



SERVICE MANUAL

UHF TRANSCEIVER

IC-F200

S-15912XZ-C1
June 2023

Icom Inc.

INTRODUCTION

We will supply spare units for the IC-F200 described in this service manual.
Accordingly, this service manual focuses on the spare units that can be supplied, consumable parts and parts that are considered necessary in case of physical damage, instead of those on the individual electronic parts list.

This service manual describes the latest technical information for the IC-F200 UHF TRANSCEIVER at the time of publication.

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

Model	Version	Version number	Transmit output power (W)	Frequency range (MHz)	Channel spacing (kHz)
IC-F200	USA-01	#11	2	450~470	12.5
	EXP-01	#12			12.5/25.0

SERVICE CAUTION

NEVER connect the DUT to an AC outlet or to a DC power supply that uses more than the specified voltage. This will ruin the DUT.

DO NOT expose the transceiver to rain, snow or liquids.

DO NOT reverse the polarity of the DC power cable 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 DUT's front-end.

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>

5030004980 DL22-0713TLR	IC-F200	MAIN UNIT	1 pieces
8930064320 SPONGE(HW)	IC-F200	CHASSIS	2 pieces

REPAIR NOTES

1. Make sure that the problem is internal before disassembling the DUT.
2. **DO NOT** open the DUT until the DUT 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 DUT is defective.
5. **NEVER** transmit power into a Standard Signal Generator or a Sweep Generator. Otherwise the RF power may damage them.
6. **ALWAYS** connect a 30 dB to 40 dB attenuator between the DUT and such test equipment.
7. **READ** the instructions of the test equipment thoroughly before connecting it to the DUT.



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SECTION 1

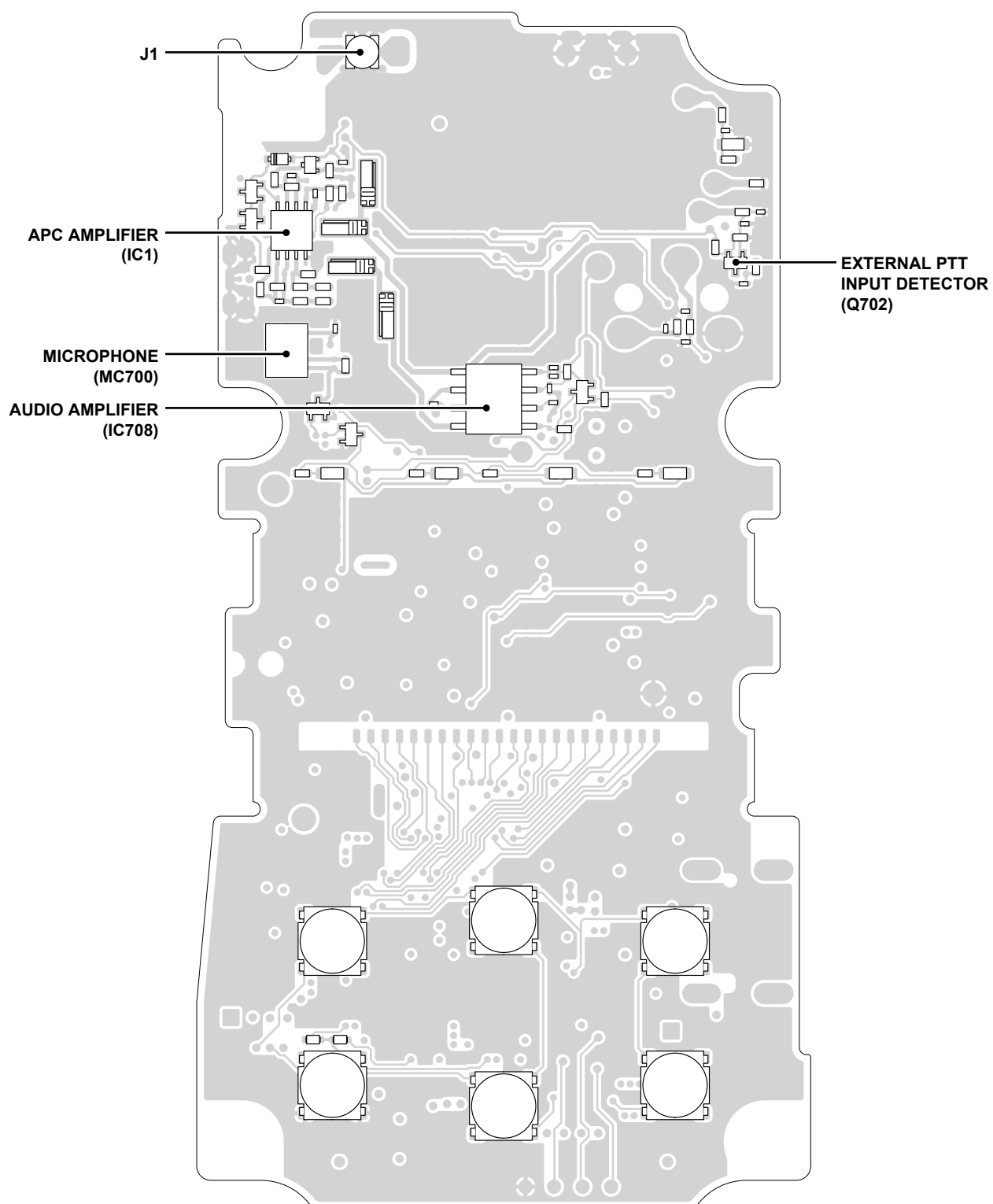
SPECIFICATIONS

			[USA] version	[EXP] version
GENERAL	Frequency range		450~470 MHz	
	Number of conventional channels		16	
	Type of emission	Wide	–	16K0F3E (25.0 kHz)
		Narrow	11K0F3E (12.5 kHz)	
	Antenna impedance		50 Ω nominal	
	Operable temperature range (transceiver only)		–30°C to +60°C (–22°F to +140°F)	
	Frequency error		±500 Hz	
	Power supply voltage (negative ground)		3.7 V DC nominal	
	Current drain (approximately)	RX (at maximum audio)	0.8 A or less	
		TX	1.8 A or less	
Dimensions		50.0(W)×156.0(H)×26.7(D) mm: 2.0(W)×6.1(H)×1.1(D) inches		
Weight (approximately)		157 g: 5.5 oz		
TRANSMITTER	Transmit output power		2.0 W or less	
	Modulation		Frequency modulation	
	Maximum frequency deviation	Wide	–	±5.0 kHz
		Narrow	±2.5 kHz	
	Spurious emissions		At least 60 dBc, 80 dBc typical	
	Adjacent channel power	Wide	–	70 dB minimum, 73 dB typical
		Narrow	60 dB minimum, 65 dB typical	
	Audio harmonic distortion		5.0% maximum (at 1 kHz, 40% deviation)	
	FM Hum and Noise (Without CCITT Filter)	Wide	–	46 dB minimum, 56 dB typical
		Narrow	40 dB maximum, 56 dB typical	
Limiting character of modulation		70% ~ 100% of maximum deviation		
Microphone impedance		2200 Ω		
RECEIVER	Sensitivity (at 12 dB SINAD)		–117 dBm maximum, –122 dBm typical	
	Adjacent channel selectivity	Wide	–	60 dB minimum, 68 dB typical
		Narrow	45 dB minimum, 52 dB typical	
	Intermodulation		55 dB minimum, 64 dB typical	
	Hum and noise	Wide	–	46 dB minimum, 51 dB typical
		Narrow	40 dB minimum, 47 dB typical	
	Squelch sensitivity (at threshold)		–123 dBm typical	
	Audio output power	Internal speaker	0.6 W typical (at 5% distortion, into the 4 Ω load)	
External speaker		0.15 W typical (at 5% distortion, into an 8 Ω load)		
Output impedance (audio)		8 Ω		

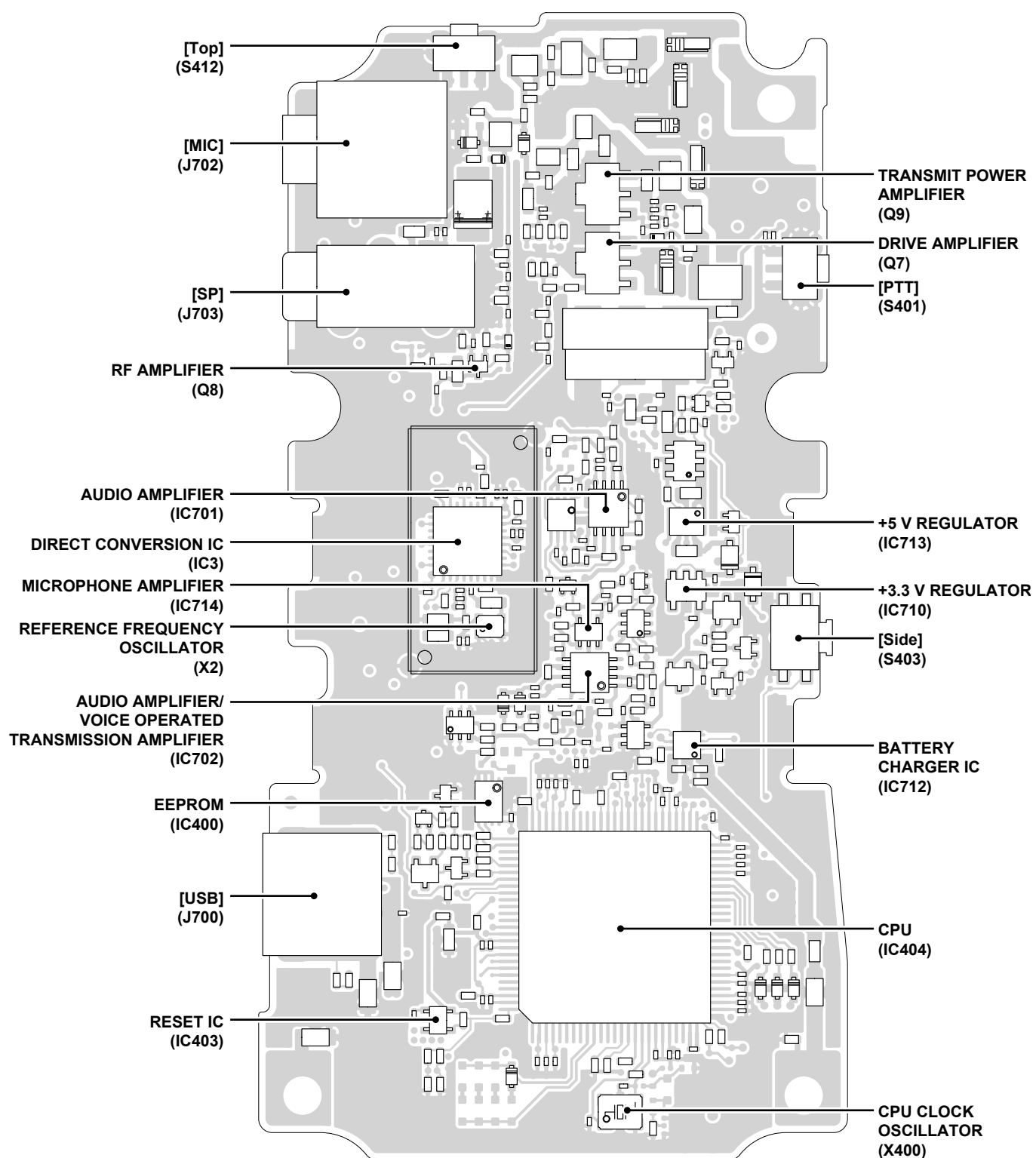
Measurements made in accordance with TIA-603.

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

• MAIN UNIT (Top view)



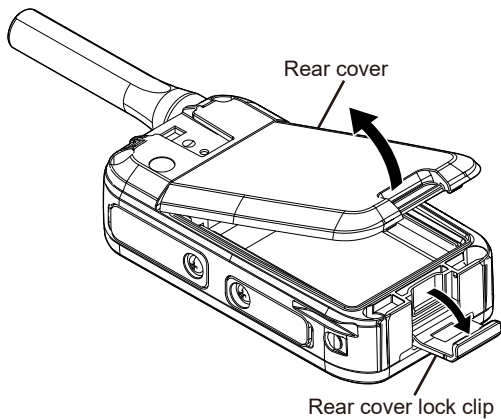
• MAIN UNIT (Bottom view)



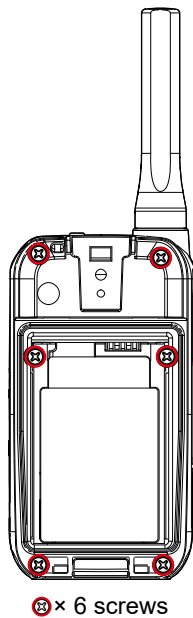
SECTION 3 DISASSEMBLY INSTRUCTION

• REMOVING THE MAIN UNIT

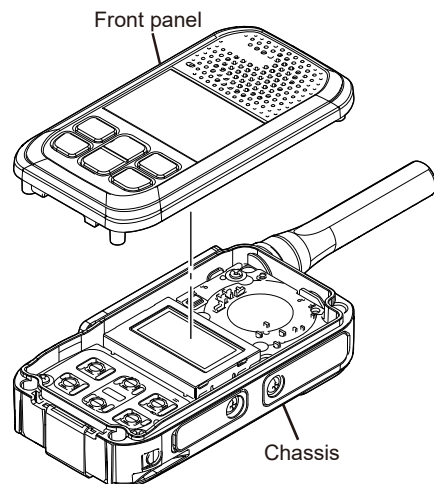
- 1) Release the rear cover lock clip and remove the rear cover.



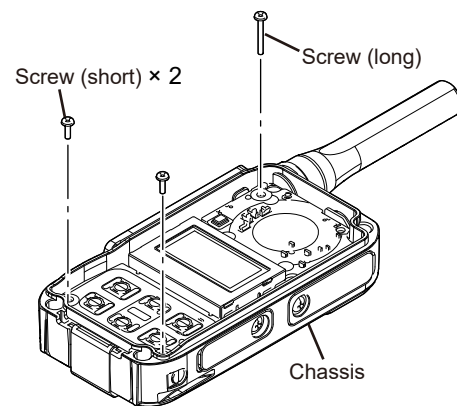
- 2) Remove the battery pack from the chassis, if attached.
3) Remove the 6 screws from the chassis.



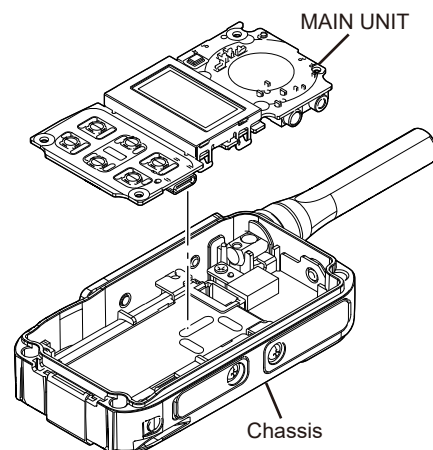
- 4) Remove the front panel from the chassis.



- 5) Remove the 3 screws from the MAIN UNIT.



- 6) Remove the MAIN UNIT from the chassis.



SECTION 4 ADJUSTMENT PROCEDURES

4-1 PREPARATION

■ REQUIRED EQUIPMENT

EQUIPMENT	GRADE AND RANGE	EQUIPMENT	GRADE AND RANGE
Programming software	For [USA]: CS-F200 USA PROGRAMMING SOFTWARE For [EXP]: CS-F200 EXP PROGRAMMING SOFTWARE	Adapter cables	• Coaxial cable "90582-0400" (See the illustration as shown on 4-2.) • OPC-2144
RF power meter (50 Ω terminated)	Measuring range: 0.1 ~ 10 W Frequency range: 300 ~ 500 MHz Offset level: +0.48 dB	Spectrum analyzer	Measuring range: Up to 3 GHz
DC power supply	Output voltage: Up to 4.1 V Current capacity: 3 A or more	Standard signal generator (SSG)	Frequency range: Up to 500 MHz Output level: -20 dBμV ~ 90 dBμV (-127 dBm ~ -17 dBm)
Audio generator (AG)	Frequency range: Up to 3000 Hz Output level: 1 ~ 500 mV	Frequency counter	Range: Up to 500 MHz Measuring accuracy: ±1 ppm or better
AC millivoltmeter	Measuring range: 10 mV to 10 V	External speaker	Input impedance: 8 Ω Rated input power: 1 W or more
Programming cable	OPC-478UC-1	Ammeter	Measuring range: 0 ~ 3 A
JIG cable 1/ JIG cable 2	See the illustration as shown below.	Distortion meter	Measuring accuracy: 3% or less at 1 kHz Input level: 50 mV to 10 V
Attenuator	Power attenuation: 30 dB or 40 dB Rated input power: 10 W or more	Modulation analyzer	Frequency range: Up to 500 MHz Measuring range: 0 ~ ±10 kHz

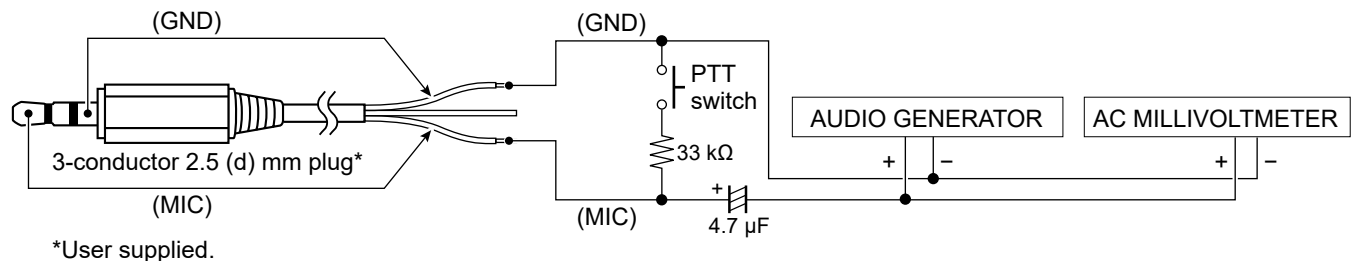
The tests described in this section should be measured and adjusted with the above test equipment. However, a radio tester can also be used for these adjustment procedures.

■ SAVE THE PROGRAMMING DATA

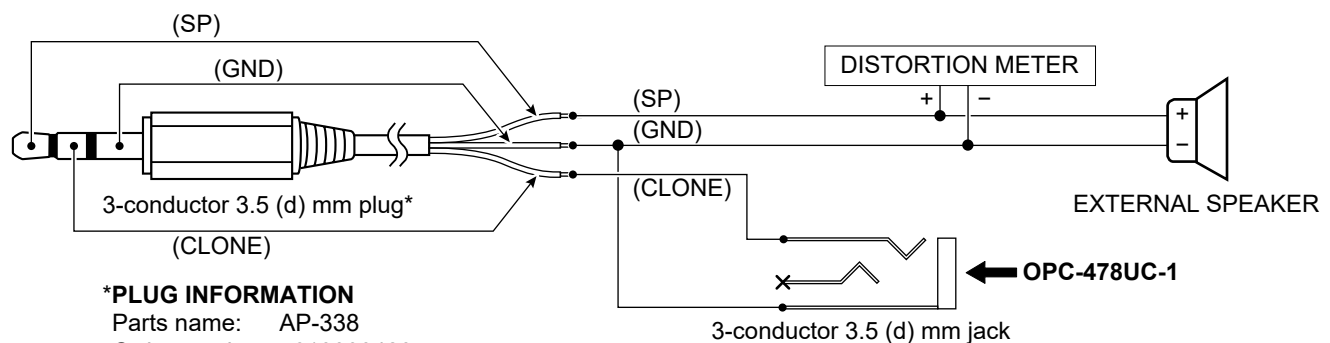
- Adjusting the DUT (Device Under Test) will change the programming setting.
- Before adjusting, save the programming data of the DUT with the programming software.
 - After adjusting, write back the programming data.

■ JIG CABLE

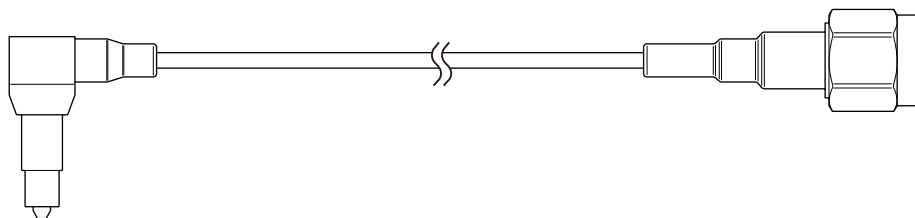
[JIG cable 1]



[JIG cable 2]



■ ADAPTER CABLE



*CABLE INFORMATION

Parts name: 90582-0400

Order number: 6910026620

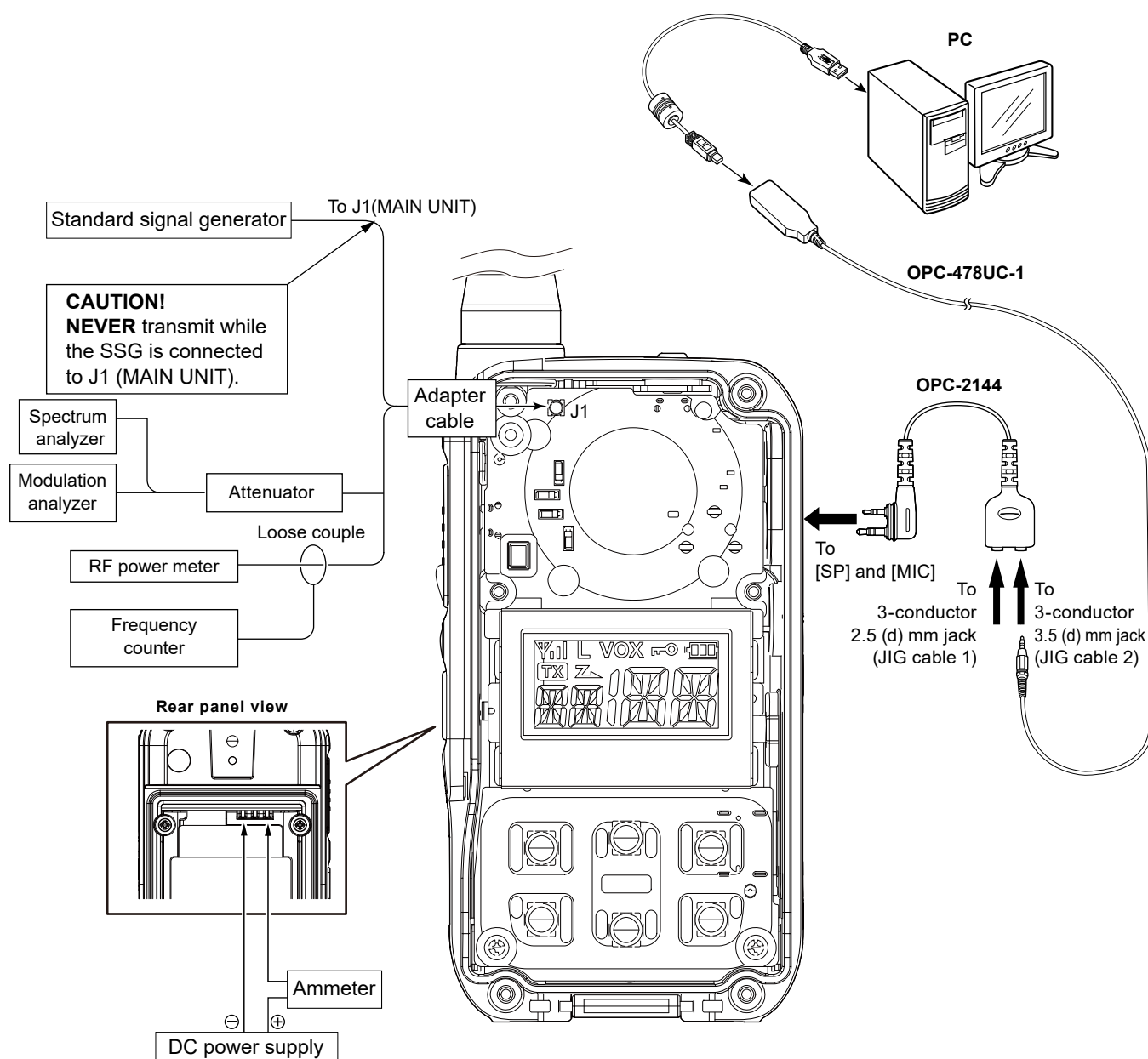
■ CONNECTIONS

To connect a test instrument such as the SSG, RF power meter, or modulation analyzer, the FRONT panel must be removed from the transceiver. **Also, the antenna must be disconnected from MAIN UNIT.**

Otherwise correct transmit and receive adjustments cannot be done.

See section 3 and perform steps 1 through 4 of "REMOVING THE MAIN UNIT."

Then remove the screw (long) listed in step 5 of "REMOVING THE MAIN UNIT."



■ ADJUSTMENT CHANNELS

Before starting adjustment, program the DUT with the embedded programming file.

Right-click on the clip icon and select “Save Embedded File to Disk...” to extract the program file from the PDF.

• For [USA]

Memory CH - Memory CH											
			Frequency (MHz)			C.Tone					
CH	Atr	Inh	RX	TX	TX Inh	RX	TX	RF PWR	SQL Tight	Lock-out	Scan
1			450.000000	<-				H			ON
2			460.000000	<-				H			ON
3			470.000000	<-				H			ON
4			450.000000	<-				L			ON
5			460.000000	<-				L			ON
6			470.000000	<-				L			ON
7			450.200000	<-	i			H			ON
8			460.200000	<-	i			H			ON
9			469.800000	<-	i			H			ON

• For [EXP]

Memory CH - Memory CH												
			Frequency (MHz)			C.Tone						
CH	Atr	Inh	RX	TX	TX Inh	RX	TX	RF PWR	SQL Tight	Lock-out	Bandwidth	Scan
1			450.000000	<-				H			N	ON
2			460.000000	<-				H			N	ON
3			470.000000	<-				H			N	ON
4			450.000000	<-				L			N	ON
5			460.000000	<-				L			N	ON
6			470.000000	<-				L			N	ON
7			450.200000	<-	i			H			N	ON
8			460.200000	<-	i			H			N	ON
9			469.800000	<-	i			H			N	ON
10			450.000000	<-				H			W	ON
11			460.000000	<-				H			W	ON
12			470.000000	<-				H			W	ON

- Programming file for the adjustment

• For [USA]

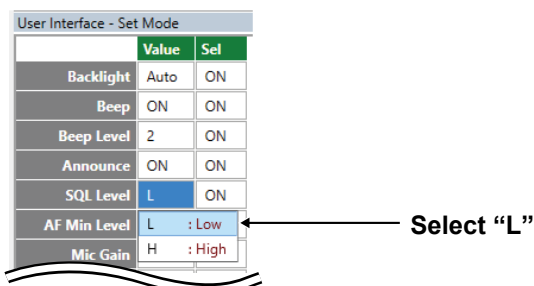


• For [EXP]



NOTE: If you program the adjustment frequencies using with the embedded programming file, the following setting is not needed.

When adjusting “SQUELCH,” change the SQL Level to “L” as shown the illustrated below.



■ ADJUSTMENT UTILITY

Adjust

Settings

DUT'S CONDITION

CH No.

1

TX Mode

1

TX OUTPUT POWER

RFP

f0

f1

f2

f3

f4

RFP Frequency (MHz)

450.0

OFF

OFF

OFF

OFF

RFP Data Hi

177

0

0

0

0

RFP Data Lo

158

0

0

0

0

SQUELCH

SQL

SQL Data (RSSI)

127

SQL Data (Noise)

85

S-METER

RSSI

RSSI N (S3)

24

RSSI N (S1)

28

[Enter] to Capture

[Enter] to Capture

REFERENCE FREQUENCY

REF

REF Data

0

TEMP

Lo

Hi

TEMP N

0

255

RFP Temp corr factor

0

0

MOD Temp corr factor

0

0

SQL (RSSI/Noise) Temp corr factor

0

0

RFP Protect

RFP Protect TEMP N

245

RFP Protect Ratio

193

BW

Wide

Narrow

SQL (RSSI) BW corr factor

-6

0

SQL (Noise) BW corr factor

9

0

Password

RX=450.00000, TX=450.00000

RF Power=High, Mode=Narrow

Analog Voice

If the window below appears, the utility is password-protected.
Ask the person who set the password.
Enter the password to open the “Adjust Utility” window.

Adjust Read Password

Enter Password for Adjust Read

OK

Cancel

4-2 FREQUENCY ADJUSTMENTS

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

ADJUSTMENT	DUT'S CONDITION	OPERATION	ADJUSTMENT ITEM	VALUE
REFERENCE FREQUENCY ~Verification~	1 • CH No.: 1 • Transmitting	• Connect the RF power meter to J1 • Loosely couple the frequency counter to J1.	—	449.999500~450.000500 MHz
~Adjustment~	NOTE: If the transmit frequency is out of the specified range, adjust as described below.			
	2 • CH No.: 1 • Transmitting	• Connect the RF power meter to J1. • Loosely couple the frequency counter to J1.	[REF Data]	450.000000 MHz (Within ±500 Hz)

4-3 TRANSMIT ADJUSTMENTS

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

ADJUSTMENT	DUT'S CONDITION	OPERATION	ADJUSTMENT ITEM	VALUE
TX OUTPUT POWER ~Adjustment~ - High power - (Narrow)	1 • CH No.: 1 • Transmitting	• Connect the RF power meter to J1. • While transmitting, adjust the DC power supply voltage to 4.1 V.	[RFP Data Hi] in the [f0] column	1.95 W
For expect [USA] (Wide)	2 • CH No.: 10 • Transmitting			
- Low power -	3 • CH No.: 4 • Transmitting	• While transmitting, adjust the DC power supply voltage to 3.7 V.	[RFP Data Lo] in the [f0] column	1.0 W
TX OUTPUT POWER ~Verification~ - High power - (Narrow)	1 • CH No.: 1 • Transmitting	• Connect the RF power meter to J1. • While transmitting, adjust the DC power supply voltage to 4.1 V.	—	1.2~2.3 W
	2 • CH No.: 2 • Transmitting			
	3 • CH No.: 3 • Transmitting			
For expect [USA] (Wide)	4 • CH No.: 10 • Transmitting			
	5 • CH No.: 11 • Transmitting			
	6 • CH No.: 12 • Transmitting			
- Low power -	7 • CH No.: 4 • Transmitting	• While transmitting, adjust the DC power supply voltage to 3.7 V.		0.7~1.4 W
	8 • CH No.: 5 • Transmitting			
	9 • CH No.: 6 • Transmitting			

Continued on the next page...

4-3 TRANSMIT ADJUSTMENTS (CONTINUED)

ADJUSTMENT	DUT'S CONDITION	OPERATION	ADJUSTMENT ITEM	VALUE
TX FLOWING CURRENT ~Verification~	1 • CH No.: 1 • Transmitting	• Connect the RF power meter to J1. • Connect the ammeter between the DUT and the DC power supply.	—	1.8 A or less
	2 • CH No.: 2 • Transmitting			
	3 • CH No.: 3 • Transmitting			
SPURIOUS EMISSIONS ~Verification~	1 • CH No.: 1 • Transmitting	• Connect the spectrum analyzer to J1, through the attenuator.	—	At least 60 dBc
	2 • CH No.: 2 • Transmitting			
	3 • CH No.: 3 • Transmitting			
MODULATION SENSITIVITY ~Verification~	1 • CH No.: 2 • Transmitting	• Connect the modulation analyzer with the AC millivoltmeter to J1, through the attenuator, and set it to: HPF: OFF LPF: 15 kHz De-emphasis: OFF Detector: (P-P)/2 • Connect the audio generator with the AC millivoltmeter to OPC-2144, through the JIG cable 1, and set it to: Frequency: 1 kHz Waveform: Sinewave Level: Set the output level so that the modulation analyzer shows ± 1.5 kHz of deviation.	—	10~20 mVrms (Audio generator output level)
TX SIGNAL-TO- NOISE RATIO ~Verification~	1 • CH No.: 2 • Transmitting	• Connect the modulation analyzer with the AC millivoltmeter to J1, through the attenuator, and set it to: HPF: 50 Hz LPF: 3 kHz De-emphasis: ON Detector: (P-P)/2 • Connect the audio generator with the AC millivoltmeter to OPC-2144, through the JIG cable 1, and set it to: Frequency: 1 kHz Waveform: Sinewave Level: Set the output level so that the modulation analyzer shows ± 1.5 kHz of deviation. • Toggle the audio generator output ON and OFF.	—	40 dB or more

4-4 RECEIVE ADJUSTMENTS

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

ADJUSTMENT		DUT'S CONDITION	OPERATION	ADJUSTMENT ITEM	VALUE
SQUELCH ~Adjustment~	1	• CH No.: 9 • Receiving	- Set SQL Level to "Low" on the DUT's menu screen. - Connect the distortion meter with the external speaker to OPC-2144, through the JIG cable 2. - Connect the SSG to J1, and set it to: Frequency: 469.800 MHz Level: Set to the level so that the distortion meter shows 12 dB SINAD. Modulation: 1 kHz Deviation: ±1.5 kHz - Click [] button to display the "I/O Check" window as shown below. - Record the "RSSI (Dec)" value as reference value A. - Record the "Noise (Dec)" value as reference value B.	—	—
	2		• Enter the adjustment value that subtract 1 from the reference value A. (Refer to the illustration below.)	[SQL Data (RSSI)]	
	3		• Enter the adjustment value that subtract the reference value B from 125. (Refer to the illustration below.)	[SQL Data (Noise)]	
S-METER ~Adjustment~	1	• CH No.: 7 • Receiving	• Connect the SSG to J1, and set it to: Frequency: 450.200 MHz Level: +23 dBμ (PD) (−84 dBm) Modulation: 1 kHz Deviation: ±1.5 kHz	[RSSI N (S3)]	Push [Enter] (Automatic adjustment)
	2				Push [Enter] (Stores the value)
	3		• Set the SSG to: Level: −7 dBμ (PD) (−114 dBm)	[RSSI N (S1)]	Push [Enter] (Automatic adjustment)
	4				Push [Enter] (Stores the value)

Continued on the next page...

• I/O Check window

I/O Check			
Input	Dec		
VIN	144		
TEMP	11.5	A5	21.5°C
RSSI	**	1F	0.40V
Noise	**		
Output			

Record this value as reference value A.

Record this value as reference value B.

Enter value A minus 1

Enter value 125 minus B

• Adjust utility window

SQL	
SQL Data (RSSI)	**
SQL Data (Noise)	**

(The values shown above are only examples.
Each DUT has own values.)

4-4 RECEIVE ADJUSTMENTS (CONTINUED)

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

ADJUSTMENT		DUT'S CONDITION	OPERATION	ADJUSTMENT ITEM	VALUE
RECEIVE SENSITIVITY ~Verification~	1	• CH No.: 7 • Receiving	• Connect the distortion meter with the external speaker to OPC-2144, through the JIG cable 2. • Connect the SSG to J1, and set it to: Frequency: 450.200 MHz Level: Set to the level so that the distortion meter shows 12 dB SINAD. Modulation: 1 kHz Deviation: ±1.5 kHz	—	-10 dBμ (PD) (-117 dBm) or less (SSG output level)
	2	• CH No.: 8 • Receiving	• Set the SSG to: Frequency: 460.200 MHz		
	3	• CH No.: 9 • Receiving	• Set the SSG to: Frequency: 469.800 MHz		
SQUELCH ~Verification~	1	• CH No.: 7 • Receiving	• Connect the distortion meter with the external speaker to OPC-2144, through the JIG cable 2. • Connect the SSG to J1, and set it to: Frequency: 450.200 MHz Level: Set to the level so that squelch just opens. Modulation: 1 kHz Deviation: ±1.5 kHz	—	-10 dBμ (PD) (-117 dBm) or less
	2		• Turn OFF the SSG output.		Squelch closes.
	3	• CH No.: 8 • Receiving	• Set the SSG to: Frequency: 460.200 MHz Level: Set to the level so that squelch just opens.		-10 dBμ (PD) (-117 dBm) or less
	4		• Turn OFF the SSG output.		Squelch closes.
	5	• CH No.: 9 • Receiving	• Set the SSG to: Frequency: 469.800 MHz Level: Set to the level so that squelch just opens.		-10 dBμ (PD) (-117 dBm) or less
	6		• Turn OFF the SSG output.		Squelch closes.
AUDIO OUTPUT POWER ~Verification~	1	• CH No.: 7 • Receiving	• Connect the distortion meter with the external speaker to OPC-2144, through the JIG cable 2. • Connect the SSG to J1, and set it to: Frequency: 450.200 MHz Modulation: 1 kHz Deviation: ±1.5 kHz Level: +60 dBμ (PD) (-47 dBm) • Set the audio output level to the point where the distortion meter shows 5% distortion.	—	0.15 W (≈1.10 V rms) or more

Continued on the next page...

4-4 RECEIVE ADJUSTMENTS (CONTINUED)

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

ADJUSTMENT	DUT'S CONDITION		OPERATION	ADJUSTMENT ITEM	VALUE
RX SIGNAL-TO-NOISE RATIO ~Verification~	1	• CH No.: 7 • Receiving	• Connect the AC millivoltmeter with the external speaker to OPC-2144, through the JIG cable 2. • Connect the SSG to J1, and set it to: Frequency: 450.200 MHz Level: +60 dBμ (PD) (−47 dBm) Modulation: 1 kHz Deviation: ±1.5 kHz • Set the audio output level to the point where the AC millivoltmeter shows 50% of the rated audio output level. (0.08 W: ≈0.8 V rms) • Toggle the SSG modulation ON and OFF.	—	40 dB or more
	2	• CH No.: 8 • Receiving	• Set the SSG to: Frequency: 460.200 MHz		
	3	• CH No.: 9 • Receiving	• Set the SSG to: Frequency: 469.800 MHz		
RX FLOWING CURRENT ~Verification~ (At maximum audio output)	1	• CH No.: 8 • Receiving	• Connect the ammeter between the DUT and the DC power supply. • Connect the SSG to J1, and set it to: Frequency: 460.200 MHz Level: +60 dBμ (PD) (−47 dBm) Modulation: 1 kHz Deviation: ±1.5 kHz • Set the audio output level to the maximum.	—	0.8 A or less
NOTE: The Power Save function and backlight must be turned OFF.					
(At stand-by)	2	• CH No.: 8 • Stand-by	• Disconnect the SSG and the JIG cable. • Verify the squelch is closed.	—	150 mA or less

4-5 AFTER THE ADJUSTMENT

After adjusting, write back the programming data (described in ■ SAVE THE PROGRAMMING DATA).

SECTION 5

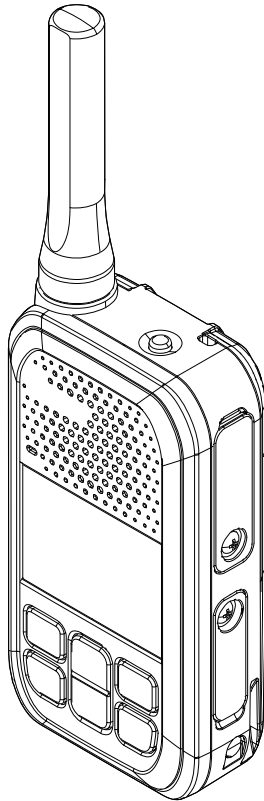
SPARE PARTS AND UNITS

■ ASSEMBLED UNIT SET

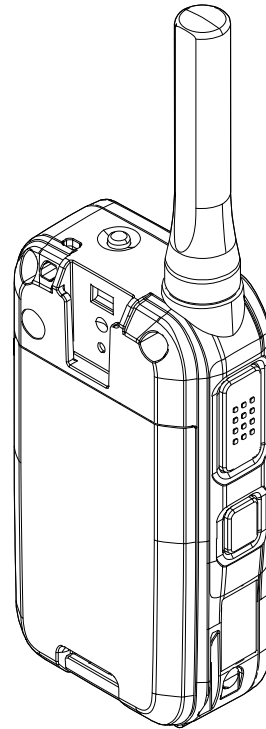
Spare unit name	Order number	Applicable versions	Remarks
C F200 #11 UNIT-SET	0343911101	#11	—
C F200 #12 UNIT-SET	0343911201	#12	

The set is completely assembled and adjusted.
Accessories not included.

<Front view>



<Back view>

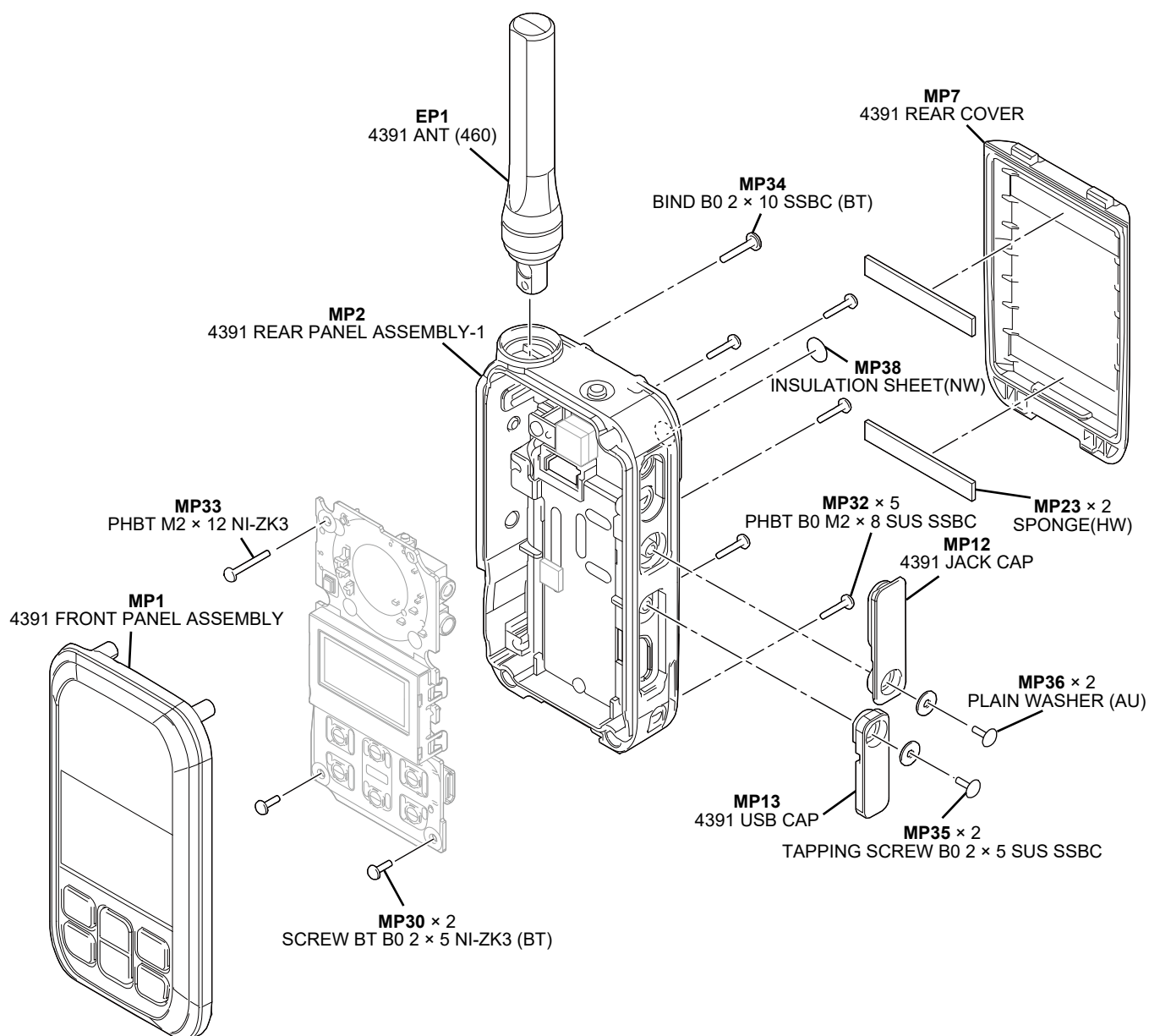


■ SPARE PARTS INFORMATION

• For the CHASSIS UNIT

	Reference Number	Parts name	Order number	Applicable versions	Remarks
ANTENNA	EP1	4391 ANT(460)	3310005730	All	—
PANEL	MP1	4391 FRONT PANEL ASSEMBLY	8210037180		—
	MP2	4391 REAR PANEL ASSEMBLY-1	8210037171		—
COVER	MP7	4391 REAR COVER	8110012610		—
CAP	MP12	4391 JACK CAP	8930110730		—
	MP13	4391 USB CAP	8930110740		—
SPONGE	MP23	SPONGE(HW)	8930064320		Quantity: 2*
SCREW	MP30	SCREW BT B0 2 × 5 NI-ZK3 (BT)	8810011840		Quantity: 2*
	MP32	PHBT B0 M2 × 8 SUS SSBC	8810010850		Quantity: 5*
	MP33	PHBT M2 × 12 NI-ZK3	8810010091		—
	MP34	BIND B0 2 × 10 SSBC (BT)	8820001880		—
	MP35	TAPPING SCREW B0 2 × 5 SUS SSBC	8810011360		Quantity: 2*
WASHER	MP36	PLAIN WASHER (AU)	8850003250		Quantity: 2*
SHEET	MP38	INSULATION SHEET(NW)	8930095070		—

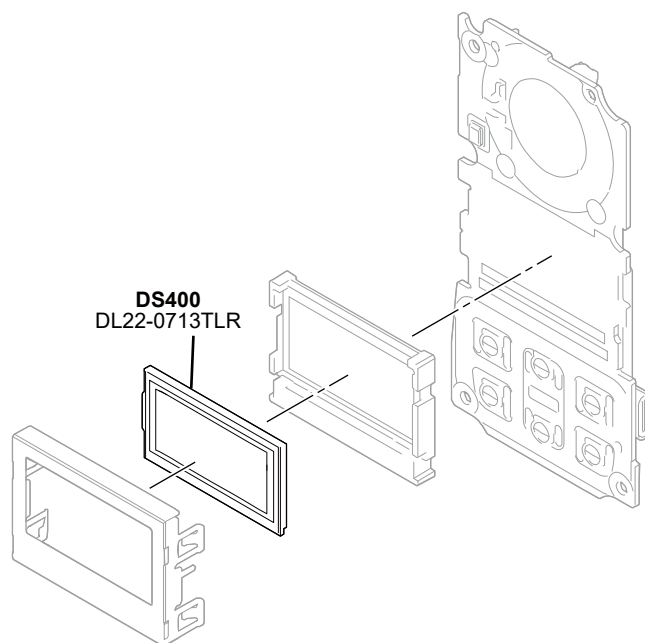
*When you order a quantity of 1, you will receive one item.



NOTE: The parts that are not listed, see SECTION 6 MECHANICAL PARTS for details.

• For the MAIN UNIT

REF NO.	PART NO.	DESCRIPTION		M.	H/V LOCATION
Q7	1560002420	S.FET	RD01MUS2B-T513	B	18.3/17.9
Q8	1530004730	S.TRA	2SC5488A-TL-H	B	25.9/27.0
Q9	1560002660	S.FET	RFM03U3P(TE12LZE)	B	13.3/17.9
J702	6450003040	CON	C1FYJ0-A00-R	B	10.0/34.3
J703	6450002530	CON	HSJ4456-010320	B	20.0/36.3
DS400	5030004980	LCD	DL22-0713TLR		



NOTE: The mechanical parts that are not listed,
see SECTION 6 MECHANICAL PARTS for details.

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
H/V LOCATION= Shows mounting location on the PCB.

SECTION 6

MECHANICAL PARTS

[CHASSIS UNIT]

REF NO.	PART NO.	DESCRIPTION	QTY.
EP1	3310005730	4391 ANT (460)	1
MP1	8210037180	4391 FRONT PANEL ASSEMBLY	1
MP2	8210037171	4391 REAR PANEL ASSEMBLY-1	1
MP7	8110012610	4391 REAR COVER	1
MP12	8930110730	4391 JACK CAP	1
MP13	8930110740	4391 USB CAP	1
MP23	8930064320	SPONGE (HW)	2
MP30	8810011840	SCREW BT B0 2 × 5 NI-ZK3 (BT)	2
MP32	8810010850	PHBT B0 M2 × 8 SUS SSBC	5
MP33	8810010091	PHBT M2 × 12 NI-ZK3	1
MP34	8820001880	BIND B0 2 × 10 SSBC (BT)	1
MP35	8810011360	TAPPING SCREW B0 2 × 5 SUS SSBC	2
MP36	8850003250	PLAIN WASHER (AU)	2
MP38	8930095070	INSULATION SHEET (NW)	1
MP42	8930111280	THERMAL SHEET (EE) RM-5 (30) 8 × 8 × T5.5	1
MP44	8930111300	THERMAL SHEET (EG) RM-5 (30) 6 × 6 × T1.5	1

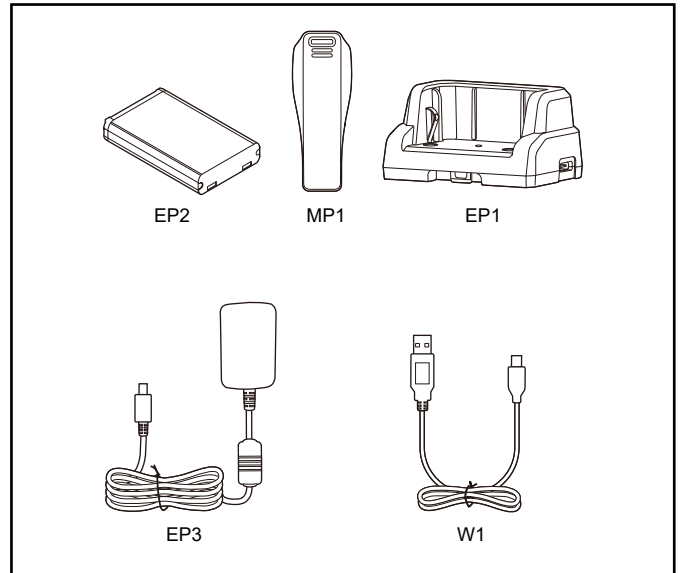
[MAIN UNIT]

REF NO.	PART NO.	DESCRIPTION	QTY.
J1*	6510031650	20549-001E-01	1
J700*	6510033720	DX07S024JA1R1300	1
J701*	6510031610	LSC-2724R62-3-32-0000	1
J702	6450003040	C1FYJ0-A00-R	1
J703	6450002530	HSJ4456-010320	1
F700*	5210001540	KAB 3202 801 NA29	1
F701*	5210001170	ERBRE2R50V	1
F703*	5210001170	ERBRE2R50V	1
DS400	5030004980	DL22-0713TLR	1
MC700*	7700003280	SPU0410HR5H-PB-7	1
S401*	2260003810	TAFG1-12WQR	1
S402*	2260003600	SKRBAAE010	1
S403*	2230001060	EVQ-PUL 02K	1
S406*	2260003600	SKRBAAE010	1
S407*	2260003600	SKRBAAE010	1
S410*	2260003600	SKRBAAE010	1
S411*	2260003600	SKRBAAE010	1
S412*	2260003810	TAFG1-12WQR	1
S700*	2260003600	SKRBAAE010	1
EP100	8930111290	SRCN-4391-SP-N-W (SHJ)	1
MP3*	8510021100	OG-321022	1
MP9*	8510021100	OG-321022	1
MP10*	8510021100	OG-321022	1
MP11*	8510021100	OG-321022	1
MP12*	8510021100	OG-321022	1
MP13*	8510023030	4087 D-SHIELD CASE	1
MP100	8930110920	4391 LCD HOLDER	1
MP101	8210037100	4391 REFLECTOR ASSY	1
MP102	8930094840	SPONGE (OG)	1
MP700*	8510021100	OG-321022	1
MP701*	8510021100	OG-321022	1
MP702*	8510021100	OG-321022	1
MP703*	8510021100	OG-321022	1

[SUPPLIED ACCESSORIES]

REF NO.	PART NO.	DESCRIPTION	QTY.
W1	8900022880	OPC-2480 Only [#12]	1
EP1	—	BC-262†	1
EP2	—	BP-304A†	1
EP3	—	BC-263A† Only [#11]	1
MP1	—	MB-127†	1

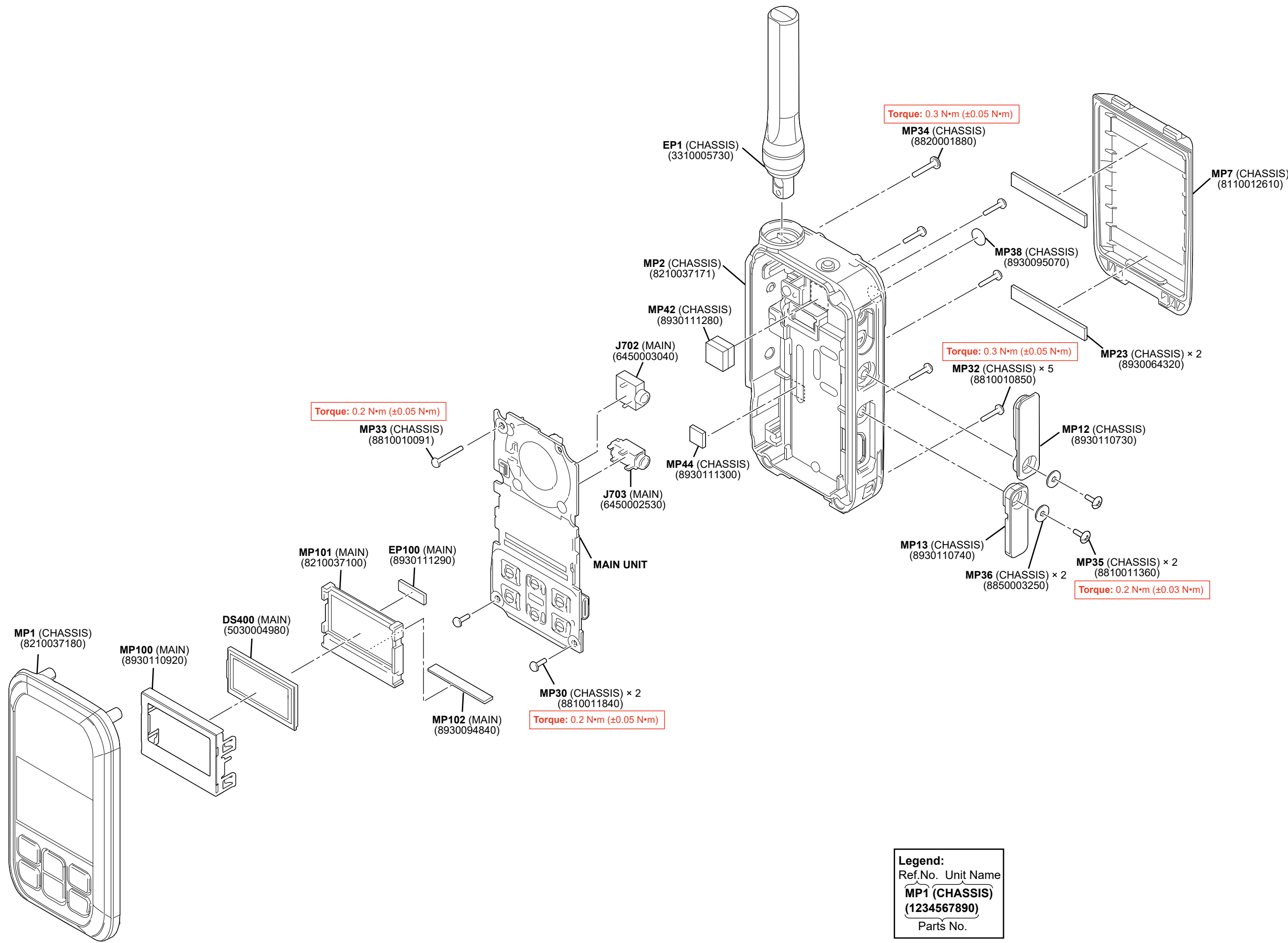
†Sold as an option.



*: 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

• Exploded view



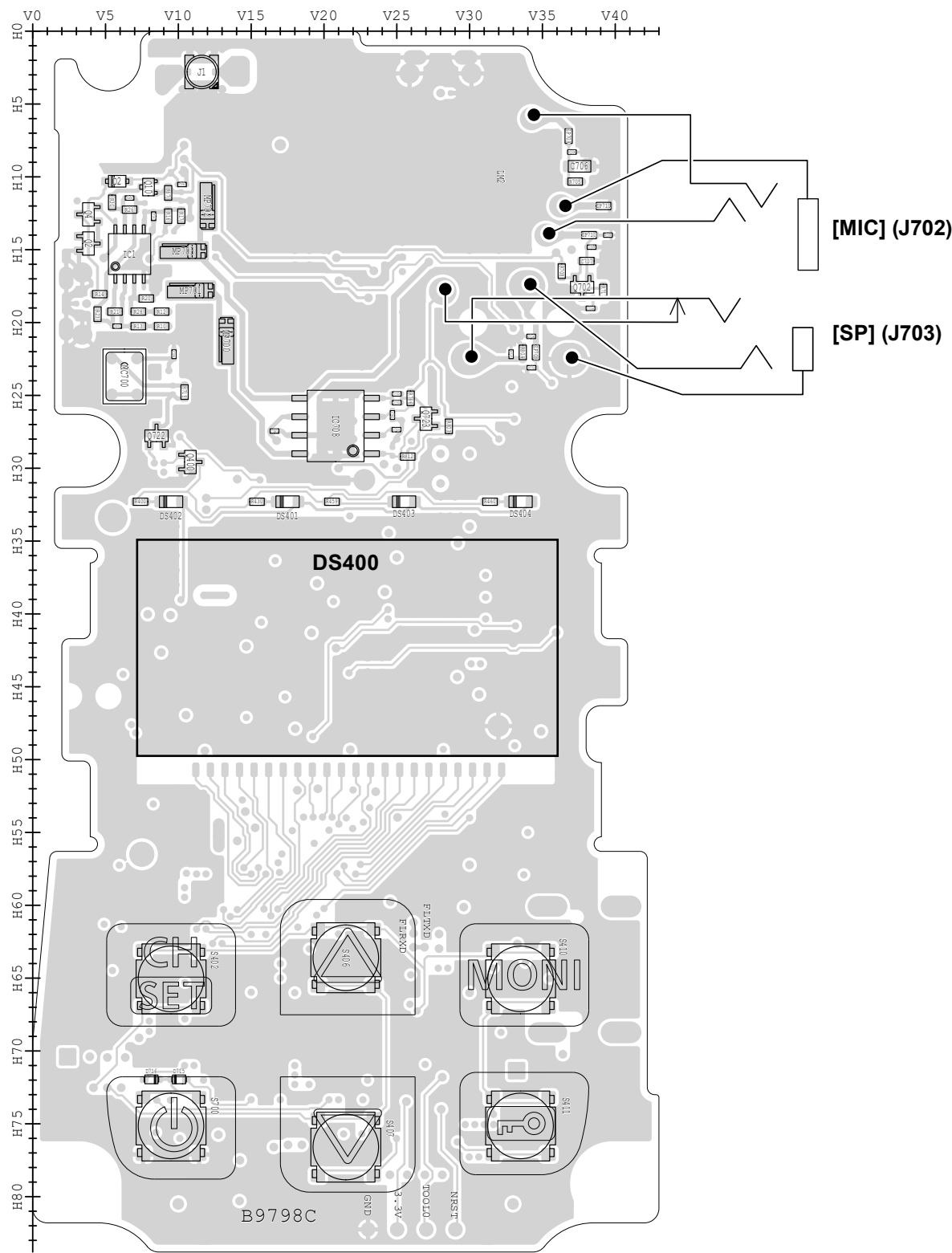
BOARD LAYOUT

(Top view)

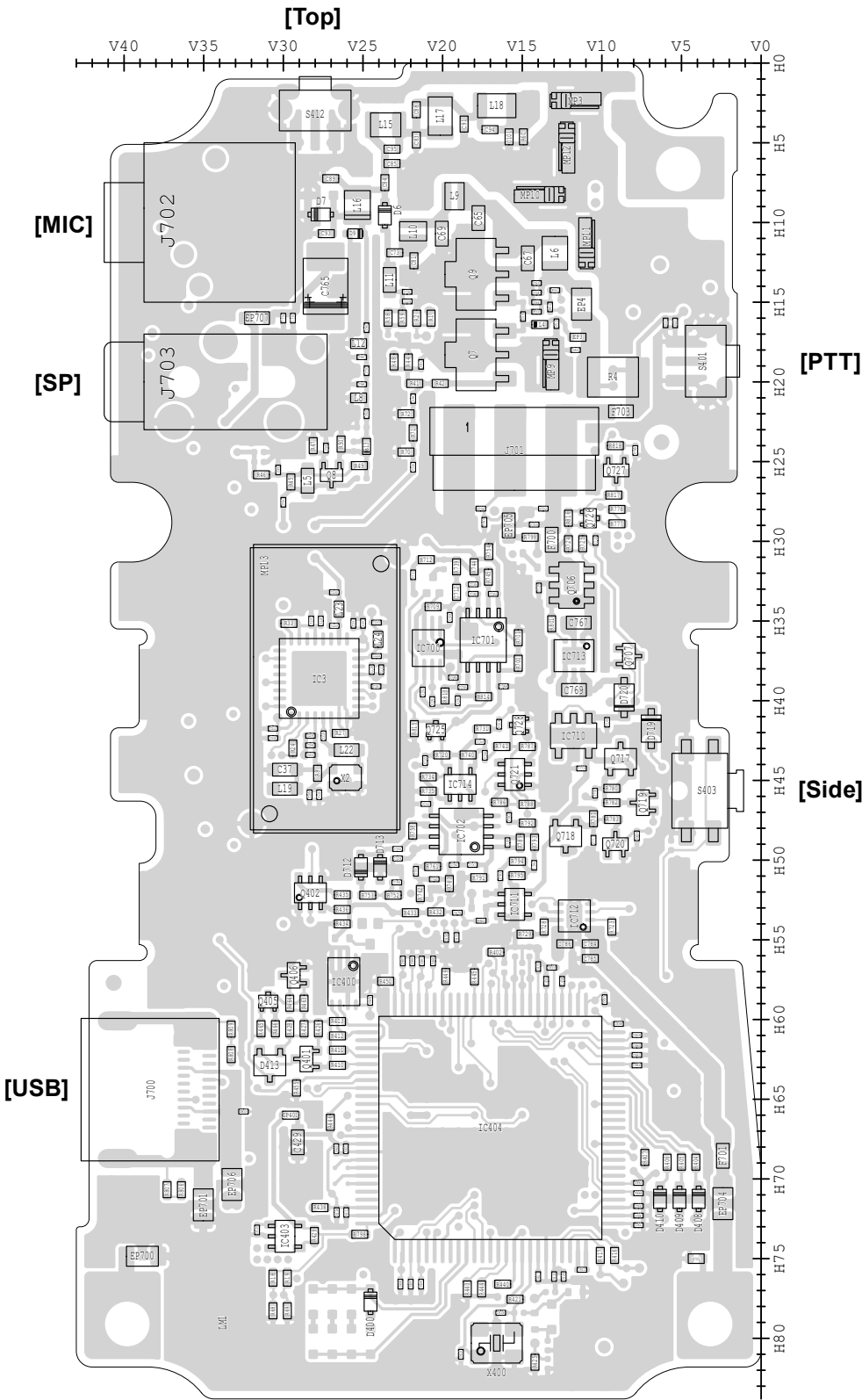


• MAIN UNIT (B-9798C)

(Top view)



(Bottom view)



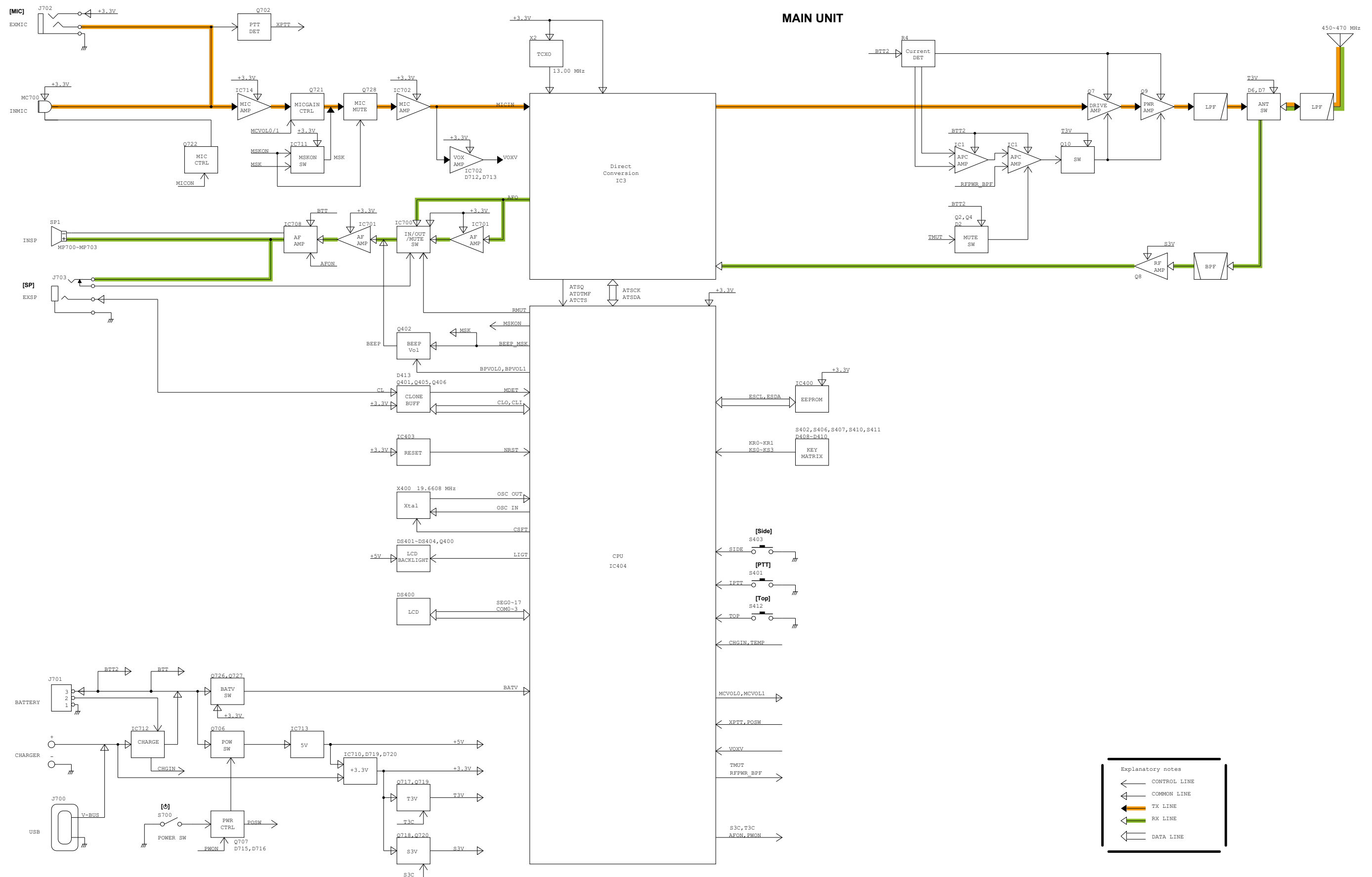
The serial numbers of transceivers that use the PCB (B-9798C).
The serial numbers may change, depending on the transceiver's production plan.

Model Name	Version Number	Serial Numbers
IC-F200	#11	11001601 and above (Plan)
	#12	12001201 and above (Plan)

NOTE: Some parts may not be mounted on the PCB, depending on the transceiver version.

SECTION 8

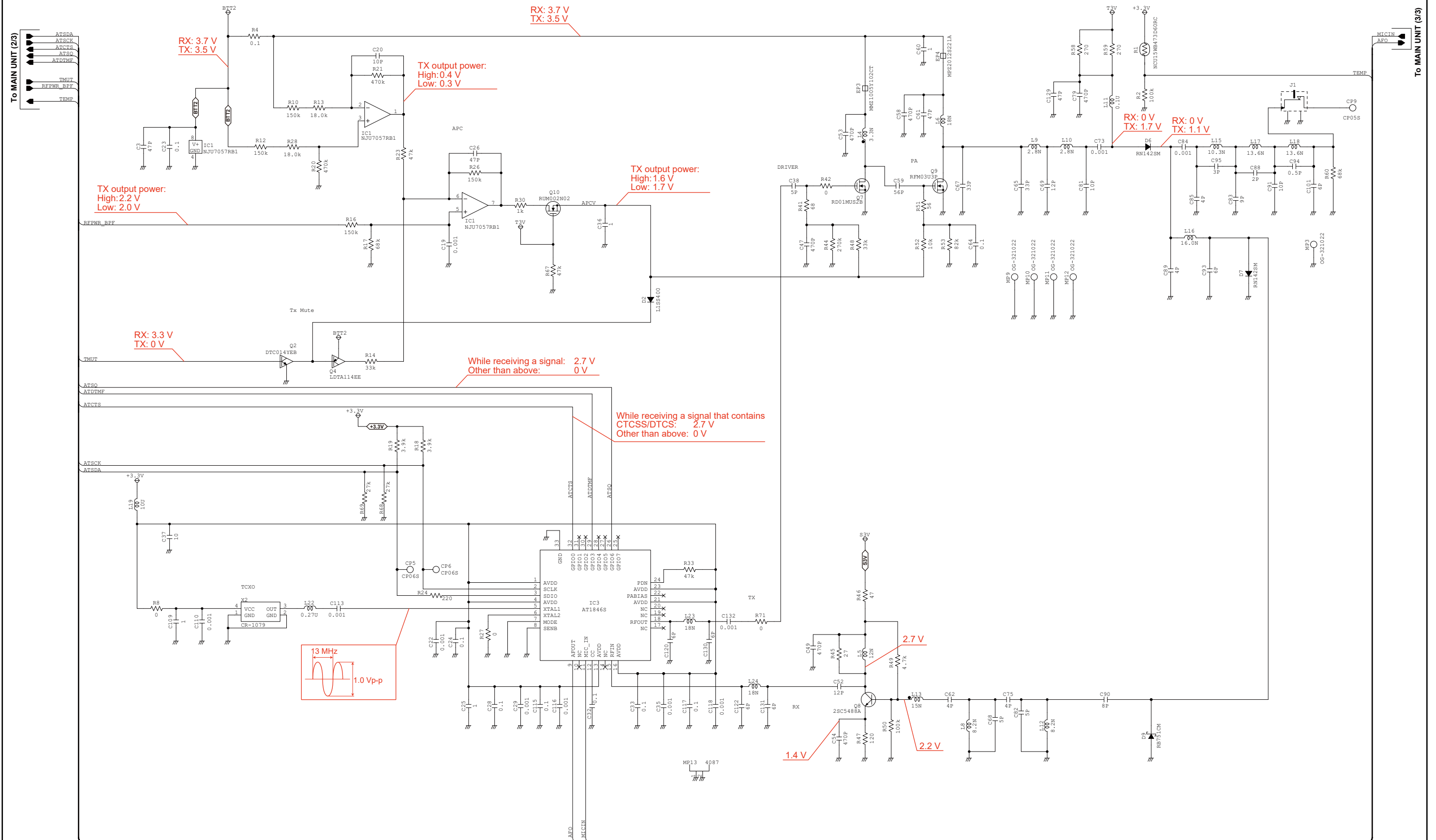
BLOCK DIAGRAM



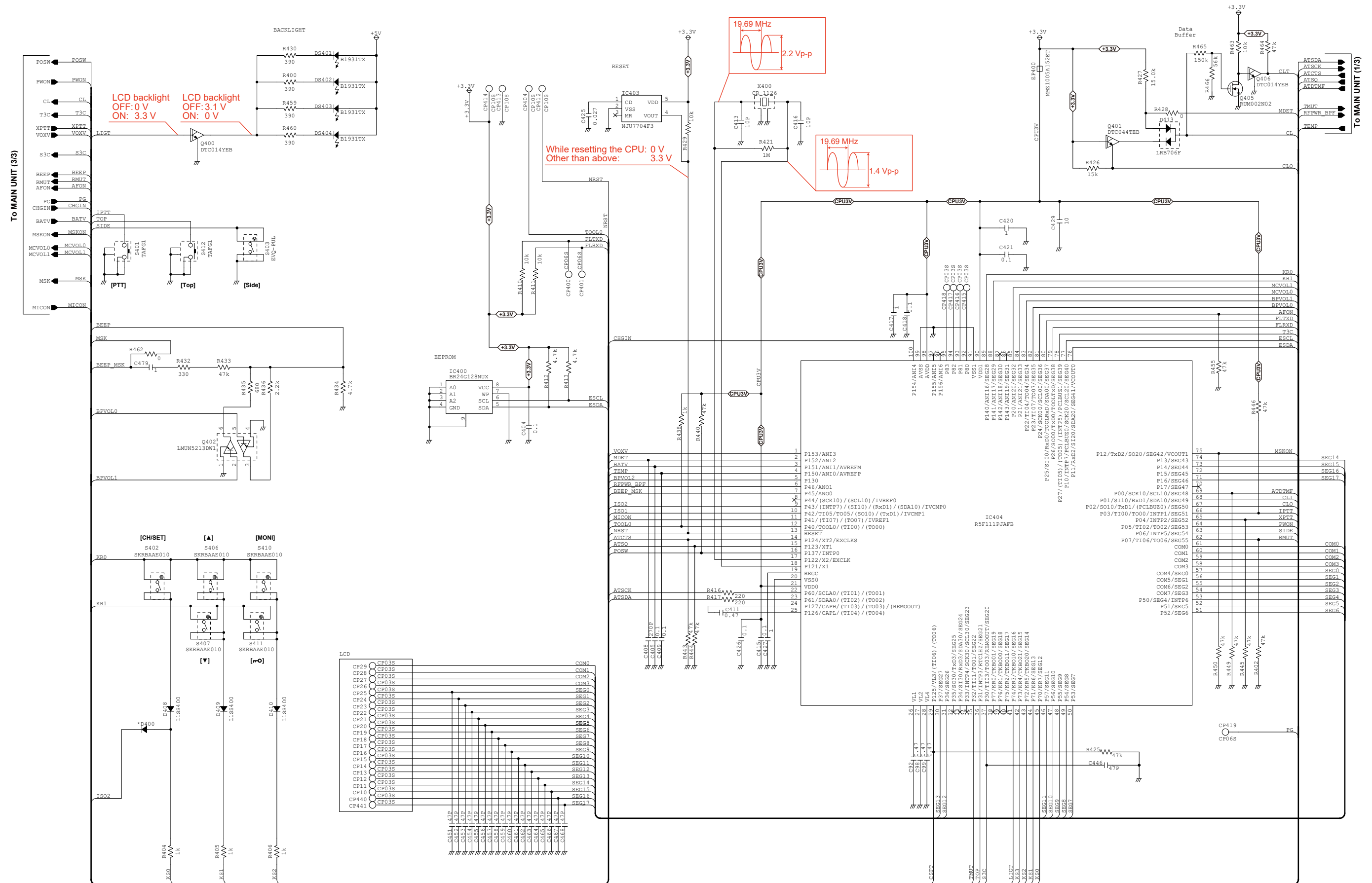
SECTION 9

VOLTAGE DIAGRAM

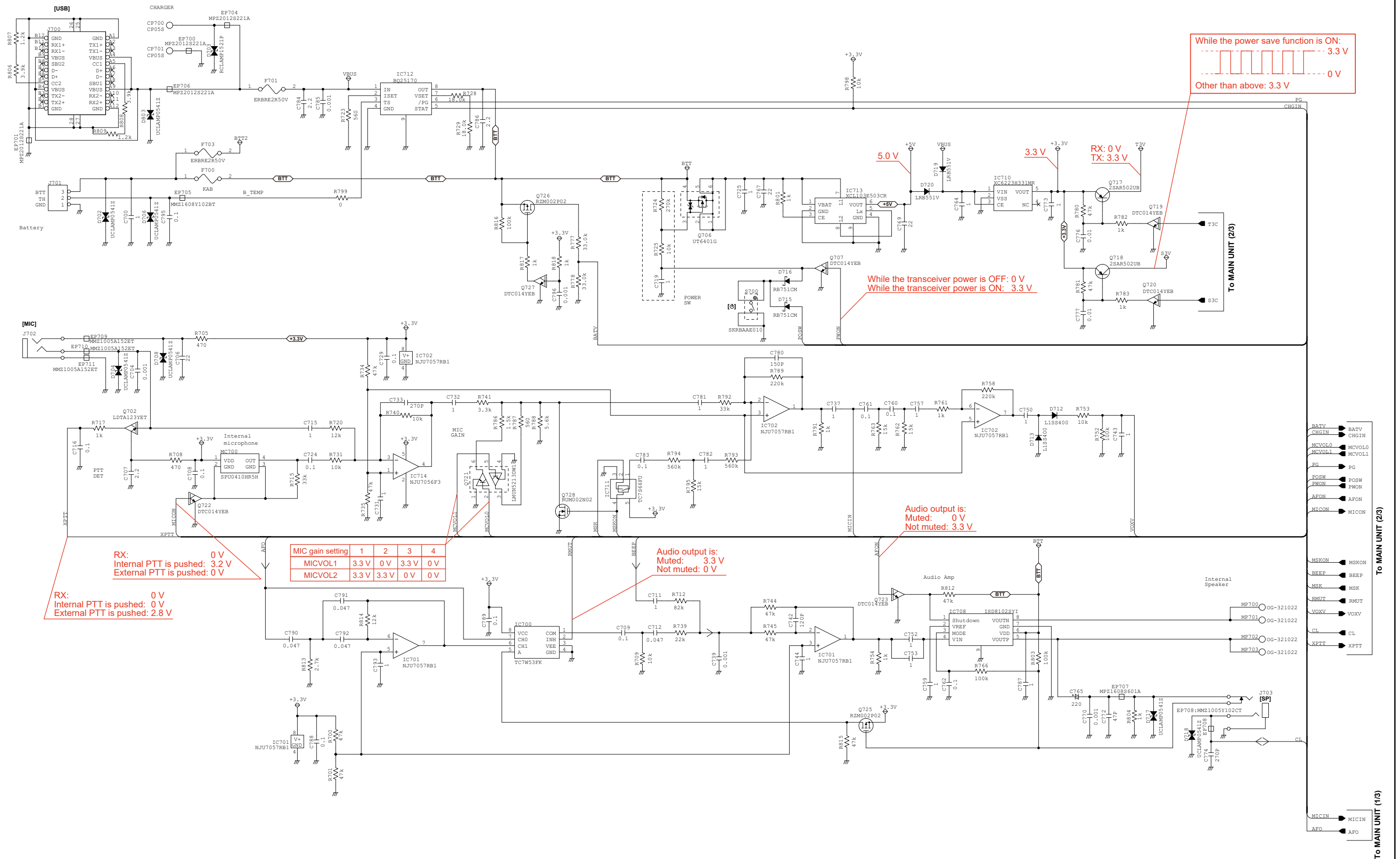
- MAIN UNIT (1/3)



- **MAIN UNIT (2/3)**



- **MAIN UNIT (3/3)**



If you have any inquiries regarding service, contact your distributor. The contact number or E-mail address of your distributor can be found on our website.

<https://www.icomjapan.com/>
