	Rotate the volume control while pushing $P_2$ .	Automatic transmission while pushing the key. Separate setting for CTCSS and DTCS depending on the programmed tone system.
	Maximum voice deviation	Rotate the volume control while pushing $P_3$ .	Automatic transmission while pushing the key.
5	S-meter level	—	Received signal level is shown in the display.
6	Transmit low power (L1)	Rotate the volume control while pushing $P_1$ .	Automatic transmission while pushing the key.
	Transmit low power (L2)	Rotate the volume control while pushing $P_2$ .	Same as above.
	Transmit high power (H)	Rotate the volume control while pushing $P_3$ .	Same as above.

### 5-3 PLL ADJUSTMENT

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT		
		UNIT	LOCATION		UNIT	ADJUST	
PLL LOCK VOLTAGE	1 • Operating freq. : 136.000 MHz [L] 146.000 MHz [H] • Receiving	MAIN	Connect a digital multi-meter or an oscilloscope to the check point, "LV".	3.0 V	MAIN	L38	
	2 • Operating freq. : 155.000 MHz [L] 174.000 MHz [H] • Receiving					Verify	
	3 • Operating freq. : 136.000 MHz [L] 146.000 MHz [H] • Transmitting					5.0 V [L] 3.0 V [H]	L43
	4 • Operating freq. : 155.000 MHz [L] 174.000 MHz [H] • Transmitting					8.5 –11.5 V [L] 10.5 –15.5 V [H]	Verify
PLL REFERENCE FREQUENCY	1 • Operating freq. : 155.000 MHz [L] 174.000 MHz [H] • Transmitting	Rear panel	Loosely couple a frequency counter to the antenna connector.	155.00000 MHz [L] 174.00000 MHz [H]	MAIN	R376	


[L]: [L-band] (136–155 MHz), [H]: [H-band] (146–174 MHz)

#### • MAIN UNIT





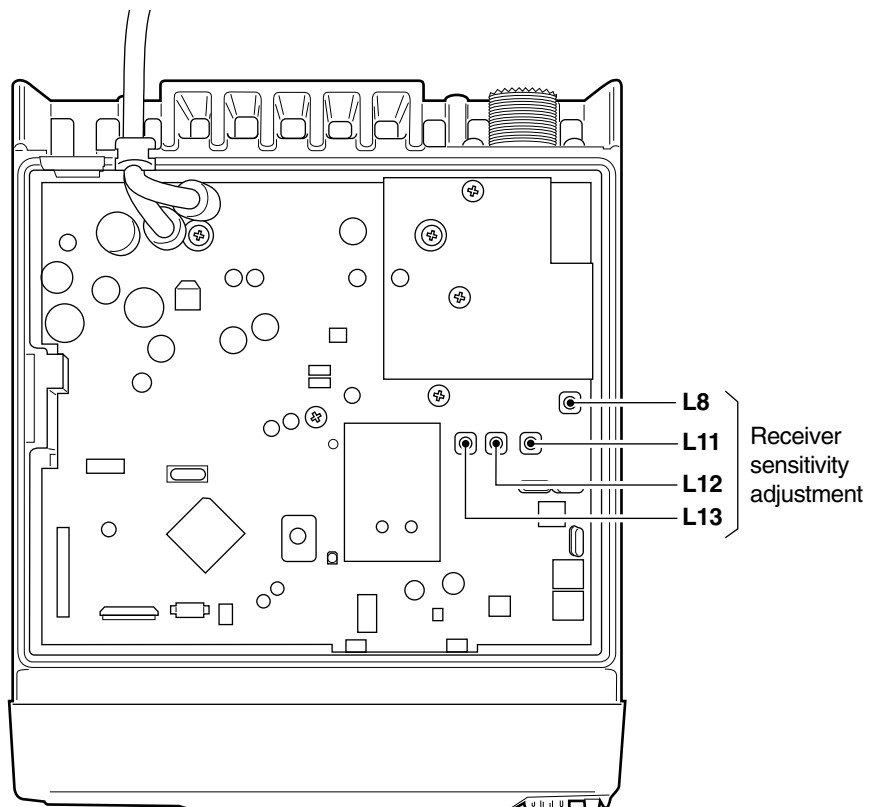
## 5-4 RECEIVER ADJUSTMENT

ADJUSTMENT	ADJUSTMENT CONDITIONS	MEASUREMENT METHOD	ADJUSTMENT	
			VALUE	ADJUST
RECEIVER SENSITIVITY	<ol style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>Operating freq. : 136.000 MHz [L] 146.000 MHz [H]</li> <li>Connect an SSG to the antenna connector and set as: Level : 5.6 <math>\mu</math>V* (-92 dBm) Modulation : OFF</li> <li>Connect a 4 <math>\Omega</math> load to the external speaker jack.</li> <li>Pre-set L8, L11, L12, L13 on the MAIN unit to maximum CCW.</li> <li>Enter <b>Initial Set Mode</b> No. 5. Refer to page 5-2 for details.</li> <li>Receiving</li> </ul> </li> </ol>	Number digits in the LCD 	Maximum indication	Adjust in sequence L8, L11, L12, L13 on the MAIN unit
NOISE SQUELCH THRESHOLD POINT	<ol style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>Make sure no signal is being applied to the antenna connector.</li> <li>Enter <b>Initial Set Mode</b> No. 2. Refer to page 5-2 for details.</li> <li>Operating freq. : 136.000 MHz [L] 146.000 MHz [H]</li> <li>Receiving</li> </ul> </li> </ol>	Speaker output	At the point where the noise audio just disappears.	Rotate volume control while pushing <b>P2</b>
	<ol style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>Connect an SSG to the antenna connector and set as: Level : 0.25 <math>\mu</math>V* (-119 dBm) Deviation : <math>\pm</math>3.5 kHz Modulation : 1 kHz</li> <li>Receiving</li> </ul> </li> </ol>		Squelch opens	Verify
BEEP LEVEL	<ol style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>Enter <b>Initial Set Mode</b> No. 3. Refer to page 5-2 for details.</li> <li>Operating freq. : Any</li> <li>Receiving</li> </ul> </li> </ol>	Speaker output	Desired level	Rotate volume control while pushing <b>P3</b>

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

[L]: [L-band] (136–155 MHz), [H]: [H-band] (146–174 MHz)

### • MAIN UNIT





# SECTION 6 PARTS LIST

## [FRONT UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
IC1	1130009120	S.IC SED1526F0A	B
IC2	1140007631	S.IC HD6433640A33H FX-2140S	B
IC3	1110005940	S.IC S-80842CLMC-B63-T2	B
IC4	1130005720	S.IC TC7W04F (TE12L)	B
IC5	1110003390	S.IC AN8005M-(E1)	B
Q1	1530002060	S.TRANSISTOR 2SC4081 T106 R	B
Q2	1590001330	S.TRANSISTOR DTA114EUA T106	B
Q3	1590000680	S.TRANSISTOR DTC114EUA T106	B
Q4	1590001330	S.TRANSISTOR DTA114EUA T106	B
Q5	1590000680	S.TRANSISTOR DTC114EUA T106	B
Q6	1590000440	S.TRANSISTOR DTA143ZUA T106	B
Q7	1590000440	S.TRANSISTOR DTA143ZUA T106	B
Q8	1590000440	S.TRANSISTOR DTA143ZUA T106	B
Q9	1590000440	S.TRANSISTOR DTA143ZUA T106	B
Q10	1590000680	S.TRANSISTOR DTC114EUA T106	B
Q11	1590000680	S.TRANSISTOR DTC114EUA T106	B
D1	1790001280	S.DIODE MA111 (TX)	B
D2	1790001280	S.DIODE MA111 (TX)	B
D3	1790001280	S.DIODE MA111 (TX)	B
D4	1790001280	S.DIODE MA111 (TX)	B
D5	1750000130	S.DIODE DA204U T106	B
D6	1750000130	S.DIODE DA204U T106	B
D7	1750000130	S.DIODE DA204U T106	B
D8	1750000130	S.DIODE DA204U T106	B
D9	1750000130	S.DIODE DA204U T106	B
X1	6050009870	S.XTAL CR-567 (9.8304 MHz)	B
L1	6200001720	S.COIL NL 322522T-1R0J	B
R1	7030003810	S.RESISTOR ERJ3GEYJ 125 V (1.2 M $\Omega$ )	B
R2	7310002820	S.TRIMMER RV-158 (RH03A3AS5) 474	B
R3	7030003800	S.RESISTOR ERJ3GEYJ 105 V (1 M $\Omega$ )	B
R4	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )	B
R5	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R6	7030003760	S.RESISTOR ERJ3GEYJ 474 V (470 k $\Omega$ )	B
R7	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 k $\Omega$ )	B
R8	7030003720	S.RESISTOR ERJ3GEYJ 224 V (220 k $\Omega$ )	B
R9	7030003720	S.RESISTOR ERJ3GEYJ 224 V (220 k $\Omega$ )	B
R10	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R11	7030003800	S.RESISTOR ERJ3GEYJ 105 V (1 M $\Omega$ )	B
R12	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R13	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R15	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 k $\Omega$ )	B
R16	7030003500	S.RESISTOR ERJ3GEYJ 332 V (3.3 k $\Omega$ )	B
R17	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R18	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R19	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R20	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R21	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R22	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R23	7030003500	S.RESISTOR ERJ3GEYJ 332 V (3.3 k $\Omega$ )	B
R24	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )	B
R25	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )	B
R26	7210002830	VARIABLE EVU-F2JFK4 B14	T
R27	7030003340	S.RESISTOR ERJ3GEYJ 151 V (150 $\Omega$ )	B
R28	7030003340	S.RESISTOR ERJ3GEYJ 151 V (150 $\Omega$ )	B
R29	7030003370	S.RESISTOR ERJ3GEYJ 271 V (270 $\Omega$ )	B
R30	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )	B
R31	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )	B
R32	7030003390	S.RESISTOR ERJ3GEYJ 391 V (390 $\Omega$ )	B
R34	7030003360	S.RESISTOR ERJ3GEYJ 221 V (220 $\Omega$ )	B
R35	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R36	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R37	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R38	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R39	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R40	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R41	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R42	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R43	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R44	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R45	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 k $\Omega$ )	B
R46	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )	B

## [FRONT UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
R47	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )	B
R48	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 k $\Omega$ )	B
R49	7030003600	S.RESISTOR ERJ3GEYJ 223 V (22 k $\Omega$ )	B
C1	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C2	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C3	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C4	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C5	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C6	4030012600	S.CERAMIC C2012 JB 1A 105M-T	B
C7	4030012600	S.CERAMIC C2012 JB 1A 105M-T	B
C8	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	B
C9	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C10	4030009000	S.CERAMIC C2012 JB 1C 224K-T	B
C11	4030006900	S.CERAMIC C1608 JB 1H 103K-T	B
C13	4030007030	S.CERAMIC C1608 CH 1H 150J-T	B
C14	4030007030	S.CERAMIC C1608 CH 1H 150J-T	B
C15	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C16	4030006900	S.CERAMIC C1608 JB 1H 103K-T	B
C17	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	B
C18	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	B
C19	4030006850	S.CERAMIC C1608 JB 1H 471K-T	B
C20	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C21	4550003220	S.TANTALUM TEESVA 1E 105M8L	B
C22	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	B
C23	4030006850	S.CERAMIC C1608 JB 1H 471K-T	B
C24	4030006850	S.CERAMIC C1608 JB 1H 471K-T	B
C25	4030006850	S.CERAMIC C1608 JB 1H 471K-T	B
C26	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	B
C27	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C28	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C29	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C30	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C31	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C32	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C33	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C34	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C35	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C36	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C37	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C38	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C39	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C40	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C41	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C42	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C43	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C44	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C45	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C46	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C47	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C48	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C49	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C50	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C51	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C52	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
J1	6450001470	CONNECTOR 95003-2881	T
J2	6510018030	S.CONNECTOR 53248-1217	B
DS1	5030002180	LCD TSC0712-UFTDHW	T
DS2	5040002470	S.LED FY1112H	T
DS3	5040002470	S.LED FY1112H	T
DS4	5040002470	S.LED FY1112H	T
DS5	5040002470	S.LED FY1112H	T
DS6	5040002470	S.LED FY1112H	T
DS7	5040002030	S.LED CL-170Y-CD-T	T
DS8	5040002030	S.LED CL-170Y-CD-T	T
DS10	5040002030	S.LED CL-170Y-CD-T	T
DS11	5040002030	S.LED CL-170Y-CD-T	T
DS13	5040002030	S.LED CL-170Y-CD-T	T
DS14	5040002030	S.LED CL-170Y-CD-T	T
DS15	5040002030	S.LED CL-170Y-CD-T	T
DS16	5040002030	S.LED CL-170Y-CD-T	T
W1	7030003860	S.RESISTOR ERJ3GE JPW V	B
W2	7030003860	S.RESISTOR ERJ3GE JPW V	B
W3	7030000010	S.RESISTOR MCR10EZJH JPW (000)	T

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

S.=Surface mount

**[FRONT UNIT]**

REF NO.	ORDER NO.	DESCRIPTION		M.
W4	7030000010	S.RESISTOR	MCR10EZHZ JPW (000)	T
EP1	0910050602	PCB	B 5205B	
EP2	8930048320	LCD CONTACT	SRCN-2140-SP-N-W	T

**[MAIN UNIT]**

REF NO.	ORDER NO.	DESCRIPTION		M.
Q39	1590000850	S.TRANSISTOR	DTC114YUA T106	B
Q40	1540000550	S.TRANSISTOR	2SD1664 T100Q	B
Q41	1530002850	S.TRANSISTOR	2SC4116-BL (TE85R)	B
Q42	1520000560	S.TRANSISTOR	2SB1123T-TD	B
Q43	1530002060	S.TRANSISTOR	2SC4081 T106 R	B
Q44	1560000810	S.FET	2SK1069-4-TL	T
Q45	1590000430	S.TRANSISTOR	DTC144EUA T106	T
Q47	1590000430	S.TRANSISTOR	DTC144EUA T106	T
Q48	1530002850	S.TRANSISTOR	2SC4116-BL (TE85R)	B
Q50	1590001330	S.TRANSISTOR	DTA114EUA T106	B
Q51	1590000680	S.TRANSISTOR	DTC114EUA T106	B
Q52	1560000810	S.FET	2SK1069-4-TL	T
Q55	1530002060	S.TRANSISTOR	2SC4081 T106 R	B
Q56	1590000720	S.TRANSISTOR	DTA144EUA T106	B
Q61	1530002850	S.TRANSISTOR	2SC4116-BL (TE85R)	B
Q62	1590000430	S.TRANSISTOR	DTC144EUA T106	T
Q64	1590000430	S.TRANSISTOR	DTC144EUA T106	B
Q65	1560000840	S.FET	2SK1829 (TE85R)	T
Q501	1590000430	S.TRANSISTOR	DTC144EUA T106	B
Q502	1590000720	S.TRANSISTOR	DTA144EUA T106	B
Q503	1590001650	S.TRANSISTOR	XP4601 (TX)	T
Q504	1560000810	S.FET	2SK1069-4-TL	B
Q505	1590000430	S.TRANSISTOR	DTC144EUA T106	T
Q506	1560000810	S.FET	2SK1069-4-TL	B
Q507	1590000430	S.TRANSISTOR	DTC144EUA T106	B
Q508	1560000840	S.FET	2SK1829 (TE85R)	B
Q509	1590000430	S.TRANSISTOR	DTC144EUA T106	B
Q510	1590000430	S.TRANSISTOR	DTC144EUA T106	B
Q511	1590000720	S.TRANSISTOR	DTA144EUA T106	B
Q512	1530002060	S.TRANSISTOR	2SC4081 T106 R	B
Q513	1590000720	S.TRANSISTOR	DTA144EUA T106	B
Q514	1590000720	S.TRANSISTOR	DTA144EUA T106	T
Q515	1590000720	S.TRANSISTOR	DTA144EUA T106	B
Q516	1530002060	S.TRANSISTOR	2SC4081 T106 R	B
Q517	1590000430	S.TRANSISTOR	DTC144EUA T106	B
Q600	1590000680	S.TRANSISTOR	DTC114EUA T106	T
D1	1790001210	S.DIODE	1SS375-TL	B
D3	1790001210	S.DIODE	1SS375-TL	B
D4	1750000510	S.DIODE	UM9401F	T
D5	1750000510	S.DIODE	UM9401F	B
D6	1750000510	S.DIODE	UM9401F	B
D7	1720000270	S.VARICAP	1SV217 (TPH2)	B
D9	1720000270	S.VARICAP	1SV217 (TPH2)	B
D10	1720000270	S.VARICAP	1SV217 (TPH2)	B
D11	1720000270	S.VARICAP	1SV217 (TPH2)	B
D15	1790001750	S.DIODE	DSM3MA4	T
D16	1750000370	S.DIODE	DA221 TL	B
D17	1790000620	S.DIODE	MA77 (TX)	B
D18	1790000620	S.DIODE	MA77 (TX)	T
D19	1720000270	S.VARICAP	1SV217 (TPH2)	B
D20	1720000270	S.VARICAP	1SV217 (TPH2)	B
D21	1720000270	S.VARICAP	1SV217 (TPH2)	B
D22	1720000270	S.VARICAP	1SV217 (TPH2)	B
D23	1720000260	S.VARICAP	1SV214 (TPH2)	B
D27	1750000130	S.DIODE	DA204U T106	T
D28	1750000220	S.DIODE	DA113W T107	B
D29	1750000130	S.DIODE	DA204U T106	B
D30	1750000550	S.DIODE	1SS355 TE-17	B
D31	1750000550	S.DIODE	1SS355 TE-17	T
D32	1750000130	S.DIODE	DA204U T106	T
D33	1730002420	S.ZENER	MA8160 (TX)	T
D36	1750000550	S.DIODE	1SS355 TE-17	B
D37	1750000550	S.DIODE	1SS355 TE-17	B
D38	1750000550	S.DIODE	1SS355 TE-17	T
D40	1720000270	S.VARICAP	1SV217 (TPH2)	B
D41	1720000270	S.VARICAP	1SV217 (TPH2)	B
D42	1720000270	S.VARICAP	1SV217 (TPH2)	B
D43	1720000270	S.VARICAP	1SV217 (TPH2)	B
D44	1720000360	S.DIODE	HSU88TRF	B
D45	1750000550	S.DIODE	1SS355 TE-17	T
D46	1720000260	S.VARICAP	1SV214 (TPH2)	B
D50	1750000550	S.DIODE	1SS355 TE-17	B
D51	1750000550	S.DIODE	1SS355 TE-17	T
D52	1750000260	S.DIODE	1SS352 (TPH3)	B
D501	1160000060	S.DIODE	DAN202U T106	B
D502	1160000060	S.DIODE	DAN202U T106	B
D503	1790000620	S.DIODE	MA77 (TX)	B
D505	1750000130	S.DIODE	DA204U T106	B
D506	1160000060	S.DIODE	DAN202U T106	B
D507	1720000360	S.DIODE	HSU88TRF	T
D508	1750000130	S.DIODE	DA204U T106	T
D509	1160000060	S.DIODE	DAN202U T106	T
D510	1750000130	S.DIODE	DA204U T106	T
D511	1790001210	S.DIODE	1SS375-TL	T
D600	1790000620	S.DIODE	MA77 (TX)	B
D601	1790000620	S.DIODE	MA77 (TX)	T

**[MAIN UNIT]**

REF NO.	ORDER NO.	DESCRIPTION		M.
IC1	1110003571	S.IC	MC3372SVMEL	B
IC2	1130007370	S.IC	TA75S558F (TE85L)	B
IC3	1130007090	S.IC	TA75W558FU (TE12L)	T
IC5	1190000350	S.IC	M62363FP-650C	T
IC7	1110003300	S.IC	M5282FP 70CD	B
IC8	1110003090	S.IC	LA4425A	T
IC9	1130007090	S.IC	TA75W558FU (TE12L)	B
IC10	1110003800	S.IC	NJM2904V-TE1	T
IC11	1150001042	S.IC	S-AV21H (ICOM-2) / SC1188	T
			[H-band]	
	1150001720	IC	S-AV21L (ICOM) / SC-1321	T
			[L-band]	
IC12	1130007970	S.IC	MC145190FR2	B
IC13	1130007300	S.IC	TC4W66FU (TE12L)	B
IC16	1180001250	S.IC	TA7808F (TE16L)	T
IC17	1180000970	S.IC	AN78L05M-(E1)	B
IC18	1130007110	S.IC	TC7W04FU (TE12L)	T
IC19	1110005540	S.IC	S-80842ALMP-EA6-T2	B
IC20	1140007640	S.IC	HD64F3437F16	[OTHER] T
	1140010900	S.IC	HD64F3437F16 (EMPTY)	T
			[BIIS] only	
IC21	1130006920	S.IC	TA75W01FU (TE12L)	T
IC22	1110003410	S.IC	μPC5023GR-043-GJG-T2	T
IC25	1130007300	S.IC	TC4W66FU (TE12L)	T
IC26	1130007110	S.IC	TC7W04FU (TE12L)	B
IC27	1130011280	S.IC	CAT25C64SI	T
IC29	1110002750	S.IC	TA75S01F (TE85R)	T
IC501	1130011500	S.IC	LC73661M	B
IC502	1130007020	S.IC	TC7S66FU (TE85R)	T
IC503	1110002750	S.IC	TA75S01F (TE85R)	T
IC504	1130006220	S.IC	TC4W53FU (TE12L)	B
IC505	1130008090	S.IC	BU4066BCFV-E1	B
IC506	1110005760	S.IC	S-812C50AUA-C3E-T2	B
IC600	1110002750	S.IC	TA75S01F (TE85R)	T
Q1	1580000490	S.FET	3SK166A-2-T7	B
Q2	1580000490	S.FET	3SK166A-2-T7	B
Q3	1530003420	S.TRANSISTOR	2SC5110-O (TE85R)	B
Q4	1530002600	S.TRANSISTOR	2SC4215-O (TE85R)	B
Q5	1530002850	S.TRANSISTOR	2SC4116-BL (TE85R)	T
Q6	1590000680	S.TRANSISTOR	DTC114EUA T106	B
Q7	1590000990	S.TRANSISTOR	DTC363EK T146	B
Q8	1590000680	S.TRANSISTOR	DTC114EUA T106	B
Q9	1530002060	S.TRANSISTOR	2SC4081 T106 R	T
Q10	1530002060	S.TRANSISTOR	2SC4081 T106 R	T
Q11	1550000020	S.FET	2SJ377 (TE16R)	B
Q12	1550000020	S.FET	2SJ377 (TE16R)	B
Q14	1590000430	S.TRANSISTOR	DTC144EUA T106	B
Q15	1530003291	S.TRANSISTOR	2SC4703-T1 SE	B
Q16	1530003420	S.TRANSISTOR	2SC5110-O (TE85R)	B
Q17	1530003420	S.TRANSISTOR	2SC5110-O (TE85R)	B
Q18	1530003420	S.TRANSISTOR	2SC5110-O (TE85R)	B
Q19	1530003420	S.TRANSISTOR	2SC5110-O (TE85R)	B
Q20	1530003420	S.TRANSISTOR	2SC5110-O (TE85R)	T
Q21	1530002920	S.TRANSISTOR	2SC4226-T1 R25	T
Q22	1590000850	S.TRANSISTOR	DTC114YUA T106	B
Q23	1530003420	S.TRANSISTOR	2SC5110-O (TE85R)	T
Q24	1590000850	S.TRANSISTOR	DTC114YUA T106	B
Q25	1590000430	S.TRANSISTOR	DTC144EUA T106	B
Q26	1590001330	S.TRANSISTOR	DTA114EUA T106	B
Q27	1590000720	S.TRANSISTOR	DTA144EUA T106	B
Q28	1590000720	S.TRANSISTOR	DTA144EUA T106	B
Q29	1560000810	S.FET	2SK1069-4-TL	B
Q30	1590002290	S.TRANSISTOR	FMS2A T148	T
Q31	1590002300	S.TRANSISTOR	FMW2 T148	T
Q32	1530002060	S.TRANSISTOR	2SC4081 T106 R	T
Q33	1510000510	S.TRANSISTOR	2SA1576A T106R	T
Q35	1530002060	S.TRANSISTOR	2SC4081 T106 R	T
Q36	1540000550	S.TRANSISTOR	2SD1664 T100Q	T
Q37	1530002850	S.TRANSISTOR	2SC4116-BL (TE85R)	T
Q38	1540000550	S.TRANSISTOR	2SD1664 T100Q	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
D602	1790001750	S.DIODE	DSM3MA4	T
F11	2010002050 2030000180	XTAL MONOLITH	FL-264 (21.750 MHz) [OTHER] FL-264 IMD:-95 (21.750 MHz) [H-band, 25W] only	T
F13	2020001180	S.CERAMIC	SFPCA455KH1A-R1 (SFPC455H-TC01)	T
F14	2020001050	S.CERAMIC	SFPCA455KE4A-R1 (SFPC455E-TC01)	T
X1	6050009970	XTAL	CR-574 (21.295 MHz)	T
X2	6070000170	S.DISCRIMINATOR	CDBC455KCA16-R0	T
X4	6050009870	S.XTAL	CR-567 (9.8304 MHz)	T
X501	6050009961	S.XTAL	CR-573A (12.6 MHz)	T
X502	6060000760	S.CERAMIC	EFOP3584E5	T
L1	6110003130	COIL	LA-504	T
L2	6110003130	COIL	LA-504	T
L3	6110003120	COIL	LA-503	T
L4	6200003850	S.COIL	36CS-656LZ-09K=P3	T
L5	6200003850	S.COIL	36CS-656LZ-09K=P3	T
L6	6170000230	COIL	LW-25	T
L7	6110003130	COIL	LA-504	T
L8	6200006200	S.COIL	MC152-E558CNA-100047=P3	T
L10	6200004230	S.COIL	ELJNC R56K-F	T
L11	6200006200	S.COIL	MC152-E558CNA-100047=P3	T
L12	6200006200	S.COIL	MC152-E558CNA-100047=P3	T
L13	6200006200	S.COIL	MC152-E558CNA-100047=P3	T
L15	6200004440	S.COIL	ELJFC 4R7M-F	T
L16	6200001920	S.COIL	ELJNC R15K-F	B
L17	6200003670	S.COIL	ELJNC 68NK-F	B
L18	6200004880	S.COIL	ELJFC 3R3K-F	B
L19	6200002940	S.COIL	ELJFC 1R2K-F	T
L23	6200001770	S.COIL	ELJNC 47NK-F	B
L24	6200001770	S.COIL	ELJNC 47NK-F	B
L25	6200003670	S.COIL	ELJNC 68NK-F	B
L26	6200004230	S.COIL	ELJNC R56K-F	B
L27	6200002160	S.COIL	ELJNC 82NK-F	B
L29	6200004880	S.COIL	ELJFC 3R3K-F	B
L30	6200004230	S.COIL	ELJNC R56K-F	B
L31	6200001770	S.COIL	ELJNC 47NK-F	T
L32	6200002160	S.COIL	ELJNC 82NK-F	B
L33	6200002160	S.COIL	ELJNC 82NK-F	B
L35	6200004880	S.COIL	ELJFC 3R3K-F	B
L37	6200004880	S.COIL	ELJFC 3R3K-F	B
L38	6200004850	S.COIL	MC152-E558CN-100024	T
L39	6200004880	S.COIL	ELJFC 3R3K-F	B
L40	6200004990	S.COIL	LQH31MNR68M01L (LQH 1N R68M)	B
L41	6200002940	S.COIL	ELJFC 1R2K-F	B
L42	6200004880	S.COIL	ELJFC 3R3K-F	B
L43	6200004980	S.COIL	MC152-E558CN-100023	T
L44	6200004230	S.COIL	ELJNC R56K-F	B
L45	6200004440	S.COIL	ELJFC 4R7M-F	T
L46	6200004230	S.COIL	ELJNC R56K-F	B
L47	6200004230	S.COIL	ELJNC R56K-F	B
L48	6200004230	S.COIL	ELJNC R56K-F	T
L50	6200004230	S.COIL	ELJNC R56K-F	T
L51	6200001770	S.COIL	ELJNC 47NK-F	B
L52	6200004230	S.COIL	ELJNC R56K-F	T
L53	6200007030	S.COIL	SLF7032T-101MR45-2	T
L54	6200004230	S.COIL	ELJNC R56K-F	T
L55	6200003960	S.COIL	MLF1608A 1R0K-T	T
L56	6200003960	S.COIL	MLF1608A 1R0K-T	T
L57	6200003960	S.COIL	MLF1608A 1R0K-T	T
L58	6200003960	S.COIL	MLF1608A 1R0K-T	T
L59	6200003960	S.COIL	MLF1608A 1R0K-T	T
L60	6200003960	S.COIL	MLF1608A 1R0K-T	T
L62	6200004720	S.COIL	MLF1608D R10K-T	B
L63	6200003960	S.COIL	MLF1608A 1R0K-T	B
L502	6200004720	S.COIL	MLF1608D R10K-T	B
L504	6200004880	S.COIL	ELJFC 3R3K-F	B
L508	6200002150	S.COIL	ELJNC 56NK-F	B
R1	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)	B
R2	7030004050	S.RESISTOR	ERJ3GEYJ 1R0 V (1 Ω)	B
R4	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)	B
R5	7030004050	S.RESISTOR	ERJ3GEYJ 1R0 V (1 Ω)	B
R7	7030001170	S.RESISTOR	MCR50JZHJ 220 Ω (221)	T
R8	7030001170	S.RESISTOR	MCR50JZHJ 220 Ω (221)	T
R10	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)	T
R12	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R13	7030003700	S.RESISTOR	ERJ3GEYJ 154 V (150 kΩ)	T
R14	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R15	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R16	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)	B
R17	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)	B
R18	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)	B
R19	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R20	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R21	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)	B
R25	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)	B
R26	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	T
R27	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)	B
R28	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	B
R29	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)	B
R30	7030003350	S.RESISTOR	ERJ3GEYJ 181 V (180 Ω)	T
R31	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R32	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)	B
R33	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)	B
R34	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R35	7030003670	S.RESISTOR	ERJ3GEYJ 823 V (82 kΩ)	B
R36	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	B
R37	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)	B
R38	7030003470	S.RESISTOR	ERJ3GEYJ 182 V (1.8 kΩ)	B
R39	7030003640	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	B
R40	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)	T
R41	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R42	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	B
R44	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)	B
R45	7030003650	S.RESISTOR	ERJ3GEYJ 563 V (56 kΩ)	B
R46	7510000430	S.THERMISTOR	TN20-3K202LT	B
R47	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)	B
R48	7030003430	S.RESISTOR	ERJ3GEYJ 821 V (820 Ω)	B
R49	7030004050	S.RESISTOR	ERJ3GEYJ 1R0 V (1 Ω)	T
R51	7030004270	S.RESISTOR	ERJ3EKF 4121 V (4.12 kΩ)	T
R52	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	T
R53	7030005491	S.RESISTOR	ERA3YKD 363V (36 kΩ)	T
R61	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R62	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)	T
R63	7030004850	S.RESISTOR	ERJ3GEYF 913 V (91 kΩ)	T
R65	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	T
R67	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R68	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)	B
R69	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)	B
R70	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)	B
R71	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R77	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)	B
R80	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)	B
R81	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R85	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)	B
R86	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)	B
R87	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R88	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R89	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)	B
R90	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R92	7030003670	S.RESISTOR	ERJ3GEYJ 823 V (82 kΩ)	B
R93	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)	B
R94	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R95	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)	B
R96	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R97	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B
R98	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)	T
R99	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)	T
R100	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R101	7030003810	S.RESISTOR	ERJ3GEYJ 125 V (1.2 MΩ)	T
R102	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R103	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	T
R107	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)	B
R108	7030000100	S.RESISTOR	MCR10EZHJ 4.7 Ω (4R7)	B
R109	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)	B
R110	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)	B
R111	7030000180	S.RESISTOR	MCR10EZHJ 22 Ω (220)	B
R113	7030003240	S.RESISTOR	ERJ3GEYJ 220 V (22 Ω)	B
R114	7030003240	S.RESISTOR	ERJ3GEYJ 220 V (22 Ω)	B
R115	7030003510	S.RESISTOR	ERJ3GEYJ 392 V (3.9 kΩ)	B
R116	7030003340	S.RESISTOR	ERJ3GEYJ 151 V (150 Ω)	B
R117	7030003470	S.RESISTOR	ERJ3GEYJ 182 V (1.8 kΩ)	B
R118	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)	B
R119	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)	B
R120	7030003550	S.RESISTOR	ERJ3GEYJ 822 V (8.2 kΩ)	B
R121	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)	B
R122	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)	T
R123	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)	T
R124	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)	T
R125	7030003420	S.RESISTOR	ERJ3GEYJ 681 V (680 Ω)	B
R126	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)	T
R127	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)	T
R128	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)	B
R129	7030003550	S.RESISTOR	ERJ3GEYJ 822 V (8.2 kΩ)	T
R130	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)	T
R131	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)	B
R132	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	T
R133	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)	T
R134	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)	B

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.
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M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
R135	7030003530	S.RESISTOR ERJ3GEYJ 562 V (5.6 kΩ)	B
R136	7030004040	S.RESISTOR ERJ3GEYJ 4R7 V (4.7 Ω)	T
R137	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R138	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	T
R139	7030003530	S.RESISTOR ERJ3GEYJ 562 V (5.6 kΩ)	T
R140	7030004040	S.RESISTOR ERJ3GEYJ 4R7 V (4.7 Ω)	T
R141	7030003430	S.RESISTOR ERJ3GEYJ 821 V (820 Ω)	B
R142	7510001360	S.THERMISTOR NTCG20 3SH 333JT	T
R143	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	B
R145	7030003400	S.RESISTOR ERJ3GEYJ 471 V (470 Ω)	B
R146	7030003280	S.RESISTOR ERJ3GEYJ 470 V (47 Ω)	B
R147	7030003400	S.RESISTOR ERJ3GEYJ 471 V (470 Ω)	B
R148	7030003280	S.RESISTOR ERJ3GEYJ 470 V (47 Ω)	T
R150	7030003740	S.RESISTOR ERJ3GEYJ 334 V (330 kΩ)	B
R151	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	B
R152	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R153	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R154	7030003420	S.RESISTOR ERJ3GEYJ 681 V (680 Ω)	B
R155	7030003500	S.RESISTOR ERJ3GEYJ 332 V (3.3 kΩ)	B
R156	7030003800	S.RESISTOR ERJ3GEYJ 105 V (1 MΩ)	T
R157	7030003800	S.RESISTOR ERJ3GEYJ 105 V (1 MΩ)	T
R158	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R159	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R160	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R162	7030003200	S.RESISTOR ERJ3GEYJ 100 V (10 Ω)	B
R163	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	B
R169	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	T
R170	7030003550	S.RESISTOR ERJ3GEYJ 822 V (8.2 kΩ)	T
R171	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	T
R172	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	T
R173	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	T
R184	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	T
R185	7030003590	S.RESISTOR ERJ3GEYJ 183 V (18 kΩ)	T
R186	7030003430	S.RESISTOR ERJ3GEYJ 821 V (820 Ω)	T
R187	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	T
R188	7030003580	S.RESISTOR ERJ3GEYJ 153 V (15 kΩ)	T
R189	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	T
R190	7030003600	S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)	T
R191	7030003400	S.RESISTOR ERJ3GEYJ 471 V (470 Ω)	T
R192	7030003600	S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)	T
R193	7030003600	S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)	T
R194	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	T
R195	7030003880	S.RESISTOR ERJ3GEYJ 244 V (240 kΩ)	T
R196	7030003610	S.RESISTOR ERJ3GEYJ 273 V (27 kΩ)	T
R197	7030003620	S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)	T
R208	7030000460	S.RESISTOR MCR10EZJH 4.7 kΩ	T
R209	7030000460	S.RESISTOR MCR10EZJH 4.7 kΩ	T
R210	7030000460	S.RESISTOR MCR10EZJH 4.7 kΩ	B
R211	7030000460	S.RESISTOR MCR10EZJH 4.7 kΩ	B
R212	7030000460	S.RESISTOR MCR10EZJH 4.7 kΩ	B
R213	7030000460	S.RESISTOR MCR10EZJH 4.7 kΩ	B
R215	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R216	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R217	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R218	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	T
R222	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R224	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	T
R228	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	T
R230	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R231	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R232	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R238	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	B
R239	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	B
R240	7030003660	S.RESISTOR ERJ3GEYJ 683 V (68 kΩ)	T
R242	7030003500	S.RESISTOR ERJ3GEYJ 332 V (3.3 kΩ)	B
R243	7030003460	S.RESISTOR ERJ3GEYJ 152 V (1.5 kΩ)	B
R244	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	T
R245	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	T
R246	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	T
R247	7030003700	S.RESISTOR ERJ3GEYJ 154 V (150 kΩ)	T
R248	7030003700	S.RESISTOR ERJ3GEYJ 154 V (150 kΩ)	T
R249	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	T
R250	7030003670	S.RESISTOR ERJ3GEYJ 823 V (82 kΩ)	T
R251	7030003410	S.RESISTOR ERJ3GEYJ 561 V (560 Ω)	T
R255	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	T
R256	7030003750	S.RESISTOR ERJ3GEYJ 394 V (390 kΩ)	T
R257	7030003600	S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)	T
R258	7030003550	S.RESISTOR ERJ3GEYJ 822 V (8.2 kΩ)	B
R259	7030003520	S.RESISTOR ERJ3GEYJ 472 V (47 kΩ)	B
R260	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	B
R261	7030003760	S.RESISTOR ERJ3GEYJ 474 V (470 kΩ)	T
R262	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	T
R263	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	T
R267	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R268	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R269	7030003760	S.RESISTOR ERJ3GEYJ 474 V (470 kΩ)	T
R270	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	B
R271	7030003720	S.RESISTOR ERJ3GEYJ 224 V (220 kΩ)	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
R272	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R273	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R275	7410000950	S.ARRAY EXB-V8V 102JV	T
R276	7410000950	S.ARRAY EXB-V8V 102JV	T
R277	7410000950	S.ARRAY EXB-V8V 102JV	T
R278	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R281	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R283	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R284	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R285	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R291	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R292	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R293	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R294	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R295	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	T
R296	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R297	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	T
R298	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	T
R299	7030003720	S.RESISTOR ERJ3GEYJ 224 V (220 kΩ)	T
R300	7030003620	S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)	T
R301	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R302	7030003570	S.RESISTOR ERJ3GEYJ 123 V (12 kΩ)	T
R303	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R304	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R305	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R306	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R307	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R308	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R309	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R310	7030003800	S.RESISTOR ERJ3GEYJ 105 V (1 MΩ)	B
R312	7030003520	S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)	T
R313	7030003730	S.RESISTOR ERJ3GEYJ 274 V (270 kΩ)	B
R314	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	B
R315	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	B
R316	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	B
R317	7030003620	S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)	T
R319	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	B
R320	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R321	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R322	7030003800	S.RESISTOR ERJ3GEYJ 105 V (1 MΩ)	B
R323	7030003800	S.RESISTOR ERJ3GEYJ 105 V (1 MΩ)	B
R324	7030003800	S.RESISTOR ERJ3GEYJ 105 V (1 MΩ)	B
R325	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R326	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R327	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R328	7030003400	S.RESISTOR ERJ3GEYJ 471 V (470 Ω)	B
R329	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	T
R330	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	T
R331	7030003400	S.RESISTOR ERJ3GEYJ 471 V (470 Ω)	B
R333	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	B
R335	7030003520	S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)	T
R336	7030003520	S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)	T
R337	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R338	7030003650	S.RESISTOR ERJ3GEYJ 563 V (56 kΩ)	B
R339	7030003610	S.RESISTOR ERJ3GEYJ 273 V (27 kΩ)	B
R340	7030003370	S.RESISTOR ERJ3GEYJ 271 V (270 Ω)	B
R341	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	T
R342	7030003660	S.RESISTOR ERJ3GEYJ 683 V (68 kΩ)	T
R344	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	B
R348	7030003510	S.RESISTOR ERJ3GEYJ 392 V (3.9 kΩ)	T
R349	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	T
R357	7030003760	S.RESISTOR ERJ3GEYJ 474 V (470 kΩ)	B
R359	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	B
R360	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	B
R361	7030003520	S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)	T
R362	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	T
R363	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	T
R365	7030003200	S.RESISTOR ERJ3GEYJ 100 V (10 Ω)	T
R366	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	T
R369	7510001430	S.THERMISTOR NTCG20 4CH 104JT	T
R370	7030003550	S.RESISTOR ERJ3GEYJ 822 V (8.2 kΩ)	T
R371	7030003520	S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)	B
R372	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	T
R373	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	B
R374	7030003620	S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)	T
R375	7030003520	S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)	T
R376	7310004630	S.TRIMMER EVM-2WSX80 B24 (203)	T
R377	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	T
R378	7030003600	S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)	T
R379	7030003600	S.RESISTOR ERJ3GEYJ 223 V (22 kΩ)	T
R380	7030003670	S.RESISTOR ERJ3GEYJ 823 V (82 kΩ)	T
R381	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	T
R382	7030003240	S.RESISTOR ERJ3GEYJ 220 V (22 Ω)	B
R385	7030003430	S.RESISTOR ERJ3GEYJ 821 V (820 Ω)	B
R386	7030000180	S.RESISTOR MCR10EZJH 22 Ω (220)	B
R387	7030003450	S.RESISTOR ERJ3GEYJ 122 V (1.2 kΩ)	T
R388	7510001410	S.THERMISTOR NTCG20 3FH 222JT	T
R389	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	T

S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
R392	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	T
R397	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R398	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R400	7030003730	S.RESISTOR ERJ3GEYJ 274 V (270 kΩ)	T
		[L-band]	T
	7030003750	S.RESISTOR ERJ3GEYJ 394 V (390 kΩ)	T
		[H-band]	T
R401	7030003710	S.RESISTOR ERJ3GEYJ 184 V (180 kΩ)	T
R402	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R403	7030004040	S.RESISTOR ERJ3GEYJ 4R7 V (4.7 Ω)	T
R404	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R405	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R406	7030003620	S.RESISTOR ERJ3GEYJ 333 V (33 kΩ)	B
R407	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	B
R408	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	B
R409	7030003460	S.RESISTOR ERJ3GEYJ 152 V (1.5 kΩ)	B
R410	7030003480	S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ)	T
R412	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
		[25 kHz]	B
	7030003470	S.RESISTOR ERJ3GEYJ 182 V (1.8 kΩ)	B
		[20 kHz]	B
R415	7030000620	S.RESISTOR MCR10EZHJ 100 kΩ	B
R418	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	T
R420	7030003580	S.RESISTOR ERJ3GEYJ 153 V (15 kΩ)	T
R421	7030004050	S.RESISTOR ERJ3GEYJ 1R0 V (1 Ω)	T
R501	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	B
R502	7030003580	S.RESISTOR ERJ3GEYJ 153 V (15 kΩ)	B
R503	7030003570	S.RESISTOR ERJ3GEYJ 123 V (12 kΩ)	B
R504	7030003570	S.RESISTOR ERJ3GEYJ 123 V (12 kΩ)	B
R505	7030003570	S.RESISTOR ERJ3GEYJ 123 V (12 kΩ)	B
R506	7030003580	S.RESISTOR ERJ3GEYJ 153 V (15 kΩ)	B
R508	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	T
R509	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	T
R510	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	T
R511	7030003710	S.RESISTOR ERJ3GEYJ 184 V (180 kΩ)	T
R512	7030003510	S.RESISTOR ERJ3GEYJ 392 V (3.9 kΩ)	T
R513	7030003650	S.RESISTOR ERJ3GEYJ 563 V (56 kΩ)	T
R514	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	T
R515	7030003630	S.RESISTOR ERJ3GEYJ 393 V (39 kΩ)	T
R516	7030003570	S.RESISTOR ERJ3GEYJ 123 V (12 kΩ)	B
R517	7030003570	S.RESISTOR ERJ3GEYJ 123 V (12 kΩ)	B
R518	7030003570	S.RESISTOR ERJ3GEYJ 123 V (12 kΩ)	B
R519	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R520	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	T
R521	7030003710	S.RESISTOR ERJ3GEYJ 184 V (180 kΩ)	T
		[25 kHz]	T
	7030003740	S.RESISTOR ERJ3GEYJ 334 V (330 kΩ)	T
		[20 kHz]	T
R522	7030003720	S.RESISTOR ERJ3GEYJ 224 V (220 kΩ)	T
R523	7030003650	S.RESISTOR ERJ3GEYJ 563 V (56 kΩ)	T
R524	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R525	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	B
R526	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R527	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R528	7030003800	S.RESISTOR ERJ3GEYJ 105 V (1 MΩ)	B
R529	7030003750	S.RESISTOR ERJ3GEYJ 394 V (390 kΩ)	B
R530	7030003500	S.RESISTOR ERJ3GEYJ 332 V (3.3 kΩ)	B
R531	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R532	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R533	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R534	7030003800	S.RESISTOR ERJ3GEYJ 105 V (1 MΩ)	T
R535	7410000950	S.ARRAY EXB-V8V 102JV	T
R538	7410000950	S.ARRAY EXB-V8V 102JV	T
R540	7030009591	S.RESISTOR ERA3YED 472V	B
R541	7030008121	S.RESISTOR ERA3YED 682V	B
R542	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	B
R543	7030003420	S.RESISTOR ERJ3GEYJ 681 V (680 Ω)	B
R544	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R545	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R546	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	T
R547	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R548	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	B
R549	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	B
R550	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	B
R551	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	T
R552	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R553	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R554	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R555	7030005651	S.RESISTOR ERA3YKD 304V (300 kΩ)	T
R556	7030005871	S.RESISTOR ERA3YKD 104V (100 kΩ)	B
R558	7030003800	S.RESISTOR ERJ3GEYJ 105 V (1 MΩ)	B
R559	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	T
R560	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R561	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R562	7030003720	S.RESISTOR ERJ3GEYJ 224 V (220 kΩ)	B
R563	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	T
R564	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	T
R565	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
R566	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	B
R567	7030003520	S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)	T
R568	7030003520	S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)	T
R569	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R570	7410000950	S.ARRAY EXB-V8V 102JV	T
R571	7410000950	S.ARRAY EXB-V8V 102JV	T
R572	7410000950	S.ARRAY EXB-V8V 102JV	T
R573	7410000950	S.ARRAY EXB-V8V 102JV	T
R574	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	T
R575	7410000950	S.ARRAY EXB-V8V 102JV	T
R576	7410000950	S.ARRAY EXB-V8V 102JV	T
R577	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	T
R578	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	T
R579	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	T
R580	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	T
R581	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	T
R583	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R584	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R585	7030003680	S.RESISTOR ERJ3GEYJ 104 V (100 kΩ)	B
R586	7030003540	S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ)	T
R587	7030003540	S.RESISTOR ERJ3GEYJ 682 V (6.8 kΩ)	T
R588	7030003430	S.RESISTOR ERJ3GEYJ 821 V (820 Ω)	B
R589	7030003610	S.RESISTOR ERJ3GEYJ 273 V (27 kΩ)	B
R590	7030003880	S.RESISTOR ERJ3GEYJ 244 V (240 kΩ)	B
R591	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	B
R592	7030003400	S.RESISTOR ERJ3GEYJ 471 V (470 Ω)	B
R593	7030003590	S.RESISTOR ERJ3GEYJ 183 V (18 kΩ)	T
R594	7030003520	S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)	B
R595	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	T
R596	7030003650	S.RESISTOR ERJ3GEYJ 563 V (56 kΩ)	T
		[H-band]	T
	7030003710	S.RESISTOR ERJ3GEYJ 184 V (180 kΩ)	T
		[L-band]	T
R600	7030003560	S.RESISTOR ERJ3GEYJ 103 V (10 kΩ)	B
R601	7030003520	S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)	B
R602	7030003520	S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)	T
R603	7030003220	S.RESISTOR ERJ3GEYJ 150 V (15 Ω)	B
R604	7030003220	S.RESISTOR ERJ3GEYJ 150 V (15 Ω)	B
R605	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	T
R606	7030003640	S.RESISTOR ERJ3GEYJ 473 V (47 kΩ)	T
R607	7030003840	S.RESISTOR ERJ3GEYJ 225 V (2.2 MΩ)	T
R608	7030003710	S.RESISTOR ERJ3GEYJ 184 V (180 kΩ)	T
R609	7030003760	S.RESISTOR ERJ3GEYJ 474 V (470 kΩ)	T
R610	7030003520	S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ)	T
R611	7030003440	S.RESISTOR ERJ3GEYJ 102 V (1 kΩ)	T
R612	7030003530	S.RESISTOR ERJ3GEYJ 562 V (5.6 kΩ)	T
R613	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	T
R614	7030003400	S.RESISTOR ERJ3GEYJ 471 V (470 Ω)	B
R615	7030003400	S.RESISTOR ERJ3GEYJ 471 V (470 Ω)	T
R618	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	T
R619	7030003320	S.RESISTOR ERJ3GEYJ 101 V (100 Ω)	T
C2	4030011160	S.CERAMIC GRM31M2C2H150JV01L (GRM42-6 CH)	B
C3	4030011210	S.CERAMIC GRM31M2C2H330JV01L (GRM42-6 CH)	T
C4	4030006850	S.CERAMIC C1608 JB 1H 471K-T	B
C5	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C6	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C7	4030006850	S.CERAMIC C1608 JB 1H 471K-T	B
C8	4030011210	S.CERAMIC GRM31M2C2H330JV01L (GRM42-6 CH)	T
C9	4030011080	S.CERAMIC GRM31M2C2H6R0DV01L (GRM42-6 CH)	T
		[H-band]	T
	4030011100	S.CERAMIC GRM31M2C2H8R0DV01L (GRM42-6 CH)	T
		[L-band]	T
C10	4030011170	S.CERAMIC GRM31M2C2H180JV01L (GRM42-6 CH)	T
C11	4030011240	S.CERAMIC GRM31M2C2H470JV01L (GRM42-6 CH)	T
C13	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C14	4510004650	S.ELECTROLYTIC ECEV1EA4R7SR	T
C15	4030011160	S.CERAMIC GRM31M2C2H150JV01L (GRM42-6 CH)	T
C16	4030011160	S.CERAMIC GRM31M2C2H150JV01L (GRM42-6 CH)	T
C17	4030011180	S.CERAMIC GRM31M2C2H220JV01L (GRM42-6 CH)	B
C18	4030007030	S.CERAMIC C1608 CH 1H 150J-T	B
C19	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C20	4030009530	S.CERAMIC C1608 CH 1H 030B-T	T
C21	4030009520	S.CERAMIC C1608 CH 1H 020B-T	B
C22	4030007060	S.CERAMIC C1608 CH 1H 270J-T	B
C23	4030009530	S.CERAMIC C1608 CH 1H 030B-T	B
C26	4030006850	S.CERAMIC C1608 JB 1H 471K-T	B
C27	4030011770	S.CERAMIC C1608 CH 1H 060B-T	B
C28	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C29	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C30	4030007060	S.CERAMIC C1608 CH 1H 270J-T	B
C31	4030009520	S.CERAMIC C1608 CH 1H 020B-T	B
C32	4030008560	S.CERAMIC C1608 CH 1H 300J-T	B
C33	4030011770	S.CERAMIC C1608 CH 1H 060B-T	B
C34	4030009520	S.CERAMIC C1608 CH 1H 020B-T	B
C35	4030009920	S.CERAMIC C1608 CH 1H 050B-T	B
C36	4030011770	S.CERAMIC C1608 CH 1H 060B-T	B

S.=Surface mount

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
C37	4030008560	S.CERAMIC C1608 CH 1H 300J-T	B
C39	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C40	4030006980	S.CERAMIC C1608 CH 1H 070D-T	B
C41	4030007030	S.CERAMIC C1608 CH 1H 150J-T	B
C42	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C43	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C44	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C45	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C46	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C47	4030009550	S.CERAMIC C1608 CH 1H 2R5B-T	B
C48	4550002890	S.TANTALUM TEESVA 1A 225M8L	T
C49	4030006900	S.CERAMIC C1608 JB 1H 103K-T	T
C50	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C51	4030007110	S.CERAMIC C1608 CH 1H 680J-T	B
C52	4030007140	S.CERAMIC C1608 CH 1H 121J-T	B
C53	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C54	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C55	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C56	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C57	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C58	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C59	4030007110	S.CERAMIC C1608 CH 1H 680J-T	B
C60	4030012600	S.CERAMIC C2012 JB 1A 105M-T	B
C61	4550002890	S.TANTALUM TEESVA 1A 225M8L	B
C62	4030007150	S.CERAMIC C1608 CH 1H 151J-T	B
C63	4030007150	S.CERAMIC C1608 CH 1H 151J-T	B
C64	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C65	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C66	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C67	4030008920	S.CERAMIC C1608 JB 1H 473K-T	T
C68	4030008920	S.CERAMIC C1608 JB 1H 473K-T	T
C69	4030008920	S.CERAMIC C1608 JB 1H 473K-T	T
C70	4030008920	S.CERAMIC C1608 JB 1H 473K-T	T
C71	4030008920	S.CERAMIC C1608 JB 1H 473K-T	T
C72	4550002890	S.TANTALUM TEESVA 1A 225M8L	T
C73	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C74	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C75	4550000460	S.TANTALUM TEESVA 1C 105M8L	B
C83	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C84	4550002890	S.TANTALUM TEESVA 1A 225M8L	B
C85	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	T
C86	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C87	4550002890	S.TANTALUM TEESVA 1A 225M8L	T
C90	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C91	4030006870	S.CERAMIC C1608 JB 1H 222K-T	B
C92	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C93	4510005290	S.ELECTROLYTIC ECEV1EA221P	T
C94	4510006260	S.ELECTROLYTIC ECEV1AA471UP	T
C95	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C97	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C98	4550002890	S.TANTALUM TEESVA 1A 225M8L	B
C100	4030010240	S.CERAMIC C1608 JB 1H 391K-T	B
C101	4030006900	S.CERAMIC C1608 JB 1H 103K-T	B
C102	4030006900	S.CERAMIC C1608 JB 1H 103K-T	T
C103	4030006900	S.CERAMIC C1608 JB 1H 103K-T	T
C104	4550002890	S.TANTALUM TEESVA 1A 225M8L	T
C105	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C106	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C107	4550003170	S.TANTALUM TEMSVA 1D 155M-8L	B
C108	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C112	4550003220	S.TANTALUM TEESVA 1E 105M8L	T
C115	4510004510	ELECTROLYTIC 25 MV 470 HC	B
C116	4030006850	S.CERAMIC C1608 JB 1H 471K-T	B
C117	4030006900	S.CERAMIC C1608 JB 1H 103K-T	B
C118	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C119	4510005750	S.ELECTROLYTIC ECEV1EA220SP	T
C121	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C122	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C123	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C124	4510005750	S.ELECTROLYTIC ECEV1EA220SP	T
C125	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C126	4030007020	S.CERAMIC C1608 CH 1H 120J-T	B
C127	4030007060	S.CERAMIC C1608 CH 1H 270J-T	B
C128	4030007020	S.CERAMIC C1608 CH 1H 120J-T	B
C129	4030007070	S.CERAMIC C1608 CH 1H 330J-T	T
C130	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C131	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C132	4030007050	S.CERAMIC C1608 CH 1H 220J-T	T
C133	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C134	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C135	4030006850	S.CERAMIC C1608 JB 1H 471K-T	B
C136	4030006850	S.CERAMIC C1608 JB 1H 471K-T	B
C137	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C138	4030007030	S.CERAMIC C1608 CH 1H 150J-T	B
C139	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C140	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C141	4030007010	S.CERAMIC C1608 CH 1H 100D-T	B
C142	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
C143	4030007060	S.CERAMIC C1608 CH 1H 270J-T	T
C144	4030007060	S.CERAMIC C1608 CH 1H 270J-T	T
C145	4030006850	S.CERAMIC C1608 JB 1H 471K-T	B
C146	4030007060	S.CERAMIC C1608 CH 1H 270J-T	T
C147	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C148	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C149	4030007040	S.CERAMIC C1608 CH 1H 180J-T	B
C150	4030007010	S.CERAMIC C1608 CH 1H 100D-T	T
C151	4030007010	S.CERAMIC C1608 CH 1H 100D-T	T
C152	4030006850	S.CERAMIC C1608 JB 1H 471K-T	B
C153	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C154	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C155	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C156	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C157	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C158	4030009500	S.CERAMIC C1608 CH 1H 0R5B-T	T
C159	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C160	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C161	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C162	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C163	4030009500	S.CERAMIC C1608 CH 1H 0R5B-T	B
C164	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C165	4030007010	S.CERAMIC C1608 CH 1H 100D-T	T
C166	4030007010	S.CERAMIC C1608 CH 1H 100D-T	T
C167	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C168	4030007070	S.CERAMIC C1608 CH 1H 330J-T	B
C169	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C170	4030007060	S.CERAMIC C1608 CH 1H 270J-T	B
	4030009650	S.CERAMIC C1608 CH 1H 240J-T	B
C171	4030007000	S.CERAMIC C1608 CH 1H 090D-T	T
	4030007020	S.CERAMIC C1608 CH 1H 120J-T	T
C172	4030007010	S.CERAMIC C1608 CH 1H 100D-T	T
	4030007020	S.CERAMIC C1608 CH 1H 120J-T	[L-band]
C173	4030007110	S.CERAMIC C1608 CH 1H 680J-T	[H-band]
C174	4030008180	S.CERAMIC C1608 UJ 1H 030C-T	[H-band]
C176	4030007070	S.CERAMIC C1608 CH 1H 330J-T	[L-band]
C177	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C178	4030006850	S.CERAMIC C1608 JB 1H 471K-T	B
C179	4550000550	S.TANTALUM TEESVA 1V 224M8L	B
C181	4550003220	S.TANTALUM TEESVA 1E 105M8L	B
C182	4510004650	S.ELECTROLYTIC ECEV1EA4R7SR	T
C183	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C184	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C185	4550002890	S.TANTALUM TEESVA 1A 225M8L	B
C186	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C187	4510004630	S.ELECTROLYTIC ECEV1CA100SR	T
C191	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C197	4550006250	S.TANTALUM TEESVA 1A 106M8L	T
C200	4550002890	S.TANTALUM TEESVA 1A 225M8L	T
C201	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	T
C202	4030006870	S.CERAMIC C1608 JB 1H 222K-T	T
C203	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C204	4550003220	S.TANTALUM TEESVA 1E 105M8L	T
C205	4030004760	S.CERAMIC C2012 JF 1H 104Z-T	B
C206	4510005290	S.ELECTROLYTIC ECEV1EA221P	T
C207	4510004630	S.ELECTROLYTIC ECEV1CA100SR	T
C208	4550000460	S.TANTALUM TEESVA 1C 105M8L	T
C209	4550005980	S.TANTALUM TEESVA 1A 475M8L	B
C210	4550000460	S.TANTALUM TEESVA 1C 105M8L	B
C211	4550000460	S.TANTALUM TEESVA 1C 105M8L	B
C212	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C214	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C216	4030007050	S.CERAMIC C1608 CH 1H 220J-T	B
C217	4030006980	S.CERAMIC C1608 CH 1H 070D-T	B
C218	4030012600	S.CERAMIC C2012 JB 1A 105M-T	T
C224	4030008920	S.CERAMIC C1608 JB 1H 473K-T	T
C225	4030011330	S.CERAMIC C1608 CH 1H 391J-T	T
C226	4550003220	S.TANTALUM TEESVA 1E 105M8L	T
C228	4030009880	S.CERAMIC C1608 JB 1H 682K-T	T
C229	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C230	4550002890	S.TANTALUM TEESVA 1A 225M8L	B
C231	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C233	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C234	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C235	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C237	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C238	4030007130	S.CERAMIC C1608 CH 1H 101J-T	T
C239	4030006900	S.CERAMIC C1608 JB 1H 103K-T	T
C240	4030006870	S.CERAMIC C1608 JB 1H 222K-T	T
C242	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C243	4550002890	S.TANTALUM TEESVA 1A 225M8L	T
C244	4030008920	S.CERAMIC C1608 JB 1H 473K-T	T
C245	4550002890	S.TANTALUM TEESVA 1A 225M8L	T
C246	4030008870	S.CERAMIC C1608 JB 1H 183K-T	T
C247	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C250	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C251	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C252	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B

S.=Surface mount



[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
C253	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C254	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C255	4550003220	S.TANTALUM TEESVA 1E 105M8L	T
C256	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	T
C257	4030008680	S.CERAMIC C2012 JF 1C 105Z-T	T
C258	4030008680	S.CERAMIC C2012 JF 1C 105Z-T	T
C259	4550003260	S.TANTALUM TEMSVA 1V 684M-8L	T
C260	4030007130	S.CERAMIC C1608 CH 1H 101J-T	T
C261	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C262	4550003220	S.TANTALUM TEESVA 1E 105M8L	T
C263	4550003220	S.TANTALUM TEESVA 1E 105M8L	T
C264	4030004760	S.CERAMIC C2012 JF 1H 104Z-T	B
C266	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	B
C267	4510004630	S.ELECTROLYTIC ECEV1CA100SR	T
C268	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	B
C269	4030011810	S.CERAMIC C1608 JB 1A 224K-T	B
C272	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	B
C288	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C289	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C290	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C291	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C292	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C293	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C294	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C295	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C296	4030007040	S.CERAMIC C1608 CH 1H 180J-T	T
C297	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C299	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	T
C300	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C301	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C302	4030004760	S.CERAMIC C2012 JF 1H 104Z-T	T
C303	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C305	4030009510	S.CERAMIC C1608 CH 1H 010B-T	[H-band] B
	4030009520	S.CERAMIC C1608 CH 1H 020B-T	[L-band] B
C306	4030009510	S.CERAMIC C1608 CH 1H 010B-T	[H-band] B
	4030009520	S.CERAMIC C1608 CH 1H 020B-T	[L-band] B
C307	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C308	4030009000	S.CERAMIC C2012 JB 1C 224K-T	T
C310	4030007040	S.CERAMIC C1608 CH 1H 180J-T	T
C311	4030006980	S.CERAMIC C1608 CH 1H 070D-T	B
C312	4030007040	S.CERAMIC C1608 CH 1H 180J-T	T
C314	4510005900	S.ELECTROLYTIC ECEV0GA101SR	T
C315	4030007160	S.CERAMIC C1608 CH 1H 181J-T	B
C316	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C318	4030006900	S.CERAMIC C1608 JB 1H 103K-T	B
C319	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C320	4030008920	S.CERAMIC C1608 JB 1H 473K-T	T
C321	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C322	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C323	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C324	4030007070	S.CERAMIC C1608 CH 1H 330J-T	B
C325	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C326	4030006850	S.CERAMIC C1608 JB 1H 471K-T	B
C327	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C328	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C329	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C330	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C331	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C332	4550002890	S.TANTALUM TEESVA 1A 225M8L	B
C333	4550002890	S.TANTALUM TEESVA 1A 225M8L	B
C334	4550002890	S.TANTALUM TEESVA 1A 225M8L	B
C337	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C338	4030007080	S.CERAMIC C1608 CH 1H 390J-T	B
C339	4550003220	S.TANTALUM TEESVA 1E 105M8L	B
C340	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C341	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C343	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C344	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C348	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C351	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C352	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C353	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C354	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C355	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C356	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C357	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C358	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C359	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C360	4030010210	S.CERAMIC C3216 JB 1C 105M-T	B
C361	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C362	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C363	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	T
C364	4550006250	S.TANTALUM TEESVA 1A 106M8L	T
C365	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C366	4550002890	S.TANTALUM TEESVA 1A 225M8L	T
C368	4550006220	S.TANTALUM TEESVA 0J 156M8L	T
C369	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C370	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.
C371	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C376	4030006850	S.CERAMIC C1608 JB 1H 471K-T	B
C377	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C378	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C379	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C380	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C381	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C382	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C383	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C384	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C385	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C386	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C387	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C388	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C389	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C390	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C391	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C392	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C393	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C394	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C395	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C396	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C397	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C398	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C399	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C400	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C401	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C402	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C403	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C404	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C405	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C406	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C407	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C408	4030006850	S.CERAMIC C1608 JB 1H 471K-T	T
C409	4030007090	S.CERAMIC C1608 CH 1H 470J-T	T
C410	4510005750	S.ELECTROLYTIC ECEV1EA220SP	T
C411	4510005750	S.ELECTROLYTIC ECEV1EA220SP	T
C412	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C413	4030006880	S.CERAMIC C1608 JB 1H 472K-T	B
C414	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C419	4030006860	S.CERAMIC C1608 JB 1H 102K-T	T
C421	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C422	4030008880	S.CERAMIC C1608 JB 1H 223K-T	B
C423	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C426	4030008560	S.CERAMIC C1608 CH 1H 300J-T	T
C502	4030011600	S.CERAMIC C1608 JB 1E 104K-T	B
C503	4030006900	S.CERAMIC C1608 JB 1H 103K-T	B
C504	4030006900	S.CERAMIC C1608 JB 1H 103K-T	B
C506	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C507	4030008880	S.CERAMIC C1608 JB 1H 223K-T	T
C508	4550006250	S.TANTALUM TEESVA 1A 106M8L	T
C509	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	T
C510	4030006900	S.CERAMIC C1608 JB 1H 103K-T	T
C511	4030006900	S.CERAMIC C1608 JB 1H 103K-T	B
C512	4030006900	S.CERAMIC C1608 JB 1H 103K-T	B
C513	4030007070	S.CERAMIC C1608 CH 1H 330J-T	B
C514	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	T
C515	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	T
C516	4550006250	S.TANTALUM TEESVA 1A 106M8L	T
C517	4030011600	S.CERAMIC C1608 JB 1E 104K-T	T
C518	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C519	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C520	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	B
C521	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C522	4030006860	S.CERAMIC C1608 JB 1H 102K-T	B
C524	4030006880	S.CERAMIC C1608 JB 1H 472K-T	B
C525	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	B
C526	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C527	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	B
C528	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C529	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C530	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C531	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C532	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C533	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C534	4030007090	S.CERAMIC C1608 CH 1H 470J-T	B
C535	4030004760	S.CERAMIC C2012 JF 1H 104Z-T	B
C536	4030004760	S.CERAMIC C2012 JF 1H 104Z-T	B
C537	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	B
C538	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	B
C539	4550003260	S.TANTALUM TEMSVA 1V 684M-8L	T
C540	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	T
C541	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	T
C542	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	B
C543	4550006250	S.TANTALUM TEESVA 1A 106M8L	B
C544	4030008630	S.CERAMIC C1608 JF 1H 104Z-T	B
C545	4030006900	S.CERAMIC C1608 JB 1H 103K-T	T
C546	4030009580	S.CERAMIC C1608 JB 1H 681K-T	T

S.=Surface mount



# SECTION 7 MECHANICAL PARTS AND DISASSEMBLY

## [CHASSIS PARTS]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
J1	6510004880	Connector MR-DS-E 01	1
MP1	8010019000	1705 chassis (B)-1	1
MP2	8810008660	Screw PH BT M3 × 8 NI-ZU	4
MP3	8810008660	Screw PH BT M3 × 8 NI-ZU	2
MP4	8810008660	Screw PH BT M3 × 8 NI-ZU	2
MP5	8810009370	Screw PH BT M3 × 12 ZK	4
MP6	8930027480	1126 TR-A clip	1
MP7	8820000870	1705 cap screw	3
MP8	8110006941	1705 cover (B)-1	1
MP11	8930039611	Thermally sheet (C)-1	1
MP12	8930036800	1705 M-holder	1
MP15	8930039630	1706 jack sheet	1
MP16	8930036771	1705 main seal-1	1
MP17	8930049130	Shield tape (D)	1

## [FRONT UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
R26	7210002830	EVU-F2JFK4 B14	1
J1	6450001470	Connector 95003-2881	1
DS1	5030002180	LCD TSC0712-UFTDHW	1
EP2	8930048320	LCD contact SRCN-2140-SP-N-W	2
MP1	8210015740	2140 front panel assembly	1
MP2	8930047980	2140 LCD holder	1
MP3	8930048290	2140 LCD filter	1
MP4	8210015770	2140 reflector	1
MP5	8930059320	2140 front key (B)	[BIIS]only 1
	8930047860	2140 front key	[OTHER] 1
MP7	8610009840	Knob N234	1
MP9	8810008760	Screw PH BT M2 × 8 NI-ZU	5
MP10	8930048910	2140 earth plate	1

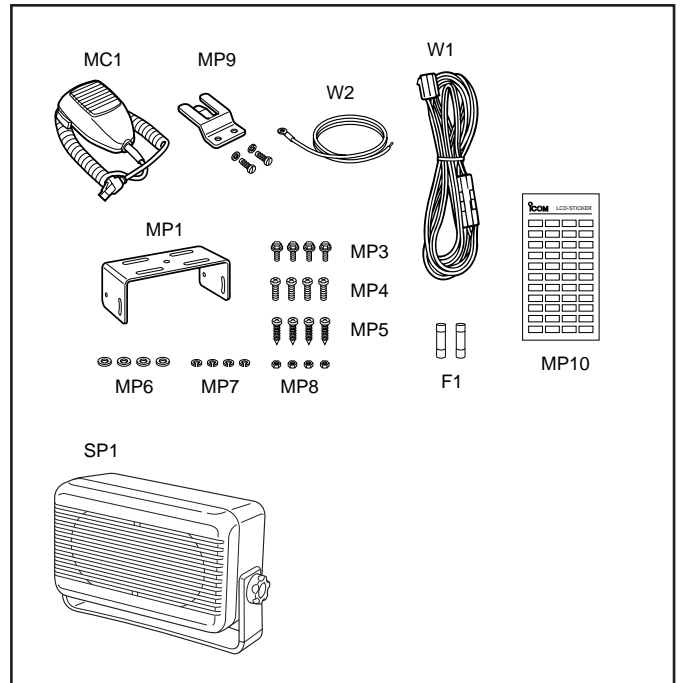
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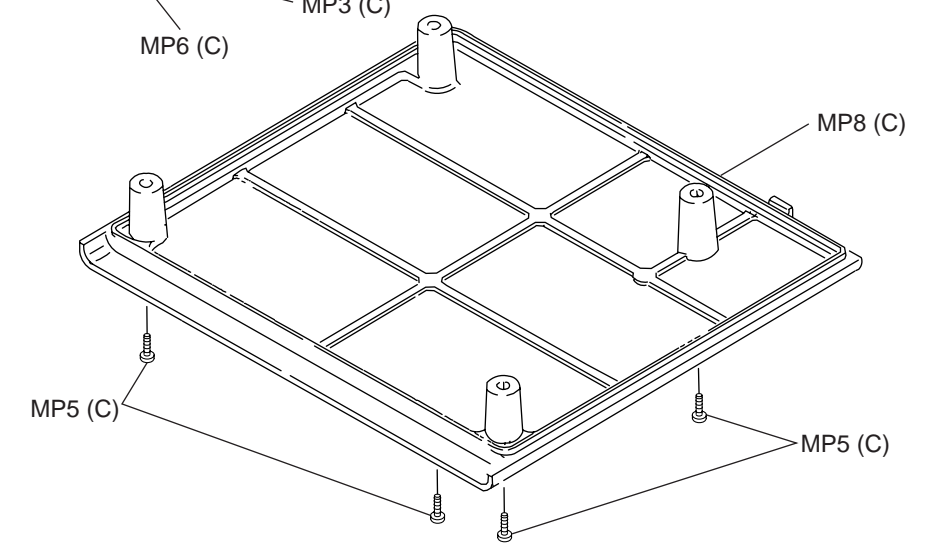
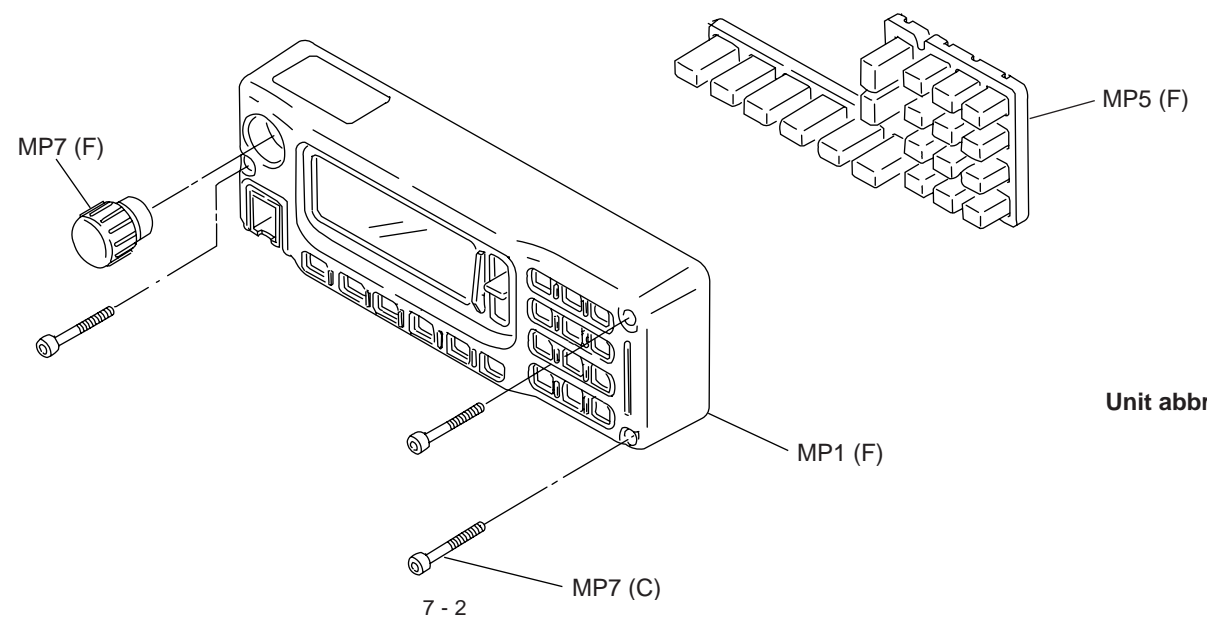
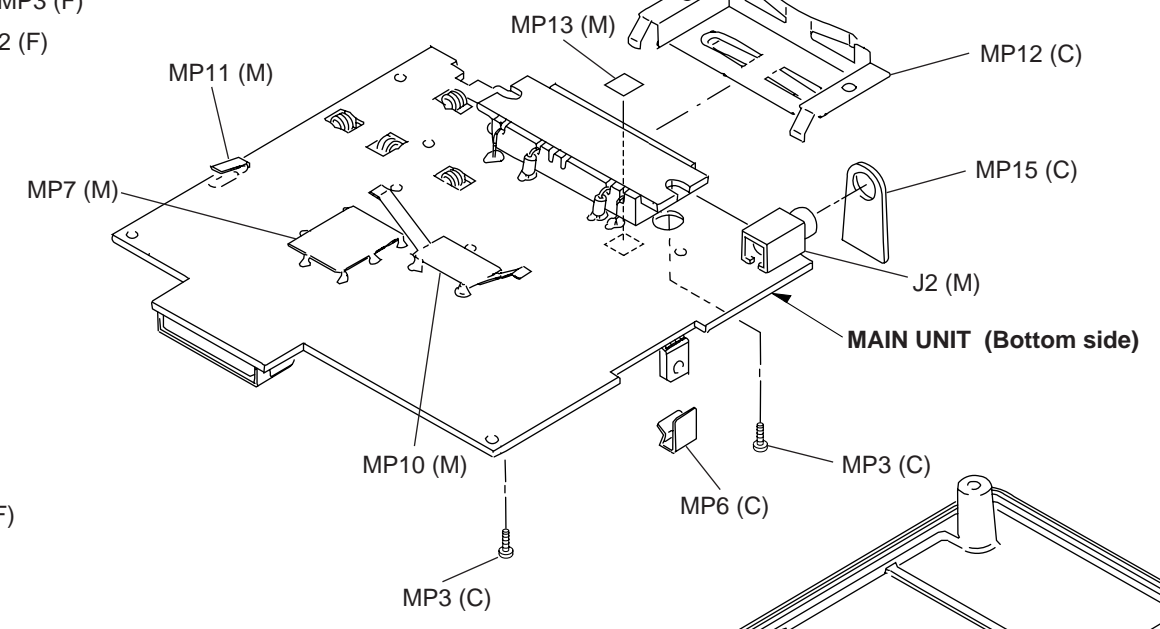
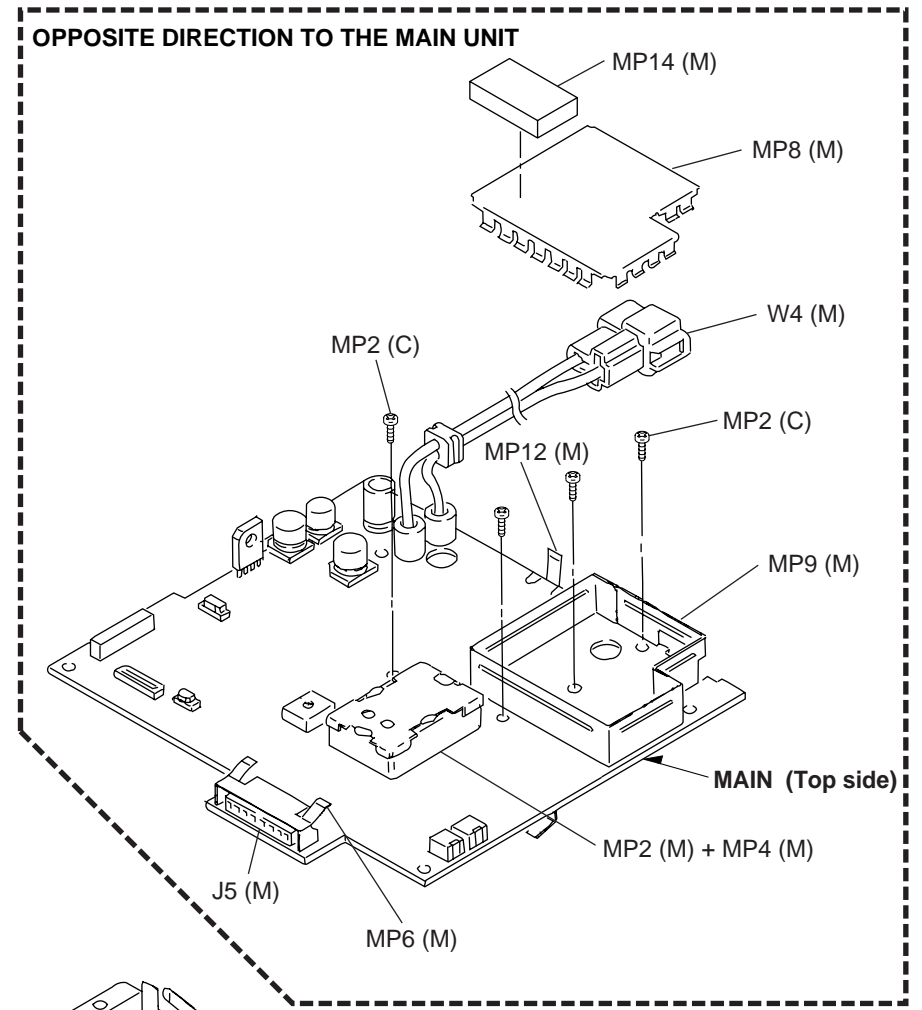
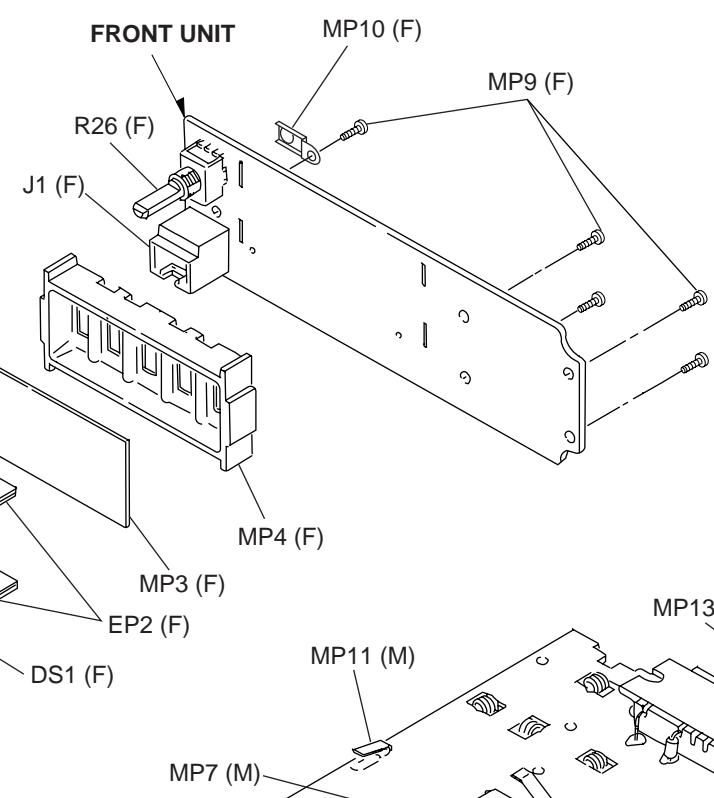
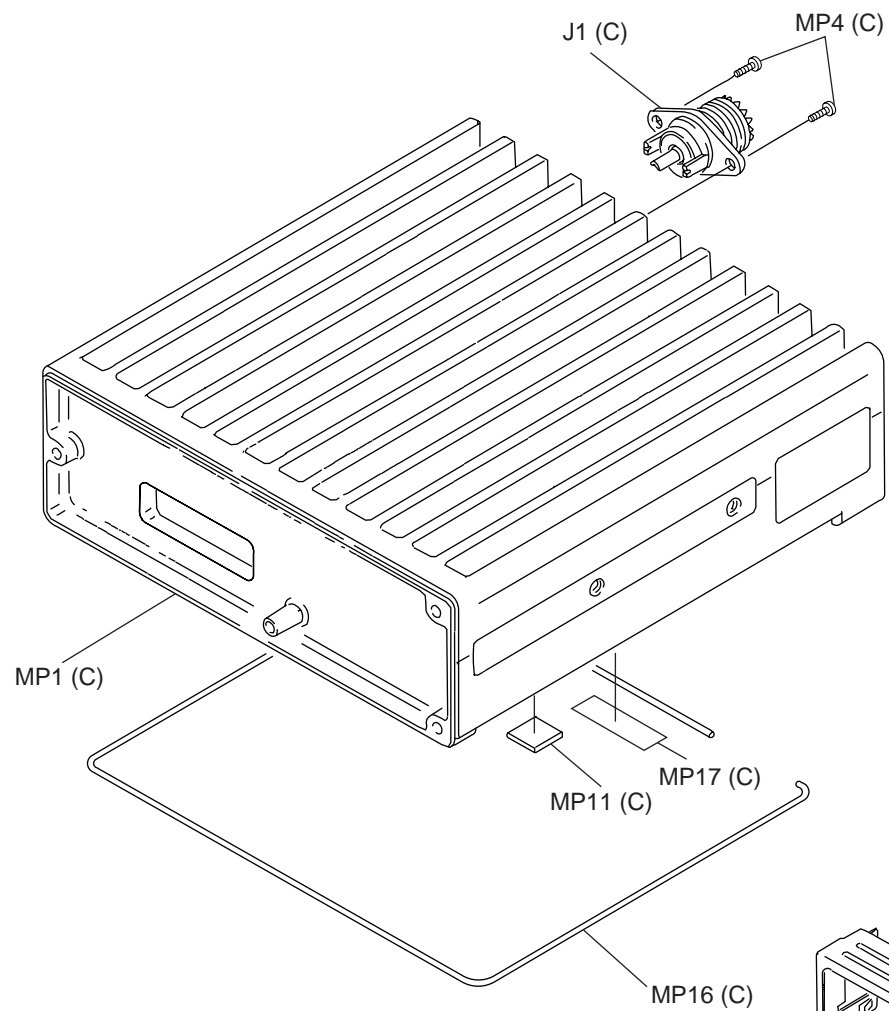
REF. NO.	ORDER NO.	DESCRIPTION	QTY.
J2	6450000140	Connector HSJ0807-01-010	1
J5	6510018040	Connector 52330-1217	1
W4	8900007960	Cable OPC-780	1
MP2	8510009980	1705 VCO case	1
MP4	8510010080	1705 VCO cover	1
MP6	8930037840	1705 connector spring	1
MP7	8510005070	599 shield plate	1
MP8	8510010240	1705 LPF cover	1
MP9	8510010230	1705 LPF case	1
MP10	8510010250	1705 shield plate	1
MP11	8930029511	1327 ANT plate-1	1
MP12	8930038790	1706 spring	1
MP13	8930040310	Sheet (E)	1
MP14	8930057730	Shield sponge (J)	1
MP15	8930005320	Filter spacer	2

## [ACCESSORIES]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
F1	5210000120	Fuse FGB 15A	2
MC1	0800005780	Microphone HM-100N	1
SP1	0800005120	Speaker SP-22	1
W1	8900003751	Cable OPC-345	1
W2	8900000730	Cable OPC-049	1
MP1	8010016730	150 mounting bracket	1
MP3	8820000530	Flange bolt M4 × 8 NI	4
MP4	8810000470	Screw PH M5 × 12 (+-)	4
MP5	8810005840	Screw PH A M5 × 20	4
MP6	8850000150	Flat washer M5 NI BS	4
MP7	8850000390	Spring washer M5	4
MP8	8830000120	Nut M5	4
MP9	6910004210	731 Mic hanger set	1
MP10	8310054790	1705 LCD seal (G)	1

**Screw abbreviations** A, BT: Self-tapping  
 PH: Pan head ZK: Black  
 BS: Brass NI: Nickel  
 NI-ZU: Nickel-Zinc

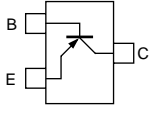
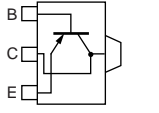
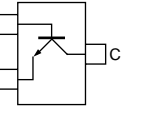
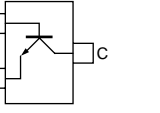
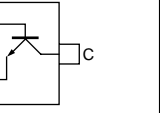
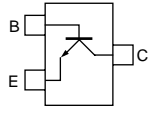
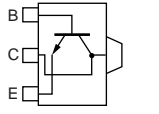
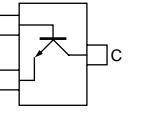
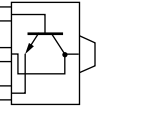
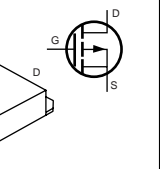
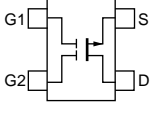
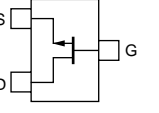
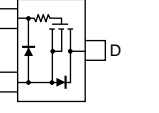
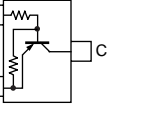
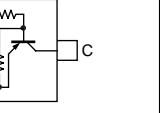
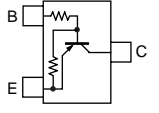
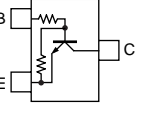
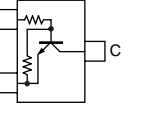
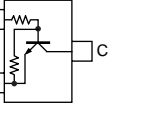
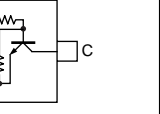
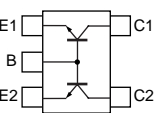
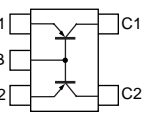
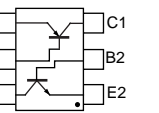





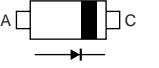
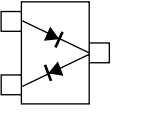
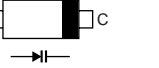

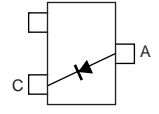
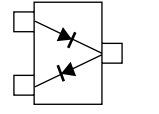
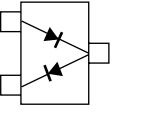
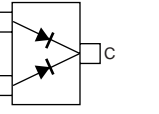
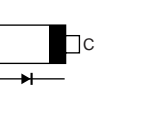
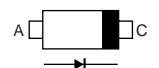
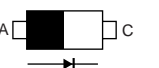
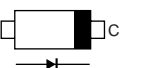
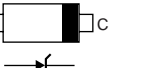
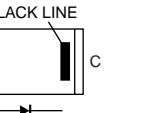
**Unit abbreviations** (F): FRONT UNIT  
(M): MAIN UNIT  
(C): CHASSIS PARTS

# SECTION 8 SEMI-CONDUCTOR INFORMATION

## • TRANSISTORS AND FET'S

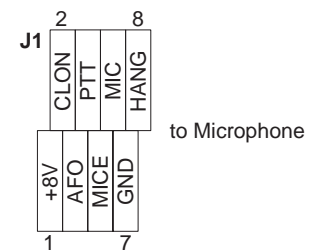
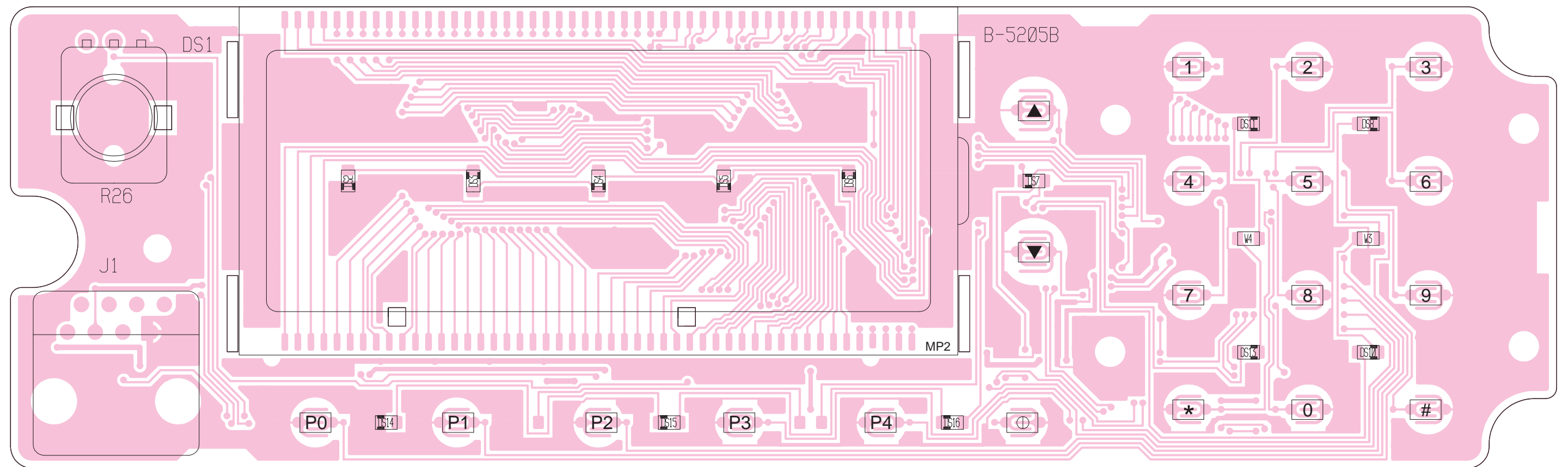
<b>2SA1576A T106 R</b> (Symbol: FR) 	<b>2SB1123 T TD</b> (Symbol: BF) 	<b>2SC4081 T106 R</b> (Symbol: BR) 	<b>2SC4116 BL</b> (Symbol: LL) 	<b>2SC4215 O</b> (Symbol: QO) 
<b>2SC4226 T1 R25</b> (Symbol: R25) 	<b>2SC4703-T1 SE</b> (Symbol: SE_) 	<b>2SC5110 O</b> (Symbol: MGO) 	<b>2SD1664 T100Q</b> (Symbol: DA,p) 	<b>2SJ377</b> (Symbol: 4L) 
<b>3SK166A</b> 	<b>2SK1069 4 TL</b> (Symbol: FJ) 	<b>2SK1829</b> (Symbol: K1) 	<b>DTA114EUA T106</b> (Symbol: 14) 	<b>DTA143ZUA T106</b> (Symbol: 113) 
<b>DTA144EUA T106</b> (Symbol: 16) 	<b>DTC114EUA T106</b> (Symbol: 24) 	<b>DTC114YUA</b> (Symbol: 64) 	<b>DTC144EUA T106</b> (Symbol: 26_) 	<b>DTC363 EK</b> (Symbol: H27) 
<b>FMS2A T148</b> (Symbol: S2) 	<b>FMW2 T148</b> (Symbol: W2) 	<b>XP4601</b> (Symbol: 5C) 		

## • DIODES

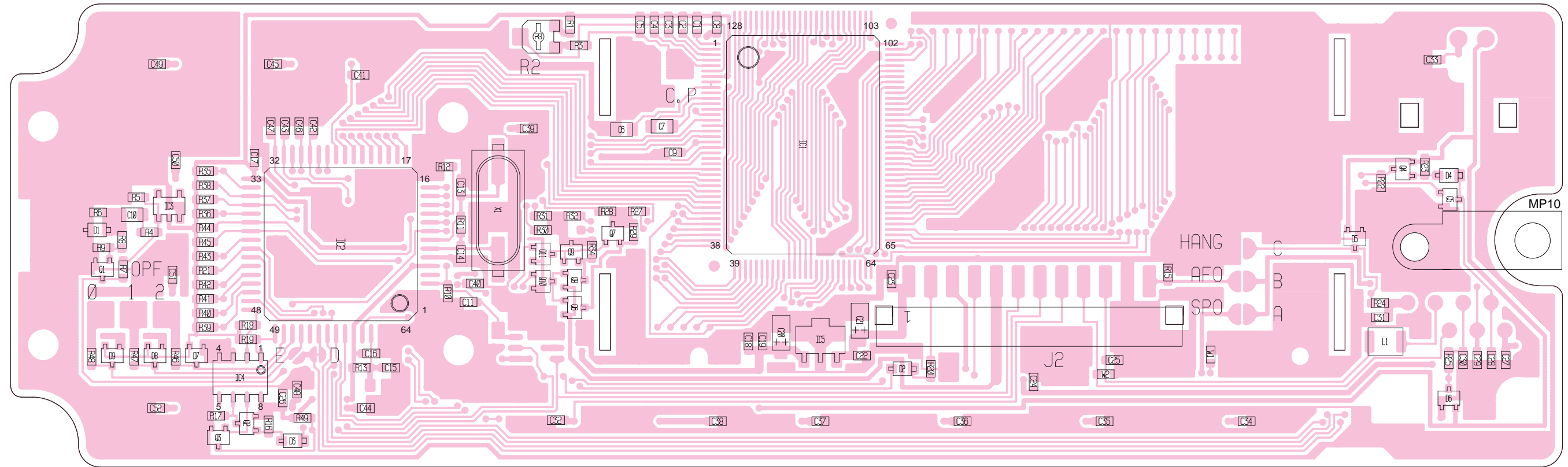
<b>1SS352</b> (Symbol: C1) 	<b>1SS355</b> (Symbol: A) 	<b>1SS375-TL</b> (Symbol: FH) 	<b>1SV214</b> (Symbol: T1) 	<b>1SV217</b> (Symbol: T6) 
<b>DA113 W T107</b> (Symbol: AY) 	<b>DA204 U T106</b> (Symbol: K) 	<b>DA221 TL</b> (Symbol: K) 	<b>DAN202 U T106</b> (Symbol: N) 	<b>DSM3MA4</b> (Symbol: SA4) 
<b>HSU88TRF</b> (Symbol: 9) 	<b>MA77</b> (Symbol: 4B) 	<b>MA111</b> (Symbol: 1B) 	<b>MA8160 H</b> (Symbol: 16^) 	<b>UM9401F</b> (Symbol: none) 

# SECTION 9 BOARD LAYOUTS

## 9-1 FRONT UNIT • TOP VIEW



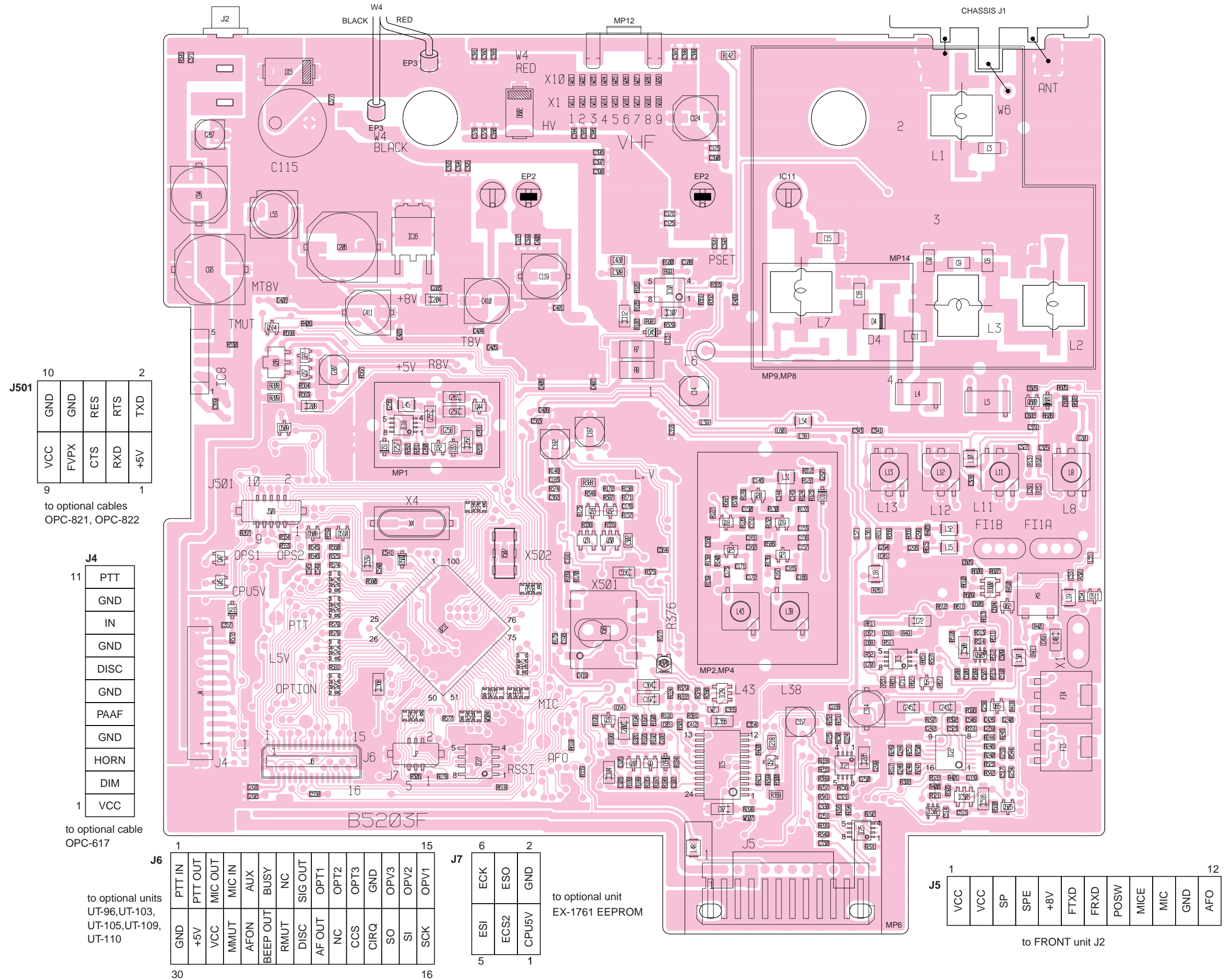
• BOTTOM VIEW (FRONT UNIT)



J2	1	VCC	2	SQL	3	SP	4	SPE	5	+8V	6	FTXO	7	FRXO	8	POSW	9	MICE	10	MIC	11	GND	12	AFO
----	---	-----	---	-----	---	----	---	-----	---	-----	---	------	---	------	---	------	---	------	----	-----	----	-----	----	-----

to MAIN unit J5

**9-2 MAIN UNIT**  
• TOP VIEW



**J501**

10	GND	2
	GND	
	RES	
	RTS	
	TXD	
	VCC	
	FVPX	
	CTS	
	RXD	
	+5V	
9		1

to optional cables  
OPC-821, OPC-822

**J4**

11	PTT
	GND
	IN
	GND
	DISC
	GND
	PAAF
	GND
	HORN
	DIM
1	VCC

to optional cable  
OPC-617

to optional units  
UT-96, UT-103,  
UT-105, UT-109,  
UT-110

**J6**

1	PTT IN	15
	PTT OUT	
	MIC OUT	
	MIC IN	
	AUX	
	BUSY	
	NC	
	SIG OUT	
	OPT1	
	OPT2	
	OPT3	
	GND	
	OPV3	
	OPV2	
	OPV1	
30	GND	16

**J7**

6	ECK	2
	ESO	
5	ES1	1
	ECS2	
	ES3	
	ES4	
	ES5	
	ES6	
	ES7	
	ES8	
	ES9	
	ES10	
	ES11	
	ES12	
	ES13	
	ES14	
	ES15	
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	ES91	
	ES92	
	ES93	
	ES94	
	ES95	
	ES96	
	ES97	
	ES98	
	ES99	
	ES100	

to optional unit  
EX-1761 EEPROM

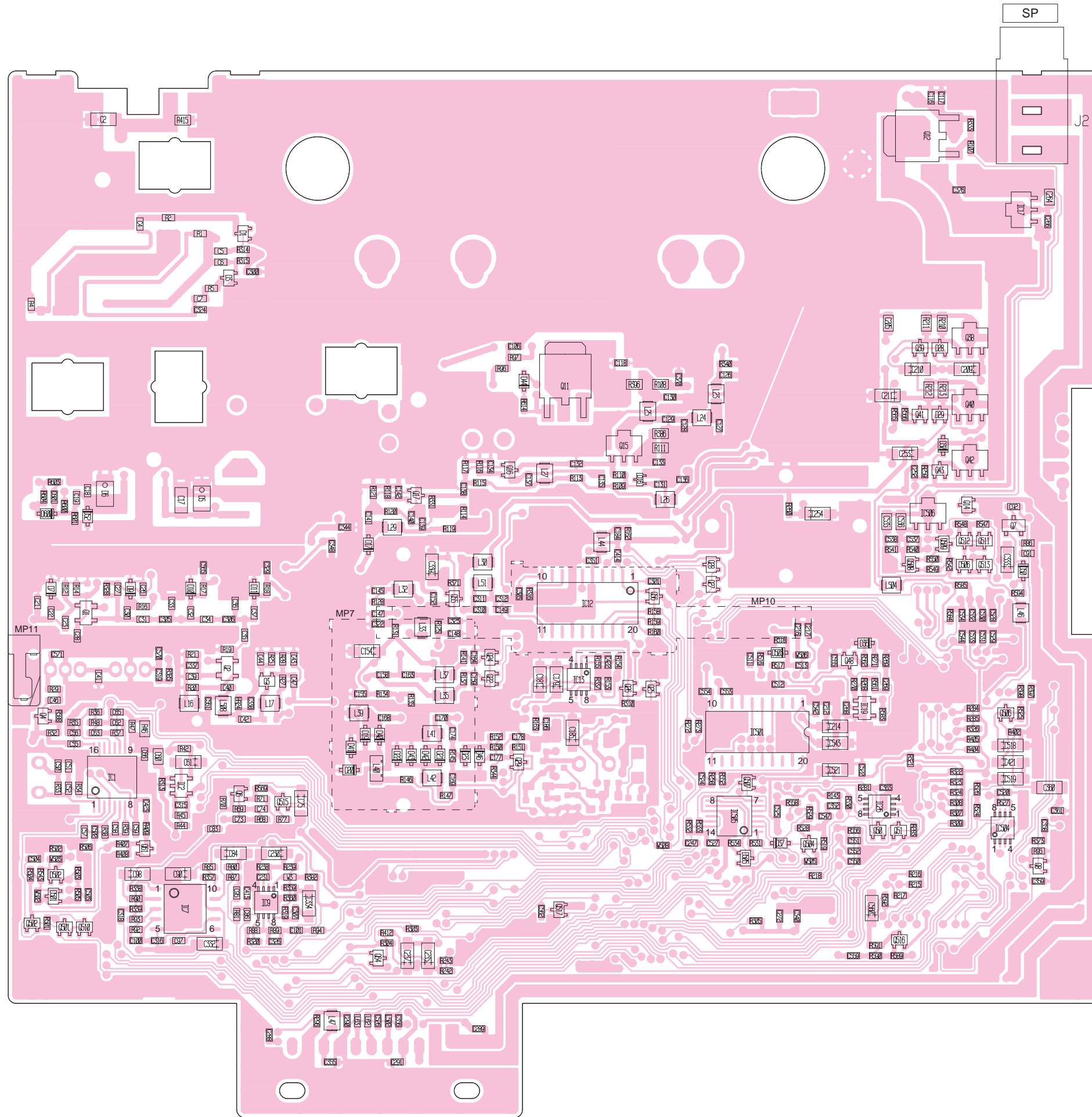
**J5**

1	VCC	12
	VCC	
	SP	
	SPE	
	+8V	
	FTXD	
	FRXD	
	POSW	
	MICE	
	MIC	
	GND	
	AFO	

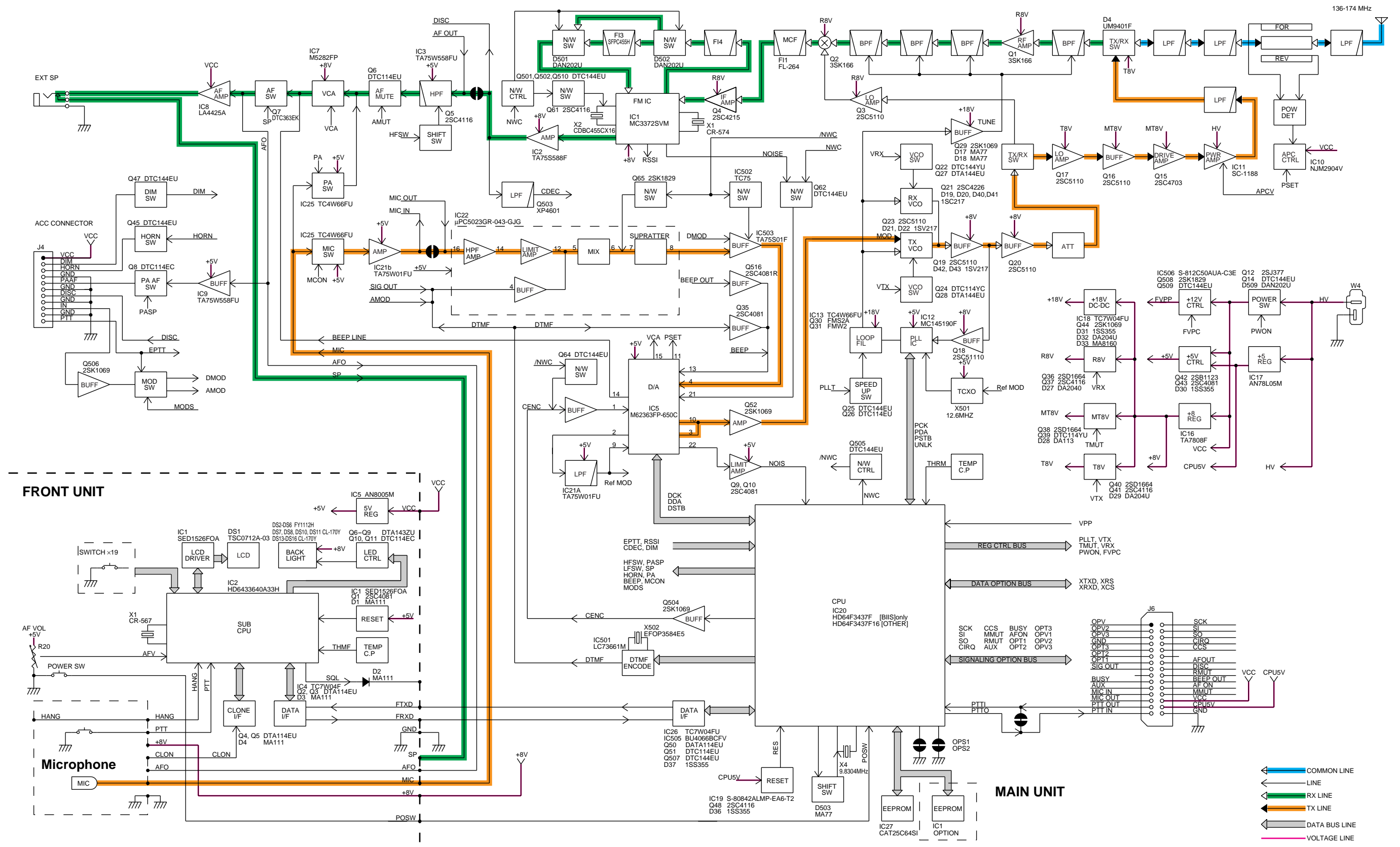
to FRONT unit J2



• BOTTOM VIEW (MAIN UNIT)

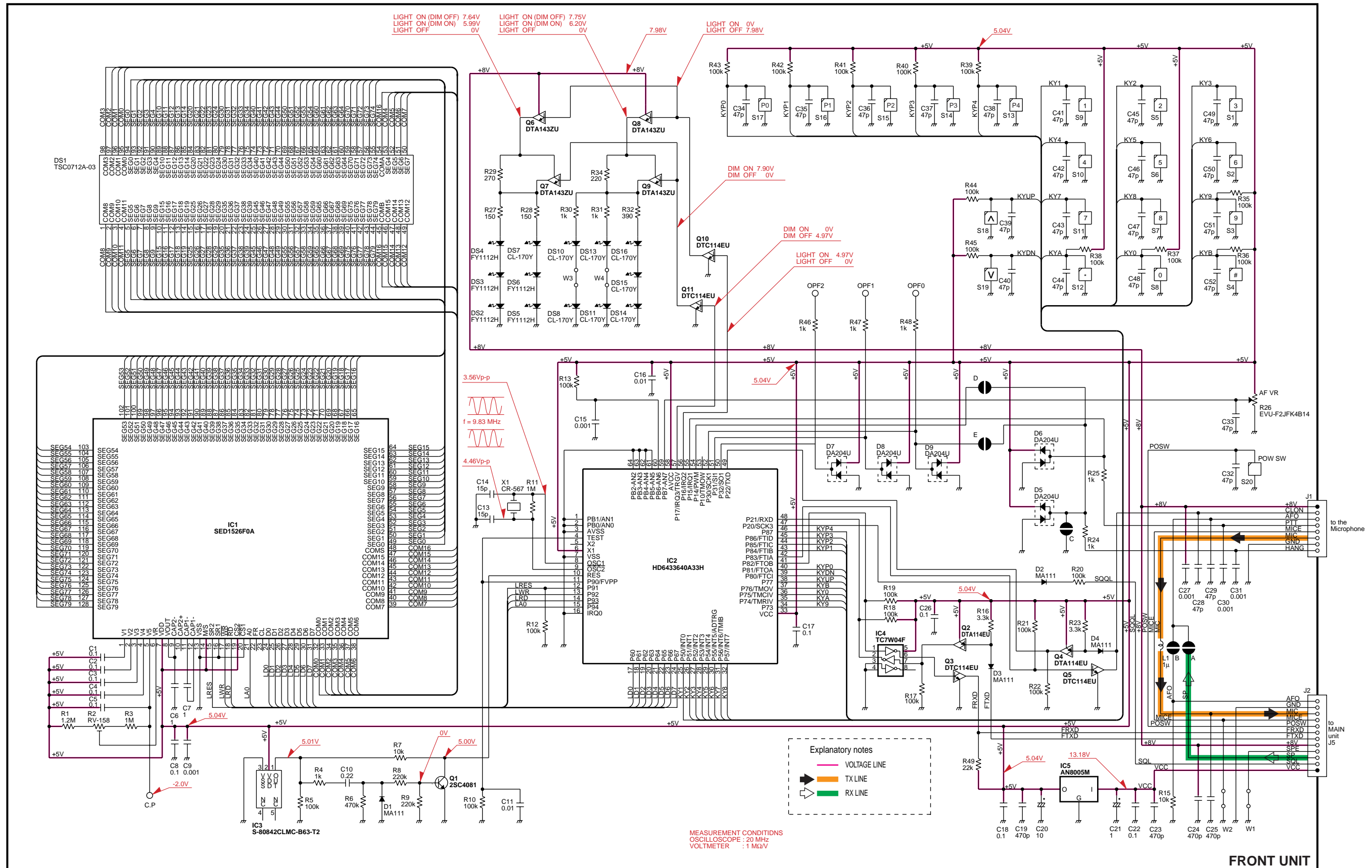


# SECTION 10 BLOCK DIAGRAM

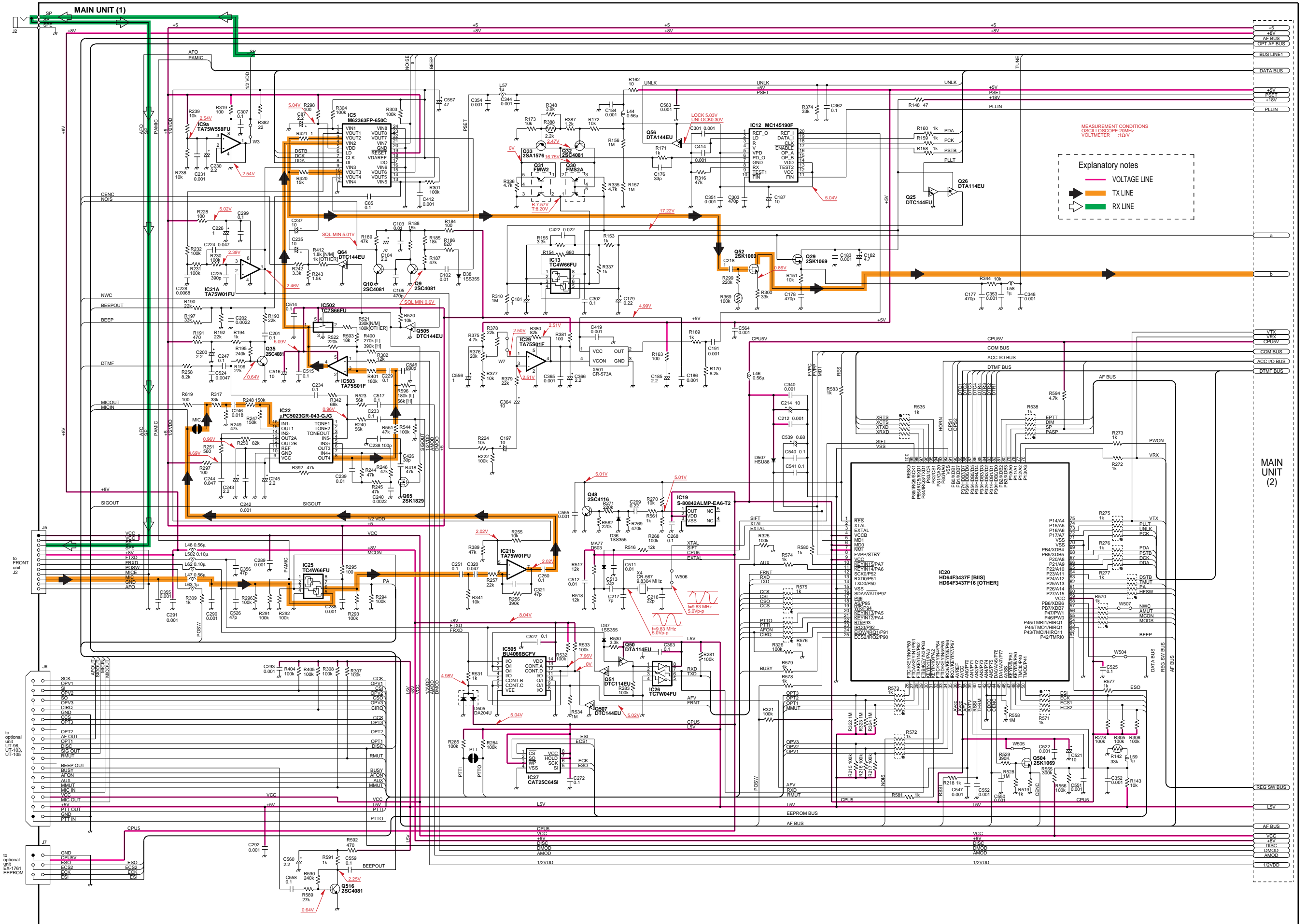


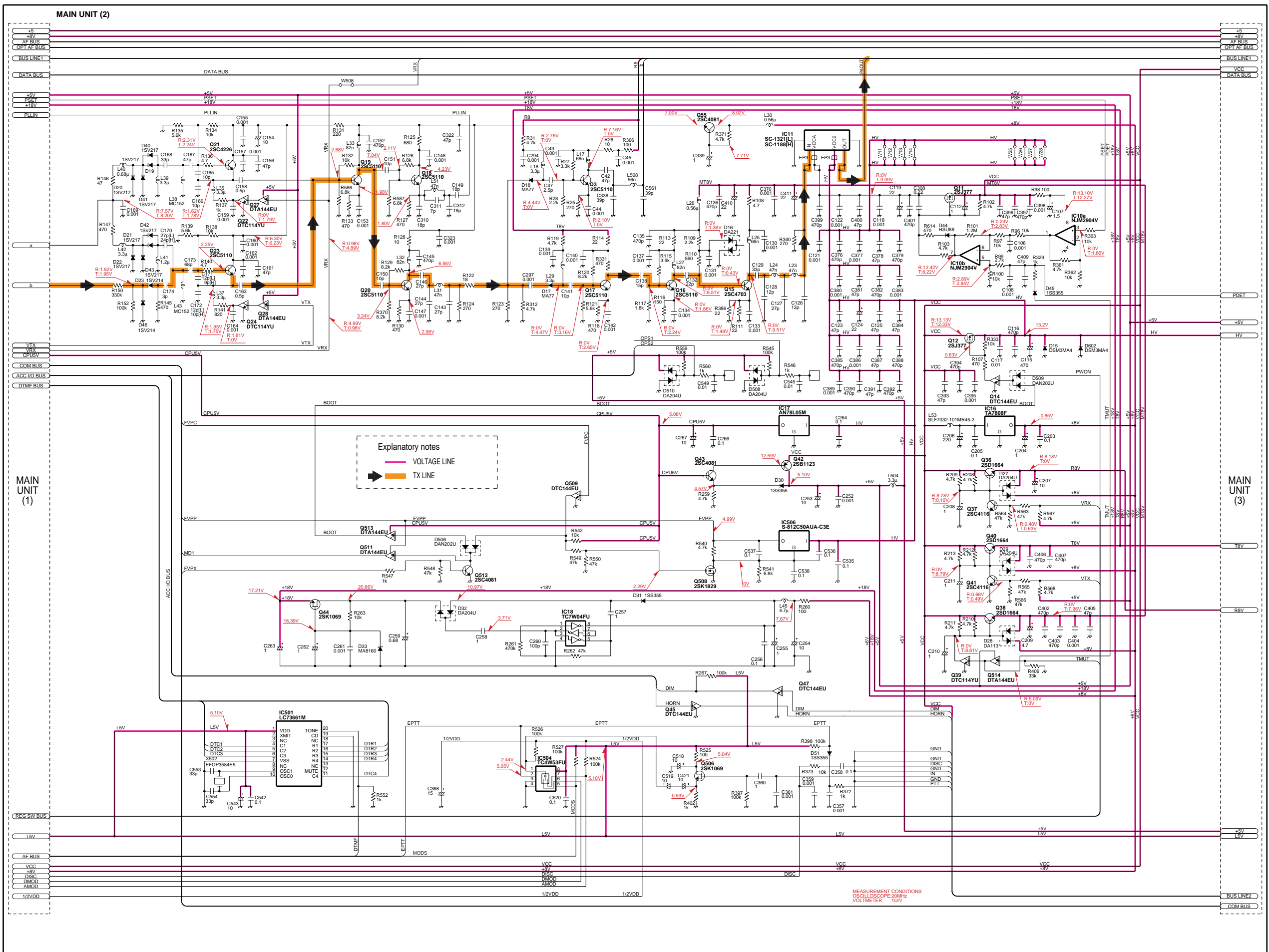
# SECTION 11 VOLTAGE DIAGRAMS

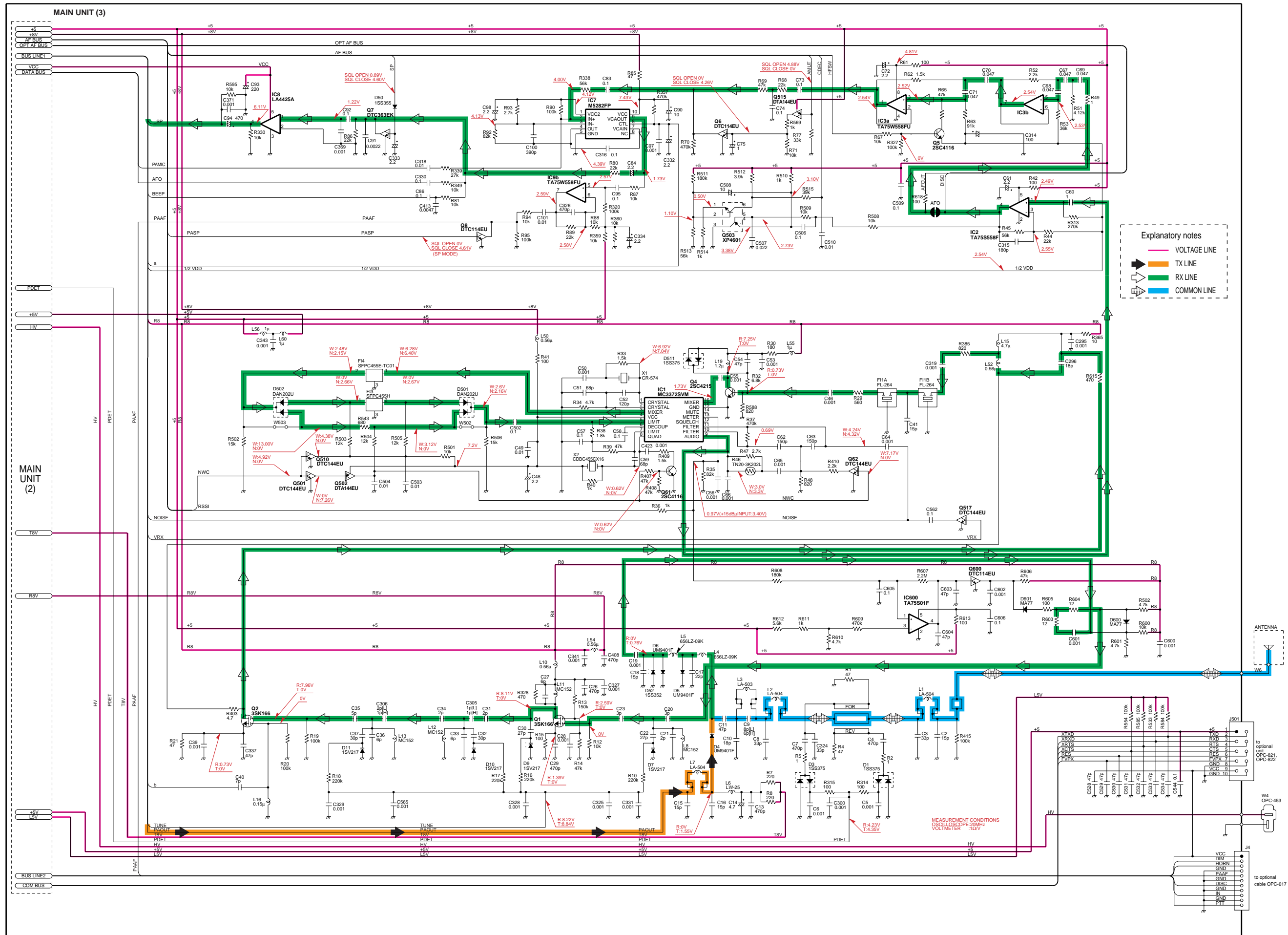
## 11-1 FRONT UNIT



# 11-2 MAIN UNIT

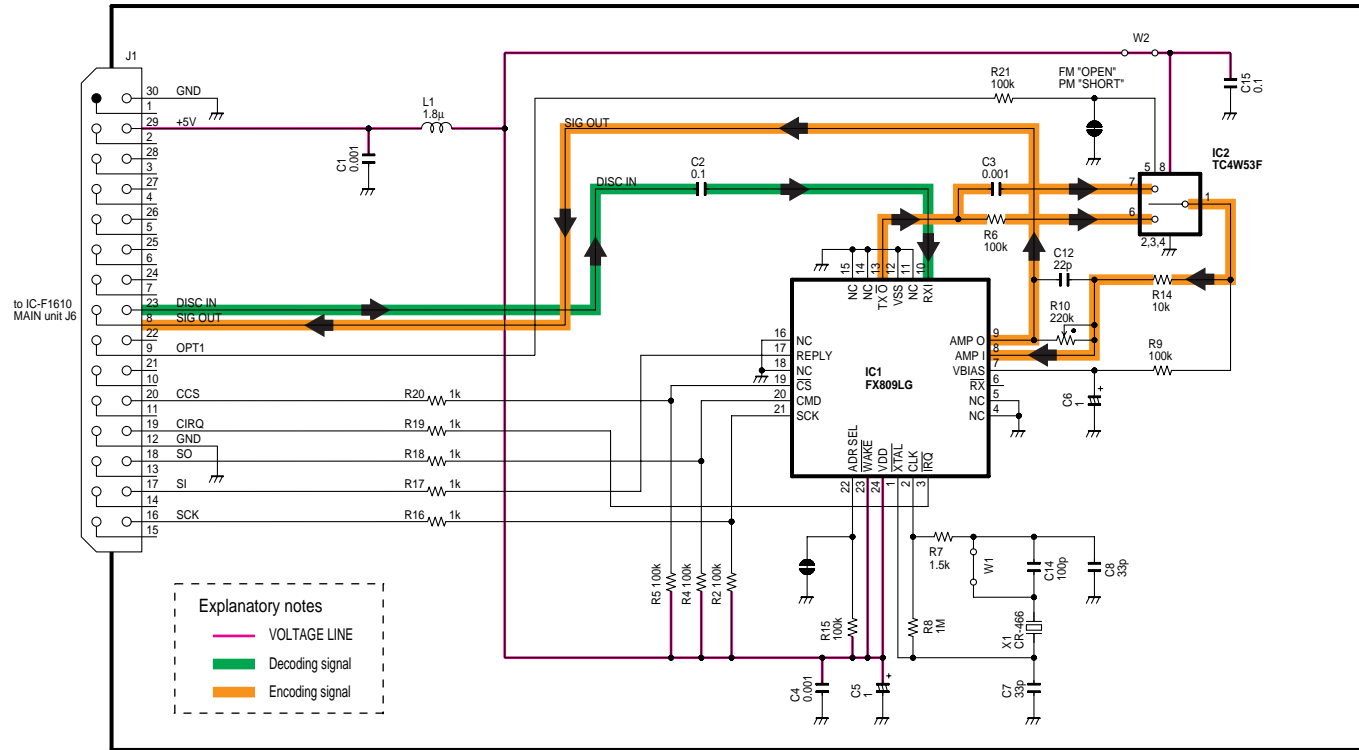




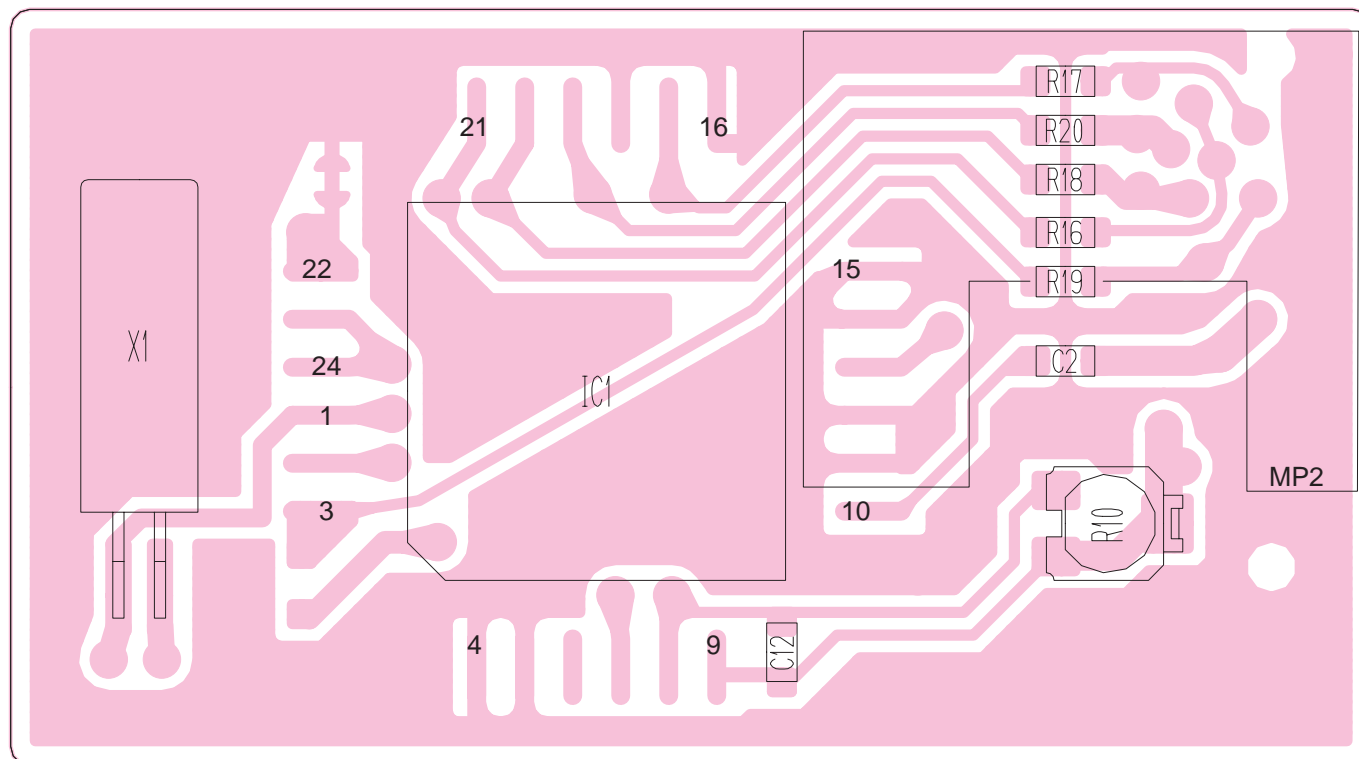


# SECTION 12 OPTIONAL UNIT UT-103

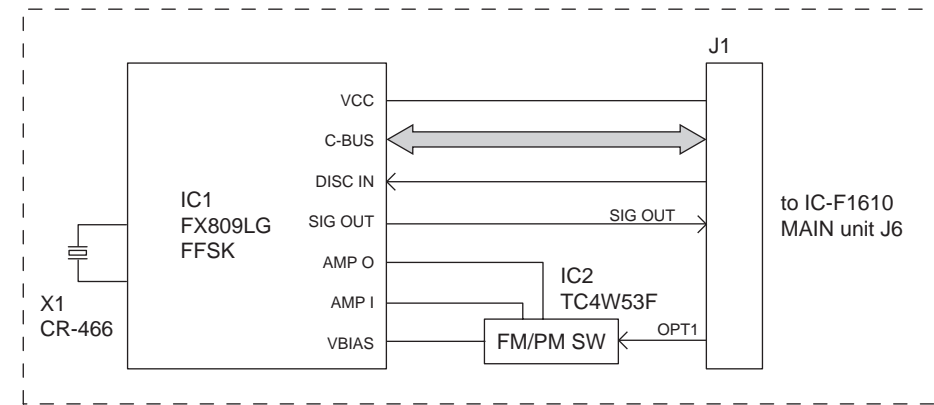
## • SCHEMATIC DIAGRAM



## • BOARD LAOUT (TOP VEIW)

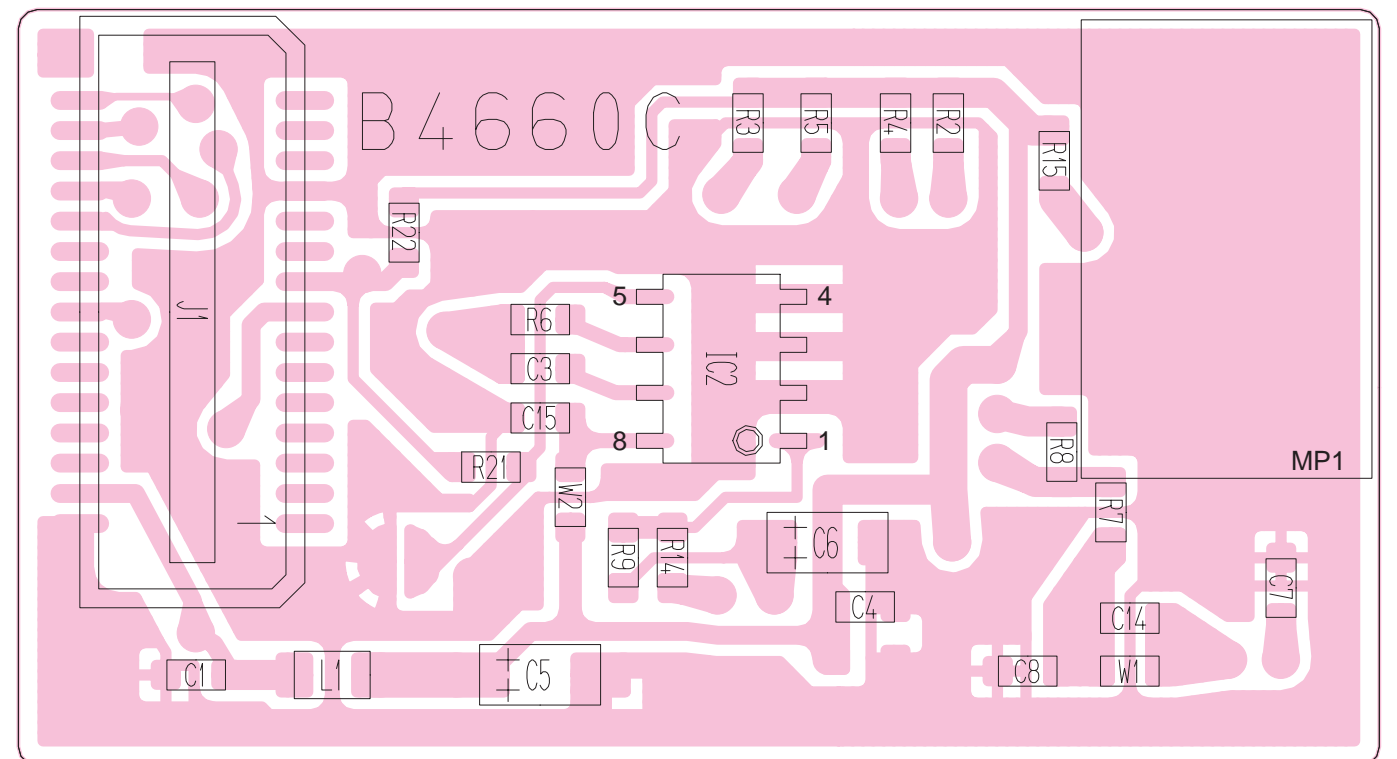


## • BLOCK DIAGRAM



## • BOARD LAYOUT (BOTTOM VIEW)

16	SCK	NC	15
	SI	NC	
	SO	NC	
	CIRQ	GND	
	CCS	NC	
	NC	NC	
	NC	OPT1	to IC-F1610
	DISC IN	SIG OUT	MAIN unit J6
	NC	NC	
	NC	NC	
	NC	NC	
	NC	NC	
	NC	NC	
	+5V	NC	
30	GND	NC	1



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