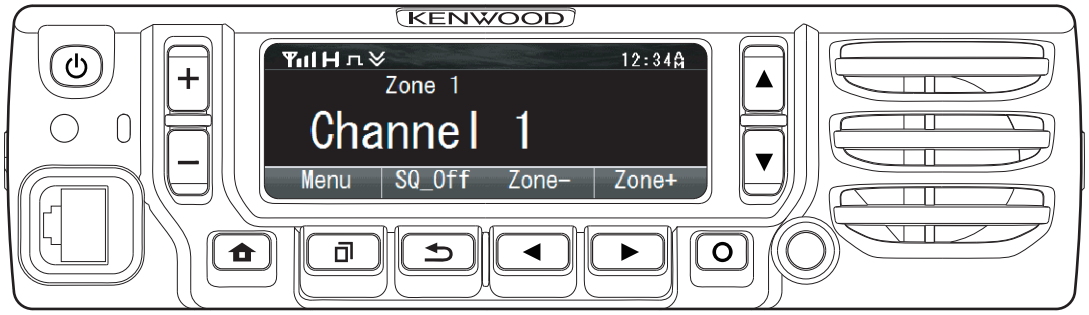
KENWOOD

SERVICE MANUAL

UHF DIGITAL TRANSCEIVER

NX-5800, NX-5800(B)

NX-5800 is a model that operation panel is attached.
NX-5800(B) is a model that operation panel is not attached.
The illustration is NX-5800.



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REVISEDⅡ

This service manual has been revised due to the addition of NX-5800 type E.

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

This product uses Lead Free solder.

B5B-7161-20

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No.RA017<Rev.003>
2015/10

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NOTE

- This equipment should be serviced by only qualified technicians.
- Danger of explosion if the battery is incorrectly replaced; replace only with the same type.
- To dispose of batteries, be sure to comply with the laws and regulations in your country or region.

Service Manual List

Manual number	Model name	Destination	Serial number	Main unit number	Remarks
No.RA017<Rev.001>	NX-5800	K2	-	XC1-0391-8X (J7C-0036-00)	First edition
	NX-5800(B)	F2,K2			
No.RA017<Rev.002>	NX-5800	K, K2			Revised edition
	NX-5800(B)	F,F2,K,K2			
No.RA017<Rev.003>	NX-5800	K, K2	From B5910001	XC1-0391-8X/ XC1-0410-1X (J7C-0036-10)	Revised2 This service manual
	NX-5800(B)	F,F2,K,K2			
	NX-5800	E	-		

SPECIFICATION

(F,F2,K,K2 TYPE)

GENERAL		
Frequency Range	F,K	450~520MHz
	F2,K2	380~470MHz
Max. Channels per Radio		1024 (Up to 4000 CH with option)
Number of Zones		128
Max. Channels per Zone		512
Channel Spacing	Analog	12.5 / 25* kHz
	Digital	6.25 / 12.5 kHz
Operating Voltage		13.6V DC ±15%
Operating Temperature Range		-22°F to +140°F (-30°C to +60°C)
Frequency Stability		±1.0ppm
Dimensions (W x H x D)	Radio w/Control Head	6.73 x 1.89 x 6.93 in. (171 x 48 x 176 mm)
Weight (net)	Radio w/Control Head	3.53 lbs (1.6 kg)
RECEIVER		
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	63dB
	Analog @ 12.5kHz	71dB
	Analog @ 25kHz	81dB
Intermodulation		80dB
Spurious Rejection		85dB
Audio Distortion		Less than 2%
Audio Output		4W / 4Ω (Remote Control Head: 3W / 4Ω)
TRANSMITTER		
RF Power Output		45W to 5W
Spurious Emission		-75dB
FM Hum & Noise	Analog @ 12.5kHz	40dB
	Analog @ 25kHz	45dB
Audio Distortion		Less than 2%
Modulation		16K0F3E, 11K0F3E, 8K30F1E, 8K30F1D, 8K30F7W, 4K00F1E, 4K00F1D, 4K00F7W, 4K00F2D, 8K10F1W, 8K10F1E, 8K10F1D

*25 kHz are not included in the models sold in the USA or US territories.
Analog measurements made per TIA 603 and specifications shown are typical.
P25 Digital measurements made per TIA 102CAAA and specifications shown are typical.
JVC KENWOOD Corporation reserves the right to change specifications without prior notice or obligation.

SPECIFICATION

(E TYPE)

GENERAL			
Frequency Range			400~470MHz
Max. Channels per Radio			1024 (Up to 4000 CH with option)
Number of Zones			128
Max. Channels per Zone			512
Channel Spacing	Analogue		12.5 / 20 / 25 kHz
	Digital		6.25 / 12.5 kHz
Operating Voltage			13.2 V DC (10.8~15.6 V DC)
Operating Temperature Range			-30°C to +60°C
Frequency Stability			±1.0ppm
Dimensions (W x H x D)	Radio w/Control Head		171 x 48 x 176 mm
Weight (net)	Radio w/Control Head		1.6 kg
RECEIVER			
Sensitivity	Analogue @ 12.5/20&25 kHz	12dB SINAD	0.32 μV / 0.28 μV
		20dB SINAD	-1 dB μV (0.45 μV) / -3 dB μV (0.35 μV)
	Digital @ 6.25/12.5 KHz	NXDN 3% BER	0.25 μV / 0.32 μV
		NXDN 1% BER	-4 dB μV (0.32 μV) / -1 dB μV (0.45 μV)
		P25 5% BER	0.28 μV
Selectivity	P25 Digital		63dB
	Analogue @ 12.5 kHz		70dB
	Analogue @ 20 kHz		78dB
	Analogue @ 25 kHz		80dB
Intermodulation	Analogue		70dB
Spurious Rejection	Analogue		80dB
Audio Distortion			Less than 2%
Audio Output			4W / 4Ω (Remote Control Head: 3W / 4Ω)
TRANSMITTER			
RF Power Output			25W to 1W
Spurious Emission			-36dBm ≤ 1GHz,-30dBm > 1GHz
FM Hum & Noise	Analogue @ 25kHz		50dB
	Analogue @ 20kHz		50dB
	Analogue @ 12.5kHz		45dB
Audio Distortion			Less than 2%
Modulation			16K0F3E, 14K0F3E, 14K0F2D, 12K0F2D, 11K0F3E, 8K50F3E, 7K50F2D, 8K30F1E, 8K30F1D, 8K30F7W, 8K10F1E, 8K10F1D, 8K10F1W, 4K00F1E, 4K00F1D, 4K00F7W, 4K00F2D

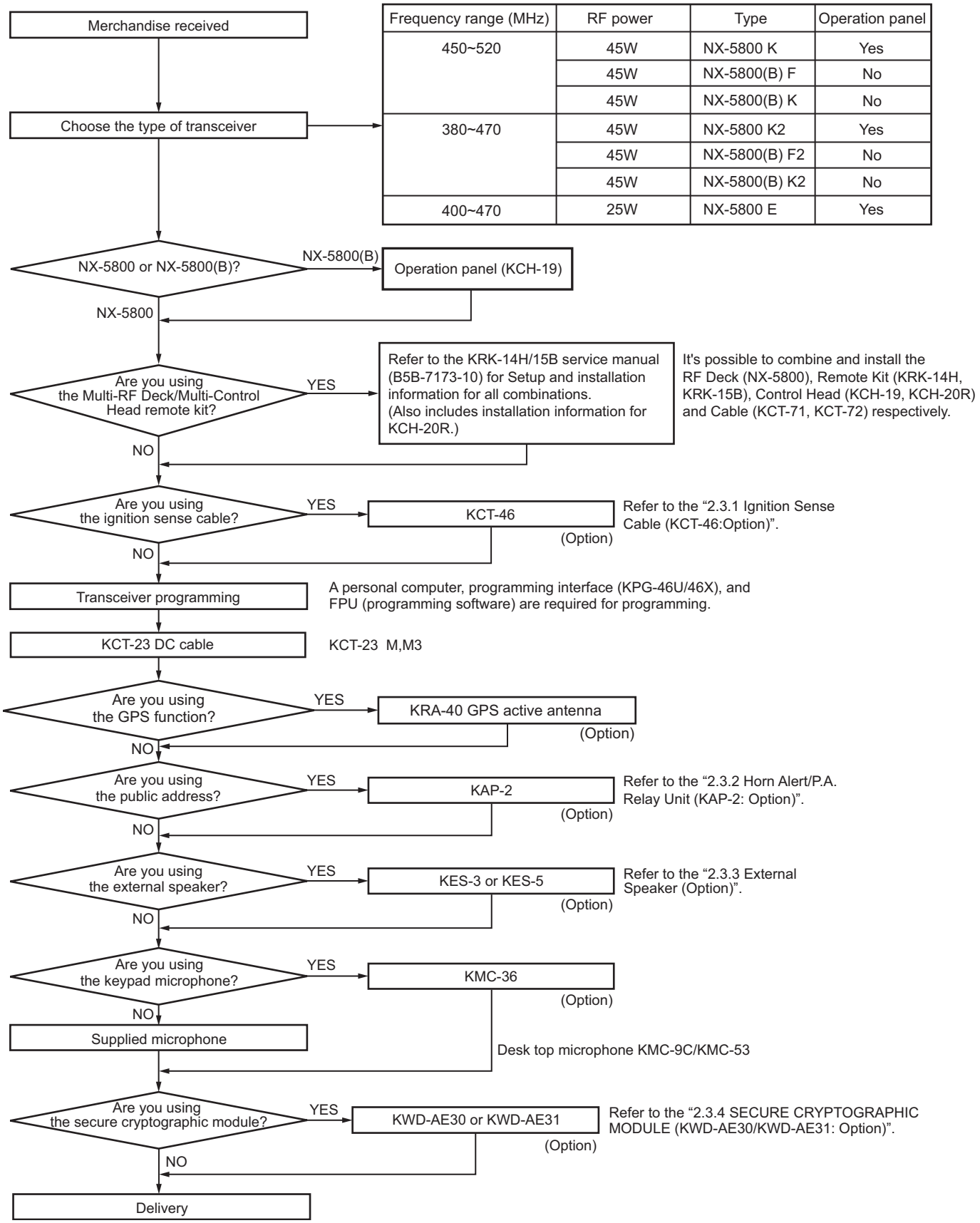
Analogue measurements made per EN standards or TIA 603 and specifications shown are typical.
P25 digital measurements made per TIA 102CAAA and specifications shown are typical.
JVC KENWOOD Corporation reserves the right to change specifications without prior notice or obligation.

SECTION 1
PRECAUTION

This service manual does not describe PRECAUTION.

SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

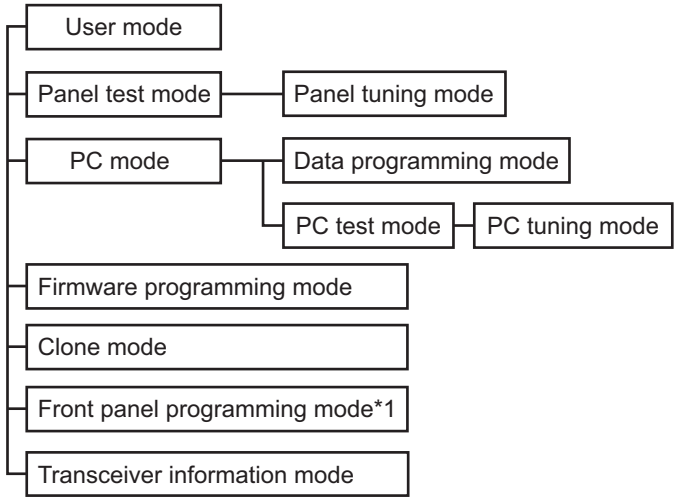
2.1 SYSTEM SET-UP



Frequency range (MHz)	RF power	Type	Operation panel
450~520	45W	NX-5800 K	Yes
	45W	NX-5800(B) F	No
	45W	NX-5800(B) K	No
380~470	45W	NX-5800 K2	Yes
	45W	NX-5800(B) F2	No
	45W	NX-5800(B) K2	No
400~470	25W	NX-5800 E	Yes

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 transcerver 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	• [⮌] + Power ON
	• [▣] + Power ON Select the “Panel Test” using the [▲] / [▼] key. Press the [▣] key.
PC mode	Received commands from PC
Panel tuning mode	[Panel test mode] + [▣]
Firmware programming mode*2	• [AUX (Orange)] + Power ON
	• [▣] + Power ON Select the “Firmware Prog” using the [▲] / [▼] key. Press the [▣] key.
	• If Write is performed by KFL, Firmware programming mode will start automatically.
Clone mode*2	• [○] + Power ON
	• [▣] + Power ON Select the “Clone” using the [▲] / [▼] key. Press the [▣] key.
Front panel programming mode*2	• Press the PF key to which Front panel programming mode is set during the user mode.
	• Press the [▣] key and enter the Menu mode. 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	• [+] + Power ON
	• [▣] + Power ON 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-46U/46X) and FPU (programming software).

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

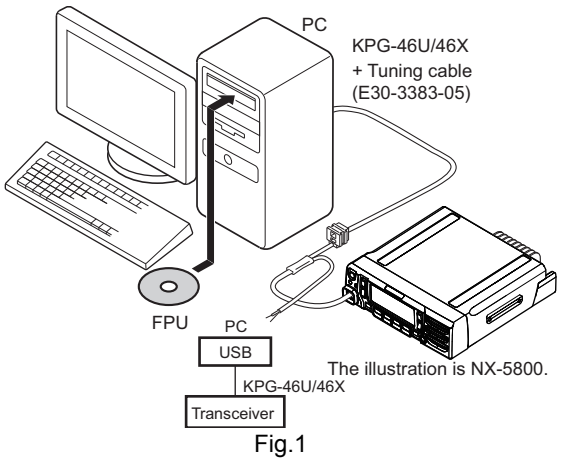


Fig.1

2.2.5.2 Connection procedure

(1) Connects the transceiver to the computer using the interface cable (KPG-46U/46X).

Note:
You must install the KPG-46U/46X driver in the computer to use the USB programming interface cable (KPG-46U/46X).

(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 lights.

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-46U/46X description (USB programming interface cable: Option)

The KPG-46U/46X is a cable which connects to a USB port on a computer.
When using the KPG-46U/46X, install the supplied CD (with driver software) in the computer. The KPG-46U driver runs under Windows XP, Vista, 7, 8 or 8.1.
The KPG-46X driver runs under Windows 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 (Ver. 1.60 or later) description

The FPU is the programming software for the transceiver supplied on a CD. 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.

Note:
KPG-D1N can't be used for E type.

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-46U/46X). (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 folder.
(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 perfomed 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 modular microphone jacks. 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 MIC 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.E30-3382-05) to the modular microphone jacks 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.

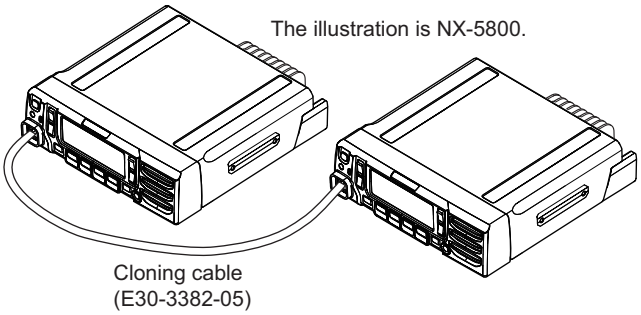


Fig.2

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/20kHz/25kHz Note: 20kHz is applied for E type only.
			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: “F7E” and “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**

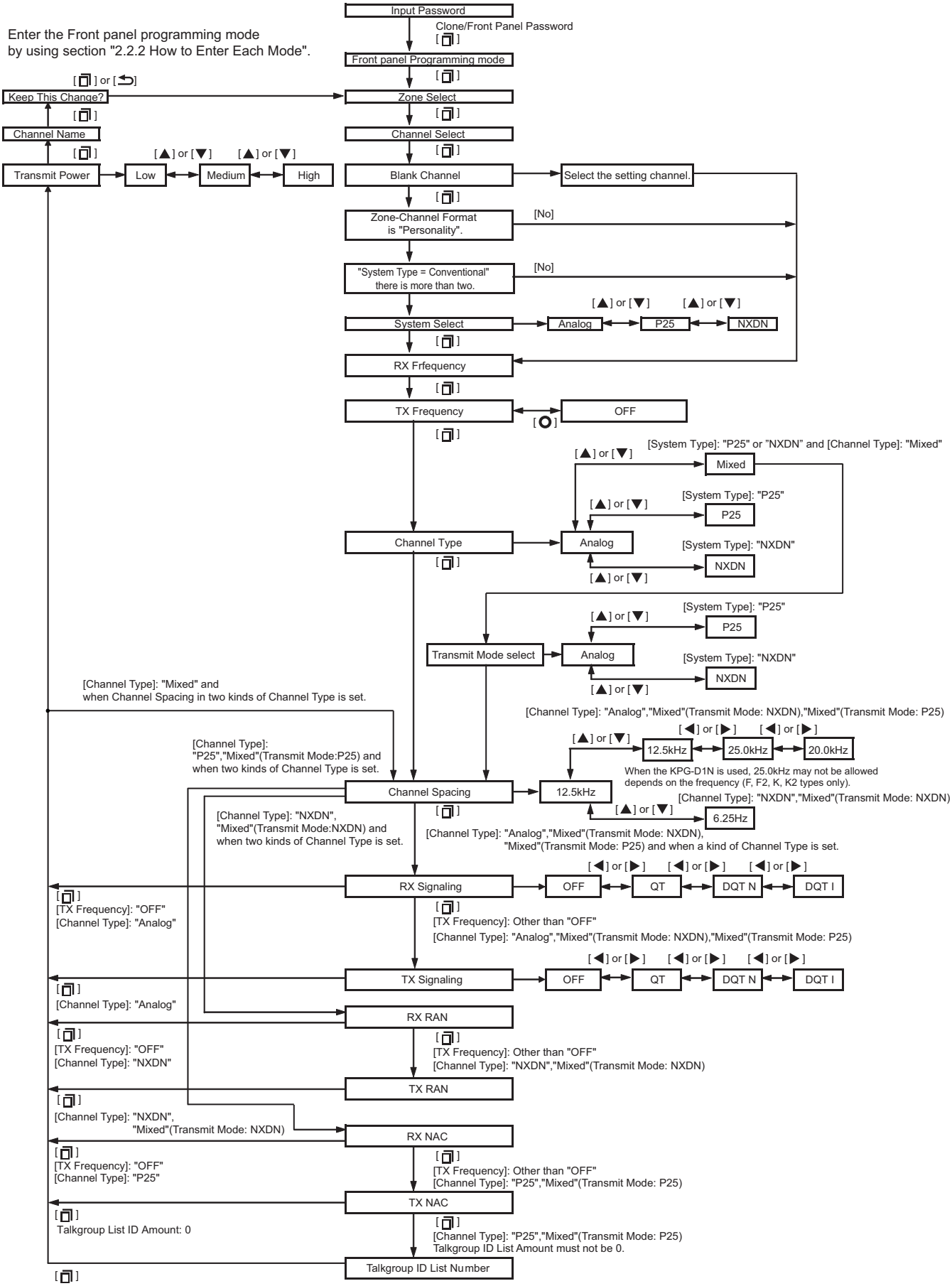
Key\Item	Zone Select	Channel Select	RX Frequency	TX Frequency	Channel Type	Channel Spacing	RX Signaling	TX Signaling
[▣]	Decision	Decision	Decision	Decision	Decision	Decision	Decision	Decision
[⮌]	Unused	Back to the previous item	Back to the previous item	Back to the previous item	Back to the previous 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
MIC Keypad [0] ~ [9]	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	
MIC Keypad [*]	Decision	Decision	Decision	Decision	Decision	Decision	Decision	Decision
MIC Keypad [#]	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	
MIC Keypad [0] ~ [9]	Go to the direct enter mode				Talkgroup List number select	Transmit power select (1, 2 or 3)	
MIC Keypad [*]	Decision	Decision	Decision	Decision	Decision	Decision	Decision/ Character/ Digit switching
MIC Keypad [#]	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
MIC Keypad [0] ~ [9]	Add a digit to the current number								
MIC Keypad [*]	Decision								Input character switching
MIC Keypad [#]	Delete/Back to the previous item								Delete

- **Front panel programming mode flow chart**

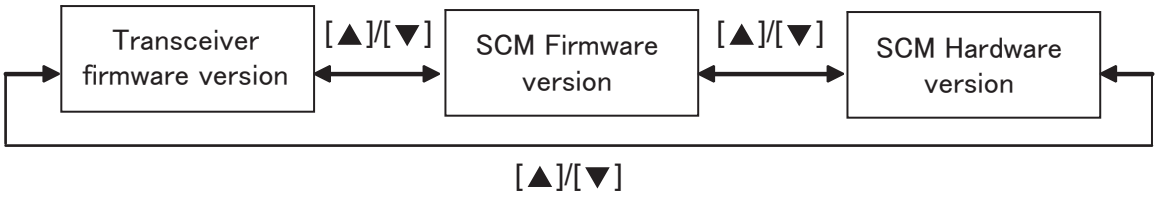


Note: Zone-Channel Format allows you to whether to configure for each zone the channels in the same system, or channels in different system. P25 can be configured for System Select or Channel Type if one or more P25 conventional system is preconfigured by the FPU.

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.

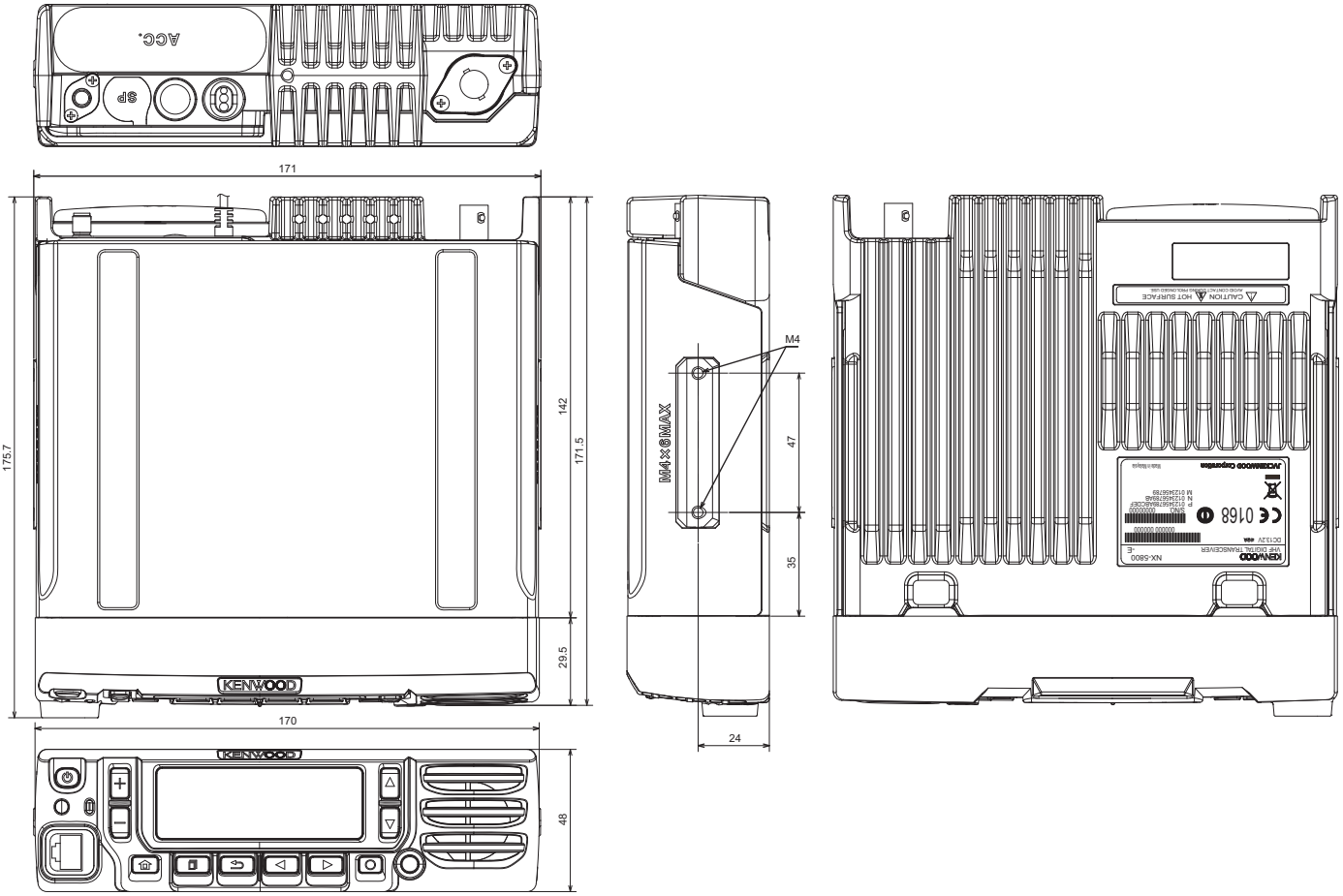


(4) To exit the transceiver information mode, turn the transceiver power OFF.

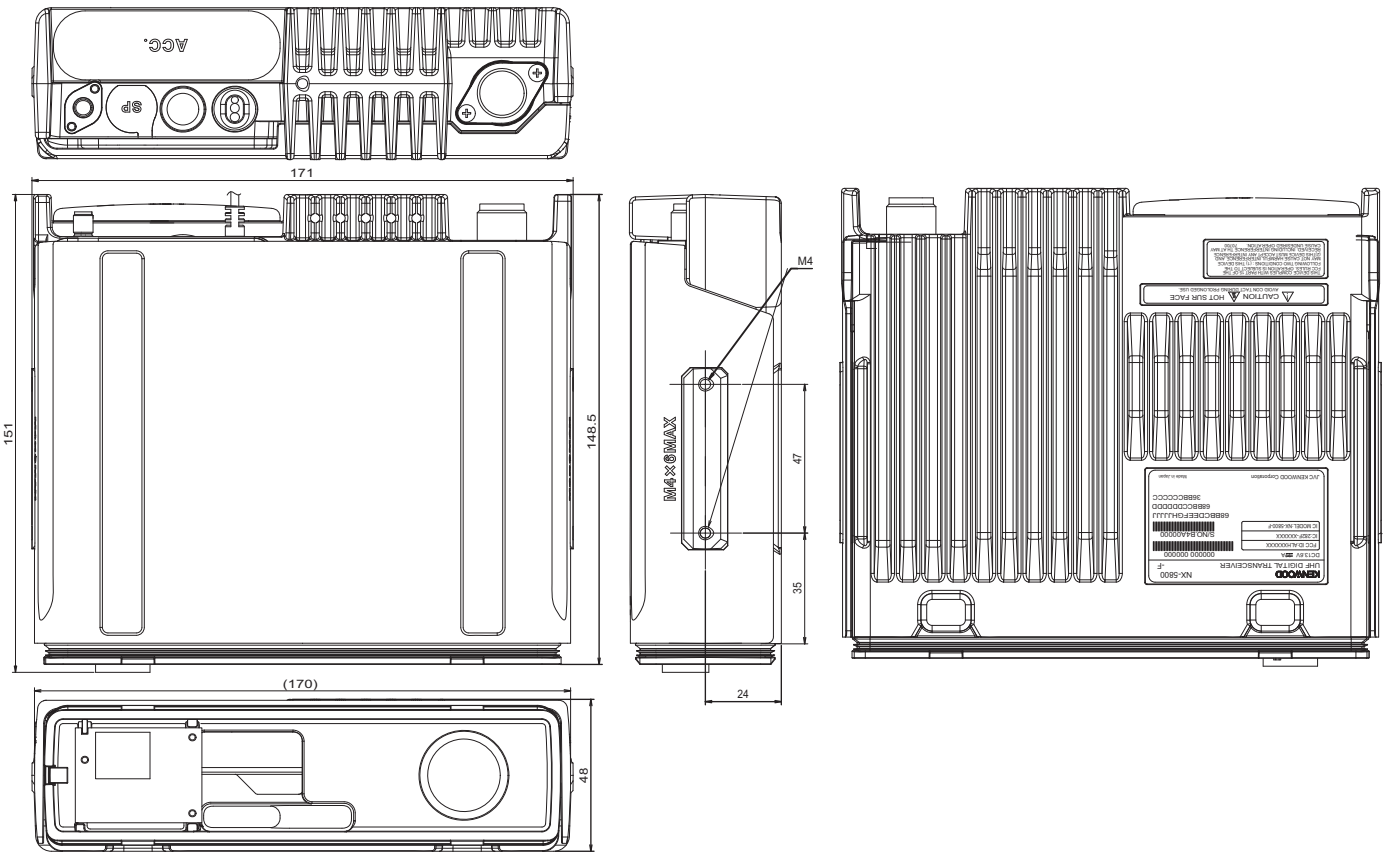
Note:
When the SCM board is not equipped to the transceiver, SCM Firmware Version and SCM Hardware Version are displayed as "-.-.-."

2.3 INSTALLATION

NX-5800 External View



NX-5800(B) External View



ATTENTION:

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

2.3.1 Ignition Sense Cable (KCT-46: Option)

The KCT-46 is an optional cable for enabling the ignition function. The ignition function lets you turn the power to the transceiver on and off with the car ignition key.

2.3.1.1 Connecting the KCT-46 cable to the transceiver

(1) Open the KCT-46 fuse holder and insert a mini blade fuse (3A). <1>
(2) While holding a clear protective cover, remove the black cap at the end of the yellow cable (ignition sense cable) of the transceiver. <2>
(3) Connect the plug of the KCT-46 to the yellow cable terminal of the transceiver. <3>
(4) Connect the other end of the KCT-46 to the ignition line of the car. <4>

Note:

You must setup using the KPG-D1/D1N.

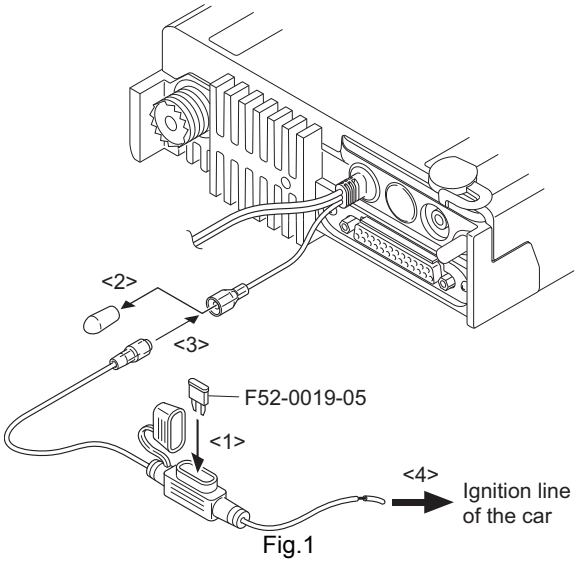


Fig.1

2.3.2 Horn Alert/P.A. Relay Unit (KAP-2: Option)

The Horn alert (max. 2A drive), Public address and External speaker function are enabled by installing the KAP-2 in the transceiver.

2.3.2.1 Installing the KAP-2 unit in the transceiver (The kit A is not used in the KAP-2 accessories)

(1) Remove the cabinet, top packing and shielding plate of the transceiver.
(2) Set the KAP-2 relay unit jumper pins according to the purpose of use.
(3) Remove the 6-pin jumper connector inserted in the TXRX unit (A/2) connector (CN910). <1>

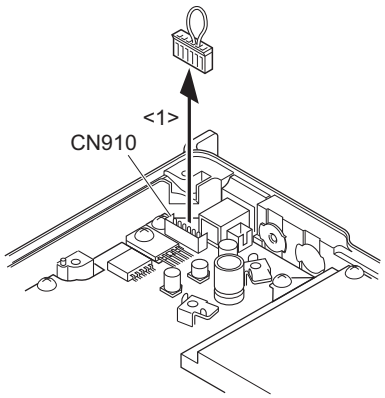


Fig.2-1

(4) Insert one side of the lead wire with connector (E37-1114-05) into the relay unit connector (CN3) <2> and the other side into the TX-RX unit (A/2) connector (CN910) <3>

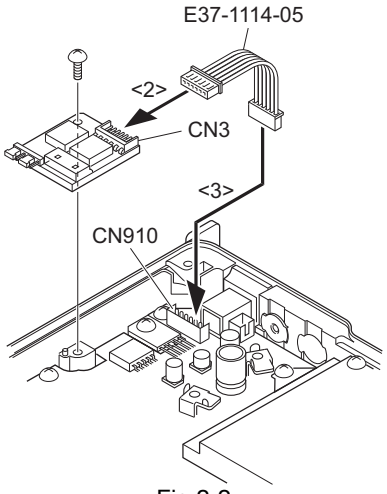


Fig.2-2

(5) Place the relay unit at the position shown in Figure 2-2 and secure it to the chassis with a screw.
(6) Remove the cap on the rear of the chassis by pushing it from the inside with your finger. <4>

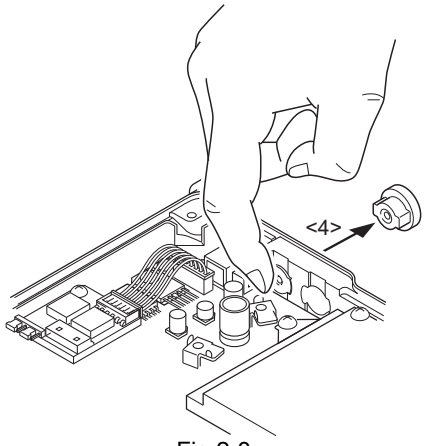


Fig.2-3

(7) Pass the 6-pin connector of the cable (E37-1113-25) through the chassis hole <5> and insert the bush into the shassis hole.
(8) Rotate the bush of the cable 90 degrees counterclockwise as viewed from the rear of the chassis. <6>
(9) Insert the 6-pin connector of the cable into the connector (CN2) of the KAP-2 relay unit. <7>

Note:
You must setup using the KPG-D1/D1N.

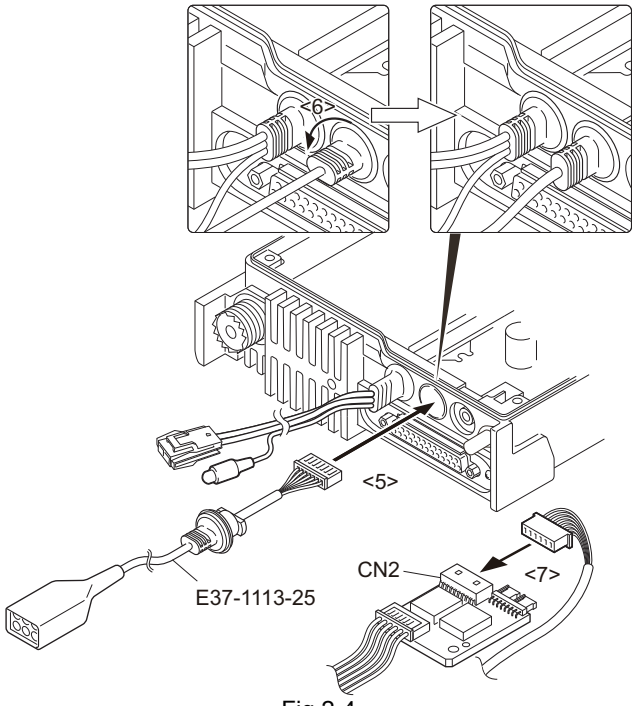
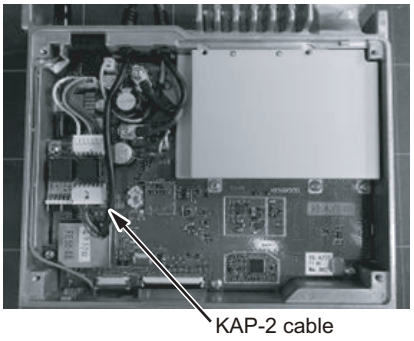


Fig.2-4

(10) Form the KAP-2 cable as shown in the figure.



2.3.3 External Speaker (Option)

2.3.3.1 KES-3

The KES-3 is an external speaker for the 3.5-mm-diameter speaker jack.

■Connection Procedure

Connect the KES-3 to the 3.5-mm-diameter speaker jack on the rear of the transceiver.

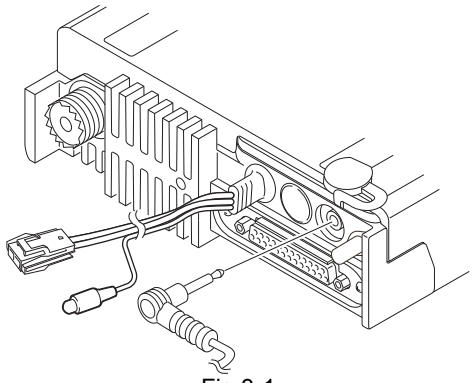


Fig.3-1

2.3.3.2 KES-5

External speaker KES-5 can be installed for KAP-2. If KES-5 is installed, it can be set by changing the CN1 short pin from pins 4 and 5 to pins 5 and 6 on the KAP-2.

KAP-2 CN1 Connect	Set Up
4-5	INT. SP or KES-3
5-6	KES-5

When you use the KES-5, plug the short pin to pins 5 and 6 on the KAP-2.

When you use the INT. SP or KES-3, plug the short pin to pins 4 and 5 on the KAP-2.

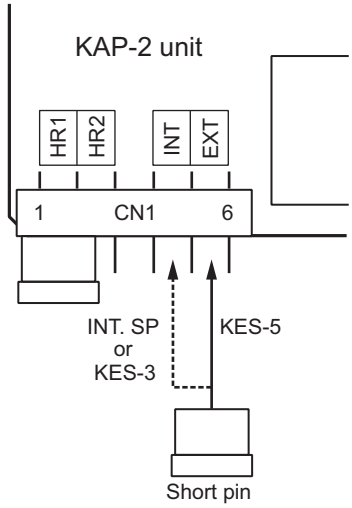


Fig.3-2

■Connection Procedure

Insert the crimp terminal into the Square plug supplied with the KAP-2.

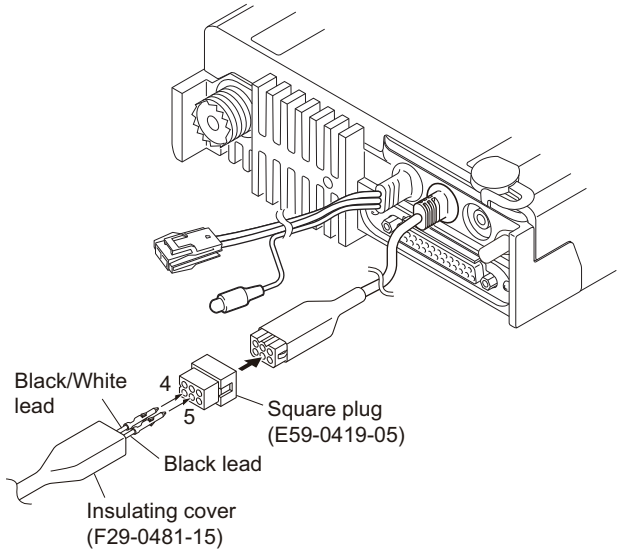
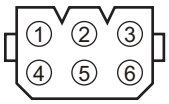


Fig.3-3

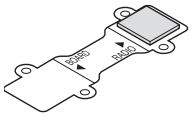
■KAP-2 Cable (E37-1113-25) 6-pin Connector



Pin No.	Color	Name
1	Red	HR2
2	Blue	GND
3	Yellow	OSP
4	Green	ESP
5	Brown	GND
6	Black	HR1

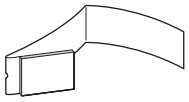
2.3.4 SECURE CRYPTOGRAPHIC MODULE (KWD-AE30/KWD-AE31:Option)

2.3.4.1 SUPPLIED ACCESSORIES



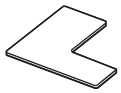
Connecting cable
(X42-3330-XX)

Cushion A *
(G13-2179-XX)

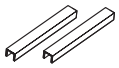


Cushion B
(G13-2178-XX)

Cushion C
(G1D-0006-XX)



Cushion D *
(G1D-0055-XX)

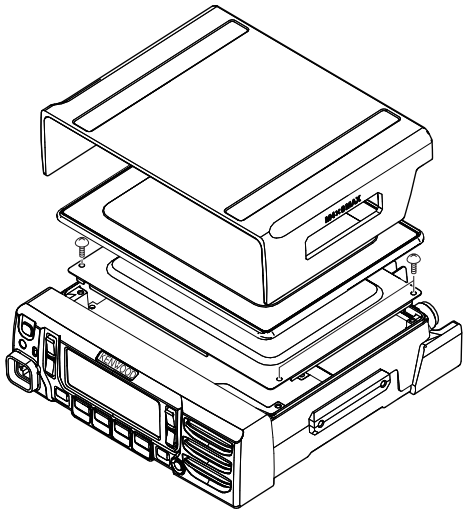


Spacer *
(F3K-0004-XX)

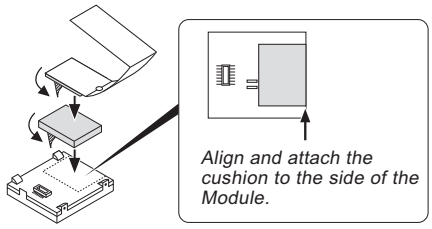
Note:
Supplied accessories with * mark are not used for the NX-5800.

2.3.4.2 INSTALLING THE MODULE IN THE TRANSCEIVER

(1) Remove the cabinet, top packing and shielding plate of the transceiver.

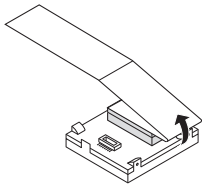


(2) Attach the cushion B and C to the module backside.

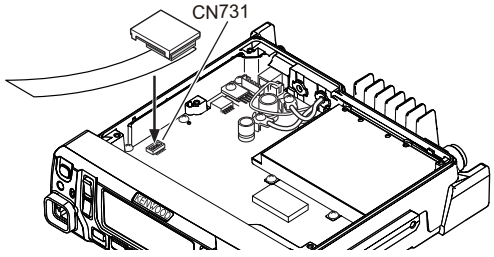


Note:
Refer to the figure for how to attach cushion B. If the release paper is reversed, it cannot be pulled out.

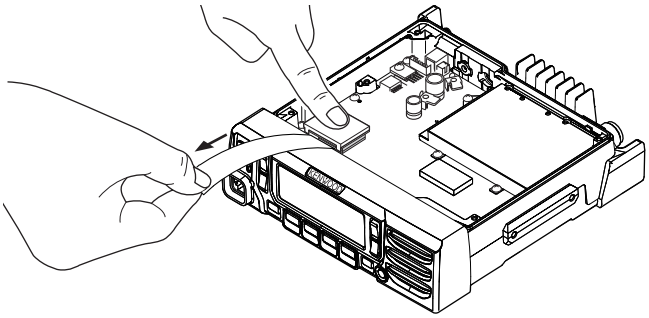
(3) Fold the release paper as indicated in the figure.



(4) Insert the connector of the module the connector (CN731) of the TX/RX PCB into.



(5) Pull and remove the release paper while pressing down on the module with your finger to hold it in place, to attach the module to the TX/RX PCB.



Note:
- When it is necessary to remove the module, do so by peeling the module off using your finger, while pulling it vertically. Do not use a screwdriver or other similar implement to remove the module; you may inadvertently damage the TX/RX PCB and the module.
- Cushion B cannot be reused. Attach a new cushion B when you remove the cushion from the module.

(6) Reinstall the cabinet, top packing and shielding plate of the transceiver.

Note:
- When the KWD-AE30/ KWD-AE31 is installed, select the “Secure Cryptographic Module” checkbox in the Product Information of the Programming software [FPU (Field Programming Unit)], 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.

2.3.5 Changing D-SUB 25-pin connector (4 pin, 5 pin) configuration

2.3.5.1 Change configuration of D-SUB 25-pin connector from AUXIO9 to CTS

■4 pin

The output (4 pin) of D-SUB 25-pin connector is configured at the AUXIO9 as the default value.

Remove the R950 chip jumpers and solder the chip jumpers to $R952.

Ref. No.			Function
R950	$R952	Default	AUXIO9
$R950	R952	-	CTS (RS-232C)

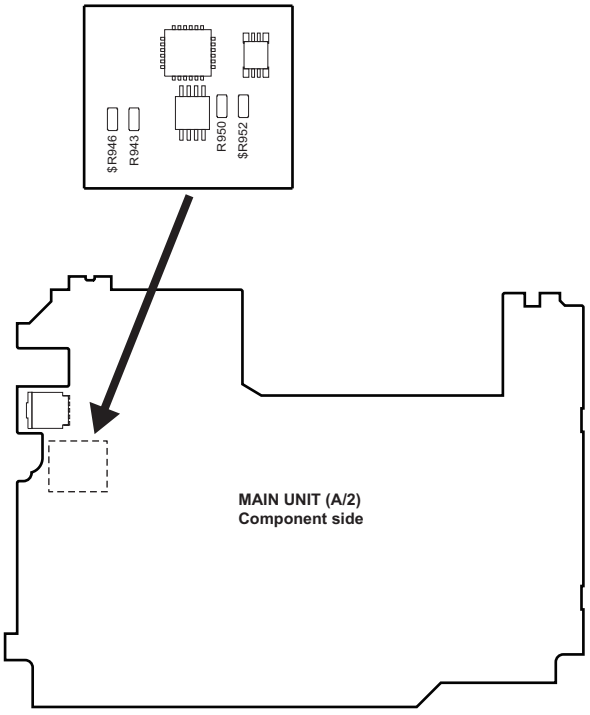
2.3.5.2 Change configuration of D-SUB 25-pin connector from DI to RTS

■5 pin

The input (5 pin) of D-SUB 25-pin connector is configured at the DI as the default value.

Remove the R943 chip jumpers and solder the chip jumpers to $R946.

Ref. No.			Function
R943	$R946	Default	DI
$R943	R946	-	RTS (RS-232C)



2.4 CIRCUIT DESCRIPTION

2.4.1 Overview

The NX-5800 is a UHF Analog FM & Digital Mobile transceiver designed to operate in the frequency range of 450 to 520MHz (F, K) , 380 to 470MHz (F2, K2) or 400 to 470MHz (E). 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 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 VCO/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 TX VCO, and modulated by the signal from the DSP. It is then amplified and fed to the antenna.

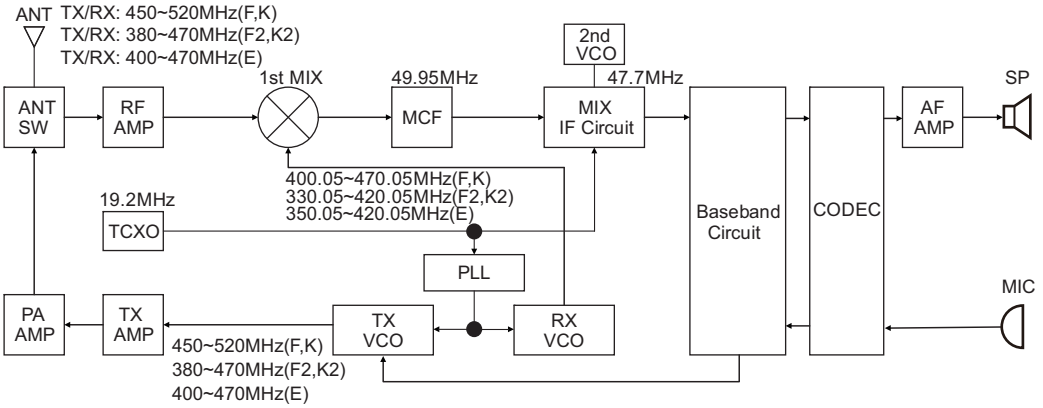


Fig.1 Frequency configuration

2.4.3 Receiver System

2.4.3.1 RF circuit

The receive signal from antenna switch (D310, D311, D312, D313, D314 and D315) is amplified by a RF amplifier (Q502) and passes through the band-pass filter (L511, L510, L509 and L508) to remove unwanted signals. The signal is then fed to the 1st mixer (IC500).

2.4.3.2 IF circuit

The first IF signal is passed through a four-pole monolithic crystal filter (XF600) to reject adjacent channel signal. The filtered first IF signal is amplified by the first IF amplifier (Q604 and Q603) 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 (IC706).

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 internal speaker and connector for external speaker (J900) through the amplifier (IC903), electronic volume control (IC719) and audio amplifier (IC911).

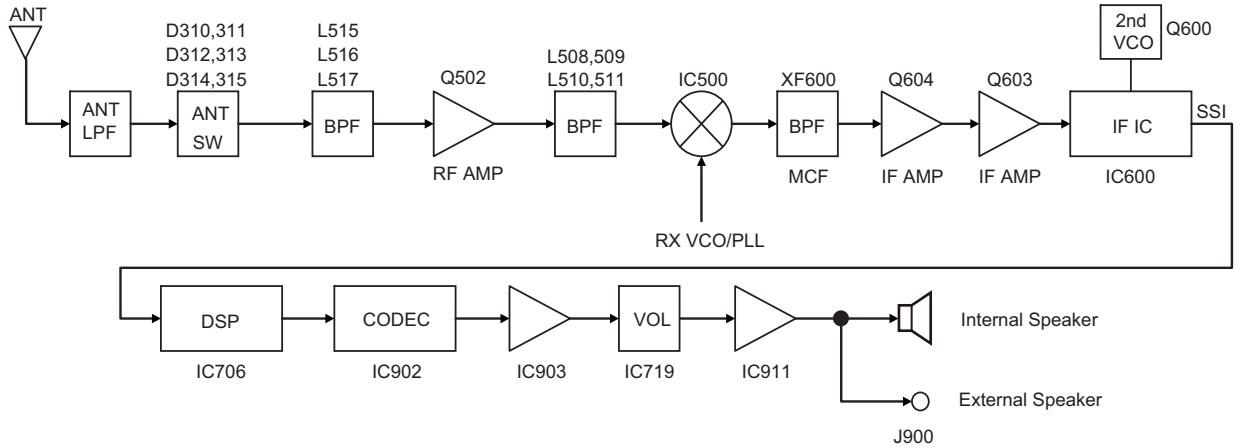


Fig.2 RF and IF circuit

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 IC706 thru SSI.

2.4.4.2 Base Band Circuit

The audio signal transferred from IC902 is processed at IC706. 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 base band signals are also generated by IC706.
In Digital mode, the audio signal is converted to the 4-Level FSK base band 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 VCO is amplified by pre-drive amplifier (IC300). The output of the pre-drive amplifier is amplified by the drive amplifier (Q300) and RF Power module (IC302) to 45W (F,K) or 25W (E) (5W when the power is low).
IC300 is MMIC.Q300 is MOS FET. The output of the final amplifier is then passed through the coupler, antenna switch (D310, D311, D312, D313, D314 and D315), harmonic filter (LPF) and applied to the antenna terminal.

2.4.4.4 APC circuit

The Automatic transmission power control (APC) circuit controls the transmitter output in adjusted value by monitoring it with a coupler. RF detection and comparison functions are included in the power-control IC (IC304).
The power control IC output is given as a drive source of the RF power module's gate (IC302), and completes APC feedback loop.
When an normal antenna load is connected, reflected Forward RF Power is detected by the coupler and direct in power-control IC (IC304).Forward RF Power is converted into DC voltage in IC304 and is compared with the APC1.
The output voltage goes through DC amp (IC301 2/2) to Drive amp (Q300) and RF Power module (IC302).
The voltage controls the gate bias1 voltage of Q300 and IC302, and keeps transmission output stable. SPC controls the gate bias2 voltage of IC302 too.
TXPWR_H/L switches the attenuation (D306) to change the loop gain of APC in the case of the especial low transmit power for base system of E type.
FLT_RSW switches the response of APC in case of base system applied to optimized for it.

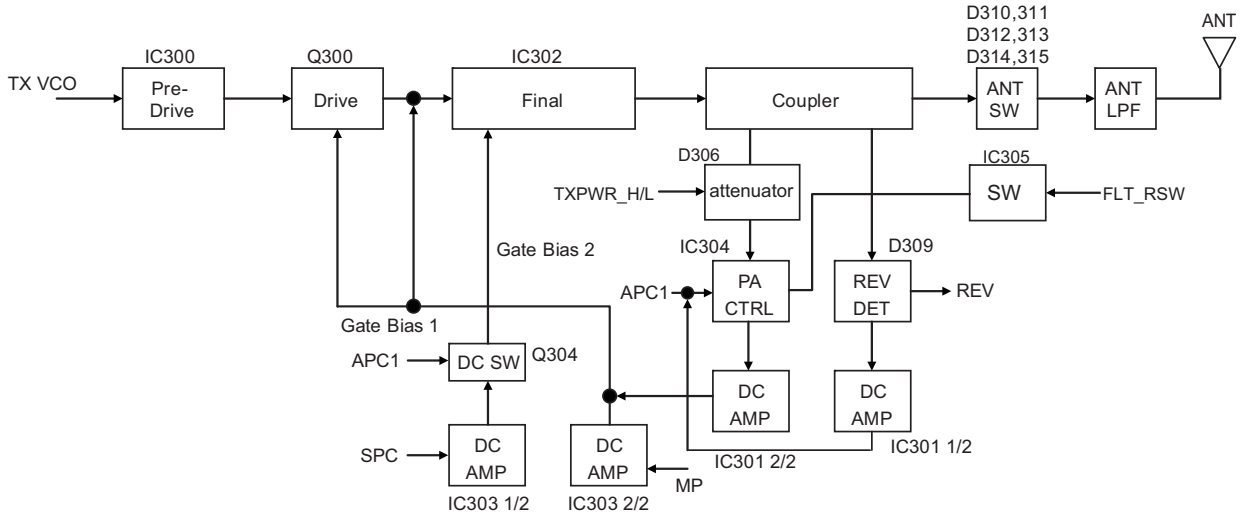


Fig.3 Drive and Final amplifier and APC circuit

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 IC703. And it is distributed to PLL (IC100), IF IC (IC600), and IC706.
The frequency adjustment is achieved by adjusting a D/A converter (IC715) output in the voltage of the control terminal of TCXO.

2.4.5.2 VCO

There are TX VCO and RX VCO.
The TX VCO (Q107) generates the carrier for the transmitter. The VCO oscillation frequency range is 450 to 520MHz (F, K) or 380 to 470MHz (F2, K2). The transmit frequency range is 450 to 520MHz (F, K) or 380 to 470MHz (F2, K2).
The RX VCO (Q105) generates the 1st local signal for the receiver.
The VCO oscillation frequency range is 400.05 to 470.05MHz (F, K) or 330.05 to 420.05MHz (F2, K2). The 1st local signal frequency range is 400.05 to 470.05MHz (F, K) or 330.05 to 420.05MHz (F2, K2).
The VCO oscillation frequency is determined by voltage control terminals "CV" and "ASSIST".
The voltage control terminal "CV" is controlled by PLL IC (IC100). The voltage control terminal "ASSIST" is controlled by the control voltage from D/A converter (IC715).
For the modulation input terminal, "VCO_MOD" of TX VCO, the output frequency changes according to the applied voltage. This is used to modulate the VCO output.

2.4.5.3 PLL IC

PLL IC (IC100) 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 (IC706) through the 3-line "SDO1", "P_SCK1", "/PCS_RF" serial bus for PLL.
MPU monitors through the “PLD”, whether the PLL IC is locked or not. If the VCO does not lock to desired frequency (unlock), the “PLD” logic is low.

2.4.6 Control Circuit

The control circuit consists of MPU/DSP (IC706) and its peripheral circuits. IC706 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 (IC706) is 32bit RISC processor and fixed floating-Point VLIW DSP 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 and the Mobile DDR (IC702), the flash memory (IC701). The flash memory has capacity of 512Mbit 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 512Mbit. The MPU copies the program to the Mobile DDR from Flash memory. And 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

LCD interface connector (CN4) of the display unit.
The LCD is controlled using parallel interface from MPU (IC706) through the interface connectors (CN749 of the main unit and CN6 of display unit) and flexible cable.

2.4.6.4 Key Detection Circuit

Keys are detected using I/O Expander IC (IC10) of the display unit. If pressed key is detected by IC10, it is informed to MPU (IC706) of the main unit through serial line.

2.4.6.5 DSP

The DSP circuit consists of a MPU/DSP (IC706) 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:

- 4Level 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 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

+B voltage is connected to RF Power Module, 50BU regulator (Q8, Q9 and D11) through the fuse (F1), DC/DC converter IC (IC8) via fuse (F1), SB1 switch (Q5 and Q6) through the fuse (F2) and SB2 switch (Q10 and Q11) through the fuse (F3).

Q8, Q9 and D11 regulates +B voltage to 5V (50BU). Then IC1 regulates 50BU to 3.1V (31BU). Then IC3 regulates 31BU to 1.2V (12BU). 50BU, 31BU and 12BU operate whenever +B is supplied.

IC8 regulates +B voltage to 5.4V (54M). 54M is controlled by BAT_CNT signal from Power management IC (IC2). When Power switch is turned on, BAT_CNT signal is controlled by /PSW signal. 54M goes to DC/DC converter (A1, IC11), AVR ICs (IC5, IC4, IC12, IC14, IC7, IC10, IC6 and IC17).

A1 (12M) is enabled while the 54M is operating. 12M provides the power to the MPU/DSP (IC706) and turns on IC11 (18M). 18M provides the power to the MPU/DSP and Mobile DDR (IC702) and turns on IC5 (33M), IC14 (33OPT). 33M provides the power to the MPU/DSP, Flash memory (IC701) and many control circuits and turns on IC4 (33A), IC10 (50A). Then 33A turns on IC9 (18M_3).

The Power management IC (IC2) watches +B voltage. If +B voltage is higher than 6.2V, IC2 outputs high voltage to the /BINT terminal. If the /BINT is high, SB1 (Q5 and Q6) and SB2 (Q10 and Q11) are turned on by SBC_2 signal from MPU. In the same way, IC12 (33C) and IC6 (50C) are turned on by SBC_2. 50C is fed to IC13 (200C). IC13 (200C) is the DC/DC boost converter. The 200C circuit then outputs approximately +20VDC.

SB1 supplies Sub (Display) unit and D-sub 25 with +B voltage. SB2 supplies Audio power amplifier (IC911) and 9V AVR (IC15) with +B voltage. Then IC15 regulates +B to 9V (90C). Then IC16 regulates 90C to 5V (50CT). If the MPU controls TXC, ANT SW and ASSW signals to High, Q15, Q16 (90T), Q17, Q18 (90ANT) and Q14 are turned on and transmission circuits are enabled to transmit. If the MPU controls RXC signal to High, IC17 (50R) is turned on and reception circuits are enabled to receive.

When the Power management IC and MPU detect /PSW signal (Power switch), /IGN signal (Ignition sense) and /BINT signal, they set the SBC_2 signal to Low, and turn the transceiver power off.

When D1, Q4 detect over-voltage condition, they turn SB1 and SB2 off, and transfer that the MPU through IC2.

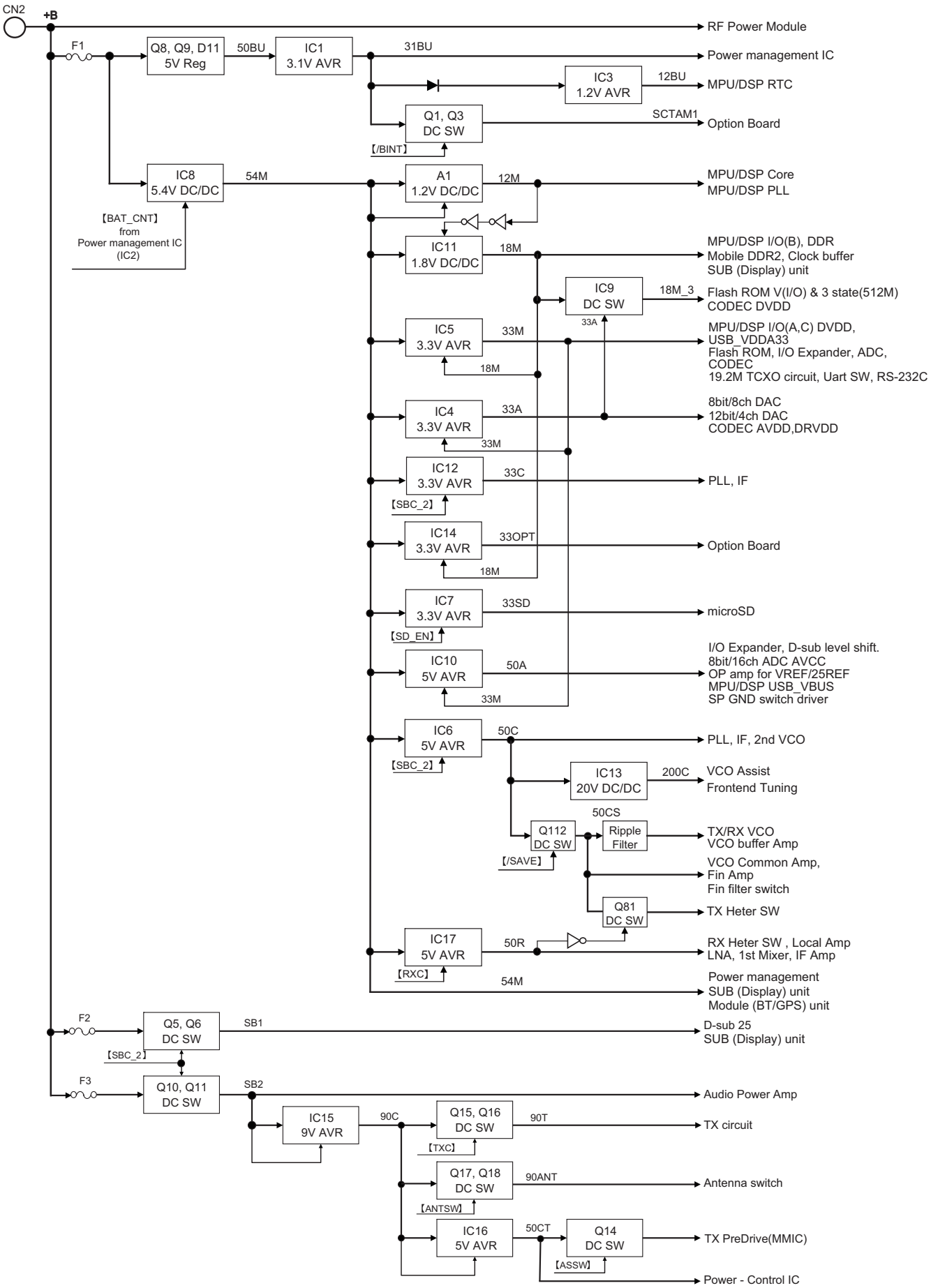


Fig.4 Power supply circuit

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 IC706, superposed on a modulation signal and output to TX VCO and 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 IC706 and the resulting signal is decoded by IC706.

2.4.9 Bluetooth/GPS Circuit

The main component of the Bluetooth/GPS circuit is Bluetooth / GPS IC (IC5) on BT/GPS unit.
The clocks of Bluetooth/GPS IC require 19.2MHz for core and 32.768kHz slow clock (X1 and X2) for UART.
Bluetooth/GPS IC communicates to the OMAP processor (IC706) on the HCI UART. Interface of UART & Digital audio (PCM) between the OMAP processor (IC706) and the Bluetooth/GPS IC (IC5), have level conversion at the level shift IC (IC6 and IC7) on BT/GPS unit.
The Bluetooth/GPS IC is powered by 1.8V and 3.3V which are supplied from 2 discrete external regulators (IC2 and IC3) on BT/GPS unit.

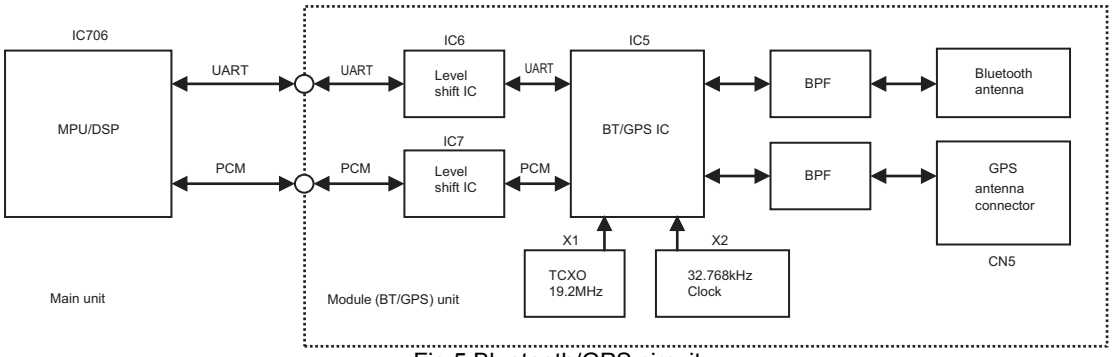


Fig.5 Bluetooth/GPS circuit

2.4.9.1 Bluetooth Circuit

The Bluetooth / GPS IC (IC5) support Bluetooth 3.0 up to HCI level.
TX/RX frequency is 2400-2483.5MHz (79ch Hopping, 2402-2480MHz, 1MHz step). Transmitting power is +2dBm at Bluetooth antenna input.
Using the printed antenna with Bluetooth, and connected to the Bluetooth / GPS IC (IC5) through the saw filter (L11).
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 then OSLO is used
In EDR2 TX if power is >-12dBm then OSLO is used
In EDR3 TX if power is >-12dBm then OSLO is used
Otherwise 2X is used for TX as well.

2.4.9.2 GPS Circuit

The GPS RF signal is received with the active antenna, and connected to the Bluetooth / GPS IC (IC5) through the terminal (CN5) and saw filter (L9).
The output is passed to pin L2 of the GPS IC. The input match for pin L2 comprises of C38, C36 and L7.
The control and data lines for the GPS IC are GPS_PA_EN, BTFM_nSHUTDOWN, GPS_TX and GPS_RX.
GPS_TX and GPS_RX are shared with Bluetooth data line.
Frequency configuration for GPS is following: Lo is GPS: 1571.324MHz

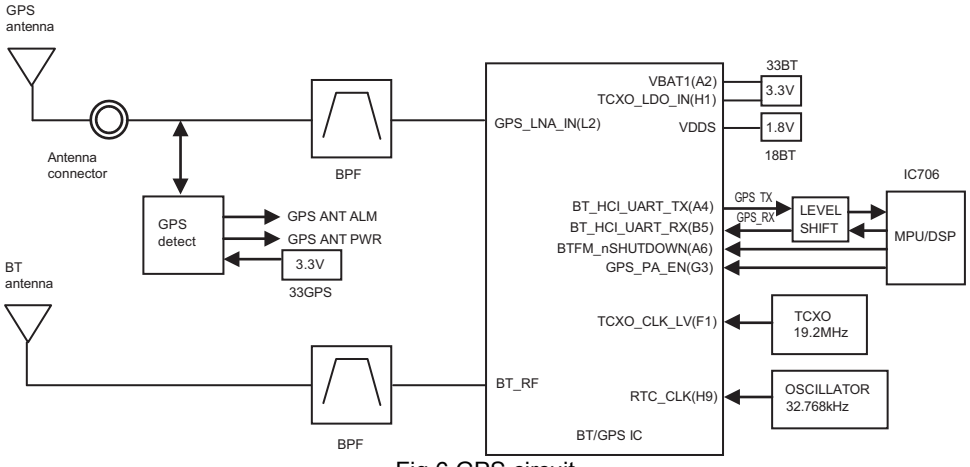


Fig.6 GPS circuit

2.5 COMPONENTS DESCRIPTION

2.5.1 Main unit (XC1-0391-XX, XC1-0410-XX)

Ref.No	Part Name	Description
IC1	IC	Voltage regulator (31BU)
IC2	IC	Power management
IC3	IC	Voltage regulator (12BU)
IC4	IC	Voltage regulator (33A)
IC5	IC	Voltage regulator (33M)
IC6	IC	Voltage regulator (50C)
IC7	IC	Voltage regulator (33SD)
IC8	IC	DC/DC Converter (54M)
IC9	IC	Load SW (18M SW)
IC10	IC	Voltage regulator (50A)
IC11	IC	DC/DC Converter (18M)
IC12	IC	Voltage regulator (33C)
IC13	IC	DC/DC Converter (200C)
IC14	IC	Voltage regulator (33OPT)
IC15	IC	Voltage regulator (90C)
IC16	IC	Voltage regulator (50CT)
IC17	IC	Voltage regulator (50R)
IC18	IC	Reset
IC100	IC	PLL IC
IC101	IC	Schmitt trigger
IC102	IC	DC AMP (CV/Assist)
IC300	IC	TX pre-drive AMP
IC301, 303	IC	APC
IC304	IC	TX power control
IC305	IC	APC SW
IC500	IC	RX 1st mixer
IC501	IC	DC AMP (CV/Assist)
IC600	IC	IF IC
IC700	IC	Level shift
IC701	IC	Flash memory
IC702	IC	Mobile DDR
IC703	IC	Clock buffer
IC704, 705	IC	Logic control
IC706	IC	MPU/DSP
IC707, 708	IC	Analog SW
IC709, 710	IC	Logic control
IC711	IC	I/O expander
IC712	IC	A/D converter
IC714	IC	Analog SW
IC715	IC	D/A converter
IC719	IC	D/A converter
IC720	IC	Reset
IC900	IC	Logic control
IC901	IC	DC AMP (25REF/VREF)
IC903	IC	AF AMP
IC902	IC	Codec
IC904	IC	Logic control
IC905	IC	Buffer AMP (BER CK/BER DT)
IC906	IC	Level shift
IC907	IC	Analog SW
IC908	IC	Schmitt trigger
IC909	IC	RS-232C driver
IC910	IC	I/O expander
IC912	IC	Logic control
Q1	Transistor	DC SW (SCTAM1)
Q3	FET	DC SW
Q4	Transistor	DC SW
Q5	FET	DC SW (SB1)
Q6, 7	Transistor	DC SW
Q8, 9	Transistor	Voltage regulator (50BU)
Q10	FET	DC SW (SB2)
Q11	Transistor	DC SW
Q12	FET	DC SW
Q14	FET	DC SW
Q15	Transistor	DC SW
Q16	FET	DC SW (90T)
Q17	Transistor	DC SW
Q18	FET	DC SW (90ANT)
Q81	FET	T/R SW
Q100	Transistor	DC SW (fin filter)
Q101	FET	DC SW
Q102	Transistor	DC SW (fin filter)
Q103	FET	DC SW
Q104	Transistor	Ripple filter
Q105	FET	VCO oscillation
Q106	Transistor	Fin AMP
Q107	FET	VCO oscillation
Q108	FET	DC SW
Q109	FET	T/R SW (VCO)
Q110, 111	Transistor	Buffer AMP
Q112	FET	DC SW
Q300	FET	TX drive AMP
Q301~303	Transistor	DC SW
Q304, 305	FET	DC SW
Q306	Transistor	DC SW
Q500	Transistor	RX local AMP
Q502	Transistor	LNA
Q600	FET	VCO oscillation
Q601	Transistor	DC SW
Q602	Transistor	Ripple filter

Ref.No	Part Name	Description
Q603	Transistor	IF AMP
Q604	FET	IF AMP
Q700	Transistor	TCXO buffer
Q701	FET	DC SW
Q703, 704	FET	DC SW
Q705	Transistor	DC SW
Q706	Transistor	50A SW
Q900, 901	FET	Audio mute
Q902	Transistor	DC SW
Q905, 906	FET	Audio mute
Q907, 908	FET	DC SW
D1	Zener diode	Overvoltage protection
D2	Diode	Reverse current prevention
D3	Zener diode	Overvoltage protection
D4	Diode	Reverse current prevention
D5	Surge absorber	Surge protection
D6	Diode	Backup battery charge
D7~10	Diode	Reverse current prevention
D11	Zener diode	Voltage regulator (50BU)
D12, 13	Diode	Reverse current prevention
D14	Diode	DC/DC converter (54M)
D15	Diode	DC/DC converter (200C)
D100	Zener diode	Overvoltage protection
D101, 102	Diode	T/R SW (fin filter)
D103, 104	Variable capacitance diode	VCO frequency control
D105~112	Variable capacitance diode	VCO assist tune
D113	Diode	Speed up
D114, 115	Diode	T/R SW (fin filter)
D117	Variable capacitance diode	TX modulation
D300	Diode	T/R SW
D301	Diode	Reverse current prevention
D302	Zener diode	Overvoltage protection
D307	Zener diode	Overvoltage protection
D309	Diode	TX Reverse power detection
D310~315	Diode	Antenna SW
D500	Diode	T/R SW
D501~507	Variable capacitance diode	RX band-pass filter tune
D508, 509	Diode	Overvoltage protection
D600, 601	Variable capacitance diode	VCO frequency control
D602	Diode array	Overvoltage protection
D700, 701	Diode	Reverse current prevention
D702~706	Varistor	Line protection
D708	Zener diode	Overvoltage protection
D801	Diode	Reverse current prevention
D900	Diode array	External speaker detection
D903	Zener diode	Overvoltage protection
D904	Diode array	Line protection
D905	Diode	Line protection
D906	Zener diode	Overvoltage protection
D907	Diode	Reverse current prevention
D908	Diode array	Line protection
D909	Diode array	External speaker detection
D910~915	Diode array	Line protection
D916	Diode	Reverse current prevention
D917	Zener diode	Overvoltage protection
D918~920	Diode array	Line protection
D921	Diode	Reverse current prevention
D922	Zener diode	Overvoltage protection
D923	Diode array	Line protection
D924	Diode	Reverse current prevention

2.5.2 Module (BT/GPS) unit (XC2-0031-80, XC2-0040-10)

Ref.No	Part Name	Description
IC1	IC	Level converter
IC2	IC	Voltage regulator (18BT)
IC3	IC	Voltage regulator (33BT)
IC4	IC	Voltage regulator (33GPS)
IC5	IC	GPS/Bluetooth
IC6, 7	IC	Level converter
Q1	FET	DC SW

2.5.3 SUB (Display) unit (XC3-0020-20, XC3-0070-20) (Only NX-5800)

Ref.No	Part Name	Description
IC1	IC	Voltage regulator (50M)
IC2	IC	Voltage regulator (30LCD)
IC3	IC	Logic control
IC4	IC	Analog SW
IC6	IC	Illuminance sensor
IC8	IC	LED driver
IC9	IC	Logic control
IC10	IC	I/O expander
IC12	IC	Logic control
Q2	FET	DC SW
Q3, 4	Transistor	DC SW
Q6	Transistor	DC SW
D1, 2	Zener diode	Overvoltage protection
D4~7	LED	LED
D9~12	LED	LED

Ref.No	Part Name	Description
D14~16	LED	LED
D20	Zener diode	Overvoltage protection
D21	LED	LED
D22	Diode	Overvoltage protection
D23, 24	Zener diode	Overvoltage protection
D25	Varistor	Surge protector
D26~32	Zener diode	Overvoltage protection

2.6 TERMINAL FUNCTION

2.6.1 Main unit (XC1-0391-XX, XC1-0410-XX)

Pin No.	Name	I/O	Function
CN4 (Ignition)			
1	IGN	I	Ignition sense input
2	GND	-	Ground
CN731 (for production)			
1~20	-	-	-
CN735 (to Module (BT/GPS) unit CN1)			
1	GPS_PWR	I	Antenna power supply detection
2	GPS_ALM	I	Antenna open/short detection
3	GND	-	Ground
4	GND	-	Ground
5	GPS_ANT_SW	O	Enable signal for 33GPS
6	GPS_PA_EN	O	GPS receiver part switching signal output
7	BT_SHUTDOWN	O	Shutdown signal output
8	WCLK	O	Audio serial data bus word clock output
9	BCLK	O	Audio serial data bus bit clock output
10	BT_AUD_DI	I	Audio signal input
11	BT_AUD_DO	O	Audio signal output
12	RTS2	O	Serial data output
13	CTS2	I	Serial data input
14	G_RXD2	I	Serial data input
15	G_TXD2	O	Serial data output
16	BT_SW	O	Enable signal for 33BT and 18BT
17	GND	-	Ground
18	GND	-	Ground
19	54M	O	5.4V output
20	54M	O	5.4V output
CN749 (to Sub (Display) unit CN6)			
1	NC (IGN)	-	No connection (Ignition sense input)
2	NC	-	No connection
3	GND	-	Ground
4	54M	O	5.4V output
5	GND	-	Ground

Pin No.	Name	I/O	Function
6	GND	-	Ground
7	18M	O	1.8V output
8	D[15]	I/O	LCD driver data output
9	D[14]	I/O	LCD driver data output
10	D[13]	I/O	LCD driver data output
11	D[12]	I/O	LCD driver data output
12	D[11]	I/O	LCD driver data output
13	D[10]	I/O	LCD driver data output
14	D[9]	I/O	LCD driver data output
15	D[8]	I/O	LCD driver data output
16	D[7]	I/O	LCD driver data output
17	D[6]	I/O	LCD driver data output
18	D[5]	I/O	LCD driver data output
19	D[4]	I/O	LCD driver data output
20	D[3]	I/O	LCD driver data output
21	D[2]	I/O	LCD driver data output
22	D[1]	I/O	LCD driver data output
23	D[0]	I/O	LCD driver data output
24	/CS_LCD	O	LCD driver chip-serect signal
25	DC	O	LCD driver data/command switch signal
26	/WR_LCD	O	LCD driver WR signal
27	/RD_LCD	O	LCD driver RD signal
28	PRST	O	LCD driver reset signal
29	/KEYINT	I	Key state change signal
30	I2CCK	O	I2C serial clock
31	I2CDT	I/O	I2C serial data
32	GND	-	Ground
33	USB_D-	I/O	USB0 PHY data minus
34	USB_D+	I/O	USB0 PHY data plus
35	GND	-	Ground
36	33M	O	3.3V output
37	DM/KVL	I/O	MIC data detection
38	GND	-	Ground
39	RXD	I	Serial data input
40	TXD	O	Serial data output
41	/PTT	I	PTT input
42	/PSW	I	Detection signal input of power switch
43	AFO+	O	AF signal output plus
44	AFO-	O	AF signal output minus
45	MIC	I	MIC signal input
46	ME	-	MIC ground
47	R_SET2	I	Radio setting signal 2
48	R_SET1	I	Radio setting signal 1
49	R_SET0	I	Radio setting signal 0
50	GND	-	Ground

Pin No.	Name	I/O	Function
CN900 (to Sub (Display) unit CN2)			
1	SPO	O	Speaker output
2	SPG	-	Speaker ground
3	GND	-	Ground
4	SB1	O	Switched power supply
CN906 (to Main unit B/2 CN907)			
1	NC	-	No connection
2~7	SB1	O	Switched power supply
8	AFO	O	RX filtered AF signal out
9	DI	I	Data signal input
10	50A	O	5V output
11	GND	-	Ground
12	DEO	O	RX detected signal output
13	MI2	I	External MIC signal input
14	ME	-	MIC ground
15	GND	-	Ground
16	RXD0	I	Serial data input 0
17	AUXO2	O	AUX output2
18	TXD0	O	Serial data output 0
19	AUXO1	O	AUX output1
20	AUXIO9	I/O	AUX input/output 9
21	AUXIO5	I/O	AUX input/output 5
22	AUXIO8	I/O	AUX input/output 8
23	AUXIO4	I/O	AUX input/output 4
24	TXD2	O	Serial data output 2
25	AUXIO3	I/O	AUX input/output 3
26	RXD2	I	Serial data input 2
27	AUXIO2	I/O	AUX input/output 2
28	AUXIO1	I/O	AUX input/output 1
29	AUXIO7	I/O	AUX input/output 7
30	AUXIO6	I/O	AUX input/output 6
CN907 (to Main unit A/2 CN906)			
1	AUXIO6	I/O	AUX input/output 6
2	AUXIO7	I/O	AUX input/output 7
3	AUXIO1	I/O	AUX input/output 1
4	AUXIO2	I/O	AUX input/output 2
5	RXD2	O	Serial data output 2
6	AUXIO3	I/O	AUX input/output 3
7	TXD2	I	Serial data input 2
8	AUXIO4	I/O	AUX input/output 4
9	AUXIO8	I/O	AUX input/output 8
10	AUXIO5	I/O	AUX input/output 5
11	AUXIO9	I/O	AUX input/output 9
12	AUXO1	I	AUX input1
13	TXD0	I	Serial data input 0
14	AUXO2	I	AUX input2
15	RXD0	O	Serial data output 0
16	GND	-	Ground
17	ME	-	MIC ground
18	MI2	O	External MIC signal output
19	DEO	I	RX detected signal input
20	GND	-	Ground
21	50C	I	5V input
22	DI	O	Data signal output
23	AFO	I	RX filtered AF signal in
24~29	SB1	I	Switched power supply
30	NC	-	No connection
CN910			
1	SB2	O	Switched power supply
2	SPI	O	Speaker output
3	SPO	I	Speaker input
4	PA	O	Control signal of Pubilc address function
5	HOR	O	Control signal of Horn alert function
6	GND	-	Ground
J700 (microSD)			
1	DAT2	I/O	Data2
2	CD/DAT3	I/O	Data3
3	CMD	I/O	Command input/output
4	VDD	O	3.3V output
5	CLK	O	Clock output
6	VSS	-	Ground
7	DAT0	I/O	Data0
8	DAT1	I/O	Data1
9	CD	I	Card detect switch
10	COMMON	-	Ground
11	GND1	-	Ground
12	GND2	-	Ground
J901 (ACC. D-Sub 25-pin)			
1	NC	-	Refer to “D-sub 25-pin connector specification”.
2	RXD1	I	
3	TXD1	O	
4	AUXIO9	I/O	
5	DI	I	
6	MI2	I	
7	GND	-	
8	AUXIO8	I/O	
9	TXD2	O	
10	RXD2	I	
11	GND	-	
12	AUXIO7	I/O	
13	AUXIO6	I/O	

Pin No.	Name	I/O	Function
14	SB	-	Refer to “D-sub 25-pin connector specification”.
15	AUXO2	O	
16	AUXO1	O	
17	AFO	O	
18	GND	-	
19	DEO	O	
20	AUXIO5	I/O	
21	AUXIO4	I/O	
22	AUXIO3	I/O	
23	AUXIO2	I/O	
24	AUXIO1	I/O	
25	ME	-	

2.6.2 Module (BT/GPS) unit (XC2-0031-80, XC2-0040-10)

Pin No.	Name	I/O	Function
CN1(to Main unit A/2 CN735)			
1	54M	I	5.4V input
2	54M	I	5.4V input
3	GND	-	Ground
4	GND	-	Ground
5	BT_SW	I	Enable signal for 33BT and 18BT
6	G_TXD2	I	Serial data intput
7	G_RXD2	O	Serial data output
8	CTS2	O	Serial data output
9	RTS2	I	Serial data input
10	BT_AUD_DO	I	Audio signal input
11	BT_AUD_DI	O	Audio signal output
12	BCLK	I	Audio serial data bus bit clock input
13	WCLK	I	Audio serial data bus word clock input
14	BT_SHUTDOWN	I	Shutdown signal input
15	GPS_PA_EN	I	GPS receiver part switching signal input
16	GPS_ANT_SW	I	Enable signal for 33GPS
17	GND	-	Ground
18	GND	-	Ground
19	GPS_ALM	O	Antenna open/short detection
20	GPS_PWR	O	Antenna power supply detection

2.6.3 Sub (Display) unit (XC3-0020-20, XC3-0070-20)

Pin No.	Name	I/O	Function
CN2 (to Main unit A/2 CN900)			
1	SP+	I	Speaker output
2	SPG	-	Speaker ground
3	GND	-	Ground
4	SB	I	Switched power supply
CN4 (LCD)			
1	VSSA	-	Ground
2	VSSA	-	Ground
3	VSSA	-	Ground
4	VCC	O	3V output
5	VCC	O	3V output
6	VSSD	-	Ground
7	VSSD	-	Ground
8	VSSD	-	Ground
9	IOVCC	O	1.8V output
10	IOVCC	O	1.8V output
11	RDX	O	LCD driver RD signal
12	WRX	O	LCD driver WR signal
13	DCX	O	LCD driver data/command switch signal
14	CSX	O	LCD driver chip-serect signal
15	DB1	I/O	LCD driver data output
16	DB2	I/O	LCD driver data output
17	DB3	I/O	LCD driver data output
18	DB4	I/O	LCD driver data output
19	DB5	I/O	LCD driver data output
20	DB6	I/O	LCD driver data output
21	DB7	I/O	LCD driver data output
22	DB8	I/O	LCD driver data output
23	DB10	I/O	LCD driver data output
24	DB11	I/O	LCD driver data output
25	DB12	I/O	LCD driver data output
26	DB13	I/O	LCD driver data output
27	DB14	I/O	LCD driver data output
28	DB15	I/O	LCD driver data output
29	DB16	I/O	LCD driver data output
30	DB17	I/O	LCD driver data output
31	CABC	-	No connection
32	RESX	O	LCD driver reset signal
33	IM0	O	Interface mode select
34	LEDA	O	54M output (LED light anode)
35	LED1	I	LED light cathode 1
36	LED2	I	LED light cathode 2
37	LED3	I	LED light cathode 3
38	LED4	-	No connection
CN5 (Internal speaker)			
1	SPG	-	Speaker ground
2	SP+	O	Speaker output
CN6 (to Main unit A/2 CN749)			
1	GND	-	Ground

Pin No.	Name	I/O	Function
2	R_SET0	O	Radio setting signal 0
3	R_SET1	O	Radio setting signal 1
4	R_SET2	O	Radio setting signal 2
5	ME	-	MIC ground
6	MIC	O	MIC signal output
7	AFO-	I	AF signal input minus
8	AFO+	I	AF signal input plus
9	/PSW	O	Detection signal input of power switch
10	/PTT	O	PTT output
11	TXD	I	Serial data input
12	RXD	O	Serial data output
13	GND	-	Ground
14	DM/KVL	I/O	MIC data detection
15	33M	I	3.3V input
16	GND	-	Ground
17	USB_D+	I/O	USB0 PHY data plus
18	USB_D-	I/O	USB0 PHY data minus
19	GND	-	Ground
20	I2CDT	I/O	I2C serial data
21	I2CCK	I	I2C serial clock
22	/KEYINT	O	Key state change signal
23	PRST	I	LCD driver reset signal
24	/RD_LCD	I	LCD driver Read signal
25	/WR_LCD	I	LCD driver Write signal
26	DC	I	LCD driver data/command switch signal
27	/CS_LCD	I	LCD driver chip-serect signal
28	D[0]	I/O	LCD driver data input
29	D[1]	I/O	LCD driver data input
30	D[2]	I/O	LCD driver data input
31	D[3]	I/O	LCD driver data input
32	D[4]	I/O	LCD driver data input
33	D[5]	I/O	LCD driver data input
34	D[6]	I/O	LCD driver data input
35	D[7]	I/O	LCD driver data input
36	D[8]	I/O	LCD driver data input
37	D[9]	I/O	LCD driver data input
38	D[10]	I/O	LCD driver data input
39	D[11]	I/O	LCD driver data input
40	D[12]	I/O	LCD driver data input
41	D[13]	I/O	LCD driver data input
42	D[14]	I/O	LCD driver data input
43	D[15]	I/O	LCD driver data input
44	18M	I	1.8V input
45	GND	-	Ground
46	GND	-	Ground
47	54M	I	5.4V input
48	GND	-	Ground
49	NC	-	No connection
50	NC (IGN)	-	No connection (Ignition sense input)
J1 (MIC jack)			
1	DM/KVL_3	I/O	MIC data detection
2	HOOK/RXD/D-2	I/O	Hook detection / Serial data input / USB PHY data minus
3	MIC_3	I	MIC signal input
4	ME_3	-	MIC ground
5	PTT/TXD_3	I/O	PTT input / Serial data output
6	GND	-	Ground
7	SB_2	O	Switched power supply
8	BLC_4/D+2	I/O	Back light control signal / USB PHY data plus

2.6.4 D-Sub 25-pin connector specification

Pin No.	Pin Name	I/O	Signal Type	Rating and Condition				
				Parameter	Min	Typ	Max	Unit
1	NC	-	-	-				
2	RXD1	I	Digital	Input Voltage Range	-30		30	V
				Threshold Low	0.5	1.3		V
				Threshold High		1.6	2.45	V
				Baud Rate	-		300k	bps
				CL		100		pF
3	TXD1	O	Digital	Voltage Swing (3kΩ Load)	±5	±5.2		V
				Baud Rate	-		300k	bps
				CL		100		pF
4	AUXIO9	I/O	Digital	VIH	4	-	5.2	V
				VIL	-0.5	-	1	V
				VOH (Io=-1.5mA)	4	-	5.2	V
				VOL (Io=1.5mA)	-	-	1.1	V
	CTS (RS-232C)	I	Digital	Input Voltage Range	-30		30	V
				Threshold Low	0.5	1.3		V
				Threshold High		1.75	2.6	V
5	DI	I	Analog	Input Voltage range (STD Deviation)	-	0.5	-	Vp-p
				Freq Response (STD Dev.) 20~9600Hz	-3		3	dB
	RTS (RS-232C)	O	Digital	Voltage Swing (3kΩ Load)	±5	±5.2		V
6	MI2	I	Analog	Audio Level (STD Deviation)	-	5	-	mVrms
				Allowable Freq	300		3000	Hz
				Input Impedance	-	600	-	Ω
7	GND	-	GND					
8	AUXIO8	I/O	Digital	VIH	4	-	5.2	V
				VIL	-0.5	-	1	V
				VOH (Io=-1.5mA)	4	-	5.2	V
				VOL (Io=1.5mA)	-	-	1.1	V
9	TXD2	O	Digital	VOH (Io=-1.5mA)	3.7	-	5.2	V
				VOL (Io=1.5mA)	-	-	1.1	V
				CL		100		pF
10	RXD2	I	Digital	VIH	2.8	-	5.2	V
				VIL	-	-	0.65	V
				CL		100		pF
11	GND	-	GND					
12	AUXIO7	I/O	Digital	VIH	4	-	5.2	V
				VIL	-0.5	-	1	V
				VOH (Io=-1.5mA)	3.7	-	5.2	V
				VOL (Io=1.5mA)	-	-	1.1	V
13	AUXIO6	I/O	Digital	VIH	4	-	5.2	V
				VIL	-0.5	-	1	V
				VOH (Io=-1.5mA)	3.7	-	5.2	V
				VOL (Io=1.5mA)	-	-	1.1	V

Pin No.	Pin Name	I/O	Signal Type	Rating and Condition				
				Parameter	Min	Typ	Max	Unit
14	SB	-	Power	Voltage	This parameter depends on Battery Voltage			
				Supply Current	-	-	2	A
15	AUXO2	O	Digital	The type of this port is open collector.				
				VOL			0.4	V
				IOL			-500	mA
16	AUXO1	O	Digital	The type of this port is open collector.				
				VOL			0.4	V
				IOL			-500	mA
17	AFO	O	Analog	Output Level		0.7		Vp-p
				Coupling Capacitor		10		uF
				allowable Load	100	-	-	kΩ
				allowable freq	300		3000	Hz
18	GND	-	GND					
19	DEO	O	Analog	Output Level	-	0.28	-	Vp-p
				Coupling Capacitor	-	10	-	uF
				allowable Load	47	-	-	kΩ
				Frequ. Response (STD Dev) Wide 20~4800Hz	-6		1	dB
				4800~7200Hz	-24		1	dB
				Narrow 20~4800Hz	-15		1	dB
20	AUXIO5	I/O	Digital	VIH	4	-	5.2	V
				VIL	-0.5	-	1	V
				VOH (Io=-1.5mA)	4	-	5.2	V
				VOL (Io=1.5mA)	-	-	1.1	V
21	AUXIO4	I/O	Digital	VIH	4	-	5.2	V
				VIL	-0.5	-	1	V
				VOH (Io=-1.5mA)	4	-	5.2	V
				VOL (Io=1.5mA)	-	-	1.1	V
22	AUXIO3	I/O	Digital	VIH	4	-	5.2	V
				VIL	-0.5	-	1	V
				VOH (Io=-1.5mA)	4	-	5.2	V
				VOL (Io=1.5mA)	-	-	1.1	V
23	AUXIO2	I/O	Digital	VIH	4	-	5.2	V
				VIL	-0.5	-	1	V
				VOH (Io=-1.5mA)	4	-	5.2	V
				VOL (Io=1.5mA)	-	-	1.1	V
24	AUXIO1	I/O	Digital	VIH	4	-	5.2	V
				VIL	-0.5	-	1	V
				VOH (Io=-1.5mA)	4	-	5.2	V
				VOL (Io=1.5mA)	-	-	1.1	V
25	ME	-	Analog	This is GND port for Microphone.				

SECTION 3
DISASSEMBLY

3.1 Precautions for Disassembly

3.1.1 Main PCB (Main unit A/2) disassembly

(1) Remove all screws and antenna terminals on the Main PCB.
(2) Rotate the bush of the power supply cable 90 degrees counterclockwise as viewed from the rear of the chassis <1> and remove the power supply cable from the chassis <2>.
(3) When the speaker phone jack is pushed up, using your finger, from the rear of the chassis <3>, the Main PCB is removed from the chassis.

Note:
The Main PCB and D-sub PCB (Main unit B/2) are connected with a flat cable.
Remove them carefully.

(4) Turn the Main PCB over and remove the flat cable from the connector (CN906). <4>
(5) Remove the Main PCB from the chassis.

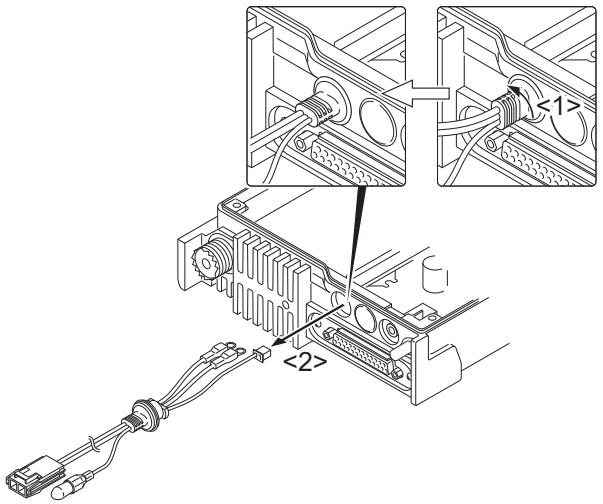


Fig.1-1

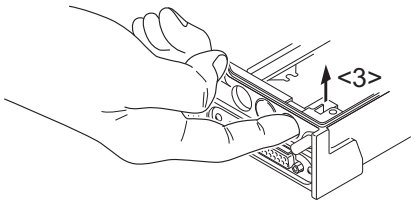


Fig.1-2

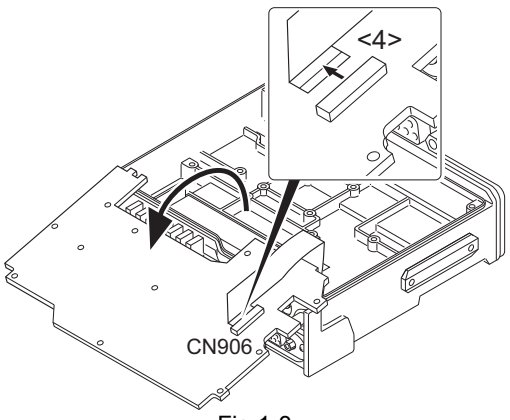


Fig.1-3

3.1.2 Removing the speaker hardware fixture (J2B-0023-00) and holder (J1K-0019-00)

(1) Remove the speaker lead from the holder hook. <1>
(2) Remove the speaker connector from the display unit connector (CN5). <2>
(3) When removing the speaker hardware fixture, insert a flat-head screwdriver at the position shown in Figure 2-1 and tilt it in the direction shown by the arrow. <3>
(4) To remove the holder, insert a flat-head screwdriver into tab of the holder and tilt it in the direction shown by the arrow. <4>

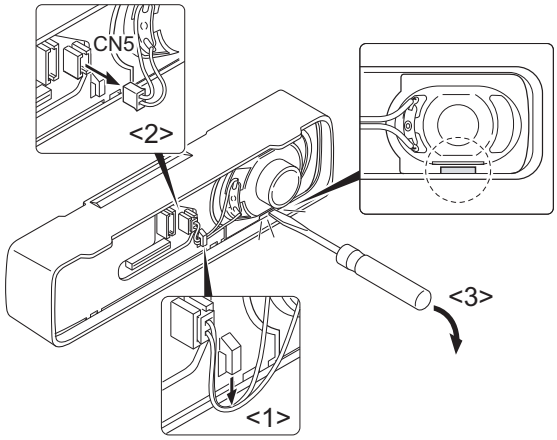


Fig.2-1

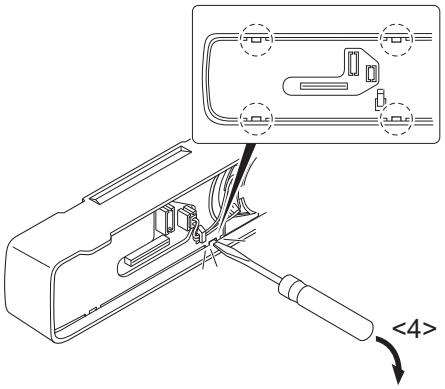


Fig.2-2

3.2 Precautions for Reassembly

3.2.1 Main PCB (Main unit A/2) reassembly

(1) With the Main PCB turned over, insert the flat cable from the D-sub PCB (Main unit B/2) into the connector (CN906) on the Main PCB.
(2) Place the Main PCB at its original position as shown in Figure 3.

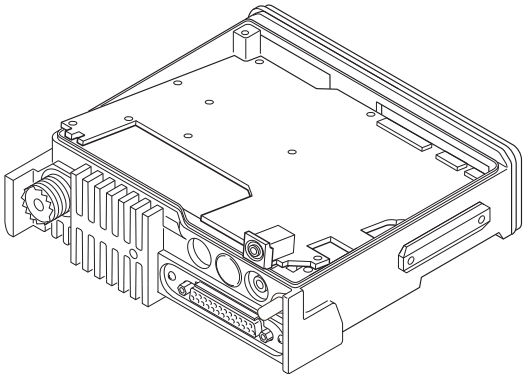


Fig.3

3.2.2 Power supply cable installation procedure

(1) Pass the power supply cable through the chassis hole <1> as shown in Figure 4-1 and insert the bush into the chassis hole.
(2) Rotate the bush of the power supply cable 90 degrees clockwise as viewed from the rear of the chassis. <2>
(3) Align the ignition sense connector (yellow) of the power supply cable around the chemical capacitor (C401) and connect it to the Main unit (A/2) connector (CN4).
(4) Align the + (positive) terminal of the power supply cable (red) as shown in Figure 4-2 and fix it to the terminal strip with a screw.
(5) Align the - (negative) terminal of the power supply cable (black) as shown in Figure 4-2 and fix it to the terminal strip with a screw.

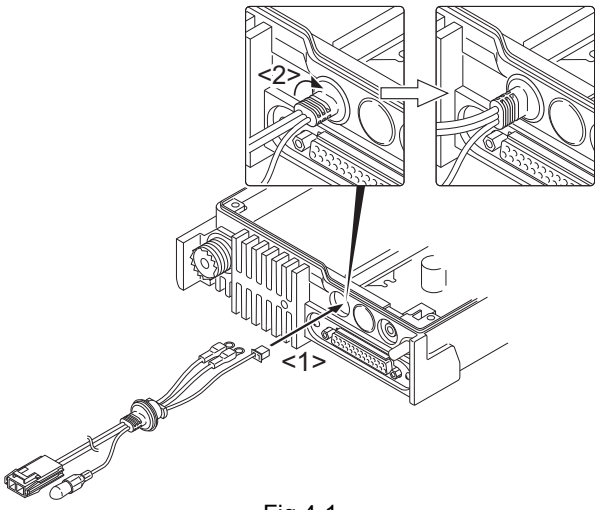


Fig.4-1

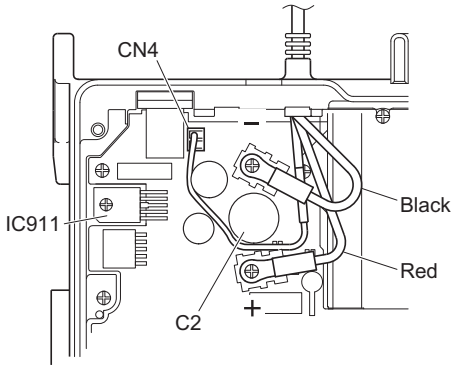
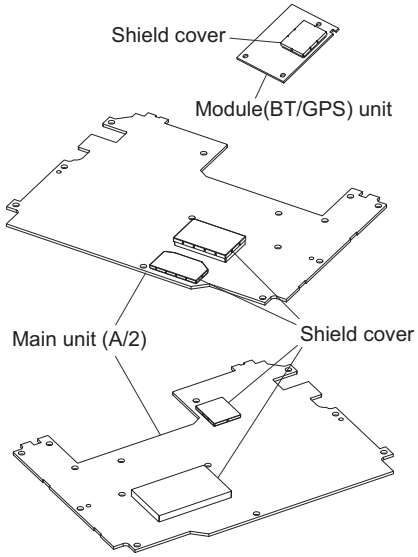


Fig.4-2

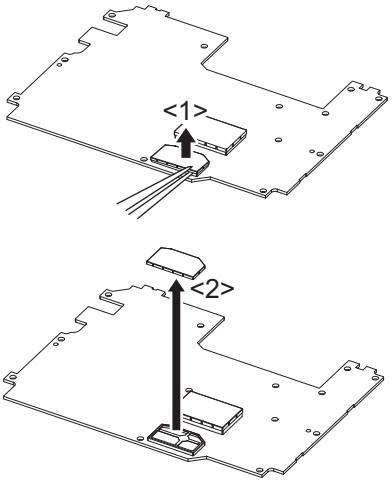
3.2.3 Remove the top cover from the shield cover

(1) There are five shield covers on the Main unit (A/2) and Module (BT/GPS) unit, the top covers can be removed.



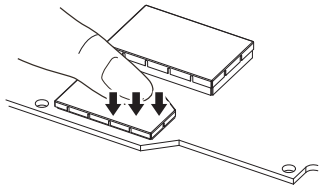
(2) Use tweezers to slightly lift the edge of the top cover. <1>
(3) As you do step 2 above, vary the position you hold the top cover as you lift it, and remove the top cover <2>.

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.



3.2.4 Top packing installation procedure

(1) Place the top packing over the shielding plate.
(2) Fit the convex tab of the top packing into the hollow of the chassis. <1>.
(3) Fit the chassis into the groove of the top packing. <2>
Verify that the top packing is in close contact with the chassis.

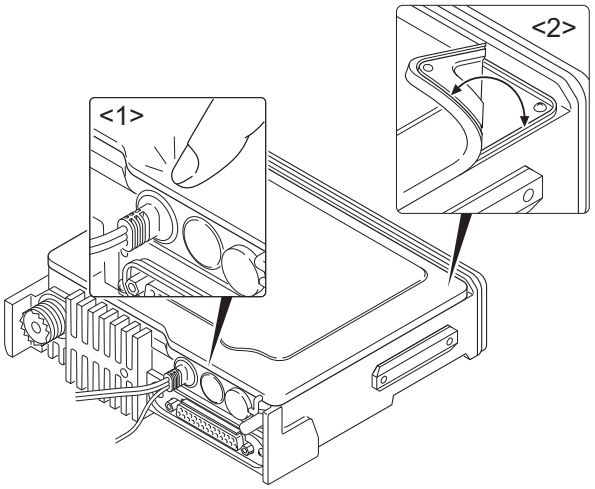


Fig.5

3.2.5 D-sub cap installation procedure

To improve water resistance, fit the D-sub cap into the D-sub terminal hardware fixture of the transceiver in the following order:

(1) Fit the left side <1> of the D-sub cap into the hardware fixture.
(2) Fit the right side <2> of the D-sub cap into the hardware fixture.
(3) Fit the center <3> of the D-sub cap into the hardware fixture.
Verify that the D-sub cap is in close contact with the hardware fixture.

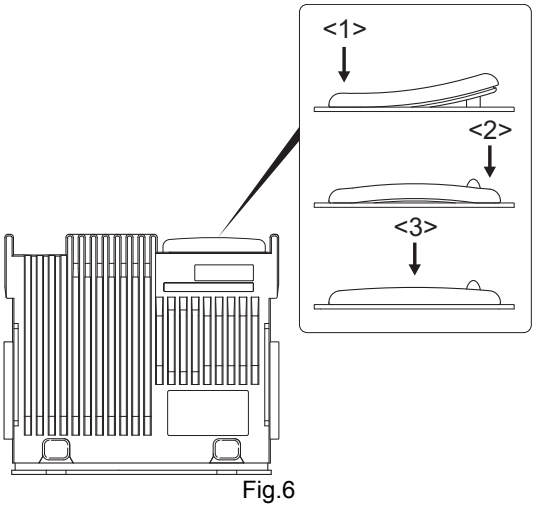


Fig.6

3.2.6 Installing the holder (J1K-0019-00) and speaker hardware fixture (J2B-0023-00)

(1) Insert two tabs of the holder (J1K-0019-00) into the hollows in the top of the panel. <1>
(2) Push the two tabs of the holder in on the opposite side of those in step 1 above and fit them into the hollow in the bottom of the panel. <2>

Note:

Push in the holder until it snaps in place.

(3) Install the speaker holder onto the panel. <3>

Note:

To improve water resistance, fit the panel into the groove of the holder.

(4) Place the speaker into the speaker holder.

Note:

The speaker must not ride on the holder rib.

(5) Place the spacer on the speaker.
(6) Insert the hardware fixture (J2B-0023-00) into the hollow of the panel as shown in Figure 7-3, then push two parts of the hardware fixture and fit it into the hollow of the top of the panel. (Fig. 7-3 <4>)

Note:

Push in the hardware fixture until it snaps in place.

(7) Insert the speaker connector into the display unit connector (CN5).
(8) Place the speaker lead on the holder hook.

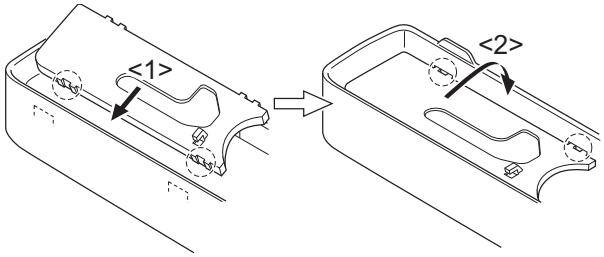


Fig.7-1

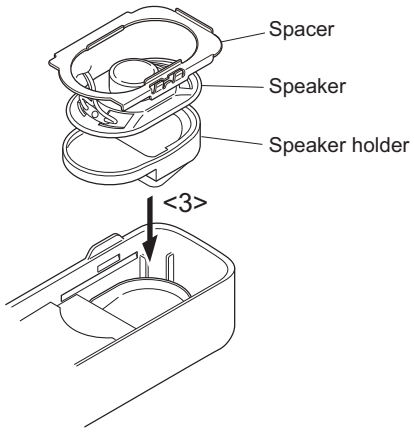


Fig.7-2

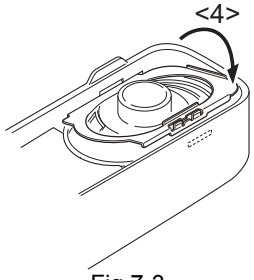
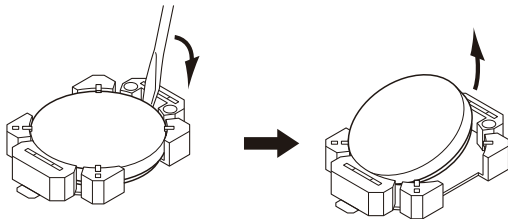


Fig.7-3

3.2.7 Removing the lithium cell (W09-0971-05)

Insert a non-conductive screwdriver to groove of one side of the socket (CN12) and pry the lithium cell up from the socket.

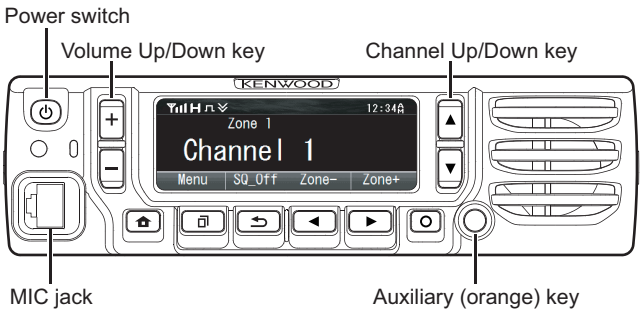


3.2.8 Installing the lithium cell (W09-0971-05)

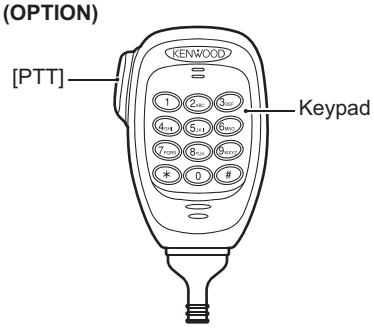
Insert a lithium cell into one side of the socket (CN12).
Push the lithium cell to insert the lithium cell into the socket.

SECTION 4
ADJUSTMENT

4.1 F,F2,K,K2 TYPE Controls



KMC-36 (OPTION)



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 4Ω 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. 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 last used channel and signaling numbers are displayed. When the panel test mode is activated for the first time, the channel and signaling numbers are 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	"Func" not appears on the sub LCD display	
	Function	Display
[+]	Push: Volume up Hold: Volume up continuously	-
[-]	Push: Volume down Hold: Volume down continuously	-
[▲]	Push: Test channel up Hold: Test channel up continuously	Channel No.
[▼]	Push: Test channel down Hold: Test channel down continuously	Channel No.
[◀]	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"
[⧉]	Shift to panel tuning mode	-
[⮌]	Function on	"Func" 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.

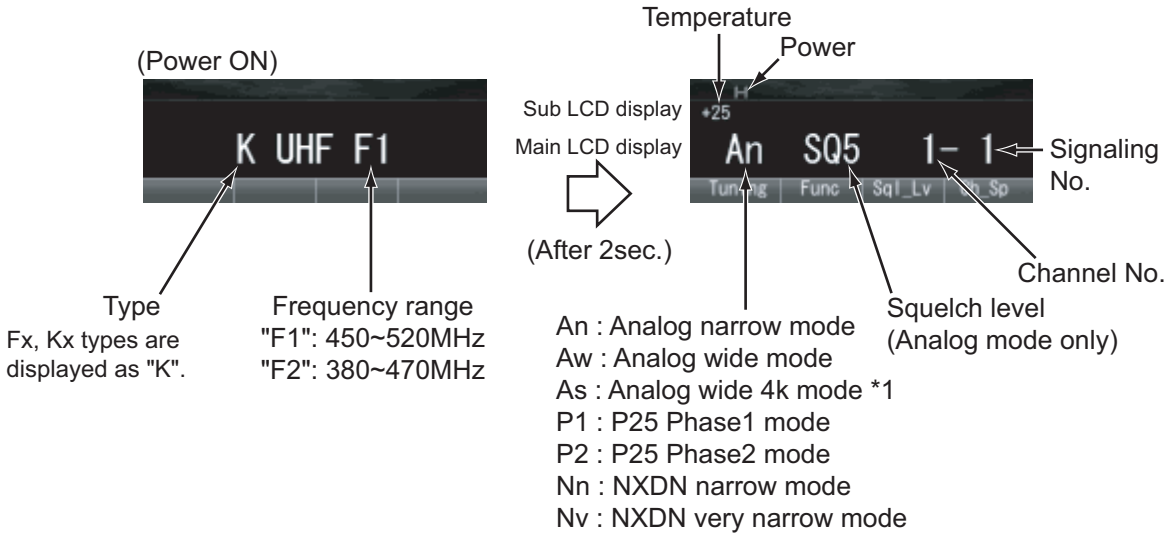
Key	"Func" appears on the sub LCD display	
	Function	Display
[+]	P25 Modulation Type (C4FM/LSM) *3	LSM : icon appears
[-]	Function off	-
[▲]	Talk Around on/off	On: icon appears
[▼]	Mode selection Analog/P25 Phase1 /P25 Phase2/NXDN	Analog: "A" P25 Phase1: "P1" P25 Phase2: "P2" NXDN: "N"
[◀]	-	-

Key	"Func" appears on the sub LCD display	
	Function	Display
[▸]	Key/LCD check	The contents of the pressed key etc., appear.
[▣]	High power/Medium power/Low power	High: "H" Medium: "M" Low: "L"
[⮌]	Function off	-
[◯]	Compander on/off	On: icon appears
[⌂]	External Speaker on/off	On: icon appears
[AUX (Orange)]	Function off	-
[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**
  "Func" Appears at function on.

- **LCD display in panel test 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	F,K		F2,K2	
	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
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)

No.	RX	TX
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	None	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
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)

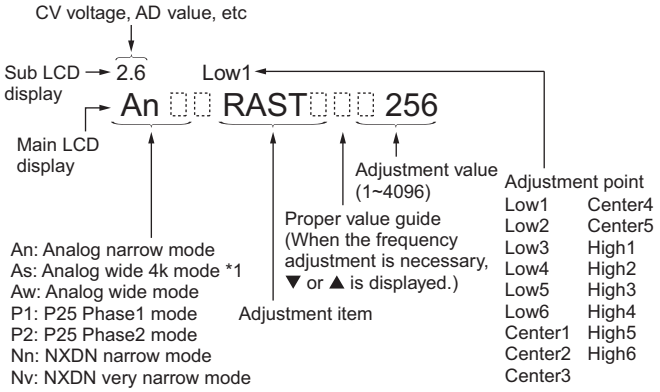
RAN: Radio Access Number
PN9: Pseudo-Random Pattern
No.7, 9 Item: PC test mode only

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 4, 6 or 8 reference level adjustments, and use the [▶] key to switch between Wide5k/ Wide4k/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)
[+]	Volume up	Continuation up
[-]	Volume down	Continuation down
[▲]	Adjustment value up	Continuation up
[▼]	Adjustment value down	Continuation down
[◀]	Auto adjustment start	-
[▶]	Wide/Narrow/P25/NXDN	-
[⧉]	Shift to panel test mode	-
[⮌]	To enter 5,9 or 17 reference level adjustments	-
[○]	Writes the adjustment value	-

Key	Function	
	Push	Hold (1 second)
[⌂]	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] (MIC)	Transmit	
[0] to [9] and [#],[✱] (MIC)	-	

4.3.3 5, 9 or 17 reference level adjustments frequency

High Maximum Power, Medium Maximum Power, Low Maximum Power, High Transmit Power Limit, Mid Transmit Power Limit, Low Transmit Power Limit, High Transmit Power, Medium Transmit Power, Low Transmit Power, Sensitivity 1, Sensitivity 2, RSSI Reference, Open Squelch, Low RSSI, High RSSI, Tight Squelch

Tuning point	Display	F,K		F2,K2	
		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	F,K		F2,K2	
		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	F,K		F2,K2	
		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 Maximum Power	High Maximum Power is adjusted.
Medium Maximum Power	Medium Maximum Power is adjusted.
Low Maximum Power	Low Maximum Power is adjusted.
High Transmit Power Limit	High Transmit Power Limit is adjusted.
Medium Transmit Power Limit	Medium Transmit Power Limit is adjusted.

Adjustment Item	Description
Low Transmit Power Limit	Low Transmit Power Limit is adjusted.
High Transmit Power	High Transmit Power is adjusted.
Medium Transmit Power	Medium Transmit Power is adjusted.
Low Transmit Power	Low Transmit Power is adjusted.
Balance	The transmit modulation frequency response is adjusted. This item is adjusted so that the deviation of 2kHz becomes the same deviation of 20Hz. This item must be adjusted before all adjustment items for deviations are adjusted.
High Deviation (P25/NXDN)	High Deviation of P25/NXDN is adjusted.
Maximum Deviation (Analog Wide/Narrow)	Maximum Deviation of Analog (Wide/Narrow) is adjusted. This item must be adjusted before all adjustment items for tone deviations are adjusted.
QT Deviation	QT tone deviation is adjusted.
DQT Deviation	DQT tone deviation is adjusted.
LTR Deviation	LTR tone deviation is adjusted.
DTMF Deviation	DTMF tone deviation is adjusted.
Single Tone Deviation	The deviation of Single Tone used in “2-tone” is adjusted.
MSK Deviation	MSK tone deviation is adjusted.

Adjustment Item	Description
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.
Sensitivity 2	The gain of RF amplifier is adjusted. The performance of the interfering wave is improved.

Adjustment Item	Description
RSSI Reference	The minimum RSSI level for scan stop is adjusted.
Open Squelch	The squelch level at level “5” is adjusted.
Low RSSI	RSSI display level “ ” is adjusted. Both “Low RSSI” and “High RSSI” must be adjusted. (The curve data of RSSI level is applied.)
High RSSI	
Tight Squelch	The squelch level at level “9” is adjusted.

4.3.5 Adjustment item and Display

Order	Adjusutment 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							
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 Maximum Power	MAX_H	-	-	-	5	-	-	-	-	Transmitter Section 3
				1~256							
7	Medium Maximum Power	MAX_M	-	-	-	5	-	-	-	-	Transmitter Section 4
				1~256							
8	Low Maximum Power	MAX_L	-	-	-	5	-	-	-	-	Transmitter Section 5
				1~256							
9	High Transmit Power Limit	H_LMT	-	-	-	5	-	-	-	-	Transmitter Section 6
				1~256							
10	Medium Transmit Power Limit	M_LMT	-	-	-	5	-	-	-	-	Transmitter Section 7
				1~256							
11	Low Transmit Power Limit	L_LMT	-	-	-	5	-	-	-	-	Transmitter Section 8
				1~256							
12	High Transmit Power	H_PWR	-	-	-	5	-	-	-	-	Transmitter Section 9
				1~1024							
13	Medium Transmit Power	M_PWR	-	-	-	5	-	-	-	-	Transmitter Section 10
				1~1024							
14	Low Transmit Power	L_PWR	-	-	-	5	-	-	-	-	Transmitter Section 11
				1~1024							
15	Balance	BAL	(Encode frequency)	-	-	9	-	-	-	-	Transmitter Section 12
				1~1024							

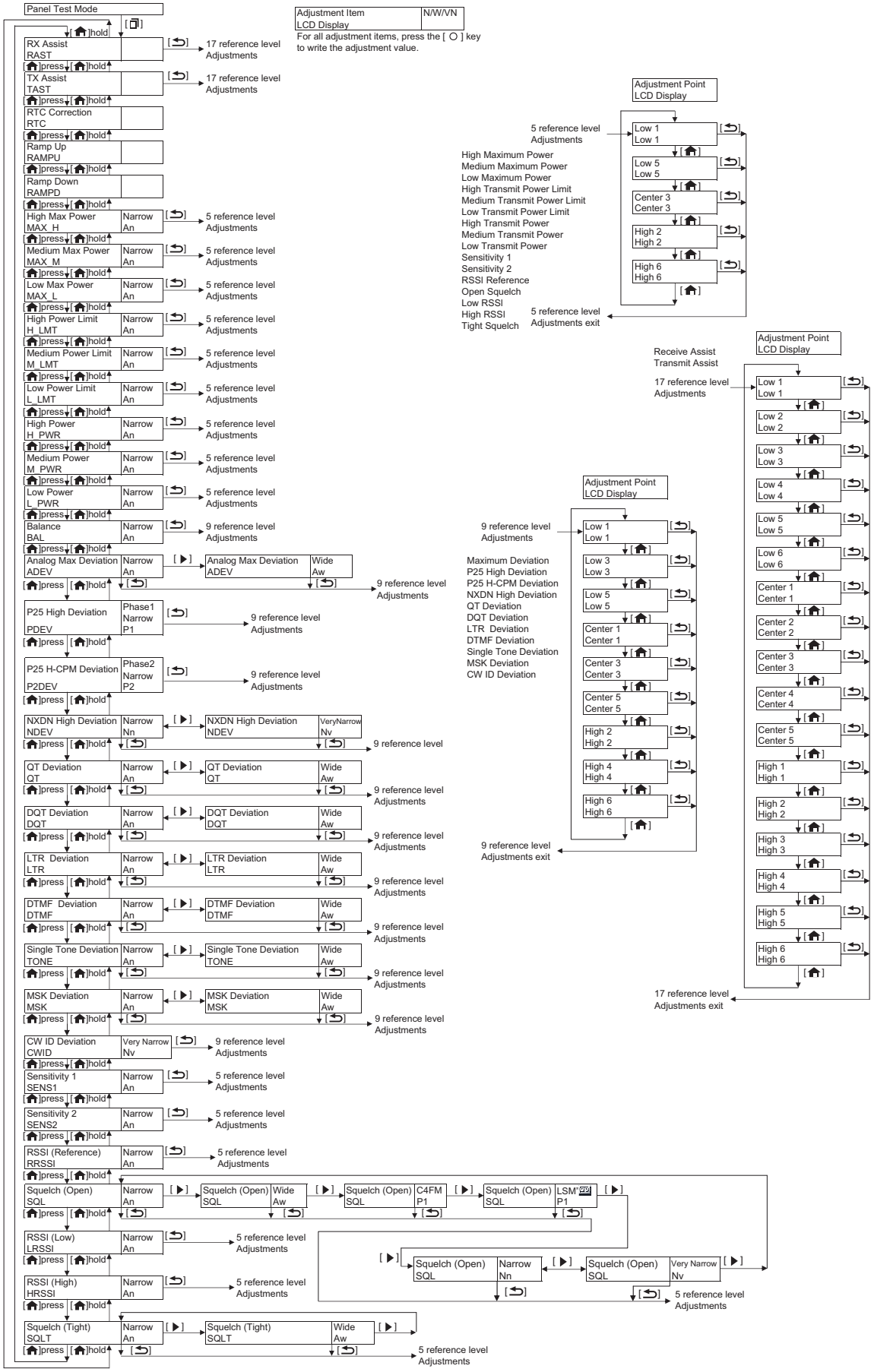
Order	Adjusutment item	Main LCD display	Sub LCD display	Aw (Analog Wide)	As *2 (Analog Wide 4k)	An (Analog Narrow)	P1 (P25 Phase1)	P2 (P25 Phase2)	Nn (NXDN Nar-row)	Nv (NXDN Very Nar-row)	Adjust item Number
				Adjustment range							
16	Maximum Deviation	ADEV	-	9	9 *2	9	-	-	-	-	Transmitter Section 13
				1~1024							
17	P25 High Deviation	PDEV	-	-	-	-	9	-	-	-	Transmitter Section 14
				1~1024							
18	P25 H-CPM Deviation	P2DEV	(RSSI measurement value)	-	-	-	-	9	-	-	Transmitter Section 15
				1~1024							
19	NXDN High Deviation	NDEV	-	-	-	-	-	-	9	9	Transmitter Section 16
				1~1024							
20	QT Deviation	QT	-	9	9 *2	9	-	-	-	-	Transmitter Section 17
				1~1024							
21	DQT Deviation	DQT	-	9	9 *2	9	-	-	-	-	Transmitter Section 18
				1~1024							
22	LTR Deviation	LTR	-	9	9 *2	9	-	-	-	-	Transmitter Section 19
				1~1024							
23	DTMF Deviation	DTMF	-	9	9 *2	9	-	-	-	-	Transmitter Section 20
				1~1024							
24	Single Tone Deviation	TONE	-	9	9 *2	9	-	-	-	-	Transmitter Section 21
				1~1024							
25	MSK Deviation	MSK	-	9	9 *2	9	-	-	-	-	Transmitter Section 22
				1~1024							
26	CW ID Deviation	CWID	-	-	-	-	-	-	-	9	Transmitter Section 23
				1~1024							
27	Sensitivity 1	SENS1	(RSSI measurement value)	-	-	5	-	-	-	-	Receiver Section 3
				1~256							
28	Sensitivity 2	SENS2	(RSSI measurement value)	-	-	5	-	-	-	-	Receiver Section 2
				1~256							
29	RSSI Reference	RRSSI	(RSSI measurement value)	-	-	5	-	-	-	-	Receiver Section 4
				1~256							
30	Open Squelch	SQL	(ASQDET measurement value)	5	5 *2	5	5 *3	-	5	5	Receiver Section 5
				1~256							
31	Low RSSI	LRSSI	(RSSI measurement value)	-	-	5	-	-	-	-	Receiver Section 6
				1~256							
32	High RSSI	HRSSI	(RSSI measurement value)	-	-	5	-	-	-	-	Receiver Section 7
				1~256							
33	Tight Squelch	SQLT	(ASQDET measurement value)	5	5 *2	5	-	-	-	-	Receiver Section 8
				1~256							

*2: Wide 4k 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.

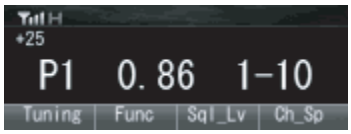
(4) Select a test frequency ("4.2.3 Frequency and Signaling" (2) Test signaling Test frequency).

(5) Measure the BER (Bit Error Rate) using the digital radio tester.

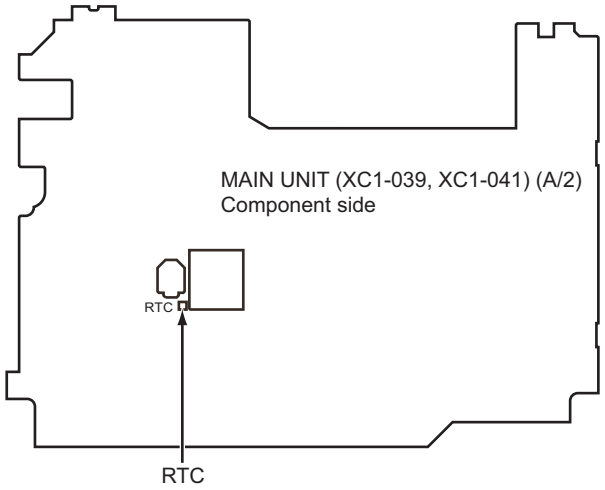
Enter a standard input signal into the transceiver as a standard tone test pattern for P25, FSW+PN9 for NXDN.

(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".)



4.5 Adjustment points

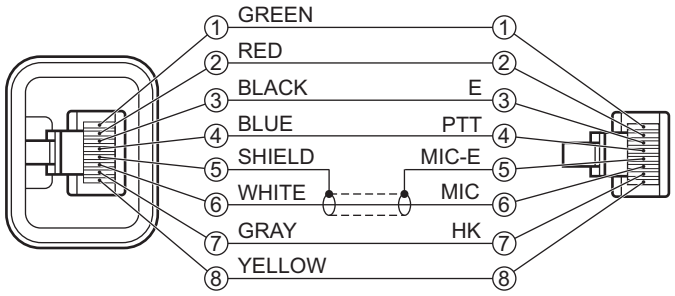


4.6 Test Equipment Required for Alignment

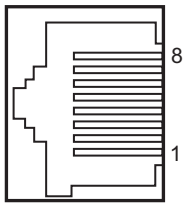
Test Equipment	Major Specifications	
1. Standard Signal Generator (SSG)	Frequency Range Modulation Output	100 to 900MHz Frequency modulation and external modulation -127dBm/0.1uV to greater than -20dBm/22.4mV
	When performing the Frequency adjustment, the following accuracy is necessary. • 0.001ppm Use a standard oscillator for adjustments, if necessary.	
2. Power Meter	Input Impedance Operation Frequency Measurement Capability	50Ω 100 to 900MHz Vicinity of 100W
3. Deviation Meter	Frequency Range	100 to 900MHz
4. Digital Volt Meter (DVM)	Measuring Range Input Impedance	10mV to 20V DC High input impedance for minimum circuit loading
5. Oscilloscope		DC through 30MHz
6. Frequency Counter	Frequency Range Frequency Stability	10Hz to 1000MHz 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		20A or more
8. AF Volt Meter (AF VM)	Frequency Range Voltage Range	50Hz to 10kHz 1mV to 10V
9. Audio Generator (AG)	Frequency Range Output	50Hz to 5kHz or more 0 to 1V
10. Distortion Meter	Capability Input Level	3% or less at 1kHz 50mV to 10Vrms
11. Spectrum Analyzer	Measuring Range	DC to 1GHz or more
12. 4Ω Dummy Load		Approx. 4Ω, 10W
13. Regulated Power Supply		13.6V, approx. 20A (adjustable from 9V to 17V) Useful if ammeter equipped

*The test equipment which is not used for adjustment is contained in this table.

■**Test cable for microphone input (E30-3360-28)**



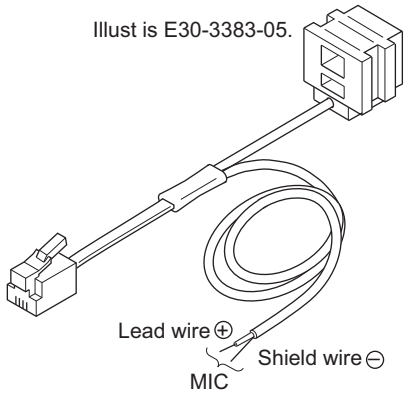
■**MIC connector (Front panel view)**



1 : MBL
2 : +B
3 : GND
4 : PTT/TXD (PC serial data from radio)
5 : MICE
6 : MIC
7 : HOOK/RXD (PC serial data to radio)
8 : DM

■**Tuning cable (E30-3383-05 or E30-7754-05)**

Adapter cable (E30-3383-05 or E30-7754-05) is required for injecting an audio if PC tuning is used.
See “PC Mode” section for the connection.



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 @425.1MHz (F2,K2) ±121.2Hz @485.1MHz (F,K)
2. High power check	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	40W~50W 13A 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	40W~50W 13A 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	40W~50W 13A or less

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel test mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
3. Low power check	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	3.5W~6.5W 7A 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	3.5W~6.5W 7A 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	3.5W~6.5W 7A or less
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 Oscillo-scope AG AF VM	Panel	ANT Ext. SP connec-tor			Adjust AG input to get a standard MOD.	5mV ±1mV
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 VM Oscilloscope Distortion meter 4Ω Dummy load	Panel	ANT Ext. SP connec-tor			Check	12dB SINAD or more

4.8 Common Section

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equip-ment	Unit	Ter-minal	Unit	Parts	Method	
1. Setting	1) DC voltage:13.6V 2) SSG standard modulation [Wide] MOD:1kHz,DEV:3kHz [Narrow] MOD:1kHz,DEV:1.5kHz								
2. Receive Assist	1) Adj item: [RAST] Adjust:[****] 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]→ Adjust:[****] Press [◯] key to store the adjustment value.	1) Adj item: [Receive Assist] 2) Adj item: [Low1],[Low2], [Low3],[Low4], [Low5],[Low6], [Center1], [Center2], [Center3], [Center4], [Center5], [High1],[High2] [High3],[High4] [High5],[High6] Press [Apply All] button to store the adjustment value.				Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	**[PC test mode]** **[Automatic Adjustment]** 1) Press [Tune Assist Voltage] button. 2) Press [Apply All] button to store the adjustment value after the automatic adjustment has finished. **[Manual Adjustment]** [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. **Note:** Confirm the VCO lock voltage approximately 3 seconds after the adjustment value is changed.	2.5V±0.1V **[Automatic Adjustment]** After the automatic adjustment is performed, verify that the VCO lock voltage is within the voltage range which is specified by the manual adjustment. **[Manual Adjustment]** Press [Apply All] button to store the adjustment value after all adjustment point have been adjusted. **Note:** 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	
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]→ Adjust:[****] PTT: ON 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] PTT: Press [Transmit] button. Press [Apply All] button to store the adjustment value.				Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	**[PC test mode]** **[Automatic Adjustment]** 1) Press [Tune Assist Voltage] button. 2) Press [Apply All] button to store the adjustment value after the automatic adjustment has finished. **[Manual Adjustment]** [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. **Note:** Confirm the VCO lock voltage approximately 3 seconds after the adjustment value is changed.	2.5V±0.1V **[Automatic Adjustment]** After the automatic adjustment is performed, verify that the VCO lock voltage is within the voltage range which is specified by the manual adjustment. **[Manual Adjustment]** Press [Apply All] button to store the adjustment value after all adjustment point have been adjusted. **Note:** The assist adjustment value must be between from 340 to 3550.
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)) **Caution:** 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] [←], [→]	**[PC test mode]** Press [Start] button of "Auto Tuning". Press [Apply] button to store the adjustment value after the automatic adjustment has finished.	**[PC test mode]** "IF20" value = Within 0±20 digits. The value of "IF20" will become around "0" after the adjustment has finished. **Remark:** "Frequency" is adjusted under receiving condition with SSG.

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equip-ment	Unit	Ter-minal	Unit	Parts	Method	
5. RTC Corre-citon	1) Adj item: [RTC] Adjust:[****] Press [◯] key to store the ad-justment val-ue.	1) Adj item: [RTC Correction] Data: {****] Press [Apply] button to store the adjust-ment value.	Fre-quency Counter	Panel	TEST POINT (CN715)		[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	**[Panel tuning mode]** Press [◯] key to store the adjustment value. **[PC test mode]** Press [Apply] button to store the adjustment value.	**Remaks:** Change the adjust-ment value so that the frequency cur-rently 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] [←], [→]	**[PC test mode] [Automatic Adjustment]** 1) Press [Tune Rump Offset] button. 2) Press [Apply All] button to store the adjustment value after the automatic adjustment has finished. 3) Check Ramp UP Offset Monitor Value Over 45. **[Manual Adjustment]** 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”.	
2. Ramp down Offset	1) Adj item: [RAMPD] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.		Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	**[PC test mode] [Automatic Adjustment]** 1) If "Automatic Adjustment" is completed in the item of "Ramp up Offset", this item is Completed in addition. Check Ramp down Offset Monitor Value under 50 with PTT ON. **[Manual Adjustment]** 1) Set the following value with reference to the value that you applied in the item of "Ramp up Offset" 2)Write calcurated Value "Ramp up Offset-70". 3)If the subtraction result is less than "1", apply"1".	

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
3. High Maximum Power	1) Adj item: [MAX_H] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [High Maximum Power] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Press [Transmit] button. Press [Apply] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	55W	±1W 15A or less **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
4. Medium Maximum power	1) Adj item: [MAX_M] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [Medium Maximum Power] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Press [Transmit] button. Press [Apply] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	55W	±1W 15A or less **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
5. Low Maximum power	1) Adj item: [MAX_L] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [Low Maximum Power] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Press [Transmit] button. Press [Apply] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	55W	±1W 15A or less **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
6. High Transmit Power Limit	1) Adj item: [H_LMT] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] PTT : OFF Press [◯] key to store the adjustment value.	1) Adj item: [High Transmit Power Limit] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Press [Apply] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 256 (Fixed)	

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
7. Medium Transmit Power Limit	1) Adj item: [M_LMT] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] PTT : OFF Press [◯] key to store the adjustment value.	1) Adj item: [Medium Transmit Power Limit] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Press [Apply] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 256 (Fixed)	
8. Low Transmit Power Limit	1) Adj item: [L_LMT] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] PTT : OFF Press [◯] key to store the adjustment value.	1) Adj item: [Low Transmit Power Limit] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Press [Apply] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 256 (Fixed)	
9. High Transmit Power	1) Adj item: [H_PWR] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[****] PTT : ON Press [◯] 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] [←], [→]	45W	±1W 12A or less **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
10. Medium Transmit Power	1) Adj item: [M_PWR] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[****] PTT : ON Press [◯] 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] [←], [→]	5W **Note:** 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 5.0W.	±0.5W 7A or less **[PC test mode]** 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	
11. Low Transmit Power	1) Adj item: [L_PWR] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[****] PTT : ON Press [◯] 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] [←], [→]	5W	±0.5W 7A or less **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
12. Balance *1	1) Adj item: [Balance] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [Balance] 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] [←], [→]	The Deviation of 20Hz frequency is fixed. Change the 2kHz adjustment value to become the same deviation of 20Hz within the specified range. (a supplementary explanation: Another way to adjust is ready. (Same as TK-5810, the old model of NX-5800). Press [AUX(Orange)] key to switch the tone to 100Hz square wave. Then, make the demodulation waveform shown on oscilloscope into square shape.)	2kHz Tone deviation is within ± 1.0% of 20Hz tone deviation. **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.

*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.

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
13. Maximum Deviation *2 [Analog Wide]	1) Adj item: [ADEV] Adjust:[****] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [Maxmum 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 fixed value for each adjustment point. (The value is written below.) Transmit at each adjustment point and check that the deviation is between 4150Hz and 4250Hz. Deviation meter LPF: 15kHz HPF: OFF 505 (F,K) 503 (F2,K2) **[Panel tuning mode]** PTT: ON **[PC test mode]** PTT: Press [Transmit] button	4150~4250Hz **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
[Analog Narrow]	1) Adj item: [An ADEV] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] 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] 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 for each adjustment point. (The value is written below.) Transmit at each adjustment point and check that the deviation is between 2050Hz and 2150Hz. Deviation meter LPF: 15kHz HPF: OFF 505 (F,K) 499 (F2,K2) **[Panel tuning mode]** PTT: ON **[PC test mode]** PTT: Press [Transmit] button	2050~2150Hz **[PC test mode]** 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.

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
14. 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] Adjust:[****] PTT : ON Press [◯] 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] 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 for each adjustment point. (The value is written below.) Transmit at each adjustment point and check that the deviation is between 2771Hz and 2883Hz. Deviation meter LPF: 3kHz HPF: OFF 505 (F,K) 504 (F2,K2) **[Panel tuning mode]** PTT: ON **[PC test mode]** PTT: Press [Transmit] button	2771~2883Hz **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
15. P25 H-CPM Deviation	1) Adj item: [P2 P2DEV] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [P25 H-CPM Deviation] 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 fixed value for each adjustment point. (The value is written below.) Transmit at each adjustment point and check that the deviation is between 3090Hz and 3215Hz. Deviation meter LPF: 3kHz HPF: OFF 485 (F,K) 483 (F2,K2) **[Panel tuning mode]** PTT: ON **[PC test mode]** PTT: Press [Transmit] button	3090~3215Hz **[PC test mode]** 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	
16. NXDN High Deviation [NXDN Narrow]	1) Adj item: [Nn NDEV] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [NXDN High Deviation (NXDN 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 fixed value for each adjustment point. (The value is written below.) Transmit at each adjustment point and check that the deviation is between 2995Hz and 3117Hz. Deviation meter LPF: 3kHz HPF: OFF 510 (F,K) 504 (F2,K2) **[Panel tuning mode]** PTT: ON **[PC test mode]** PTT: Press [Transmit] button	2995~3117Hz **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
[NXDN Very Narrow]	1) Adj item: [Nv NDEV] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [NXDN High Deviation (NXDN Very 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 fixed value for each adjustment point. (The value is written below.) Transmit at each adjustment point and check that the deviation is between 1311Hz and 1363Hz. Deviation meter LPF: 3kHz HPF: OFF 510 (F,K) 505 (F2,K2) **[Panel tuning mode]** PTT: ON **[PC test mode]** PTT: Press [Transmit] button	1311~1363Hz **[PC test mode]** 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	
17. QT Deviation *3 [Analog Wide]	1) Adj item: [Aw QT] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [QT 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. 525 (F,K) 521 (F2,K2)	0.75kHz±0.05 kHz
[Analog Narrow]	1) Adj item: [An QT] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] 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. 525 (F,K) 522 (F2,K2)	0.35kHz±0.05 kHz

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
18. 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 [◯] 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. 425 (F,K) 432 (F2,K2)	0.75kHz±0.05 kHz
[Analog Narrow]	1) Adj item: [An DQT] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [DQT 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. 425 (F,K) 436 (F2,K2,E)	0.35kHz±0.05 kHz

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
19. LTR Deviation *3 [Analog Wide]	1) Adj item: [Aw LTR] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [LTR 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. 480 (F,K) 477 (F2,K2)	1.00kHz±0.05 kHz
[Analog Narrow]	1) Adj item: [An LTR] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] 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. 480 (F,K) 477 (F2,K2)	0.75kHz±0.05 kHz

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
20. DTMF Deviation *3 [Analog Wide]	1) Adj item: [Aw DTMF] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] 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 [OK] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 545 (F,K) 548 (F2,K2)	2.50kHz±0.05 kHz
[Analog Narrow]	1) Adj item: [An DTMF] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [DTMF 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. 545 (F,K) 547 (F2,K2)	1.25kHz±0.05 kHz

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
21. Single Tone Deviation *3 [Analog Wide]	1) Adj item: [Aw TONE] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [Single Tone 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 (F,K) 514 (F2,K2)	3.00kHz±0.05 kHz
[Analog Narrow]	1) Adj item: [An TONE] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [Single Tone Deviation (Analog Narrow)] 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 (F,K) 513 (F2,K2)	1.50kHz±0.05 kHz

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
22. 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 [◯] 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. 500 (F,K) 504 (F2,K2)	3.00kHz±0.05 kHz
[Analog Narrow]	1) Adj item: [An MSK] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [MSK Deviation (Analog Narrow)] 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. 500 (F,K) 503 (F2,K2)	1.50kHz±0.05 kHz

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
23. 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 [◯] 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. 500 (F,K) 508 (F2,K2)	1.10kHz±0.10 kHz
*3: Refer to the “4.9.1 Necessary Deviation adjustment item for each signaling and mode” table.									

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 adjust 2. P25 High Deviation 3. P25 High Deviation (H-CPM)	-
NXDN	Audio	-	1. Balance adjust 2. High Deviation [NXDN Narrow]	1. Balance adjust 2. High Deviation [NXDN Very Narrow]
	CWID	-	-	1. Balance adjust 2. High Deviation [NXDN Very Narrow] 3. CWID Deviation [NXDN Very Narrow]

- Balance is common with all the above deviation adjustments. If Balance (Transmitter Section 12) has already adjusted, please skip Step1 and adjust from Step2.
- Maximum Deviation (Analog Wide/Narrow) is common with all the analog signaling deviations. If Balance and Maximum Deviation (Analog Wide /Narrow) (Transmitter Section 13) have already adjusted, please skip Step2 and adjust from Step3.

4.10 Receiver Section

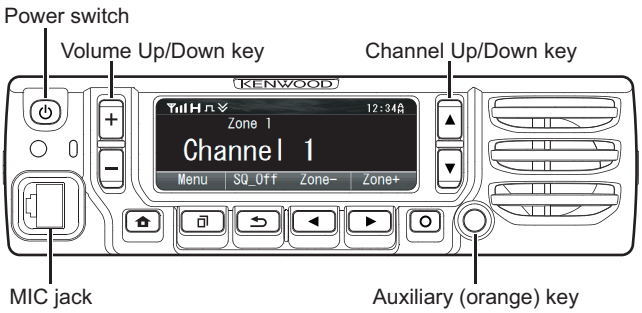
Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. AF level setting	[Panel test mode] 1) CH-Sig: 1-1 SSG output: -47dBm (1mV) (MOD: 1kHz/ ±1.5kHz)	1) Test Channel Channel: 1 Test Signaling Mode: Analog Signaling: 1 SSG output: -47dBm (1mV) (MOD:1kHz/ ±1.5kHz)	SSG DVM AF VM Dummy load	Panel	ANT Ext. SP connector	Panel	[Panel tuning mode] [+], [-] [PC test mode] [←], [→]	Volume Up/Down knob to obtain 1.41V AF output. (0.5W @ 4Ω load)	1.41V ±0.1V
2. Sensitivity 2	1) Adj item: [An SENS2] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[***] Press [◯] key to store the adjustment value.	1) Adj item: [Sensitivity 2] 2) Adj item: [Low1], [Low5], [Center3], [High2], [High6] Press [Apply All] button to store the adjustment value.		Panel	ANT Ext. SP connector	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. F,K [Low1]: 67 (Fixed) [Low5]: 80 (Fixed)) [Center3]: 92 (Fixed) [High2]: 105 (Fixed) [High6]: 117 (Fixed) F2,K2 [Low1]: 52 (Fixed) [Low5]: 70 (Fixed)) [Center3]: 83 (Fixed) [High2]: 103 (Fixed) [High6]: 117 (Fixed)	
3. Sensitivity 1	1) Adj item: [An SENS1] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: -118.5dBm (0.3μV) (MOD: 1kHz/ ±1.5kHz) Adjust:[***] Press [◯] key to store the adjustment value.	1) Adj item: [Sensitivity 1] 2) Adj item: [Low1], [Low5], [Center3], [High2], [High6] SSG output: -118.5dBm (0.3μV) (MOD: 1kHz/ ±1.5kHz) Press [Apply All] button to store the adjustment value.	SSG AF VM Dummy load	Panel	ANT Ext. SP connector	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	1) Write the value as followings. F,K [Low1]: 87 (Fixed) [Low5]: 105 (Fixed)) [Center3]: 125 (Fixed) [High2]: 147 (Fixed) [High6]: 170 (Fixed) F2,K2 [Low1]: 63 (Fixed) [Low5]: 86 (Fixed)) [Center3]: 110 (Fixed) [High2]: 138 (Fixed) [High6]: 168 (Fixed) 2) Increase the adjustment value until the AF VM shows 12dB SINAD. 3) Store the adjustment value.	
4. RSSI reference	1) Adj item: [An 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 Oscilloscope	Panel	ANT Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** 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	
5. Open Squelch [Analog Wide]	1) Adj item: [Aw SQL] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level -3dB (MOD: 1kHz/ ±3kHz)	1) Adj item: [Open Squelch (Analog Wide)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level -3dB (MOD: 1kHz/±3kHz)	SSG Distortion meter Oscilloscope	Panel	ANT Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** After input signal from SSG, press [Apply] button to store the adjustment value.	
[Analog Narrow]	1) Adj item: [An SQL] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level -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 -3dB (MOD: 1kHz/ ±1.5kHz)	SSG Distortion meter Oscilloscope	Panel	ANT Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** 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 Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** 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 Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** After input signal from SSG, press [Apply] button to store the adjustment value.	

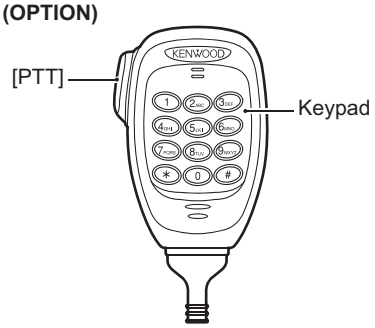
Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
[NXDN Narrow]	1) Adj item: [Nn SQL] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow -1dB (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 Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** 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 Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** After input signal from SSG, press [Apply] button to store the adjustment value.	
6. 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 Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** After input signal from SSG, press [Apply] button to store the adjustment value.	
7. 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 Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** 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	
8. 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 (Analog Wide)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow +6dB (MOD: 1kHz/±3kHz)	SSG Distortion meter Oscilloscope	Panel	ANT Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** 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 (Analog 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 Oscilloscope	Panel	ANT Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** After input signal from SSG, press [Apply] button to store the adjustment value.	

4.11 E TYPE Controls



KMC-36 (OPTION)



4.11.1 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 4Ω dummy load and connected to an AC voltmeter and an audio distortion meter or a SINAD measurement meter at all times during checking/tuning.

4.12 Panel Test Mode

4.12.1 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. 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 last used channel and signaling numbers are displayed. When the panel test mode is activated for the first time, the channel and signaling numbers are 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.

4.12.2 Key operation

Key	"Func" not appears on the sub LCD display	
	Function	Display
[+]	Push: Volume up Hold: Volume up continuously	-
[-]	Push: Volume down Hold: Volume down continuously	-
[▲]	Push: Test channel up Hold: Test channel up continuously	Channel No.
[▼]	Push: Test channel down Hold: Test channel down continuously	Channel No.
[◀]	Push: Squelch level up *1 Hold: Squelch off	Squelch level Squelch off: 🔇 icon appears
[▶]	Wide 5k/Wide 4k/Narrow/ Very Narrow *2	Wide 5k: "w" Wide 4k: "s" Narrow: "n" Very Narrow: "v"
[⧉]	Shift to panel tuning mode	-
[⮌]	Function on	"Func" 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	"Func" appears on the sub LCD display	
	Function	Display
[+]	P25 Modulation Type (C4FM/LSM) *3	LSM : LSM icon appears
[-]	Function off	-
[▲]	Talk Around on/off	On: TA icon appears
[▼]	Mode selection Analog/P25 Phase1 /P25 Phase2/NXDN	Analog: "A" P25 Phase1: "P1" P25 Phase2: "P2" NXDN: "N"
[◀]	-	-
[▶]	Key/LCD check	The contents of the pressed key etc., appear.

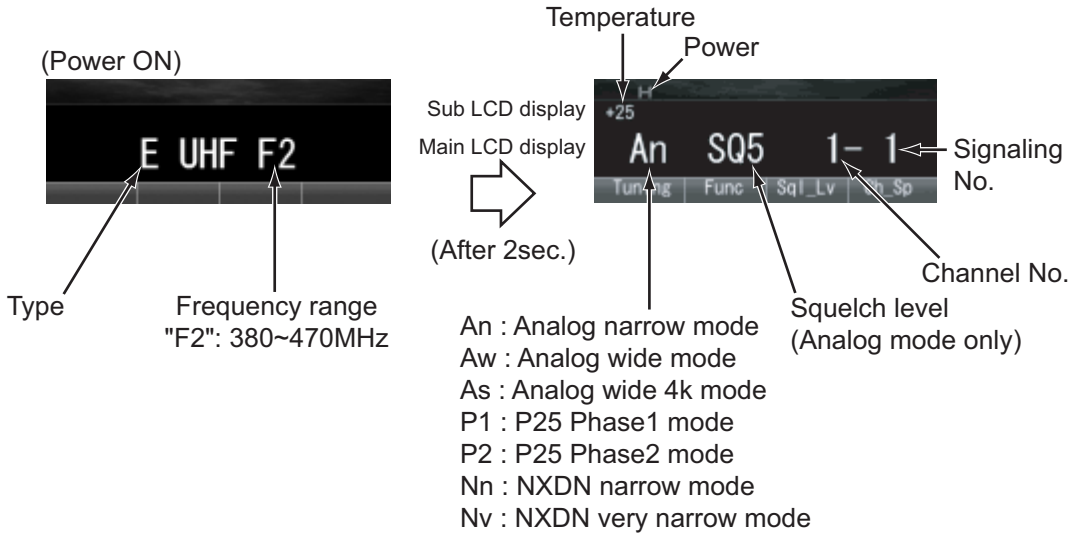
Key	"Func" appears on the sub LCD display	
	Function	Display
[▣]	High power/Medium power/Low power	High: "H" Medium: "M" Low: "L"
[⮌]	Function off	-
[◯]	Compander on/off	On: ▯▯ icon appears
[⌂]	External Speaker on/off	On: ▷▮ icon appears
[AUX (Orange)]	Function off	-
[PTT]	Transmit	-

Key	"Func" appears on the sub LCD display	
	Function	Display
[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**
  "Func" Appears at function on.

- **LCD display in panel test mode**



4.12.3 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	RX (MHz)	TX (MHz)
1	425.05000	425.10000
2	380.05000	380.10000
3	469.95000	469.90000
4	425.00000	425.00000
5	425.20000	425.20000
6	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)

No.	RX	TX
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	None	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
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)

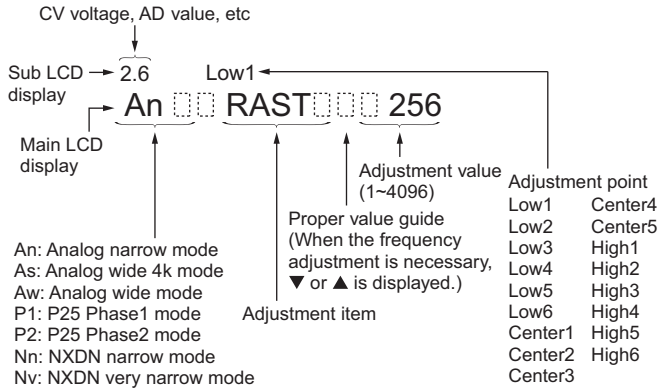
RAN: Radio Access Number
PN9: Pseudo-Random Pattern
No.7, 9 Item: PC test mode only

4.13 Panel Tuning Mode

4.13.1 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 4, 6 or 8 reference level adjustments, and use the [▶] key to switch between Wide5k/Wide4k/Narrow.

- LCD display in panel tuning mode



4.13.2 Key operation

Key	Function	
	Push	Hold (1 second)
[+]	Volume up	Continuation up
[-]	Volume down	Continuation down
[▲]	Adjustment value up	Continuation up
[▼]	Adjustment value down	Continuation down
[◀]	Auto adjustment start	-
[▶]	Wide 5k/Wide 4k/Narrow/ P25/NXDN	-
[ ]	Shift to panel test mode	-
[ ]	To enter 5,9 or 17 reference level adjustments	-
[○]	Writes the adjustment value	-

Key	Function	
	Push	Hold (1 second)
[ ]	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] (MIC)	Transmit	
[0] to [9] and [#],[✳] (MIC)	-	

4.13.3 5, 9 or 17 reference level adjustments frequency

High Maximum Power, Medium Maximum Power, Low Maximum Power, High Transmit Power Limit, Mid Transmit Power Limit, Low Transmit Power Limit, High Transmit Power, Medium Transmit Power, Low Transmit Power, Sensitivity 1, Sensitivity 2, RSSI Reference, Open Squelch, Low RSSI, High RSSI, Tight Squelch

Tuning point	Display	RX (MHz)	TX (MHz)
1	Low 1	380.050000	380.100000
2	Low 5	402.550000	402.600000
3	Center 3	425.050000	425.100000
4	High 2	447.550000	447.600000
5	High 6	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	RX (MHz)	TX (MHz)
1	Low 1	380.050000	380.100000
2	Low 3	391.050000	391.100000
3	Low 5	402.550000	402.600000
4	Center 1	413.550000	413.600000
5	Center 3	425.050000	425.100000
6	Center 5	436.050000	436.100000
7	High 2	447.550000	447.600000
8	High 4	458.550000	458.600000
9	High 6	469.950000	469.900000

Receive Assist, Transmit Assist

Tuning point	Display	RX (MHz)	TX (MHz)
1	Low 1	380.050000	380.100000
2	Low 2	385.550000	385.600000
3	Low 3	391.050000	391.100000
4	Low 4	396.550000	396.600000
5	Low 5	402.550000	402.600000
6	Low 6	408.050000	408.100000
7	Center 1	413.550000	413.600000
8	Center 2	419.050000	419.100000
9	Center 3	425.050000	425.100000
10	Center 4	430.550000	430.600000
11	Center 5	436.050000	436.100000
12	High 1	441.550000	441.600000
13	High 2	447.550000	447.600000
14	High 3	453.050000	453.100000
15	High 4	458.550000	458.600000
16	High 5	464.050000	464.100000
17	High 6	469.950000	469.900000

4.13.4 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 Maximum Power	High Maximum Power is adjusted.
Medium Maximum Power	Medium Maximum Power is adjusted.
Low Maximum Power	Low Maximum Power is adjusted.
High Transmit Power Limit	High Transmit Power Limit is adjusted.
Medium Transmit Power Limit	Medium Transmit Power Limit is adjusted.

Adjustment Item	Description
Low Transmit Power Limit	Low Transmit Power Limit is adjusted.
High Transmit Power	High Transmit Power is adjusted.
Medium Transmit Power	Medium Transmit Power is adjusted.
Low Transmit Power	Low Transmit Power is adjusted.
Balance	The transmit modulation frequency response is adjusted. This item is adjusted so that the deviation of 2kHz becomes the same deviation of 20Hz. This item must be adjusted before all adjustment items for deviations are adjusted.
High Deviation (P25/NXDN)	High Deviation of P25/NXDN is adjusted.
Maximum Deviation (Analog Wide/Narrow)	Maximum Deviation of Analog (Wide/Narrow) is adjusted. This item must be adjusted before all adjustment items for tone deviations are adjusted.
QT Deviation	QT tone deviation is adjusted.
DQT Deviation	DQT tone deviation is adjusted.
LTR Deviation	LTR tone deviation is adjusted.
DTMF Deviation	DTMF tone deviation is adjusted.
Single Tone Deviation	The deviation of Single Tone used in “2-tone” is adjusted.
MSK Deviation	MSK tone deviation is adjusted.

Adjustment Item	Description
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.
Sensitivity 2	The gain of RF amplifier is adjusted. The performance of the interfering wave is improved.

Adjustment Item	Description
RSSI Reference	The minimum RSSI level for scan stop is adjusted.
Open Squelch	The squelch level at level “5” is adjusted.
Low RSSI	RSSI display level “ “ is adjusted. Both “Low RSSI” and “High RSSI” must be adjusted. (The curve data of RSSI level is applied.)
High RSSI	
Tight Squelch	The squelch level at level “9” is adjusted.

4.13.5 Adjustment item and Display

Order	Adjusutment item	Main LCD display	Sub LCD display	Aw (Analog Wide 5k)	As (Analog Wide 4k)	An (Analog Narrow)	P1 (P25 Phase1)	P2 (P25 Phase2)	Nn (NXDN Narrow)	Nv (NXDN Very Narrow)	Adjust item Number
				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 Maximum Power	MAX_H	-	-	-	5	-	-	-	-	Transmitter Section 3
				1~256							
7	Medium Maximum Power	MAX_M	-	-	-	5	-	-	-	-	Transmitter Section 4
				1~256							
8	Low Maximum Power	MAX_L	-	-	-	5	-	-	-	-	Transmitter Section 5
				1~256							
9	High Transmit Power Limit	H_LMT	-	-	-	5	-	-	-	-	Transmitter Section 6
				1~256							
10	Medium Transmit Power Limit	M_LMT	-	-	-	5	-	-	-	-	Transmitter Section 7
				1~256							
11	Low Transmit Power Limit	L_LMT	-	-	-	5	-	-	-	-	Transmitter Section 8
				1~256							
12	High Transmit Power	H_PWR	-	-	-	5	-	-	-	-	Transmitter Section 9
				1~1024							
13	Medium Transmit Power	M_PWR	-	-	-	5	-	-	-	-	Transmitter Section 10
				1~1024							
14	Low Transmit Power	L_PWR	-	-	-	5	-	-	-	-	Transmitter Section 11
				1~1024							
15	Balance	BAL	(Encode frequency)	-	-	9	-	-	-	-	Transmitter Section 12
				1~1024							

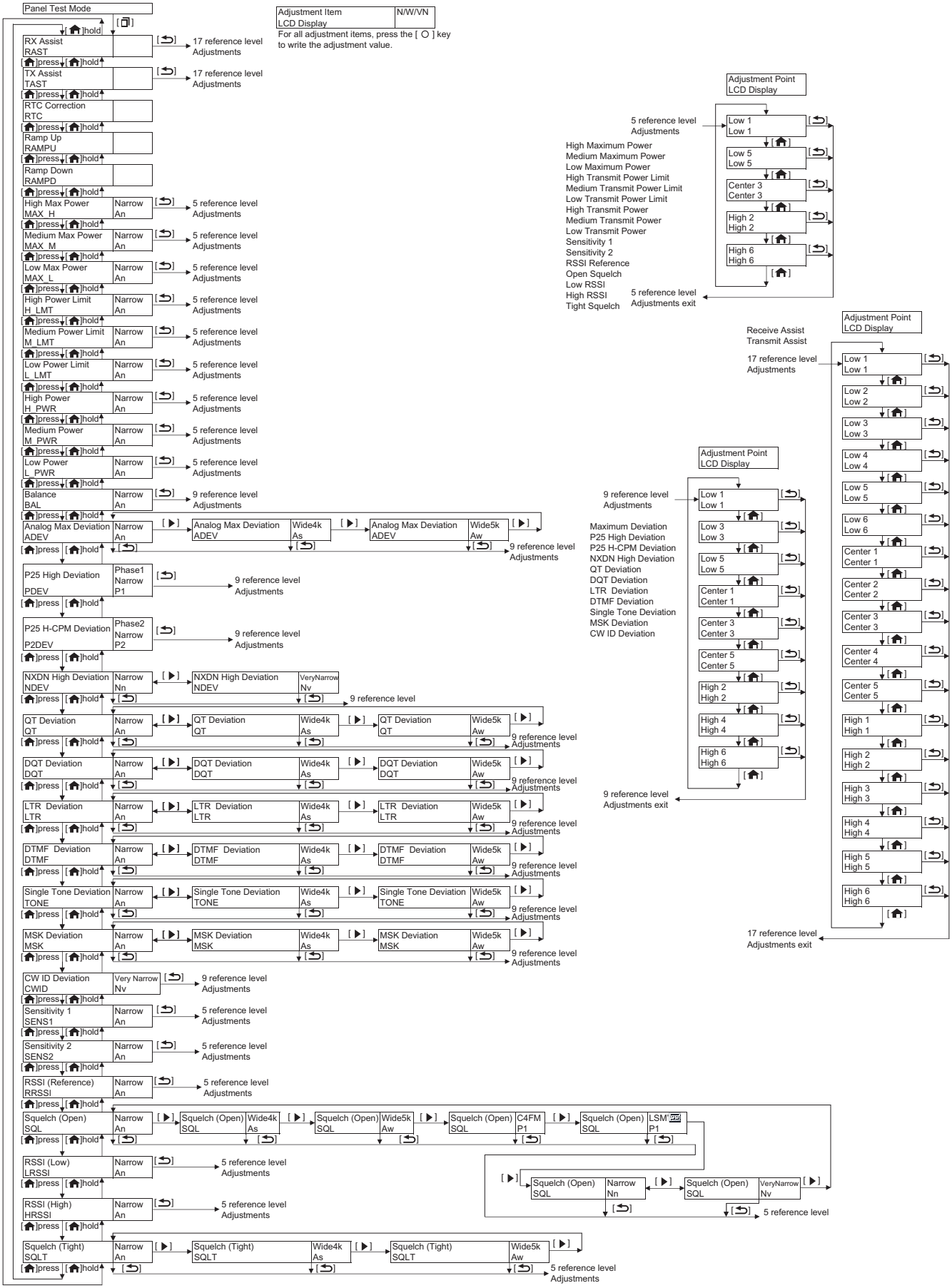
Order	Adjusutment item	Main LCD display	Sub LCD display	Aw (Analog Wide 5k)	As (Analog Wide 4k)	An (Analog Narrow)	P1 (P25 Phase1)	P2 (P25 Phase2)	Nn (NXDN Nar-row)	Nv (NXDN Very Nar-row)	Adjust item Number
				Adjustment range							
16	Maximum Deviation	ADEV	-	9	9	9	-	-	-	-	Transmitter Section 13
				1~1024							
17	P25 High Deviation	PDEV	-	-	-	-	9	-	-	-	Transmitter Section 14
				1~1024							
18	P25 H-CPM Deviation	P2DEV	(RSSI measurement value)	-	-	-	-	9	-	-	Transmitter Section 15
				1~1024							
19	NXDN High Deviation	NDEV	-	-	-	-	-	-	9	9	Transmitter Section 16
				1~1024							
20	QT Deviation	QT	-	9	9	9	-	-	-	-	Transmitter Section 17
				1~1024							
21	DQT Deviation	DQT	-	9	9	9	-	-	-	-	Transmitter Section 18
				1~1024							
22	LTR Deviation	LTR	-	9	9	9	-	-	-	-	Transmitter Section 19
				1~1024							
23	DTMF Deviation	DTMF	-	9	9	9	-	-	-	-	Transmitter Section 20
				1~1024							
24	Single Tone Deviation	TONE	-	9	9	9	-	-	-	-	Transmitter Section 21
				1~1024							
25	MSK Deviation	MSK	-	9	9	9	-	-	-	-	Transmitter Section 22
				1~1024							
26	CW ID Deviation	CWID	-	-	-	-	-	-	-	9	Transmitter Section 23
				1~1024							
27	Sensitivity 1	SENS1	(RSSI measurement value)	-	-	5	-	-	-	-	Receiver Section 3
				1~256							
28	Sensitivity 2	SENS2	(RSSI measurement value)	-	-	5	-	-	-	-	Receiver Section 2
				1~256							
29	RSSI Reference	RRSSI	(RSSI measurement value)	-	-	5	-	-	-	-	Receiver Section 4
				1~256							
30	Open Squelch	SQL	(ASQDET measurement value)	5	5	5	5 *1	-	5	5	Receiver Section 5
				1~256							
31	Low RSSI	LRSSI	(RSSI measurement value)	-	-	5	-	-	-	-	Receiver Section 6
				1~256							
32	High RSSI	HRSSI	(RSSI measurement value)	-	-	5	-	-	-	-	Receiver Section 7
				1~256							
33	Tight Squelch	SQLT	(ASQDET measurement value)	5	5	5	-	-	-	-	Receiver Section 8
				1~256							

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

4.13.6 Panel tuning mode flow chart

Note:

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



4.14 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.

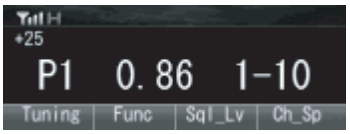
(4) Select a test frequency ("4.2.3 Frequency and Signaling" (2) Test signaling Test frequency).

(5) Measure the BER (Bit Error Rate) using the digital radio tester.

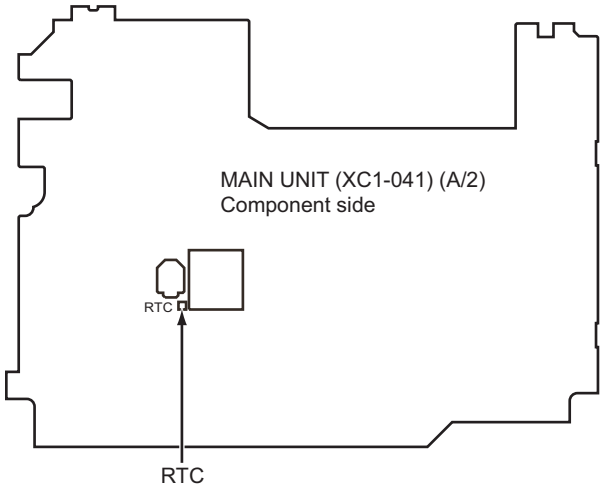
Enter a standard input signal into the transceiver as a standard tone test pattern for P25, FSW+PN9 for NXDN.

(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".)



4.15 Adjustment points

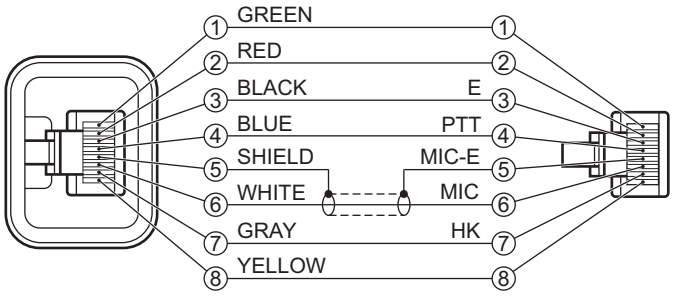


4.16 Test Equipment Required for Alignment

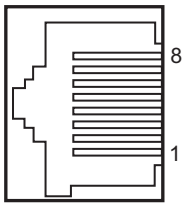
Test Equipment	Major Specifications	
1. Standard Signal Generator (SSG)	Frequency Range Modulation Output	100 to 900MHz Frequency modulation and external modulation -127dBm/0.1uV to greater than -20dBm/22.4mV
	When performing the Frequency adjustment, the following accuracy is necessary. • 0.001ppm Use a standard oscillator for adjustments, if necessary.	
2. Power Meter	Input Impedance Operation Frequency Measurement Capability	50Ω 100 to 900MHz Vicinity of 100W
3. Deviation Meter	Frequency Range	100 to 900MHz
4. Digital Volt Meter (DVM)	Measuring Range Input Impedance	10mV to 20V DC High input impedance for minimum circuit loading
5. Oscilloscope		DC through 30MHz
6. Frequency Counter	Frequency Range Frequency Stability	10Hz to 1000MHz 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		20A or more
8. AF Volt Meter (AF VM)	Frequency Range Voltage Range	50Hz to 10kHz 1mV to 10V
9. Audio Generator (AG)	Frequency Range Output	50Hz to 5kHz or more 0 to 1V
10. Distortion Meter	Capability Input Level	3% or less at 1kHz 50mV to 10Vrms
11. Spectrum Analyzer	Measuring Range	DC to 1GHz or more
12. 4Ω Dummy Load		Approx. 4Ω, 10W
13. Regulated Power Supply		13.6V, approx. 20A (adjustable from 9V to 17V) Useful if ammeter equipped

*The test equipment which is not used for adjustment is contained in this table.

■**Test cable for microphone input (E30-3360-28)**



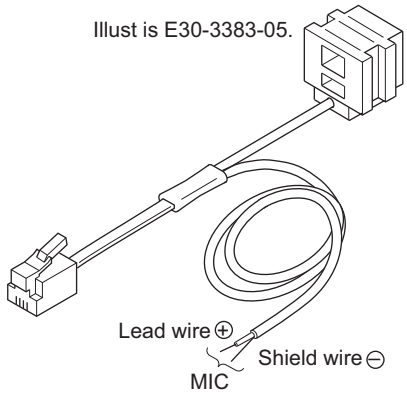
■**MIC connector (Front panel view)**



1 : MBL
2 : +B
3 : GND
4 : PTT/TXD (PC serial data from radio)
5 : MICE
6 : MIC
7 : HOOK/RXD (PC serial data to radio)
8 : DM

■**Tuning cable (E30-3383-05 or E30-7754-05)**

Adapter cable (E30-3383-05 or E30-7754-05) is required for injecting an audio if PC tuning is used.
See “PC Mode” section for the connection.



4.17 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 @425.1MHz
2. High power check	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	21W~29W 9A 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	21W~29W 9A 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	21W~29W 9A or less

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel test mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
3. Low power check	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	3.5W~6.5W 7A 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	3.5W~6.5W 7A 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	3.5W~6.5W 7A or less
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 Ext. SP connector			Adjust AG input to get a standard MOD.	5mV ±1mV
5. Sensitivity check	1)CH-Sig: 1-1 SSG output Wide 5k: -117dBm (0.32μV) (MOD: 1kHz/±3kHz) Wide 4k: -117dBm (0.32μV) (MOD:1kHz/ ±2.4kHz) Narrow: -117dBm (0.32μV) (MOD: 1kHz/ ±1.5kHz)	1)Test Channel Channel: 1 Test Signaling Mode: Analog Signaling: 1 SSG output Wide 5k: -117dBm (0.32μV) (MOD: 1kHz/±3kHz) Wide 4k: -117dBm (0.32μV) (MOD:1kHz/±2.4kHz) Narrow: -117dBm (0.32μV) (MOD: 1kHz/±1.5kHz)	SSG AF VM Oscilloscope Distortion meter 4Ω Dummy load	Panel	ANT Ext. SP connector			Check	12dB SINAD or more

4.18 Common Section

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equip-ment	Unit	Ter-minal	Unit	Parts	Method	
1. Setting	1) DC voltage:13.2V 2) SSG standard modulation [Wide 5k] MOD:1kHz,DEV:3kHz [Wide 4k] MOD:1kHz,DEV:2.4kHz [Narrow] MOD:1kHz,DEV:1.5kHz								
2. Receive Assist	1) Adj item: [RAST] Adjust:[****] 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]→ Adjust:[****] Press [◯] key to store the adjustment value.	1) Adj item: [Receive Assist] 2) Adj item: [Low1],[Low2], [Low3],[Low4], [Low5],[Low6], [Center1], [Center2], [Center3], [Center4], [Center5], [High1],[High2] [High3],[High4] [High5],[High6] Press [Apply All] button to store the adjustment value.				Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	**[PC test mode]** **[Automatic Adjustment]** 1) Press [Tune Assist Voltage] button. 2) Press [Apply All] button to store the adjustment value after the automatic adjustment has finished. **[Manual Adjustment]** [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. **Note:** Confirm the VCO lock voltage approximately 3 seconds after the adjustment value is changed.	2.5V±0.1V **[Automatic Adjustment]** After the automatic adjustment is performed, verify that the VCO lock voltage is within the voltage range which is specified by the manual adjustment. **[Manual Adjustment]** Press [Apply All] button to store the adjustment value after all adjustment point have been adjusted. **Note:** 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	
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]→ Adjust:[****] PTT: ON 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] PTT: Press [Transmit] button. Press [Apply All] button to store the adjustment value.				Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	**[PC test mode]** **[Automatic Adjustment]** 1) Press [Tune Assist Voltage] button. 2) Press [Apply All] button to store the adjustment value after the automatic adjustment has finished. **[Manual Adjustment]** [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. **Note:** Confirm the VCO lock voltage approximately 3 seconds after the adjustment value is changed.	2.5V±0.1V **[Automatic Adjustment]** After the automatic adjustment is performed, verify that the VCO lock voltage is within the voltage range which is specified by the manual adjustment. **[Manual Adjustment]** Press [Apply All] button to store the adjustment value after all adjustment point have been adjusted. **Note:** The assist adjustment value must be between from 340 to 3550.
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)) **Caution:** 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 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] [←], [→]	**[PC test mode]** Press [Start] button of "Auto Tuning". Press [Apply] button to store the adjustment value after the automatic adjustment has finished.	**[PC test mode]** "IF20" value = Within 0±20 digits. The value of "IF20" will become around "0" after the adjustment has finished. **Remark:** "Frequency" is adjusted under receiving condition with SSG.

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equip-ment	Unit	Ter-minal	Unit	Parts	Method	
5. RTC Corre-citon	1) Adj item: [RTC] Adjust:[****] Press [◯] key to store the ad-justment val-ue.	1) Adj item: [RTC Correction] Data: {****] Press [Apply] button to store the adjust-ment value.	Fre-quency Counter	Panel	TEST POINT (CN715)		[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	**[Panel tuning mode]** Press [◯] key to store the adjustment value. **[PC test mode]** Press [Apply] button to store the adjustment value.	**Remaks:** Change the adjust-ment value so that the frequency cur-rently displayed on “Crystal Oscillation Frequency” on the PC window and the frequency currently displayed on the frequency counter are in agreement.

4.19 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] [←], [→]	**[PC test mode] [Automatic Adjustment]** 1) Press [Tune Rump Offset] button. 2) Press [Apply All] button to store the adjustment value after the automatic adjustment has finished. 3) Check Ramp UP Offset Monitor Value Over 45. **[Manual Adjustment]** 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”.	
2. Ramp down Offset	1) Adj item: [RAMPD] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.		Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	**[PC test mode] [Automatic Adjustment]** 1) If "Automatic Adjustment" is completed in the item of "Ramp up Offset", this item is Completed in addition. Check Ramp down Offset Monitor Value under 50 with PTT ON. **[Manual Adjustment]** 1) Set the following value with reference to the value that you applied in the item of "Ramp up Offset" 2)Write calcurated Value "Ramp up Offset-70". 3)If the subtraction result is less than "1", apply"1".	

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
3. High Maximum Power	1) Adj item: [MAX_H] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [High Maximum Power] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Press [Transmit] button. Press [Apply] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	55W	±1W 15A or less **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
4. Medium Maximum power	1) Adj item: [MAX_M] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [Medium Maximum Power] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Press [Transmit] button. Press [Apply] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	55W	±1W 15A or less **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
5. Low Maximum power	1) Adj item: [MAX_L] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [Low Maximum Power] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Press [Transmit] button. Press [Apply] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	55W	±1W 15A or less **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
6. High Transmit Power Limit	1) Adj item: [H_LMT] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] PTT : OFF Press [◯] key to store the adjustment value.	1) Adj item: [High Transmit Power Limit] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Press [Apply] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 256 (Fixed)	

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
7. Medium Transmit Power Limit	1) Adj item: [M_LMT] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] PTT : OFF Press [◯] key to store the adjustment value.	1) Adj item: [Medium Transmit Power Limit] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Press [Apply] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 256 (Fixed)	
8. Low Transmit Power Limit	1) Adj item: [L_LMT] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] PTT : OFF Press [◯] key to store the adjustment value.	1) Adj item: [Low Transmit Power Limit] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Press [Apply] button to store the adjustment value.	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 256 (Fixed)	
9. High Transmit Power	1) Adj item: [H_PWR] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[****] PTT : ON Press [◯] 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] [←], [→]	25W **Note:** High Transmit Power Is the purpose of the custom power (adjustment). This Power must be lower than High transmit power.	±1W 7A or less **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
10. Medium Transmit Power	1) Adj item: [M_PWR] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[****] PTT : ON Press [◯] 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] [←], [→]	5W **Note:** In the production, this Medium transmit power is adjusted at 5W. And E type can't be adjusted over 5W. (If you adjust over 5W, choose High Transmit Power mode.)	±0.5W 7A or less **[PC test mode]** 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	
11. Low Transmit Power	1) Adj item: [L_PWR] Adjust:[****] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[****] PTT : ON Press [◯] 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] [←], [→]	5W	±0.5W 7A or less **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
12. Balance *1	1) Adj item: [Balance] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [Balance] 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] [←], [→]	The Deviation of 20Hz frequency is fixed. Change the 2kHz adjustment value to become the same deviation of 20Hz within the specified range. (a supplementary explanation: Another way to adjust is ready. (Same as TK-5810, the old model of NX-5800). Press [AUX(Orange)] key to switch the tone to 100Hz square wave. Then, make the demodulation waveform shown on oscilloscope into square shape.)	2kHz Tone deviation is within ± 1.0% of 20Hz tone deviation. **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
*1 : Refer to the “4.19.1 Necessary Deviation adjustment item for each signaling and mode” table. Balance adjustment is common with the adjustment of all signaling deviations.									

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
13. Maximum Deviation *2 [Analog Wide 5k]	1) Adj item: [ADEV] Adjust:[****] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [Maxmum Deviation (Analog Wide 5k)] 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 fixed value for each adjustment point. (The value is written below.) Transmit at each adjustment point and check that the deviation is between 4150Hz and 4250Hz. Deviation meter LPF: 15kHz HPF: OFF 503 **[Panel tuning mode]** PTT: ON **[PC test mode]** PTT: Press [Transmit] button	4150~4250Hz **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
[Analog Wide 4k]	1) Adj item: [As ADEV] Adjust:[****] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [Maxmum Deviation (Analog Wide 4k)] 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 fixed value “503” for each adjustment point. (The value is written below.) Transmit at each adjustment point and check that the deviation is between 3310Hz and 3410Hz. Deviation meter LPF: 15kHz HPF: OFF **[Panel tuning mode]** PTT: ON **[PC test mode]** PTT: Press [Transmit] button	3310~3410Hz **[PC test mode]** 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	
[Analog Narrow]	1) Adj item: [An ADEV] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] 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] 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 for each adjustment point. (The value is written below.) Transmit at each adjustment point and check that the deviation is between 2050Hz and 2150Hz. Deviation meter LPF: 15kHz HPF: OFF 499 **[Panel tuning mode]** PTT: ON **[PC test mode]** PTT: Press [Transmit] button	2050~2150Hz **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
*2 : Refer to the “4.19.1 Necessary Deviation adjustment item for each signaling and mode” table. Regarding Maximum Deviation (Analog), it is common with the adjustment of all analog signalings.									
14. 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] Adjust:[****] PTT : ON Press [◯] 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] 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 for each adjustment point. (The value is written below.) Transmit at each adjustment point and check that the deviation is between 2771Hz and 2883Hz. Deviation meter LPF: 3kHz HPF: OFF 504 **[Panel tuning mode]** PTT: ON **[PC test mode]** PTT: Press [Transmit] button	2771~2883Hz **[PC test mode]** 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	
15. P25 H-CPM Deviation	1) Adj item: [P2 P2DEV] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [P25 H-CPM Deviation] 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 fixed value for each adjustment point. (The value is written below.) Transmit at each adjustment point and check that the deviation is between 3090Hz and 3215Hz. Deviation meter LPF: 3kHz HPF: OFF 483 **[Panel tuning mode]** PTT: ON **[PC test mode]** PTT: Press [Transmit] button	3090~3215Hz **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
16. NXDN High Deviation [NXDN Narrow]	1) Adj item: [Nn NDEV] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [NXDN High Deviation (NXDN 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 fixed value for each adjustment point. (The value is written below.) Transmit at each adjustment point and check that the deviation is between 2995Hz and 3117Hz. Deviation meter LPF: 3kHz HPF: OFF 504 **[Panel tuning mode]** PTT: ON **[PC test mode]** PTT: Press [Transmit] button	2995~3117Hz **[PC test mode]** 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]	1) Adj item: [Nv NDEV] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [NXDN High Deviation (NXDN Very 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 fixed value for each adjustment point. (The value is written below.) Transmit at each adjustment point and check that the deviation is between 1311Hz and 1363Hz. Deviation meter LPF: 3kHz HPF: OFF 505 **[Panel tuning mode]** PTT: ON **[PC test mode]** PTT: Press [Transmit] button	1311~1363Hz **[PC test mode]** Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
17. QT Deviation *3 [Analog Wide 5k]	1) Adj item: [Aw QT] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [QT Deviation (Analog Wide 5k)] 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. 521	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 Wide 4k]	1) Adj item: [As QT] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [QT Deviation (Analog Wide 4k)] 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. 522	0.60kHz±0.05 kHz
[Analog Narrow]	1) Adj item: [An QT] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] 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. 522	0.35kHz±0.05 kHz

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
18. DQT Deviation *3 [Analog Wide 5k]	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 [◯] key to store the adjustment value.	1) Adj item: [DQT Deviation (Analog Wide 5k)] 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. 432	0.75kHz±0.05 kHz
[Analog Wide 4k]	1) Adj item: [As DQT] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [DQT Deviation (Analog Wide 4k)] 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. 436	0.6kHz±0.05kHz

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 DQT] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [DQT 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. 436	0.35kHz±0.05 kHz
19. LTR Deviation *3 [Analog Wide 5k]	1) Adj item: [Aw LTR] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [LTR Deviation (Analog Wide 5k)] 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. 477	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 Wide 4k]	1) Adj item: [As LTR] Adjust:[****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [LTR Deviation (Analog Wide 4k)] 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. 477	0.90kHz±0.05 kHz
[Analog Narrow]	1) Adj item: [An LTR] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] 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. 477	0.75kHz±0.05 kHz

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
20. DTMF Deviation *3 [Analog Wide 5k]	1) Adj item: [Aw DTMF] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [DTMF Deviation (Analog Wide 5k)] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Press [Transmit] button. Press [OK] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. 548	2.50kHz±0.05 kHz
[Analog Wide 4k]	1) Adj item: [As DTMF] Adjust:[****] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [DTMF Deviation (Analog Wide 4k)] 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. 547	2.0kHz±0.05kHz

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 DTMF] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [DTMF 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. 547	1.25kHz±0.05 kHz
21. Single Tone Deviation *3 [Analog Wide 5k]	1) Adj item: [Aw TONE] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [Single Tone Deviation (Analog Wide 5k)] 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. 514	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 Wide 4k]	1) Adj item: [As TONE] Adjust:[****] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [Single Tone Deviation (Analog Wide 4k)] 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	2.4kHz±0.05kHz
[Analog Narrow]	1) Adj item: [An TONE] Adjust:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [Single Tone Deviation (Analog Narrow)] 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	1.50kHz±0.05kHz

Item	Condition		Measurement			Adjustment			Specifications /Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
22. MSK Deviation *3 [Analog Wide 5k]	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 [◯] key to store the adjustment value.	1) Adj item: [MSK Deviation (Analog Wide 5k)] 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. 504	3.00kHz±0.05 kHz
[Analog Wide 4k]	1) Adj item: [As MSK] Adjust:[****] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [MSK Deviation (Analog Wide 4k)] 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. 503	2.40kHz±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:[****] 2) Adj item: [Low1]→ [Low3]→ [Low5]→ [Center1]→ [Center3]→ [Center5]→ [High2]→ [High4]→ [High6] Adjust:[****] PTT : ON Press [◯] key to store the adjustment value.	1) Adj item: [MSK Deviation (Analog Narrow)] 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. 503	1.50kHz±0.05 kHz
23. 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 [◯] 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. 508	1.10kHz±0.10 kHz
*3: Refer to the “4.19.1 Necessary Deviation adjustment item for each signaling and mode” table.									

4.19.1 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 5k)”, this signaling is composed of three elements [Balance, Maximum Deviation (Analog Wide 5k) and QT Deviation (Analog Wide 5k)]. Please adjust Balance and Maximum Deviation (Analog Wide 5k) before adjusting QT Deviation (Analog Wide 5k).

Mode	Signaling	Necessary adjustment and order			
		Wide	**Wide 4k**	**Narrow**	**Very Narrow**
Analog	Audio	1. Balance adjust 2. Maximum Deviation [Analog Wide 5k]	1. Balance adjust 2. Maximum Deviation [Analog Wide 4k]	1. Balance adjust 2. Maximum Deviation [Analog Narrow]	-
	QT	1. Balance adjust 2. Maximum Deviation [Analog Wide 5k] 3. QT Deviation [Analog Wide 5k]	1. Balance adjust 2. Maximum Deviation [Analog Wide 4k] 3. QT Deviation [Analog Wide 4k]	1. Balance adjust 2. Maximum Deviation [Analog Narrow] 3. QT Deviation [Analog Narrow]	-
	DQT	1. Balance adjust 2. Maximum Deviation [Analog Wide 5k] 3. DQT Deviation [Analog Wide 5k]	1. Balance adjust 2. Maximum Deviation [Analog Wide 4k] 3. DQT Deviation [Analog Wide 4k]	1. Balance adjust 2. Maximum Deviation [Analog Narrow] 3. DQT Deviation [Analog Narrow]	-
	LTR	1. Balance adjust 2. Maximum Deviation [Analog Wide 5k] 3. LTR Deviation [Analog Wide 5k]	1. Balance adjust 2. Maximum Deviation [Analog Wide 4k] 3. LTR Deviation [Analog Wide 4k]	1. Balance adjust 2. Maximum Deviation [Analog Narrow] 3. LTR Deviation [Analog Narrow]	-
	DTMF	1. Balance adjust 2. Maximum Deviation [Analog Wide 5k] 3. DTMF Deviation [Analog Wide 5k]	1. Balance adjust 2. Maximum Deviation [Analog Wide 4k] 3. DTMF Deviation [Analog Wide 4k]	1. Balance adjust 2. Maximum Deviation [Analog Narrow] 3. DTMF Deviation [Analog Narrow]	-
	2TONE	1. Balance adjust 2. Maximum Deviation [Analog Wide 5k] 3. Single TONE Deviation [Analog Wide 5k]	1. Balance adjust 2. Maximum Deviation [Analog Wide 4k] 3. Single TONE Deviation [Analog Wide 4k]	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 5k] 3. MSK Deviation [Analog Wide 5k]	1. Balance adjust 2. Maximum Deviation [Analog Wide 4k] 3. MSK Deviation [Analog Wide 4k]	1. Balance adjust 2. Maximum Deviation [Analog Narrow] 3. MSK Deviation [Analog Narrow]	-
P25		-	-	1. Balance adjust 2. P25 High Deviation 3. P25 High Deviation (H-CPM)	-
NXDN	Audio	-	-	1. Balance adjust 2. High Deviation [NXDN Narrow]	1. Balance adjust 2. High Deviation [NXDN Very Narrow]
	CWID	-	-	-	1. Balance adjust 2. High Deviation [NXDN Very Narrow] 3. CWID Deviation [NXDN Very Narrow]

- Balance is common with all the above deviation adjustments. If Balance (Transmitter Section 12) has already adjusted, please skip Step1 and adjust from Step2.
- Maximum Deviation (Analog Wide 5k/Wide 4k/Narrow) is common with all the analog signaling deviations. If Balance and Maximum Deviation (Analog Wide 5k/Wide 4k/Narrow) (Transmitter Section 13) have already adjusted, please skip Step2 and adjust from Step3.

4.20 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 VM Dummy load	Panel	ANT Ext. SP connector	Panel	[Panel tuning mode] [+], [-] [PC test mode] [←], [→]	Volume Up/Down knob to obtain 1.41V AF output. (0.5W @ 4Ω load)	1.41V ±0.1V
2. Sensitivity 2	1) Adj item: [An SENS2] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] Adjust:[***] Press [◯] key to store the adjustment value.	1) Adj item: [Sensitivity 2] 2) Adj item: [Low1], [Low5], [Center3], [High2], [High6] Press [Apply All] button to store the adjustment value.		Panel	ANT Ext. SP connector	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	Write the value as followings. [Low1]: 52 (Fixed) [Low5]: 70 (Fixed)) [Center3]: 83 (Fixed) [High2]: 103 (Fixed) [High6]: 117 (Fixed)	
3. Sensitivity 1	1) Adj item: [An SENS1] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: -118.5dBm (0.3μV) (MOD: 1kHz/ ±1.5kHz) Adjust:[***] Press [◯] key to store the adjustment value.	1) Adj item: [Sensitivity 1] 2) Adj item: [Low1], [Low5], [Center3], [High2], [High6] SSG output: -118.5dBm (0.3μV) (MOD: 1kHz/ ±1.5kHz) Press [Apply All] button to store the adjustment value.	SSG AF VM Dummy load	Panel	ANT Ext. SP connector	Panel	[Panel tuning mode] [▲], [▼] [PC test mode] [←], [→]	1) Write the value as followings. [Low1]: 63 (Fixed) [Low5]: 86 (Fixed)) [Center3]: 110 (Fixed) [High2]: 138 (Fixed) [High6]: 168 (Fixed) 2) Increase the adjustment value until the AF VM shows 12dB SINAD. 3) Store the adjustment value.	
4. RSSI reference	1) Adj item: [An 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 Oscilloscope	Panel	ANT Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** 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	
5. Open Squelch [Analog Wide 5k]	1) Adj item: [Aw SQL] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level -3dB (MOD: 1kHz/ ±3kHz)	1) Adj item: [Open Squelch (Analog Wide 5k)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level -3dB (MOD: 1kHz/±3kHz)	SSG Distortion meter Oscilloscope	Panel	ANT Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** After input signal from SSG, press [Apply] button to store the adjustment value.	
[Analog Wide 4k]	1) Adj item: [As SQL] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level -3dB (MOD: 1kHz/ ±2.4kHz)	1) Adj item: [Open Squelch (Analog Wide 4k)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level -3dB (MOD: 1kHz/ ±2.4kHz)	SSG Distortion meter Oscilloscope	Panel	ANT Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** After input signal from SSG, press [Apply] button to store the adjustment value.	
[Analog Narrow]	1) Adj item: [An SQL] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level -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 -3dB (MOD: 1kHz/ ±1.5kHz)	SSG Distortion meter Oscilloscope	Panel	ANT Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** 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 Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** 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	
[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 Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** After input signal from SSG, press [Apply] button to store the adjustment value.	
[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 Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** 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 Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** 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	
6. 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 Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** After input signal from SSG, press [Apply] button to store the adjustment value.	
7. 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 Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** After input signal from SSG, press [Apply] button to store the adjustment value.	
8. Tight Squelch [Analog Wide 5k]	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 (Analog Wide 5k)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow +6dB (MOD: 1kHz/±3kHz)	SSG Distortion meter Oscilloscope	Panel	ANT Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** After input signal from SSG, press [Apply] button to store the adjustment value.	
[Analog Wide 4k]	1) Adj item: [As SQLT] Adjust:[***] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow +6dB (MOD: 1kHz/ ±2.4kHz)	1) Adj item: [Tight Squelch (Analog Wide 4k)] 2) Adj item: [Low1]→ [Low5]→ [Center3]→ [High2]→ [High6] SSG output: 12dB SINAD level at Analog Narrow +6dB (MOD: 1kHz/±2.4 kHz)	SSG Distortion meter Oscilloscope	Panel	ANT Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** 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	
[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 (Analog 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 Oscilloscope	Panel	ANT Ext. SP connector	Panel		**[Panel tuning mode]** After input signal from SSG, press [◯] key to store the adjustment value. **[PC test mode]** 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

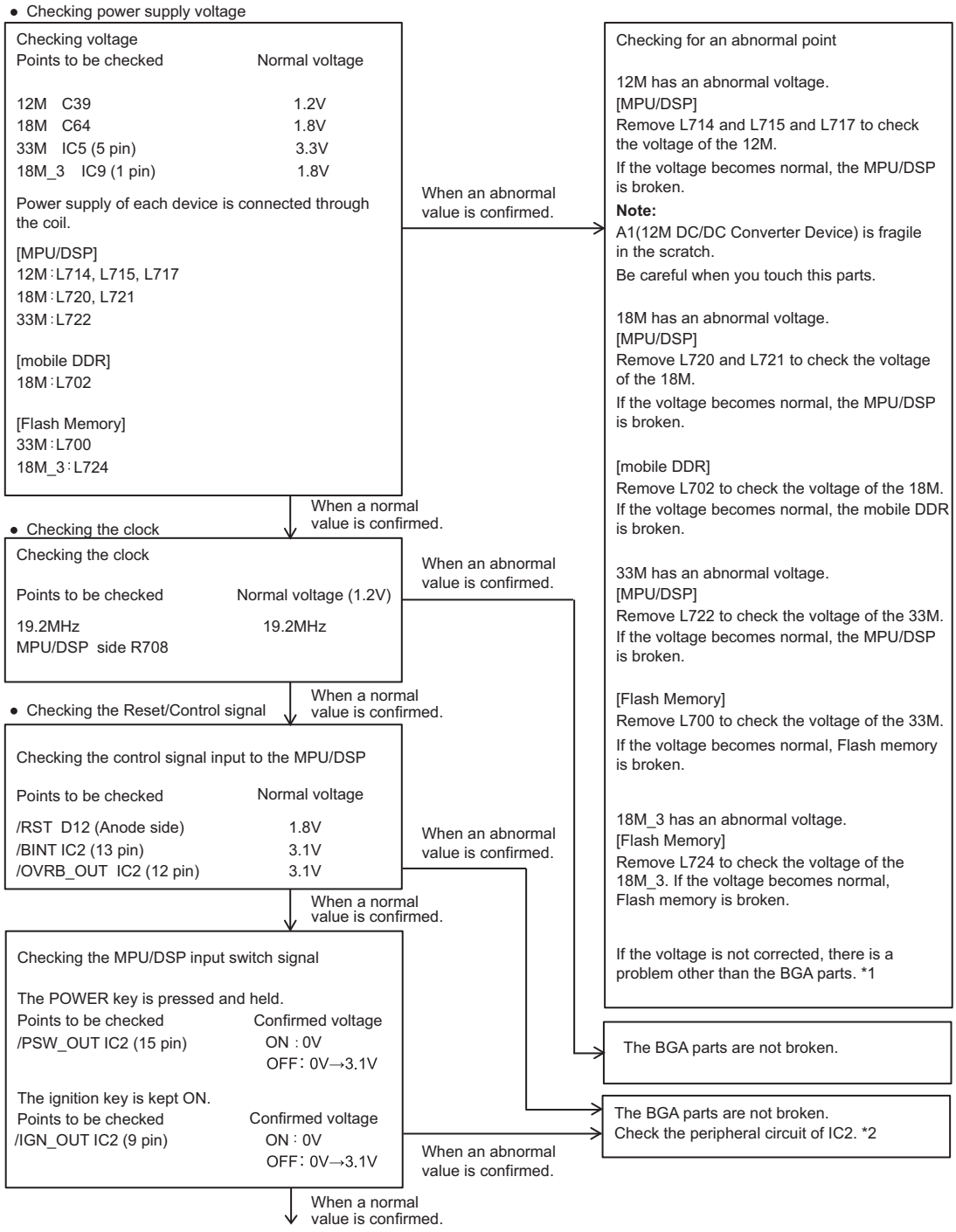
■Overview

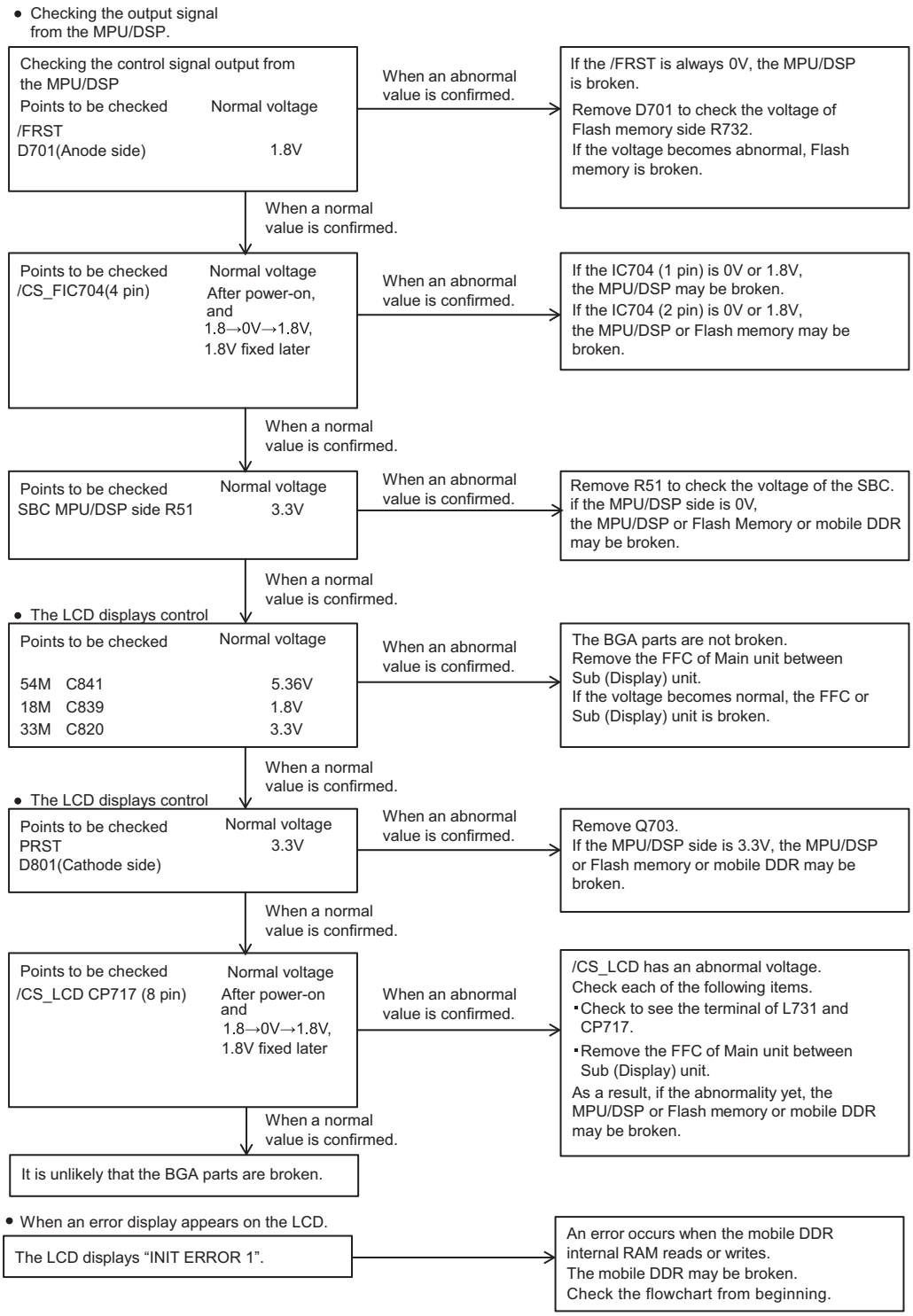
A flowchart for determining whether or not the transceiver can be powered on (the LCD does not function even if the power switch is turned on) due to broken BGA parts.

■BGA parts

MPU/DSP (IC706), mobile DDR (IC702), Flash memory (IC701)

When the BGA IC is problematic, please bring the printed circuit board (XC1-0391-82/XC1-0391-83) 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.

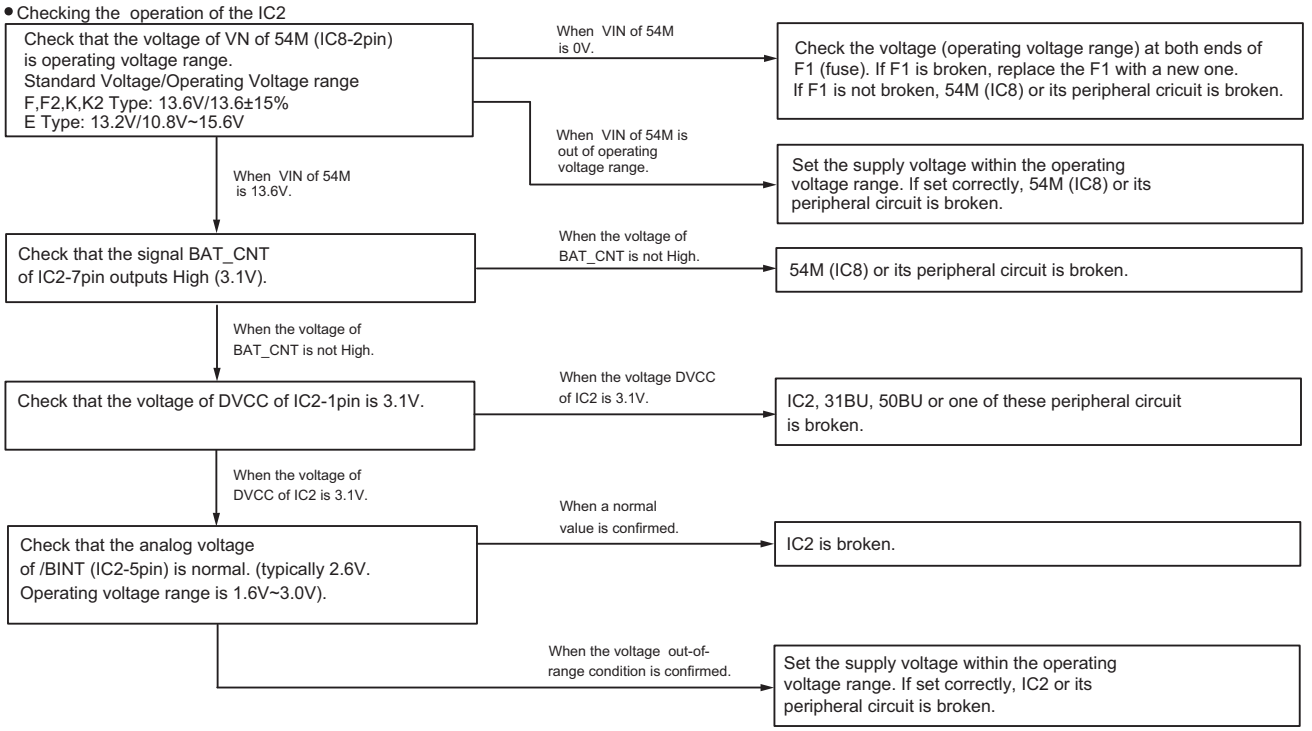




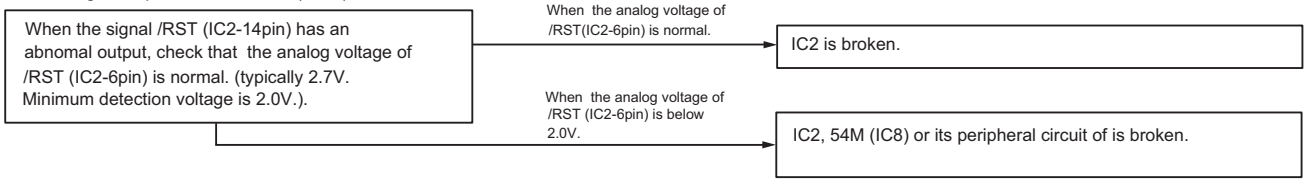
■Descriptions of signal names

(1) /RST	:MPU/DSP reset signal	LOW → Reset
(2) /BINT	:Battery final voltage monitoring	LOW → Final voltage
(3) /OVRB_OUT	:Battery overvoltage monitoring	LOW → Overvoltage
(4) /PSW_OUT	:Power switch signal	LOW → ON
(5) /IGN_OUT	:Ignition switch signal	LOW → ON
(6) /FRST	:Flash Memory reset signal	LOW → Reset
(7) /CS_F	:Flash Memory chip select signal	LOW → Active
(8) SBC	:Switch +B control	HIGH → ON
(9) 30LCD	:LCD module control 3.0V power supply	
(10) PRST	:LCD reset signal	LOW → Reset
(11) /CS_LCD	:LCD controller chip select signal	LOW → Active

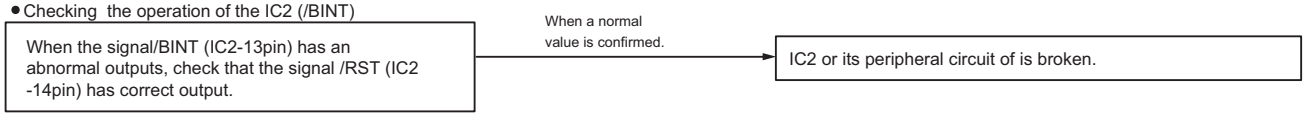
*1 If 12M, 18M or 33M has still abnormal voltage after the implementation of each procedure above, 54M(IC8), 12M(A1), 18M(IC11), 33M(IC5) or one of these peripheral circuit is broken.
54M (normally 5.4V at L12) has an abnormal voltage, check the MSP430G25KGCA (IC2) according to the following procedure.



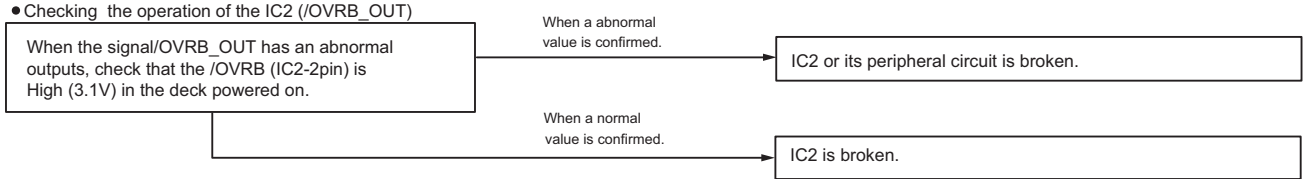
*2 ● Checking the operation of the IC2 (/RST)



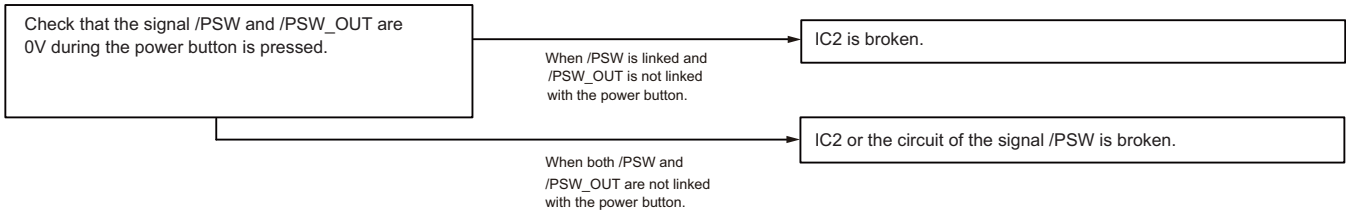
● Checking the operation of the IC2 (/BINT)



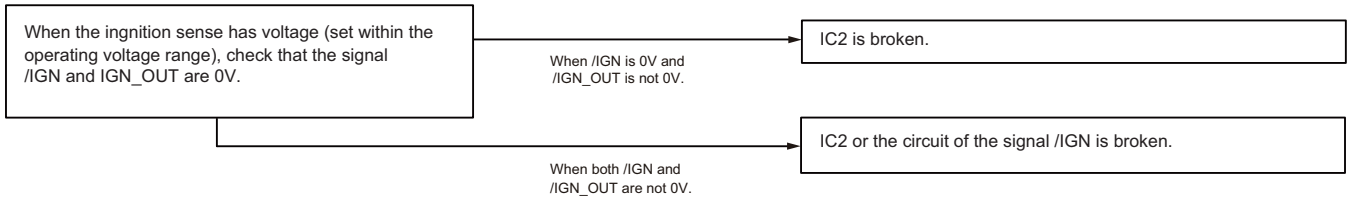
● Checking the operation of the IC2 (/OVRB_OUT)



● Checking the operation of IC2 (/PSW and /IGN)
Check that the signal /PSW (IC2-10pin) and /PSW_OUT (IC2-15pin) are linked with the power button on KCH-19 in power on state.



If the ignition function is enabled, check that the signal /IGN (IC2-8pin) and /IGN_OUT (IC2-9pin) are linked with the ignition sense.



■Remarks related MSP430G25KGCA

A. MSP430G25KGCA is written the program.

B. OMAP communicates with MSP43G25KGCA by serial communication at startup of deck.
Only firmware version of MSP43G25KGCA is confirmed OMAP in serial communication.
Even when firmware version of MSP43G25KGCA can not be acquired, the system of MSP43G25KGCA is started.

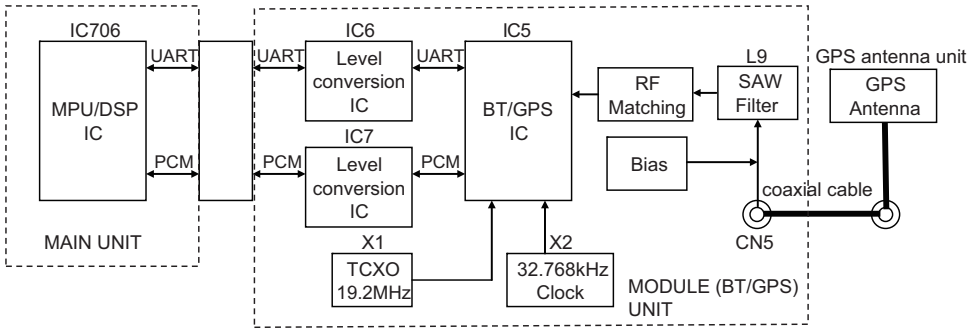
C. If there is the difference of firmware virsion of MSP43G25KGCA between MSP43G25KGCA and OMAP, the firmware version of MSP43G25KGCA is updated with the serial communication by OMAP.
"WAIT···"is displayed on the LCD during the firmware update. When the firmware update fails, the system of MSP43G25KGCA is started and OMAP is trying to update again at next startup.

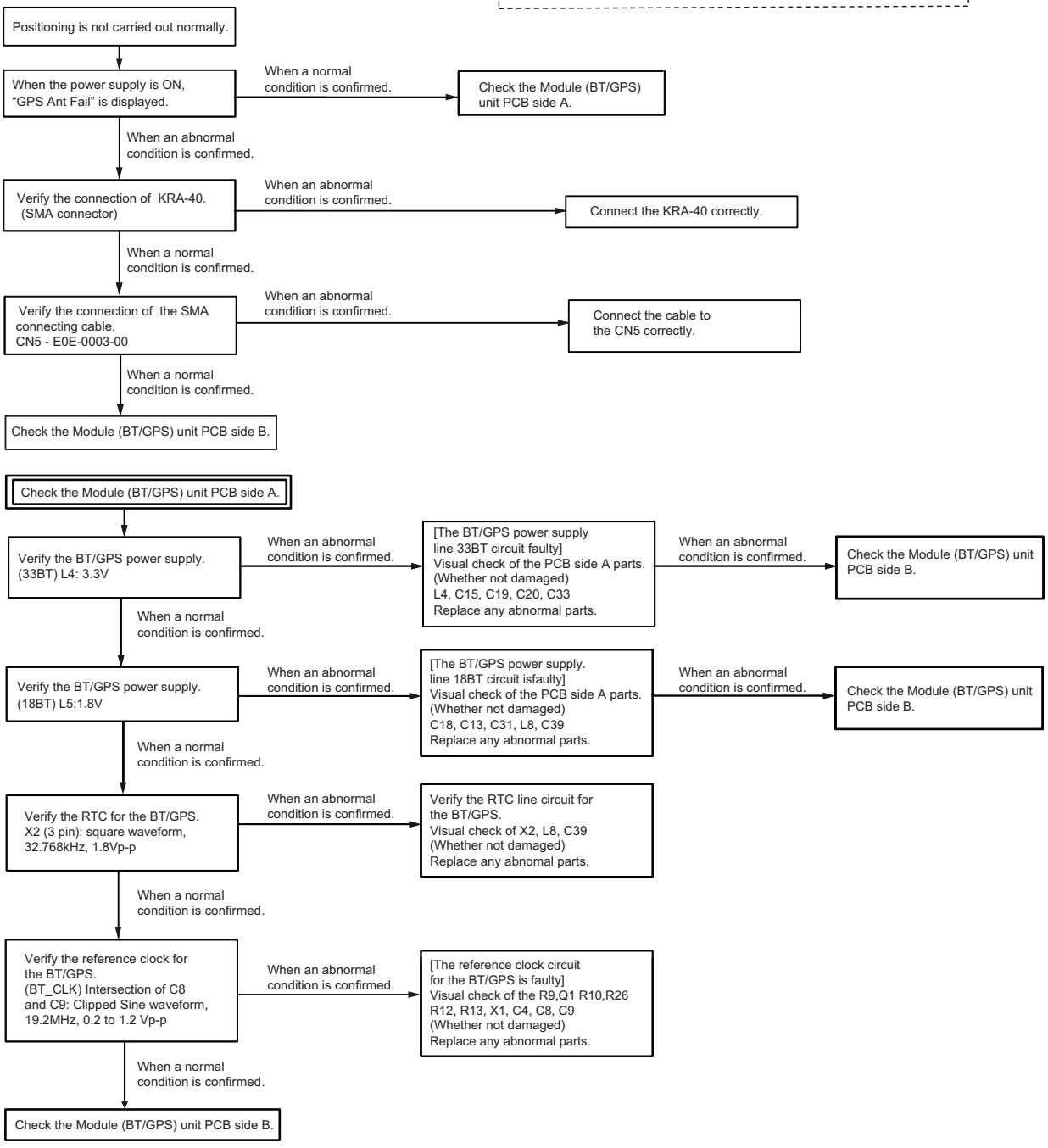
5.2 Failure diagnosis of the GPS section

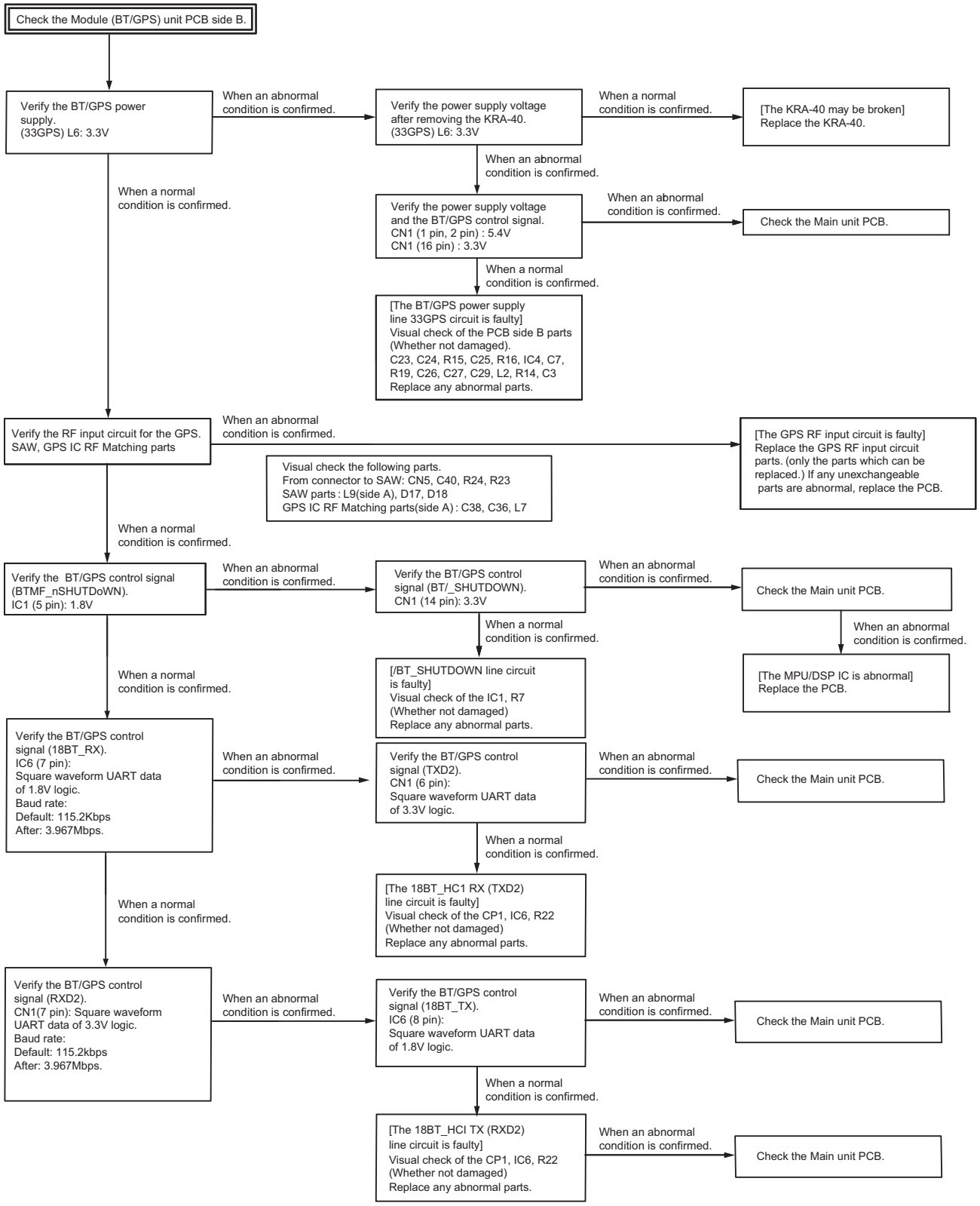
Over view:

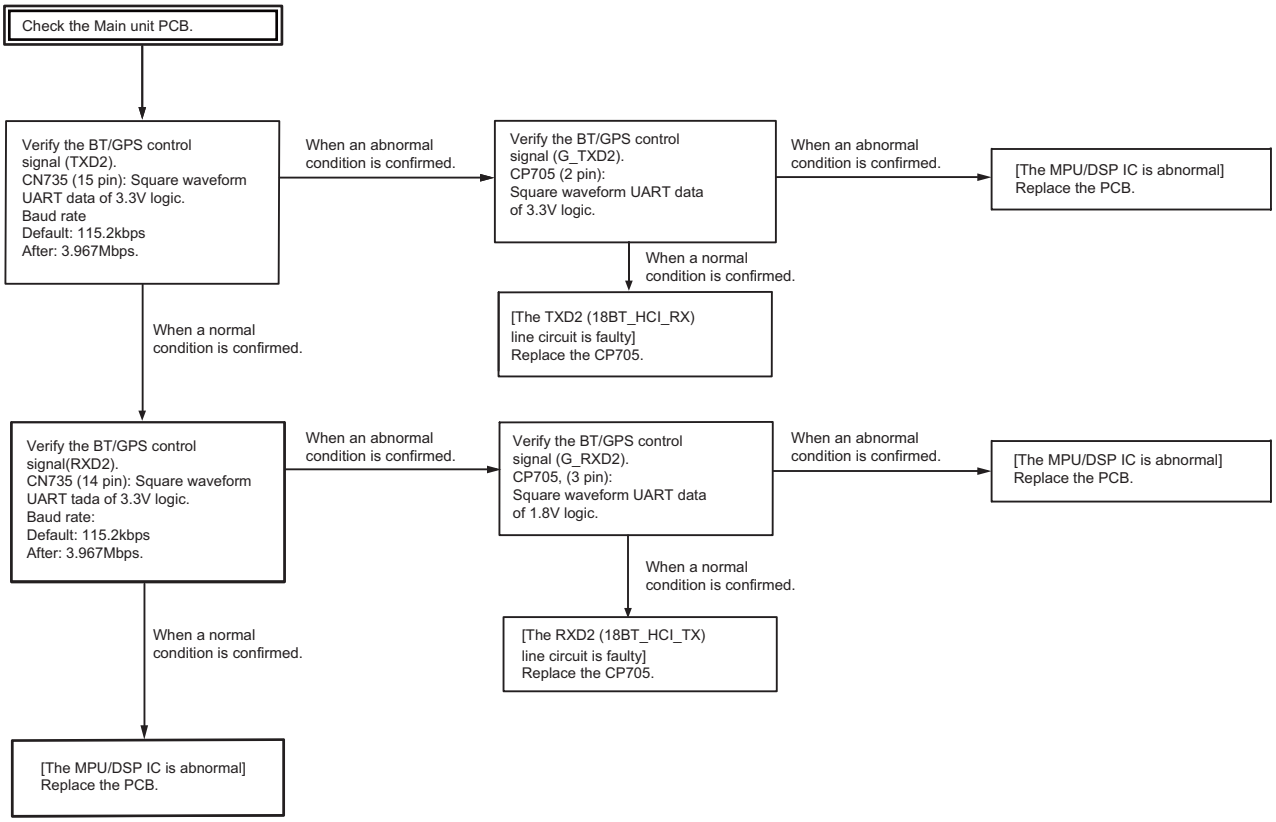
When the GPS function does not operate, use this flowchart to determine the problem.

Major parts for a GPS circuit
- GPS antenna (KRA-40 (option))
- Coaxial cable (E0E-0003-00)
- SAW Filter (L9)
- Bluetooth/GPS IC (IC5)
- Level conversion IC (IC6,IC7)
- TCXO 19.2MHz (X1)
- 32.768kHz clock (X2)
- 33BT Regulator (IC3)
- 18BT Regulator (IC2)
- 33GPS Regulator (IC4)
- MPU/DSP IC (IC706)






Check the Module (BT/GPS) unit PCB side B.
Verify the BT/GPS power supply.
(33GPS) L6: 3.3V
When an abnormal condition is confirmed.
Verify the power supply voltage after removing the KRA-40.
(33GPS) L6: 3.3V
When a normal condition is confirmed.
[The KRA-40 may be broken]
Replace the KRA-40.
When an abnormal condition is confirmed.
When a normal condition is confirmed.
Verify the power supply voltage and the BT/GPS control signal.
CN1 (1 pin, 2 pin) : 5.4V
CN1 (16 pin) : 3.3V
When an abnormal condition is confirmed.
Check the Main unit PCB.
When a normal condition is confirmed.
[The BT/GPS power supply line 33GPS circuit is faulty]
Visual check of the PCB side B parts (Whether not damaged).
C23, C24, R15, C25, R16, IC4, C7, R19, C26, C27, C29, L2, R14, C3
Replace any abnormal parts.
Verify the RF input circuit for the GPS.
SAW, GPS IC RF Matching parts
When an abnormal condition is confirmed.
[The GPS RF input circuit is faulty]
Replace the GPS RF input circuit parts. (only the parts which can be replaced.) If any unexchangeable parts are abnormal, replace the PCB.
Visual check the following parts.
From connector to SAW: CN5, C40, R24, R23
SAW parts : L9(side A), D17, D18
GPS IC RF Matching parts(side A) : C38, C36, L7
When a normal condition is confirmed.
Verify the BT/GPS control signal (BTMF_nSHUTDoWN).
IC1 (5 pin): 1.8V
When an abnormal condition is confirmed.
Verify the BT/GPS control signal (BT/_SHUTDOWN).
CN1 (14 pin): 3.3V
When an abnormal condition is confirmed.
Check the Main unit PCB.
When an abnormal condition is confirmed.
When a normal condition is confirmed.
[/BT_SHUTDOWN line circuit is faulty]
Visual check of the IC1, R7 (Whether not damaged)
Replace any abnormal parts.
[The MPU/DSP IC is abnormal]
Replace the PCB.
When a normal condition is confirmed.
Verify the BT/GPS control signal (18BT_RX).
IC6 (7 pin):
Square waveform UART data of 1.8V logic.
Baud rate:
Default: 115.2Kbps
After: 3.967Mbps.
When an abnormal condition is confirmed.
Verify the BT/GPS control signal (TXD2).
CN1 (6 pin):
Square waveform UART data of 3.3V logic.
When an abnormal condition is confirmed.
Check the Main unit PCB.
When a normal condition is confirmed.
[The 18BT_HC1 RX (TXD2) line circuit is faulty]
Visual check of the CP1, IC6, R22 (Whether not damaged)
Replace any abnormal parts.
When a normal condition is confirmed.
Verify the BT/GPS control signal (RXD2).
CN1(7 pin): Square waveform UART data of 3.3V logic.
Baud rate:
Default: 115.2kbps
After: 3.967Mbps.
When an abnormal condition is confirmed.
Verify the BT/GPS control signal (18BT_TX).
IC6 (8 pin):
Square waveform UART data of 1.8V logic.
When an abnormal condition is confirmed.
Check the Main unit PCB.
When a normal condition is confirmed.
[The 18BT_HCI TX (RXD2) line circuit is faulty]
Visual check of the CP1, IC6, R22 (Whether not damaged)
Replace any abnormal parts.
When an abnormal condition is confirmed.
Check the Main unit PCB.



■Descriptions of signal names

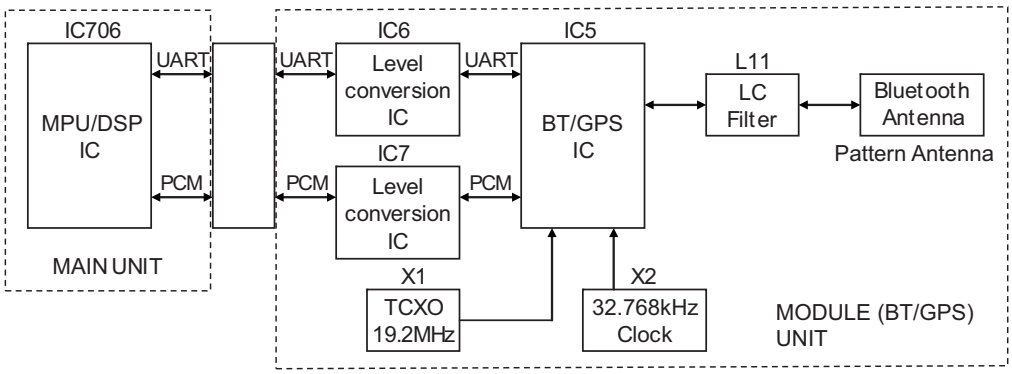
(1) 33BT: BT/GPS IC 3.3V power supply
(2) 18BT: BT/GPS IC 1.8V power supply
(3) 33GPS: BT/GPS IC 3.3V power supply
(4) TXD2: BT/GPS serial data line connected to UART TX of MPU/DSP IC (MPU/DSP to BT/GPS IC)
(5) RXD2:BT/GPS serial data line connected to UART RX of MPU/DSP IC (MPU/DSP to BT/GPS IC)
(6)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

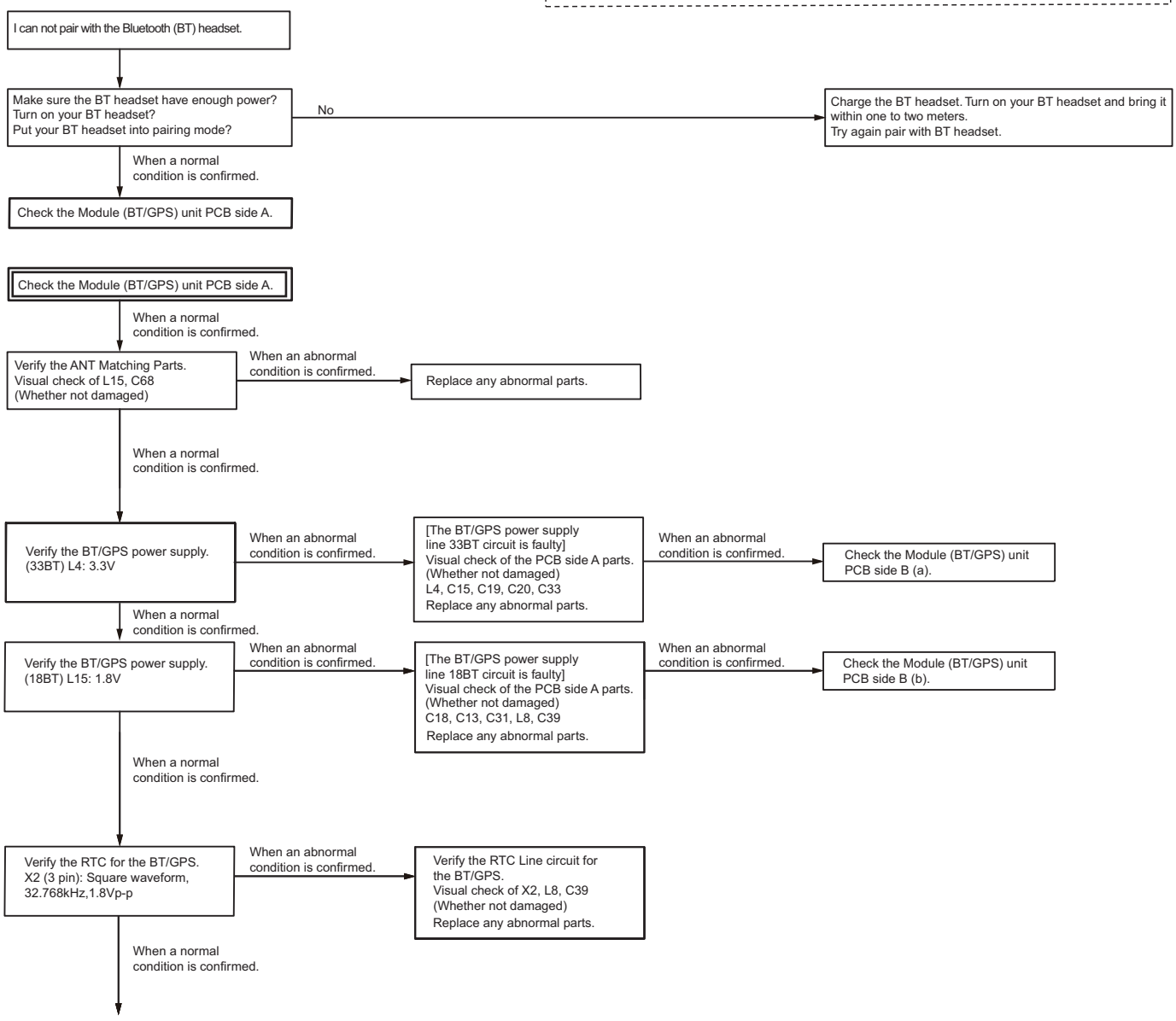
5.3 Failure diagnosis of the Bluetooth section

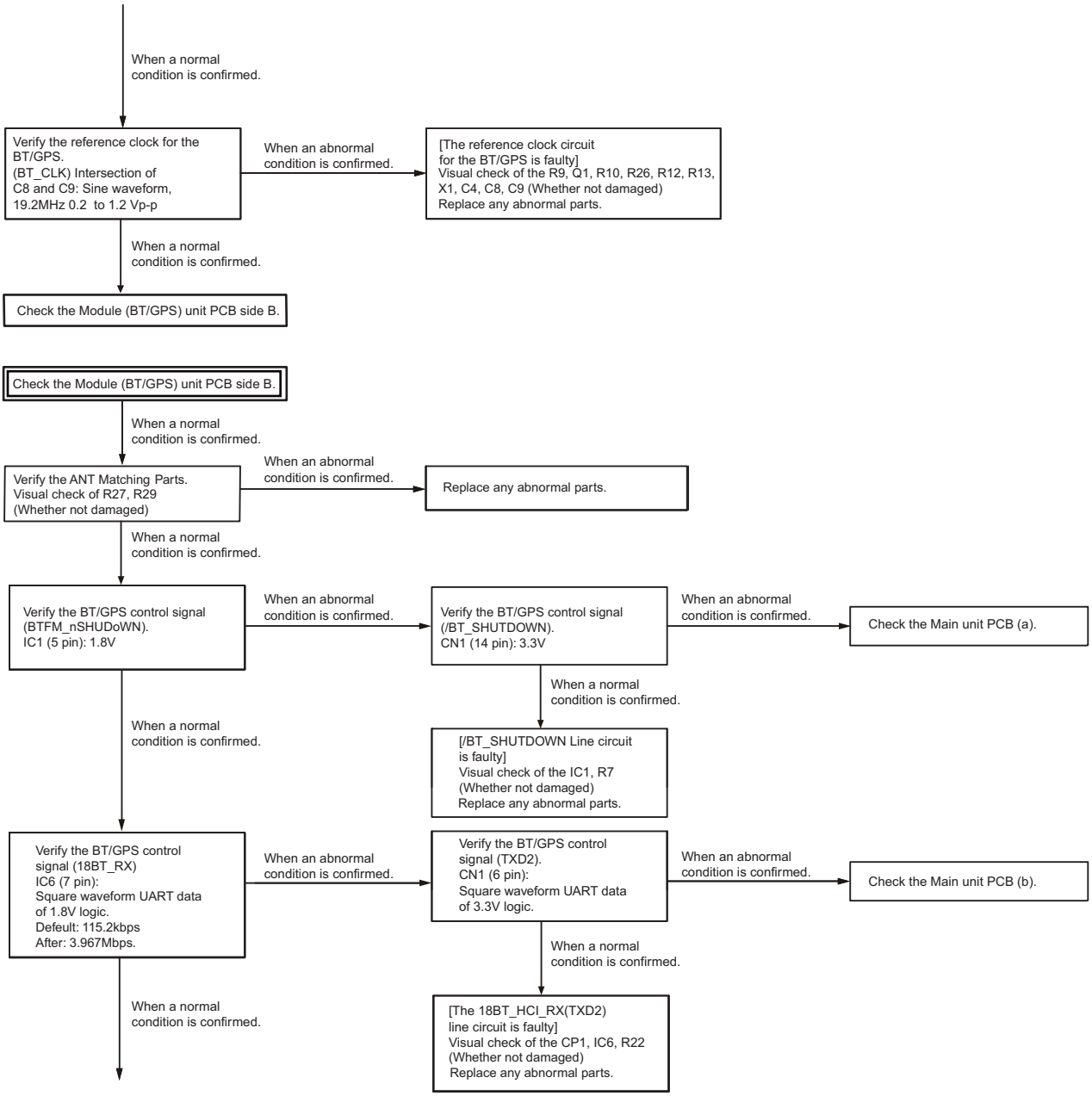
Over view:

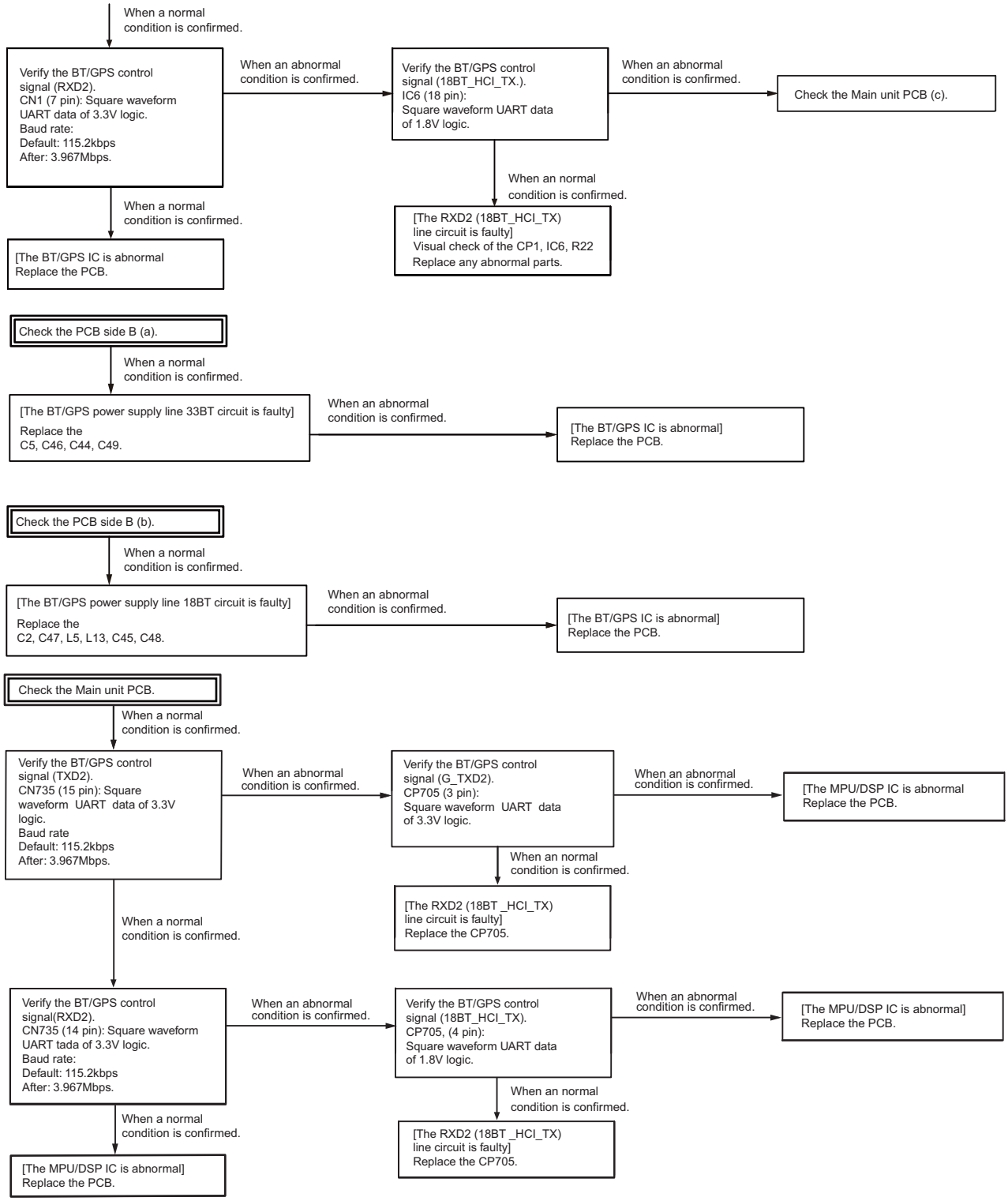
When the Bluetooth function does not operate, use this flowchart to determine the problem.

Major parts for a Bluetooth circuit
- Bluetooth antenna (Pattern Antenna)
- LC filter (L11)
- Bluetooth/GPS (IC5)
- Level conversion IC (IC6, IC7)
- TCXO 19.2MHz (X1)
- 32.768kHz clock (X2)
- 33BT Regulator (IC3)
- 18BT Regulator (IC2)
- MPU/DSP IC (IC706)






When a normal condition is confirmed.
Verify the reference clock for the BT/GPS.
(BT_CLK) Intersection of C8 and C9: Sine waveform, 19.2MHz 0.2 to 1.2 Vp-p
When an abnormal condition is confirmed.
[The reference clock circuit for the BT/GPS is faulty]
Visual check of the R9, Q1, R10, R26, R12, R13, X1, C4, C8, C9 (Whether not damaged)
Replace any abnormal parts.
When a normal condition is confirmed.
Check the Module (BT/GPS) unit PCB side B.
Check the Module (BT/GPS) unit PCB side B.
When a normal condition is confirmed.
Verify the ANT Matching Parts.
Visual check of R27, R29
(Whether not damaged)
When an abnormal condition is confirmed.
Replace any abnormal parts.
When a normal condition is confirmed.
Verify the BT/GPS control signal (BTFM_nSHUDoWN).
IC1 (5 pin): 1.8V
When an abnormal condition is confirmed.
Verify the BT/GPS control signal (/BT_SHUTDOWN).
CN1 (14 pin): 3.3V
When an abnormal condition is confirmed.
Check the Main unit PCB (a).
When a normal condition is confirmed.
[/BT_SHUTDOWN Line circuit is faulty]
Visual check of the IC1, R7
(Whether not damaged)
Replace any abnormal parts.
When a normal condition is confirmed.
Verify the BT/GPS control signal (18BT_RX)
IC6 (7 pin):
Square waveform UART data of 1.8V logic.
Defeult: 115.2kbps
After: 3.967Mbps.
When an abnormal condition is confirmed.
Verify the BT/GPS control signal (TXD2).
CN1 (6 pin):
Square waveform UART data of 3.3V logic.
When an abnormal condition is confirmed.
Check the Main unit PCB (b).
When a normal condition is confirmed.
[The 18BT_HCI_RX(TXD2) line circuit is faulty]
Visual check of the CP1, IC6, R22
(Whether not damaged)
Replace any abnormal parts.
When a normal condition is confirmed.



■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

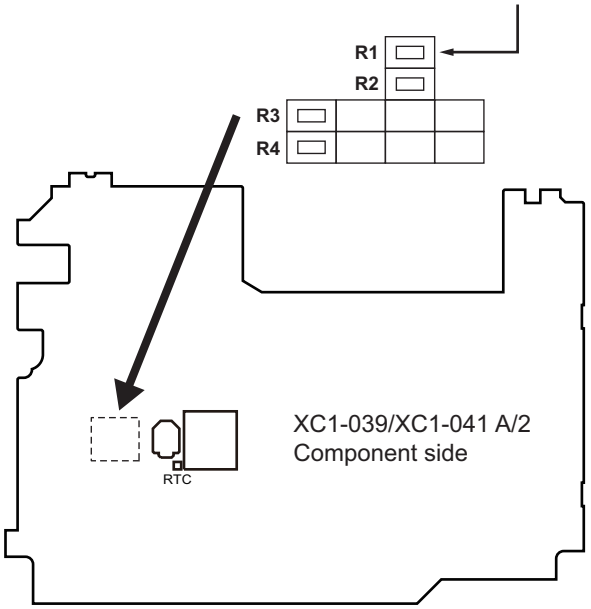
5.4 Replacing Main Unit

■Main unit Information

Model Name	Original Main unit Number	For Service Main unit Number
NX-5800 (F,K)	XC1-0391-80 XC1-0410-10	XC1-0391-82 XC1-0410-12
NX-5800 (F2,K2,E)	XC1-0391-81 XC1-0410-11	XC1-0391-83 XC1-0410-13

■Method of confirming "Original Main unit" and "Service Main unit"

The 0Ω resistor (R1) is mounted on the "R1" silk print part of the Service Main unit (XC1-0391-82/XC1-0391-83/XC1-0410-12/XC1-0410-13).



XC1-039	XC1-041	R1	R2	R3	R4
1-80	0-10	(None)	0Ω	0Ω	(None)
1-81	0-11	(None)	0Ω	(None)	0Ω
1-82	0-12	0Ω	0Ω	0Ω	(None)
1-83	0-13	0Ω	0Ω	(None)	0Ω

Note:

- The 0Ω resistor (R1, R2, R3, R4) 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 (XC1-0391-82/XC1-0391-83/XC1-0410-12/XC1-0410-13) and the schematic diagram of the original Main unit (XC1-0391-80/XC1-0391-81/XC1-0410-10/XC1-0410-11). (R1, R2, R3 and R4 are connected with GND (ground) only.)

■Supplied Accessories of "Service Main unit"

Item (Including Parts Number)	Quantity
Main Unit (XC1-039, XC1-041)	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	Desctiption
Firmware	NX-5800 Firmware.
FPU Data (PC programming mode)	XC1-039/XC1-041 (NX-5800) F, F2, E type data.
Various Adjustment Data (PC Test mode)	General adjustment values for the XC1-039/XC1-041 (NX-5800).
KENWOOD ESN	Model name: [XC1-039/XC1-041] NX-5800S1 (F, K: 450 ~ 520MHz) or NX-5800S2 (F2, K2:380~470MHz, E:400~470MHz) Type: F, F2, K, K2, E 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

(1) After changing the printed circuit board, write the up-to-date Firmware following the instructions in the "2.2 RE-ALIGNMENT - 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.

(2) 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.

(3) Enter Program> Test Mode, then adjust the various adjustment data (PC Test Mode) as described in the "SECTION 4 ADJUSTMENT".

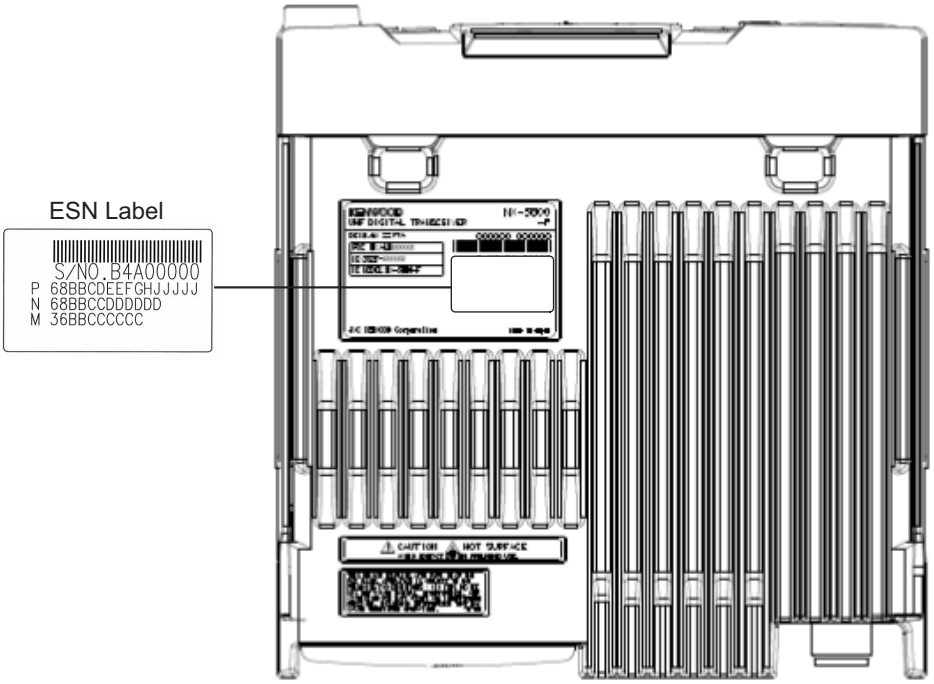
(4) Attach the new labels corresponding to the new printed circuit board. (Refer to the images below for label placement.)

(5) 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.
- KPG-D1N can't be used for E type.

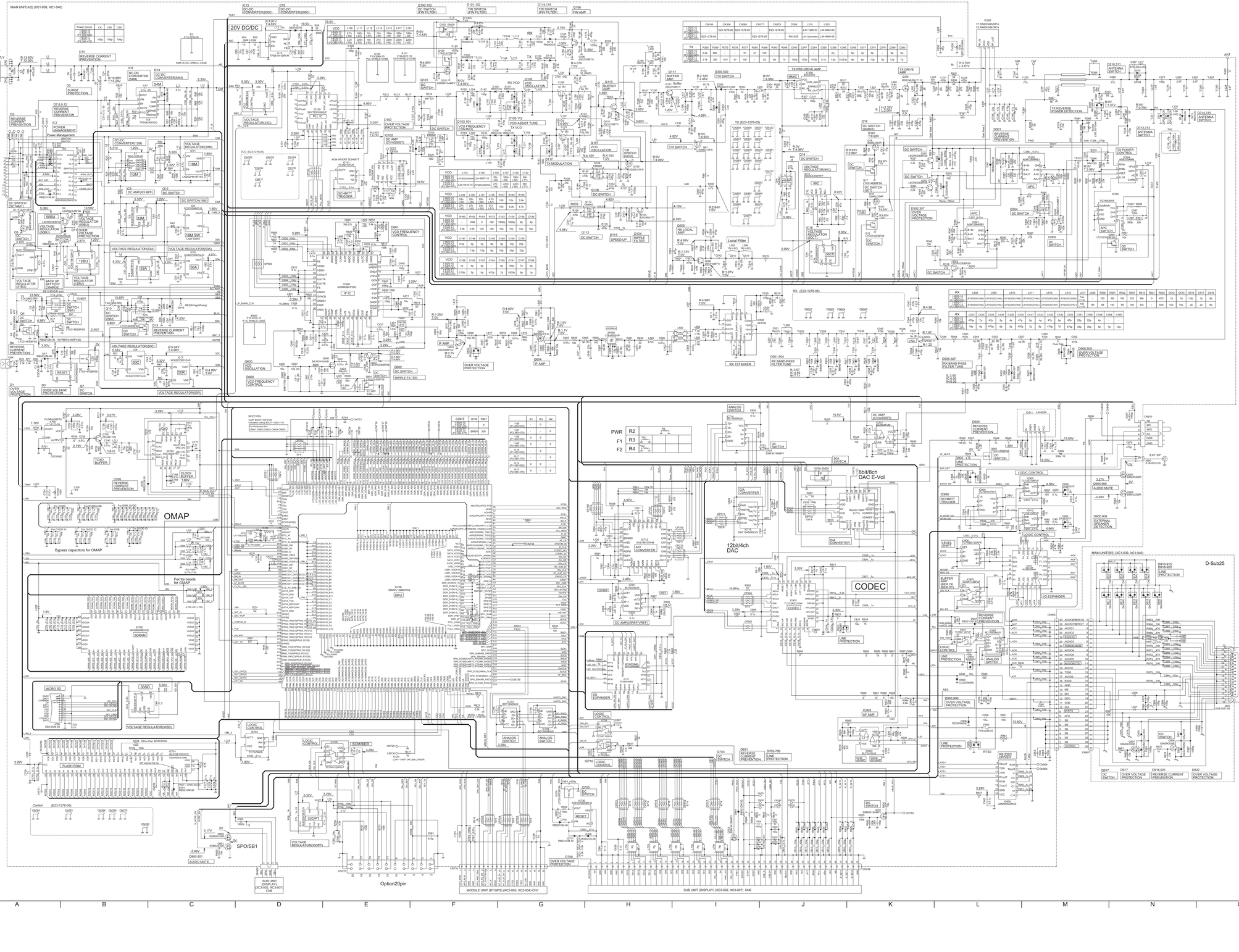
■ESN Label Layout



MEMO

SCHEMATIC DIAGRAM

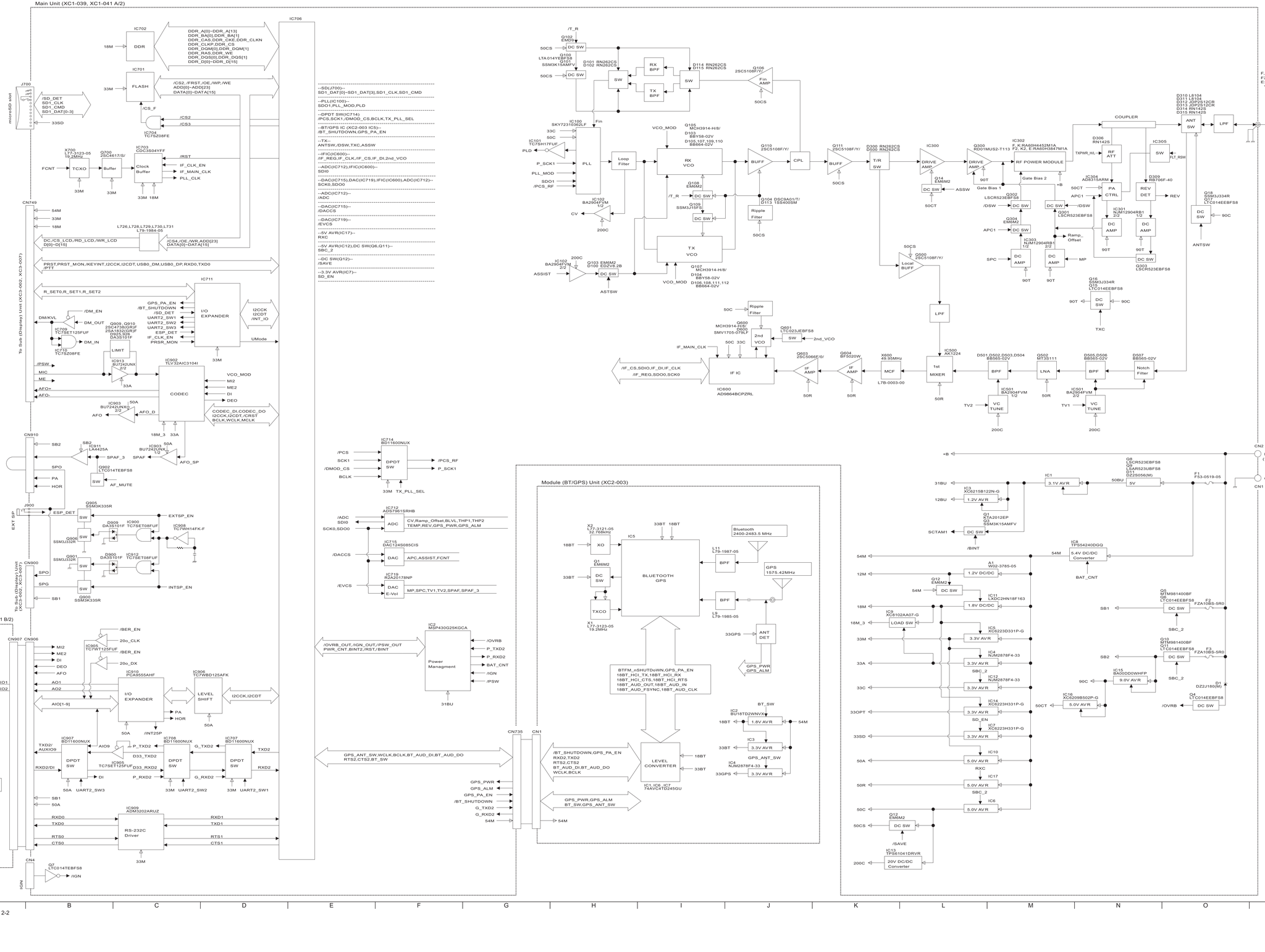
■ MAIN UNIT (XC1-0391-80 (NX-5800(K), NX-5800B(F), NX-5800B(K)), XC1-0391-81 (NX-5800(K2), NX-5800B(F2), NX-5800B(K2)), XC1-0400-10 (NX-5800(K), NX-5800B(K)), XC1-0400-11 (NX-5800(K2), NX-5800B(K2), NX-5800(E)))



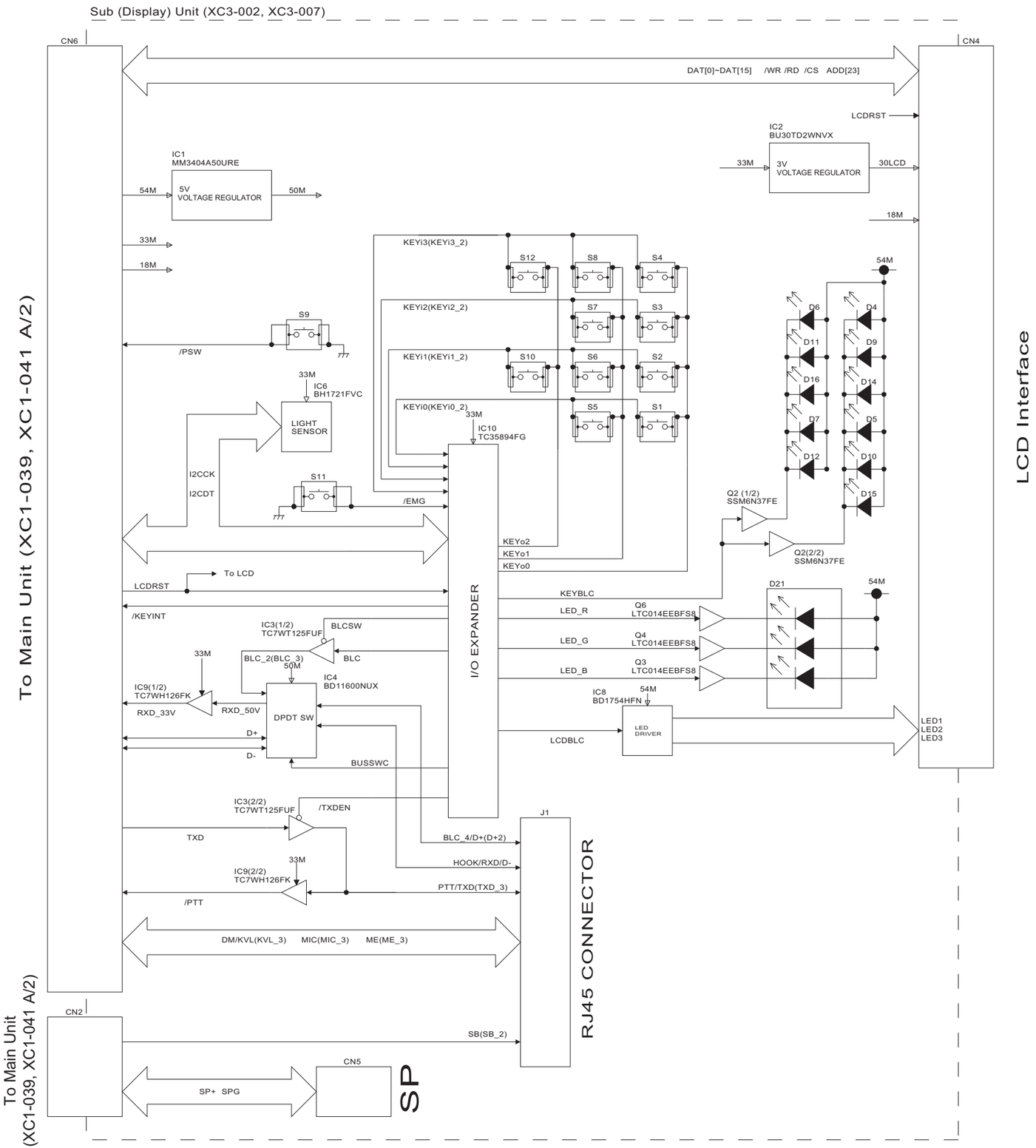
BLOCK DIAGRAM

■ MAIN UNIT

Main Unit (XC1-039, XC1-041 A/2)



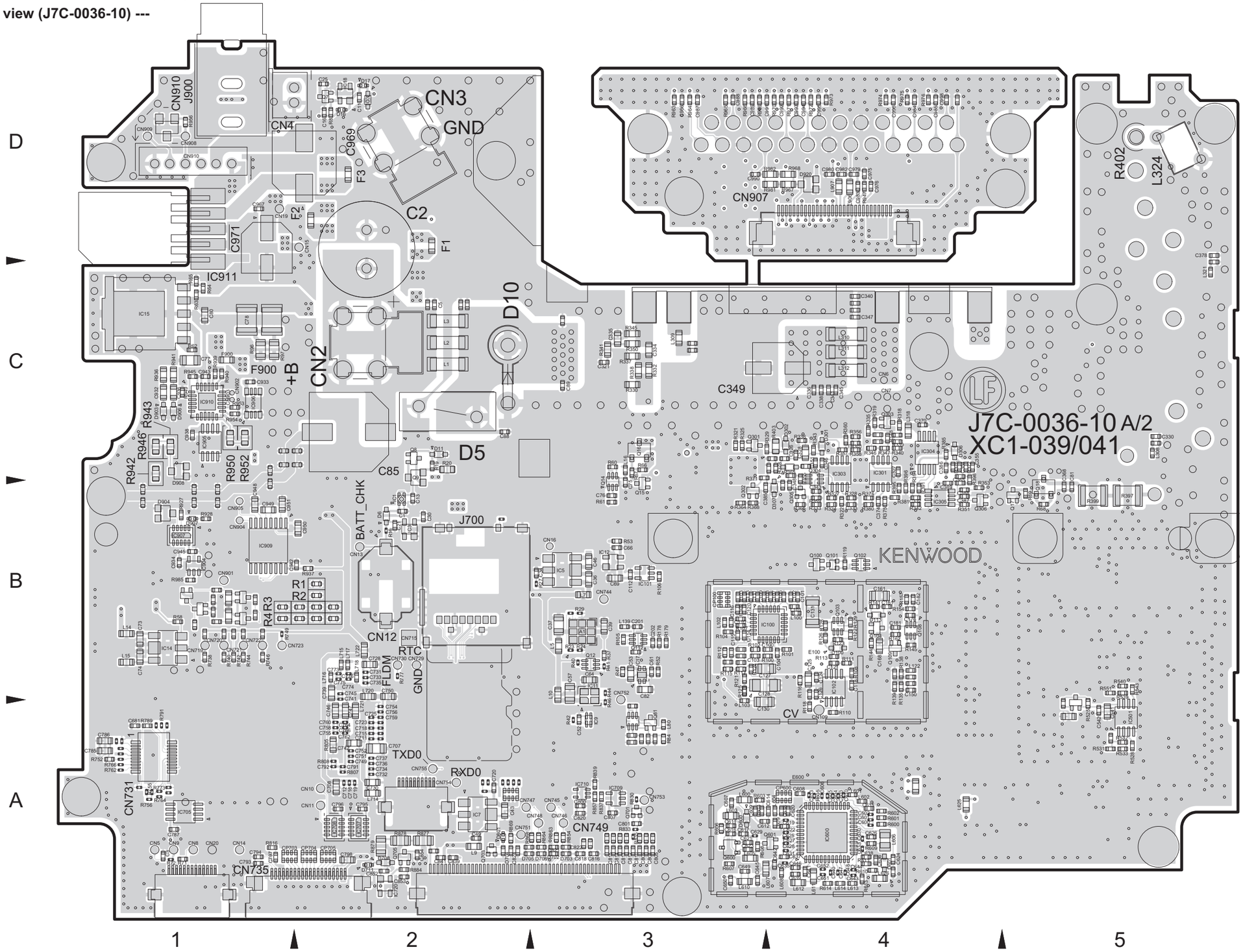
■ SUB (Display) UNIT



PRINTED CIRCUIT BOARD

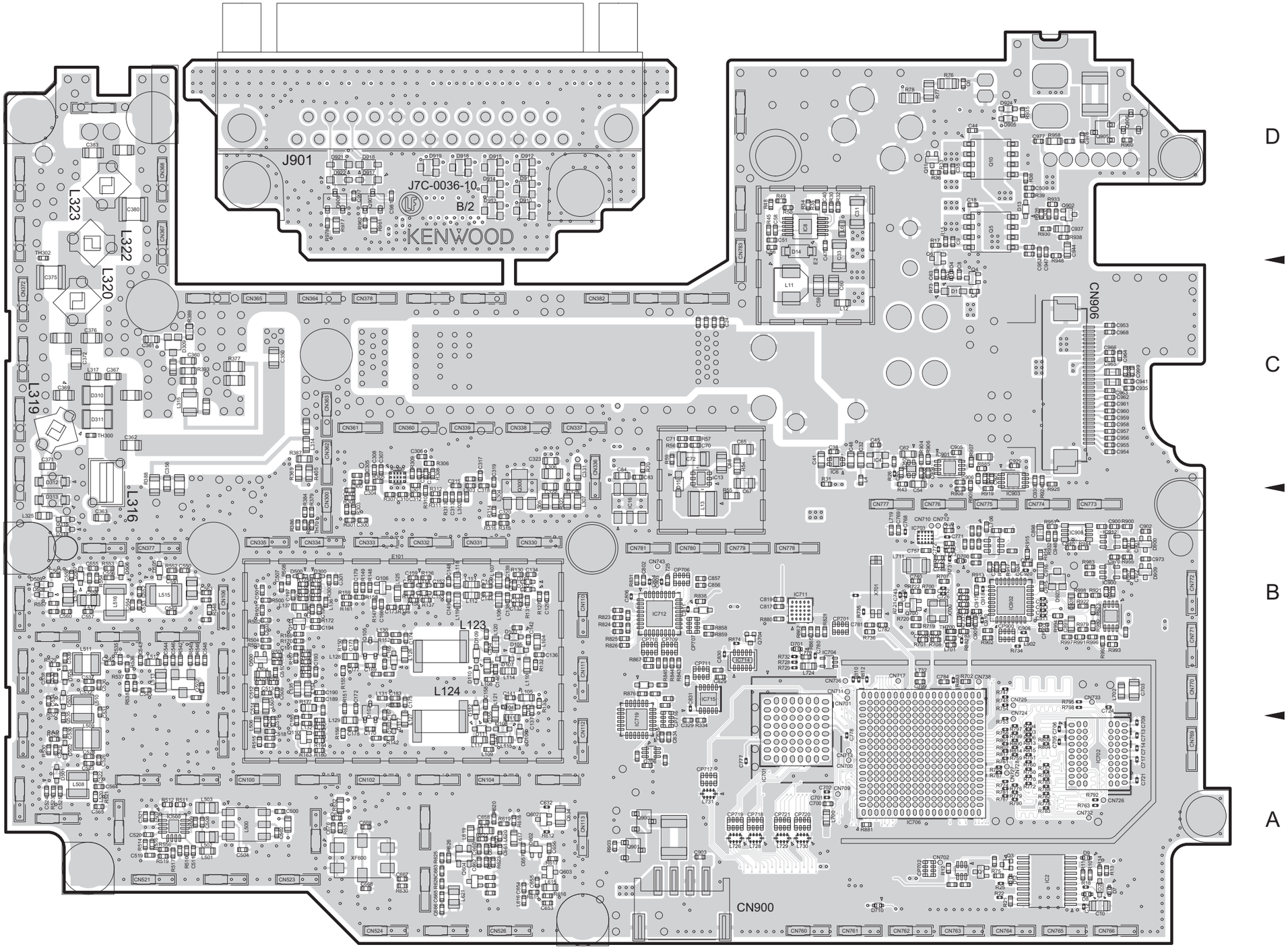
■ MAIN UNIT (XC1-0391-80 (NX-5800(K), NX-5800B(F), NX-5800B(K)), XC1-0391-81 (NX-5800(K2), NX-5800B(F2), NX-5800B(K2)), XC1-0400-10 (NX-5800(K), NX-5800B(K)), XC1-0400-11 (NX-5800(K2), NX-5800B(K2), NX-5800(E)))

--- Component side view (J7C-0036-10) ---



■ MAIN UNIT (XC1-0391-80 (NX-5800(K), NX-5800B(F), NX-5800B(K)), XC1-0391-81 (NX-5800(K2), NX-5800B(F2), NX-5800B(K2)), XC1-0400-10 (NX-5800(K), NX-5800B(K)), XC1-0400-11 (NX-5800(K2), NX-5800B(K2), NX-5800(E)))

--- Foil side view (J7C-0036-10) ---



● ADDRESS TABLE OF BOARD PARTS

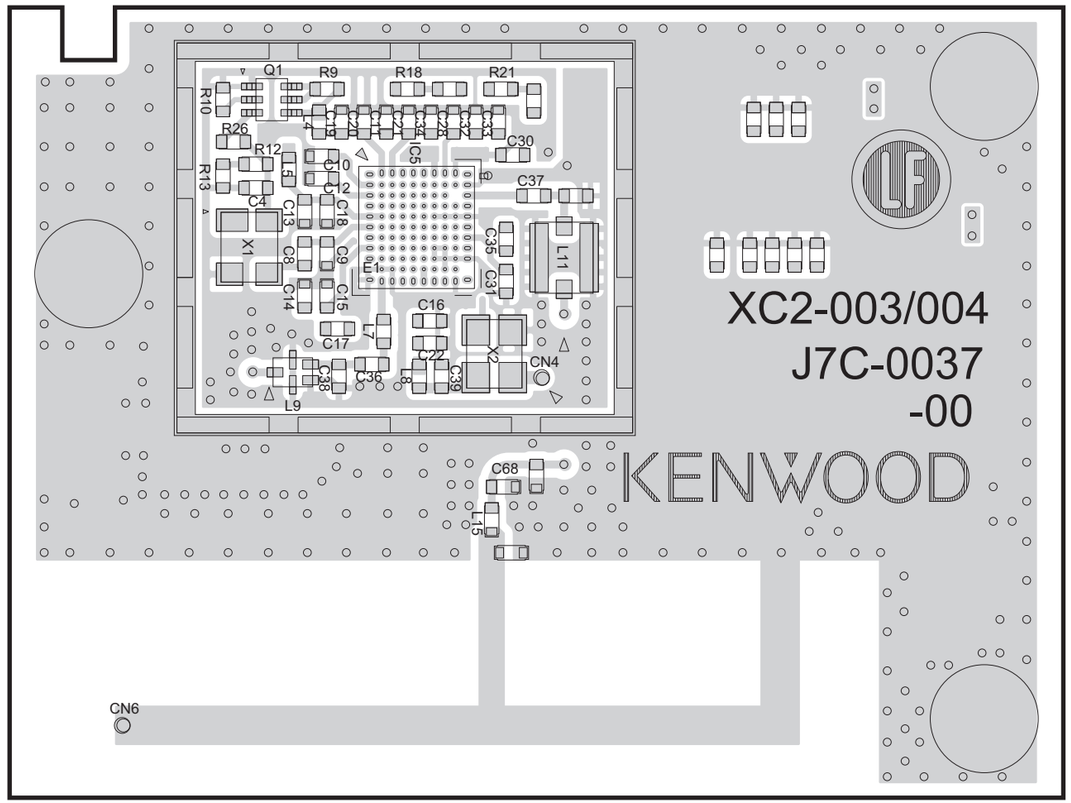
Each address may have an address error by one interval.

Side — A-1C — Y axis / X axis

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
IC		Q500	B- 4B	D907	A- 1B	R102	A- 3B	R327	A- 4B	R543	A- 5B	R783	B- 1A	R932	B- 1B	C53	A- 3B	C172	B- 4B	C502	B- 4A	C638	A- 4A	C771	B- 2B	C935	B- 1C	CN360	B- 4C	L16	A- 3C	L612	A- 4A
IC1	A- 2B	Q502	B- 5B	D908	A- 1C	R103	A- 3B	R328	A- 4B	R545	B- 5B	R785	B- 1A	R933	B- 1D	C54	B- 2C	C173	B- 4B	C503	B- 4B	C639	A- 4A	C772	B- 2B	C936	A- 1C	CN361	B- 4C	L80	A- 3A	L613	A- 4A
IC2	B- 1A	Q600	A- 3A	D909	B- 1B	R104	A- 3B	R329	A- 4C	R546	B- 5B	R787	B- 1A	R935	B- 1D	C55	B- 2C	C174	B- 4B	C504	B- 5A	C640	A- 4A	C773	A- 2B	C937	B- 1D	CN362	B- 4C	L100	A- 4B	L614	A- 4A
IC3	A- 2B	Q601	A- 4A	D910	B- 3D	R105	A- 3B	R330	A- 3C	R548	B- 5B	R788	B- 1A	R936	A- 1C	C56	B- 2D	C175	B- 4B	C506	B- 4B	C641	A- 4A	C774	A- 2B	C938	A- 1C	CN363	B- 4C	L101	A- 4B	L615	B- 3A
IC4	B- 2C	Q602	B- 3A	D911	B- 3D	R106	A- 3B	R332	A- 3C	R551	A- 5B	R789	A- 1A	R937	A- 2B	C57	A- 3B	C176	A- 4B	C507	B- 4B	C642	A- 4A	C775	A- 2B	C940	B- 1B	CN364	B- 4C	L102	A- 3B	L616	B- 3A
IC5	A- 3B	Q603	B- 3A	D912	B- 3D	R107	A- 3B	R333	A- 4B	R552	B- 5B	R790	B- 1A	R938	B- 1D	C58	B- 2D	C177	B- 4B	C508	B- 5A	C643	A- 4A	C776	A- 2B	C941	B- 1C	CN365	B- 4C	L103	A- 3A	L617	B- 3A
IC6	B- 2C	Q604	B- 4A	D913	B- 4D	R108	A- 4B	R334	B- 3A	R553	B- 5B	R791	A- 1A	R939	A- 1C	C59	B- 2C	C178	B- 4A	C509	B- 4B	C644	A- 4A	C777	B- 2A	C942	A- 2B	CN367	B- 5D	L104	B- 3B	L618	B- 4A
IC7	A- 2A	Q700	B- 2B	D914	B- 4D	R109	A- 3B	R335	A- 4C	R554	B- 5B	R792	B- 1A	R940	A- 1C	C60	B- 2C	C179	B- 4B	C510	B- 4B	C645	A- 3A	C778	B- 2A	C943	A- 1C	CN368	B- 5D	L105	B- 3B	L619	B- 4A
IC8	B- 2D	Q701	A- 3A	D915	B- 4D	R110	A- 4A	R336	A- 4C	R556	B- 5A	R794	B- 1A	R941	A- 1C	C61	A- 3B	C181	A- 4B	C511	B- 5A	C646	A- 4A	C779	B- 2B	C944	B- 1D	CN372	B- 5C	L106	B- 3B	L620	B- 3A
IC9	A- 3A	Q703	A- 2A	D916	B- 4D	R111	A- 4B	R337	A- 3C	R557	B- 5B	R795	B- 1B	R943	A- 1C	C62	B- 2C	C182	A- 4B	C512	B- 4B	C647	A- 4A	C780	B- 2B	C945	A- 1B	CN377	B- 5B	L107	B- 3B	L621	B- 4A
IC10	B- 2C	Q704	B- 2B	D917	B- 4D	R112	A- 3B	R338	A- 3C	R600	A- 4A	R797	B- 1A	R944	B- 1B	C63	B- 2C	C183	B- 4B	C513	B- 4B	C648	A- 4A	C781	B- 2B	C946	B- 1B	CN378	B- 4C	L108	B- 4B	L625	A- 4A
IC11	A- 3B	Q705	A- 2A	D918	B- 4D	R113	A- 4B	R339	A- 4C	R601	A- 4A	R798	B- 1B	R945	A- 1C	C64	A- 3B	C184	B- 4A	C514	B- 4B	C649	A- 3A	C782	B- 2B	C947	B- 1D	CN382	B- 3C	L109	B- 4A	L626	A- 4A
IC12	A- 3B	Q706	B- 3A	D919	B- 4D	R115	A- 3B	R340	A- 4C	R602	A- 4A	R799	B- 1A	R947	A- 4D	C65	B- 2C	C185	B- 4A	C516	B- 4A	C650	A- 3A	C783	B- 2B	C948	A- 1B	CN521	B- 5A	L110	B- 3B	L700	B- 2A
IC13	B- 3C	Q900	B- 3A	D920	A- 4D	R116	A- 4B	R341	A- 3C	R603	A- 3A	R800	B- 1A	R948	B- 1D	C66	A- 3B	C187	B- 4A	C517	B- 4A	C651	A- 4A	C784	B- 2B	C949	A- 1B	CN523	B- 4A	L111	B- 3A	L701	B- 2B
IC14	A- 1B	Q901	B- 3A	D921	B- 4D	R117	A- 3B	R342	A- 4B	R604	A- 3A	R801	B- 1A	R949	A- 1C	C67	B- 2C	C189	B- 4B	C518	B- 4A	C652	A- 4A	C785	A- 1A	C950	A- 2B	CN524	B- 4A	L112	B- 4B	L702	B- 1B
IC15	A- 1C	Q902	B- 1D	D922	B- 4D	R118	A- 4A	R343	A- 4C	R605	A- 4A	R802	B- 1A	R950	A- 1C	C68	B- 3C	C190	B- 4B	C519	B- 5A	C653	B- 3A	C786	A- 1A	C951	A- 1B	CN526	B- 3A	L113	B- 4B	L706	B- 1B
IC16	B- 3B	Q905	B- 1D	D923	B- 1B	R119	A- 4B	R345	A- 3C	R606	A- 3A	R803	B- 1A	R951	B- 1B	C69	A- 3B	C191	B- 4B	C520	B- 5A	C654	B- 3A	C787	A- 1A	C952	B- 1D	CN715	A- 2B	L114	B- 3B	L711	B- 2B
IC17	A- 3B	Q906	B- 1D	D924	B- 1D	R121	A- 3B	R346	A- 4C	R607	A- 3A	R804	B- 1A	R953	A- 1C	C70	B- 3C	C192	B- 4B	C521	B- 5A	C655	B- 3A	C791	A- 2A	C953	B- 1C	CN731	A- 1A	L115	B- 3A	L713	B- 2B
IC18	A- 2D	Q907	B- 4D			R122	A- 4B	R347	A- 4C	R608	A- 3A	R805	A- 2A	R954	A- 1C	C71	B- 3C	C193	B- 4B	C522	B- 5A	C656	B- 3A	C792	A- 2A	C954	B- 1C	CN735	A- 2A	L116	B- 4B	L714	A- 2A
IC100	A- 4B	Q908	B- 4D	**RESISTOR**		R123	A- 4B	R348	A- 4C	R609	A- 4A	R806	B- 1A	R955	B- 1B	C72	B- 3C	C194	B- 4B	C523	B- 5A	C657	B- 3A	C793	A- 1A	C955	B- 1C	CN749	A- 2A	L117	B- 4A	L715	A- 2B
IC101	A- 3B			R1	A- 2B	R124	A- 3B	R350	A- 3C	R610	A- 4A	R807	A- 2A	R956	A- 1D	C73	A- 1B	C195	B- 4B	C524	B- 5A	C658	B- 4A	C794	A- 1A	C956	B- 1C	CN760	B- 2A	L118	B- 4B	L716	A- 2B
IC102	A- 4B	**DIODE**		R2	A- 2B	R125	A- 3B	R351	A- 4B	R611	A- 4A	R808	A- 2A	R957	B- 1B	C74	A- 1B	C196	B- 4B	C525	B- 5A	C659	B- 4A	C795	A- 2A	C957	B- 1C	CN761	B- 2A	L119	B- 4B	L717	A- 2B
IC300	B- 4C	D1	B- 2C	R3	A- 1B	R126	A- 4B	R353	A- 4B	R612	B- 3A	R809	B- 1A	R958	B- 1D	C75	A- 3B	C197	B- 4B	C526	B- 5A	C660	B- 4A	C796	A- 2A	C958	B- 1C	CN762	B- 2A	L120	B- 4B	L718	A- 2B
IC301	A- 4C	D2	B- 1A	R4	A- 1B	R127	B- 3B	R355	A- 4C	R613	A- 4A	R810	B- 2B	R960	B- 1D	C76	A- 3B	C198	B- 4B	C528	B- 5A	C661	B- 3A	C797	A- 1A	C959	B- 1C	CN763	B- 2A	L121	B- 4B	L719	B- 2B
IC303	A- 4C	D3	A- 2D	R8	A- 2D	R128	A- 4B	R356	A- 4C	R614	A- 4A	R812	B- 2B	R961	B- 4D	C77	A- 1C	C201	A- 3B	C529	B- 5A	C662	B- 4A	C798	A- 2A	C960	B- 1C	CN764	B- 1A	L122	A- 4B	L720	A- 2B
IC304	A- 4C	D4	B- 2C	R10	B- 1A	R129	A- 4B	R357	A- 4C	R615	B- 3A	R813	B- 1A	R962	B- 4D	C78	A- 1C	C202	A- 3B	C530	B- 5A	C663	B- 4A	C799	B- 2B	C961	B- 1C	CN765	B- 1A	L123	B- 4B	L721	A- 2A
IC305	A- 4B	D5	A- 2C	R11	B- 1A	R130	B- 3B	R358	A- 4C	R616	B- 3A	R814	B- 1A	R963	A- 3D	C80	A- 1C	C300	B- 4B	C531	B- 5B	C665	B- 4A	C800	A- 3A	C962	B- 1C	CN766	B- 1A	L124	B- 4A	L722	A- 2B
IC500	B- 5A	D6	A- 2B	R12	B- 2A	R131	B- 3B	R359	A- 4B	R617	B- 3A	R815	B- 1A	R964	A- 3D	C81	A- 5B	C301	B- 4B	C532	B- 5B	C666	B- 4A	C801	A- 3A	C963	B- 1C	CN769	B- 1A	L125	B- 4B	L723	B- 2B
IC501	A- 5A	D7	B- 1A	R13	B- 1A	R132	B- 3B	R360	A- 4C	R618	B- 3A	R816	A- 1A	R965	A- 3D	C82	A- 3B	C303	B- 4B	C533	B- 5B	C667	B- 4A	C802	B- 3B	C964	B- 1C	CN770	B- 1B	L126	B- 4B	L724	B- 2B
IC600	A- 4A	D8	B- 1A	R14	B- 1A	R133	B- 3B	R364	A- 3B	R619	B- 3A	R817	B- 1A	R966	A- 3D	C83	B- 3C	C304	B- 4B	C534	B- 5B	C668	B- 4A	C803	B- 3B	C965	B- 1C	CN771	B- 1B	L127	B- 4A	L725	B- 3B
IC701	B- 2A	D9	B- 1A	R15	B- 2D	R135	A- 4B	R365	A- 4C	R620	B- 4A	R823	B- 3B	R967	A- 4D	C84	B- 3C	C305	B- 4C	C535	B- 5A	C669	B- 4A	C804	B- 3B	C966	B- 1C	CN772	B- 1B	L128	B- 4B	L726	B- 3A
IC702	B- 1A	D10	A- 2C	R16	A- 2B	R136	B- 4B	R366	A- 4B	R621	B- 4A	R824	B- 3B	R968	A- 4D	C85	A- 2C	C306	B- 4C	C536	B- 5B	C670	B- 4A	C805	A- 3A	C967	A- 1D	CN773	B- 1B	L129	B- 4A	L728	B- 2A
IC703	B- 2B	D11	A- 2C	R17	B- 2D	R137	B- 4B	R368	A- 3B	R622	B- 4A	R825	B- 3B	R969	A- 3D	C88	A- 2C	C307	B- 4C	C537	B- 5B	C671	B- 4A	C806	B- 3B	C968	B- 1C	CN774	B- 1B	L130	B- 4B	L729	B- 2A
IC704	B- 2B	D12	B- 1A	R18	B- 1A	R138	A- 4B	R369	B- 4C	R623	B- 4A	R826	B- 3B	R970	A- 4D	C89	A- 3C	C308	B- 4C	C538	B- 5B	C681	A- 1A	C807	A- 3A	C969	A- 2D	CN775	B- 1B	L131	B- 4B	L730	B- 2A
IC705	A- 1A	D13	B- 1D	R19	A- 2C	R139	A- 4B	R371	A- 3C	R624	B- 4A	R828	B- 2B	R971	A- 4D	C100	A- 4B	C309	B- 4C	C539	B- 5B	C700	B- 2A	C808	A- 3A	C970	B- 1B	CN776	B- 2B	L132	B- 4A	L731	B- 3A
IC706	B- 2A	D14	B- 2D	R20	A- 2C	R141	A- 4B	R372	A- 4C	R625	B- 4A	R830	A- 3A	R972	A- 4D	C101	A- 4B	C310	B- 4B	C540	B- 5B	C701	B- 2A	C809	A- 3A	C971	A- 1D	CN777	B- 2B	L134	B- 4B	L732	B- 2B
IC707	A- 2A	D15	B- 3C	R21	B- 1A	R142	B- 4A	R374	A- 4B	R626	B- 4A	R831	B- 3B	R973	A- 4D	C102	A- 4B	C311	B- 4C	C541	A- 5A	C702	B- 2A	C810	A- 3A	C972	B- 1B	CN778	B- 2B	L135	B- 4B	L901	B- 2B
IC708	A- 2A	D16	A- 2D	R22	B- 1A	R143	B- 4B	R375	A- 4B	R628	B- 4A	R833	A- 3A	R974	A- 4D	C103	A- 3B	C312	B- 4B	C542	A- 5A	C703	B- 1B	C811	B- 3B	C973	B- 1B	CN779	B- 2B	L136	B- 4B	L902	B- 1B
IC709	A- 3A	D17	A- 2D	R23	A- 3B	R144	A- 4B	R376	A- 4C	R630	B- 4A	R835	A- 3A	R975	A- 4D	C104	A- 4B	C313	B- 4B	C543	B- 5B	C704	B- 2B	C812	A- 3A	C975	A- 4D	CN780	B- 3B	L137	B- 4B	L906	A- 4D
IC710	A- 3A	D100	A- 4B	R24	A- 3B	R145	A- 4B	R377	B- 5C	R631	B- 4A	R837	A- 3A	R976	A- 4D	C106	A- 4B	C315	B- 4C	C544	B- 5B	C705	B- 1A	C813	A- 3A	C976	A- 4D	CN781	B- 3B	L138	B- 4B	L907	A- 4D
IC711	B- 2B	D101	B- 3B	R25	B- 1A	R146	B- 4B	R378	A- 4C	R632	B- 4A	R838	B- 3B	R977	B- 4D	C107	A- 4B	C317	B- 4C	C545	B- 5B	C706	B- 1A	C814	A- 3A	C977	B- 1D	CN783	B- 3C	L139	A- 3B		
IC712	B- 3B	D102	B- 3B	R26	B- 2C	R147	B- 4B	R379	B- 4B	R700	B- 2B	R839	A- 3A	R978	B- 4D	C108	A- 3B	C318	B- 4C	C546	B- 5B	C707	A- 2A	C815	A- 3A	C978	B- 1D	CN900	B- 3A	L300	B- 4C	XF600	B- 4A
IC714	B- 2B	D103	B- 3B	R27	A- 3B	R148	B- 4B	R380	A- 4B	R701	B- 2B	R843	B- 3B	R979	B- 1B	C109	A- 3B	C319	B- 4C	C548	B- 5B	C708	A- 2A	C816	A- 3A	C979	A- 4D	CN906	B- 1C	L301	B- 4C		
IC715	B- 3B	D104	B- 3B	R29	A- 3B	R149	B- 4B	R381	A- 4B	R702	B- 2B	R844	B- 3B	R980	B- 1B	C110	A- 3B	C320	B- 3B	C549	B- 5B	C709	B- 1A	C817	B- 2B	C980	A- 4D	CN907	A- 4D	L302	B- 4B		
IC719	B- 3A	D105	B- 3B	R30	B- 2D	R150	B- 4B	R384	B- 4B	R707	B- 2B	R845	B- 3B	R981	A- 4D	C111	A- 3B	C321	A- 3C	C550	B- 5B	C711	A- 2A	C818	A- 3A	C981	B- 4D	CN910	A- 1D	L303	B- 4C		
IC720	A- 2A	D106	B- 3A	R31	B- 2C	R151	B- 4B	R385	A- 4C	R708	B- 2B	R854	A- 3A	R982	A- 4D	C112	A- 3B	C322	B- 3C	C551	B- 5B	C712	A- 2A	C819	B- 2B	C982	A- 4D			L304	B- 4B		
IC900	B- 1B	D107	B- 3B	R32	B- 2D	R152	B- 4B	R386	B- 4B	R709	B- 2B	R857	A- 3A	R983	B- 1B	C113	A- 3B	C323	B- 3C	C552	B- 5B	C713	B- 1A	C820	A- 3A	C983	A- 4D	CP100	A- 3B	L305	B- 3B		
IC901	B- 2C	D108	B- 3A	R33	B- 2D	R153	B- 4B	R387	B- 4C	R719	B- 2B	R858	B- 3B	R984	B- 1C	C114	A- 3B	C325	B- 3C	C553	B- 5B	C714	B- 1A	C821	A- 3A	C984	A- 4D	CP600	A- 4A	L306	B- 3C		
IC902	B- 1B	D109	B- 4B	R34	B- 2D	R154	A- 4B	R388	B- 5C	R720	B- 2B	R859	B- 3B	R985	A- 1B	C115	A- 3B	C326	A- 4C	C554	B- 5B	C715	A- 2A	C822	A- 3A	C985	A- 4D	CP701	B- 2B	L307	B- 3B		
IC903	B- 1C	D110	B- 4B	R35	B- 2D	R155	B- 4B	R389	B- 5C	R721	B- 2B	R862	B- 2B	R991	B- 1B	C116	A- 3B	C327	A- 4C	C555	B- 5B	C716	A- 2A	C824	A- 2A	C986	A- 3D	CP702	B- 2A	L308	A- 5C		
IC904	A- 1B	D111	B- 4A	R36	B- 2D	R156	B- 4A	R391	A- 4B	R722	B- 2B	R863	A- 3A	R992	B- 1B	C118	A- 4B	C328	A- 4C	C556	B- 5B	C717	B- 1A	C829	B- 3B	C987	A- 3D	CP703	A- 1A	L309	A- 3C		
IC905	A- 1C	D112	B- 4B	R37	A- 3B	R157	A- 4B	R393	B- 5C	R727	B- 2B	R864	A- 3A	R993	B- 1B	C120	A- 3B	C329	B- 3A	C557	B- 5B	C718	A- 2A	C830	B- 3B	C988	A- 3D	CP704	A- 2A	L310	A- 4C		
IC906	A- 1C	D113	A- 4B	R38	B- 1D	R158	B- 4B	R394	A- 4B	R728	B- 2B	R865	B- 2B	R994	B- 1B	C121	A- 4B	C330	A- 5C	C558	B- 5B	C719	A- 2A	C831	B- 3B	C989	A- 3D	CP705	A- 2A	L311	A- 4C		
IC907	A- 1B	D114	B- 4B	R39	B- 1D	R159	B- 4B	R395	A- 4B	R729	B- 2B	R866	B- 4B	R996	B- 1B	C124	A- 4B	C331	B- 3C	C559	B- 5B	C720	A- 2A	C834	B- 3A	C990	A- 3D	CP706	B- 3B	L312	A- 4C		
IC908	B- 1B	D115	B- 4B	R40	A- 3B	R160	B- 4A	R396	A- 4B	R731	B- 2B	R867	B- 3B	R997	B- 1B	C125	A- 4B	C332	A- 4B	C560	B- 5B	C721	B- 1A	C835	B- 3A	C991	A- 4D	CP707	B- 3B	L314	B- 4C		
IC909	A- 1B	D117	B- 4A	R41	A- 3B	R161	B- 4B	R397	A- 5B	R732	B- 2B	R868	A- 3A	R998	B- 1B	C126	A- 4B	C333	A- 4B	C562	B- 5B	C722	B- 2B	C839	A- 2A	C992	A- 4D	CP709	B- 3B	L315	B- 5C		
IC910	A- 1C	D300	B- 4B	R42	A- 3A	R162	A- 4B	R398	A- 4C	R733	B- 2B	R869	A- 2A			C127	A- 3B	C334	A- 3C	C563	B- 5B	C723	A- 2A	C841	A- 2A	C993	A- 4D	CP710	B- 3B	L316	B- 5C		
IC912	B- 1B	D301	A- 4C	R43	B- 2C	R163	B- 4A	R399	A- 5B	R734	B- 1B	R874	B- 3B	**CAPACITOR**		C128	A- 3B	C335	A- 3C	C564	B- 5A	C724	B- 1B	C852	A- 2A	C994	A- 4D	CP711	B- 3B	L317	B- 5C		
		D302	A- 4C	R44	A- 3B	R164	B- 4A	R402	A- 5D	R735	B- 2B	R876	B- 3B	C1	A- 2B	C129	B- 3B	C336	A- 4C	C565	B- 5A	C725	A- 2A	C853	A- 2A	C995	A- 4D	CP716	B- 3A	L318	A- 4C		
TRANSISTOR		D306	A- 4C	R45	B- 2D	R165	B- 4A	R403	A- 4C	R736	B- 2B	R877	A- 2A	C2	A- 2D	C130	A- 3A	C338	A- 4C	C600	A- 4A	C726	B- 2B	C854	A- 2A	C996	A- 4D	CP717	B- 3A	L319	B- 5C		
Q1	B- 2A	D307	A- 4B	R46	A- 3A	R166	B- 4B	R405	B- 4C	R738	A- 1B	R878	A- 2A	C3	A- 1A	C131	A- 4B	C340	A- 4C	C601	A- 4A	C728	A- 2B	C856	B- 3B	C997	B- 4D	CP718	B- 2A	L320	B- 5C		
Q3	B- 1A	D309	B- 5C	R47	A- 3B	R167	B- 4B	R500	B- 4B	R740	A- 1B	R879	A- 2A	C4	B- 2C	C132	B- 3B	C341	A- 4C	C602	A- 4A	C729	B- 2B	C857	B- 3B	C998	A- 4D	CP719	B- 3A	L321	A- 5C		
Q4	B- 2C	D310	B- 5C	R48	B- 2D	R168	B- 4B	R501	B- 4B	R742	A- 1B	R880	B- 2B	C5	A- 2C	C133	B- 3B	C343	A- 4B	C603	A- 4A	C730	A- 2A	C898	B- 1B	C999	B- 1C	CP720	B- 2A	L322	B- 5D		
Q5	B- 1D	D311	B- 5C	R49	B- 2D	R169	B- 4B	R502	B- 4B	R744	A- 1B	R881	B- 2A	C6	B- 2D	C134	B- 3B	C345	A- 4C	C604	A- 4A	C731	A- 2B	C899	B- 1B			CP721	B- 2A	L323	B- 5D		
Q6	B- 2D	D312	B- 5C	R50	B- 2D	R170	B- 4B	R503	B- 4B	R746	A- 1B	R882	B- 2B	C8	B- 2C	C135	B- 3B	C346	A- 4C	C605	A- 4A	C732	A- 2A	C900	B- 1B	**OTHER**		CP900	B- 1B	L324	A- 5D		
Q7	A- 2D	D313	B- 5B	R51	B- 2C	R171	B- 4B	R504	B- 4B	R747	B- 1B	R883	B- 2B	C9	B- 2D	C136	B- 3B	C347	A- 4C	C606	A- 4A	C733	A- 2B	C901	B- 1B	X700	B- 2B	CP901	B- 1B	L325	B- 5B		
Q8	A- 2C	D314	B- 5B	R52	A- 3B	R172	B- 4B	R505	B- 4B	R748	B- 1B	R884	A- 2A	C10	B- 1A	C137	B- 3B	C348	A- 4B	C607	A- 3A	C734	A- 2A	C902	B- 1B	X701	B- 2B			L500	B- 5A		
Q9	A- 2C	D315	B- 5B	R53	A- 3B	R173	B- 4B	R506	B- 4B	R749	A- 1B	R885	B- 2C	C11	A- 2D	C138	B- 3B	C349	A- 4C	C608	A- 4A	C735	A- 2B	C903	B- 3A			A1	A- 3B	L501	B- 5A		
Q10	B- 1D	D500	B- 4B	R54	B- 3C	R174	B- 4B	R507	B- 4B	R750	B- 1A	R900	B- 1B	C12	B- 1A	C139	B- 3B	C350	B- 4C	C609	A- 3A	C736	A- 2A	C904	B- 2C	TH300	B- 5C			L502	B- 5A		
Q11	B- 2D	D501	B- 5A	R55	B- 3B	R175	B- 4B	R508	B- 4B	R751	B- 1A	R901	B- 1B	C13	A- 2B	C141	B- 3B	C351	A- 4C	C610	A- 4A	C737	A- 2A	C905	B- 2C	TH301	A- 4C	E2	B- 2D	L503	B- 5A		
Q12	A- 3B	D502	B- 5A	R56	B- 3C	R176	B- 4B	R509	B- 5A	R752	A- 1A	R902	B- 1B	C16	A- 2D	C142	B- 3B	C354	A- 4C	C611	A- 3A	C738	B- 2B	C906	B- 2C	TH302	B- 5D	E100	A- 4B	L504	B- 4B		
Q14	A- 3B	D503	B- 5B	R57	B- 3C	R177	B- 4B	R510	B- 5A	R753	B- 1A	R903	B- 3A	C18	B- 2D	C143	B- 3B	C355	A- 4C	C612	A- 3A	C739	A- 2B	C908	B- 1B	TH700	B- 2B	E101	B- 4B	L505	B- 4B		
Q15	A- 3B	D504	B- 5B	R58	A- 1B	R178	A- 3B	R511	B- 5A	R754	B- 1B	R904	B- 2C	C21	A- 2B	C144	B- 4B	C356	B- 5C	C613	A- 4A	C740	B- 2B	C909	B- 2B	TH701	B- 4B	E600	A- 4A	L506	B- 4A		
Q16	A- 3C	D505	B- 5B	R59	B- 3C	R179	A- 3B	R512	B- 5A	R755	A- 1A	R905	B- 2C	C24	B- 3C	C145	B- 4B	C360	B- 5C	C614	A- 4A	C741	A- 2B	C910	B- 2B					L507	B- 5A		
Q17	A- 5B	D506	B- 5B	R60	A- 3C	R300	B- 4B	R514	B- 5A	R756	A- 1A	R906	B- 2C	C25	A- 2D	C146	B- 4B	C361	B- 5C	C615	A- 4A	C742	A- 2A	C911	B- 1B	CN2	A- 2C	F1	A- 2D	L508	B- 5A		
Q18	A- 5B	D507	B- 5B	R61	A- 3B	R301	B- 4B	R515	B- 4A	R757	B- 1A	R907	B- 2C	C30	A- 2B	C147	B- 4A	C362	B- 5C	C616	A- 3A	C743	B- 2B	C912	B- 1B	CN3	A- 2D	F2	A- 2D	L509	B- 5A		
Q81	A- 3A	D508	B- 5B	R62	A- 1C	R303	B- 4B	R516	B- 5A	R758	B- 1A	R908	B- 2B	C31	B- 2D	C148	B- 4B	C363	B- 5B	C617	A- 3A	C745	A- 2B	C913	B- 1B	CN4	A- 1D	F3	A- 2D	L510	B- 5B		
Q100	A- 4B	D509	B- 5B	R63	A- 1C	R304	B- 4B	R517	B- 5A	R759	B- 1A	R909	B- 2C	C32	B- 2C	C149	B- 4B	C365	A- 4C	C618	A- 4A	C746	A- 2A	C914	B- 1B	CN12	A- 2B	F900	A- 1C	L511	B- 5B		
Q101	A- 4B	D600	A- 3A	R64	A- 1C	R305	B- 4C	R519	B- 5A	R760	B- 1A	R911	B- 2B	C33	B- 2D	C150	A- 4B	C367	B- 5C	C619	A- 4A	C747	A- 2A	C915	B- 1B	CN100	B- 4A			L512	B- 5B		
Q102	A- 4B	D601	A- 4A	R65	A- 1C	R306	B- 4C	R521	B- 5A	R761	B- 1A	R912	B- 2B	C34	A- 3B	C151	A- 4B	C368	A- 5B	C620	A- 4A	C748	B- 2B	C916	B- 1B	CN102	B- 4A	J700	A- 2B	L513	B- 5B		
Q103	A- 4B	D602	B- 3A	R66	A- 3C	R307	B- 4B	R523	B- 5A	R762	A- 1A	R913	B- 2B	C35	B- 2D	C152	B- 4B	C369	B- 5C	C621	A- 3A	C749	A- 2A	C917	B- 2B	CN104	B- 3A	J900	A- 1D	L515	B- 5B		
Q104	A- 4B	D700	B- 2B	R67	A- 3C	R308	B- 4C	R525	A- 5A	R763	B- 1A	R914	B- 1B	C36	A- 3B	C153	B- 4B	C370	A- 4C	C622	A- 4A	C750	A- 2B	C918	B- 2B	CN106	B- 5B	J901	A- 4D	L516	B- 5B		
Q105	B- 4B	D701	B- 2B	R68	A- 5B	R309	B- 4C	R526	B- 5A	R764	A- 1A	R915	B- 1B	C37	A- 3B	C154	B- 4B	C371	B- 5C	C623	A- 3A	C751	A- 2A	C919	B- 1B	CN110	B- 3B			L517	B- 5B		
Q106	B- 4B	D702	A- 3A	R69	A- 5B	R310	B- 4B	R527	B- 5B	R765	B- 1A	R916	B- 1B	C38	B- 2C	C155	B- 4A	C372	B- 5C	C624	A- 4A	C752	A- 2A	C920	B- 1B	CN111	B- 3B	L1	A- 2C	L518	B- 5B		
Q107	B- 4B	D703	A- 3A	R70	B- 3C	R311	B- 4B	R528	A- 5A	R766	A- 1A	R917	B- 1B	C39	A- 3B	C156	B- 4B	C374	A- 4B	C625	A- 4A	C754	A- 2A	C921	B- 1C	CN112	B- 3A	L2	A- 2C	L520	B- 5A		
Q108	A- 4B	D704	A- 2A	R71	A- 1A	R312	B- 4B	R529	B- 5B	R767	B- 1A	R918	B- 2C	C40	B- 2D	C158	B- 4B	C375	B- 5C	C626	A- 4A	C755	A- 2A	C922	B- 1B	CN113	B- 3A	L3	A- 2C	L600	A- 3A		
Q109	A- 4B	D705	A- 2A	R72	A- 1A	R313	B- 4B	R530	B- 5A	R768	B- 1A	R919	B- 1B	C41	B- 2C	C159	B- 4B	C376	B- 5C	C627	A- 4A	C756	A- 2A	C924	B- 1B	CN300	B- 4B	L4	B- 2C	L601	A- 4A		
Q110	B- 4A	D706	A- 3A	R73	B- 2C	R314	B- 4B	R531	A- 5A	R770	B- 1A	R920	B- 1B	C43	A- 2A	C161	A- 4B	C378	A- 5D	C628	A- 4A	C757	B- 2B	C925	B- 2B	CN330	B- 3B	L5	A- 3B	L602	A- 4A		
Q111	B- 4B	D708	A- 2A	R75	B- 1A	R315	B- 3B	R532	A- 5A	R772	B- 1A	R921	B- 1B	C44	B- 2D	C162	B- 4A	C380	B- 5D	C629	A- 3A	C758	A- 2A	C926	B- 2B	CN331	B- 4B	L6	B- 2D	L603	A- 3A		
Q112	A- 3B	D710	B- 2A	R76	B- 2D	R316	B- 4B	R533	A- 5A	R773	A- 1A	R922	B- 1B	C45	B- 2C	C164	B- 4B	C383	B- 5D	C630	A- 4A	C759	A- 2A	C927	B- 2B	CN332	B- 4B	L7	A- 3B	L604	A- 4A		
Q300	B- 3B	D711	A- 2A	R77	B- 2D	R318	A- 4C	R535	B- 5B	R774	B- 1A	R923	B- 1B	C46	A- 3B	C165	B- 4B	C385	A- 3B	C631	A- 4A	C760	A- 2A	C928	B- 1B	CN333	B- 4B	L9	A- 2A	L605	A- 3A		
Q301	A- 3C	D801	A- 2A	R78	B- 2D	R319	A- 4C	R536	B- 5B	R775	B- 1A	R924	B- 1C	C47	B- 2D	C166	B- 4B	C386	A- 4C	C632	B- 3A	C762	A- 2A	C929	B- 1C	CN334	B- 4B	L10	A- 3B	L606	A- 4A		
Q302	A- 3B	D900	B- 1B	R84	A- 3A	R321	A- 3C	R537	B- 5B	R777	A- 2B	R925	B- 1C	C48	B- 2C	C167	B- 4B	C387	A- 4B	C633	A- 4A	C764	A- 2A	C930	B- 1C	CN335	B- 4B	L11	B- 2C	L607	A- 3A		
Q303	A- 4C	D903

■ MODULE (BT/GPS) UNIT (XC2-0031-80 (NX-5800B(F), NX-5800B(F2), NX-5800B(K), NX-5800B(K2), NX-5800(K), NX-5800(K2)), XC2-0040-10 (NX-5800B(K), NX-5800B(K2), NX-5800(K), NX-5800(K2), NX-5800(E)))

--- Component side view (J7C-0037-00) ---



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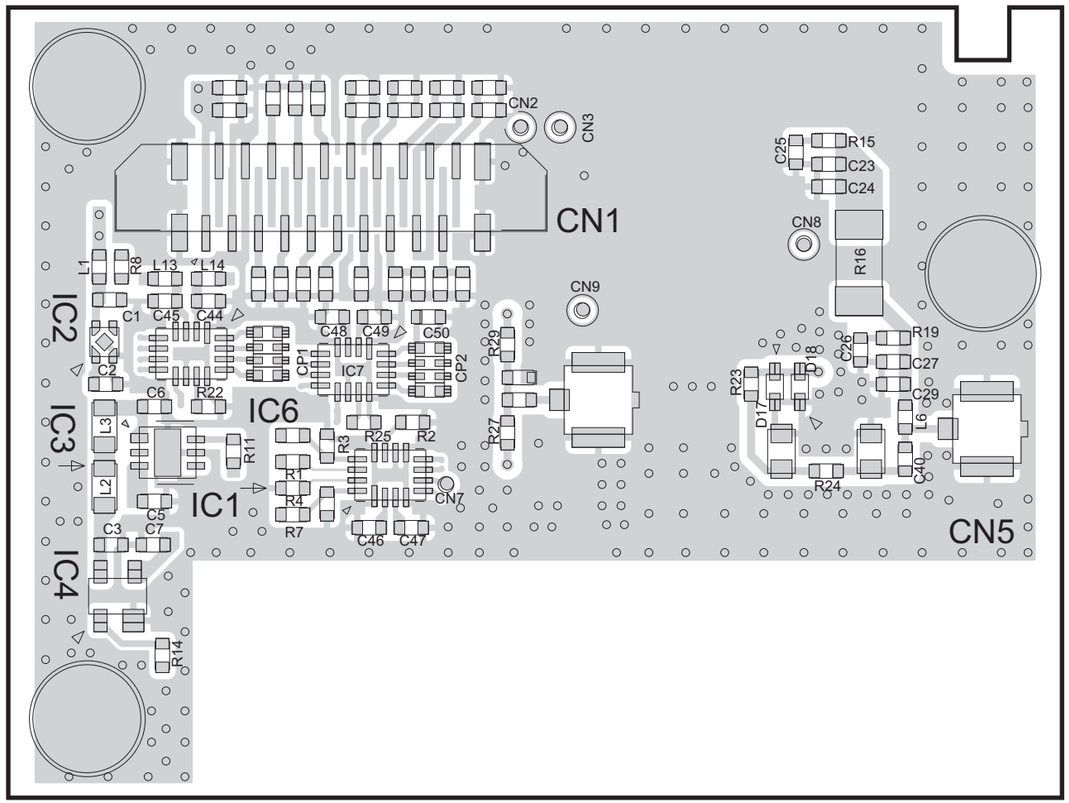


● ADDRESS TABLE OF BOARD PARTS

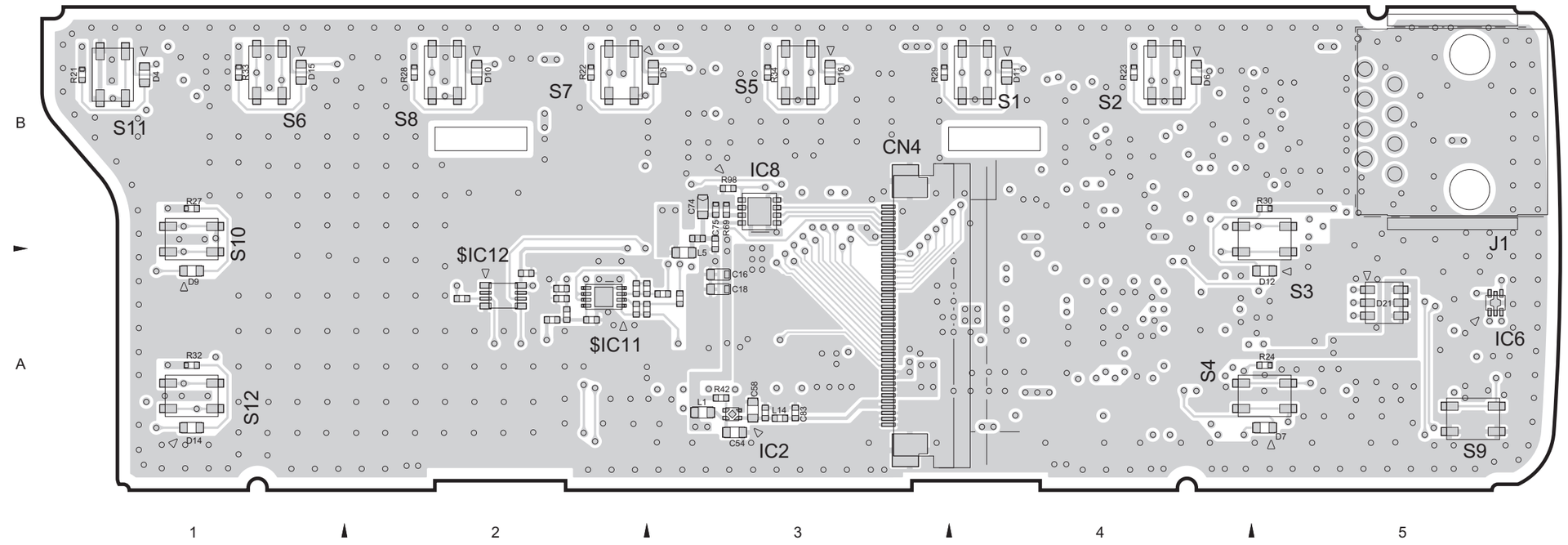
Each address may have an address error by one interval.

A-1C: Side — Y axis — X axis

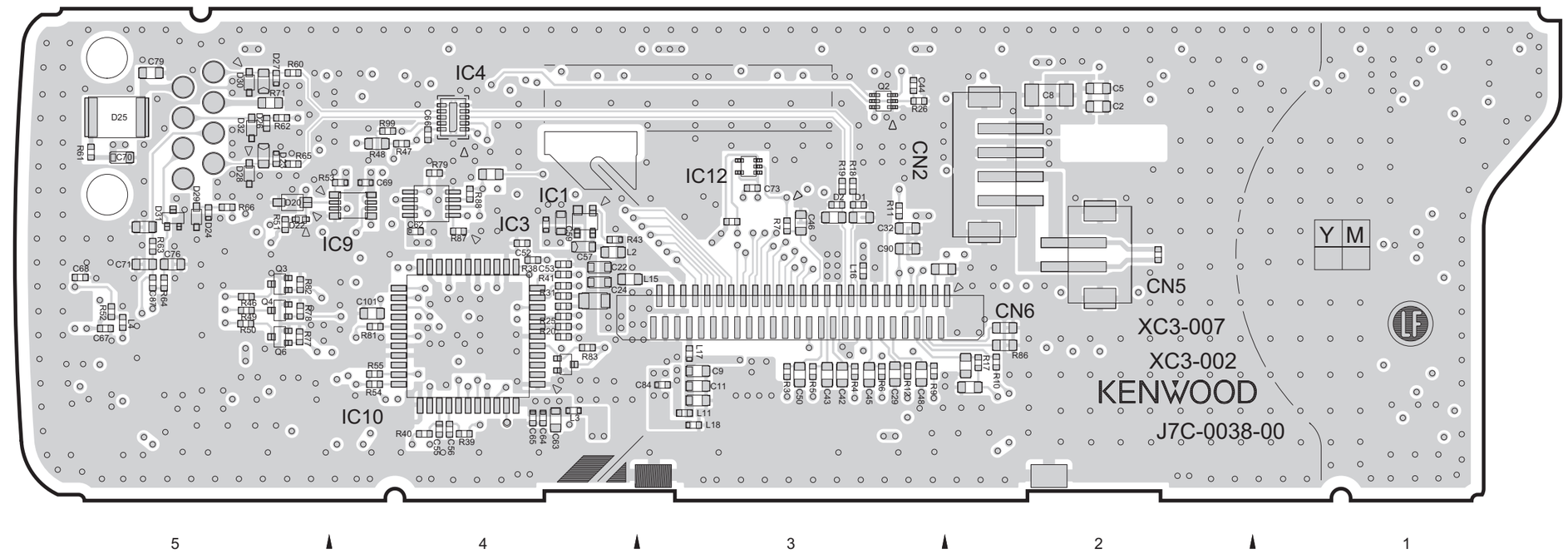
REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
IC		R7	B- 3A	**CAPACITOR**		C21	A- 2B	C45	B- 3B		
IC1	B- 2A	R8	B- 3B	C1	B- 3B	C22	A- 2B	C46	B- 2A	CP1	B- 3B
IC2	B- 3B	R9	A- 1B	C2	B- 3B	C23	B- 1B	C47	B- 2A	CP2	B- 2B
IC3	B- 3A	R10	A- 1B	C3	B- 3A	C24	B- 1B	C48	B- 3B		
IC4	B- 3A	R11	B- 3A	C4	A- 1B	C25	B- 1B	C49	B- 2B	E1	A- 2B
IC5	A- 2B	R12	A- 1B	C5	B- 3A	C26	B- 1B	C50	B- 2B		
IC6	B- 3B	R13	A- 1B	C6	B- 3A	C27	B- 1B	C68	A- 2A	L1	B- 3B
IC7	B- 3B	R14	B- 3A	C7	B- 3A	C28	A- 2B			L2	B- 3A
		R15	B- 1B	C8	A- 1B	C29	B- 1B	**OTHER**		L3	B- 3A
TRANSISTOR		R16	B- 1B	C9	A- 1B	C30	A- 2B	X1	A- 1B	L4	A- 1B
Q1	A- 1B	R18	A- 2B	C10	A- 1B	C31	A- 2B	X2	A- 2B	L5	A- 1B
		R19	B- 1B	C11	A- 2B	C32	A- 2B			L6	B- 1A
DIODE		R21	A- 2B	C12	A- 1B	C33	A- 2B	CN1	B- 3B	L7	A- 2B
D17	B- 1B	R22	B- 3A	C13	A- 1B	C34	A- 2B	CN2	B- 2B	L8	A- 2B
D18	B- 1B	R23	B- 1B	C14	A- 1B	C35	A- 2B	CN3	B- 2B	L9	A- 1B
		R24	B- 1A	C15	A- 1B	C36	A- 2B	CN4	A- 2B	L11	A- 2B
RESISTOR		R25	B- 2A	C16	A- 2B	C37	A- 2B	CN5	B- 1A	L13	B- 3B
R1	B- 3A	R26	A- 1B	C17	A- 1B	C38	A- 1B	CN6	A- 1A	L14	B- 3B
R2	B- 2A	R27	B- 2A	C18	A- 1B	C39	A- 2B	CN7	B- 2A	L15	A- 2A
R3	B- 3A	R29	B- 2B	C19	A- 1B	C40	B- 1A	CN8	B- 1B		
R4	B- 3A			C20	A- 2B	C44	B- 3B	CN9	B- 2B		

■ SUB (DISPLAY) UNIT (XC3-0020-20 (NX-5800(K), NX-5800(K2)), XC3-0070-20 (NX-5800(K), NX-5800(K2), NX-5800(E)))

--- Component side view (J7C-0038-00) ---



--- Foil side view (J7C-0038-00) ---



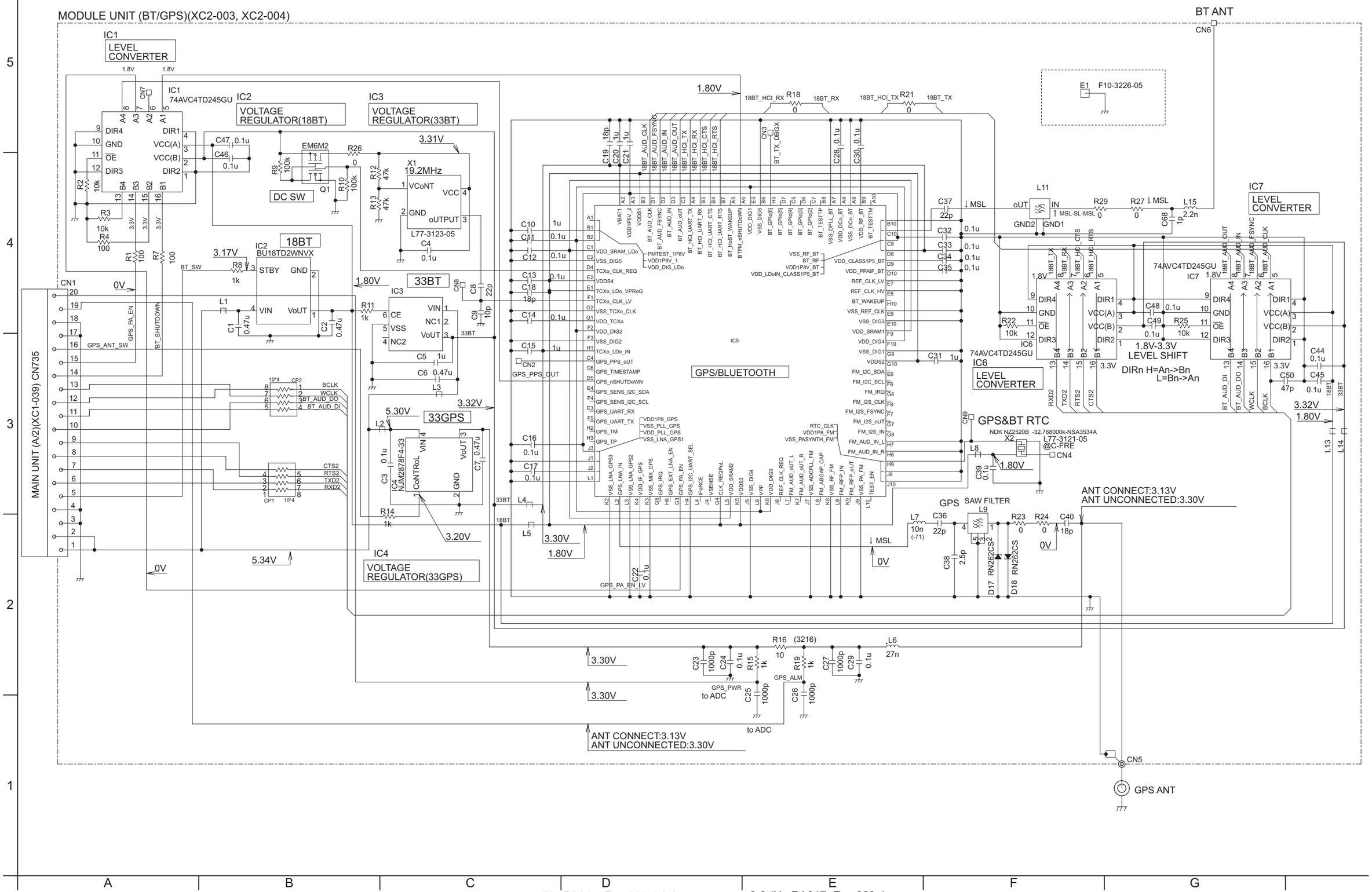
● **ADDRESS TABLE OF BOARD PARTS**

Each address may have an address error by one interval.

Side — A-1C — Y axis / X axis

REF.NO.	LOCATION
IC	
IC1	B- 4B
IC2	A- 3A
IC3	B- 4B
IC4	B- 4B
IC6	A- 5A
IC8	A- 3B
IC9	B- 4B
IC10	B- 4A
IC12	B- 3B
TRANSISTOR	
Q2	B- 3B
Q3	B- 5A
Q4	B- 5A
Q6	B- 5A
DIODE	
D1	B- 3B
D2	B- 3B
D4	A- 1B
D5	A- 3B
D6	A- 4B
D7	A- 5A
D9	A- 1A
D10	A- 2B
D11	A- 4B
D12	A- 5A
D14	A- 1A
D15	A- 1B
D16	A- 3B
D20	B- 5B
D21	A- 5A
D22	B- 5B
D23	B- 5B
D24	B- 5B
D25	B- 5B
D26	B- 5B
D27	B- 5B
D28	B- 5B
D29	B- 5B
D30	B- 5B
D31	B- 5B
D32	B- 5B
RESISTOR	
R3	B- 3A
R4	B- 3A
R5	B- 3A
R6	B- 3A
R7	B- 3B
R9	B- 3A
R10	B- 2A
R11	B- 3B
R12	B- 3A
R17	B- 2A
R18	B- 3B
R19	B- 3B
R20	B- 4A
R21	A- 1B
R22	A- 2B
R23	A- 4B
R24	A- 5A
R25	B- 4A
R26	B- 3B
R27	A- 1B
R28	A- 2B
R29	A- 3B
R30	A- 5B
R31	B- 4A
R32	A- 1A
R33	A- 1B
R34	A- 3B
R38	B- 4A
R39	B- 4A
R40	B- 4A
R41	B- 4A
R42	A- 3A
R43	B- 4B
R46	B- 5A
R47	B- 4B
R48	B- 4B
R49	B- 5A
R50	B- 5A
R51	B- 5B
R52	B- 5A
R53	B- 4B
R54	B- 4A
R55	B- 4A
R60	B- 5B
R61	B- 5B
R62	B- 5B
R63	B- 5B
R64	B- 5A
R65	B- 5B
R66	B- 5B
R69	A- 3B
R71	B- 5B
R77	B- 5A
R78	B- 5A
R79	B- 4B
R81	B- 4A
R82	B- 5A
R83	B- 4A
R86	B- 2A
R87	B- 4B
R88	B- 4B
R98	A- 3B
R99	B- 4B
CAPACITOR	
C2	B- 2B
C5	B- 2B
C8	B- 2B
C9	B- 3A
C11	B- 3A
C16	A- 3A
C18	A- 3A
C22	B- 4A
C24	B- 4A
C29	B- 3A
C32	B- 3B
C42	B- 3A
C43	B- 3A
C44	B- 3B
C45	B- 3A
C46	B- 3B
C48	B- 3A
C50	B- 3A
C52	B- 4B
C53	B- 4A
C54	A- 3A
C55	B- 4A
C56	B- 4A
C57	B- 4B
C58	A- 3A
C59	B- 4B
C62	B- 4B
C63	B- 4A
C64	B- 4A
C65	B- 4A
C66	B- 4B
C67	B- 5A
C68	B- 5A
C69	B- 4B
C70	B- 5B
C71	B- 5A
C73	B- 3B
C74	A- 3B
C75	A- 3B
C76	B- 5A
C79	B- 5B
C83	A- 3A
C84	B- 3A
C87	B- 5A
C90	B- 3B
C101	B- 4A
OTHER	
CN2	B- 2B
CN4	A- 3A
CN5	B- 2B
CN6	B- 3A
S1	A- 4B
S2	A- 4B
S3	A- 5B
S4	A- 5A
S5	A- 3B
S6	A- 1B
S7	A- 2B
S8	A- 2B
S9	A- 5A
S10	A- 1B
S11	A- 1B
S12	A- 1A
J1	A- 5B
L1	A- 3A
L2	B- 4B
L3	B- 4A
L4	B- 5A
L5	A- 3A
L11	B- 3A
L14	A- 3A
L15	B- 4A
L16	B- 3A
L17	B- 3A
L18	B- 3A

■ MODULE (BT/GPS) UNIT (XC2-0031-80 (NX-5800B(F), NX-5800B(F2), NX-5800B(K), NX-5800B(K2), NX-5800(K), NX-5800(K2)), XC2-0040-10 (NX-5800B(K), NX-5800B(K2), NX-5800(K), NX-5800(K2), NX-5800(E)))

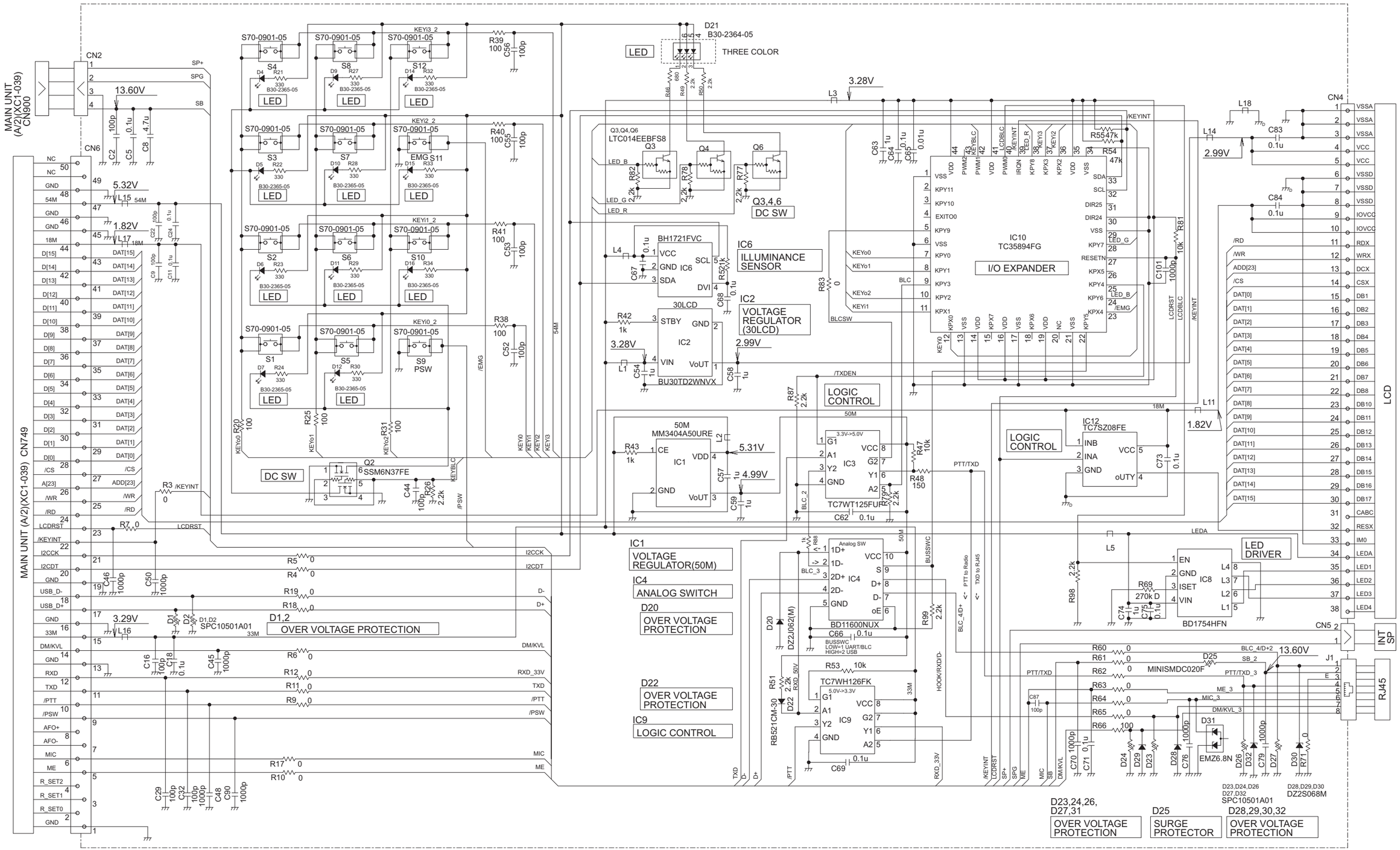


(No.RA017<Rev.003>) 2-9

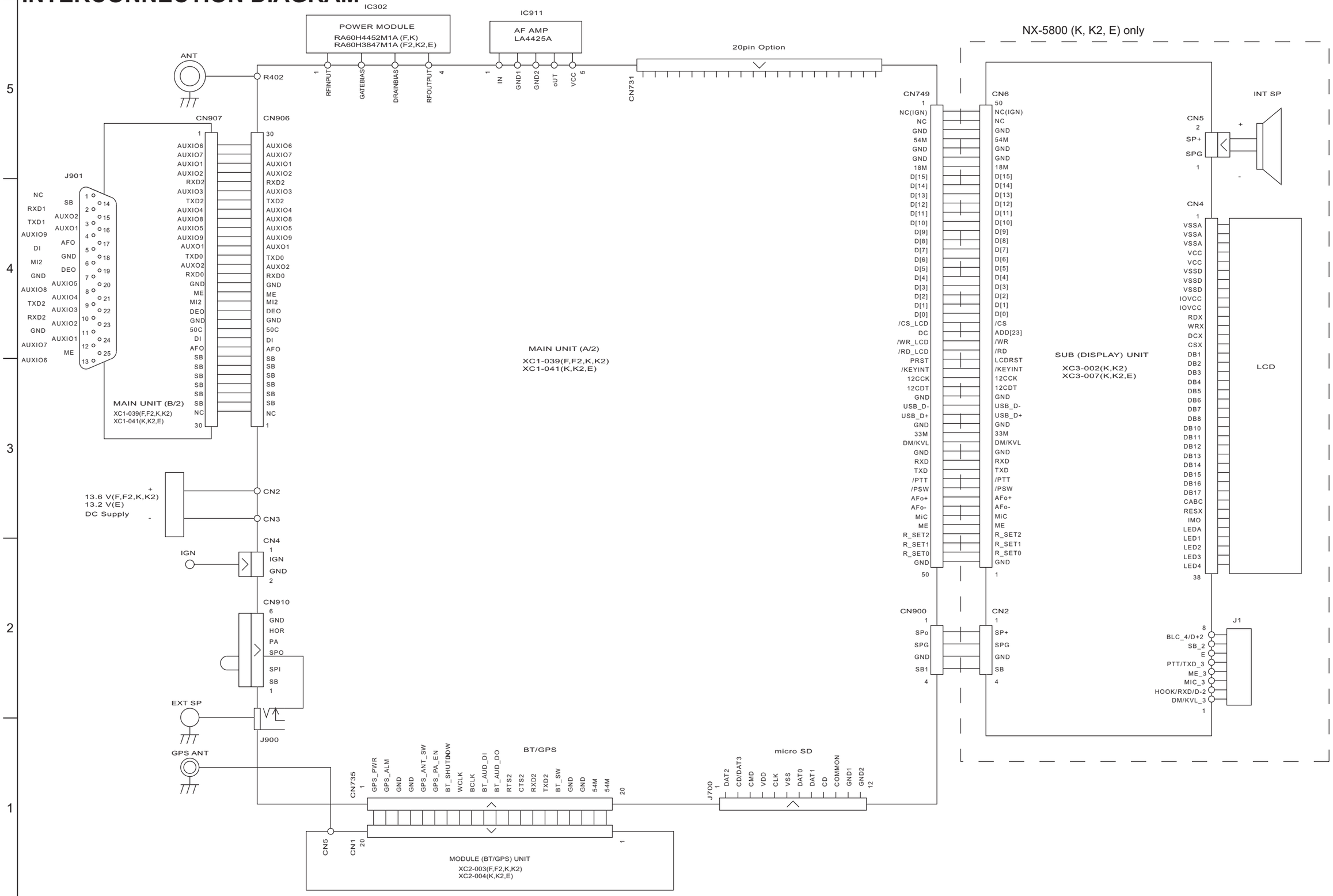
2-9 (No.RA017<Rev.003>)

■ SUB (DISPLAY) UNIT (XC3-0020-20 (NX-5800(K), NX-5800(K2)), XC3-0070-20 (NX-5800(K), NX-5800(K2), NX-5800(E)))

SUB UNIT (DISPLAY)(XC3-002, XC3-007)

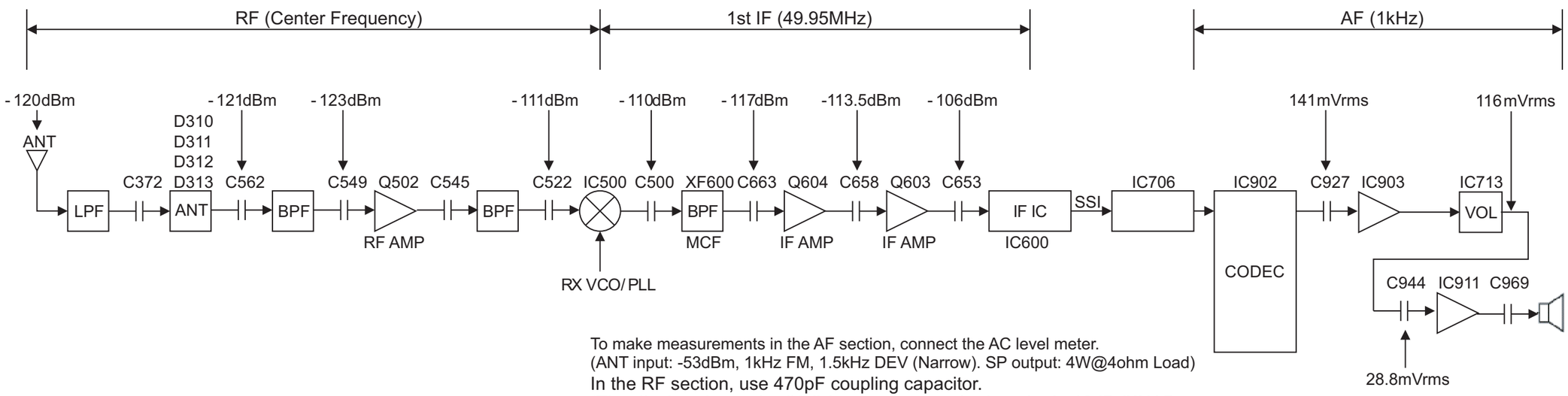


INTERCONNECTION DIAGRAM



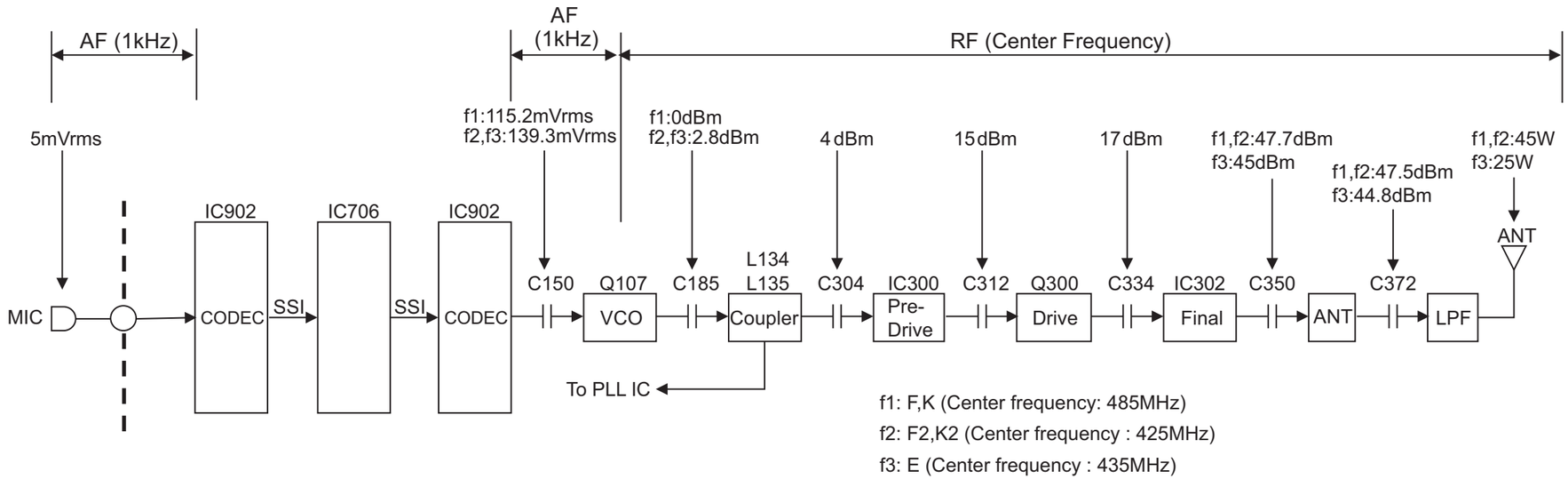
LEVEL DIAGRAM

Receiver section



To make measurements in the AF section, connect the AC level meter.
(ANT input: -53dBm, 1kHz FM, 1.5kHz DEV (Narrow). SP output: 4W@4ohm Load)
In the RF section, use 470pF coupling capacitor.
(The display shows the SSG input value required to obtain 12dB SINAD.)

Transmitter section



f1: F,K (Center frequency: 485MHz)
f2: F2,K2 (Center frequency : 425MHz)
f3: E (Center frequency : 435MHz)

PARTS LIST

[NX-5800,NX-5800(B)]

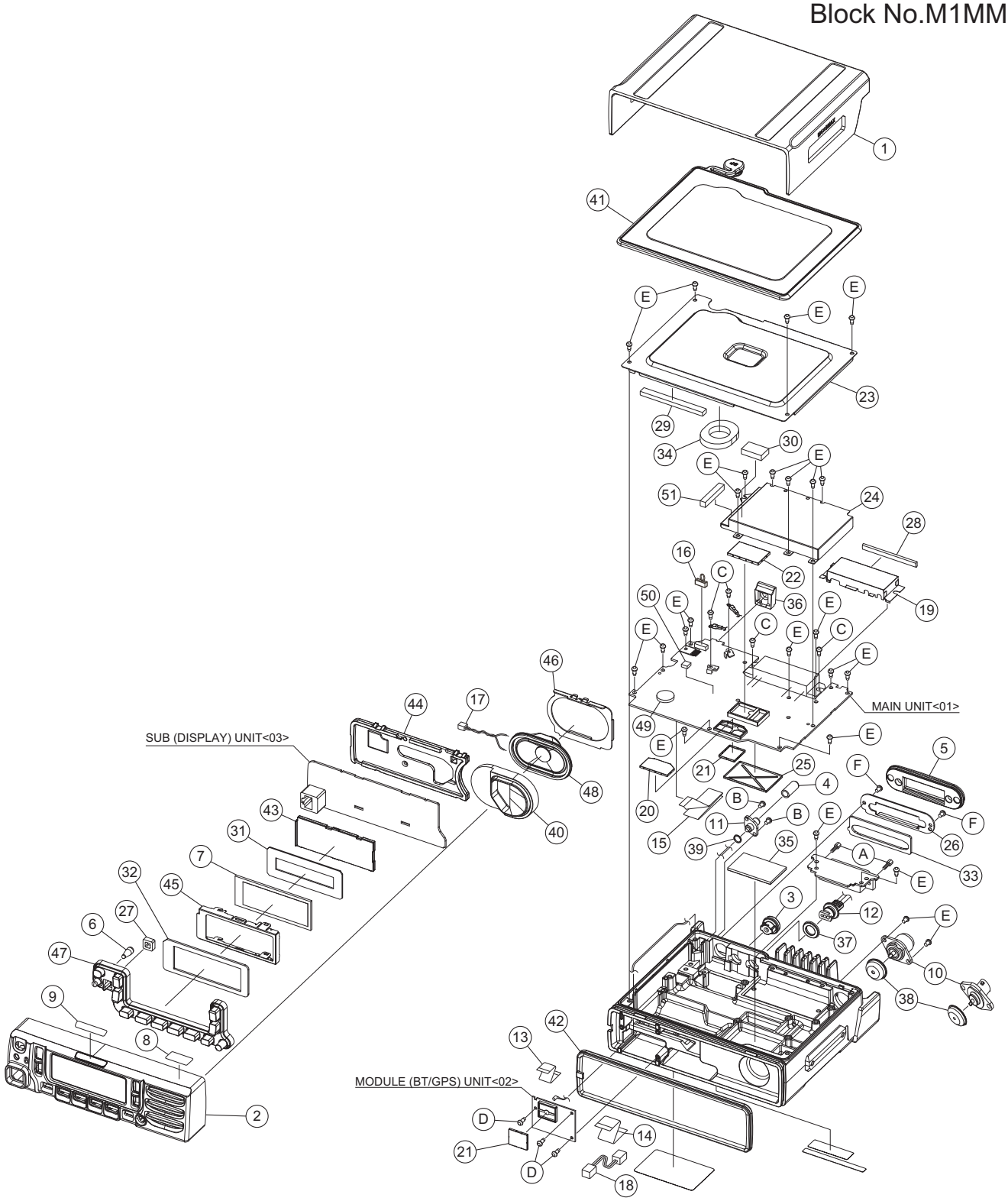
* SAFETY PRECAUTION
  Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.
* BEWARE OF BOGUS PARTS
  Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine parts be used.
* (x_) in a description column shows the number of the used part.

- Contents -

Exploded view of general assembly and parts list ---------- 3-2
Electrical parts list ---------- 3-4
Packing materials and accessories parts list ---------- 3-17

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-0034-00	PLASTIC CABINET		
2	A6C-0003-20	PANEL ASSY		K,K2,E
3	B09-0681-03	CAP	KAP-2	
4	B09-0754-05	CAP	SMA	
5	B0K-0004-00	CAP	D-SUB	
6	B1B-0017-00	ILL.GUIDE	Light Sensor	K,K2,E
7	B38-0966-05	LCD ASSY	2.55inch	K,K2,E
8	B4B-0008-00	CAUTION STICKER	FCC,PANEL	K,K2
9	B4D-0021-00	BADGE		K,K2,E
10	E04-0167-15	C.RECEPTACLE-M	ANT	K,K2,BF,BF2,BK,BK2
10	E04-0454-15	C.RECEPTACLE-BN	ANT	E
11	E0E-0003-00	C.RECEPTACLE-SM	GPS	
12	E30-7520-45	DC CORD		
13	E3F-0017-00	FLAT CABLE	20P BT/GPS	
14	E3F-0019-00	FLAT CABLE	50P TO HEAD	
15	E3F-0021-10	FLAT CABLE	30P D-SUB	
16	E37-1118-05	LEAD.WIRE W.C.	SHORT CABLE	
17	E37-1693-05	LEAD.WIRE W.C.	SP 2pin 6cm	K,K2,E
18	E3H-0008-00	LEAD.WIRE W.C.	4P TO HEAD	
19	F10-3112-13	SHIELDING CASE	PM	
20	F10-3223-05	SHIELDING COVER	BLS(IFIC)	
21	F10-3225-05	SHIELDING COVER	BLS(BT/GPS,DCDC54M)(x2)	
22	F10-3243-15	SHIELDING COVER	BLS(PLL IC)	
23	F1A-0003-00	SHIELDING PLATE	TOP	
24	F1B-0013-00	SHIELDING CASE	FINAL	
25	F1B-0021-00	SHIELDING COVER	BLS(VCO)	
26	F1E-0001-00	SHIELDING PLATE	D-SUB	
27	F1E-0002-00	SHADE	TX-Busy	K,K2,E
28	G13-2101-04	CONDUCT CUSHION	PM	
29	G13-1837-04	CUSHION	ABOVE 50P FFC	
30	G13-2153-04	CONDUCT CUSHION	FINAL	
31	G1D-0011-00	CUSHION	LCD-HOLDER	K,K2,E
32	G1D-0012-10	CUSHION	LCD-F.GLASS	K,K2,E
33	G1D-0018-00	CUSHION	D-SUB	
34	G1D-0028-00	CUSHION	DC SCREW	
35	G1D-0049-00	CUSHION	VCO	
36	G53-1616-13	PACKING	PHONE JACK	
37	G53-1643-04	PACKING	DC CORD	
38	G53-1662-04	PACKING	ANT(M)	K,K2,BF,BF2,BK,BK2
38	G53-1675-04	PACKING	ANT(BNC)	E
39	G53-1768-04	PACKING	SMA	
40	G5D-0053-00	PACKING	SP	K,K2,E
41	G5D-0016-00	PACKING	TOP	
42	G5D-0017-00	PACKING	FRONT	
43	J1K-0018-00	HOLDER	LCD	K,K2,E
44	J1K-0019-00	HOLDER	PCB PANEL	K,K2,E
45	J2B-0021-00	MOUNTING	LCD	K,K2,E
46	J2B-0023-00	MOUNTING	SP	K,K2,E
47	K2K-0100-10	KEY TOP		K,K2,E
48	T07-0810-05	SPEAKER		K,K2,E
49	W09-0971-05	LITHIUM CELL	TXRX UNIT	
50	G13-2071-14	CONDUCT CUSHION	FINAL	E
51	G13-1784-04	CUSHION	FINAL	E
A	N09-2292-05	HEX.HEAD SCREW	D-SUB(x2)	
B	N30-2606-48	P.HEAD M.SCREW	SMA(x2)	
C	N67-3008-48	P.H.SEMS SCREW	DC,PM(x4)	
D	N83-2005-48	P.HEAD T.SCREW	BT/GPS UNIT(x3)	
E	N87-2608-48	BR.HEAD T.SCREW	(x24)	
F	N89-2606-43	BI.HEAD T.SCREW	D-SUB(x2)	
-	XC1-0391-82	SERVICE MAIN UNIT	SERVICE UNIT *Produced in Japan	K,BF,BK
-	XC1-0410-12	SERVICE MAIN UNIT	SERVICE UNIT *Produced in Malaysia	K,BK
-	XC1-0391-83	SERVICE MAIN UNIT	SERVICE UNIT *Produced in Japan	K2,BF2,BK2
-	XC1-0410-13	SERVICE MAIN UNIT	SERVICE UNIT *Produced in Malaysia	K2,BK2,E
-	XC2-0031-80	MODULE UNIT	BT/GPS *Produced in Japan	K,K2,BF,BF2,BK,BK2
-	XC2-0040-10	MODULE UNIT	BT/GPS *Produced in Malaysia	K,K2,BK,BK2,E
-	XC3-0020-20	SUB UNIT	DISPLAY *Produced in Japan	K,K2
-	XC3-0070-20	SUB UNIT	DISPLAY *Produced in Malaysia	K,K2,E

Electrical parts list

MAIN UNIT

XC1-0391-80(NX-5800_K,NX-5800B_F,NX-5800B_K)

XC1-0391-81(NX-5800_K2,NX-5800B_F2,NX-5800B_K2)

XC1-0410-10(NX-5800_K,NX-5800B_K)

XC1-0410-11(NX-5800_K2,NX-5800B_K2,NX-5800_E)

***Note : 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
IC1	----------	MOS IC	*Note	
IC2	MSP430G25KGCA	MPU IC		
IC3	XC6215B122N-G	MOS IC		
IC4	NJM2878F4-33	BIPOLAR IC		
IC5	XC6223D331P-G	MOS IC		
IC6	----------	MOS IC	*Note	
IC7	XC6223H331P-G	ANALOG IC		
IC8	TPS54240DGQ	MOS IC		
IC9	XC8102AA07-G	MOS IC		
IC10	----------	MOS IC	*Note	
IC11	LXDC2HN18F163	MOS IC		
IC12	NJM2878F4-33	BIPOLAR IC		
IC13	TPS61041DRVR	ANALOG IC		
IC14	XC6223H331P-G	ANALOG IC		
IC15	BA00DD0WHFP	MOS IC		
IC16	XC6209B502P-G	MOS IC		
IC17	----------	MOS IC	*Note	
IC18	XC61CN5002N-G	MOS IC		
IC100	SKY72310362LF	MOS IC		
IC101	TC7SH17FUF	MOS IC		
IC102	BA2904FVM	MOS IC		
IC300	----------	MOS IC	*Note	
IC301	NJM12904RB1	BIPOLAR IC		
IC302	RA60H4452M1A	MOS IC	PM	K,BF,BK
IC302	RA60H3847M1A	MOS IC	PM	K2,BF2,BK2,E
IC303	NJM12904RB1	BIPOLAR IC		
IC304	AD8315ARM	MOS IC		
IC305	TC7W53FKF	MOS IC		
IC500	AK1224	MOS IC		
IC501	BA2904FVM	MOS IC		
IC600	AD9864BCPZRL	MOS IC		
IC701	----------	ROM IC	*Note	
IC702	----------	SRAM IC	*Note	
IC703	CDC3S04YFF	MOS IC		
IC704	TC7SZ08FE	MOS IC		
IC705	TC7WH126FU-F	MOS IC		
IC706	----------	MPU IC	*Note	K,K2,BK,BK2,E
IC706	----------	MPU IC	*Note	BF,BF2
IC707	BD11600NUX	MOS IC		
IC708	BD11600NUX	MOS IC		
IC709	TC7SET125FUF	MOS IC		
IC710	TC7SZ08FE	MOS IC		
IC711	----------	MPU IC	*Note	
IC712	ADS7961SRHB	MOS IC		
IC714	BD11600NUX	MOS IC		
IC715	DAC124S085CIS	MOS IC		
IC719	R2A20178NP	MCU IC		
IC720	XC61CN5002N-G	MOS IC		
IC900	TC7SET08FUF	MOS IC		
IC901	BU7242NUX	MOS IC		
IC902	TLV32AIC3104I	MOS IC		
IC903	BU7242NUX	MOS IC		
IC904	TC7SET125FUF	MOS IC		
IC905	TC7WT125FUF	MOS IC		
IC906	TC7WBD125AFK	MOS IC		
IC907	BD11600NUX	MOS IC		
IC908	TC7WH14FK-F	MOS IC		
IC909	ADM3202ARUZ	MOS IC		
IC910	PCA9555AHF	MOS IC		
IC911	LA4425A-E	MOS IC	AUDIO AMP	
IC912	TC7SET08FUF	MOS IC		

⚠ Symbol No.	Part No.	Part Name	Description	Local
Q1	KTA2012EP	TRANSISTOR		
Q3	SSM3K15AMFV	FET		
Q4	LTC014EEBFS8	DIGI TRANSISTOR		
Q5	MTM981400BF	FET		
Q6	LTC014EEBFS8	DIGI TRANSISTOR		
Q7	LTC014TEBFS8	DIGI TRANSISTOR		
Q8	LSCR523EBFS8	TRANSISTOR		
Q9	LSAR523UBFS8	TRANSISTOR		
Q10	MTM981400BF	FET		
Q11	LTC014EEBFS8	DIGI TRANSISTOR		
Q12	EM6M2	FET		
Q14	EM6M2	FET		
Q15	LTC014EEBFS8	DIGI TRANSISTOR		
Q16	SSM3J334R	FET		
Q17	LTC014EEBFS8	DIGI TRANSISTOR		
Q18	SSM3J334R	FET		
Q81	SSM3J15FS	FET		
Q100	LTA014YEBFS8	DIGI TRANSISTOR		
Q101	SSM3K15AMFV	FET		
Q102	EMD9	TRANSISTOR		
Q103	EM6M2	FET		
Q104	DSC9A01/T/	TRANSISTOR		
Q105	MCH3914-H/8/	FET		
Q106	2SC5108F/Y/	TRANSISTOR		
Q107	MCH3914-H/8/	FET		
Q108	EM6M2	FET		
Q109	SSM3J15FS	FET		
Q110	2SC5108F/Y/	TRANSISTOR		
Q111	2SC5108F/Y/	TRANSISTOR		
Q112	EM6M2	FET		
Q300	RD01MUS2-T113	FET		
Q301	LSCR523EBFS8	TRANSISTOR		
Q302	LSCR523EBFS8	TRANSISTOR		
Q303	LSCR523EBFS8	TRANSISTOR		
Q304	EM6M2	FET		
Q305	SSM3K15AMFV	FET		
Q306	LTC023JEBFS8	DIGI TRANSISTOR		
Q500	2SC5108F/Y/	TRANSISTOR		
Q502	MT3S111	TRANSISTOR		
Q600	MCH3914-H/8/	FET		
Q601	LTC023JEBFS8	DIGI TRANSISTOR		
Q602	LSCR523EBFS8	TRANSISTOR		
Q603	2SC5066F/O/	TRANSISTOR		
Q604	BB506CFS-H	FET		
Q700	2SC4617/S/	TRANSISTOR		
Q701	SSM3K15AMFV	FET		
Q703	SSM3K15AMFV	FET		
Q704	SSM3K15AMFV	FET		
Q705	LTC014TEBFS8	DIGI TRANSISTOR		
Q706	EMD9	TRANSISTOR		K2,BF2,BK2,E
Q900	SSM3K335R	FET		
Q901	SSM3J332R	FET		
Q902	DSC9A01/T/	TRANSISTOR		
Q905	SSM3K335R	FET		
Q906	SSM3J332R	FET		
Q907	SSM3K335R	FET		
Q908	SSM3K335R	FET		
D1	DZ2J180(M)	ZENER DIODE		
D2	RB520SM-30	DIODE		
D3	EDZV8.2B	ZENER DIODE		
D4	RB521CM-30	DIODE		
D5	22ZR-10D	SURGE ABSORBER		
D6	RB520SM-30	DIODE		
D7	RB521CM-30	DIODE		
D8	RB521CM-30	DIODE		
D9	RB521CM-30	DIODE		
D10	DSA3A1	DIODE		
D11	DZ2S056(M)	ZENER DIODE		
D12	RB521CM-30	DIODE		
D13	1SS400SM	DIODE		
D14	RB060M-40	DIODE		
D15	DB2J40700	DIODE		
D16	RB521CM-30	DIODE		
D17	RB521CM-30	DIODE		

⚠ Symbol No.	Part No.	Part Name	Description	Local
D100	EDZV8.2B	ZENER DIODE		
D101	RN262CS	DIODE		
D102	RN262CS	DIODE		
D103	BBY58-02V	VARI CAP DIODE		
D104	BBY58-02V	VARI CAP DIODE		
D105	BB664-02V	VARI CAP DIODE		
D106	BB664-02V	VARI CAP DIODE		
D107	BB664-02V	VARI CAP DIODE		
D108	BB664-02V	VARI CAP DIODE		
D109	BB664-02V	VARI CAP DIODE		
D110	BB664-02V	VARI CAP DIODE		
D111	BB664-02V	VARI CAP DIODE		
D112	BB664-02V	VARI CAP DIODE		
D113	1SS400SM	DIODE		
D114	RN262CS	DIODE		
D115	RN262CS	DIODE		
D117	BB555-02VH	VARI CAP DIODE		K,K2,BK,BK2,E
D117	BB555-02V	VARI CAP DIODE		BF,BF2
D300	RN262CS	DIODE		
D301	RB520SM-30	DIODE		
D302	DZ2S056(M)	ZENER DIODE		
D306	RN142S	DIODE		K2,BF2,BK2,E
D307	DZ2S056(M)	ZENER DIODE		
D309	RB706F-40	DIODE		
D310	L8104	DIODE		
D311	L8104	DIODE		
D312	JDP2S12CR	DIODE		
D313	JDP2S12CR	DIODE		
D314	RN142S	DIODE		
D315	RN142S	DIODE		
D500	RN262CS	DIODE		
D501	BB565-02V	VARI CAP DIODE		
D502	BB565-02V	VARI CAP DIODE		
D503	BB565-02V	VARI CAP DIODE		
D504	BB565-02V	VARI CAP DIODE		
D505	BB565-02V	VARI CAP DIODE		
D506	BB565-02V	VARI CAP DIODE		
D507	BB565-02V	VARI CAP DIODE		
D508	RN142S	DIODE		
D509	RN142S	DIODE		
D600	SMV1705-079LF	VARI CAP DIODE		
D601	SMV1705-079LF	VARI CAP DIODE		
D602	DA3S101F	DIODE ARRAY		
D700	RB521CM-30	DIODE		
D701	RB521CM-30	DIODE		
D702	SPC10501A01	VARISTOR		
D703	SPC10501A01	VARISTOR		
D704	SPC10501A01	VARISTOR		
D705	SPC10501A01	VARISTOR		
D706	SPC10501A01	VARISTOR		
D708	EDZV8.2B	ZENER DIODE		
D710	RB521CM-30	DIODE		
D711	RB521CM-30	DIODE		
D801	RB521CM-30	DIODE		
D900	DA3S101F	DIODE ARRAY		
D903	DZ2S056(M)	ZENER DIODE		
D904	DA204U	MULTIPLE DIODE		
D905	1SS400SM	DIODE		
D906	DZ2S056(M)	ZENER DIODE		
D907	RB521CM-30	DIODE		
D908	DA204U	MULTIPLE DIODE		
D909	DA3S101F	DIODE ARRAY		
D910	DA204U	MULTIPLE DIODE		
D911	DA204U	MULTIPLE DIODE		
D912	DA204U	MULTIPLE DIODE		
D913	DA204U	MULTIPLE DIODE		
D914	DA204U	MULTIPLE DIODE		
D915	DA204U	MULTIPLE DIODE		
D916	DA2J101	DIODE		
D917	DZ2J180(M)	ZENER DIODE		
D918	DA204U	MULTIPLE DIODE		
D919	DA204U	MULTIPLE DIODE		
D920	DA204U	MULTIPLE DIODE		
D921	DA2J101	DIODE		
D922	DZ2J180(M)	ZENER DIODE		
D923	DA204U	MULTIPLE DIODE		
D924	RB520SM-30	DIODE		

⚠ Symbol No.	Part No.	Part Name	Description	Local
C1	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C2	CD04CK1E102M	E CAPACITOR	1000uF 25V M	
C3	CK73HBB1H222K	C CAPACITOR	2200pF 50V K	
C4	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C5	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C6	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C8	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C9	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C10	CK73FB1C106K	C CAPACITOR	10uF 16V K	
C11	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C12	C93-1959-05	C CAPACITOR	0.1uF 16V	
C13	CK73HB1A474K	C CAPACITOR	0.47uF 10V K	
C16	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C18	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C21	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C24	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C25	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C30	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C31	CK73EB1H475KM	C CAPACITOR	4.7uF 50V M	
C32	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C33	CK73EB1H475KM	C CAPACITOR	4.7uF 50V M	
C34	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C35	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C36	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C37	CK73FB1C106K	C CAPACITOR	10uF 16V K	
C38	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C39	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C40	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C41	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C43	CK73GXR1C225K	C CAPACITOR	2.2uF 16V K	
C44	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C45	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C46	CK73GXR1C225K	C CAPACITOR	2.2uF 16V K	
C47	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C48	CK73GXR1C225K	C CAPACITOR	2.2uF 16V K	
C49	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C50	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C51	CK73HBB1H332K	C CAPACITOR	3300pF 50V K	
C52	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C53	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C54	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C55	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C56	CK73HB1H392K	C CAPACITOR	3900pF 50V K	
C57	CK73FXR1E475K	C CAPACITOR	4.7uF 25V K	
C58	CC73HCH1H220G	C CAPACITOR	22pF 50V G	
C59	CK73FB1C106K	C CAPACITOR	10uF 16V K	
C60	CK73FB1C106K	C CAPACITOR	10uF 16V K	
C61	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C62	CK73GXR1C225K	C CAPACITOR	2.2uF 16V K	
C63	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C64	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C65	CK73FB1C106K	C CAPACITOR	10uF 16V K	
C66	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C67	CK73FB1C106K	C CAPACITOR	10uF 16V K	
C68	CK73FXR1E475K	C CAPACITOR	4.7uF 25V K	
C69	CK73GXR1C225K	C CAPACITOR	2.2uF 16V K	
C70	CK73HB1H391K	C CAPACITOR	390pF 50V K	
C71	CK73HB1H391K	C CAPACITOR	390pF 50V K	
C72	CK730FA1H475K	C CAPACITOR	4.7uF 50V K	
C73	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C74	CK73GXR1C225K	C CAPACITOR	2.2uF 16V K	
C75	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C76	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C77	CK73FXR1E475K	C CAPACITOR	4.7uF 25V K	
C78	CK730DT1C476K	C CAPACITOR	47uF 16V K	
C80	CK73GXR1H104K	C CAPACITOR	0.1uF 50V K	
C81	CC73HCH1H470G	C CAPACITOR	47pF 50V G	
C82	CK73GXR1C225K	C CAPACITOR	2.2uF 16V K	
C83	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C84	CK73GXR1C225K	C CAPACITOR	2.2uF 16V K	
C85	C92-0968-05	E CAPACITOR	470uF 25V	
C88	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C89	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C100	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C101	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C102	CC73HCH1H100B	C CAPACITOR	10pF 50V B	
C103	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C104	CK73HB1H103K	C CAPACITOR	10000pF 50V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C106	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C107	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C108	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C109	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C110	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C111	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C112	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C113	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C114	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C115	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C116	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C118	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C120	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C121	CC73HCH1H330G	C CAPACITOR	33pF 50V G	
C124	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C125	CK73GB1H105K	C CAPACITOR	1uF 50V K	
C126	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C127	CK73FBB1H154K	C CAPACITOR	0.15uF 50V K	
C128	CS77ABE1D100M	TA E CAPACITOR	10uF 20V M	
C129	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C130	CK73FB1H473K	C CAPACITOR	0.047uF 50V K	
C131	CC730AD1H104J	C CAPACITOR	0.1uF 50V J	
C132	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C133	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	K,BF,BK
C133	CC73HCH1H100B	C CAPACITOR	10pF 50V B	K2,BF2,BK2,E
C134	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C135	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	K,BF,BK
C135	CC73HCH1H100B	C CAPACITOR	10pF 50V B	K2,BF2,BK2,E
C136	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C137	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C138	CC73HCH1H090B	C CAPACITOR	9pF 50V B	K,BF,BK
C138	CC73HCH1H100B	C CAPACITOR	10pF 50V B	K2,BF2,BK2,E
C139	CC73HCH1H080B	C CAPACITOR	8pF 50V B	K,BF,BK
C139	CC73HCH1H100B	C CAPACITOR	10pF 50V B	K2,BF2,BK2,E
C141	CC73HCH1H0R5B	C CAPACITOR	0.5pF 50V B	K,BF,BK
C142	CC73HCH1H151J	C CAPACITOR	150pF 50V J	
C143	CC73HCH1H151J	C CAPACITOR	150pF 50V J	
C144	CC73HCH1H020B	C CAPACITOR	2pF 50V B	K,BF,BK
C144	CC73HCH1H1R5B	C CAPACITOR	1.5pF 50V B	K2,BF2,BK2,E
C145	CC73HCH1H020B	C CAPACITOR	2pF 50V B	K,BF,BK
C145	CC73HCH1H1R5B	C CAPACITOR	1.5pF 50V B	K2,BF2,BK2,E
C146	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C147	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C148	CC73HCH1H080B	C CAPACITOR	8pF 50V B	K,BF,BK
C148	CC73HCH1H090B	C CAPACITOR	9pF 50V B	K2,BF2,BK2,E
C149	CC73HCH1H090B	C CAPACITOR	9pF 50V B	K,BF,BK
C149	CC73HCH1H100B	C CAPACITOR	10pF 50V B	K2,BF2,BK2,E
C150	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C151	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C152	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C153	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C154	CC73HCH1H120G	C CAPACITOR	12pF 50V G	K,BF,BK
C154	CC73HCH1H240G	C CAPACITOR	24pF 50V G	K2,BF2,BK2,E
C155	CC73HCH1H220G	C CAPACITOR	22pF 50V G	K,BF,BK
C155	CC73HCH1H330G	C CAPACITOR	33pF 50V G	K2,BF2,BK2,E
C156	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C158	CC73HCH1H010B	C CAPACITOR	1pF 50V B	K,BF,BK
C158	CC73HCH1HR75B	C CAPACITOR	0.75pF 50V B	K2,BF2,BK2,E
C159	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C161	CK73FB1C106K	C CAPACITOR	10uF 16V K	
C162	CC73HCH1H0R5B	C CAPACITOR	0.5pF 50V B	
C164	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C165	CC73HCH1H040B	C CAPACITOR	4pF 50V B	K,BF,BK
C165	CC73HCH1H050B	C CAPACITOR	5pF 50V B	K2,BF2,BK2,E
C166	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C167	CC73HCH1H040B	C CAPACITOR	4pF 50V B	K,BF,BK
C167	CC73HCH1H050B	C CAPACITOR	5pF 50V B	K2,BF2,BK2,E
C168	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C169	CC73HCH1H070B	C CAPACITOR	7pF 50V B	
C170	CC73HCH1H070B	C CAPACITOR	7pF 50V B	
C171	CC73HCH1H060B	C CAPACITOR	6pF 50V B	
C172	CC73HCH1H060B	C CAPACITOR	6pF 50V B	
C173	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C174	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C175	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C176	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C177	CC73HCH1H0R5B	C CAPACITOR	0.5pF 50V B	
C178	CC73HCH1H0R5B	C CAPACITOR	0.5pF 50V B	
C179	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C181	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C182	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C183	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C184	CK73HBB1H471K	C CAPACITOR	470pF 50V K	K2,BF2,BK2,E
C185	CC73HCH1H060B	C CAPACITOR	6pF 50V B	K,BF,BK
C185	CC73HCH1H070B	C CAPACITOR	7pF 50V B	K2,BF2,BK2,E
C187	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C189	CC73HCH1H390G	C CAPACITOR	39pF 50V G	
C190	CC73HCH1H120G	C CAPACITOR	12pF 50V G	
C191	CC73HCH1H151J	C CAPACITOR	150pF 50V J	K,BF,BK
C191	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	K2,BF2,BK2,E
C192	CC73HCH1H060B	C CAPACITOR	6pF 50V B	
C193	CC73HCH1H060B	C CAPACITOR	6pF 50V B	
C194	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C195	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C196	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C197	CC73HCH1H070B	C CAPACITOR	7pF 50V B	K,BF,BK
C197	CC73HCH1H060B	C CAPACITOR	6pF 50V B	K2,BF2,BK2,E
C198	CC73HCH1H040B	C CAPACITOR	4pF 50V B	K,BF,BK
C198	CC73HCH1H010B	C CAPACITOR	1pF 50V B	K2,BF2,BK2,E
C201	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C202	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C300	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C301	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C303	CC73HCH1H050B	C CAPACITOR	5pF 50V B	
C304	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C305	CC73HCH1H050B	C CAPACITOR	5pF 50V B	
C306	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C307	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C308	CK73HB1E473K	C CAPACITOR	0.047uF 25V K	
C309	CK73HBB1H472K	C CAPACITOR	4700pF 50V K	
C310	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C311	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C312	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C313	CC73HCH1H050B	C CAPACITOR	5pF 50V B	
C315	CC73HCH1H100B	C CAPACITOR	10pF 50V B	
C317	CC73HCH1H050B	C CAPACITOR	5pF 50V B	
C318	CC73HCH1H180G	C CAPACITOR	18pF 50V G	
C319	CC73HCH1H120G	C CAPACITOR	12pF 50V G	
C320	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C321	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C322	CK73GB1H471K	C CAPACITOR	470uF 50V K	
C323	CK73GB1H471K	C CAPACITOR	470uF 50V K	
C325	CC73GCH1H100B	C CAPACITOR	10pF 50V B	
C326	CK73HBB1H222K	C CAPACITOR	2200pF 50V K	
C327	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C328	CK73GB1H183K	C CAPACITOR	0.018uF 50V K	
C329	CK73HBB1H472K	C CAPACITOR	4700pF 50V K	
C330	CC73HCH1H470G	C CAPACITOR	47pF 50V G	
C331	CK73GB1H471K	C CAPACITOR	470uF 50V K	
C332	CK73HBB1H472K	C CAPACITOR	4700pF 50V K	
C333	CK73HBB1H332K	C CAPACITOR	3300pF 50V K	
C334	CK73GB1H471K	C CAPACITOR	470uF 50V K	
C335	CK73GB1H471K	C CAPACITOR	470uF 50V K	
C336	CC73HCH1H220G	C CAPACITOR	22pF 50V G	
C338	CC73HCH1H470G	C CAPACITOR	47pF 50V G	
C340	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C341	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C343	CK73HBB1H332K	C CAPACITOR	3300pF 50V K	
C345	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C346	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C347	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C348	CK73HB1E473K	C CAPACITOR	0.047uF 25V K	
C349	CE32BY1E470M	E CAPACITOR	47uF 25V M	
C350	C93-1866-05	C CAPACITOR	27pF 250V	
C351	CK73HB1E333K	C CAPACITOR	0.033uF 25V K	
C354	CK73HBB1H471K	C CAPACITOR	470pF 50V K	K2,BF2,BK2,E
C355	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	K2,BF2,BK2,E
C356	CC73GCH1H020B	C CAPACITOR	2pF 50V B	K,BF,BK
C356	CC73GCH1H1R5B	C CAPACITOR	1.5pF 50V B	K2,BF2,BK2,E
C360	CK73GB1H471K	C CAPACITOR	470uF 50V K	
C361	CK73GB1H471K	C CAPACITOR	470uF 50V K	
C362	C93-1866-05	C CAPACITOR	27pF 250V	
C363	CK73GB1H471K	C CAPACITOR	470uF 50V K	
C365	CK73HB1E333K	C CAPACITOR	0.033uF 25V K	K2,BF2,BK2,E
C367	CK73GB1H471K	C CAPACITOR	470uF 50V K	
C368	CK73HBB1H471K	C CAPACITOR	470pF 50V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C369	C93-1852-05	C CAPACITOR	6pF 250V	K,BF,BK
C369	C93-1846-05	C CAPACITOR	4pF 250V	K2,BF2,BK2,E
C370	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C371	CC73GCH1H030B	C CAPACITOR	3pF 50V B	K,BF,BK
C371	CC73GCH1H040B	C CAPACITOR	4pF 50V B	K2,BF2,BK2,E
C372	C93-1932-05	C CAPACITOR	100pF 250V	
C374	CK73HBB1H472K	C CAPACITOR	4700pF 50V K	
C375	C93-2031-05	C CAPACITOR	8pF 500V	K,BF,BK
C375	C93-2043-05	C CAPACITOR	12pF 500V	K2,BF2,BK2,E
C376	C93-1849-05	C CAPACITOR	5pF 250V	K2,BF2,BK2,E
C378	CC73HCH1H470G	C CAPACITOR	47pF 50V G	
C380	C93-2035-05	C CAPACITOR	9pF 500V	K,BF,BK
C380	C93-2043-05	C CAPACITOR	12pF 500V	K2,BF2,BK2,E
C383	C93-1852-05	C CAPACITOR	6pF 250V	K,BF,BK
C383	C93-1855-05	C CAPACITOR	7pF 250V	K2,BF2,BK2,E
C385	CK73HBB1H222K	C CAPACITOR	2200pF 50V K	
C386	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C387	CC73HCH1H121J	C CAPACITOR	120pF 50V J	
C388	CK73HB1H391K	C CAPACITOR	390pF 50V K	
C389	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C500	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C501	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C502	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C503	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C504	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C506	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C507	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C508	CC73HCH1H030B	C CAPACITOR	3pF 50V B	
C509	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C510	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C511	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C512	CC73HCH1H070B	C CAPACITOR	7pF 50V B	K,BF,BK
C512	CC73HCH1H100B	C CAPACITOR	10pF 50V B	K2,BF2,BK2,E
C513	CC73HCH1H070B	C CAPACITOR	7pF 50V B	K,BF,BK
C513	CC73HCH1H100B	C CAPACITOR	10pF 50V B	K2,BF2,BK2,E
C514	CC73HCH1H1R5B	C CAPACITOR	1.5pF 50V B	K,BF,BK
C514	CC73HCH1H020B	C CAPACITOR	2pF 50V B	K2,BF2,BK2,E
C516	CC73HCH1H120G	C CAPACITOR	12pF 50V G	
C517	CC73HCH1H010B	C CAPACITOR	1pF 50V B	K,BF,BK
C517	CC73HCH1H020B	C CAPACITOR	2pF 50V B	K2,BF2,BK2,E
C518	CC73HCH1H080B	C CAPACITOR	8pF 50V B	K,BF,BK
C518	CC73HCH1H060B	C CAPACITOR	6pF 50V B	K2,BF2,BK2,E
C519	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C520	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C521	CC73HCH1H180G	C CAPACITOR	18pF 50V G	
C522	CK73HBB1H471K	C CAPACITOR	470pF 50V K	K,BF,BK
C522	CC73HCH1H180G	C CAPACITOR	18pF 50V G	K2,BF2,BK2,E
C523	CC73HCH1H070B	C CAPACITOR	7pF 50V B	K,BF,BK
C523	CC73HCH1H090B	C CAPACITOR	9pF 50V B	K2,BF2,BK2,E
C524	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C525	CC73HCH1H470G	C CAPACITOR	47pF 50V G	K,BF,BK
C525	CC73HCH1H471J	C CAPACITOR	470pF 50V J	K2,BF2,BK2,E
C526	CC73HCH1H050B	C CAPACITOR	5pF 50V B	K,BF,BK
C526	CC73HCH1H060B	C CAPACITOR	6pF 50V B	K2,BF2,BK2,E
C528	CC73HCH1H040B	C CAPACITOR	4pF 50V B	K,BF,BK
C528	CC73HCH1H050B	C CAPACITOR	5pF 50V B	K2,BF2,BK2,E
C529	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C530	CC73HCH1H470G	C CAPACITOR	47pF 50V G	K,BF,BK
C530	CC73HCH1H471J	C CAPACITOR	470pF 50V J	K2,BF2,BK2,E
C531	CC73HCH1H050B	C CAPACITOR	5pF 50V B	K,BF,BK
C531	CC73HCH1H070B	C CAPACITOR	7pF 50V B	K2,BF2,BK2,E
C532	CC73HCH1H040B	C CAPACITOR	4pF 50V B	K,BF,BK
C532	CC73HCH1H050B	C CAPACITOR	5pF 50V B	K2,BF2,BK2,E
C533	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C534	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C535	CC73HCH1H470G	C CAPACITOR	47pF 50V G	K,BF,BK
C535	CC73HCH1H471J	C CAPACITOR	470pF 50V J	K2,BF2,BK2,E
C536	CC73HCH1H060B	C CAPACITOR	6pF 50V B	K,BF,BK
C536	CC73HCH1H070B	C CAPACITOR	7pF 50V B	K2,BF2,BK2,E
C537	CC73HCH1H080B	C CAPACITOR	8pF 50V B	
C538	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C539	CC73HCH1H470G	C CAPACITOR	47pF 50V G	K,BF,BK
C539	CC73HCH1H471J	C CAPACITOR	470pF 50V J	K2,BF2,BK2,E
C540	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C541	CK73GXR1H104K	C CAPACITOR	0.1uF 50V K	
C542	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C543	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C544	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C545	CC73HCH1H080B	C CAPACITOR	8pF 50V B	
C546	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C548	CC73HCH1H120G	C CAPACITOR	12pF 50V G	
C549	CC73HCH1H040B	C CAPACITOR	4pF 50V B	
C550	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C551	CC73HCH1H220G	C CAPACITOR	22pF 50V G	K,BF,BK
C551	CC73HCH1H390G	C CAPACITOR	39pF 50V G	K2,BF2,BK2,E
C552	CC73HCH1H030B	C CAPACITOR	3pF 50V B	
C553	CC73HCH1H020B	C CAPACITOR	2pF 50V B	
C554	CC73HCH1H030B	C CAPACITOR	3pF 50V B	
C555	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C556	CC73HCH1H220G	C CAPACITOR	22pF 50V G	K,BF,BK
C556	CC73HCH1H390G	C CAPACITOR	39pF 50V G	K2,BF2,BK2,E
C557	CC73HCH1H040B	C CAPACITOR	4pF 50V B	
C558	CC73HCH1H040B	C CAPACITOR	4pF 50V B	K,BF,BK
C558	CC73HCH1H050B	C CAPACITOR	5pF 50V B	K2,BF2,BK2,E
C559	CC73HCH1H060B	C CAPACITOR	6pF 50V B	
C560	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C562	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C563	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C564	CC73HCH1H070B	C CAPACITOR	7pF 50V B	K2,BF2,BK2,E
C565	CC73HCH1H120G	C CAPACITOR	12pF 50V G	K2,BF2,BK2,E
C600	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C601	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C602	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C603	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C604	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C605	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C606	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C607	CC73HCH1H120G	C CAPACITOR	12pF 50V G	
C608	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C609	CK73HB1E562K	C CAPACITOR	5600pF 25V K	
C610	C93-1959-05	C CAPACITOR	0.1uF 16V	
C611	CC73HCH1H100B	C CAPACITOR	10pF 50V B	
C612	CK73HB1A224K	C CAPACITOR	0.22uF 10V K	
C613	C93-1959-05	C CAPACITOR	0.1uF 16V	
C614	CK73HB1H123K	C CAPACITOR	0.012uF 50V K	
C615	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C616	CC73HCH1H390G	C CAPACITOR	39pF 50V G	
C617	CC73HCH1H390G	C CAPACITOR	39pF 50V G	
C618	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C619	C93-1959-05	C CAPACITOR	0.1uF 16V	
C620	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C621	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C622	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C623	CC73HCH1H390G	C CAPACITOR	39pF 50V G	
C624	CC73HCH1H390G	C CAPACITOR	39pF 50V G	
C625	C93-1959-05	C CAPACITOR	0.1uF 16V	
C626	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C627	C93-1953-05	C CAPACITOR	0.01uF 25V	
C628	C93-1959-05	C CAPACITOR	0.1uF 16V	
C629	C93-1953-05	C CAPACITOR	0.01uF 25V	
C630	C93-1959-05	C CAPACITOR	0.1uF 16V	
C631	C93-1959-05	C CAPACITOR	0.1uF 16V	
C632	C93-1953-05	C CAPACITOR	0.01uF 25V	
C633	C93-1959-05	C CAPACITOR	0.1uF 16V	
C634	CK73FB1C106K	C CAPACITOR	10uF 16V K	
C635	C93-1959-05	C CAPACITOR	0.1uF 16V	
C636	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C637	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C638	CK73HBB1H682K	C CAPACITOR	6800pF 50V K	
C639	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C640	C93-1969-05	C CAPACITOR	1000pF 50V	
C641	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C642	CC73HCH1H100B	C CAPACITOR	10pF 50V B	
C643	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C644	C93-1953-05	C CAPACITOR	0.01uF 25V	
C645	CC73HCH1H330G	C CAPACITOR	33pF 50V G	
C646	CC73HCH1H151J	C CAPACITOR	150pF 50V J	
C647	C93-1959-05	C CAPACITOR	0.1uF 16V	
C648	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C649	CC73HCH1H100B	C CAPACITOR	10pF 50V B	
C650	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C651	C93-1959-05	C CAPACITOR	0.1uF 16V	
C652	C93-1959-05	C CAPACITOR	0.1uF 16V	
C653	CC73HCH1H560J	C CAPACITOR	56pF 50V J	
C654	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C655	CK73HB1H103K	C CAPACITOR	10000pF 50V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C656	CC73HCH1H100B	C CAPACITOR	10pF 50V B	
C657	CC73HCH1H060B	C CAPACITOR	6pF 50V B	
C658	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C659	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C660	CC73HCH1H120G	C CAPACITOR	12pF 50V G	
C661	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C662	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C663	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C665	CC73HCH1H090B	C CAPACITOR	9pF 50V B	
C666	CC73HCH1H270G	C CAPACITOR	27pF 50V G	
C667	CC73HCH1H060B	C CAPACITOR	6pF 50V B	
C668	CC73HCH1H180G	C CAPACITOR	18pF 50V G	
C669	CC73HCH1H020B	C CAPACITOR	2pF 50V B	
C670	CC73HCH1H020B	C CAPACITOR	2pF 50V B	
C671	CC73HCH1H180G	C CAPACITOR	18pF 50V G	
C681	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C700	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C701	C93-1959-05	C CAPACITOR	0.1uF 16V	
C702	C93-1959-05	C CAPACITOR	0.1uF 16V	
C703	CK73FXR0J226M	C CAPACITOR	22uF 6.3V M	
C704	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C705	C93-1959-05	C CAPACITOR	0.1uF 16V	
C706	C93-1959-05	C CAPACITOR	0.1uF 16V	
C707	CK73FXR0J226M	C CAPACITOR	22uF 6.3V M	
C708	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C709	C93-1959-05	C CAPACITOR	0.1uF 16V	
C711	C93-1959-05	C CAPACITOR	0.1uF 16V	
C712	C93-1959-05	C CAPACITOR	0.1uF 16V	
C713	C93-1959-05	C CAPACITOR	0.1uF 16V	
C714	C93-1959-05	C CAPACITOR	0.1uF 16V	
C715	C93-1959-05	C CAPACITOR	0.1uF 16V	
C716	C93-1959-05	C CAPACITOR	0.1uF 16V	
C717	C93-1959-05	C CAPACITOR	0.1uF 16V	
C718	C93-1959-05	C CAPACITOR	0.1uF 16V	
C719	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C720	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C721	C93-1959-05	C CAPACITOR	0.1uF 16V	
C722	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C723	C93-1959-05	C CAPACITOR	0.1uF 16V	
C724	C93-1959-05	C CAPACITOR	0.1uF 16V	
C725	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C726	C93-1953-05	C CAPACITOR	0.01uF 25V	
C728	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C729	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C730	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C731	C93-1959-05	C CAPACITOR	0.1uF 16V	
C732	C93-1959-05	C CAPACITOR	0.1uF 16V	
C733	C93-1959-05	C CAPACITOR	0.1uF 16V	
C734	C93-1959-05	C CAPACITOR	0.1uF 16V	
C735	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C736	C93-1959-05	C CAPACITOR	0.1uF 16V	
C737	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C738	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C739	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C740	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C741	C93-1959-05	C CAPACITOR	0.1uF 16V	
C742	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C743	C93-1953-05	C CAPACITOR	0.01uF 25V	
C745	C93-1959-05	C CAPACITOR	0.1uF 16V	
C746	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C747	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C748	CC73HCH1H100B	C CAPACITOR	10pF 50V B	
C749	C93-1959-05	C CAPACITOR	0.1uF 16V	
C750	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C751	C93-1959-05	C CAPACITOR	0.1uF 16V	
C752	C93-1959-05	C CAPACITOR	0.1uF 16V	
C754	C93-1959-05	C CAPACITOR	0.1uF 16V	
C755	C93-1959-05	C CAPACITOR	0.1uF 16V	
C756	C93-1959-05	C CAPACITOR	0.1uF 16V	
C757	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C758	C93-1959-05	C CAPACITOR	0.1uF 16V	
C759	CC73JCH1H101J	C CAPACITOR	100pF 50V J	
C760	C93-1959-05	C CAPACITOR	0.1uF 16V	
C762	C93-1959-05	C CAPACITOR	0.1uF 16V	
C764	C93-1959-05	C CAPACITOR	0.1uF 16V	
C766	C93-1959-05	C CAPACITOR	0.1uF 16V	
C768	C93-1953-05	C CAPACITOR	0.01uF 25V	
C769	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C770	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C771	C93-1959-05	C CAPACITOR	0.1uF 16V	
C772	C93-1959-05	C CAPACITOR	0.1uF 16V	
C773	C93-1959-05	C CAPACITOR	0.1uF 16V	
C774	C93-1959-05	C CAPACITOR	0.1uF 16V	
C775	C93-1959-05	C CAPACITOR	0.1uF 16V	
C776	C93-1959-05	C CAPACITOR	0.1uF 16V	
C777	C93-1959-05	C CAPACITOR	0.1uF 16V	
C778	C93-1959-05	C CAPACITOR	0.1uF 16V	
C779	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C780	C93-1959-05	C CAPACITOR	0.1uF 16V	
C781	CC73HCH1H150G	C CAPACITOR	15pF 50V G	
C782	CC73HCH1H150G	C CAPACITOR	15pF 50V G	
C783	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C784	CK73HB1A224K	C CAPACITOR	0.22uF 10V K	
C785	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C786	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C787	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C791	C93-1959-05	C CAPACITOR	0.1uF 16V	
C792	C93-1959-05	C CAPACITOR	0.1uF 16V	
C793	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C794	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C795	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C796	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C797	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C798	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C799	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C800	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C801	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C802	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C803	C93-1959-05	C CAPACITOR	0.1uF 16V	
C804	C93-1959-05	C CAPACITOR	0.1uF 16V	
C805	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C806	C93-1959-05	C CAPACITOR	0.1uF 16V	
C807	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C808	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C809	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C810	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C811	C93-1959-05	C CAPACITOR	0.1uF 16V	
C812	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C813	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C814	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C815	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C816	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C817	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C818	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C819	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C820	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C821	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C822	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C824	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C829	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C830	C93-1959-05	C CAPACITOR	0.1uF 16V	
C831	C93-1959-05	C CAPACITOR	0.1uF 16V	
C834	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C835	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C839	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C841	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C852	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C853	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C854	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C856	CC73HCH1H470G	C CAPACITOR	47pF 50V G	
C857	CC73HCH1H470G	C CAPACITOR	47pF 50V G	
C898	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C899	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C900	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C901	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C902	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C903	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C904	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C905	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C906	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C908	C93-1959-05	C CAPACITOR	0.1uF 16V	
C909	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C910	C93-1959-05	C CAPACITOR	0.1uF 16V	
C911	C93-1959-05	C CAPACITOR	0.1uF 16V	
C912	C93-1959-05	C CAPACITOR	0.1uF 16V	
C913	C93-1959-05	C CAPACITOR	0.1uF 16V	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C914	C93-1959-05	C CAPACITOR	0.1uF 16V	
C915	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C916	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C917	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C918	C93-1959-05	C CAPACITOR	0.1uF 16V	
C919	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C920	C93-1959-05	C CAPACITOR	0.1uF 16V	
C921	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C922	CK73HBB1H472K	C CAPACITOR	4700pF 50V K	
C924	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C925	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C926	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C927	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C928	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C929	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C930	CC73HCH1H680J	C CAPACITOR	68pF 50V J	
C931	CK73HB1A474K	C CAPACITOR	0.47uF 10V K	
C932	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C933	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C934	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C935	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C936	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C937	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C938	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C940	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C941	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C942	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C943	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C944	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C945	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C946	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C947	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C948	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C949	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C950	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C951	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C952	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C953	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C954	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C955	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C956	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C957	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C958	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C959	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C960	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C961	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C962	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C963	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C964	CK73HB1E473K	C CAPACITOR	0.047uF 25V K	
C965	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C966	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C967	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C968	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C969	C92-0906-05	E CAPACITOR	330uF 10V	
C970	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C971	CE32BY1E470M	E CAPACITOR	47uF 25V M	
C972	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C973	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C975	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C976	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C977	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C978	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C979	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C980	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C981	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C982	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C983	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C984	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C985	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C986	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C987	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C988	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C989	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C990	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C991	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C992	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C993	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C994	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C995	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C996	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C997	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C998	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C999	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
R1	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R2	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R3	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	K,BF,BK
R4	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	K2,BF2,BK2,E
R8	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R10	RK73HH1J104D	MG RESISTOR	100kΩ 1/16W D	
R11	RK73HH1J104D	MG RESISTOR	100kΩ 1/16W D	
R12	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R13	RK73HH1J104D	MG RESISTOR	100kΩ 1/16W D	
R14	RK73HH1J223D	MG RESISTOR	22kΩ 1/16W D	
R15	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R16	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R17	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R18	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R19	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R20	RK73GB2A000J	MG RESISTOR	0Ω 1/10W J	
R21	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R22	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R23	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R24	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R25	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R26	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R27	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R29	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R30	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R31	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R32	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R33	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R34	RK73HH1J333D	MG RESISTOR	33kΩ 1/16W D	
R35	RK73HH1J103D	MG RESISTOR	10kΩ 1/16W D	
R36	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R37	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R38	RK73HB1J224J	MG RESISTOR	220kΩ 1/16W J	
R39	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R40	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R41	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R42	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R43	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R44	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R45	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R46	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R47	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R48	RK73HH1J103D	MG RESISTOR	10kΩ 1/16W D	
R49	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D	
R50	RK73HH1J103D	MG RESISTOR	10kΩ 1/16W D	
R51	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R52	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R53	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R54	R92-3769-05	MG RESISTOR	10Ω 0.25W	
R55	R92-3769-05	MG RESISTOR	10Ω 0.25W	
R56	RK73HB1J334J	MG RESISTOR	330kΩ 1/16W J	
R57	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R58	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R59	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R60	RK73HB1J474J	MG RESISTOR	470kΩ 1/16W J	
R61	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R62	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R63	RK73HH1J273D	MG RESISTOR	27kΩ 1/16W D	
R64	RK73HH1J152D	MG RESISTOR	1.5kΩ 1/16W D	
R65	RK73HH1J472D	MG RESISTOR	4.7kΩ 1/16W D	
R66	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R67	RK73HB1J472J	MG RESISTOR	4.7kΩ 1/16W J	
R68	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R69	RK73HB1J472J	MG RESISTOR	4.7kΩ 1/16W J	
R70	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R71	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R72	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R73	RK73HB1J471J	MG RESISTOR	470Ω 1/16W J	
R75	RK73HB1J474J	MG RESISTOR	470kΩ 1/16W J	
R76	RK73FB2B332J	MG RESISTOR	3.3kΩ 1/8W J	
R77	RK73FB2B332J	MG RESISTOR	3.3kΩ 1/8W J	
R78	RK73FB2B332J	MG RESISTOR	3.3kΩ 1/8W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R84	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R96	RK73FB2B2R7J	MG RESISTOR	2.7Ω 1/8W J	
R97	RK73FB2B3R3J	MG RESISTOR	3.3Ω 1/8W J	
R100	RK73HB1J821J	MG RESISTOR	820Ω 1/16W J	
R101	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R102	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R103	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R104	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R105	RK73HB1J474J	MG RESISTOR	470kΩ 1/16W J	
R106	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R107	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R108	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R109	RK73HB1J470J	MG RESISTOR	47Ω 1/16W J	
R110	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R111	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R112	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R113	RK73HB1J124J	MG RESISTOR	120kΩ 1/16W J	
R115	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R116	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R117	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R118	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R119	RK73HB1J474J	MG RESISTOR	470kΩ 1/16W J	
R121	RK73HB1J151J	MG RESISTOR	150Ω 1/16W J	
R122	RK73HB1J472J	MG RESISTOR	4.7kΩ 1/16W J	
R123	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R124	RK73HH1J391D	MG RESISTOR	390Ω 1/16W D	
R125	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R126	RK73HB1J106J	MG RESISTOR	10MΩ 1/16W J	
R127	RK73HB1J472J	MG RESISTOR	4.7kΩ 1/16W J	
R128	RK73HB1J470J	MG RESISTOR	47Ω 1/16W J	
R129	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R130	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R131	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R132	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R133	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R135	RK73HB1J123J	MG RESISTOR	12kΩ 1/16W J	
R136	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R137	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R138	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R139	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R141	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R142	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R143	RK73HB1J472J	MG RESISTOR	4.7kΩ 1/16W J	
R144	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R145	RK73HB1J474J	MG RESISTOR	470kΩ 1/16W J	
R146	RK73HB1J330J	MG RESISTOR	33Ω 1/16W J	
R147	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	K,BF,BK
R147	RK73HB1J151J	MG RESISTOR	150Ω 1/16W J	K2,BF2,BK2,E
R148	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	K,BF,BK
R148	RK73HB1J822J	MG RESISTOR	8.2kΩ 1/16W J	K2,BF2,BK2,E
R149	RK73HB1J392J	MG RESISTOR	3.9kΩ 1/16W J	K,BF,BK
R149	RK73HB1J472J	MG RESISTOR	4.7kΩ 1/16W J	K2,BF2,BK2,E
R150	RN73H0AJ181D	MF RESISTOR	180Ω D	
R151	RN73HH1J151D	MG RESISTOR	150Ω 0.063W D	
R152	RN73HH1J100D	MF RESISTOR	10Ω 0.063W D	
R153	RN73HH1J100D	MF RESISTOR	10Ω 0.063W D	
R154	RK73HB1J474J	MG RESISTOR	470kΩ 1/16W J	
R155	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R156	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R157	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R158	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R159	RK73HB1J270J	MG RESISTOR	27Ω 1/16W J	
R160	RK73HB1J392J	MG RESISTOR	3.9kΩ 1/16W J	K2,BF2,BK2,E
R161	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R162	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R163	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	K,BF,BK
R163	RK73HB1J562J	MG RESISTOR	5.6kΩ 1/16W J	K2,BF2,BK2,E
R164	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	K,BF,BK
R164	RK73HB1J121J	MG RESISTOR	120Ω 1/16W J	K2,BF2,BK2,E
R165	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R166	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R167	RK73HB1J270J	MG RESISTOR	27Ω 1/16W J	
R168	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R169	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R170	RK73HB1J822J	MG RESISTOR	8.2kΩ 1/16W J	
R171	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R172	RK73HB1J151J	MG RESISTOR	150Ω 1/16W J	K,BF,BK
R172	RK73HB1J181J	MG RESISTOR	180Ω 1/16W J	K2,BF2,BK2,E

⚠ Symbol No.	Part No.	Part Name	Description	Local
R173	RK73HB1J272J	MG RESISTOR	2.7kΩ 1/16W J	
R174	RK73HB1J470J	MG RESISTOR	47Ω 1/16W J	
R175	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R176	RK73HB1J472J	MG RESISTOR	4.7kΩ 1/16W J	
R177	RK73GB2A000J	MG RESISTOR	0Ω 1/10W J	
R178	RK73HB1J474J	MG RESISTOR	470kΩ 1/16W J	
R179	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R300	RK73HB1J332J	MG RESISTOR	3.3kΩ 1/16W J	
R301	RK73HB1J221J	MG RESISTOR	220Ω 1/16W J	
R303	RK73HB1J220J	MG RESISTOR	22Ω 1/16W J	
R304	RK73HB1J221J	MG RESISTOR	220Ω 1/16W J	
R305	RK73HB1J220J	MG RESISTOR	22Ω 1/16W J	
R306	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R307	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R308	RK73HB1J121J	MG RESISTOR	120Ω 1/16W J	
R309	RK73HB1J822J	MG RESISTOR	8.2kΩ 1/16W J	
R310	RK73HB1J271J	MG RESISTOR	270Ω 1/16W J	
R311	RK73HB1J390J	MG RESISTOR	39Ω 1/16W J	
R312	RK73HB1J390J	MG RESISTOR	39Ω 1/16W J	
R313	RK73HB1J271J	MG RESISTOR	270Ω 1/16W J	
R314	RK73HB1J470J	MG RESISTOR	47Ω 1/16W J	
R315	RK73HB1J392J	MG RESISTOR	3.9kΩ 1/16W J	
R316	RK73HB1J472J	MG RESISTOR	4.7kΩ 1/16W J	
R318	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R319	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R321	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R322	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R323	RK73GB2A560J	MG RESISTOR	56Ω 1/10W J	
R324	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R325	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R327	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R328	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R329	RK73HB1J470J	MG RESISTOR	47Ω 1/16W J	
R330	RK73GB2A271J	MG RESISTOR	270Ω 1/10W J	
R332	RK73GB2A390J	MG RESISTOR	39Ω 1/10W J	
R333	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R334	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R335	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	K,BF,BK
R335	RK73HB1J272J	MG RESISTOR	2.7kΩ 1/16W J	K2,BF2,BK2,E
R336	RK73HB1J221J	MG RESISTOR	220Ω 1/16W J	
R337	RK73GB2A271J	MG RESISTOR	270Ω 1/10W J	
R338	RK73GB2A390J	MG RESISTOR	39Ω 1/10W J	
R339	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R340	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R341	RK73GB2A331J	MG RESISTOR	330Ω 1/10W J	
R342	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R343	RK73HB1J271J	MG RESISTOR	270Ω 1/16W J	
R345	RK73GB2A562J	MG RESISTOR	5.6kΩ 1/10W J	
R346	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R347	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R348	RK73HB1J153J	MG RESISTOR	15kΩ 1/16W J	
R350	RK73GB2A332J	MG RESISTOR	3.3kΩ 1/10W J	
R351	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R353	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R355	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R356	RK73HB1J182J	MG RESISTOR	1.8kΩ 1/16W J	
R357	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R358	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R359	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R360	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R364	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R365	RK73HB1J471J	MG RESISTOR	470Ω 1/16W J	
R366	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R368	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R369	RK73GB2A681J	MG RESISTOR	680Ω 1/10W J	K,BF,BK
R369	RK73GB2A391J	MG RESISTOR	390Ω 1/10W J	K2,BF2,BK2,E
R371	RK73HB1J470J	MG RESISTOR	47Ω 1/16W J	
R372	RK73HB1J471J	MG RESISTOR	470Ω 1/16W J	K2,BF2,BK2,E
R374	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R375	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R376	RK73HB1J470J	MG RESISTOR	47Ω 1/16W J	K2,BF2,BK2,E
R377	RK73FB2B910J	MG RESISTOR	91Ω 1/8W J	K,BF,BK
R377	RK73FB2B101J	MG RESISTOR	100Ω 1/8W J	K2,BF2,BK2,E
R378	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R379	RK73HB1J333J	MG RESISTOR	33kΩ 1/16W J	
R380	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R381	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R384	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R385	RK73HB1J470J	MG RESISTOR	47Ω 1/16W J	K,BF,BK
R386	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R387	RK73GB2A560J	MG RESISTOR	56Ω 1/10W J	
R388	RK73FB2B101J	MG RESISTOR	100Ω 1/8W J	K,BF,BK
R388	RK73FB2B820J	MG RESISTOR	82Ω 1/8W J	K2,BF2,BK2,E
R389	RK73GB2A000J	MG RESISTOR	0Ω 1/10W J	
R391	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R393	RK73GB2A560J	MG RESISTOR	56Ω 1/10W J	K2,BF2,BK2,E
R394	RK73HB1J183J	MG RESISTOR	18kΩ 1/16W J	
R395	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R396	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R397	RK73PB2H470J	MG RESISTOR	47Ω 1/2W J	
R398	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	K2,BF2,BK2,E
R399	RK73PB2H470J	MG RESISTOR	47Ω 1/2W J	
R402	R92-1061-05	C RESISTOR	0.008Ω	
R403	RK73GB2A000J	MG RESISTOR	0Ω 1/10W J	
R405	RK73GB2A560J	MG RESISTOR	56Ω 1/10W J	
R500	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	K,BF,BK
R500	RK73HB1J680J	MG RESISTOR	68Ω 1/16W J	K2,BF2,BK2,E
R501	RK73HB1J680J	MG RESISTOR	68Ω 1/16W J	K,BF,BK
R501	RK73HB1J151J	MG RESISTOR	150Ω 1/16W J	K2,BF2,BK2,E
R502	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	K,BF,BK
R502	RK73HB1J680J	MG RESISTOR	68Ω 1/16W J	K2,BF2,BK2,E
R503	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R504	RK73HB1J682J	MG RESISTOR	6.8kΩ 1/16W J	
R505	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R506	RK73HB1J470J	MG RESISTOR	47Ω 1/16W J	
R507	RK73HB1J221J	MG RESISTOR	220Ω 1/16W J	K,BF,BK
R507	RK73HB1J181J	MG RESISTOR	180Ω 1/16W J	K2,BF2,BK2,E
R508	RK73HB1J472J	MG RESISTOR	4.7kΩ 1/16W J	
R509	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R510	RK73HB1J393J	MG RESISTOR	39kΩ 1/16W J	K,BF,BK
R510	RK73HB1J333J	MG RESISTOR	33kΩ 1/16W J	K2,BF2,BK2,E
R511	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R512	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R514	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R515	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R516	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R517	RK73HB1J271J	MG RESISTOR	270Ω 1/16W J	
R519	RK73HB1J180J	MG RESISTOR	18Ω 1/16W J	
R521	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	K,BF,BK
R523	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R525	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R526	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R527	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R528	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R529	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R530	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R531	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R532	RK73HB1J274J	MG RESISTOR	270kΩ 1/16W J	
R533	RK73HB1J333J	MG RESISTOR	33kΩ 1/16W J	
R535	RK73HB1J821J	MG RESISTOR	820Ω 1/16W J	
R536	RK73HB1J5R6J	MG RESISTOR	5.6Ω 1/16W J	
R537	RK73HB1J821J	MG RESISTOR	820Ω 1/16W J	
R538	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R539	RK73HB1J274J	MG RESISTOR	270kΩ 1/16W J	
R540	RK73HB1J333J	MG RESISTOR	33kΩ 1/16W J	
R542	RK73HB1J820J	MG RESISTOR	82Ω 1/16W J	
R543	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R545	RK73HB1J183J	MG RESISTOR	18kΩ 1/16W J	
R546	RK73HB1J183J	MG RESISTOR	18kΩ 1/16W J	
R548	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R551	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R552	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R553	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R554	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R556	RK73HB1J271J	MG RESISTOR	270Ω 1/16W J	
R557	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R600	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R601	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R602	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R603	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R604	RK73HB1J681J	MG RESISTOR	680Ω 1/16W J	
R605	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R606	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R607	RK73HB1J220J	MG RESISTOR	22Ω 1/16W J	
R608	RK73HB1J561J	MG RESISTOR	560Ω 1/16W J	
R609	RK73HB1J182J	MG RESISTOR	1.8kΩ 1/16W J	
R610	RK73HB1J562J	MG RESISTOR	5.6kΩ 1/16W J	
R611	RK73HB1J471J	MG RESISTOR	470Ω 1/16W J	
R612	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R613	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R614	RK73HB1J470J	MG RESISTOR	47Ω 1/16W J	
R615	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R616	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R617	RK73HB1J274J	MG RESISTOR	270kΩ 1/16W J	
R618	RK73HB1J271J	MG RESISTOR	270Ω 1/16W J	
R619	RK73HB1J180J	MG RESISTOR	18Ω 1/16W J	
R620	RK73HB1J271J	MG RESISTOR	270Ω 1/16W J	
R621	RK73HB1J470J	MG RESISTOR	47Ω 1/16W J	
R622	RK73HB1J681J	MG RESISTOR	680Ω 1/16W J	
R623	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R624	RK73HB1J563J	MG RESISTOR	56kΩ 1/16W J	
R625	RK73HB1J823J	MG RESISTOR	82kΩ 1/16W J	
R626	RK73HB1J333J	MG RESISTOR	33kΩ 1/16W J	
R628	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R630	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R631	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R632	RK73GB2A220J	MG RESISTOR	22Ω 1/10W J	
R700	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R701	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R702	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R707	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R708	RK73HB1J220J	MG RESISTOR	22Ω 1/16W J	
R709	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R719	RK73HB1J153J	MG RESISTOR	15kΩ 1/16W J	
R720	RK73HB1J333J	MG RESISTOR	33kΩ 1/16W J	
R721	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R722	RK73HB1J681J	MG RESISTOR	680Ω 1/16W J	
R727	RK73HB1J821J	MG RESISTOR	820Ω 1/16W J	
R728	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R729	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R731	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R732	RK73JB1H472J	MG RESISTOR	4.7kΩ 1/20W J	
R733	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R734	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R735	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R736	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R738	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R740	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R742	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R744	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R746	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R747	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R748	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R749	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R750	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R751	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R752	RK73HB1J332J	MG RESISTOR	3.3kΩ 1/16W J	
R753	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R754	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R755	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R756	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R757	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R758	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R759	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R760	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R761	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R762	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R763	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R764	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R765	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R766	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R767	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R768	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R770	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R772	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R773	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R774	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R775	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R777	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R778	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R779	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R781	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R782	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R783	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R785	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R787	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R788	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R789	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R790	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R791	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R792	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R794	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R795	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R797	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R798	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R799	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R800	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R801	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R802	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R803	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R804	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R805	RK73GH2A49R9D	MG RESISTOR	49.9Ω 1/10W D	
R806	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R807	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R808	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R809	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R810	RK73JB1H102J	MG RESISTOR	1kΩ 1/20W J	
R812	RK73JB1H222J	MG RESISTOR	2.2kΩ 1/20W J	
R813	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R814	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R815	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R816	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R817	RK73JB1H220J	MG RESISTOR	22Ω 1/20W J	
R823	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R824	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R825	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R826	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R828	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R830	RK73JB1H103J	MG RESISTOR	10kΩ 1/20W J	
R831	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R833	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R835	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R837	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R838	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R839	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R843	RK73HH1J104D	MG RESISTOR	100kΩ 1/16W D	
R844	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R845	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R854	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R857	RK73HB1J333J	MG RESISTOR	33kΩ 1/16W J	
R858	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R859	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R862	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R863	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R864	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R865	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R866	RK73HB1J183J	MG RESISTOR	18kΩ 1/16W J	
R867	RK73HB1J333J	MG RESISTOR	33kΩ 1/16W J	
R868	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R869	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R874	RK73JB1H104J	MG RESISTOR	100kΩ 1/20W J	
R876	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R877	RK73FB2B332J	MG RESISTOR	3.3kΩ 1/8W J	
R878	RK73FB2B332J	MG RESISTOR	3.3kΩ 1/8W J	
R879	RK73FB2B332J	MG RESISTOR	3.3kΩ 1/8W J	
R880	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R881	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R882	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R883	RK73JB1H473J	MG RESISTOR	47kΩ 1/20W J	
R884	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R885	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R900	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R901	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R902	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R903	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R904	RK73HH1J223D	MG RESISTOR	22kΩ 1/16W D	
R905	RK73HH1J223D	MG RESISTOR	22kΩ 1/16W D	
R906	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R907	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R908	RK73HH1J223D	MG RESISTOR	22kΩ 1/16W D	
R909	RK73HH1J223D	MG RESISTOR	22kΩ 1/16W D	
R911	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R912	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R913	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R914	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R915	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R916	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R917	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R918	RK73HB1J683J	MG RESISTOR	68kΩ 1/16W J	
R919	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D	
R920	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R921	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R922	RK73HB1J681J	MG RESISTOR	680Ω 1/16W J	
R923	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R924	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R925	RK73HB1J273J	MG RESISTOR	27kΩ 1/16W J	
R926	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R927	RK73HB1J474J	MG RESISTOR	470kΩ 1/16W J	
R928	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R930	RK73HH1J103D	MG RESISTOR	10kΩ 1/16W D	
R932	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R933	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R935	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R936	RK73GB2A101J	MG RESISTOR	100Ω 1/10W J	
R937	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R938	RK73HB1J332J	MG RESISTOR	3.3kΩ 1/16W J	
R939	RK73HB1J392J	MG RESISTOR	3.9kΩ 1/16W J	
R940	RK73HB1J392J	MG RESISTOR	3.9kΩ 1/16W J	
R941	RK73GB2A101J	MG RESISTOR	100Ω 1/10W J	
R943	RK73GB2A000J	MG RESISTOR	0Ω 1/10W J	
R944	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R945	RK73HB1J472J	MG RESISTOR	4.7kΩ 1/16W J	
R947	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R948	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R949	RK73HB1J472J	MG RESISTOR	4.7kΩ 1/16W J	
R950	RK73GB2A000J	MG RESISTOR	0Ω 1/10W J	
R951	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R953	RK73HB1J472J	MG RESISTOR	4.7kΩ 1/16W J	
R954	RK73HB1J472J	MG RESISTOR	4.7kΩ 1/16W J	
R955	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R956	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R957	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R958	RK73GB2A102J	MG RESISTOR	1kΩ 1/10W J	
R960	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R961	RK73GB2A102J	MG RESISTOR	1kΩ 1/10W J	
R962	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R963	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R964	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R965	RK73HB1J471J	MG RESISTOR	470Ω 1/16W J	
R966	RK73HB1J471J	MG RESISTOR	470Ω 1/16W J	
R967	RK73GB2A221J	MG RESISTOR	220Ω 1/10W J	
R968	RK73GB2A221J	MG RESISTOR	220Ω 1/10W J	
R969	RK73HB1J471J	MG RESISTOR	470Ω 1/16W J	
R970	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R971	RK73HB1J471J	MG RESISTOR	470Ω 1/16W J	
R972	RK73HB1J471J	MG RESISTOR	470Ω 1/16W J	
R973	RK73HB1J471J	MG RESISTOR	470Ω 1/16W J	
R974	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R975	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R976	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R977	RK73GB2A102J	MG RESISTOR	1kΩ 1/10W J	
R978	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R979	RK73HB1J681J	MG RESISTOR	680Ω 1/16W J	
R980	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R981	RK73GB2A221J	MG RESISTOR	220Ω 1/10W J	
R982	RK73GB2A221J	MG RESISTOR	220Ω 1/10W J	
R983	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R984	RK73HB1J682J	MG RESISTOR	6.8kΩ 1/16W J	
R985	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R991	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R992	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R993	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R994	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R996	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R997	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R998	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
L1	LB73Z0AF-001	CHIP FERRITE		
L2	LB73Z0AF-001	CHIP FERRITE		
L3	LB73Z0AF-001	CHIP FERRITE		

⚠ Symbol No.	Part No.	Part Name	Description	Local
L4	LB73H0AV-002	CHIP FERRITE		
L5	LB73G0AK-001	CHIP FERRITE		
L6	LB73G0AM-004	CHIP FERRITE		
L7	LB73G0AK-001	CHIP FERRITE		
L9	LB73G0AK-001	CHIP FERRITE		
L10	LB73G0AK-001	CHIP FERRITE		
L11	L41-4792-69	CHIP INDUCTOR		
L12	LB73G0AM-004	CHIP FERRITE		
L13	LR79Z0AA150M	CHIP INDUCTOR		
L14	LB73G0AK-001	CHIP FERRITE		
L15	LB73G0AK-001	CHIP FERRITE		
L16	LB73H0AY-004	CHIP FERRITE		
L80	LB73H0AV-003	CHIP FERRITE		
L100	LB73H0AV-003	CHIP FERRITE		
L101	LB73H0AV-003	CHIP FERRITE		
L102	LB73H0AV-003	CHIP FERRITE		
L103	LB73H0AV-003	CHIP FERRITE		
L104	LK73G0AQ100K	M.CHIP INDUCTOR	10uH	
L105	LK73G0AQ100K	M.CHIP INDUCTOR	10uH	
L106	LK73G0AF2N7S	M.CHIP INDUCTOR	2.7nH	K,BF,BK
L106	L40-2263-92	CHIP INDUCTOR		K2,BF2,BK2,E
L107	L40-3363-92	CHIP INDUCTOR		
L108	LB73H0AV-003	CHIP FERRITE		
L109	LB73H0AV-003	CHIP FERRITE		
L110	LK73G0AFR27J	M.CHIP INDUCTOR	0.27uH	
L111	LK73G0AFR18J	M.CHIP INDUCTOR	0.18uH	K,BF,BK
L111	LK73G0AFR22J	M.CHIP INDUCTOR	0.22uH	K2,BF2,BK2,E
L112	LK73G0AF12NJ	M.CHIP INDUCTOR	12nH	K,BF,BK
L112	LK73G0AF18NJ	M.CHIP INDUCTOR	18nH	K2,BF2,BK2,E
L113	LK73G0AF15NJ	M.CHIP INDUCTOR	15nH	K,BF,BK
L113	LK73G0AF27NJ	M.CHIP INDUCTOR	27nH	K2,BF2,BK2,E
L114	LK73G0AFR27J	M.CHIP INDUCTOR	0.27uH	
L115	LK73G0AFR18J	M.CHIP INDUCTOR	0.18uH	K,BF,BK
L115	LK73G0AFR22J	M.CHIP INDUCTOR	0.22uH	K2,BF2,BK2,E
L116	LK73G0AFR27J	M.CHIP INDUCTOR	0.27uH	
L117	LK73G0AFR18J	M.CHIP INDUCTOR	0.18uH	K,BF,BK
L117	LK73G0AFR22J	M.CHIP INDUCTOR	0.22uH	K2,BF2,BK2,E
L118	L40-3363-92	CHIP INDUCTOR		
L119	L40-2263-92	CHIP INDUCTOR		
L120	LK73G0AFR27J	M.CHIP INDUCTOR	0.27uH	
L121	LK73G0AFR18J	M.CHIP INDUCTOR	0.18uH	K,BF,BK
L121	LK73G0AFR22J	M.CHIP INDUCTOR	0.22uH	K2,BF2,BK2,E
L122	LB73H0AY-004	CHIP FERRITE		
L123	LR79Z0CM28NG	CHIP INDUCTOR	28nH	K,BF,BK
L123	L34-4610-15	AIR CORE COIL		K2,BF2,BK2,E
L124	L34-4607-15	AIR CORE COIL		K,BF,BK
L124	LR79Z0CM22NG	CHIP INDUCTOR	22nH	K2,BF2,BK2,E
L125	LK73G0AF33NJ	M.CHIP INDUCTOR	33nH	K,BF,BK
L125	LK73G0AF27NJ	M.CHIP INDUCTOR	27nH	K2,BF2,BK2,E
L126	LK73G0AFR27J	M.CHIP INDUCTOR	0.27uH	
L127	LK73G0AFR18J	M.CHIP INDUCTOR	0.18uH	K,BF,BK
L127	LK73G0AFR22J	M.CHIP INDUCTOR	0.22uH	K2,BF2,BK2,E
L128	LK73G0AFR27J	M.CHIP INDUCTOR	0.27uH	
L129	LK73G0AFR18J	M.CHIP INDUCTOR	0.18uH	K,BF,BK
L129	LK73G0AFR22J	M.CHIP INDUCTOR	0.22uH	K2,BF2,BK2,E
L130	LB73H0AY-004	CHIP FERRITE		
L131	LB73H0AY-004	CHIP FERRITE		
L132	LK73H0AM39NJ	M.CHIP INDUCTOR	39nH	K,BF,BK
L132	LK73H0AM56NJ	M.CHIP INDUCTOR	56nH	K2,BF2,BK2,E
L134	LK73G0AF22NJ	M.CHIP INDUCTOR	22nH	K,BF,BK
L134	LK73G0AF27NJ	M.CHIP INDUCTOR	27nH	K2,BF2,BK2,E
L135	LK73G0AF22NJ	M.CHIP INDUCTOR	22nH	K,BF,BK
L135	LK73G0AF27NJ	M.CHIP INDUCTOR	27nH	K2,BF2,BK2,E
L136	LB73H0AV-003	CHIP FERRITE		
L137	LK73G0AF22NJ	M.CHIP INDUCTOR	22nH	K,BF,BK
L137	LK73G0AF33NJ	M.CHIP INDUCTOR	33nH	K2,BF2,BK2,E
L138	LK73H0AG4N7S	M.CHIP INDUCTOR	4.7nH	K,BF,BK
L138	LK73H0AG27NJ	M.CHIP INDUCTOR	27nH	K2,BF2,BK2,E
L139	LB73H0AY-004	CHIP FERRITE		
L300	LK73H0AM15NJ	M.CHIP INDUCTOR	15nH	
L301	LK73H0AMR12J	M.CHIP INDUCTOR	0.12uH	
L302	LK73H0AM15NJ	M.CHIP INDUCTOR	15nH	
L303	LK73H0AM15NJ	M.CHIP INDUCTOR	15nH	
L304	LK73H0AM6N8J	M.CHIP INDUCTOR	6.8nH	
L305	LK73G0AF4N7S	M.CHIP INDUCTOR	4.7nH	
L306	LB73F0AW-002	CHIP FERRITE		
L307	LK73G0AF10NJ	M.CHIP INDUCTOR	10nH	
L308	LB73H0AV-003	CHIP FERRITE		
L309	LB73G0BA-004	CHIP FERRITE		
L310	LB73Z0AF-001	CHIP FERRITE		
L311	LB73Z0AF-001	CHIP FERRITE		
L312	LB73Z0AF-001	CHIP FERRITE		
L314	LK73G0AF47NJ	M.CHIP INDUCTOR	47nH	
L315	L41-1285-33	CHIP INDUCTOR		K,BF,BK
L315	LR77Z0AA68NJ	CHIP INDUCTOR	68nH	K2,BF2,BK2,E
L316	L34-4896-05	AIR CORE COIL		
L317	L41-8278-55	CHIP INDUCTOR		
L318	LB73G0BD-005	CHIP FERRITE		
L319	L34-4694-05	AIR CORE COIL		
L320	L34-4669-05	AIR CORE COIL		
L321	LB73H0AV-003	CHIP FERRITE		
L322	L34-4669-05	AIR CORE COIL		
L323	L34-4694-05	AIR CORE COIL		K,BF,BK
L323	L34-4669-05	AIR CORE COIL		K2,BF2,BK2,E
L324	L34-4667-05	AIR CORE COIL		
L325	L41-3965-55	CHIP INDUCTOR		
L500	L39-1498-05	TOROIDAL COIL		
L501	LB73G0BD-005	CHIP FERRITE		
L502	L41-1095-14	CHIP INDUCTOR		
L503	L41-1095-14	CHIP INDUCTOR		
L504	LK73G0AF22NJ	M.CHIP INDUCTOR	22nH	
L505	LK73G0AF15NJ	M.CHIP INDUCTOR	15nH	
L506	LK73G0AF18NJ	M.CHIP INDUCTOR	18nH	
L507	LK73H0AM27NJ	M.CHIP INDUCTOR	27nH	
L508	LR79Z0DD21N9J	CHIP INDUCTOR	21.9nH	K,BF,BK
L508	LR79Z0DD27N4J	CHIP INDUCTOR	27.4nH	K2,BF2,BK2,E
L509	LR79Z0DD21N9J	CHIP INDUCTOR	21.9nH	K,BF,BK
L509	LR79Z0DD27N4J	CHIP INDUCTOR	27.4nH	K2,BF2,BK2,E
L510	LR79Z0DD21N9J	CHIP INDUCTOR	21.9nH	K,BF,BK
L510	LR79Z0DD27N4J	CHIP INDUCTOR	27.4nH	K2,BF2,BK2,E
L511	LR79Z0DD21N9J	CHIP INDUCTOR	21.9nH	K,BF,BK
L511	LR79Z0DD27N4J	CHIP INDUCTOR	27.4nH	K2,BF2,BK2,E
L512	LB73G0BD-005	CHIP FERRITE		
L513	L41-1578-14	CHIP INDUCTOR		
L515	LR79Z0DD32N5J	CHIP INDUCTOR	32.5nH	K,BF,BK
L515	LR79Z0DD37N7J	CHIP INDUCTOR	37.7nH	K2,BF2,BK2,E
L516	LR79Z0DD32N5J	CHIP INDUCTOR	32.5nH	K,BF,BK
L516	LR79Z0DD37N7J	CHIP INDUCTOR	37.7nH	K2,BF2,BK2,E
L517	L41-1578-14	CHIP INDUCTOR		K,BF,BK
L517	L41-1878-14	CHIP INDUCTOR		K2,BF2,BK2,E
L518	L41-8278-14	CHIP INDUCTOR		
L520	LK73H0AM18NJ	M.CHIP INDUCTOR	18nH	K2,BF2,BK2,E
L600	LK73G0AQ100K	M.CHIP INDUCTOR	10uH	
L601	LB73H0AV-003	CHIP FERRITE		
L602	LB73H0AV-003	CHIP FERRITE		
L603	L41-2788-55	CHIP INDUCTOR		
L604	LB73H0AV-003	CHIP FERRITE		
L605	LK73G0AFR27J	M.CHIP INDUCTOR	0.27uH	
L606	L41-4798-14	CHIP INDUCTOR		
L607	L41-1885-53	CHIP INDUCTOR		
L608	LB73H0AV-003	CHIP FERRITE		
L609	LB73H0AV-003	CHIP FERRITE		
L610	L41-2285-53	CHIP INDUCTOR		
L611	LK73G0AQ100K	M.CHIP INDUCTOR	10uH	
L612	LK73G0AQ100K	M.CHIP INDUCTOR	10uH	
L613	LB73H0AV-003	CHIP FERRITE		
L614	LB73H0AV-003	CHIP FERRITE		
L615	LK73G0AQR33K	M.CHIP INDUCTOR	0.33uH	
L616	LB73H0AV-002	CHIP FERRITE		
L617	LK73G0AQR82K	M.CHIP INDUCTOR	0.82uH	
L618	LK73G0AQ2R2K	M.CHIP INDUCTOR	2.2uH	
L619	L40-6881-86	CHIP INDUCTOR		
L620	LB73H0AV-002	CHIP FERRITE		
L621	L41-1098-14	CHIP INDUCTOR		
L625	LK73G0ASR47J	M.CHIP INDUCTOR	470nH	
L626	LK73G0AQ100K	M.CHIP INDUCTOR	10uH	
L700	LB73G0AK-001	CHIP FERRITE		
L701	LB73H0AV-003	CHIP FERRITE		
L702	LB73G0AK-001	CHIP FERRITE		
L706	LB73H0AV-002	CHIP FERRITE		
L711	LR77Z0AE4R7J	CHIP INDUCTOR	4.7uH	
L713	LB73H0AV-002	CHIP FERRITE		
L714	LB73G0AM-004	CHIP FERRITE		
L715	L92-1101-05	CHIP FERRITE		
L716	L92-1101-05	CHIP FERRITE		
L717	L92-1101-05	CHIP FERRITE		

⚠ Symbol No.	Part No.	Part Name	Description	Local
L718	L92-1101-05	CHIP FERRITE		
L719	LB73H0AV-002	CHIP FERRITE		
L720	LB73G0AK-001	CHIP FERRITE		
L721	LB73G0AK-001	CHIP FERRITE		
L722	LB73G0AK-001	CHIP FERRITE		
L723	LB73H0AV-002	CHIP FERRITE		
L724	LB73G0AK-001	CHIP FERRITE		
L725	LB73H0AV-002	CHIP FERRITE		
L726	L79-1984-05	FILTER		
L728	L79-1984-05	FILTER		
L729	L79-1984-05	FILTER		
L730	L79-1984-05	FILTER		
L731	L79-1984-05	FILTER		
L732	L92-1101-05	CHIP FERRITE		
L901	LB73H0AV-003	CHIP FERRITE		
L902	LB73H0AV-003	CHIP FERRITE		
L906	LB73G0BA-004	CHIP FERRITE		
L907	LB73G0BA-004	CHIP FERRITE		
A1	W02-3785-05	DC-DC CONVERTER		
CN2	E23-1260-14	TERMINAL		
CN3	E23-1260-14	TERMINAL		
CN4	E41-1682-05	PIN ASSY		
CN12	J19-5386-05	HOLDER		
CN100	E23-1278-05	TERMINAL		
CN102	E23-1278-05	TERMINAL		
CN104	E23-1278-05	TERMINAL		
CN106	E23-1278-05	TERMINAL		K2,BF2,BK2,E
CN110	E23-1278-05	TERMINAL		
CN111	E23-1278-05	TERMINAL		
CN112	E23-1278-05	TERMINAL		
CN113	E23-1278-05	TERMINAL		
CN300	E23-1278-05	TERMINAL		
CN330	E23-1278-05	TERMINAL		
CN331	E23-1278-05	TERMINAL		
CN332	E23-1278-05	TERMINAL		
CN333	E23-1278-05	TERMINAL		
CN334	E23-1278-05	TERMINAL		
CN335	E23-1278-05	TERMINAL		
CN336	E23-1278-05	TERMINAL		K,BF,BK
CN337	E23-1278-05	TERMINAL		
CN338	E23-1278-05	TERMINAL		
CN339	E23-1278-05	TERMINAL		
CN360	E23-1278-05	TERMINAL		
CN361	E23-1278-05	TERMINAL		
CN362	E23-1278-05	TERMINAL		
CN363	E23-1278-05	TERMINAL		
CN364	E23-1278-05	TERMINAL		
CN365	E23-1278-05	TERMINAL		K,BF,BK
CN367	E23-1278-05	TERMINAL		
CN368	E23-1278-05	TERMINAL		
CN372	E23-1278-05	TERMINAL		
CN377	E23-1278-05	TERMINAL		K2,BF2,BK2,E
CN378	E23-1278-05	TERMINAL		K,BF,BK
CN382	E23-1278-05	TERMINAL		
CN521	E23-1278-05	TERMINAL		
CN523	E23-1278-05	TERMINAL		
CN524	E23-1278-05	TERMINAL		
CN526	E23-1278-05	TERMINAL		
CN731	E40-6720-05	SOCKET FOR PIN		
CN735	E40-6862-05	F.C.CONNECTOR		
CN749	EC720AA-0550A	FFC FPC CONNE		
CN760	E23-1278-05	TERMINAL		
CN761	E23-1278-05	TERMINAL		
CN762	E23-1278-05	TERMINAL		
CN763	E23-1278-05	TERMINAL		
CN764	E23-1278-05	TERMINAL		
CN765	E23-1278-05	TERMINAL		
CN766	E23-1278-05	TERMINAL		
CN769	E23-1278-05	TERMINAL		
CN770	E23-1278-05	TERMINAL		
CN771	E23-1278-05	TERMINAL		
CN772	E23-1278-05	TERMINAL		
CN773	E23-1278-05	TERMINAL		
CN774	E23-1278-05	TERMINAL		
CN775	E23-1278-05	TERMINAL		
CN776	E23-1278-05	TERMINAL		
CN777	E23-1278-05	TERMINAL		
CN778	E23-1278-05	TERMINAL		
CN779	E23-1278-05	TERMINAL		
CN780	E23-1278-05	TERMINAL		
CN781	E23-1278-05	TERMINAL		
CN783	E23-1278-05	TERMINAL		
CN900	E41-2723-05	PIN ASSY		
CN906	E40-6560-05	F.C.CONNECTOR		
CN907	E40-6560-05	F.C.CONNECTOR		
CN910	E40-6582-05	PIN ASSY		
CP100	RK74HB1J100J	NET RESISTOR	10Ω 1/16W J	
CP600	RK74HB1J100J	NET RESISTOR	10Ω 1/16W J	
CP701	RK74HB1J103J	NET RESISTOR	10kΩ 1/16W J	
CP702	RK74HB1J102J	NET RESISTOR	1kΩ 1/16W J	
CP703	RK74HB1J100J	NET RESISTOR	10Ω 1/16W J	
CP704	RK74HB1J100J	NET RESISTOR	10Ω 1/16W J	
CP705	RK74HB1J100J	NET RESISTOR	10Ω 1/16W J	
CP706	RK74HB1J101J	NET RESISTOR	100Ω 1/16W J	
CP707	RK74HB1J101J	NET RESISTOR	100Ω 1/16W J	
CP709	RK74HB1J101J	NET RESISTOR	100Ω 1/16W J	
CP710	RK74HB1J101J	NET RESISTOR	100Ω 1/16W J	
CP711	RK74HB1J101J	NET RESISTOR	100Ω 1/16W J	
CP716	RK74HB1J101J	NET RESISTOR	100Ω 1/16W J	
CP717	RK74HB1J470J	NET RESISTOR	47Ω 1/16W J	
CP718	RK74HB1J470J	NET RESISTOR	47Ω 1/16W J	
CP719	RK74HB1J470J	NET RESISTOR	47Ω 1/16W J	
CP720	RK74HB1J470J	NET RESISTOR	47Ω 1/16W J	
CP721	RK74HB1J470J	NET RESISTOR	47Ω 1/16W J	
CP900	RK74HB1J100J	NET RESISTOR	10Ω 1/16W J	
CP901	RK74HA1J100J	NET RESISTOR	10Ω 1/16W J	
E2	F10-3226-05	SHIELDING CASE		
E100	F10-3244-15	SHIELDING CASE		
E101	F1B-0017-10	SHIELDING CASE		
E600	F10-3224-15	SHIELDING CASE		
F1	F53-0286-05	FUSE		
F2	FZA10BS-5R0	FUSE (CC)		
F3	FZA10BS-5R0	FUSE (CC)		
F900	F53-0286-05	FUSE		
J700	E68-0426-05	JACK OTHERS		
J900	E1B-0001-00	3.5D PHONE JACK		
J901	E58-0521-05	SUB SOCKET D		
OT1	F10-3223-05	SHIELDING COVER	BLS(IF IC)	
OT2	F10-3225-05	SHIELDING COVER		
OT3	F10-3243-15	SHIELDING COVER	BLS(PLL IC)	
OT4	F1B-0021-00	SHIELDING COVER		
TH300	ERTJ0V104H	N THERMISTOR		
TH301	ERTJ0V104H	N THERMISTOR		
TH302	ERTJ0V104H	N THERMISTOR		
TH700	ERTJ0V104H	N THERMISTOR		
TH701	ERTJ0V104H	N THERMISTOR		
X700	L77-3123-05	TCXO		
X701	L77-1802-05	QUARTZ CRYSTAL		
XF600	L7B-0003-00	MCF		

MODULE (BT/GPS) UNIT

XC2-0031-80(NX-5800_K,NX-5800_K2,NX-5800B_F, NX-5800B_F2,NX-5800B_K,NX-5800B_K2)

XC2-0040-10(NX-5800_K,NX-5800_K2,NX-5800B_K, NX-5800B_K2,NX-5800_E)

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

Block No. [0][2]

⚠ Symbol No.	Part No.	Part Name	Description	Local
IC1	74AVC4TD245GU	MOS IC		
IC2	BU18TD2WNVX	MOS IC		
IC3	----------	ANALOG IC	*Note	
IC4	NJM2878F4-33	BIPOLAR IC		
IC5	----------	MOS IC	*Note	
IC6	74AVC4TD245GU	MOS IC		

⚠ Symbol No.	Part No.	Part Name	Description	Local
IC7	74AVC4TD245GU	MOS IC		
Q1	EM6M2	FET		
D17	RN262CS	DIODE		
D18	RN262CS	DIODE		
C1	CK73HB1A474K	C CAPACITOR	0.47uF 10V K	
C2	CK73HB1A474K	C CAPACITOR	0.47uF 10V K	
C3	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C4	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C5	CK73HB1A105K	C CAPACITOR	1uF 10V K	
C6	CK73HB1A474K	C CAPACITOR	0.47uF 10V K	
C7	CK73HB1A474K	C CAPACITOR	0.47uF 10V K	
C8	CC73HCH1H220J	C CAPACITOR	22pF 50V J	
C9	CC73HCH1H100B	C CAPACITOR	10pF 50V B	
C10	CK73HB1A105K	C CAPACITOR	1uF 10V K	
C11	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C12	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C13	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C14	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C15	CK73HB1A105K	C CAPACITOR	1uF 10V K	
C16	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C17	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C18	CC73HCH1H180J	C CAPACITOR	18pF 50V J	
C19	CC73HCH1H180J	C CAPACITOR	18pF 50V J	
C20	CK73HB1A105K	C CAPACITOR	1uF 10V K	
C21	CK73HB1A105K	C CAPACITOR	1uF 10V K	
C22	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C23	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C24	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C25	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C26	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C27	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C28	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C29	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C30	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C31	CK73HB1A105K	C CAPACITOR	1uF 10V K	
C32	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C33	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C34	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C35	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C36	CC73HCH1H220J	C CAPACITOR	22pF 50V J	
C37	CC73HCH1H220J	C CAPACITOR	22pF 50V J	
C38	CC73HCH1H2R5B	C CAPACITOR	2.5pF 50V B	
C39	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C40	CC73HCH1H180J	C CAPACITOR	18pF 50V J	
C44	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C45	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C46	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C47	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C48	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C49	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C50	CC73HCH1H470J	C CAPACITOR	47pF 50V J	
C68	CC73HCH1H010B	C CAPACITOR	1pF 50V B	
R1	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R2	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R3	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R4	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R7	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R8	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R9	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R10	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R11	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R12	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R13	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R14	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R15	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R16	RK73EB2E100J	MG RESISTOR	10Ω 1/4W J	
R18	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R19	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R21	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R22	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R23	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R24	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R25	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R26	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R27	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R29	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
L1	LB73H0AV-002	CHIP FERRITE		
L2	LB73G0AK-001	CHIP FERRITE		
L3	LB73G0BJ-002	CHIP FERRITE		
L4	L92-0487-05	CHIP FERRITE		
L5	L92-0487-05	CHIP FERRITE		
L6	LK73H0AG27NJ	M.CHIP INDUCTOR	27nH	
L7	LK73H0AM10NJ	M.CHIP INDUCTOR	10nH	
L8	L92-0487-05	CHIP FERRITE		
L9	L79-1985-05	FILTER		
L11	L79-1987-05	FILTER		
L13	L92-0487-05	CHIP FERRITE		
L14	L92-0487-05	CHIP FERRITE		
L15	L40-2263-71	CHIP INDUCTOR		
CN1	E40-6879-05	F.C.CONNECTOR		
CN5	E0E-0012-00	RF C.RECEPTACLE		
CP1	RK74HB1J100J	NET RESISTOR	10Ω 1/16W J	
CP2	RK74HB1J100J	NET RESISTOR	10Ω 1/16W J	
E1	F10-3226-05	SHIELDING CASE		
X1	L77-3123-05	TCXO		
X2	L77-3121-05	QUARTZ CRYSTAL		

SUB (DISPLAY) UNIT

XC3-0020-20(NX-5800_K,NX-5800_K2)

XC3-0070-20(NX-5800_K,NX-5800_K2,NX-5800_E)

Block No. [0][3]

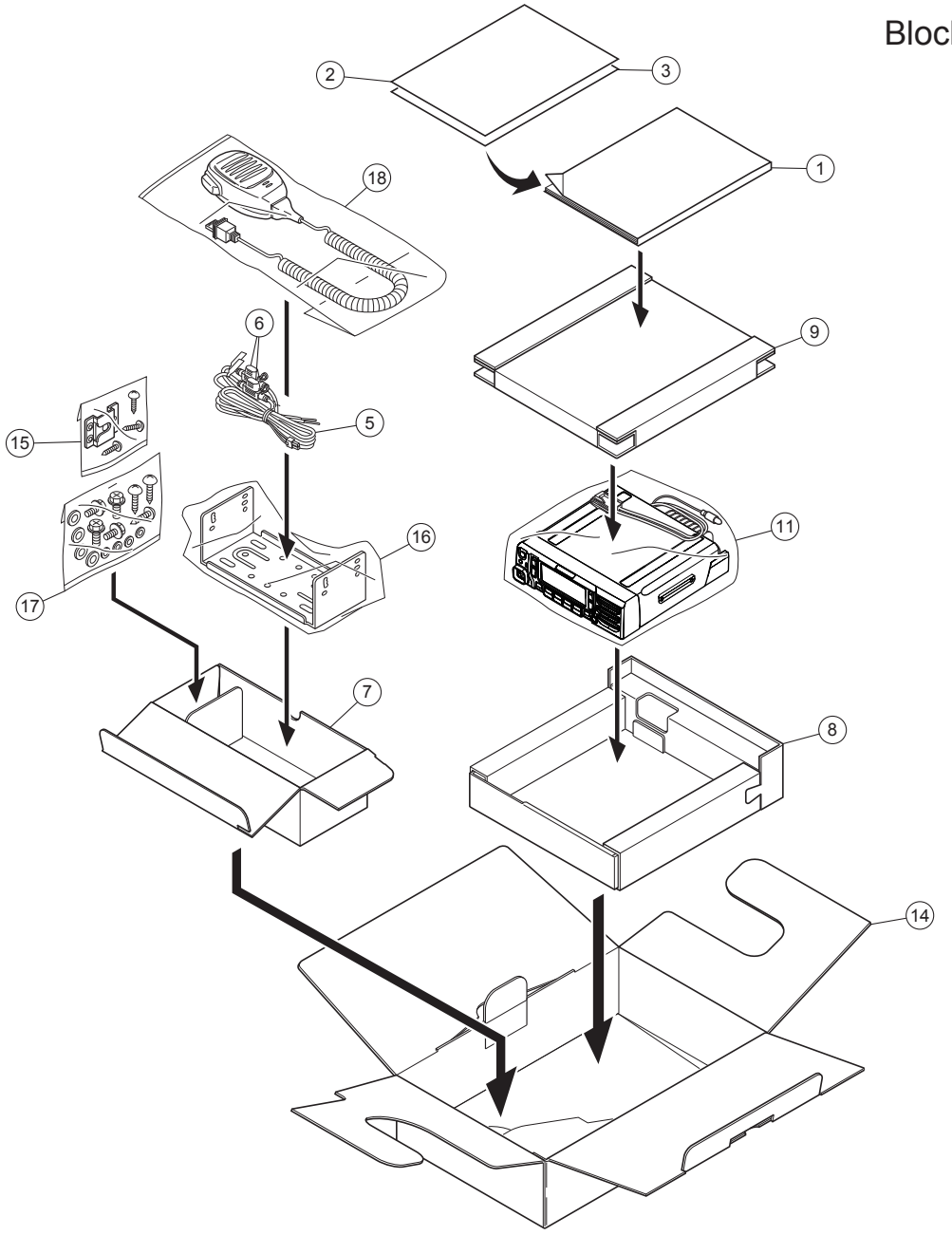
⚠ Symbol No.	Part No.	Part Name	Description	Local
IC1	MM3404A50URE	MOS IC		
IC2	BU30TD2WNVX	MOS IC		
IC3	TC7WT125FUF	MOS IC		
IC4	BD11600NUX	MOS IC		
IC6	BH1721FVC	MOS IC		
IC8	BD1754HFN	MOS IC		
IC9	TC7WH126FK	MOS IC		
IC10	TC35894FG	MOS IC		
IC12	TC7SZ08FE	MOS IC		
Q2	SSM6N37FE	FET		
Q3	LTC014EEBFS8	DIGI TRANSISTOR		
Q4	LTC014EEBFS8	DIGI TRANSISTOR		
Q6	LTC014EEBFS8	DIGI TRANSISTOR		
D1	SPC10501A01	VARISTOR		
D2	SPC10501A01	VARISTOR		
D4	B30-2365-05	LED		
D5	B30-2365-05	LED		
D6	B30-2365-05	LED		
D7	B30-2365-05	LED		
D9	B30-2365-05	LED		
D10	B30-2365-05	LED		
D11	B30-2365-05	LED		
D12	B30-2365-05	LED		
D14	B30-2365-05	LED		
D15	B30-2365-05	LED		
D16	B30-2365-05	LED		
D20	DZ2J062(M)	ZENER DIODE		
D21	B30-2364-05	LED		
D22	RB521CM-30	DIODE		
D23	SPC10501A01	VARISTOR		
D24	SPC10501A01	VARISTOR		
D25	MINISMDC020F	VARISTOR		
D26	SPC10501A01	VARISTOR		
D27	SPC10501A01	VARISTOR		
D28	DZ2S068M	ZENER DIODE		
D29	DZ2S068M	ZENER DIODE		
D30	DZ2S068M	ZENER DIODE		
D31	EMZ6.8N	ZENER DIODE		

⚠ Symbol No.	Part No.	Part Name	Description	Local
D32	DZ2S068M	ZENER DIODE		
C2	CC73GCH1H101J	C CAPACITOR	100pF 50V J	
C5	CK73GXR1H104K	C CAPACITOR	0.1uF 50V K	
C8	C93-1810-05	C CAPACITOR	4.7uF 50V	
C9	CC73GCH1H101J	C CAPACITOR	100pF 50V J	
C11	CK73GXR1H104K	C CAPACITOR	0.1uF 50V K	
C16	CC73GCH1H101J	C CAPACITOR	100pF 50V J	
C18	CK73GXR1H104K	C CAPACITOR	0.1uF 50V K	
C22	CC73GCH1H101J	C CAPACITOR	100pF 50V J	
C24	CK73GXR1H104K	C CAPACITOR	0.1uF 50V K	
C29	CC73GCH1H101J	C CAPACITOR	100pF 50V J	
C32	CC73GCH1H101J	C CAPACITOR	100pF 50V J	
C42	CC73GCH1H470J	C CAPACITOR	47pF 50V J	
C43	CC73GCH1H470J	C CAPACITOR	47pF 50V J	
C44	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C45	CK73GBB1H102K	C CAPACITOR	1000pF 50V K	
C46	CK73GBB1H102K	C CAPACITOR	1000pF 50V K	
C48	CK73GBB1H102K	C CAPACITOR	1000pF 50V K	
C50	CK73GBB1H102K	C CAPACITOR	1000pF 50V K	
C52	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C53	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C54	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C55	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C56	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C57	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C58	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C59	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C62	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C63	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C64	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C65	CK73HBB1E103K	C CAPACITOR	0.01uF 25V K	
C66	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C67	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C68	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C69	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C70	CK73GBB1H102K	C CAPACITOR	1000pF 50V K	
C71	CK73GXR1H104K	C CAPACITOR	0.1uF 50V K	
C73	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C74	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C75	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C76	CK73GBB1H102K	C CAPACITOR	1000pF 50V K	
C79	CK73GBB1H102K	C CAPACITOR	1000pF 50V K	
C83	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C84	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C87	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C90	CK73GBB1H102K	C CAPACITOR	1000pF 50V K	
C101	CK73GBB1H102K	C CAPACITOR	1000pF 50V K	
R3	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R4	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R5	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R6	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R7	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R9	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R10	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R11	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R12	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R17	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R18	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R19	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R20	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R21	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R22	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R23	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R24	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R25	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R26	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R27	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R28	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R29	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R30	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R31	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R32	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R33	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R34	RK73HB1J331J	MG RESISTOR	330Ω 1/16W J	
R38	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R39	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R40	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R41	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R42	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R43	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R46	RK73HB1J681J	MG RESISTOR	680Ω 1/16W J	
R47	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R48	RK73GB2A151J	MG RESISTOR	150Ω 1/10W J	
R49	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R50	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R51	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R52	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R53	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R54	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R55	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R60	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R61	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R62	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R63	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R64	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R65	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R66	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
R69	RK73HH1J274D	MG RESISTOR	270kΩ 1/16W D	
R71	RK73GB2A000J	MG RESISTOR	0Ω 1/10W J	
R77	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R78	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R79	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R81	RK73HB1J103J	MG RESISTOR	10kΩ 1/16W J	
R82	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R83	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R86	RK73GB2A000J	MG RESISTOR	0Ω 1/10W J	
R87	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R88	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R98	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
R99	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
L1	LB73G0AM-004	CHIP FERRITE		
L2	LB73G0AM-004	CHIP FERRITE		
L3	LB73H0AV-003	CHIP FERRITE		
L4	LB73H0AV-003	CHIP FERRITE		
L5	LB73G0AM-004	CHIP FERRITE		
L11	LB73H0AV-003	CHIP FERRITE		
L14	LB73H0AV-003	CHIP FERRITE		
L15	LB73G0AM-004	CHIP FERRITE		
L16	LB73H0AV-003	CHIP FERRITE		
L17	LB73H0AV-003	CHIP FERRITE		
L18	LB73H0AV-003	CHIP FERRITE		
CN2	E41-2673-05	PIN ASSY		
CN4	E40-6965-05	F.C.CONNECTOR		
CN5	E41-2671-05	PIN ASSY		
CN6	E40-6913-05	F.C.CONNECTOR		
J1	E58-0535-05	MODULAR JACK		
S1	S70-0901-05	TACTILE PUSH SW		
S2	S70-0901-05	TACTILE PUSH SW		
S3	S70-0901-05	TACTILE PUSH SW		
S4	S70-0901-05	TACTILE PUSH SW		
S5	S70-0901-05	TACTILE PUSH SW		
S6	S70-0901-05	TACTILE PUSH SW		
S7	S70-0901-05	TACTILE PUSH SW		
S8	S70-0901-05	TACTILE PUSH SW		
S9	S70-0901-05	TACTILE PUSH SW		
S10	S70-0901-05	TACTILE PUSH SW		
S11	S70-0901-05	TACTILE PUSH SW		
S12	S70-0901-05	TACTILE PUSH SW		

Packing materials and accessories parts list (NX-5800_K,NX-5800_K2,NX-5800_E)

Block No.M2MM



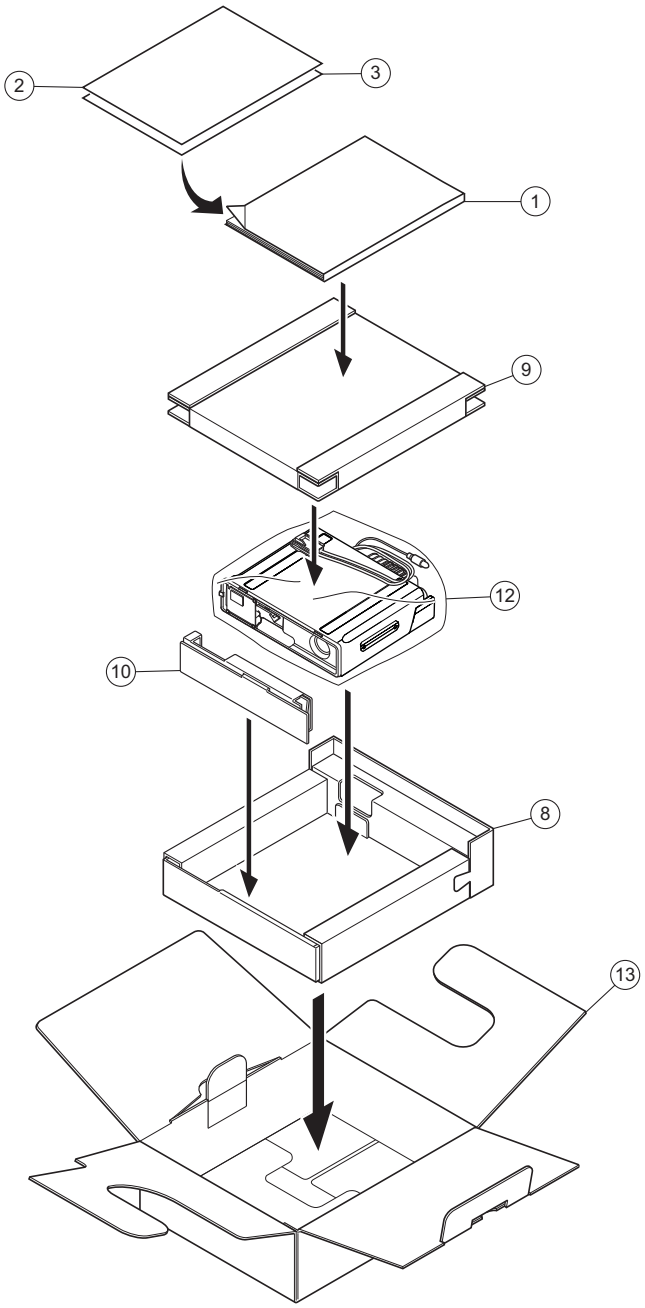
Packing and accessories

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

⚠ Symbol No.	Part No.	Part Name	Description	Local
1	B5A-0056-00	INST.MANUAL		K,K2
1	B5A-0806-00	INST.MANUAL	9 LANGUAGE	E
2	----------	PAMPHLET	HOT SURFACE	
3	----------	PAMPHLET	FCC 40cm	K,K2
3	----------	PAMPHLET	ROHS2	E
5	E30-7523-65	DC CORD ASSY	ACC	
6	F52-0024-05	FUSE	ACC(15A)(x2)	
7	H0C-0008-00	INNER CARTON	FOR ACC	
8	H1C-0029-00	PACKING FIXTURE	LOWER	
9	H1C-0030-00	PACKING FIXTURE	UPPER	
11	H2F-0045-00	PROTECTION BAG	RADIO(NX-5800)	
14	H5A-0235-00	ITEM CARTON	NX-5800	
15	J19-1584-15	HOLDER	ACC(MIC)	
16	----------	BRACKET	ACC	
17	N99-2039-05	SCREW SET	ACC	
18	T91-0639-65	MICROPHONE	ACC	

Packing materials and accessories parts list (NX-5800B_F,NX-5800B_F2,NX-5800B_K,NX-5800B_K2)

Block No.M3MM



Packing and accessories

Block No. [M][3][M][M]

⚠ Symbol No.	Part No.	Part Name	Description	Local
1	B5A-0056-00	INST.MANUAL		
2	----------	PAMPHLET	HOT SURFACE	
3	----------	PAMPHLET	FCC 40cm	
8	H1C-0012-10	PACKING FIXTURE	LOWER	BF,BF2
8	H1C-0029-00	PACKING FIXTURE	LOWER	BK,BK2
9	H1C-0013-10	PACKING FIXTURE	UPPER	BF,BF2
9	H1C-0030-00	PACKING FIXTURE	UPPER	BK,BK2
10	H1C-0027-00	PACKING FIXTURE	SPACER	BF,BF2
10	H1C-0031-00	PACKING FIXTURE	SPACER	BK,BK2
12	----------	ANTI-STATIC BAG	RADIO(NX-5800B)	
13	H5A-0014-00	ITEM CARTON	NX-5800B	BF,BF2
13	H5A-0234-00	ITEM CARTON	NX-5800B	BK,BK2

MEMO

KENWOOD

JVC KENWOOD Corporation
Communications Systems Business Unit

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