

# KENWOOD

## SERVICE MANUAL

### UHF DIGITAL TRANSCEIVER

## NX-5300

NX-5300 F2,F5,K2,K5    NX-5300 F3,F6,K3,K6



**Note :**

Lead free solder used in the board (material : Sn, Ag, In, Bi, melting point : 227 Centigrade)

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This product complies with the RoHS directive for the European market.



This product uses Lead Free solder.

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Transceivers containing AMBE+2™ Vocoder:

The AMBE+2™ voice coding technology is embedded in the firmware under the license of Digital Voice Systems, Inc.

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# SPECIFICATION

<b>GENERAL</b>		
Frequency Range	F5,F6,K5,K6	380 ~ 470 MHz
	F2,F3,K2,K3	450 ~ 520 MHz
Max. Channels per Radio	1024 (Up to 4000)	
Zones	128	
Max. Channels per Zone	512	
Channel Spacing	Analog	12.5 / 25 kHz
	Digital	6.25 / 12.5 kHz
Operating Voltage	7.5V DC±20%	
Battery Life 5-5-90 (10-10-80) duty cycle	KNB-L1(2,000mAh)	10 hours (6.5 hours)
	KNB-L2(2,600mAh)	12.5 hours (8.5 hours)
	KNB-L3(3,400mAh)	17 hours (11 hours)
Operating Temperature Range	-22°F ~ +140°F (-30°C ~ +60°C)	
Frequency Stability	±1.0ppm	
Antenna Impedance	50Ω	
Dimensions (W x H x D) (Projections not included)	KNB-L1(2,000mAh)	2.28 x 5.47 x 1.52 in. (58 x 139 x 38.8 mm)
	KNB-L2(2,600mAh)	2.28 x 5.47 x 1.65 in. (58 x 139 x 41.8 mm)
	KNB-L3(3,400mAh)	2.28 x 5.47 x 1.86 in. (58 x 139 x 47.2 mm)
Weight (net)	KNB-L1(2,000mAh)	15.52 oz (440 g)
	KNB-L2(2,600mAh)	16.57 oz (470 g)
	KNB-L3(3,400mAh)	17.98 oz (510 g)
<b>RECEIVER</b>		
Sensitivity	NXDN 6.25kHz Digital(3%BER)	0.20μV
	NXDN 12.5kHz Digital(3%BER)	0.25μV
	P25 Digital (5% BER)	0.25μV
	P25 Digital (1% BER)	0.40μV
	Analog (12dB SINAD)	0.25μV
Selectivity	P25 Digital	60dB
	Analog@12.5kHz	67dB
	Analog@25kHz	73dB
Intermodulation Distortion	73dB	
Spurious Response	75dB	
Audio Distortion	Less than 3%	
Audio Output	3% Distortion	500mW / 8Ω
	5% Distortion	1000mW / 8Ω
<b>TRANSMITTER</b>		
RF Power Output	5 to 1W	
Spurious Response	-70dB	
FM Hum & Noise	Analog @ 25 kHz	45dB
	Analog @ 12.5 kHz	40dB
Audio Distortion	Less than 2%	
Modulation	16K0F3E, 11K0F3E, 8K10F1E, 8K10F1D, 8K10F1W, 8K30F1E, 8K30F1D, 8K30F7W, 4K00F1E,4K00F1D, 4K00F7W, 4K00F2D	

Measurements made per TIA/EIA-603 and specifications shown are typical.

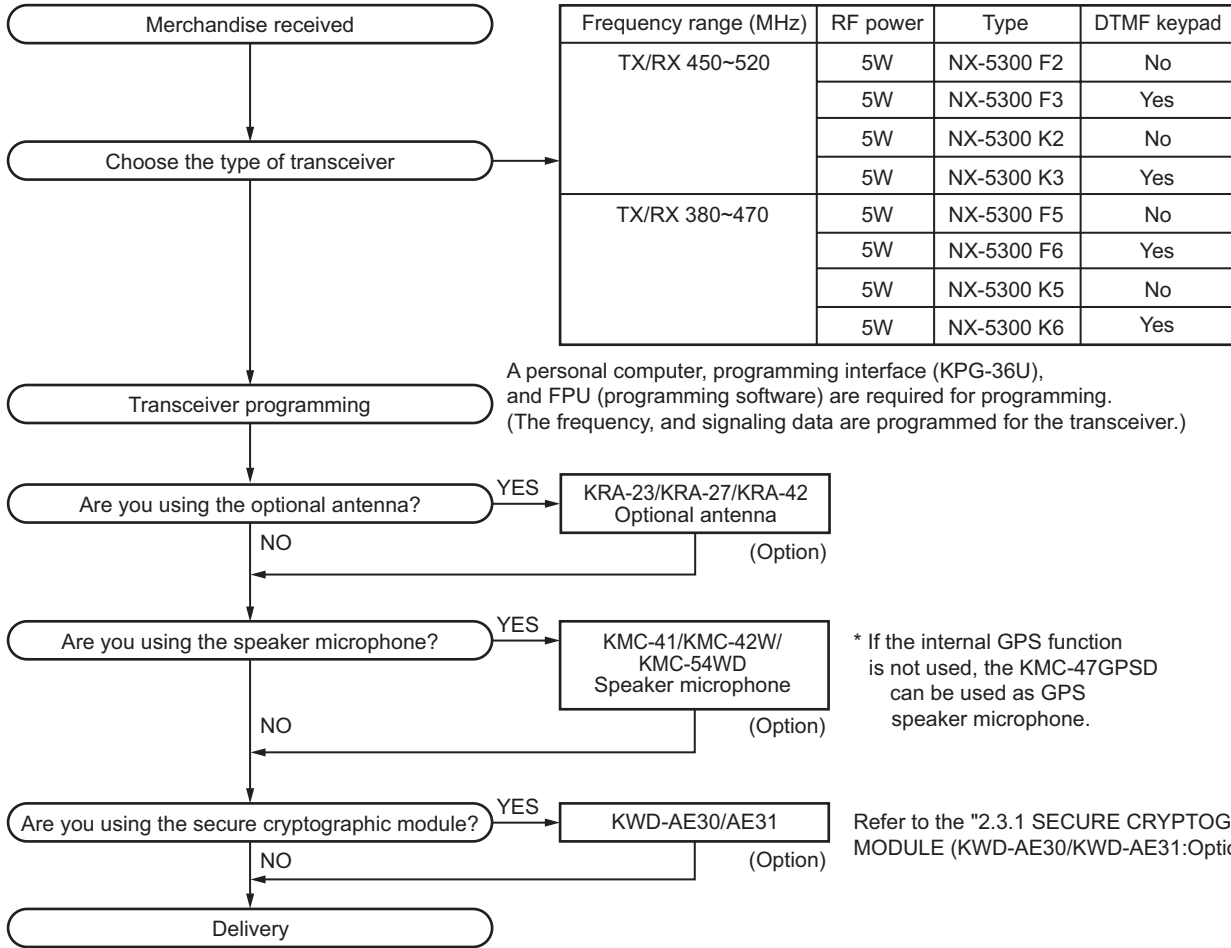
JVC KENWOOD Corporation reserves the right to change specifications without prior notice or obligation.

# SECTION 1 PRECAUTION

This service manual does not describe PRECAUTION.

## SECTION 2 SPECIFIC SERVICE INSTRUCTIONS

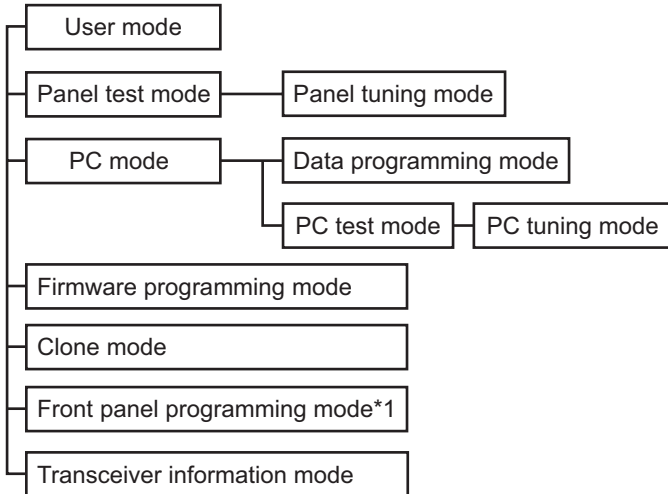
### 2.1 SYSTEM SET-UP





## 2.2 REALIGNMENT

### 2.2.1 Modes



\*1: In order to use the Front panel programming mode, it is necessary to purchase the "Front panel program" feature option.

Mode	Function
User mode	For normal use.
Panel test mode	Used by the dealer to check the fundamental characteristics.
Panel tuning mode	Used by the dealer to tune the transceiver.
PC mode	Used for communication between the transceiver and PC.
Data programming mode	Used to read and write frequency data and other features to and from the transceiver.
PC test mode	Used to check the transceiver using the PC. This feature is included in the FPU.
Firmware programming mode	Used when changing the main program of the flash memory.
Clone mode	Used to transfer programming data from one transceiver to another.
Front panel programming mode	Frequency, signaling and features write to the transceiver.
Transceiver information mode	Used to confirm the transceiver firmware version, SCM firmware version and SCM Hardware version.

### 2.2.2 How to Enter Each Mode

Mode	Operation
User mode	Power ON
Panel test mode*2	<ul style="list-style-type: none"> <li>• [↵] + Power ON</li> <li>• [⏏] + Power ON</li> </ul> Select the "Panel Test" using the [▲] / [▼] key. Press the [⏏] key.
PC mode	Received commands from PC
Panel tuning mode	[Panel test mode] + [⏏]

Mode	Operation
Firmware programming mode*2	<ul style="list-style-type: none"> <li>• [AUX (Orange)] + Power ON</li> <li>• [⏏] + Power ON</li> </ul> Select the "Firmware Prog" using the [▲] / [▼] key. Press the [⏏] key. <ul style="list-style-type: none"> <li>• If Write is performed by KFL, Firmware programming mode will start automatically.</li> </ul>
Clone mode*2	<ul style="list-style-type: none"> <li>• [⊙] + Power ON</li> <li>• [⏏] + Power ON</li> </ul> Select the "Clone" using the [▲] / [▼] key. Press the [⏏] key.
Front panel programming mode*2	<ul style="list-style-type: none"> <li>• Press the PF key to which Front panel programming mode is set during the user mode.</li> <li>• Press the [⏏] key and enter the Menu mode.</li> </ul> Select the any icon assigned the Front panel programming mode using the [▲] / [▼] key. Press [⏏] key. Select the "Panel Program" using the [▲] / [▼] key. Press the [⏏] key.
Transceiver information mode*2	<ul style="list-style-type: none"> <li>• [Side 3] + Power ON</li> <li>• [⏏] + Power ON</li> </ul> Select the "Transceiver Info" using the [▲] / [▼] key. Press the [⏏] key.

\*2 There is the two or three as how to enter.

### 2.2.3 Panel Test Mode

Setting method refer to ADJUSTMENT.

### 2.2.4 Panel Tuning Mode

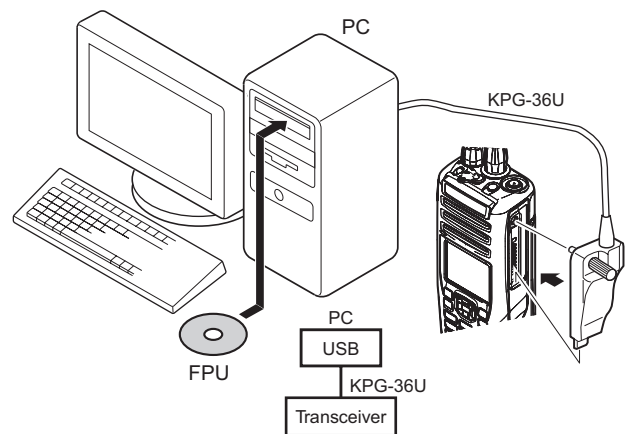
Setting method refer to ADJUSTMENT.

### 2.2.5 PC Mode

#### 2.2.5.1 Preface

The transceiver is programmed by using a personal computer, programming interface (KPG-36U) and FPU (programming software).

The programming software can be used with a PC. Figure 1 shows the setup of a PC for programming.



### 2.2.5.2 Connection procedure

- (1) Connects the transceiver to the computer using the interface cable (KPG-36U).

**Note:**

You must install the KPG-36U driver in the computer to use the USB programming interface cable (KPG-36U).

- (2) When the POWER switch on, user mode can be entered immediately. When PC sends command the transceiver enter PC mode, and "PROGRAM" is displayed on the LCD. When data transmitting from the transceiver, the red LED lights. When data receiving to the transceiver, the green LED light.

**Note:**

The data stored in the computer must match the "Model Name" when it is written into the flash memory.

### 2.2.5.3 KPG-36U description (USB programming interface cable: Option)

The KPG-36U is a cable which connects to a USB port on a computer.

When using the KPG-36U, install the supplied CD (with driver software) in the computer. The KPG-36U driver runs under Windows XP, Vista, 7, 8 or 8.1.

The latest version of the USB driver is available for download from the following URL:

<http://www.kenwood.com/usb-com/>

(This URL may change without notice.)

### 2.2.5.4 Programming software KPG-D1/D1N description

The FPU is the programming software for the transceiver supplied on a CD-ROM. This software runs under Windows Vista 7, 8 or 8.1 on a PC.

The data can be input to or read from the transceiver and edited on the screen.

## 2.2.6 Firmware Programming Mode

### 2.2.6.1 Preface

Flash memory is mounted on the transceiver. This allows the transceiver to be upgrade when new features are released in the future. (For details on how to obtain the firmware, contact Customer Service.)

### 2.2.6.2 Connection procedure

Connect the transceiver to the personal computer using the programming interface (KPG-36U). (Connection is same as in the PC mode.)



### 2.2.6.3 Programming

- (1) Start up the firmware programming software (KENWOOD Firmware Loader). The KFL.exe exists in the KPG-D1/D1N installed holder.
- (2) Set the baud rate to "auto" or 1152000, 576000, 115200, and 57600.
- (3) Set the firmware to be upgrade by file name item.
- (4) Enter the Firmware programming mode by using section "2.2.2 How to Enter Each Mode". Then, the yellow LED on the transceiver light and "FIRMWARE PROG" is displayed.
- (5) Check the connection between the transceiver and the personal computer, and make sure that the transceiver is in the Program mode.
- (6) Press "Write" button in the window. When the transceiver starts to receive data, the "LOADING" display lights.
- (7) If writing ends successfully, the checksum is calculated and a result is displayed.
- (8) If you want to continue programming other transceivers, repeat step (4) to (7).

**Note:**

If write is performed by KFL, Firmware programming mode will start automatically even if Firmware programming is set to disable in the programming software.

### 2.2.6.4 Function

If you press the [  ] key while "FIRMWARE PROG" is displayed, the checksum is calculated, and a result is displayed. If you press the [  ] key again while checksum is displayed, "FIRMWARE PROG" is redisplayed.




### 2.2.7 Clone Mode

Programming data can be transferred from one transceiver to another by connecting them via their external universal connectors. The operation is as follows.

■The following data cannot be cloned.

- Tuning data
- Embedded message with password
- ESN (Electronic Serial Number) data

■Key guide on the Clone/ Front Panel Programming Password input screen.


- Confirm ([  ] key): The password confirmation
- Delete ([  ] key): Delete the latest digit from the current password number (Press and hold to delete all password numbers)
- Select([  ] key): Determine the latest digit of the password number.

- (1) In the source transceiver, enter the clone mode by using section "2.2.2 How to Enter Each Mode". When the Clone/ Front Panel Programming Password is set to the transceiver, "Input Password" is displayed on the LCD. If the password is not set, the transceiver displays "CLONE MODE".
- (2) When you enter the correct password, "CLONE MODE" is displayed, the transceiver can be used as the cloning source. The following describes how to enter the password.
- (3)

- How to enter the password using the keypad;



If one of the keys 0 to 9 is pressed while the "Input Password" is displayed, the password number is displayed on the LCD.

Each press of the key shifts the display in order to the left.



When you enter the password and press [  ] or [\*] key, "CLONE MODE" displayed if the entered password is correct. If password is incorrect, "Input Password" is redisplayed.

- How to enter password using the [▲] and [▼] keys;

If the [▲] / [▼] key is pressed while "Input Password" is displayed, the Clone/ Front Panel Programming Password input screen is displayed.

If the [▲] or [▼] key is pressed while the clone/ Front Panel Programming Password input screen is displayed, the number (0 to 9) blinks on the LCD. When you press the [  ] key, currently selected number is determined. If you press the [  ] key after entering password in this procedure, "CLONE MODE" is displayed if entered password is correct. If the password is incorrect, "Input Password" is redisplayed.

- (4) Power ON the target transceiver.
- (5) Connecting the cloning cable (part No.E30-3325-05) to the universal connectors on the source and target.

- (6) Press [  ] key on the source while the source displays "CLONE MODE". The data of the source is sent to the target. While the target is receiving the data, "PROGRAM" is displayed. When cloning of the data is completed, the source displays "END", and the target automatically operates in the User mode. The target can then be operated by the same program as the source.
- (7) The other target can be continuously cloned. When the [  ] key on the source is pressed while the source displays "END", the source displays "CLONE MODE". Carry out the operation in step (4) to (6).

**Note:**

- Cannot be cloned if the password (overwrite password) is programmed to the target.
- "Model name" must be same to clone the transceiver.

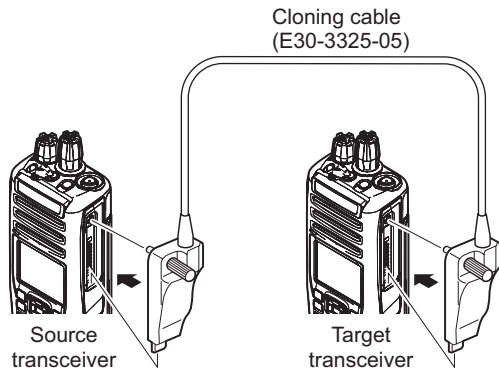


Fig.2

**2.2.8 Front Panel Programming Mode**




If the Front Panel Programming Mode is used, the frequency or other data of the conventional channel is rewritable only by the transceiver.

Moreover, the conventional channel can be added.

**■The following setup items can be changed or added by using the Front panel programming mode.**

- RX/TX Frequency
- Channel Type
- Channel Spacing
- Decode QT/DQT/RAN/NAC, Encode QT/DQT/RAN/NAC
- Talkgroup ID List No.
- Transmit Power
- Channel Name

**■Key guide on the Clone/ Front Panel Programming Password input screen.**

- Confirm ([  ] key): The password confirmation
- Delete ([  ] key): Delete the latest digit from the current password number (Press and hold to delete all password numbers)
- Select ([  ] key): Determine the latest digit of the password number.

**2.2.8.1 Enter to the Front panel programming mode.**

Enter to the Menu Mode by pressing [Front Panel Mode] PF key or [Menu] key. When the Front Panel Mode is selected, it can enter to the Front panel programming mode.

If the Clone/Front panel programming Password is not set to the transceiver, "Panel Program" is displayed on the LCD.

If the Clone/Front panel programming Password is set to the transceiver, "Panel Program" is displayed on the LCD when you enter the correct password while "Input Password" is displayed.

**2.2.8.2 Data Writing**

Before moving to next Zone/Channel, "Keep This Change?" appears on the LCD, if you select "OK", the new data is written to memory. If you select "Cancel", the new data not be written; the new data will be erased.

- The setup items for Front panel programming mode are as follows.

No.	Setup item	Display	Remarks
1	RX Frequency	RX Frequency	Receive Frequency
2	TX Frequency	TX Frequency	Transmit Frequency
3	Channel Type	Channel Type	Analog/NXDN/P25
4	Channel Spacing	Channel Space	Analog: 12.5kHz/25kHz
			NXDN: 6.25kHz/12.5kHz
			P25: 12.5kHz
5	RX Signaling	RX QT/DQT	Receive QT/DQT
6	TX Signaling	TX QT/DQT	Transmit QT/DQT
7	RX RAN	RX RAN	None, 1~63
8	TX RAN	TX RAN	None, 1~63
9	RX NAC	RX NAC	000~FFF (Hexadecimal) Note: "F7F" cannot set.
10	TX NAC	TX NAC	000~FFF (Hexadecimal) Note: "F7F" cannot set.
11	Talkgroup ID List Number	Talkgroup	None, 1~1500
12	Transmit Power	Transmit Power	Low/Medium/High
13	Channel Name	Channel Name	

• Key operation

Key/Item	Zone Select	Channel Select	RX Frequency	TX Frequency	Channel Type	Channel Spacing	RX Signaling	TX Signaling
	Decision	Decision	Decision	Decision	Decision	Decision	Decision	Decision
	Unused	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous item
	Unused	Unused	Unused	TX Frequency OFF	Unused	Unused	Unused	Unused
	Exit panel program mode	Exit panel program mode	Exit panel program mode	Exit panel program mode	Exit panel program mode	Exit panel program mode	Exit panel program mode	Exit panel program mode
[▲]	Zone change	Channel change	Frequency up	Frequency up	Channel type change	Channel Spacing Change	Signaling number change	Signaling number change
[▼]	Zone change	Channel change	Frequency down	Frequency down	Channel type change	Channel Spacing Change	Signaling number change	Signaling number change
[▶]	Unused	Unused	Frequency step change	Frequency step change	Unused	Unused	Signaling type change	Signaling type change
[◀]	Unused	Unused	Frequency step change	Frequency step change	Unused	Unused	Signaling type change	Signaling type change
Keypad [0] ~ [9] *3	Zone number select	Channel number select	Go to the direct enter mode		Channel number select (1 or 2)	Channel spacing select (1 or 2)	Go to the direct enter mode	
Keypad [*] *3	Decision	Decision	Decision	Decision	Decision	Decision	Decision	Decision
Keypad [#] *3	Unused	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous item

Key/Item	RX RAN	TX RAN	RX NAC	TX NAC	TG ID List No.	Transmit Power	Channel Name
	Decision	Decision	Decision	Decision	Decision	Decision	Decision
	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous item/Delete
	Unused	Unused	Unused	Unused	Unused	Unused	Character/Digit switching
	Exit panel program mode	Exit panel program mode	Exit panel program mode	Exit panel program mode	Exit panel program mode	Exit panel program mode	Exit panel program mode
[▲]	RX RAN up	TX RAN up	RX NAC up	TX NAC up	TG List number up	Transmit power change	Go to the direct enter mode
[▼]	RX RAN down	TX RAN down	RX NAC down	TX NAC down	TG List number down	Transmit power change	
[▶]	RX RAN ON/OFF	RX RAN ON/OFF	Unused	Unused	Unused	Unused	
[◀]	RX RAN ON/OFF	RX RAN ON/OFF	Unused	Unused	Unused	Unused	
Keypad [0] ~ [9] *3	Go to the direct enter mode				Talkgroup List number select	Transmit power select (1, 2 or 3)	
Keypad [*] *3	Decision	Decision	Decision	Decision	Decision	Decision	Decision/ Character/ Digit switching
Keypad [#] *3	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous item

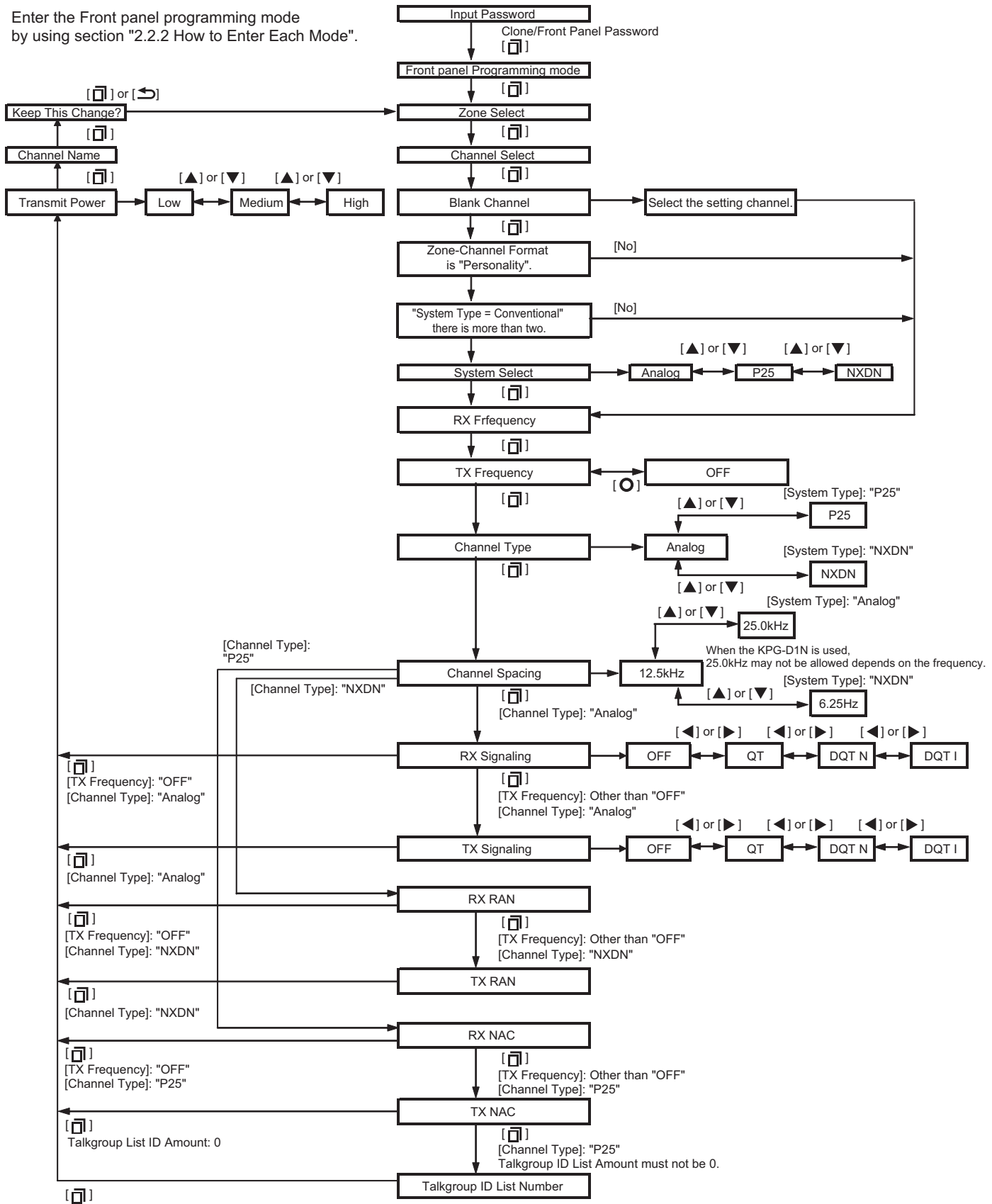
• Direct enter mode

Key/Item	RX Frequency	TX Frequency	RX Signaling	TX Signaling	RX RAN	TX RAN	RX NAC	TX NAC	Channel Name
[□]	Decision								Character/Channel name decision
[↵]	Delete								
[○]	Unused								
[🏠]	Exit panel program mode								
[▲]	Unused								Character selection (upper case character → lower-case character → digit → upper case character...)
[▼]									Character selection (upper case character → lower-case character → digit → upper case character...)
[▶]									Move a cursor to the right
[◀]									Move a cursor to the left
Keypad [0] ~ [9] *3	Add a digit to the current number								
Keypad [*] *3	Decision								Input character switching
Keypad [#] *3	Delete/Back to the previous item								Delete

\*1: F3,F6,K3,K6 models only

• Front panel programming mode flow chart

Enter the Front panel programming mode by using section "2.2.2 How to Enter Each Mode".

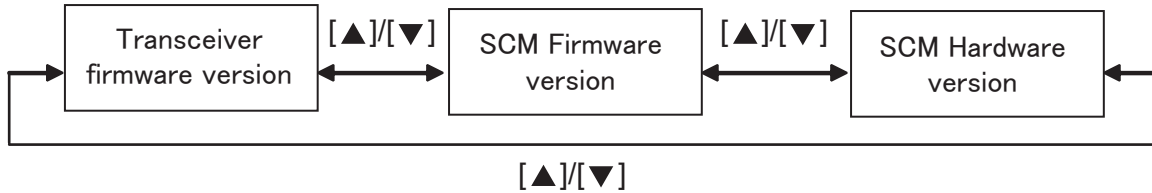


**Note:** Zone-Channel Format allows you to whether to configure for each zone the channels in the same system, or channels in different system. P25 can be configured for System Select or Channel Type if one or more P25 conventional system is preconfigured by the FPU.

### 2.2.9 Transceiver Information Mode

Use this function to confirm the transceiver firmware version, SCM Firmware version and SCM Hardware version.

- (1) Enter the Transceiver Information mode by using section "2.2.2 How to Enter Each Mode".
- (2) The transceiver firmware version appears on the LCD.
- (3) Use the [▲] and [▼] keys to select the confirmation items.



- (4) To exit the transceiver information mode, turn the transceiver power OFF.

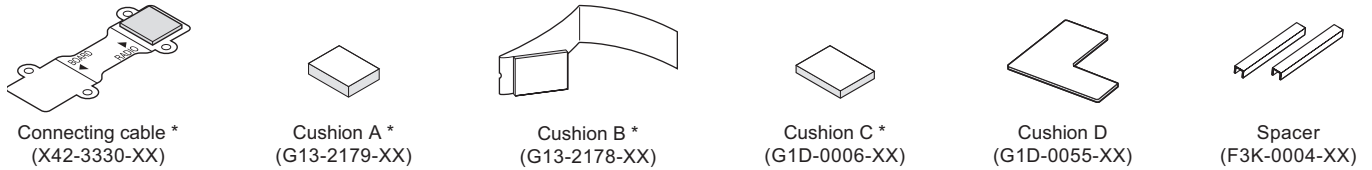
**Note:**

When the SCM board is not equipped to the transceiver, SCM Firmware Version and SCM Hardware Version are displayed as "-.-.-".

### 2.3 INSTALLATION

#### 2.3.1 SECURE CRYPTOGRAPHIC MODULE (KWD-AE30/KWD-AE31:Option)

#### 2.3.2 SUPPLIED ACCESSORIES



**Note:**

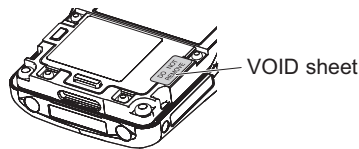
Supplied accessories with \* mark are not used for the NX-5300.

#### 2.3.3 INSTALLING THE MODULE IN THE TRANSCEIVER

**ATTENTION:**

When installing the module, please take measures to prevent static electricity.

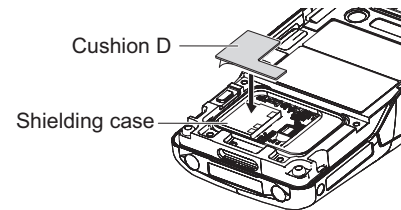
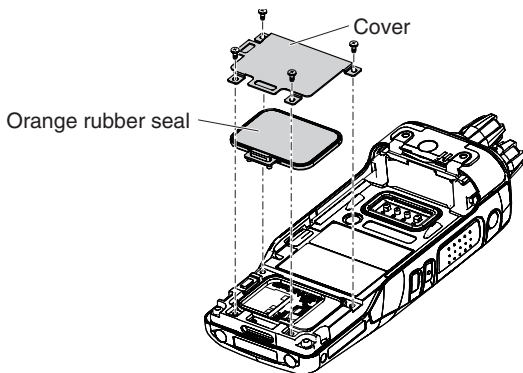
- (1) Remove the VOID sheet.
- (4) Remove the release paper from one side of cushion D, then attach the cushion to the shielding case of the module.



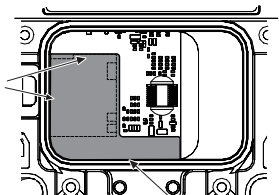
**CAUTION:**

Regarding VOID, confirm the service policy of the NX-5300 to KENWOOD (or authorized distributor). In addition, when installing the module, remove VOID sheet after understanding the service policy.

- (2) Remove the 4 screws from the cover.
- (3) Remove the cover and orange rubber seal from the transceiver.

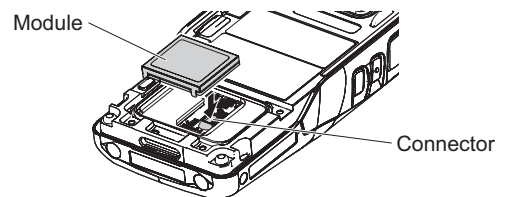


Attach the cushion correctly to the position of the chassis and shielding case (end-face).



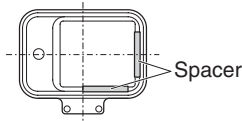
Insert the cushion under the chassis.

- (5) Insert the module to the connector of the PCB.





- (6) Attach two spacers to the back side of the orange rubber seal as indicated below.



**Note:**

Rubber seal may not attach correctly if the spacer is brought near by the corner too much.

- (7) Reinstall the cover and orange rubber seal using the 4 screws removed in step 2 and 3.

**Note:**

When installing the rubber orange seal on the chassis, ensure that you do not damage the rubber seal and that the contact area of the chassis is dust-free.

**Note:**

- When the KWD-AE30/ KWD-AE31 is installed, select the "Secure Cryptographic Module" checkbox in the Product Information of the KPG-D1/KPG-D1N (programming software), and then set each parameter.
- If the KWD-AE30/ KWD-AE31 connector is not properly installed, the TX/RX indicator will blink red or "No SCM" will appear on the display when the transceiver power is turned on.
- If the Encryption Key data is not written at the Keyloader, or the Encryption Key data is zeroized, "Key Fail" will appear on the display.
- If the KWD-AE30/ KWD-AE31 is installed in other transceivers, the Encryption Key data will be forced to zeroize.

**2.4 CIRCUIT DESCRIPTION**

**2.4.1 Overview**

The NX-5300 is a UHF Analog FM & Digital Portable transceiver designed to operate in the frequency range of 450 to 520MHz (F2,F3,K2,K3) or 380 to 470MHz (F5,F6,K5,K6).

The unit consists of a receiver, a transmitter, a phase-locked loop (PLL) frequency synthesizer, a digital control unit, and a power supply circuit.

**2.4.2 Frequency Configuration**

The receiver is a double-conversion super-heterodyne using a first intermediate frequency (IF) of 49.95MHz and second IF of 2.25MHz. Incoming signals from the antenna are mixed with the local signal from the PLL circuit to produce the first IF of 49.95MHz. This is then mixed with the 47.7MHz second local oscillator output to produce the 2.25MHz second IF. The transmit signal frequency is generated by the PLL VCO, and modulated by the signal from the DSP. It is then amplified and fed to the antenna.

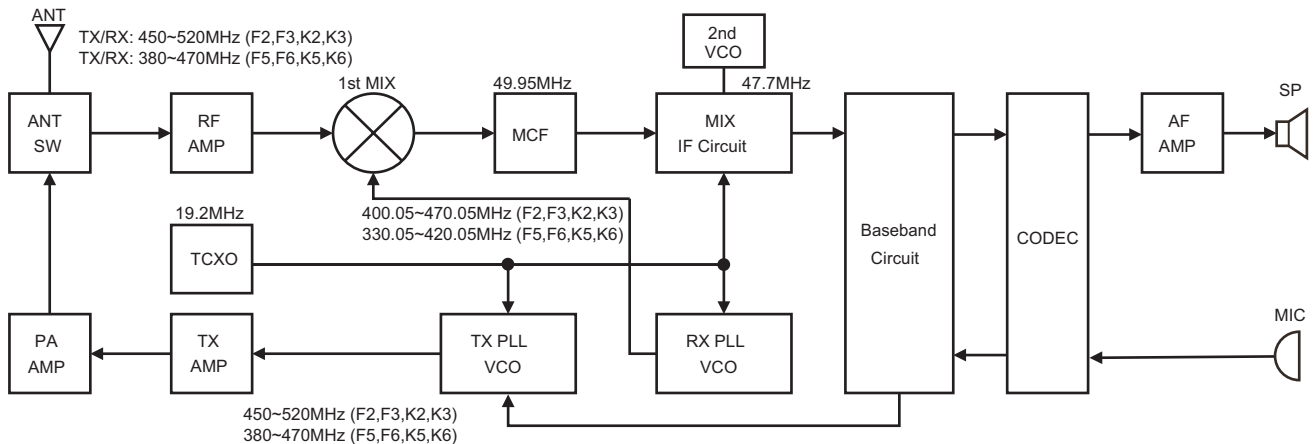


Fig.1 Frequency configuration

**2.4.3 Receiver System**

**2.4.3.1 RF Circuit**

The receive signal from antenna switch (D350, D370 and D371) is amplified by a RF amplifier (Q530) and passes through the band-pass filter (L523, L533 and L520) to remove unwanted signals. The signal is then fed to the 1st mixer (Q500).

**2.4.3.2 IF Circuit**

The first IF signal is passed through a four-pole monolithic crystal filter (XF670) to reject adjacent channel signals. The filtered first IF signal is amplified by the first IF amplifier (Q670 and Q660) and then applied to the IF system IC (IC600). The IF system IC provides a second mixer, second PLL, AGC and A/D converter.

The second mixer mixes the first IF signal with the 47.7MHz of second local oscillator output and produces the second IF signal of 2.25MHz.

The second IF signal is then be fed into an A/D converter, generates the I and Q data. This data is in the form of SSI (Serial Synchronous Interface), and sent to the DSP (IC702).



### 2.4.3.3 Audio Amplifier Circuit

Audio processing (high-pass filter, low-pass filter, de-emphasized and so on) at Analog FM mode and decoding at Digital mode are processed by DSP. SSI signal from DSP is converted to audio signal at IC902. The signal goes to amplifier (IC904 or IC905). While INTAMT is High, IC904 is activated and audio is heard from internal speaker. While EXTAMT is High, IC905 is activated and audio is heard from external speaker.

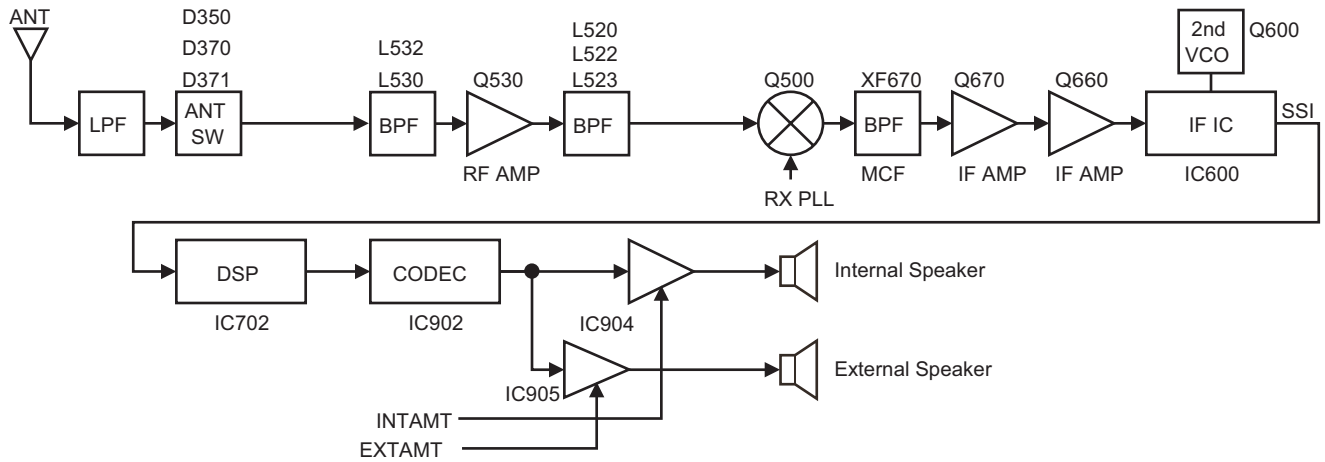


Fig.2 RF and IF circuit

### 2.4.4 Transmitter System

#### 2.4.4.1 Audio Band Circuit

The signal from microphone is amplified and converted to digital signal by IC902. IC902 includes AGC function. Digital signal is transferred to IC702 through SSI.

#### 2.4.4.2 Baseband Circuit

The audio signal transferred from IC902 is processed at IC702. Voice signals of 300Hz or lower and frequencies of 3kHz or higher are cut off and an audio range 300Hz to 3kHz is extracted. The audio signal is then pre-emphasized in FM mode and synthesized with the signals, such as QT and DQT, as required, and is transferred to PLL Frequency Synthesizer block. The DTMF and MSK baseband signals are also generated by IC702.

In Digital mode, the audio signal is converted to the 4-Level FSK baseband signal and is transferred to PLL Frequency Synthesizer block.

The output level according to the transmit carrier is fine-adjusted according to each modulation method.

#### 2.4.4.3 Drive and Final Amplifier

The signal from the TX PLL is amplified by pre-drive amplifier (IC300 and Q310). The output of the pre-drive amplifier is amplified by the drive amplifier (Q320) and final amplifier (Q330) to 5W (1W when the power is low). IC300 is MMIC. Q310, Q320 and Q330 are MOS FET. The output of the final amplifier is then passed through the harmonic filter (LPF) and antenna switch (D350, D370 and D371) and applied to the antenna terminal.

#### 2.4.4.4 APC Circuit

The APC circuit always monitors the current flowing through the drive amplifier (Q320) and final amplifier (Q330). The APC keeps a current constant.

The voltage drop at R400 and R402 is caused by the current flowing through the RF power amplifier and this voltage is applied to APC circuit. Output voltage from APC controls the VGG of Q310, Q320 and Q330 to keep the current constant. The change of power high/low is carried out by the change of the reference voltage.

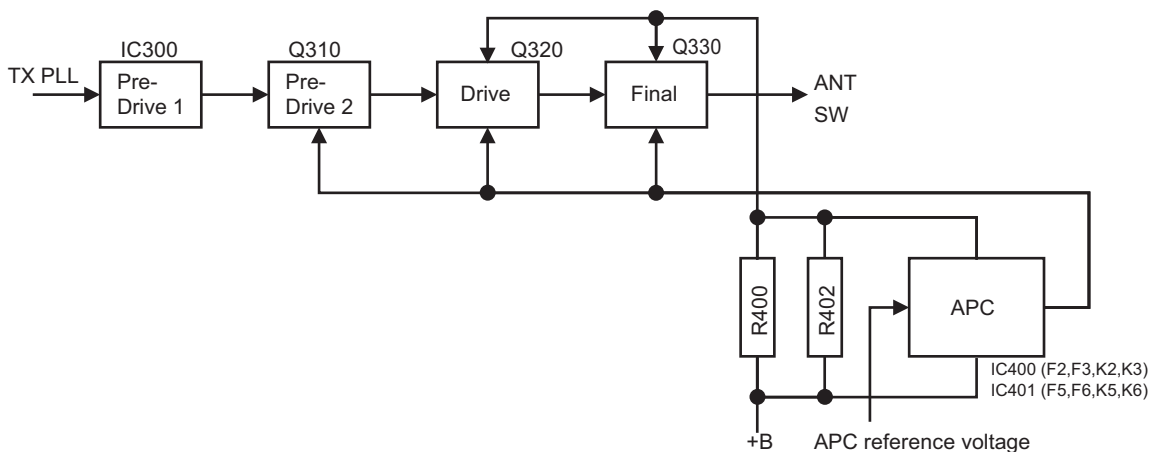


Fig.3 Drive and Final amplifier and APC circuit

## 2.4.5 PLL Frequency Synthesizer

### 2.4.5.1 TCXO (X700)

TCXO (X700) generates a reference frequency of 19.2MHz for the PLL frequency synthesizer. This reference signal is buffered by Q700 and IC700. And it is distributed to TX PLL (IC100), RX PLL (IC200), IF IC (IC600), GPS/Bluetooth (IC850), and IC702. The frequency adjustment is achieved by adjusting a D/A converter (IC901) output in the voltage of the control terminal of TCXO.

### 2.4.5.2 VCO

#### ■F2,F3,K2,K3 types

There are TX VCO and RX VCO.

The TX VCO (Q140) generates the carrier for the transmitter. The VCO oscillation frequency range is 450 to 520MHz. The transmit frequency range is 450 to 520MHz.

The RX VCO (Q240) generates the 1st local signal for the receiver.

The VCO oscillation frequency range is 400.05 to 470.05MHz. The 1st local signal frequency range is 400.05 to 470.05MHz.

The VCO oscillation frequency is determined by voltage control terminals "CV" and "ASSIST". The voltage control terminal "CV" is controlled by PLL IC (IC100 for TX PLL, IC200 for RX PLL). The voltage control terminal "ASSIST" is controlled by the control voltage from D/A converter (IC901).

For the modulation input terminal, "VCO\_MOD" of TX VCO (Q140), the output frequency changes according to the applied voltage. This is used to modulate the VCO output.

#### ■F5,F6,K5,K6 types

There are TX VCO\_L, TX VCO\_H, RX VCO\_L and RX VCO\_H.

The TX VCO\_L (Q160) and TX VCO\_H (Q140) generates the carrier for the transmitter. The oscillation frequency range of TX VCO\_L is 380 to 413.5MHz. The oscillation frequency range of TX VCO\_H is 413.5 to 470MHz. The transmit frequency range is 380 to 470MHz.

The RX VCO\_L (Q260) and RX VCO\_H (Q240) generates the 1st local signal for the receiver.

The oscillation frequency range of RX VCO\_L is 330.05 to 363.55MHz. The oscillation frequency range of RX VCO\_H is 363.55 to 420.05MHz. The 1st local signal frequency range is 330.05 to 420.05MHz.

The VCO oscillation frequency is determined by voltage control terminals "CV" and "ASSIST". The voltage control terminal "CV" is controlled by PLL IC (IC100 for TX PLL, IC200 for RX PLL). The voltage control terminal "ASSIST" is controlled by the control voltage from D/A converter (IC901).

For the modulation input terminal, "VCO\_MOD" of TX VCO\_H (Q140) and TX VCO\_L (Q160), the output frequency changes according to the applied voltage. This is used to modulate the VCO output.

### 2.4.5.3 PLL IC

There are TX PLL IC and RX PLL IC. PLL ICs compare the difference in phases of the VCO oscillation signal and the TCXO reference frequency. And it returns the difference voltage to the VCO CV terminal and realizes the "Phase Locked Loop". This allows the VCO oscillation frequency to accurately match (lock) the desired frequency.

When the frequency is controlled by the PLL, the frequency convergence time increases as the frequency difference increases when the set frequency is changed. To supplement this, the MPU is used before control by the PLL IC to bring the VCO oscillation frequency close to the desired frequency. As a result, the VCO CV voltage does not change and is always stable at approx. 2.5V.

The desired frequency is set for the PLL IC by the MPU (IC702) through the 3-line "SDO1", "SCK1", "/PCS\_R" serial bus for RX PLL and "SDO1", "SCK1", "/PCS\_T" serial bus for TX PLL. The MPU monitors through the "PLD\_R" and "PLD\_T" signal line, whether the PLL IC is locked or not. If the VCO does not lock to desired frequency (unlock), the "PLD\_R" and "PLD\_T" logic is low.

## 2.4.6 Control Circuit

The control circuit consists of MPU/DSP (IC702) and its peripheral circuits. IC702 mainly performs the following;

- (1) Switching between transmission and reception by PTT signal input.
- (2) Reading system, zone, frequency, and program data from the memory circuit.
- (3) Sending frequency program data to the PLL.
- (4) Controlling the audio mute circuit by decode data input.

### 2.4.6.1 MPU

The MPU/DSP (IC702) is 32-bit RISC processor and fixed floating-point VLIW DSP, equipped with peripheral function.

This MPU operates at 288MHz (MAX) clock and 3.3V /1.8V/ 1.2V DC. Controls the flash memory, Mobile DDR, the receive circuit, the transmitter circuit, the control circuit, and the display circuit and transfers data to or from an external device.

### 2.4.6.2 Memory Circuit

Memory circuit consists of the MPU (IC702) and the Mobile DDR (IC703), the flash memory (IC705). The flash memory has capacity of 512M-bit that contains the transceiver control program for the MPU and stores the data. It also stores the data for transceiver channels and operating parameter that are written by the FPU. This program can be easily written from external devices. The Mobile DDR has capacity of 512 M-bit. The MPU copies the program to the Mobile DDR from the flash memory. The MPU is used as a work area Mobile DDR.

#### ■Flash Memory

##### Note:

The flash memory stores the data that is written by the FPU (KPG-D1/D1N), tuning data (Deviation, Squelch, etc.), and firmware program (User mode, Test mode, Tuning mode, etc.). This data must be rewritten when replacing the flash memory.

## ■ Mobile DDR (static memory)

### Note:

Mobile DDR is used as a work area of the MPU.

### 2.4.6.3 LCD

The LCD is controlled using parallel interface from the MPU (IC702).

### 2.4.6.4 Key Detection Circuit

Keys are detected using I/O Expander IC (IC708). If pressed key is detected by IC708, it is informed to the MPU (IC702) through serial line.

### 2.4.6.5 Low Battery Warning

The battery voltage is divided using R40 and R41 and is detected by A/D converter (IC900). When the battery voltage falls below the voltage set by the Low battery warning adjustment, the red LED blinks to notify the operator that it is time to replace the battery. If the battery voltage falls even more (approx. 5.8V), a beep sounds and transmission stops.

Low battery warning	Battery condition
The red LED blinks during transmission.	The battery voltage is low but the transceiver is still usable.
The red LED blinks and the warning tone beeps while the PTT switch is pressed.	The battery voltage is low and the transceiver is not usable to make calls.

#### Low battery warning

The red LED blinks during transmission.

The red LED blinks and the warning tone beeps while the PTT switch is pressed.

#### Battery condition

The battery voltage is low but the transceiver is still usable.

The battery voltage is low and the transceiver is not usable to make calls.

### 2.4.6.6 DSP

The DSP circuit consists of a MPU/DSP (IC702) and processes the baseband signal. The DSP operates at 288MHz (MAX) clock, the I/O section operates at 3.3V/1.8V and the core section operates at 1.2V.

The DSP carries out the following processes:

- 4 Level FSK processing
- Analog FM pre-emphasis/de-emphasis
- Vocoder processing between audio codec and modulation/demodulation
- CAI processing, such as error correction encoding
- QT/DQT encoding/decoding
- DTMF encoding/decoding
- MSK encoding/decoding
- 2-tone/5-tone encoding/decoding
- Compressor/expander processing
- Voice scrambler processing
- Transmit/receive audio filtering processing
- Microphone amplifier AGC processing
- Audio mute processing
- Modulation level processing
- Active Noise Reduction
- Voice recording/playback processing
- Voice announce processing

### 2.4.7 Power Supply Circuit

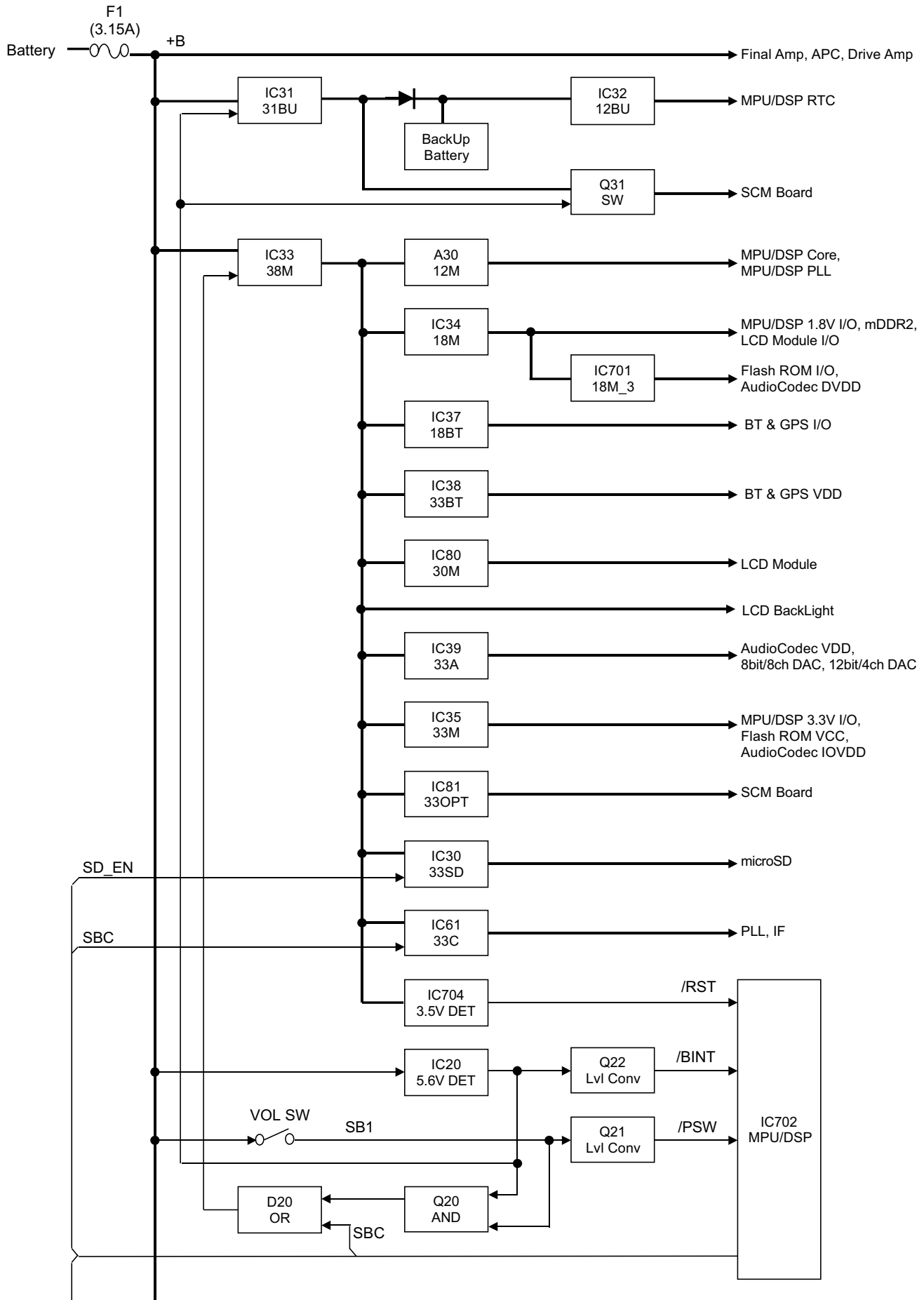
The battery voltage (+B) is provided from battery terminal. The battery voltage passes through the 3.15A fuse (F1), and goes to RF final amplifier, AVR ICs (IC31, IC82, IC801, IC36, IC63, IC65, IC64), DC/DC converter (IC33), transistor (Q32, Q71 through the 1A fuse (F2)), and voltage detector IC (IC20). Voltage detector (IC20) watches battery voltage. If the battery voltage is enough higher than 5.6V, detector outputs High. Then, IC31 (31BU) outputs 3.1V, and IC32 (12BU) outputs 1.2V, and Q31 is turned on.

When the VOL SW is turned on, SB1 becomes high (battery voltage). The DC/DC (IC33) operates if both SB1 and output of detector are high. IC33 (38M) outputs 3.8V, and A30 (12M) outputs 1.2V. Then, IC34 (18M) and IC37 (18BT) outputs 1.8V. Then, IC80 (30M) outputs 3.0V, and IC38 (33BT) and IC35 (33M) and IC81 (33OPT) outputs 3.3V. Then, IC39 (33A) outputs 3.3V, and IC82 (50A) outputs 5.0V. Then, IC701 (18M\_3) outputs 1.8V, and Q71 (53AF) is turned on. Voltage detector (IC704) watches IC33 (38M) output voltage. If the 38M output voltage is enough higher than 3.5V, detector outputs High. As a result, the MPU/DSP operate.

The SBC signal becomes High after the MPU/DSP operates, and IC61 (33C), IC36 (50C), IC63 (50VCO) and Q32 (SB2) are turned on. When SD\_EN signal becomes High, IC30 (33SD) operates. When 5UC signal becomes High, IC801 (50U) operates. When TXC signal becomes High, IC65 (50T) operates. IC65 (50T) is turned on in transmit mode.

When RXC signal becomes High, IC64 (50R) operates. IC64 (50R) is turned on in receive mode. Switches are controlled by the MPU/DSP.

When the VOL SW is turned off /PSW signal becomes Low. After detecting /PSW signal, the MPU/DSP changes SBC signal to Low. The 50C is fed to IC60 (200C). IC60 (200C) is the DC/DC boost converter. IC60, D60, C64 consist of a voltage quadruple. The 200C circuit then outputs approximately +20VDC.



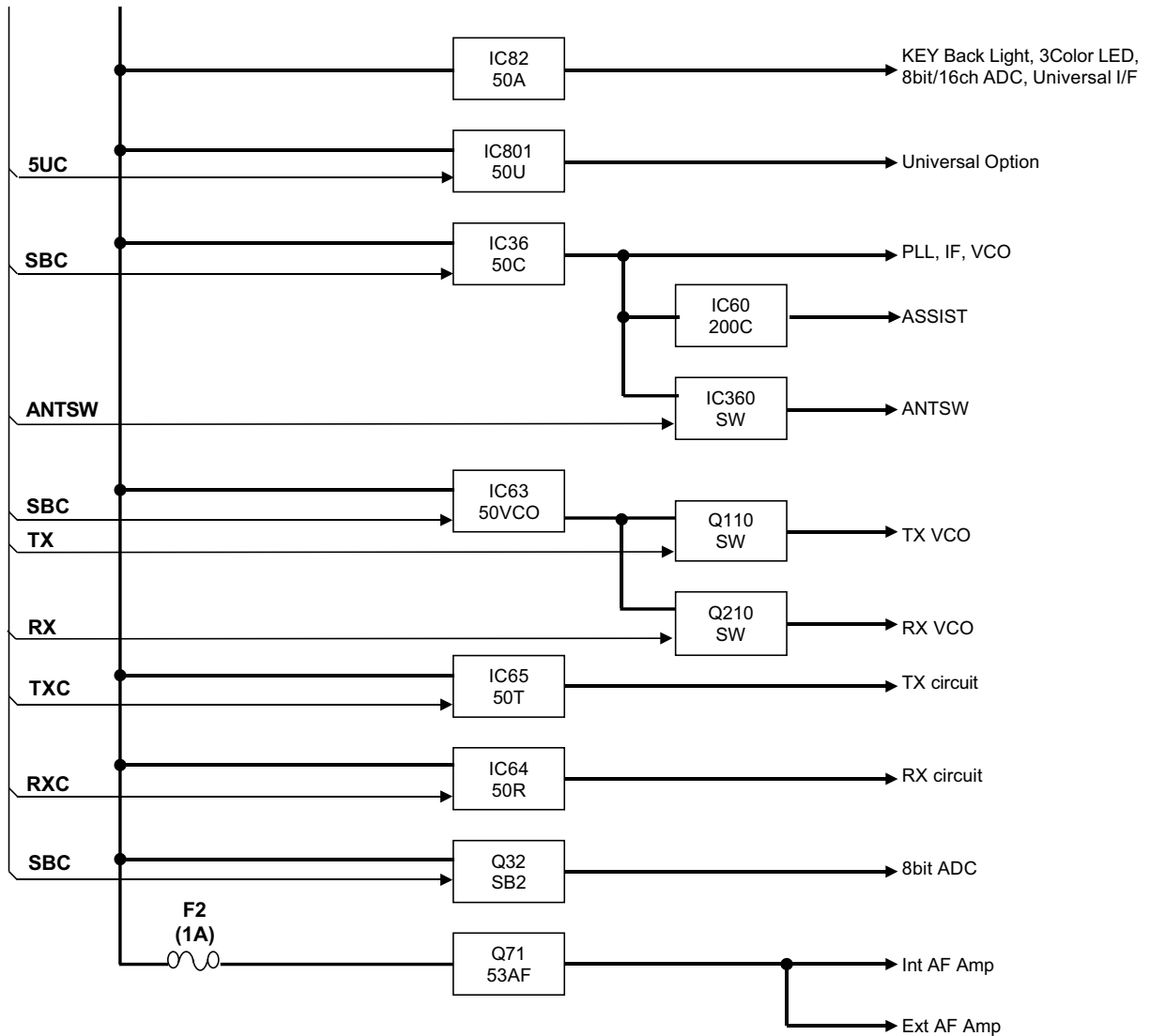


Fig.4 Power supply circuit

## 2.4.8 Signaling Circuit

### 2.4.8.1 Encode (QT/DQT/DTMF/2-tone/MSK)

Each signaling data signal of QT, DQT, DTMF, 2-tone and MSK is generated by IC702, superposed on a modulation signal and is sent to TX VCO and TX PLL IC.

### 2.4.8.2 Decode (QT/DQT/DTMF/2-tone/MSK)

The audio signal is removed from the FM detection signal sent to the IC702 and the resulting signal is decoded by IC702.

## 2.4.9 Bluetooth/GPS Circuit

The main component of the BT/GPS circuit is BT/GPS IC (IC850).

The clocks of BT/GPS IC require 19.2MHz for core and 32.768kHz slow clock (X850) for UART.

19.2MHz clock (X700) is shared with MPU/DSP (IC702), and is supplied through the clock buffer IC (IC700).

The BT/GPS IC communicates to the MPU/DSP (IC702) on the HCI UART. Interface of UART & Digital audio (PCM) between the MPU/DSP (IC702) and the BT/GPS IC (IC850), have level conversion at the level conversion IC (IC852, IC853).

The BT/GPS IC is powered by 1.8V and 3.3V which are supplied from two discrete external regulators (IC38 and IC37). The input of these regulators is sourced from a switching regulator (IC33) which regulates the battery voltage to 3.8V.

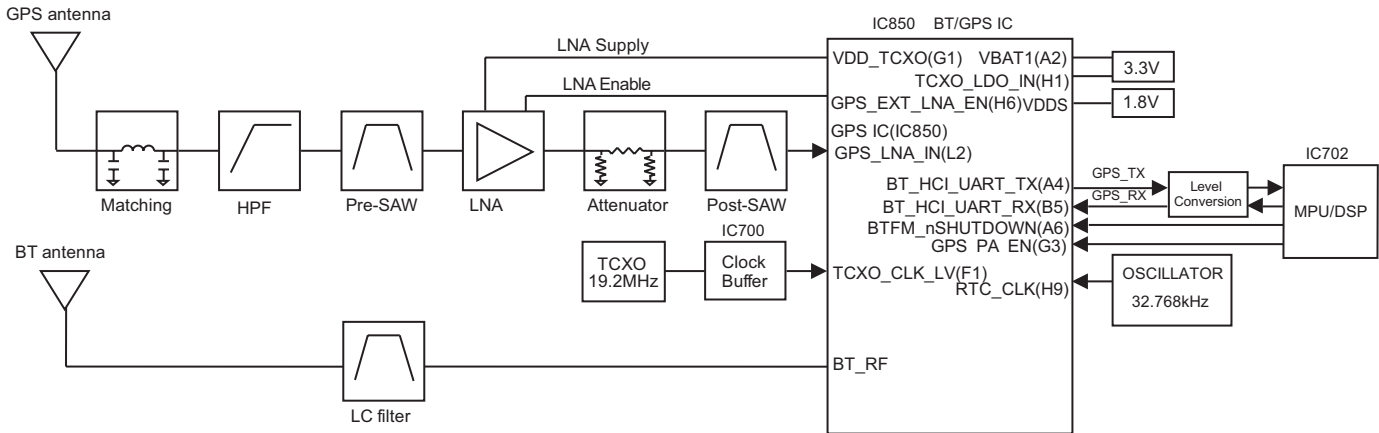


Fig.5 Bluetooth/GPS circuit

### 2.4.9.1 Bluetooth Circuit

The BT/GPS IC (IC850) support Bluetooth 3.0 up to HCI level.

The TX/RX frequency is 2400-2483.5MHz (79ch Hopping, 2402-2480MHz, 1MHz step). The transmit power is +2dBm at Bluetooth antenna input.

The Bluetooth antenna is made of sheet metal, and connected to the BT/GPS IC (IC850) through the LC filter (L855).

Frequency configuration for Bluetooth is following:

There are two LO modes: 2X and Offset LO (OSLO). 2X where LO is  $2 * RF\_FREQ$  (e.g. when transmitting at 2441MHz it is at 4882MHz). OSLO where LO is at  $2/3 * RF\_FREQ$  (e.g. when transmitting at 2441MHz it is at 1627.333MHz).

In RX the 2X is always used.

In GFSK TX if power is 10dBm or more then OSLO is used.

In EDR2 TX if power is -12dBm or more then OSLO is used.

In EDR3 TX if power is -12dBm or more then OSLO is used.

Otherwise 2X is used for TX as well.

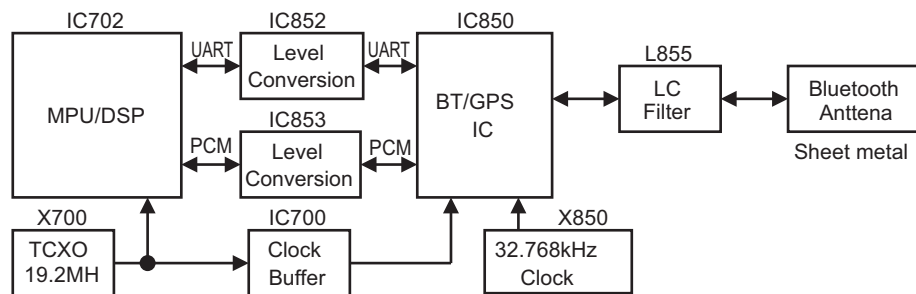


Fig.6 Bluetooth circuit

### 2.4.9.2 GPS Circuit

The RF signal is received by the antenna matched by the matching circuit. The matching circuit consists of L905, C948 and C883. And this signal applied to a high-pass filter. The filter consists of C882, C881, C880, L859 and L858. The filtered RF signal is then applied to a SAW filter (L857).

The output of the SAW filter is fed into the LNA (IC851). The LNA is enabled by GPS\_EXT\_LNA\_EN (pin H6 of the BT/GPS IC, IC850). The LNA input match comprises of C879, C878 and L856. The LNA output match comprises of C874. And through the Attenuator comprised of R857, R856 and R855, the RF signal is further filtered by a second SAW filter (L853).

The output of the second SAW filter is passed to pin L2 of the BT/GPS IC. The input match for pin L2 comprises of C867, C866 and L852. The control and data lines for the BT/GPS IC are GPS\_PA\_EN, BTFM\_nSHUTDOWN, GPS\_TX and GPS\_RX. GPS\_TX and GPS\_RX are shared with the Bluetooth data line.

Frequency configuration for GPS is following:

Lo is GPS: 1571.324MHz

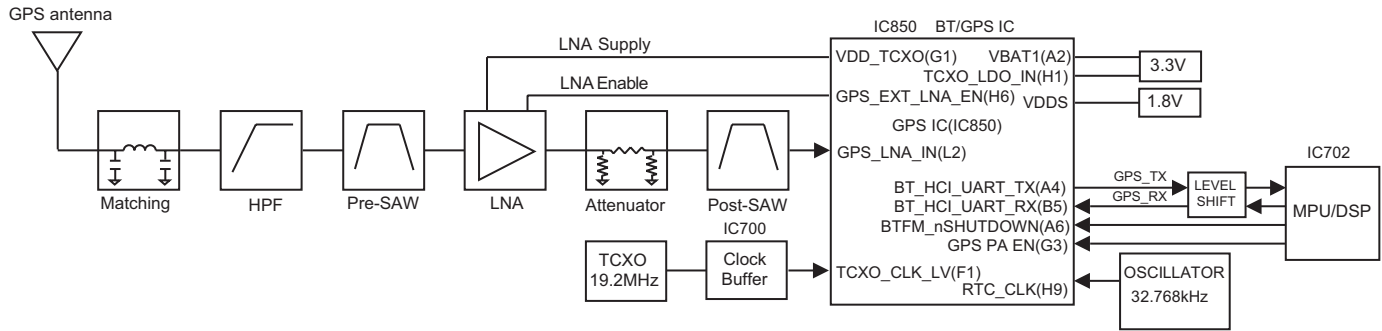


Fig.7 GPS circuit

## 2.5 COMPONENTS DESCRIPTION

### 2.5.1 TX-RX unit (XC1-0341-8X)

Ref. No.	Part Name	Description
IC20	IC	Reset
IC30	IC	Voltage regulator (33SD)
IC31	IC	Voltage regulator (31BU)
IC32	IC	Voltage regulator (12BU)
IC33	IC	DC/DC converter (38M)
IC34	IC	DC/DC converter (18M)
IC35	IC	Voltage regulator (33M)
IC36	IC	Voltage regulator (50C)
IC37	IC	Voltage regulator (18BT)
IC38	IC	Voltage regulator (33BT)
IC39	IC	Voltage regulator (33A)
IC60	IC	DC/DC converter (200C)
IC61	IC	Voltage regulator (33C)
IC63~65	IC	Voltage regulator (50R/50T/50VCO)
IC70	IC	Voltage regulator (53AF)
IC80	IC	Voltage regulator (30M)
IC81	IC	Voltage regulator (33OPT)
IC82	IC	Voltage regulator (50A)
IC100	IC	PLL IC
IC101	IC	DC AMP
IC102	IC	Voltage regulator (53AF)
IC200	IC	PLL IC
IC201	IC	DC AMP
IC300	IC	Pre-drive AMP 1

Ref. No.	Part Name	Description
IC360	IC	DC SW (Antenna SW)
IC400, 401	IC	APC
IC550, 551	IC	DC AMP
IC600	IC	IF IC
IC700	IC	Clock buffer
IC701	IC	DC SW (18M)
IC702	IC	MPU
IC703	IC	SDRAM
IC704	IC	Reset
IC705	IC	Flash memory
IC706	IC	Logic control
IC708	IC	I/O control
IC709	IC	Motion sensor
IC711,712	IC	Logic control
IC800	IC	LED driver
IC801	IC	Voltage regulator (50U)
IC802	IC	Analog SW
IC803	IC	Level converter
IC804,805	IC	Logic control
IC806	IC	Logic control
IC850	IC	GPS/Bluetooth
IC851	IC	GPS LNA
IC852,853	IC	Level converter
IC900	IC	A/D converter

Ref. No.	Part Name	Description
IC901	IC	D/A converter
IC902	IC	Codec
IC903	IC	D/A converter
IC904,905	IC	Audio AMP
IC906	IC	Logic control
IC907	IC	Clock buffer
Q20	Transistor	DC SW
Q21, 22	FET	DC SW
Q30	FET	DC SW
Q31	Transistor	DC SW
Q32,33	FET	DC SW
Q70	Transistor	DC SW
Q71	Transistor	Voltage regulator (53AF)
Q100	FET	DC SW
Q101	Transistor	Ripple filter
Q102,103	FET	DC SW
Q111	FET	DC SW
Q140	FET	VCO oscillation
Q160	FET	VCO oscillation
Q180	Transistor	Buffer AMP
Q200	FET	DC SW
Q201	Transistor	Ripple filter
Q202,203	FET	DC SW
Q210,211	FET	DC SW
Q240	FET	VCO oscillation
Q260	FET	VCO oscillation
Q280	Transistor	Buffer AMP
Q310	FET	Pre-drive AMP 2
Q320	FET	Drive AMP
Q330	FET	Final AMP
Q390	Transistor	DC SW
Q400	Transistor	DC SW
Q401,402	FET	DC SW
Q403	Transistor	DC SW
Q404	FET	DC SW
Q500	FET	Mixer
Q530	FET	LNA
Q580	Transistor	Buffer AMP
Q600	FET	VCO oscillation
Q601	Transistor	DC SW
Q602	Transistor	DC SW
Q660	Transistor	IF AMP
Q670	FET	IF AMP
Q700	Transistor	TCXO buffer
Q701	FET	DC SW
Q702	Transistor	DC SW

Ref. No.	Part Name	Description
Q703	FET	DC SW
Q800	FET	DC SW
Q801	Transistor	DC SW
D1	Diode	+B
D2	Diode	Overvoltage protection
D20	Diode	DC SW
D30	Diode	Backup battery charge
D60	Diode	DC/DC converter
D100	Zener diode	Overvoltage protection
D101	Diode	Ripple filter
D140~144	Variable capacitance diode	VCO frequency control
D160~164	Variable capacitance diode	VCO frequency control
D200	Zener diode	Overvoltage protection
D201	Diode	Ripple filter
D240~243	Variable capacitance diode	VCO frequency control
D260~263	Variable capacitance diode	VCO frequency control
D350	Diode	Antenna SW
D370,371	Diode	Antenna SW
D390	Zener diode	APC protect
D520~522	Variable capacitance diode	VCO frequency control
D532~534	Variable capacitance diode	VCO frequency control
D600,601	Variable capacitance diode	VCO frequency control
D603	Diode	Overvoltage protection
D700~703	Diode	Overvoltage protection
D704	LED	LED
D705	Diode	Overvoltage protection
D800~804	Diode	Overvoltage protection
D805,806	Zener diode	Surge protection
D807	Diode	DC SW
D808	Zener diode	Surge protection
D809,810	Varistor	Surge protection
D850,851	Diode	Overvoltage protection
D900,901	Zener diode	Surge protection
D902	Diode	Overvoltage protection
D903	Diode	DC SW
D904~907	Diode	Overvoltage protection



## 2.6 TERMINAL FUNCTION

### 2.6.1 TX-RX unit (XC1-0341-8X)

Pin No.	Name	I/O	Function
<b>CN4</b>			
1	+B	O	Power output after passing through the fuse
2	SB1	I	Switched B input
3	NC	-	No connection
4	NC	-	No connection
5	VOL	I	Volume level input
6	50A	O	5.0V output
7	ENC0	I	Rotary switch input
8	GND	-	GND
9	ENC1	I	Rotary switch input
10	GND	-	GND
11	ENC2	I	Rotary switch input
12	ENC3	I	Rotary switch input
13	CNTSW	I	Lever switch input
14	GND	-	GND
15	GND	-	GND
16	ME	-	MIC GND
17	GND	-	GND
18	INTM_S	I	Internal MIC (SUB)
19	INTM_M	I	Internal MIC (MAIN)
20	ME	-	MIC GND
<b>CN8</b>			
1	/Side0	I	Side 0 input
2	GND	-	GND
3	/Side2	I	Side 2 input
4	/Side1	I	Side 1 input
5	/PTT	I	PTT input
6	NC	-	No connection
<b>CN9</b>			
1	LEDK3	I	LCD backlight (Cathode)
2	LEDK2	I	LCD backlight (Cathode)
3	LEDK1	I	LCD backlight (Cathode)
4	LEDA	O	LCD backlight (Anode)
5	VSSA	-	GND
6	VSSA	-	GND
7	VCC	O	3.0V output
8	VCC	O	3.0V output
9	DC	O	Data/Command control signal
10	/CS	O	LCD CS signal
11	/RESET	O	LCD reset signal
12	/RD	O	LCD read signal
13	/WR	O	LCD write signal
14	IM0	O	System interface select
15	BD15	I/O	LCD Data Bus 15

Pin No.	Name	I/O	Function
16	BD14	I/O	LCD Data Bus 14
17	BD13	I/O	LCD Data Bus 13
18	BD12	I/O	LCD Data Bus 12
19	BD11	I/O	LCD Data Bus 11
20	BD10	I/O	LCD Data Bus 10
21	BD9	I/O	LCD Data Bus 9
22	BD8	I/O	LCD Data Bus 8
23	BD7	I/O	LCD Data Bus 7
24	BD6	I/O	LCD Data Bus 6
25	BD5	I/O	LCD Data Bus 5
26	BD4	I/O	LCD Data Bus 4
27	BD3	I/O	LCD Data Bus 3
28	BD2	I/O	LCD Data Bus 2
29	BD1	I/O	LCD Data Bus 1
30	BD0	I/O	LCD Data Bus 0
31	CABC	I	Backlight control signal
32	IOVCC	O	1.8V output
33	IOVCC	O	1.8V output
34	VSSD	-	GND
35	VSSD	-	GND
<b>CN10</b>			
1	GND	-	GND
2	/KEY10	I	Key matrix input
3	GND	-	GND
4	/KEY11	I	Key matrix input
5	GND	-	GND
6	/KEY12	I	Key matrix input
7	KEY_BLC	O	Key backlight output
8	/KEY13	I	Key matrix input
9	KEY_BLC	O	Key backlight output
10	/KEY14	I	Key matrix input
11	KEYO3	O	Key matrix output
12	GND	-	GND
13	KEYO2	O	Key matrix output
14	GND	-	GND
15	KEYO1	O	Key matrix output
16	GND	-	GND
17	KEYO0	O	Key matrix output
18	GND	-	GND
19	GND	-	GND
20	GND	-	GND
<b>CN11 (for production)</b>			
1~20	-	-	-
<b>CN12</b>			
1	SMIC	I	External MIC input
2	RXD	I/O	Serial data input/USB DM

Pin No.	Name	I/O	Function
3	TXD	I/O	Serial data output/USB DP
4	5V	O	5V power supply output
5	E	-	GND
6	OPT	I	MIC identification
7	PF	I	Programmable function key input
8	/PTT	I	PTT input
9	ME	-	MIC GND
10	EMC	I	External MIC input/USB VBUS
11	/MSW	I	EXT/INT MIC switch input
12	SP-	O	BTL output for external speaker -
13	SP+	O	BTL output for external speaker +
14	SSW	I	EXT/INT speaker switch input
<b>CN13</b>			
1	SP-	O	BTL output for internal speaker -
2	SP+	O	BTL output for internal speaker +

Pin No.	Name	I/O	Function
<b>J1</b>			
1	DAT2	I/O	Data 2
2	CD/DAT3	I/O	Data 3
3	CMD	I/O	Command input/output
4	VDD	O	3.3V output
5	CLK	O	Clock output
6	VSS	-	GND
7	DAT0	I/O	Data 0
8	DAT1	I/O	Data 1
9	CD	I	Card detect switch
10	COMMON	-	GND
11	GND1	-	GND
12	GND2	-	GND

## 2.6.2 Universal connector specification

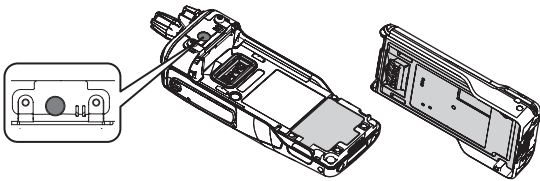
Pin No.	Name	I/O	Signal Type	Function	Rating and Condition				
					Parameter	Min	Typ	Max	Unit
1	SSW	I	Digital	EXT/INT speaker switch input	VIH	2.5	-	5.3	V
					VIL	0.0	-	0.15	V
2	SP+	O	Analog	BTL output for external speaker	[ 8Ω load ]				
					Max output power (1kHz, Batt=7.5V)		1.3	1.8	W
					DC Bias		2.5		V
					Allowable Frequency	300		3000	Hz
3	SP-	O	Analog	BTL output for external speaker	[ 16Ω load ]				
					Max output power (1kHz, Batt=7.5V)		0.9	1.4	W
					DC Bias		2.5		V
					Allowable Frequency	300		3000	Hz
4	MSW	I	Digital	EXT/INT MIC switch input	VIH	3.5	-	5.3	V
					VIL	0.0	-	0.15	V
5	EMC	I	Analog	External MIC input	Audio Level (STD deviation)	7.7	12.5	17.3	mV
					DC Bias		3.3		V
					Allowable Frequency	300		3000	Hz
					Input impedance	-	1.8	-	kΩ
	VBUS		Analog	USB VBUS (5V) input	VIH	4.8	-	5.3	V
					VIL	0.0	-	0.50	V
6	ME	-	-	MIC GND	This is GND port for Microphone.				
7	PTT	I	Digital	PTT input	VIH	2.5	-	5.3	V
					VIL	0.0	-	0.40	V
8	PF	I	Analog	Programmable function key input	V(PF2)	3.5	-	3.9	V
					V(PF1)	2.5	-	3.5	V
9	OPT	I	Digital	MIC identification	VIH	4.0	-	5.3	V
					VIL	0.0	-	0.7	V
10	GND	-	-	GND					

Pin No.	Name	I/O	Signal Type	Function	Rating and Condition					
					Parameter	Min	Typ	Max	Unit	
11	5U	-	Power	5V power supply output	Output Voltage(Iout = 100mA)	4.9	5.0	5.1	V	
					Maximum Current	-	-	0.2	A	
12	TXD	O	Digital	Serial data output	VOH(Io=-5mA)	4.1	-	5.1	V	
					VOL(Io=5mA)	0.0	-	0.8	V	
					Baud Rate			1.1875	Mbps	
	USB_DP	IO	Analog	USB DP	VIH	2.7	-	3.6	V	
					VIL	-	-	0.8	V	
					VOH	2.8	-	3.5	V	
					VOL	0.0	-	0.3	V	
					Baud Rate (Full-Speed)			12	Mbps	
	13	RXD	I	Digital	Serial data input	VIH	2.0	-	5.3	V
						VIL	0.0	-	0.8	V
Baud Rate								1.1875	Mbps	
USB_DM		IO	Analog	USB DM	VIH	2.7	-	3.6	V	
					VIL	-	-	0.8	V	
					VOH	2.8	-	3.5	V	
					VOL	0.0	-	0.3	V	
					Baud Rate (Full-Speed)			12	Mbps	
14		SMIC	I	Analog	External MIC input	Audio Level (STD deviation)	7.7	12.5	17.3	mV
						DC Bias		3.3		V
	Allowable Frequency					300		3000	Hz	
	Input impedance					-	1.8	-	kΩ	

## SECTION 3 DISASSEMBLY

### 3.1 Precautions for Waterproof

- Do not remove the black sheet from the reverse side of the transceiver (refer to the illustration below). Removal of this sheet decreases the waterproof efficiency of the transceiver and may cause malfunctions if water seeps into the transceiver.
- The orange packing material on the reverse side of the transceiver is important with respect to the waterproof efficiency of the transceiver. Do not place stickers or other materials on or around the packing material shown in the figure, or on the reverse side of the battery pack. Doing so will impair the waterproof efficiency of the transceiver and may cause it to break down. Additionally, in order to prevent damage to the packing material, do not allow it to come in contact with foreign materials.



### 3.2 Precautions for Disassembly

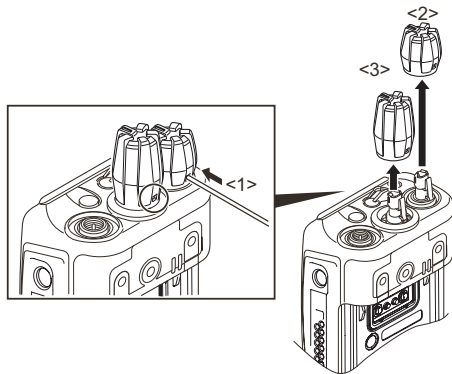
#### 3.2.1 Removing the selector knob and volume knob

- (1) Using a thin tool, insert it in the hole on the selector knob side and push the knob spring. <1>

**Note:**

When you push the knob spring, take care not to damage the resin of the knob.

- (2) Lift and remove the selector knob <2> while pushing the knob spring.
- (3) Repeat steps 1 and 2 for the volume knob, to remove the volume knob <3>.



**Note:**

Perform the following procedures when installing the selector knob and volume knob.

- a) Match the direction for the hole of the knob and the knob spring.
- b) Push the knob onto the knob spring until a click sounds.

#### 3.2.2 Removing the selector knob spring and volume knob spring

- (1) Lightly grasp the left and right sides of the selector knob spring together, and lift up as shown in the figure. <1>

**Note:**

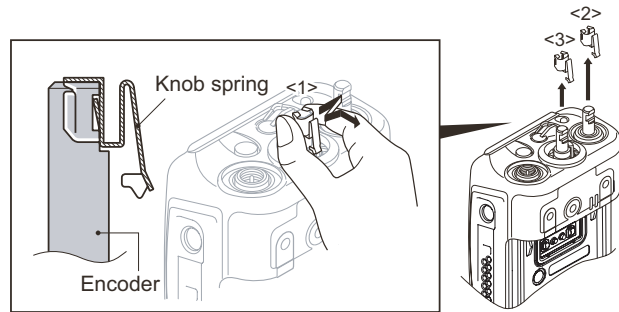
Do not grasp the knob spring tightly.

- (2) Remove the selector knob spring <2>.

**Note:**

Use minimal contact with your fingers on the knob spring.

- (3) Repeat steps 1 and 2 for the volume knob spring, to remove the volume knob spring <3>.



**Note:**

Perform the following procedures when installing the selector knob spring and volume knob spring.

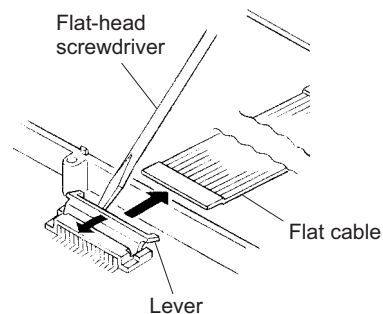
- a) Match the direction for the knob spring and the encoder.
- b) Insert the encoder onto the knob spring until a click sounds.

#### 3.2.3 How to remove the flat cable

- (1) Gently rise up the connector lever in the direction of the arrow with a flat-head screwdriver or tweezers. (CN8, CN9, CN12)

**Note:**

Gently push both sides of the connector lever, when put in the flat cable.

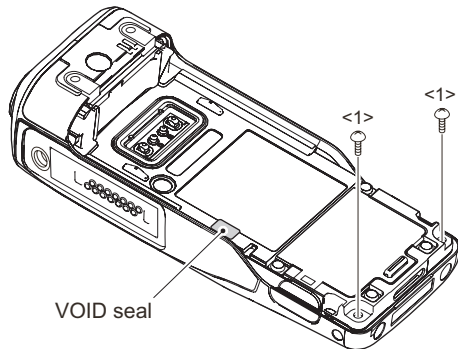


### 3.2.4 Remove the front case from the chassis

- (1) Remove two screws <1>.
- (2) Lift the base of the chassis and remove the chassis from the front case.

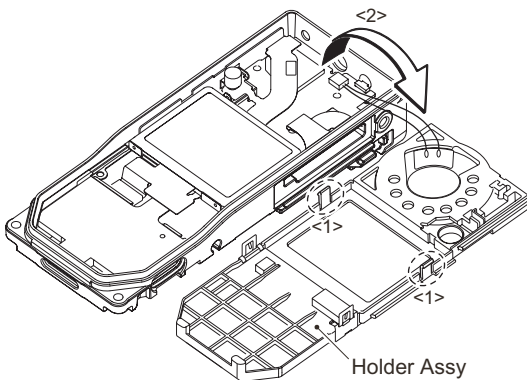
#### Note:

- There is a void seal stuck to the chassis and the front case, the void sheet peels off of when the chassis is removed from the case. Once the void seal is peeled off, it cannot be used again.
- When the chassis does not remove from the front case, remove by pushing in the key top with the finger.
- Regarding VOID, confirm the service policy of the NX-5300 to KENWOOD (or authorized distributor).



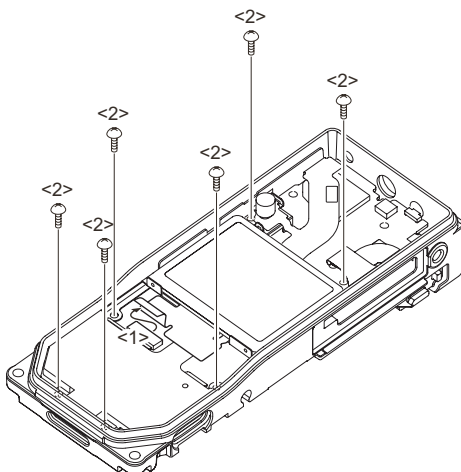
### 3.2.5 Remove the holder ASSY from the chassis

- (1) Remove the two hooks on the holder ASSY from the chassis. <1>
- (2) Rotate the holder ASSY to the right as shown in the figure. <2>

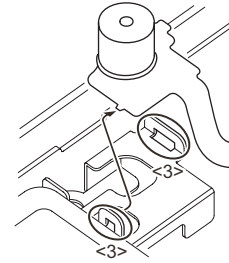


### 3.2.6 Removing the LCD shielding case from the Main unit

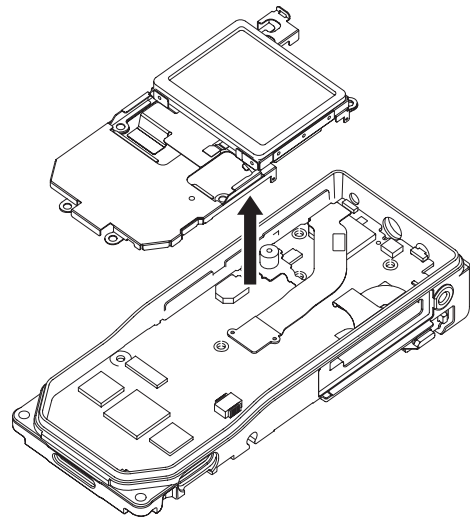
- (1) Remove the LCD FPC from the connector (CN9). <1>
- (2) Remove the six screws. <2>



- (3) Remove the VOL/SEL/MIC FPC from the two holes of the LCD shielding case. <3>

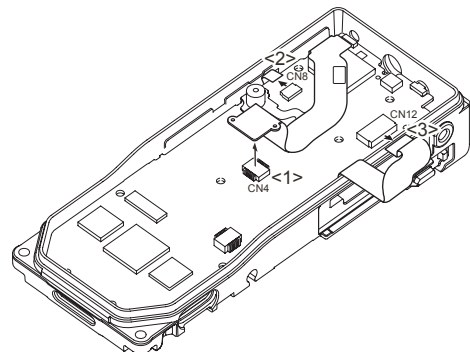


- (4) Remove the LCD shielding case from the Main unit. <4>



### 3.2.7 Removing the Main unit from the chassis

- (1) Remove the VOL/SEL/MIC FPC from the connector (CN4). <1>
- (2) Remove the PTT FPC from the connector (CN8). <2>
- (3) Remove the Universal connector FPC from the connector (CN12). <3>

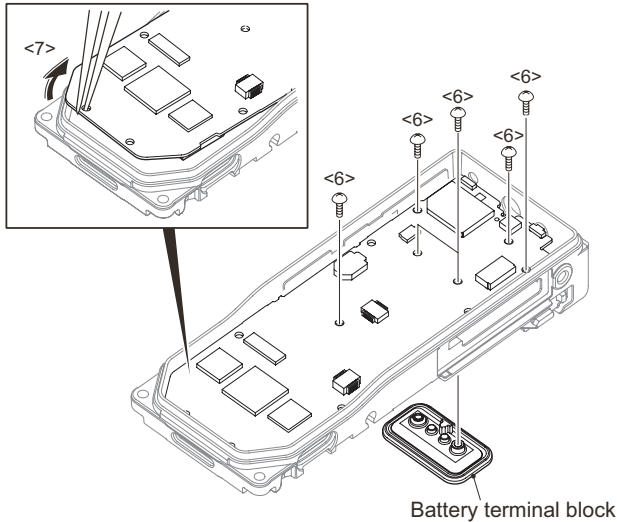


(4) Remove the six screws <6>.

**Note:**

When you remove two screws (black), the battery terminal block is removed.

(5) Anchor the screw hole of the Main unit using the tip of a pair of tweezers as shown in the figure. Then lift the Main unit to remove it from the chassis. <7>



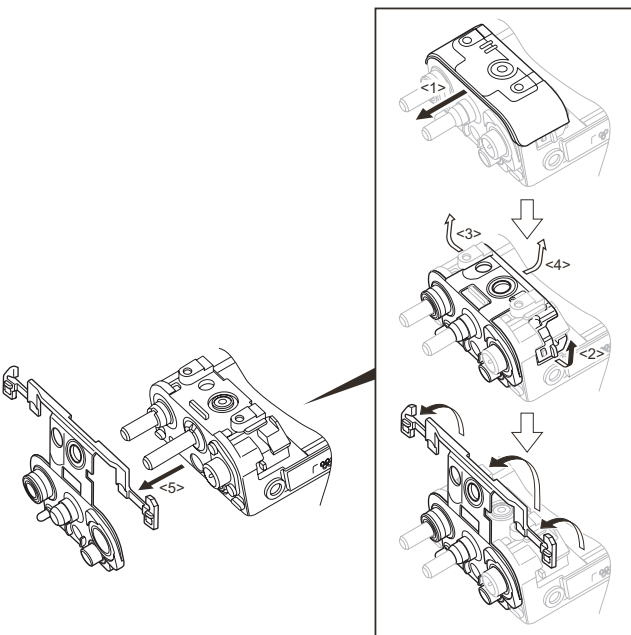
**3.2.8 Removing the TOP packing**

- (1) Remove the rear panel by sliding it upwards. <1>
- (2) Pull the TOP packing to the left to remove the packing that is fit into the left groove of the chassis. <2>
- (3) Pull the TOP packing to the right to remove the packing that is fit into the right groove of the chassis. <3>
- (4) Pull the TOP packing to the center to remove the packing that is fit into the center groove of the chassis. <4>
- (5) Remove the TOP packing. <5>

**Note:**

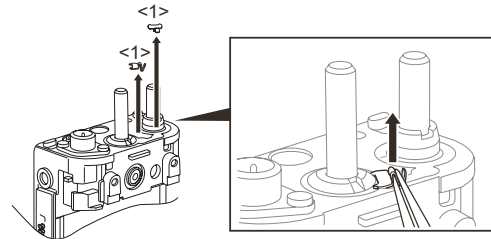
Remove the packing slowly, as the packing of the selector part might be overset when the TOP packing is removed.

If the packing is turned over, return it to the original position using a soft tipped item (e.g., your finger).



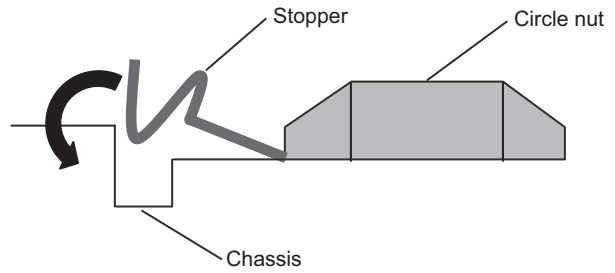
**3.2.9 Removing the stopper of the selector circle nut and volume circle nut**

(1) Remove the stopper <1> using a pair of tweezers.



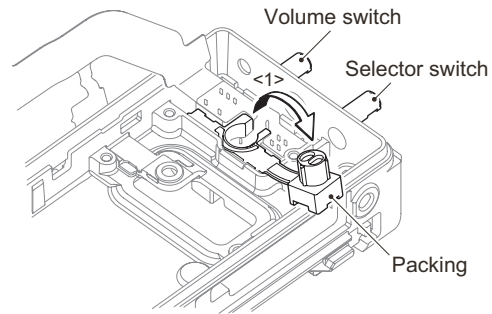
**Note:**

When reassembling the stopper, install it as shown in the figure.

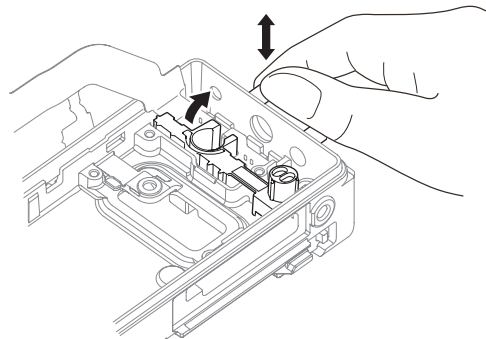


**3.2.10 Remove the selector and volume switches from the chassis**

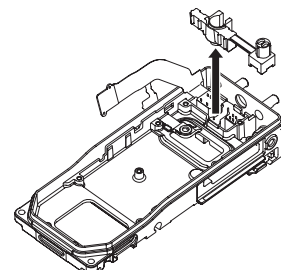
(1) Pull up the cover of the packing. <1>



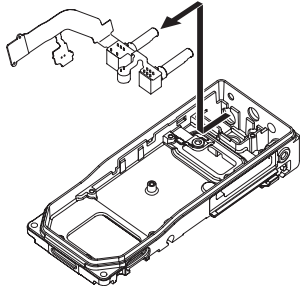
(2) Move the selector and volume switches vertically to lift the packing.



(3) Pull on the packing and remove it from the chassis.

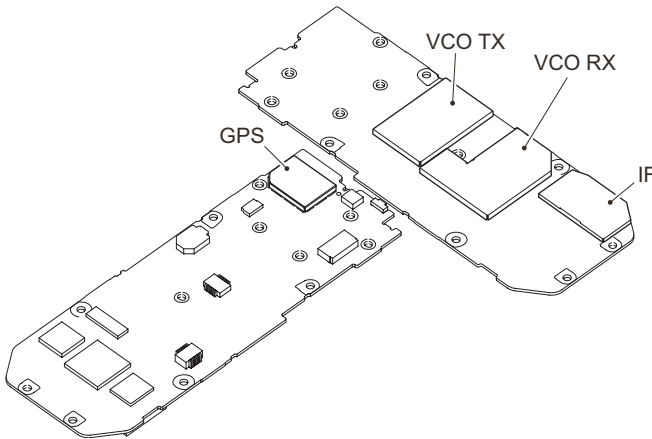


- (4) Move the selector and volume switches and then remove them both from the holes in the chassis.



### 3.2.11 Remove the top cover from the shield cover

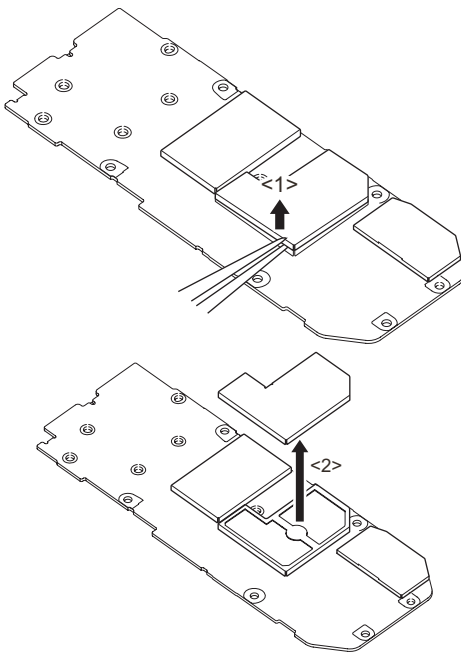
- (1) There are four shield covers (GPS, IF, VCO RX, and VCO TX) on the main unit, the top covers can be removed.



- (2) Use tweezers to slightly lift the edge of the top cover. <1>  
 (3) As you do step 2 above, vary the position you hold the top cover as you lift it, and remove the top cover <2>.

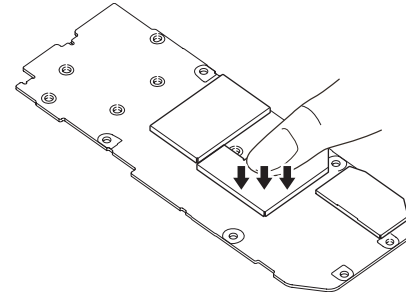
**Note:**

Once the top cover is removed, it cannot be used again.



**Note:**

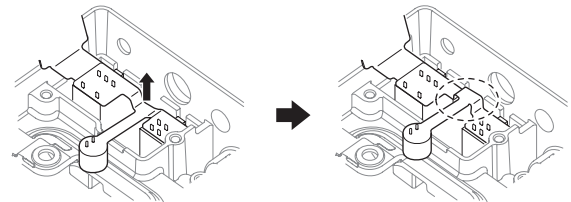
Push evenly on the top cover and be careful that you do not bend it as you install it on the shield cover.



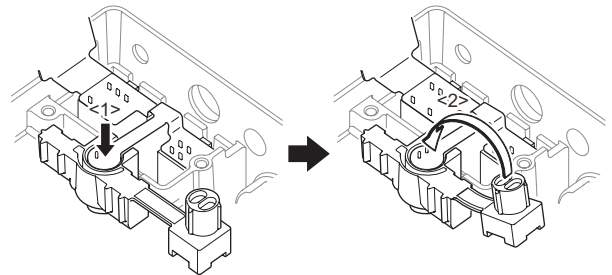
### 3.3 Precautions for Reassembly

#### 3.3.1 Install the packing in the chassis

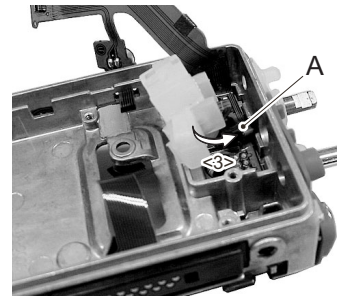
- (1) Lift up the VOL/SEL/MIC FPC as shown by the arrow in the figure so it is in the shape shown inside the dotted line.



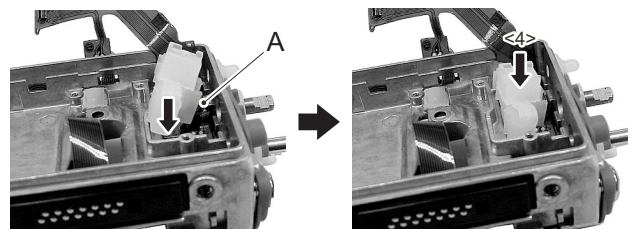
- (2) Insert the microphone into the packing. <1>  
 (3) Insert the cover into the packing. <2>



- (4) Tuck the packing under the A part of the FPC. <3>



- (5) Keep the packing tucked under A as you insert it into the chassis. <4>

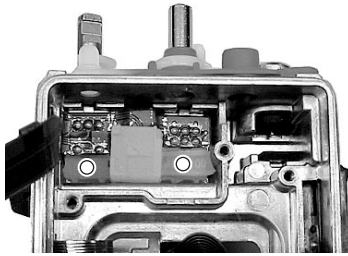




(6) Press the packing evenly to the base of the chassis.

**Note:**

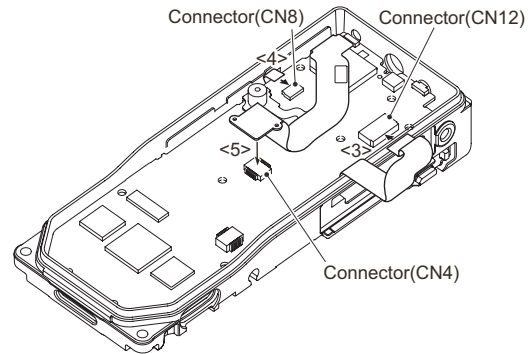
To prevent doing any damage, do not press forcefully on the packing.



(3) Insert the universal connector FPC into the connector (CN12). <3>

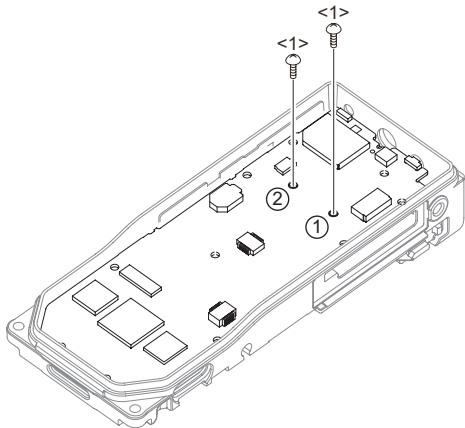
(4) Insert the PTT FPC into the connector (CN8). <4>

(5) Insert the VOL/SEL/MIC FPC into the connector (CN4). <5>

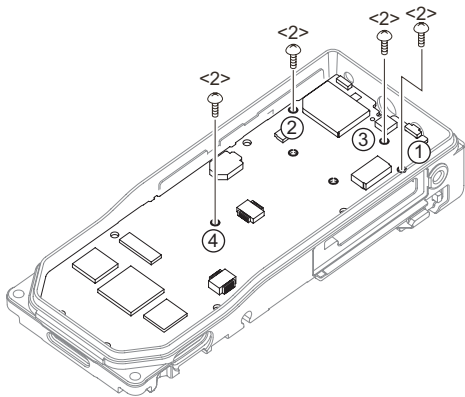


**3.3.2 Install the main unit in the chassis**

(1) Tighten the two screws (black) <1> to affix the battery terminal block to the chassis.

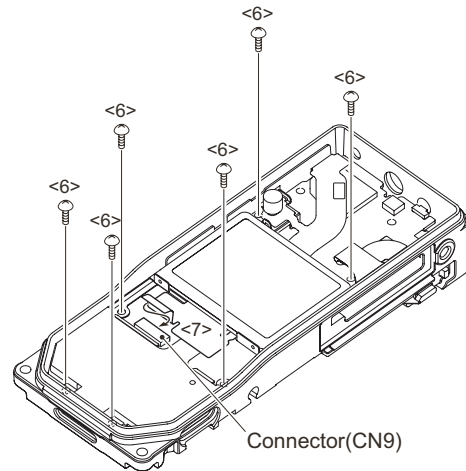


(2) Tighten the four screws <2> to affix the main unit to the chassis.

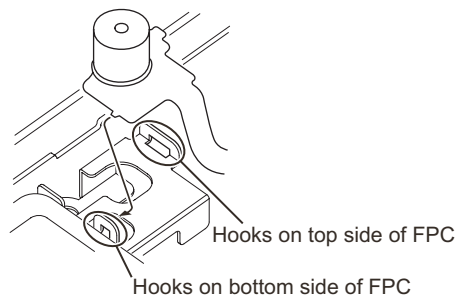


(6) Place the LCD shield cover on the main unit and tighten the six screws. <6>

(7) Insert the LCD FPC into the connector (CN9). <7>



(8) After inserting the hooks on the top side of the VOL/SEL/MIC FPC (mic part) into the holes on the top side of the LCD shield cover, insert the hooks on the bottom side of the FPC into the holes on the bottom side of the shield cover.





### 3.3.3 Mounting the chassis onto the case

(1) Place the key top on the chassis. Then, fit the chassis tightly into the groove of the key top. <1>

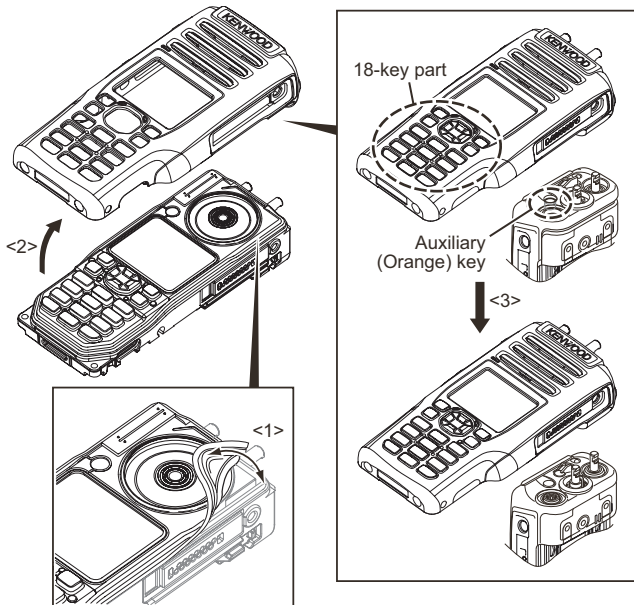
**Note:**

Confirm that the entire groove of the key top fits to the chassis tightly.

(2) Mount the chassis onto the case. <2>

**Note:**

- After mounting the chassis onto the case, if the 18-key part of the key top or the Auxiliary (Orange) key part of the VOL/SEL packing gets stuck inside the case as shown in the figure, return it to the normal position using a soft tipped item (e.g., finger) . <3>
- Prying it with a pointed metal tool such as forceps, may damage the key top or packing.



### 3.3.4 Assembly Information (Sheet/Cushion)

When "Main Parts" is changed (ordered), "Assembled Sheet / Cushion" should also be changed (ordered) together.

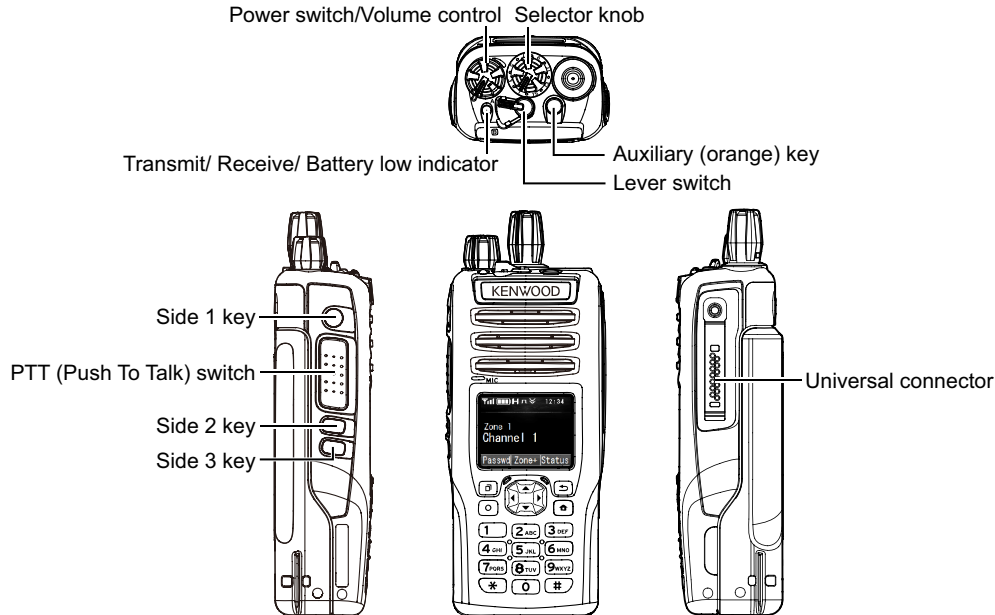
The Sticker and Sheet etc are non-reusable parts. It requires the new one to get the radio's performance after repairs.

For example, when "Plastic Cabinet (A0C-0001-00 (F3,K3)/ A0C-0002-00 (F2,K2))" is changed, "Badge (B4D-0002-00)", "Fibrous Sheet (G1A-0001-00)", "Sheet (G1B-0074-00)", "Spacer (J3K-0003-00)" and "Knob (K2K-0013-00)" should be ordered and changed together because Badge (B4D-0002-00), Fibrous Sheet (G1A-0001-00), Sheet (G1B-0074-00), Spacer (J3K-0003-00) and Knob (K2K-0013-00) are non-reusable.

Main Parts		Assembled Sheet/ Cushion		
Part Name	Part Number	Part Name	Part Number	Remark
Plastic Cabinet (F3,F6,K3,K6) Plastic Cabinet (F2,F5,K2,K5)	A0C-0001-00	Badge	B4D-0002-00	"KENWOOD" is printed.
	A0C-0002-00	Fibrous Sheet (SP)	G1A-0001-00	
		Sheet (LCD)	G1B-0074-00	
		Spacer (2CH)	J3K-0003-00	
		Knob (2CH)	K2K-0013-00	
Rear Panel	A8A-0005-00	Sheet (Air)	G11-4440-04	
Terminal (ANT)	E2D-0003-00	Cushion (ANT)	G1D-0041-00	
Terminal Block	E7C-0001-00	Terminal Sticker	B4C-0105-00	
Cover (OP board)	F0G-0005-00	Cushion (Cover)	G1D-0062-00	
Shielding Cover (MPU)	F1B-0005-00	Sheet (Insulating)	G1B-0031-00	
Shielding Cover (LCD)	F1B-0006-00	Cushion (LCD/Front)	G1D-0009-00	
Holder (F3,K3)	J1K-0004-00	Cushion (20-pin Connector)	G1D-0021-00	
FPC (UNIV)	J87-0056-05	R.Receptacle	E58-0532-05	
FPC (PTT)	J87-0057-05	Sheet (PTT)	G1B-0016-00	
FPC (VOL, SEL, ECM)	J87-0058-05	Sheet (Conducting)	G11-4459-04	
		Cushion	G1D-0025-00	
Speaker	T0H-0002-00	Rubber Cushion (SP)	G1B-0045-10	

# SECTION 4 ADJUSTMENT

## 4.1 Controls



### 4.1.1 Preparations for checking/tuning the transceiver

Before attempting to check/tune the transceiver, connect the unit to a suitable power supply.

Whenever the transmitter is turned on, the unit must be connected to a suitable dummy load (i.e. power meter).

The speaker output connector must be terminated with an 8Ω dummy load and connected to an AC voltmeter and an audio distortion meter or a SINAD measurement meter at all times during checking/tuning.

## 4.2 Panel Test Mode

### 4.2.1 Test mode operation features

This transceiver has a test mode. To enter test mode, press and hold the [↵] key while turning the transceiver power ON or press the [□] key and select the "Panel Test". Before the transceiver enters test mode, the frequency version information appears on the LCD momentarily. Test mode can be inhibited by programming. To exit test mode, turn the transceiver power OFF. The following functions are available in test mode.

- When the panel test mode is activated, the channel selected with the [Selector] knob and the last used signaling number are displayed. When it is activated for the first time, the signaling number is 1.
- If test signaling 10 (P25 Phase1), 7 (P25 Phase2) and 7 (NXDN Mode) is selected, the result of Bit Error Rate (BER) calculation is displayed on the LCD.

### 4.2.2 Key operation

Key	"FNC" not appears on the sub LCD display	
	Function	Display
[Selector]	-	-
[▲]	Push: Test channel up Hold: Test channel up continuously	Channel No.
[▼]	Push: Test channel down Hold: Test channel down continuously	Channel No.

Key	"FNC" not appears on the sub LCD display	
	Function	Display
[◀]	Push: Squelch level up *1 Hold: Squelch off	Squelch level Squelch off: [🔊] icon appears
[▶]	Wide/Narrow/ Very Narrow *2	Wide: "w" Narrow: "n" Very Narrow: "v"
[Side1]	-	-
[Side2]	-	-
[Side3]	Push: Microphone (Front MIC/Rear MIC) select	Rear MIC: [🎤] icon appears
[□]	Shift to panel tuning mode	-
[↵]	Function on	"FNC" appears on the sub LCD display
[○]	MSK 1200bps and 2400bps *1	2400bps: [📡] icon appears
[🏠]	Push: Test signaling up Hold: Test signaling up continuously	Signaling No.
[AUX (Orange)]	-	-
[PTT]	Transmit	-
[0] to [9] and [#], [*]	-	-

\*1: When the mode is selected as Analog, this function is enabled.

\*2: When the Mode is selected as P25, bandwidth is fixed to Narrow.

Key	"FNC" appears on the sub LCD display	
	Function	Display
[Selector]	-	-
[▲]	Talk Around on/off	On:  icon appears
[▼]	Analog/Phase1/Phase2/NXDN	Analog: "A" P25 phase1: "P1" P25 phase2: "P2" NXDN: "N"
[◀]	-	-
[▶]	Key/LCD check	The position of the selector knob, etc., appear.
[Side1]	Function off	-
[Side2]	Function off	-
[Side3]	P25 Modulation Type (C4FM/LSM) *3	LSM :  icon appears
	High power/Low power	High: "H" Medium: "M" Low: "L"

Key	"FNC" appears on the sub LCD display	
	Function	Display
	Function off	-
[O]	Compander on/off	On:  icon appears
[Home]	Function off	-
[AUX (Orange)]	For production	-
[PTT]	Transmit	-
[0] to [9] and [#], [*]	Function off	-

\*3: When the mode is selected as P25, this function is enabled.

- **LED indicator**  
Red LED Lights during transmission.  
Green LED Lights when there is carrier.
- **Sub LCD indicator**  
"FNC" Appears at function on.

#### • LCD display in panel test mode

(Power ON)

Battery type detect  
"ALKALI": Alkaline battery pack  
"LI": Li-ion  
"LI IS": Li-ion(IS)  
"NIMH": Ni-MH

Market code  
Market code of Fx, Kx types are displayed as "K".

Frequency range  
"F1": 450~520MHz  
"F2": 380~470MHz

Temperature  
Power

Sub LCD display  
+25

Main LCD display  
An SQ5 1-1  
Tuning C+ Func

Signaling No.  
Channel No.

(After 2sec.)

An : Analog narrow mode  
Aw : Analog wide 5k mode  
As : Analog wide 4k mode \*1  
P1 : P25 Phase1 mode  
P2 : P25 Phase2 mode  
Nn : NXDN narrow mode  
Nv : NXDN very narrow mode

\*1: Wide 4k is displayed only when the PC test mode is used. However, it aims at production for factory, or a operation verification of the transceiver. It is not necessary in operation of the transceiver to adjust.

#### 4.2.3 Frequency and Signaling

The transceiver has been adjusted for the frequencies shown in the following table. When required, readjust them following the adjustment procedure to obtain the frequencies you want in actual operation.

(1) Test frequency

CH	F2,F3,K2,K3		F5,F6,K5,K6	
	RX (MHz)	TX (MHz)	RX (MHz)	TX (MHz)
1	485.05000	485.10000	425.05000	425.10000
2	450.05000	450.10000	380.05000	380.10000
3	519.95000	519.90000	469.95000	469.90000

CH	F2,F3,K2,K3		F5,F6,K5,K6	
	RX (MHz)	TX (MHz)	RX (MHz)	TX (MHz)
4	485.00000	485.00000	425.00000	425.00000
5	485.20000	485.20000	425.20000	425.20000
6	485.40000	485.40000	425.40000	425.40000
7~16	-	-	-	-

(2) Test signaling

■Analog mode signaling

No.	RX	TX
1	None	None
2	None	Square Wave
3	LTR Data	LTR Data
4	QT:67.0Hz	QT:67.0Hz
5	QT:151.4Hz	QT:151.4Hz
6	QT:210.7Hz	QT:210.7Hz
7	QT:254.1Hz	QT:254.1Hz
8	DQT:D023N	DQT:D023N
9	DQT:D754I	DQT:D754I
10	DTMF Decode (CODE: 159D)	DTMF Encode (CODE: 159D)
11	None	DTMF Encode (CODE: 9)
12	2-tone Decode (A: 304.7Hz, B: 3106.0Hz)	2-tone Encode (A: 304.7Hz, B: 3106.0Hz)
13	Single Tone Decode (979.9Hz)	Single Tone Encode (979.9Hz)
14	None	Single Tone Encode (1000Hz)
15	None	MSK PN9
16	MSK Decode	MSK Encode

■P25 Phase1 signaling

No.	RX	TX
1	NAC 293	NAC 293
2	NAC 023	NAC 023
3	NAC 5EA	NAC 5EA
4	None	PN9
5	NAC 293	Symbol Rate Pattern
6	NAC 293	1/3 Deviation Pattern
7	NAC 293	0 Continuous Pattern
8	NAC 293	Fidelity Pattern
9	None	FSW+PN9
10	NAC 293	1011Hz Tone Test Pattern
11	Tone Pattern	1011Hz Tone Test Pattern
12	Silence Pattern	Silence Pattern
13	Audio Test Pattern	NAC293 + Audio Test Pattern
14	Vocoder Loop	None

■P25 Phase2 signaling

No.	RX	TX
1	STTP-OB-1031-0	STTP-IB1031-1+Audio
2	None	PN9 Phase2
3	STTP-OB-1031-1	Symbol Rate Pattern Phase2
4	STTP-OB-1031-1	1/3 Deviation Pattern Phase2
5	STTP-OB-1031-1	0 Continuous Pattern

No.	RX	TX
6	STTP-OB-1031-1	0 Burst Pattern
7	STTP-OB-1031	Symmetrical STTP-IB1031-1
8	Tone Pattern (Half rate)	STTP-IB1031-1
9	Silence Pattern (Half Rate)	STP-IB-1 + Silence Pattern (Half Rate)
10	Audio Test Pattern (Half Rate)	STTP-IB1031-1 + Audio Test Pattern (Half Rate)
11	Codec Loop	STTP-IB1031-1 + Codec Loop
12	Vocoder Loop (Half Rate)	STTP-IB1031-1 + Vocoder Loop (Half Rate)








■NXDN Mode signaling

No.	RX	TX
1	RAN1	RAN1
2	None	PN9
3	RAN1	Maximum Deviation Pattern
7	FSW + PN9	FSW + PN9
9	Tone Pattern (1031Hz)	Tone Pattern (1031Hz)

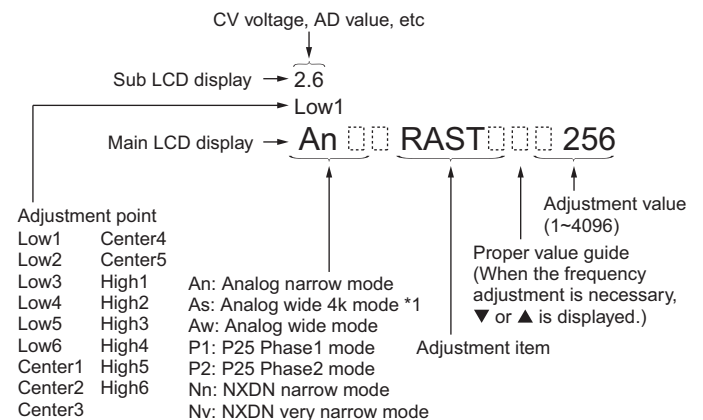
RAN: Radio Access Number  
 PN9: Pseudo-Random Pattern  
 No.7, 9 Item: PC test mode only

4.3 Panel Tuning Mode

4.3.1 Transceiver tuning (To enter tuning mode)



To enter tuning mode, press the [  ] key while the transceiver is in test mode. Use the [  ] key to write tuning data through tuning modes, and the [  ]/[  ] key to adjust tuning requirements (1 to 4096 appears on the LCD). Use the [  ] key to select the adjustment item through tuning modes. Use the [  ] key to adjust 5, 9 or 17 reference level adjustments, and use the [  ] key to switch between Wide/Narrow.



- LCD display in panel tuning mode



\*1: Wide 4k is displayed only when the PC test mode is used. However, it aims at production for factory, or a operation verification of the transceiver. It is not necessary in operation of the transceiver to adjust.

### 4.3.2 Key operation

Key	Function	
	Push	Hold (1 second)
[Selector]	-	
[ ▲ ]	Adjustment value up	Continuation up
[ ▼ ]	Adjustment value down	Continuation down
[ ◀ ]	Auto adjustment start	-
[ ▶ ]	Wide/Narrow/P25/NXDN	-
[ Side1 ]	-	
[ Side2 ]	-	
[ Side3 ]	-	
[  ]	Shift to panel test mode	-
[  ]	To enter 5,9 or 17 reference level adjustments	-

Key	Function	
	Push	Hold (1 second)
[  ]	Writes the adjustment value	-
[  ]	Go to next adjustment item	Back to last adjustment item (At the time of 5, 9 or 17 point adjustment: Adjustment point change)
[AUX (Orange)]	Output tone pattern change of balance adjustment (A change is possible only during balance adjustment.)	-
[PTT]	Transmit	
[0] to [9] and [#].[ * ]	-	

### 4.3.3 5, 9 or 17 reference level adjustments frequency

High Transmit Power, Medium Transmit Power, Low Transmit Power, Sensitivity 1, Sensitivity 2, Sensitivity 3, RSSI Reference, Open Squelch, Low RSSI, High RSSI, Tight Squelch

Tuning point	Display	F2,F3,K2,K3		F5,F6,K5,K6	
		RX (MHz)	TX (MHz)	RX (MHz)	TX (MHz)
1	Low 1	450.050000	450.100000	380.050000	380.100000
2	Low 5	467.550000	467.600000	402.550000	402.600000
3	Center 3	485.050000	485.100000	425.050000	425.100000
4	High 2	502.550000	502.600000	447.550000	447.600000
5	High 6	519.950000	519.900000	469.950000	469.900000

Maximum Deviation , P25 High Deviation, P25 H-CPM Deviation, NXDN High Deviation, QT Deviation, DQT Deviation, LTR Deviation, DTMF Deviation, Single Tone Deviation, MSK Deviation, CW ID Deviation

Tuning point	Display	F2,F3,K2,K3		F5,F6,K5,K6	
		RX (MHz)	TX (MHz)	RX (MHz)	TX (MHz)
1	Low 1	450.050000	450.100000	380.050000	380.100000
2	Low 3	458.850000	458.900000	391.050000	391.100000
3	Low 5	467.550000	467.600000	402.550000	402.600000
4	Center 1	476.350000	476.400000	413.550000	413.600000
5	Center 3	485.050000	485.100000	425.050000	425.100000
6	Center 5	493.850000	493.900000	436.050000	436.100000
7	High 2	502.550000	502.600000	447.550000	447.600000
8	High 4	511.350000	511.400000	458.550000	458.600000
9	High 6	519.950000	519.900000	469.950000	469.900000

**Receive Assist, Transmit Assist**

Tuning point	Display	F2,F3,K2,K3		F5,F6,K5,K6	
		RX (MHz)	TX (MHz)	RX (MHz)	TX (MHz)
1	Low 1	450.050000	450.100000	380.050000	380.100000
2	Low 2	454.450000	454.500000	385.550000	385.600000
3	Low 3	458.850000	458.900000	391.050000	391.100000
4	Low 4	463.250000	463.300000	396.550000	396.600000
5	Low 5	467.550000	467.600000	402.550000	402.600000
6	Low 6	471.950000	472.000000	408.050000	408.100000
7	Center 1	476.350000	476.400000	413.550000	413.600000
8	Center 2	480.750000	480.800000	419.050000	419.100000
9	Center 3	485.050000	485.100000	425.050000	425.100000
10	Center 4	489.450000	489.500000	430.550000	430.600000
11	Center 5	493.850000	493.900000	436.050000	436.100000
12	High 1	498.250000	498.300000	441.550000	441.600000
13	High 2	502.550000	502.600000	447.550000	447.600000
14	High 3	506.950000	507.000000	453.050000	453.100000
15	High 4	511.350000	511.400000	458.550000	458.600000
16	High 5	515.750000	515.800000	464.050000	464.100000
17	High 6	519.950000	519.900000	469.950000	469.900000

**4.3.4 Adjustment item supplement**

Adjustment Item	Description
Receive Assist	The lock voltage of VCO (Receive) is adjusted. This item must be adjusted before all adjustment items for receiver section are adjusted.
Transmit Assist	The lock voltage of VCO (Transmit) is adjusted. This item must be adjusted before all adjustment items for transmitter section are adjusted.
Frequency	Frequency is adjusted under receiving condition with SSG. The SSG needs 0.001ppm accuracy so please use a standard oscillator if necessary. This item can be adjusted only in PC Test Mode so that the adjustment value is not changed easily.
Ramp Offset	Adjust this item to the optimal Ramp voltage.
High Transmit Power	High Transmit Power is adjusted.
Medium Transmit Power	Medium Transmit Power is adjusted.
Low Transmit Power	Low Transmit Power is adjusted.

Adjustment Item	Description
Balance	The transmit modulation frequency response is adjusted. This item is adjusted so that the deviation of 6kHz becomes the 96% deviation of 20Hz. This item must be adjusted before all adjustment items for deviations are adjusted.
Maximum Deviation (P25/NXDN)	Maximum Deviation of P25/NXDN is adjusted.
Maximum Deviation (Analog Wide 5K/ Wide 4K/Narrow)	Maximum Deviation of Analog (Wide 5K/ Wide 4K/Narrow) is adjusted. This item must be adjusted before all adjustment items for tone deviations are adjusted.
QT Deviation	QT deviation is adjusted.
DQT Deviation	DQT deviation is adjusted.
LTR Deviation	LTR deviation is adjusted.
DTMF Deviation	DTMF deviation is adjusted.
Single Tone Deviation	The deviation of Single Tone used in "2-tone" is adjusted.
MSK Deviation	MSK tone deviation is adjusted.
CWID Deviation	CWID tone deviation is adjusted. CWID is used to inform the others who is transmitting on a 6.25-kHz spacing channel. (In FCC rule, Analog mode or CWID is required for each channel-spacing.)
Sensitivity 1	Band-Pass Filter is adjusted. The performance of Receive Sensitivity is improved.

Adjustment Item	Description
Sensitivity 2	The gain of RF amplifier is adjusted. The performance of the interfering wave is improved.
Sensitivity 3	Not used
RSSI Reference	The minimum RSSI level for scan stop is adjusted.
Open Squelch	The squelch level at level "1" is adjusted.
Low RSSI	RSSI display level " $\nabla$ " is adjusted.
High RSSI	Both "Low RSSI" and "High RSSI" must be adjusted. (The curve data of RSSI level is applied.)

Adjustment Item	Description
Tight Squelch	The squelch level at level "9" is adjusted.
Battery Warning Level	Battery Warning Level (LED blinking level) is adjusted. Battery Warning Level minus 0.4V is the transmission inhibited level.

#### 4.3.5 Adjustment item and Display

Order	Adjustment item	Main LCD display	Sub LCD display	Aw	As *2	An	P1	P2	Nn	Nv	Adjust item Number
				(Analog Wide)	(Analog Wide 4k)	(Analog Narrow)	(P25 Phase1)	(P25 Phase2)	(NXDN Narrow)	(NXDN Very Narrow)	
Adjustment range											
1	Receive Assist	RAST	(CV voltage)	17 point ADJ							Common Section 2
				1 ~ 4096							
2	Transmit Assist	TAST	(CV voltage)	17 point ADJ							Common Section 3
				1 ~ 4096							
3	RTC Correction	RTC	-	-							Common Section 5
				-2.00~-0.01 ,0.00 ,+0.01~+2.00							
4	Ramp Up Offset	RAMPU	(ADC measurement value)	-							Transmitter Section 1
				1~1024							
5	Ramp Down Offset	RAMPD	(ADC measurement value)	-							Transmitter Section 2
				1~1024							
6	High Transmit Power	H_PWR	-	-	-	5	-	-	-	-	Transmitter Section 3
				1~1024							
7	Medium Transmit Power	M_PWR	-	-	-	5	-	-	-	-	Transmitter Section 4
				1~1024							
8	Low Transmit Power	L_PWR	-	-	-	5	-	-	-	-	Transmitter Section 5
				1~1024							
9	Balance	BAL	(Encode frequency)	-	-	9	-	-	-	-	Transmitter Section 6
				1~1024							
10	Maximum Deviation	ADEV	-	9	9 *2	9	-	-	-	-	Transmitter Section 7
				1~1024							
11	P25 High Deviation	PDEV	-	-	-	-	9	-	-	-	Transmitter Section 8
				1~1024							
12	P25 H-CPM Deviation	P2DEV	-	-	-	-	-	9	-	-	Transmitter Section 9
				1~1024							
13	NXDN High Deviation	NDEV	-	-	-	-	-	-	9	9	Transmitter Section 10
				1~1024							
14	QT Deviation	QT	-	9	9 *2	9	-	-	-	-	Transmitter Section 11
				1~1024							
15	DQT Deviation	DQT	-	9	9 *2	9	-	-	-	-	Transmitter Section 12
				1~1024							



Order	Adjustment item	Main LCD display	Sub LCD display	Aw (Analog Wide)	As *2 (Analog Wide 4k)	An (Analog Narrow)	P1 (P25 Phase1)	P2 (P25 Phase2)	Nn (NXDN Narrow)	Nv (NXDN Very Narrow)	Adjust item Number
				Adjustment range							
16	LTR Deviation	LTR	-	9	9 *2	9	-	-	-	-	Transmitter Section 13
				1~1024							
17	DTMF Deviation	DTMF	-	9	9 *2	9	-	-	-	-	Transmitter Section 14
				1~1024							
18	Single Tone Deviation	TONE	-	9	9 *2	9	-	-	-	-	Transmitter Section 15
				1~1024							
19	MSK Deviation	MSK	-	9	9 *2	9	-	-	-	-	Transmitter Section 16
				1~1024							
20	CW ID Deviation	CWID	-	-	-	9	-	-	-	-	Transmitter Section 17
				1~1024							
21	Battery Warning Level	BATT	(BATT measurement value)	1point ADJ							Transmitter Section 18
				1~256							
22	Sensitivity 1	SENS1	(RSSI measurement value)	-	-	5	-	-	-	-	Receiver Section 2
				1~256							
23	Sensitivity 2	SENS2	(RSSI measurement value)	-	-	5	-	-	-	-	Receiver Section 4
				1~256							
24	Sensitivity 3	SENS3	(RSSI measurement value)	-	-	5	-	-	-	-	Receiver Section 3
				1~256							
25	RSSI Reference	RRSSI	(RSSI measurement value)	-	-	5	-	-	-	-	Receiver Section 5
				1~256							
26	Open Squelch	SQL	(ASQDET measurement value)	5	5 *2	5	5 *3	5	5	5	Receiver Section 6
				1~256							
27	Low RSSI	LRSSI	(RSSI measurement value)	-	-	5	-	-	-	-	Receiver Section 7
				1~256							
28	High RSSI	HRSSI	(RSSI measurement value)	-	-	5	-	-	-	-	Receiver Section 8
				1~256							
29	Tight Squelch	SQLT	(ASQDET measurement value)	5	5 *2	5	-	-	-	-	Receiver Section 9
				1~256							

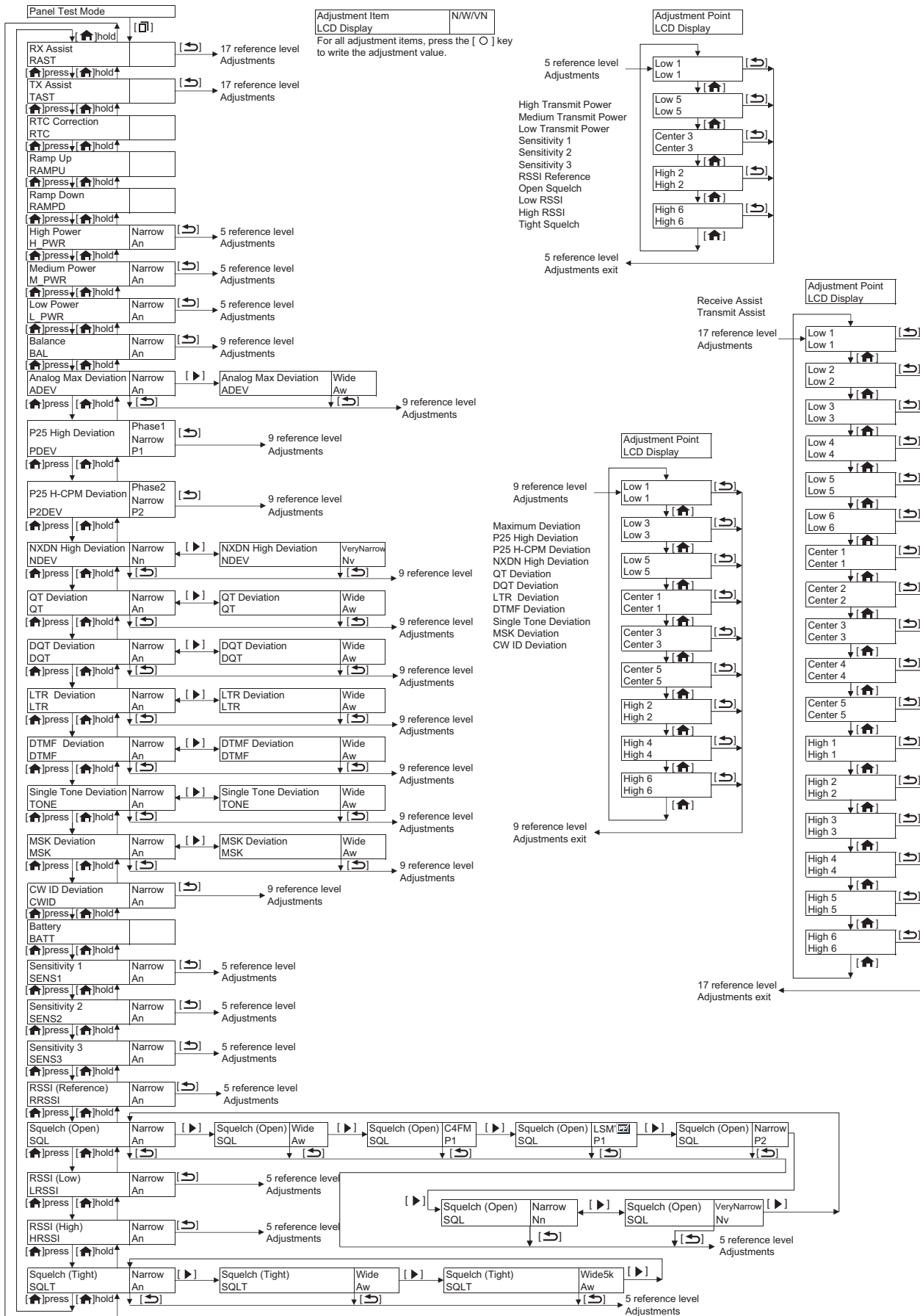
\*2: Wide4K can be set up only when the PC test mode is used.

\*3: When P25 Phase1 is selected, in C4FM and LSM, there is an adjustment item, respectively.

### 4.3.6 Panel tuning mode flow chart

**Note:**

\* In this Panel tuning mode flow chart, the Adjustment item name is modified.



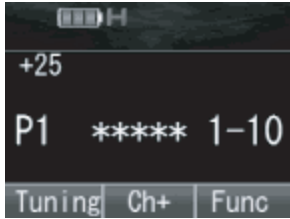
#### 4.4 BER (Bit Error Rate) Measurement

- (1) The Panel Test Mode is used to measure the BER (Refer "4.2.1 Test mode operation features").
- (2) Select "10" (P25 Phase1), "7" (P25 Phase2) and "7" (NXDN Mode) for test signaling (Refer to "4.2.3 Frequency and Signaling" (2) Test signaling).

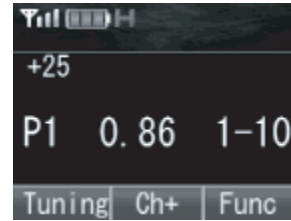
**Note:**

"7" (NXDN Mode) can be selected only by PC test mode.

- (3) Select a bandwidth (Narrow/Very Narrow) by pressing the [ ▶ ] key. When P25 Phase1 or P25 Phase2 is selected, it is not necessary to select a bandwidth.
- (4) Select a test frequency ("4.2.3 Frequency and Signaling" (2) Test signaling Test frequency).



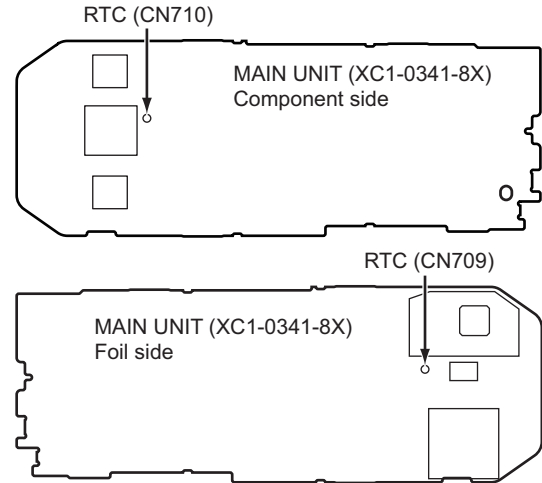
- (5) Measure the BER (Bit Error Rate) using the digital radio tester.  
Enter a standard input signal into the transceiver as a standard tone test pattern for P25, FSW+PN9 for NXDN.
- (6) Adjust the input signal level to achieve the standard bit error rate (BER).  
(For example, if the BER is 0.86%, the display shows "0.86".)



**Note:**

"4", "9" (P25 Phase1), "2" (P25 Phase2) is for production.

#### 4.5 Adjustment points



#### 4.6 Test Equipment Required for Alignment

Test Equipment	Major Specifications	
1. Standard Signal Generator (SSG)	Frequency Range	100 to 900MHz
	Modulation	Frequency modulation and external modulation
	Output	-127dBm/0.1uV to greater than -20dBm/22.4mV
	When performing the Frequency adjustment, the following accuracy is necessary.	
	• 0.001ppm	
	Use a standard oscillator for adjustments, if necessary.	
2. Power Meter	Input Impedance	50Ω
	Operation Frequency	100 to 900MHz
	Measurement Capability	Vicinity of 10W
3. Deviation Meter	Frequency Range	100 to 900MHz
4. Digital Volt Meter (DVM)	Measuring Range	10mV to 10V DC
	Input Impedance	High input impedance for minimum circuit loading
5. Oscilloscope		DC through 30MHz
6. Frequency Counter	Frequency Range	10Hz to 1000MHz
	Frequency Stability	0.2ppm or less
	To measure the oscillating frequency of the internal clock 32766.00Hz~32770.00Hz for RTC Correction Resolution 0.01Hz is better for accuracy adjustment.	
7. Ammeter		5A
8. AF Volt Meter (AF VM)	Frequency Range	50Hz to 10kHz
	Voltage Range	1mV to 10V
9. Audio Generator (AG)	Frequency Range	50Hz to 5kHz or more
	Output	0 to 1V
10. Distortion Meter	Capability	3% or less at 1kHz
	Input Level	50mV to 10Vrms
11. Spectrum Analyzer	Measuring Range	DC to 1GHz or more
12. 8Ω Dummy Load		Approx. 8Ω, 3W
13. Regulated Power Supply		5V to 10V, approx. 3A
		Useful if ammeter equipped

### ■Antenna connector adapter

The antenna connector of this transceiver uses an SMA terminal.

Use an antenna connector adapter [SMA(f) - BNC(f) or SMA(f) - N(f)] for adjustment. (The adapter is not provided as an option, so buy a commercially-available one.)

### ■Nut wrench

In order to turn the volume nut and the channel selector nut, use a recommendation tool.

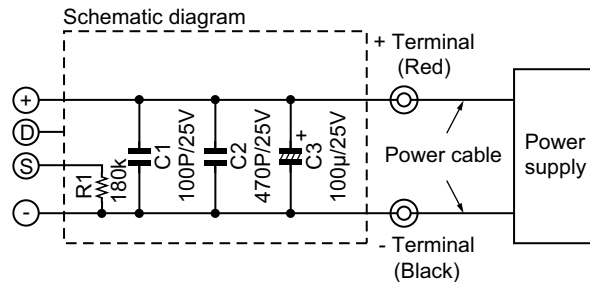
KENWOOD part No.: W05-1123-00

### ■Battery Jig (W3F-0001-00)

Connect the power cable properly between the battery jig installed in the transceiver and the power supply, and be sure output voltage and the power supply polarity prior to switching the power supply ON, otherwise over voltage and reverse connection may damage the transceiver, or the power supply or both.

#### Note:

\*When using the battery jig, you must measure the voltage at the terminals of the battery jig. Otherwise, a slight voltage drop may occur within the power cable, between the power supply and the battery jig, especially while the transceiver transmits.



### ■Universal connector

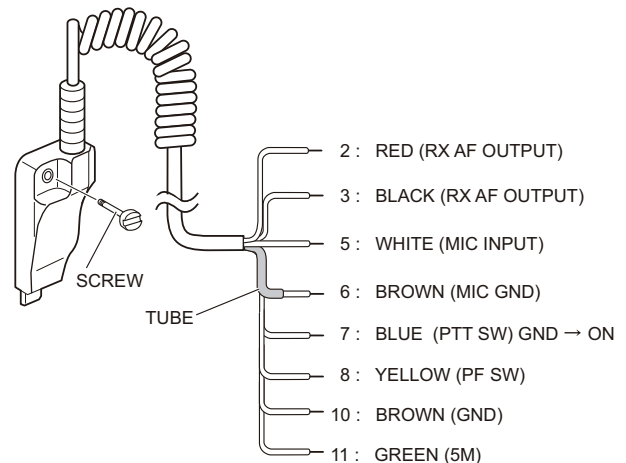
Use the interface cable (KPG-36U) for PC tuning or the lead wire with plug (E30-3287-28) and screw (N08-0535-08) for panel tuning. Connect the plug to the universal connector of the transceiver and tighten the screw.

The lead wire with plug (E30-3287-28) and screw (N08-0535-08) terminals are as follows. Numbers are universal connector terminal numbers.

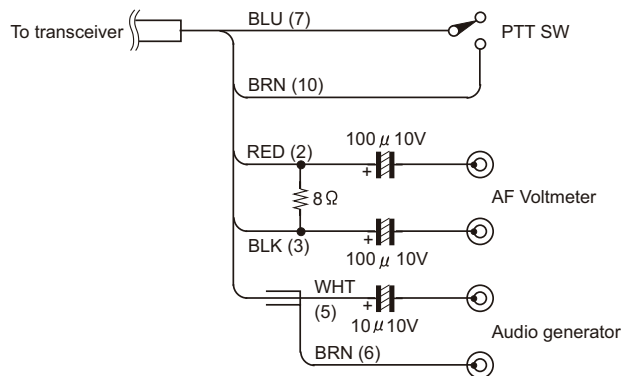
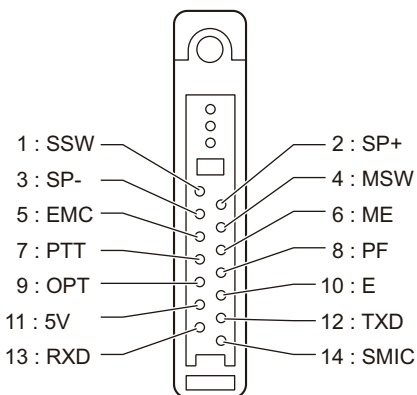
#### Caution

- (1) When connecting the plug to the universal connector of the transceiver, a short circuit may occur. To prevent this, be sure to turn the transceiver POWER switch off.
- (2) Since the RX AF output is a BTL output, there is a DC component. Isolate this with a capacitor or transformer as shown in the figure.
- (3) Do not connect an instrument between red or black and GND.

#### \*Panel tuning



#### \*Universal connector

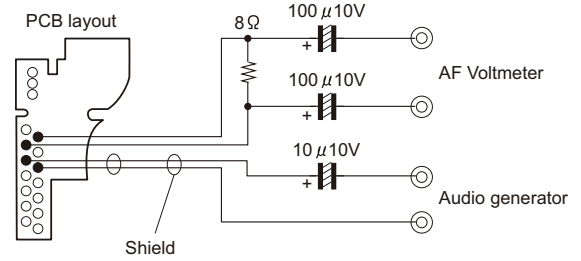
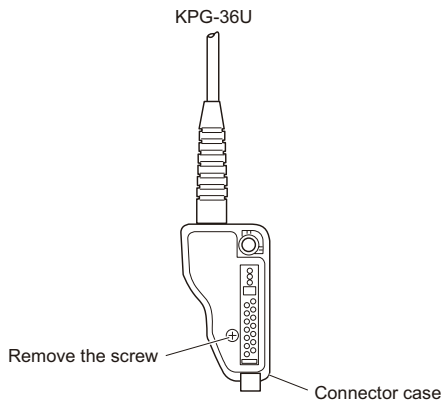


**Note:** Pin 1 (SSW) and Pin 4 (MSW) are connected to Pin 10 (GND) to active External SP and External MIC.

**\*PC tuning**

Connect the wires to the PCB in the connector case of interface cable.

For output the wires out of the connector case, need to process the connector case.



**4.7 Radio check Section**

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel test mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Frequency check	1)CH-Sig: 1-1 PTT: ON	1)Test Channel Channel: 1 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.	f. counter	Panel	ANT			Check an internal temperature of radio from 20°C to 33°C.	±0.25ppm ±106.2Hz@4 25.1MHz(F5, F6,K5,K6) ±121.2Hz@4 85.1MHz(F2, F3,K2,K3)
2. High power check (Battery voltage: 7.5V)	1)CH-Sig: 1-1 PTT: ON TA: OFF	1)Test Channel Channel: 1 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.	Power meter Ammeter	Panel	ANT			Check	4.0W~6.0W 2.3A or less
	2)CH-Sig: 2-1 PTT: ON TA: OFF	2)Test Channel Channel: 2 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.	Power meter Ammeter	Panel	ANT			Check	4.0W~6.0W 2.3A or less
	3)CH-Sig: 3-1 PTT: ON TA: OFF	3)Test Channel Channel: 3 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.	Power meter Ammeter	Panel	ANT			Check	4.0W~6.0W 2.3A or less
3. Low power check (Battery voltage: 7.5V)	1)CH-Sig: 1-1 PTT: ON TA: OFF	1)Test Channel Channel: 1 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.	Power meter Ammeter	Panel	ANT			Check	0.7W~1.2W 1.2A or less
	2)CH-Sig: 2-1 PTT: ON TA: OFF	2)Test Channel Channel: 2 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.	Power meter Ammeter	Panel	ANT			Check	0.7W~1.2W 1.2A or less
	3)CH-Sig: 3-1 PTT: ON TA: OFF	3)Test Channel Channel: 3 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.	Power meter Ammeter	Panel	ANT			Check	0.7W~1.2W 1.2A or less

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel test mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
4. MIC sensitivity check	1)CH-Sig: 1-1 AG: 1kHz PTT: ON	1)Test Channel Channel: 1 Test Signaling Mode: Analog Signaling: 1 AG: 1kHz PTT: Press [Transmit] button.	Deviation meter Oscilloscope AG AF VM	Panel	ANT Universal connector			Adjust AG input to get a standard MOD.	12.5mV ±5.8mV
5. Sensitivity check	1)CH-Sig: 1-1 SSG output Wide: -117dBm (0.32μV) (MOD: 1kHz/±3kHz) Narrow: -117dBm (0.32μV) (MOD: 1kHz/ ±1.5kHz)	1)Test Channel Channel: 1 Test Signaling Mode: Analog Signaling: 1 SSG output Wide: -117dBm (0.32μV) (MOD: 1kHz/±3kHz) Narrow: -117dBm (0.32μV) (MOD: 1kHz/±1.5kHz)	SSG AF VTVM Oscilloscope Distortion meter 8Ω Dummy load	Panel	ANT Universal connector			Check	12dB SINAD or more

#### 4.8 Common Section

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Setting	1) BATT terminal voltage:7.5V 2) SSG standard modulation [Wide 5k] MOD:1kHz,DEV:3kHz [Wide 4k] MOD:1kHz,DEV:2.4kHz [Narrow] MOD:1kHz,DEV:1.5kHz								

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
2. Receive Assist	<p>1) Adj item: [RAST] Adjust:[****]</p> <p>2) Adj item: [Low1 RAST]→ [Low2 RAST]→ [Low3 RAST]→ [Low4 RAST]→ [Low5 RAST]→ [Low6 RAST]→ [Center1 RAST]→ [Center2 RAST]→ [Center3 RAST]→ [Center4 RAST]→ [Center5 RAST]→ [High1 RAST]→ [High2 RAST]→ [High3 RAST]→ [High4 RAST]→ [High5 RAST]→ [High6 RAST]→</p> <p>*F5,F6,K5,K6 type only: Press and hold the [▶] key to enter [Center1 RAST](Overlap High)→ Adjust:[****] Press [○] key to store the adjustment value.</p>	<p>1) Adj item: [Receive Assist]</p> <p>2) Adj item: [Low1],[Low2], [Low3],[Low4], [Low5],[Low6], [Center1], [Center2], [Center3], [Center4], [Center5], [High1],[High2] [High3],[High4], [High5],[High6]</p> <p>*F5,F6,K5,K6 type only: [Center1 RAST](Overlap High)→ Press [Apply All] button to store the adjustment value.</p>				Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	<p><b>[PC test mode] [Automatic Adjustment]</b> 1) Press [Tune Assist Voltage] button. 2) Press [Apply All] button to store the adjustment value after the automatic adjustment has finished.</p> <p><b>[Manual Adjustment]</b> [V] indicator on the PC window shows VCO lock voltage. Change the adjustment value to get VCO lock voltage within the limit of the specified voltage.</p> <p><b>Note:</b> Confirm the VCO lock voltage approximately 3 seconds after the adjustment value is changed.</p>	<p>2.5V±0.1V <b>[Automatic Adjustment]</b> After the automatic adjustment is performed, verify that the VCO lock voltage is within the voltage range which is specified by the manual adjustment.</p> <p><b>[Manual Adjustment]</b> Press [Apply All] button to store the adjustment value after all adjustment point have been adjusted.</p> <p><b>Note:</b> The assist adjustment value must be between from 340 to 3550.</p>

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
3. Transmit Assist	1) Adj item: [TAST] Adjust:[****] 2) Adj item: [Low1 TAST]→ [Low2 TAST]→ [Low3 TAST]→ [Low4 TAST]→ [Low5 TAST]→ [Low6 TAST]→ [Center1 TAST]→ [Center2 TAST]→ [Center3 TAST]→ [Center4 TAST]→ [Center5 TAST]→ [High1 TAST]→ [High2 TAST]→ [High3 TAST]→ [High4 TAST]→ [High5 TAST]→ [High6 TAST]→  *F5,F6,K5,K6 type only: Press and hold the [▶] key to enter [Center1 TAST](Over Lap High)→ Adjust:[****] Press [○] key to store the adjustment value.	1) Adj item: [Transmit Assist] 2) Adj item: [Low1],[Low2],[Low3],[Low4],[Low5],[Low6],[Center1], [Center2],[Center3], [Center4],[Center5],[High1],[High2],[High3],[High4],[High5],[High6]  *F5,F6,K5,K6 type only: [Center1 TAST](Over Lap High)→ Press [Apply All] button to store the adjustment value.				Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	<b>[PC test mode] [Automatic Adjustment]</b> 1) Press [Tune Assist Voltage] button. 2) Press [Apply All] button to store the adjustment value after the automatic adjustment has finished. <b>[Manual Adjustment]</b> [V] indicator on the PC window shows VCO lock voltage. Change the adjustment value to get VCO lock voltage within the limit of the specified voltage. <b>Note:</b> Confirm the VCO lock voltage approximately 3 seconds after the adjustment value is changed.	2.5V±0.1V <b>[Automatic Adjustment]</b> After the automatic adjustment is performed, verify that the VCO lock voltage is within the voltage range which is specified by the manual adjustment. <b>[Manual Adjustment]</b> Press [Apply All] button to store the adjustment value after all adjustment point have been adjusted. <b>Note:</b> The assist adjustment value must be between from 340 to 3550.



Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
4. Frequency	*The Frequency adjustment can be performed only in PC test mode.	1) Adj item: [Frequency] SSG output: -20dBm (22.4mV) (CW (without modulation))  <b>Caution:</b> Perform the frequency adjustment under the following conditions. • Temperature range of +20°C to +33°C (+68.0°F to +91.4°F). (The temperature is displayed on the Frequency adjustment screen of the KPG-D1/D1N and the LCD of the transceiver.) • Use an accuracy of 0.001ppm for the SSG. (Use a standard oscillator if necessary.)	SSG	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	<b>[PC test mode]</b> Press [Start] button of "Auto Tuning". Press [Apply] button to store the adjustment value after the automatic adjustment has finished.	<b>[PC test mode]</b> "IF20" value = Within 0±20 digits. The value of "IF20" will become around "0" after the adjustment has finished.  <b>Remark:</b> "Frequency" is adjusted under receiving condition with SSG.
5. RTC Correction	1) Adj item: [RTC] Adjust:[****] Press [○] key to store the adjustment value.	1) Adj item: [RTC Correction] Data: {****} Press [Apply] button to store the adjustment value.	Frequency Counter	Panel	TEST POINT (CN709 or CN710)		[Panel tuning mode] [▲],[▼] [PC test mode] [←],[→]	<b>[Panel tuning mode]</b> Press [○] key to store the adjustment value. <b>[PC test mode]</b> Press [Apply] button to store the adjustment value.	<b>Remarks:</b> Change the adjustment value so that the frequency currently displayed on "Crystal Oscillation Frequency" on the PC window and the frequency currently displayed on the frequency counter are in agreement.

#### 4.9 Transmitter Section

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Ramp up Offset	1) Adj item: [RAMPU] Adjust:[****] PTT : ON Press [○] key to store the adjustment value.	1) Adj item: [Ramp Up Offset] Press [Transmit] button. Press [Apply] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	<b>[PC test mode]</b> 1) Set the adjustment value to "1". 2) Increase the adjustment value slowly while monitoring the offset monitor value. 3) Set the adjustment value when the offset monitor value exceed "50".	

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
2. Ramp down Offset	1) Adj item: [RAMPD] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.	1) Adj item: [Ramp Down Offset] Press [Transmit] button. Press [Apply] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	<b>[PC test mode]</b> 1) Set the adjustment value to "1". 2) Increase the adjustment value slowly while monitoring the offset monitor value. 3) Set the adjustment value when the offset monitor value exceed "20".	
3. High transmit power (Battery voltage : 7.5V)	1) Adj item: [An H_PWR] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.	1) Adj item: [High Transmit Power] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Press [Transmit] button. Press [Apply All] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	5.0W	±0.1W 2.3A or less  <b>[PC test mode]</b> Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
4. Medium transmit power (Battery voltage : 7.5V)	1) Adj item: [An M_PWR] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.	1) Adj item: [Medium Transmit Power] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Press [Transmit] button. Press [Apply All] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	<b>Note:</b> Medium transmit power is the purpose of the custom power (adjustment). This power must be lower than High transmit power. In the production, this Medium transmit power is adjusted at same power as Low transmit power.	<b>[PC test mode]</b> Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
5. Low transmit power (Battery voltage : 7.5V)	1) Adj item: [An L_PWR] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.	1) Adj item: [Low Transmit Power] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Press [Transmit] button. Press [Apply All] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	1W	±0.1W 1.2A or less  <b>[PC test mode]</b> Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
6. Balance *1	<p>1) Adj item: [BAL] Adjust:[****] Deviation meter LPF: 15kHz HPF: OFF Detector:P-P/2</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] *F5,F6,K5,K6 type only: Press and hold the [▶] key to enter [Center1] (Over Lap High)→ Adjust:[****] PTT : ON Press [○] key to store the adjustment value.</p>	<p>1) Adj item: [Balance] Deviation meter LPF: 15kHz HPF: OFF Detector:P-P/2</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] *F5,F6,K5,K6 type only: [Center1] (Over Lap High)→ Press [Transmit] button. Press [Apply All] button to store the adjustment value.</p>	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	<p>The Deviation of 20Hz frequency is fixed. Change the 6kHz adjustment value to become the 96% deviation of 20Hz within the specified range.</p> <p>(a supplementary explanation: Another way to adjust is ready. (Same as TK-5300, the old model of NX-5300). Press [AUX(Orange)] key to switch the tone to 100Hz square wave. Then, make the demodulation waveform shown on oscilloscope into square shape.)</p>	<p>6kHz Tone deviation is within 96 ± 1% of 20Hz tone deviation.</p> <p><b>[PC test mode]</b> Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.</p>
<p>*1 : Refer to the “4.9.1 Necessary Deviation adjustment item for each signaling and mode” table. Balance adjustment is common with the adjustment of all signaling deviations.</p>									
7. Maximum Deviation *2 [Analog Wide]	<p>1) Adj item: [ADEV] Adjust:[****] Deviation meter LPF: 15kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] *F5,F6,K5,K6 type only: Press and hold the [Right] key to enter [Center1] (Over Lap High)→ Adjust:[****] PTT : ON Press [○] key to store the adjustment value.</p>	<p>1) Adj item: [Maximum Deviation (Analog Wide)] Deviation meter LPF: 15kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] *F5,F6,K5,K6 type only: [Center1] (Over Lap High)→ Press [Transmit] button. Press [Apply All] button to store the adjustment value.</p>	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	<p>Write fixed value “496” (F2,F3,K2,K3), “494” (F5,F6,K5,K6) for each adjustment point. Transmit at each adjustment point and check that the deviation is between 4150Hz and 4250Hz. Deviation meter LPF: 15kHz HPF: OFF</p> <p><b>[Panel tuning mode]</b> PTT: ON</p> <p><b>[PC test mode]</b> PTT: Press [Transmit] button</p>	<p>4150~4250Hz</p> <p><b>[PC test mode]</b> Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.</p>

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
[Analog Narrow] *2	1) Adj item: [An ADEV] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] *F5,F6,K5,K6 type only: Press and hold the [Right] key to enter [Center1] (Over Lap High)→ Adjust:[****] PTT : ON Press [O] key to store the adjustment value.	1) Adj item: [Maxmum Deviation (Analog Narrow)] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] *F5,F6,K5,K6 type only: [Center1] (Over Lap High)→ Press [Transmit] button. Press [Apply All] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write fixed value "494" (F2,F3,K2,K3), "491" (F5,F6,K5,K6) for each adjustment point. Transmit at each adjustment point and check that the deviation is between 2050Hz and 2150Hz. Deviation meter LPF: 15kHz HPF: OFF  <b>[Panel tuning mode]</b> PTT: ON  <b>[PC test mode]</b> PTT: Press [Transmit] button	2050~2150Hz  <b>[PC test mode]</b> Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
*2 : Refer to the "4.9.1 Necessary Deviation adjustment item for each signaling and mode" table. Regarding Maximum Deviation (Analog), it is common with the adjustment of all analog signalings.									
8. P25 High Deviation	1) Adj item: [P1 PDEV] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] *F5,F6,K5,K6 type only: Press and hold the [Right] key to enter [Center1] (Over Lap High)→ Adjust:[****] PTT : ON Press [O] key to store the adjustment value.	1) Adj item: [P25 High Deviation] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] *F5,F6,K5,K6 type only: [Center1] (Over Lap High)→ Press [Transmit] button. Press [Apply All] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write fixed value "498" (F2,F3,K2,K3), "497" (F5,F6,K5,K6) for each adjustment point. Transmit at each adjustment point and check that the deviation is between 2771Hz and 2883Hz. Deviation meter LPF: 3kHz HPF: OFF  <b>[Panel tuning mode]</b> PTT: ON  <b>[PC test mode]</b> PTT: Press [Transmit] button	2771~2883Hz  <b>[PC test mode]</b> Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
9. P25 H-CPM Deviation	<p>1) Adj item: [P2 P2DEV] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] *F5,F6,K5,K6 type only: Press and hold the [Right] key to enter [Center1] (Over Lap High)→ Adjust:[****] PTT : ON Press [O] key to store the adjustment value.</p>	<p>1) Adj item: [P25 H-CPM Deviation] Deviation meter LPF: 3kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] *F5,F6,K5,K6 type only: [Center1] (Over Lap High)→ Press [Transmit] button. Press [Apply All] button to store the adjustment value.</p>	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write fixed value "498" (F2,F3,K2,K3), "497" (F5,F6,K5,K6) for each adjustment point. Transmit at each adjustment point and check that the deviation is between 3090Hz and 3215Hz. Deviation meter LPF: 3kHz HPF: OFF  <b>[Panel tuning mode]</b> PTT: ON  <b>[PC test mode]</b> PTT: Press [Transmit] button	3090~3215Hz  <b>[PC test mode]</b> Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
10. NXDN High Deviation [NXDN Narrow]	<p>1) Adj item: [Nn NDEV] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] *F5,F6,K5,K6 type only: Press and hold the [Right] key to enter [Center1] (Over Lap High)→ Adjust:[****] PTT : ON Press [O] key to store the adjustment value.</p>	<p>1) Adj item: [NXDN High Deviation (NXDN Narrow)] Deviation meter LPF: 3kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] *F5,F6,K5,K6 type only: [Center1] (Over Lap High)→ Press [Transmit] button. Press [Apply All] button to store the adjustment value.</p>	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write fixed value "497" for each adjustment point. Transmit at each adjustment point and check that the deviation is between 2995Hz and 3117Hz. Deviation meter LPF: 3kHz HPF: OFF  <b>[Panel tuning mode]</b> PTT: ON  <b>[PC test mode]</b> PTT: Press [Transmit] button	2995~3117Hz  <b>[PC test mode]</b> Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
[NXDN Very Narrow]	<p>1) Adj item: [Nv NDEV] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] *F5,F6,K5,K6 type only: Press and hold the [Right] key to enter [Center1] (Over Lap High)→ Adjust:[****] PTT : ON Press [O] key to store the adjustment value.</p>	<p>1) Adj item: [NXDN High Deviation (NXDN Very Narrow) Deviation meter LPF: 3kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] *F5,F6,K5,K6 type only: [Center1] (Over Lap High)→ Press [Transmit] button. Press [Apply All] button to store the adjustment value.</p>	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write fixed value "489" (F2,F3,K2,K3), "492" (F5,F6,K5,K6) for each adjustment point. Transmit at each adjustment point and check that the deviation is between 1331Hz and 1363Hz. Deviation meter LPF: 3kHz HPF: OFF  <b>[Panel tuning mode]</b> PTT: ON  <b>[PC test mode]</b> PTT: Press [Transmit] button	1311~1363Hz  <b>[PC test mode]</b> Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
11. QT Deviation *3 [Analog Wide]	<p>1) Adj item: [Aw QT] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.</p>	<p>1) Adj item: [QT Deviation (Analog Wide)] Deviation meter LPF: 3kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Press [Transmit] button. Press [Apply All] button to store the adjustment value.</p>	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 513 (Reference value)	0.75kHz±0.05 kHz

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
[Analog Narrow]	1) Adj item: [An QT] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.	1) Adj item: [QT Deviation (Analog Narrow)] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Press [Transmit] button. Press [Apply All] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 513 (Reference value)	0.35kHz±0.05 kHz
12. DQT Deviation *3 [Analog Wide]	1) Adj item: [Aw DQT] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.	1) Adj item: [DQT Deviation (Analog Wide)] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Press [Transmit] button. Press [Apply All] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 405 (Reference value)	0.75kHz±0.05 kHz

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
[Analog Narrow]	<p>1) Adj item: [An DQT] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.</p>	<p>1) Adj item: [DQT Deviation (Analog Narrow)] Deviation meter LPF: 3kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Press [Transmit] button. Press [Apply All] button to store the adjustment value.</p>	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 405 (Reference value)	0.35kHz±0.05 kHz
13. LTR Deviation *3 [Analog Wide]	<p>1) Adj item: [Aw LTR] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.</p>	<p>1) Adj item: [LTR Deviation (Analog Wide)] Deviation meter LPF: 3kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Press [Transmit] button. Press [Apply All] button to store the adjustment value.</p>	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 513 (Reference value)	1.00kHz±0.05 kHz



Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
[Analog Narrow]	1) Adj item: [An LTR] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.	1) Adj item: [LTR Deviation (Analog Narrow)] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Press [Transmit] button. Press [Apply All] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 513 (Reference value)	0.75kHz±0.05 kHz
14. DTMF Deviation *3 [Analog Wide]	1) Adj item: [Aw DTMF] Adjust:[****] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.	1) Adj item: [DTMF Deviation (Analog Wide)] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Press [Transmit] button. Press [Apply All] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 513 (Reference value)	2.50kHz±0.05 kHz

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
[Analog Narrow]	<p>1) Adj item: [An DTMF] Adjust:[****] Deviation meter LPF: 15kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.</p>	<p>1) Adj item: [DTMF Deviation (Analog Narrow)] Deviation meter LPF: 15kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Press [Transmit] button. Press [Apply All] button to store the adjustment value.</p>	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 513 (Reference value)	1.25kHz±0.05 kHz
15. Single Tone Deviation *3 [Analog Wide]	<p>1) Adj item: [Aw TONE] Adjust:[****] Deviation meter LPF: 15kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.</p>	<p>1) Adj item: [Single Tone Deviation (Analog Wide)] Deviation meter LPF: 15kHz HPF: OFF</p> <p>2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Press [Transmit] button. Press [Apply All] button to store the adjustment value.</p>	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 513 (Reference value)	3.00kHz±0.05 kHz

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
[Analog Narrow]	1) Adj item: [An TONE] Adjust:[****] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.	1) Adj item: [Single Tone Deviation (Analog Narrow)] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Press [Transmit] button. Press [Apply All] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 513 (Reference value)	1.50kHz±0.05 kHz
16. MSK Deviation *3 [Analog Wide]	1) Adj item: [Aw MSK] Adjust:[****] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.	1) Adj item: [MSK Deviation (Analog Wide)] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Press [Transmit] button. Press [Apply All] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 513 (Reference value)	3.00kHz±0.05 kHz

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
[Analog Narrow]	1) Adj item: [An MSK] Adjust:[****] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.	1) Adj item: [MSK Deviation (Analog Narrow)] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Press [Transmit] button. Press [Apply All] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 513 (Reference value)	1.50kHz±0.05 kHz
17. CWID Deviation *3 [Analog Narrow]	1) Adj item: [An CWID] Adjust:[****] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [O] key to store the adjustment value.	1) Adj item: [CWID Deviation (Analog Narrow)] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Press [Transmit] button. Press [Apply All] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 513 (Reference value)	1.10kHz±0.10 kHz

\*3: Refer to the "4.9.1 Necessary Deviation adjustment item for each signaling and mode" table.

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
18. Battery Warning Level writing	1) Adj item: [BATT] Adjust:[***] PTT: ON	1) Adj item: [Battery Warning Level] Press [Transmit] button.	Power meter DVM	Panel	ANT BATT terminal			<p>Press the PTT switch or [Transmit] button on the PC window. Apply 6.20V to battery terminal. Confirm that one pre-determined numeric in the range 1 to 256 appears.</p> <p><b>[Panel tuning mode]</b> Press [O] key to store the adjustment value.</p> <p><b>[PC test mode]</b> Press [Apply] button to store the adjustment value.</p>	
19. Battery Warning Level check	<b>[Panel test mode]</b> 1) CH-Sig: 1-1 BATT terminal voltage: 6.0V while transmitting	1)Test Channel Channel: 1 Test Signaling Mode: Analog Signaling: 1 BATT terminal voltage: 6.0V while transmitting						Check	The transceiver can transmit with causing the LED to blink.

#### 4.9.1 Necessary Deviation adjustment item for each signaling and mode

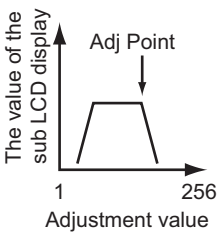
The following shows the necessary adjustment items for each signaling deviation. Please read the following table like the following example. In the case of the signaling "QT (Analog Wide)", this signaling is composed of three elements [Balance, Maximum Deviation (Analog Wide) and QT Deviation (Analog Wide)]. Please adjust Balance and Maximum Deviation (Analog Wide) before adjusting QT Deviation (Analog Wide).

Mode	Signaling	Necessary adjustment and order		
		Wide	Narrow	Very Narrow
Analog	Audio	1. Balance adjust 2. Maximum Deviation [Analog Wide]	1. Balance adjust 2. Maximum Deviation [Analog Narrow]	-
	QT	1. Balance adjust 2. Maximum Deviation [Analog Wide] 3. QT Deviation [Analog Wide]	1. Balance adjust 2. Maximum Deviation [Analog Narrow] 3. QT Deviation [Analog Narrow]	-
	DQT	1. Balance adjust 2. Maximum Deviation [Analog Wide] 3. DQT Deviation [Analog Wide]	1. Balance adjust 2. Maximum Deviation [Analog Narrow] 3. DQT Deviation [Analog Narrow]	-
	LTR	1. Balance adjust 2. Maximum Deviation [Analog Wide] 3. LTR Deviation [Analog Wide]	1. Balance adjust 2. Maximum Deviation [Analog Narrow] 3. LTR Deviation [Analog Narrow]	-
	DTMF	1. Balance adjust 2. Maximum Deviation [Analog Wide] 3. DTMF Deviation [Analog Wide]	1. Balance adjust 2. Maximum Deviation [Analog Narrow] 3. DTMF Deviation [Analog Narrow]	-
	2TONE	1. Balance adjust 2. Maximum Deviation [Analog Wide] 3. Single TONE Deviation [Analog Wide]	1. Balance adjust 2. Maximum Deviation [Analog Narrow] 3. Single TONE Deviation [Analog Narrow]	-
	MSK (Fleet sync)	1. Balance adjust 2. Maximum Deviation [Analog Wide] 3. MSK Deviation [Analog Wide]	1. Balance adjust 2. Maximum Deviation [Analog Narrow] 3. MSK Deviation [Analog Narrow]	-
P25	-	1. Balance 2. P25 High Deviation 3. P25 High Deviation (H-CPM)	-	
NXDN	Audio	-	1. Balance adjust 2. Maximum Deviation [NXDN Narrow]	1. Balance adjust 2. Maximum Deviation [NXDN Very Narrow]
	CWID	-	-	1. Balance adjust 2. Maximum Deviation [NXDN Very Narrow] 3. CWID Deviation [NXDN Very Narrow]

- Balance is common with all the above deviation adjustments. If Balance (Transmitter Section 6) has already adjusted, please skip Step1 and adjust from Step2.
- Maximum Deviation (Analog Wide/Narrow) is common with all the analog signaling deviations and CWID Deviation (NXDN Very Narrow). If Balance and Maximum Deviation (Analog Wide /Narrow) (Transmitter Section 7) have already adjusted, please skip Step2 and adjust from Step3.

#### 4.10 Receiver Section

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. AF level setting	[Panel test mode] 1) CH-Sig: 1-1 SSG output: -47dBm (1mV) (MOD: 1kHz/ ±1.5kHz)	1) Test Channel Channel: 1 Test Signaling Mode: Analog Signaling: 1 SSG output: -47dBm (1mV) (MOD:1kHz/ ±1.5kHz)	SSG DVM AF VTVM Dummy load	Panel	ANT Uni- versal con- nector	Panel	Vol- ume knob	Turn the Volume knob to obtain 0.90V AF output.	0.90V ±0.1V
2. Sensitivity 1	1) Adj item: [An SENS1] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[***] Press [O] key to store the adjustment value.	1) Adj item: [Sensitivity 1] 2) Adj item: [Low1], [Low5], [Center3], [High2], [High6] Press [Apply All] button to store the adjustment value.	SSG AF VTVM Dummy load	Panel	ANT Uni- versal con- nector	Panel	[Panel tuning mode] [▲], [▼], [PC test mode] [←], [→]	Write the value as follows. F2,F3,K2,K3 [Low1]: 17 (Fixed) [Low5]: 37 (Fixed) [Center3]: 52 (Fixed) [High2]: 67 (Fixed) [High6]: 82 (Fixed) F5,F6,K5,K6 [Low1]: 18 (Fixed) [Low5]: 36 (Fixed) [Center3]: 55 (Fixed) [High2]: 78 (Fixed) [High6]: 106 (Fixed)	
3. Sensitivity 3	1) Adj item: [An SENS3] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[***] Press [O] key to store the adjustment value.	1) Adj item: [Sensitivity 3] 2) Adj item: [Low1], [Low5], [Center3], [High2], [High6] Press [Apply All] button to store the adjustment value.	SSG AF VTVM Dummy load	Panel	ANT Uni- versal con- nector	Panel	[Panel tuning mode] [▲], [▼], [PC test mode] [←], [→]	Write the value as follows. [Low1]: 256 (Fixed) [Low5]: 256 (Fixed) [Center3]: 256 (Fixed) [High2]: 256 (Fixed) [High6]: 256 (Fixed)	

Item	Condition		Measurement			Adjustment			Specifications/Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
4. Sensitivity 2	1) Adj item: [An SENS2] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: -90dBm (7.08μV) (MOD: 1kHz/±1.5kHz) Adjust:[***] Press [O] key to store the adjust- ment value.	1) Adj item: [Sensitivity 2] 2) Adj item: [Low1], [Low5], [Center3], [High2], [High6] SSG output: -90dBm (7.08μV) (MOD: 1kHz/±1.5kHz) Press [Apply All] button to store the adjustment value.	SSG AF VTVM Dummy load	Panel	ANT Uni- versal con- nector	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as follow- ings. The sub LCD display shows the RSSI value. Change the adjustment value to get maximum RSSI value.  <p>The value of the sub LCD display</p> <p>Adj Point</p> <p>1 256</p> <p>Adjustment value</p>	
5. RSSI reference	1) Adj item: [RRSSI] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level -3dB (MOD: 1kHz/±1.5kHz)	1) Adj item: [RSSI Reference (Analog Narrow)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level -3dB (MOD: 1kHz/±1.5kHz)	SSG Distortion meter Oscillo- scope	Panel	ANT Uni- versal con- nector	Panel	<b>[Panel tuning mode]</b> After input signal from SSG, press [O] key to store the adjustment val- ue.  <b>[PC test mode]</b> After input signal from SSG, press [Apply] button to store the adjustment value.		
6. Open Squelch [Analog Wide]	1) Adj item: [Aw SQL] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow -3dB (MOD: 1kHz/ ±3kHz)	1) Adj item: [Open Squelch (An- analog Wide)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow -3dB (MOD: 1kHz/±3kHz)	SSG Distortion meter Oscillo- scope	Panel	ANT Uni- versal con- nector	Panel	<b>[Panel tuning mode]</b> After input signal from SSG, press [O] key to store the adjustment val- ue.  <b>[PC test mode]</b> After input signal from SSG, press [Apply] button to store the adjustment value.		



Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equip-ment	Unit	Ter-minal	Unit	Parts	Method	
[Analog Narrow]	1) Adj item: [An SQL] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow -3dB (MOD: 1kHz/ ±1.5kHz)	1) Adj item: [Open Squelch (Analog Narrow)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow -3dB (MOD: 1kHz/ ±1.5kHz)	SSG Distortion meter Oscilloscope	Panel	ANT Uni- versal con- nector	Panel		<b>[Panel tuning mode]</b> After input signal from SSG, press [O] key to store the adjustment val- ue.  <b>[PC test mode]</b> After input signal from SSG, press [Apply] button to store the adjustment value.	
[P25 (C4FM)]	1) Adj item: [P1 SQL] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow -1dB (MOD: 1kHz/ ±2.2kHz)	1) Adj item: [Open Squelch (P25 C4FM)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow -1dB (MOD: 1kHz/ ±2.2kHz)	SSG Distortion meter Oscilloscope	Panel	ANT Uni- versal con- nector	Panel		<b>[Panel tuning mode]</b> After input signal from SSG, press [O] key to store the adjustment val- ue.  <b>[PC test mode]</b> After input signal from SSG, press [Apply] button to store the adjustment value.	
[P25 (LSM)]	1) Adj item: [P1 SQL] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow -3dB (MOD: 1kHz/ ±3.3kHz)	1) Adj item: [Open Squelch (P25 LSM)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow -3dB (MOD: 1kHz/ ±3.3kHz)	SSG Distortion meter Oscilloscope	Panel	ANT Uni- versal con- nector	Panel		<b>[Panel tuning mode]</b> After input signal from SSG, press [O] key to store the adjustment val- ue.  <b>[PC test mode]</b> After input signal from SSG, press [Apply] button to store the adjustment value.	

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
[NXDN Narrow]	1) Adj item: [Nn SQL] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow -1dB (MOD: 400Hz/ ±2.5kHz)	1) Adj item: [Open Squelch (NXDN Narrow)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow -1dB (MOD: 400Hz/ ±2.5kHz)	SSG Distortion meter Oscilloscope	Panel	ANT Universal connector	Panel		<b>[Panel tuning mode]</b> After input signal from SSG, press [O] key to store the adjustment value.  <b>[PC test mode]</b> After input signal from SSG, press [Apply] button to store the adjustment value.	
[NXDN Very Narrow]	1) Adj item: [Nv SQL] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow -3dB (MOD: 400Hz/ ±1.2kHz)	1) Adj item: [Open Squelch (NXDN Very Narrow)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow -3dB (MOD: 400Hz/ ±1.2kHz)	SSG Distortion meter Oscilloscope	Panel	ANT Universal connector	Panel		<b>[Panel tuning mode]</b> After input signal from SSG, press [O] key to store the adjustment value.  <b>[PC test mode]</b> After input signal from SSG, press [Apply] button to store the adjustment value.	
7. Low RSSI	1) Adj item: [An LRSSI] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: -118dBm (0.28μV) (MOD: 1kHz/ ±1.5kHz)	1) Adj item: [Low RSSI (Analog Narrow)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: -118dBm (0.28μV) (MOD: 1kHz/ ±1.5kHz)	SSG	Panel	ANT Universal connector	Panel		<b>[Panel tuning mode]</b> After input signal from SSG, press [O] key to store the adjustment value.  <b>[PC test mode]</b> After input signal from SSG, press [Apply] button to store the adjustment value.	
8. High RSSI	1) Adj item: [An HRSSI] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: -80dBm (22.4μV) (MOD: 1kHz/ ±1.5kHz)	1) Adj item: [High RSSI (Analog Narrow)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: -80dBm (22.4μV) (MOD: 1kHz/ ±1.5kHz)	SSG	Panel	ANT Universal connector	Panel		<b>[Panel tuning mode]</b> After input signal from SSG, press [O] key to store the adjustment value.  <b>[PC test mode]</b> After input signal from SSG, press [Apply] button to store the adjustment value.	

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equip-ment	Unit	Ter-minal	Unit	Parts	Method	
9. Tight Squelch [Analog Wide]	1) Adj item: [Aw SQLT] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow +6dB (MOD: 1kHz/ ±3kHz)	1) Adj item: [Tight Squelch (Ana- log Wide)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow +6dB (MOD: 1kHz/±3kHz)	SSG Distortion meter Oscillo- scope	Panel	ANT Uni- versal con- nector	Panel		<b>[Panel tuning mode]</b> After input signal from SSG, press [O] key to store the adjustment val- ue.  <b>[PC test mode]</b> After input signal from SSG, press [Apply] button to store the adjustment value.	
[Analog Narrow]	1) Adj item: [An SQLT] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow +6dB (MOD: 1kHz/ ±1.5kHz)	1) Adj item: [Tight Squelch (Ana- log Narrow)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow +6dB (MOD: 1kHz/ ±1.5kHz)	SSG Distortion meter Oscillo- scope	Panel	ANT Uni- versal con- nector	Panel		<b>[Panel tuning mode]</b> After input signal from SSG, press [O] key to store the adjustment val- ue.  <b>[PC test mode]</b> After input signal from SSG, press [Apply] button to store the adjustment value.	

# SECTION 5 TROUBLESHOOTING

## 5.1 Fault Diagnosis of the BGA (Ball Grid Array) IC

### ■Overview:

A flowchart for determining whether or not the transceiver can be powered on (the LCD does not function even if the power switch is turned on) due to broken BGA parts.

### ■BGA parts:

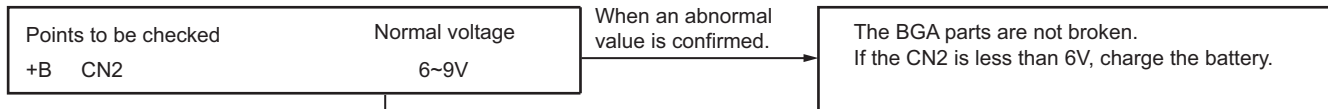
MPU/DSP (IC702), mobile DDR (IC703), Flash memory (IC705)

When the BGA IC is problematic, please bring the printed circuit board (XC1-0341-82/XC1-0341-83) in for service. Various ESN/default adjustment values are written on the printed circuit board for service.

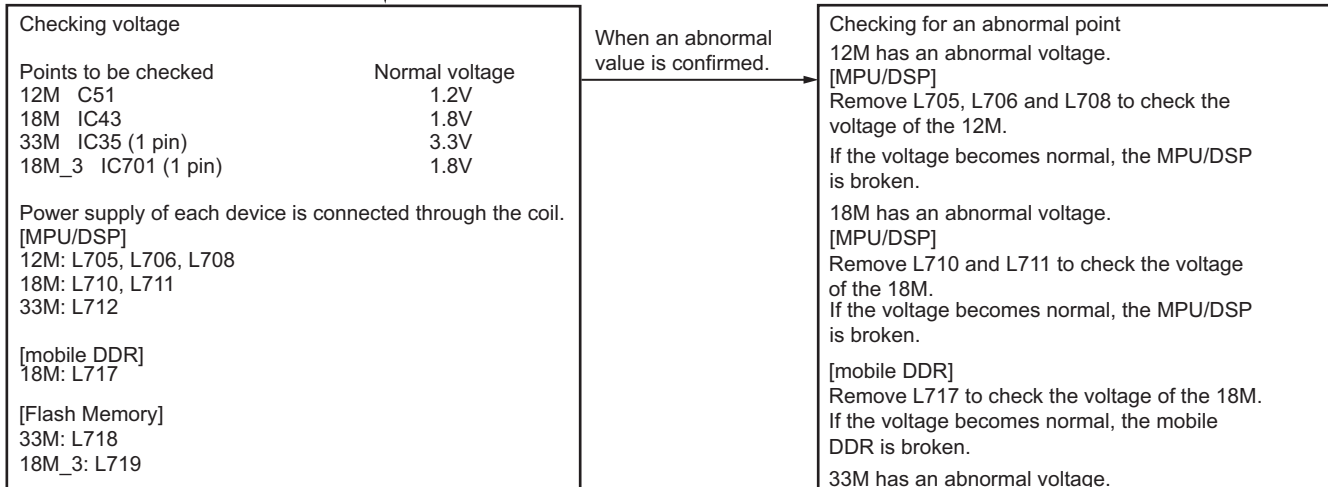
Additionally various ESN stickers are included. (Please refer to "5.4 Replacing Main Unit".)

After the printed circuit board has been readjusted, please attach any ESN stickers to the chassis. When "ESN Validation" is used, you must modify the ESN register.

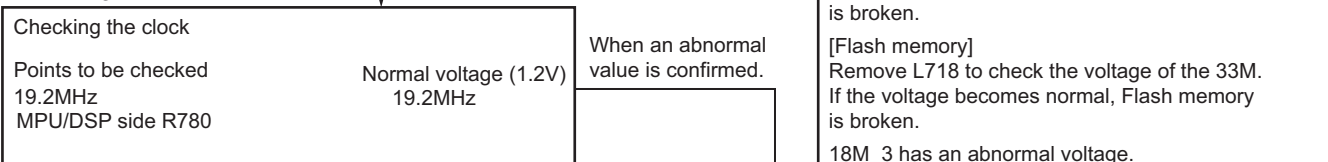
- Checking battery voltage



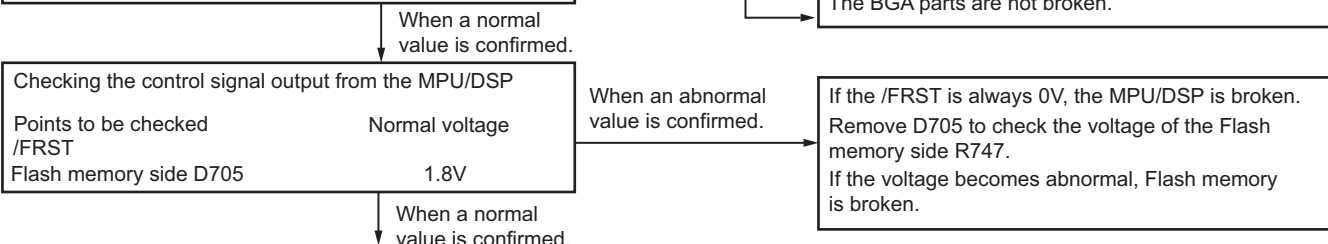
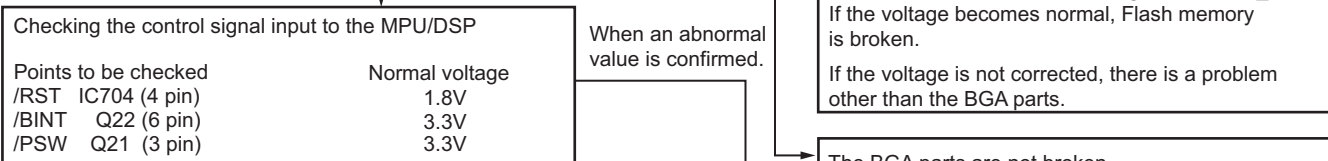
- Checking power supply voltage

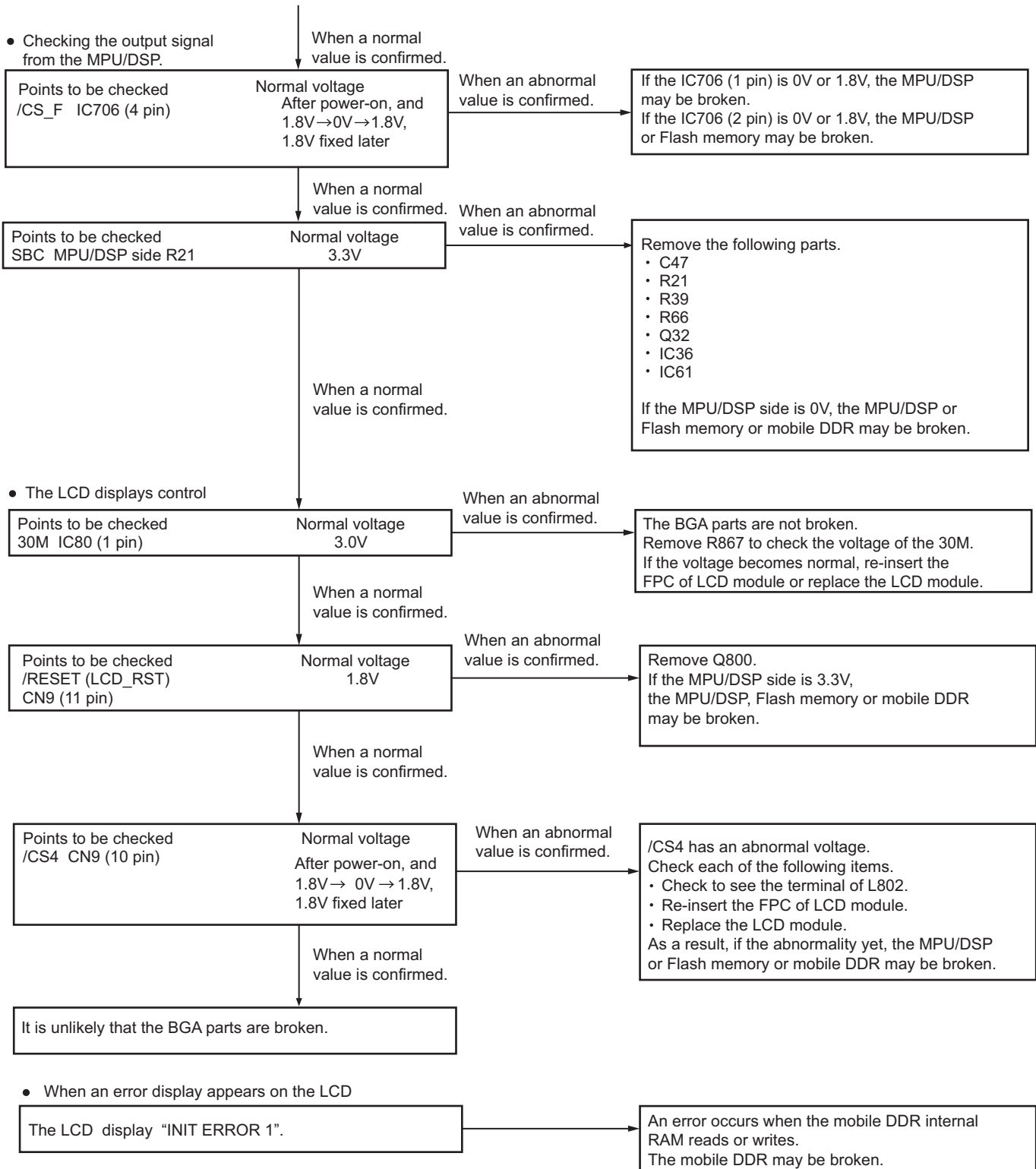


- Checking the clock



- Checking the Reset/Control signal





### ■ Descriptions of signal names

1) /RST	: MPU/DSP reset signal	LOW → Reset
2) /BINT	: Battery final voltage monitoring	LOW → Final voltage
3) /PSW	: Power switch signal	LOW → ON
4) /FRST	: Flash memory reset signal	LOW → Reset
5) /CS_F	: Flash memory chip select signal	LOW → Active
6) SBC	: Switch +B control	HIGH → ON
7) 30M	: LCD module control 3.0V power supply	
8) /RESET (LCD_RST)	: LCD reset signal	LOW → Reset
9) /CS4	: LCD controller chip select signal	LOW → Active

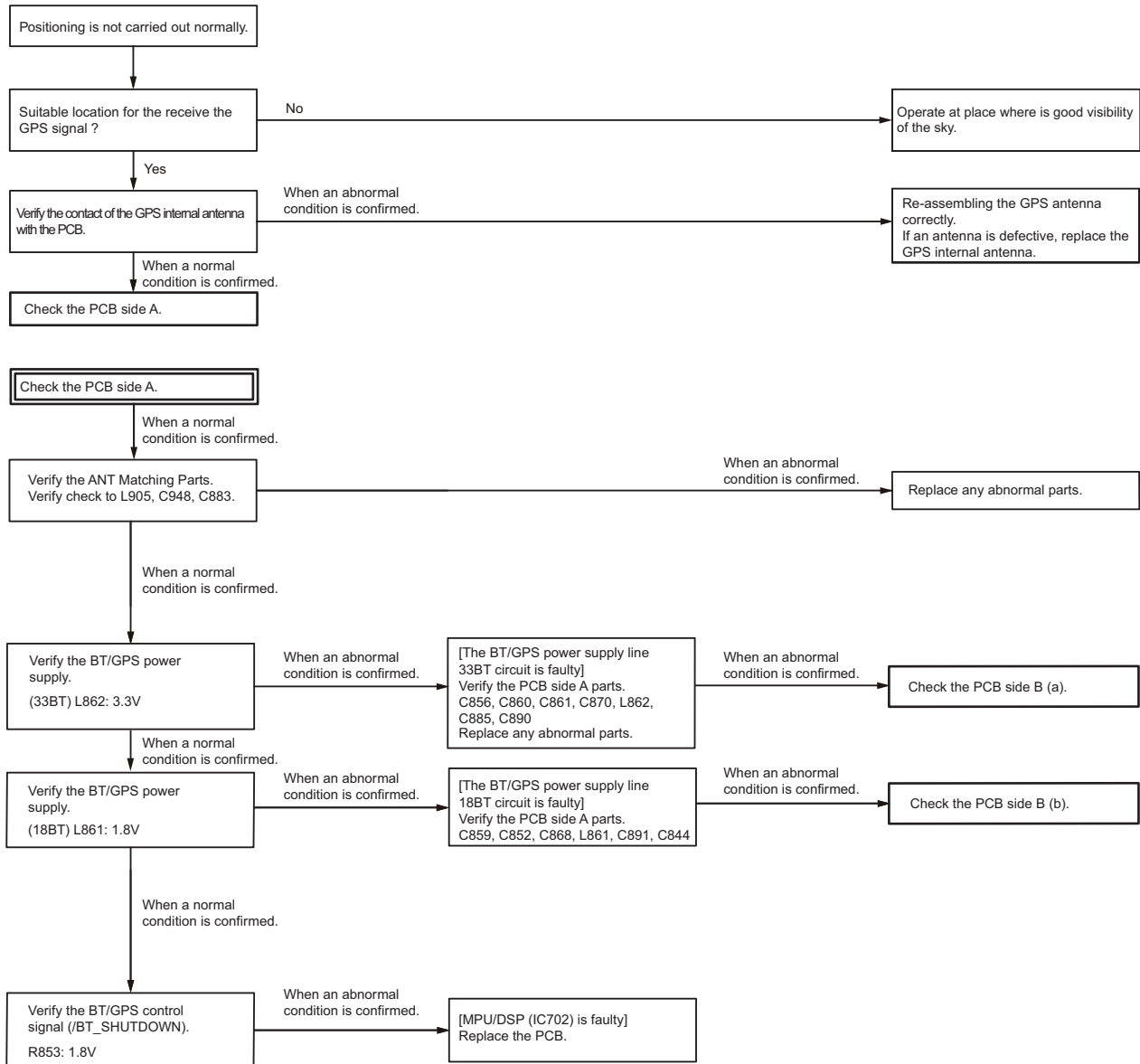
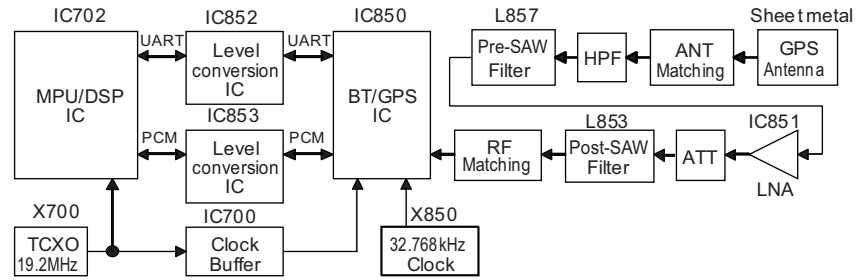
## 5.2 Failure diagnosis of the GPS section

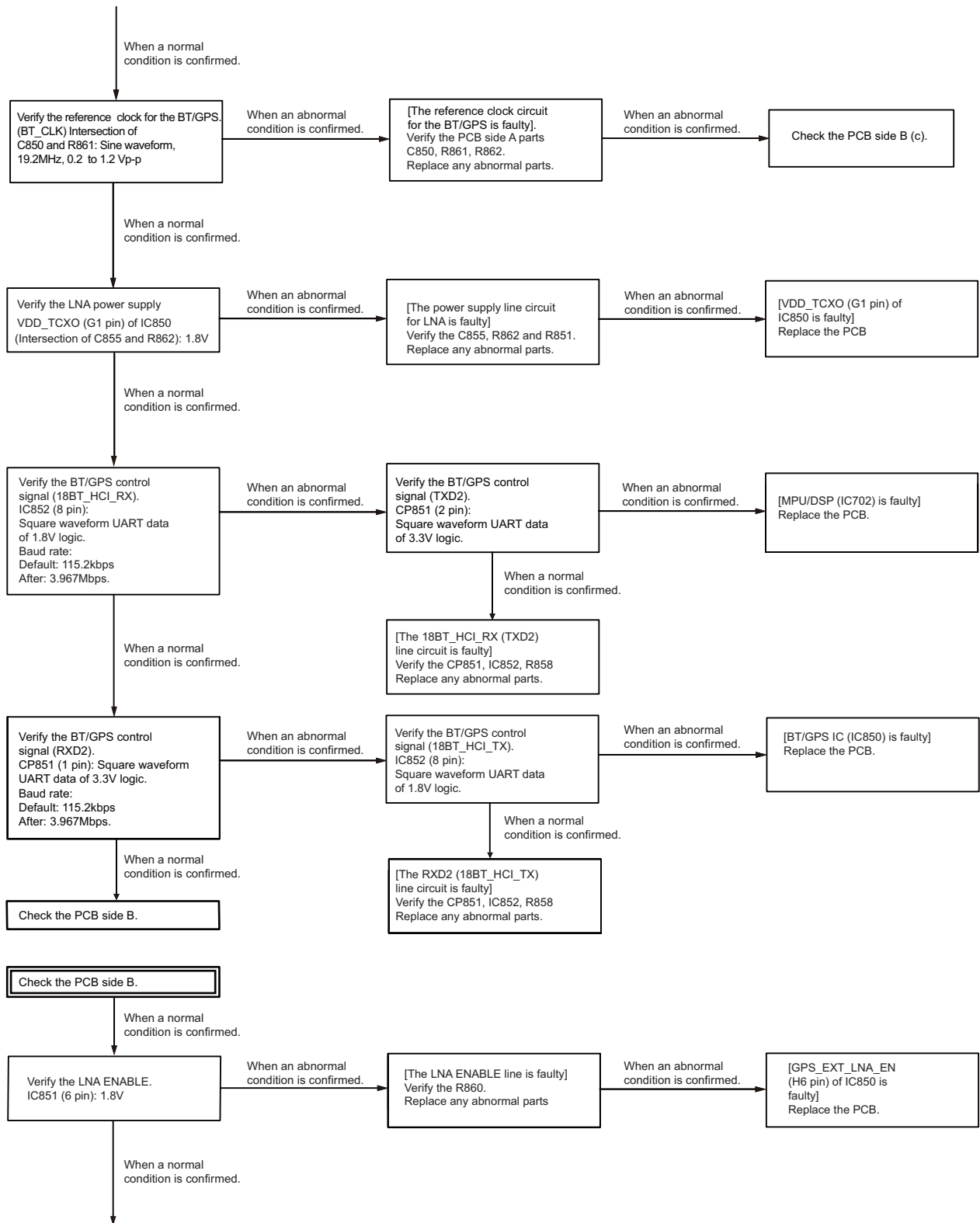
### ■ Overview:

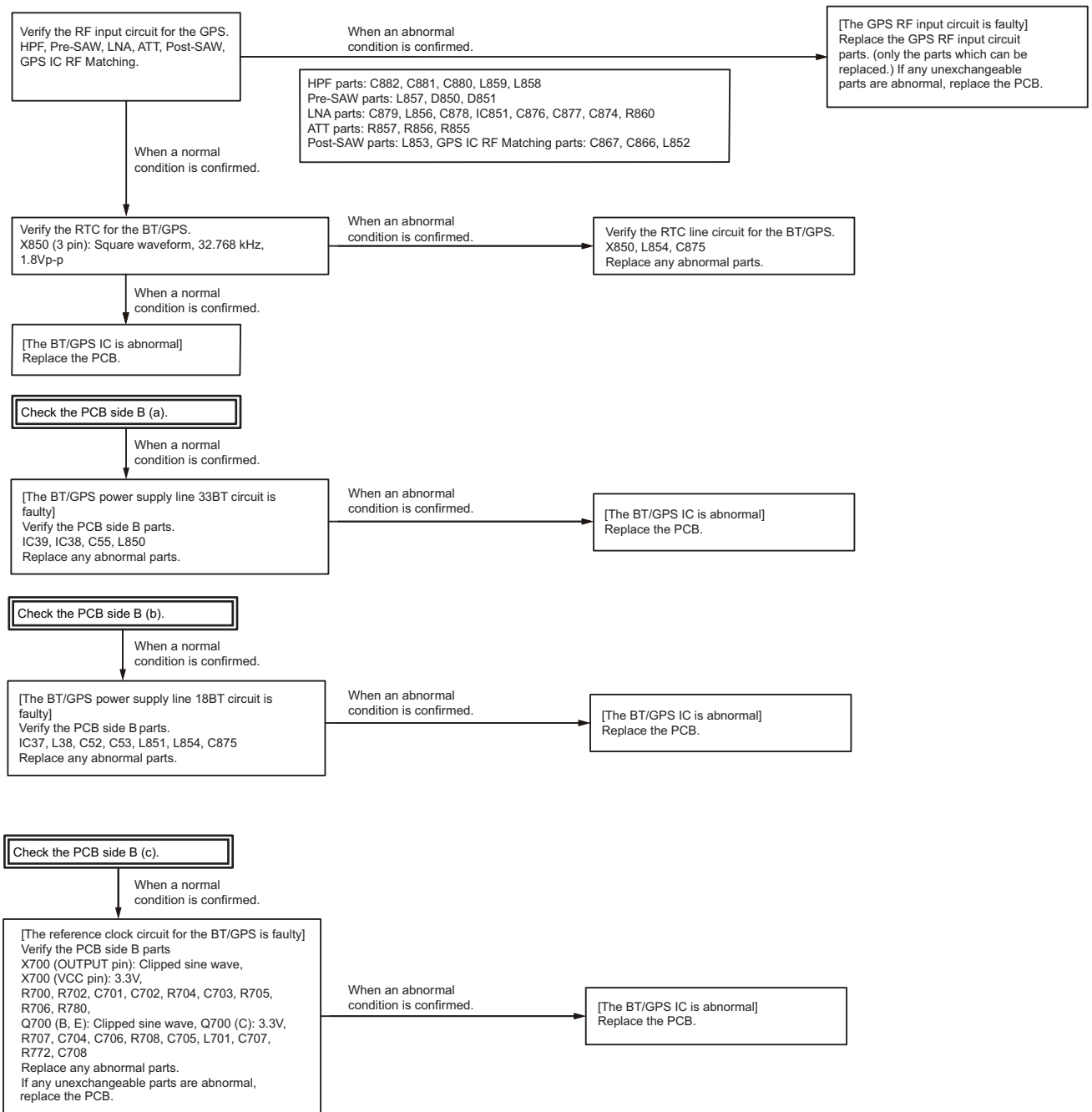
When the GPS function does not operate, use this flowchart to determine the problem.

#### Major parts for a GPS circuit

- GPS antenna (Connect on CN907)
- LNA IC (IC851)
- Pre-SAW Filter (L857)
- Post-SAW Filter (L853)
- Bluetooth/GPS IC (IC850)
- Level conversion IC (IC852, IC853)
- TCXO 19.2MHz (X700)
- Clock Buffer (IC700)
- 32.768 KHz clock (X850)
- 33BT Regulator (IC38)
- 18BT Regulator (IC37)
- MPU/DSP IC (IC702)







■ Descriptions of signal names

- 1) 33BT: BT/GPS IC 3.3V power supply
- 2) 18BT: BT/GPS IC 1.8V power supply
- 3) TXD2: BT/GPS serial data line connected to UART TX of MPU/DSP IC (MPU/DSP to BT/GPS IC)
- 4) RXD2: BT/GPS serial data line connected to UART RX of MPU/DSP IC (MPU/DSP to BT/GPS IC)
- 5) 18BT\_HCI\_RX: BT/GPS serial data line connected to UART RX of BT/GPS IC (MPU to BT/GPS IC)
- 6) 18BT\_HCI\_TX: BT/GPS serial data line connected to UART TX of BT/GPS IC (BT/GPS IC to MPU)
- 7) /BT\_SHUTDOWN: BT/GPS active control of MPU/DSP IC (MPU/DSP to BT/GPS IC) High → Active, Low → Reset



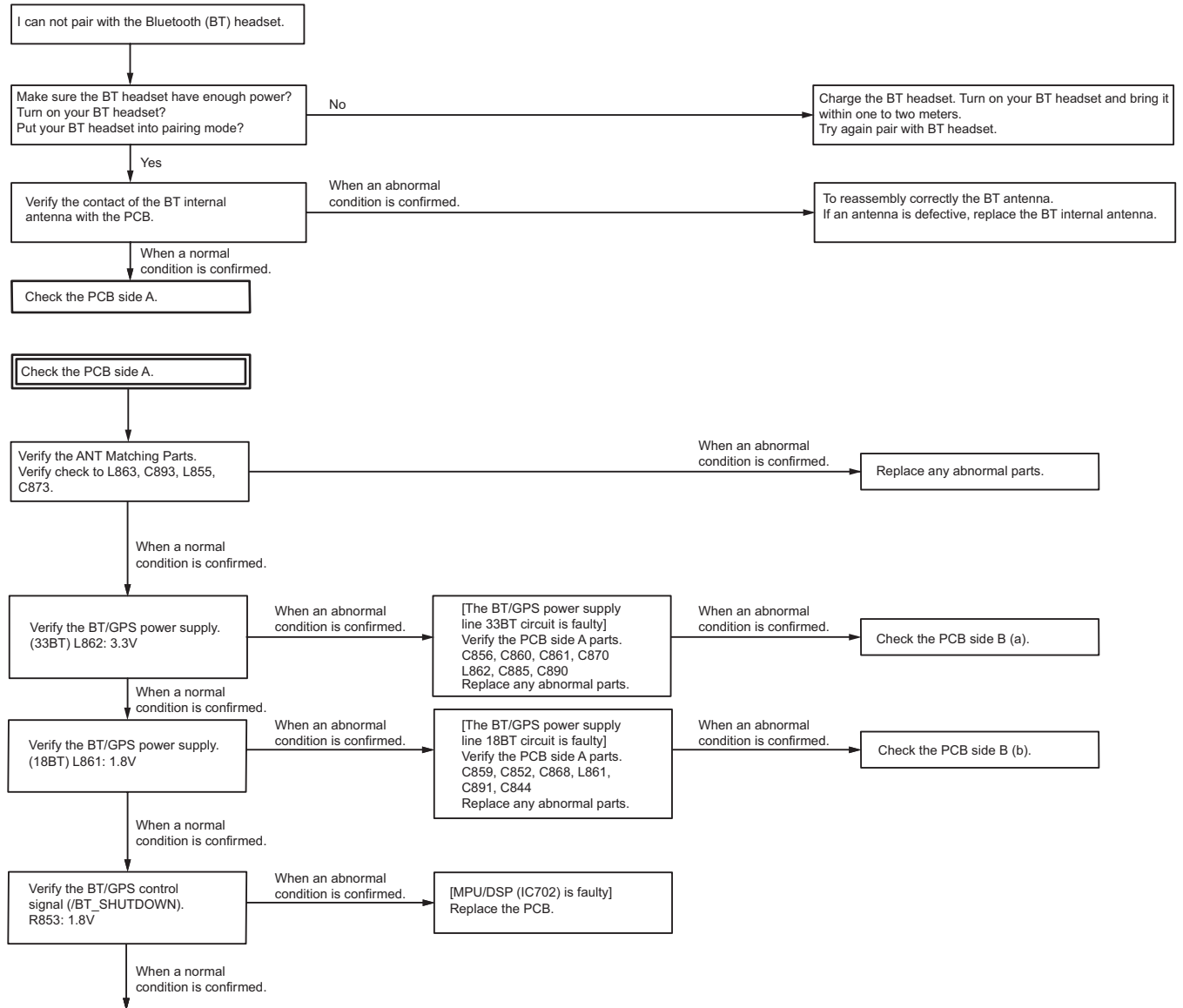
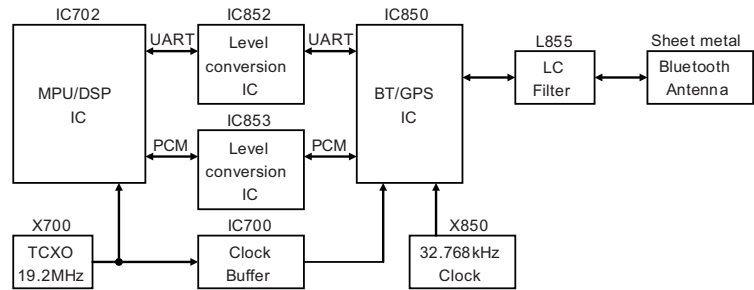
### 5.3 Failure diagnosis of the Bluetooth section

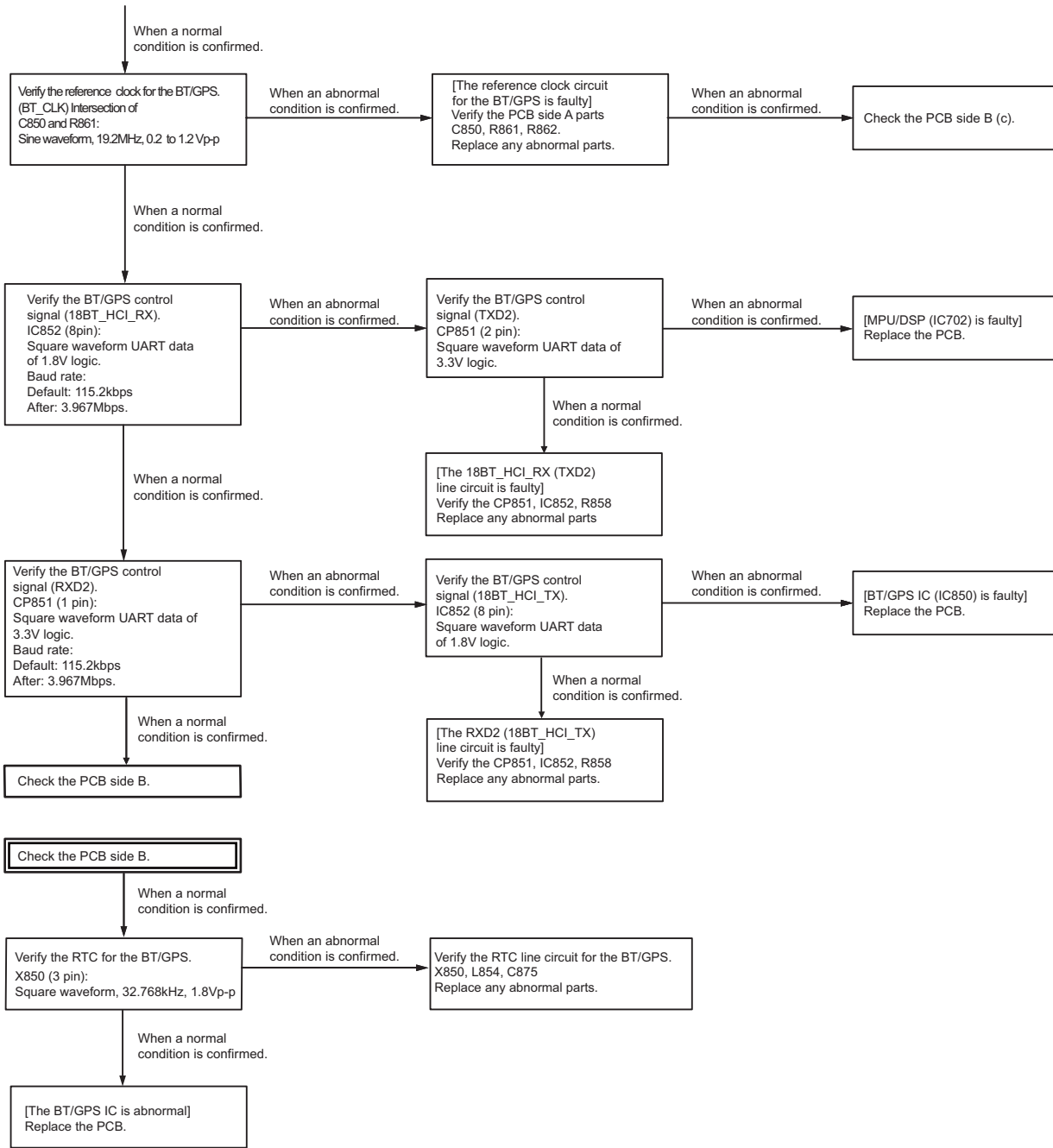
#### ■Overview:

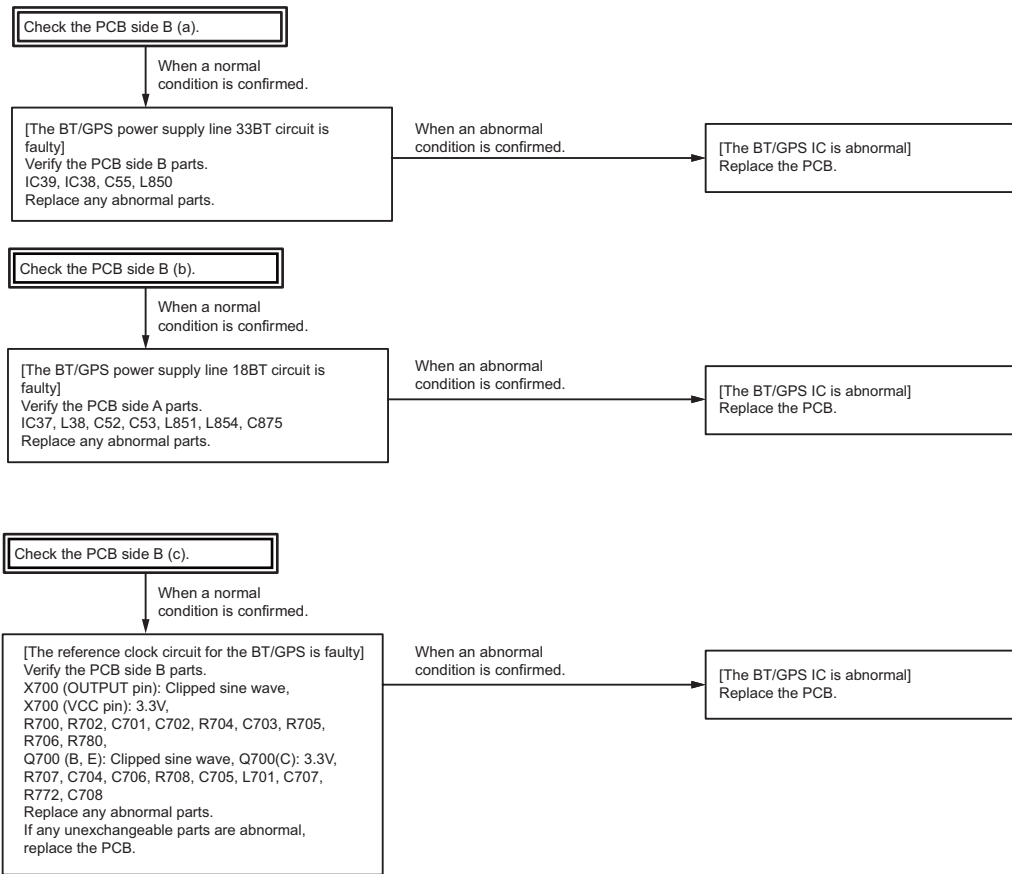
When the Bluetooth function does not operate, use this flowchart to determine the problem.

Major parts for a Bluetooth circuit

- Bluetooth antenna (Connect on CN909)
- LC filter (L855)
- Bluetooth/GPS (IC850)
- Level conversion IC (IC852, IC853)
- TCXO 19.2MHz (X700)
- Clock Buffer (IC700)
- 32.768kHz clock (X850)
- 33BT Regulator (IC38)
- 18BT Regulator (IC37)
- MPU/DSP IC (IC702)







■ Descriptions of signal names

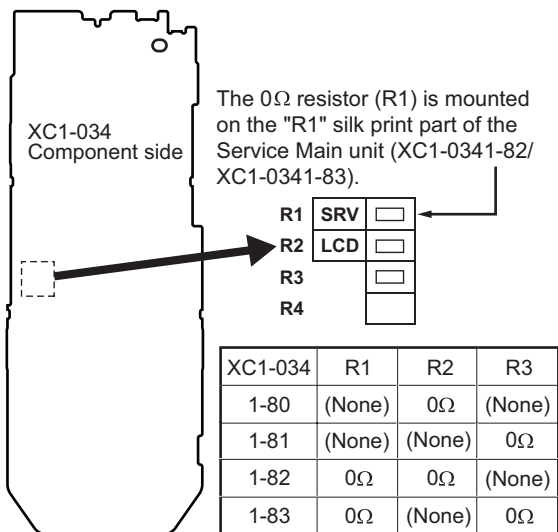
- 1) 33BT: BT/GPS IC 3.3V power supply
- 2) 18BT: BT/GPS IC 1.8V power supply
- 3) TXD2: BT/GPS serial data line connected to UART TX of MPU/DSP IC (MPU/DSP to BT/GPS IC)
- 4) RXD2: BT/GPS serial data line connected to UART RX of MPU/DSP IC (MPU/DSP to BT/GPS IC)
- 5) 18BT\_HCI\_RX: BT/GPS serial data line connected to UART RX of BT/GPS IC (MPU to BT/GPS IC)
- 6) 18BT\_HCI\_TX: BT/GPS serial data line connected to UART TX of GPS IC (BT/GPS IC to MPU)
- 7) /BT\_SHUTDOWN: BT/GPS active control of MPU/DSP IC (MPU/DSP to BT/GPS IC) High → Active, Low → Reset

## 5.4 Replacing Main Unit

### ■Main unit information

Model Name	Original Main unit Number	For Service Main unit Number
NX-5300 (F2,F3,K2,K3)	XC1-0341-80	XC1-0341-82
NX-5300 (F5,F6,K5,K6)	XC1-0341-81	XC1-0341-83

### ■Method of confirming “Original Main unit” and “Service Main unit”



#### Note:

- The 0Ω resistor (R1, R2, R3) is used to differentiate the destination with a visual check. These are not connected with any PCB pattern; they are specifically for production control. There is no need to change the mount of these resistors.
- There is no difference between the schematic diagram of the Service Main unit (XC1-0341-82/XC1-0341-83) and the schematic diagram of the original Main unit (XC1-0341-80/XC1-0341-81). (R1, R2 and R3 are connected with GND (ground) only.)

### ■Supplied Accessories of “Service Main unit”

Item (Including Parts Number)	Quantity
Main Unit (XC1-034)	1
KENWOOD ESN/ NXDN ESN/ Product Number/ MPT ESN/P25 ESN Label	1

### ■“Service Main unit” Data

The following data is written on the service unit:

Data Type	Description
Firmware	NX-5300 Firmware.
FPU Data (PC programming mode)	XC1-034 (NX-5300) F2, F5 type data.
Various Adjustment Data (PC Test mode)	General adjustment values for the XC1-034 (NX-5300).

Data Type	Description
KENWOOD ESN	Model name: [XC1-034] NX-5300S1 (F2:450~520MHz) or NX-5300S2 (F5:380~470MHz) Type: F2,F5 The same number as the KENWOOD ESN label is written.
NXDN ESN/ MPT ESN/ Product number/ P25 ESN	The same number as the NXDN ESN/ MPT ESN/Product Number/P25 ESN label is written.

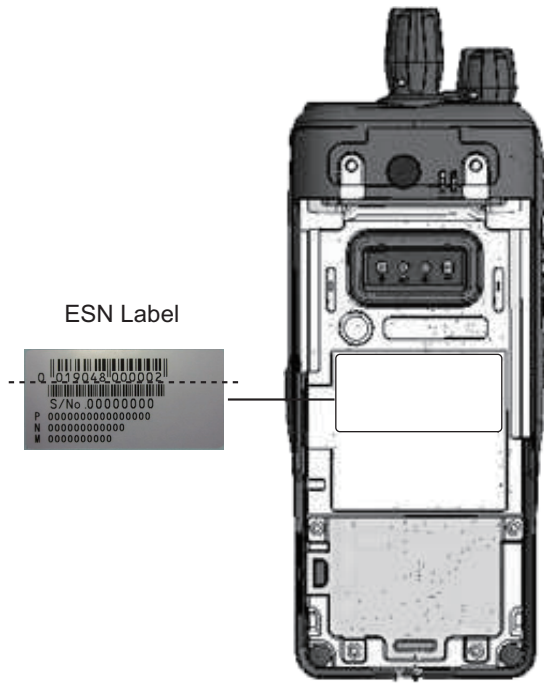
### ■After Changing the PCB

- After changing the printed circuit board, write the up-to-date Firmware following the instructions in the “2.2 REALIGNMENT - 2.2.6 Firmware Programming Mode”.
  - Write the Firmware in accordance to the Market. If you write different Market Firmware, there are times communication with the FPU is not possible.
- Using the KPG-D1/D1N, select your desired item (Model Name and Frequency) from the Model> Product Information menu, then use Program> Write Data to the Transceiver to write the FPU data (PC Programming mode). When writing to the transceiver, a Warning Message, corresponding to the item selected, appears. Click [OK] to continue writing the data.
- Enter Program> Test Mode, then adjust the various adjustment data (PC Test Mode) as described in the "SECTION 4 ADJUSTMENT".
- Attach the new labels corresponding to the new printed circuit board. (Refer to the images below for label placement.)
- If necessary, write the FPU data used by the customer with the KPG-D1/D1N.

#### Note:

- When using the ESN Validation function of NXDN Trunking, the NXDN ESN number changes when the circuit board is changed (the number is written on the circuit board); the NXDN Trunking System cannot be accessed. Use the KPG-110SM on the NXDN Trunking System side to reprogram the NXDN ESN number.
- When a new printed circuit board is used, the KENWOOD ESN changes, as does the Transceiver Information display of the KPG-D1/D1N, but this does not have any effect on the operation of the transceiver.
- If changing to the original ESN, please contact our service center.

■ ESN Label Layout



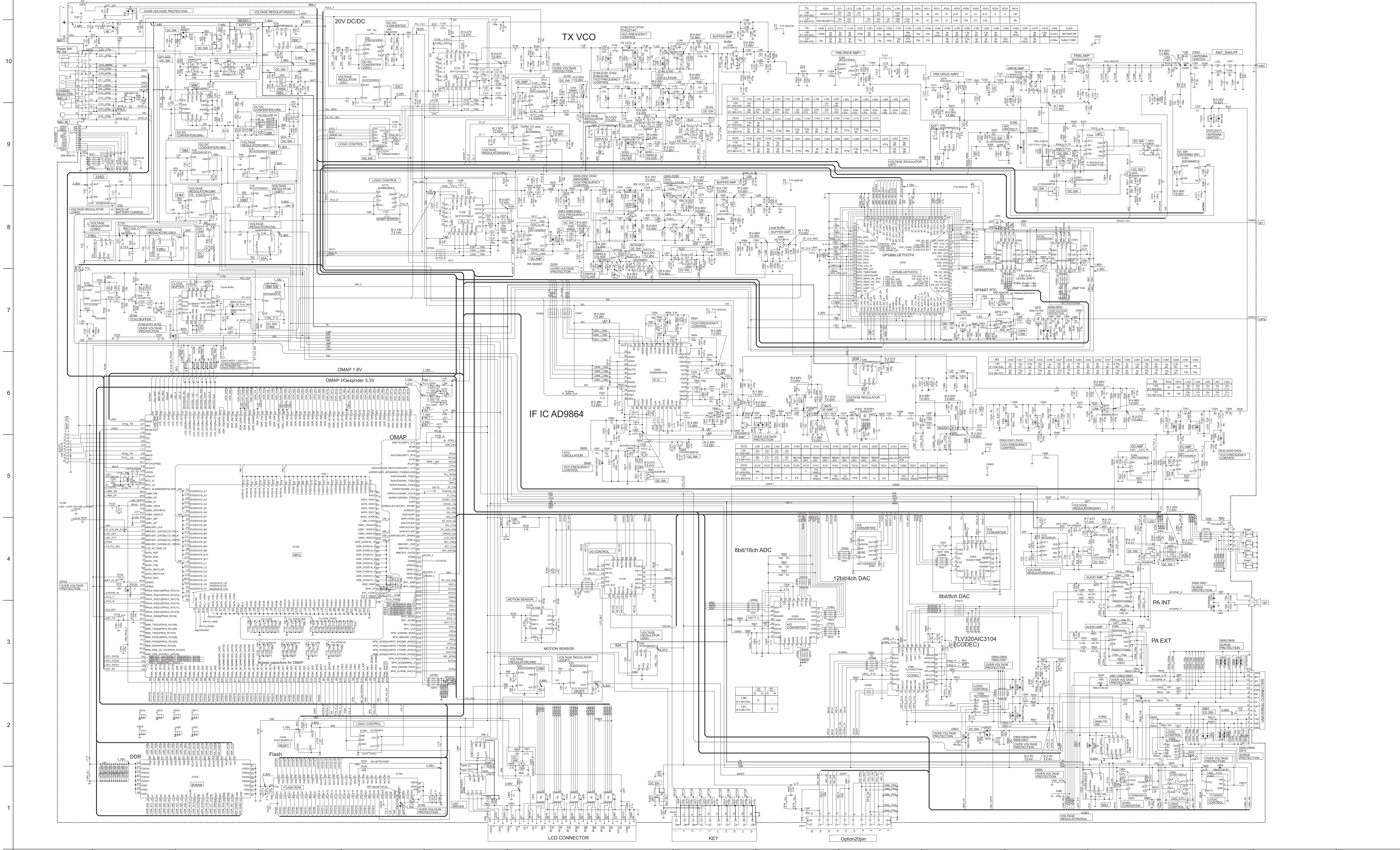
**Note:**

Cut a UPC code and UPC barcode at dotted line.

# MEMO



**SCHEMATIC DIAGRAM**  
**MAIN UNIT (XC1-0341-80(NX-5300(F2)), NX-5300(F3), NX-5300(K2), NX-5300(K3)), XC1-0341-81(NX-5300(F5), NX-5300(F6), NX-5300(K5), NX-5300(K6))**





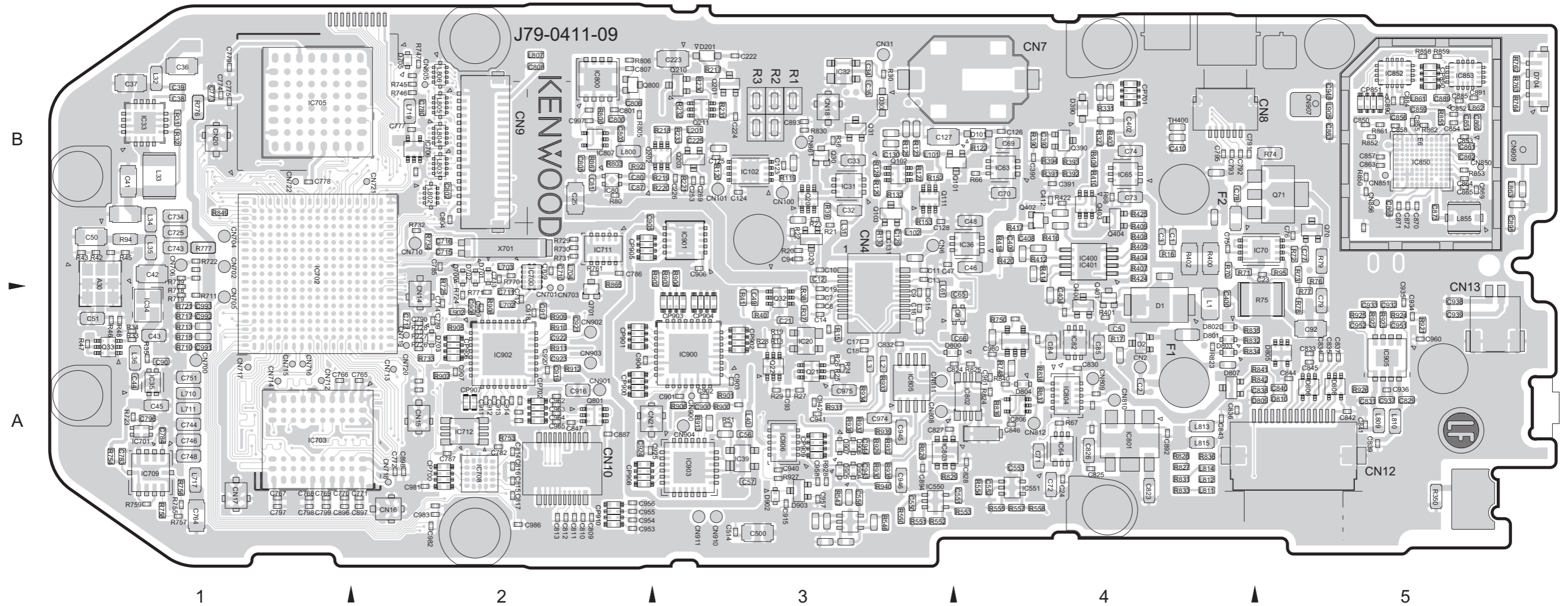




# PRINTED CIRCUIT BOARD

■ MAIN UNIT (XC1-0341-80 (NX-5300(F2), NX-5300(F3), NX-5300(K2), NX-5300(K3)), XC1-0341-81 (NX-5300(F5), NX-5300(F6), NX-5300(K5), NX-5300(K6)))

--- Component side view (J79-0411-09) ---



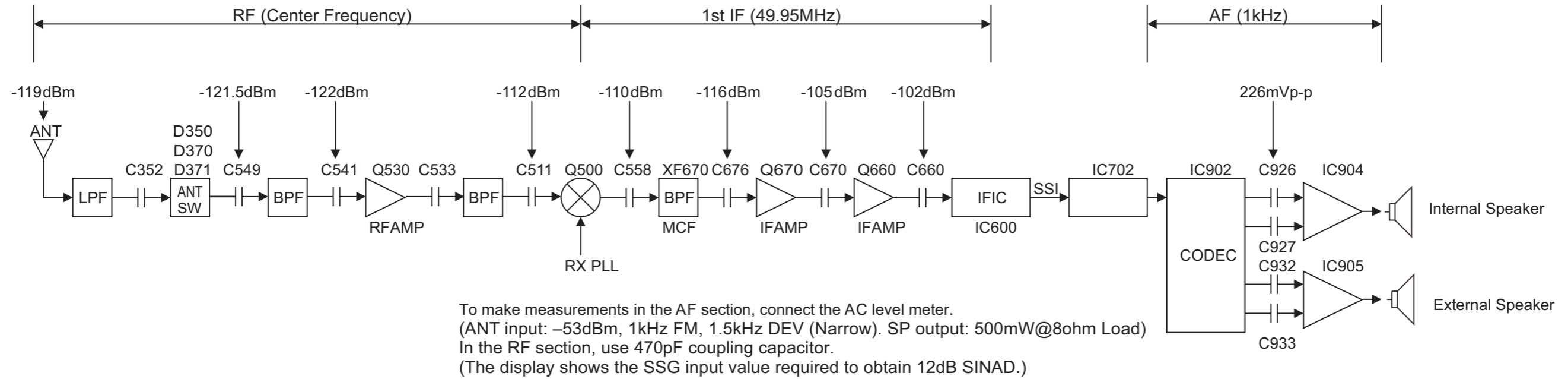




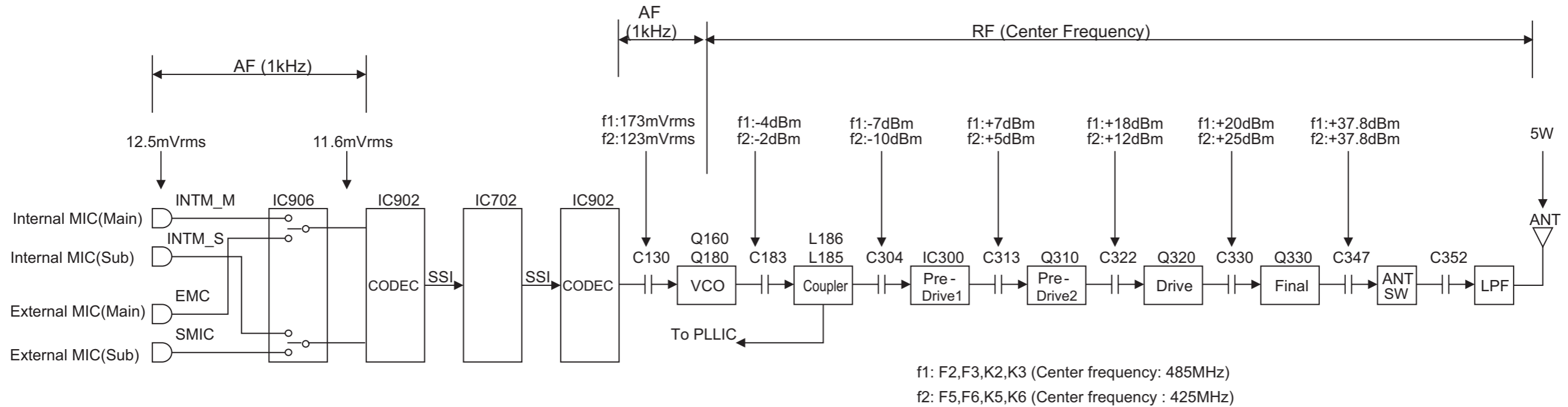


# LEVEL DIAGRAM

## Receiver section



## Transmitter section



# PARTS LIST

[NX-5300]

\* SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

\* BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine parts be used.

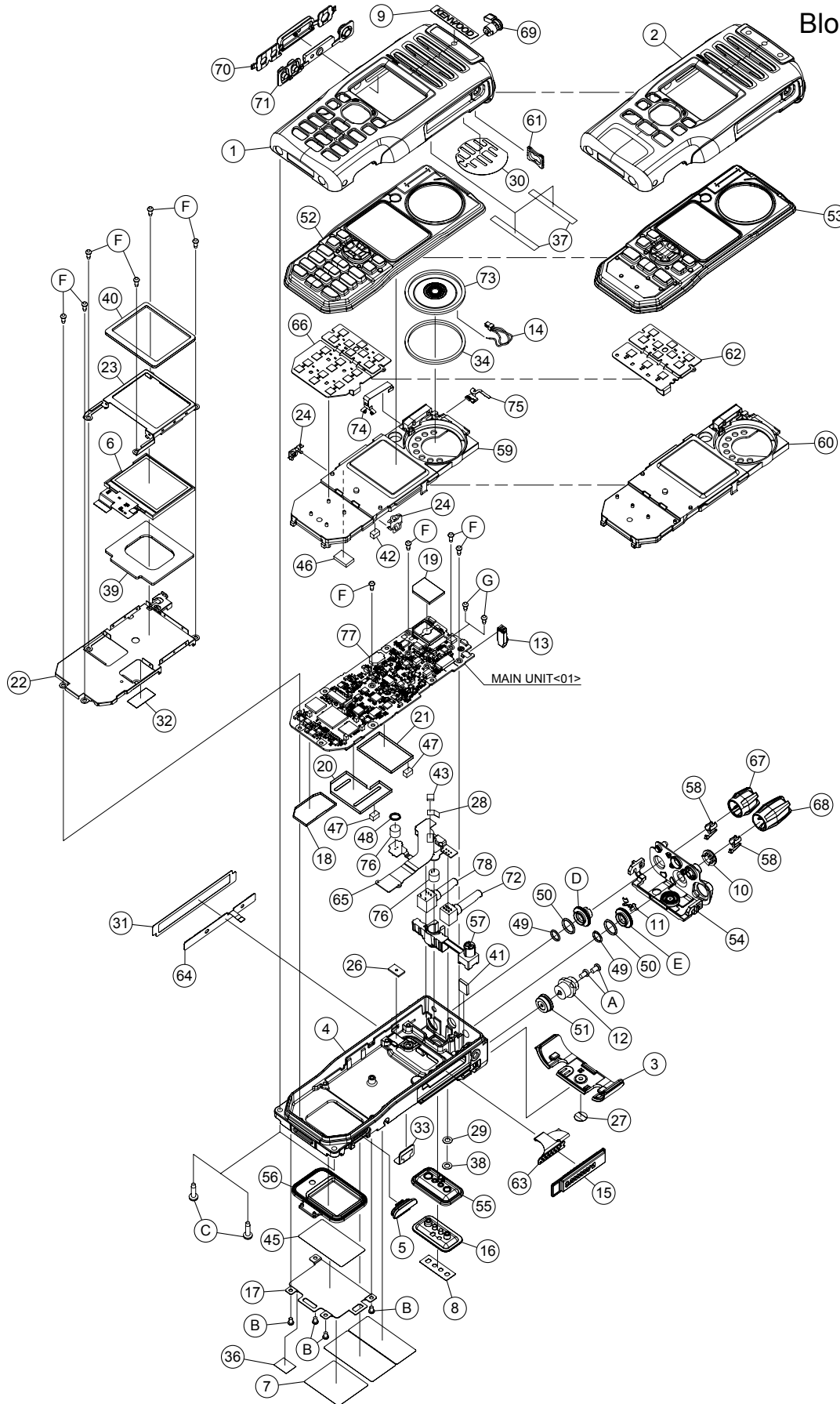
\* (x\_) in a description column shows the number of the used part.

- Contents -

Exploded view of general assembly and parts list .....	3-2
Electrical parts list .....	3-5
Packing materials and accessories parts list .....	3-16

# Exploded view of general assembly and parts list

Block No.M1MM



# General assembly

Block No. [M][1][M][M]

△ Symbol No.	Part No.	Part Name	Description	Local
1	A0C-0001-00	PLASTIC CABINET(FULL KEY)		F3,F6,K3,K6
2	A0C-0002-00	PLASTIC CABINET(STANDARD KEY)		F2,F5,K2,K5
3	A8A-0005-00	REAR PANEL		
4	A1A-0005-00	CHASSIS		
5	B0K-0024-00	CAP(SD)		
6	B38-0960-05	LCD ASSY		
7	B4B-0006-00	CAUTION STICKER		
8	B4C-0105-00	TERMINAL STICKER		
9	B4D-0002-00	KENWOOD BADGE		
10	D32-0454-04	STOPPER(16CH)		
11	D3C-0001-10	STOPPER(CIRCULAR NUT)		
12	E04-0467-15	RF COAXIAL RECEPTACLE(SMA)		
13	E2D-0003-00	TERMINAL(ANT)		
14	E3H-0007-00	LEAD WIRE WITH CONNECTOR(SP)		
15	E58-0532-05	RECTANGULAR RECEPTACLE(14P)		
16	E7C-0001-00	TERMINAL BLOCK		
17	F0G-0005-00	COVER(OP BOARD)		
18	F10-3223-05	SHIELDING COVER(IF)		
19	F10-3227-05	SHIELDING COVER(GPS)		
20	F10-3243-15	SHIELDING COVER(VCO TX)		
21	F10-3245-15	SHIELDING COVER(VCO RX)		
22	F1B-0005-00	SHIELDING CASE(OMAP)		
23	F1B-0006-00	SHIELDING COVER(LCD)		
24	G0B-0031-00	EARTH SPRING(FPC)	(x2)	
26	G11-4090-14	SHEET(COOLING)		
27	G11-4440-04	SHEET(LEAK COVER)		
28	G11-4459-04	SHEET(VOL/SELECTOR/ECM FPC)		
29	G11-4500-04	SHEET(LEAK)		
30	G1A-0001-00	FIBROUS SHEET		
31	G1B-0016-00	SHEET(PTT)		
32	G1B-0031-00	SHEET(LI BATT INSULATING)		
33	-----	SHEET(VOID/CABINET)		
34	G1B-0045-10	RUBBER CUSHION(SP)		
36	-----	SEAL(VOID/OP BOARD)		
37	G1B-0074-00	SHEET(CABINET)	(x2)	
38	G1B-0087-00	SHEET(LEAK)		
39	G1D-0008-00	CUSHION(LCD/BACK)		
40	G1D-0009-00	CUSHION(LCD/FRONT)		
41	G1D-0010-00	CUSHION(ANT TERMINAL)		
42	G1D-0021-00	CUSHION(20KEY CONN)		
43	G1D-0025-00	CUSHION(VOL/FPC)		
45	G1D-0062-00	CUSHION(OP BOARD COVER)		
46	G13-1952-04	CUSHION(FOR ALL)		
47	G13-2071-14	CUSHION(XC1BLS)	(x2)	
48	G53-1768-04	PACKING(ECM)		F2,F5,K2,K5
49	G53-1792-04	PACKING(VOL)	(x2)	
50	G53-2206-04	O RING(CIRCULAR NUT)	(x2)	
51	G53-2207-04	PACKING(ANT)		
52	G5D-0002-00	PACKING(FULL KEY)		F3,F6,K3,K6
53	G5D-0003-00	PACKING(STANDARD KEY)		F2,F5,K2,K5
54	G5D-0005-00	PACKING(TOP)		
55	G5D-0006-00	PACKING(TERMINAL BLOCK)		
56	G5D-0007-00	PACKING(OP BOARD)		
57	G5D-0018-00	PACKING(VOL/2ECM)		
58	G09-0443-14	KNOB SPRING(VOL/SELECTOR)	(x2)	
59	J1K-0004-00	HOLDER(FULL KEY)		F3,F6,K3,K6
60	J1K-0005-00	HOLDER(STANDARD KEY)		F2,F5,K2,K5
61	J3K-0003-00	SPACER(2CH)		
62	J8C-0001-00	FLEX PRINTED BOARD(STANDARD KEY)		F2,F5,K2,K5
63	J87-0056-05	FPC(UNIVERSAL)		
64	J87-0057-05	FPC(PTT)		
65	J87-0058-05	FPC(VOL/SELECTOR/ECM)		
66	J87-0059-05	FPC(FULL KEY)		F3,F6,K3,K6
67	K2K-0011-00	KNOB(VOL)		
68	K2K-0012-00	KNOB(16CH)		
69	K2K-0013-00	KNOB(2CH)		
70	K2K-0014-00	KNOB(PTT)		
71	K2K-0015-00	BUTTON KNOB(PTT)		
72	S6A-0004-00	ROTARY SWITCH		
73	T0H-0002-00	SPEAKER		
74	T9A-0001-00	ANTENNA ELEMENT(GPS)		
75	T9A-0004-00	ANTENNA ELEMENT(BLUETOOTH)		
76	T9B-0004-00	MIC ELEMENT	(x2)	
77	W09-0971-05	LITHIUM CELL		
78	R31-0692-05	VARIABLE RESISTOR(VOL)		
A	N09-2438-05	BINDING HEAD SCREW(ANT)	(x2)	
B	N09-2441-25	SPECIAL SCREW(OP BOARD)	(x4)	
C	N09-6646-05	SPECIAL SCREW(CASE)	(x2)	
D	N14-1011-00	CIRCULAR NUT(VOL)		

△ Symbol No.	Part No.	Part Name	Description	Local
E	N14-1012-00	CIRCULAR NUT(RO-SW)		
F	N83-2005-48	PAN HEAD TAPTITE SCREW(UNIT/FIX)	(x10)	
G	N84-2004-43	PAN HEAD TAPTITE SCREW(TERM-BL(+,-))	(x2)	
-	XC1-0341-82	SERVICE MAIN UNIT		F2,F3,K2,K3
-	XC1-0341-83	SERVICE MAIN UNIT		F5,F6,K5,K6



# Electrical parts list

## MAIN UNIT

XC1-0341-80(NX-5300\_F2,NX-5300\_F3,NX-5300\_K2,NX-5300\_K3)

XC1-0341-81(NX-5300\_F5,NX-5300\_F6,NX-5300\_K5,NX-5300\_K6)

**\*Note 1 : This part cannot be replaced. Therefore, this part is not supplied as a service part.**

Block No. [0][1]

△ Symbol No.	Part No.	Part Name	Description	Local
IC20	XC61CC5602N-G	IC(MOS-IC)		
IC30	XC6223H331G-G	IC(MOS-IC)		
IC31	XC6209B312D-G	IC(MOS-IC)		
IC32	XC6215B122N-G	IC(MOS-IC)		
IC33	TPS62140RGT	IC(MOS-IC)		
IC34	LXDC2HN18F163	IC(MOS-IC)		
IC35	XC6223D331G-G	IC(MOS-IC)		
IC36	XC6209B502D-G	IC(MOS-IC)		
IC37	BU18TD2WNVX	IC(MOS-IC)		
IC38	BU33TD2WNVX	IC(MOS-IC)		
IC39	NJM2878F4-33	BIPOLAR IC		
IC60	TPS61041DRVVR	IC(ANALOGUE)		
IC61	BU33TD2WNVX	IC(MOS-IC)		
IC63	XC6209B502D-G	IC(MOS-IC)		
IC64	XC6209B502D-G	IC(MOS-IC)		
IC65	XC6209B502D-G	IC(MOS-IC)		
IC70	BU7242NUX	IC(MOS-IC)		
IC80	BU30TD2WNVX	IC(MOS-IC)		
IC81	XC6223H331G-G	IC(MOS-IC)		
IC82	XC6209B502D-G	IC(MOS-IC)		
IC100	SKY72310362LF	IC(MOS-IC)		
IC101	OPA170AIDRLR	IC(MOS-IC)		
IC102	BU7242NUX	IC(MOS-IC)		
IC200	SKY72310362LF	IC(MOS-IC)		
IC201	OPA170AIDRLR	IC(MOS-IC)		
IC300	UPC2710TB-A	BIPOLAR IC		
IC360	XC8102AA07-G	IC(MOS-IC)		
IC400	BD7562FVM	IC(MOS-IC)	F2,F3,K2,K3	
IC401	NJM21717RB1	BIPOLAR IC	F5,F6,K5,K6	
IC550	OPA170AIDRLR	IC(MOS-IC)		
IC551	OPA170AIDRLR	IC(MOS-IC)		
IC600	AD9864BCPZRL	IC(MOS-IC)		
IC700	CDC3S04YFF	IC(MOS-IC)		
IC701	XC8102AA07-G	IC(MOS-IC)		
IC702	-----	Note 1		
IC703	-----	Note 1		
IC704	S-80135ANPF-G	IC(MOS-IC)		
IC705	-----	Note 1		
IC706	TC7SZ08FE	IC(MOS-IC)		
IC708	-----	Note 1		
IC709	KXCJ9-1008	IC(MOS-IC)		
IC711	BD11600NUX	IC(MOS-IC)		
IC712	TC7WH14FK-F	IC(MOS-IC)		
IC800	BD1754HFN	IC(MOS-IC)		
IC801	NJW4184U2-05	IC(MOS-IC)		
IC802	TC7W53FKF	IC(MOS-IC)		
IC803	TC7SPB9306TUF	IC(MOS-IC)		
IC804	BD11600NUX	IC(MOS-IC)		
IC805	TC7WT126FU-F	IC(MOS-IC)		
IC806	TC7SZ08FE	IC(MOS-IC)		
IC807	TC7SZ08FE	IC(MOS-IC)		
IC850	-----	Note 1		
IC851	-----	Note 1		
IC852	74AVC4TD245GU	IC(MOS-IC)		
IC853	74AVC4TD245GU	IC(MOS-IC)		
IC900	ADS7961SRHB	IC(MOS-IC)		
IC901	DAC124S085CIS	IC(MOS-IC)		
IC902	TLV32AIC3104I	IC(MOS-IC)		
IC903	R2A20178NP	MICROCONTROLLER IC		
IC904	TPA6201A1DRBR	IC(ANALOGUE)		
IC905	TPA6201A1DRBR	IC(ANALOGUE)		
IC906	BD11600NUX	IC(MOS-IC)		
Q20	EMD12	TRANSISTOR		
Q21	SSM6N37FE	FET		

△ Symbol No.	Part No.	Part Name	Description	Local
Q22	SSM6N37FE	FET		
Q30	SSM3K15AMFV	FET		
Q31	KTA2012EP	TRANSISTOR		
Q32	EM6M2	FET		
Q33	EM6M2	FET		
Q70	LTC014EEBFS8	DIGI TRANSISTOR		
Q71	2SB1132(Q,R)	TRANSISTOR		
Q100	EM6M2	FET		
Q101	DSC9A01/T/	TRANSISTOR		
Q102	EM6M2	FET		F5,F6,K5,K6
Q103	SSM3J15FS	FET		F5,F6,K5,K6
Q111	EM6M2	FET		
Q140	MCH3914-H/8/	FET		
Q160	MCH3914-H/8/	FET		F5,F6,K5,K6
Q180	2SC5108F/Y/	TRANSISTOR		
Q200	EM6M2	FET		
Q201	DSC9A01/T/	TRANSISTOR		
Q202	EM6M2	FET		F5,F6,K5,K6
Q203	SSM3J15FS	FET		F5,F6,K5,K6
Q210	SSM3J15FS	FET		
Q211	EM6M2	FET		
Q240	MCH3914-H/8/	FET		
Q260	MCH3914-H/8/	FET		F5,F6,K5,K6
Q280	2SC5108F/Y/	TRANSISTOR		
Q310	2SK3077F	FET		
Q320	RFM01U7PF	FET		F2,F3,K2,K3
Q320	RD01MUS2BT113	FET		F5,F6,K5,K6
Q330	RD07MUS2BT214	FET		
Q390	LSCR523EBFS8	TRANSISTOR		
Q400	LTC023JEBFS8	DIGI TRANSISTOR		
Q401	SSM3K15AMFV	FET		
Q402	SSM3K15AMFV	FET		
Q403	EMD9	TRANSISTOR		
Q404	SSM3J15FS	FET		
Q500	BB506CFS-E	FET		
Q530	BB506CFS-E	FET		
Q580	2SC5108F/Y/	TRANSISTOR		
Q600	MCH3914-H/8/	FET		
Q601	LTC023JEBFS8	DIGI TRANSISTOR		
Q602	LSCR523EBFS8	TRANSISTOR		
Q660	2SC5066F/O/	TRANSISTOR		
Q670	BF5020W	FET		
Q700	2SC4617/S/	TRANSISTOR		
Q701	SSM3K15AMFV	FET		
Q702	LTC014EEBFS8	DIGI TRANSISTOR		
Q703	SSM6N37FE	FET		
Q800	SSM3K15AMFV	FET		
Q801	EMD9	TRANSISTOR		
Q850	SSM3K15AMFV	FET		
D1	1SR154-400	DIODE		
D2	DA3S101F	MULTIPLE DIODE		
D20	DAN222	MULTIPLE DIODE		
D30	RB520SM-30	DIODE		
D60	DB2J40700	DIODE		
D100	EDZV8.2B	ZENER DIODE		
D101	1SS400SM	DIODE		
D140	BBY56-02V	VARIABLE CAPACITANCE DIODE		
D141	BB664-02V	VARIABLE CAPACITANCE DIODE		
D142	BB664-02V	VARIABLE CAPACITANCE DIODE		
D143	BB664-02V	VARIABLE CAPACITANCE DIODE		
D144	BB664-02V	VARIABLE CAPACITANCE DIODE		
D160	BBY56-02V	VARIABLE CAPACITANCE DIODE		F5,F6,K5,K6
D161	BB664-02V	VARIABLE CAPACITANCE DIODE		F5,F6,K5,K6
D162	BB664-02V	VARIABLE CAPACITANCE DIODE		F5,F6,K5,K6
D163	BB664-02V	VARIABLE CAPACITANCE DIODE		F5,F6,K5,K6
D164	BB664-02V	VARIABLE CAPACITANCE DIODE		F5,F6,K5,K6
D200	EDZV8.2B	ZENER DIODE		
D201	1SS400SM	DIODE		
D240	BBY56-02V	VARIABLE CAPACITANCE DIODE		
D241	BB664-02V	VARIABLE CAPACITANCE DIODE		
D242	BB664-02V	VARIABLE CAPACITANCE DIODE		
D243	BB664-02V	VARIABLE CAPACITANCE DIODE		
D260	BBY56-02V	VARIABLE CAPACITANCE DIODE		F5,F6,K5,K6
D261	BB664-02V	VARIABLE CAPACITANCE DIODE		F5,F6,K5,K6
D262	BB664-02V	VARIABLE CAPACITANCE DIODE		F5,F6,K5,K6

△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
D263	BB664-02V	VARIABLE CAPACITANCE DIODE		F5,F6,K5,K6	C44	CK73HB1A105K	C CAPACITOR	1.0UF K	
D350	L5208F	DIODE			C45	CK73GB1E105K	C CAPACITOR	1.0UF K	
D370	RN142S	DIODE			C46	CK73GB1E105K	C CAPACITOR	1.0UF K	
D371	RN142S	DIODE			C47	C93-1967-05	C CAPACITOR	470PF K	
D390	DZ2S056(M)	ZENER DIODE			C48	CK73GXR1C225K	C CAPACITOR	2.2UF K	
D520	BB565-02V	VARIABLE CAPACITANCE DIODE			C49	CK73HBB1H471K	C CAPACITOR	470PF K	
D521	BB565-02V	VARIABLE CAPACITANCE DIODE			C50	CS77PBL1A470M	C CAPACITOR	47UF M	
D522	BB565-02V	VARIABLE CAPACITANCE DIODE			C51	CK73GB0J106K	C CAPACITOR	10UF K	
D532	BB565-02V	VARIABLE CAPACITANCE DIODE			C52	CK73HB1A474K	C CAPACITOR	0.47UF K	
D533	BB565-02V	VARIABLE CAPACITANCE DIODE			C53	CK73HB1A474K	C CAPACITOR	0.47UF K	
D534	BB565-02V	VARIABLE CAPACITANCE DIODE			C54	CK73HB1A474K	C CAPACITOR	0.47UF K	
D600	SMV1705-079LF	VARIABLE CAPACITANCE DIODE			C55	CK73HB1A474K	C CAPACITOR	0.47UF K	
D601	SMV1705-079LF	VARIABLE CAPACITANCE DIODE			C56	CK73HB1A105K	C CAPACITOR	1.0UF K	
D603	DA3S101F	MULTIPLE DIODE			C57	CK73HB1A105K	C CAPACITOR	1.0UF K	
D700	RB521CM-30	DIODE			C60	CK73GB1A335K	C CAPACITOR	3.3UF K	
D701	RB521CM-30	DIODE			C61	CK73GB1A335K	C CAPACITOR	3.3UF K	
D702	RB521CM-30	DIODE			C62	CK73FB1A475K	C CAPACITOR	4.7UF K	
D703	RB521CM-30	DIODE			C63	CK73HBB1H681K	C CAPACITOR	680PF K	
D704	NSSM038A	LED			C64	CK73EB1H475KM	C CAPACITOR	4.7UF K	
D705	RB521CM-30	DIODE			C65	CK73HB1A105K	C CAPACITOR	1.0UF K	
D800	RB521CM-30	DIODE			C66	CK73HB1A105K	C CAPACITOR	1.0UF K	
D801	RB521CM-30	DIODE			C69	CK73GXR1C225K	C CAPACITOR	2.2UF K	
D802	RB521CM-30	DIODE			C70	CK73GB1E105K	C CAPACITOR	1.0UF K	
D803	RB521CM-30	DIODE			C71	CK73GB1E105K	C CAPACITOR	1.0UF K	
D804	RB521CM-30	DIODE			C72	CK73GXR1C225K	C CAPACITOR	2.2UF K	
D805	DZ5S068D	ZENER DIODE			C73	CK73GB1E105K	C CAPACITOR	1.0UF K	
D806	DZ5S068D	ZENER DIODE			C74	CK73GXR1C225K	C CAPACITOR	2.2UF K	
D807	DAN222	MULTIPLE DIODE			C75	C93-1959-05	C CAPACITOR	0.10UF K	
D808	DZ5S068D	ZENER DIODE			C76	C93-1959-05	C CAPACITOR	0.10UF K	
D809	SPC10501A01	VARISTOR			C77	CC73HCH1H101J	C CAPACITOR	100PF J	
D810	SPC10501A01	VARISTOR			C78	CK73HBB1H471K	C CAPACITOR	470PF K	
D850	RN262CS	DIODE			C79	CK73GXR1C225K	C CAPACITOR	2.2UF K	
D851	RN262CS	DIODE			C80	CK73HB1A105K	C CAPACITOR	1.0UF K	
D900	DZ2S068M	ZENER DIODE			C81	CK73HB1A105K	C CAPACITOR	1.0UF K	
D901	DZ2S068M	ZENER DIODE			C82	CK73HB1A105K	C CAPACITOR	1.0UF K	
D902	RB521CM-30	DIODE			C83	CK73GB1E105K	C CAPACITOR	1.0UF K	
D903	DAN222	MULTIPLE DIODE			C84	CK73GB1E105K	C CAPACITOR	1.0UF K	
D904	RB521CM-30	DIODE			C85	CK73GXR1C225K	C CAPACITOR	2.2UF K	
D905	RB521CM-30	DIODE			C86	CK73HBB1H681K	C CAPACITOR	680PF K	
D906	RB521CM-30	DIODE			C87	CK73HB1A105K	C CAPACITOR	1.0UF K	
D907	RB521CM-30	DIODE			C90	CK73HB1E104K	C CAPACITOR	0.10UF K	
C1	CK73HBB1H102K	C CAPACITOR	1000PF K		C92	CK73FB1C106K	C CAPACITOR	10UF K	
C2	CC73HCH1H220J	C CAPACITOR	22PF J		C93	C93-1967-05	C CAPACITOR	470PF K	
C3	CK73HBB1H682K	C CAPACITOR	6800PF K		C94	C93-1967-05	C CAPACITOR	470PF K	
C5	CC73HCH1H101J	C CAPACITOR	100PF J		C101	CC73HCH1H100B	C CAPACITOR	10PF B	
C7	C93-1967-05	C CAPACITOR	470PF K		C102	CK73HB1H103K	C CAPACITOR	0.010UF K	
C8	C93-1967-05	C CAPACITOR	470PF K		C103	CK73HB1H103K	C CAPACITOR	0.010UF K	
C9	C93-1967-05	C CAPACITOR	470PF K		C105	CK73HB1H103K	C CAPACITOR	0.010UF K	
C10	C93-1967-05	C CAPACITOR	470PF K		C107	CC73JCH1H101J	C CAPACITOR	100PF J	
C11	C93-1967-05	C CAPACITOR	470PF K		C108	CC73JCH1H101J	C CAPACITOR	100PF J	
C12	CK73HBB1H682K	C CAPACITOR	6800PF K		C110	CC73JCH1H101J	C CAPACITOR	100PF J	
C13	C93-1967-05	C CAPACITOR	470PF K		C111	CC73JCH1H101J	C CAPACITOR	100PF J	
C14	C93-1967-05	C CAPACITOR	470PF K		C112	C93-1959-05	C CAPACITOR	0.10UF K	
C15	C93-1967-05	C CAPACITOR	470PF K		C113	CC73JCH1H101J	C CAPACITOR	100PF J	
C16	C93-1967-05	C CAPACITOR	470PF K		C114	CC73HCH1H101J	C CAPACITOR	100PF J	
C17	C93-1967-05	C CAPACITOR	470PF K		C115	C93-1959-05	C CAPACITOR	0.10UF K	
C18	C93-1967-05	C CAPACITOR	470PF K		C116	CC73JCH1H101J	C CAPACITOR	100PF J	
C19	C93-1967-05	C CAPACITOR	470PF K		C117	CK73HBB1H472K	C CAPACITOR	4700PF K	
C20	CK73HB1E104K	C CAPACITOR	0.10UF K		C118	CK73HB1H103K	C CAPACITOR	0.010UF K	
C21	CK73HBB1H471K	C CAPACITOR	470PF K		C119	CC73HCH1H330G	C CAPACITOR	33PF G	
C22	CC73JCH1H101J	C CAPACITOR	100PF J		C120	CC73JCH1H101J	C CAPACITOR	100PF J	
C23	C93-1959-05	C CAPACITOR	0.10UF K		C121	CK73GB1H105K	C CAPACITOR	1.0UF K	
C24	C93-1967-05	C CAPACITOR	470PF K		C122	CC730AD1H104J	C CAPACITOR	100PF J	
C25	CK73FB1C106K	C CAPACITOR	10UF K		C123	CC73JCH1H101J	C CAPACITOR	100PF J	
C30	CK73GB1E105K	C CAPACITOR	1.0UF K		C124	C93-1959-05	C CAPACITOR	0.10UF K	
C31	CK73HB1A105K	C CAPACITOR	1.0UF K		C125	CC73JCH1H101J	C CAPACITOR	100PF J	
C32	CK73GB1E105K	C CAPACITOR	1.0UF K		C126	C93-1967-05	C CAPACITOR	470PF K	
C33	CK73GB1E105K	C CAPACITOR	1.0UF K		C127	CS77BP1A4R7M	C CAPACITOR	4.7UF M	
C34	CK73HB1A105K	C CAPACITOR	1.0UF K		C128	C93-1967-05	C CAPACITOR	470PF K	
C35	CK73HB1A105K	C CAPACITOR	1.0UF K		C129	CK73HB1A105K	C CAPACITOR	1.0UF K	
C36	CK73FB1C106K	C CAPACITOR	10UF K		C130	CK73HB1A105K	C CAPACITOR	1.0UF K	
C37	CK73FB1C106K	C CAPACITOR	10UF K		C131	C93-1967-05	C CAPACITOR	470PF K	
C38	CK73HBB1H332K	C CAPACITOR	3300PF K		C140	CK73FBB1H154K	C CAPACITOR	0.15UF K	
C39	CK73HB1E104K	C CAPACITOR	0.10UF K		C141	CS77MA1E2R2M	C CAPACITOR	2.2UF M	
C41	CK73FXR0J226M	C CAPACITOR	22UF M		C142	CK73FB1H473K	C CAPACITOR	0.047UF K	
C42	CK73FB1A475K	C CAPACITOR	4.7UF K		C143	CC73HCH1H101J	C CAPACITOR	100PF J	
C43	CK73GB0J106K	C CAPACITOR	10UF K		C144	CK73HBB1H471K	C CAPACITOR	470PF K	
					C146	CC73HCH1H470J	C CAPACITOR	47PF J	

△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
C147	CC73HCH1H1R5B	C CAPACITOR	1.5PF B	F2,F3,K2,K3	C259	CK73HB1H103K	C CAPACITOR	0.010UF K	
C147	CC73HCH1H020B	C CAPACITOR	2.0PF B	F5,F6,K5,K6	C260	CC73HCH1H101J	C CAPACITOR	100PF J	F5,F6,K5,K6
C148	CC73HCH1H0R5B	C CAPACITOR	0.5PF B		C261	CK73HBB1H471K	C CAPACITOR	470PF K	F5,F6,K5,K6
C149	CC73HCH1H040B	C CAPACITOR	4.0PF B	F2,F3,K2,K3	C262	CC73HCH1H680J	C CAPACITOR	68PF J	F5,F6,K5,K6
C149	CC73HCH1H050B	C CAPACITOR	5.0PF B	F5,F6,K5,K6	C264	CC73HCH1H050B	C CAPACITOR	5.0PF B	F5,F6,K5,K6
C150	CC73HCH1H050B	C CAPACITOR	5.0PF B		C265	CC73HCH1H050B	C CAPACITOR	5.0PF B	F5,F6,K5,K6
C151	CC73HCH1H050B	C CAPACITOR	5.0PF B		C266	CC73HCH1H050B	C CAPACITOR	5.0PF B	F5,F6,K5,K6
C152	CK73HBB1H471K	C CAPACITOR	470PF K		C267	CK73HBB1H471K	C CAPACITOR	470PF K	F5,F6,K5,K6
C153	CC73HCH1H0R5B	C CAPACITOR	0.5PF B		C268	CC73HCH1H0R5B	C CAPACITOR	0.5PF B	F5,F6,K5,K6
C154	CC73JCH1H101J	C CAPACITOR	100PF J		C269	CC73JCH1H101J	C CAPACITOR	100PF J	F5,F6,K5,K6
C156	CK73HBB1H471K	C CAPACITOR	470PF K		C271	CK73HBB1H471K	C CAPACITOR	470PF K	F5,F6,K5,K6
C160	CC73HCH1H101J	C CAPACITOR	100PF J	F5,F6,K5,K6	C272	CK73HBB1H471K	C CAPACITOR	470PF K	F2,F3,K2,K3
C161	CK73HBB1H471K	C CAPACITOR	470PF K	F5,F6,K5,K6	C281	CK73HBB1H471K	C CAPACITOR	470PF K	
C163	CC73HCH1H680J	C CAPACITOR	68PF J	F5,F6,K5,K6	C282	CK73HBB1H471K	C CAPACITOR	470PF K	
C164	CC73HCH1H0R5B	C CAPACITOR	0.5PF B	F5,F6,K5,K6	C283	CC73HCH1H050B	C CAPACITOR	5.0PF B	F2,F3,K2,K3
C165	CC73HCH1H0R5B	C CAPACITOR	0.5PF B	F5,F6,K5,K6	C283	CC73HCH1H060B	C CAPACITOR	6.0PF B	F5,F6,K5,K6
C166	CC73HCH1H050B	C CAPACITOR	5.0PF B	F5,F6,K5,K6	C291	CC73HCH1H100B	C CAPACITOR	10PF B	
C167	CC73HCH1H050B	C CAPACITOR	5.0PF B	F5,F6,K5,K6	C292	CC73HCH1H050B	C CAPACITOR	5.0PF B	
C168	CC73HCH1H050B	C CAPACITOR	5.0PF B	F5,F6,K5,K6	C293	CC73HCH1H050B	C CAPACITOR	5.0PF B	
C169	CK73HBB1H471K	C CAPACITOR	470PF K	F5,F6,K5,K6	C294	CC73HCH1H080B	C CAPACITOR	8.0PF B	F2,F3,K2,K3
C170	CC73HCH1H0R5B	C CAPACITOR	0.5PF B	F5,F6,K5,K6	C294	CC73HCH1H090B	C CAPACITOR	9.0PF B	F5,F6,K5,K6
C171	CC73JCH1H101J	C CAPACITOR	100PF J	F5,F6,K5,K6	C295	CC73HCH1H040B	C CAPACITOR	4.0PF B	
C173	CK73HBB1H471K	C CAPACITOR	470PF K	F5,F6,K5,K6	C296	CC73HCH1H050B	C CAPACITOR	5.0PF B	
C181	CK73HBB1H471K	C CAPACITOR	470PF K		C304	CK73HBB1H102K	C CAPACITOR	1000PF K	
C182	CK73HBB1H471K	C CAPACITOR	470PF K		C305	CK73HBB1H102K	C CAPACITOR	1000PF K	
C183	CC73HCH1H040B	C CAPACITOR	4.0PF B		C306	CK73HBB1H102K	C CAPACITOR	1000PF K	F2,F3,K2,K3
C184	CK73HBB1H471K	C CAPACITOR	470PF K		C306	CC73HCH1H100B	C CAPACITOR	10PF B	F5,F6,K5,K6
C188	CC73HCH1H050B	C CAPACITOR	5.0PF B		C307	CK73HBB1H471K	C CAPACITOR	470PF K	
C189	CC73HCH1H030B	C CAPACITOR	3.0PF B		C310	CC73HCH1H040B	C CAPACITOR	4.0PF B	F2,F3,K2,K3
C190	CC73HCH1H050B	C CAPACITOR	5.0PF B		C310	CC73HCH1H050B	C CAPACITOR	5.0PF B	F5,F6,K5,K6
C191	CC73HCH1H100B	C CAPACITOR	10PF B		C311	CC73HCH1H030B	C CAPACITOR	3.0PF B	F2,F3,K2,K3
C192	CC73HCH1H050B	C CAPACITOR	5.0PF B		C311	CC73HCH1H040B	C CAPACITOR	4.0PF B	F5,F6,K5,K6
C193	CC73HCH1H050B	C CAPACITOR	5.0PF B		C312	CC73HCH1H030B	C CAPACITOR	3.0PF B	
C200	CK73HB1H103K	C CAPACITOR	0.010UF K		C313	CC73HCH1H120G	C CAPACITOR	12PF G	
C203	CC73HCH1H100B	C CAPACITOR	10PF B		C314	CK73HBB1H471K	C CAPACITOR	470PF K	
C204	CK73HB1H103K	C CAPACITOR	0.010UF K		C315	CC73HCH1H101J	C CAPACITOR	100PF J	
C206	CK73HB1H103K	C CAPACITOR	0.010UF K		C317	CK73HBB1H471K	C CAPACITOR	470PF K	
C207	CC73JCH1H101J	C CAPACITOR	100PF J		C318	CC73HCH1H040B	C CAPACITOR	4.0PF B	F2,F3,K2,K3
C208	CC73JCH1H101J	C CAPACITOR	100PF J		C318	CC73HCH1H050B	C CAPACITOR	5.0PF B	F5,F6,K5,K6
C209	CC73JCH1H101J	C CAPACITOR	100PF J		C321	CK73HBB1H471K	C CAPACITOR	470PF K	
C210	CC73JCH1H101J	C CAPACITOR	100PF J		C322	CK73HBB1H471K	C CAPACITOR	470PF K	F2,F3,K2,K3
C211	C93-1959-05	C CAPACITOR	0.10UF K		C322	CC73HCH1H150J	C CAPACITOR	15PF J	F5,F6,K5,K6
C212	CC73JCH1H101J	C CAPACITOR	100PF J		C323	CC73HCH1H060B	C CAPACITOR	6.0PF B	F2,F3,K2,K3
C213	CC73HCH1H101J	C CAPACITOR	100PF J		C325	CC73HCH1H220J	C CAPACITOR	22PF J	F2,F3,K2,K3
C214	C93-1959-05	C CAPACITOR	0.10UF K		C325	CC73HCH1H150J	C CAPACITOR	15PF J	F5,F6,K5,K6
C215	CC73JCH1H101J	C CAPACITOR	100PF J		C326	CC73HCH1H101J	C CAPACITOR	100PF J	
C216	CK73HBB1H472K	C CAPACITOR	4700PF K		C326	CK73HB1E104K	C CAPACITOR	0.10UF K	
C217	CK73HB1H103K	C CAPACITOR	0.010UF K		C328	CK73HBB1H471K	C CAPACITOR	470PF K	
C218	CC73HCH1H330G	C CAPACITOR	33PF G		C330	CC73HCH1H680J	C CAPACITOR	68PF J	F2,F3,K2,K3
C219	CC73JCH1H101J	C CAPACITOR	100PF J		C330	CC73HCH1H101J	C CAPACITOR	100PF J	F5,F6,K5,K6
C220	CK73GB1H105K	C CAPACITOR	1.0UF K		C331	CC73HCH1H100B	C CAPACITOR	10PF B	F5,F6,K5,K6
C221	CC730AD1H104J	C CAPACITOR	0.10UF J		C332	C93-0949-05	C CAPACITOR	39PF G	F2,F3,K2,K3
C222	C93-1967-05	C CAPACITOR	470PF K		C332	C93-0951-05	C CAPACITOR	47PF G	F5,F6,K5,K6
C223	CS77BP1A4R7M	C CAPACITOR	4.7UF M		C334	CC73HCH1H101J	C CAPACITOR	100PF J	
C224	C93-1967-05	C CAPACITOR	470PF K		C335	CC73HCH1H220J	C CAPACITOR	22PF J	F2,F3,K2,K3
C225	CK73HB1A105K	C CAPACITOR	1.0UF K		C335	CC73HCH1H330J	C CAPACITOR	33PF J	F5,F6,K5,K6
C226	C93-1967-05	C CAPACITOR	470PF K		C338	CC73HCH1H151J	C CAPACITOR	150PF J	
C240	CK73FBB1H154K	C CAPACITOR	0.15UF K		C339	CC73HCH1H151J	C CAPACITOR	150PF J	
C241	CS77ABE1D100M	TA E CAPACITOR	10UF M		C341	CK73HB1E104K	C CAPACITOR	0.10UF K	
C242	CK73FB1H473K	C CAPACITOR	0.047UF K		C344	C93-0943-05	C CAPACITOR	22PF G	F2,F3,K2,K3
C243	CC73HCH1H101J	C CAPACITOR	100PF J		C344	C93-0947-05	C CAPACITOR	33PF G	F5,F6,K5,K6
C244	CK73HBB1H471K	C CAPACITOR	470PF K		C346	C93-0935-05	C CAPACITOR	10PF G	F2,F3,K2,K3
C246	CC73HCH1H560J	C CAPACITOR	56PF J	F2,F3,K2,K3	C347	CC73GCH1H101J	C CAPACITOR	100PF J	
C246	CC73HCH1H390J	C CAPACITOR	39PF J	F5,F6,K5,K6	C348	CC73GCH1H050B	C CAPACITOR	5.0PF B	F2,F3,K2,K3
C247	CC73HCH1H020B	C CAPACITOR	2.0PF B	F2,F3,K2,K3	C348	CC73GCH1H080B	C CAPACITOR	8.0PF B	F5,F6,K5,K6
C247	CC73HCH1H010B	C CAPACITOR	1.0PF B	F5,F6,K5,K6	C349	CK73HBB1H471K	C CAPACITOR	470PF K	
C248	CC73HCH1H060B	C CAPACITOR	6.0PF B	F2,F3,K2,K3	C351	CC73HCH1H010B	C CAPACITOR	1.0PF B	
C248	CC73HCH1H050B	C CAPACITOR	5.0PF B	F5,F6,K5,K6	C352	CC73GCH1H101J	C CAPACITOR	100PF J	
C249	CC73HCH1H060B	C CAPACITOR	6.0PF B	F2,F3,K2,K3	C355	CC73HCH1H030B	C CAPACITOR	3.0PF B	F2,F3,K2,K3
C249	CC73HCH1H050B	C CAPACITOR	5.0PF B	F5,F6,K5,K6	C355	CC73HCH1H020B	C CAPACITOR	2.0PF B	F5,F6,K5,K6
C250	CC73HCH1H050B	C CAPACITOR	5.0PF B		C356	CC73GCH1H1R5B	C CAPACITOR	1.5PF B	F2,F3,K2,K3
C251	CK73HBB1H471K	C CAPACITOR	470PF K		C356	CC73GCH1H2R5B	C CAPACITOR	2.5PF B	F5,F6,K5,K6
C252	CC73HCH1H0R5B	C CAPACITOR	0.5PF B		C357	CC73GCH1H070B	C CAPACITOR	7.0PF B	F2,F3,K2,K3
C253	CC73JCH1H101J	C CAPACITOR	100PF J		C357	CC73GCH1H060B	C CAPACITOR	6.0PF B	F5,F6,K5,K6
C255	CK73HBB1H471K	C CAPACITOR	470PF K		C358	CC73GCH1H1R5B	C CAPACITOR	1.5PF B	F2,F3,K2,K3
C256	CK73HB1E104K	C CAPACITOR	0.10UF K		C358	CC73GCH1H020B	C CAPACITOR	2.0PF B	F5,F6,K5,K6
C257	CK73HB1E104K	C CAPACITOR	0.10UF K		C359	CC73GCH1H040B	C CAPACITOR	4.0PF B	F2,F3,K2,K3
C258	CK73HB1E224K	C CAPACITOR	0.22UF K		C359	CC73GCH1H020B	C CAPACITOR	2.0PF B	F5,F6,K5,K6

△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
C360	CC73HCH1H101J	C CAPACITOR	100PF J		C580	CC73HCH1H020B	C CAPACITOR	2.0PF B	F5,F6,K5,K6
C361	CC73JCH1H101J	C CAPACITOR	100PF J		C581	CC73HCH1H1R5B	C CAPACITOR	1.5PF B	F2,F3,K2,K3
C362	CC73JCH1H101J	C CAPACITOR	100PF J		C581	CC73HCH1H030B	C CAPACITOR	3.0PF B	F5,F6,K5,K6
C364	C93-0943-05	C CAPACITOR	22PF G	F5,F6,K5,K6	C582	CC73HCH1H120G	C CAPACITOR	12PF G	F2,F3,K2,K3
C365	C93-0935-05	C CAPACITOR	10PF G	F2,F3,K2,K3	C582	CC73HCH1H100B	C CAPACITOR	10PF B	F5,F6,K5,K6
C367	C93-0937-05	C CAPACITOR	12PF G	F5,F6,K5,K6	C583	CC73HCH1H020B	C CAPACITOR	2.0PF B	F2,F3,K2,K3
C370	CC73HCH1H050B	C CAPACITOR	5.0PF B	F2,F3,K2,K3	C583	CC73HCH1H030B	C CAPACITOR	3.0PF B	F5,F6,K5,K6
C370	CC73HCH1H060B	C CAPACITOR	6.0PF B	F5,F6,K5,K6	C584	CC73HCH1H080B	C CAPACITOR	8.0PF B	F2,F3,K2,K3
C378	CC73GCH1H2R5B	C CAPACITOR	2.5PF B	F2,F3,K2,K3	C584	CC73HCH1H100B	C CAPACITOR	10PF B	F5,F6,K5,K6
C390	C93-1967-05	C CAPACITOR	470PF K		C585	CC73HCH1H070B	C CAPACITOR	7.0PF B	
C391	CC73JCH1H101J	C CAPACITOR	100PF J		C586	C93-1959-05	C CAPACITOR	0.10UF K	
C392	CC73HCH1H101J	C CAPACITOR	100PF J		C587	CK73HBB1H471K	C CAPACITOR	470PF K	
C400	CK73HBB1H471K	C CAPACITOR	470PF K		C588	CK73HBB1H471K	C CAPACITOR	470PF K	
C402	CK73GB1C563K	C CAPACITOR	0.056UF K		C589	CC73HCH1H100B	C CAPACITOR	10PF B	
C404	CK73HBB1H471K	C CAPACITOR	470PF K		C590	CC73HCH1H0R5B	C CAPACITOR	0.5PF B	F2,F3,K2,K3
C408	CK73HBB1H152K	C CAPACITOR	1500PF K		C590	CC73HCH1H1R5B	C CAPACITOR	1.5PF B	F5,F6,K5,K6
C409	CK73HBB1H152K	C CAPACITOR	1500PF K		C591	CC73HCH1H180G	C CAPACITOR	18PF G	F2,F3,K2,K3
C410	CK73HBB1H471K	C CAPACITOR	470PF K		C591	CC73HCH1H220G	C CAPACITOR	22PF G	F5,F6,K5,K6
C412	CC73JCH1H101J	C CAPACITOR	100PF J		C592	CC73HCH1H180G	C CAPACITOR	18PF G	F2,F3,K2,K3
C413	CC73JCH1H101J	C CAPACITOR	100PF J		C592	CC73HCH1H220G	C CAPACITOR	22PF G	F5,F6,K5,K6
C500	CK73FB1A475K	C CAPACITOR	4.7UF K		C600	CC73JCH1H101J	C CAPACITOR	100PF J	
C501	CK73HB1H103K	C CAPACITOR	0.010UF K		C601	CC73JCH1H101J	C CAPACITOR	100PF J	
C502	CK73HB1H103K	C CAPACITOR	0.010UF K		C602	CC73JCH1H101J	C CAPACITOR	100PF J	
C503	CK73HB1H103K	C CAPACITOR	0.010UF K		C603	CK73HB1E104K	C CAPACITOR	0.10UF K	
C504	CK73HBB1H471K	C CAPACITOR	470PF K		C604	CC73JCH1H101J	C CAPACITOR	100PF J	
C506	CC73HCH1H120G	C CAPACITOR	12PF G		C605	CC73JCH1H101J	C CAPACITOR	100PF J	
C507	CK73HBB1H471K	C CAPACITOR	470PF K		C606	CC73JCH1H101J	C CAPACITOR	100PF J	
C508	CK73HB1H103K	C CAPACITOR	0.010UF K		C607	CC73JCH1H101J	C CAPACITOR	100PF J	
C509	CK73HBB1H471K	C CAPACITOR	470PF K		C608	CC73HCH1H120G	C CAPACITOR	12PF G	
C510	CC73HCH1H060B	C CAPACITOR	6.0PF B		C609	CK73HB1E562K	C CAPACITOR	5600PF K	
C511	CK73HBB1H471K	C CAPACITOR	470PF K		C610	C93-1959-05	C CAPACITOR	0.10UF K	
C512	CK73HBB1H471K	C CAPACITOR	470PF K		C611	CC73HCH1H3R5B	C CAPACITOR	3.5PF B	
C514	C93-1967-05	C CAPACITOR	470PF K		C612	CK73HB1E224K	C CAPACITOR	0.22UF K	
C520	CC73HCH1H030B	C CAPACITOR	3.0PF B	F2,F3,K2,K3	C613	C93-1959-05	C CAPACITOR	0.10UF K	
C520	CC73HCH1H050B	C CAPACITOR	5.0PF B	F5,F6,K5,K6	C614	CK73HB1H123K	C CAPACITOR	0.012UF K	
C521	CC73HCH1H180G	C CAPACITOR	18PF G	F2,F3,K2,K3	C615	CK73HB1E104K	C CAPACITOR	0.10UF K	
C521	CC73HCH1H220G	C CAPACITOR	22PF G	F5,F6,K5,K6	C616	CC73HCH1H330G	C CAPACITOR	33PF G	
C522	CK73HBB1H471K	C CAPACITOR	470PF K		C617	CC73HCH1H270G	C CAPACITOR	27PF G	
C524	CC73HCH1H0R5B	C CAPACITOR	0.5PF B	F2,F3,K2,K3	C618	C93-1959-05	C CAPACITOR	0.10UF K	
C524	CC73HCH1H010B	C CAPACITOR	1.0PF B	F5,F6,K5,K6	C619	CK73HB1A105K	C CAPACITOR	1.0UF K	
C525	CC73HCH1H180G	C CAPACITOR	18PF G	F2,F3,K2,K3	C620	C93-1953-05	C CAPACITOR	0.010UF K	
C525	CC73HCH1H220G	C CAPACITOR	22PF G	F5,F6,K5,K6	C621	C93-1953-05	C CAPACITOR	0.010UF K	
C526	CC73HCH1H1R5B	C CAPACITOR	1.5PF B	F2,F3,K2,K3	C622	CK73HB1H103K	C CAPACITOR	0.010UF K	
C526	CC73HCH1H020B	C CAPACITOR	2.0PF B	F5,F6,K5,K6	C623	CC73HCH1H050B	C CAPACITOR	5.0PF B	
C527	CC73HCH1H180G	C CAPACITOR	18PF G	F2,F3,K2,K3	C624	CK73HBB1H102K	C CAPACITOR	1000PF K	
C527	CC73HCH1H270G	C CAPACITOR	27PF G	F5,F6,K5,K6	C625	C93-1959-05	C CAPACITOR	0.10UF K	
C528	CC73HCH1H010B	C CAPACITOR	1.0PF B	F2,F3,K2,K3	C626	CC73HCH1H680J	C CAPACITOR	68PF J	
C528	CC73HCH1H030B	C CAPACITOR	3.0PF B	F5,F6,K5,K6	C627	CK73HB1E104K	C CAPACITOR	0.10UF K	
C530	CK73HB1E104K	C CAPACITOR	0.10UF K		C628	C93-1953-05	C CAPACITOR	0.010UF K	
C531	CK73HB1H103K	C CAPACITOR	0.010UF K		C629	C93-1959-05	C CAPACITOR	0.10UF K	
C532	CK73HBB1H471K	C CAPACITOR	470PF K		C630	C93-1959-05	C CAPACITOR	0.10UF K	
C533	CK73HBB1H471K	C CAPACITOR	470PF K		C631	C93-1959-05	C CAPACITOR	0.10UF K	
C535	CC73HCH1H0R5B	C CAPACITOR	0.5PF B		C632	C93-1953-05	C CAPACITOR	0.010UF K	
C536	CK73GB1E105K	C CAPACITOR	1.0UF K		C633	C93-1959-05	C CAPACITOR	0.10UF K	
C538	CK73HBB1H471K	C CAPACITOR	470PF K		C634	CK73HB1A105K	C CAPACITOR	1.0UF K	
C539	CK73HBB1H471K	C CAPACITOR	470PF K		C635	CK73FB1A475K	C CAPACITOR	4.7UF K	
C540	CC73HCH1H060B	C CAPACITOR	6.0PF B	F2,F3,K2,K3	C636	C93-1959-05	C CAPACITOR	0.10UF K	
C540	CC73HCH1H090B	C CAPACITOR	9.0PF B	F5,F6,K5,K6	C637	CK73HB1E104K	C CAPACITOR	0.10UF K	
C541	CK73HBB1H471K	C CAPACITOR	470PF K		C638	CK73HB1H103K	C CAPACITOR	0.010UF K	
C542	CC73HCH1H010B	C CAPACITOR	1.0PF B	F2,F3,K2,K3	C639	C93-1969-05	C CAPACITOR	1000PF K	
C542	CC73HCH1H030B	C CAPACITOR	3.0PF B	F5,F6,K5,K6	C640	CC73HCH1H101J	C CAPACITOR	100PF J	
C543	CC73HCH1H1R5B	C CAPACITOR	1.5PF B		C641	CC73HCH1H101J	C CAPACITOR	100PF J	
C544	CC73HCH1H030B	C CAPACITOR	3.0PF B	F2,F3,K2,K3	C642	CC73JCH1H101J	C CAPACITOR	100PF J	
C544	CC73HCH1H040B	C CAPACITOR	4.0PF B	F5,F6,K5,K6	C643	C93-1953-05	C CAPACITOR	0.010UF K	
C545	CK73HBB1H471K	C CAPACITOR	470PF K		C644	CC73HCH1H151J	C CAPACITOR	150PF J	
C547	CC73HCH1H030B	C CAPACITOR	3.0PF B	F2,F3,K2,K3	C645	CC73HCH1H100B	C CAPACITOR	10PF B	
C547	CC73HCH1H060B	C CAPACITOR	6.0PF B	F5,F6,K5,K6	C646	CC73JCH1H101J	C CAPACITOR	100PF J	
C549	CC73HCH1H080B	C CAPACITOR	8.0PF B		C647	C93-1959-05	C CAPACITOR	0.10UF K	
C550	CK73HB1H103K	C CAPACITOR	0.010UF K		C648	CC73HCH1H330G	C CAPACITOR	33PF G	
C551	CK73HB1H103K	C CAPACITOR	0.010UF K		C649	C93-1959-05	C CAPACITOR	0.10UF K	
C552	CK73HB1H103K	C CAPACITOR	0.010UF K		C650	CC73HCH1H100B	C CAPACITOR	10PF B	
C553	CK73HB1H103K	C CAPACITOR	0.010UF K		C651	CC73HCH1H101J	C CAPACITOR	100PF J	
C554	CK73HBB1H471K	C CAPACITOR	470PF K		C652	C93-1959-05	C CAPACITOR	0.10UF K	
C556	CK73HBB1H471K	C CAPACITOR	470PF K		C660	CC73HCH1H560J	C CAPACITOR	56PF J	
C558	CK73HB1H103K	C CAPACITOR	0.010UF K		C661	C93-1967-05	C CAPACITOR	470PF K	
C559	CC73HCH1HR75B	C CAPACITOR	0.75PF B	F2,F3,K2,K3	C662	C93-1953-05	C CAPACITOR	0.010UF K	
C559	CC73HCH1H1R5B	C CAPACITOR	1.5PF B	F5,F6,K5,K6	C663	CC73HCH1H100B	C CAPACITOR	10PF B	
C580	CC73HCH1H040B	C CAPACITOR	4.0PF B	F2,F3,K2,K3	C664	CC73HCH1H060B	C CAPACITOR	6.0PF B	

△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
C670	CK73HB1H103K	C CAPACITOR	0.010UF K		C767	C93-1959-05	C CAPACITOR	0.10UF K	
C671	C93-1953-05	C CAPACITOR	0.010UF K		C768	C93-1959-05	C CAPACITOR	0.10UF K	
C672	CC73HCH1H150G	C CAPACITOR	15PF G		C769	C93-1959-05	C CAPACITOR	0.10UF K	
C673	C93-1967-05	C CAPACITOR	470PF K		C770	C93-1959-05	C CAPACITOR	0.10UF K	
C674	CK73HBB1H102K	C CAPACITOR	1000PF K		C771	C93-1959-05	C CAPACITOR	0.10UF K	
C675	CK73HB1H103K	C CAPACITOR	0.010UF K		C772	C93-1959-05	C CAPACITOR	0.10UF K	
C676	CC73HCH1H100B	C CAPACITOR	10PF B		C773	CK73HB1A105K	C CAPACITOR	1.0UF K	
C677	CC73HCH1H270G	C CAPACITOR	27PF G		C774	C93-1959-05	C CAPACITOR	0.10UF K	
C678	CC73HCH1H060B	C CAPACITOR	6.0PF B		C775	CC73JCH1H101J	C CAPACITOR	100PF J	
C679	CC73HCH1H180J	C CAPACITOR	18PF J		C776	CK73HB1H103K	C CAPACITOR	0.010UF K	
C681	CC73HCH1H010B	C CAPACITOR	1.0PF B		C777	C93-1953-05	C CAPACITOR	0.010UF K	
C700	CK73HB1H103K	C CAPACITOR	0.010UF K		C778	C93-1959-05	C CAPACITOR	0.10UF K	
C701	CC73JCH1H101J	C CAPACITOR	100PF J		C779	C93-1959-05	C CAPACITOR	0.10UF K	
C702	C93-1953-05	C CAPACITOR	0.010UF K		C780	CK73HB1A105K	C CAPACITOR	1.0UF K	
C703	CK73HB1H103K	C CAPACITOR	0.010UF K		C782	C93-1959-05	C CAPACITOR	0.10UF K	
C704	CC73JCH1H101J	C CAPACITOR	100PF J		C783	CK73HB1H103K	C CAPACITOR	0.010UF K	
C705	CK73HB1H103K	C CAPACITOR	0.010UF K		C784	CK73HB1E104K	C CAPACITOR	0.10UF K	
C706	C93-1953-05	C CAPACITOR	0.010UF K		C785	CC73JCH1H101J	C CAPACITOR	100PF J	
C707	CC73HCH1H100B	C CAPACITOR	10PF B		C786	C93-1959-05	C CAPACITOR	0.10UF K	
C708	CK73HB1H103K	C CAPACITOR	0.010UF K		C787	C93-1959-05	C CAPACITOR	0.10UF K	
C709	C93-1953-05	C CAPACITOR	0.010UF K		C788	CK73HBB1H471K	C CAPACITOR	470PF K	
C710	CK73HB1A105K	C CAPACITOR	1.0UF K		C789	C93-1967-05	C CAPACITOR	470PF K	
C711	CK73HB1A105K	C CAPACITOR	1.0UF K		C790	CC73JCH1H101J	C CAPACITOR	100PF J	
C712	C93-1959-05	C CAPACITOR	0.10UF K		C791	CC73JCH1H101J	C CAPACITOR	100PF J	
C713	C93-1959-05	C CAPACITOR	0.10UF K		C792	CC73JCH1H101J	C CAPACITOR	100PF J	
C714	C93-1959-05	C CAPACITOR	0.10UF K		C793	CC73JCH1H101J	C CAPACITOR	100PF J	
C715	CC73HCH1H180J	C CAPACITOR	18PF J		C795	CC73JCH1H101J	C CAPACITOR	100PF J	
C716	CC73HCH1H180J	C CAPACITOR	18PF J		C796	CK73HB1E104K	C CAPACITOR	0.10UF K	
C717	CK73HB1E224K	C CAPACITOR	0.22UF K		C797	CC73JCH1H101J	C CAPACITOR	100PF J	
C718	C93-1959-05	C CAPACITOR	0.10UF K		C798	CC73JCH1H101J	C CAPACITOR	100PF J	
C719	C93-1959-05	C CAPACITOR	0.10UF K		C799	CC73JCH1H101J	C CAPACITOR	100PF J	
C720	C93-1959-05	C CAPACITOR	0.10UF K		C800	CK73HB1A105K	C CAPACITOR	1.0UF K	
C721	C93-1959-05	C CAPACITOR	0.10UF K		C801	C93-1959-05	C CAPACITOR	0.10UF K	
C722	CC73JCH1H101J	C CAPACITOR	100PF J		C802	CK73HB1A105K	C CAPACITOR	1.0UF K	
C723	C93-1959-05	C CAPACITOR	0.10UF K		C803	CK73HB1A105K	C CAPACITOR	1.0UF K	
C724	CK73FXR0J226M	C CAPACITOR	22UF M		C804	C93-1969-05	C CAPACITOR	1000PF K	
C725	CK73GB0J106K	C CAPACITOR	10UF K		C805	CK73HB1A105K	C CAPACITOR	1.0UF K	
C726	C93-1959-05	C CAPACITOR	0.10UF K		C806	CK73HBB1H681K	C CAPACITOR	680PF K	
C727	C93-1959-05	C CAPACITOR	0.10UF K		C807	C93-1959-05	C CAPACITOR	0.10UF K	
C728	C93-1959-05	C CAPACITOR	0.10UF K		C808	CK73HB1E104K	C CAPACITOR	0.10UF K	
C729	C93-1959-05	C CAPACITOR	0.10UF K		C809	C93-1967-05	C CAPACITOR	470PF K	
C730	C93-1959-05	C CAPACITOR	0.10UF K		C810	C93-1967-05	C CAPACITOR	470PF K	
C731	CC73JCH1H101J	C CAPACITOR	100PF J		C811	C93-1967-05	C CAPACITOR	470PF K	
C732	C93-1959-05	C CAPACITOR	0.10UF K		C812	C93-1967-05	C CAPACITOR	470PF K	
C733	CC73JCH1H101J	C CAPACITOR	100PF J		C813	C93-1967-05	C CAPACITOR	470PF K	
C734	CK73GB0J106K	C CAPACITOR	10UF K		C814	C93-1967-05	C CAPACITOR	470PF K	
C735	CK73GB0J106K	C CAPACITOR	10UF K		C815	C93-1967-05	C CAPACITOR	470PF K	
C736	C93-1959-05	C CAPACITOR	0.10UF K		C816	C93-1967-05	C CAPACITOR	470PF K	
C737	C93-1959-05	C CAPACITOR	0.10UF K		C817	C93-1967-05	C CAPACITOR	470PF K	
C738	C93-1959-05	C CAPACITOR	0.10UF K		C818	CK73GB0J106K	C CAPACITOR	10UF K	
C739	C93-1959-05	C CAPACITOR	0.10UF K		C819	CK73GB0J106K	C CAPACITOR	10UF K	
C740	CC73JCH1H101J	C CAPACITOR	100PF J		C822	CC73JCH1H101J	C CAPACITOR	100PF J	
C741	C93-1959-05	C CAPACITOR	0.10UF K		C823	CK73GB1E105K	C CAPACITOR	1.0UF K	
C742	CC73JCH1H101J	C CAPACITOR	100PF J		C824	C93-1953-05	C CAPACITOR	0.010UF K	
C743	CK73GB0J106K	C CAPACITOR	10UF K		C825	C93-1953-05	C CAPACITOR	0.010UF K	
C744	CK73GB0J106K	C CAPACITOR	10UF K		C826	CK73GXR1C225K	C CAPACITOR	2.2UF K	
C745	C93-1959-05	C CAPACITOR	0.10UF K		C827	C93-1953-05	C CAPACITOR	0.010UF K	
C746	CK73GB0J106K	C CAPACITOR	10UF K		C828	C93-1953-05	C CAPACITOR	0.010UF K	
C747	C93-1959-05	C CAPACITOR	0.10UF K		C829	CK73HBB1H102K	C CAPACITOR	1000PF K	
C748	CK73GB0J106K	C CAPACITOR	10UF K		C830	C93-1953-05	C CAPACITOR	0.010UF K	
C749	C93-1959-05	C CAPACITOR	0.10UF K		C831	CK73HBB1H102K	C CAPACITOR	1000PF K	
C750	C93-1959-05	C CAPACITOR	0.10UF K		C832	C93-1953-05	C CAPACITOR	0.010UF K	
C751	CK73GB0J106K	C CAPACITOR	10UF K		C833	CC73JCH1H101J	C CAPACITOR	100PF J	
C752	C93-1959-05	C CAPACITOR	0.10UF K		C834	CC73JCH1H101J	C CAPACITOR	100PF J	
C753	C93-1959-05	C CAPACITOR	0.10UF K		C835	CC73JCH1H101J	C CAPACITOR	100PF J	
C754	C93-1959-05	C CAPACITOR	0.10UF K		C836	CC73JCH1H101J	C CAPACITOR	100PF J	
C755	C93-1959-05	C CAPACITOR	0.10UF K		C837	CC73JCH1H101J	C CAPACITOR	100PF J	
C756	C93-1959-05	C CAPACITOR	0.10UF K		C838	CC73HCH1H470J	C CAPACITOR	47PF J	
C757	CC73JCH1H101J	C CAPACITOR	100PF J		C839	CC73JCH1H101J	C CAPACITOR	100PF J	
C758	C93-1959-05	C CAPACITOR	0.10UF K		C840	CC73HCH1H470J	C CAPACITOR	47PF J	
C759	C93-1959-05	C CAPACITOR	0.10UF K		C841	CC73JCH1H101J	C CAPACITOR	100PF J	
C760	C93-1959-05	C CAPACITOR	0.10UF K		C842	CC73JCH1H101J	C CAPACITOR	100PF J	
C761	C93-1959-05	C CAPACITOR	0.10UF K		C843	CC73JCH1H101J	C CAPACITOR	100PF J	
C762	C93-1959-05	C CAPACITOR	0.10UF K		C844	CC73JCH1H101J	C CAPACITOR	100PF J	
C763	C93-1959-05	C CAPACITOR	0.10UF K		C845	CC73JCH1H101J	C CAPACITOR	100PF J	
C764	CK73FXR0J226M	C CAPACITOR	22UF M		C846	C93-1953-05	C CAPACITOR	0.010UF K	
C765	C93-1959-05	C CAPACITOR	0.10UF K		C847	CC73JCH1H101J	C CAPACITOR	100PF J	
C766	C93-1959-05	C CAPACITOR	0.10UF K		C850	C93-1953-05	C CAPACITOR	0.010UF K	

△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
C851	CK73HB1A105K	C CAPACITOR	1.0UF K		C933	CK73HB1E224K	C CAPACITOR	0.22UF K	
C852	C93-1959-05	C CAPACITOR	0.10UF K		C934	C93-1959-05	C CAPACITOR	0.10UF K	
C853	C93-1959-05	C CAPACITOR	0.10UF K		C935	C93-1959-05	C CAPACITOR	0.10UF K	
C854	C93-1959-05	C CAPACITOR	0.10UF K		C936	CC73JCH1H101J	C CAPACITOR	100PF J	
C855	C93-1959-05	C CAPACITOR	0.10UF K		C937	CK73HB1A105K	C CAPACITOR	1.0UF K	
C856	CK73HB1A105K	C CAPACITOR	1.0UF K		C938	CC73HCH1H101J	C CAPACITOR	100PF J	
C857	C93-1959-05	C CAPACITOR	0.10UF K		C939	CC73HCH1H101J	C CAPACITOR	100PF J	
C858	C93-1959-05	C CAPACITOR	0.10UF K		C940	C93-1959-05	C CAPACITOR	0.10UF K	
C859	CC73HCH1H180J	C CAPACITOR	18PF J		C941	C93-1959-05	C CAPACITOR	0.10UF K	
C860	CC73HCH1H180J	C CAPACITOR	18PF J		C942	C93-1959-05	C CAPACITOR	0.10UF K	
C861	CK73HB1A105K	C CAPACITOR	1.0UF K		C943	CK73HB1E104K	C CAPACITOR	0.10UF K	
C862	CK73HB1A105K	C CAPACITOR	1.0UF K		C944	CK73HB1E104K	C CAPACITOR	0.10UF K	
C863	C93-1959-05	C CAPACITOR	0.10UF K		C945	CK73GXR0J475K	C CAPACITOR	4.7UF K	
C864	C93-1959-05	C CAPACITOR	0.10UF K		C946	CK73GXR0J475K	C CAPACITOR	4.7UF K	
C865	C93-1959-05	C CAPACITOR	0.10UF K		C948	CC73HCH1H1R5B	C CAPACITOR	1.5PF B	
C866	CC73HCH1H220J	C CAPACITOR	22PF J		C949	CC73HCH1H101J	C CAPACITOR	100PF J	
C867	CC73HCH1H2R5B	C CAPACITOR	2.5PF B		C950	CC73HCH1H101J	C CAPACITOR	100PF J	
C868	CK73HB1A105K	C CAPACITOR	1.0UF K		C951	CC73HCH1H101J	C CAPACITOR	100PF J	
C869	C93-1959-05	C CAPACITOR	0.10UF K		C952	CC73HCH1H101J	C CAPACITOR	100PF J	
C870	C93-1959-05	C CAPACITOR	0.10UF K		C953	CC73JCH1H101J	C CAPACITOR	100PF J	
C871	C93-1959-05	C CAPACITOR	0.10UF K		C954	CC73JCH1H101J	C CAPACITOR	100PF J	
C872	C93-1959-05	C CAPACITOR	0.10UF K		C955	CC73JCH1H101J	C CAPACITOR	100PF J	
C873	CC73HCH1H220J	C CAPACITOR	22PF J		C956	CC73JCH1H101J	C CAPACITOR	100PF J	
C874	CC73HCH1H121J	C CAPACITOR	120PF J		C957	CC73JCH1H101J	C CAPACITOR	100PF J	
C875	C93-1959-05	C CAPACITOR	0.10UF K		C958	CC73JCH1H101J	C CAPACITOR	100PF J	
C876	CC73HCH1H180J	C CAPACITOR	18PF J		C959	CC73JCH1H101J	C CAPACITOR	100PF J	
C877	CK73HBB1H102K	C CAPACITOR	1000PF K		C960	CC73JCH1H101J	C CAPACITOR	100PF J	
C879	CC73HCH1H121J	C CAPACITOR	120PF J		C961	C93-1967-05	C CAPACITOR	470PF K	
C880	CC73HCH1H1R5B	C CAPACITOR	1.5PF B		C962	CC73JCH1H101J	C CAPACITOR	100PF J	
C881	CC73HCH1H010B	C CAPACITOR	1.0PF B		C963	CC73JCH1H101J	C CAPACITOR	100PF J	
C882	CC73HCH1H1R5B	C CAPACITOR	1.5PF B		C964	CC73JCH1H101J	C CAPACITOR	100PF J	
C883	CC73HCH1H020B	C CAPACITOR	2.0PF B		C965	CC73JCH1H101J	C CAPACITOR	100PF J	
C884	C93-1959-05	C CAPACITOR	0.10UF K		C974	CK73GXR0J475K	C CAPACITOR	4.7UF K	
C885	C93-1959-05	C CAPACITOR	0.10UF K		C975	CK73GXR0J475K	C CAPACITOR	4.7UF K	
C887	CC73JCH1H101J	C CAPACITOR	100PF J		C976	CC73JCH1H101J	C CAPACITOR	100PF J	
C889	CC73HCH1H470J	C CAPACITOR	47PF J		C977	CC73JCH1H101J	C CAPACITOR	100PF J	
C890	C93-1959-05	C CAPACITOR	0.10UF K		C978	CC73JCH1H101J	C CAPACITOR	100PF J	
C891	C93-1959-05	C CAPACITOR	0.10UF K		C980	CC73JCH1H101J	C CAPACITOR	100PF J	
C892	CC73JCH1H101J	C CAPACITOR	100PF J		C981	CC73JCH1H101J	C CAPACITOR	100PF J	
C893	C93-1967-05	C CAPACITOR	470PF K		C982	C93-1967-05	C CAPACITOR	470PF K	
C894	C93-1953-05	C CAPACITOR	0.010UF K		C983	C93-1967-05	C CAPACITOR	470PF K	
C895	CC73HCH1H0R5B	C CAPACITOR	0.5PF B		C984	CK73HBB1H471K	C CAPACITOR	470PF K	
C896	CC73JCH1H101J	C CAPACITOR	100PF J		C986	C93-1967-05	C CAPACITOR	470PF K	
C897	CC73JCH1H101J	C CAPACITOR	100PF J		C987	CC73JCH1H101J	C CAPACITOR	100PF J	
C898	CC73JCH1H101J	C CAPACITOR	100PF J		C988	CC73JCH1H101J	C CAPACITOR	100PF J	
C899	C93-1967-05	C CAPACITOR	470PF K		C989	CC73JCH1H101J	C CAPACITOR	100PF J	
C900	CK73HB1A105K	C CAPACITOR	1.0UF K		C990	CC73JCH1H101J	C CAPACITOR	100PF J	
C901	C93-1959-05	C CAPACITOR	0.10UF K		C991	CC73HCH1H101J	C CAPACITOR	100PF J	
C902	C93-1959-05	C CAPACITOR	0.10UF K		C992	CC73HCH1H101J	C CAPACITOR	100PF J	
C903	C93-1959-05	C CAPACITOR	0.10UF K		C993	CC73HCH1H101J	C CAPACITOR	100PF J	
C904	C93-1959-05	C CAPACITOR	0.10UF K		C997	C93-1959-05	C CAPACITOR	0.10UF K	
C905	CK73HB1A105K	C CAPACITOR	1.0UF K						
C906	C93-1959-05	C CAPACITOR	0.10UF K		R2	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	F2,F3,K2,K3
C907	C93-1959-05	C CAPACITOR	0.10UF K		R3	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	F5,F6,K5,K6
C908	CK73HB1A105K	C CAPACITOR	1.0UF K		R15	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
C909	C93-1959-05	C CAPACITOR	0.10UF K		R16	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
C911	C93-1959-05	C CAPACITOR	0.10UF K		R17	RK73HB1J101J	MG RESISTOR	100 J 1/16W	
C912	C93-1959-05	C CAPACITOR	0.10UF K		R18	RK73JB1H474J	MG RESISTOR	470K J 1/20W	
C913	C93-1959-05	C CAPACITOR	0.10UF K		R19	RK73JB1H474J	MG RESISTOR	470K J 1/20W	
C914	C93-1959-05	C CAPACITOR	0.10UF K		R20	RK73JB1H474J	MG RESISTOR	470K J 1/20W	
C915	C93-1967-05	C CAPACITOR	470PF K		R21	RK73JB1H103J	MG RESISTOR	10K J 1/20W	
C916	CK73GB0J106K	C CAPACITOR	10UF K		R22	RK73JB1H474J	MG RESISTOR	470K J 1/20W	
C917	CK73HB1A105K	C CAPACITOR	1.0UF K		R23	RK73JB1H103J	MG RESISTOR	10K J 1/20W	
C918	C93-1959-05	C CAPACITOR	0.10UF K		R24	RK73JB1H474J	MG RESISTOR	470K J 1/20W	
C919	CK73HB1A105K	C CAPACITOR	1.0UF K		R25	RK73JB1H474J	MG RESISTOR	470K J 1/20W	
C920	C93-1959-05	C CAPACITOR	0.10UF K		R26	RK73JB1H104J	MG RESISTOR	100K J 1/20W	
C921	CK73HBB1H472K	C CAPACITOR	4700PF K		R27	RK73JB1H104J	MG RESISTOR	100K J 1/20W	
C922	CK73HB1A105K	C CAPACITOR	1.0UF K		R28	RK73JB1H104J	MG RESISTOR	100K J 1/20W	
C923	CK73HB1A105K	C CAPACITOR	1.0UF K		R29	RK73JB1H104J	MG RESISTOR	100K J 1/20W	
C924	CK73HB1A105K	C CAPACITOR	1.0UF K		R30	RK73JB1H102J	MG RESISTOR	1.0K J 1/20W	
C925	CC73JCH1H101J	C CAPACITOR	100PF J		R31	RK73HH1J183D	MG RESISTOR	18K D 1/16W	
C926	CK73HB1E224K	C CAPACITOR	0.22UF K		R32	RK73HH1J683D	MG RESISTOR	68K D 1/16W	
C927	CK73HB1E224K	C CAPACITOR	0.22UF K		R33	RK73JB1H102J	MG RESISTOR	1.0K J 1/20W	
C928	C93-1959-05	C CAPACITOR	0.10UF K		R34	RK73JB1H104J	MG RESISTOR	100K J 1/20W	
C929	C93-1959-05	C CAPACITOR	0.10UF K		R35	RK73JB1H103J	MG RESISTOR	10K J 1/20W	
C930	C93-1969-05	C CAPACITOR	1000PF K		R36	RK73JB1H474J	MG RESISTOR	470K J 1/20W	
C931	CK73HB1A105K	C CAPACITOR	1.0UF K		R37	RK73HB1J274J	MG RESISTOR	270K J 1/20W	
C932	CK73HB1E224K	C CAPACITOR	0.22UF K		R38	RK73HB1J224J	MG RESISTOR	220K J 1/16W	

△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
R39	RK73HB1J474J	MG RESISTOR	470K J 1/16W		R163	RN73HH1J220D	MG RESISTOR	22 D 1/16W	F5,F6,K5,K6
R40	RK73HH1J474D	MG RESISTOR	470K D 1/16W		R181	RK73HB1J103J	MG RESISTOR	10K J 1/16W	
R41	RK73HH1J474D	MG RESISTOR	470K D 1/16W		R183	RK73HB1J101J	MG RESISTOR	100 J 1/16W	
R42	RK73JB1H102J	MG RESISTOR	1.0K J 1/20W		R184	RK73HB1J682J	MG RESISTOR	6.8K J 1/16W	
R43	RK73JB1H104J	MG RESISTOR	100K J 1/20W		R185	RK73HB1J221J	MG RESISTOR	220 J 1/16W	
R45	RK73JB1H473J	MG RESISTOR	47K J 1/20W		R190	RK73HB1J101J	MG RESISTOR	100 J 1/16W	
R46	RK73JB1H101J	MG RESISTOR	100 J 1/20W		R200	RK73HB1J100J	MG RESISTOR	10 J 1/16W	
R47	RK73JB1H104J	MG RESISTOR	100K J 1/20W		R201	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
R48	RK73JB1H104J	MG RESISTOR	100K J 1/20W		R202	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
R49	RK73JB1H102J	MG RESISTOR	1.0K J 1/20W		R203	RK73HB1J100J	MG RESISTOR	10 J 1/16W	
R50	RK73JB1H102J	MG RESISTOR	1.0K J 1/20W		R204	RK73HB1J104J	MG RESISTOR	100K J 1/16W	
R51	RK73JB1H102J	MG RESISTOR	1.0K J 1/20W		R205	RK73HB1J470J	MG RESISTOR	47 J 1/16W	
R60	R92-3774-05	MG RESISTOR	27		R206	RK73HB1J100J	MG RESISTOR	10 J 1/16W	
R61	R92-3774-05	MG RESISTOR	27		R207	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W	
R62	RK73HB1J474J	MG RESISTOR	470K J 1/16W		R208	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W	
R63	RK73HB1J333J	MG RESISTOR	33K J 1/16W		R209	RK73HB1J223J	MG RESISTOR	22K J 1/16W	
R64	RK73HB1J100J	MG RESISTOR	10 J 1/16W		R210	RK73HB1J124J	MG RESISTOR	120K J 1/16W	
R66	RK73JB1H102J	MG RESISTOR	1.0K J 1/20W		R211	RK73HB1J100J	MG RESISTOR	10 J 1/16W	
R67	RK73JB1H104J	MG RESISTOR	100K J 1/20W		R212	RK73HB1J472J	MG RESISTOR	4.7K J 1/16W	
R68	RK73JB1H104J	MG RESISTOR	100K J 1/20W		R213	RK73HB1J104J	MG RESISTOR	100K J 1/16W	
R70	RK73HH1J473D	MG RESISTOR	47K D 1/16W		R214	RK73HB1J106J	MG RESISTOR	10M J 1/16W	
R71	RK73HH1J473D	MG RESISTOR	47K D 1/16W		R215	RK73HB1J470J	MG RESISTOR	47 J 1/16W	
R72	RK73HB1J474J	MG RESISTOR	470K D 1/16W		R216	RK73HB1J104J	MG RESISTOR	100K J 1/16W	
R73	RK73HB1J223J	MG RESISTOR	22K J 1/16W		R217	RK73HB1J103J	MG RESISTOR	10K J 1/16W	
R74	RK73GB2A471J	MG RESISTOR	470 J 1/10W		R218	RK73HB1J474J	MG RESISTOR	470K J 1/16W	F5,F6,K5,K6
R75	RK73PB2H1R2J	MG RESISTOR	1.2 J 1/2W		R219	RK73HB1J474J	MG RESISTOR	470K J 1/16W	F5,F6,K5,K6
R76	RK73HB1J471J	MG RESISTOR	470 J 1/16W		R220	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W	F5,F6,K5,K6
R77	RK73HH1J223D	MG RESISTOR	22K D 1/16W		R221	RK73HB1J473J	MG RESISTOR	47K J 1/16W	F5,F6,K5,K6
R78	RK73HH1J223D	MG RESISTOR	22K D 1/16W		R230	RK73HB1J473J	MG RESISTOR	47K J 1/16W	
R79	RK73GB2A000J	MG RESISTOR	0.0 J 1/10W		R231	RK73HB1J474J	MG RESISTOR	470K J 1/16W	
R80	RK73JB1H102J	MG RESISTOR	1.0K J 1/20W		R232	RK73HB1J474J	MG RESISTOR	470K J 1/16W	
R81	RK73JB1H102J	MG RESISTOR	1.0K J 1/20W		R233	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	F2,F3,K2,K3
R92	RK73HB1J470J	MG RESISTOR	47 J 1/16W		R240	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
R94	R92-3758-05	MG RESISTOR	1.2		R241	RK73HB1J151J	MG RESISTOR	150 J 1/16W	
R95	RK73HB1J471J	MG RESISTOR	470 J 1/16W		R242	RK73HB1J105J	MG RESISTOR	1.0M J 1/16W	
R96	RK73HB1J101J	MG RESISTOR	100 J 1/16W		R243	RK73HB1J391J	MG RESISTOR	390 J 1/16W	
R100	RK73JB1H104J	MG RESISTOR	100K J 1/20W		R244	RK73HB1J103J	MG RESISTOR	10K J 1/16W	
R101	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		R247	RN73HOAJ181D	MF RESISTOR	180 D 1/16W	
R102	RK73HB1J100J	MG RESISTOR	10 J 1/16W		R248	RN73HH1J220D	MG RESISTOR	22 D 1/16W	
R103	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		R249	RK73HB1J121J	MG RESISTOR	120 J 1/16W	
R104	RK73HB1J100J	MG RESISTOR	10 J 1/16W		R250	RK73HB1J121J	MG RESISTOR	120 J 1/16W	
R105	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R251	RK73HB1J680J	MG RESISTOR	68 J 1/16W	
R106	RK73HB1J470J	MG RESISTOR	47 J 1/16W		R260	RN73HH1J151D	MG RESISTOR	150 J 1/16W	F5,F6,K5,K6
R107	RK73HB1J100J	MG RESISTOR	10 J 1/16W		R261	RN73HH1J220D	MG RESISTOR	22 D 1/16W	F5,F6,K5,K6
R108	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W		R281	RK73HB1J154J	MG RESISTOR	150K J 1/16W	
R109	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W		R283	RK73HB1J101J	MG RESISTOR	100 J 1/16W	
R110	RK73HB1J223J	MG RESISTOR	22K J 1/16W		R290	RK73HB1J101J	MG RESISTOR	100 J 1/16W	
R111	RK73HB1J124J	MG RESISTOR	120K J 1/16W		R300	RK73HB1J181J	MG RESISTOR	180 J 1/16W	
R112	RK73HB1J100J	MG RESISTOR	10 J 1/16W		R301	RK73HB1J330J	MG RESISTOR	33 J 1/16W	
R113	RK73HB1J472J	MG RESISTOR	4.7K J 1/16W		R302	RK73HB1J181J	MG RESISTOR	180 J 1/16W	
R114	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R303	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
R115	RK73HB1J106J	MG RESISTOR	10M J 1/16W		R304	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
R116	RK73HB1J470J	MG RESISTOR	47 J 1/16W		R310	RK73HB1J151J	MG RESISTOR	150 J 1/16W	F2,F3,K2,K3
R117	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R310	RK73HB1J121J	MG RESISTOR	120 J 1/16W	F5,F6,K5,K6
R119	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W		R311	RK73HB1J390J	MG RESISTOR	39 J 1/16W	F2,F3,K2,K3
R120	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W		R311	RK73HB1J470J	MG RESISTOR	47 J 1/16W	F5,F6,K5,K6
R122	RK73HB1J103J	MG RESISTOR	10K J 1/16W		R312	RK73HB1J151J	MG RESISTOR	150 J 1/16W	F2,F3,K2,K3
R123	RK73HB1J473J	MG RESISTOR	47K J 1/16W		R312	RK73HB1J121J	MG RESISTOR	120 J 1/16W	F5,F6,K5,K6
R125	RK73HB1J333J	MG RESISTOR	33K J 1/16W	F2,F3,K2,K3	R313	RK73HB1J560J	MG RESISTOR	56 J 1/16W	
R125	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	F5,F6,K5,K6	R314	RK73HB1J122J	MG RESISTOR	1.2K J 1/16W	
R127	RK73HB1J474J	MG RESISTOR	470K J 1/16W	F5,F6,K5,K6	R316	RK73HB1J392J	MG RESISTOR	3.9K J 1/16W	
R128	RK73HB1J474J	MG RESISTOR	470K J 1/16W	F5,F6,K5,K6	R317	RK73HB1J471J	MG RESISTOR	470 J 1/16W	
R129	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W	F5,F6,K5,K6	R321	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
R130	RK73HB1J473J	MG RESISTOR	47K J 1/16W	F5,F6,K5,K6	R323	RK73HB1J332J	MG RESISTOR	3.3K J 1/16W	
R132	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	F2,F3,K2,K3	R324	RK73HB1J270J	MG RESISTOR	27 J 1/16W	F2,F3,K2,K3
R140	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		R324	RK73HB1J470J	MG RESISTOR	47 J 1/16W	F5,F6,K5,K6
R141	RK73HB1J391J	MG RESISTOR	390 J 1/16W		R325	RK73HB1J472J	MG RESISTOR	4.7K J 1/16W	F2,F3,K2,K3
R142	RK73HB1J151J	MG RESISTOR	150 J 1/16W		R325	RK73HB1J392J	MG RESISTOR	3.9K J 1/16W	F5,F6,K5,K6
R143	RK73HB1J105J	MG RESISTOR	1.0M J 1/16W		R326	RK73HB1J330J	MG RESISTOR	33 J 1/16W	F2,F3,K2,K3
R144	RK73HB1J103J	MG RESISTOR	10K J 1/16W		R326	RK73HB1J331J	MG RESISTOR	330 J 1/16W	F5,F6,K5,K6
R146	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R327	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
R147	RN73HH1J151D	MG RESISTOR	150 D 1/16W	F2,F3,K2,K3	R330	RK73HB1J220J	MG RESISTOR	22 J 1/16W	F2,F3,K2,K3
R147	RN73HOAJ121D	MF RESISTOR	120 D 1/16W	F5,F6,K5,K6	R330	RK73HB1J8R2J	MG RESISTOR	8.2 J 1/16W	F5,F6,K5,K6
R148	RN73HH1J220D	MG RESISTOR	22 D 1/16W		R331	RK73HB1J472J	MG RESISTOR	4.7K J 1/16W	F2,F3,K2,K3
R152	RK73HB1J474J	MG RESISTOR	470K J 1/16W		R331	RK73HB1J392J	MG RESISTOR	3.9K J 1/16W	F5,F6,K5,K6
R153	RK73HB1J474J	MG RESISTOR	470K J 1/16W		R333	RK73FB2B000J	MG RESISTOR	0.0 J 1/8W	F2,F3,K2,K3
R161	RK73HB1J104J	MG RESISTOR	100K J 1/16W	F5,F6,K5,K6	R334	RK73HB1J332J	MG RESISTOR	3.3K J 1/16W	
R162	RN73HOAJ181D	MF RESISTOR	180 J 1/16W	F5,F6,K5,K6	R335	RK73FB2B000J	MG RESISTOR	0.0 J 1/8W	F2,F3,K2,K3

△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
R336	RK73GB2A000J	MG RESISTOR	0.0 J 1/10W		R607	RK73HB1J471J	MG RESISTOR	470 J 1/16W	
R350	RK73GB2A823J	MG RESISTOR	82K J 1/10W		R608	RK73JB1H472J	MG RESISTOR	4.7K J 1/20W	
R360	R92-3785-05	MG RESISTOR	1.2		R609	RK73HB1J104J	MG RESISTOR	100K J 1/16W	
R362	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W		R610	RK73HB1J470J	MG RESISTOR	47 J 1/16W	
R371	RK73GB2A000J	MG RESISTOR	0.0 J 1/10W		R660	RK73HB1J103J	MG RESISTOR	10K J 1/16W	
R390	RK73HB1J273J	MG RESISTOR	27K J 1/16W		R661	RK73HB1J101J	MG RESISTOR	100 J 1/16W	
R391	RK73HB1J473J	MG RESISTOR	47K J 1/16W		R662	RK73HB1J274J	MG RESISTOR	270K J 1/16W	
R392	RK73HB1J473J	MG RESISTOR	47K J 1/16W		R663	RK73HB1J271J	MG RESISTOR	270 J 1/16W	
R393	RK73HB1J470J	MG RESISTOR	47 J 1/16W		R664	RK73HB1J180J	MG RESISTOR	18 J 1/16W	
R394	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		R665	RK73HB1J271J	MG RESISTOR	270 J 1/16W	
R400	R92-3756-05	MG RESISTOR	0.22		R670	RK73HB1J470J	MG RESISTOR	47 J 1/16W	
R401	RK73JB1H103J	MG RESISTOR	10K J 1/20W		R671	RK73HB1J681J	MG RESISTOR	680 J 1/16W	
R402	R92-3756-05	MG RESISTOR	0.22		R672	RK73HB1J104J	MG RESISTOR	100K J 1/16W	
R403	RK73HB1J270J	MG RESISTOR	27 J 1/16W		R673	RK73HB1J473J	MG RESISTOR	47K J 1/16W	
R404	RK73HH1J472D	MG RESISTOR	4.7K D 1/16W		R674	RK73HB1J104J	MG RESISTOR	100K J 1/16W	
R405	RK73HH1J472D	MG RESISTOR	4.7K D 1/16W		R675	RK73HB1J333J	MG RESISTOR	33K J 1/16W	
R406	RK73HB1J471J	MG RESISTOR	470 J 1/16W		R676	RK73HB1J101J	MG RESISTOR	100 J 1/16W	
R407	RK73HH1J333D	MG RESISTOR	33K D 1/16W		R677	RK73HB1J101J	MG RESISTOR	100 J 1/16W	
R408	RK73HH1J562D	MG RESISTOR	5.6K D 1/16W		R700	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W	
R409	RK73HB1J470J	MG RESISTOR	47 J 1/16W		R701	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
R410	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		R702	RK73HB1J100J	MG RESISTOR	10 J 1/16W	
R412	RK73HB1J332J	MG RESISTOR	3.3K J 1/16W		R703	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
R414	RK73HB1J153J	MG RESISTOR	15K J 1/16W	F2,F3,K2,K3	R704	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W	
R414	RK73HB1J183J	MG RESISTOR	18K J 1/16W	F5,F6,K5,K6	R705	RK73HB1J153J	MG RESISTOR	15K J 1/16W	
R416	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		R706	RK73HB1J333J	MG RESISTOR	33K J 1/16W	
R417	RK73HB1J223J	MG RESISTOR	22K J 1/16W		R707	RK73HB1J100J	MG RESISTOR	10 J 1/16W	
R418	RK73HB1J223J	MG RESISTOR	22K J 1/16W		R708	RK73HB1J681J	MG RESISTOR	680 J 1/16W	
R420	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R710	RK73HB1J103J	MG RESISTOR	10K J 1/16W	
R422	RK73JB1H102J	MG RESISTOR	1.0K J 1/20W		R711	RK73JB1H102J	MG RESISTOR	1.0K J 1/20W	
R424	RK73HH1J682D	MG RESISTOR	6.8K D 1/16W		R713	RK73HB1J103J	MG RESISTOR	10K J 1/16W	
R425	RK73HB1J152J	MG RESISTOR	1.5K J 1/16W		R715	RK73HB1J103J	MG RESISTOR	10K J 1/16W	
R500	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		R717	RK73HB1J103J	MG RESISTOR	10K J 1/16W	
R501	RK73HB1J470J	MG RESISTOR	47 J 1/16W		R718	RK73JB1H103J	MG RESISTOR	10K J 1/20W	
R502	RK73HB1J681J	MG RESISTOR	680 J 1/16W		R719	RK73JB1H103J	MG RESISTOR	10K J 1/20W	
R503	RK73HB1J181J	MG RESISTOR	180 J 1/16W		R721	RK73HB1J103J	MG RESISTOR	10K J 1/16W	
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R520	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R725	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
R521	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R726	RK73JB1H103J	MG RESISTOR	10K J 1/20W	
R522	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R727	RK73JB1H223J	MG RESISTOR	22K J 1/20W	
R532	RK73HB1J820J	MG RESISTOR	82 J 1/16W	F2,F3,K2,K3	R728	RK73JB1H473J	MG RESISTOR	47K J 1/20W	
R532	RK73HB1J680J	MG RESISTOR	68 J 1/16W	F5,F6,K5,K6	R729	RK73JB1H103J	MG RESISTOR	10K J 1/20W	
R533	RK73HB1J181J	MG RESISTOR	180 J 1/16W	F2,F3,K2,K3	R730	RK73JB1H103J	MG RESISTOR	10K J 1/20W	
R533	RK73HB1J151J	MG RESISTOR	150 J 1/16W	F5,F6,K5,K6	R731	RK73JB1H103J	MG RESISTOR	10K J 1/20W	
R534	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R732	RK73JB1H103J	MG RESISTOR	10K J 1/20W	
R535	RK73GB2A000J	MG RESISTOR	0.0 J 1/10W		R733	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
R536	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R734	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
R537	RK73HB1J154J	MG RESISTOR	150K J 1/16W		R736	RK73GH2A49R9D	MG RESISTOR	49.9 D 1/10W	
R538	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R737	RK73HH1J102D	MG RESISTOR	1.0K D 1/16W	
R539	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R738	RK73HH1J102D	MG RESISTOR	1.0K D 1/16W	
R540	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R739	RK73JB1H102J	MG RESISTOR	1.0K J 1/20W	
R542	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		R744	RK73JB1H472J	MG RESISTOR	4.7K J 1/20W	
R546	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		R745	RK73JB1H104J	MG RESISTOR	100K J 1/20W	
R547	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		R746	RK73JB1H104J	MG RESISTOR	100K J 1/20W	
R550	RK73HB1J103J	MG RESISTOR	10K J 1/16W		R747	RK73JB1H472J	MG RESISTOR	4.7K J 1/20W	
R551	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R748	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
R552	RK73HB1J684J	MG RESISTOR	680K J 1/16W		R750	RK73HB1J332J	MG RESISTOR	3.3K J 1/16W	
R553	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R753	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
R554	RK73HB1J103J	MG RESISTOR	10K J 1/16W		R754	RK73HB1J100J	MG RESISTOR	10 J 1/16W	
R555	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R755	RK73JB1H222J	MG RESISTOR	2.2K J 1/20W	
R557	RK73HB1J684J	MG RESISTOR	680K J 1/16W		R756	RK73HB1J100J	MG RESISTOR	10 J 1/16W	
R558	RK73HB1J104J	MG RESISTOR	100K J 1/16W		R757	RK73JB1H222J	MG RESISTOR	2.2K J 1/20W	
R581	RK73HB1J470J	MG RESISTOR	47 J 1/16W		R758	RK73HB1J100J	MG RESISTOR	10 J 1/16W	
R582	RK73HB1J271J	MG RESISTOR	270 J 1/16W		R759	RK73JB1H472J	MG RESISTOR	4.7K J 1/20W	
R583	RK73HB1J682J	MG RESISTOR	6.8K J 1/16W		R760	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W	
R584	RK73HB1J103J	MG RESISTOR	10K J 1/16W		R761	RK73JB1H104J	MG RESISTOR	100K J 1/20W	
R585	RK73HB1J331J	MG RESISTOR	330 J 1/16W		R762	RK73HB1J222J	MG RESISTOR	2.2K J 1/16W	
R586	RK73HB1J150J	MG RESISTOR	15 J 1/16W		R763	RK73HB1J122J	MG RESISTOR	1.2K J 1/16W	
R587	RK73HB1J331J	MG RESISTOR	330 J 1/16W		R764	RK73HB1J561J	MG RESISTOR	560 J 1/16W	
R588	RK73GB2A220J	MG RESISTOR	22 J 1/10W		R765	RK73HB1J101J	MG RESISTOR	100 J 1/16W	
R600	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W		R770	RK73JB1H473J	MG RESISTOR	47K J 1/20W	
R601	RK73HB1J681J	MG RESISTOR	680 J 1/16W		R771	RK73JB1H473J	MG RESISTOR	47K J 1/20W	
R602	RK73JB1H103J	MG RESISTOR	10K J 1/20W		R772	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W	
R603	RK73HH1J391D	MG RESISTOR	390 D 1/16W		R773	RK73HB1J473J	MG RESISTOR	47K J 1/16W	
R604	RK73HB1J220J	MG RESISTOR	22 J 1/16W		R774	RK73HB1J473J	MG RESISTOR	47K J 1/16W	
R605	RK73HB1J182J	MG RESISTOR	1.8K J 1/16W		R775	RK73JB1H473J	MG RESISTOR	47K J 1/20W	
R606	RK73HB1J562J	MG RESISTOR	5.6K J 1/16W		R776	RK73GB2A000J	MG RESISTOR	0.0 J 1/10W	



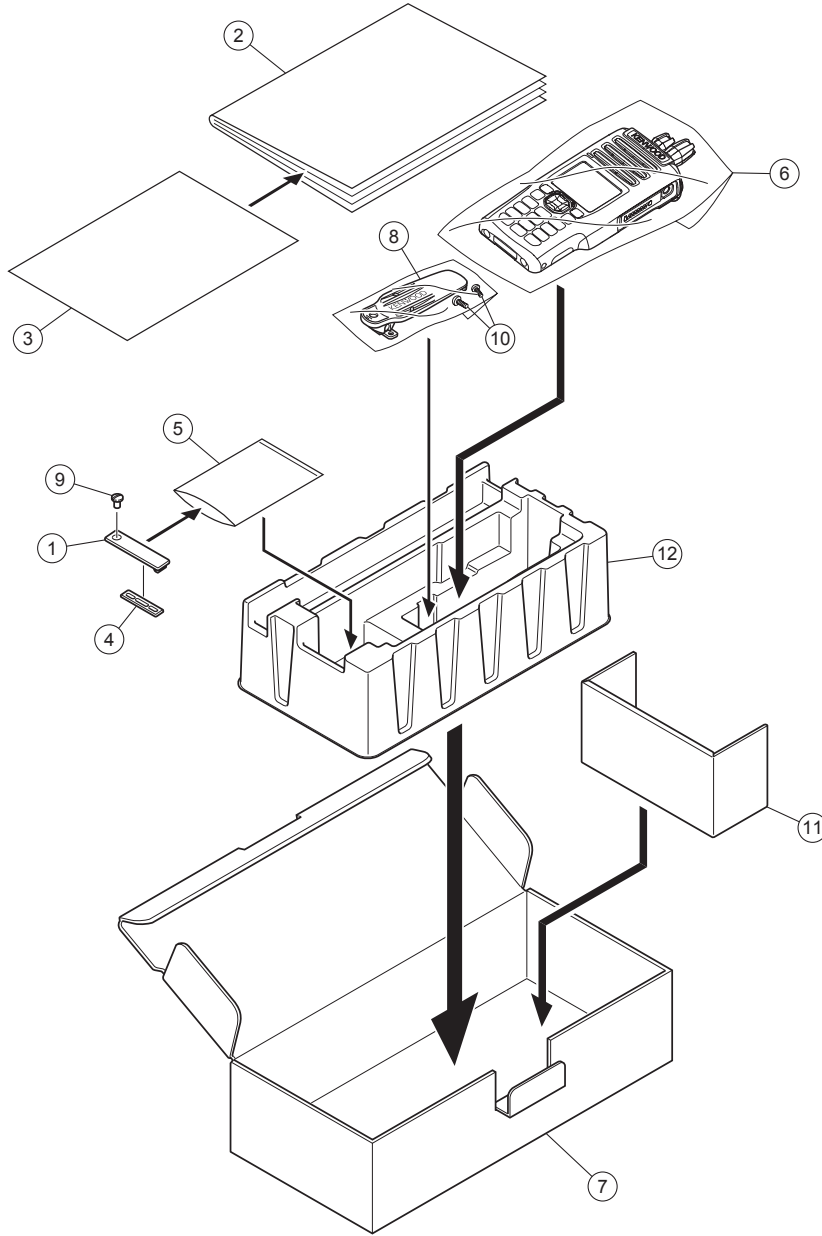
△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
R777	RK73GB2A000J	MG RESISTOR	0.0 J 1/10W		R932	RK73HB1J182J	MG RESISTOR	1.8K J 1/16W	
R778	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		R933	RK73HB1J182J	MG RESISTOR	1.8K J 1/16W	
R779	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		R934	RK73HB1J182J	MG RESISTOR	1.8K J 1/16W	
R780	RK73HB1J220J	MG RESISTOR	22 J 1/16W		R935	RK73HB1J182J	MG RESISTOR	1.8K J 1/16W	
R800	RK73HH1J274D	MG RESISTOR	270K D 1/16W		R937	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W	
R803	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		R938	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W	
R805	RK73JB1H472J	MG RESISTOR	4.7K J 1/20W		R939	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W	
R806	RK73JB1H103J	MG RESISTOR	10K J 1/20W		R940	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W	
R808	RK73HB1J332J	MG RESISTOR	3.3K J 1/16W		L1	LB73F0AW-002	CHIP FERRITE BEADS		
R810	RK73JB1H104J	MG RESISTOR	100K J 1/20W		L2	LB73H0AV-003	CHIP FERRITE BEADS		
R814	RK73JB1H104J	MG RESISTOR	100K J 1/20W		L3	LB73H0AV-003	CHIP FERRITE BEADS		
R819	RK73HB1J101J	MG RESISTOR	100 J 1/16W		L30	LB73G0AK-001	CHIP FERRITE BEADS		
R823	RK73JB1H104J	MG RESISTOR	100K J 1/20W		L31	LB73H0AV-002	CHIP FERRITE BEADS		
R824	RK73JB1H102J	MG RESISTOR	1.0K J 1/20W		L32	LB73G0AM-004	CHIP FERRITE BEADS		
R825	RK73JB1H104J	MG RESISTOR	100K J 1/20W		L33	L33-3034-05	SMALL FIXED INDUCTOR(2.2UH)		
R826	RK73HB1J222J	MG RESISTOR	2.2K J 1/16W		L34	LB73G0AM-004	CHIP FERRITE BEADS		
R827	RK73HB1J471J	MG RESISTOR	470 J 1/16W		L35	LB73G0AK-001	CHIP FERRITE BEADS		
R828	RK73HB1J822J	MG RESISTOR	8.2K J 1/16W		L36	LB73G0AK-001	CHIP FERRITE BEADS		
R829	RK73HB1J222J	MG RESISTOR	2.2K J 1/16W		L38	LB73H0AV-002	CHIP FERRITE BEADS		
R830	RK73JB1H102J	MG RESISTOR	1.0K J 1/20W		L39	LB73G0BJ-002	CHIP FERRITE BEADS		
R831	RK73HB1J101J	MG RESISTOR	100 J 1/16W		L40	LB73H0AV-002	CHIP FERRITE BEADS		
R832	RK73HB1J101J	MG RESISTOR	100 J 1/16W		L60	L41-1502-70	SMALL FIXED INDUCTOR(15UH)		
R833	RK73HB1J101J	MG RESISTOR	100 J 1/16W		L61	LB73H0AV-002	CHIP FERRITE BEADS		
R834	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W		L61	LB73H0AV-002	CHIP FERRITE BEADS		
R835	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W		L81	LB73G0AK-001	CHIP FERRITE BEADS		
R836	RK73HB1J101J	MG RESISTOR	100 J 1/16W		L100	LB73H0AV-003	CHIP FERRITE BEADS		
R837	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L101	LB73H0AV-004	CHIP FERRITE BEADS		
R838	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L102	LB73H0AV-004	CHIP FERRITE BEADS		
R839	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L140	LB73H0AV-003	CHIP FERRITE BEADS		
R840	RK73JB1H472J	MG RESISTOR	4.7K J 1/20W		L141	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		
R841	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L142	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		
R842	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L143	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		
R849	RK73HB1J331J	MG RESISTOR	330 J 1/16W		L144	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		
R850	RK73JB1H102J	MG RESISTOR	1.0K J 1/20W		L145	L41-1578-08	SMALL FIXED INDUCTOR(15NH)		F2,F3,K2,K3
R851	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L145	L41-1878-08	SMALL FIXED INDUCTOR(18NH)		F5,F6,K5,K6
R852	RK73JB1H101J	MG RESISTOR	100 J 1/20W		L146	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		
R853	RK73JB1H101J	MG RESISTOR	100 J 1/20W		L147	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		
R855	RK73HB1J151J	MG RESISTOR	150 J 1/16W		L160	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		F5,F6,K5,K6
R856	RK73HB1J390J	MG RESISTOR	39 J 1/16W		L161	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		F5,F6,K5,K6
R857	RK73HB1J151J	MG RESISTOR	150 J 1/16W		L162	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		F5,F6,K5,K6
R858	RK73JB1H103J	MG RESISTOR	10K J 1/20W		L163	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		F5,F6,K5,K6
R859	RK73JB1H103J	MG RESISTOR	10K J 1/20W		L164	L41-2778-08	SMALL FIXED INDUCTOR(27NH)		F5,F6,K5,K6
R860	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L165	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		F5,F6,K5,K6
R861	RK73JB1H103J	MG RESISTOR	10K J 1/20W		L166	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		F5,F6,K5,K6
R862	RK73JB1H473J	MG RESISTOR	47K J 1/20W		L180	LK73H0AM27NJ	SMALL FIXED INDUCTOR(27NH)		F2,F3,K2,K3
R865	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L180	LK73H0AM33NJ	SMALL FIXED INDUCTOR(33NH)		F5,F6,K5,K6
R867	RK73HB1J100J	MG RESISTOR	10 J 1/16W		L183	LK73H0AM12NJ	SMALL FIXED INDUCTOR(12NH)		
R900	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L185	LK73H0AM22NJ	SMALL FIXED INDUCTOR(22NH)		
R901	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L186	LK73H0AM22NJ	SMALL FIXED INDUCTOR(22NH)		
R902	RK73HH1J104D	MG RESISTOR	100K D 1/16W		L200	LB73H0AV-003	CHIP FERRITE BEADS		
R903	RK73HH1J103D	MG RESISTOR	10K D 1/16W		L201	LB73H0AV-004	CHIP FERRITE BEADS		
R904	RK73HH1J104D	MG RESISTOR	100K D 1/16W		L240	LB73H0AV-003	CHIP FERRITE BEADS		
R905	RK73HB1J100J	MG RESISTOR	10 J 1/16W		L241	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		
R906	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L242	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		
R907	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L243	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		
R908	RK73HB1J102J	MG RESISTOR	1.0K J 1/16W		L244	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		
R909	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L245	L41-1878-08	SMALL FIXED INDUCTOR(18NH)		F2,F3,K2,K3
R910	RK73HB1J222J	MG RESISTOR	2.2K J 1/16W		L245	L41-2778-08	SMALL FIXED INDUCTOR(27NH)		F5,F6,K5,K6
R911	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L246	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		
R912	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L247	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		
R913	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L260	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		F5,F6,K5,K6
R915	RK73HH1J123D	MG RESISTOR	12K D 1/16W		L261	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		F5,F6,K5,K6
R916	RK73HH1J123D	MG RESISTOR	12K D 1/16W		L262	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		F5,F6,K5,K6
R917	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L263	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		F5,F6,K5,K6
R918	RK73HH1J154D	MG RESISTOR	150K D 1/16W		L264	L41-3978-08	SMALL FIXED INDUCTOR(39NH)		F5,F6,K5,K6
R919	RK73HH1J154D	MG RESISTOR	150K D 1/16W		L265	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		F5,F6,K5,K6
R920	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L266	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)		F5,F6,K5,K6
R921	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L280	LK73H0AM33NJ	SMALL FIXED INDUCTOR(33NH)		F2,F3,K2,K3
R922	RK73HH1J123D	MG RESISTOR	12K D 1/16W		L280	LK73H0AM39NJ	SMALL FIXED INDUCTOR(39NH)		F5,F6,K5,K6
R923	RK73HH1J123D	MG RESISTOR	12K D 1/16W		L285	LK73H0AM22NJ	SMALL FIXED INDUCTOR(22NH)		F2,F3,K2,K3
R924	RK73HH1J154D	MG RESISTOR	150K D 1/16W		L285	LK73H0AM27NJ	SMALL FIXED INDUCTOR(27NH)		F5,F6,K5,K6
R925	RK73HH1J154D	MG RESISTOR	150K D 1/16W		L286	LK73H0AM22NJ	SMALL FIXED INDUCTOR(22NH)		F2,F3,K2,K3
R926	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L286	LK73H0AM27NJ	SMALL FIXED INDUCTOR(27NH)		F5,F6,K5,K6
R927	RK73JB1H474J	MG RESISTOR	470K J 1/20W		L290	LK73H0AM12NJ	SMALL FIXED INDUCTOR(12NH)		F2,F3,K2,K3
R928	RK73JB1H473J	MG RESISTOR	47K J 1/20W		L290	LK73H0AM15NJ	SMALL FIXED INDUCTOR(15NH)		F5,F6,K5,K6
R929	RK73HB1J471J	MG RESISTOR	470 J 1/16W		L303	LK73G0AFR10J	SMALL FIXED INDUCTOR(100NH)		
R930	RK73HB1J471J	MG RESISTOR	470 J 1/16W		L310	LK73H0AM10NJ	SMALL FIXED INDUCTOR(10NH)		
R931	RK73HB1J000J	MG RESISTOR	0.0 J 1/16W		L311	LK73H0AM15NJ	SMALL FIXED INDUCTOR(15NH)		F2,F3,K2,K3

△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
L311	LK73H0AM12NJ	SMALL FIXED INDUCTOR(12NH)		F5,F6,K5,K6	L806	L79-1984-05	FILTER		
L312	L41-1575-53	SMALL FIXED INDUCTOR(15NH)		F2,F3,K2,K3	L807	LB73H0AV-002	CHIP FERRITE BEADS		
L312	L41-2275-53	SMALL FIXED INDUCTOR(22NH)		F5,F6,K5,K6	L808	LB73G0AK-001	CHIP FERRITE BEADS		
L313	LB73G0BD-005	CHIP FERRITE BEADS			L809	LB73G0AM-004	CHIP FERRITE BEADS		
L320	LK73H0AM12NJ	SMALL FIXED INDUCTOR(12NH)		F2,F3,K2,K3	L810	LB73G0AM-004	CHIP FERRITE BEADS		
L321	LK73H0AM12NJ	SMALL FIXED INDUCTOR(12NH)		F5,F6,K5,K6	L811	LB73H0AV-002	CHIP FERRITE BEADS		
L322	LR79Z0CA15NJ	CHIP INDUCTOR		F2,F3,K2,K3	L812	LB73H0AV-002	CHIP FERRITE BEADS		
L322	L41-1075-43	SMALL FIXED INDUCTOR(10NH)		F5,F6,K5,K6	L813	LB73G0AM-004	CHIP FERRITE BEADS		
L323	LB73F0AW-002	CHIP FERRITE BEADS			L814	LB73H0AV-002	CHIP FERRITE BEADS		
L330	L41-1563-47	SMALL FIXED INDUCTOR(1.5NH)		F5,F6,K5,K6	L815	LB73G0AM-004	CHIP FERRITE BEADS		
L331	LR79Z0DC45N5J	CHIP INDUCTOR			L850	L92-0487-05	CHIP FERRITE		
L332	LB73F0AW-002	CHIP FERRITE BEADS			L851	L92-0487-05	CHIP FERRITE		
L350	L41-1288-55	SMALL FIXED INDUCTOR(120NH)		F2,F3,K2,K3	L852	LK73H0AM10NJ	SMALL FIXED INDUCTOR(10NH)		
L350	L41-1888-55	SMALL FIXED INDUCTOR(180NH)		F5,F6,K5,K6	L853	L79-1985-05	FILTER(1575.42MHZ)		
L352	LR79Z0DD16N9J	CHIP INDUCTOR			L854	L92-0487-05	CHIP FERRITE		
L353	LR79Z0DD16N9J	CHIP INDUCTOR			L855	L79-1987-05	FILTER(2450MHZ)		
L354	L41-5669-16	SMALL FIXED INDUCTOR(5.6NH)		F5,F6,K5,K6	L856	LK73H0AM6N8J	SMALL FIXED INDUCTOR(6.8NH)		
L360	LR79Z0CAR22J	CHIP INDUCTOR			L857	L79-1985-05	FILTER(1575.42MHZ)		
L370	LR79Z0DD21N9J	CHIP INDUCTOR			L858	L41-3965-55	SMALL FIXED INDUCTOR(3.9NH)		
L500	LR77Z0AER56J	CHIP INDUCTOR			L859	L41-3965-55	SMALL FIXED INDUCTOR(3.9NH)		
L501	LB73G0BD-005	CHIP FERRITE BEADS			L861	L92-0487-05	CHIP FERRITE		
L502	LR77Z0AER27J	CHIP INDUCTOR			L862	L92-0487-05	CHIP FERRITE		
L503	L41-1875-53	SMALL FIXED INDUCTOR(18NH)		F2,F3,K2,K3	L863	L40-2263-71	SMALL FIXED INDUCTOR(2.2NH)		
L503	L41-2275-53	SMALL FIXED INDUCTOR(22NH)		F5,F6,K5,K6	L902	LB73H0AV-002	CHIP FERRITE BEADS		
L520	L41-8268-14	SMALL FIXED INDUCTOR(8.2NH)			L903	LB73G0AM-004	CHIP FERRITE BEADS		
L522	L41-8268-14	SMALL FIXED INDUCTOR(8.2NH)			L904	LB73G0AM-004	CHIP FERRITE BEADS		
L523	L41-8268-14	SMALL FIXED INDUCTOR(8.2NH)			L905	LK73H0AM1N0S	SMALL FIXED INDUCTOR(1.0NH)		
L530	L41-8268-14	SMALL FIXED INDUCTOR(8.2NH)							
L531	LB73G0BD-005	CHIP FERRITE BEADS			A30	W02-3785-05	DC/DC CONVERTER		
L532	L41-2285-14	SMALL FIXED INDUCTOR(220NH)			CN1	G0B-0023-00	EARTH SPRING		
L535	L41-8268-14	SMALL FIXED INDUCTOR(8.2NH)			CN3	G0B-0023-00	EARTH SPRING		
L540	L41-3978-14	SMALL FIXED INDUCTOR(39NH)		F2,F3,K2,K3	CN4	E40-6970-05	PIN ASSY(20P)		
L540	L41-4778-14	SMALL FIXED INDUCTOR(47NH)		F5,F6,K5,K6	CN7	J19-5386-05	HOLDER		
L580	LK73H0AM15NJ	SMALL FIXED INDUCTOR(15NH)		F2,F3,K2,K3	CN8	E40-6883-05	FLAT CABLE CONNECTOR(6P)		
L580	LK73H0AM18NJ	SMALL FIXED INDUCTOR(18NH)		F5,F6,K5,K6	CN9	E40-6962-05	FLAT CABLE CONNECTOR(35P)		
L581	LK73H0AM15NJ	SMALL FIXED INDUCTOR(15NH)		F2,F3,K2,K3	CN10	E40-6720-05	SOCKET FOR PIN ASSY(20P)		
L581	LK73H0AM18NJ	SMALL FIXED INDUCTOR(18NH)		F5,F6,K5,K6	CN11	E40-6720-05	SOCKET FOR PIN ASSY(20P)		
L582	LK73H0AM22NJ	SMALL FIXED INDUCTOR(22NH)		F2,F3,K2,K3	CN12	E41-3167-05	FLAT CABLE CONNECTOR(14PIN)		
L582	LK73H0AM27NJ	SMALL FIXED INDUCTOR(27NH)		F5,F6,K5,K6	CN13	E41-1486-05	PIN ASSY(2P)		
L600	LK73G0AQ100K	SMALL FIXED INDUCTOR(10UH)			CN14	G0B-0005-00	EARTH SPRING		
L601	LB73H0AV-003	CHIP FERRITE BEADS			CN15	G0B-0005-00	EARTH SPRING		
L602	LB73H0AV-003	CHIP FERRITE BEADS			CN16	G0B-0005-00	EARTH SPRING		
L603	L41-3988-55	SMALL FIXED INDUCTOR(390NH)			CN17	G0B-0005-00	EARTH SPRING		
L604	L41-2785-53	SMALL FIXED INDUCTOR(0.27UH)			CN18	G0B-0005-00	EARTH SPRING		
L605	LB73H0AV-003	CHIP FERRITE BEADS			CN20	G0B-0005-00	EARTH SPRING		
L606	L41-4798-14	SMALL FIXED INDUCTOR(4.7UF)			CN21	G0B-0005-00	EARTH SPRING		
L607	LB73H0AV-003	CHIP FERRITE BEADS			CN301	E23-1278-05	TERMINAL		
L608	LB73H0AV-003	CHIP FERRITE BEADS			CN602	E23-1278-05	TERMINAL		
L609	L41-1885-53	SMALL FIXED INDUCTOR(0.18UH)			CN603	G0B-0002-00	EARTH SPRING		
L610	LK73G0AQ100K	SMALL FIXED INDUCTOR(10UH)			CP100	RK74HB1J100J	NET RESISTOR	10 J 1/16W	
L611	LK73G0AQ100K	SMALL FIXED INDUCTOR(10UH)			CP200	RK74HB1J100J	NET RESISTOR	10 J 1/16W	
L612	L41-2285-53	SMALL FIXED INDUCTOR(0.22UH)			CP600	RK74HB1J100J	NET RESISTOR	10 J 1/16W	
L613	LB73H0AV-003	CHIP FERRITE BEADS			CP601	RK74HB1J100J	NET RESISTOR	10 J 1/16W	
L614	LB73H0AV-003	CHIP FERRITE BEADS			CP700	RK74HB1J100J	NET RESISTOR	10 J 1/16W	
L660	LK73G0AQR33K	SMALL FIXED INDUCTOR(330NH)			CP701	RK74HB1J101J	NET RESISTOR	100 J 1/16W	
L661	LB73H0AV-002	CHIP FERRITE BEADS			CP702	RK74HB1J101J	NET RESISTOR	100 J 1/16W	
L662	LK73G0AQR82K	SMALL FIXED INDUCTOR(820NH)			CP850	RK74HB1J100J	NET RESISTOR	10 J 1/16W	
L670	LK73G0AQR82K	SMALL FIXED INDUCTOR(820NH)			CP851	RK74HB1J100J	NET RESISTOR	10 J 1/16W	
L671	LK73G0AQR47K	SMALL FIXED INDUCTOR(470NH)			CP900	RK74HB1J100J	NET RESISTOR	10 J 1/16W	
L672	LB73H0AV-002	CHIP FERRITE BEADS			CP901	RK74HB1J101J	NET RESISTOR	100 J 1/16W	
L673	L41-8288-14	SMALL FIXED INDUCTOR(820NH)			CP902	RK74HB1J101J	NET RESISTOR	100 J 1/16W	
L700	LB73H0AV-003	CHIP FERRITE BEADS			CP903	RK74HB1J101J	NET RESISTOR	100 J 1/16W	
L701	LK73G0AQ4R7K	SMALL FIXED INDUCTOR(4.7UH)			CP904	RK74HB1J101J	NET RESISTOR	100 J 1/16W	
L702	LB73H0AV-002	CHIP FERRITE BEADS			CP905	RK74HB1J100J	NET RESISTOR	10 J 1/16W	
L703	LB73H0AV-002	CHIP FERRITE BEADS			CP906	RK74HB1J100J	NET RESISTOR	10 J 1/16W	
L704	LB73H0AV-002	CHIP FERRITE BEADS			CP907	RK74HA1J100J	NET RESISTOR	10 J 1/16W	
L705	LB73G0AM-004	CHIP FERRITE BEADS			CP908	RK74HB1J100J	NET RESISTOR	10 J 1/16W	
L706	L92-1101-05	CHIP FERRITE			CP909	RK74HB1J104J	NET RESISTOR	100K J 1/16W	
L708	L92-1101-05	CHIP FERRITE			CP910	RK74HB1J101J	NET RESISTOR	100 J 1/16W	
L710	LB73G0AK-001	CHIP FERRITE BEADS			E1	F10-3224-05	SHIELDING CASE		
L711	LB73G0AK-001	CHIP FERRITE BEADS			E3	F10-3244-05	SHIELDING CASE		
L717	LB73G0AK-001	CHIP FERRITE BEADS			E4	F10-3236-05	SHIELDING CASE		
L719	LB73G0AK-001	CHIP FERRITE BEADS			E5	F10-3246-05	SHIELDING CASE		
L800	LB73G0AK-001	CHIP FERRITE BEADS			E6	F10-3228-05	SHIELDING CASE		
L802	L79-1984-05	FILTER			F1	FZA10BQ-3R15	FUSE(3.15A)		
L803	L79-1984-05	FILTER			F2	F53-0498-05	FUSE(1.0A)		
L804	L79-1984-05	FILTER			J1	E68-0426-05	JACK(OTHERS 8P)		
L805	L79-1984-05	FILTER			S1	S70-0530-05	TACT SWITCH		

△ Symbol No.	Part No.	Part Name	Description	Local
S2	S68-0931-05	PUSH SWITCH		
TH400	ERTJ0V104H	NEGATIVE TEMP THERMISTOR		
TH700	ERTJ0V104H	NEGATIVE TEMP THERMISTOR		
X700	L77-3123-05	TCXO(19.2MHZ)		
X701	L77-1802-05	CRYSTAL RESONATOR(32.768KHZ)		
X850	L77-3121-05	CRYSTAL RESONATOR(32.768KHZ)		
XF670	L7B-0003-00	MCF		

# Packing materials and accessories parts list

Block No.M2MM



## Packing and accessories

Block No. [M][2][M][M]  
Local

Symbol No.	Part No.	Part Name	Description
1	B0K-0002-00	CAP	
2	B5A-0049-00	INSTRUCTION MANUAL	
3	-----	PAMPHLET	
4	G5D-0027-00	PACKING	
5	-----	PROTECTION BAG (60/110/0.07)	
6	-----	PROTECTION BAG (100/250/0.07)	
7	H5A-0012-00	ITEM CARTON CASE	
8	J29-0730-05	HOOK	
9	N08-0571-04	DRESSED SCREW(CAP)	
10	N09-6585-15	SPECIAL SCREW(BELT CLIP)	(x2)
11	H1C-0036-00	PACKING FIXTURE	
12	H1C-0011-00	PACKING FIXTURE	

# MEMO



# KENWOOD

JVC KENWOOD Corporation  
Communications Equipment BU

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