



SERVICE MANUAL

VHF MARINE TRANSCEIVERS

IC-M220
IC-M220G

S-15506XZ-C1
October 2018

Icom Inc.

INTRODUCTION

This service manual describes the latest technical information for the IC-M220/IC-M220G VHF MARINE TRANSCEIVERS at the time of publication.

MODEL	VERSION	VERSION NUMBER	GPS
IC-M220	USA	#11	—
	EXP	#13	
IC-M220G	USA	#21	✓

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

SERVICE CAUTION

NEVER connect the transceiver to a DC power supply that uses more than the specified voltage. This will ruin the transceiver.

DO NOT reverse the polarities of the power supply when directly applying power to the transceiver/circuit.

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.



IC-M220/IC-M220G

ORDERING PARTS

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

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

<ORDER EXAMPLE>

1110010000	AT1846S	IC-M220	MAIN UNIT	5 pieces
8930100330	4048 IC CLIP	IC-M220	CHASSIS	1 piece

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

REPAIR NOTES

1. Make sure that the 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** short any circuits or electronic parts.
4. **DO NOT** keep power ON for a long time when the transceiver is defective.
5. **NEVER** directly transmit power into any test equipment such as Standard Signal Generator or a Sweep Generator, otherwise the RF power may damage them.
6. **ALWAYS** connect a 40 dB attenuator between the transceiver and such test equipment.
7. **READ** the instructions of the test equipment thoroughly before connecting it to the transceiver.
8. If the front panel and chassis are separated and reassembled, waterproof performance will not be guaranteed unless the specified waterproof check is performed.

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■ General

- **Frequency coverage:**

TX	156.025 ~ 157.425 MHz
RX	156.050 ~ 163.275 MHz
DSC receiver	156.525 MHz
- **Type of emission:** 16K0G3E, 16K0G2B
- **Antenna impedance:** 50 Ω (nominal)
- **Operating temperature range:** -20°C ~ +60°C (-4°F ~ +140°F)
- **Power supply voltage:** 13.8 V DC nominal (11.7~15.9 V DC) negative ground
- **Current drain:**

Receiving	Maximum 1.2 A (at maximum audio)
Transmitting	Maximum 5.0 A (at 25 W)
- **Dimensions :** 156.5 (W)×66.5 (H)×110.1 (D) mm (6.2 (W)×2.6 (H)×4.3 (D) inches)
- **Weight (approximate):** 700 g (1 lb 9 oz); including HM-237B

■ Transmitter

- **Output power:**

25 W (High power)
1 W (Low power)
- **Modulation:**

Analog	Frequency modulation
DSC	Frequency shift keying modulation
- **Maximum frequency deviation:** ± 5 kHz
- **Frequency tolerance:** ± 5 ppm
- **Spurious emissions:** Less than -60 dBc
- **Adjacent channel power:** More than 65 dB
- **Audio harmonic distortion:** Less than 10% (at 60% deviation)
- **Residual modulation:** More than 40 dB
- **Audio frequency response:** +1 ~ -3 dB of 6 dB octave from 500 ~ 2500 Hz
- **Input impedance (Microphone):** 2 k Ω

■ Receiver

- **Sensitivity:**

Transceiver	-13 dB μ typical (at 12 dB SINAD)
DSC receiver	-5 dB μ emf typical (at 1% BER)
- **Squelch sensitivity:** Less than -10 dB μ
- **Adjacent channel selectivity:**

Transceiver	More than 68 dB
DSC receiver	More than 68 dB μ emf (at 1% BER)
- **Intermodulation:**

Transceiver	More than 63 dB
DSC receiver	More than 55 dB μ emf (at 1% BER)
- **Hum and Noise:** More than 40 dB
- **Audio frequency response:** +1 ~ -3 dB of -6 dB octave from 500 ~ 2500 Hz
- **Audio output power:** 4.5 W typical (at 10% distortion into the 4 Ω load)
- **Output impedance (Speaker):** 4 Ω

■ GPS receiver (for only IC-M220G)

- **Receive frequency:** 1575.42 MHz
- **Number of receive channels:**

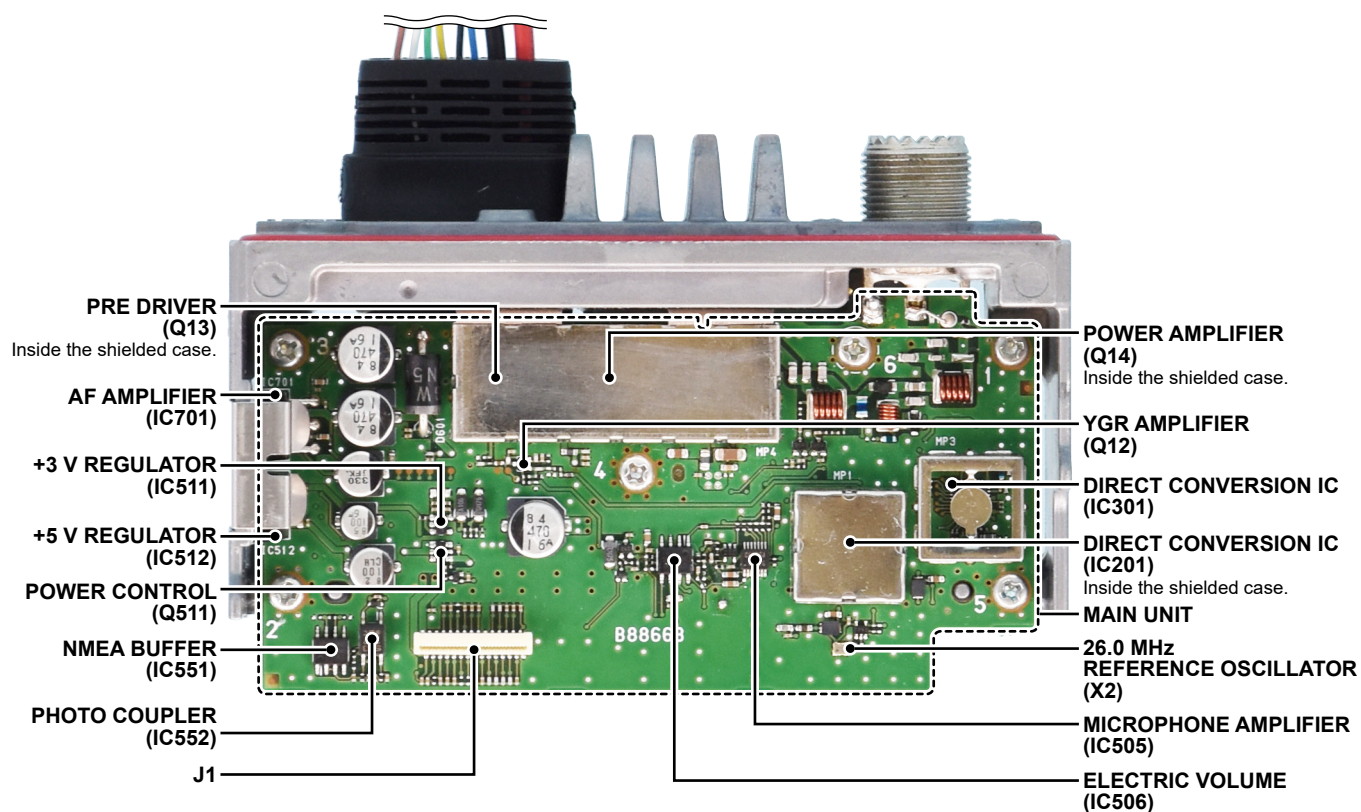
For acquisition	Maximum 24 channels
For calculation	Maximum 12 channels
- **Differential satellite:** WAAS, EGNOS, MSAS, GAGAN
- **GLONASS receive frequency:** 1602 MHz

Measurements made in accordance with TIA-603/EIA-603B (transceiver) and IEC 62238 (DSC receiver, GPS receiver).
All stated specifications are typical and subject to change without notice or obligation.

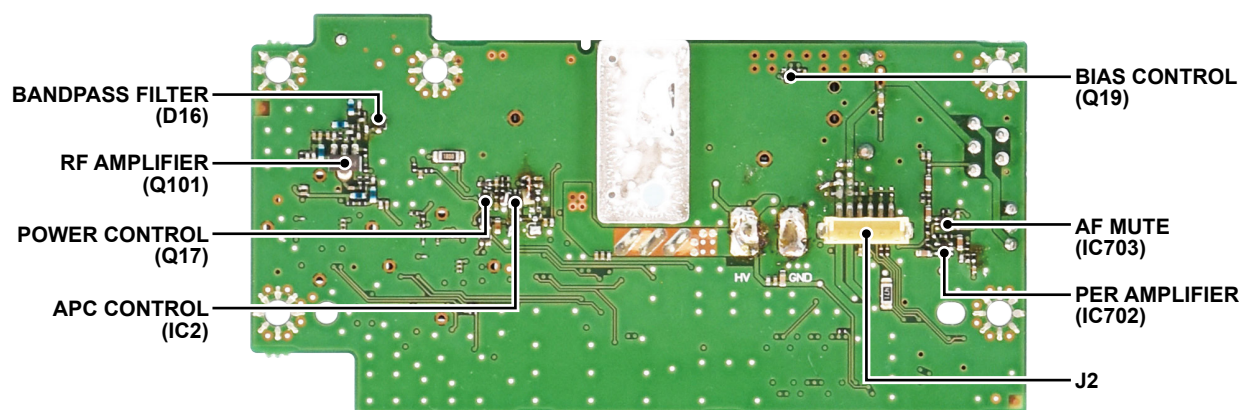
SECTION 2

INSIDE VIEWS

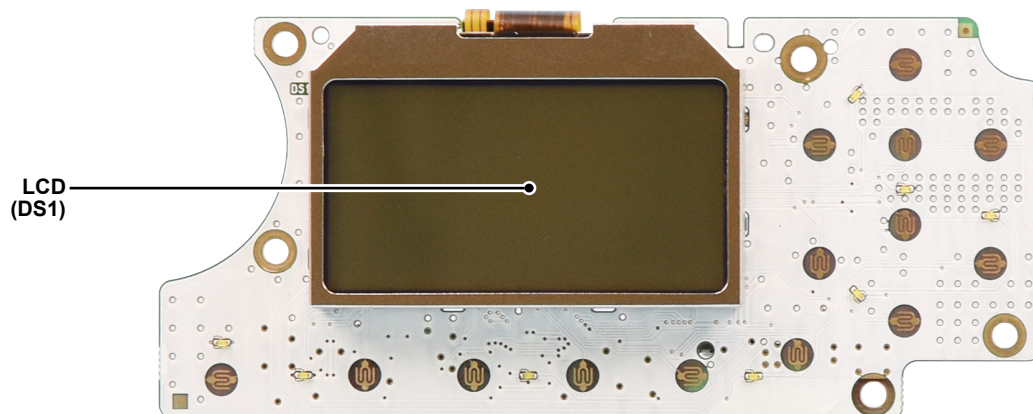
• MAIN UNIT (TOP VIEW)



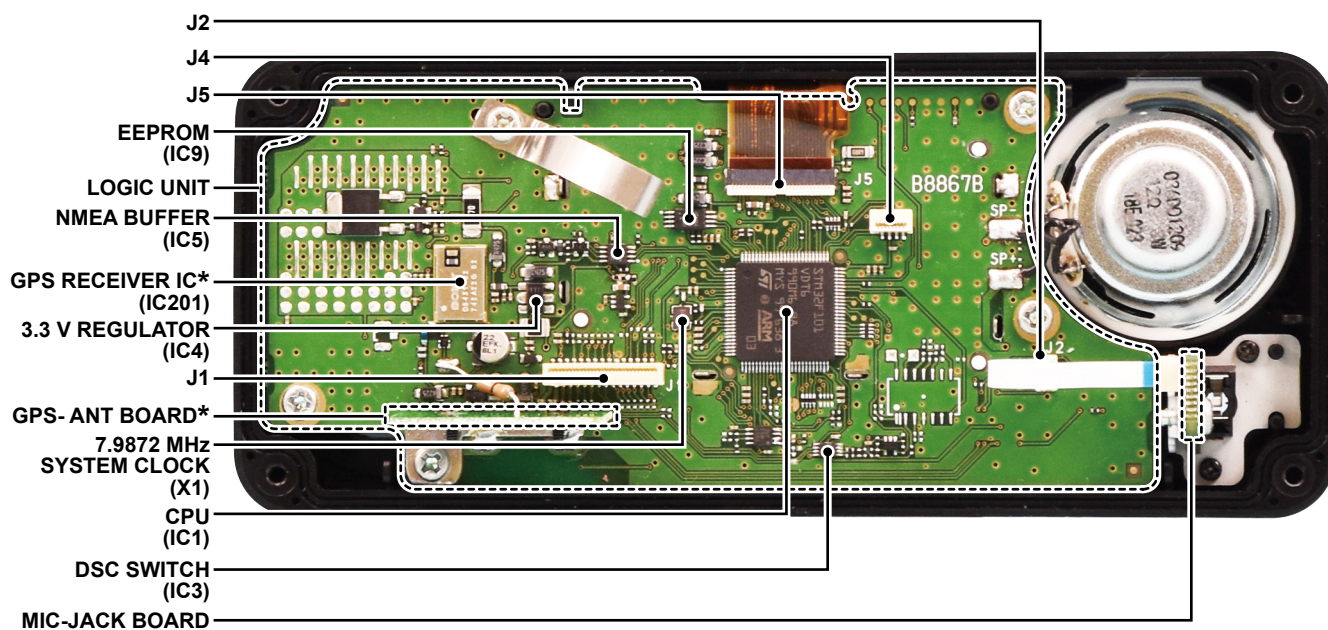
• MAIN UNIT (BOTTOM VIEW)



• LOGIC UNIT (TOP VIEW)



• LOGIC UNIT (BOTTOM VIEW)

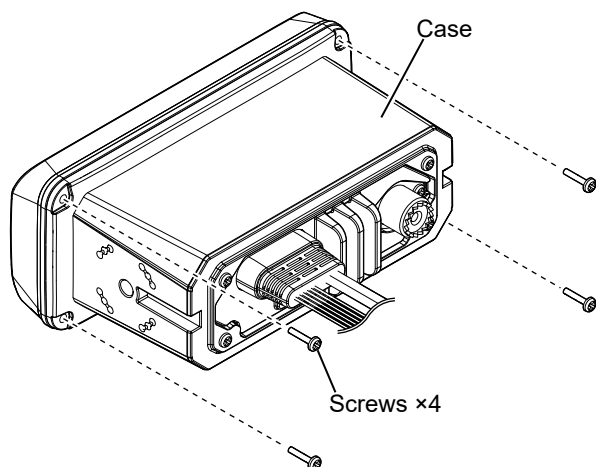


* Available only with the IC-M220G.

SECTION 3 DISASSEMBLY INSTRUCTIONS

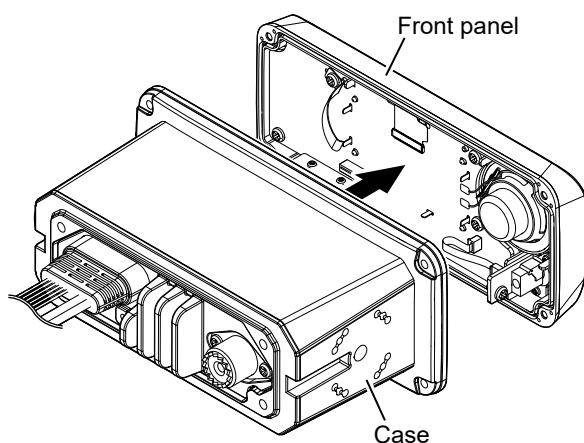
1. REMOVING THE FRONT PANEL

- 1) Remove the 4 screws from the case.

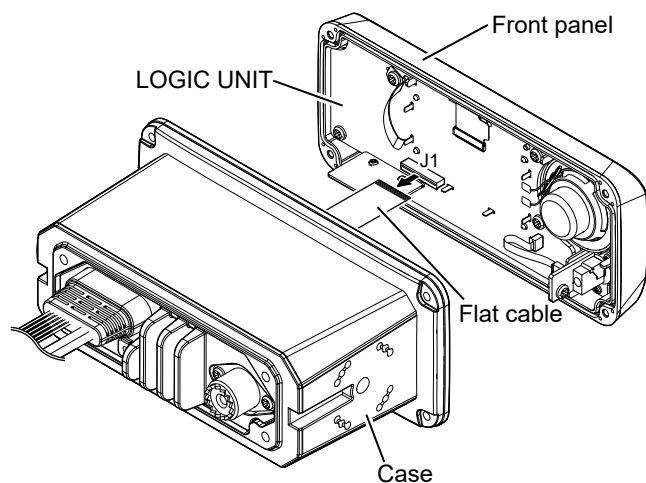


- 2) Separate the front panel from the case.

BE CAREFUL about the flat cable when separating the front panel from the case.

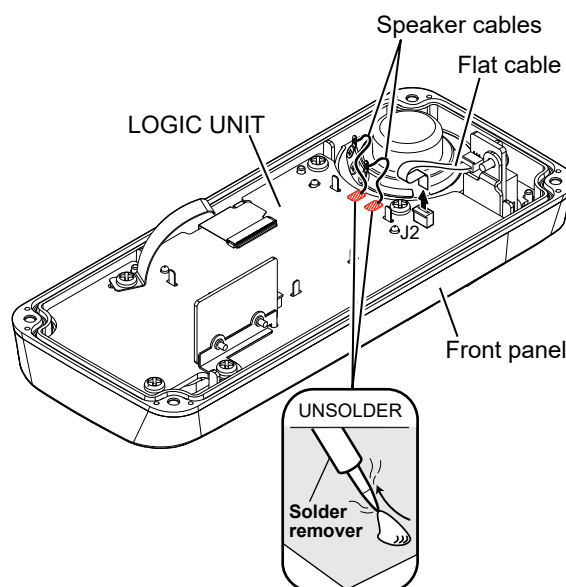


- 3) Disconnect the flat cable from the LOGIC UNIT.

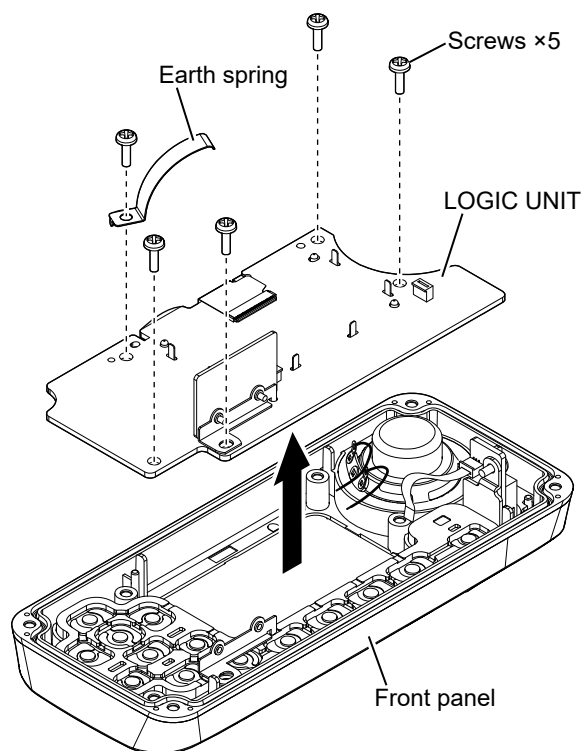


2. REMOVING THE LOGIC UNIT

- 1) Unsolder the 2 points of the speaker cables, and disconnect the flat cable from the LOGIC UNIT.

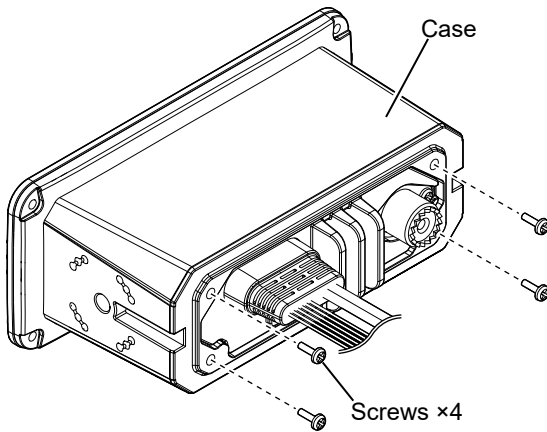


- 2) Remove the 5 screws, and then remove the LOGIC UNIT and the earth spring from the front panel.

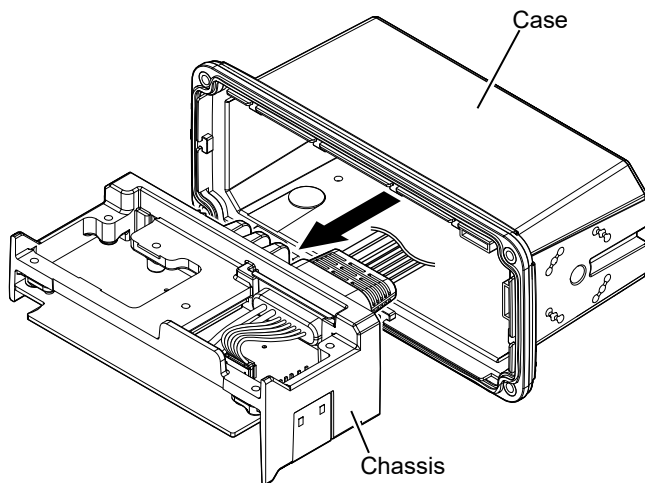


3. REMOVING THE MAIN UNIT

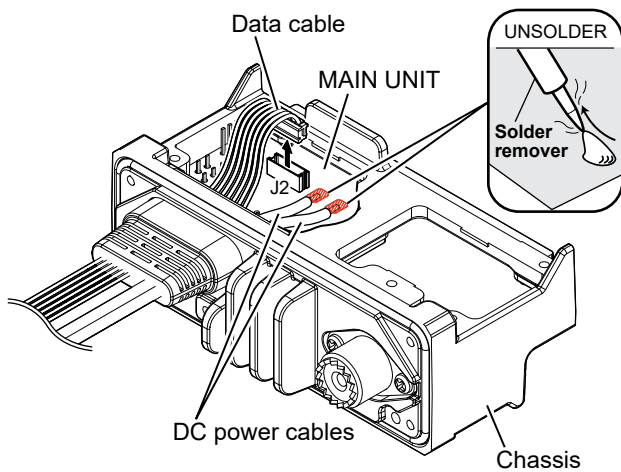
1) Remove the 4 screws from the case.



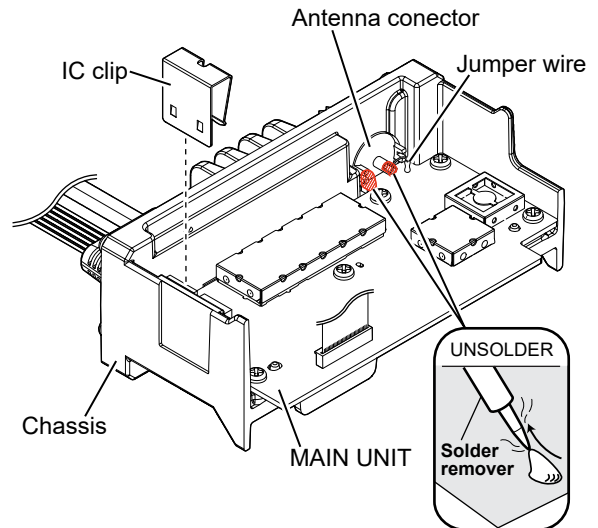
2) Separate the chassis from the case.



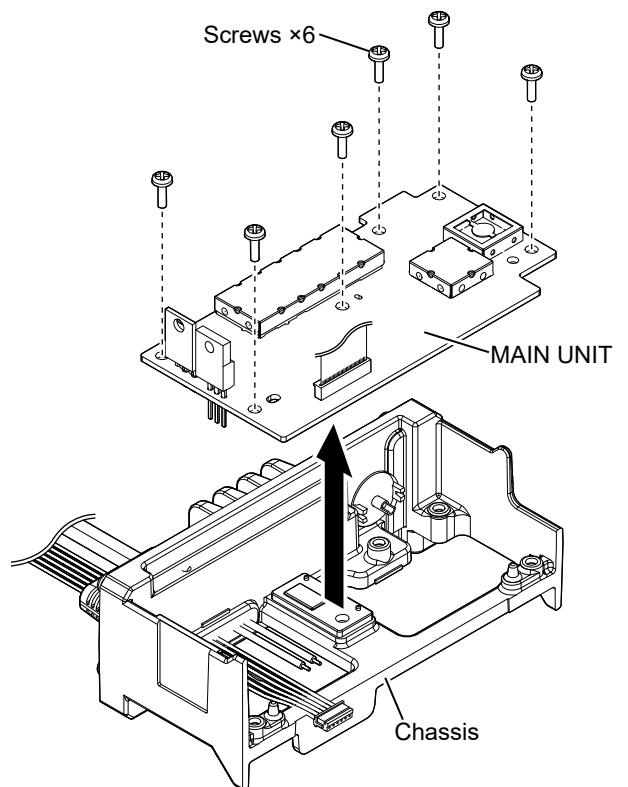
3) Unsolder the 2 points of the DC power cables, and disconnect the data cable from the MAIN UNIT.



4) Unsolder the 2 points of the antenna connector, and remove the IC clip from the MAIN UNIT.



5) Remove the 6 screws, and then remove the MAIN UNIT from the chassis.



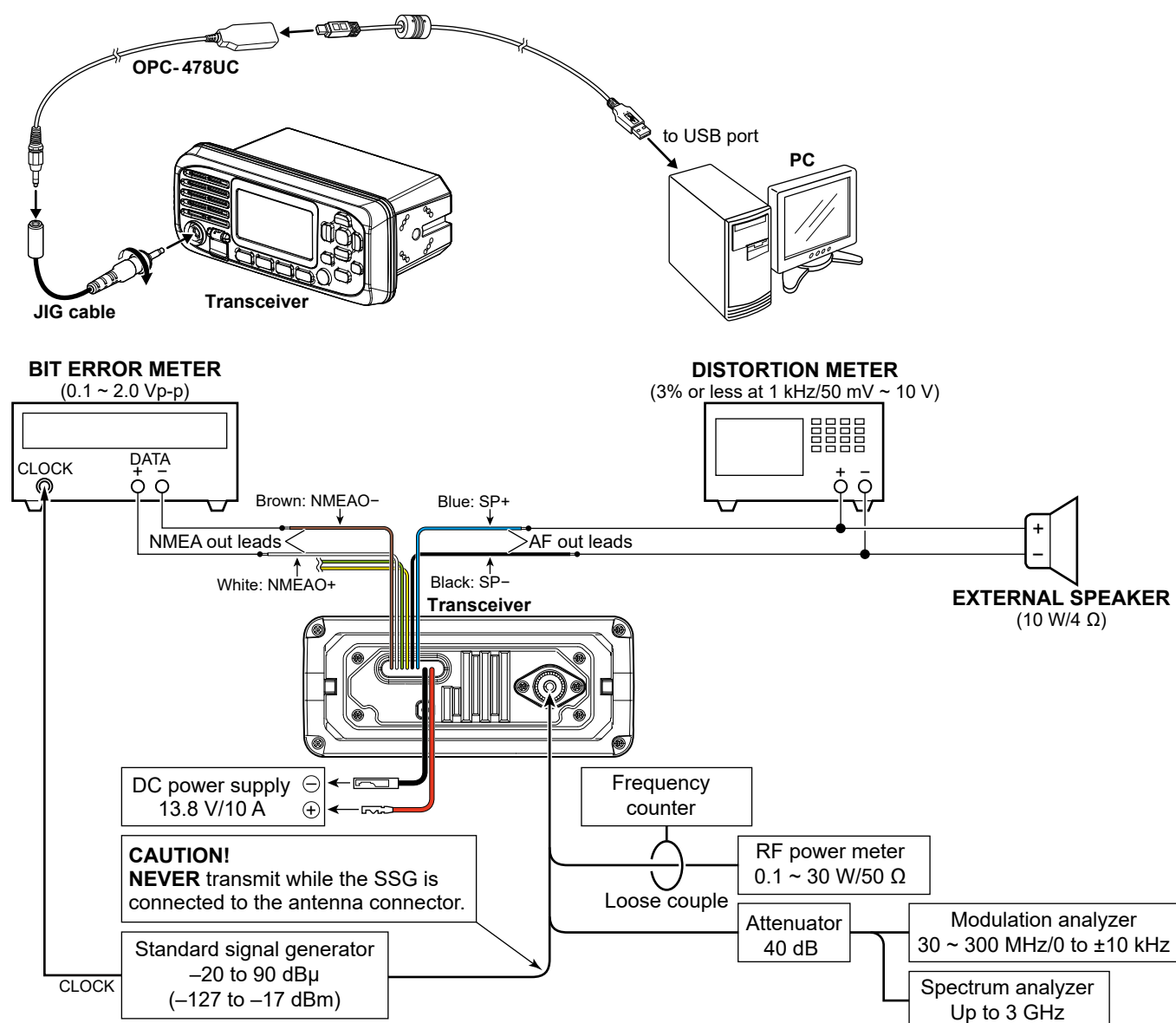
SECTION 4 ADJUSTMENT PROCEDURE

4-1 PREPARATION

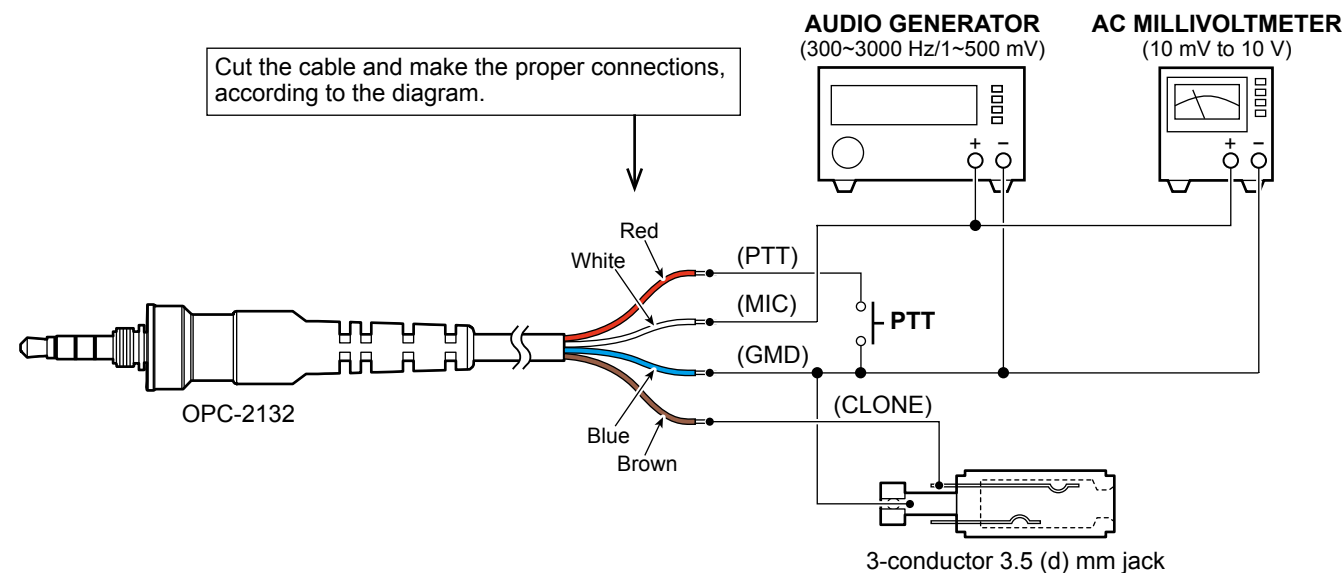
■ REQUIRED EQUIPMENT

EQUIPMENT	GRADE AND RANGE	EQUIPMENT	GRADE AND RANGE
Programming software	CS-M220 PROGRAMMING SOFTWARE (Revision 1.00 or later)	JIG cable	Modified OPC-2132 (See the illustration shown on page 4-2.)
Programming cable	OPC-478UC	Standard signal generator (SSG) ★ With the pseudo random code sending function or the pulse duty setting function.	Frequency range: 0.1~300 MHz Output level: -20 dBμ to 90 dBμ (-127 to -17 dBm)
RF power meter (50 Ω terminated)	Measuring range: 0.1 ~ 30 W Frequency range: 100 ~ 300 MHz SWR: Less than 1.2 : 1	Frequency counter	Frequency range: 0.1 ~ 300 MHz Frequency accuracy: ±1 ppm or better
AC millivoltmeter	Measuring range: 10 mV to 10 V	Attenuator	Power attenuation: 40 dB Capacity: More than 30 W
Modulation analyzer	Frequency range: 30 ~ 300 MHz Measuring range: 0 to ±10 kHz	External speaker	Input impedance: 4 Ω Capacity: More than 10 W
Oscilloscope	Frequency range: DC ~ 20 MHz Measuring range: 0.01 ~ 20 V	Distortion meter	Measuring accuracy: 3% or less at 1 kHz Input level: 50 mV to 20 V
Audio generator (AG)	Frequency range: 300 ~ 3000 Hz Output level: 1 ~ 500 mV		
Spectrum analyzer	Measuring range: Up to 3 GHz		
Bit error meter	Input level: 0.1 ~ 2.0 Vp-p		

■ CONNECTION



■ JIG CABLE



■ ADJUST UTILITY

Untitled - CS-M220

File View COM Port Program Model Adjust Help

IC-M220 (USA)

- Common
- DSC
- INT CH
- USA CH
- CAN CH
- WX CH
- Programmable CH
- Adjust Utility
- Adjust
- Output Data
- Parameter

Adjust Utility

Setting	
CH Group	USA
CH No.	16
RF Power	High
Inspection	OFF
AF Level	1
SQL Level	1
PTT	OFF

Adjust

TX Output Power	0	[-----]
RF Power (High)	40	[#####-----]
RF Power (Low)	25	[#####-----]
DSC (1300 Hz)	0	[#####-----]
DSC (2100 Hz)	0	[#####-----]
ATIS (1300 Hz)	0	[#####-----]
ATIS (2100 Hz)	0	[#####-----]
MSENS (INT)	9	[##-----]
RSSI (Tight)	31	[####-----] [Enter] to Capture
RSSI (Threshold)	21	[###-----] [Enter] to Capture
Noise (Threshold)	57	[#####-----] [Enter] to Capture

TX OUTPUT POWER

DEVIATION (DSC)

MODULATION SENSITIVITY

SQUELCH

4-2 FREQUENCY ADJUSTMENTS

1) Select an adjustment item using [↑]/[↓]/[←]/[→] on the PC's keyboard.

2) Set or modify the adjustment value as specified using [Space]/[Back Space] on the PC's keyboard.

ADJUSTMENT	TRANSCEIVER'S CONDITION	OPERATION	ADJUSTMENT ITEM	VALUE
REFERENCE FREQUENCY -Verification-	1 • Operating channel: 16 • Transmitting	- Connect the RF power meter (or dummy load) to the antenna connector. - Loosely coupled the frequency counter to the antenna connector. - No audio signal is applied to the FRONT MIC JACK.	—	156.800 MHz (±500 Hz)

4-3 RECEIVE ADJUSTMENTS

1) Select an adjustment item by pushing [↑]/[↓] on the PC keyboard.

2) Set or modify the adjustment value as specified by pushing [←]/[→], and then push [Enter] to store the value.

ADJUSTMENT	TRANSCEIVER'S CONDITION	OPERATION	ADJUSTMENT ITEM	VALUE
RECEIVE SENSITIVITY -Verification-	1 • Operating channel: 16 • Receiving	- Connect an standard signal generator (SSG) to the antenna connector and set it to: Frequency: 156.800 MHz Modulation: 1 kHz Deviation: ±3.0 kHz Level: -10 dBμ (-117 dBm) - Connect the distortion meter to SP+ (blue) and SP- (black) lines of the AF out leads.	—	12 dB SINAD or better
(Band low)	2 • Operating channel: 01 • Receiving	• Set the SSG to: Frequency: 156.050 MHz		
(Band high)	3 • Operating channel: 88 • Receiving	• Set the SSG to: Frequency: 157.425 MHz		
SQUELCH -Adjustment- (Threshold)	1 • Operating channel: 16 • Receiving	• Set the SSG to: Level: -13.5 dBμ (-120.5 dBm)	[RSSI (Threshold)]	Push [Enter] (Automatic adjustment)
(Tight)	2	• Set the SSG to: Level: -3.5 dBμ (-110.5 dBm)	[RSSI (Tight)]	
-Verification-	3 • Operating channel: 16 • SQL: 10 • Receiving	• Set the SSG to: Level: 0 dBμ (-107 dBm)	—	Squelch open
AUDIO OUTPUT -Verification- (Distortion)	1 • Operating channel: 16 • Audio output level: 19 • Receiving	• Set the SSG to: Level: 60 dBμ (-47 dBm)	—	7 ~ 13% distortion
(Output level)	2			More than 3.5 W (3.74 V)
RX SIGNAL-TO-NOISE RATIO -Verification-	1 • Operating channel: 16 • Receiving	- Set the SSG to: Level: 40 dBμ (-67 dBm) - Adjust the AF output to 50% of rated. - Verify the AF output level difference when a modulated and an unmodulated signal is received.	—	More than 40 dB
RX POWER CONSUMPTION -Verification-	1 • Operating channel: 16 • Maximum AF volume • Maximum LCD brightness • Receiving	- Set the SSG to: Level: 60 dBμ (-47 dBm) - Connect the ammeter between the DC power connector and the DC power supply.	—	Less than 1.2 A
WX Alert -Verification-	1 • Operating channel: WX10 • Receiving	Set the SSG to: Frequency: 163.275 MHz Modulation: 1.05 kHz Deviation: ±3.0 kHz Level: 0 dBμ (-107 dBm)	—	WX Alert sounds

4-3 RECEIVE ADJUSTMENTS (CONTINUED)

1) Select an adjustment item by pushing [↑]/[↓] on the PC keyboard.

2) Set or modify the adjustment value as specified by pushing [←]/[→], and then push [Enter] to store the value.

ADJUSTMENT		TRANSCIVER'S CONDITION	OPERATION	ADJUSTMENT ITEM	VALUE
BIT ERROR RATIO -Verification-	1	- Operating channel: 70 - Switch to [Inspection Mode] and move the cursor to [DSC Sensitivity]. - Receiving	- Connect an standard signal generator (SSG) to the antenna connector and set it to: Frequency: 156.525 MHz AFSK: Modulation/Deviation 1.3 kHz/±2.6 kHz 2.1 kHz/±4.2 kHz Signal †50% Duty or PN9 Modulation rate 1200 bps Level: 0 dBμ (−107 dBm) emf - Connect "DATA" terminal of the bit error meter to NMEAO+ (white) and NMEAO− (brown) lines of the NMEA out leads, and "CLOCK" terminal of the SSG to "CLOCK" terminal of the bit error meter.	—	Less than 1%

† Selected by the SSG installed function.

4-4 TRANSMIT ADJUSTMENTS

1) Select an adjustment item by pushing [↑]/[↓] on the PC keyboard.

2) Set or modify the adjustment value as specified by pushing [←]/[→], and then push [Enter] to store the value.

ADJUSTMENT		TRANSCIVER'S CONDITION	OPERATION	ADJUSTMENT ITEM	VALUE
TX OUTPUT POWER -Adjustment- (High power) ----- (Low power) ----- -Verification- (High power, Band low) ----- (High power, Band high) ----- (Low power, Band low) ----- (Low power, Band high)	1	• Operating channel: 16 • Output power level: High • Transmitting	• Connect the RF power meter to the antenna connector.	[RF POWER (High)]	23.5~24.2 W
	2	• Operating channel: 16 • Output power level: Low • Transmitting		[RF POWER (Low)]	0.75 W
	3	• Operating channel: 01 • Output power level: High • Transmitting		—	20~25 W
	4	• Operating channel: 88 • Output power level: High • Transmitting			
	5	• Operating channel: 01 • Output power level: Low • Transmitting			0.5~1.0 W
	6	• Operating channel: 88 • Output power level: Low • Transmitting			
TX POWER CONSUMPTION -Verification- (High power) ----- (Low power) ----- (High power, Band low) ----- (High power, Band high) ----- (Low power, Band Low) ----- (Low power, Band high)	1	• Operating channel: 16 • Output power level: High • Maximum LCD brightness • Transmitting	• Connect the ammeter between the power cable of the transceiver and the DC power supply	—	Less than 4.5 A
	2	• Operating channel: 16 • Output power level: Low • Maximum LCD brightness • Transmitting			Less than 1.2 A
	3	• Operating channel: 01 • Output power level: High • Maximum LCD brightness • Transmitting			Less than 4.5 A
	4	• Operating channel: 88 • Output power level: High • Maximum LCD brightness • Transmitting			
	5	• Operating channel: 01 • Output power level: Low • Maximum LCD brightness • Transmitting			Less than 1.2 A
	6	• Operating channel: 88 • Output power level: Low • Maximum LCD brightness • Transmitting			
SPURIOUS EMISSION -Verification- (High power) ----- (Low power)	1	• Operating channel: 16 • Output power level: High • Without modulation • Transmitting	• Connect the Spectrum analyzer to the antenna connector through the attenuator.	—	Less than -60 dBc
	2	• Operating channel: 16 • Output power level: Low • Without modulation • Transmitting			

4-4 TRANSMIT ADJUSTMENTS (CONTINUED)

1) Select an adjustment item by pushing [↑]/[↓] on the PC keyboard.

2) Set or modify the adjustment value as specified by pushing [←]/[→], and then push [Enter] to store the value.

ADJUSTMENT		TRANSCIVER'S CONDITION	OPERATION	ADJUSTMENT ITEM	VALUE
DEVIATION -Verification- (Transceiver)	1	- Operating channel: 16 - Transmitting	- Connect the modulation analyzer to the antenna connector through the attenuator and set it to: HPF: OFF LPF: 20 kHz De-emphasis: OFF Detector: (P-P)/2 - Connect the audio generator and the AC millivoltmeter to the FRONT MIC JACK through the JIG cable, and set it to: Frequency: 1 kHz Wave form: Sine wave Level: 280 mV rms	—	±3.9~±4.3 kHz
	2	- Operating channel: 70 - Transmitting	—	[DSC (1300Hz)]	±2.6 kHz ±10%
(DSC)	3			[DSC (2100Hz)]	±4.2 kHz ±10%
MODULATION SENSITIVITY -Verification-	1	- Operating channel: 16 - Transmitting	Set the audio generator to: Level: 28 mV rms	[MSENS (INT)]	±2.7~±3.3 kHz
TX SIGNAL-TO- NOISE RATIO -Verification-	1	- Operating channel: 16 - Transmitting	- Connect the modulation analyzer to the antenna connector through the attenuator and set it to: HPF: OFF LPF: 20 kHz De-emphasis: OFF Detector: (P-P)/2 - Connect the AC millivoltmeter to the modulation analyzer. - Connect the audio generator and the AC millivoltmeter to the FRONT MIC JACK, and set it to: Frequency: 1 kHz Wave form: Sine wave - Adjust the audio generator output level so that the deviation on the modulation analyzer becomes ±3.0 kHz. - The audio output level of the modulation analyzer at this time is the reference level (0 dB). - Turn off the output of the audio generator and verify the difference between the audio output level of the modulation analyzer at that time and the reference level.	—	More than 40 dB

SECTION 5

PARTS LIST

[MAIN UNIT]

REF NO.	PART NO.	DESCRIPTION	M.	H/V LOCATION
IC2	1110008890	S.IC NJU7056F3-TE2-#ZZZH	B	74.0/31.2
IC201	1110010000	S.IC AT1846S	T	84.5/22.5
IC301	1110010000	S.IC AT1846S	T	102.0/28.0
IC302	1130019580	S.IC TC7SU04FULF	T	86.3/9.3
IC504	1130015760	S.IC TC74VHC4066AFK (EK)	T	71.0/19.5
IC505	1110008890	S.IC NJU7056F3-TE2-#ZZZH	T	67.4/20.4
IC506	1110010010	S.IC U2429G-S08-R	T	59.5/19.4
IC511	1180003980	S.REG XC6221A332MR-G	T	25.9/24.5
IC512	1180002781	REG KIA7805API-U/PF		
IC551	1120003230	S.IC UTRS485G-S08-R	T	10.1/6.4
IC552	1170000352	S.IC PC357N6J000F	T	16.0/8.1
IC701	1110009990	IC TDA2003L-TB5-T		
IC702	1110008890	S.IC NJU7056F3-TE2-#ZZZH	B	12.1/24.1
IC703	1130007021	S.IC TC7S66FU (TE85LF)	B	12.1/27.7
Q10	1510001090	S.TRA KTA2015Y-RTK/P	T	52.4/21.0
Q11	1590004070	S.TRA LDTIC144EET1G	T	51.8/17.3
Q12	1530004011	S.TRA KTC3770U-C-RTK/P	T	37.5/33.2
Q13	1560002580	S.FET AFT05MS003NT1	T	37.2/45.7
Q14	1560002590	S.FET AFT05MS031NR1	T	54.0/45.5
Q16	1590004060	S.TRA LDTIC114EET1G	B	70.6/33.5
Q17	1590004060	S.TRA LDTIC114EET1G	B	78.3/31.5
Q18	1590004070	S.TRA LDTIC144EET1G	T	34.1/49.6
Q19	1590004070	S.TRA LDTIC144EET1G	B	32.3/48.3
Q101	1530004100	S.TRA MT3S20P (TE12LF)	B	98.5/36.5
Q201	1590004040	S.TRA LDTA123YET1G	B	79.1/27.9
Q202	1590004070	S.TRA LDTIC144EET1G	B	79.1/25.5
Q511	1590004070	S.TRA LDTIC144EET1G	T	28.1/16.9
Q512	1550000590	S.FET UT6401G-AG6-R	T	25.9/20.6
D11	1750002540	S.DIO LRB520G-30T1G	B	78.4/34.3
D12	1750002350	S.DIO MMBD352WT1	T	77.5/35.7
D13	1750002350	S.DIO MMBD352WT1	T	80.2/35.7
D14	1750002190	S.DIO JDP2512CR (TE85LQ)	T	89.4/44.3
D15	1750003520	S.DIO LS204FR	T	94.0/39.1
D16	1750002350	S.DIO MMBD352WT1	B	92.7/41.9
D551	1750001810	S.DIO L1SS400T1G	T	16.5/13.1
D601	1710001440	DIO 1N5402-F		
X2	6050014830	S.XTA CR-1073 (26 MHz)	T	83.4/6.6
L1	6200013750	S.COI MLK1005SR10JT	T	35.5/33.7
L2	6200012880	S.COI 0.30-1.3-6TL 24.5N	T	33.0/42.9
L3	6200013110	S.COI 0.35-1.6-9TL 52.0N	T	41.4/42.3
L4	6200013030	S.COI 0.35-1.6-6TL 31.0N	T	43.2/50.4
L5	6200013030	S.COI 0.35-1.6-6TL 31.0N	T	63.5/41.0
L6	6200012390	S.COI 0.30-0.92-3TR 5.8N	T	70.0/42.7
L7	6200012870	S.COI 0.30-1.4-5TR 23.5N	T	69.6/48.6
L101	6200016650	S.COI LQW2BA5R82J00L	T	86.4/41.4
L102	6200014320	S.COI 0.80-3.0-5TR 41.0N	T	81.3/41.3
L103	6200014330	S.COI 0.80-2.7-5TR 35.0N	T	99.5/44.3
L105	6200012700	S.COI 0.50-2.0-6TL 35.0N	T	90.1/40.1
L106	6200011670	S.COI LQW18AN82NG00D	B	97.6/44.3
L107	6200010910	S.COI LQW18AN56NG00D	B	101.8/37.8
L108	6200011670	S.COI LQW18AN82NG00D	B	99.1/41.8
L109	6200011860	S.COI LQW18ANR47G00D	T	90.3/36.8
L111	6200011650	S.COI LQW18AN68NG00D	B	94.4/31.8
L112	6200011650	S.COI LQW18AN68NG00D	B	96.5/31.6
L211	6200009290	S.COI LQW18AN47NG00D (LQW1608A47NG00)	T	89.7/25.6
L216	6200001981	S.COI NLV25T-1R0J-PF	T	81.9/9.6
L217	6200001981	S.COI NLV25T-1R0J-PF	T	94.5/15.4
L311	6200009290	S.COI LQW18AN47NG00D (LQW1608A47NG00)	T	106.5/32.0
L312	6200004660	S.COI MLF1608A 1R8K-T	T	86.2/17.0
L313	6200004660	S.COI MLF1608A 1R8K-T	T	104.6/22.7
R11	7030015970	S.RES RMC1/16S-103JTH (10 k)	T	53.7/19.0
R12	7030016050	S.RES RMC1/16S-102JTH (1 k)	T	52.0/19.0
R21	7030016560	S.RES RMC1/16SJPTH	T	42.5/32.7
R22	7030015970	S.RES RMC1/16S-103JTH (10 k)	T	38.1/31.4
R23	7030016330	S.RES RMC1/16S-153JTH (15 k)	T	40.4/31.4
R24	7030016150	S.RES RMC1/16S-100JTH (10)	T	38.1/30.5
R25	7030016560	S.RES RMC1/16SJPTH	T	32.9/33.7
R26	7030015910	S.RES RMC1/16S-101JTH (100)	T	41.3/34.0
R31	7030015910	S.RES RMC1/16S-101JTH (100)	T	32.0/46.0
R32	7030016110	S.RES RMC1/16S-473JTH (47 k)	T	32.0/48.7
R33	7030015970	S.RES RMC1/16S-103JTH (10 k)	T	30.7/46.5
R34	7030016110	S.RES RMC1/16S-473JTH (47 k)	T	32.0/49.6
R35	7030015970	S.RES RMC1/16S-103JTH (10 k)	B	32.0/49.8
R44	7030015520	S.RES RMC1/16JPTP	T	47.9/50.4
R45	7030015910	S.RES RMC1/16S-101JTH (100)	T	48.2/41.0
R46	7030016020	S.RES RMC1/16S-104JTH (100 k)	T	46.9/39.7
R47	7030015970	S.RES RMC1/16S-103JTH (10 k)	T	46.0/39.7
R71	7030016420	S.RES RMC1/16S-182JTH (1.8 k)	T	77.5/41.6
R72	7030016420	S.RES RMC1/16S-182JTH (1.8 k)	T	77.5/39.9
R73	7030016420	S.RES RMC1/16S-182JTH (1.8 k)	T	83.4/37.7
R74	7030016420	S.RES RMC1/16S-182JTH (1.8 k)	T	81.7/37.7
R75	7030014850	S.RES RMC1/8K181FTP (180)	B	83.6/37.2
R76	7030016020	S.RES RMC1/16S-104JTH (100 k)	T	77.7/32.8
R78	7030015920	S.RES RMC1/16S-221JTH (220)	B	76.7/33.6
R79	7030015960	S.RES RMC1/16S-472JTH (4.7 k)	B	75.8/35.3
R80	7030016050	S.RES RMC1/16S-102JTH (1 k)	B	75.8/33.6

[MAIN UNIT]

REF NO.	PART NO.	DESCRIPTION	M.	H/V LOCATION
R81	7030016110	S.RES RMC1/16S-473JTH (47 k)	B	75.8/31.9
R82	7030016300	S.RES RMC1/16S-332JTH (3.3 k)	B	73.7/28.3
R83	7030016330	S.RES RMC1/16S-153JTH (15 k)	B	72.6/33.1
R84	7030016020	S.RES RMC1/16S-104JTH (100 k)	B	72.6/34.0
R85	7030016390	S.RES RMC1/16S-184JTH (180 k)	B	72.2/31.7
R86	7030015970	S.RES RMC1/16S-103JTH (10 k)	B	76.7/31.9
R91	7030016000	S.RES RMC1/16S-823JTH (82 k)	T	101.4/53.7
R99	7030016430	S.RES RMC1/16S-392JTH (3.9 k)	B	88.5/35.7
R100	7030015910	S.RES RMC1/16S-101JTH (100)	B	86.4/35.2
R101	7030016150	S.RES RMC1/16S-100JTH (10)	B	95.5/35.6
R102	7030016290	S.RES RMC1/16S-222JTH (2.2 k)	B	95.5/37.8
R103	7030016480	S.RES RMC1/16S-821JTH (820)	B	97.8/39.8
R104	7030016170	S.RES RMC1/16S-560JTH (56)	B	104.7/37.3
R105	7030016470	S.RES RMC1/16S-390JTH (39)	B	99.1/40.2
R106	7030015900	S.RES RMC1/16S-470JTH (47)	B	95.8/32.7
R107	7030016210	S.RES RMC1/16S-121JTH (120)	B	96.3/33.9
R108	7030016210	S.RES RMC1/16S-121JTH (120)	B	95.3/33.9
R109	7030016560	S.RES RMC1/16SJPTH	B	96.0/43.4
R110	7030016560	S.RES RMC1/16SJPTH	B	96.9/41.6
R111	7030015900	S.RES RMC1/16S-470JTH (47)	B	95.9/30.5
R112	7030015900	S.RES RMC1/16S-470JTH (47)	B	97.6/30.5
R211	7030015930	S.RES RMC1/16S-471JTH (470)	B	88.5/29.1
R212	7030016150	S.RES RMC1/16S-100JTH (10)	B	87.2/28.7
R213	7030015930	S.RES RMC1/16S-471JTH (470)	B	87.6/27.3
R214	7030015910	S.RES RMC1/16S-101JTH (100)	B	82.6/25.9
R220	7410001570	S.ARR MNR02M0APJ101 (100)	T	79.3/25.1
R221	7410001570	S.ARR MNR02M0APJ101 (100)	T	79.3/20.4
R223	7410001570	S.ARR MNR02M0APJ101 (100)	T	81.7/17.4
R224	7030016050	S.RES RMC1/16S-102JTH (1 k)	T	85.8/18.1
R231	7030016150	S.RES RMC1/16S-100JTH (10)	T	55.8/19.0
R232	7030015960	S.RES RMC1/16S-472JTH (4.7 k)	T	55.8/19.9
R233	7030015960	S.RES RMC1/16S-472JTH (4.7 k)	T	55.8/18.1
R239	7030016560	S.RES RMC1/16SJPTH	T	63.2/16.7
R240	7030016560	S.RES RMC1/16SJPTH	T	64.7/18.0
R241	7030015970	S.RES RMC1/16S-103JTH (10 k)	T	62.8/19.7
R242	7030015910	S.RES RMC1/16S-101JTH (100)	T	63.7/19.7
R322	7030015910	S.RES RMC1/16S-101JTH (100)	T	96.3/30.3
R323	7410001570	S.ARR MNR02M0APJ101 (100)	T	99.8/22.9
R324	7030016050	S.RES RMC1/16S-102JTH (1 k)	T	104.0/23.8
R326	7030016410	S.RES RMC1/16S-561JTH (560)	T	105.7/21.6
R331	7030016410	S.RES RMC1/16S-561JTH (560)	T	87.3/15.9
R333	7030016060	S.RES RMC1/16S-105JTH (1 M)	T	88.1/9.5
R334	7030015910	S.RES RMC1/16S-101JTH (100)	T	86.4/6.9
R341	7510001661	S.THR NTCG16 4LH 473JT	T	74.0/17.6
R342	7030019760	S.RES RMC1/16K223FTP (22 k)	T	72.9/14.8
R343	7030015960	S.RES RMC1/16S-472JTH (4.7 k)	B	80.0/15.8
R344	7030015960	S.RES RMC1/16S-472JTH (4.7 k)	B	80.0/14.9
R501	7030015980	S.RES RMC1/16S-333JTH (33 k)	T	65.6/19.7
R502	7030016090	S.RES RMC1/16S-223JTH (22 k)	T	65.6/21.4
R503	7030016090	S.RES RMC1/16S-223JTH (22 k)	T	68.5/24.2
R504	7030015970	S.RES RMC1/16S-103JTH (10 k)	T	65.9/18.4
R511	7030016440	S.RES RMC1/16S-272JTH (2.7K)	B	26.8/12.2
R512	7030016060	S.RES RMC1/16S-105JTH (1 M)	T	73.0/24.2
R513	7030016060	S.RES RMC1/16S-105JTH (1 M)	T	73.4/25.5
R515	7030016020	S.RES RMC1/16S-104JTH (100 k)	T	74.0/20.2
R523	7030016060	S.RES RMC1/16S-105JTH (1 M)	T	70.3/24.2
R524	7030016060	S.RES RMC1/16S-105JTH (1 M)	T	69.4/24.2
R527	7030015980	S.RES RMC1/16S-333JTH (33 k)	T	71.7/25.5
R528	7030016050	S.RES RMC1/16S-102JTH (1 k)	T	71.7/26.4
R551	7030016150	S.RES RMC1/16S-100JTH (10)	B	21.2/23.7
R552	7030016150	S.RES RMC1/16S-100JTH (10)	B	20.3/23.7
R553	7030016110	S.RES RMC1/16S-473JTH (47 k)	T	10.3/11.2
R554	7030016640	S.RES RMC1/16S-1R0JTH (1)	T	13.4/4.3
R555	7030016020	S.RES RMC1/16S-104JTH (100 k)	T	13.4/6.0
R561	7030019410	S.RES RMC1/8-471JTP (470)	B	20.4/17.6
R562	7030016420	S.RES RMC1/16S-182JTH (1.8 k)	T	17.3/2.6
R563	7030015960	S.RES RMC1/16S-472JTH (4.7 k)	T	14.6/2.6
R601	7030016560	S.RES RMC1/16SJPTH	T	23.2/25.5
R602	7030016110	S.RES RMC1/16S-473JTH (47 k)	T	26.5/17.1
R603	7030016110	S.RES RMC1/16S-473JTH (47 k)	T	26.9/18.4
R611	7030016330	S.RES RMC1/16S-153JTH (15 k)	T	29.7/23.8
R613	7030016330	S.RES RMC1/16S-153JTH (15 k)	T	31.4/23.8
R731	7030016240	S.RES RMC1/16S-684JTH (680K)	B	7.5/23.7
R732	7030016090	S.RES RMC1/16S-223JTH (22 k)	B	8.0/25.9
R733	7030015980	S.RES RMC1/16S-333JTH (33 k)	B	8.4/23.7
R735	7030016090	S.RES RMC1/16S-223JTH (22 k)	B	14.5/25.0
R736	7030016090	S.RES RMC1/16S-223JTH (22 k)	B	11.4/25.9
R737	7030016340	S.RES RMC1/16S-393JTH (39K)	B	11.1/25.9
R738	7030015970	S.RES RMC1/16S-103JTH (10 k)	B	13.8/29.5
R740	7030016040	S.RES RMC1/16S-224JTH (220 k)	B	14.5/26.9
R744	7030016070	S.RES RMC1/16S-474JTH (470 k)	B	10.1/27.4
R745	7030016560	S.RES RMC1/16SJPTH	B	14.5/30.6
R746	7030016090	S.RES RMC1/16S-223JTH (22 k)	B	15.4/30.6
R750	7030016470	S.RES RMC1/16S-390JTH (39)	T	6.8/37.1
R751	7030015920	S.RES RMC1/16S-221JTH (220)	T	10.0/35.6
R752	7030017480	S.RES RMC1/16-2R2JTP (2.2)	T	18.8/34.0
R753	7030016640	S.RES RMC1/16S-1R0JTH (1)	B	21.3/43.2
R801	7030016640	S.RES RMC1/16S-1R0JTH (1)	T	24.9/2.1
C11	4030023090	S.CER 0402B102K500CT	T	53.

[MAIN UNIT]

REF NO.	PARTS NO.	DESCRIPTION	M.	H/V LOCATION
C30	4030022860	S.CER 0402N470J500CT	T	39.5/34.0
C31	4030023090	S.CER 0402B102K500CT	T	40.4/34.0
C41	4030023090	S.CER 0402B102K500CT	T	33.0/39.4
C42	4030022810	S.CER 0402N330J500CT	T	32.6/40.7
C46	4030023090	S.CER 0402B102K500CT	T	32.0/46.9
C47	4030022940	S.CER 0402B104K100CT	T	32.0/47.8
C48	4030023090	S.CER 0402B102K500CT	B	32.0/50.7
C51	4030022640	S.CER 0402N101J500CT	T	43.8/41.1
C52	4030023090	S.CER 0402B102K500CT	T	43.8/40.2
C53	4030024530	S.CER C1608 JB 1C 225M-T	T	44.3/39.1
C54	4030022640	S.CER 0402N101J500CT	T	60.7/38.9
C55	4030023090	S.CER 0402B102K500CT	T	60.7/39.8
C56	4030024530	S.CER C1608 JB 1C 225M-T	T	60.2/40.9
C57	4030024540	S.CER C2012 JB 1C 106K-T	T	59.9/34.7
C61	4030023670	S.CER 0603N330J500CT	T	40.5/46.2
C62	4030023670	S.CER 0603N330J500CT	T	41.9/46.2
C63	4030023500	S.CER 0603N150J500CT	T	41.3/48.3
C67	4030022640	S.CER 0402N101J500CT	T	49.6/39.7
C68	4030023090	S.CER 0402B102K500CT	T	48.7/39.7
C69	4030022940	S.CER 0402B104K100CT	T	47.8/39.7
C71	4030020340	S.CER GRM21A5C2E820JW01D	T	65.9/40.9
C72	4030020330	S.CER GRM21A5C2E101JW01D	T	67.8/43.0
C74	4030020340	S.CER GRM21A5C2E820JW01D	T	70.9/45.5
C75	4030020400	S.CER GRM21A5C2E150JW01D	T	68.6/51.4
C76	4030020330	S.CER GRM21A5C2E101JW01D	T	76.4/46.3
C91	4030022750	S.CER 0402N221J500CT	B	68.7/27.9
C92	4030023090	S.CER 0402B102K500CT	B	69.6/27.9
C93	4030022860	S.CER 0402N470J500CT	T	46.6/35.0
C94	4030023200	S.CER 0402B471 k500CT	T	46.6/34.1
C95	4030023090	S.CER 0402B102K500CT	T	46.6/33.2
C96	4030023820	S.CER 0603B104K250CT	T	67.3/32.7
C97	4030025150	S.CER GRM31CR71H475KA12L	T	67.4/34.5
C98	4030023090	S.CER 0402B102K500CT	T	62.8/31.6
C111	4030020380	S.CER GRM21A5C2E180JW01D	T	78.4/46.3
C112	4030020380	S.CER GRM21A5C2E180JW01D	T	80.7/46.3
C113	4030020420	S.CER GRM21A7U2E102JW31D	T	94.1/44.3
C114	4030020380	S.CER GRM21A5C2E180JW01D	T	93.1/48.5
C115	4030023380	S.CER 0603N6R0C500CT	T	97.2/48.5
C116	4030020390	S.CER GRM21A5C2E270JW01D	T	97.2/50.6
C120	4030023090	S.CER 0402B102K500CT	B	87.6/34.8
C121	4030020390	S.CER GRM21A5C2E270JW01D	T	94.1/42.2
C122	4030022740	S.CER 0402N220J500CT	T	92.6/38.8
C123	4030023130	S.CER 0402B222 k500CT	T	95.4/38.8
C124	4030022560	S.CER 0402N5R0B500CT	B	95.4/41.1
C125	4030022720	S.CER 0402N1R5B500CT	B	96.0/42.5
C126	4030022600	S.CER 0402N9R0C500CT	B	96.5/40.2
C127	4030022550	S.CER 0402N4R0B500CT	B	96.4/44.7
C128	4030022550	S.CER 0402N4R0B500CT	B	97.8/40.7
C129	4030022640	S.CER 0402N101J500CT	B	100.0/40.2
C130	4030023130	S.CER 0402B222 k500CT	B	100.9/40.2
C131	4030022660	S.CER 0402N120J500CT	B	102.9/37.3
C132	4030022530	S.CER 0402N2R0B500CT	B	103.8/37.3
C133	4030023130	S.CER 0402B222 k500CT	B	102.0/40.2
C134	4030023030	S.CER 0402B103K250CT	B	102.9/40.2
C135	4030023130	S.CER 0402B222 k500CT	B	97.5/32.7
C136	4030022770	S.CER 0402N270J500CT	B	94.4/33.9
C137	4030022680	S.CER 0402N150J500CT	B	93.3/30.4
C138	4030022680	S.CER 0402N150J500CT	B	104.3/32.8
C139	4030022720	S.CER 0402N1R5B500CT	B	94.5/41.1
C140	4030023090	S.CER 0402B102K500CT	T	86.9/39.1
C141	4030023090	S.CER 0402B102K500CT	T	77.5/38.2
C142	4030023090	S.CER 0402B102K500CT	T	80.0/37.7
C143	4030023090	S.CER 0402B102K500CT	T	76.4/33.2
C144	4030023090	S.CER 0402B102K500CT	T	77.7/33.7
C145	4030023090	S.CER 0402B102K500CT	T	80.5/33.7
C146	4030023200	S.CER 0402B471 k500CT	B	78.4/29.8
C147	4030023090	S.CER 0402B102K500CT	B	78.0/33.2
C148	4030023090	S.CER 0402B102K500CT	B	76.7/35.3
C149	4030022940	S.CER 0402B104K100CT	B	76.2/30.6
C150	4030023090	S.CER 0402B102K500CT	B	73.7/29.2
C151	4030023030	S.CER 0402B103K250CT	B	82.5/35.6
C153	4030023030	S.CER 0402B103K250CT	B	72.6/34.9
C154	4030022940	S.CER 0402B104K100CT	B	71.3/31.7
C211	4030023090	S.CER 0402B102K500CT	B	92.4/30.4
C212	4030022740	S.CER 0402N220J500CT	T	90.1/26.7
C213	4030022740	S.CER 0402N220J500CT	T	90.1/24.5
C214	4030023090	S.CER 0402B102K500CT	T	88.8/24.1
C220	4030022100	S.CER GRM0332C1H100JA01D	B	87.2/22.9
C221	4030022140	S.CER GRM033B31H102KA12D	T	88.0/27.0
C222	4030022160	S.CER GRM033B31A104KE84D	T	87.3/27.0
C223	4030022100	S.CER GRM0332C1H100JA01D	B	87.0/22.9
C226	4030022140	S.CER GRM033B31H102KA12D	T	89.1/22.2
C227	4030022160	S.CER GRM033B31A104KE84D	T	89.1/21.5
C228	4030022940	S.CER 0402B104K100CT	T	89.3/20.0
C229	4030022140	S.CER GRM033B31H102KA12D	T	89.1/20.8
C231	4030022140	S.CER GRM033B31H102KA12D	T	89.1/19.2
C232	4030022740	S.CER 0402N220J500CT	T	84.4/17.4
C233	4030022750	S.CER 0402N221J500CT	T	84.8/15.9
C234	4030022100	S.CER GRM0332C1H100JA01D	T	83.3/16.7
C235	4030022140	S.CER GRM033B31H102KA12D	T	83.3/17.4
C236	4030022160	S.CER GRM033B31A104KE84D	T	80.2/17.8
C237	4030022100	S.CER GRM0332C1H100JA01D	B	82.0/22.2
C238	4030022140	S.CER GRM033B31H102KA12D	B	82.0/21.5
C239	4030022160	S.CER GRM033B31A104KE84D	B	82.0/20.8
C241	4030023200	S.CER 0402B471 k500CT	T	85.8/27.1
C243	4030022100	S.CER GRM0332C1H100JA01D	T	84.4/27.0
C244	4030022140	S.CER GRM033B31H102KA12D	T	83.7/27.0
C245	4030022160	S.CER GRM033B31A104KE84D	B	85.1/25.0
C246	4550007260	S.TAN F931C475MAABMA	T	81.0/12.0
C249	4550007260	S.TAN F931C475MAABMA	B	76.9/27.1
C250	4550007260	S.TAN F931C475MAABMA	T	96.8/15.3
C251	4030023030	S.CER 0402B103K250CT	T	55.8/20.8
C252	4030025230	S.CER TMK107BJ105KAHT	T	55.5/22.6
C253	4550007520	S.TAN F931A106MAABMA	T	60.5/12.6
C254	4030022940	S.CER 0402B104K100CT	T	59.3/14.2

Eqv.= This component is equivalent to the REF No. component listed above, and may be substituted on parts orders and repairs.

[MAIN UNIT]

REF NO.	PARTS NO.	DESCRIPTION	M.	H/V LOCATION
C255	4030022940	S.CER 0402B104K100CT	T	62.8/18.0
C256	4030022940	S.CER 0402B104K100CT	T	63.7/18.0
C311	4030023090	S.CER 0402B102K500CT	B	104.3/31.9
C312	4030022740	S.CER 0402N220J500CT	T	107.6/32.3
C313	4030022740	S.CER 0402N220J500CT	T	107.2/29.7
C314	4030023090	S.CER 0402B102K500CT	T	106.3/29.7
C320	4030022100	S.CER GRM0332C1H100JA01D	T	104.5/32.5
C321	4030022140	S.CER GRM033B31H102KA12D	T	103.8/32.5
C322	4030022160	S.CER GRM033B31A104KE84D	T	103.1/32.5
C323	4030022100	S.CER GRM0332C1H100JA01D	B	104.5/28.3
C326	4030022140	S.CER GRM033B31H102KA12D	T	106.5/27.7
C327	4030022160	S.CER GRM033B31A104KE84D	T	106.5/27.0
C331	4030022140	S.CER GRM033B31H102KA12D	T	106.5/26.3
C332	4030022740	S.CER 0402N220J500CT	T	102.8/22.9
C333	4030022750	S.CER 0402N221J500CT	T	103.3/21.6
C334	4030022100	S.CER GRM0332C1H100JA01D	T	101.7/23.1
C335	4030022140	S.CER GRM033B31H102KA12D	T	101.0/23.1
C336	4030022160	S.CER GRM033B31A104KE84D	T	97.8/24.0
C337	4030022100	S.CER GRM0332C1H100JA01D	B	98.7/28.1
C338	4030022140	S.CER GRM033B31H102KA12D	B	98.7/27.4
C339	4030022160	S.CER GRM033B31A104KE84D	B	98.7/26.7
C341	4030023090	S.CER 0402B102K500CT	T	72.6/15.9
C343	4030022100	S.CER GRM0332C1H100JA01D	T	102.2/32.5
C344	4030022140	S.CER GRM033B31H102KA12D	T	101.5/32.5
C345	4030022160	S.CER GRM033B31A104KE84D	T	100.8/32.5
C351	4030023030	S.CER 0402B103K250CT	T	84.5/10.6
C352	4030023030	S.CER 0402B103K250CT	T	85.5/6.9
C500	4030022940	S.CER 0402B104K100CT	T	64.3/22.8
C501	4030022940	S.CER 0402B104K100CT	T	64.3/21.9
C502	4030022910	S.CER 0402N681J500CT	T	64.7/19.7
C508	4030022940	S.CER 0402B104K100CT	T	68.1/15.5
C509	4030022940	S.CER 0402B104K100CT	T	67.2/15.5
C510	4030022940	S.CER 0402B104K100CT	T	66.3/15.5
C511	4030022940	S.CER 0402B104K100CT	T	63.7/25.1
C512	4030022940	S.CER 0402B104K100CT	T	63.7/24.2
C513	4030023030	S.CER 0402B103K250CT	T	67.6/18.4
C514	4030022940	S.CER 0402B104K100CT	T	68.1/17.2
C515	4030022940	S.CER 0402B104K100CT	T	67.2/17.2
C516	4030022940	S.CER 0402B104K100CT	T	73.4/26.4
C517	4030022940	S.CER 0402B104K100CT	T	73.4/27.3
C518	4030022940	S.CER 0402B104K100CT	T	73.4/28.2
C519	4030022940	S.CER 0402B104K100CT	T	66.3/17.2
C555	4030022940	S.CER 0402B104K100CT	T	13.4/2.6
C561	4030023090	S.CER 0402B102K500CT	B	24.2/23.7
C562	4030023000	S.CER 0402B683K100CT	T	16.8/14.2
C563	4030023090	S.CER 0402B102K500CT	B	22.7/32.3
C564	4030023030	S.CER 0402B103K250CT	T	18.2/2.6
C565	4030022940	S.CER 0402B104K100CT	T	15.5/2.6
C566	4030023090	S.CER 0402B102K500CT	T	16.4/2.6
C602	4030023030	S.CER 0402B103K250CT	T	25.0/26.7
C603	4030022940	S.CER 0402B104K100CT	T	25.0/27.6
C604	4030023030	S.CER 0402B103K250CT	T	28.6/26.7
C605	4030022940	S.CER 0402B104K100CT	T	26.8/27.6
C606	4550007520	S.TAN F931A106MAABMA	T	28.8/27.2
C611	4510011180	S.ELE 6CE100FSS	T	14.1/25.1
C612	4030023030	S.CER 0402B103K250CT	T	5.6/29.4
C613	4030022940	S.CER 0402B104K100CT	T	6.5/29.4
C614	4030023820	S.CER 0603B104K250CT	T	5.7/25.2
C615	4030023030	S.CER 0402B103K250CT	T	6.8/24.9
C616	4510009920	S.ELE 16 CE 100 LH	T	16.0/18.4
C620	4030023090	S.CER 0402B102K500CT	T	29.8/16.9
C621	4510010300	S.ELE 16 CE 470 AX	T	39.6/24.3
C622	4030023820	S.CER 0603B104K250CT	B	35.4/19.8
C623	4030023090	S.CER 0402B102K500CT	B	36.5/19.5
C624	4030022640	S.CER 0402N101J500CT	B	37.5/19.5
C625	4030023030	S.CER 0402B103K250CT	B	62.3/23.0
C626	4030023090	S.CER 0402B102K500CT	B	61.4/23.0
C627	4030022640	S.CER 0402N101J500CT	B	60.5/23.0
C628	4030023030	S.CER 0402B103K250CT	T	21.1/38.1
C629	4030023090	S.CER 0402B102K500CT	T	21.1/37.2
C631	4030023090	S.CER 0402B102K500CT	T	28.4/21.0
C637	4550008240	S.TAN F930G476MAA	T	31.3/27.2
C732	4030022940	S.CER 0402B104K100CT		9.7/25.9
C737	4030022940	S.CER 0402B104K100CT	B	15.4/28.9
C738	4030022940	S.CER 0402B104K100CT	B	15.4/32.3
C741	4030023030	S.CER 0402B103K250CT	B	7.5/22.0
C742	4030022940	S.CER 0402B104K100CT	B	9.7/25.0
C743	4030022750	S.CER 0402N221J500CT	B	9.3/23.7
C745	4030022940	S.CER 0402B104K100CT	B	10.1/29.1
C746	4030025230	S.CER TMK107BJ105KAHT	B	15.0/23.4
C747	4030022940	S.CER 0402B104K100CT	B	14.5/28.9
C748	4030022940	S.CER 0402B104K100CT	B	14.5/32.3
C749	4030022810	S.CER 0402N330J500CT	B	14.5/35.7
C750	4030023090	S.CER 0402B102K500CT	B	15.4/35.7
C751	4510010300	S.ELE 16 CE 470 AX	T	15.2/48.9
C752	4030023820	S.CER 0603B104K250CT	T	8.5/45.0
C753	4030023090	S.CER 0402B102K500CT	T	8.2/43.9
C754	4030024020	S.CER 0603B393K500CT	T	9.1/37.1
C755	4510010160	S.ELE EEEFKJ331XAP	T	14.4/31.8
C761	4510010300	S.ELE 16 CE 470 AX	T	15.2/39.9
C762	4030023200	S.CER 0402B471 K500CT	T	9.3/41.8
C763	4030023820	S.CER 0603B104K250CT	B	21.3/45.6
C764	4030023820	S.CER 0603B104K250CT	B	19.9/45.6
C766	4030022860	S.CER 0402N470J500CT	T	24.3/34.7
C767	4030022940	S.CER 0402B104K100CT	T	24.3/33.8
C771	4030022860	S.CER 0402N470J500CT	B	28.7/33.4
C773	4030022860	S.CER 0402N470J500CT	B	26.4/35.9
C801	4030023090	S.CER 0402B102K500CT	T	24.5/12.2
C802	4030023090	S.CER 0402B102K500CT	T	23.1/2.1
C804	4030023090	S.CER 0402B102K500CT	T	24.0/2.1
C806	4030023090	S.CER 0402B102K500CT	T	25.8/2.1
C807	4030023090	S.CER 0402B102K500CT	T	26.3/12.5
C808	4030023090	S.CER 0402B102K500CT	T	26.8/2.1
C809	4030023090	S.CER 0402B102K500CT	T	27.3/12.5
C812	4030023090	S.CER 0402B102K500CT	T	27.8/2.1

[MAIN UNIT]

REF NO.	PARTS NO.	DESCRIPTION	M.	H/V LOCATION
C813	4030023090	S.CER 0402B102K500CT	T	29.3/12.5
C815	4030023090	S.CER 0402B102K500CT	T	30.3/12.5
C816	4030023090	S.CER 0402B102K500CT	T	30.8/2.1
C817	4030023090	S.CER 0402B102K500CT	T	31.3/12.5
C818	4030023090	S.CER 0402B102K500CT	T	31.8/2.1
C820	4030022740	S.CER 0402N220J500CT	T	32.8/2.1
C821	4030022740	S.CER 0402N220J500CT	T	33.3/12.5
C822	4030022740	S.CER 0402N220J500CT	T	33.8/2.1
C823	4030022740	S.CER 0402N220J500CT	T	34.3/12.5
C824	4030022740	S.CER 0402N220J500CT	T	34.8/2.1
C825	4030023090	S.CER 0402B102K500CT	T	35.3/12.5
C826	4030022740	S.CER 0402N220J500CT	T	35.8/2.1
C827	4030023090	S.CER 0402B102K500CT	T	36.3/12.5
C828	4030023090	S.CER 0402B102K500CT	T	36.8/2.1
C829	4030023090	S.CER 0402B102K500CT	T	37.3/12.5
J1	6510021722	S.CON 30FLT-SM2-TB (LF) (SN) (M)	T	30.5/7.3
J2	6510021441	S.CON B6B-ZR-SM4-TF (LF) (SN)	B	23.5/26.7
W1	7030014230	JUM RJ20S0OHM		
EP2	6910014690	S.BEA MPZ1608S221A-T	T	44.3/34.9
EP3	6910024810	S.BEA MPZ2012S300AT	T	63.8/33.8
EP701	6910016330	S.BEA MMZ1005S 601CT-S	B	14.5/34.0

[LOGIC UNIT]

REF NO.	PARTS NO.	DESCRIPTION	M.	H/V LOCATION
IC1	1140018540	S.IC STM32F101VDT6	B	52.0/25.0
IC2	1110008940	S.IC NJU7057RB1-TE2-#ZMZH	B	55.1/7.5
IC3	1130009981	S.IC TC7W53FK (TE85LF)	B	46.0/5.6
IC4	1180003570	S.REG NJM2830U1-33-TE1-#ZZZB	B	87.1/27.1
IC5	1130007421	S.IC TC7W14FU (TE12LF)	B	75.6/33.2
IC9	1130019460	S.IC GT24C256A-2ZLI-TR	B	65.3/38.1
IC10	1110007620	S.IC NJU7704F3-42A-TE1-#ZZZB	B	75.2/26.3
IC14	1110008890	S.IC NJU7056F3-TE2-#ZZZH	B	37.2/6.1
IC201	1190004600	S.IC GSU-141A-090C (CKD5431-02) Only [#21]	B	97.8/29.1
Q1	1520001030	S.TRA 2SB1182G-R-TN3-R	B	113.5/39.2
Q2	1530004140	S.TRA L2SC4081RT1G	B	103.6/37.2
Q3	1590001330	S.TRA DTA114EUA T106	B	80.8/34.2
Q4	1530004140	S.TRA L2SC4081RT1G	B	84.4/34.2
D1	1750002030	S.ZEN DZ2J068M0L	B	103.5/39.4
D3	1750001810	S.DIO L1SS400T1G	B	86.3/34.1
D11	1750003230	S.ZEN DZ2J200M0L	B	87.9/18.1
FI201	2040002420	S.SAW TA0757B Only [#21]	B	100.1/21.0
X1	6050014240	S.XTA CR-1022 (7.9872 MHz)	B	66.6/24.2
R11	7030016020	S.RES RMC1/16S-104JTH (100 k)	B	47.9/37.2
R12	7030016020	S.RES RMC1/16S-104JTH (100 k)	B	47.0/37.2
R13	7030016050	S.RES RMC1/16S-102JTH (1 k)	B	40.5/26.0
R15	7030015910	S.RES RMC1/16S-101JTH (100) Only [#21]	B	40.5/28.9
R16	7410001440	S.ARR MNR04M0APJ101 (100)	B	40.5/22.3
R17	7030015910	S.RES RMC1/16S-101JTH (100)	B	49.6/35.8
R18	7410001580	S.ARR MNR02M0APJ102 (1 k)	B	57.5/36.2
R23	7410001440	S.ARR MNR04M0APJ101 (100)	B	48.7/12.5
R25	7030016050	S.RES RMC1/16S-102JTH (1 k)	B	52.8/13.7
R26	7030016190	S.RES RMC1/16S-273JTH (27K)	B	44.8/10.8
R27	7030016290	S.RES RMC1/16S-222JTH (2.2 k)	B	45.3/9.5
R28	7030016020	S.RES RMC1/16S-104JTH (100 k)	B	54.9/13.7
R30	7030016020	S.RES RMC1/16S-104JTH (100 k)	B	51.9/13.7
R31	7030015970	S.RES RMC1/16S-103JTH (10 k)	B	34.0/51.8
R32	7030015910	S.RES RMC1/16S-101JTH (100)	B	83.0/20.1
R33	7030016560	S.RES RMC1/16SJPTH	B	64.6/25.5
R34	7030015910	S.RES RMC1/16S-101JTH (100)	B	64.2/23.5
R39	7030016560	S.RES RMC1/16SJPTH	B	52.7/9.6
R40	7030016060	S.RES RMC1/16S-105JTH (1 M)	B	102.9/41.1
R41	7030020560	S.RES RMC1/2-270JTE (27)	B	96.2/39.4
R42	7030016100	S.RES RMC1/16S-334JTH (330 k)	B	100.9/38.2
R43	7030015920	S.RES RMC1/16S-221JTH (220)	B	100.9/39.1
R45	7030016280	S.RES RMC1/16S-331JTH (330)	B	100.5/48.0
R46	7030016280	S.RES RMC1/16S-331JTH (330)	B	103.4/16.8
R47	7030016280	S.RES RMC1/16S-331JTH (330)	B	49.3/7.1
R48	7030016280	S.RES RMC1/16S-331JTH (330)	B	8.5/11.0
R51	7030016790	S.RES RMC1/16S-335JTH (3.3 M)	B	56.6/38.7
R52	7410001460	S.ARR MNR04M0APJ104 (100 k)	B	45.2/37.4
R54	7030019490	S.RES RMC1/8K680FTP (68)	B	41.6/47.5
R57	7030015970	S.RES RMC1/16S-103JTH (10 k)	B	65.0/35.3
R58	7030015970	S.RES RMC1/16S-103JTH (10 k)	B	64.1/35.3
R59	7030016110	S.RES RMC1/16S-473JTH (47 k)	B	68.2/19.8
R60	7030016360	S.RES RMC1/16S-123JTH (12 k)	B	43.0/37.2
R67	7030018300	S.RES RMC1/16K473FTP (47 k)	B	76.6/29.9
R68	7030018300	S.RES RMC1/16K473FTP (47 k)	B	73.6/29.9
R69	7030016330	S.RES RMC1/16S-153JTH (15 k)	B	78.5/30.4
R73	7030016560	S.RES RMC1/16SJPTH	B	58.8/7.4
R75	7030015910	S.RES RMC1/16S-101JTH (100)	B	58.8/5.7
R76	7030015910	S.RES RMC1/16S-101JTH (100)	B	51.3/4.9
R81	7030016020	S.RES RMC1/16S-104JTH (100 k)	B	74.7/31.0
R82	7030016050	S.RES RMC1/16S-102JTH (1 k)	B	82.6/32.8
R83	7030016150	S.RES RMC1/16S-100JTH (10)	B	87.9/33.3
R84	7030016110	S.RES RMC1/16S-473JTH (47 k)	B	82.6/34.5
R85	7030016110	S.RES RMC1/16S-473JTH (47 k)	B	81.3/36.1
R86	7030016060	S.RES RMC1/16S-105JTH (1 M)	B	72.7/35.3
R87	7030019710	S.RES RMC1/4-101JTE (100)	B	87.3/22.9
R92	7030015910	S.RES RMC1/16S-101JTH (100)	B	39.0/5.1
R93	7030016020	S.RES RMC1/16S-104JTH (100 k)	B	39.0/6.8
R94	7030016090	S.RES RMC1/16S-223JTH (22 k)	B	41.6/5.1
R95	7030016560	S.RES RMC1/16SJPTH	B	42.9/4.7
R96	7030016090	S.RES RMC1/16S-223JTH (22 k)	B	42.9/5.6
R97	7030016200	S.RES RMC1/16S-274JTH (270K)	B	35.4/5.5
R98	7030016140	S.RES RMC1/16S-124JTH (120K)	B	35.4/7.2
R104	7030016020	S.RES RMC1/16S-104JTH (100 k)	B	83.0/19.2
R113	7030015960	S.RES RMC1/16S-472JTH (4.7 k)	B	24.8/14.7
R114	7030016150	S.RES RMC1/16S-100JTH (10)	B	11.7/16.9
R115	7030016560	S.RES RMC1/16SJPTH	B	18.6/16.9
C1	4030023090	S.CER 0402B102K500CT	B	64.5/28.0
C2	4030023030	S.CER 0402B103K250CT	B	65.4/28.0
C3	4030022940	S.CER 0402B104K100CT	B	67.2/28.0
C4	4030023090	S.CER 0402B102K500CT	B	65.5/19.8
C5	4030023030	S.CER 0402B103K250CT	B	66.4/19.8
C6	4030022940	S.CER 0402B104K100CT	B	67.3/19.8
C7	4030023090	S.CER 0402B102K500CT	B	57.4/14.2
C8	4030023030	S.CER 0402B103K250CT	B	57.4/13.3
C9	4030022940	S.CER 0402B104K100CT	B	57.4/12.4
C10	4030023090	S.CER 0402B102K500CT	B	44.1/14.2
C11	4030023030	S.CER 0402B103K250CT	B	44.1/13.3
C12	4030022940	S.CER 0402B104K100CT	B	44.1/12.4
C13	4030023090	S.CER 0402B102K500CT	B	40.2/30.9
C14	4030023030	S.CER 0402B103K250CT	B	39.3/30.9
C15	4030022940	S.CER 0402B104K100CT	B	38.4/30.9
C16	4030023090	S.CER 0402B102K500CT	B	61.4/35.3

Eqv.= This component is equivalent to the REF No. component listed above, and may be substituted on parts orders and repairs.

M.= Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
H/V LOCATION=See the BOARD LAYOUTS for details.

[LOGIC UNIT]

REF NO.	PARTS NO.	DESCRIPTION	M.	H/V LOCATION
C17	4030023030	S.CER 0402B103K250CT	B	62.3/35.3
C18	4030022940	S.CER 0402B104K100CT	B	63.2/35.3
C20	4550007260	S.TAN F931C475MAABMA	B	64.7/41.0
C21	4550008260	S.TAN F921C334MPA	B	56.4/40.1
C22	4550007390	S.TAN F931C225MAABMA	B	63.8/46.3
C23	4550007390	S.TAN F931C225MAABMA	B	63.8/48.4
C24	4030023090	S.CER 0402B102K500CT	B	54.3/39.8
C25	4030022940	S.CER 0402B104K100CT	B	59.4/39.8
C26	4550007260	S.TAN F931C475MAABMA	B	63.8/50.5
C27	4030023030	S.CER 0402B103K250CT	B	36.8/33.9
C28	4030023090	S.CER 0402B102K500CT	B	43.3/45.0
C36	4030022980	S.CER 0402B473K100CT	B	64.2/20.8
C37	4030022980	S.CER 0402B473K100CT	B	64.2/21.7
C38	4030022980	S.CER 0402B473K100CT	B	64.2/22.6
C40	4030023090	S.CER 0402B102K500CT	B	28.0/51.8
C43	4030022630	S.CER 0402N100C500CT	B	66.3/27.1
C44	4030022630	S.CER 0402N100C500CT	B	63.7/25.5
C51	4030023090	S.CER 0402B102K500CT	B	100.4/40.8
C52	4030022940	S.CER 0402B104K100CT	B	101.3/36.9
C53	4030023090	S.CER 0402B102K500CT	B	104.2/26.5
C54	4030023010	S.CER 0402B104K160CT	B	101.7/48.0
C55	4030023090	S.CER 0402B102K500CT	B	122.3/24.0
C56	4030023090	S.CER 0402B102K500CT	B	43.3/42.4
C57	4030023010	S.CER 0402B104K160CT	B	43.3/41.5
C58	4030023090	S.CER 0402B102K500CT	B	43.3/40.6
C60	4030022940	S.CER 0402B104K100CT	B	63.6/42.6
C61	4030023030	S.CER 0402B103K250CT	B	43.4/38.5
C71	4030023000	S.CER 0402B683K100CT	B	77.6/27.4
C72	4030025230	S.CER TMK107BJ105KAHT	B	75.1/28.6
C73	4030025230	S.CER TMK107BJ105KAHT	B	77.9/28.6
C74	4030023090	S.CER 0402B102K500CT	B	74.8/24.5
C78	4030023030	S.CER 0402B103K250CT	B	40.3/6.5
C81	4030022940	S.CER 0402B104K100CT	B	54.5/5.3
C82	4030023090	S.CER 0402B102K500CT	B	45.0/7.4
C84	4030023090	S.CER 0402B102K500CT	B	59.2/8.7
C85	4030023090	S.CER 0402B102K500CT	B	50.8/7.1
C86	4030023090	S.CER 0402B102K500CT	B	91.1/27.6
C87	4030025230	S.CER TMK107BJ105KAHT	B	91.4/25.8
C88	4550007260	S.TAN F931C475MAABMA	B	87.0/30.7
C89	4030023030	S.CER 0402B103K250CT	B	88.1/20.8
C90	4030025230	S.CER TMK107BJ105KAHT	B	88.1/19.7
C91	4510009810	S.ELE EEEFK1E220R	B	93.4/20.3
C92	4030022940	S.CER 0402B104K100CT	B	76.0/35.4
C93	4030023090	S.CER 0402B102K500CT	B	87.5/34.6
C111	4030023030	S.CER 0402B103K250CT	B	87.1/14.7
C112	4550007260	S.TAN F931C475MAABMA	B	88.7/14.1
C113	4030023030	S.CER 0402B103K250CT	B	85.3/20.1
C114	4030023090	S.CER 0402B102K500CT	B	85.3/19.2
C145	4030023090	S.CER 0402B102K500CT	B	82.3/12.1
C147	4030023030	S.CER 0402B103K250CT	B	83.3/12.1
C149	4030023090	S.CER 0402B102K500CT	B	84.7/12.5
C150	4030023090	S.CER 0402B102K500CT	B	86.5/12.5
C161	4030023090	S.CER 0402B102K500CT	B	11.3/15.5
C162	4030022940	S.CER 0402B104K100CT	B	10.8/16.9
C201	4030022750	S.CER 0402N221J500CT Only [#21]	B	100.8/22.6
C205	4030022750	S.CER 0402N221J500CT Only [#21]	B	92.9/27.6
C206	4030022940	S.CER 0402B104K100CT Only [#21]	B	92.9/26.7
C207	4550007260	S.TAN F931C475MAABMA Only [#21]	B	92.6/33.9
C208	4030022750	S.CER 0402N221J500CT Only [#21]	B	102.4/29.9
C209	4030023090	S.CER 0402B102K500CT Only [#21]	B	103.3/29.9
C210	4030022940	S.CER 0402B104K100CT Only [#21]	B	104.2/29.9
J1	6510021722	S.CON 30FLT-SM2-TB (LF) (SN) (M)	B	77.5/16.5
J2	6510022692	S.CON 06FLT-SM2-TB (LF) (SN) (M)	B	15.0/16.2
J4	6510027111	S.CON 08FLT-SM2-TB (LF) (SN) (M)	B	37.0/37.2
J5	6510032560	S.CON AYF532665T	B	52.6/43.6
DS1	5030004390	LCD TS-GG132064061A		
DS2	5040004210	S.LED CL-196TLY-CD-T	T	106.0/32.9
DS3	5040004210	S.LED CL-196TLY-CD-T	T	99.0/46.1
DS4	5040004210	S.LED CL-196TLY-CD-T	T	118.1/29.2
DS5	5040004210	S.LED CL-196TLY-CD-T	T	99.3/18.1
DS6	5040004210	S.LED CL-196TLY-CD-T	T	84.6/6.4
DS7	5040004210	S.LED CL-196TLY-CD-T	T	52.6/6.4
DS8	5040004210	S.LED CL-196TLY-CD-T	T	20.6/6.4
DS9	5040004210	S.LED CL-196TLY-CD-T	T	9.0/11.0
W1	8900019100	CAB OPC-2016 (P0.5N30L90)		
EP8	6910019100	S.BEA MPZ1608S101AT	B	64.1/43.7
EP12	6910016330	S.BEA MMZ1005S 601CT-S	B	18.6/17.8
EP201	6910019100	S.BEA MPZ1608S101AT Only [#21]	B	92.4/28.7

[MIC-JACK UNIT]

REF NO.	PARTS NO.	DESCRIPTION	M.	H/V LOCATION
J1	6510022692	S.CON 06FLT-SM2-TB (LF) (SN) (M)	B	2.6/5.2
J2	6450002460	CON HSJ1594-010160		
W1	8910000070	FFC FFC-1008 (P0.5N6L50)		

Eqv.= This component is equivalent to the REF No. component listed above, and may be substituted on parts orders and repairs.

M.= Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
H/V LOCATION=See the BOARD LAYOUTS for details.

[GPS-ANT UNIT] (for only IC-M220G)

REF NO.	PARTS NO.	DESCRIPTION	M.	H/V LOCATION
L1	6200015480	S.COI MLG1005S 2N4C-T	T	12.2/18.8
C1	4030022520	S.CER 0402N1R0B500CT	T	16.7/14.1
C2	4030022610	S.CER 0402N0R3B500CT	T	17.1/12.9
W1	7030014290	JUM RJ25S0OHM		
EP2	3310004650	S.ANT ANT016008LCD1575MA1	T	17.1/18.8

Eqv.= This component is equivalent to the REF No. component listed above,
and may be substituted on parts orders and repairs.

M.= Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
H/V LOCATION=See the BOARD LAYOUTS for details.

SECTION 6

MECHANICAL PARTS

[CHASSIS UNIT]

REF NO.	PART NO.	DESCRIPTION	QTY.
J1	6510004882	MR-DSE-01-2	1
W1	8920002900	CAB-1359	1
MP1	8010024570	4048 CHASSIS	1
MP2	8930098330	3974 BUSH PLATE	1
MP3	8930034301	1542 ANT SEAL-1	1
MP4	8930100330	4048 IC CLIP	1
MP11	8010024420	3974 CASE ASSEMBLY	1
MP13	8930055070	2438 SHEET	1
MP14	8930049040	INSULATION SHEET FQ	1
MP15	8930098300	3974 PACKING (MTK)	1
MP16	8930060440	2685 R-PACKING (TOP)	1
MP21	8810008661	PH BT M3×8 NI-ZC3	6
MP22	8810010610	PH B0 M3×8 SUS S (BT)	2
MP23	8810010610	PH B0 M3×8 SUS S (BT)	4
MP24	8810010620	PH B0 M3×12 SUS S	4

[MIC-JACK]

REF NO.	PART NO.	DESCRIPTION	QTY.
J1*	6510022692	06FLT-SM2-TB (LF) (SN) (M)	1
J2	6450002460	HSJ1594-010160	1
W1	8910000070	FFC-1008 (P0.5N6L50)	1

[GPS-ANT] (for only IC-M220G)

REF NO.	PART NO.	DESCRIPTION	QTY.
W1*	7030014290	RJ25S0OHM	1
EP2*	3310004650	ANT016008LCD1575MA1	1
MP1	8930100540	4048 GPS ANGLE	1
MP2	8810000101	PH M2×4 ZK3	2

[MAIN UNIT]

REF NO.	PART NO.	DESCRIPTION	QTY.
J1*	6510021722	30FLT-SM2-TB (LF) (SN) (M)	1
J2*	6510021441	B6B-ZR-SM4-TF (LF) (SN)	1
W1*	7030014230	RJ20S0OHM	1
MP1*	8510016471	2775 VCO CASE-1	1
MP2*	8510016471	2775 VCO CASE-1	1
MP3	8510016461	2775 VCO COVER-1	1
MP5*	8410003140	4048 HEATSINK	1
MP6*	8510022640	4048 SHIELD CASE	1
MP7	8510022650	4048 SHIELD COVER	1
MP8	8930097540	SHIELD SPONGE (EI)	2

[ACCESSORIES]

REF NO.	PART NO.	DESCRIPTION	QTY.
MC1	—	HM-237B†	1
W1	8900022320	OPC-2395	1
MP1	8950007310	3054 ACC KIT 6ITEM	1
MP2	8010017250	2040 MOBILE BRACKET	1

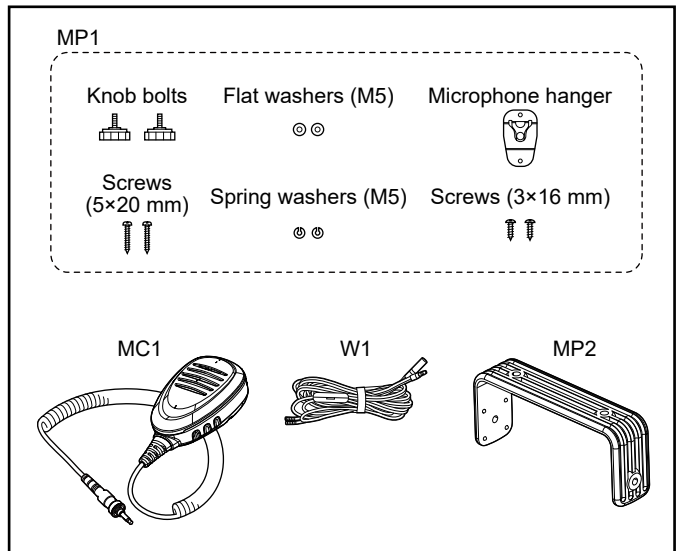
†: Sold as an option.

[FRONT UNIT]

REF NO.	PARTS NO.	DESCRIPTION	QTY.
MP1	8210033830	4048 FRONT PANEL ASSEMBLY	1
SP1	2510002160	036D01209	1
W1	9035700010	22/00/030/W02/W02	2
MP3	8110011420	3974 DISTRESS COVER	1
MP4	8930098310	3974 SHAFT	1
MP5	8930098320	3974 SPRING	1
MP7	8930100130	4048 KEYBOARD (SC)	1
MP8	8930055842	2490 EARTH SPRING-2	1
MP9	8930100090	4048 MIC HOLDER	1
MP10	8930100260	4048 MIC SPONGE	1
MP11	8830003640	3360 NUT	1
MP21	8810008661	PH BT M3×8 NI-ZC3	5
MP22	8810011840	PH BT B0 2×5 NI-ZK3	2
MP23	8810008631	PH BT M3×6 NI-ZC3	1

[LOGIC UNIT]

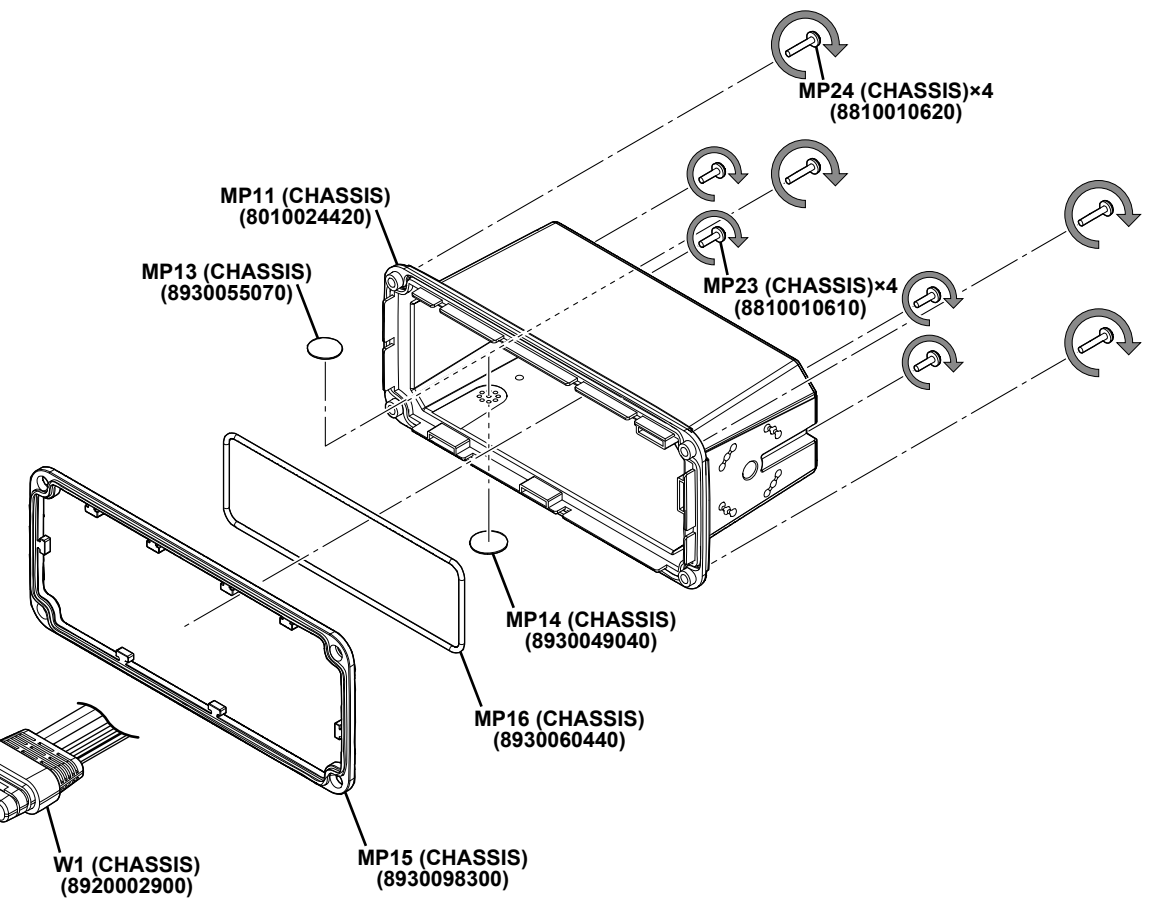
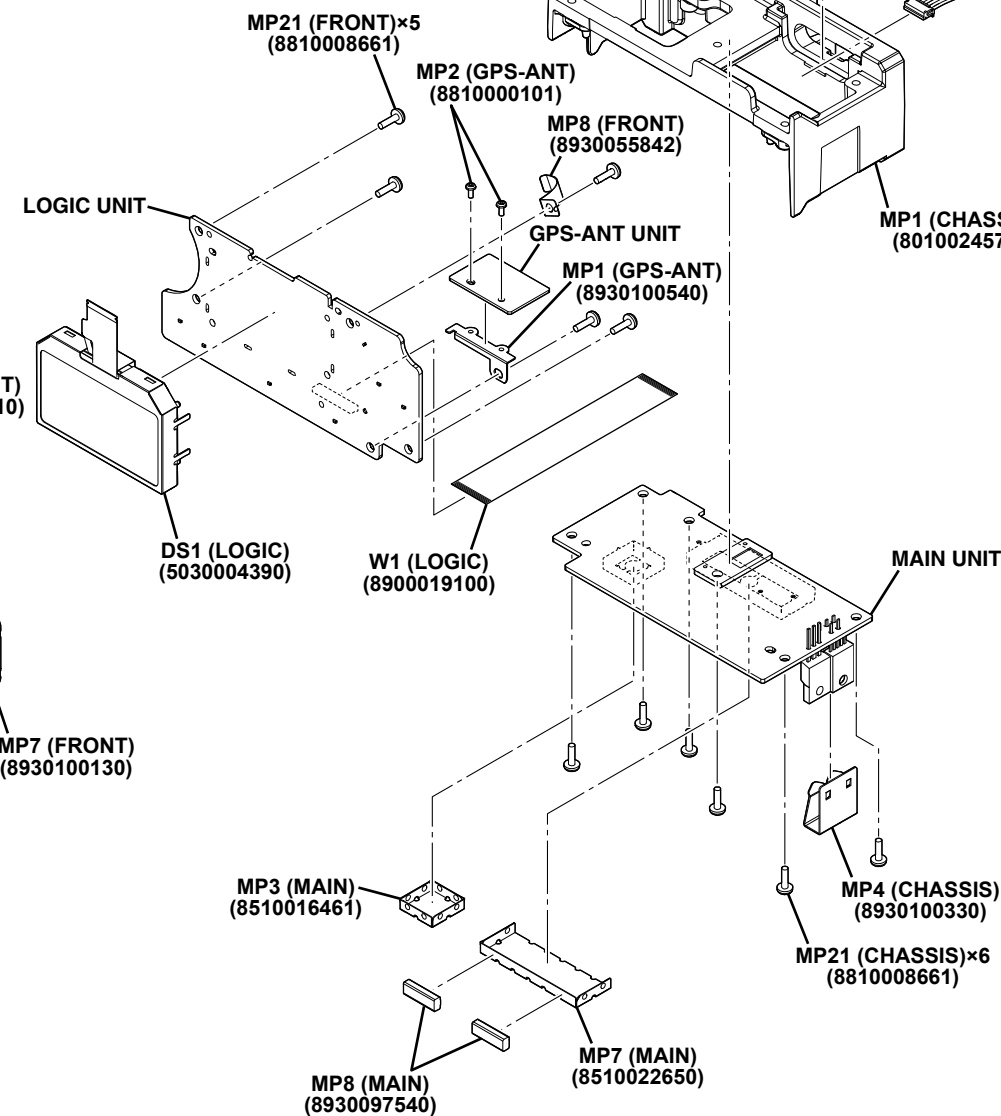
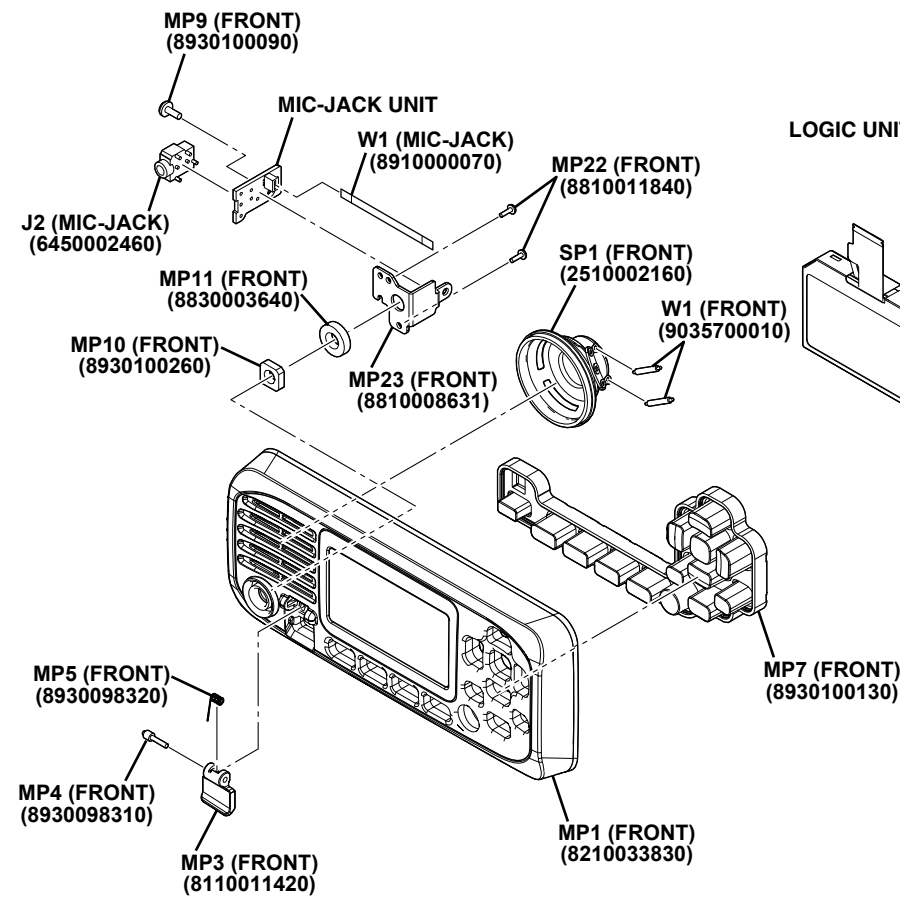
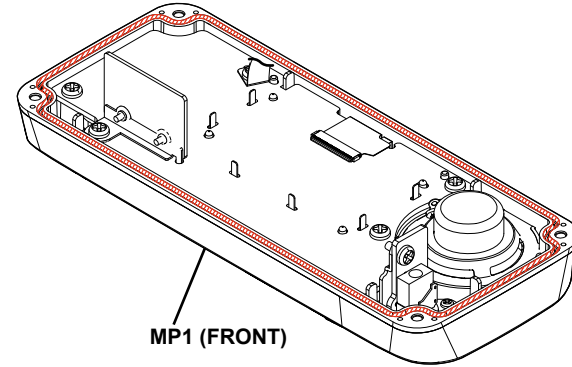
REF NO.	PART NO.	DESCRIPTION	QTY.
J1*	6510021722	30FLT-SM2-TB (LF) (SN) (M)	1
J2*	6510022692	06FLT-SM2-TB (LF) (SN) (M)	1
J4*	6510027111	08FLT-SM2-TB (LF) (SN) (M)	1
J5*	6510032560	AYF532665T	1
DS1	5030004390	TS-GG132064061A	1
W1	8900019100	OPC-2016 (P0.5N30L90)	1



*: Refer to "BOARD LAYOUTS" for the location.

Screw abbreviations A, B0, BT: Self-tapping PH: Pan head BS: Brass NI: Nickel ZU: Zinc SUS: Stainless

Apply the grease to the following area of the front panel
Used grease: G501 (80G) SHINETSU (8950002750)



Tightening torque

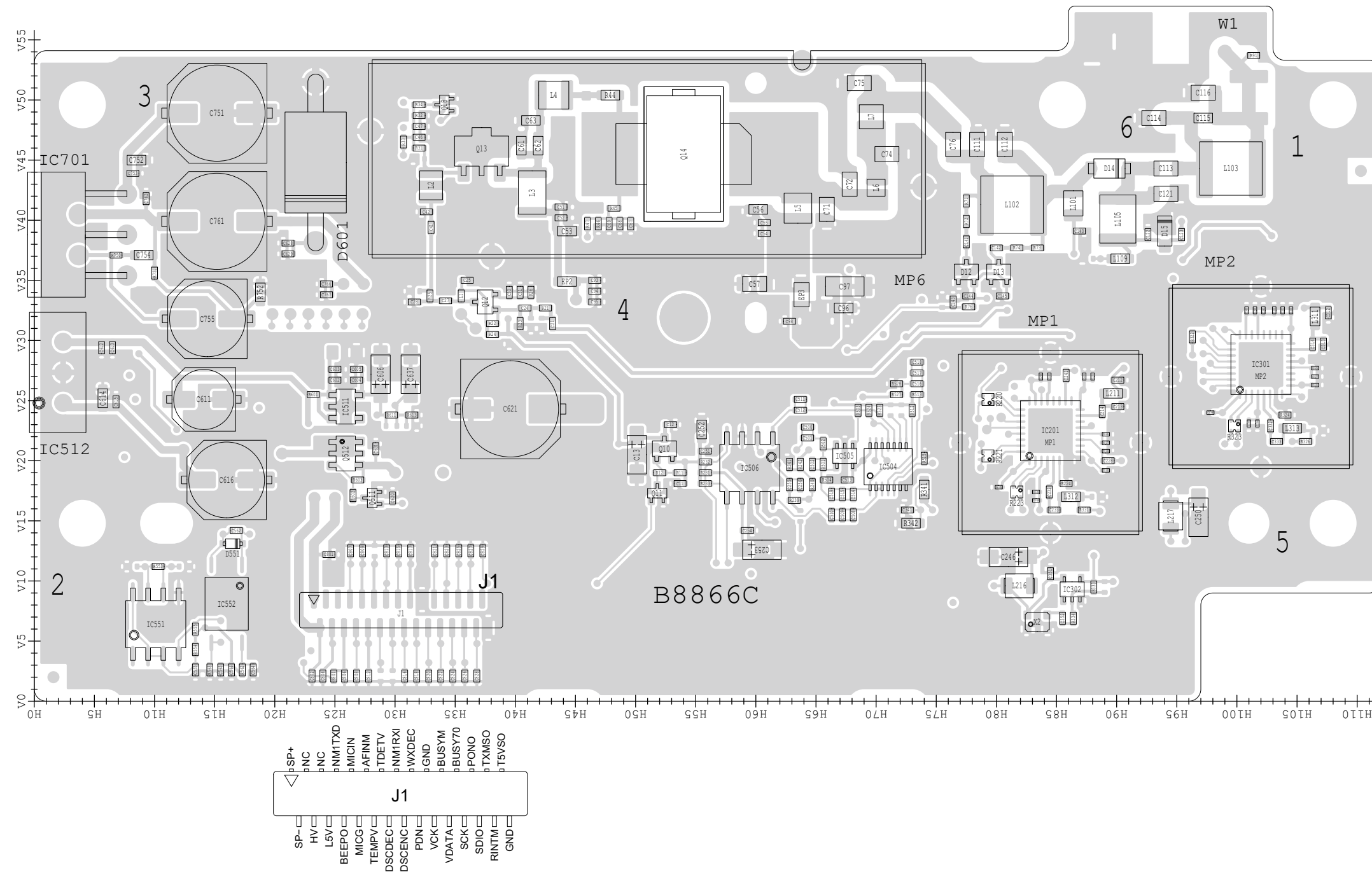
-  : <0.8 (N•m)>
-  : <0.7 (N•m)>
-  : <0.6 (N•m)>
-  : <0.5 (N•m)>
-  : <0.4 (N•m)>
-  : <0.3 (N•m)>
-  : <0.2 (N•m)>
-  : <0.1 (N•m)>

Legend:
Ref.No. Unit Name
MP1 (CHASSIS)
(1234567890)
Parts No.

BOARD LAYOUTS

The actual configuration of the PC board can be seen by viewing the top and bottom BOARD LAYOUT pages together.

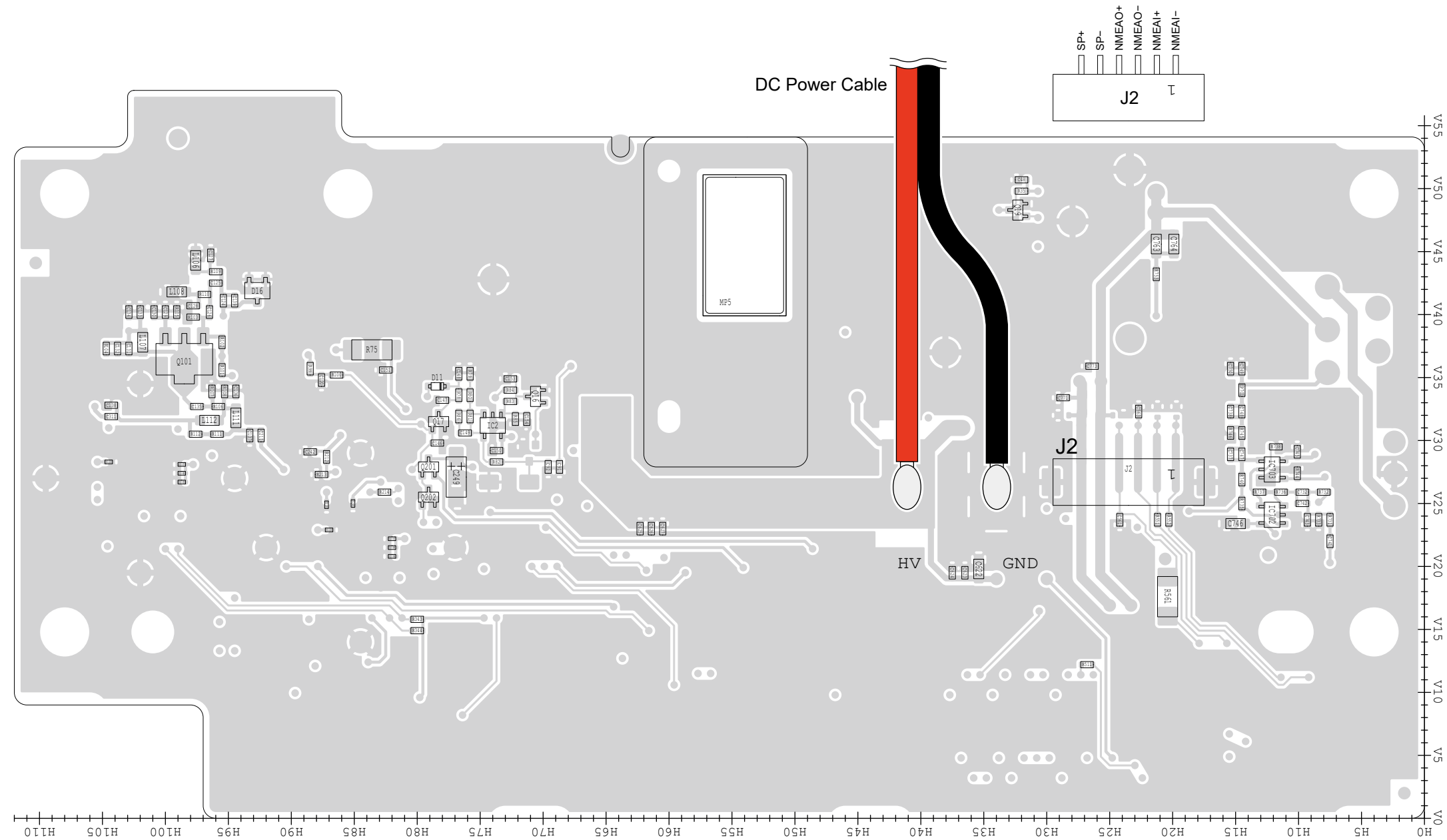
• MAIN UNIT (B-8866C: TOP VIEW)



See the PARTS LIST H/V location on the PARTS LIST for location details.

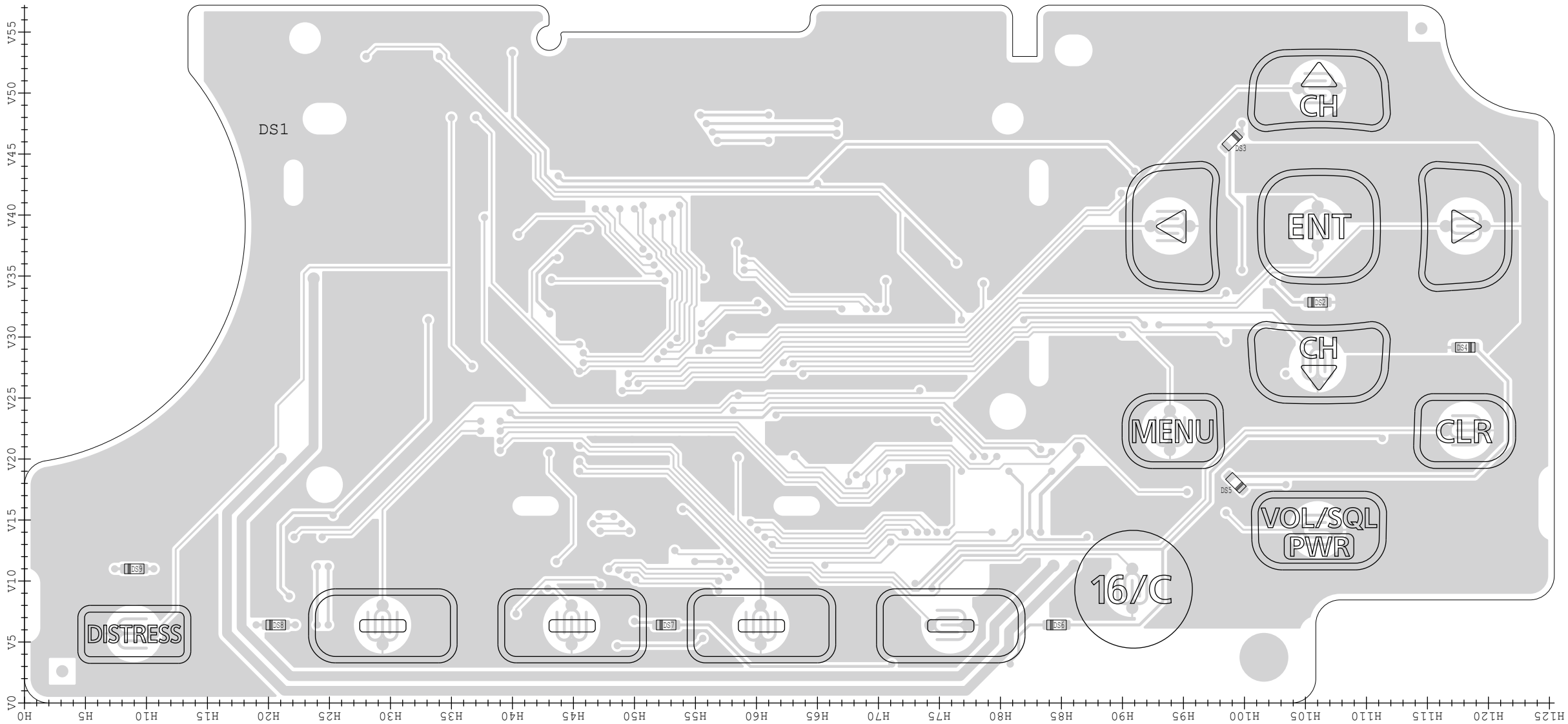
The actual configuration of the PC board can be seen by viewing the top and bottom BOARD LAYOUT pages together.

• MAIN UNIT (B-8866C: BOTTOM VIEW)



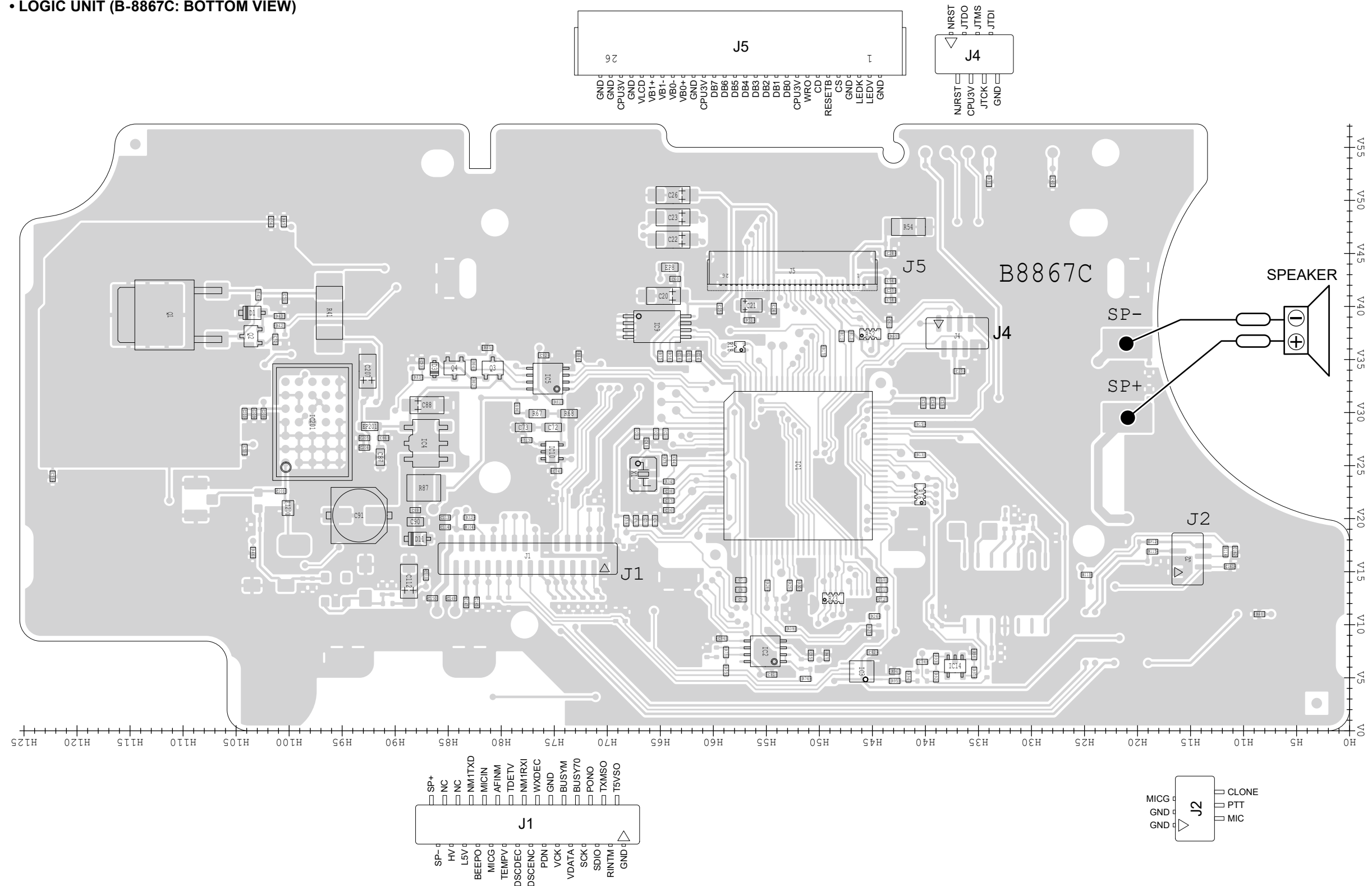
See the PARTS LIST H/V location on the PARTS LIST for location details.

• LOGIC UNIT (B-8867C: TOP VIEW)



The actual configuration of the PC board can be seen by viewing the top and bottom BOARD LAYOUT pages together.

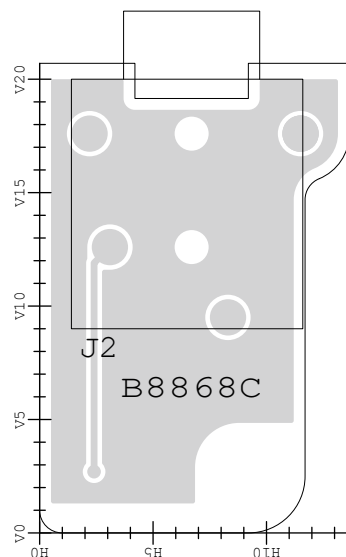
• LOGIC UNIT (B-8867C: BOTTOM VIEW)



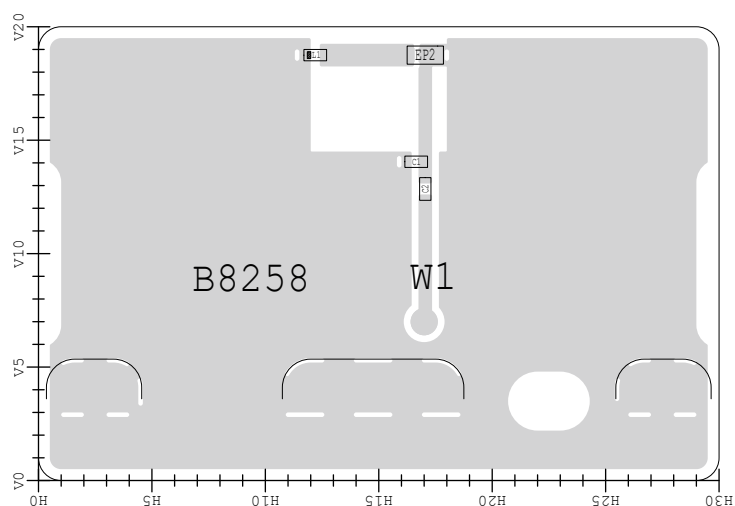
See the PARTS LIST H/V location on the PARTS LIST for location details.

The actual configuration of the PC board can be seen by viewing the top and bottom BOARD LAYOUT pages together.

- **MIC-JACK UNIT (B-8868C: TOP VIEW)**



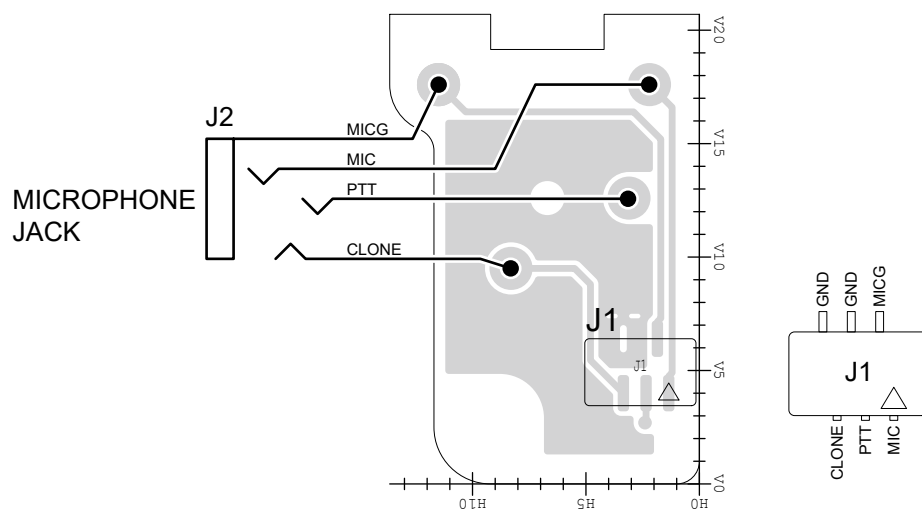
- **GPS-ANT UNIT (B-8258 for only IC-M220G: TOP VIEW)**



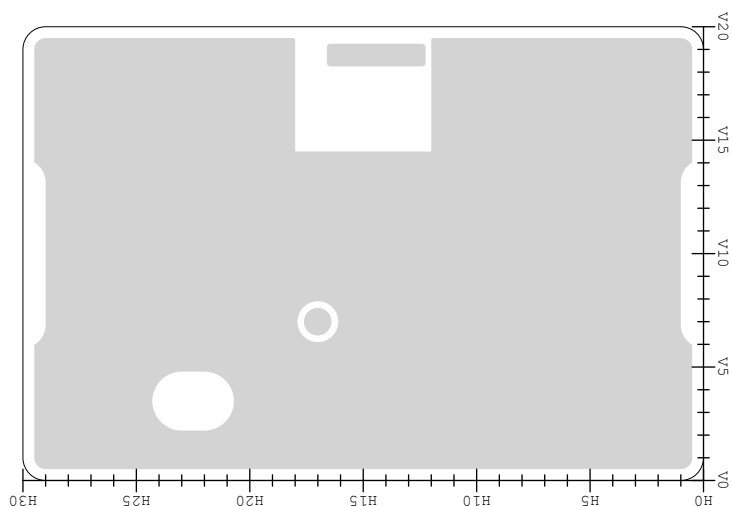
See the PARTS LIST H/V location on the PARTS LIST for location details.

The actual configuration of the PC board can be seen by viewing the top and bottom BOARD LAYOUT pages together.

• MIC-JACK UNIT (B-8868C: BOTTOM VIEW)



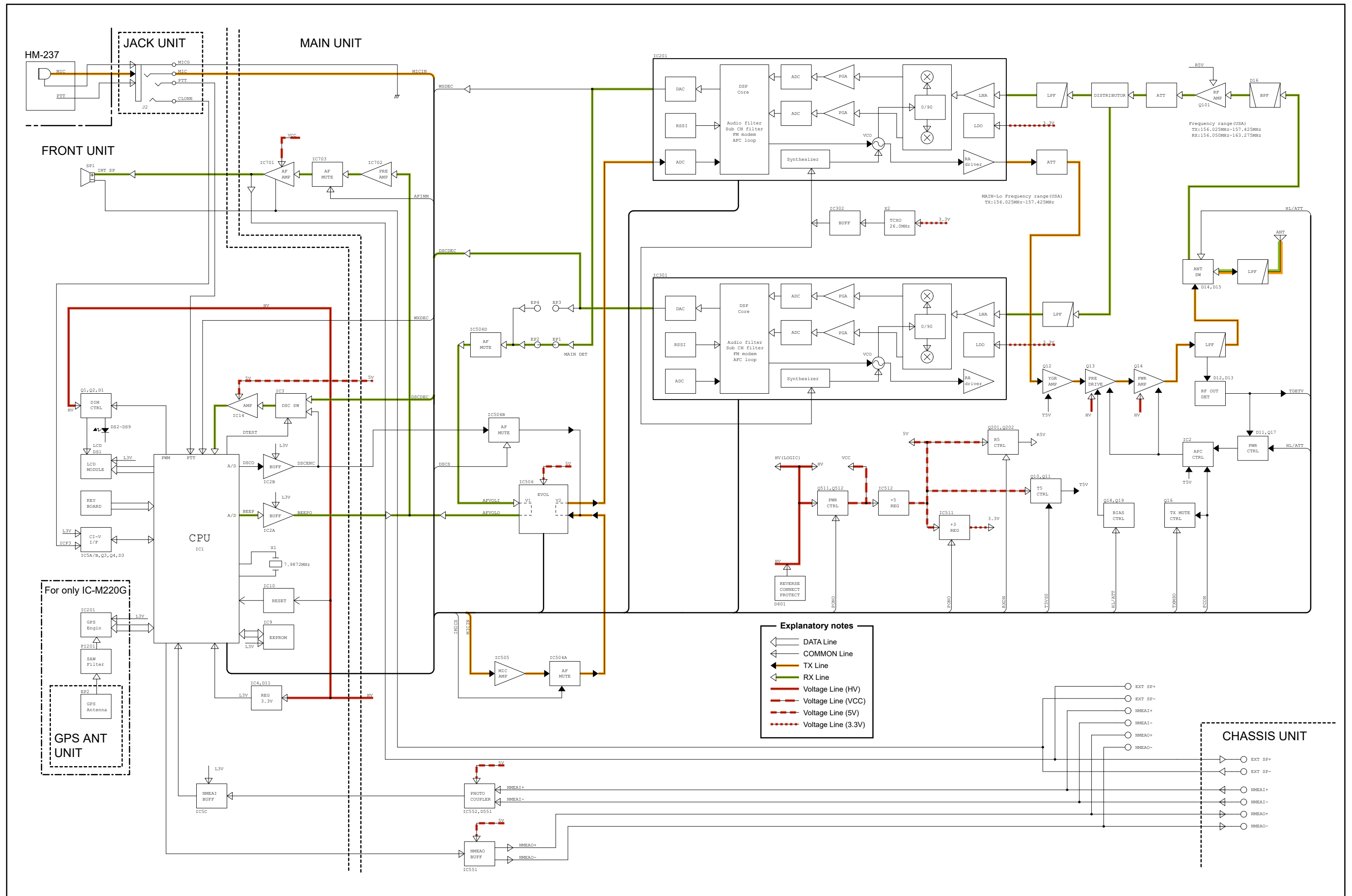
• GPS-ANT UNIT (B-8258 for only IC-M220G: BOTTOM VIEW)



See the PARTS LIST H/V location on the PARTS LIST for location details.

SECTION 8

BLOCK DIAGRAM



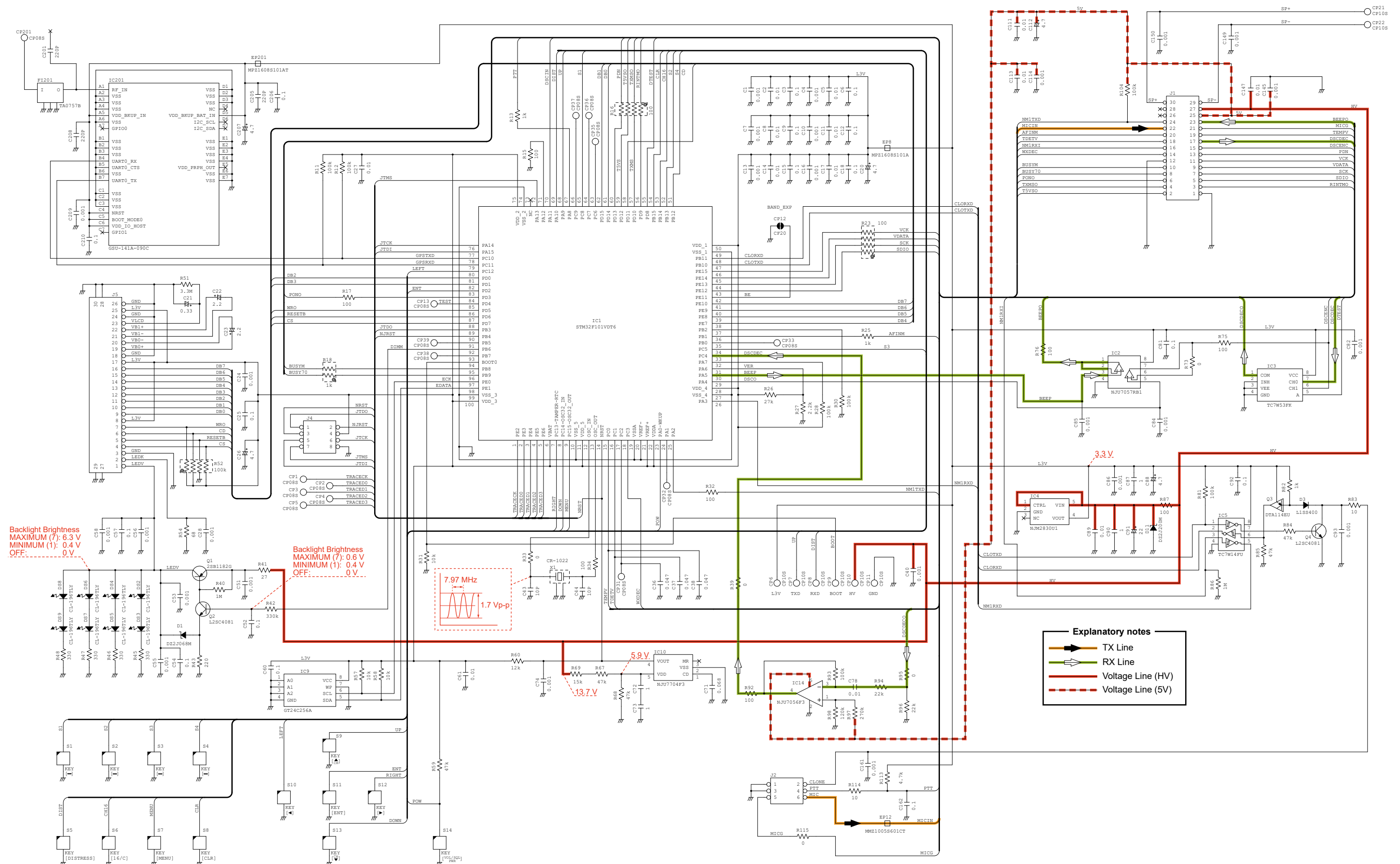
VOLTAGE DIAGRAM

Explanatory notes

- Tx Line (Orange solid)
- Rx Line (Green solid)
- Voltage Line (HV) (Red solid)
- Voltage Line (VCC) (Blue dashed)
- Voltage Line (5V) (Red dashed)
- Voltage Line (3.3V) (Blue dotted)

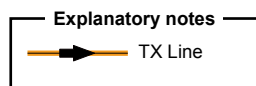
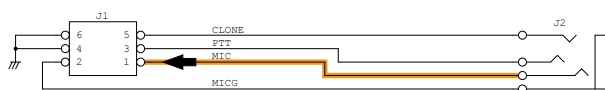
9-1

- LOGIC UNIT

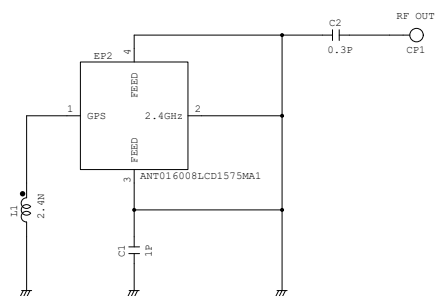


* Refer to the PARTS LIST for the value and name of component.

• MIC-JACK UNIT



• GPS-ANT UNIT (for only IC-M220G)



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