ICOM

SERVICE MANUAL

VHF MARINE TRANSCEVER

IC-M603

S-14310XZ-C1
Sep. 2006

Icom Inc.

INTRODUCTION

This service manual describes the latest service information for the **IC-M603** VHF MARINE TRANSCEIVER at the time of publication.

MODEL	VERSION	MICROPHONE
IC-M603	UK	HM-126RB
	EUR	
	HOL	
	FRG	

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

CAUTION

NEVER connect the transceiver to an AC outlet or to a DC power supply that uses more than 15.6 V. This will ruin the transceiver.

DO NOT reverse the polarities of the power supply when connecting the transceiver.

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

ORDERING PARTS

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

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

<SAMPLE ORDER>

1110003491	S.IC	TA31136FNG	IC-M603	MAIN UNIT	5 pieces
8820001210	Screw	2438 screw	IC-M603	Top 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 50 dB to 60 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.

TABLE OF CONTENTS

SECTION 1 SPECIFICATIONS

■ GENERAL

- Frequency coverage : 156.000–161.450 MHz (TX)
  156.000–163.425 MHz (RX)
- Mode : 16K0G3E (FM) / 16K0G2B (DSC)
- Power supply voltage (negative ground) : 13.8 V DC (10.8–15.6 V)
- Operating temperature range : –20˚C to +60˚C
- Current drain (at 13.8 V DC) : Transmit at 25 W 5.5 A approx.
  Receive max. audio 1.5 A approx.
- Antenna impedance : 50 Ω (nominal)
- Dimensions (projections not included) : 220(W)×110(H)×109.4(D) mm
- Weight : 1400 g

■ TRANSMITTER

- Output power (at 13.8 V DC) : High 25 W
  Low 1 W
- Modulation : Variable reactance frequency modulation
- Maximum frequency deviation : ±5 kHz
- Frequency error : ±0.3 kHz
- Spurious emissions : Less than 0.25 µW
- Adjacent channel power : More than 70 dB
- Residual modulation : More than 40 dB
- Audio harmonic distortion : Less than 10% at 60% deviation
- Audio frequency response : +1 dB to –3 dB of 6 dB/octave from 300 Hz to 3000 Hz
- Microphone impedance : 2 kΩ

■ RECEIVER

- Receive system : Double conversion superheterodyne system
- Intermediate frequencies : 1st 21.7 MHz*1, 30.15 MHz*2
  2nd 450 kHz
- Sensitivity : Less than –5 dBµ at 12 dB SINAD (for both regular and CH70)
- Squelch sensitivity : Less than –5 dBµ at threshold
- Adjacent channel selectivity : More than 75 dB
- Spurious response : More than 75 dB
- Intermodulation : More than 75 dB
- Hum and noise : More than 45 dB
- Audio output power (at 13.8 V DC) : 2.0 W typical at 10% distortion with a 4 Ω load
- Audio frequency responce : +1 dB to –3 dB of –6 dB octave from 300 Hz to 3000 Hz

*1Channel 70, *2Normal channels

Specifications are measured in accordance with EN301 025-2, -3.

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

■ VHF MARINE CHANNEL LIST

Channel number			Frequency (MHz)	
USA	INT	CAN	Transmit	Receive
	01	01	156.050	160.650
01A			156.050	156.050
	02	02	156.100	160.700
	03	03	156.150	160.750
03A			156.150	156.150
	04		156.200	160.800
		04A	156.200	156.200
	05		156.250	160.850
05A		05A	156.250	156.250
06	06	06	156.300	156.300
	07		156.350	160.950
07A		07A	156.350	156.350
08	08	08	156.400	156.400
09	09	09	156.450	156.450
10	10	10	156.500	156.500
11	11	11	156.550	156.550
12	12	12	156.600	156.600
13*2	13	13*1	156.650	156.650
14	14	14	156.700	156.700
15*2	15*1	15*1	156.750	156.750
16	16	16	156.800	156.800
17*1	17	17*1	156.850	156.850
	18		156.900	161.500
18A		18A	156.900	156.900
	19		156.950	161.550
19A		19A	156.950	156.950
20	20	20*1	157.000	161.600
20A			157.000	157.000

Channel number			Frequency (MHz)	
USA	INT	CAN	Transmit	Receive
	21	21	157.050	161.650
21A		21A	157.050	157.050
		21b	Rx only	161.650
	22		157.100	161.700
22A		22A	157.100	157.100
	23	23	157.150	161.750
23A			157.150	157.150
24	24	24	157.200	161.800
25	25	25	157.250	161.850
		25b	Rx only	161.850
26	26	26	157.300	161.900
27	27	27	157.350	161.950
28	28	28	157.400	162.000
		28b	Rx only	162.000
	60	60	156.025	160.625
	61		156.075	160.675
61A		61A	156.075	156.075
	62		156.125	160.725
		62A	156.125	156.125
	63		156.175	160.775
63A			156.175	156.175
	64	64	156.225	160.825
64A		64A	156.225	156.225
	65		156.275	160.875
65A	65A	65A	156.275	156.275
	66		156.325	160.925
66A	66A	66A*1	156.325	156.325
67*2	67	67	156.375	156.375

Channel number			Frequency (MHz)	
USA	INT	CAN	Transmit	Receive
68	68	68	156.425	156.425
69	69	69	156.475	156.475
70*3	70*3	70*3	156.525	156.525
71	71	71	156.575	156.575
72	72	72	156.625	156.625
73	73	73	156.675	156.675
74	74	74	156.725	156.725
75*1	75*1	75*1	156.775	156.775
76*1	76*1	76*1	156.825	156.825
77*1	77	77*1	156.875	156.875
	78		156.925	161.525
78A		78A	156.925	156.925
	79		156.975	161.575
79A		79A	156.975	156.975
	80		157.025	161.625
80A		80A	157.025	157.025
	81		157.075	161.675
81A		81A	157.075	157.075
	82		157.125	161.725
82A		82A	157.125	157.125
	83	83	157.175	161.775
83A		83A	157.175	157.175
		83b	Rx only	161.775
84	84	84	157.225	161.825
84A			157.225	157.225
85	85	85	157.275	161.875
85A			157.275	157.275
86	86	86	157.325	161.925

Channel number			Frequency (MHz)	
USA	INT	CAN	Transmit	Receive
86A			157.325	157.325
87	87	87	157.375	161.975
87A			157.375	157.375
88	88	88	157.425	162.025
88A			157.425	157.425

WX channel	Frequency (MHz)	
	Transmit	Receive
1	RX only	162.550
2	RX only	162.400
3	RX only	162.475
4	RX only	162.425
5	RX only	162.450
6	RX only	162.500
7	RX only	162.525
8	RX only	161.650
9	RX only	161.775
10	RX only	163.275

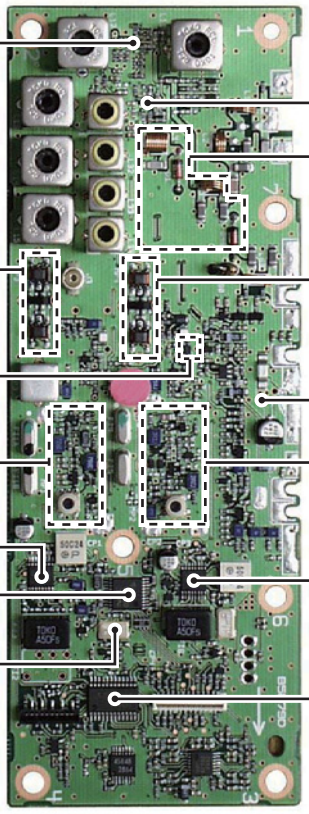
*1 Low power only. *2 Momentary high power. *3 DSC operation only.

NOTE: Simplex channels, 3, 21, 23, 61, 64, 81, 82 and 83 **CANNOT** be lawfully used by the general public in U.S.A. waters.

SECTION 2 INSIDE VIEWS

2-1 IC-M603

• MAIN UNIT



RF amplifier
(Q1: 3SK294)

1st mixer circuit
(D11: HSB88WS
L18: 617DB-1919=P3
L19: 617DB-1327=P3)

TX/RX switch circuit
(D42, D43*: MA77)

RX VCO circuit
(Q12: PMBFJ310
D32, D33: HVC358B)

2nd mixer
(IC1: TA31136FNG)

PLL IC
(IC12: µPD3140GS)

Reference oscillator
(X4: CR-827 15.3 MHz)

RF amplifier (for CH70)
(Q7: 3SK294)

Antenna switch circuit

1st mixer circuit (for CH70)
(D21: HSB88WS
L48, L49: 617DB-1327=P3)

Power amplifier*
(IC13: RA35H1516M)

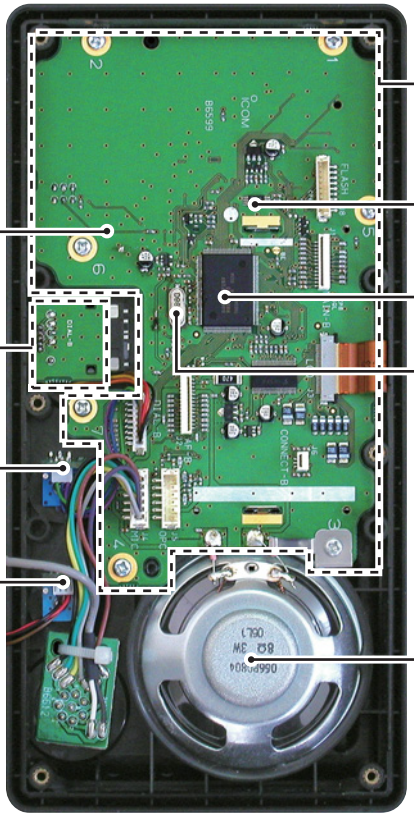
TX VCO circuit
(Q18: PMBFJ310
D39, D40: 1SV214)

2nd mixer (for CH70)
(IC6: TA31136FN)

D/A converter
(IC15: M62363FP-650C)

* Located under side of the point

• LOGIC UNIT



Reset IC
(IC2: S-80942CNMC-G9C)

DIAL UNIT

SQL UNIT

VR UNIT

LOGIC UNIT

EEPROM
(IC4: HN58X24164TI)

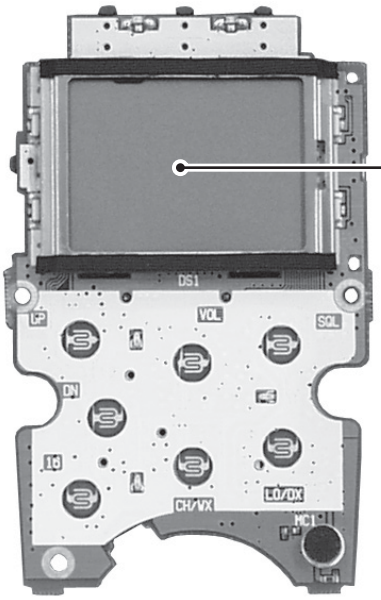
CPU
(IC1: HD64F2633FRF28V)

System clock
(X1: CR-691 9.8304 MHz)

Speaker

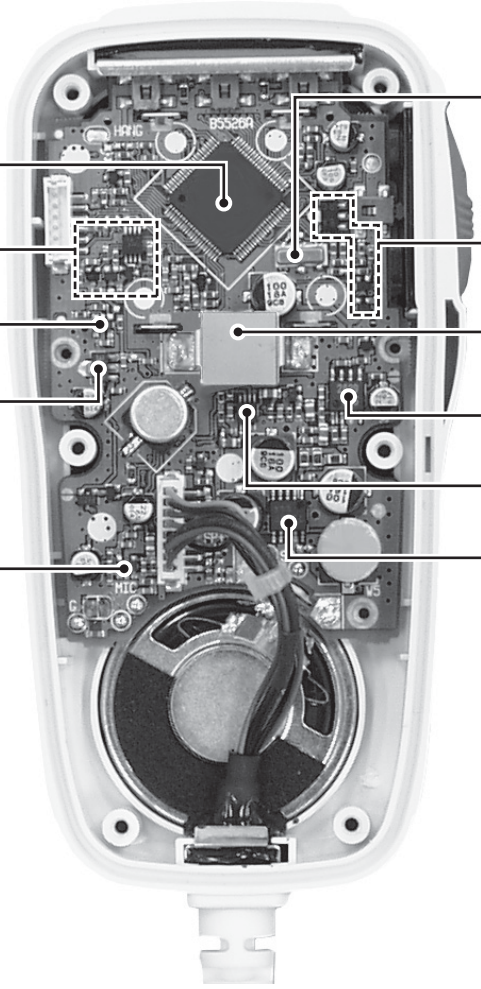
2-2 HM-157 (Ooptional product)

• TOP VIEW



LCD
(DS1: A0119)

• BOTTOM VIEW



CPU
(IC1: μPD789405AGK-A30-9EU)

Data buffer circuit

Reset IC
(IC7: S-80928CNMC)

5V regulator
(IC5: TA78L05F)

MIC amplifier
(IC4: NJM2125F)

System clock
(X1: CSTCC4.91MG)

Dimmer circuit

8V regulator
(IC6: TA7808F)

Volume IC
(IC3: M62429FP)

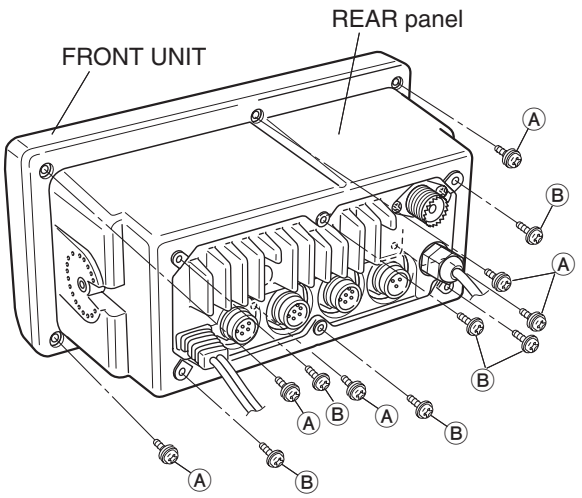
AF/MIC switch
(IC9: TC4W53FU)

AF amplifier
(IC2: TA7368F)

SECTION 3 DISASSEMBLY AND OPTIONS INSTRUCTIONS

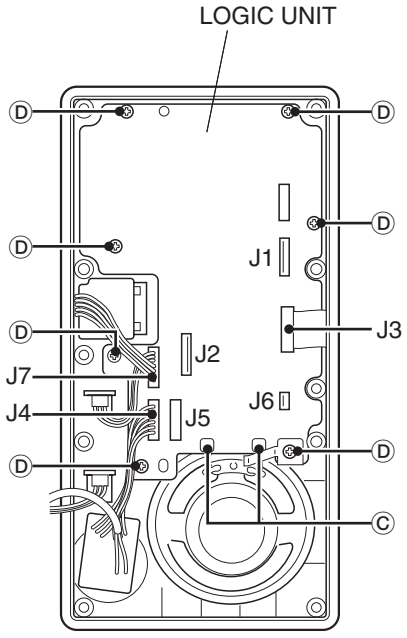
1. Opening the transceiver case

① Unscrew 6 screws Ⓐ, and remove the front unit.
② Unscrew 6 screws Ⓑ, and remove the rear panel.



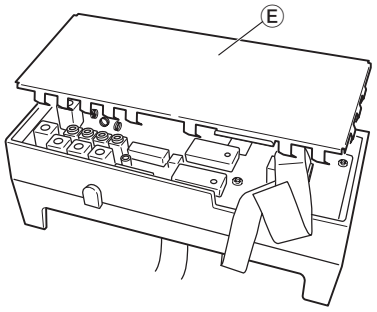
2. Removing the LOGIC UNIT

① Disconnect connector from J5 and flat cables from J1, J2 and J6.
② Unsolder 2 points Ⓒ.
③ Disconnect microphone connector from J4 and SQL/ DIAL connectors from J7.
④ Unscrew 7 screws Ⓓ, and remove the LOGIC UNIT.

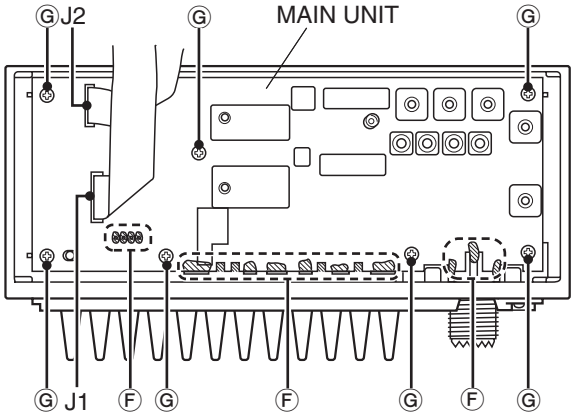


3. Removing the MAIN UNIT

① Remove the shield cover Ⓔ.



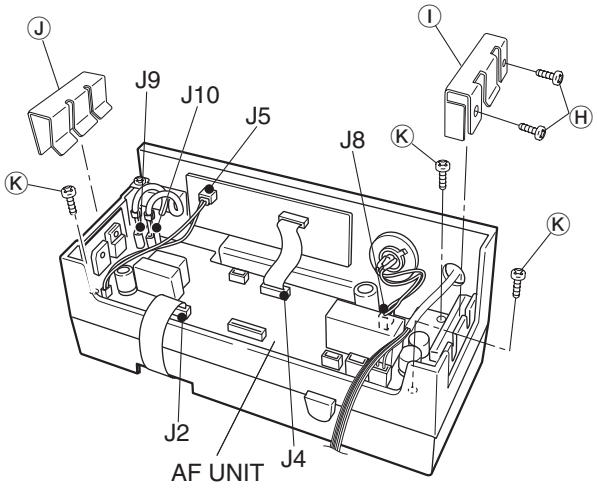
② Disconnect flat cables from J1 and J2.
③ Unsolder 17 points Ⓕ.
④ Unscrew 7 screws Ⓖ, and remove the MAIN UNIT.



Unsolder point

4. Removing the AF UNIT

① Disconnect 4 connectors from J5, J8, J9 and J10.
② Disconnect 2 flat cables from J2 and J4
③ Unscrew 2 screws Ⓗ, and remove 2 clips Ⓘ, Ⓙ.
④ Unscrew 3 screws Ⓚ, and remove the AF UNIT.



SECTION 4 CIRCUIT DESCRIPTION

4-1 RECEIVER CIRCUITS

4-1-1 ANTENNA SWITCHING CIRCUIT (MAIN UNIT)

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

Received signals enter the MAIN unit from the antenna connector and pass through the low-pass filter (L1, L2). The signals are then applied to the RF circuit via the antenna switching circuit (D1, L3, L4, C7–C9).

4-1-2 RF CIRCUIT (MAIN UNIT)

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 (L11, C23–C25) which the object signals are led to each RF amplifier of channel 70 circuit (Q7) or other channels (except channel 70) circuit (Q1).

• CHANNEL 70 CIRCUIT

The amplified signals from the RF amplifier (Q7) are applied to the 4-stage bandpass filter (L31–L34, C407, C408, C410 –C423) to suppress unwanted signals and improve the selectivity. The signals are then applied to the 1st mixer circuit for channel 70.

• OTHER CHANNELS CIRCUIT

The amplified signals from the RF amplifier (Q1) are applied to the 4-stage bandpass filter (L12–L15, C33, C34, C36–C48) to suppress unwanted signals and improve the selectivity. The signals are then applied to the 1st mixer circuit for other channels.

4-1-3 1ST MIXER AND 1ST IF CIRCUITS (MAIN UNIT)

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

• CHANNEL 70 CIRCUIT

The signals from the RF circuit are mixed with the 1st LO signals at the 1st mixer circuit (D21, L48, L49) to produce a 21.7 MHz 1st IF signal.

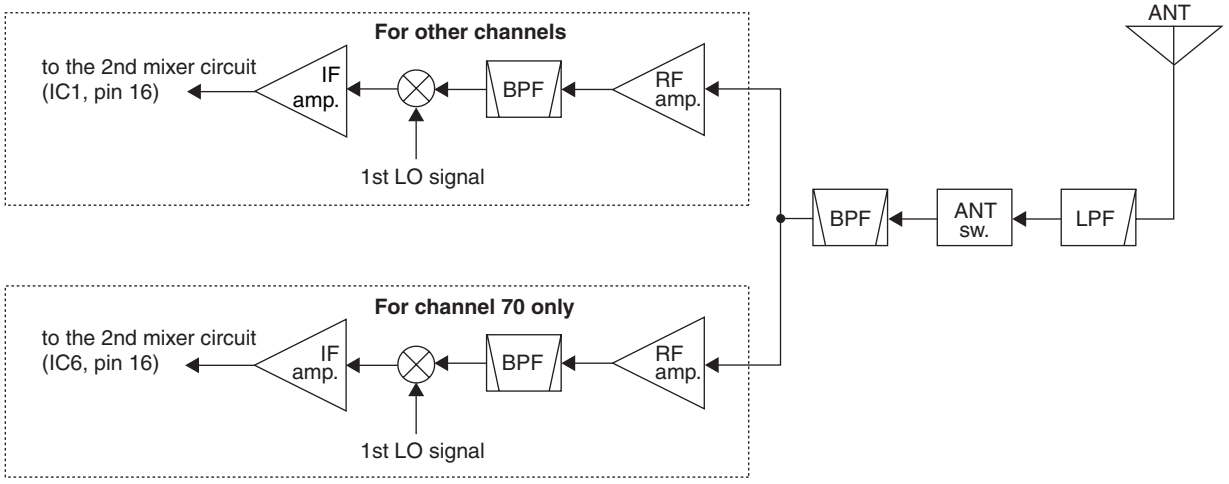
The 1st IF signal is amplified at the 1st IF amplifiers (Q8, Q9), and then passes through the pair of crystal bandpass filters (FI4, FI5) to suppress out-of-band signals. The filtered signal is then amplified at the 2nd IF amplifier (Q10), and is then applied to the 2nd mixer circuit (IC6).

• OTHER CHANNELS CIRCUIT

The signals from the RF circuit are mixed with the 1st LO signals at the 1st mixer circuit (D11, L18, L19) to produce a 30.15 MHz 1st IF signal.

The 1st IF signal is amplified at the 1st IF amplifiers (Q3, Q4), and then passes through the crystal bandpass filter (FI1) to suppress out-of-band signals. The filtered signal is then amplified at the 2nd IF amplifier (Q2), and is then applied to the 2nd mixer circuit (IC1).

• 1ST MIXER AND 1ST IF CIRCUITS



4-1-4 2ND IF AND DEMODULATOR CIRCUITS (MAIN UNIT)

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

The FM IF IC (IC6 for channel 70, IC1 for other channels) contains the 2nd local oscillator, 2nd mixer, limiter amplifier, quadrature detector, and noise detector circuits, etc.

• CHANNEL 70 CIRCUIT

The 1st IF signal from the 2nd IF amplifier (Q10) is applied to the 2nd mixer section of FM IF IC (IC6, pin 16), and is mixed with a 21.25 MHz 2nd LO signal, which is generated at the 2nd oscillator section in IC6 and X3, to produce a 450 kHz 2nd IF signal.

The 2nd IF signal from IC6 (pin 3) is passed through the ceramic filter (FI6), which unwanted signals are suppressed, and is then applied to the 2nd IF (limiter) amplifier in IC6 (pin 5). The signal is applied to the FM detector section in IC6 for demodulating into AF signals.

The FM detector circuit employs a quadrature detection method (linear phase detection), which uses a ceramic discriminator (X2) for phase delay to obtain a non-adjusting circuit. The detected signal from IC6 (pin 9) is applied to the AF circuit.

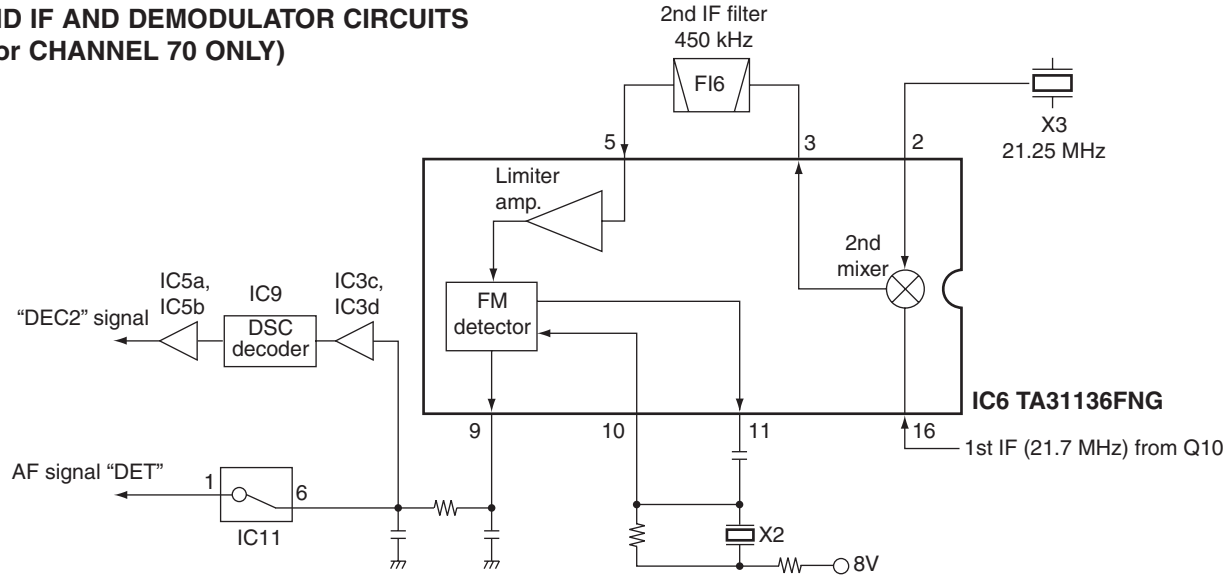
• OTHER CHANNELS CIRCUIT

The 1st IF signal from the 2nd IF amplifier (Q2) is applied to the 2nd mixer section of FM IF IC (IC1, pin 16), and is mixed with a 30.6 MHz 2nd LO signal, which is generated at the PLL circuit using the reference frequency (15.3 MHz), to produce a 450 kHz 2nd IF signal.

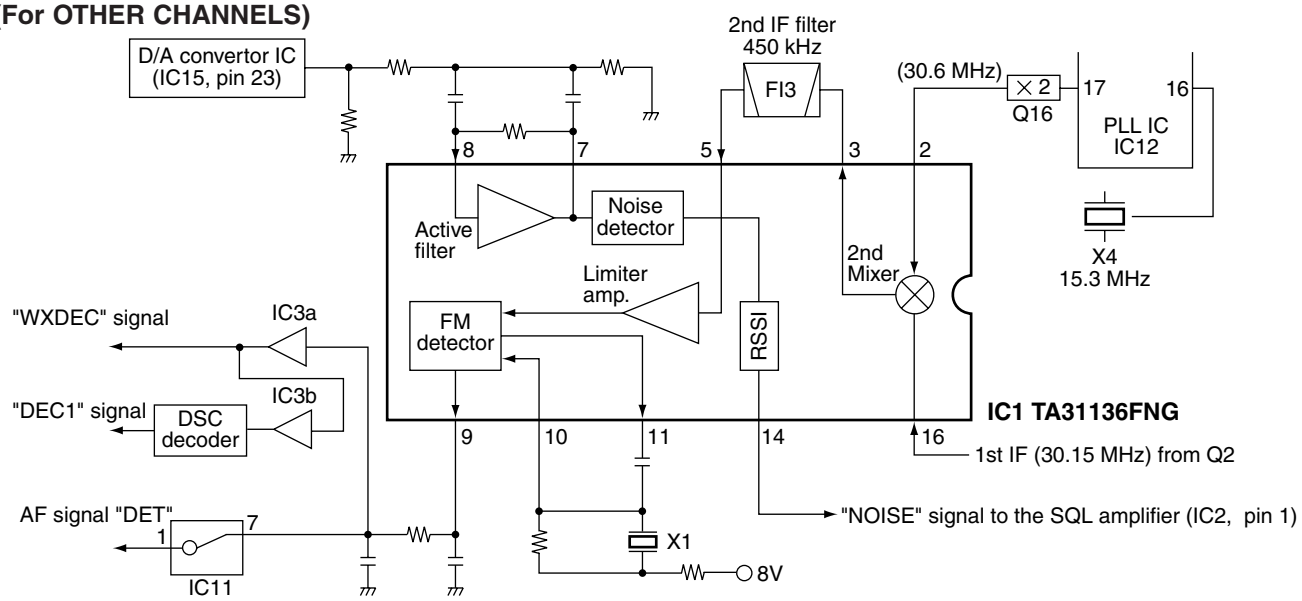
The 2nd IF signal from IC1 (pin 3) is passed through the ceramic filter (FI3), which unwanted signals are suppressed, and is then applied to the 2nd IF (limiter) amplifier in IC1 (pin 5). The signal is applied to the FM detector section in IC1 for demodulating into AF signals.

The FM detector circuit employs a quadrature detection method (linear phase detection), which uses a ceramic discriminator (X1) for phase delay to obtain a non-adjusting circuit. The detected signal from IC1 (pin 9) is applied to the AF circuit.

• 2ND IF AND DEMODULATOR CIRCUITS (For CHANNEL 70 ONLY)



• 2ND IF AND DEMODULATOR CIRCUITS (For OTHER CHANNELS)



4-1-5 AF AMPLIFIER CIRCUIT (AF UNIT)

The AF amplifier circuit amplifies the demodulated signals to drive a speaker. The AF circuit includes an AF mute circuit for the squelch.

AF signals from the FM IF ICs (channel 70; IC6, pin 9, other channels IC1, pin 9) are passed through the analog switch (IC7, pins 10, 11) via the "DET" signal, and are applied to the de-emphasis circuit (R31, C41). The de-emphasis circuit is an integrated circuit with frequency characteristic of –6 dB/octave.

The signals pass through the bandpass filter (Q11, Q12), and are then applied to the AF mute swtich (Q13). The signals passed through the [VOLUME] control (VR unit; R1), and are then applied to the AF power amplifier (IC3, pin 1) to obtain 5 W AF audio output power. The amplified AF signals drive the internal speaker as "SP+" signal directly or external speaker as "AF" signal via the RL2.

4-1-6 SQUELCH CIRCUIT (MAIN AND LOGIC UNITS)

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.

A portion of the AF signals from the FM IF IC (IC1, pin 9) is passed through C89, and is applied to the D/A converter (IC15, pin 24) to control the amplitude. The signal is applied to the FM IF IC's active filter section (IC1, pin 8). The active filter section amplifies and filters noise components. The filtered signals are applied to the noise detector section and output from pin 14 as the "SQL" signal. The "SQL" signal is amplified at the DC amplifier (IC2) and applied to the main CPU (LOGIC unit; IC1, pin 104) as the "SQL" signal. The main CPU compares "SQL" voltage with "SQLV" voltage from the SQL board, and outputs the "MICM" and "RMUTE" signals to toggle the AF mute switches (Q7, Q13).

4-2 TRANSMITTER CIRCUITS

4-2-1 MICROPHONE AMPLIFIER CIRCUIT (AF UNIT)

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

• USING HM-126RB/RG

The AF signals from the microphone (ACC unit; HM-**126RB/RG**) are amplified at the microphone amplifier (IC6a) via the analog switch (IC4, pins 11, 10) as "MIC" signal. A capacitor (C77) and resistor (R73) are connected to the microphone amplifier to obtain the pre-emphasis characteristics.

• USING HM-162

The AF signals from the microphone (ACC unit; HM-162) are amplified at the microphone amplifier (IC6a) via the analog switch (connecting option1 jack: IC16, pins 2, 3, 4; connecting option2 jack: IC16, pins 4, 9, 10) as "AF/MIC1" or "AF/MIC2" signals. A capacitor (C77) and resistor (R73) are connected to the microphone amplifier to obtain the pre-emphasis characteristics.

The amplified signals are applied to the IDC amplifier (IC8a, pin 2) via the analog switch (IC7, pins 2, 3, 9), and are then passed through the splatter filter (IC8b) to suppress unwanted 3 kHz or higher signals. The filtered signals are applied to the modulation circuit.

4-2-2 MODULATION CIRCUIT (MAIN UNIT)

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

The audio signals from the splatter filter (IC8b) are passed through the D/A converter IC (IC15, pins11, 12), and are then applied to the modulation circuit. The applied signals change the reactance of the varactor diode (D37), and modulate the oscillated signal at the TX-VCO (Q18).

4-2-3 PRE-DRIVE AND YGR AMPLIFIERS CIRCUIT (MAIN UNIT)

The drive amplifier circuit amplifies the VCO oscillating signal to a level needed at the power amplifier.

The output signal from VCO circuit is amplified at the buffer amplifiers (Q19 and Q27), and is applied to the TX/RX switch (D43). The transmit signal from the TX/RX switch is amplified at the pre-drive (Q28) and YGR (Q30) amplifiers to obtain an approximate 50 mW signal level. The amplified signal is then applied to the RF power amplifier (IC13).

4-2-4 POWER AMPLIFIER CIRCUIT (MAIN UNIT)

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

IC13 is a power module which has amplification output capabilities of about 35 W with 50 mW input. The output signal from IC13 (pin 1) is passed through the antenna switching circuit (D46) and is then applied to the antenna connector via the low-pass filter (L1, L2, L89, C361, C364).

4-2-5 APC CIRCUIT (MAIN UNIT)

The APC (Automatic Power Controller) circuit stabilizes the TX output power.

The RF output signal from the power amplifier (IC13) is detected at the power detector circuit (D47, D48) and is applied to APC controller. The applied voltage compares to “DAPCON” signal from the D/A converter IC (IC15, pin 14), and then outputs the differential bias voltage for power amplifier (IC13, pin 3). Thus the APC circuit maintains a constant output power.

4-3 PLL CIRCUITS

4-3-1 GENERAL

The PLL circuit provides stable oscillation of the transmit frequency and receive 1st LO frequency. The PLL circuit compares the phase of divided VCO frequency with the reference frequency. The PLL output frequency is controlled by the crystal oscillator and divided ratio of the programmable divider.

IC12 is a dual PLL IC, which controls both TX and RX VCO circuits, and contains a prescaler, programmable counter, programmable divider, phase detector, charge pomp and etc.

The PLL circuit, using a one chip PLL IC (IC12), directly generates the transmit frequency and receive 1st IF frequency with VCOs. The PLL IC sets the divided ratio based on serial data from the main CPU, and compares the phases of VCO signals with the reference oscillator frequency. The PLL IC detects the out-of-step phase and outputs from pins 8 and 13 for TX and RX, respectively. The reference frequency (15.3 MHz) is oscillated at the reference oscillator (X4).

4-3-2 TX AND CHANNEL 70 (RX) LOOPS

The generated signal at the TX-VCO/CHANNEL 70-VCO (Q18, D37, D39, D40) enters the PLL IC (IC12, pin 2) and is divided at the programmable divider section and is then applied to the phase detector section.

The phase detector compares the input signal with a reference frequency, and then outputs the out-of-phase signal (pulse-type signal) from pin 8.

The pulse-type signal is converted into DC voltage (lock voltage) at the loop filter (R217–R219, C247, C249, C278), and is then applied to the varactor diodes (D39, D40) of the TX-VCO to stabilize the oscillated frequency.

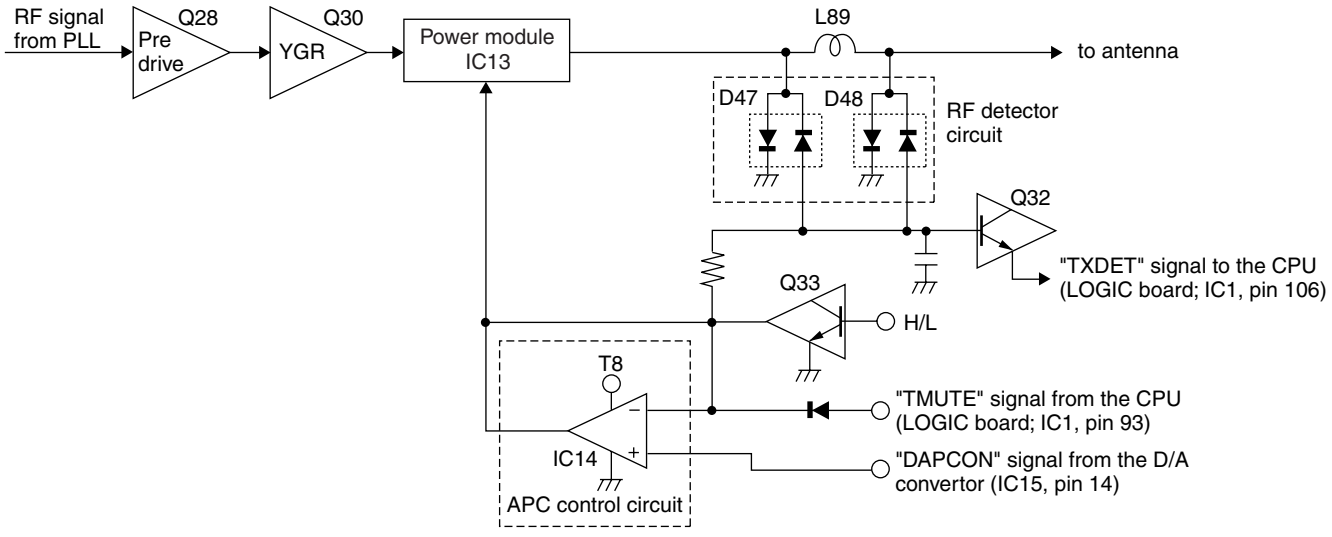
4-3-3 OTHER CHANNELS (RX) LOOP

The generated signal at the RX-VCO (Q12, D32, D33) enters the PLL IC (IC2, pin 19) and is divided at the programmable divider section and is then applied to the phase detector section.

The phase detector compares the input signal with a reference frequency, and then outputs the out-of-phase signal (pulse-type signal) from pin 13.

The pulse-type signal is converted into DC voltage (lock voltage) at the loop filter (R182, R213, R214, C225, C248), and is then applied to the varactor diodes (D32, D33) of the RX-VCO to stabilize the oscillated frequency. The lock voltage from the loop filter is amplified at the buffer amplifier (Q23), and is then applied to the RF circuit.

• APC CIRCUIT



4-3-4 VCO CIRCUIT (MAIN UNIT)

• TX-VCO/CHANNEL 70-VCO (RX) CIRCUITS

The VCO outputs from TX-VCO/CHANNEL 70-VCO (Q18) are amplified at the buffer amplifiers (Q19 and Q27), and are applied to the TX/RX switch circuit (D42, D43). The receiver LO signal is applied to the 1st mixer circuit for CHANNEL 70 (D21, L48, L49) passing through a low-pass filter (L51, L52, C150–C152), and the transmitter signal is applied to the pre-drive amplifier (Q28). A portion of the VCO output signal is re-applied to the PLL IC (IC12, pin 2) via the buffer amplifier (Q15).

• OTHER CHANNELS-VCO (RX) CIRCUITS

The VCO outputs from OTHER CHANNELS-VCO (Q12) are amplified at the buffer amplifiers (Q13 and Q23). The receiver LO signal is applied to the 1st mixer circuit for OTHER CHANNELS (D11, L18, L19) passing through a low-pass filter (L21, L22, C52–C54). A portion of the VCO output signal is re-applied to the PLL IC (IC12, pin 2 or pin 19) via the buffer amplifier (Q19).

4-4 DSC CIRCUITS

4-4-1 DSC MODULATION CIRCUIT (LOGIC, AF AND MAIN UNITS)

The ATIS signal from the CPU (LOGIC unit; IC1, pin 117) is applied to the buffer amplifier (AF unit; Q18) as “DSC” signal. The signal passes through the analog switch (AF unit; IC7, pin 1), and then applied to IDC amplifier (AF unit; IC8a). Then, the amplified signal is applied to the transmitter circuit.

The signalis passed through the splatter filter (AF unit; IC8b) to suppress unwanted 3 kHz or higher signals. The filtered signals are then applied to the TX modulation circuit via the D/A converter IC (MAIN unit; IC15, pins 11, 12) as a DSC modulation signal “MOD”.

4-5 LOGIC CIRCUITS

4-5-1 LOGIC UNIT

• CPU

IC1 is a 8 bit single chip micro-computer, which contains LCD driver, serial I/O, timer, A/D converter, programmable I/O, ROM and RAM.

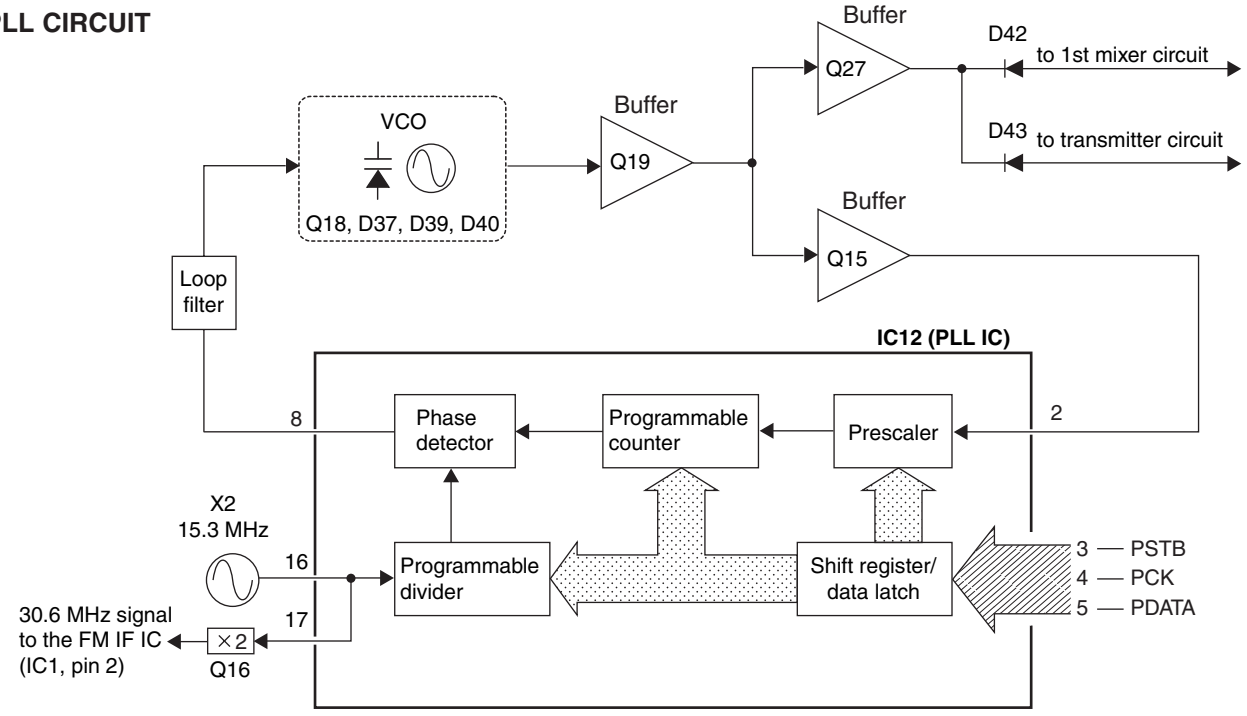
• SYSTEM CLOCK CIRCUIT

X1 is a crystal oscillator, which oscillates 9.8304 MHz system clock for the main CPU (IC1).

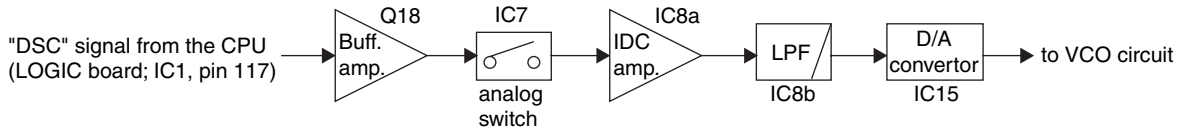
• RESET CIRCUIT

IC2 is a reset IC, which outputs a reset signal (“LOW” pulse) to main CPU (IC1, pin 79) when turning transceiver power ON.

• PLL CIRCUIT



• DSC CIRCUIT



4-6 POWER SUPPLY CIRCUITS

4-6-1 VOLTAGE LINE (MAIN UNIT)

LINE	DESCRIPTION
HV	The 13.8 V from the connected DC power supply.
VCC	Same voltage as the 13.8 V line, and is applied to the AF power amplifiers (AF unit; IC3, IC10), LOGIC unit, etc.
8V	Common 8 V converted from the VCC line at the +8V regulator circuit (AF unit; IC1). The output voltage is applied to the T8 controller (MAIN unit; Q36, Q36), +5 regulator (AF unit; IC2), R8 regulator (AF unit; Q1, Q2), etc.
5V	Common 5 V converted from the 8V line at the +5 regulator circuit (AF unit; IC2). The output voltage is applied to the buffer amplifiers (AF unit; IC19, Q14), expander ICs (AF unit; IC17, IC18), etc.
T8	Transmit 8 V controlled by the T8 control circuit (MAIN unit; Q35, Q36) using the “SEND” signal from main CPU. The output voltage is applied to the pre-dirve (MAIN unit; Q28), YGR amplifier (MAIN unit; Q30), APC controller (MAIN unit; IC14), etc.
R8	Receive 8 V controlled by the R8 control circuit (AF unit; Q1, Q2) using the RCV signal from main CPU. The controlled voltage is applied to the bandpass filter (AF unit; Q11, Q12), buffer and IF amplifiers (AF unit; Q2 and Q23), etc.

4-7 PORT ALLOCATIONS

4-7-1 EXPANDER IC (AF unit; IC18)

Pin number	Port name	Description
4	MICS2	Outputs HM-162/2 control signal. High : While transmitting via the HM-162/2.
5	MICS1	Outputs HM-162/1 control signal. High : While transmitting via the HM-162/1.
6	SPS2	Outputs HM-162/2 control signal. High : While receiving via the HM-162/2.
7	SPS1	Outputs HM-162/1 control signal. High : While receiving via the HM-162/1.
11	SP	Outputs the internal speaker (FRONT unit; SP1) control signal. High : The speaker is activating.
12	BPLVL	Outputs beep audio level control signal. Low : Beep audio level is maximum.
13	RCV	Outputs the R8 regulator (AF unit; Q1, Q2) control signal. High : While receiving.
14	HLC	Outputs the Hailer speaker TX/RX select signal. High : While transmitting via the Hailer speaker.

4-7-2 EXPANDER IC (AF unit; IC17)

Pin number	Port name	Description
4	STRU	Outputs scrambler unit bypass control signal. High : Bypassing the scrambler unit.
5	AFSUB	Outputs sound signals to the HM-162. High : Sounding from HM-162.
6	INCMH	Outputs voice signals from IC-M602 to HM-162 using intercom function. High : While receiving.
7	INCHM	Outputs voice signals from HM-162 to IC-M602 using intercom function. High : While transmitting.
11	MIC/DSC	Outputs MIC/DSC modulation circuit control signal. High : While the DSC signal is modulated.
12	HAILIN	Outputs the microphone select signal. High : While using the hailer speaker.
13	FOGC	Outputs fog horn control signal. High : Fog horn is ON.
14	HAILOUT	Outputs the microphone select signal. High : While using the HM-126.

4-7-3 CPU (LOGIC BOARD; IC1)

Pin number	Port name	Description
40	UNLK	Input port for PLL unlock signal from the PLL IC (MAIN unit; IC12, pin 7). High : While PLL is unlocked.
41	EDATA	I/O port for the data signals to the EEPROM (IC4, pin 5).
28	ECK	Outputs a clock signal to the EEPROM (IC4, pin 6).
34	DEC3	Input port for the decode signal for channel 70 receiver.
38	DEC1	Input port for the ATIS/DSC decode signals.
110	BEEP	Outputs beep audio signals.
58	DATAMC	I/O port for the cloning data from the transceiver.
59	DATACM	I/O port for the cloning data to the transceiver.
63	DATAMH1	I/O port for the communicating signal from the transceiver to the microphone (HM-162/1).
64	DATAH1M	I/O port for the communicating signal from the microphone (HM-162/1) to the transceiver.
66	DATANM	I/O port for the GGA signals
69	DATAMN	I/O port for the NMEA data.
70	PDATA	Outputs a data signal to the PLL IC (MAIN unit; IC12, pin 5).
71	PCK	Outputs a clock signal to the PLL IC (MAIN unit; IC12, pin 4).
6	OPTIN	Outputs the voice scrambler unit (UT-112) detecting signal. Low : While UT-112 is connecting.
92	RMUTE	Outputs RX muting signal. High : While RX signal is muting.
93	TMUTE	Outputs transmit mute signal. High : While TX muting.
94	SEND	Outputs T8 regulator control signal. High: While transmitting.
96	H/L	Output port for RF output power (High or Low) select signal. Low : While Low power is selected.
97 98	ATT2C ATT1C	Output RX attenuator control signals.
103	WXDEC	Input port for the weather alert signal.
104	SQL	Input port for the FM IF IC (MAIN unit; IC1, pin 14)'s noise amplifier detecting signal.

ATT level	OFF	ON (1)	ON (2)	MAX.
ATT1C	1	1	0	1
ATT2C	1	0	1	1

Pin number	Port name	Description
105	LBAT	Input port for the low-battery detecting signal. Low battery indicator appears when the battery becomes less than 2.58 V
106	TXDET	Input port for transmit detecting signal.
107	TEMP	Input port for the indide temperature detecting signal.
111–114	DIAL1–DIAL4	Input ports for the dial data signals.
115	PTT	Input port for the HM-136's PTT button detecting signal. Low : While PTT button is pushed.
26	HANG	Input port for the microphone hanger detecting signal Low : The microphone on hook.
117	DSC	Outputs ATIS/DSC encode signals.
120	SCON	Outputs the voice scrambler unit (UT-112) control signal.
121	OPSTB	Outputs a strobe signal to the voice scrambler unit (UT-112).
124	DASTB	Outputs a strobe signal to the PLL IC (MAIN unit; IC12, pin 3).
125	PSTB	Outputs a strobe signal to the D/A convertor IC (MAIN unit; IC15, pin 6).
126	DATAH2M	I/O port for the communicating singal from the microphone (HM-162/2) to the transceiver.
127	DATAMH2	I/O port for the communicating singal from the transceiver to the microphone (HM-162/2).

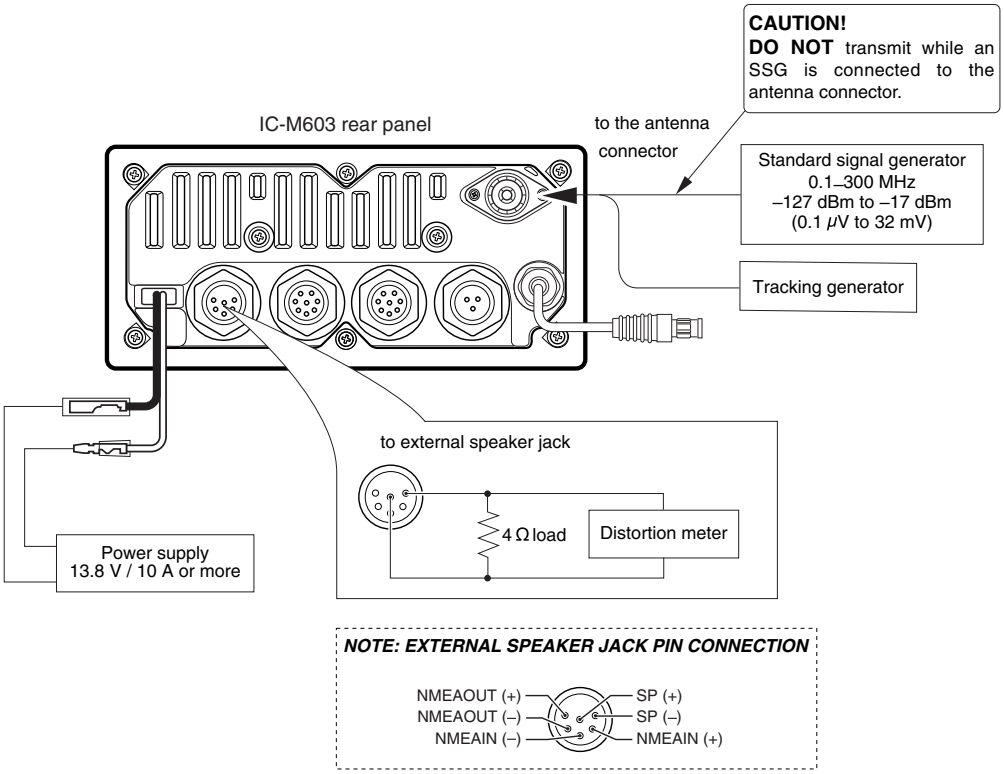
SECTION 5 ADJUSTMENT PROCEDURES

5-1 PREPARATION

■ REQUIRED TEST EQUIPMENT

EQUIPMENT	GRADE AND RANGE	EQUIPMENT	GRADE AND RANGE
DC power supply	Output voltage : 13.8 V DC Current capacity : 10 A or more	Standard signal generator (SSG)	Frequency range : 0.1–300 MHz Output level : 0.1 µV to 32 mV (–127 to –17 dBm)
External speaker	Input impedance : 4 Ω Capacity : 5 W or more	DC voltmeter	Input impedance : 50 kΩ/V DC or better
Tracking generator	Frequency range : 100–300 MHz Output level : 0.1 µV to 32 mV (–127 dBm to –17 dBm)	Distortion meter	Frequency range : 1 kHz ±10 % Measuring range : 1–100 %

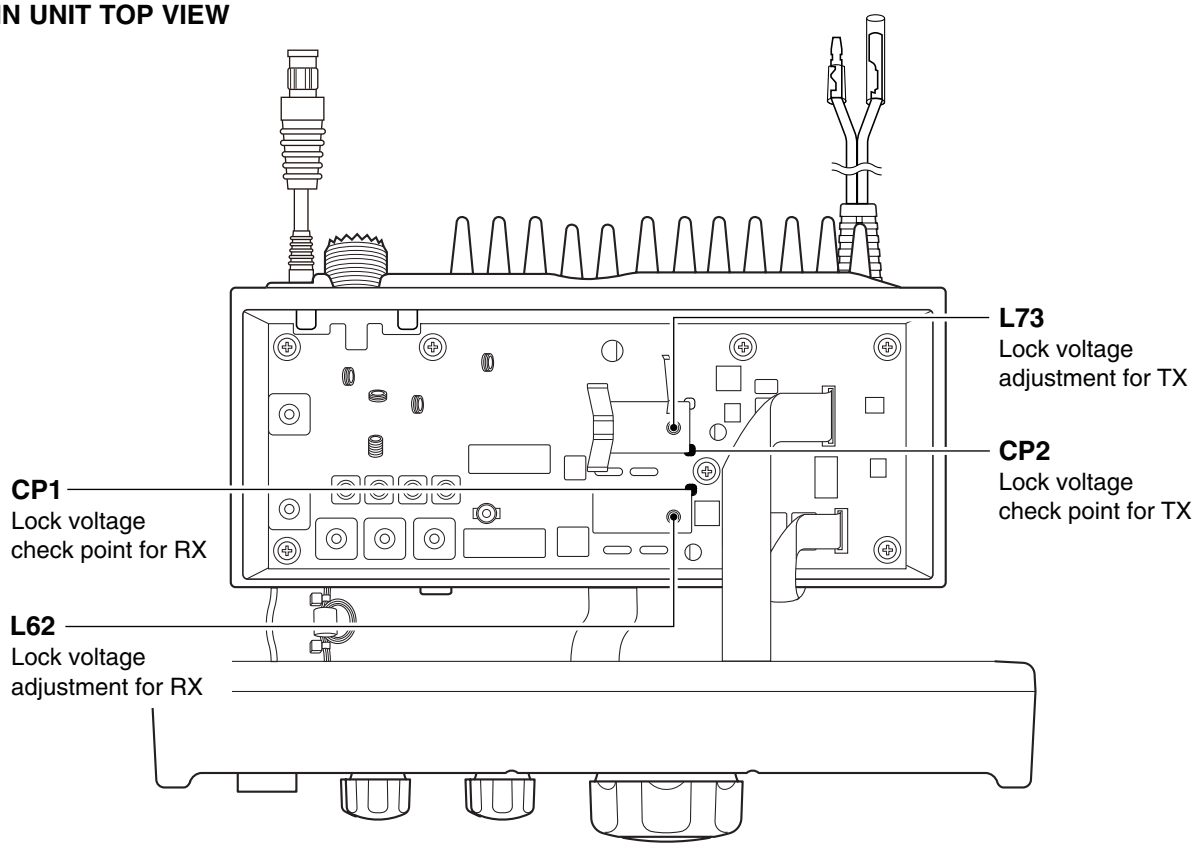
■ CONNECTION



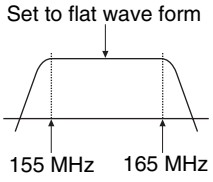
5-2 PLL ADJUSTMENTS

ADJUSTMENT		ADJUSTMENT CONDITION	MEASUREMENT		VALUE	ADJUSTMENT POINT	
			UNIT	LOCATION		UNIT	ADJUST
LOCK VOLTAGE	1	• Operating channel : ch P2 • Receiving	MAIN	Connect a digital multi-meter or oscilloscope to check point CP1.	3.8 V – 4.0 V	MAIN	L62
	2	• Operating channel : ch P2 • Output power : Low • Transmitting		Connect a digital multi-meter or oscilloscope to check point CP2.	3.1 V – 3.3 V		L73
	3	• Operating channel : ch 70 • Receiving			2.4–3.7 V		Verify

• MAIN UNIT TOP VIEW

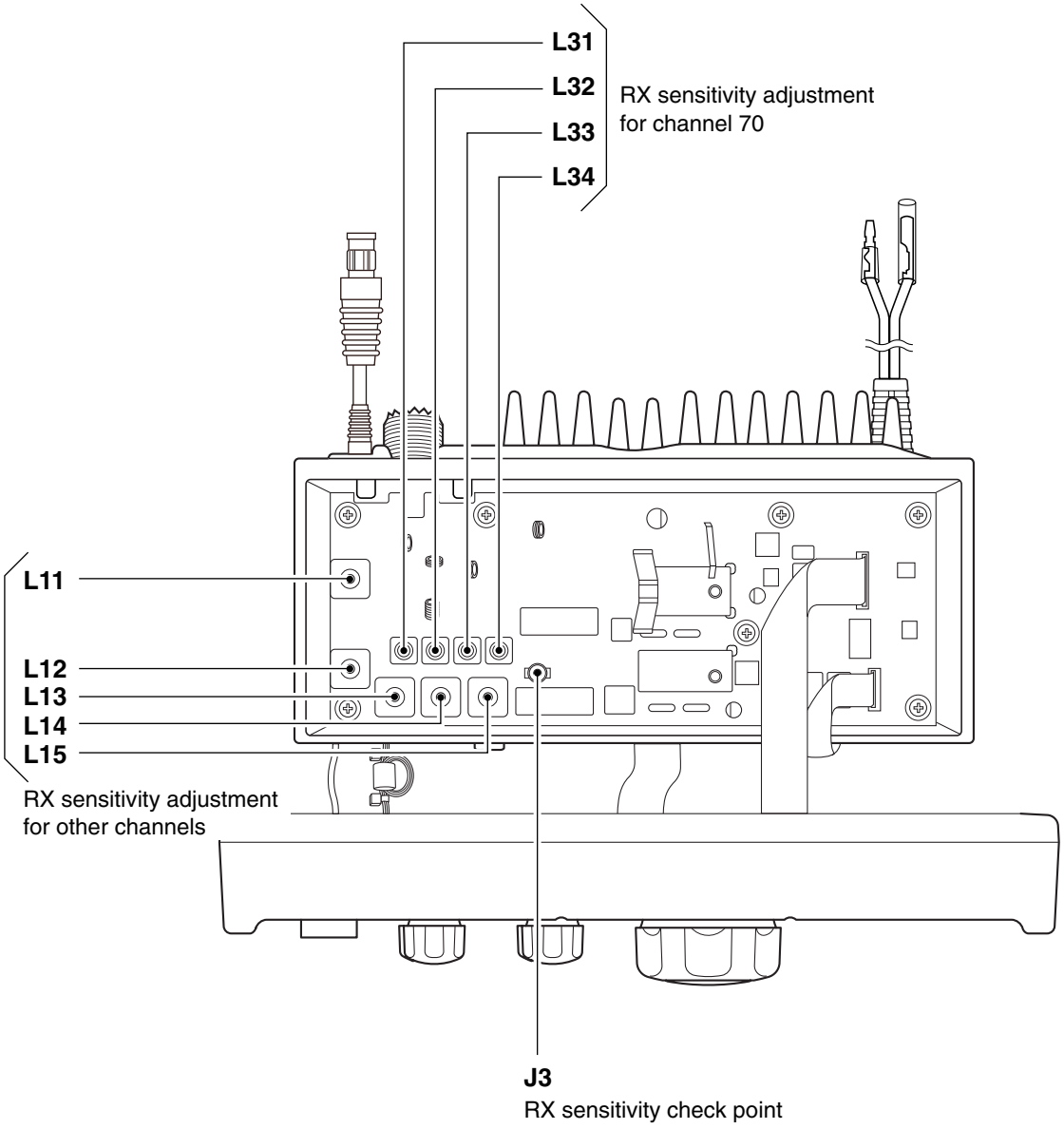


5-3 RECEIVER ADJUSTMENTS

ADJUSTMENT		ADJUSTMENT CONDITION	MEASUREMENT		VALUE	ADJUSTMENT POINT	
			UNIT	LOCATION		UNIT	ADJUST
SENSITIVITY (Except channel 70)	1	• Operating channel : ch 16 • Connect a tracking generator's output to the antenna connector and set as: Level : 7.1 mV* (–30 dBm)	MAIN	Connect a tracking generator's input to the MAIN unit; J3.	Set the flat wave form as shown below.  	MAIN	L11 L12 L13 L14 L15
(Channel 70)	2	• Operating channel : ch 70 • Connect an SSG to the antenna connector and set as: Frequency : 156.525 MHz Level : 10 µV* (–97 dBm) Modulation : 1 kHz Deviation : ±3.5 kHz • Set the internal speaker OFF in the SET mode, and connect a distortion meter with a 4 Ω load to [EXT SP] receptacle. • Receiving	MAIN	Connect a DC voltmeter to check point CP3.	Maximum voltage	MAIN	L31 L32 L33 L34

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

• MAIN UNIT TOP VIEW



SECTION 6 PARTS LIST

• IC-M603
[REPLACEMENT UNITS]

ORDER NO.	UNIT NAME	
0325770124	U M603 #24 FRONT (including LOGIC UNIT)	[UK]
0325770125	U M603 #25 FRONT (including LOGIC UNIT)	[EUR]
0325770126	U M603 #26 FRONT (including LOGIC UNIT)	[HOL]
0325770127	U M603 #27 FRONT (including LOGIC UNIT)	[FRG]

[FRONT UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.	H/V LOCATION
W1	8900015550	CBL	OPC-1658		
W2	7120000470	JMP	ERDS2T0		
W3	7120000470	JMP	ERDS2T0		

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.	H/V LOCATION
IC1	1140013650	S.IC	HD64F2633RF28 (FX-2577D)	B	80/53
IC2	1110005771	S.IC	S-80942CNMC-G9CT2G	B	88.3/36.4
IC4	1140008650	S.IC	HN58X2464TI	B	104.6/61
IC5	1180002380	S.IC	S-817B33AMC-CWW-T2G	B	41.9/59
IC6	1130013200	S.IC	TC74LCXR164245 (E,F)	B	56.4/65.7
IC8	1180000421	S.IC	TA78L05F (TE12R,F)	B	46.8/53.3
Q4	1530003960	S.TR	KTC2875-B-RTK/P	B	99.8/42.1
Q12	1590003670	S.TR	KRA304-RTK/P	B	98.8/73.8
Q13	1590003670	S.TR	KRA304-RTK/P	B	96.3/73.8
Q15	1530003900	S.TR	KTC4075 BL-RTK/P	B	113.9/59
Q16	1530003900	S.TR	KTC4075 BL-RTK/P	B	113.9/61.6
Q17	1520000840	S.TR	KTA1664Y-RTF/P	B	118.3/60.2
D1	1790001561	S.DIO	1SS372 (TE85R,F)	B	94.2/43.1
D3	1730002360	S.ZEN	MA8062-M (TX)	B	23.5/41.2
D4	1730002360	S.ZEN	MA8062-M (TX)	B	29.6/41.2
D5	1730002360	S.ZEN	MA8062-M (TX)	B	33.5/39.9
D6	1750001320	S.DIO	KDS4148U RTK/P	B	80.3/33.5
X1	6050011090	S.XTL	CR-691 (9.8304 MHz)	B	75.3/39.4
R4	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	104.7/66.5
R5	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	103.4/66.5
R6	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	96.2/31.9
R7	7030010610	S.RES	ERJ1TYJ 470U (47)	B	56/53
R8	7030003570	S.RES	ERJ3GEYJ 123 V (12 k)	B	86.7/40.1
R9	7030003620	S.RES	ERJ3GEYJ 333 V (33 k)	B	85.1/37
R10	7030003640	S.RES	ERJ3GEYJ 473 V (47 k)	B	85.9/35
R12	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	64/66.2
R13	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	64/64.9
R14	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	64/63.6
R15	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	64/62
R16	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	64/60.7
R17	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	102.7/47.6
R18	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	104.1/48.2
R23	7030003570	S.RES	ERJ3GEYJ 123 V (12 k)	B	110.2/69.8
R24	7030003450	S.RES	ERJ3GEYJ 122 V (1.2 k)	B	59.9/53.3
R25	7030003450	S.RES	ERJ3GEYJ 122 V (1.2 k)	B	88.1/66.6
R27	7030003570	S.RES	ERJ3GEYJ 123 V (12 k)	B	66.7/63.5
R28	7030003570	S.RES	ERJ3GEYJ 123 V (12 k)	B	66.7/62.2
R29	7030003570	S.RES	ERJ3GEYJ 123 V (12 k)	B	66.7/60.9
R31	7030003440	S.RES	ERJ3GEYJ 102 V (1 k)	B	98.9/48.5
R32	7030003440	S.RES	ERJ3GEYJ 102 V (1 k)	B	97.6/48.5
R33	7030003580	S.RES	ERJ3GEYJ 153 V (15 k)	B	99.8/45.7
R34	7030003640	S.RES	ERJ3GEYJ 473 V (47 k)	B	99.8/44.4
R35	7030003500	S.RES	ERJ3GEYJ 332 V (3.3 k)	B	84/41.9
R36	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	100.2/48.5
R37	7030003570	S.RES	ERJ3GEYJ 123 V (12 k)	B	104.3/73.3
R38	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	46/58.3
R39	7030003330	S.RES	ERJ3GEYJ 121 V (120)	B	93.6/88.2
R40	7030003330	S.RES	ERJ3GEYJ 121 V (120)	B	57.7/88.2
R41	7030003630	S.RES	ERJ3GEYJ 393 V (39 k)	B	110.7/58.3
R42	7030003640	S.RES	ERJ3GEYJ 473 V (47 k)	B	110.7/59.6
R43	7030003440	S.RES	ERJ3GEYJ 102 V (1 k)	B	110.7/62.2
R44	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	114.3/63.5

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.	H/V LOCATION
R45	7030003500	S.RES	ERJ3GEYJ 332 V (3.3 k)	B	110.7/63.5
R46	7030003360	S.RES	ERJ3GEYJ 221 V (220)	B	128/51.9
R47	7030003360	S.RES	ERJ3GEYJ 221 V (220)	B	103.8/13
R48	7030003360	S.RES	ERJ3GEYJ 221 V (220)	B	107.1/49.6
R49	7030003360	S.RES	ERJ3GEYJ 221 V (220)	B	34.2/22.3
R50	7030003330	S.RES	ERJ3GEYJ 121 V (120)	B	31/33.5
R51	7030003330	S.RES	ERJ3GEYJ 121 V (120)	B	63.3/36.6
R52	7030003700	S.RES	ERJ3GEYJ 154 V (150 k)	B	63.9/38.7
R53	7030003640	S.RES	ERJ3GEYJ 473 V (47 k)	B	65.2/38.7
R55	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	35.6/22.3
R56	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	38.2/22.3
R57	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	40.8/22.3
R58	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	43.4/22.3
R62	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	28.9/44.8
R63	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	34.9/36.9
R64	7030003440	S.RES	ERJ3GEYJ 102 V (1 k)	B	25.9/41.8
R65	7030003440	S.RES	ERJ3GEYJ 102 V (1 k)	B	27.2/41.8
R66	7030003320	S.RES	ERJ3GEYJ 101 V (100)	B	33.4/35.1
R71	7030003620	S.RES	ERJ3GEYJ 333 V (33 k) [HOL]	B	60.7/46.2
	7030003680	S.RES	ERJ3GEYJ 104 V (100 k) [UK], [EUR]	B	60.7/46.2
	7030003860	S.RES	ERJ3GE JPW V [FRG]	B	60.7/46.2
R72	7030003620	S.RES	ERJ3GEYJ 333 V (33 k) [UK]	B	58.6/43.7
	7030003680	S.RES	ERJ3GEYJ 104 V (100 k) [EUR], [HOL]	B	58.6/43.7
R81	7030003640	S.RES	ERJ3GEYJ 473 V (47 k)	B	81.9/70.6
R82	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	85.3/70.6
R83	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	83.2/70.6
C2	4030006900	S.CER	C1608 JB 1H 103K-T	B	106.1/66.5
C4	4030008890	S.CER	C1608 JB 1H 273K-T	B	88.3/33.9
C5	4510008560	S.ELE	EEE1HAR47SR	B	88.1/30.8
C6	4030006900	S.CER	C1608 JB 1H 103K-T	B	84.3/35
C7	4030011600	S.CER	C1608 JB 1E 104K-T	B	78/65.3
C8	4030011600	S.CER	C1608 JB 1E 104K-T	B	74.9/63.7
C9	4510008540	S.ELE	EEE1CA100SR	B	69.7/66.6
C11	4030011600	S.CER	C1608 JB 1E 104K-T	B	93.4/54.7
C12	4030011600	S.CER	C1608 JB 1E 104K-T	B	93.1/47.8
C15	4030006850	S.CER	C1608 JB 1H 471K-T	B	84/39.1
C17	4030011600	S.CER	C1608 JB 1E 104K-T	B	82.4/41.9
C18	4030007050	S.CER	C1608 CH 1H 220J-T	B	77.4/42.7
C18	4030007060	S.CER	C1608 CH 1H 270J-T	B	77.4/42.7
C19	4030007050	S.CER	C1608 CH 1H 220J-T	B	80.5/42.7
C19	4030007060	S.CER	C1608 CH 1H 270J-T	B	80.5/42.7
C20	4030011600	S.CER	C1608 JB 1E 104K-T	B	74.6/42.7
C21	4030006900	S.CER	C1608 JB 1H 103K-T	B	71.8/42.7
C25	4030011600	S.CER	C1608 JB 1E 104K-T	B	110.7/60.9
C26	4510008540	S.ELE	EEE1CA100SR	B	118.8/65.2
C27	4030011600	S.CER	C1608 JB 1E 104K-T	B	119/68.3
C34	4030006900	S.CER	C1608 JB 1H 103K-T	B	62.6/38.7
C35	4030011600	S.CER	C1608 JB 1E 104K-T	B	66.5/38.7
C37	4030006900	S.CER	C1608 JB 1H 103K-T	B	49.9/21.6
C38	4030011600	S.CER	C1608 JB 1E 104K-T	B	47.7/22.3
C39	4030006860	S.CER	C1608 JB 1H 102K-T	B	44.7/22.3
C40	4030006860	S.CER	C1608 JB 1H 102K-T	B	42.1/22.3
C41	4030006860	S.CER	C1608 JB 1H 102K-T	B	39.5/22.3
C42	4030006860	S.CER	C1608 JB 1H 102K-T	B	36.9/22.3
C44	4030006900	S.CER	C1608 JB 1H 103K-T	B	58.6/42.4
C46	4030006900	S.CER	C1608 JB 1H 103K-T	B	29.2/42.8
C47	4030006850	S.CER	C1608 JB 1H 471K-T	B	23.9/42.8
C48	4030006900	S.CER	C1608 JB 1H 103K-T	B	33.4/38.2
C49	4030007090	S.CER	C1608 CH 1H 470J-T	B	26.6/22.5
C50	4030007090	S.CER	C1608 CH 1H 470J-T	B	22/22.9
C51	4030007130	S.CER	C1608 CH 1H 101J-T	B	15.1/45.1
C52	4030007130	S.CER	C1608 CH 1H 101J-T	B	12.9/64.4
C53	4030006900	S.CER	C1608 JB 1H 103K-T	B	15.2/24.8
C55	4030011600	S.CER	C1608 JB 1E 104K-T	B	42.2/61.5
C56	4510008540	S.ELE	EEE1CA100SR	B	46.4/63.5
C57	4030011600	S.CER	C1608 JB 1E 104K-T	B	64/68.9
C58	4030006900	S.CER	C1608 JB 1H 103K-T	B	64/67.6
C59	4030006900	S.CER	C1608 JB 1H 103K-T	B	49.7/66.9
C60	4030006900	S.CER	C1608 JB 1H 103K-T	B	64/59.4
C61	4550007370	S.TAN	F931V225MBABMA	B	46.4/69.3
C62	4550007370	S.TAN	F931V225MBABMA	B	36/84.6
C63	4550007370	S.TAN	F931V225MBABMA	B	36/81.3
C64	4550007370	S.TAN	F931V225MBABMA	B	46.4/72.7
C65	4550007650	S.TAN	F931V105MAABMA	B	43.3/85.2
C66	4550007650	S.TAN	F931V105MAABMA	B	43.3/83.1
C67	4550007650	S.TAN	F931V105MAABMA	B	43.3/81
C68	4550007650	S.TAN	F931V105MAABMA	B	43.3/78.9
C69	4550007650	S.TAN	F931V105MAABMA	B	43.3/76.8
C71	4030006860	S.CER	C1608 JB 1H 102K-T	B	45.4/56.7
C72	4510008540	S.ELE	EEE1CA100SR	B	41.9/54.1
C73	4030006900	S.CER	C1608 JB 1H 103K-T	B	48.2/56.7

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

[LOGIC UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.	H/V LOCATION
C74	4510008540	S.ELE	EEE1CA100SR	B	51.7/54.1
C101	4030006860	S.CER	C1608 JB 1H 102K-T	B	81/73.6
C103	4030006860	S.CER	C1608 JB 1H 102K-T	B	82.3/73.6
C104	4030007090	S.CER	C1608 CH 1H 470J-T	B	82.3/84.3
C105	4030007090	S.CER	C1608 CH 1H 470J-T	B	83.6/73.6
C106	4030007090	S.CER	C1608 CH 1H 470J-T	B	83.6/84.3
C107	4030007090	S.CER	C1608 CH 1H 470J-T	B	84.9/73.6
C108	4030006860	S.CER	C1608 JB 1H 102K-T	B	86.2/73.6
C109	4030006860	S.CER	C1608 JB 1H 102K-T	B	85.3/84.3
C110	4030007090	S.CER	C1608 CH 1H 470J-T	B	86.6/84.3
C111	4030007090	S.CER	C1608 CH 1H 470J-T	B	87.5/73.6
C112	4030007090	S.CER	C1608 CH 1H 470J-T	B	87.9/84.3
C113	4030007090	S.CER	C1608 CH 1H 470J-T	B	88.8/73.6
C114	4030007090	S.CER	C1608 CH 1H 470J-T	B	89.2/84.3
C115	4030007090	S.CER	C1608 CH 1H 470J-T	B	90.1/73.6
C116	4030007090	S.CER	C1608 CH 1H 470J-T	B	90.5/84.3
C117	4030007090	S.CER	C1608 CH 1H 470J-T	B	91.4/73.6
C118	4030007090	S.CER	C1608 CH 1H 470J-T	B	92.7/73.6
C119	4030007090	S.CER	C1608 CH 1H 470J-T	B	94/73.6
C120	4030007090	S.CER	C1608 CH 1H 470J-T	B	92.8/84.3
C121	4030006860	S.CER	C1608 JB 1H 102K-T	B	55/46.7
C124	4030007090	S.CER	C1608 CH 1H 470J-T	B	45/35.6
C125	4030007090	S.CER	C1608 CH 1H 470J-T	B	51.3/49.4
C126	4030007090	S.CER	C1608 CH 1H 470J-T	B	51.3/46.7
C127	4030007090	S.CER	C1608 CH 1H 470J-T	B	51.2/37.5
C128	4030007090	S.CER	C1608 CH 1H 470J-T	B	50/46.7
C129	4030007090	S.CER	C1608 CH 1H 470J-T	B	49.9/37.5
C130	4030007090	S.CER	C1608 CH 1H 470J-T	B	48.7/46.7
C131	4030007090	S.CER	C1608 CH 1H 470J-T	B	48.6/37.5
C132	4030007090	S.CER	C1608 CH 1H 470J-T	B	47.4/46.7
C133	4030007090	S.CER	C1608 CH 1H 470J-T	B	46.1/46.7
C134	4030007090	S.CER	C1608 CH 1H 470J-T	B	47.3/37.5
C135	4030007090	S.CER	C1608 CH 1H 470J-T	B	44.8/46.7
C136	4030007090	S.CER	C1608 CH 1H 470J-T	B	46/37.5
C137	4030007090	S.CER	C1608 CH 1H 470J-T	B	43.5/46.7
C138	4030007090	S.CER	C1608 CH 1H 470J-T	B	44.7/37.5
C139	4030007090	S.CER	C1608 CH 1H 470J-T	B	42.2/46.7
C140	4030007090	S.CER	C1608 CH 1H 470J-T	B	43.4/37.5
C141	4030007090	S.CER	C1608 CH 1H 470J-T	B	40.3/44.6
C142	4030007090	S.CER	C1608 CH 1H 470J-T	B	42.1/37.5
C143	4030007090	S.CER	C1608 CH 1H 470J-T	B	57.6/33.7
C151	4030006860	S.CER	C1608 JB 1H 102K-T	B	37/74.4
C152	4030006860	S.CER	C1608 JB 1H 102K-T	B	37/71.6
C153	4030006860	S.CER	C1608 JB 1H 102K-T	B	30/74.4
C154	4030006860	S.CER	C1608 JB 1H 102K-T	B	30/71.6
J1	6510023361	S.CNR	26FLT-SM2-TB (LF) (SN)	B	87.5/78.9
J2	6510023511	S.CNR	28FLT-SM2-TB (LF) (SN)	B	49/42
J3	6510023391	S.CNR	27FLZ-SM2-TB (LF) (SN)	B	58.6/80.4
J4	6510023261	S.CNR	B6B-PH-SM4-TB (LF) (SN)	B	23.6/29.2
J5	6510023261	S.CNR	B6B-PH-SM4-TB (LF) (SN)	B	23.6/37.5
J6	6510022691	S.CNR	06FLT-SM2-TB (LF) (SN)	B	33.5/73
J7	6510019421	S.CNR	B8B-ZR-SM4-TF (LF) (SN)	B	43.9/29.1
J8	6510021261	S.CNR	B9B-ZR-SM4-TF (LF) (SN)		
DS1	5030002390	LCD	HLM7784-010100		
DS2	5040002660	S.LED	FY1101F-TR (LED)	T	88.6/36.7
DS3	5040002660	S.LED	FY1101F-TR (LED)	T	76.6/36.7
DS4	5040002660	S.LED	FY1101F-TR (LED)	T	64.6/36.7
DS5	5040002660	S.LED	FY1101F-TR (LED)	T	52.6/36.7
DS6	5040002660	S.LED	FY1101F-TR (LED)	T	40.6/36.7
DS7	5040002660	S.LED	FY1101F-TR (LED)	T	28.6/36.7
DS8	5040002310	S.LED	SML-311YTT86	T	106.3/39.8
DS9	5040002310	S.LED	SML-311YTT86	T	102.9/27
DS10	5040002310	S.LED	SML-311YTT86	T	31.3/27
DS11	5040002310	S.LED	SML-311YTT86	T	106.3/77.1
DS12	5040002310	S.LED	SML-311YTT86	T	106.3/64.9
DS13	5040002310	S.LED	SML-311YTT86	T	106.3/52.7
DS14	5040002310	S.LED	SML-311YTT86	T	131.2/39.8
DS15	5040002310	S.LED	SML-311YTT86	T	133.1/18.2
DS16	5040002310	S.LED	SML-311YTT86	T	107/13.8
DS17	5040002310	S.LED	SML-311YTT86	T	131.2/77.1
DS18	5040002310	S.LED	SML-311YTT86	T	131.2/64.9
DS19	5040002310	S.LED	SML-311YTT86	T	131.2/52.7
DS20	5040002660	S.LED	FY1101F-TR (LED)	T	28.6/88.2
DS21	5040002660	S.LED	FY1101F-TR (LED)	T	40.6/88.2
DS22	5040002660	S.LED	FY1101F-TR (LED)	T	52.6/88.2
DS23	5040002660	S.LED	FY1101F-TR (LED)	T	64.6/88.2
DS24	5040002660	S.LED	FY1101F-TR (LED)	T	76.6/88.2
DS25	5040002660	S.LED	FY1101F-TR (LED)	T	88.6/88.2
S1	2230000250	SW	SPPH22014A		
S1	2230001170	SW	SPPH220200		

[AF UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.	H/V LOCATION
IC1	1110002031	IC	TA7808S (Q)		
IC2	1180000421	S.IC	TA78L05F (TE12R,F)	T	37.2/31.5
IC3	1110003091	IC	LA4425A-E		
IC4	1130007690	S.IC	BU4066BCF-E2	T	108.2/7.2
IC5	1130007690	S.IC	BU4066BCF-E2	T	96.8/7.2
IC6	1110003750	S.IC	M5218AFP 600C	T	66.1/26.4
IC7	1130007690	S.IC	BU4066BCF-E2	T	52.9/26.1
IC8	1110003750	S.IC	M5218AFP 600C	T	66.1/11.8
IC9	1110003750	S.IC	M5218AFP 600C	B	146.2/32.7
IC10	1110005801	IC	TA8225LQ		
IC11	1110004520	S.IC	M5222FP 600C	B	135.7/36.2
IC12	1170000352	S.IC	PC357N6J000F	T	86.2/29.1
IC13	1130011120	S.IC	BU4584BFV-E2	T	106.8/19
IC14	1110002400	S.IC	NJM2107F-TE1	B	127/33.3
IC16	1130007690	S.IC	BU4066BCF-E2	T	108.1/35.8
IC17	1130007570	S.IC	BU4094BCFV-E2	T	95.7/19
IC18	1130007570	S.IC	BU4094BCFV-E2	T	95.7/31.8
IC19	1130007431	S.IC	TC7S14FU (TE85R,F)	B	88.2/28.2
IC20	1110002400	S.IC	NJM2107F-TE1	B	84.6/9.3
Q1	1520000460	S.TR	2SB1132 T100 R	T	37.2/39
Q2	1590000430	S.TR	DTC144EUA T106	T	42.3/38.6
Q3	1590000430	S.TR	DTC144EUA T106	B	40.1/24
Q4	1510000920	S.TR	2SA1577 T106 Q	B	28.2/21.8
Q7	1530002551	S.TR	2SC3326-B (TE85R,F)	T	32.7/4.5
Q9	1530002851	S.TR	2SC4116-BL (TE85R,F)	T	37/9.7
Q11	1530002851	S.TR	2SC4116-BL (TE85R,F)	T	80.4/18.6
Q12	1530002851	S.TR	2SC4116-BL (TE85R,F)	T	86.4/17.5
Q13	1590001391	S.FET	2SJ144-Y (TE85R,F)	B	103.4/19
Q18	1560000811	S.FET	2SK1069-4-TL-E	T	51.9/19.1
Q21	1530002851	S.TR	2SC4116-BL (TE85R,F)	B	111.3/19.1
Q22	1530002280	S.TR	2SC4081 T106 S	B	95.2/25.1
Q23	1590000430	S.TR	DTC144EUA T106	B	95.2/21.3
Q24	1560000811	S.FET	2SK1069-4-TL-E	T	105.6/24.2
Q25	1530002280	S.TR	2SC4081 T106 S	T	108.4/25.8
Q26	1510000510	S.TR	2SA1576A T106R	T	111.3/24.6
Q28	1560000811	S.FET	2SK1069-4-TL-E	T	102.8/18.4
Q29	1530002280	S.TR	2SC4081 T106 S	T	111.2/17.7
Q30	1510000510	S.TR	2SA1576A T106R	T	111.1/21.7
Q51	1520000380	TR	2SB1143 S		
Q52	1540000550	S.TR	2SD1664 T100Q	B	11.8/31.3
Q53	1540000550	S.TR	2SD1664 T100Q	B	15.3/26.6
D1	1790000700	DIO	DSA3A1		
D2	1750000550	S.DIO	1SS355 TE-17	B	20.9/21.6
D5	1160000080	S.DIO	DAP202K T146	T	36.1/4.5
D7	1750000550	S.DIO	1SS355 TE-17	T	40.3/10.1
D8	1730002360	S.ZEN	MA8062-M (TX)	T	126.2/10.4
D11	1750000550	S.DIO	1SS355 TE-17	B	111.1/15.8
D12	1750000550	S.DIO	1SS355 TE-17	B	80.5/30.3
D13	1750000150	S.DIO	DA204K T146	B	98.4/26.9
D14	1730002360	S.ZEN	MA8062-M (TX)	B	95.1/28.6
R1	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	T	37.2/42.4
R2	7030003480	S.RES	ERJ3GEYJ 222 V (2.2 k)	T	40.4/38.8
R3	7030003480	S.RES	ERJ3GEYJ 222 V (2.2 k)	B	37.6/22
R4	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	36.9/19.7
R11	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	T	37.3/6.8
R12	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	T	34.5/6.8
R13	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	T	31.7/6.8
R16	7030003800	S.RES	ERJ3GEYJ 105 V (1 M)	T	24.9/5.5
R17	7030003600	S.RES	ERJ3GEYJ 223 V (22 k)	T	26.2/3.1
R18	7030003600	S.RES	ERJ3GEYJ 223 V (22 k)	T	23.6/5.5
R19	7030000100	S.RES	MCR10EZHJ 4.7 (4R7)	T	5.8/13
R20	7030003590	S.RES	ERJ3GEYJ 183 V (18 k)	T	34.8/9.6
R21	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	T	94.2/37.6
R31	7030003550	S.RES	ERJ3GEYJ 822 V (8.2 k)	T	75.3/14.3
R32	7030003550	S.RES	ERJ3GEYJ 822 V (8.2 k)	T	77.5/18
R33	7030003380	S.RES	ERJ3GEYJ 331 V (330)	T	77.5/16.7
R34	7030003770	S.RES	ERJ3GEYJ 564 V (560 k)	T	79.5/21.3
R35	7030003710	S.RES	ERJ3GEYJ 184 V (180 k)	T	77.5/20.6
R36	7030003490	S.RES	ERJ3GEYJ 272 V (2.7 k)	T	80.9/21.3
R37	7030003620	S.RES	ERJ3GEYJ 333 V (33 k)	T	80.2/16.6
R38	7030003620	S.RES	ERJ3GEYJ 333 V (33 k)	T	83.4/18.1
R39	7030003440	S.RES	ERJ3GEYJ 102 V (1 k)	T	77.5/21.9
R40	7030003480	S.RES	ERJ3GEYJ 222 V (2.2 k)	T	83.4/15.5
R41	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	103.2/20.9
R42	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	105.5/15.9
R43	7030003760	S.RES	ERJ3GEYJ 474 V (470 k)	B	109.7/10.7
R44	7030003800	S.RES	ERJ3GEYJ 105 V (1 M)	T	114.7/9.4
R45	7030003800	S.RES	ERJ3GEYJ 105 V (1 M)	T	112.1/12.4
R46	7030003800	S.RES	ERJ3GEYJ 105 V (1 M)	T	104/2.7
R47	7030003800	S.RES	ERJ3GEYJ 105 V (1 M)	T	110.8/12.4
R48	7030003800	S.RES	ERJ3GEYJ 105 V (1 M)	T	109.5/12.4
R49	7030003280	S.RES	ERJ3GEYJ 470 V (47)	B	100.8/20.9
R50	7030003280	S.RES	ERJ3GEYJ 470 V (47)	T	91.8/12.7
R51	7030003490	S.RES	ERJ3GEYJ 272 V (2.7 k)	T	106.2/12.2
R52	7030003800	S.RES	ERJ3GEYJ 105 V (1 M)	T	97.6/2.7

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

[AF UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R53	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	91.3/2.8
R54	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	113.4/10.5
R55	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	102/3.5
R56	7030003280	S.RES ERJ3GEYJ 470 V (47)	T	91.4/10.8
R57	7030003760	S.RES ERJ3GEYJ 474 V (470 k)	T	89.7/2.8
R59	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	85.8/3.5
R60	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	87.9/2.8
R61	7030003280	S.RES ERJ3GEYJ 470 V (47)	T	61.4/28.2
R62	7030003550	S.RES ERJ3GEYJ 822 V (8.2 k)	T	70.3/24.1
R63	7030003580	S.RES ERJ3GEYJ 153 V (15 k)	T	70.3/25.4
R64	7030003650	S.RES ERJ3GEYJ 563 V (56 k)	T	70.3/26.7
R67	7030003590	S.RES ERJ3GEYJ 183 V (18 k)	T	69.5/28.7
R68	7030003590	S.RES ERJ3GEYJ 183 V (18 k)	T	68.9/31.1
R68	7030003600	S.RES ERJ3GEYJ 223 V (22 k)	T	68.9/31.1
R69	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	66.1/31.1
R71	7030003280	S.RES ERJ3GEYJ 470 V (47)	T	51.2/21.3
R72	7030003590	S.RES ERJ3GEYJ 183 V (18 k)	T	62.7/25.3
R73	7030003550	S.RES ERJ3GEYJ 822 V (8.2 k)	T	66.2/20.3
R74	7030003760	S.RES ERJ3GEYJ 474 V (470 k)	T	63.4/21.6
R75	7030003590	S.RES ERJ3GEYJ 183 V (18 k)	T	60.3/24.7
R76	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	60.3/26
R79	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	52.7/32.5
R80	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	54.4/32.5
R81	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	58.2/29
R82	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	47.6/23.9
R83	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	61.4/17.5
R84	7030003670	S.RES ERJ3GEYJ 823 V (82 k)	T	62.7/14.6
R85	7030003570	S.RES ERJ3GEYJ 123 V (12 k)	T	64.9/16.9
R86	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	67.7/17.9
R87	7030003690	S.RES ERJ3GEYJ 124 V (120 k)	T	60.1/11.8
R88	7030003690	S.RES ERJ3GEYJ 124 V (120 k)	T	58.8/11.8
R89	7030003660	S.RES ERJ3GEYJ 683 V (68 k)	T	61.4/9
R90	7030003660	S.RES ERJ3GEYJ 683 V (68 k)	T	62.7/9
R91	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	64.8/5.5
R92	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	60.1/6.2
R94	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	57/17.1
R95	7030003600	S.RES ERJ3GEYJ 223 V (22 k)	T	55.1/17.7
R96	7030003490	S.RES ERJ3GEYJ 272 V (2.7 k)	T	53.8/18.4
R97	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	58.8/33.6
R197	7030003550	S.RES ERJ3GEYJ 822 V (8.2 k)	B	142.2/36.5
R198	7030003590	S.RES ERJ3GEYJ 183 V (18 k)	B	148.4/38.8
R199	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	B	148.4/37.5
R201	7030003590	S.RES ERJ3GEYJ 183 V (18 k)	B	141/31
R202	7030003520	S.RES ERJ3GEYJ 472 V (4.7 k)	B	149.8/27.8
R203	7030003790	S.RES ERJ3GEYJ 824 V (820 k)	B	145.4/36.2
R204	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	B	140.6/37.4
R205	7030003580	S.RES ERJ3GEYJ 153 V (15 k)	B	129.7/37.2
R206	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	137.2/32.7
R207	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	130.2/30.8
R208	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	133.3/31.4
R209	7030003610	S.RES ERJ3GEYJ 273 V (27 k)	B	135.7/29.3
R210	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	136.5/31.4
R211	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	117.2/41
R212	7030003300	S.RES ERJ3GEYJ 680 V (68)	B	153.3/35.4
R213	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	B	151.2/35
R214	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	B	152.6/30.8
R215	7030003300	S.RES ERJ3GEYJ 680 V (68)	B	153.3/33.1
R216	7030000020	S.RES MCR10EZHJ 1 (010)	B	152.2/22.3
R217	7030000020	S.RES MCR10EZHJ 1 (010)	B	153.8/28.5
R218	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	B	154.4/38.2
R219	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	B	112.9/21.4
R221	7030003540	S.RES ERJ3GEYJ 682 V (6.8 k)	B	90.5/27.9
R222	7030003400	S.RES ERJ3GEYJ 471 V (470)	B	83.6/32.3
R223	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	B	98.2/21.6
R224	7030003520	S.RES ERJ3GEYJ 472 V (4.7 k)	B	95.4/27
R225	7030003210	S.RES ERJ3GEYJ 120 V (12)	B	98.2/24.6
R226	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	94.6/30.2
R230	7030003200	S.RES ERJ3GEYJ 100 V (10)	B	108/22.5
R231	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	102.6/24.4
R232	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	T	102.6/23.1
R233	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	102.6/21.8
R244	7030003520	S.RES ERJ3GEYJ 472 V (4.7 k)	T	108.6/23.6
R245	7030003280	S.RES ERJ3GEYJ 470 V (47)	T	111.3/26.7
R260	7030003200	S.RES ERJ3GEYJ 100 V (10)	B	108/19.7
R261	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	100.5/20.3
R262	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	T	102.6/20.5
R263	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	102.6/16.2
R264	7030003520	S.RES ERJ3GEYJ 472 V (4.7 k)	T	111.6/15.8
R265	7030003280	S.RES ERJ3GEYJ 470 V (47)	T	111.3/19.8
R267	7030003280	S.RES ERJ3GEYJ 470 V (47)	T	100/37.9
R268	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	102.1/33.4
R269	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	108.1/27.9
R270	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	104.7/29.2
R271	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	108.6/40.1
R272	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	105.5/31.1
R273	7030003550	S.RES ERJ3GEYJ 822 V (8.2 k)	T	110.2/30.4
R273	7030003570	S.RES ERJ3GEYJ 123 V (12 k)	T	110.2/30.4
R274	7030003460	S.RES ERJ3GEYJ 152 V (1.5 k)	T	111.6/30.4
R275	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	113.4/39.9
R276	7030003550	S.RES ERJ3GEYJ 822 V (8.2 k)	T	114.5/35.1
R276	7030003570	S.RES ERJ3GEYJ 123 V (12 k)	T	114.5/35.1

[AF UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R277	7030003460	S.RES ERJ3GEYJ 152 V (1.5 k)	T	114.5/33.8
R301	7030003400	S.RES ERJ3GEYJ 471 V (470)	B	16.6/32.8
R302	7030003460	S.RES ERJ3GEYJ 152 V (1.5 k)	B	7.2/30.5
R303	7030009591	S.RES ERA3YED 472V (4.7 k)	B	7.2/27.5
R304	7030009591	S.RES ERA3YED 472V (4.7 k)	B	6.4/25.3
R305	7030000190	S.RES MCR10EZHJ 27 (270)	B	5.1/39.1
R306	7030000190	S.RES MCR10EZHJ 27 (270)	B	6.2/36.9
R307	7030000190	S.RES MCR10EZHJ 27 (270)	B	7.3/34.7
R308	7030000190	S.RES MCR10EZHJ 27 (270)	B	10.6/20.6
R309	7030000190	S.RES MCR10EZHJ 27 (270)	B	8.4/22.6
R310	7030000190	S.RES MCR10EZHJ 27 (270)	B	10.6/25.5
R311	7030000190	S.RES MCR10EZHJ 27 (270)	B	16.9/30.1
R312	7030000190	S.RES MCR10EZHJ 27 (270)	B	19.8/30.1
R313	7030000190	S.RES MCR10EZHJ 27 (270)	B	22/31.2
R314	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	20.2/16.7
R315	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	18.9/16.7
R316	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	T	89.7/5.8
R317	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	T	90.7/8.3
R317	7030003630	S.RES ERJ3GEYJ 393 V (39 k)	T	90.7/8.3
R318	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	90.1/10.8
R323	7030003860	S.RES ERJ3GE JPW V	B	145.4/39.1
C1	4030007090	S.CER C1608 CH 1H 470J-T	T	14.9/38.4
C2	4030006860	S.CER C1608 JB 1H 102K-T	T	14.9/37.1
C3	4030007090	S.CER C1608 CH 1H 470J-T	T	14.9/35.8
C4	4030006900	S.CER C1608 JB 1H 103K-T	T	17.6/34.2
C5	4030006850	S.CER C1608 JB 1H 471K-T	T	24.8/34.2
C6	4030006860	S.CER C1608 JB 1H 102K-T	T	9.6/33.4
C7	4030007090	S.CER C1608 CH 1H 470J-T	T	9.6/32.1
C8	4030006860	S.CER C1608 JB 1H 102K-T	T	19.8/27.2
C9	4030007090	S.CER C1608 CH 1H 470J-T	T	21.1/27.2
C10	4510007480	ELE 16 ME 470 CA+TS		
C11	4030007090	S.CER C1608 CH 1H 470J-T	T	70.5/10.7
C12	4030006900	S.CER C1608 JB 1H 103K-T	T	70.5/9.4
C18	4030006850	S.CER C1608 JB 1H 471K-T	T	35.9/34.8
C19	4030006850	S.CER C1608 JB 1H 471K-T	T	38.6/34.8
C21	4510008540	S.ELE EEE1CA100SR	T	9.1/23
C22	4030011600	S.CER C1608 JB 1E 104K-T	T	5.5/23.8
C23	4510008540	S.ELE EEE1CA100SR	T	17.9/21
C24	4030011600	S.CER C1608 JB 1E 104K-T	T	14.9/23.4
C25	4030006900	S.CER C1608 JB 1H 103K-T	T	40.9/35.9
C26	4510008540	S.ELE EEE1CA100SR	T	42.3/32.2
C27	4030006860	S.CER C1608 JB 1H 102K-T	T	44.2/37.2
C28	4030007090	S.CER C1608 CH 1H 470J-T	B	3.2/16.7
C29	4030007090	S.CER C1608 CH 1H 470J-T	B	4.8/15.1
C30	4030007090	S.CER C1608 CH 1H 470J-T	B	3.2/13.6
C31	4030017490	S.CER C1608 JB 1A 105K-T	T	29.4/3.1
C32	4030006900	S.CER C1608 JB 1H 103K-T	T	26.9/6.2
C33	4030017490	S.CER C1608 JB 1A 105K-T	T	23/3.1
C34	4030006850	S.CER C1608 JB 1H 471K-T	T	4.4/10.8
C35	4030011600	S.CER C1608 JB 1E 104K-T	T	3.7/17.9
C36	4510004591	ELE 16 ME 470 HC+TS		
C37	4510004591	ELE 16 ME 470 HC+TS		
C38	4030011600	S.CER C1608 JB 1E 104K-T	T	5.4/14.6
C39	4030006850	S.CER C1608 JB 1H 471K-T	T	21.5/16.7
C40	4030007090	S.CER C1608 CH 1H 470J-T	T	3.4/13.6
C41	4550000530	S.TAN TEESVA 1V 104M8R	T	78.8/14.9
C42	4030008890	S.CER C1608 JB 1H 273K-T	T	75.3/17.1
C43	4030008890	S.CER C1608 JB 1H 273K-T	T	77.5/19.3
C44	4030006870	S.CER C1608 JB 1H 222K-T	T	83.4/16.8
C45	4030010040	S.CER C1608 JB 1H 561K-T	T	84.8/19.4
C46	4510008540	S.ELE EEE1CA100SR	T	84.8/22.5
C47	4030017490	S.CER C1608 JB 1A 105K-T	T	86.6/15.4
C48	4030017490	S.CER C1608 JB 1A 105K-T	B	107.8/11.8
C49	4030010770	S.CER C1608 JB 1H 392K-T	B	105.5/17.2
C50	4030017490	S.CER C1608 JB 1A 105K-T	B	98/18.9
C51	4030017490	S.CER C1608 JB 1A 105K-T	T	116.3/9.8
C52	4030006870	S.CER C1608 JB 1H 222K-T	T	131.2/11.7
C53	4030006850	S.CER C1608 JB 1H 471K-T	T	124.5/10.7
C55	4030011600	S.CER C1608 JB 1E 104K-T	T	102.9/9.3
C56	4030011600	S.CER C1608 JB 1E 104K-T	T	108.2/12.4
C58	4030006900	S.CER C1608 JB 1H 103K-T	T	92.3/14.5
C59	4030011600	S.CER C1608 JB 1E 104K-T	T	104.2/12.4
C60	4030006900	S.CER C1608 JB 1H 103K-T	T	88.8/11.4
C61	4030017490	S.CER C1608 JB 1A 105K-T	T	91.3/5.9
C63	4030011600	S.CER C1608 JB 1E 104K-T	T	87.5/11.4
C64	4030017490	S.CER C1608 JB 1A 105K-T	T	94.1/2.3
C71	4030006860	S.CER C1608 JB 1H 102K-T	T	62.7/28.2
C72	4510008540	S.ELE EEE1CA100SR	T	71.7/21
C73	4030011600	S.CER C1608 JB 1E 104K-T	T	68.2/20.9
C75	4030011810	S.CER C1608 JB 1A 224K-T	T	71.7/31.1
C76	4030007090	S.CER C1608 CH 1H 470J-T	T	66.1/32.4
C77	4030006870	S.CER C1608 JB 1H 222K-T	T	66.2/21.6
C78	4030007020	S.CER C1608 CH 1H 120J-T	T	63.4/20.3
C79	4030011600	S.CER C1608 JB 1E 104K-T	T	62.7/31
C80	4030006900	S.CER C1608 JB 1H 103K-T	T	61.4/31
C81	4030011600	S.CER C1608 JB 1E 104K-T	T	47.6/28.6
C82	4030011600	S.CER C1608 JB 1E 104K-T	T	48.7/20
C83	4030011600	S.CER C1608 JB 1E 104K-T	T	62.7/17.5
C84	4030007050	S.CER C1608 CH 1H 220J-T	T	67.7/16.6

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

[AF UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.	H/V LOCATION
C85	4030006860	S.CER	C1608 JB 1H 102K-T	T	61.4/11.8
C86	4030010770	S.CER	C1608 JB 1H 392K-T	T	64.8/6.9
C87	4030007120	S.CER	C1608 CH 1H 820J-T	T	62.7/11.8
C89	4030008900	S.CER	C1608 JB 1H 333K-T	T	61.4/6.2
C90	4030006900	S.CER	C1608 JB 1H 103K-T	T	68.1/6.2
C91	4030011600	S.CER	C1608 JB 1E 104K-T	T	66.8/6.2
C92	4030006900	S.CER	C1608 JB 1H 103K-T	T	60.1/14.6
C93	4030011600	S.CER	C1608 JB 1E 104K-T	T	61.4/14.6
C94	4510008540	S.ELE	EEE1CA100SR	T	49.5/14.3
C95	4030011600	S.CER	C1608 JB 1E 104K-T	T	50/19.3
C96	4030011600	S.CER	C1608 JB 1E 104K-T	T	51.4/32.5
C97	4030011600	S.CER	C1608 JB 1E 104K-T	T	65.1/38.9
C98	4030011600	S.CER	C1608 JB 1E 104K-T	T	101.4/29.4
C200	4510009060	S.ELE	EEE1HA3R3SR	T	122.2/28.3
C201	4030011600	S.CER	C1608 JB 1E 104K-T	B	129.7/38.5
C202	4030011600	S.CER	C1608 JB 1E 104K-T	B	146.8/29.3
C204	4030017490	S.CER	C1608 JB 1A 105K-T	B	139.1/30.2
C205	4030011600	S.CER	C1608 JB 1E 104K-T	B	132.5/29.3
C206	4510009060	S.ELE	EEE1HA3R3SR	T	142.8/38
C207	4510004601	ELE	16 ME 1000 HC+T0		
C208	4030006900	S.CER	C1608 JB 1H 103K-T	B	149.8/25.1
C209	4510008500	S.ELE	EEE1CA101WP	T	150.1/38.6
C210	4510008500	S.ELE	EEE1CA101WP	T	150.1/31.3
C211	4510008520	S.ELE	EEE1CA470SP	T	141.2/31.3
C212	4510008830	S.ELE	EEE1CA221P	T	148.3/23.1
C213	4510008830	S.ELE	EEE1CA221P	T	148.3/13.9
C214	4030006860	S.CER	C1608 JB 1H 102K-T	B	152.6/24.6
C215	4030008920	S.CER	C1608 JB 1H 473K-T	B	154.8/30.8
C216	4030008920	S.CER	C1608 JB 1H 473K-T	B	153.3/20.2
C217	4030006860	S.CER	C1608 JB 1H 102K-T	B	155.8/38.2
C219	4030011600	S.CER	C1608 JB 1E 104K-T	B	133.3/32.7
C220	4030011600	S.CER	C1608 JB 1E 104K-T	B	88.9/32.3
C221	4030006900	S.CER	C1608 JB 1H 103K-T	B	87/30.5
C222	4030006880	S.CER	C1608 JB 1H 472K-T	B	82.1/29.9
C225	4030006900	S.CER	C1608 JB 1H 103K-T	B	94.6/23.2
C227	4030006900	S.CER	C1608 JB 1H 103K-T	T	76.1/38.8
C228	4030006860	S.CER	C1608 JB 1H 102K-T	T	72.8/33.8
C229	4030006900	S.CER	C1608 JB 1H 103K-T	T	133.7/27.1
C237	4030006900	S.CER	C1608 JB 1H 103K-T	B	105.8/24.3
C251	4030006900	S.CER	C1608 JB 1H 103K-T	B	106.2/19.7
C254	4030006900	S.CER	C1608 JB 1H 103K-T	T	101.3/37.9
C260	4030017490	S.CER	C1608 JB 1A 105K-T	T	107.8/29.5
C261	4030017490	S.CER	C1608 JB 1A 105K-T	T	115/39.5
C262	4030017490	S.CER	C1608 JB 1A 105K-T	T	101.9/31.8
C263	4030006860	S.CER	C1608 JB 1H 102K-T	T	99.8/29.2
C265	4030006860	S.CER	C1608 JB 1H 102K-T	T	102.7/29
C266	4030011600	S.CER	C1608 JB 1E 104K-T	T	92.4/22.3
C267	4030011600	S.CER	C1608 JB 1E 104K-T	T	92.9/37.6
C270	4030007090	S.CER	C1608 CH 1H 470J-T	T	10.3/7.6
C271	4030006860	S.CER	C1608 JB 1H 102K-T	T	12.3/11
C272	4030006860	S.CER	C1608 JB 1H 102K-T	B	12.9/10.5
C273	4030006860	S.CER	C1608 JB 1H 102K-T	T	120.5/2.3
C274	4030006860	S.CER	C1608 JB 1H 102K-T	T	123.2/10
C275	4030006860	S.CER	C1608 JB 1H 102K-T	T	39.6/5.3
C276	4030006860	S.CER	C1608 JB 1H 102K-T	T	39.4/8
C277	4030006860	S.CER	C1608 JB 1H 102K-T	T	43/3.6
C278	4030006860	S.CER	C1608 JB 1H 102K-T	T	46.2/3.3
C279	4030006850	S.CER	C1608 JB 1H 471K-T	T	56.3/4.2
C281	4030006850	S.CER	C1608 JB 1H 471K-T	T	47.7/10.8
C282	4030011810	S.CER	C1608 JB 1A 224K-T	T	108.2/31.1
C283	4030011810	S.CER	C1608 JB 1A 224K-T	T	113.4/37.1
C301	4510008540	S.ELE	EEE1CA100SR	T	30.3/40.5
RL1	6330001670	RLY	FTR-P3CP012W1		
RL2	6330001620	RLY	FTR-F3AA012E		
RL3	6330001460	RLY	FTR-F1CA012V		
J1	6510023511	S.CNR	28FLT-SM2-TB (LF) (SN)	T	80/7.2
J2	6510022621	S.CNR	10FMN-BMTTR-A-TBT (LF) (SN)	T	46.5/7.1
J3	6510016431	S.CNR	53307-1471	T	60.3/37.4
J4	6510023091	S.CNR	20FLT-SM2-TB (LF) (SN)	T	80/34
J5	6510023421	CNR	SB4P-HVQ-A (LF) (SN)		
J6	6510019371	S.CNR	B3B-ZR-SM4-TF (LF) (SN)	T	120.2/5.4
J7	6510018961	S.CNR	B2B-PH-SM4-TB (LF) (SN)	T	130.6/5.6
J8	6510003381	CNR	B02B-EH-S (LF) (SN)		
J9	6510020800	CNR	OP-10		
J10	6510020800	CNR	OP-10		
J11	6510018961	S.CNR	B2B-PH-SM4-TB (LF) (SN)	T	140/5.6
W6	8900011871	CBL	OPC-1203A <TJM>		
EP2	6910013370	S.BEA	BLM18BB221SN1D	T	117.8/2.3
EP3	6910013370	S.BEA	BLM18BB221SN1D (	T	121/10.7
EP4	6910018270	S.BEA	MMZ1608Y301CT	T	6.4/10.2
EP5	6910018270	S.BEA	MMZ1608Y301CT	T	100.7/27.2
EP6	6910018270	S.BEA	MMZ1608Y301CT	T	70.8/28.7
EP7	6910014690	S.BEA	MPZ1608S221A-T	B	15.1/16.5
EP7	6910018270	S.BEA	MMZ1608Y301CT	B	15.1/16.5
EP8	6910018270	S.BEA	MMZ1608Y301CT	T	128.5/11.7

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.	H/V LOCATION
IC1	1110003491	S.IC	TA31136FNG (D,EL)	T	113.7/6.5
IC2	1120002830	S.IC	NJM2125F-TE1	T	147.9/9.3
IC3	1110003780	S.IC	NJM2902V-TE1	T	151.4/38.7
IC4	1110003650	S.IC	NJM2211M-TE1 [HOL], [FRG] only	B	149.7/31.6
IC5	1130011120	S.IC	BU4584BFV-E2	T	151.8/22.9
IC6	1110003491	S.IC	TA31136FNG (D,EL)	T	114.9/37.1
IC9	1110003650	S.IC	NJM2211M-TE1	B	149.7/44.6
IC11	1130005641	S.IC	TC4W53F (TE12L,F)	B	153.1/16.3
IC12	1130007611	S.IC	uPD3140GS-E1-A	T	117.4/23.6
IC13	1150002082	IC	RA35H1516M-121		
IC14	1110002400	S.IC	NJM2107F-TE1	T	72.8/43.1
IC15	1190000350	S.IC	M62363FP-650C	T	138.5/20.9
Q1	1580000751	S.FET	3SK294 (TE85L,F)	T	7.3/24.9
Q2	1530002601	S.TR	2SC4215-O (TE85R,F)	B	101.6/4.1
Q3	1560000990	S.FET	PMBFJ310	B	71.4/3.3
Q4	1560000990	S.FET	PMBFJ310	B	71.4/9.1
Q7	1580000751	S.FET	3SK294 (TE85L,F)	T	19.2/27.8
Q8	1560000990	S.FET	PMBFJ310	B	72.1/28.4
Q9	1560000990	S.FET	PMBFJ310	B	70.2/23.3
Q10	1530002601	S.TR	2SC4215-O (TE85R,F)	B	99.5/23.4
Q11	1530002851	S.TR	2SC4116-BL (TE85R,F)	T	98.7/16.8
Q12	1560000990	S.FET	PMBFJ310	T	94.1/13.4
Q13	1530002601	S.TR	2SC4215-O (TE85R,F)	T	82.1/12.5
Q14	1530002601	S.TR	2SC4215-O (TE85R,F)	B	79.8/9
Q15	1530002601	S.TR	2SC4215-O (TE85R,F)	B	86.2/38.5
Q16	1530002851	S.TR	2SC4116-BL (TE85R,F)	T	124.7/14.8
Q17	1530002851	S.TR	2SC4116-BL (TE85R,F)	T	84.1/34.9
Q18	1560000990	S.FET	PMBFJ310	T	92.4/32.7
Q19	1530002601	S.TR	2SC4215-O (TE85R,F)	T	89.6/36.1
Q21	1590000720	S.TR	DTA144EUA T106	T	115.1/31.7
Q22	1590000430	S.TR	DTC144EUA T106	T	118.1/32.1
Q23	1530003421	S.TR	2SC5110-O (TE85R,F)	T	70.2/15.4
Q27	1530003421	S.TR	2SC5110-O (TE85R,F)	T	72.8/33.2
Q28	1530002241	S.TR	2SC3775-3-TB-E	T	89.1/46.4
Q29	1590000430	S.TR	DTC144EUA T106		
Q30	1530002241	S.TR	2SC3775-3-TB-E	T	101.5/46.4
Q32	1590000660	S.TR	DTC144TU T106	T	61.7/42.8
Q33	1590000430	S.TR	DTC144EUA T106	T	65.6/41
Q35	1510000920	S.TR	2SA1577 T106 Q	T	129.4/41.4
Q36	1590000430	S.TR	DTC144EUA T106	T	132.9/42.3
Q37	1590000660	S.TR	DTC144TU T106	T	68.2/39.3
D1	1710001081	DIO	L308CCB		
D11	1750000431	S.DIO	HSB88WSTR-E	T	58.5/6.2
D12	1790001330	S.ZEN	MA8036-L (TX)	B	113.7/7.4
D15	1790000980	S.DIO	MA742 (TX)	B	97/1.6
D21	1750000431	S.DIO	HSB88WSTR-E	T	59.5/26.3
D22	1790001330	S.ZEN	MA8036-L (TX)	B	122.8/34.8
D32	1720000811	S.VCP	HVC358BTRF-E	T	95/17.1
D33	1720000811	S.VCP	HVC358BTRF-E	T	94.3/15.7
D35	1720000661	S.VCP	1SV288 (TPH2,F)	T	129.2/18.9
D37	1720000261	S.VCP	1SV214 (TPH2,F)	T	88.8/29.5
D39	1720000261	S.VCP	1SV214 (TPH2,F)	T	91.3/28.6
D40	1720000261	S.VCP	1SV214 (TPH2,F)	T	91.3/30.4
D41	1790001621	S.DIO	1SV308 (TPL3,F)	T	94.3/28.3
D42	1790000620	S.DIO	MA77 (TX)	T	68.4/36
D43	1790000620	S.DIO	MA77 (TX)	B	71.8/37
D44	1750000550	S.DIO	1SS355 TE-17	T	94.9/43
D46	1710001081	DIO	L308CCB		
D47	1790000691	S.DIO	HSM88ASRTR-E	T	61.7/49.6
D48	1790000691	S.DIO	HSM88ASRTR-E	T	61.7/46.2
D49	1730002320	S.ZEN	MA8051-M (TX)	T	74.9/46.3
D52	1790001250	S.DIO	MA2S111-(TX)		
FI1	2030000580	MLH	FL-404 (30.15 MHz)		
FI3	2020001270	CER	CFWLB450KE2A-B0		
FI4	2030000350	MLH	21R15AB (FL-368)		
FI5	2030000480	MLH	21R15AB (FL-399)		
FI6	2020001840	CER	ALFYM450F=K		
X1	6070000191	S.DCR	CDBKB450KCAY24-R0	T	108.1/12.5
X2	6070000191	S.DCR	CDBKB450KCAY24-R0	T	113.8/45.3
X3	6050012120	S.XTL	CR-804 (21.250 MHz)	T	123.4/43.5
X4	6050012370	S.XTL	CR-827 (15.3 MHz)	T	124.6/21.1
L1	6110001600	COL	LA-243		
L2	6110001600	COL	LA-243		
L3	6110001600	COL	LA-243		
L4	6110001580	COL	LA-238		
L11	6190001591	COL	#E526HNA-100312		
L12	6190001591	COL	#E526HNA-100312		
L13	6190001591	COL	#E526HNA-100312		
L14	6190001591	COL	#E526HNA-100312		
L15	6190001591	COL	#E526HNA-100312		
L18	6140002551	S.COL	#617DB-1919=P3	T	53.2/6.2

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.	H/V LOCATION
L19	6130002961	S.COL #617DB-1327=P3	T	64.8/6.2
L20	6200001831	S.COL NLV32T-100J	T	75.9/8
L21	6200002160	S.COL ELJNC 82NK-F	T	63.2/17.1
L22	6200008090	S.COL LQW2BHN68NJ03L	T	65.9/18.9
L25	6200002861	S.COL NLV25T-4R7J	T	76.6/11.7
L26	6200010520	S.COL C2520C-R75G-A (0.75U)	T	74.2/4.4
L31	6190001581	COL #E544ENAS-100014		
L32	6190001581	COL #E544ENAS-100014		
L33	6190001581	COL #E544ENAS-100014		
L34	6190001581	COL #E544ENAS-100014		
L48	6130002961	S.COL #617DB-1327=P3	T	54.2/26.3
L49	6130002961	S.COL #617DB-1327=P3	T	65.8/26.3
L50	6200001831	S.COL NLV32T-100J	T	75.1/29.4
L51	6200002160	S.COL ELJNC 82NK-F	T	62.3/34.5
L52	6200008090	S.COL LQW2BHN68NJ03L	T	65.1/35.1
L55	6200002861	S.COL NLV25T-4R7J	B	74.9/31.7
L56	6200010440	S.COL C2520C-1R2G-A (1.2U)	T	75.5/24.6
L57	6200010510	S.COL ACL2520L-3R3K-T	B	78.1/21.8
L61	6200003101	S.COL NLV32T-3R9J	T	90.9/16.5
L62	6130002371	S.COL LB-258-LF	T	99.2/11.9
L63	6200002991	S.COL NLV32T-2R2J	T	87.3/10.1
L64	6200009560	S.COL MLG1608B R10J-T	T	82/15.9
L65	6200009560	S.COL MLG1608B R10J-T	B	77.4/9.1
L66	6200006991	S.COL ELJRE 56NGFA	B	85.3/7.4
L67	6200009560	S.COL MLG1608B R10J-T	B	88.2/38.6
L68	6200001981	S.COL NLV25T-1R0J	T	120.6/14.8
L69	6200001981	S.COL NLV25T-1R0J	T	115.5/13.8
L70	6200006991	S.COL ELJRE 56NGFA	B	98.1/39.3
L72	6200003321	S.COL NLV32T-3R3J	T	85.9/29.3
L73	6130002371	S.COL LB-258-LF	T	99.5/33.4
L74	6200003091	S.COL NLV32T-2R7J	T	94.8/37
L75	6200009560	S.COL MLG1608B R10J-T	T	87.6/36.1
L79	6200003281	S.COL NLV25T-2R2J	T	101/28.7
L81	6200011041	S.COL LL1608-FSLR18J	T	69.3/17.9
L83	6200009560	S.COL MLG1608B R10J-T	T	72/35.8
L84	6200005741	S.COL ELJRE 47NGFA	T	85.4/46
L85	6200002421	S.COL NLV25T-068J	T	92.1/46.3
L85	6200002431	S.COL NLV25T-082J	T	92.1/46.3
L86	6200002431	S.COL NLV25T-082J	T	104.8/46.1
L87	6200002601	S.COL NLV25T-047J	T	105.1/49.5
L88	6200002601	S.COL NLV25T-047J	T	105.1/53
L89	6110001600	COL LA-243		
L90	6170000230	COL LW-25		
L91	6200008950	S.COL LQH32MN221K23L	B	128.7/19
L92	6200011041	S.COL LL1608-FSLR18J	T	72.8/19.4
R1	7030003670	S.RES ERJ3GEYJ 823 V (82 k)	T	16/50.9
R4	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	16.4/36.6
R6	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	19.6/36.6
R7	7030010250	S.RES ERJ1TYJ 0R00U	B	108/51.2
R8	7030010250	S.RES ERJ1TYJ 0R00U	B	104.1/44.6
R9	7030010250	S.RES ERJ1TYJ 0R00U	B	88.9/44.6
R10	7030010250	S.RES ERJ1TYJ 0R00U	B	84.5/51.2
R11	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	T	13.8/26.2
R12	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	8.8/26.9
R13	7030003600	S.RES ERJ3GEYJ 223 V (22 k)	T	12/26.2
R14	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	4.8/25.5
R15	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	T	5.7/28.1
R16	7030003460	S.RES ERJ3GEYJ 152 V (1.5 k)	B	8/17.2
R17	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	6.7/22.2
R18	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	9.9/21.4
R19	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	15.1/19.4
R31	7030003450	S.RES ERJ3GEYJ 122 V (1.2 k)	B	53.8/6.4
R32	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	64.7/11.9
R33	7030003200	S.RES ERJ3GEYJ 100 V (10)	T	62.7/11.4
R34	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	64.7/13.2
R37	7030003240	S.RES ERJ3GEYJ 220 V (22)	T	72.9/7.6
R38	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	B	74.4/3.3
R39	7030003200	S.RES ERJ3GEYJ 100 V (10)	B	78.1/4.1
R40	7030003400	S.RES ERJ3GEYJ 471 V (470)	B	109.5/12.6
R41	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	112.5/11.6
R43	7030003390	S.RES ERJ3GEYJ 391 V (390)	B	112.5/15.2
R47	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	118.3/5.5
R48	7030003760	S.RES ERJ3GEYJ 474 V (470 k)	B	115.6/10.5
R49	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	B	116/13.8
R51	7030003430	S.RES ERJ3GEYJ 821 V (820)	B	119.6/12.2
R59	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	133.4/15.7
R61	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	145.1/5.7
R62	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	148.2/5.6
R63	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	151.6/9.7
R64	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	153.5/10.4
R65	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	154.8/11.7
R66	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	152.1/11.7
R71	7030003280	S.RES ERJ3GEYJ 470 V (47)	T	146/27.1
R72	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	146.8/29
R73	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	148.1/29
R74	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	147.7/30.8
R75	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	148.1/32.7
R76	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	150.5/31
R77	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	157/33.6

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R78	7030003550	S.RES ERJ3GEYJ 822 V (8.2 k) [HOL], [FRG] only	T	157.1/29.7
R79	7030003460	S.RES ERJ3GEYJ 152 V (1.5 k) [HOL], [FRG] only	T	155/32.9
R80	7030003760	S.RES ERJ3GEYJ 474 V (470 k)	T	153.7/30.2
R81	7030003760	S.RES ERJ3GEYJ 474 V (470 k) [HOL], [FRG] only	T	152/28.2
R84	7030003760	S.RES ERJ3GEYJ 474 V (470 k) [HOL], [FRG] only	T	146.7/37.4
R85	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	B	151.9/21.2
R86	7030003280	S.RES ERJ3GEYJ 470 V (47)	T	149/18.6
R87	7030003380	S.RES ERJ3GEYJ 331 V (330)	B	151.9/22.8
R88	7030003680	S.RES ERJ3GEYJ 104 V (100 k) [HOL], [FRG] only	B	156.3/33
R89	7030003630	S.RES ERJ3GEYJ 393 V (39 k) [HOL], [FRG] only	B	156.3/29.8
R90	7030003580	S.RES ERJ3GEYJ 153 V (15 k) [HOL], [FRG] only	B	155.6/28.2
R91	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k) [HOL], [FRG] only	B	156.3/26.6
R95	7030003420	S.RES ERJ3GEYJ 681 V (680)	B	98.4/4.3
R96	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	102.6/2.2
R97	7030003380	S.RES ERJ3GEYJ 331 V (330)	B	105.3/2.9
R98	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	B	102.2/8
R104	7030003370	S.RES ERJ3GEYJ 271 V (270)	T	65.8/30.8
R105	7030003230	S.RES ERJ3GEYJ 180 V (18)	T	62.9/31.5
R106	7030003370	S.RES ERJ3GEYJ 271 V (270)	T	59.7/31.7
R107	7030003240	S.RES ERJ3GEYJ 220 V (22)	T	72.5/29.4
R108	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	B	74.6/22.6
R111	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	108.6/38.5
R112	7030003450	S.RES ERJ3GEYJ 122 V (1.2 k)	B	114.8/38.2
R113	7030003390	S.RES ERJ3GEYJ 391 V (390)	T	115.8/33.6
R116	7030003200	S.RES ERJ3GEYJ 100 V (10)	T	117.7/42.8
R120	7030003450	S.RES ERJ3GEYJ 122 V (1.2 k)	B	96.5/22.7
R121	7030003560	S.RES ERJ3GEYJ 103 V (10 k)		
R122	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	98.4/21.4
R123	7030003380	S.RES ERJ3GEYJ 331 V (330)	B	102.7/22.2
R124	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	B	98.8/19.7
R142	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	146.8/44.5
R143	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	148.1/48.3
R144	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	147.9/46.4
R145	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	148.1/44.5
R146	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	150.5/46.4
R147	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	155.6/40.9
R148	7030003550	S.RES ERJ3GEYJ 822 V (8.2 k)	T	156.3/47.2
R149	7030003460	S.RES ERJ3GEYJ 152 V (1.5 k)	T	155/44.5
R150	7030003760	S.RES ERJ3GEYJ 474 V (470 k)	T	153.7/47.2
R151	7030003760	S.RES ERJ3GEYJ 474 V (470 k)	T	152.1/49
R154	7030003760	S.RES ERJ3GEYJ 474 V (470 k)	T	146.7/40
R155	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	B	154.7/21.2
R157	7030003380	S.RES ERJ3GEYJ 331 V (330)	T	156.3/20.1
R158	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	155.5/46.1
R159	7030003630	S.RES ERJ3GEYJ 393 V (39 k)	B	155.6/43.2
R160	7030003580	S.RES ERJ3GEYJ 153 V (15 k)	B	156.3/41.6
R161	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	B	155.6/40
R163	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	150.7/16.2
R181	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	100.8/16.6
R182	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	87.5/17.1
R185	7030003320	S.RES ERJ3GEYJ 101 V (100)	B	96.8/12
R186	7030003450	S.RES ERJ3GEYJ 122 V (1.2 k)	T	84.4/9.9
R188	7030003380	S.RES ERJ3GEYJ 331 V (330)	B	84/18.5
R189	7030003520	S.RES ERJ3GEYJ 472 V (4.7 k)	T	84.2/12.9
R190	7030003520	S.RES ERJ3GEYJ 472 V (4.7 k)	T	85.5/12.9
R191	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	81.7/9.3
R192	7030003420	S.RES ERJ3GEYJ 681 V (680)	B	75.2/12.8
R193	7030003660	S.RES ERJ3GEYJ 683 V (68 k)	B	77.6/12.8
R194	7030003320	S.RES ERJ3GEYJ 101 V (100)	B	88.9/8.9
R195	7030003300	S.RES ERJ3GEYJ 680 V (68)	B	95/7.4
R196	7030003320	S.RES ERJ3GEYJ 101 V (100)	B	114.1/18.5
R201	7030003420	S.RES ERJ3GEYJ 681 V (680)	B	81.8/39.2
R202	7030003660	S.RES ERJ3GEYJ 683 V (68 k)	B	83.9/38.4
R203	7030003320	S.RES ERJ3GEYJ 101 V (100)	B	102.1/38
R204	7030003300	S.RES ERJ3GEYJ 680 V (68)	B	104.1/38.7
R205	7030003320	S.RES ERJ3GEYJ 101 V (100)	B	114.7/28.8
R207	7030003760	S.RES ERJ3GEYJ 474 V (470 k)	T	131.2/19.7
R208	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	T	129.7/22.4
R209	7030003380	S.RES ERJ3GEYJ 331 V (330)	T	121.8/23.2
R212	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	119.8/29.7
R213	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	112.9/20.2
R214	7030003610	S.RES ERJ3GEYJ 273 V (27 k)	T	112.3/16.2
R217	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	114.7/29.1
R218	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	T	111.1/28.6
R219	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	B	83.5/27
R220	7030003260	S.RES ERJ3GEYJ 330 V (33)	T	82.4/28.5
R221	7030003450	S.RES ERJ3GEYJ 122 V (1.2 k)	T	120.4/17.1
R222	7030003760	S.RES ERJ3GEYJ 474 V (470 k)	T	123.1/16.7
R226	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	82.2/34.7
R227	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	T	83.7/32.1
R228	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	T	87.6/32.1
R230	7030003450	S.RES ERJ3GEYJ 122 V (1.2 k)	T	98.2/37.2
R232	7030003420	S.RES ERJ3GEYJ 681 V (680)	T	87/34.2

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.	H/V LOCATION
R233	7030003660	S.RES ERJ3GEYJ 683 V (68 k)	T	89.6/34.2
R236	7030001150	S.RES MCR50JZHJ 150 (151)	B	57.6/40.6
R238	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	98.7/28.9
R239	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	B	101.2/31
R241	7030003280	S.RES ERJ3GEYJ 470 V (47)	T	76.2/17.4
R243	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	T	73.5/17.4
R244	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	75/15.4
R245	7030003360	S.RES ERJ3GEYJ 221 V (220)	T	72.4/15.4
R251	7030003320	S.RES ERJ3GEYJ 101 V (100)	B	80.7/36.3
R252	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	74.6/36.8
R253	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	T	76.3/34.9
R254	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	77.5/33
R255	7030003360	S.RES ERJ3GEYJ 221 V (220)	T	76.2/33
R256	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	67.4/33.9
R257	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	69.4/33.9
R258	7030003270	S.RES ERJ3GEYJ 390 V (39)	T	81.2/44.8
R259	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	80.6/46.7
R260	7030003390	S.RES ERJ3GEYJ 391 V (390)	T	82.5/46
R262	7030003200	S.RES ERJ3GEYJ 100 V (10)	T	94.8/46.5
R263	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	86.7/46
R264	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	86.7/43.3
R265	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	90.7/43.3
R267	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	96.1/45.2
R268	7030003310	S.RES ERJ3GEYJ 820 V (82)	T	96.8/47.1
R268	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	96.8/47.1
R271	7030003240	S.RES ERJ3GEYJ 220 V (22)	T	107.9/47.1
R272	7030003240	S.RES ERJ3GEYJ 220 V (22)	T	107.9/45.8
R273	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	100.9/43.3
R274	7030003310	S.RES ERJ3GEYJ 820 V (82)	T	102.2/43.3
R275	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	56.5/50.3
R276	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	57.3/47.6
R277	7030003450	S.RES ERJ3GEYJ 122 V (1.2 k)	T	57.9/50.3
R278	7030003450	S.RES ERJ3GEYJ 122 V (1.2 k)	T	58.5/46.2
R282	7030003550	S.RES ERJ3GEYJ 822 V (8.2 k)	T	64/44
R282	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	64/44
R283	7030003460	S.RES ERJ3GEYJ 152 V (1.5 k)	T	67.6/43.8
R284	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	T	67.6/46.6
R285	7030003500	S.RES ERJ3GEYJ 332 V (3.3 k)	T	68.9/43.8
R286	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	72.6/46.8
R287	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	77.9/42.5
R288	7030003800	S.RES ERJ3GEYJ 105 V (1 M)	T	70.6/39.2
R290	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	78.6/46.1
R291	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	144.4/16.5
R292	7030003400	S.RES ERJ3GEYJ 471 V (470)	T	144.4/18.5
R293	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	132.5/28.1
R295	7030003860	S.RES ERJ3GE JPW V	T	132.5/23.4
R296	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	129.4/39.3
R297	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	130.8/43.5
R299	7410000950	S.ARY EXB-V8V 102JV	T	123.3/26.7
R302	7510001661	S.TMR NTCG16 4LH 473JT	T	127.6/23.1
R306	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	134.6/28.8
R308	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	135.6/30.2
R309	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	142.8/31.2
R310	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	135.6/31.5
R311	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	142.8/32.5
R312	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	135.6/32.8
R313	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	134.1/34.1
R314	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	142.8/33.9
R315	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	142.8/35.3
R316	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	132/35.8
R317	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	142.8/37.5
R318	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	134.4/37.8
R319	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	142.9/38.8
R320	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	T	134.4/39.1
R321	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	134.4/40.4
R322	7030003440	S.RES ERJ3GEYJ 102 V (1 k)	T	135.7/41.7
R323	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	142.8/41.4
R324	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	138.4/3.5
R325	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	137.2/6.2
R326	7030003860	S.RES ERJ3GE JPW V	T	136.1/13.1
R327	7030003860	S.RES ERJ3GE JPW V	T	143.9/14.6
R328	7030003860	S.RES ERJ3GE JPW V	T	138.4/13.8
R329	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	T	145/9.7
R330	7030003620	S.RES ERJ3GEYJ 333 V (33 k)	T	22.6/30.5
R331	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	21.3/30.5
R332	7030003600	S.RES ERJ3GEYJ 223 V (22 k)	T	16/27.8
R333	7030003560	S.RES ERJ3GEYJ 103 V (10 k)	T	21.9/28.4
R334	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	T	21.9/27.1
R335	7030003480	S.RES ERJ3GEYJ 222 V (2.2 k)	B	21.4/20.6
R335	7030003490	S.RES ERJ3GEYJ 272 V (2.7 k)	B	21.4/20.6
R336	7030004050	S.RES ERJ3GEYJ 1R0 V (1)	B	17.6/24.3
R337	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	16.7/25.5
R338	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	24.2/24.7
R341	7030003600	S.RES ERJ3GEYJ 223 V (22 k)	T	63.1/40.7
R342	7030003600	S.RES ERJ3GEYJ 223 V (22 k)	T	63.1/39.4
R343	7510001461	S.TMR NTCG16 3NH 471JT	T	149.7/6.9
C1	4030011070	S.CER GRM31M2C2H5R0CY21L	T	28.2/51.3
C3	4030011190	S.CER GRM31M2C2H270JV01L	T	28.3/47.7
C5	4030011170	S.CER GRM31M2C2H180JV01L	T	32/46.7

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
C6	4030017200	S.CER GRM31BR32J102KY01L	T	35.6/45.1
C7	4030011210	S.CER GRM31M2C2H330JV01L	T	40.6/43
C8	4030011190	S.CER GRM31M2C2H270JV01L	T	40.6/38.6
C9	4030018350	S.CER GRM31A5C2J151JW01D	T	31.5/29.4
C12	4030006860	S.CER C1608 JB 1H 102K-T	T	16.4/40.7
C14	4030006860	S.CER C1608 JB 1H 102K-T	T	19.6/40.7
C21	4030006860	S.CER C1608 JB 1H 102K-T	T	14.8/31.2
C23	4030007070	S.CER C1608 CH 1H 330J-T	T	6.6/30.4
C24	4030007040	S.CER C1608 CH 1H 180J-T	B	11.5/31.9
C25	4030009530	S.CER C1608 CH 1H 030B-T	B	11.5/30.3
C26	4030007170	S.CER C1608 CH 1H 221J-T	T	8.1/28.8
C27	4030006850	S.CER C1608 JB 1H 471K-T	T	10.7/26.2
C28	4030006860	S.CER C1608 JB 1H 102K-T	T	9.9/22.7
C29	4030011600	S.CER C1608 JB 1E 104K-T	T	9.9/24
C30	4030006850	S.CER C1608 JB 1H 471K-T	T	5.7/26.8
C32	4030011600	S.CER C1608 JB 1E 104K-T	T	14.3/21.3
C33	4030009920	S.CER C1608 CH 1H 050B-T	B	8/15.6
C34	4030009920	S.CER C1608 CH 1H 050B-T	B	8/14
C35	4030006860	S.CER C1608 JB 1H 102K-T	T	12.9/21.8
C36	4030009520	S.CER C1608 CH 1H 020B-T	B	15.1/7.2
C37	4030009350	S.CER C1608 CH 1H 3R5B-T	B	18.7/8
C38	4030006990	S.CER C1608 CH 1H 080D-T	B	20.3/8
C39	4030009540	S.CER C1608 CH 1H 1R5B-T	B	23.8/7.2
C40	4030009520	S.CER C1608 CH 1H 020B-T	B	26.9/7.2
C41	4030009350	S.CER C1608 CH 1H 3R5B-T	B	30.2/8
C42	4030006990	S.CER C1608 CH 1H 080D-T	B	31.8/8
C43	4030009510	S.CER C1608 CH 1H 010B-T	B	35.3/7.2
C44	4030009530	S.CER C1608 CH 1H 030B-T	B	41.7/6.4
C45	4030007020	S.CER C1608 CH 1H 120J-T	B	43.3/6.4
C47	4030007100	S.CER C1608 CH 1H 560J-T	B	43.3/9.6
C48	4030009550	S.CER C1608 CH 1H 2R5B-T	B	11.5/7.2
C49	4030009520	S.CER C1608 CH 1H 020B-T	T	60.9/6.2
C52	4030006860	S.CER C1608 JB 1H 102K-T	T	62.7/14.1
C53	4030007060	S.CER C1608 CH 1H 270J-T	T	64.7/14.5
C54	4030007060	S.CER C1608 CH 1H 270J-T	T	65.1/16.6
C55	4030006900	S.CER C1608 JB 1H 103K-T	B	68/3.7
C56	4030006860	S.CER C1608 JB 1H 102K-T	T	14.9/17.9
C57	4030006900	S.CER C1608 JB 1H 103K-T	T	16.8/17.4
C59	4030006900	S.CER C1608 JB 1H 103K-T	B	73.8/10.1
C60	4030006860	S.CER C1608 JB 1H 102K-T	B	75.1/7.7
C61	4030018400	S.CER CM105 CH 330G 50AT	B	74.4/4.8
C62	4030009540	S.CER C1608 CH 1H 1R5B-T	B	74.4/6.4
C63	4030006900	S.CER C1608 JB 1H 103K-T	T	72.5/12
C64	4030011770	S.CER C1608 CH 1H 060B-T	B	89.9/2.6
C67	4030009520	S.CER C1608 CH 1H 020B-T	B	89.9/5.8
C67	4030009920	S.CER C1608 CH 1H 050B-T	B	89.9/5.8
C68	4030006900	S.CER C1608 JB 1H 103K-T	B	106.8/4.2
C69	4030011600	S.CER C1608 JB 1E 104K-T	T	109.1/5.3
C70	4030006860	S.CER C1608 JB 1H 102K-T	B	109.5/11
C71	4030006860	S.CER C1608 JB 1H 102K-T	B	109.5/14.2
C72	4030007120	S.CER C1608 CH 1H 820J-T	T	109.1/8
C73	4030007090	S.CER C1608 CH 1H 470J-T	T	75.9/38.3
C74	4030011600	S.CER C1608 JB 1E 104K-T	T	77.8/37.5
C77	4550007520	S.TAN F931A106MAABMA	T	104.2/3.1
C78	4030006900	S.CER C1608 JB 1H 103K-T	B	117.1/6
C79	4030017490	S.CER C1608 JB 1A 105K-T	B	113.9/4.4
C80	4030006900	S.CER C1608 JB 1H 103K-T	T	112.5/14.3
C81	4030006860	S.CER C1608 JB 1H 102K-T	B	117.1/7.3
C83	4030011600	S.CER C1608 JB 1E 104K-T	T	118.3/10.4
C87	4030011280	S.CER C1608 CH 1H 271J-T	B	115.3/12.2
C88	4030011280	S.CER C1608 CH 1H 271J-T	B	119/10.5
C89	4030011600	S.CER C1608 JB 1E 104K-T	T	132.1/14.7
C90	4030006860	S.CER C1608 JB 1H 102K-T	B	104.6/5
C91	4030006900	S.CER C1608 JB 1H 103K-T	B	100.7/6
C92	4030006900	S.CER C1608 JB 1H 103K-T	B	104.6/9
C93	4030011810	S.CER C1608 JB 1A 224K-T	T	107.7/5.3
C94	4030011810	S.CER C1608 JB 1A 224K-T	T	150.3/9.7
C95	4030011600	S.CER C1608 JB 1E 104K-T	T	148.4/11.7
C96	4030006860	S.CER C1608 JB 1H 102K-T	B	99.9/2.2
C98	4550007520	S.TAN F931A106MAABMA	T	156.9/35.3
C99	4030011600	S.CER C1608 JB 1E 104K-T	T	155.4/37
C100	4030011600	S.CER C1608 JB 1E 104K-T	T	144.9/43.9
C102	4030011600	S.CER C1608 JB 1E 104K-T	T	146.8/32.7
C103	4030008850	S.CER C1608 JB 1H 123K-T	T	149.4/29
C104	4030008900	S.CER C1608 JB 1H 333K-T	T	150.7/32.9
C105	4030008900	S.CER C1608 JB 1H 333K-T	T	149.4/32.9
C106	4030006850	S.CER C1608 JB 1H 471K-T	T	151.5/29.5
C107	4030006900	S.CER C1608 JB 1H 103K-T [HOL], [FRG] only	T	156.5/31.7
C108	4030006900	S.CER C1608 JB 1H 103K-T [HOL], [FRG] only	T	155/30.2
C109	4030006900	S.CER C1608 JB 1H 103K-T [HOL], [FRG] only	T	153.7/32.9
C111	4030008920	S.CER C1608 JB 1H 473K-T [HOL], [FRG] only	T	157.3/37.4
C112	4030011810	S.CER C1608 JB 1A 224K-T [HOL], [FRG] only	T	148/37.4
C113	4030011600	S.CER C1608 JB 1E 104K-T	T	151.1/19.4
C114	4030006850	S.CER C1608 JB 1H 471K-T	B	154.5/22.8
C115	4030006870	S.CER C1608 JB 1H 222K-T [HOL], [FRG] only	B	156.3/36.1

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.	H/V LOCATION
C116	4030006900	S.CER C1608 JB 1H 103K-T [HOL], [FRG] only	B	155.6/31.4
C117	4030011600	S.CER C1608 JB 1E 104K-T [HOL], [FRG] only	B	155.6/34.6
C118	4340000310	S.MLR ECHU 1C 333JX5 [HOL], [FRG] only	B	151.6/24.8
C150	4030006860	S.CER C1608 JB 1H 102K-T	T	61.6/31.5
C151	4030007060	S.CER C1608 CH 1H 270J-T	T	65.4/32.1
C152	4030008560	S.CER C1608 CH 1H 300J-T	T	65.4/33.4
C155	4030006900	S.CER C1608 JB 1H 103K-T	B	68/28.4
C157	4030006900	S.CER C1608 JB 1H 103K-T	B	75.7/28.7
C158	4030006860	S.CER C1608 JB 1H 102K-T	B	77.9/26.9
C159	4030009530	S.CER C1608 CH 1H 030B-T	B	75.6/25.6
C160	4030018400	S.CER CM105 CH 330G 50AT	B	74.9/26.9
C161	4030006900	S.CER C1608 JB 1H 103K-T	T	71.2/23.8
C164	4030009910	S.CER C1608 CH 1H 040B-T	B	82.8/25
C165	4030009920	S.CER C1608 CH 1H 050B-T	B	87.9/24.5
C166	4030006900	S.CER C1608 JB 1H 103K-T	B	102.1/24.6
C167	4030011600	S.CER C1608 JB 1E 104K-T	T	110.2/35.8
C168	4030006860	S.CER C1608 JB 1H 102K-T	T	110/40.8
C169	4030006860	S.CER C1608 JB 1H 102K-T	T	108.9/35.8
C170	4030007130	S.CER C1608 CH 1H 101J-T	T	110.2/38.5
C171	4030007090	S.CER C1608 CH 1H 470J-T	B	112.5/39.8
C172	4030011600	S.CER C1608 JB 1E 104K-T	T	130.2/37.2
C175	4550007520	S.TAN F931A106MAABMA	T	110.5/31.9
C176	4030006900	S.CER C1608 JB 1H 103K-T	B	116.7/40.4
C177	4030017490	S.CER C1608 JB 1A 105K-T	B	118.1/36.9
C178	4030006900	S.CER C1608 JB 1H 103K-T	B	118/34.2
C179	4030006860	S.CER C1608 JB 1H 102K-T	B	114.8/33.5
C182	4030011600	S.CER C1608 JB 1E 104K-T	B	118.6/40.4
C183	4030007040	S.CER C1608 CH 1H 180J-T	T	119.1/42.8
C183	4030007100	S.CER C1608 CH 1H 560J-T	T	119.1/42.8
C184	4030007020	S.CER C1608 CH 1H 120J-T	T	118.2/40.9
C184	4030007090	S.CER C1608 CH 1H 470J-T	T	118.2/40.9
C186	4550007520	S.TAN F931A106MAABMA	B	146/25
C187	4030011600	S.CER C1608 JB 1E 104K-T	T	146/42.6
C190	4030011600	S.CER C1608 JB 1E 104K-T	T	146/47.6
C191	4030008850	S.CER C1608 JB 1H 123K-T	T	149.4/48.3
C192	4030008900	S.CER C1608 JB 1H 333K-T	T	150.7/44.5
C193	4030008900	S.CER C1608 JB 1H 333K-T	T	149.4/44.5
C194	4030006850	S.CER C1608 JB 1H 471K-T	T	151.3/47.7
C195	4030006900	S.CER C1608 JB 1H 103K-T	T	156.3/44.5
C196	4030006900	S.CER C1608 JB 1H 103K-T	T	155/47.2
C197	4030006900	S.CER C1608 JB 1H 103K-T	T	153.7/44.5
C199	4030006860	S.CER C1608 JB 1H 102K-T	B	101.3/21.4
C200	4030006860	S.CER C1608 JB 1H 102K-T	B	79.9/11.3
C201	4030008920	S.CER C1608 JB 1H 473K-T	T	155.3/42.3
C202	4030011810	S.CER C1608 JB 1A 224K-T	T	148/40
C204	4030006850	S.CER C1608 JB 1H 471K-T	T	153.9/19.4
C205	4030006870	S.CER C1608 JB 1H 222K-T	B	156.3/49
C206	4030006900	S.CER C1608 JB 1H 103K-T	B	156.3/44.8
C207	4030011600	S.CER C1608 JB 1E 104K-T	B	155.5/47.7
C208	4340000310	S.MLR ECHU 1C 333JX5	B	154.3/38.1
C221	4030017490	S.CER C1608 JB 1A 105K-T	B	101.7/15.4
C222	4030006860	S.CER C1608 JB 1H 102K-T	B	99.7/13.6
C223	4030011600	S.CER C1608 JB 1E 104K-T	B	99.7/12
C224	4550007520	S.TAN F931A106MAABMA	B	99.8/17.5
C225	4550000510	S.TAN TEESVA 1V 473M8R	T	86.2/15.4
C227	4030009520	S.CER C1608 CH 1H 020B-T	T	88.5/13.6
C228	4030008270	S.CER C1608 UJ 1H 180J-T	T	91.7/13.2
C229	4030008270	S.CER C1608 UJ 1H 180J-T	T	91.7/10.5
C230	4030007040	S.CER C1608 CH 1H 180J-T	T	90.4/13.2
C231	4030007040	S.CER C1608 CH 1H 180J-T	T	90.4/10.5
C232	4030006870	S.CER C1608 JB 1H 222K-T	T	95.1/10.5
C233	4030006900	S.CER C1608 JB 1H 103K-T	T	93.8/10.5
C235	4030009530	S.CER C1608 CH 1H 030B-T	T	87.7/12.3
C236	4030006870	S.CER C1608 JB 1H 222K-T	T	82/14.5
C237	4030007020	S.CER C1608 CH 1H 120J-T	B	79.8/17.3
C239	4030007060	S.CER C1608 CH 1H 270J-T	B	83.3/8.2
C240	4030007060	S.CER C1608 CH 1H 270J-T	B	87.3/8.2
C241	4030009920	S.CER C1608 CH 1H 050B-T	B	77/16.5
C242	4030009990	S.CER C1608 CH 1H 200J-T	B	81.7/8.2
C243	4030006860	S.CER C1608 JB 1H 102K-T	B	116.9/18.5
C244	4030011810	S.CER C1608 JB 1A 224K-T	B	119.8/25.4
C245	4030006860	S.CER C1608 JB 1H 102K-T	B	120.3/27
C246	4030006900	S.CER C1608 JB 1H 103K-T	T	117.3/28.8
C247	4030011600	S.CER C1608 JB 1E 104K-T	T	111.4/27.3
C248	4550000510	S.TAN TEESVA 1V 473M8R	T	114.8/17.9
C249	4550007390	S.TAN F931C225MAABMA	B	113.5/25.1
C251	4030009920	S.CER C1608 CH 1H 050B-T	B	84.7/35.9
C252	4030006860	S.CER C1608 JB 1H 102K-T	B	89.5/37.8
C253	4030009990	S.CER C1608 CH 1H 200J-T	B	94.3/39.3
C254	4030006860	S.CER C1608 JB 1H 102K-T	B	117.4/28.8
C255	4030007030	S.CER C1608 CH 1H 150J-T	T	121.8/20.6
C256	4030009920	S.CER C1608 CH 1H 050B-T	T	127.6/19.1
C257	4030007110	S.CER C1608 CH 1H 680J-T	T	128.4/21.1
C258	4030006860	S.CER C1608 JB 1H 102K-T	T	131/21.1
C259	4030007060	S.CER C1608 CH 1H 270J-T	B	96.2/38.6
C260	4030007060	S.CER C1608 CH 1H 270J-T	B	100/38.6
C261	4030006860	S.CER C1608 JB 1H 102K-T	B	119.7/20
C262	4030011600	S.CER C1608 JB 1E 104K-T	B	116/22.5

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
C263	4030006900	S.CER C1608 JB 1H 103K-T	B	123.2/19.4
C264	4030009920	S.CER C1608 CH 1H 050B-T	T	119/18.4
C265	4030006900	S.CER C1608 JB 1H 103K-T	T	122.5/14.6
C266	4030007040	S.CER C1608 CH 1H 180J-T	T	118.7/13
C267	4030009530	S.CER C1608 CH 1H 030B-T	T	118.1/15
C268	4030007040	S.CER C1608 CH 1H 180J-T	T	117.4/13
C269	4030007010	S.CER C1608 CH 1H 100D-T	T	114.6/10.8
C271	4030017490	S.CER C1608 JB 1A 105K-T	T	81.9/31.7
C272	4030006860	S.CER C1608 JB 1H 102K-T	B	91/34.2
C273	4030011600	S.CER C1608 JB 1E 104K-T	B	91/32
C274	4550007520	S.TAN F931A106MAABMA	B	85.6/33.3
C275	4030006860	S.CER C1608 JB 1H 102K-T	B	139.7/21.1
C276	4030007090	S.CER C1608 CH 1H 470J-T	B	86.6/28.6
C277	4030017490	S.CER C1608 JB 1A 105K-T	B	85.5/30.4
C278	4550000530	S.TAN TEESVA 1V 104M8R	B	81.2/28.9
C280	4030009510	S.CER C1608 CH 1H 010B-T	T	89.5/31.9
C281	4030009350	S.CER C1608 CH 1H 3R5B-T	T	97.4/29
C282	4030011770	S.CER C1608 CH 1H 060B-T	T	96.1/29
C283	4030009500	S.CER C1608 CH 1H 0R5B-T	T	93.5/30.1
C284	4030009910	S.CER C1608 CH 1H 040B-T	T	96.1/31.6
C285	4030009530	S.CER C1608 CH 1H 030B-T	T	96.1/34.2
C286	4030007010	S.CER C1608 CH 1H 100D-T	T	94.8/31.6
C287	4030007010	S.CER C1608 CH 1H 100D-T	T	94.8/34.2
C288	4030006870	S.CER C1608 JB 1H 222K-T	T	86.3/32.1
C289	4030006900	S.CER C1608 JB 1H 103K-T	T	85/32.1
C290	4030009500	S.CER C1608 CH 1H 0R5B-T	T	92.6/34.8
C292	4030007020	S.CER C1608 CH 1H 120J-T	T	84.3/37.5
C294	4030006870	S.CER C1608 JB 1H 222K-T	T	86.3/36.1
C295	4030006860	S.CER C1608 JB 1H 102K-T	B	101.2/29.1
C307	4030006860	S.CER C1608 JB 1H 102K-T	T	70.6/17.9
C308	4030007010	S.CER C1608 CH 1H 100D-T	T	67.4/17.2
C309	4030006860	S.CER C1608 JB 1H 102K-T	T	73.7/15.4
C316	4030006860	S.CER C1608 JB 1H 102K-T	B	69/32.2
C317	4030006860	S.CER C1608 JB 1H 102K-T	T	69/32
C318	4030007030	S.CER C1608 CH 1H 150J-T	T	70.7/34.3
C319	4030006860	S.CER C1608 JB 1H 102K-T	T	73.3/35.8
C320	4030006860	S.CER C1608 JB 1H 102K-T	T	74.9/33
C322	4030006860	S.CER C1608 JB 1H 102K-T	T	82.5/43.3
C323	4030007090	S.CER C1608 CH 1H 470J-T	T	83.8/46
C324	4030007040	S.CER C1608 CH 1H 180J-T	T	83.8/43.3
C325	4030007040	S.CER C1608 CH 1H 180J-T	T	85.4/43.3
C330	4030006860	S.CER C1608 JB 1H 102K-T	T	93.3/43.3
C331	4030006860	S.CER C1608 JB 1H 102K-T	T	92/43.3
C332	4030007090	S.CER C1608 CH 1H 470J-T	T	88.1/43.3
C333	4030006860	S.CER C1608 JB 1H 102K-T	T	89.4/43.3
C334	4030007040	S.CER C1608 CH 1H 180J-T	T	94.8/47.8
C334	4030009990	S.CER C1608 CH 1H 200J-T	T	94.8/47.8
C335	4030006860	S.CER C1608 JB 1H 102K-T	T	96.5/43.3
C338	4030009530	S.CER C1608 CH 1H 030B-T	T	99.1/47.1
C339	4030006860	S.CER C1608 JB 1H 102K-T	T	107.4/43.8
C341	4030007090	S.CER C1608 CH 1H 470J-T	T	104.8/43.3
C342	4030006850	S.CER C1608 JB 1H 471K-T	T	106.1/43.3
C343	4030006860	S.CER C1608 JB 1H 102K-T	T	103.5/43.3
C345	4030007050	S.CER C1608 CH 1H 220J-T	T	102.4/48.7
C346	4030007040	S.CER C1608 CH 1H 180J-T	T	107.7/48.8
C347	4030007080	S.CER C1608 CH 1H 390J-T	T	107.7/52.1
C348	4030007040	S.CER C1608 CH 1H 180J-T	T	107.7/54.2
C351	4550007520	S.TAN F931A106MAABMA	T	92/51.3
C352	4030006860	S.CER C1608 JB 1H 102K-T	T	93.1/54.9
C353	4510008570	S.ELE EEE1CA220SR	T	85/52.3
C354	4030007090	S.CER C1608 CH 1H 470J-T	T	65.8/56.3
C355	4030006850	S.CER C1608 JB 1H 471K-T	T	65.8/54.7
C356	4030006860	S.CER C1608 JB 1H 102K-T	T	65.8/52.9
C361	4030011170	S.CER GRM31M2C2H180JV01L	T	49.8/52.9
C362	4030006860	S.CER C1608 JB 1H 102K-T	T	59.3/50
C363	4030006860	S.CER C1608 JB 1H 102K-T	T	59.5/44.8
C364	4030011170	S.CER GRM31M2C2H180JV01L	T	49.8/48.8
C365	4030006860	S.CER C1608 JB 1H 102K-T	B	49.6/40.7
C370	4030006860	S.CER C1608 JB 1H 102K-T	T	64/46.7
C371	4030006860	S.CER C1608 JB 1H 102K-T	T	68.3/41.8
C372	4550007620	S.TAN F931V224MAABMA	T	65.8/45.1
C373	4030011600	S.CER C1608 JB 1E 104K-T	T	68.9/46.6
C374	4030006860	S.CER C1608 JB 1H 102K-T	T	70.3/46.6
C375	4030007050	S.CER C1608 CH 1H 220J-T	T	72.6/45.5
C376	4030006860	S.CER C1608 JB 1H 102K-T	T	70.3/43.8
C377	4030006860	S.CER C1608 JB 1H 102K-T	T	72.5/39.7
C378	4550007520	S.TAN F931A106MAABMA	T	76.9/45.6
C379	4030006860	S.CER C1608 JB 1H 102K-T	T	75.2/43.3
C381	4030006860	S.CER C1608 JB 1H 102K-T	T	129.4/16.7
C383	4030006900	S.CER C1608 JB 1H 103K-T	T	151.4/18.1
C385	4030006860	S.CER C1608 JB 1H 102K-T	T	127.4/40.5
C391	4550007180	S.TAN F931C685MAABMA	B	115.6/20.5
C392	4030006860	S.CER C1608 JB 1H 102K-T	T	134.6/27.5
C393	4030006850	S.CER C1608 JB 1H 471K-T	T	124.1/50.5
C397	4030006860	S.CER C1608 JB 1H 102K-T	T	130.1/45.6
C398	4030006850	S.CER C1608 JB 1H 471K-T	T	130.1/50.4
C399	4030006860	S.CER C1608 JB 1H 102K-T	T	122.8/50.5
C400	4030009520	S.CER C1608 CH 1H 020B-T	T	61.9/26.3
C401	4030007170	S.CER C1608 CH 1H 221J-T	T	20/30.5
C402	4030006850	S.CER C1608 JB 1H 471K-T	T	17.3/27.8
C403	4030006860	S.CER C1608 JB 1H 102K-T	T	19.3/24.7

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.	H/V LOCATION
C404	4030011600	S.CER C1608 JB 1E 104K-T	T	21.3/25.2
C405	4030006850	S.CER C1608 JB 1H 471K-T	T	18/29.8
C406	4030011600	S.CER C1608 JB 1E 104K-T	T	25.5/24.7
C407	4030009920	S.CER C1608 CH 1H 050B-T	B	21.3/19.2
C408	4030011770	S.CER C1608 CH 1H 060B-T	B	21.3/17.7
C409	4030006860	S.CER C1608 JB 1H 102K-T	B	19.4/25
C410	4030009540	S.CER C1608 CH 1H 1R5B-T	B	24.2/19.7
C411	4030009510	S.CER C1608 CH 1H 010B-T	B	24.9/21.7
C412	4030006990	S.CER C1608 CH 1H 080D-T	B	27.3/19.3
C413	4030009350	S.CER C1608 CH 1H 3R5B-T	B	28.9/19.3
C414	4030009560	S.CER C1608 CH 1H R75B-T	B	31.3/20.1
C415	4030009560	S.CER C1608 CH 1H R75B-T	B	32.8/21.7
C416	4030006990	S.CER C1608 CH 1H 080D-T	B	35.3/19.3
C417	4030009350	S.CER C1608 CH 1H 3R5B-T	B	36.9/19.3
C418	4030009510	S.CER C1608 CH 1H 010B-T	B	39.3/20.1
C419	4030009540	S.CER C1608 CH 1H 1R5B-T	B	40.8/21.7
C420	4030007020	S.CER C1608 CH 1H 120J-T	B	45.6/21
C421	4030009530	S.CER C1608 CH 1H 030B-T	B	45.6/19.4
C423	4030007100	S.CER C1608 CH 1H 560J-T	B	48.5/19.4
C427	4030006860	S.CER C1608 JB 1H 102K-T	T	59/43.5
C428	4030006860	S.CER C1608 JB 1H 102K-T	T	59/41.9
C431	4030006860	S.CER C1608 JB 1H 102K-T	T	145.3/25.3
C432	4030006860	S.CER C1608 JB 1H 102K-T	T	132.3/31.6
C433	4030006860	S.CER C1608 JB 1H 102K-T	B	143/33.4
C434	4030006860	S.CER C1608 JB 1H 102K-T	T	135.7/43
C435	4030006860	S.CER C1608 JB 1H 102K-T	B	143.9/40.7
C436	4030006850	S.CER C1608 JB 1H 471K-T	B	141.7/2.6
C438	4030006850	S.CER C1608 JB 1H 471K-T	T	145.6/12.8
C439	4030006860	S.CER C1608 JB 1H 102K-T	B	130.6/16
C440	4030006860	S.CER C1608 JB 1H 102K-T	B	143.7/16.3
C441	4030006860	S.CER C1608 JB 1H 102K-T	B	140.6/10.3
J1	6510023361	S.CNR 26FLT-SM2-TB (LF) (SN)	T	139.2/36.2
J2	6510022621	S.CNR 10FMN-BMTTR-A-TBT (LF) (SN)	T	141.4/8.2
J3	6510007020	CNR TMP-J01X-V6		
W7	7030010840	S.JMP MJP-0.2-T	T	72.7/50.9
W12	7030010860	JMP MJP-0.6		
EP2	6910013370	S.BEA BLM18BB221SN1D	T	71.2/21
EP3	6910002161	CAS CASE-BM7H-LF		

[CONNECT UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
Q1	1590003560	S.FET TPC6104 (TE85L,F)	T	44.2/3
Q2	1590003580	S.TR KRC404 RTK/P	T	62.7/24.9
Q3	1590003560	S.FET TPC6104 (TE85L,F)	T	49.3/8.2
Q4	1590003580	S.TR KRC404 RTK/P	T	76.6/18.3
D1	1730002360	S.ZEN MA8062-M (TX)	T	64.4/19.1
D2	1730002360	S.ZEN MA8062-M (TX)	T	75.5/16.1
R1	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	T	46.7/4.4
R2	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	48/4.4
R3	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	51.4/12.3
R4	7030003640	S.RES ERJ3GEYJ 473 V (47 k)	T	46.9/8.6
R5	7030003680	S.RES ERJ3GEYJ 104 V (100 k)	T	51.4/11
R6	7030003320	S.RES ERJ3GEYJ 101 V (100)	T	74.7/13.7
C1	4030006860	S.CER C1608 JB 1H 102K-T	T	46.8/21.2
C2	4030006860	S.CER C1608 JB 1H 102K-T	T	46.8/19.9
C8	4030006860	S.CER C1608 JB 1H 102K-T	T	18.8/19
C9	4030006860	S.CER C1608 JB 1H 102K-T	T	6.3/19.6
C11	4030006860	S.CER C1608 JB 1H 102K-T	T	35.4/5
C13	4030006860	S.CER C1608 JB 1H 102K-T	T	34.6/11.9
C16	4030006860	S.CER C1608 JB 1H 102K-T	T	44.9/6.8
C17	4030006860	S.CER C1608 JB 1H 102K-T	T	40.2/4.7
C18	4030006860	S.CER C1608 JB 1H 102K-T	T	48.5/11.9
C21	4030006860	S.CER C1608 JB 1H 102K-T	T	68.1/4.5
C23	4030006860	S.CER C1608 JB 1H 102K-T	T	63/13.1
C26	4030006860	S.CER C1608 JB 1H 102K-T	T	74.1/7.6
C27	4030006860	S.CER C1608 JB 1H 102K-T	T	69.9/4.5
C28	4030006860	S.CER C1608 JB 1H 102K-T	T	74.3/11.5
C31	4030006860	S.CER C1608 JB 1H 102K-T	T	60.5/24.9
C32	4030006860	S.CER C1608 JB 1H 102K-T	T	66.3/16.1
C35	4030006860	S.CER C1608 JB 1H 102K-T	T	76.5/20.2
C36	4030011600	S.CER C1608 JB 1E 104K-T	T	76/13.7
J1	6510022440	CNR LTW-8MP-C NUT,GASKET		
J2	6510022440	CNR LTW-8MP-C NUT,GASKET		

[CONNECT UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
J3	6510023320	CNR LTWD-06PMMP-LC <LIA>!		
J4	6510023091	S.CNR 20FLT-SM2-TB (LF) (SN)	T	54.5/20
J5	6510014961	S.CNR B2B-ZR-SM4-TF (LF) (SN)	T	12.9/21.3
J6	6510022691	S.CNR 06FLT-SM2-TB (LF) (SN)	T	70/19.7
J6	6510025820	S.CNR 06FLZT-SM1-TF (H) (LF)(SN)	T	70/19.7
F1	5210001000	S.FUS ERBSE2R50U	T	37.4/3.7
F2	5210001000	S.FUS ERBSE2R50U	T	62.5/5.6
W1	8900015560	CBL OPC-1659 (P0.5,N6,L140) <TJM>		

[DIAL UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
S1	2250000470	ECR EVQ-V9C00116E		
W1	8900011721	CBL OPC-1187A <TJM>		

[VR UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R1	7210003080	VAR TP96N97-15F-10KA-2345		
W1	8900015960	CBL OPC-1186A <TJM>		

[SQL UNIT]

REF NO.	ORDER NO.	DESCRIPTION	M.	H/V LOCATION
R1	7210002360	VAR TP96N97-15F-10KB-1301		

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

• HM-126RB/RG

[REPLACEMENT UNITS]

ORDER NO.	UNIT NAME
Optional product	HM-126RB

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.	H/V LOCATION
IC1	1140012070	S.IC	µPD789405AGK-B12-9EU	B	18.5/25.2
IC2	1110001810	S.IC	TA7368F (ER)	B	63/17.3
IC3	1110004490	S.IC	M62429FP 700C	B	46.5/8.9
IC4	1120002830	S.IC	NJM2125F-TE1	B	69.8/39.8
IC5	1180000420	S.IC	TA78L05F (TE12R)	B	42/43.2
IC6	1180001250	S.IC	TA7808F (TE16L)	B	39.7/24.1
IC7	1110005730	S.IC	S-80928CNMC-G8Y-T2	B	36/42.7
IC8	1130007420	S.IC	TC7W14FU (TE12L)	B	24.7/38.4
IC9	1130006220	S.IC	TC4W53FU (TE12L)	B	48.5/22.7
Q1	1560000810	S.FET	2SK1069-4-TL	B	30/28.9
Q2	1520000460	S.TR	2SB1132 T100 R	B	21.2/10.9
Q3	1530002850	S.TR	2SC4116-BL (TE85R)	B	31/6.3
Q4	1590001390	S.FET	2SJ144-Y (TE85R)	B	45.9/16.4
Q5	1590000430	S.TR	DTC144EUA T106	B	59.4/41.9
Q6	1590000980	S.TR	DTB123EK T146	B	60.3/45.1
Q9	1560000810	S.FET	2SK1069-4-TL	B	29.1/44
Q10	1530002060	S.TR	2SC4081 T106 R	B	28.7/38.9
Q11	1510000510	S.TR	2SA1576A T106R	B	29.1/41.5
Q12	1530002850	S.TR	2SC4116-BL (TE85R)	B	34/6.3
D1	1750000130	S.DIO	DA204U T106	B	39.3/6
D2	1160000060	S.DIO	DAN202U T106	B	15.3/41
D3	1750000550	S.DIO	1SS355 TE-17	B	55.6/29.4
X1	6060000750	S.CER	CSTCC4M91G53-R0)	B	26.7/14.9
R1	7030000270	S.RES	MCR10EZHJ 120 (121)	B	3.4/19.7
R2	7030000270	S.RES	MCR10EZHJ 120 (121)	B	3.5/30.9
R3	7030000280	S.RES	MCR10EZHJ 150 (151)	B	56.9/39
R6	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	12.2/14.8
R7	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	14.1/14.6
R8	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	12.2/13.5
R9	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	10.3/13.1
R10	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	10.8/36.4
R11	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	12.1/39.5
R12	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	12.6/35.9
R13	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	13.9/35.6
R14	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	13.4/39.5
R15	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	17.2/40.2
R16	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	18.8/40.4
R17	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	18/42.3
R18	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	26.8/32.8
R19	7030003800	S.RES	ERJ3GEYJ 105 V (1 M)	B	23.8/15.5
R20	7030003540	S.RES	ERJ3GEYJ 682 V (6.8 k)	B	32.7/29.7
R21	7030003630	S.RES	ERJ3GEYJ 393 V (39 k)	B	34.5/27.8
R22	7030004120	S.RES	ERJ3GEYJ 203 V (20 k)	B	33.2/27.8
R23	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	31.9/27.8
R24	7030003450	S.RES	ERJ3GEYJ 122 V (1.2 k)	B	28.1/30.6
R25	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	30.2/30.9
R26	7510001671	S.TMR	NTCG16 4BH 103JT	B	33.1/32.3
R27	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	33.1/31
R28	7030004120	S.RES	ERJ3GEYJ 203 V (20 k)	B	25.8/10.4
R29	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	27.7/9.8
R30	7030003590	S.RES	ERJ3GEYJ 183 V (18 k)	B	25.8/9.1
R31	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	27.7/7.1
R32	7030004120	S.RES	ERJ3GEYJ 203 V (20 k)	B	25.8/7.8
R33	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	25.8/6.5
R34	7030003440	S.RES	ERJ3GEYJ 102 V (1 k)	B	34.2/8.2
R35	7030003510	S.RES	ERJ3GEYJ 392 V (3.9 k)	B	51.8/10.6
R36	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	51.1/14.4
R37	7030003600	S.RES	ERJ3GEYJ 223 V (22 k)	B	48.7/12.4
R38	7030003580	S.RES	ERJ3GEYJ 153 V (15 k)	B	41.5/6.7
R39	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	48.6/15.6
R40	7030003760	S.RES	ERJ3GEYJ 474 V (470 k)	B	48.6/16.9
R41	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	48.6/19.5
R42	7030003570	S.RES	ERJ3GEYJ 123 V (12 k)	T	79.1/44.7
R43	7030003490	S.RES	ERJ3GEYJ 272 V (2.7 k)	T	72.4/39.3
R44	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	68.4/42.2
R45	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	71.1/42.2
R46	7030003620	S.RES	ERJ3GEYJ 333 V (33 k)	B	71.9/36.9
R47	7030003730	S.RES	ERJ3GEYJ 274 V (270 k)	B	69.8/36.1
R50	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	33.4/43.1
R51	7030003610	S.RES	ERJ3GEYJ 273 V (27 k)	B	34.4/45.8
R52	7030003630	S.RES	ERJ3GEYJ 393 V (39 k)	B	35.8/40.3
R53	7030003680	S.RES	ERJ3GEYJ 104 V (100 k)	B	26.6/34.7
R54	7030003440	S.RES	ERJ3GEYJ 102 V (1 k)	B	26.1/42.2
R55	7030003640	S.RES	ERJ3GEYJ 473 V (47 k)	B	29.4/45.9
R56	7030003440	S.RES	ERJ3GEYJ 102 V (1 k)	B	31.1/43.5
R57	7030003520	S.RES	ERJ3GEYJ 472 V (4.7 k)	B	26.3/40.8

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION		M.	H/V LOCATION
R58	7030003280	S.RES	ERJ3GEYJ 470 V (47)	B	31.6/40.3
R59	7030003580	S.RES	ERJ3GEYJ 153 V (15 k)	B	29.8/8.2
R60	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	29/10.1
R61	7030003630	S.RES	ERJ3GEYJ 393 V (39 k)	B	29/6.3
R62	7030003640	S.RES	ERJ3GEYJ 473 V (47 k)	B	26.6/5.2
R63	7030003560	S.RES	ERJ3GEYJ 103 V (10 k)	B	31.1/4.4
R64	7030003510	S.RES	ERJ3GEYJ 392 V (3.9 k)	B	33.9/4.4
R65	7030003800	S.RES	ERJ3GEYJ 105 V (1 M)	B	45.5/25.1
R66	7030003800	S.RES	ERJ3GEYJ 105 V (1 M)	B	46.3/26.4
R67	7030003800	S.RES	ERJ3GEYJ 105 V (1 M)	B	49/26.4
R68	7030003320	S.RES	ERJ3GEYJ 101 V (100)	B	58.1/29
R69	7030003320	S.RES	ERJ3GEYJ 101 V (100)	B	15.3/39
R70	7030003260	S.RES	ERJ3GEYJ 330 V (33)	B	43.7/4.6
R75	7030000180	S.RES	MCR10EZHJ 22 (220)	B	55.1/14.9
R76	7030000180	S.RES	MCR10EZHJ 22 (220)	B	55.1/13.1
R77	7030000180	S.RES	MCR10EZHJ 22 (220)	B	55.2/10.6
C1	4510004630	S.ELE	ECEV1CA100SR	B	15.8/10.6
C3	4510005430	S.ELE	ECEV0JA220SR	B	10.3/8.8
C4	4030006900	S.CER	C1608 JB 1H 103K-T	B	9/13.1
C5	4030006900	S.CER	C1608 JB 1H 103K-T	B	18/43.6
C6	4030006900	S.CER	C1608 JB 1H 103K-T	B	31.2/32.8
C7	4030011600	S.CER	C1608 JB 1E 104K-T	B	28.9/32.6
C9	4030006900	S.CER	C1608 JB 1H 103K-T	B	14.4/7.5
C10	4030017480	S.CER	C1608 JB 1A 474K-T	B	51.8/9.3
C11	4030011600	S.CER	C1608 JB 1E 104K-T	B	46/12.4
C12	4030012600	S.CER	C2012 JB 1A 105M-T	B	51.7/12.2
C13	4030006900	S.CER	C1608 JB 1H 103K-T	B	52.4/14.4
C14	4030011600	S.CER	C1608 JB 1E 104K-T	B	57.7/14.7
C15	4510006220	S.ELE	ECEV1CA101UP	B	59.7/9.7
C16	4510006220	S.ELE	ECEV1CA101UP	B	54.8/19.4
C17	4510006220	S.ELE	ECEV1CA101UP	B	62.7/23.8
C18	4510006250	S.ELE	ECEV1CA331UP	B	68.6/9.1
C22	4030006900	S.CER	C1608 JB 1H 103K-T	B	41.8/9.5
C23	4510005430	S.ELE	ECEV0JA220SR	B	47.4/3.7
C24	4030012600	S.CER	C2012 JB 1A 105M-T	B	48.3/14
C25	4030006900	S.CER	C1608 JB 1H 103K-T	B	48.6/18.2
C26	4030012600	S.CER	C2012 JB 1A 105M-T	B	45.9/19.5
C27	4030006850	S.CER	C1608 JB 1H 471K-T	B	79.1/44.3
C28	4030011600	S.CER	C1608 JB 1E 104K-T	B	65.4/39.1
C29	4030006860	S.CER	C1608 JB 1H 102K-T	B	66.7/39.8
C30	4510004630	S.ELE	ECEV1CA100SR	B	69.5/45.4
C31	4030011810	S.CER	C1608 JB 1A 224K-T	B	73.2/36.9
C32	4030007090	S.CER	C1608 CH 1H 470J-T	B	69.8/37.4
C33	4030012600	S.CER	C2012 JB 1A 105M-T	B	66.6/37
C34	4030011600	S.CER	C1608 JB 1E 104K-T	B	45.2/40.9
C35	4510005430	S.ELE	ECEV0JA220SR	B	61.8/38.1
C36	4030011600	S.CER	C1608 JB 1E 104K-T	B	41.2/39.8
C37	4510005430	S.ELE	ECEV0JA220SR	B	46.9/44.8
C38	4030011600	S.CER	C1608 JB 1E 104K-T	B	38.6/9.2
C39	4510006220	S.ELE	ECEV1CA101UP	B	32.3/19
C40	4030011600	S.CER	C1608 JB 1E 104K-T	B	41.1/36.5
C41	4510006250	S.ELE	ECEV1CA331UP	B	49.2/35.1
C42	4030008890	S.CER	C1608 JB 1H 273K-T	B	38.5/42.5
C44	4030011600	S.CER	C1608 JB 1E 104K-T	B	29.3/33.9
C45	4030006900	S.CER	C1608 JB 1H 103K-T	B	25.6/36
C46	4030011600	S.CER	C1608 JB 1E 104K-T	B	27.1/44.3
C47	4030006850	S.CER	C1608 JB 1H 471K-T	B	51.1/25.5
C50	4030006860	S.CER	C1608 JB 1H 102K-T	B	71.1/28.4
C51	4030007090	S.CER	C1608 CH 1H 470J-T	B	61.4/28.3
C52	4030007090	S.CER	C1608 CH 1H 470J-T	B	55.6/31
C53	4030006900	S.CER	C1608 JB 1H 103K-T	B	48.4/25.1
C54	4030012600	S.CER	C2012 JB 1A 105M-T	B	52.7/25.3
J1	6510019420	S.CNR	B8B-ZR-SM3-TF	B	64.9/33.3
DS1	5030001900	LCD	A0119 LCD36*28.5		
DS2	5040002660	S.LED	FY1101F-TR (LED)	T	27.7/4.2
DS3	5040002660	S.LED	FY1101F-TR (LED)	T	15.7/4.2
DS4	5040002310	S.LED	SML-311YTT86	T	5.9/18.4
DS5	5040002660	S.LED	FY1101F-TR (LED)	T	27.7/46.2
DS6	5040002660	S.LED	FY1101F-TR (LED)	T	15.7/46.2
DS7	5040002310	S.LED	SML-311YTT86	T	.9/32
DS8	5040002310	S.LED	SML-311YTT86	T	45.8/18.2
DS9	5040002310	S.LED	SML-311YTT86	T	65.7/18.2
DS10	5040002310	S.LED	SML-311YTT86	T	53.8/36.2
MC1	7700002480	MIC	SKB-2746 LPC		
S1	2260002710	S.SW	SKQLLCE012	B	3/14.2
S2	2260002710	S.SW	SKQLLCE012	B	3/25.2
S3	2260002710	S.SW	SKQLLCE012	B	3/36.2
S4	2260002800	S.SW	SW-167 (SKQTLAE010)	B	20.7/2.7
EP2	8930051120	LCT	SRCN-2320-SP-N-W		

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

SECTION 7 MECHANICAL PARTS

7-1 IC-M603

[CHASSIS PARTS]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
J1	6510004880	Antenna connector MR-DSE-01	1
W1	8900015950	Cable OPC-1175A	1
W2	8900011460	Cable OPC-1176	1
W3	8900011161	Cable OPC-1128A	1
W4	8900011811	Cable OPC-1197A-1	1
W5	8900011821	Cable OPC-1198A-1	1
W6	8900011831	Cable OPC-1200A-1	1
MP1	8010020510	2577 A-chassis	1
MP2	8210019050	2577 rear panel assembly	1
MP3	8930058271	2577 F-packing-1	1
MP4	8930058260	2577 R-packing	1
MP5	8930058460	2577 bush plate	1
MP6	8110007800	2577 module cover	1
MP7	8930058480	2577 module plate	1
MP8	8510014900	2577 shield cover	1
MP9	8930034300	1542 ANT seal	1
MP10	8930058780	2577 sheet	1
MP11	8810008661	Screw B0 3 × 8 NI-ZC3 (BT)	7
MP12	8810008661	Screw B0 3 × 8 NI-ZC3 (BT)	3
MP13	8820001210	2438 screw	6
MP14	8820001210	2438 screw	6
MP15	8820001210	2438 screw	2
MP16	8820001210	2438 screw	2
MP17	8810004301	Screw M3 × 10 ZK3	2
MP19	8930052290	O-ring (AD)	8
MP20	8930058450	2577 IC clip	1
MP21	8930058470	2577 IC plate	1
MP22	8930049040	Insulation plate (FQ)	1
MP23	8930055040	2438 cap	5
MP25	8930059021	Thermally sheet (AI)-1	1
MP26	8810008661	Screw B0 3 × 8 NI-ZC3 (BT)	1

[MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
EP3	6910002161	Shield case-BM7H-LF	1
MP1	8510014870	2577 RX-VCO case	1
MP2	8510014880	2577 TX-VCO case	1
MP3	8510014890	2577 DBM case	1
MP4	8510014890	2577 DBM case	1
MP5	8510015100	2577 shield case	1
MP6	8930059350	2577 earth plate	1
MP9	8930063240	2577 earth spring	1
MP10	8930071140	2577 A-earth plate	1

[LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
DS1	5030002390	LCD HLM7784-010100	1
S1	2230001170	Switch SPPH220200	1
MP1	8930058440	2577 LCD holder	1
MP2	8210019060	2577 reflector	1
MP3	8930058910	2577 LCD sheet	1
MP4	8930058900	Rubber sheet (BB)	2

[AF UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
W6	8900011871	Cable OPC-1203A	1

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

[FRONT UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
SP1	2510001210	SPEAKER 066P0804	1
W1	8900015550	Cable OPC-1658	1
MP1	8210023110	2577 front panel (C) assembly	1
MP12	8610011240	Knob N-295	1
MP13	8610011240	Knob N-295	1
MP14	8610011210	Knob N-293	1
MP17	8930059540	Compression ring R102-P	1
MP18	8810008661	Screw B0 3 × 8 NI-ZC3 (BT)	7
MP19	8930059200	O-ring (AT)	1
MP20	8930053030	2345 earth plate	1
MP21	8850001981	Plain washer M10 10 × 16 × 0.8 ZC3	1
MP22	8930052280	O-ring (AC)	2
MP23	8930058790	2577 SP NET	1

[CONNECT UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
J1	6510022440	Connector LTW-8MP-C	1
J2	6510022440	Connector LTW-8MP-C	1
J3	6510023620	Connector LTWBU-10PMMP-LC	1

[DIAL UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
S1	2250000470	Switch EVQ-V9C00116E	1

[SQL UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
R1	7210002360	Variable resistor TP96N97-15F-10KA-1301	1

[VR UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
R1	7210003080	Variable resistor TP96N97-15F-10KA-2345	1

[ACCESSORIES]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
W1	8900011440	Cable OPC-1174	1
W2	8900010761	Cable OPC-1096A [EUR], [HOL], [FRG] only	
P1	6510023310	LTWD-06BFFA-L180	1
P2	6510023300	LTWB-03BFFA-L180	1
MC1	Optional product	HM-126RB	1
MP1	8950005110	2289 mic hanger	1
MP2	8610010561	2040 knob bolt-1	2
MP3	8010018860	2455 bracket	1
MP4	8310050900	2438 warning sticker	1
MP5	8810001490	Screw PH A M5 × 20 SUS	4
MP6	8850000500	Spring washer M5 SUS	4
MP7	8850000180	Flat washer M5 SUS	4
MP8	8810004700	Screw PH A M3 × 16 SUS	2
MP9	8930059480	Sponge (GZ)	2

Accessories illustration is shown at the next page.

Unit abbreviations

(C): CHASSIS PARTS
(M): MAIN UNIT
(F): FRONT UNIT
(L): LOGIC BOARD
(A): AF UNIT
(CO): CONNECT UNIT
(D): DIAL BOARD
(S): SQL BOARD
(V): VR BOARD

MP8 (C)
MP7 (C)
IC13 (M)
MP13 (C)
MP19 (C)
MP14 (C)
MP2 (C)
MP11 (C)
MP4 (M)
MP5 (M)
MP10 (M)
MP10 (C)
MAIN UNIT
MP2 (M)
MP6 (C)
W5 (C)
MP6 (M)
MP3 (M)
MP9 (M)
EP3 (M)
MP1 (M)
W4 (C)
MP22 (C)
MP4 (C)
MP3 (C)
MP23 (C)
MP16 (C)
MP9 (C)
W2 (C)
MP15 (C)
J1 (CO)
MP19 (C)
J2 (CO)
J1 (C)
J3 (CO)
MP1 (C)
MP20 (F)
MP18 (F)
MP4 (L)
W1 (C)
MP23 (F)
SP1 (F)
MP1 (L)
W2 (C)
J1 (CO)
J2 (CO)
W1 (F)
MP3 (L)
S1 (L)
MP2 (L)
W3 (C)
MP4 (L)
LOGIC UNIT
DS1 (L)
J3 (CO)
CONNECT UNIT
MP5 (C)
VR UNIT
SQL UNIT
R1 (V)
MP22 (F)
R1 (S)
MP22 (F)
S1 (D)
DIAL UNIT
AF UNIT
MP25 (C)
MP26 (C)
W1 (F)
MP19 (F)
MP23 (C)
MP12 (C)
MP17 (C)
W6 (C)
R1 (V)
R1 (S)
MP12 (F)
W6 (A)
MP13 (F)
MP21 (F)
S1 (D)
MP21 (C)
MP20 (C)
MP14 (F)
MP1 (F)

MC1
W1
W2
MP2
MP9
P1
MP5
MP4
P2
MP6
MP3
MP7

ACCESSORIES

7-2 HM-126RB/RG

[CHASSIS PARTS]

REF. NO.	ORDER NO.	DESCRIPTION		QTY.
W1	8900011480	Cable OPC-948	[Gray]	1
	8900011490	Cable OPC-949	[Black]	1
MP1	8210017670	2352 front panel-1	[Gray]	1
	8210019241	2352 front panel (A)-1	[Black]	1
MP2	8210016851	2352 rear panel	[Gray]	1
	8210019221	2352 rear panel (A)	[Black]	1
MP3	8930052160	2352 key		1
MP4	8930052150	2352 PTT rubber		1
MP5	8930052140	2352 PTT holder		1
MP6	8930052690	2352 mic rubber		1
MP7	8930052120	2352 rubber		1
MP8	8930052110	2352 main seal		1
MP9	8610010870	2352 hanger knob		1
MP10	8310048760	2352 R-plate		1
MP11	8310048780	2352 mic plate		1
MP12	8820001150	2352 screw		5
MP13	8850001850	ICOM washer (Y)		5
MP14	8930052340	O-ring (AE)		5
MP15	8930052350	O-ring (AF)		1
MP16	8930053870	2352 sheet (A)		1
MP17	8930053040	2352 SP net		1
MP18	8850001610	Spring washer M4 SUS		1
MP19	8810009260	Screw PH BT 2 × 6 NI		3
MP20	8810008900	Screw PH M3 × 6 NI		1
MP21	8810009240	Screw M4 × 10 ZK		1
MP24	8930061010	2715 mic sheet		1

[MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
MC1	7700002120	Microphone KUC2123-030245	1
SP1	2510001080	Speaker S36G04K-9	1

Screw abbreviations

BT: Self-tapping
FH: Flat head
SUS: Stainless
NI-ZU: Nickel-Zinc
PH: Pan head
ZK: Black
NI: Nickel

7-3 HM-157 (Optional product)

[CHASSIS PARTS]

REF. NO.	ORDER NO.	DESCRIPTION		QTY.
W3	8900010220	Cable OPC-1412	[B]	1
	8900010230	Cable OPC-1413	[SW]	1
SP1	2510001330	Speaker 036D0803		1
MP1	8210017360	2417 front panel (C)-1 assembly	[B]	1
	8210017390	2417 front panel (D)-1 assembly	[SW]	1
MP3	8930053510	2417 key board		1
MP4	8930053540	2417 PTT rubber		1
MP5	8930053990	2417 PTT sheet		1
MP6	8930053550	2417 PTT holder		1
MP7	8930053520	2417 top key		1
MP8	8930053760	2417 key plate		1
MP10	8930061110	2681 mic tape		1
MP11	8810009180	Screw FH BT M2 × 5 NI-ZU		3
MP12	8930053750	2417 plate		1
MP13	8210017250	2417 rear panel-1	[B]	1
	8210022021	2417 rear panel (C)-1	[SW]	1
MP14	8310049970	2417 R-plate		1
MP15	8610010980	2417 hanger knob		1
MP16	8930053740	O-ring (AJ)		1
MP17	8810008450	Screw M4 × 8 ZK		1
MP18	8850000490	Spring washer M4 SUS		1
MP19	8930053530	2417 rubber		1
MP20	8820001180	2417 screw 2.6 × 16		6
MP21	8930053730	O-ring (AI)		6
MP25	8930046000	1903 mic sponge		1
MP26	8930061610	Sponge (HG)		1
MP27	8930039000	1757 sheet		1

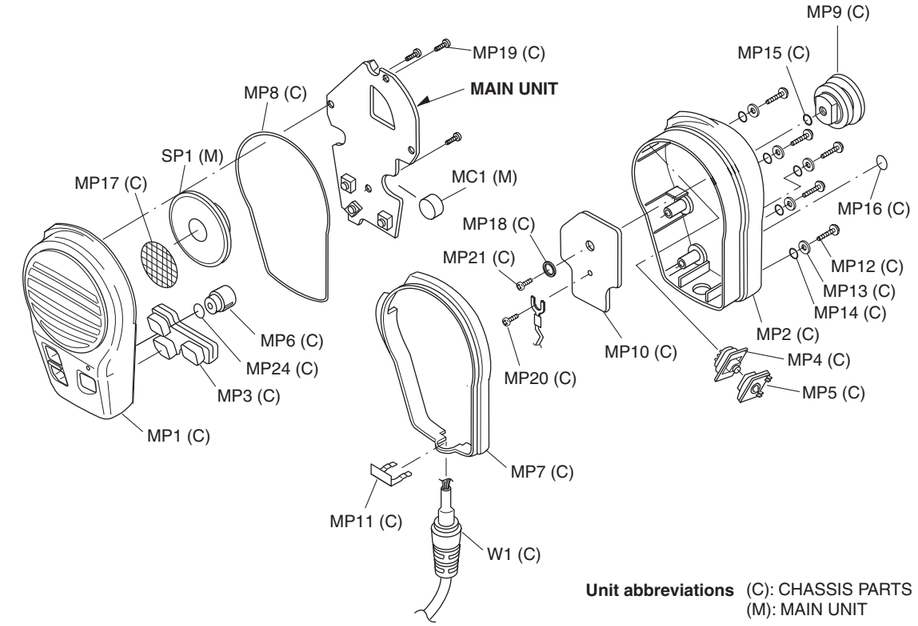
[MAIN UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
DS1	5030001900	LCD A0119 (LCD 36 × 28.5)	1
EP2	8930051120	LCD contact SRCN-2320-SP-N-W	2
MC1	7700002480	Microphone SKB-2746 LPC	1
MP1	8930053780	2417 LCD holder	1
MP2	8210017240	2417 reflector	1
MP3	8310050200	2417 H-plate	1
MP4	8930039612	Thermally sheet (C)-2	1
MP5	8930054890	Insulate sheet (GM)	2

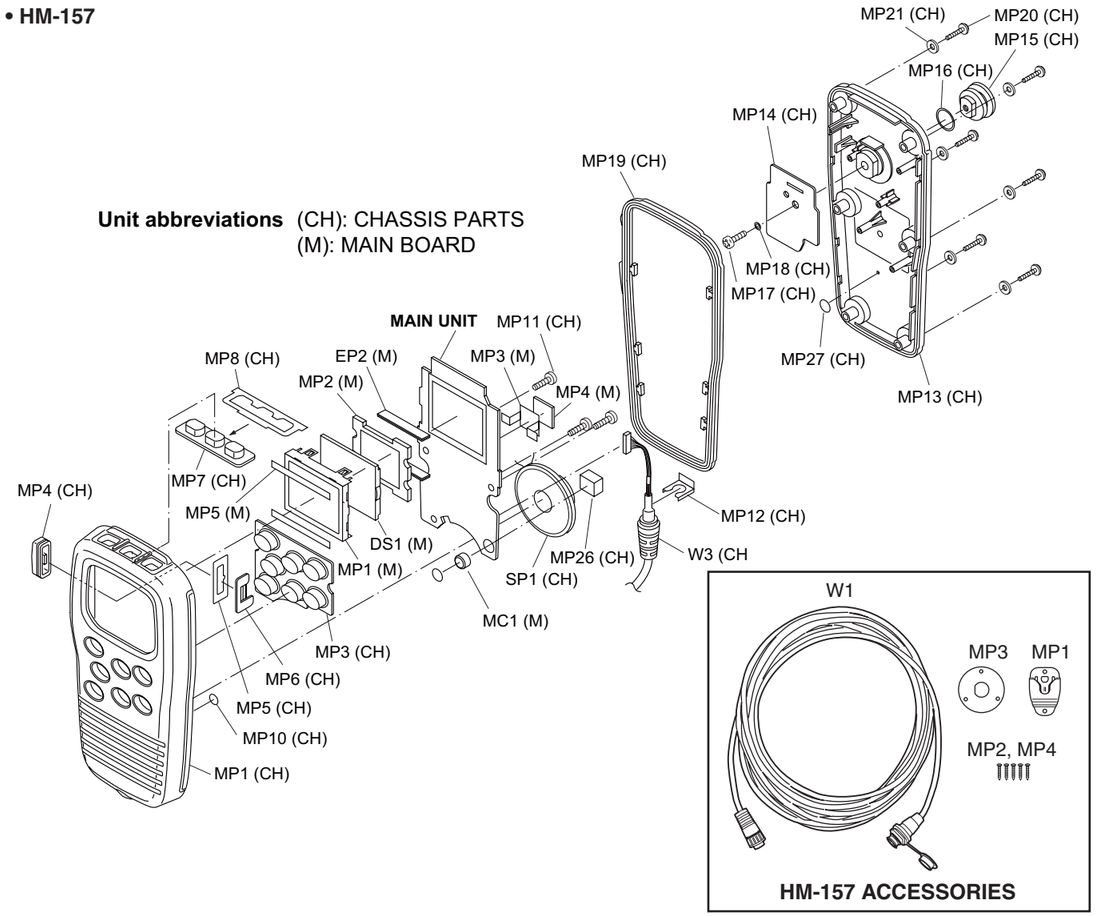
[ACCESSORIES]

REF. NO.	ORDER NO.	DESCRIPTION	QTY.
W1	8900010280	Cable OPC-1000	1
MP1	8950005110	2289 mic hanger	1
MP2	8810004700	Screw PH A M3 × 16 SUS	2
MP3	8310050320	2417 C-plate	1
MP4	8810004700	Screw PH A M3 × 16 SUS	3

• **HM-126RB/RG**

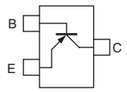
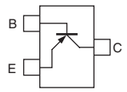
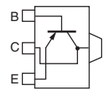
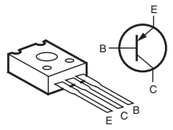
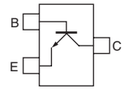
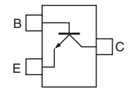
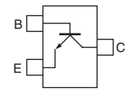
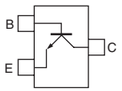
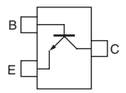
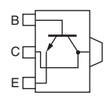
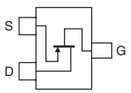
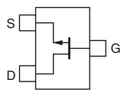
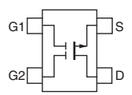
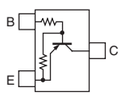
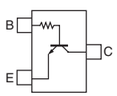
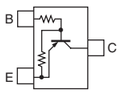
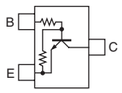
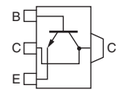
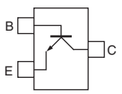
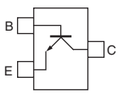
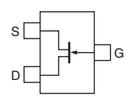
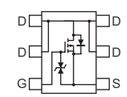


• **HM-157**

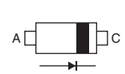
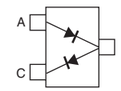
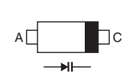
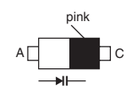
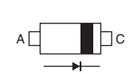
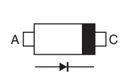
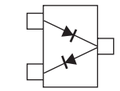
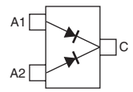
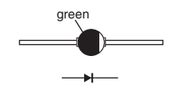
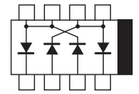
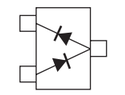
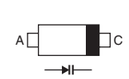
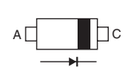
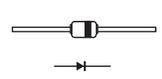
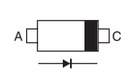
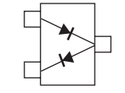
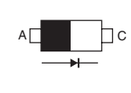
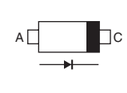


SECTION 8 SEMI-CONDUCTOR INFORMATION

• TRANSSISTORS AND FET'S

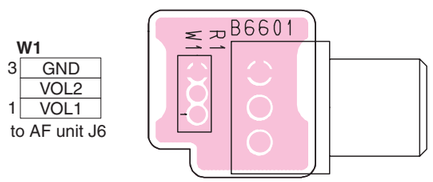
2SA1576A T106 R (Symbol: FR) 	**2SA1577 T106 Q** (Symbol: HQ) 	**2SB1132 T100 R** (Symbol: BAR) 	**2SB1143 S** (Symbol: B1143) 	**2SC3326 B** (Symbol: CCB) 
2SC3775 3 TB (Symbol: OY3) 	**2SC4081 T106 S** (Symbol: BS) 	**2SC4116 BL** (Symbol: LL) 	**2SC4215 O** (Symbol: QO) 	**2SD1664 Q** (Symbol: DAQ) 
2SJ144 Y (Symbol: VY) 	**2SK1069 4 TL** (Symbol: FJ) 	**3SK294** (Symbol: UV) 	**DTA144EUA T106** (Symbol: 16) 	**DTC144TU T106** (Symbol: 06) 
KRA304 (Symbol: PD) 	**KRC404** (Symbol: ND) 	**KTA1664** (Symbol: R) 	**KTC2875-B** (Symbol: MB) 	**KTC4075 BL** (Symbol: LBL) 
PMBFJ310 (Symbol: M10) 	**TPC6104** (Symbol: S3D) 			

• DIODES

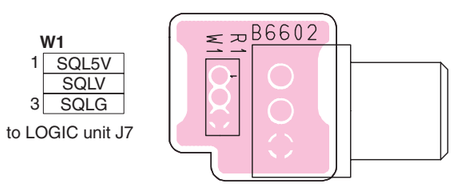
1SS355 (Symbol: A) 	**1SS372** (Symbol: N9) 	**1SV214** (Symbol: T1) 	**1SV288** (Symbol: TJ) 	**1SV307** (Symbol: TX) 
1SV308 (Symbol: TX) 	**DA204 K T146** (Symbol: K) 	**DAN202 K T146** (Symbol: N) 	**DSA3A1** (Color: Green) 	**HSB88WSTR** (Symbol: Silver line) 
HSM88ASR TR (Symbol: C3) 	**HVC358B** (Symbol: B2) 	**KDS4148U** (Symbol: UH) 	**L308CCB** (Symbol: CC) 	**MA2S111** (Symbol: A) 
MA742 (Symbol: M1U) 	**MA77** (Symbol: 4B) 	**MA8036 L** (Symbol: 3_6) 	**MA8051 M** (Symbol: 5-1) 	**MA8062 M** (Symbol: 6-2)

SECTION 9 BOARD LAYOUTS

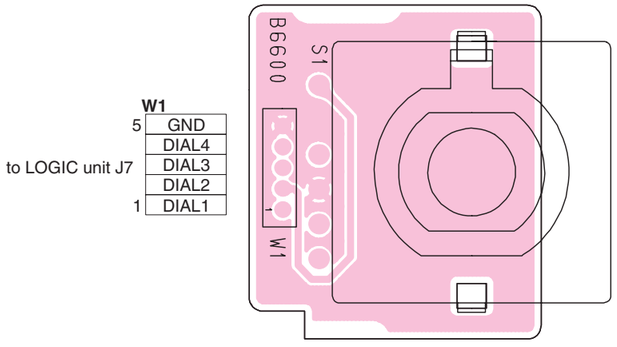
9-1 VR UNIT (TOP VIEW)



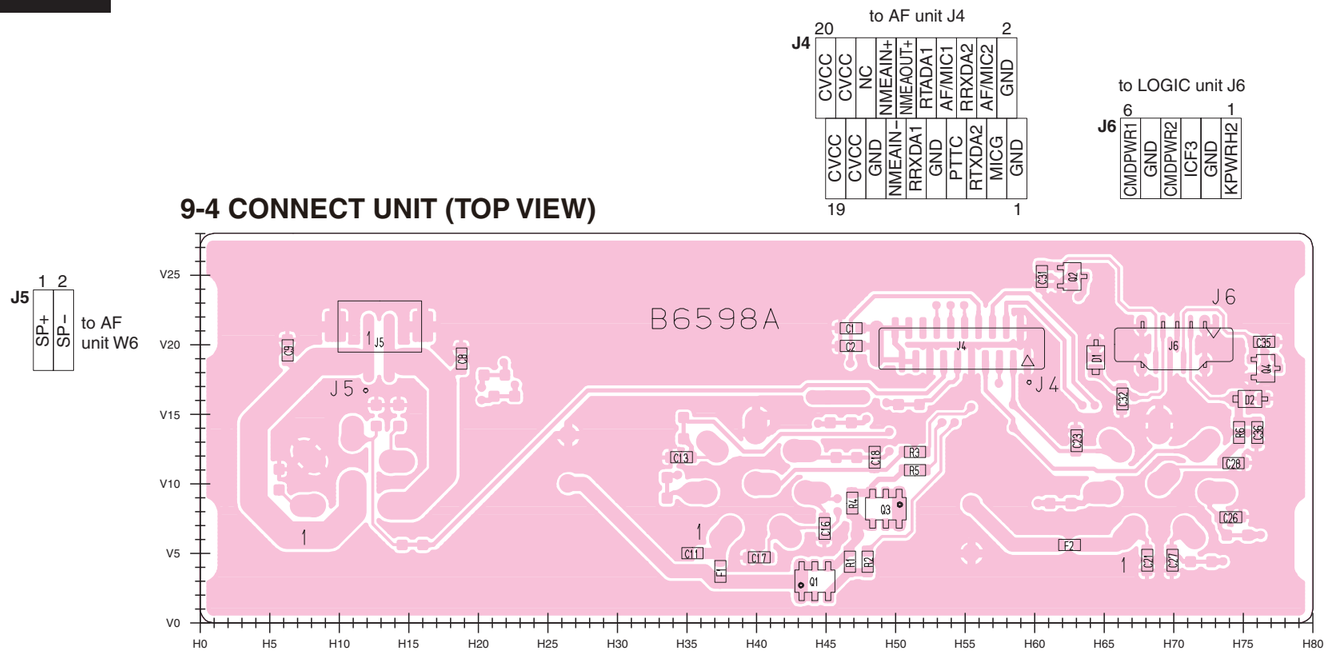
9-2 SQL UNIT (TOP VIEW)



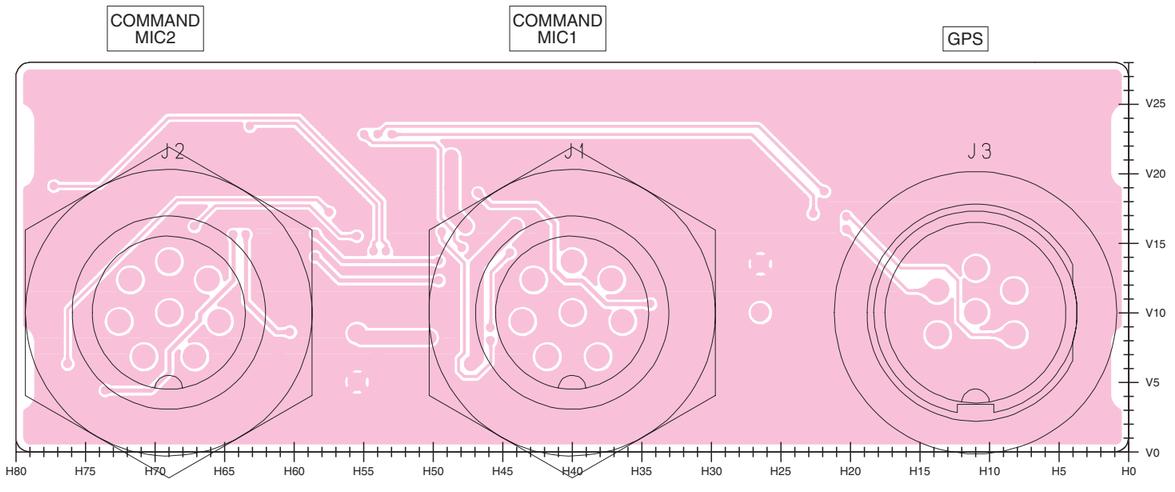
9-3 DIAL UNIT (TOP VIEW)



9-4 CONNECT UNIT (TOP VIEW)

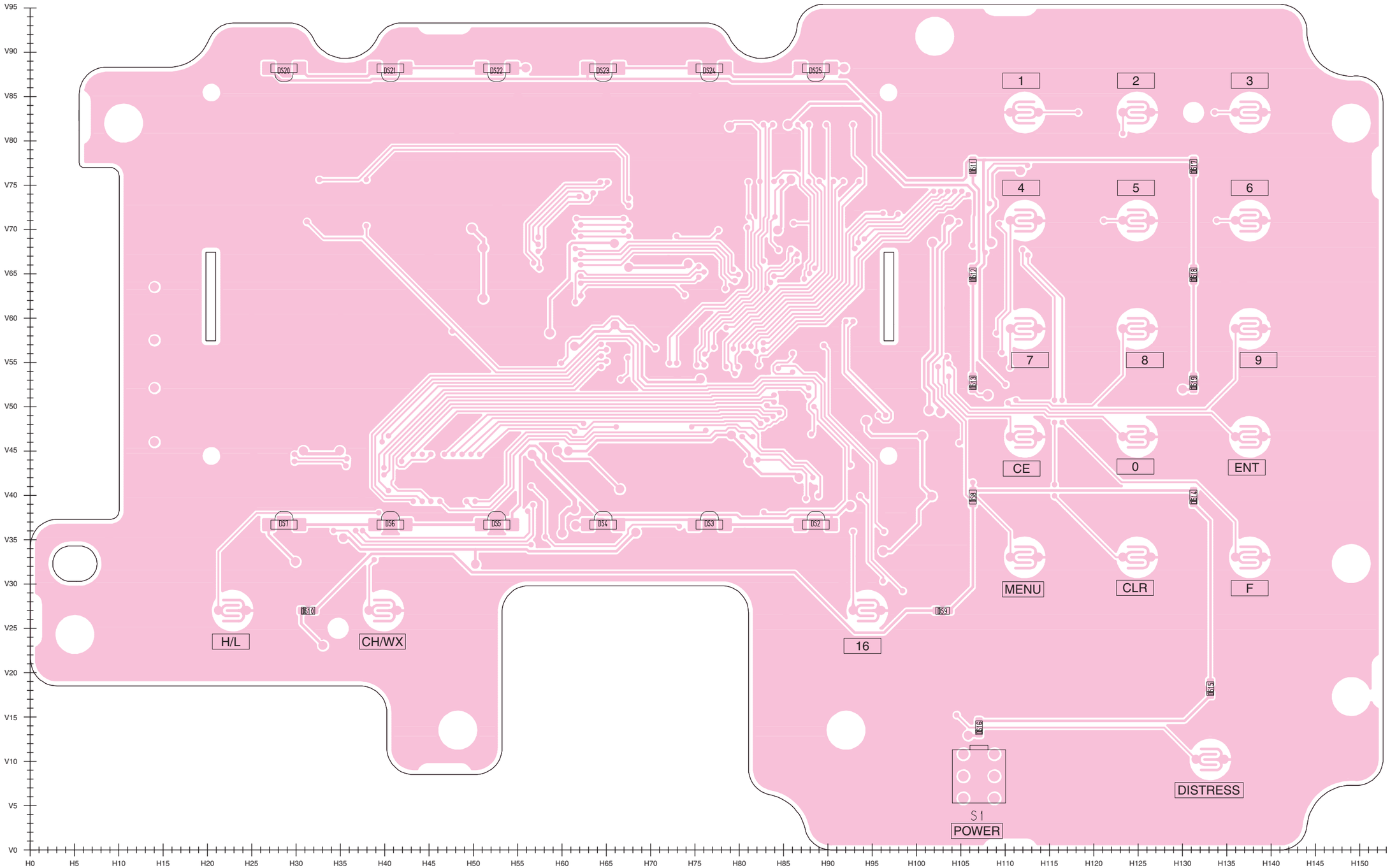


• CONNECT UNIT (BOTTOM VIEW)

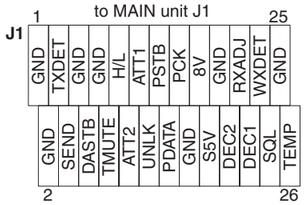


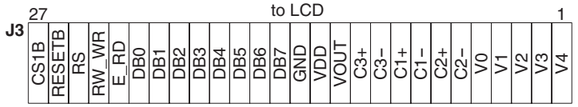
The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.

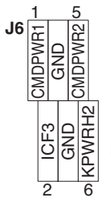
9-5 LOGIC UNIT (TOP VIEW)



9-5 LOGIC UNIT (BOTTOM VIEW)







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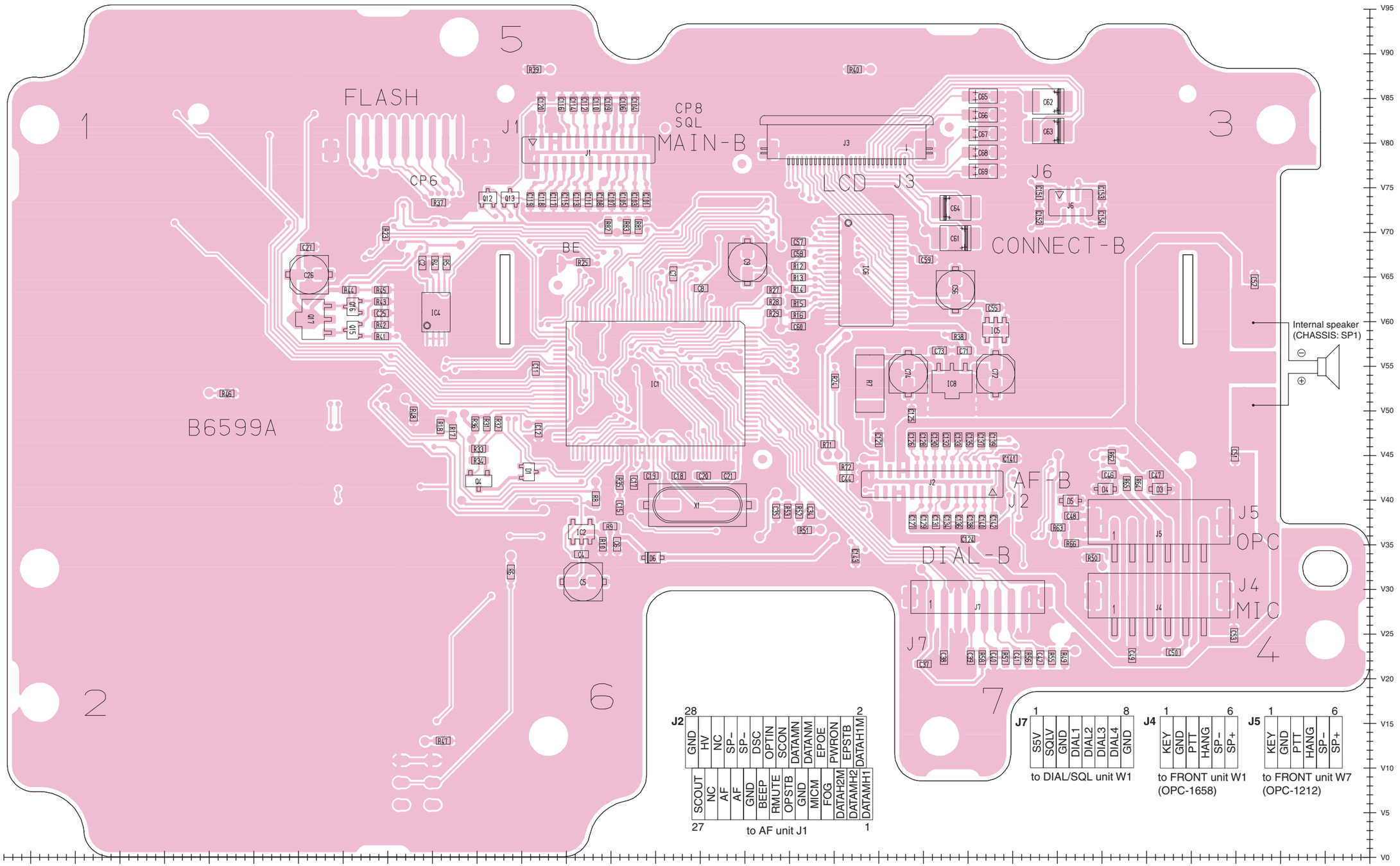
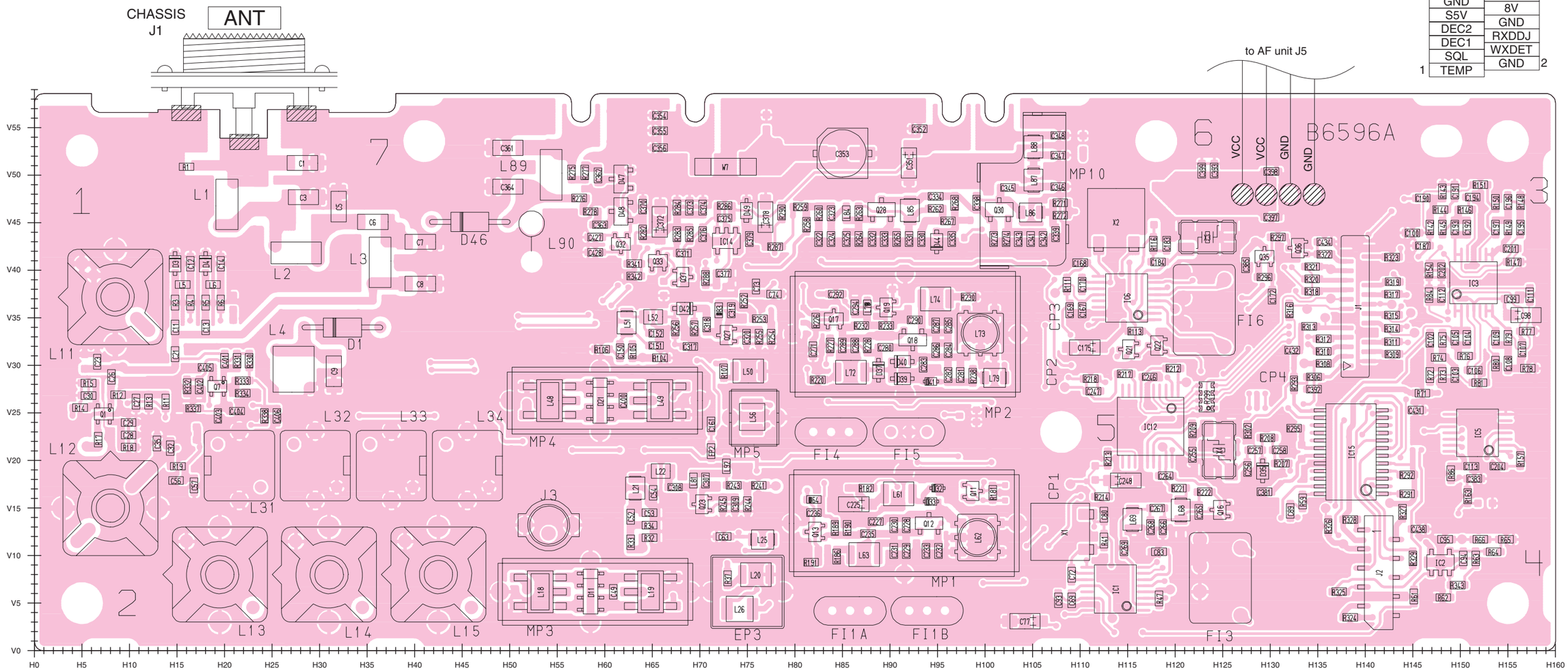


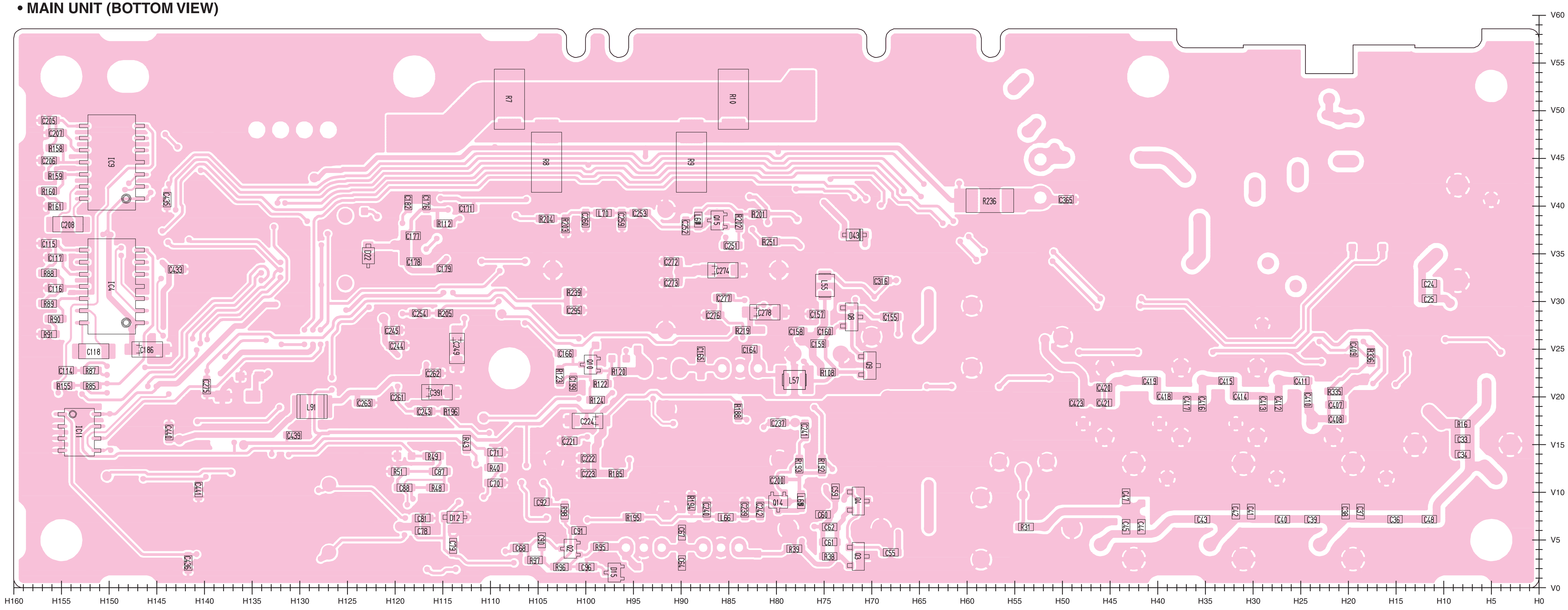
The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.

9-6 MAIN UNIT (TOP VIEW)



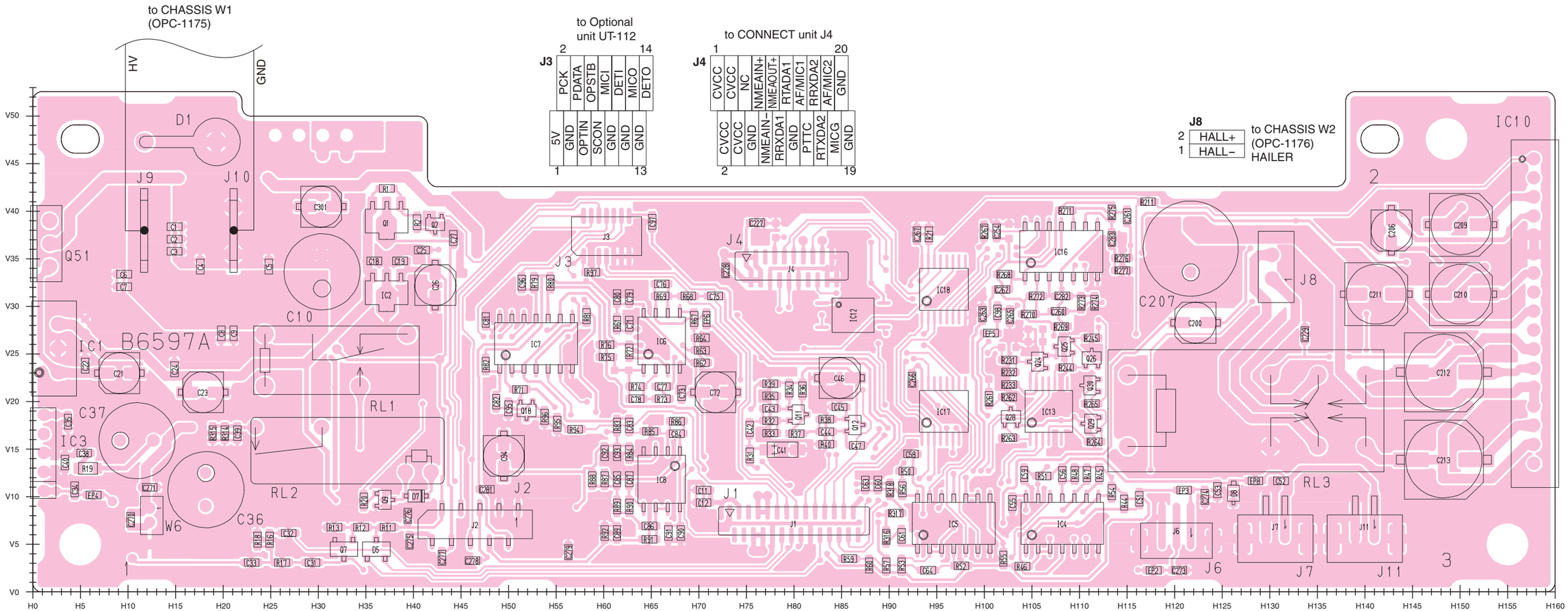
The combination of this page and the previous page shows the unit layout in the same configuration as the actual P.C. Board.

• MAIN UNIT (BOTTOM VIEW)



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

9-7 AF UNIT (TOP VIEW)



W6
1 SP−
2 SP+
to CONNECT unit J5

J2
9 1
S5V PCK HLVL NWC GND
8V R8 PDATA MOD DET
10 2
to MAIN unit J2

J1
1 27
GND HV NC SP− SP− DSC OPTIN SCON DATAMN DATANM EPOE PWRON EPSTB DATAH1M
SCOUT NC AF AF GND BEEP RMUTE OPSTB GND MICM FOG DATAH2M DATAMH2 DATAMH1
2 to LOGIC unit J2 28

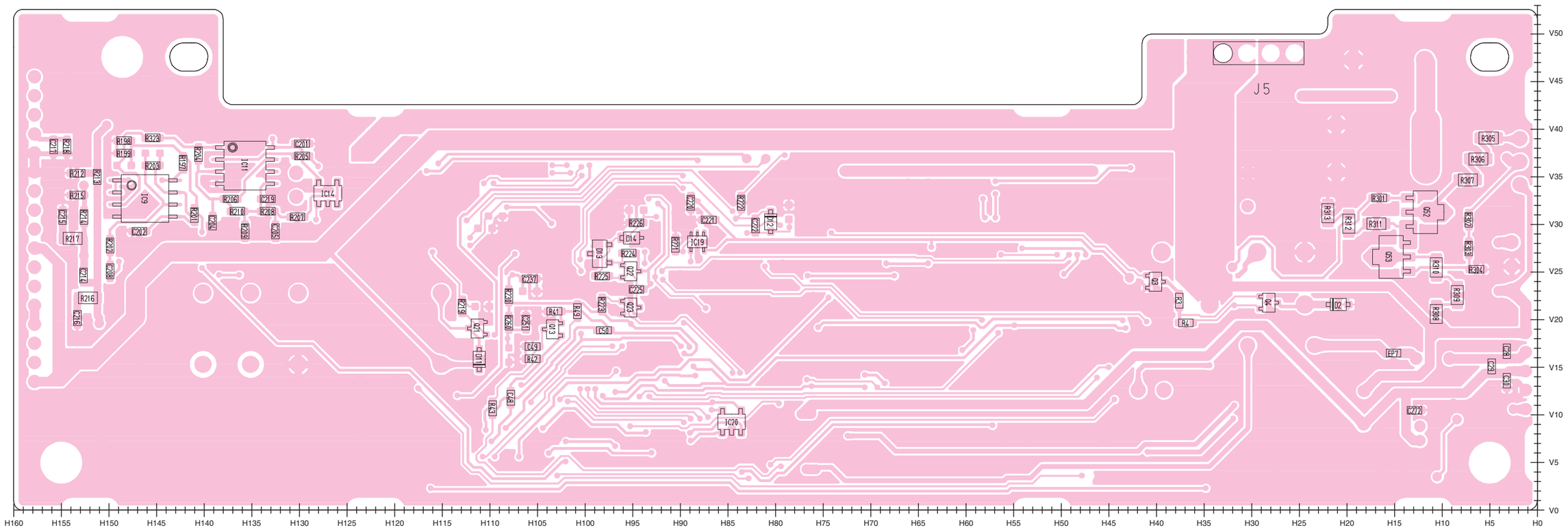
J6
GND VOL2 VOL1
3 1
to VR unit W1

J7
MICG MIC
2 1
to FRONT unit W1
(OPC-1658)

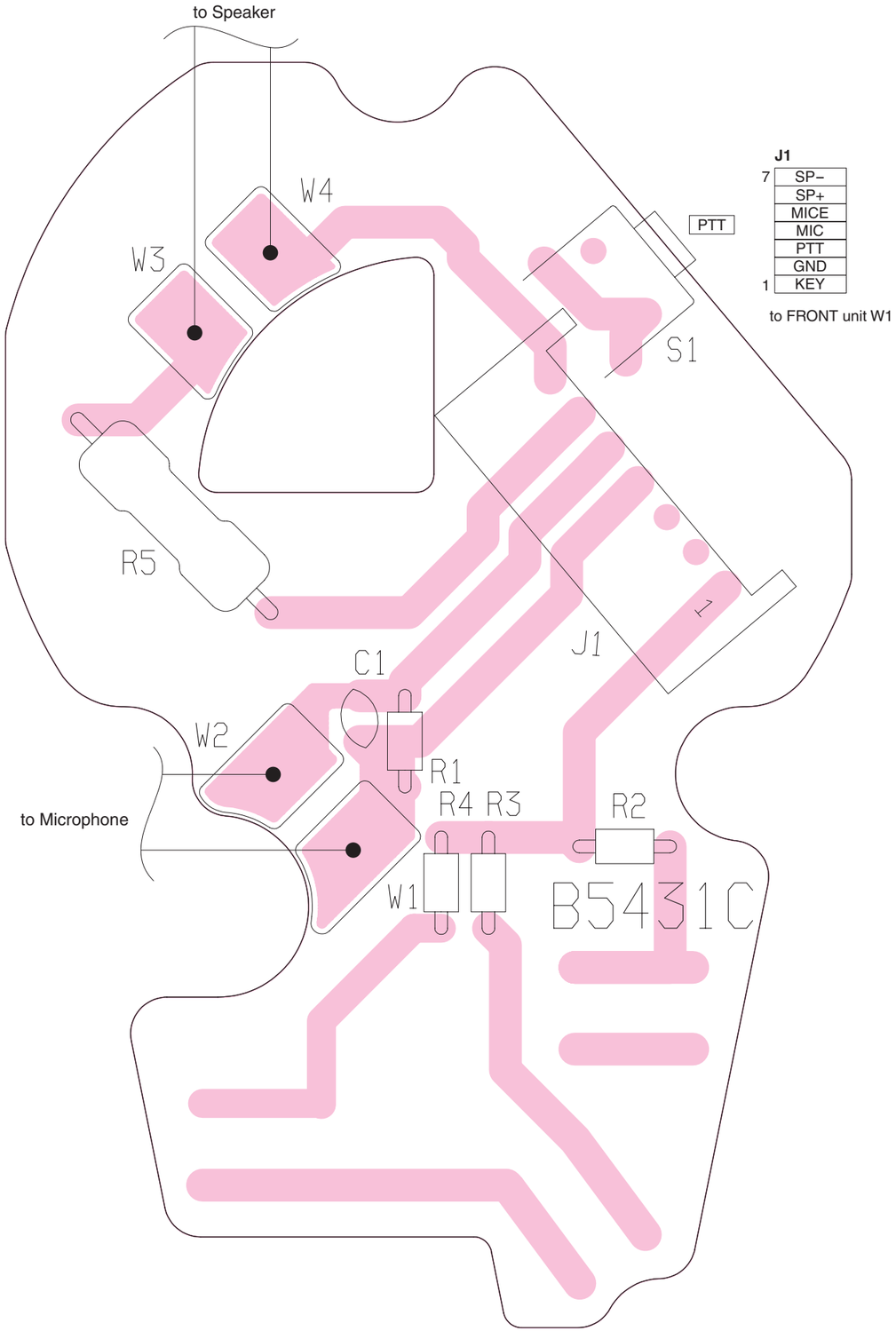
J11
MICG MIC
2 1
to CHSSIS W7
(OPC-1212)

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

• AF UNIT (BOTTOM VIEW)

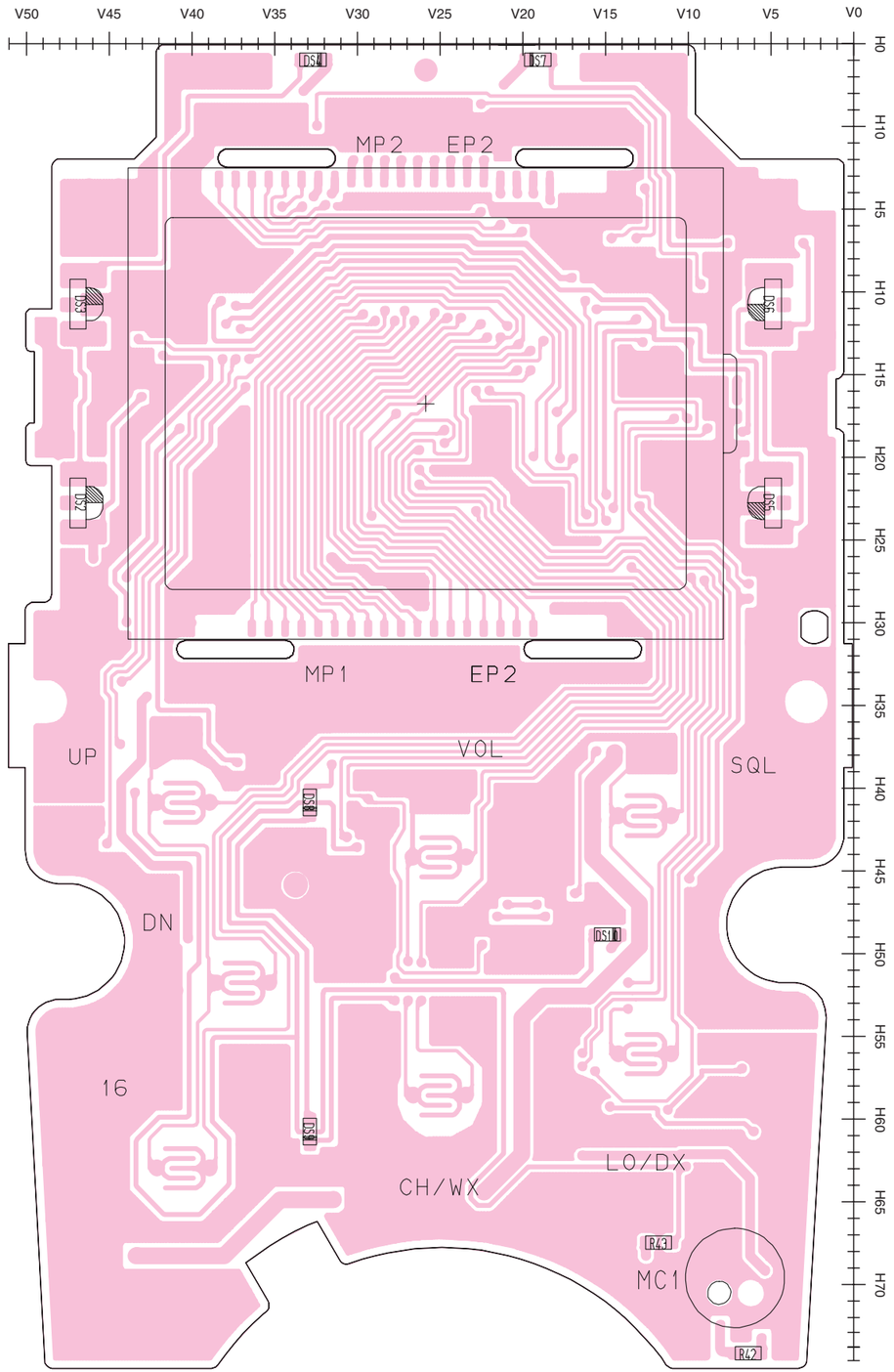


9-8 HM-126RB/RG (TOP VIEW)



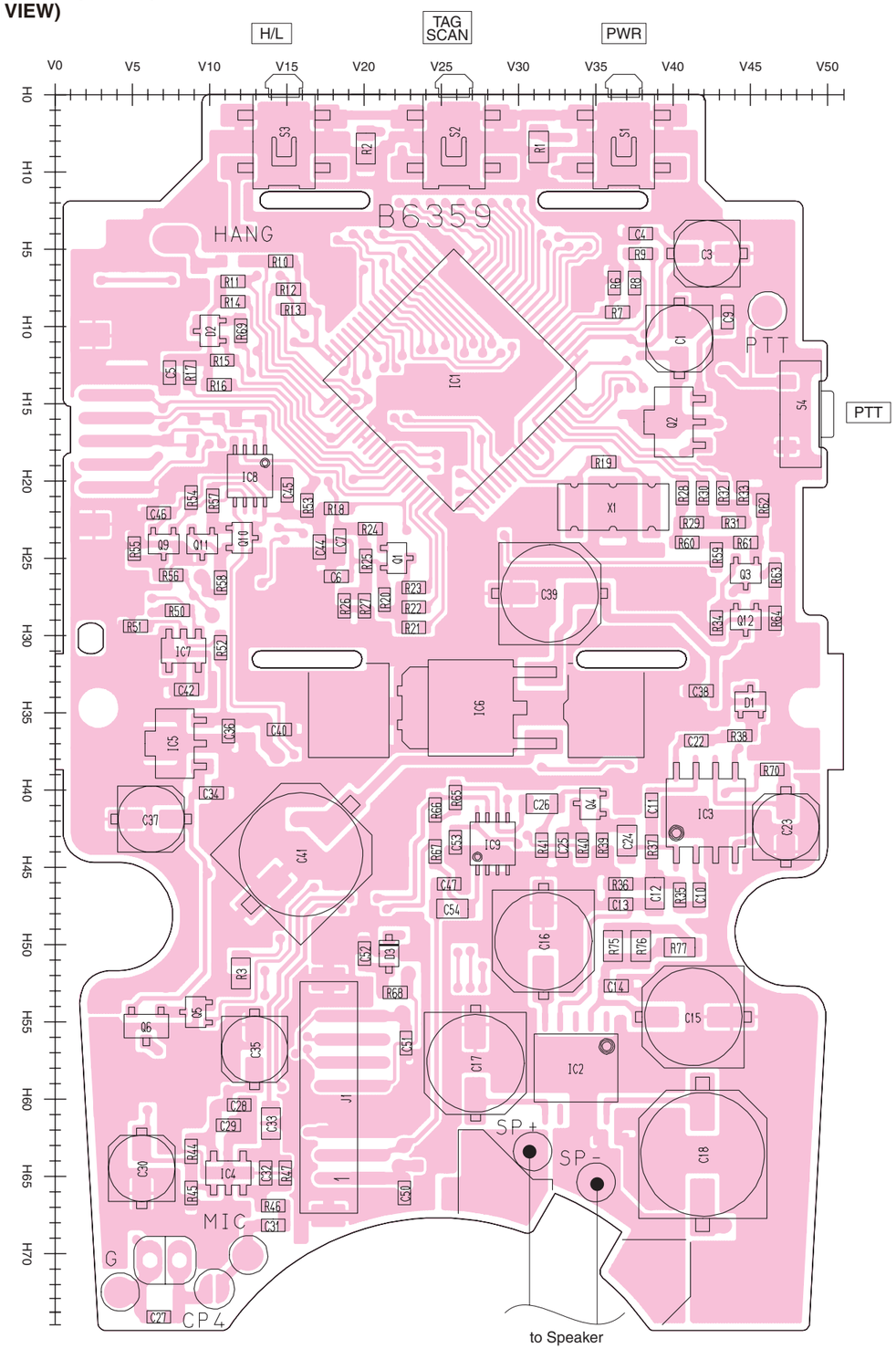
The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.

9-9 HM-157 (Optional product) (TOP VIEW)

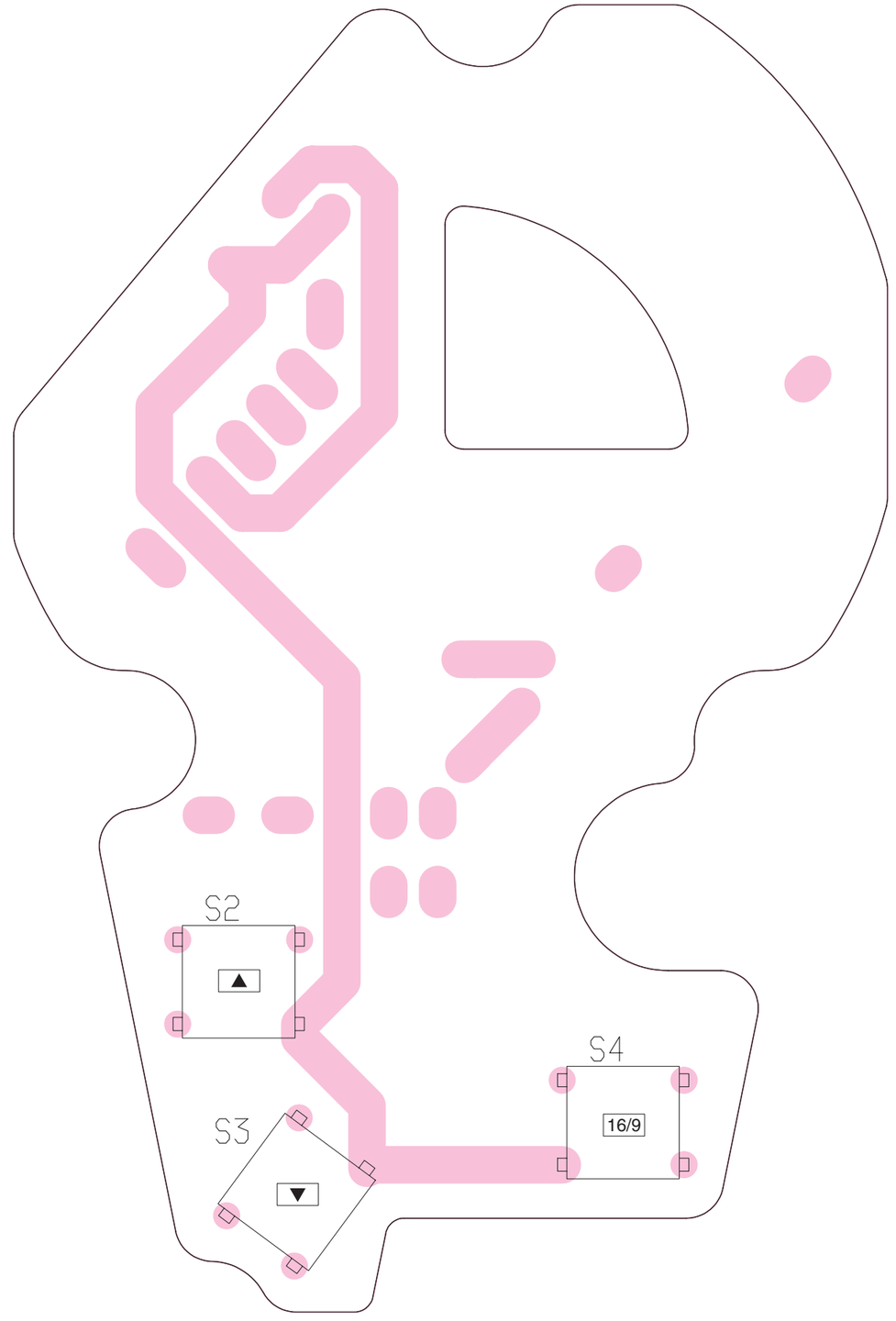


The combination of this page and the previous page shows the unit layout in the same configuration as the actual P.C. Board.

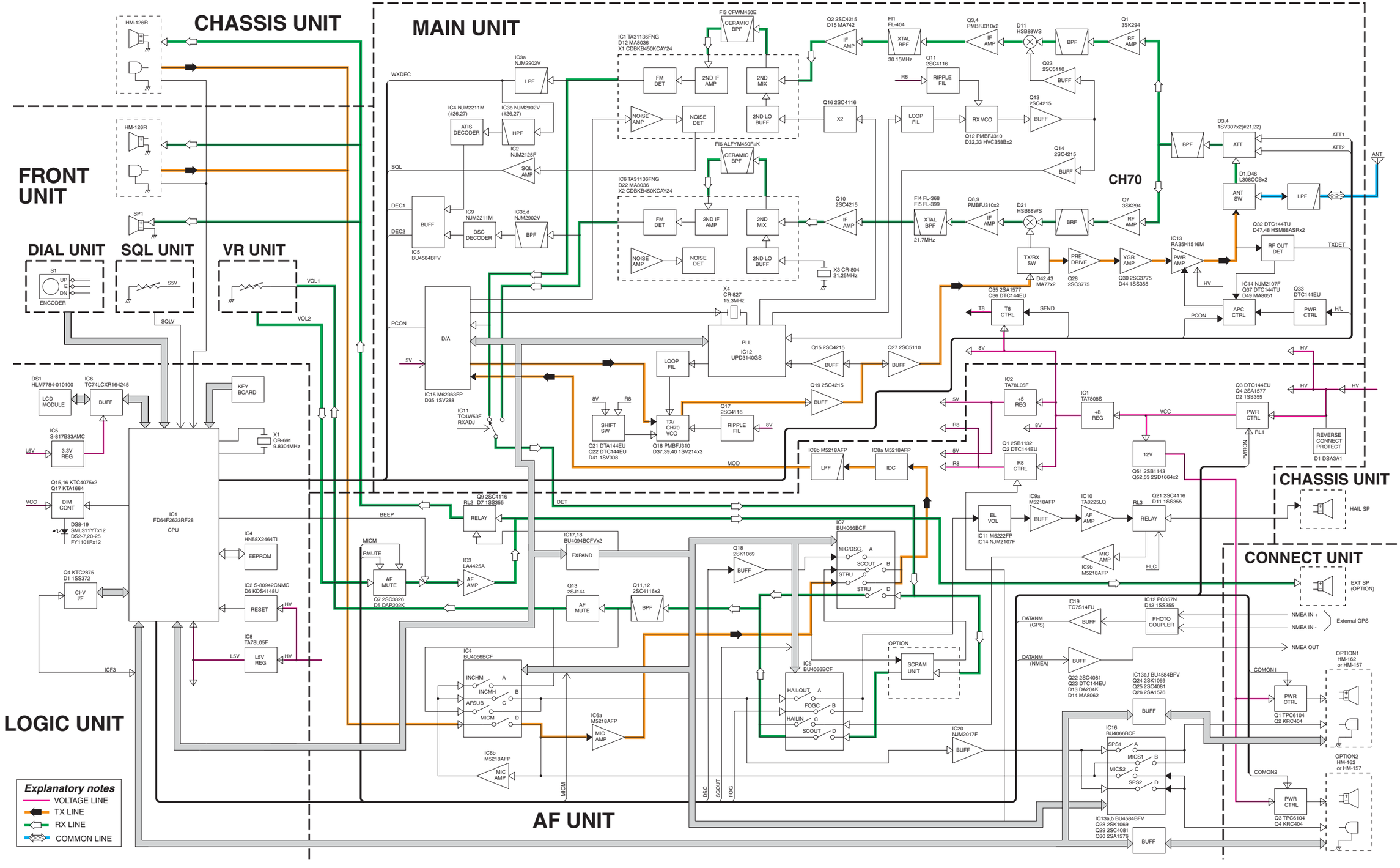
• HM-157 (Optional product)
(BOTTOM VIEW)



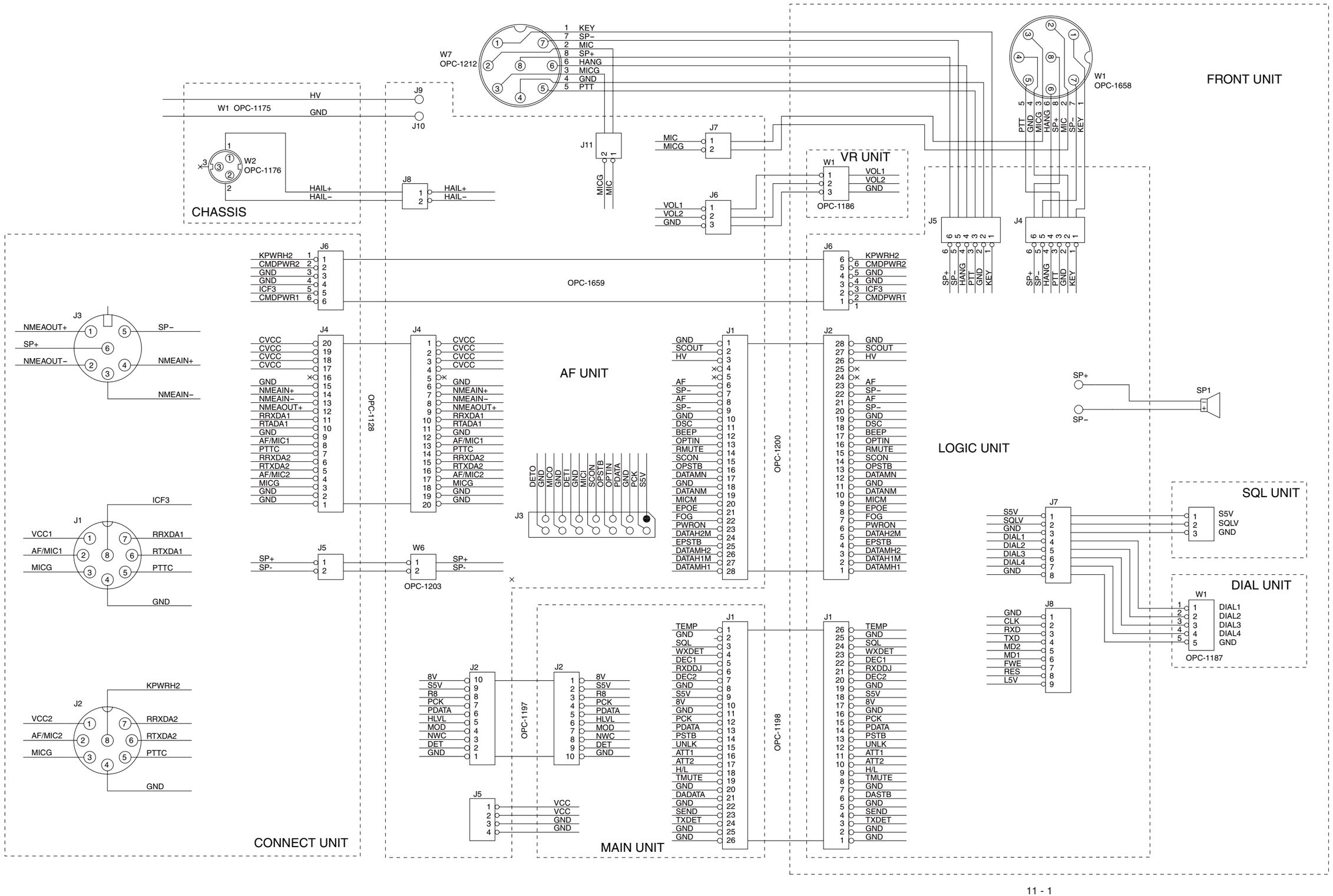
• HM-126RB-RG (BOTTOM VIEW)



SECTION 10 BLOCK DIAGRAM

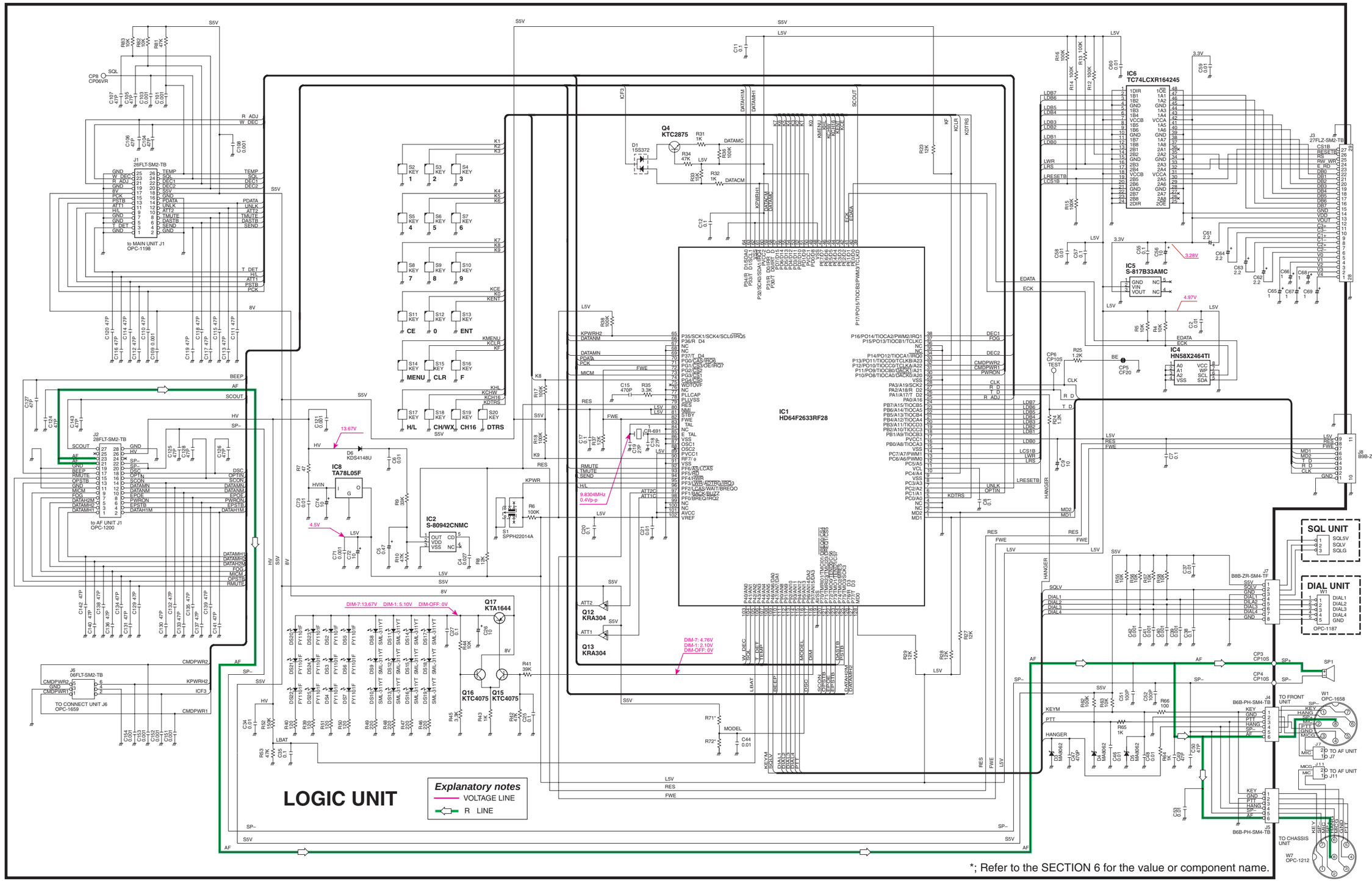


SECTION 11 WIRING DIAGRAM

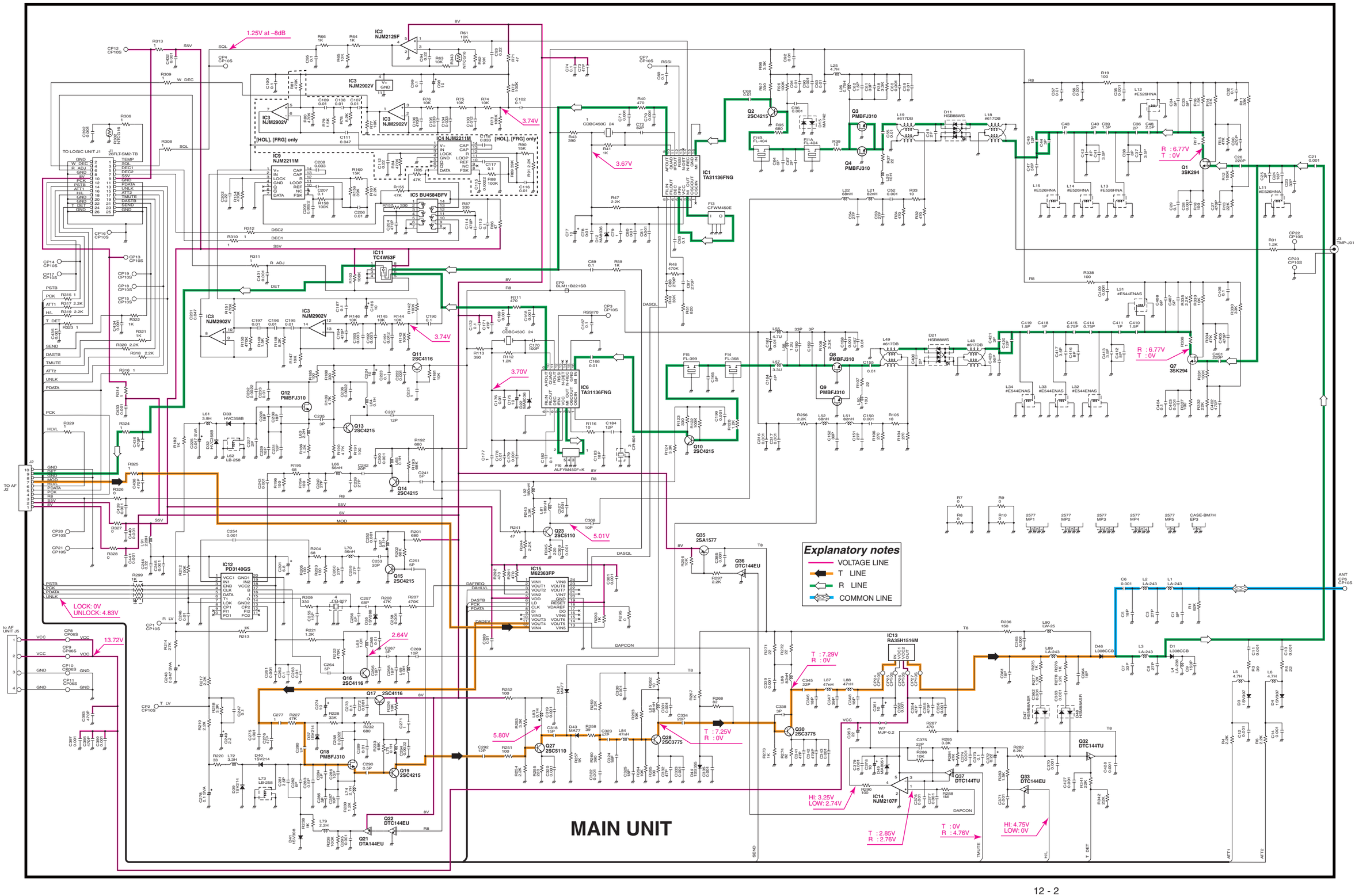


SECTION 12 VOLTAGE DIAGRAMS

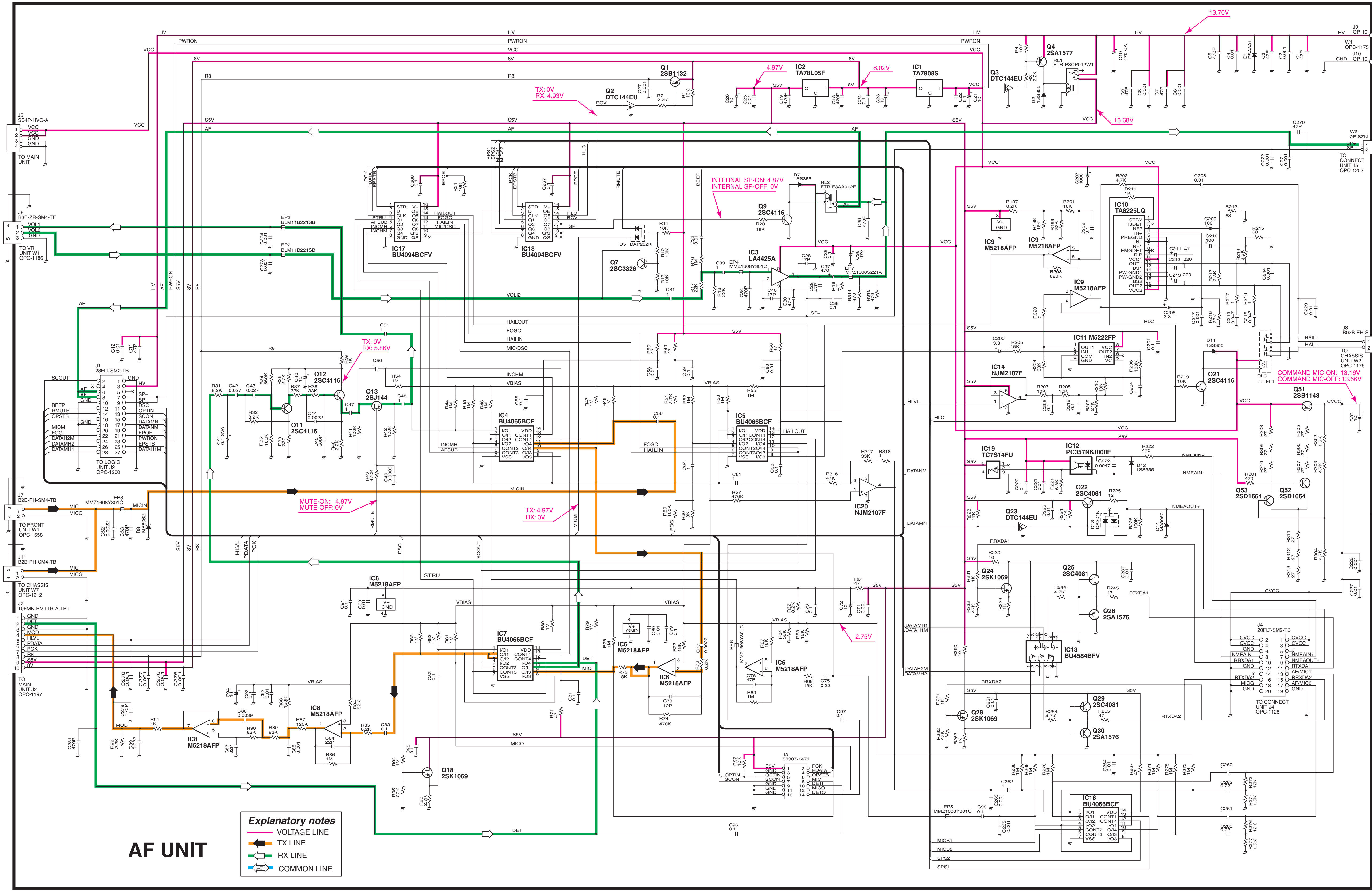
12-1 LOGIC UNIT



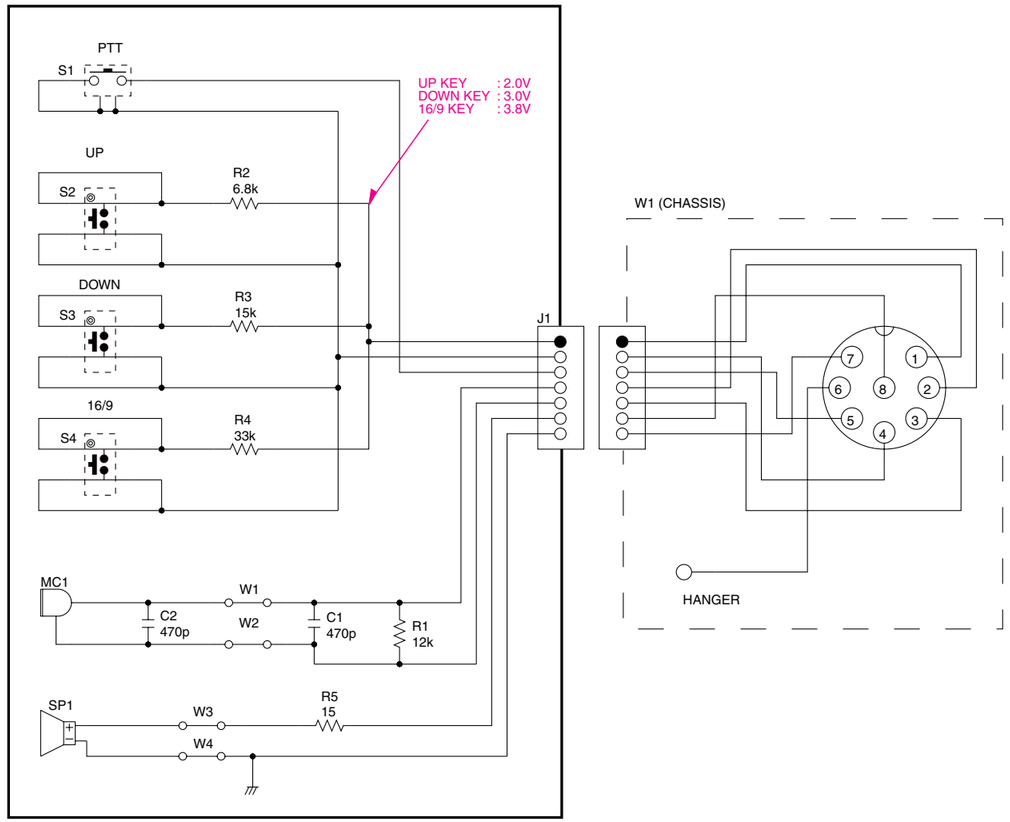
12-2 MAIN UNIT



12-3 AF UNIT

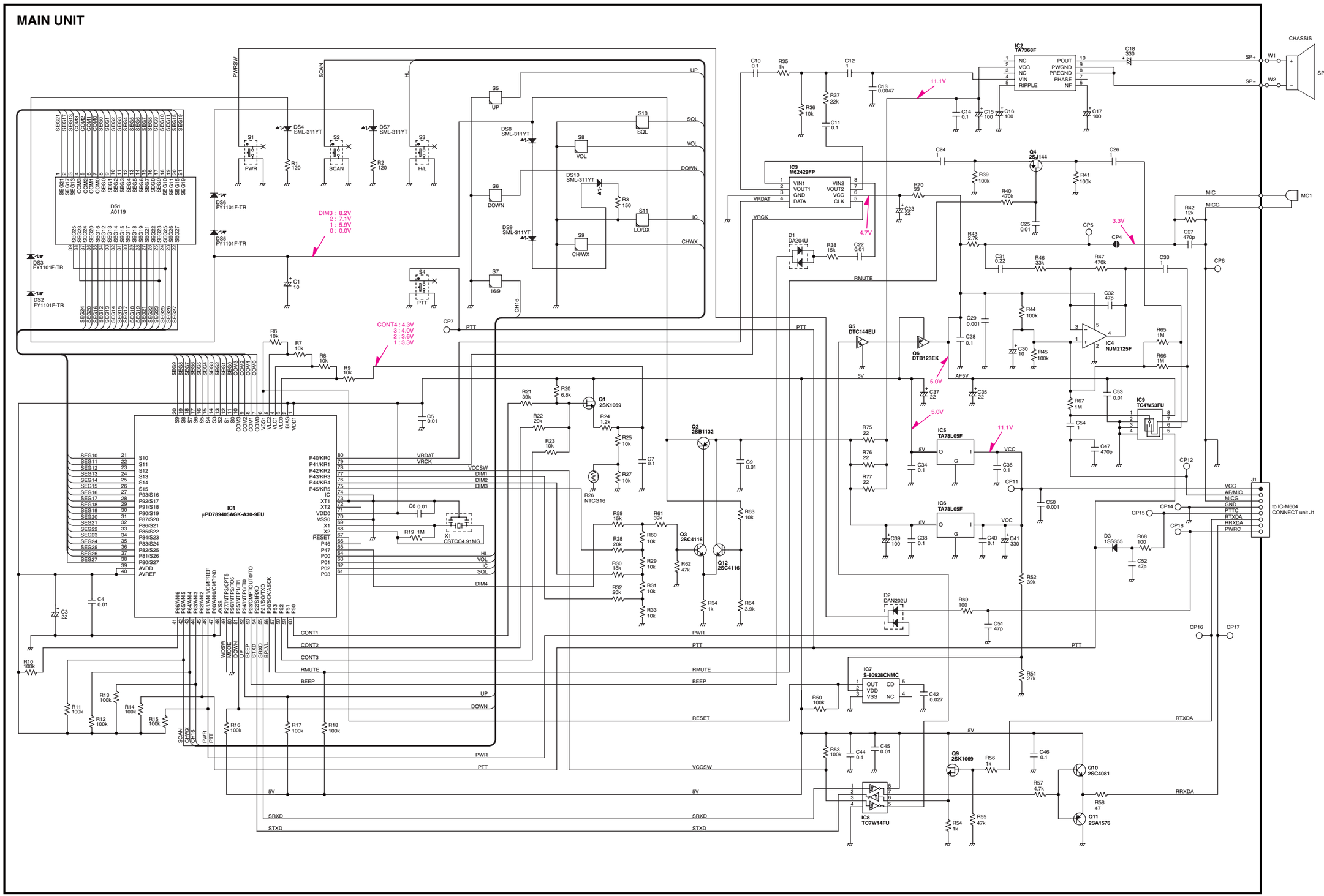

AF UNIT
Explanatory notes
VOLTAGE LINE
TX LINE
RX LINE
COMMON LINE
13.70V
13.68V
4.97V
8.02V
TX: 0V
RX: 4.93V
INTERNAL SP-ON: 4.87V
INTERNAL SP-OFF: 0V
TX: 0V
RX: 5.86V
MUTE-ON: 4.97V
MUTE-OFF: 0V
TX: 4.97V
RX: 0V
2.75V
COMMAND MIC-ON: 13.16V
COMMAND MIC-OFF: 13.56V
J5 SB4P-HVQ-A
TO MAIN UNIT
J6 B3B-ZR-SM4-TF
TO VR UNIT W1 OPC-1186
J1 28FLT-SM2-TB
TO LOGIC UNIT J2 OPC-1200
J7 B2B-PH-SM4-TB
TO FRONT UNIT W1 OPC-1658
J11 B2B-PH-SM4-TB
TO CHASSIS UNIT W7 OPC-1212
J2 10FMN-BMTTR-A-TBT
TO MAIN UNIT J2 OPC-1197
J3 S3307-1471
J4 20FLT-SM2-TB
TO CONNECT UNIT J4 OPC-1128
J8 B2B-EH-S
TO CHASSIS UNIT W2 OPC-1176
W6 2P-SZN
OPTION
TO CONNECT UNIT J5 OPC-1203
J9 OP-10
J10 OP-10
W1 OPC-1175
To CHASSIS UNIT
IC1 TA7808S
IC2 TA78L05F
IC3 LA4425A
IC4 BU4066BCF
IC5 BU4066BCF
IC6 M5218AFP
IC7 BU4066BCF
IC8 M5218AFP
IC9 M5218AFP
IC10 TA8225LQ
IC11 M5222FP
IC12 PC357N6J000F
IC13 BU4584BFV
IC14 NJM2107F
IC16 BU4066BCF
IC17 BU4094BCFV
IC18 BU4094BCFV
IC19 TC7S14FU
IC20 NJM2107F
Q1 2SB1132
Q2 DTC144EU
Q3 DTC144EU
Q4 2SA1577
Q7 2SC3326
Q9 2SC4116
Q11 2SC4116
Q12 2SC4116
Q13 2SJ144
Q18 2SK1069
Q21 2SC4116
Q22 2SC4081
Q23 DTC144EU
Q24 2SK1069
Q25 2SC4081
Q26 2SA1576
Q28 2SK1069
Q29 2SC4081
Q30 2SA1576
Q51 2SB1143
Q52 2SD1664
Q53 2SD1664
RL1 FTR-P3CP012W1
RL2 FTR-F3AA012E
RL3 FTR-F1
EP3 BLM11B221SB
EP2 BLM11B221SB
EP4 MMZ1608Y301C
EP5 MMZ1608Y301C
EP7 MPZ1608S221A
EP8 MMZ1608Y301C
D5 DAP202K
D7 1SS355
D11 1SS355
D12 1SS355

12-4 HM-126RB/RG



12-5 HM-157 (Optional product)

MAIN UNIT



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