

# NX-200(G)

## SERVICE MANUAL

REVISED

# KENWOOD

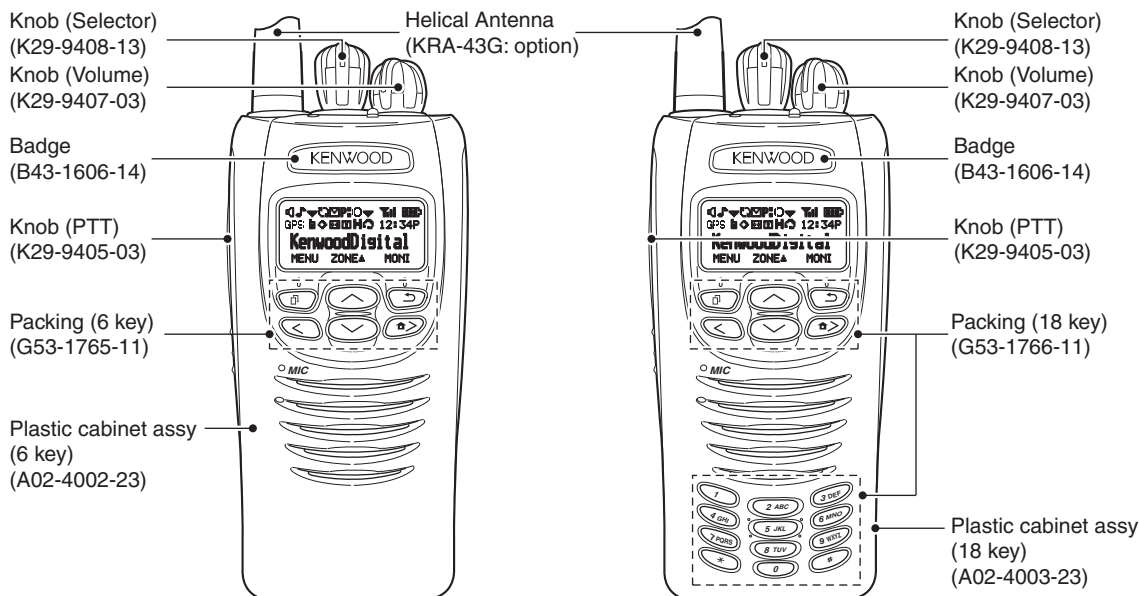
JVCKENWOOD Corporation

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This service manual has been revised due to the DSP IC modification of the Control unit.

### NX-200(G) K

### NX-200(G) K2



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# NX-200(G)

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Transceivers containing AMBE+2™ Vocoder:

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

# GENERAL

## INTRODUCTION

### SCOPE OF THIS MANUAL

This manual is intended for use by experienced technicians familiar with similar types of commercial grade communications equipment. It contains all required service information for the equipment and is current as of the publication date. Changes which may occur after publication are covered by either Service Bulletins or Manual Revisions. These are issued as required.

## ORDERING REPLACEMENT PARTS

When ordering replacement parts or equipment information, the full part identification number should be included. This applies to all parts : components, kits, or chassis. If the part number is not known, include the chassis or kit number of which it is a part, and a sufficient description of the required component for proper identification.

The Control Unit and TX-RX Unit both have been updated due to DSP IC replacement. There is no compatibility between new and old combination. Refer to the below table. Please use the suitable unit for your service by referring to the suitable service manual.

### Service Manual List

Title	Market code	Serial number	Unit	Unit number	Parts number	Remarks
NX-200(G)	K, K2	~ B4200426	TX-RX	X57-8950-12 (J79-0438-09)	B5B-7111-00	First edition
			Control	X53-4590-XX (J79-0131-39)	B5B-7111-00	First edition
		B4200427~	TX-RX	X57-8950-13 (J79-0438-09)	B5B-7111-10	Revised This service manual
			Control	XC1-0020-XX (J79-0441-09)	B5B-7111-10	Revised This service manual

## PERSONAL SAFETY

The following precautions are recommended for personal safety:

- DO NOT transmit until all RF connectors are verified secure and any open connectors are properly terminated.
- SHUT OFF and DO NOT operate this equipment near electrical blasting caps or in an explosive atmosphere.
- This equipment should be serviced by a qualified technician only.

## SERVICE

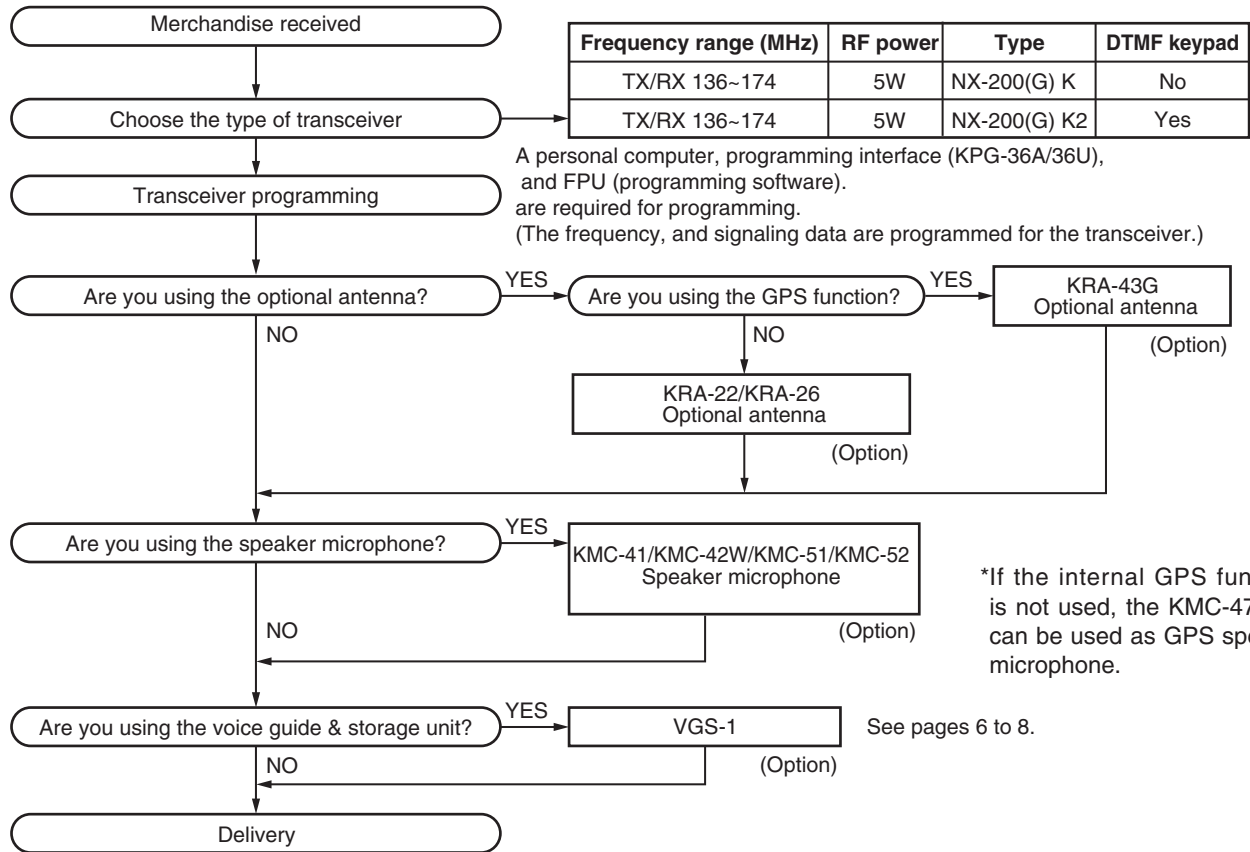
This transceiver is designed for easy servicing. Refer to the schematic diagrams, printed circuit board views, and alignment procedures contained within.

## NOTE

You must use KPG-111D/111DN version 4.40 or later for this transceiver. KPG-111D/111DN versions earlier than version 4.40 will not work properly.

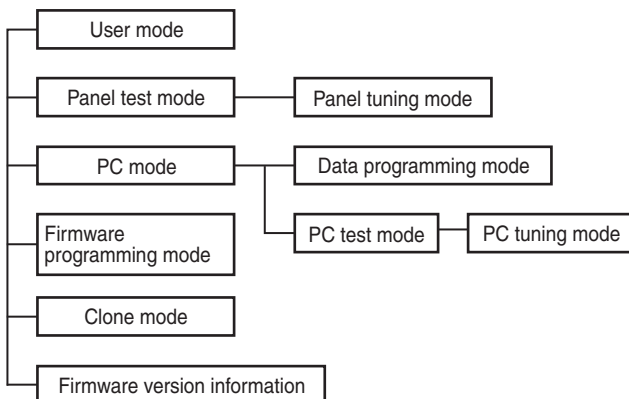
**Note:** Refer to page 11 for compatibility information of the Control unit and TX-RX unit.

## SYSTEM SET-UP



## REALIGNMENT

### 1. Modes



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.
Firmware version information	Used to confirm the internal firmware version.

# NX-200(G)

## REALIGNMENT

### 2. How to Enter Each Mode

Mode	Operation
User mode	Power ON
Panel test mode	[↵] + Power ON
PC mode	Received commands from PC
Panel tuning mode	[Panel test mode] + [↵]
Firmware programming mode	[↵] + Power ON
Clone mode	[<] + Power ON
Firmware version information	[Side1] + Power ON

### 3. Panel Test Mode

Setting method refer to ADJUSTMENT.

### 4. Panel Tuning Mode

Setting method refer to ADJUSTMENT.

### 5. PC Mode

#### 5-1. Preface

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

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

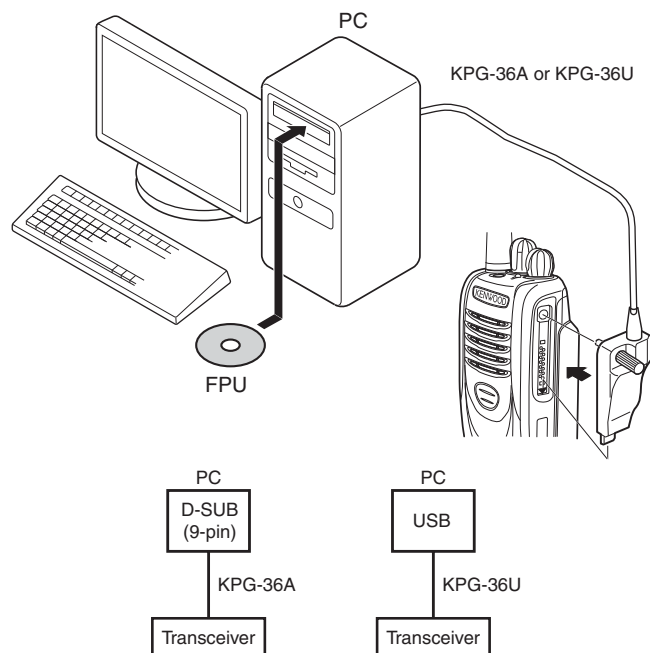


Fig. 1

#### 5-2. Connection procedure

1. Connect the transceiver to the computer using the interface cable (KPG-36A/36U). (Connection is the same as in the PC Mode.)

#### Note:

- You must install the KPG-36U driver in the computer to use the USB programming interface cable (KPG-36U).
2. When the POWER switch on, user mode can be entered immediately. When PC sends command the transceiver enter PC mode, and "PROGRAM" is displayed on the LCD. When data transmitting from transceiver, the red LED is lights. When data receiving to transceiver, the green LED is lights.

#### Note:

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

#### 5-3. KPG-36A description

##### (PC programming interface cable: Option)

The KPG-36A is required to interface the transceiver to the computer. It has a circuit in its D-sub connector (KPG-36A: 9-pin) case that converts the RS-232C logic level to the TTL level.

The KPG-36A connects the universal connector of the transceiver to the RS-232C serial port of the computer.

#### 5-4. KPG-36U description

##### (PC programming interface cable: Option)

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

When using the KPG-36U, install the driver software in the computer. The KPG-36U driver runs under Windows XP, Vista, 7 and 8.

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.)

#### 5-5. Programming software : KPG-111D/111DN

##### (Ver.4.40 or later) description

The FPU is the programming software for the transceiver supplied on a CD. This software runs under Windows XP, Vista, 7 and 8 on a PC.

The data can be input to or read from the transceiver and edited on the screen. The programmed or edited data can be printed out. It is also possible to tune the transceiver.

### 6. Firmware Programming Mode

#### Note:

Don't write the firmware which is V2.05.00 or before. "INIT ERROR2" will be displayed and transceiver will never revive.

## REALIGNMENT

### 6-1. Preface

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

### 6-2. Connection procedure

Connect the transceiver to the personal computer using the interface cable (KPG-36A/36U). (Connection is the same as in the PC Mode.)

### 6-3. Programming

1. Start up the firmware programming software (Fpro.exe (Ver. 6.20 or later)). The Fpro.exe exists in the KPG-111D/111DN installed holder.
2. Set the communications speed (normally, 115200 bps) and communications port in the configuration item.
3. Set the firmware to be updated by File name item.
4. Press and hold the [⏏] key while turning the transceiver power ON. Then, the orange LED on the transceiver lights and "PROGRAM 115200" 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 steps 4 to 7.

#### Note:

This mode cannot be entered if the Firmware Programming mode is set to Disable in the Programming software.

### 6-4. Function

1. If you press the [Side2] key while "PROGRAM 115200" is displayed, the display changes to "PROGRAM 19200" (The LED blinks green) to indicate that the write speed is low speed (19200 bps). If you press the [Side2] key again while "PROGRAM 19200" is displayed, the display changes to "PROGRAM 38400" (The LED lights red and orange alternatively). If you press the [Side2] key again while "PROGRAM 38400" is displayed, the display changes to "PROGRAM 57600" (The LED blinks orange). If you press the [Side2] key again while "PROGRAM 57600" is displayed, the display returns to "PROGRAM 115200" (The LED lights orange).
2. If you press the [Side1] key while "PROGRAM 115200" is displayed, the checksum is calculated, and a result is displayed. If you press the [Side1] key again while the checksum is displayed, "PROGRAM 115200" is redisplayed.

#### Note:

Normally, write in the high-speed mode.

### 7. Clone Mode

Programming data can be transferred from one transceiver to another by connecting them via their external universal connectors. The operation is as follows (the transmit transceiver is the source and the receive transceiver is a target).

The following data cannot be cloned.

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

#### Note:

The following data can be cloned.

- Fleet (own)/ID (own) for FleetSync
- Unit ID (own) for NXDN

Key guide on the Read authorization password input screen.

- CONFIRM ([⏏] key): The password confirmation
- DELETE ([←] key): Delete the least digit from the current password number (Press and hold to delete all password numbers)
- SELECT ([⏏] key): Determine the least digit of the password number

1. Press and hold the [←] key while turning the transceiver power ON. If the Read authorization password is set to the transceiver, the transceiver displays "CLONE LOCK". If the password is not set, the transceiver displays "CLONE MODE".
2. When you enter the correct password, and "CLONE MODE" is displayed, the transceiver can be used as the cloning source. The following describes how to enter the password.

#### 3.

- **How to enter the password using the keypad (K2 model only);**

If one of keys 0 to 9 is pressed while the "CLONE LOCK" is displayed, the pressed 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 the [⏏] or [\*] key, "CLONE MODE" is displayed if the entered password is correct. If the password is incorrect, "CLONE LOCK" is redisplayed.

- **How to enter the password using the [^] and [v] keys ;**

If the [^] / [v] key is pressed while "CLONE LOCK" is displayed, the Read authorization password input screen is displayed.

If the [^] key or [v] key is pressed while the Read authorization password input screen is displayed, the number (0 to 9) blinks on the LCD. When you press the [⏏] key, the currently selected number is determined. If you press the [⏏] key after entering the password in this procedure, "CLONE MODE" is displayed if the entered password is correct. If the password is incorrect, "CLONE LOCK" is redisplayed.

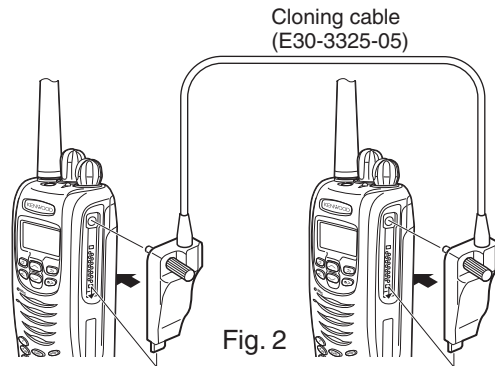
# NX-200(G)

## REALIGNMENT

4. Power ON the target transceiver.
5. Connect the cloning cable (part No. E30-3325-05) to the universal connectors on the source and target.
6. Press the [F] 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 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 [F] 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.



## 8. Firmware Version Information

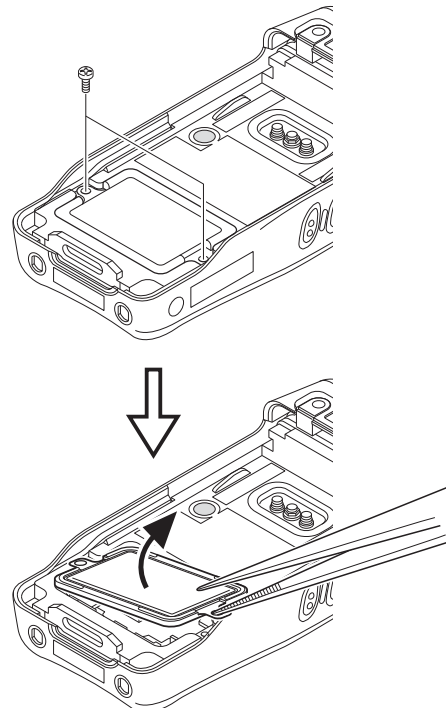
Press and hold the [Side1] key while turning the transceiver power ON and then keep pressing and holding the [Side1] key, the firmware version information appears on the LCD.

## INSTALLATION

### Preparation before Installing Option board

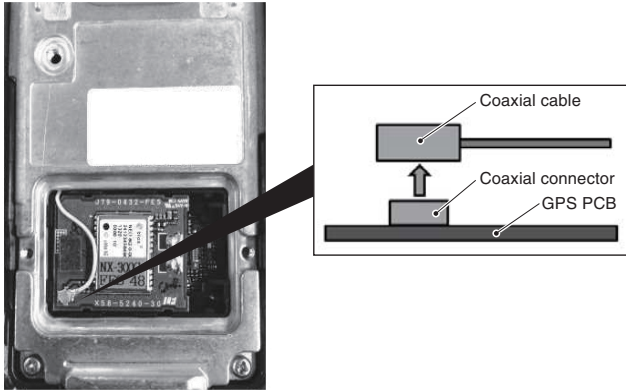
#### ■ Removing the GPS PCB

1. Remove the two screws from the cover.
2. Remove the cover by inserting the tip of a pair of tweezers into the screw hole of the cover and prying it open.

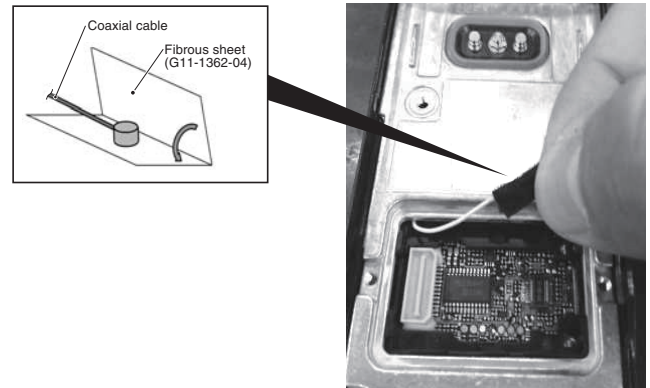


## INSTALLATION

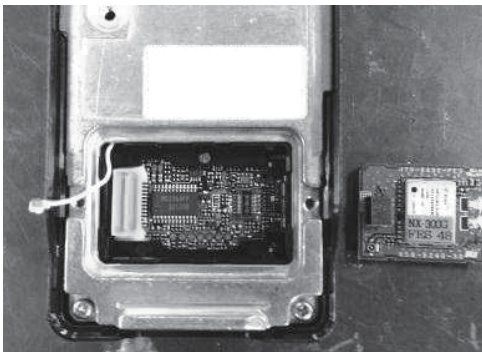
3. Remove the coaxial cable from the GPS PCB.  
**Note:** When you remove the coaxial cable from the GPS PCB, remove perpendicularly to the GPS PCB.



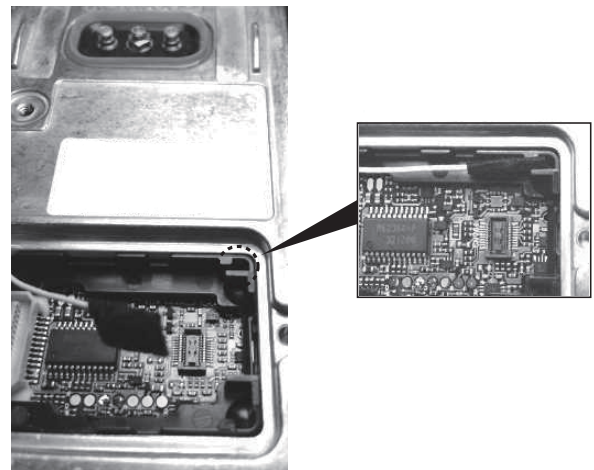
6. Fold the fibrous sheet (G10-1362-04) in half, and cover the terminal of the coaxial cable as shown in the figure.



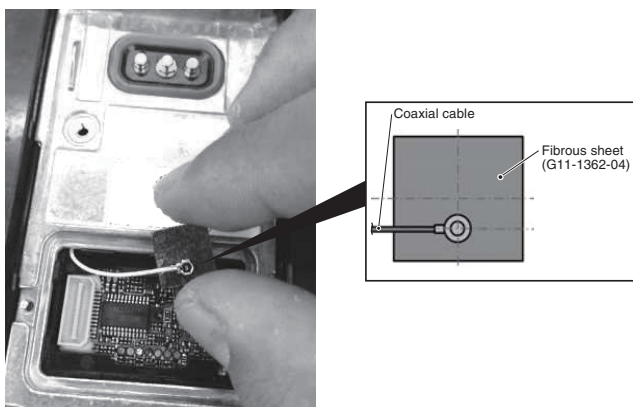
4. Remove the GPS PCB from the connector (CN710) of the Control PCB.



7. Insert the fibrous sheet into the slit of the holder as shown in the figure.



5. Affix the terminal of the coaxial connector to the fibrous sheet (G10-1362-04) as shown in the figure.



## INSTALLATION

### Voice Guide & Storage Unit (VGS-1: Option)

#### ■ Installing the VGS-1

1. Attach the flat spring (G02-1846-03) to the VGS-1 as shown in the figure.

Note:

Attach the flat spring so that its convex fits the PCB hollow of the VGS-1.

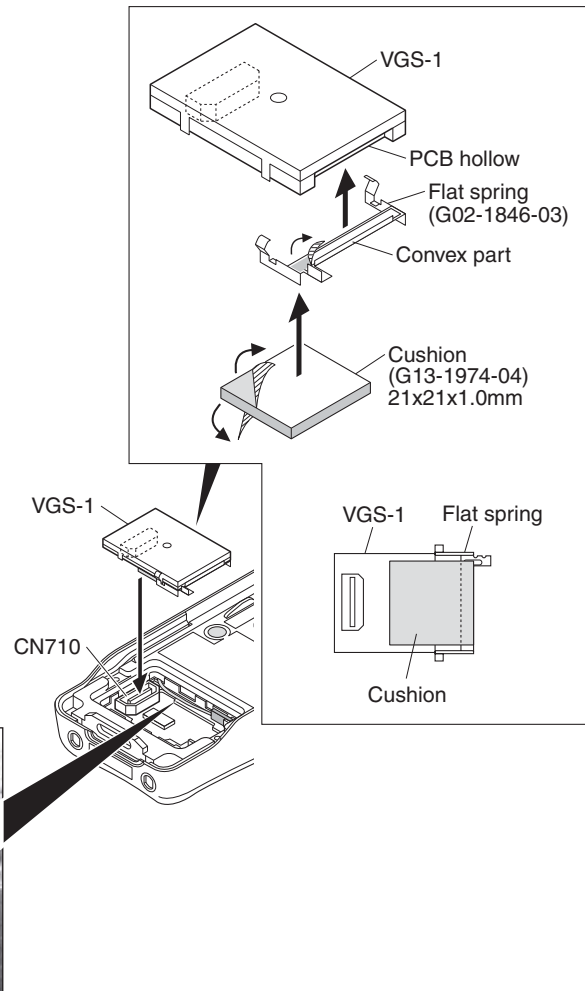
2. Attach the cushion (G13-1974-04) to the VGS-1 as shown in the figure.

Note:

Be sure to not cover the VGS-1 connector with the cushion.

3. Insert the VGS-1 connector into the connector (CN710) of the Control PCB.

4. Reinstall the cover using the two screws removed in step 1 of "Removing the GPS PCB" described on page 6.

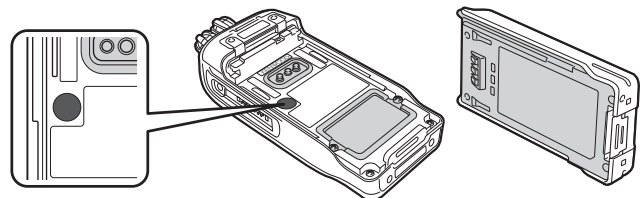


The coaxial cable is located under the VGS-1.

## DISASSEMBLY FOR REPAIR

### 1. Precautions for Waterproof

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



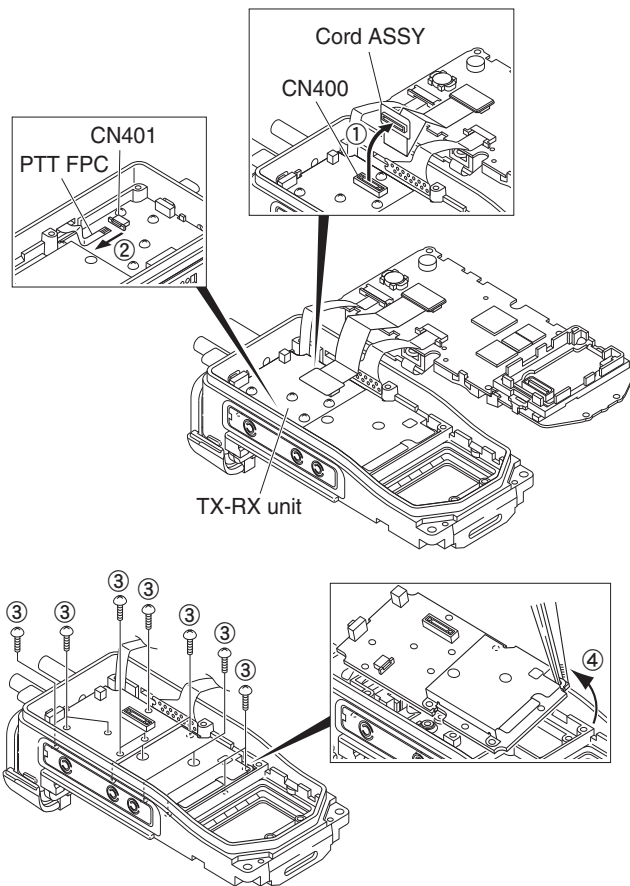


## DISASSEMBLY FOR REPAIR

### 2. Precautions for Disassembly

#### ■ Removing the TX-RX unit from the chassis

1. Remove the cord ASSY from the connector of the TX-RX unit (CN400) ①.
2. Remove the PTT FPC from the connector of the TX-RX unit (CN401) ②.
3. Remove the 14 screws ③.
4. Anchor the screw hole of the TX-RX unit using the tip of a pair of tweezers as shown in the figure. Then, lift the TX-RX unit to remove it from the chassis ④.

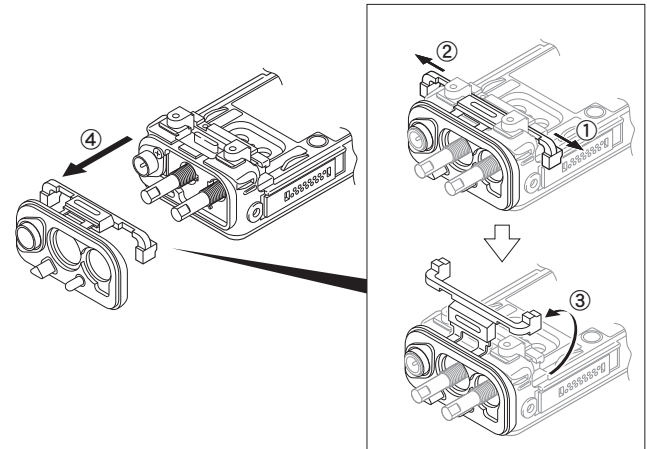


#### Note:

The illustration of the Sub (GPS) unit and GPS coaxial cable is omitted.

#### ■ Removing the TOP packing (G53-1762-02)

1. Pull the TOP packing to the left to remove the packing that is fit into the left groove of the chassis ①.
2. Pull the TOP packing to the right to remove the packing that is fit into the right groove of the chassis ②.
3. Turn back the TOP packing as shown in the figure ③.
4. Remove the TOP packing ④.



### 3. Precautions for Reassembly

#### ■ Mounting the chassis onto the case

1. Place the key top on the chassis. Then, fit the chassis tightly into the groove of the key top ①.

#### Note:

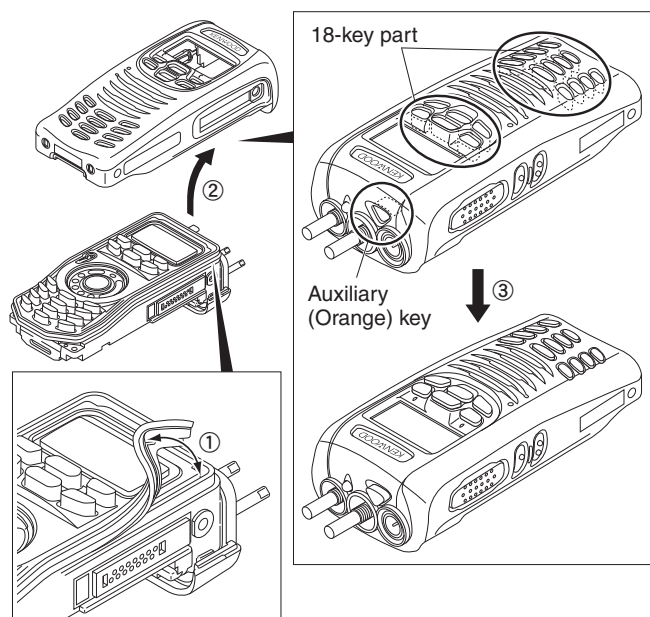
Confirm that the entire groove of the key top fits to the chassis tightly.

2. Mount the chassis onto the case ②.

#### Note:

After mounting the chassis onto the case, if the 18-key part on the key top or the Auxiliary (Orange) key part of the VOL/CH packing gets stuck inside the case as shown in the figure, return it to the normal position using a soft tipped item (e.g., finger) ③.

Prying it with a pointed metal tool such as forceps, may damage the key top or packing.

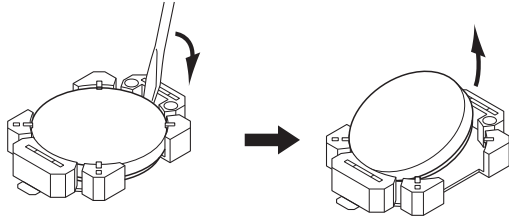


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## DISASSEMBLY FOR REPAIR

### ■ Removing the lithium cell (W09-0971-05)

Insert a non-conductive screwdriver to groove of one side of the socket (CN401,CN11) and pry the lithium cell up from the socket.



### ■ Installing the lithium cell (W09-0971-05)

Insert a lithium cell into one side of the socket (CN401,CN11). Push the lithium cell to insert the lithium cell into the socket.



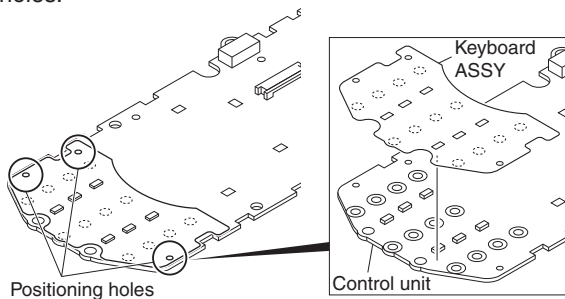
### ■ Affixing the keyboard ASSY (S79-0472-05)

Affix the keyboard ASSY to the Control unit as shown in the figure.

After affixing the keyboard ASSY to the Control unit, confirm that the three positioning holes of the keyboard ASSY and the Control unit are not misaligned.

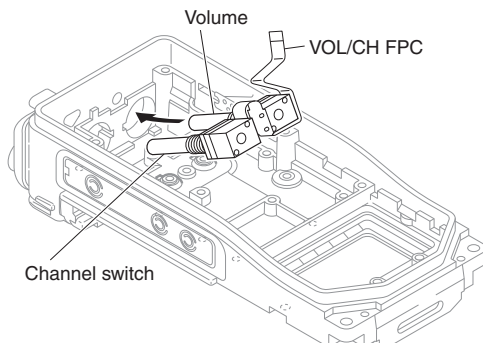
Note:

If the holder (Option board) is removed from the Control unit, it becomes easy to confirm the three positioning holes.



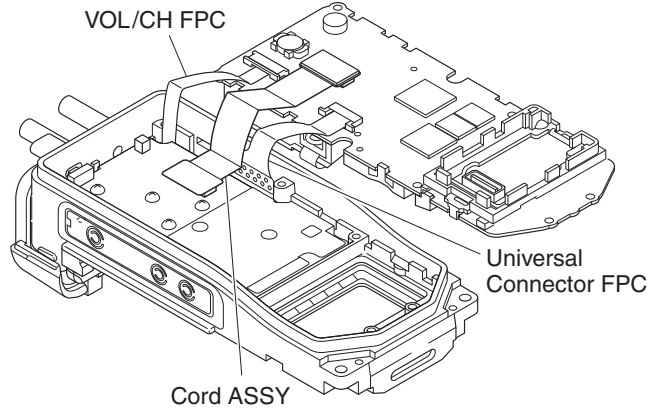
### ■ Inserting the Volume and Channel switch into the chassis

Insert the volume and channel switch into the chassis with the VOL/CH FPC formed as shown in the figure.



### ■ Forming the VOL/CH FPC, Cord ASSY and Universal connector FPC

Form the VOL/CH FPC, Cord ASSY and Universal connector FPC as shown in the figure.



Note:

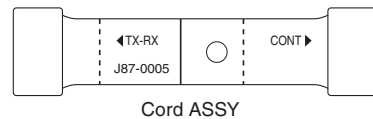
The illustration of the Sub (GPS) unit and GPS coaxial cable is omitted.

Note:

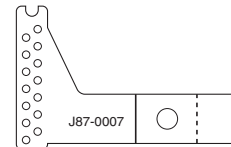
Fold indications are printed on the Cord ASSY and Universal Connector FPC.

“—” line shows creased line on the top.

“- - -” line shows creased line on the bottom.



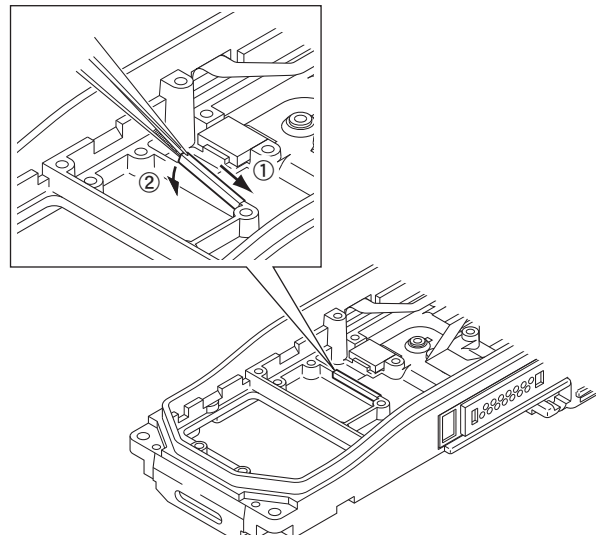
Cord ASSY



Universal Connector FPC

### ■ Relay hardware (E29-1242-04) installation procedure

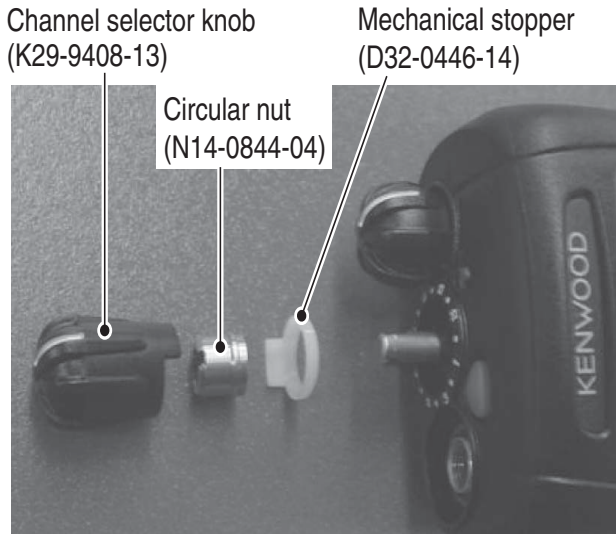
1. Fit one side of the relay hardware to a right corner of the chassis using a pair of tweezers ①.
2. Fit the other side of the relay hardware to the rib of the chassis ②.



## DISASSEMBLY FOR REPAIR

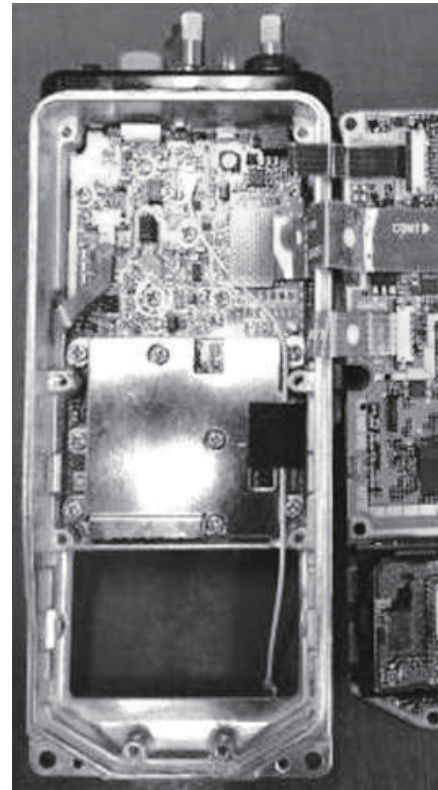
### ■ Changing the channel selector from 16-channel operation to free

1. Remove the channel selector knob.
2. Remove the circular nut.
3. Remove the mechanical stopper.
4. Reassemble the circular nut and channel selector knob that were removed in steps 1 and 2, in their original positions.



### ■ Forming the GPS coaxial cable(E37-1718-05)

Form the GPS coaxial cable as shown in the figure.



## 4. Compatibility information for the Control unit and TX-RX unit

### ■ Compatibility information

There are some important notices when you replace the Control and TX-RX units.

1. Firmware  
"E3EA" or later firmware versions must be applied.
2. PCB compatibility chart

Compatibility Chart		Firmware and Control Unit	
		"5995" or earlier version (Compatible with "E3EA" or later firmware)	"E3EA" or later version
		X53-4590-10/-11/-12/-13 (Old) (J79-0131-39)	XC1-0020-10/-11/-12/-13 (New) (J79-0441-09)
TX-RX Unit	X57-8950-12 (Old) (J79-0438-09)	Available	NOT Available
	X57-8950-13 (New) (J79-0438-09)	NOT Available	Available

3. Readjustment  
It is necessary to readjust all the adjustment items.

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## DISASSEMBLY FOR REPAIR

### ■ Assembly information (Sheet/Cushion)

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

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

For example, when “Plastic Cabinet (A02-4002-23 (6-key)/A02-4003-23 (18-key))” is changed, “Sticker (B42-7417-04)”, “Badge (B43-1606-04)” and “Fibrous Sheet (G10-1373-04)” should be ordered and changed together because Sticker (B42-7417-04), Badge (B43-1606-04) and Fibrous Sheet (G10-1373-04) are non-reusable.

Main Parts		Assembled Sheet/ Cushion		
Part Name	Part Number	Part Name	Part Number	Remark
Plastic Cabinet (6-key)	A02-4002-23	Sticker	B42-7417-04	“NEXEDGE” is printed.
		Badge	B43-1606-14	“KENWOOD” is printed.
Plastic Cabinet (18-key)	A02-4003-23	Fibrous Sheet (SP)	G10-1373-04	
LCD ASSY	B38-0923-05	Adhesive Sheet (LCD)	J99-0714-04	Used for fixing the LCD ASSY on the Illumination Guide (LCD). Also used for fixing the Illumination Guide (LCD) on the Control Unit.
Cord ASSY (50-pin FPC)	X42-3510-10	Cushion (50-pin FPC)	G13-2293-04	
Speaker	T07-0755-25	Rubber Cushion (SP)	G11-4272-14	
		Sheet (SP)	G11-4458-14	Used for stabilizing the waterproof performance. “●” (a hole) on the Sheet (SP) shows the upper side (6-key FPC side).
Switch Unit (6-key FPC)	X41-3840-10	Adhesive Sheet (6-key FPC)	J99-0745-04	Used for fixing the Switch Unit (6-key FPC) from the back side of the Holder (FG-SP) before soldering.
		Adhesive Sheet (6-key FPC)	J99-0712-14	Used for fixing the Switch Unit (6-key FPC) on the Holder (FG-SP).
Switch Unit (PTT FPC)	X41-3830-10	Sheet (PTT)	G11-4428-04	Used for fixing the Push Knob (PTT) on the Switch Unit (PTT FPC) and stabilizing the waterproof performance.
		Adhesive Sheet (PTT FPC)	J99-0711-04	Used for fixing the Switch Unit (PTT FPC) on the Chassis.
Chassis	A10-4186-04	Relay Hardware (VCO-Chassis)	E29-1242-04	Used for stabilizing the shield performance of the VCO.
		Sheet (Air)	G11-4500-04	This sheet is put on the leak check hole. This sheet lets air through, but does not let water through.
		Rubber Sheet (FET)	G11-4429-04	Used for stabilizing the radiation performance of the FET.
		Sheet (Air)	G11-4440-04	This sheet is a protect cover of the sheet (G11-4331-04).
		Cushion (ANT)	G13-2220-04	Used for fixing the Terminal ASSY.
Terminal Block	E72-0425-13	Adhesive Sheet (Terminal Block)	J99-0747-04	Used for fixing the Terminal Block and the Packing (Terminal Block).

## CIRCUIT DESCRIPTION

### 1. Overview

The NX-200(G) is a VHF portable transceiver designed to operate in the frequency range of 136 to 174MHz. The unit consists of receiver, transmitter, phase-locked loop (PLL) frequency synthesizer, base band parts, power supply, and control circuits.

### 2. Frequency Configuration

The receiver is a double-conversion superheterodyne using the first intermediate frequency (IF) of 58.05MHz and the second IF of 450kHz. Incoming signals from the antenna are mixed with the local signal from the PLL circuit to produce the first IF of 58.05MHz. This is then mixed with the 57.6MHz second local oscillator output to produce the 450kHz second IF. The transmit signal frequency is generated by the PLL VCO, and modulated by the signal from the DSP. It is then amplified and fed to the antenna.

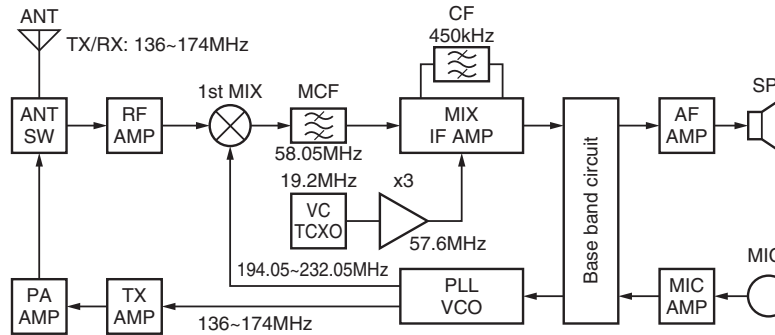


Fig. 1 Frequency configuration

### 3. Receiver System

#### 3-1. RF Circuit

An incoming RF signal from the antenna terminal is passed through the antenna switch (D104, D105, D209 and D211) and then the bandpass filter (L220, L224). The bandpass filter is adjusted by a variable capacitor. The input voltage to the variable capacitor is regulated by the voltage output from the D/A converter (IC703). The signal is amplified by an RF amplifier (Q204), and passed through the bandpass filter (L212, L215). The resulting signal is applied to the first mixer (Q203), where it is mixed with the first local oscillator signal output from the frequency synthesizer to produce the first IF (58.05MHz).

#### 3-2. IF Circuit

The first IF signal is passed through a four-pole monolithic crystal filter (XF200) to reject adjacent channel signals. The filtered first IF signal is amplified by the first IF amplifier (Q202) and then applied to the IF system IC (IC202). The IF system IC provides a second mixer, AGC amplifier, and RSSI (Received Signal Strength Indicator).

The second mixer mixes the first IF signal with the 57.6MHz of second local oscillator output and produces the second IF signal of 450kHz.

The second IF signal is passed through the ceramic filter (CF200) to reject the adjacent channel signal. The filtered second IF signal is amplified by the AGC amplifier.

The signal from the AGC amplifier is input to the ASIC (IC108) through the ceramic filter (CF201) and operational amplifier (IC203).

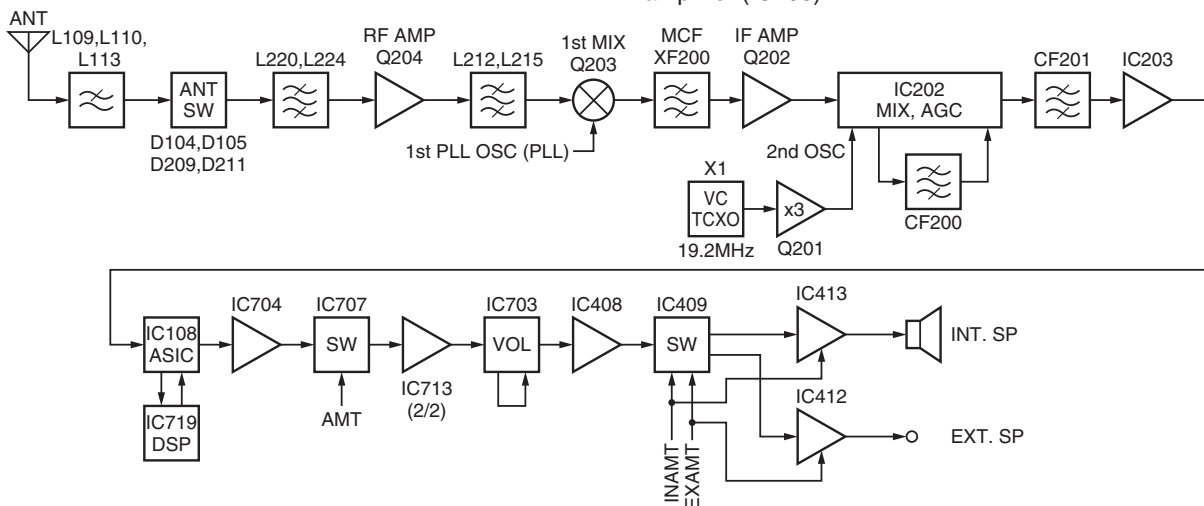


Fig. 2 RF and IF circuit

## CIRCUIT DESCRIPTION

### 3-3. Audio Amplifier Circuit

Audio processing (high-pass filter, low-pass filter, de-emphasized and so on) at FM mode and decoding at NXDN mode are processed by DSP. The audio signal from IC108 and IC719 goes through the amplifier (IC704). The signal then goes through a mute switch (IC707), amplifier (IC713), electronic volume control (IC703), and AF amplifier (IC408).

While busy, AMT becomes Low to turn IC707 on, and the signal is fed to the AF switch. While INAMT is High, the AF switch (IC409) selects the internal speaker, and the audio signal is fed to the internal audio power amplifier (IC413), and output to the internal speaker. While EXAMT is High, the AF switch (IC409) selects the external speaker, and the audio signal is fed to the external audio power amplifier (IC412), and output to the external speaker. The power supply for IC413 and IC412 is turned on while INAMT or EXAMT is High.

The speaker is switched by the logic of the speaker switching terminal SSW on the universal connector. When the SP-MIC is not attached, SSW becomes High. IC108 detects the logic of SSW and activates either INAMT or EXAMT.

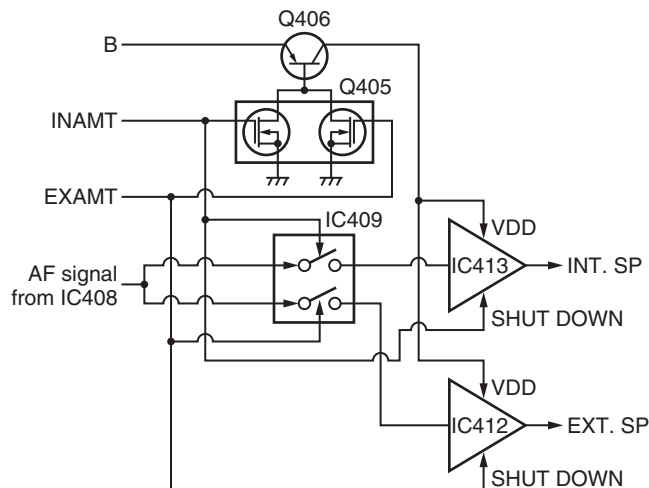


Fig. 3 Audio amplifier circuit

### 3-4. Squelch Circuit

It amplifies the demodulated noise signal from IC108 after filtering through the BPF circuit. Then, the amplified signal is converted to a DC signal by the detection circuit. The converted signal is fed back to IC108.

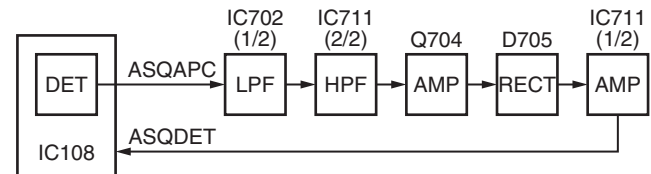


Fig. 4 Squelch circuit

## 4. Transmitter System

### 4-1. Audio Band Circuit

The signal from the internal microphone goes through the mute switch (Q5). When the SP-MIC is not attached, the microphone switching terminal (MSW) on the universal connector becomes High, and the mute switch (Q5) is turned on. When the SP-MIC is attached, MSW is connected to GND inside the SP-MIC. For this reason, Q5 is turned off, the internal microphone is muted, and only the input of the external microphone is supplied to the microphone amplifier. The signal from the microphone goes through the mute switch (Q707), and is amplified by IC716 (1/2) and limited by the AGC circuit which is composed of D703, D704, Q705 and Q706.

### 4-2. Base Band Circuit

The audio signal output from the base band circuit is converted to digital data with a sampling frequency of 48kHz. This digital data is sent to the DSP (IC719), and voice signals of 300Hz or lower and frequencies of 3kHz or higher are cut off and an audio range of 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 then output from IC108. In Digital mode, the audio signal is converted to the 4-Level FSK base band signal and output from IC108. The DTMF and MSK base band signals are also generated by the DSP and output by IC108.

LPF (IC705) works as a smoothing filter. The DAC (IC703) assigns the base band signal to the VCO. At this time, the level output according to the transmit carrier is fine-adjusted according to each modulation method.

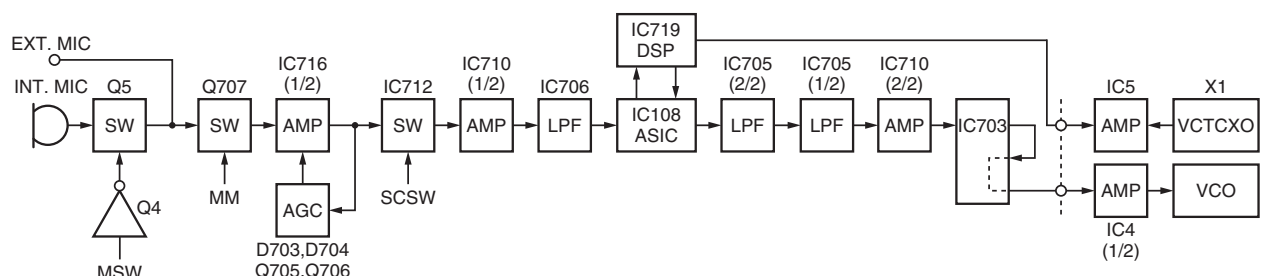


Fig. 5 Audio band and Base band circuit

## CIRCUIT DESCRIPTION

### 4-3. VOX

IC716 (2/2) amplifies the audio signal captured in the microphone. The signal is then converted into the DC voltage, rectified by D706. The DC voltage activates the ASIC (IC108), and the VOX starts.

### 4-4. Drive and Final Amplifier

The signal from the T/R switch (D100 is on) is amplified by the drive amplifier (Q102 and Q103) to 25~27dBm. The output of the drive amplifier is amplified by the Final power amplifier (Q106) to 5.0W (1W when the power is low). The Final power amplifier is MOS FET. The output of the Final power amplifier is then passed through the harmonic filter (LPF) and antenna switch (D104, D105 are on) and applied to the antenna terminal.

### 4-5. APC Circuit

The APC circuit always monitors the current flowing through the Final power amplifier (Q106) and keeps a constant current. The voltage drop at R136, R138 and R141 is caused by the current flowing through the RF power amplifier and this voltage is applied to the differential amplifier (IC100 1/2). IC100 (2/2) compares the output voltage of IC100 (1/2) with the reference voltage from IC108, and the output of IC100 (2/2) controls the VGG of Q102, Q103 and Q106 to make the both voltages the same. The change of power high/low is carried out by the change of the reference voltage. Q105, Q107 and Q110 are turned on and Q104 and Q109 are turned off in transmit and the APC circuit is active.

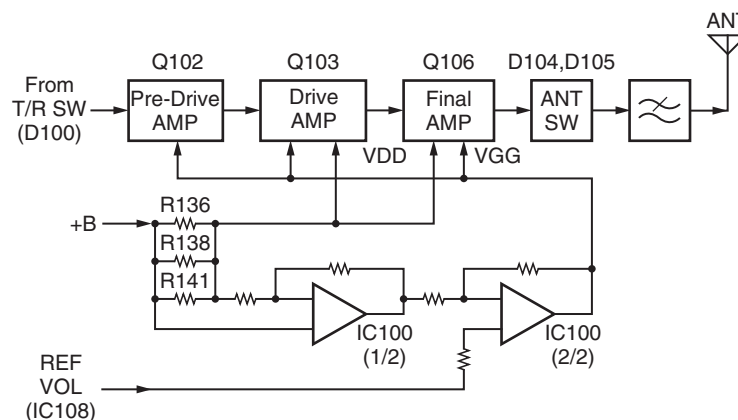


Fig. 6 Drive and final amplifier and APC circuit

## 5. PLL Frequency Synthesizer

### 5-1. VCTCXO (X1)

VCTCXO (X1) generates a reference frequency of 19.2MHz for the PLL frequency synthesizer. This reference frequency is applied to pin 9 of the PLL IC (IC3) and is connected to the IF circuit as a 2nd local signal through the Tripler (Q201). The VCTCXO oscillation frequency is determined by the DC voltage of the VC terminal. The VC voltage is fixed to 1.65V by R59 and R60, and supplied to the VC terminal through IC5. The modulation signal is also fed to VC terminal through IC5.

The frequency adjustment is achieved by switching the ratio of dividing frequency that is not adjusted by the DC voltage impressed to VC. The resolution of the adjusting frequency is approximately 8Hz. Because twice the VCO output are input for the input frequency of PLL IC, the sending and receiving frequency can be adjusted by approximately 4Hz resolution.

### 5-2. VCO

There is a RX VCO and a TX VCO.

The TX VCO (Q10) generates a transmit carrier and the RX VCO (Q8) generates a 1st local signal. For the VCO oscillation frequency, the transmit carrier is 136 to 174 MHz and the 1st local receive signal is 194.05 to 232.05MHz.

The VCO oscillation frequency is determined by one system of operation switching terminal "T/R" and two systems of voltage control terminals "CV" and "ASSIST".

The operation switching terminal, "T/R", is controlled by the control line (/T\_R) output from the ASIC (IC108). When the /T\_R logic is low, the VCO outputs the transmit carrier and when it is high, it outputs a 1st local receive signal.

The voltage control terminals, "CV" and "ASSIST", are controlled by the PLL IC (IC3) and ASIC (IC108) and the output frequency changes continuously according to the applied voltage. For the modulation input terminal, "VCO\_MOD", the output frequency changes according to the applied voltage. This is used to modulate the VCO output. "VCO\_MOD" works only when "/T\_R" is low.

# NX-200(G)

## CIRCUIT DESCRIPTION

### 5-3. PLL IC (IC3)

The PLL IC compares the differences in phases of the VCO oscillation frequency and the VCTCXO reference frequency, returns the difference to the VCO CV terminal and realizes the “Phase Locked Loop” for the return control. 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 ASIC 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 approximately 2.5V.

The desired frequency is set for the PLL IC by the ASIC (IC108) through the 3-line “SDO1”, “SCK1”, “/PCS\_RF” serial bus. Whether the PLL IC is locked or not is monitored by the ASIC through the “PLD” signal line. If the VCO is not the desired frequency (unlock), the “PLD” logic is low.

### 5-4. Doubler (Q4)

The doubler (Q4) extracts the twice harmonic component from the signal from the VCO. This twice harmonic component is then fed into PLL (IC3) through band pass filter.

Band pass filter consists of two filters. One is for TX (L3,L5,L7) and pass band is 272.0 to 348.0MHz. The other is for RX 1st local (L2,L6,L30) and pass band is 388.1 to 464.1MHz.

### 5-5. Local Switch (D100, D201)

The connection destination of the signal output from the buffer amplifier (Q100) is changed with the diode switch (D100) that is controlled by the transmission power supply, 50T, and the diode switch (D201) that is controlled by the receive power supply, 50R. If the 50T logic is high, it is connected to a send-side pre-drive (Q102). If the 50T logic is low, it is connected to a receive-side mixer (Q203).

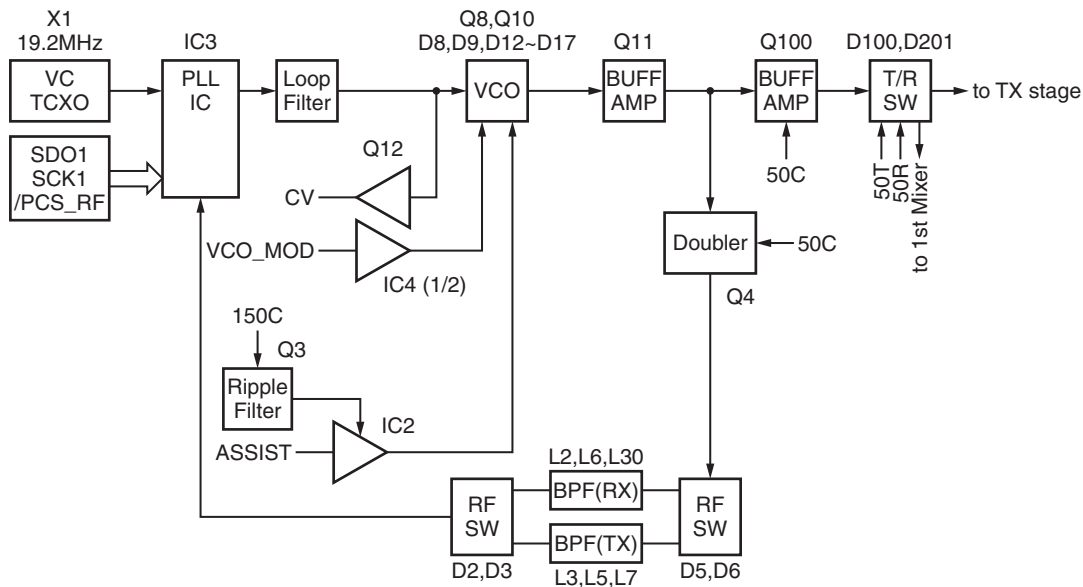


Fig. 7 PLL block diagram

## 6. Control Circuit

The control circuit consists of the ASIC (IC108) and its peripheral circuits. IC108 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 squelch on/off by the DC voltage from the squelch circuit.
- 5) Controlling the audio mute circuit by decode data input.

### 6-1. ASIC

The ASIC (IC108) is a 32-bit RISC processor, equipped with peripheral function and ADC/DAC.

This ASIC operates at 18.432MHz clock and 3.3V /1.5V DC. It controls the flash memory, SRAM, DSP, the receive circuit, the transmitter circuit, the control circuit, and the display circuit and transfers data to or from an external device.



## CIRCUIT DESCRIPTION

### 6-2. Memory Circuit

The memory circuit consists of the ASIC (IC108) and the SRAM (IC103) and flash memory (IC101). The flash memory has capacity of 32M-bit that contains the transceiver control program for the ASIC 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 SRAM has capacity of 1M-bit that contains work area and data area.

#### ■ Flash memory

Note: The flash memory stores the data that is written by the FPU (KPG-111D/111DN), 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.

#### ■ SRAM (Static memory)

Note: The SRAM has temporary data area and work area. When the power supply is off, it is backed up by an internal secondary lithium battery. Therefore, the saved data is not lost.

#### ■ Real-time clock

The clock function is based on real-time clock IC (IC106). When the power supply is off, it is backed up by an internal secondary lithium battery.

### 6-3. LCD

The LCD is controlled using the bus lines on the connector (CN1) of the Control unit (XC1-002). It corrects the LCD contrast voltage using IC1.

### 6-4. Key Detection Circuit

Keys are detected using the key scan circuit in IC108. The /KEYI signals that are normally pulled down go high when any key is pressed.

### 6-5. Low Battery Warning

The battery voltage is divided using R444 and R445 and is detected by the ASIC (IC108). When the battery voltage falls below the voltage set by the Low battery warning adjustment, the red LED blinks to notify the operator that it is time to replace the battery. If the battery voltage falls even more (approx. 5.8V), a beep sounds and transmission stops.

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

### 6-6. DSP

The DSP circuit consists of a DSP (IC719) and processes the base band signal. The DSP operates on an external clock of 18.432MHz (the same as the IC108), the I/O section operates at 3.3V and the core section operates at 1.5V. The DSP carries out the following processes:

- 4 Level FSK processing
- Analog FM pre-emphasis/de-emphasis
- Vocoder processing between audio codec and modulation/demodulation
- CAI processing, such as error correction encoding
- QT/DQT encoding/decoding
- LTR 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

## 7. Power Supply Circuit

The battery voltage (+B) is provided from the battery terminal on the TX/RX unit (X57). The battery voltage passes through the 2.5A fuse (F400), and goes to the RF final amplifier, AVR ICs (IC400, IC403), and Control unit (XC1).

In the control unit, +B is connected to the DC/DC (IC407), AVR ICs (IC411, IC708, IC416), and voltage detector IC (IC414). The voltage detector watches the battery voltage. If the battery voltage is 5.6V or higher, the detector outputs High. While the output of IC414 is High, IC416 and Q409 provide 3.1V (31BU) to the backup-section.

When the VOL SW is turned on, SB1 becomes high (battery voltage). The DC/DC (IC407) operates if both SB1 and the output of the detector are high. IC407 outputs 3.8V and it activates IC404 (33M), IC717 (15M), and IC406 (33A). As a result, the ASIC and DSP operate.

The SBC signal becomes High after the ASIC operates, IC708 (5A), Q403 on the Control unit (SB2) and Q403 on the TX-RX unit (SB3) are turned on. IC402 and IC403 operate by turning on these AVR ICs and FET switches.

The 5UC signal becomes High when an option is installed on the universal connector. Then IC411 (50U) operates.

When the /SAVE signal becomes High, IC400 (50C) operates. The output of IC400 is connected to three FET switches (Q401, Q402, Q405). When the SBC signal becomes High, IC403 (33C) operates. The FET switches are controlled by the ASIC. Q405 (50T) is turned on in transmit mode. Q401 (50R) and Q402 (50IF) are turned on in receive mode.

When the VOL SW is turned off, the /PSW signal becomes Low. After detecting the /PSW signal, the ASIC changes the SBC signal to Low. Then the power supplies except IC416 (31BU) stop.

# NX-200(G)

## CIRCUIT DESCRIPTION

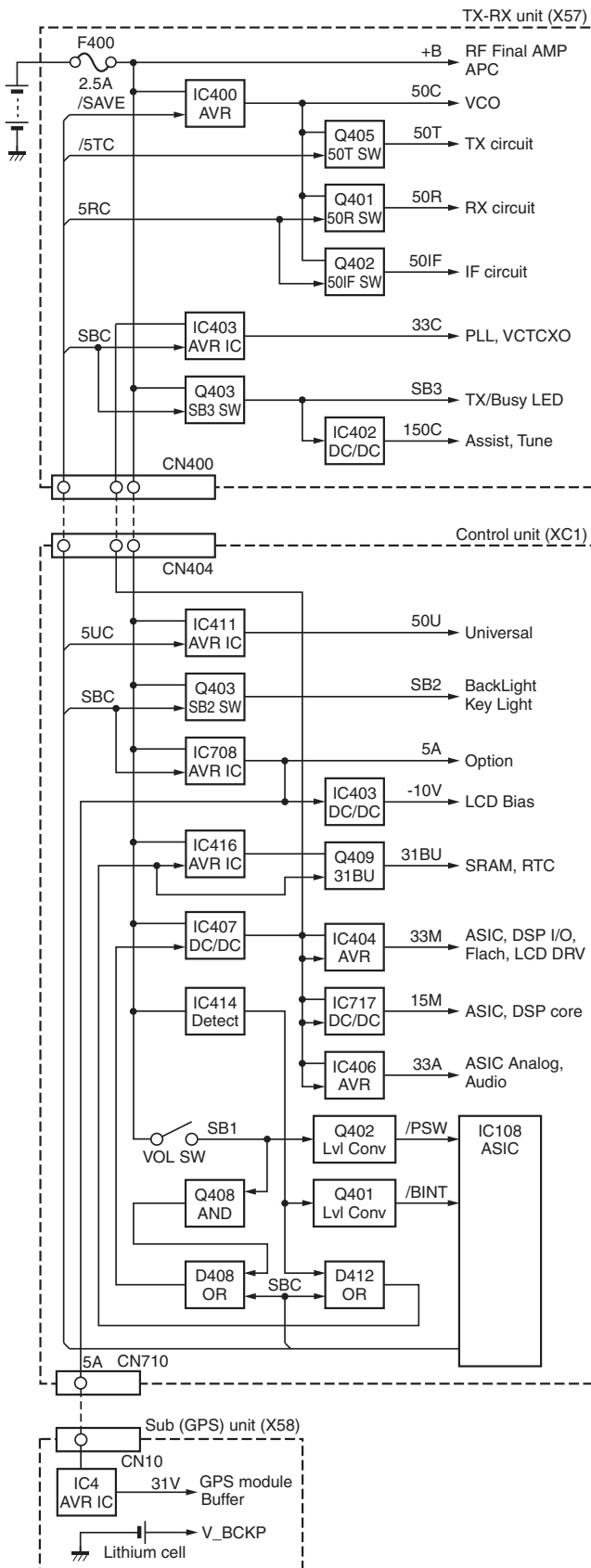


Fig. 8 Power supply circuit

## 8. Signaling Circuit

### 8-1. Encode (QT/DQT/LTR/DTMF/2-tone/MSK)

Each signaling data signal of QT, DQT, LTR, DTMF, 2-tone and MSK is generated by the DSP circuit, superposed on a modulation signal and output from IC108. The modulation balance of the QT/DQT/LTR signal is adjusted by the D/A converter (IC703) and the resulting signal is routed to the modulation input of the VCO. Each deviation of the TX QT, DQT, LTR, DTMF, 2-tone and MSK tone is adjusted by changing the output level of IC108 and the resulting signal is routed to the VCO. The RX DTMF tone is routed to the receive audio signal system, and is output from the speaker.

### 8-2. Decode (QT/DQT/LTR/DTMF/2-tone/MSK)

The audio signal is removed from the FM detection signal sent to the DSP circuit and the resulting signal is decoded.

## 9. Comander Circuit

The term "comander" means compressor and expander. The comander reduces noise by utilizing a compressor and an expander. The transceiver contains a DSP (IC719) to perform this operation. The transceiver comander can be turned on or off using the FPU.

## 10. GPS Circuit

The GPS information function can be used by setting it through the FPU. When the GPS information function is enabled, the AVR (IC4/GPS) is enabled by the OPT5, and is supplied to the GPS circuit.

The GPS circuit block consists of a TX-RX unit and a GPS unit (X58). The circuit from an antenna to LNA is on a TX-RX unit. This output is connected to the GPS unit by the coaxial cable.

The GPS signal of 1575.42MHz received with the antenna (with GPS band) is passed by the HPF and BPF (L605/TX-RX) and is amplified by the LNA (IC881/TX-RX).

The GPS signal is processed by the GPS IC (IC1/GPS) and input to the ASIC (IC108/CONT) through the UART port. The ASIC (IC108/CONT) processes the GPS data (NMEA) and sends the resulting information to the LCD.

The GPS IC operates in stand-alone. Operating voltage is 3.1V. When the transceiver power is off, the GPS IC will be backed up with the internal coin battery. When the battery pack is removed, the GPS IC will be backed up for about one day in a coin battery. But if the GPS IC has never had the position fixed, it will not be backed up.

When the GPS function is enabled, the consumption current increases by about 70 mA.

## COMPONENTS DESCRIPTION

### Control unit (XC1-0020-XX)

Ref. No.	Part Name	Description
IC1	IC	LCD contrast
IC101	IC	Flash memory
IC103	IC	SRAM
IC104	IC	2 input AND gate
IC105	IC	Reset
IC106	IC	RTC
IC107	IC	Buffer
IC108	IC	ASIC
IC109	IC	2 input AND gate
IC401,402	IC	Bus switch
IC403	IC	Voltage doubling inverter
IC404	IC	Voltage regulator (33M)
IC406	IC	Voltage regulator (33A)
IC407	IC	DC/DC converter
IC408	IC	AF AMP
IC409	IC	AF switch
IC411	IC	Voltage regulator (50U)
IC412,413	IC	Audio AMP
IC414	IC	Reset
IC415	IC	2 input AND gate
IC416	IC	Voltage regulator
IC417,418	IC	Dual bus buffer
IC701	IC	I/O control
IC702	IC	APC LPF
IC703	IC	D/A converter
IC704	IC	RX AF LPF
IC705	IC	Modulation LPF
IC706	IC	MIC AMP
IC707	IC	RX AF switch
IC708	IC	Voltage regulator (5A)
IC709	IC	Sidetone mute
IC710	IC	MOD/MIC summing AMP
IC711	IC	SQL BPF/SQL DC AMP
IC712	IC	MIC switch
IC713	IC	1.65V REF/RX summing AMP
IC714	IC	OPT switch
IC715,716	IC	VOX AMP
IC717	IC	DC/DC converter (15M)
IC719	IC	DSP
Q1,2	Transistor	LCD backlight switch
Q3	FET	LCD backlight switch
Q4	FET	MIC mute control
Q5	FET	MIC mute switch
Q101,102	Transistor	12key backlight switch

Ref. No.	Part Name	Description
Q103	FET	12key backlight switch
Q401,402	FET	Level converter
Q403	Transistor	SB2 switch
Q404	FET	SB2 switch control
Q405	FET	AF AMP switch
Q406,407	Transistor	Voltage regulator (AF AMP)
Q408,409	Transistor	DC switch
Q410	FET	DC switch
Q411	FET	Level converter
Q412	FET	DC switch control
Q413~415	Transistor	DC switch
Q701	Transistor	OPT switch
Q702	FET	Tone switch
Q703	FET	W/N noise switch
Q704	Transistor	SQL noise AMP
Q705,706	Transistor	MIC AGC
Q707	FET	MIC mute
D1,2	LED	12key backlight
D3,4	LED	LCD backlight
D5,6	LED	12key backlight
D7,8	LED	LCD backlight
D9,10	LED	12key backlight
D11	Diode	LCD backlight switch
D12~16	Diode	Reverse current prevention
D17~21	Zener diode	Surge absorption
D22,23	Diode	Surge absorption
D101	Diode	12key backlight switch
D102	Diode	Reverse current prevention
D401~404	Diode	12key control
D405,406	Diode	DC/DC converter
D407	Diode	Over voltage prevention
D408	Diode	DC/DC converter control
D409,410	Diode	SP control
D411	Diode	RTC BATT control
D412	Diode	DC switch control
D413	Diode	RTC BATT control
D414,415	Diode	Reverse current prevention
D416	Diode	33M control
D417	Diode	33A control
D701	Diode	5A switch
D702	Diode	PLD control
D703,704	Diode	Detector
D705	Diode	Noise detector
D706	Diode	VOX detector
D707	Diode	VOX

# NX-200(G)

## COMPONENTS DESCRIPTION

### TX-RX unit (X57-8950-13)

Ref. No.	Part Name	Description
IC1	IC	Temperature sensor
IC2	IC	AF AMP for VCO tune
IC3	IC	PLL IC
IC4	IC	OP AMP (VCO MOD/APC)
IC5	IC	DC AMP for TCXO MOD
IC100	IC	Auto power control
IC200,201	IC	DC AMP for BPF
IC202	IC	FM IC
IC203	IC	Buffer
IC400	IC	Voltage regulator (50C)
IC401	IC	50T control
IC402	IC	DC/DC converter
IC403	IC	Voltage regulator (33C)
IC404	IC	OP AMP (RSSI/VAGC)
IC501	IC	LNA (for GPS)
Q1,2	Transistor	Buffer AMP switch
Q3	Transistor	Ripple filter
Q4	Transistor	Buffer AMP
Q6	Transistor	Ripple filter
Q7	FET	T/R switch
Q8,10	FET	VCO oscillation
Q9	FET	T/R switch
Q11	Transistor	Buffer AMP
Q12	FET	Buffer AMP
Q13	FET	Buffer AMP switch
Q100	Transistor	Buffer AMP
Q102	FET	Drive AMP
Q103	FET	Pre-final AMP
Q104,105	Transistor	APC switch
Q106	FET	RF final AMP
Q107,109	FET	APC switch
Q110	Transistor	APC switch
Q201	Transistor	2nd Local tripler
Q202	Transistor	IF AMP
Q203	FET	Mixer
Q204	FET	RF AMP
Q401	FET	50R switch
Q402	FET	50IF switch
Q403	FET	SB3 switch
Q404	FET	DC/DC converter switch
Q405	Transistor	50T switch
Q406	Transistor	TX/RX LED switch

Ref. No.	Part Name	Description
D1	Diode	Ripple filter
D2,3	Diode	f-in RF switch
D4	Diode	Bypass diode
D5,6	Diode	f-in RF switch
D7	Diode	Ripple filter
D8,9 D12-17	Variable capacitance diode	Frequency control
D18	Variable capacitance diode	TX modulation
D100	Diode	Local switch
D103	Zener diode	APC switch
D104,105	Diode	Antenna switch
D106	Zener diode	APC protect
D201	Diode	Local switch
D204,205, D207,208	Variable capacitance diode	Vari-cap tune
D209	Diode	Antenna switch
D211	Diode	Antenna switch
D213	Diode	Reverse protection
D400	Diode	Reverse protection
D401	Diode	50T control
D402	LED	TX/RX LED
D403	Diode	Reverse protection
D501	Diode	Clpper
D502	Diode	Clpper

### Sub (GPS) unit (X58-5240-10)

Ref. No.	Part Name	Description
IC1	Electric circuit module	GPS receiver module
IC2	IC	Buffer
IC4	IC	Voltage regulator
D2	Diode	Backflow prevention

# NX-200(G)

## PARTS LIST

△ indicates safety critical components.

Parts without **Parts No.** are not supplied.

Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.

Teile ohne **Parts No.** werden nicht geliefert.

L : Scandinavia

Y : PX (Far East, Hawaii)

C : China

K : USA

T : England

X : Australia

P : Canada

E : Europe

M : Other Areas

### NX-200 (G)

### CONTROL UNIT (XC1-0020-XX)

Ref. No.	Address	Parts No.	Description	Desti- nation	Ref. No.	Address	Parts No.	Description	Desti- nation
<b>NX-200(G)</b>									
1	1B	A02-4002-23	PLASTIC CABINET (6KEY)	K	68	2B	J30-1296-04	SPACER(VOL)	
2	1A	A02-4003-23	PLASTIC CABINET (18KEY)	K2	69	3B	J87-0007-25	FPC(UNIVERSAL)	
3	3A	A10-4186-04	CHASSIS		70	2B	J87-0028-05	FPC (VOL,SELECTOR)	
4	2B	A62-1156-02	PANEL (TOP)		71	3A	J99-0711-04	ADHESIVE SHEET(PTT FPC)	
6	1B,1D	B09-0712-03	CAP ACCESSORY		72	2B	J99-0712-14	ADHESIVE SHEET(6KEY FPC)	
7	1A	B11-1853-34	FILTER(LCD)		74	1A,2A	J99-0714-04	ADHESIVE SHEET(LCD)	
8	1A	B11-1854-02	ILLUMINATION GUIDE (LCD)		75	3B	J99-0715-08	ADHESIVE SHEET	
9	3B	B11-1855-04	ILLUMINATION GUIDE (TX/BUSY)		76	2B	J99-0745-04	ADHESIVE SHEET(6KEY FPC)	
10	1A	B38-0923-05	LCD ASSY		77	3B	J99-0747-04	ADHESIVE SHEET(T-BLOCK)	
12	1A	B42-7417-04	STICKER (NEXEDGE)		79	3A	K25-2001-03	PUSH KNOB(PTT)	
13	1B	B43-1606-14	BADGE(KENWOOD)		80	1A	K29-9405-03	KNOB (PTT)	
14	2D	B62-2608-00	INSTRUCTION MANUAL		81	1A	K29-9406-03	BUTTON KNOB(SIDE KEY)	
16	2B	D32-0446-14	STOPPER (16CH)		82	1B	K29-9407-03	KNOB (VOL)	
18	2A	E29-1241-04	RELAY HARDWARE (X57 PCB)		83	1B	K29-9408-13	KNOB (SELECTOR)	
19	3A	E29-1242-04	RELAY HARDWARE		A	1B,1D	N08-0564-04	DRESSED SCREW	
20	2A	E37-1718-05	LEAD WIRE WITH CONNECTOR (GPS)		B	3B	N0Z-0001-00	HEXAGON HEAD SCREW	
21	3B	E58-0532-05	RECTANGULAR RECEPTACLE (SP/MIC)		C	3A	N09-2440-15	SPECIAL SCREW (CASE)	
22	3B	E72-0425-13	TERMINAL BLOCK		D	2A,2B	N09-6549-04	STEPPED SCREW (FG-SP HOLDER)	
24	3A	F07-1959-14	COVER(OP BOARD)		E	2B,3A	N09-6554-05	PAN HEAD SCREW (ANT/OP BOARD)	
26	2A	G02-1865-13	EARTH SPRING(SP)		F	1C	N09-6585-15	CIRCULAR NUT (VOL,SELECTOR)	
27	2A	G10-1362-04	FIBROUS SHEET(GPS)		G	2B	N14-0844-04	CIRCULAR NUT(VOL,SW)	
28	1A	G10-1373-04	FIBROUS SHEET(SP)		H	1A,2A,2B	N83-2005-48	PAN HEAD TAPTITE SCREW (PCB)	
29	2B	G10-1807-04	FIBROUS SHEET(TOP PANEL)		S1	2B	S60-0437-05	ROTARY SWITCH	
30	2A	G11-4272-14	RUBBER CUSHION(SP)		85	1A	S79-0472-05	KEYBOARD ASSY(12KEY)	K2
32	2A	G11-4428-04	SHEET(PTT)		87	2A	T07-0755-25	SPEAKER	
33	3A	G11-4429-04	RUBBER SHEET(FET)		88	2A	T91-0575-05	MIC ELEMENT	
34	3A	G11-4440-04	SHEET(AIR)		90	2A	W09-0971-05	LITHIUM CELL	
35	2A	G11-4458-14	SHEET(SP)		VR1	2B	R31-0666-05	VARIABLE RESISTOR	
36	2A	G11-4459-04	SHEET(TX-RX PCB)		92	3A	X41-3830-10	SWITCH UNIT (PTT FPC)	
38	2A	G11-4497-04	SHEET(LCD)		93	2B	X41-3840-10	SWITCH UNIT (6KEY FPC)	
39	3A	G11-4500-04	SHEET(AIR)		94	2A	X42-3510-10	CORD ASSY (50PIN FPC)	
40	2A	G11-4501-04	SHEET(ECM)		95	2B	X60-4080-10	TERMINAL ASSY	
41	1B	G11-4540-04	SHEET(CABINET)		-		XC1-0020-12	CONTROL UNIT FOR SERVICE	K
42	2A	G13-1856-04	CUSHION(GPS)		-		XC1-0020-13	CONTROL UNIT FOR SERVICE	K2
44	2A,3A	G13-2220-04	CUSHION(ANT OP BOARD)		<b>CONTROL UNIT (XC1-0020-XX) -10: K -11: K2</b>				
45	2A	G13-2292-04	CUSHION(TX-RX PCB)		C1		CK73HB1A104K	CHIP C 0.10UF	K
46	2A	G13-2293-04	CUSHION(50PINFPC)		C2		CK73GB1E105K	CHIP C 1.0UF	K
47	2A	G13-2294-04	CUSHION(TERMINAL)		C3		CK73GB1E105K	CHIP C 1.0UF	K
48	3B	G53-1762-02	PACKING (TOP)		C4		CK73GB1E105K	CHIP C 1.0UF	K
50	3B	G53-1763-03	PACKING (TERMINAL BLOCK)		C5		CK73GB1E105K	CHIP C 1.0UF	K
51	3A	G53-1764-03	PACKING (OP BOARD)		C6		CK73GB1E105K	CHIP C 1.0UF	K
52	1B	G53-1765-11	PACKING (6KEY)	K	C7		CK73HB1A104K	CHIP C 0.10UF	K
53	1A	G53-1766-11	PACKING (18KEY)	K2	C8		CK73HB1A104K	CHIP C 0.10UF	K
54	2B	G53-1768-04	PACKING (VOL,SELECTOR O-RING)		C10		CK73HB1A104K	CHIP C 0.10UF	K
56	1B,1D	G53-1769-04	PACKING(CAP)		C11		CK73HB0J105K	CHIP C 1.0UF	K
57	2B	G53-1792-04	PACKING (SMA O-RING)		C12		CK73HB1H471K	CHIP C 470PF	K
59	1D,2D	H12-4293-02	PACKING FIXTURE		C13		CK73HB1H471K	CHIP C 470PF	K
60	2D	H13-2135-04	CARTON BOARD		C14		CK73HB1H471K	CHIP C 470PF	K
61	3C	H52-2839-02	ITEM CARTON CASE		C15		CK73HB1H471K	CHIP C 470PF	K
62	2A	J19-5505-11	HOLDER(FG-SP)		C16		CC73HCH1H101J	CHIP C 100PF	J
63	2B	J19-5506-03	HOLDER (VOL,SELECTOR)						
64	2A	J19-5507-02	HOLDER (OP BOARD)						
65	2B	J21-8638-14	MOUNTING HARDWARE (FG-SP HOLDER)						
66	1C	J29-0730-05	BELT CLIP ACCESSORY						

# NX-200(G)

## PARTS LIST

### CONTROL UNIT (XC1-0020-XX)

Ref No.	Address	Parts No.	Description	Desti- nation	Ref No.	Address	Parts No.	Description	Desti- nation
C17		CC73HCH1H101J	CHIP C 100PF J		C152		CK73HB1A104K	CHIP C 0.10UF K	
C23		CK73HB1H102K	CHIP C 1000PF K		C153		CK73HB1A104K	CHIP C 0.10UF K	
C24		CC73HCH1H470J	CHIP C 47PF J		C154		CK73HB1A104K	CHIP C 0.10UF K	
C25		CK73HB1H102K	CHIP C 1000PF K		C155		CK73HB1A104K	CHIP C 0.10UF K	
C26		CK73HB1H102K	CHIP C 1000PF K		C156		CK73HB1H102K	CHIP C 1000PF K	
C27		CK73HB1H102K	CHIP C 1000PF K		C157		CK73HB1H102K	CHIP C 1000PF K	
C28		CC73HCH1H101J	CHIP C 100PF J		C158		CK73HB1E103K	CHIP C 0.010UF K	
C29		CC73HCH1H101J	CHIP C 100PF J		C159		CK73HB1A104K	CHIP C 0.10UF K	
C30		CC73HCH1H101J	CHIP C 100PF J		C160		CK73HB1E682K	CHIP C 6800PF K	
C31		CC73HCH1H101J	CHIP C 100PF J		C161		CK73HB1E682K	CHIP C 6800PF K	
C32		CC73HCH1H101J	CHIP C 100PF J		C162		CK73HB1E103K	CHIP C 0.010UF K	
C33		CC73HCH1H101J	CHIP C 100PF J		C163		CK73HB1A105K	CHIP C 1.0UF K	
C34		CC73HCH1H101J	CHIP C 100PF J		C164		CK73HB1E104K	CHIP C 0.10UF K	
C35		CK73HB1H102K	CHIP C 1000PF K		C166		CK73HB1E104K	CHIP C 0.10UF K	
C36		CK73HB1E682K	CHIP C 6800PF K		C167		CK73HB1E104K	CHIP C 0.10UF K	
C37		CK73HB1H102K	CHIP C 1000PF K		C401		CK73HB1A104K	CHIP C 0.10UF K	
C38		CC73HCH1H101J	CHIP C 100PF J		C402		CK73HB1A104K	CHIP C 0.10UF K	
C40		CC73HCH1H221J	CHIP C 220PF J		C403		CS77MP1C2R2M	CHIP TNTL 2.2UF 16WV	
C41		CC73HCH1H101J	CHIP C 100PF J		C404		CS77MP1C2R2M	CHIP TNTL 2.2UF 16WV	
C101		CK73HB1E104K	CHIP C 0.10UF K		C405		CS77MP1C2R2M	CHIP TNTL 2.2UF 16WV	
C102		CK73GB0J106K	CHIP C 10UF K		C406		CK73HB0J105K	CHIP C 1.0UF K	
C103		CK73HB1E104K	CHIP C 0.10UF K		C407		CK73HB1H102K	CHIP C 1000PF K	
C104		CK73HB1E104K	CHIP C 0.10UF K		C408		CK73HB1H102K	CHIP C 1000PF K	
C105		CK73HB0J105K	CHIP C 1.0UF K		C409		CK73HB0J105K	CHIP C 1.0UF K	
C106		CK73HB1E103K	CHIP C 0.010UF K		C411		CK73HB0J105K	CHIP C 1.0UF K	
C107		CK73HB1E104K	CHIP C 0.10UF K		C412		CK73HB0J105K	CHIP C 1.0UF K	
C108		CK73HB1A104K	CHIP C 0.10UF K	K2	C414		CK73HB0J105K	CHIP C 1.0UF K	
C109		CK73HB1H102K	CHIP C 1000PF K		C415		CS77BP1A100M	CHIP TNTL 10UF 10WV	
C110		CK73HB1H102K	CHIP C 1000PF K		C416		CK73FB1A106K	CHIP C 10UF K	
C111		CK73GB0J106K	CHIP C 10UF K		C417		CC73HCH1H221J	CHIP C 220PF J	
C112		CK73GB0J106K	CHIP C 10UF K		C418		CK73HB1E103K	CHIP C 0.010UF K	
C113		CK73HB1E104K	CHIP C 0.10UF K		C419		CK73FB1E475K	CHIP C 4.7UF K	
C114		CK73HB0J105K	CHIP C 1.0UF K	K2	C420		CK73HB1E103K	CHIP C 0.010UF K	
C115		CK73HB1H471K	CHIP C 470PF K	K2	C421		CK73HB1E682K	CHIP C 6800PF K	
C116		CK73HB1E104K	CHIP C 0.10UF K		C422		CC73HCH1H100C	CHIP C 10PF C	
C117		CK73HB1E104K	CHIP C 0.10UF K		C424		CK73HB1A104K	CHIP C 0.10UF K	
C118		CK73HB0J105K	CHIP C 1.0UF K		C425		CK73HB1A104K	CHIP C 0.10UF K	
C120		CK73HB1E104K	CHIP C 0.10UF K		C427		CK73HB1E103K	CHIP C 0.010UF K	
C122		CK73HB1E103K	CHIP C 0.010UF K		C428		CC73HCH1H030C	CHIP C 3.0PF C	
C124		CK73HB1E103K	CHIP C 0.010UF K		C429		CK73HB1A104K	CHIP C 0.10UF K	
C130		CK73HB1E103K	CHIP C 0.010UF K		C430		CK73HB1A104K	CHIP C 0.10UF K	
C131		CK73HB1A104K	CHIP C 0.10UF K		C431		CK73FB1A106K	CHIP C 10UF K	
C133		CS77MP0J100M	CHIP TNTL 10UF 6.3WV		C433		CK73FB1A106K	CHIP C 10UF K	
C135		CK73HB1H102K	CHIP C 1000PF K		C435		CK73HB1A563K	CHIP C 0.056UF K	
C136		CK73HB1E103K	CHIP C 0.010UF K		C436		CK73HB1A563K	CHIP C 0.056UF K	
C137		CK73GB1E105K	CHIP C 1.0UF K		C437		CK73HB1A563K	CHIP C 0.056UF K	
C138		CK73HB1A104K	CHIP C 0.10UF K		C438		CK73HB1A563K	CHIP C 0.056UF K	
C139		CK73HB1A104K	CHIP C 0.10UF K		C439		CK73HB1A104K	CHIP C 0.10UF K	
C140		CK73HB1A104K	CHIP C 0.10UF K		C440		CK73HB1A104K	CHIP C 0.10UF K	
C141		CC73HCH1H101J	CHIP C 100PF J		C441		CK73GB1E105K	CHIP C 1.0UF K	
C142		CS77MP0J100M	CHIP TNTL 10UF 6.3WV		C442		CK73HB1H471K	CHIP C 470PF K	
C143		CK73HB1E103K	CHIP C 0.010UF K		C443		CK73HB1E103K	CHIP C 0.010UF K	
C144		CK73GB1E105K	CHIP C 1.0UF K		C445		CK73HB1H102K	CHIP C 1000PF K	
C145		CK73HB1A104K	CHIP C 0.10UF K		C446		CK73GB1E105K	CHIP C 1.0UF K	
C146		CK73HB1A104K	CHIP C 0.10UF K		C447		CK73HB1H102K	CHIP C 1000PF K	
C147		CK73HB1A104K	CHIP C 0.10UF K		C448		CK73HB0J105K	CHIP C 1.0UF K	
C148		CK73HB1A104K	CHIP C 0.10UF K		C449		CK73HB0J105K	CHIP C 1.0UF K	
C149		CK73HB1E103K	CHIP C 0.010UF K		C450		CK73HB0J105K	CHIP C 1.0UF K	
C150		CK73GB1E105K	CHIP C 1.0UF K		C452		CK73HB1E103K	CHIP C 0.010UF K	
C151		CK73HB1A104K	CHIP C 0.10UF K		C453		CK73HB1E103K	CHIP C 0.010UF K	

## PARTS LIST

CONTROL UNIT (XC1-0020-XX)

Ref No.	Address	Parts No.	Description	Desti- nation	Ref No.	Address	Parts No.	Description	Desti- nation
C454		CK73GB1E105K	CHIP C 1.0UF K		C750		CC73HCH1H470J	CHIP C 47PF J	
C455		CK73HB1H471K	CHIP C 470PF K		C751		CK73GB1E105K	CHIP C 1.0UF K	
C456		CK73HB1H471K	CHIP C 470PF K		C752		CC73HCH1H101J	CHIP C 100PF J	
C457		CK73HB1H471K	CHIP C 470PF K		C753		CC73HCH1H101J	CHIP C 100PF J	
C459		CK73HB1H471K	CHIP C 470PF K		C755		CC73HCH1H470J	CHIP C 47PF J	
C460		CK73HB1E682K	CHIP C 6800PF K		C756		CK73HB1A104K	CHIP C 0.10UF K	
C461		CK73HB1H471K	CHIP C 470PF K		C757		CK73GB0J475K	CHIP C 4.7UF K	
C462		CK73HB1H471K	CHIP C 470PF K		C758		CK73GB0J475K	CHIP C 4.7UF K	
C463		CK73HB1H471K	CHIP C 470PF K		C759		CK73HB1E103K	CHIP C 0.010UF K	
C464		CK73HB1E103K	CHIP C 0.010UF K		C760		CK73HB1E103K	CHIP C 0.010UF K	
C465		CK73HB1H102K	CHIP C 1000PF K		C761		CC73HCH1H100D	CHIP C 10PF D	
C466		CK73HB1E682K	CHIP C 6800PF K		C762		CK73HB1A104K	CHIP C 0.10UF K	
C467		CK73HB1A104K	CHIP C 0.10UF K		C763		CK73HB1E103K	CHIP C 0.010UF K	
C468		CK73HB1A104K	CHIP C 0.10UF K		C764		CK73HB1H102K	CHIP C 1000PF K	
C469		CK73HB1H102K	CHIP C 1000PF K		C765		CK73HB1A104K	CHIP C 0.10UF K	
C470		CK73HB1H102K	CHIP C 1000PF K		C766		CK73HB1A104K	CHIP C 0.10UF K	
C471		CK73HB1C473K	CHIP C 0.047UF K		C767		CK73HB1A104K	CHIP C 0.10UF K	
C480		CK73HB1E103K	CHIP C 0.010UF K		C768		CK73HB1H102K	CHIP C 1000PF K	
C701		CK73HB1A104K	CHIP C 0.10UF K		C771		CK73HB1A224K	CHIP C 0.22UF K	
C703		CK73GB0J475K	CHIP C 4.7UF K		C772		CK73HB1E103K	CHIP C 0.010UF K	
C704		CK73HB1A104K	CHIP C 0.10UF K		C775		CC73HCH1H470J	CHIP C 47PF J	
C705		CK73HB1A104K	CHIP C 0.10UF K		C778		CK73HB0J105K	CHIP C 1.0UF K	
C706		CC73HCH1H680J	CHIP C 68PF J		C779		CK73HB1E103K	CHIP C 0.010UF K	
C707		CC73HCH1H270J	CHIP C 27PF J		C780		CK73HB1A224K	CHIP C 0.22UF K	
C708		CK73HB1A104K	CHIP C 0.10UF K		C781		CK73HB0J105K	CHIP C 1.0UF K	
C709		CK73HB0J105K	CHIP C 1.0UF K		C782		CK73HB0J105K	CHIP C 1.0UF K	
C710		CK73HB1E103K	CHIP C 0.010UF K		C785		CK73HB1A224K	CHIP C 0.22UF K	
C711		CK73HB1A104K	CHIP C 0.10UF K		C786		CK73HB1E103K	CHIP C 0.010UF K	
C712		CK73HB1E103K	CHIP C 0.010UF K		C787		CK73HB0J105K	CHIP C 1.0UF K	
C713		CK73HB1H332K	CHIP C 3300PF K		C788		CC73HCH1H150J	CHIP C 15PF J	
C714		CK73HB1H122K	CHIP C 1200PF K		C789		CC73HCH1H680J	CHIP C 68PF J	
C715		CK73HB1A104K	CHIP C 0.10UF K		C790		CK73HB1A104K	CHIP C 0.10UF K	
C716		CK73HB1H681K	CHIP C 680PF K		C791		CK73HB1A393K	CHIP C 0.039UF K	
C717		CK73HB1E103K	CHIP C 0.010UF K		C792		CK73HB0J105K	CHIP C 1.0UF K	
C718		CK73HB1H152K	CHIP C 1500PF K		C793		CK73HB1A104K	CHIP C 0.10UF K	
C720		CK73HB1E103K	CHIP C 0.010UF K		C794		CK73HB1A104K	CHIP C 0.10UF K	
C721		CK73HB1A104K	CHIP C 0.10UF K		C795		CK73HB1E103K	CHIP C 0.010UF K	
C722		CK73HB1E103K	CHIP C 0.010UF K		C796		CK73HB1A104K	CHIP C 0.10UF K	
C723		CK73HB1A104K	CHIP C 0.10UF K		C797		CK73HB0J105K	CHIP C 1.0UF K	
C724		CK73HB1E103K	CHIP C 0.010UF K		C798		CS77BP1A100M	CHIP TNL 10UF 10WV	
C725		CC73HCH1E181J	CHIP C 180PF J		C799		CK73HB1A104K	CHIP C 0.10UF K	
C726		CK73HB1A104K	CHIP C 0.10UF K		C800		CK73HB1H152K	CHIP C 1500PF K	
C727		CK73HB1A104K	CHIP C 0.10UF K		C801		CK73HB1C223K	CHIP C 0.022UF K	
C728		CK73HB1H331K	CHIP C 330PF K		C802		CK73HB1E103K	CHIP C 0.010UF K	
C730		CK73HB1H331K	CHIP C 330PF K		C803		CK73HB1H102K	CHIP C 1000PF K	
C731		CK73HB1E103K	CHIP C 0.010UF K		C804		CC73HCH1H470J	CHIP C 47PF J	
C732		CK73HB1E103K	CHIP C 0.010UF K		C805		CK73HB1H471K	CHIP C 470PF K	
C735		CK73HB1H122K	CHIP C 1200PF K		C806		CK73HB1H471K	CHIP C 470PF K	
C736		CK73HB1A104K	CHIP C 0.10UF K		C808		CK73GB0J475K	CHIP C 4.7UF K	
C737		CK73HB1A104K	CHIP C 0.10UF K		C809		CK73FB1A106K	CHIP C 10UF K	
C739		CK73HB1E682K	CHIP C 6800PF K		C812		CK73HB0J105K	CHIP C 1.0UF K	
C740		CK73HB1H102K	CHIP C 1000PF K		C819		CK73HB1E104K	CHIP C 0.10UF K	
C742		CK73GB1E105K	CHIP C 1.0UF K		C820		CK73HB1E104K	CHIP C 0.10UF K	
C743		CK73HB0J105K	CHIP C 1.0UF K		C821		CC73HCH1H101J	CHIP C 100PF J	
C744		CK73HB1E103K	CHIP C 0.010UF K		C822		CK73GB0J106K	CHIP C 10UF K	
C745		CK73HB1E103K	CHIP C 0.010UF K		C830		CK73HB1H102K	CHIP C 1000PF K	
C746		CK73HB1E103K	CHIP C 0.010UF K		CN1		E40-6755-05	FLAT CABLE CONNECTOR	
C747		CK73HB1A104K	CHIP C 0.10UF K		CN22		E23-1325-05	TERMINAL	
C748		CK73HB1A104K	CHIP C 0.10UF K		CN23		E40-6758-05	PIN ASSY	
C749		CC73HCH1H470J	CHIP C 47PF J		CN24		E23-1325-05	TERMINAL	

# NX-200(G)

## PARTS LIST

### CONTROL UNIT (XC1-0020-XX)

Ref No.	Address	Parts No.	Description	Desti- nation	Ref No.	Address	Parts No.	Description	Desti- nation
CN401		J19-5386-05	HOLDER (LITHIUM CELL)		IC106		R2023T	MOS-IC	
CN403		E40-6813-05	PIN ASSY		IC107		SM5023CNDH-G	MOS IC	
CN404		E40-6421-15	PIN ASSY		IC108		<b>Note 1</b>	MOS-IC	
CN405		E40-6754-05	FLAT CABLE CONNECTOR		IC109		TC7SH08FU-F	MOS-IC	
CN701		E40-6586-05	SOCKET FOR PIN ASSY(20P)		IC110		TC7SH08FU-F	MOS-IC	
CN710		E40-6757-05	PIN ASSY		IC401		TC74LCX245FK	MOS-IC	
D1		B30-2337-05	LED(YELLOW)	K2	IC402		TC7WZ245FK-F	MOS-IC	
D2		B30-2337-05	LED(YELLOW)	K2	IC403		LM2682MMX	MOS-IC	
D3		B30-2337-05	LED(YELLOW)		IC404		XC6204B332D-G	MOS-IC	
D4		B30-2337-05	LED(YELLOW)		IC406		XC6204B332M-G	MOS-IC	
D5		B30-2337-05	LED(YELLOW)	K2	IC407		LT1616ES6-PBF	ANALOGUE IC	
D6		B30-2337-05	LED(YELLOW)	K2	IC408		BU7465HFV	MOS-IC	
D7		B30-2337-05	LED(YELLOW)		IC409		TC7W66FK-F	MOS-IC	
D8		B30-2337-05	LED(YELLOW)		IC411		NJM2880U105ZB	ANALOGUE IC	
D9		B30-2337-05	LED(YELLOW)	K2	IC412		TPA6201A1DRBR	ANALOGUE IC	
D10		B30-2337-05	LED(YELLOW)	K2	IC413		TPA6201A1DRBR	ANALOGUE IC	
D11		DA2S101	DIODE		IC414		XC61CC5602N-G	MOS IC	
D12		KDR720F-P	SCHOTTKY BARRIER DIODE		IC415		TC7SET08FU-F	MOS-IC	
D13		KDR720F-P	SCHOTTKY BARRIER DIODE		IC416		S-812C31BPI-G	ANALOGUE IC	
D14		KDR720F-P	SCHOTTKY BARRIER DIODE		IC417		TC7WH126FK	MOS-IC	
D15		KDR720F-P	SCHOTTKY BARRIER DIODE		IC418		TC7WT125FUF	MOS IC	
D16		KDR720F-P	SCHOTTKY BARRIER DIODE		IC701		PCA9535BS	MOS-IC	
D17		EMZ6.8N	ZENER DIODE		IC702		BU7242NUX	MOS-IC	
D18		HZC6.8-E	ZENER DIODE		IC703		M62364FP-F	MOS-IC	
D19		HZC6.8-E	ZENER DIODE		IC704		BU7465HFV	MOS-IC	
D20		NNCD6.8G-A	ZENER DIODE		IC705		BU7242NUX	MOS-IC	
D21		NNCD6.8G-A	ZENER DIODE		IC706		BU7465HFV	MOS-IC	
D22		KDS123E-P	DIODE		IC707		TC7W53FK(F)	MOS-IC	
D23		KDS123E-P	DIODE		IC708		XC6209B502P-G	MOS IC	
D101		DA2S101	DIODE	K2	IC709		TC7W53FK(F)	MOS-IC	
D102		KDR720F-P	SCHOTTKY BARRIER DIODE		IC710		BU7242NUX	MOS-IC	
D401		1SS388F	SCHOTTKY BARRIER DIODE		IC711		BU7242NUX	MOS-IC	
D402		1SS388F	SCHOTTKY BARRIER DIODE		IC712		TC7S66FUF	MOS-IC	
D403		1SS388F	SCHOTTKY BARRIER DIODE		IC713		BU7242NUX	MOS-IC	
D404		1SS388F	SCHOTTKY BARRIER DIODE		IC714		TC7W53FK(F)	MOS-IC	
D405		1SS388F	SCHOTTKY BARRIER DIODE		IC715		BU7465HFV	MOS-IC	
D406		HRB0502A	DIODE		IC716		BU7242NUX	MOS-IC	
D407		DA2S101	DIODE		IC717		XC9235A15CM-G	MOS IC	
D408		KDS121-P	DIODE		IC719		<b>Note 1</b>	MICROPROCESSOR IC	
D409		DA2S101	DIODE		L1		L92-0408-05	CHIP FERRITE	
D410		DA2S101	DIODE		L2		L92-0408-05	CHIP FERRITE	
D411		KDR720F-P	SCHOTTKY BARRIER DIODE		L3		L92-0140-05	CHIP FERRITE	
D412		KDS121-P	DIODE		L4		L92-0408-05	CHIP FERRITE	
D413		1SS388F	SCHOTTKY BARRIER DIODE		L5		L92-0408-05	CHIP FERRITE	
D414		KDR720F-P	SCHOTTKY BARRIER DIODE		L6		L92-0408-05	CHIP FERRITE	
D415		KDR720F-P	SCHOTTKY BARRIER DIODE		L7		L92-0408-05	CHIP FERRITE	
D416		1SS388F	SCHOTTKY BARRIER DIODE		L8		L92-0140-05	CHIP FERRITE	
D417		1SS388F	SCHOTTKY BARRIER DIODE		L9		L92-0162-05	BEADS CORE	
D701		KDS121-P	DIODE		L101		L92-0408-05	CHIP FERRITE	
D702		DA2S101	DIODE		L102		L92-0408-05	CHIP FERRITE	
D703		KDR731	DIODE		L401		L33-1496-05	SMALL FIXED INDUCTOR(22UH)	
D704		KDR731	DIODE		L402		L92-0467-05	CHIP FERRITE	
D705		KDR731	DIODE		L403		L92-0466-05	CHIP FERRITE	
D706		KDR731	DIODE		L409		L92-0467-05	CHIP FERRITE	
D707		KDS123E-P	DIODE		L410		L92-0467-05	CHIP FERRITE	
F701		F53-0360-05	FUSE(0.25A)		L411		L92-0467-05	CHIP FERRITE	
IC1		NJM2130F3-ZB	BI-POLAR IC		L701		L92-0140-05	CHIP FERRITE	
IC101		<b>Note 1</b>	ROM IC		L702		L92-0162-05	BEADS CORE	
IC103		<b>Note 1</b>	SRAM IC		L704		L92-0162-05	BEADS CORE	
IC105		XC6109C29AN-G	MOS-IC		L705		L92-0162-05	BEADS CORE	



## PARTS LIST

CONTROL UNIT (XC1-0020-XX)

Ref No.	Address	Parts No.	Description	Desti-nation	Ref No.	Address	Parts No.	Description	Desti-nation
L706		L92-0162-05	BEADS CORE		R18		RK73HB1J822J	CHIP R 8.2K J 1/16W	
L707		L92-0162-05	BEADS CORE		R19		RK73HB1J471J	CHIP R 470 J 1/16W	
L708		L92-0162-05	BEADS CORE		R20		RK73HB1J102J	CHIP R 1.0K J 1/16W	
L710		L92-0444-05	CHIP FERRITE		R21		RK73HB1J122J	CHIP R 1.2K J 1/16W	
L711		L92-0444-05	CHIP FERRITE		R22		RK73HB1J102J	CHIP R 1.0K J 1/16W	
L712		L92-0444-05	CHIP FERRITE		R23		RK73HB1J102J	CHIP R 1.0K J 1/16W	
L713		L92-0163-05	BEADS CORE		R24		RK73HB1J102J	CHIP R 1.0K J 1/16W	
L714		L92-0444-05	CHIP FERRITE		R25		RK73HB1J122J	CHIP R 1.2K J 1/16W	
L715		L92-0444-05	CHIP FERRITE		R26		RK73HB1J102J	CHIP R 1.0K J 1/16W	
L716		L92-0444-05	CHIP FERRITE		R27		RK73HB1J104J	CHIP R 100K J 1/16W	
L717		L92-0444-05	CHIP FERRITE		R28		RK73HB1J102J	CHIP R 1.0K J 1/16W	
L718		L92-0408-05	CHIP FERRITE		R29		RK73HB1J102J	CHIP R 1.0K J 1/16W	
L719		L33-1494-05	SMALL FIXED INDUCTOR(4.7UH)		R30		RK73HB1J101J	CHIP R 100 J 1/16W	
L720		L92-0162-05	BEADS CORE		R31		RK73HB1J102J	CHIP R 1.0K J 1/16W	
Q1		2SA1362-F(GR)	TRANSISTOR		R32		RK73HB1J101J	CHIP R 100 J 1/16W	
Q2		KTC4075E(Y,GR)	TRANSISTOR		R33		RK73HB1J101J	CHIP R 100 J 1/16W	
Q3		SSM3K15AMFVF	FET		R34		RK73HB1J101J	CHIP R 100 J 1/16W	
Q4		SSM3K15AMFVF	FET		R35		RK73HB1J101J	CHIP R 100 J 1/16W	
Q5		2SJ347F	FET		R40		RK73HB1J000J	CHIP R 0.0 J 1/16W	
Q101		2SA1832(GR)F	TRANSISTOR	K2	R101		RK73HB1J474J	CHIP R 470K J 1/16W	
Q102		KTC4075E(Y,GR)	TRANSISTOR	K2	R102		RK73HB1J000J	CHIP R 0.0 J 1/16W	
Q103		SSM3K15AMFVF	FET	K2	R103		RK73HB1J102J	CHIP R 1.0K J 1/16W	
Q401		SSM6N16FE-F	FET		R104		RK73HB1J473J	CHIP R 47K J 1/16W	
Q402		SSM6N16FE-F	FET		R106		RK73HB1J472J	CHIP R 4.7K J 1/16W	K2
Q403		2SJ648-A	FET		R107		RK73HB1J104J	CHIP R 100K J 1/16W	
Q404		SSM3K15AMFVF	FET		R108		RK73HB1J474J	CHIP R 470K J 1/16W	K2
Q405		SSM6N16FE-F	FET		R112		RK73HB1J000J	CHIP R 0.0 J 1/16W	K2
Q406		2SB798AZ(DLDK)	TRANSISTOR		R114		RK73HB1J331J	CHIP R 330 J 1/16W	K2
Q407		KRC660U-P	DIGITAL TRANSISTOR		R116		RK73HB1J473J	CHIP R 47K J 1/16W	
Q408		EMD12	TRANSISTOR		R117		RK73HB1J000J	CHIP R 0.0 J 1/16W	
Q409		2SA1955A-F	TRANSISTOR		R118		RK73HB1J473J	CHIP R 47K J 1/16W	
Q410		SSM3K15AMFVF	FET		R120		RK73HB1J474J	CHIP R 470K J 1/16W	
Q411		SSM6N16FE-F	FET		R121		RK73HB1J104J	CHIP R 100K J 1/16W	
Q412		SSM3K15AMFVF	FET		R123		RK73HB1J101J	CHIP R 100 J 1/16W	
Q413		2SA1955A-F	TRANSISTOR		R124		RK73HB1J101J	CHIP R 100 J 1/16W	
Q414		EMD12	TRANSISTOR		R125		RK73HB1J101J	CHIP R 100 J 1/16W	
Q415		EMD12	TRANSISTOR		R126		RK73HB1J101J	CHIP R 100 J 1/16W	
Q702		SSM3K15AMFVF	FET		R127		RK73HB1J104J	CHIP R 100K J 1/16W	
Q703		SSM3K15AMFVF	FET		R130		RK73HB1J101J	CHIP R 100 J 1/16W	
Q704		KTC4075E(Y,GR)	TRANSISTOR		R131		RK73HB1J104J	CHIP R 100K J 1/16W	
Q705		2SC4738(GR)F	TRANSISTOR		R135		RK73HB1J103J	CHIP R 10K J 1/16W	
Q706		2SA1832(GR)F	TRANSISTOR	K2	R136		RK73HB1J104J	CHIP R 100K J 1/16W	
Q707		2SJ648-A	FET		R137		RK73HB1J104J	CHIP R 100K J 1/16W	
Q708		SSM3K15AMFVF	FET		R138		RK73HB1J473J	CHIP R 47K J 1/16W	
R1		RK73HB1J105J	CHIP R 1.0M J 1/16W		R141		RK73HB1J104J	CHIP R 100K J 1/16W	
R2		RK73HB1J104J	CHIP R 100K J 1/16W		R142		RK73HB1J104J	CHIP R 100K J 1/16W	
R3		RK73HB1J123J	CHIP R 12K J 1/16W		R143		RK73HB1J104J	CHIP R 100K J 1/16W	
R4		RK73HB1J103J	CHIP R 10K J 1/16W		R144		RK73HB1J471J	CHIP R 470 J 1/16W	
R5		RK73HB1J103J	CHIP R 10K J 1/16W		R145		RK73HB1J104J	CHIP R 100K J 1/16W	
R6		RK73HB1J103J	CHIP R 10K J 1/16W		R147		RK73HB1J104J	CHIP R 100K J 1/16W	
R7		RK73HB1J103J	CHIP R 10K J 1/16W		R149		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R8		RK73HB1J103J	CHIP R 10K J 1/16W		R150		RK73HB1J102J	CHIP R 1.0K J 1/16W	
R9		RK73HB1J103J	CHIP R 10K J 1/16W		R153		RK73HB1J104J	CHIP R 100K J 1/16W	
R10		RK73HB1J103J	CHIP R 10K J 1/16W		R154		RK73HB1J104J	CHIP R 100K J 1/16W	
R11		RK73HB1J104J	CHIP R 100K J 1/16W		R155		RK73HB1J473J	CHIP R 47K J 1/16W	
R12		RK73HB1J103J	CHIP R 10K J 1/16W		R156		RK73HB1J472J	CHIP R 4.7K J 1/16W	
R14		RK73HB1J472J	CHIP R 4.7K J 1/16W		R157		RK73HB1J472J	CHIP R 4.7K J 1/16W	
R15		RK73HB1J000J	CHIP R 0.0 J 1/16W		R158		RK73HB1J220J	CHIP R 22 J 1/16W	
R16		RK73HB1J331J	CHIP R 330 J 1/16W		R159		RK73HB1J220J	CHIP R 22 J 1/16W	
R17		RK73HB1J000J	CHIP R 0.0 J 1/16W		R160		RK73HB1J000J	CHIP R 0.0 J 1/16W	

If a part reference number is listed in a shaded box, that part does not come with the PCB.

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## PARTS LIST

### CONTROL UNIT (XC1-0020-XX)

Ref No.	Address	Parts No.	Description	Desti- nation	Ref No.	Address	Parts No.	Description	Desti- nation
R161		RK73HB1J000J	CHIP R 0.0 J 1/16W		R434		RK73HB1J393J	CHIP R 39K J 1/16W	
R162		RK73HB1J474J	CHIP R 470K J 1/16W		R435		RK73HB1J104J	CHIP R 100K J 1/16W	
R163		RK73HH1J104D	CHIP R 100K D 1/16W		R436		RK73HB1J104J	CHIP R 100K J 1/16W	
R164		RK73HB1J104J	CHIP R 100K J 1/16W		R437		RK73HB1J471J	CHIP R 470 J 1/16W	
R165		RK73HB1J223J	CHIP R 22K J 1/16W		R438		RK73HB1J104J	CHIP R 100K J 1/16W	
R167		RK73HB1J102J	CHIP R 1.0K J 1/16W		R439		RK73HB1J104J	CHIP R 100K J 1/16W	
R168		RK73HB1J000J	CHIP R 0.0 J 1/16W		R440		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R170		RK73HH1J103D	CHIP R 10K D 1/16W		R441		RK73HB1J153J	CHIP R 15K J 1/16W	
R171		RK73HB1J000J	CHIP R 0.0 J 1/16W		R442		RK73HB1J102J	CHIP R 1.0K J 1/16W	
R172		RK73HB1J000J	CHIP R 0.0 J 1/16W		R443		RK73HB1J474J	CHIP R 470K J 1/16W	
R173		RK73HB1J000J	CHIP R 0.0 J 1/16W		R444		RK73HB1J564J	CHIP R 560K J 1/16W	
R174		RK73HB1J104J	CHIP R 100K J 1/16W		R445		RK73HB1J154J	CHIP R 150K J 1/16W	
R175		RK73HB1J104J	CHIP R 100K J 1/16W		R446		RK73HB1J274J	CHIP R 270K J 1/16W	
R176		RK73HB1J104J	CHIP R 100K J 1/16W		R447		RK73HB1J104J	CHIP R 100K J 1/16W	
R177		RK73HB1J104J	CHIP R 100K J 1/16W		R448		RK73HB1J103J	CHIP R 10K J 1/16W	
R178		RK73HB1J104J	CHIP R 100K J 1/16W		R449		RK73HB1J474J	CHIP R 470K J 1/16W	
R180		RK73HB1J104J	CHIP R 100K J 1/16W		R450		RK73HB1J474J	CHIP R 470K J 1/16W	
R181		RK73HB1J104J	CHIP R 100K J 1/16W		R451		RK73HB1J474J	CHIP R 470K J 1/16W	
R182		RK73HB1J474J	CHIP R 470K J 1/16W		R452		RK73HB1J474J	CHIP R 470K J 1/16W	
R183		RK73HB1J104J	CHIP R 100K J 1/16W		R453		RK73HB1J104J	CHIP R 100K J 1/16W	
R184		RK73HB1J473J	CHIP R 47K J 1/16W		R454		RK73HB1J474J	CHIP R 470K J 1/16W	
R185		RK73HB1J105J	CHIP R 1.0M J 1/16W		R455		RK73HB1J102J	CHIP R 1.0K J 1/16W	
R187		RK73HB1J102J	CHIP R 1.0K J 1/16W		R456		RK73HB1J474J	CHIP R 470K J 1/16W	
R189		RK73HB1J104J	CHIP R 100K J 1/16W		R457		RK73HB1J104J	CHIP R 100K J 1/16W	
R190		RK73HB1J102J	CHIP R 1.0K J 1/16W		R458		RK73HB1J104J	CHIP R 100K J 1/16W	
R191		RK73HB1J474J	CHIP R 470K J 1/16W		R459		RK73HB1J102J	CHIP R 1.0K J 1/16W	
R192		RK73HB1J102J	CHIP R 1.0K J 1/16W		R460		RK73HB1J102J	CHIP R 1.0K J 1/16W	
R193		RK73HB1J104J	CHIP R 100K J 1/16W		R461		RK73HB1J103J	CHIP R 10K J 1/16W	
R194		RK73HB1J104J	CHIP R 100K J 1/16W		R462		RK73HB1J102J	CHIP R 1.0K J 1/16W	
R195		RK73HB1J473J	CHIP R 47K J 1/16W		R463		RK73HB1J104J	CHIP R 100K J 1/16W	
R196		RK73HB1J473J	CHIP R 47K J 1/16W		R465		RK73HB1J103J	CHIP R 10K J 1/16W	
R401		RK73HB1J152J	CHIP R 1.5K J 1/16W	K2	R466		RK73HB1J104J	CHIP R 100K J 1/16W	
R402		RK73HB1J151J	CHIP R 150 J 1/16W		R467		RK73HB1J104J	CHIP R 100K J 1/16W	
R403		RK73HB1J152J	CHIP R 1.5K J 1/16W	K2	R468		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R404		RK73HB1J151J	CHIP R 150 J 1/16W		R469		RK73HB1J474J	CHIP R 470K J 1/16W	
R405		RK73HB1J152J	CHIP R 1.5K J 1/16W	K2	R470		RK73HB1J183J	CHIP R 18K J 1/16W	
R406		RK73HB1J000J	CHIP R 0.0 J 1/16W		R471		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R407		RK73HB1J103J	CHIP R 10K J 1/16W		R472		RK73HB1J223J	CHIP R 22K J 1/16W	
R408		RK73HB1J103J	CHIP R 10K J 1/16W		R473		RK73HB1J332J	CHIP R 3.3K J 1/16W	
R409		RK73HB1J470J	CHIP R 47 J 1/16W		R474		RK73HB1J333J	CHIP R 33K J 1/16W	
R410		RK73HB1J471J	CHIP R 470 J 1/16W		R475		RK73HB1J333J	CHIP R 33K J 1/16W	
R411		RK73HB1J471J	CHIP R 470 J 1/16W		R477		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R412		RK73HB1J471J	CHIP R 470 J 1/16W		R478		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R413		RK73HB1J471J	CHIP R 470 J 1/16W		R479		RK73HB1J102J	CHIP R 1.0K J 1/16W	
R414		RK73HB1J471J	CHIP R 470 J 1/16W		R481		RK73HB1J474J	CHIP R 470K J 1/16W	
R415		RK73HB1J471J	CHIP R 470 J 1/16W		R483		RK73HB1J473J	CHIP R 47K J 1/16W	
R416		RK73HB1J471J	CHIP R 470 J 1/16W		R484		RK73HB1J223J	CHIP R 22K J 1/16W	
R417		RK73HB1J000J	CHIP R 0.0 J 1/16W		R485		RK73HB1J103J	CHIP R 10K J 1/16W	
R418		RK73HB1J471J	CHIP R 470 J 1/16W		R487		RK73HH1J223D	CHIP R 22K D 1/16W	
R419		RK73HB1J000J	CHIP R 0.0 J 1/16W		R488		RK73HH1J223D	CHIP R 22K D 1/16W	
R420		RK73HB1J000J	CHIP R 0.0 J 1/16W		R489		RK73HH1J223D	CHIP R 22K D 1/16W	
R424		RK73HH1J683D	CHIP R 68K D 1/16W		R490		RK73HH1J223D	CHIP R 22K D 1/16W	
R425		RK73HH1J333D	CHIP R 33K D 1/16W		R491		RK73HB1J104J	CHIP R 100K J 1/16W	
R426		RK73HB1J000J	CHIP R 0.0 J 1/16W		R492		RK73HB1J474J	CHIP R 470K J 1/16W	
R427		RK73HB1J000J	CHIP R 0.0 J 1/16W		R493		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R428		RK73HB1J000J	CHIP R 0.0 J 1/16W		R494		RK73HH1J104D	CHIP R 100K D 1/16W	
R429		RK73HB1J000J	CHIP R 0.0 J 1/16W		R495		RK73HH1J104D	CHIP R 100K D 1/16W	
R431		RK73HB1J474J	CHIP R 470K J 1/16W		R496		RK73HH1J104D	CHIP R 100K D 1/16W	
R432		RK73HB1J000J	CHIP R 0.0 J 1/16W		R497		RK73HH1J104D	CHIP R 100K D 1/16W	
R433		RK73HB1J000J	CHIP R 0.0 J 1/16W		R500		RK73HB1J473J	CHIP R 47K J 1/16W	

## PARTS LIST

CONTROL UNIT (XC1-0020-XX)

Ref No.	Address	Parts No.	Description	Desti- nation	Ref No.	Address	Parts No.	Description	Desti- nation
R501		RK73HB1J222J	CHIP R 2.2K J 1/16W		R713		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R502		RK73HB1J103J	CHIP R 10K J 1/16W		R714		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R503		RK73HB1J103J	CHIP R 10K J 1/16W		R715		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R504		RK73HB1J102J	CHIP R 1.0K J 1/16W		R716		RK73GB2A000J	CHIP R 0.0 J 1/10W	
R506		RK73HB1J222J	CHIP R 2.2K J 1/16W		R717		RK73HB1J104J	CHIP R 100K J 1/16W	
R507		RK73HB1J102J	CHIP R 1.0K J 1/16W		R718		RK73HB1J104J	CHIP R 100K J 1/16W	
R508		RK73HB1J102J	CHIP R 1.0K J 1/16W		R719		RK73HB1J104J	CHIP R 100K J 1/16W	
R509		RK73HB1J102J	CHIP R 1.0K J 1/16W		R720		RK73HB1J104J	CHIP R 100K J 1/16W	
R510		RK73HB1J102J	CHIP R 1.0K J 1/16W		R721		RK73HB1J104J	CHIP R 100K J 1/16W	
R511		RK73HB1J102J	CHIP R 1.0K J 1/16W		R722		RK73HB1J104J	CHIP R 100K J 1/16W	
R512		RK73HB1J101J	CHIP R 100 J 1/16W		R723		RK73HB1J105J	CHIP R 1.0M J 1/16W	
R513		RK73HB1J102J	CHIP R 1.0K J 1/16W		R724		RK73HB1J104J	CHIP R 100K J 1/16W	
R514		RK73HB1J102J	CHIP R 1.0K J 1/16W		R725		RK73HB1J100J	CHIP R 10 J 1/16W	
R515		RK73HB1J102J	CHIP R 1.0K J 1/16W		R726		RK73HB1J104J	CHIP R 100K J 1/16W	
R516		RK73HB1J101J	CHIP R 100 J 1/16W		R727		RK73HB1J105J	CHIP R 1.0M J 1/16W	
R517		RK73HB1J102J	CHIP R 1.0K J 1/16W		R728		RK73HB1J105J	CHIP R 1.0M J 1/16W	
R518		RK73HB1J101J	CHIP R 100 J 1/16W		R729		RK73HB1J105J	CHIP R 1.0M J 1/16W	
R519		RK73HB1J102J	CHIP R 1.0K J 1/16W		R730		RK73HB1J471J	CHIP R 470 J 1/16W	
R520		RK73HB1J102J	CHIP R 1.0K J 1/16W		R731		RK73HB1J105J	CHIP R 1.0M J 1/16W	
R521		RK73HB1J102J	CHIP R 1.0K J 1/16W		R732		RK73HB1J105J	CHIP R 1.0M J 1/16W	
R522		RK73HB1J102J	CHIP R 1.0K J 1/16W		R733		RK73HB1J473J	CHIP R 47K J 1/16W	
R523		RK73HB1J102J	CHIP R 1.0K J 1/16W		R735		RK73HB1J473J	CHIP R 47K J 1/16W	
R524		RK73HB1J102J	CHIP R 1.0K J 1/16W		R736		RK73HB1J823J	CHIP R 82K J 1/16W	
R525		RK73HB1J102J	CHIP R 1.0K J 1/16W		R737		RK73HB1J153J	CHIP R 15K J 1/16W	
R526		RK73HB1J102J	CHIP R 1.0K J 1/16W		R738		RK73HB1J563J	CHIP R 56K J 1/16W	
R527		RK73HB1J102J	CHIP R 1.0K J 1/16W		R739		RK73HB1J823J	CHIP R 82K J 1/16W	
R528		RK73HB1J102J	CHIP R 1.0K J 1/16W		R740		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R529		RK73HB1J101J	CHIP R 100 J 1/16W		R741		RK73HB1J474J	CHIP R 470K J 1/16W	
R530		RK73HB1J101J	CHIP R 100 J 1/16W		R742		RK73HB1J103J	CHIP R 10K J 1/16W	
R531		RK73HB1J101J	CHIP R 100 J 1/16W		R743		RK73HB1J103J	CHIP R 10K J 1/16W	
R532		RK73HB1J102J	CHIP R 1.0K J 1/16W		R744		RK73HB1J223J	CHIP R 22K J 1/16W	
R533		RK73HB1J101J	CHIP R 100 J 1/16W		R745		RK73HB1J682J	CHIP R 6.8K J 1/16W	
R534		RK73HB1J101J	CHIP R 100 J 1/16W		R746		RK73HB1J563J	CHIP R 56K J 1/16W	
R535		RK73HB1J101J	CHIP R 100 J 1/16W		R748		RK73HB1J103J	CHIP R 10K J 1/16W	
R536		RK73HB1J102J	CHIP R 1.0K J 1/16W		R749		RK73HB1J472J	CHIP R 4.7K J 1/16W	
R537		RK73HB1J102J	CHIP R 1.0K J 1/16W		R750		RK73HB1J103J	CHIP R 10K J 1/16W	
R538		RK73HB1J102J	CHIP R 1.0K J 1/16W		R752		RK73HB1J101J	CHIP R 100 J 1/16W	
R539		RK73HB1J102J	CHIP R 1.0K J 1/16W		R753		RK73HB1J683J	CHIP R 68K J 1/16W	
R540		RK73HB1J102J	CHIP R 1.0K J 1/16W		R754		RK73HB1J564J	CHIP R 560K J 1/16W	
R541		RK73HB1J101J	CHIP R 100 J 1/16W		R755		RK73HB1J104J	CHIP R 100K J 1/16W	
R543		RK73HB1J101J	CHIP R 100 J 1/16W		R756		RK73HB1J101J	CHIP R 100 J 1/16W	
R544		RK73HB1J102J	CHIP R 1.0K J 1/16W		R757		RK73HB1J223J	CHIP R 22K J 1/16W	
R545		RK73HB1J101J	CHIP R 100 J 1/16W		R758		RK73HB1J103J	CHIP R 10K J 1/16W	
R546		RK73HB1J102J	CHIP R 1.0K J 1/16W		R759		RK73HB1J101J	CHIP R 100 J 1/16W	
R547		RK73HB1J102J	CHIP R 1.0K J 1/16W		R761		RK73HB1J223J	CHIP R 22K J 1/16W	
R548		RK73HB1J473J	CHIP R 47K J 1/16W		R762		RK73HB1J223J	CHIP R 22K J 1/16W	
R549		RK73HB1J473J	CHIP R 47K J 1/16W		R763		RK73HB1J223J	CHIP R 22K J 1/16W	
R550		RK73HB1J000J	CHIP R 0.0 J 1/16W		R764		RK73HB1J223J	CHIP R 22K J 1/16W	
R551		RK73HB1J000J	CHIP R 0.0 J 1/16W		R765		RK73HB1J334J	CHIP R 330K J 1/16W	
R701		RK73HB1J000J	CHIP R 0.0 J 1/16W		R766		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R702		RK73HB1J000J	CHIP R 0.0 J 1/16W		R767		RK73HB1J103J	CHIP R 10K J 1/16W	
R703		RK73HB1J000J	CHIP R 0.0 J 1/16W		R768		RK73HB1J224J	CHIP R 220K J 1/16W	
R704		RK73HB1J000J	CHIP R 0.0 J 1/16W		R769		RK73HB1J334J	CHIP R 330K J 1/16W	
R705		RK73HB1J000J	CHIP R 0.0 J 1/16W		R770		RK73HB1J334J	CHIP R 330K J 1/16W	
R706		RK73HB1J000J	CHIP R 0.0 J 1/16W		R771		RK73HB1J153J	CHIP R 15K J 1/16W	
R707		RK73HB1J000J	CHIP R 0.0 J 1/16W		R775		RK73HB1J183J	CHIP R 18K J 1/16W	
R709		RK73HB1J000J	CHIP R 0.0 J 1/16W		R777		RK73HB1J473J	CHIP R 47K J 1/16W	
R710		RK73HB1J000J	CHIP R 0.0 J 1/16W		R778		RK73HB1J333J	CHIP R 33K J 1/16W	
R711		RK73HB1J000J	CHIP R 0.0 J 1/16W		R779		RK73HB1J473J	CHIP R 47K J 1/16W	
R712		RK73HB1J000J	CHIP R 0.0 J 1/16W		R780		RK73HB1J104J	CHIP R 100K J 1/16W	

# NX-200(G)

## PARTS LIST

CONTROL UNIT (XC1-0020-XX)  
TX-RX UNIT (X57-8950-13)

Ref No.	Address	Parts No.	Description	Desti- nation	Ref No.	Address	Parts No.	Description	Desti- nation
R782		RK73HB1J104J	CHIP R 100K J 1/16W		R844		RK73HB1J472J	CHIP R 4.7K J 1/16W	
R783		RK73HB1J183J	CHIP R 18K J 1/16W		R845		RK73HB1J104J	CHIP R 100K J 1/16W	
R784		RK73HB1J104J	CHIP R 100K J 1/16W		R846		RK73HB1J471J	CHIP R 470 J 1/16W	
R785		RK73HB1J682J	CHIP R 6.8K J 1/16W		R847		RK73HB1J182J	CHIP R 1.8K J 1/16W	
R786		RK73HB1J000J	CHIP R 0.0 J 1/16W		R848		RK73HB1J000J	CHIP R 0.0 J 1/16W	K
R787		RK73HB1J124J	CHIP R 120K J 1/16W		R849		RK73HB1J000J	CHIP R 0.0 J 1/16W	K2
R788		RK73HB1J473J	CHIP R 47K J 1/16W		R850		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R789		RK73HB1J154J	CHIP R 150K J 1/16W		R851		RK73HB1J683J	CHIP R 68K J 1/16W	
R790		RK73HB1J102J	CHIP R 1.0K J 1/16W		R852		RK73HB1J683J	CHIP R 68K J 1/16W	
R791		RK73HB1J474J	CHIP R 470K J 1/16W		R860		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R793		RK73HB1J102J	CHIP R 1.0K J 1/16W		R863		RK73HB1J104J	CHIP R 100K J 1/16W	
R794		RK73HB1J104J	CHIP R 100K J 1/16W		R864		RK73HB1J104J	CHIP R 100K J 1/16W	
R795		RK73HB1J000J	CHIP R 0.0 J 1/16W		R867		RK73HB1J104J	CHIP R 100K J 1/16W	
R796		RK73HB1J333J	CHIP R 33K J 1/16W		R868		RK73HB1J104J	CHIP R 100K J 1/16W	
R797		RK73HB1J102J	CHIP R 1.0K J 1/16W		R869		RK73HB1J104J	CHIP R 100K J 1/16W	
R798		RK73HB1J104J	CHIP R 100K J 1/16W		R870		RK73HB1J104J	CHIP R 100K J 1/16W	
R799		RK73HB1J334J	CHIP R 330K J 1/16W		R872		RK73HB1J104J	CHIP R 100K J 1/16W	
R800		RK73HB1J474J	CHIP R 470K J 1/16W		R873		RK73HB1J104J	CHIP R 100K J 1/16W	
R801		RK73HB1J473J	CHIP R 47K J 1/16W		R874		RK73HB1J104J	CHIP R 100K J 1/16W	
R802		RK73HB1J474J	CHIP R 470K J 1/16W		R876		RK73HB1J103J	CHIP R 10K J 1/16W	
R803		RK73HB1J103J	CHIP R 10K J 1/16W		R877		RK73HB1J474J	CHIP R 470K J 1/16W	
R804		RK73HB1J000J	CHIP R 0.0 J 1/16W		R888		RK73HB1J101J	CHIP R 100 J 1/16W	
R805		RK73HB1J473J	CHIP R 47K J 1/16W		R889		RK73HB1J471J	CHIP R 470 J 1/16W	
R806		RK73HB1J473J	CHIP R 47K J 1/16W		R890		RK73GB2A000J	CHIP R 0.0 J 1/10W	
R807		RK73HB1J102J	CHIP R 1.0K J 1/16W		R891		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R808		RK73HB1J471J	CHIP R 470 J 1/16W		TH1		ERTJ0EV104H	THERMISTOR	
R809		RK73HB1J334J	CHIP R 330K J 1/16W		TH701		ERTJ0EV104H	THERMISTOR	
R810		RK73HB1J332J	CHIP R 3.3K J 1/16W		X101		L77-1802-05	CRYSTAL RESONATOR(32768HZ)	
R811		RK73HB1J823J	CHIP R 82K J 1/16W		X102		L77-3015-05	TCXO(18.432M)	
R812		RK73HB1J562J	CHIP R 5.6K J 1/16W		<b>TX-RX UNIT (X57-8950-13)</b>				
R813		RK73HB1J273J	CHIP R 27K J 1/16W		C1		CC73HCH1H101J	CHIP C 100PF J	
R814		RK73HB1J564J	CHIP R 560K J 1/16W		C3		CK73HB1C103K	CHIP C 0.010UF K	
R815		RK73HB1J104J	CHIP R 100K J 1/16W		C4		CC73HCH1H101J	CHIP C 100PF J	
R816		RK73HB1J683J	CHIP R 68K J 1/16W		C5		CC73HCH1H100C	CHIP C 10PF C	
R818		RK73HB1J104J	CHIP R 100K J 1/16W		C6		CK73HB1C103K	CHIP C 0.010UF K	
R819		RK73HB1J103J	CHIP R 10K J 1/16W		C7		CK73GB1E105K	CHIP C 1.0UF K	
R820		RK73HB1J103J	CHIP R 10K J 1/16W		C8		CK73HB1H102K	CHIP C 1000PF K	
R821		RK73HB1J104J	CHIP R 100K J 1/16W		C9		CC73HCH1H100C	CHIP C 10PF C	
R822		RK73HB1J103J	CHIP R 10K J 1/16W		C10		CC73HCH1H101J	CHIP C 100PF J	
R823		RK73HB1J103J	CHIP R 10K J 1/16W		C11		CC73HCH1H101J	CHIP C 100PF J	
R824		RK73HB1J393J	CHIP R 39K J 1/16W		C12		CK73HB1H471K	CHIP C 470PF K	
R825		RK73HB1J104J	CHIP R 100K J 1/16W		C13		CC73HCH1H101J	CHIP C 100PF J	
R826		RK73HB1J334J	CHIP R 330K J 1/16W		C15		CK73HB1H471K	CHIP C 470PF K	
R827		RK73HB1J184J	CHIP R 180K J 1/16W		C16		CC73HCH1H101J	CHIP C 100PF J	
R828		RK73HB1J000J	CHIP R 0.0 J 1/16W		C17		CC73HCH1H101J	CHIP C 100PF J	
R829		RK73HB1J000J	CHIP R 0.0 J 1/16W		C18		CK73HB1C103K	CHIP C 0.010UF K	
R830		RK73HB1J105J	CHIP R 1.0M J 1/16W		C19		CK73HB1H471K	CHIP C 470PF K	
R831		RK73HB1J474J	CHIP R 470K J 1/16W		C20		CC73HCH1H220G	CHIP C 22PF G	
R832		RK73HB1J473J	CHIP R 47K J 1/16W		C21		CK73HB1H471K	CHIP C 470PF K	
R833		RK73HB1J684J	CHIP R 680K J 1/16W		C22		CC73HCH1H390G	CHIP C 39PF G	
R834		RK73HB1J000J	CHIP R 0.0 J 1/16W		C24		CC73HCH1H101J	CHIP C 100PF J	
R835		RK73HB1J153J	CHIP R 15K J 1/16W		C25		CC73HCH1H101J	CHIP C 100PF J	
R836		RK73HB1J473J	CHIP R 47K J 1/16W		C26		CC73HCH1H030B	CHIP C 3.0PF B	
R837		RK73HB1J683J	CHIP R 68K J 1/16W		C27		CK73HB1A104K	CHIP C 0.10UF K	
R838		RK73HB1J564J	CHIP R 560K J 1/16W		C28		CC73HCH1H101J	CHIP C 100PF J	
R839		RK73HB1J333J	CHIP R 33K J 1/16W						
R840		RK73HB1J123J	CHIP R 12K J 1/16W						
R841		RK73HB1J564J	CHIP R 560K J 1/16W						
R842		RK73HB1J104J	CHIP R 100K J 1/16W						
R843		RK73HB1J102J	CHIP R 1.0K J 1/16W						

## PARTS LIST

TX-RX UNIT (X57-8950-13)

Ref No.	Address	Parts No.	Description	Desti-nation	Ref No.	Address	Parts No.	Description	Desti-nation
C29		CK73HB1A104K	CHIP C 0.10UF K		C109		CK73HB1H471K	CHIP C 470PF K	
C30		C93-0787-05	CHIP C 0.1UF J		C111		CK73HB1H102K	CHIP C 1000PF K	
C31		CC73HCH1H220G	CHIP C 22PF G		C112		CC73HCH1H560J	CHIP C 56PF J	
C32		CC73HCH1H101J	CHIP C 100PF J		C114		CK73HB1H102K	CHIP C 1000PF K	
C34		CC73HCH1H470G	CHIP C 47PF G		C115		CK73HB1H102K	CHIP C 1000PF K	
C35		CC73HCH1H101J	CHIP C 100PF J		C116		CK73HB1A104K	CHIP C 0.10UF K	
C36		CK73HB1H471K	CHIP C 470PF K		C117		CK73HB1H102K	CHIP C 1000PF K	
C37		CK73HB1H471K	CHIP C 470PF K		C119		CC73HCH1H180J	CHIP C 18PF J	
C38		CK73HB1H102K	CHIP C 1000PF K		C120		CK73HB1H471K	CHIP C 470PF K	
C39		CC73HCH1H101J	CHIP C 100PF J		C122		CK73HB1H102K	CHIP C 1000PF K	
C41		CK73HB1H472K	CHIP C 4700PF K		C123		CK73HB1A104K	CHIP C 0.10UF K	
C42		CK73HB1H471K	CHIP C 470PF K		C124		CC73HCH1H470J	CHIP C 47PF J	
C43		CS77MA1VR15M	CHIP TNTL 0.15UF 35WV		C125		CK73HB1H102K	CHIP C 1000PF K	
C44		CS77BA1D100M	CHIP TNTL 10UF 20WV		C127		CC73HCH1H100C	CHIP C 10PF C	
C45		CK73HB1H471K	CHIP C 470PF K		C128		CS77MA1A6R8M	CHIP TNTL 6.8UF 10WV	
C46		CK73HB1H471K	CHIP C 470PF K		C129		CK73HB1A104K	CHIP C 0.10UF K	
C47		CK73HB1H471K	CHIP C 470PF K		C130		CK73HB1H102K	CHIP C 1000PF K	
C48		C93-1906-05	CHIP FILM 0.047U 35V		C131		CK73GB1E105K	CHIP C 1.0UF K	
C50		CC73HCH1H101J	CHIP C 100PF J		C132		CK73HB1H102K	CHIP C 1000PF K	
C51		CC73HCH1H101J	CHIP C 100PF J		C133		CK73HB1H471K	CHIP C 470PF K	
C52		CK73HB1H471K	CHIP C 470PF K		C134		CK73HB1H471K	CHIP C 470PF K	
C53		CK73FB0J106K	CHIP C 10UF K		C135		CC73GCH1H150G	CHIP C 15PF G	
C54		CK73HB1H471K	CHIP C 470PF K		C136		CC73GCH1H820J	CHIP C 82PF J	
C55		CK73GB0J475K	CHIP C 4.7UF K		C139		CK73HB1H471K	CHIP C 470PF K	
C56		CK73HB0J105K	CHIP C 1.0UF K		C140		CC73GCH1H110G	CHIP C 11PF G	
C57		CC73HCH1H270J	CHIP C 27PF J		C141		CK73HB1H471K	CHIP C 470PF K	
C58		CC73HCH1H470J	CHIP C 47PF J		C142		CC73GCH1H080B	CHIP C 8.0PF B	
C60		CK73HB1H471K	CHIP C 470PF K		C143		CC73HCH1H101J	CHIP C 100PF J	
C62		CC73HCH1H030B	CHIP C 3.0PF B		C144		CC73GCH1H270G	CHIP C 27PF G	
C63		CK73HB1H471K	CHIP C 470PF K		C145		CK73HB1C103K	CHIP C 0.010UF K	
C64		CC73HCH1H030B	CHIP C 3.0PF B		C146		CC73GCH1H150G	CHIP C 15PF G	
C65		CC73HCH1HR75B	CHIP C 0.75PF B		C148		CK73HB1H102K	CHIP C 1000PF K	
C66		CC73HCH1H080B	CHIP C 8.0PF B		C149		CC73GCH1H220G	CHIP C 22PF G	
C67		CC73HCH1H100B	CHIP C 10PF B		C150		CK73HB1A104K	CHIP C 0.10UF K	
C68		CC73HCH1H100B	CHIP C 10PF B		C151		CK73GB1C104K	CHIP C 0.10UF K	
C69		CC73HCH1H100B	CHIP C 10PF B		C152		CK73GB1E105K	CHIP C 1.0UF K	
C70		CK73HB1H102K	CHIP C 1000PF K		C154		CC73GCH1H220G	CHIP C 22PF G	
C71		CK73GB1H103K	CHIP C 0.010UF K		C155		CK73HB1H471K	CHIP C 470PF K	
C72		CK73GB1H102K	CHIP C 1000PF K		C156		CK73HB1C103K	CHIP C 0.010UF K	
C74		CC73HCH1H0R5B	CHIP C 0.5PF B		C158		CC73GCH1H330G	CHIP C 33PF G	
C75		CC73HCH1H0R5B	CHIP C 0.5PF B		C159		CK73HB1H471K	CHIP C 470PF K	
C76		CK73HB1H102K	CHIP C 1000PF K		C160		CK73HB1A104K	CHIP C 0.10UF K	
C77		CC73HCH1H220J	CHIP C 22PF J		C163		CC73GCH1H120G	CHIP C 12PF G	
C78		CK73HB1H471K	CHIP C 470PF K		C165		CC73GCH1H070B	CHIP C 7.0PF B	
C79		CC73HCH1H101J	CHIP C 100PF J		C166		CC73GCH1H560J	CHIP C 56PF J	
C81		CC73HCH1H470J	CHIP C 47PF J		C167		CC73HCH1H101J	CHIP C 100PF J	
C83		CK73HB1H471K	CHIP C 470PF K		C168		CC73HCH1H101J	CHIP C 100PF J	
C84		CC73HCH1H050B	CHIP C 5.0PF B		C169		CK73HB1A104K	CHIP C 0.10UF K	
C85		CK73HB0J105K	CHIP C 1.0UF K		C173		CK73HB1H471K	CHIP C 470PF K	
C87		CK73HB1C103K	CHIP C 0.010UF K		C177		CC73HCH1H220J	CHIP C 22PF J	
C88		CC73HCH1H101J	CHIP C 100PF J		C178		CC73HCH1H120J	CHIP C 12PF J	
C90		CK73HB1A104K	CHIP C 0.10UF K		C179		CC73HCH1H100B	CHIP C 10PF B	
C91		CK73HB1A104K	CHIP C 0.10UF K		C180		CC73GCH1H120G	CHIP C 12PF G	
C92		CC73HCH1H020B	CHIP C 2.0PF B		C190		CC73GCH1H270G	CHIP C 27PF G	
C93		CC73HCH1H330J	CHIP C 33PF J		C191		CC73GCH1H181J	CHIP C 180PF J	
C100		CC73HCH1H150J	CHIP C 15PF J		C193		CC73GCH1H330G	CHIP C 33PF G	
C101		CK73HB1H102K	CHIP C 1000PF K		C201		CK73GB1H104K	CHIP C 0.10UF K	
C102		CK73HB1H102K	CHIP C 1000PF K		C202		CK73GB1H104K	CHIP C 0.10UF K	
C104		CC73HCH1H100C	CHIP C 10PF C		C203		CC73HCH1H070B	CHIP C 7.0PF B	
C106		CK73HB1H102K	CHIP C 1000PF K		C204		CK73HB1C103K	CHIP C 0.010UF K	

# NX-200(G)

## PARTS LIST

TX-RX UNIT (X57-8950-13)

Ref No.	Address	Parts No.	Description	Desti- nation	Ref No.	Address	Parts No.	Description	Desti- nation
C206		CK73HB1C103K	CHIP C 0.010UF K		C284		CK73HB1H102K	CHIP C 1000PF K	
C207		CC73HCH1H100B	CHIP C 10PF B		C285		CK73HB1H102K	CHIP C 1000PF K	
C208		CC73HCH1H680J	CHIP C 68PF J		C286		CK73HB1H102K	CHIP C 1000PF K	
C209		CC73HCH1H101J	CHIP C 100PF J		C290		CC73HCH1H150J	CHIP C 15PF J	
C210		CK73HB1H471K	CHIP C 470PF K		C291		CK73HB1H102K	CHIP C 1000PF K	
C211		CK73HB1C103K	CHIP C 0.010UF K		C295		CC73HCH1H100B	CHIP C 10PF B	
C212		CC73HCH1H680J	CHIP C 68PF J		C296		CC73HCH1H020B	CHIP C 2.0PF B	
C213		CK73HB1C103K	CHIP C 0.010UF K		C297		CC73HCH1H010B	CHIP C 1.0PF B	
C215		CC73HCH1H050B	CHIP C 5.0PF B		C298		CC73HCH1H020B	CHIP C 2.0PF B	
C216		CC73HCH1H220G	CHIP C 22PF G		C299		CC73HCH1H180J	CHIP C 18PF J	
C217		CC73HCH1H470J	CHIP C 47PF J		C301		CC73HCH1H180J	CHIP C 18PF J	
C219		CC73HCH1H060B	CHIP C 6.0PF B		C304		CC73HCH1H120J	CHIP C 12PF J	
C220		CK73HB1C103K	CHIP C 0.010UF K		C306		CC73HCH1H390J	CHIP C 39PF J	
C221		CK73HB1A104K	CHIP C 0.10UF K		C307		CC73HCH1H180J	CHIP C 18PF J	
C222		CK73HB1C103K	CHIP C 0.010UF K		C310		CC73HCH1H470G	CHIP C 47PF G	
C223		CK73HB1C103K	CHIP C 0.010UF K		C311		CK73HB1C103K	CHIP C 0.010UF K	
C224		CK73HB1A104K	CHIP C 0.10UF K		C312		CK73GB1H104K	CHIP C 0.10UF K	
C225		CK73HB1A104K	CHIP C 0.10UF K		C314		CK73HB1A104K	CHIP C 0.10UF K	
C226		CK73HB1H471K	CHIP C 470PF K		C316		CK73HB1H102K	CHIP C 1000PF K	
C227		CK73HB1A104K	CHIP C 0.10UF K		C317		CC73HCH1H100B	CHIP C 10PF B	
C228		CK73HB1A104K	CHIP C 0.10UF K		C320		CC73HCH1H010B	CHIP C 1.0PF B	
C229		CC73HCH1H100B	CHIP C 10PF B		C355		CK73HB1A104K	CHIP C 0.10UF K	
C230		CK73HB1A104K	CHIP C 0.10UF K		C356		CK73HB1A104K	CHIP C 0.10UF K	
C231		CC73HCH1H100B	CHIP C 10PF B		C362		CC73HCH1H330J	CHIP C 33PF J	
C232		CK73HB1H102K	CHIP C 1000PF K		C386		CC73HCH1H070B	CHIP C 7.0PF B	
C233		CK73HB1C103K	CHIP C 0.010UF K		C400		CC73GCH1H220J	CHIP C 22PF J	
C234		CK73FB1E474K	CHIP C 0.47UF K		C402		CK73HB1H471K	CHIP C 470PF K	
C235		CK73HB1H102K	CHIP C 1000PF K		C403		CK73HB1H471K	CHIP C 470PF K	
C236		CK73FB1A106K	CHIP C 10UF K		C404		CK73GB1E105K	CHIP C 1.0UF K	
C237		CK73FB1A106K	CHIP C 10UF K		C405		CK73GB1E105K	CHIP C 1.0UF K	
C238		CK73HB1C103K	CHIP C 0.010UF K		C406		CK73GB1E105K	CHIP C 1.0UF K	
C239		CK73HB1A104K	CHIP C 0.10UF K		C407		CK73GB1C224K	CHIP C 0.22UF K	
C240		CC73HCH1H040B	CHIP C 4.0PF B		C408		CK73GB1E105K	CHIP C 1.0UF K	
C241		CK73HB1H102K	CHIP C 1000PF K		C409		C92-0765-05	CHIP TNTL 4.7UF 16WV	
C242		CK73HB1H102K	CHIP C 1000PF K		C410		CK73GB1C224K	CHIP C 0.22UF K	
C244		CC73HCH1H120G	CHIP C 12PF G		C411		CK73HB1A104K	CHIP C 0.10UF K	
C245		CK73FB1A475K	CHIP C 4.7UF K		C414		CK73GB1C224K	CHIP C 0.22UF K	
C246		CK73HB1A104K	CHIP C 0.10UF K		C415		CK73HB1H471K	CHIP C 470PF K	
C247		CC73HCH1H050B	CHIP C 5.0PF B		C416		CK73GB1E105K	CHIP C 1.0UF K	
C248		CC73HCH1H220G	CHIP C 22PF G		C417		CC73HCH1E181J	CHIP C 180PF J	
C249		CK73HB1A104K	CHIP C 0.10UF K		C418		CK73GB1E105K	CHIP C 1.0UF K	
C250		CC73HCH1H030B	CHIP C 3.0PF B		C419		CC73HCH1H220J	CHIP C 22PF J	
C251		CC73HCH1H060B	CHIP C 6.0PF B		C420		CK73HB1H471K	CHIP C 470PF K	
C252		CC73HCH1H470G	CHIP C 47PF G		C421		CK73GB1C224K	CHIP C 0.22UF K	
C254		CC73HCH1H100B	CHIP C 10PF B		C422		CK73GB1E105K	CHIP C 1.0UF K	
C259		CC73HCH1H820J	CHIP C 82PF J		C423		CK73GB1C224K	CHIP C 0.22UF K	
C261		CC73HCH1H270J	CHIP C 27PF J		C424		CK73GB1E105K	CHIP C 1.0UF K	
C262		CK73HB1C103K	CHIP C 0.010UF K		C425		CK73GB1E105K	CHIP C 1.0UF K	
C264		CC73HCH1H270J	CHIP C 27PF J		C426		CC73HCH1H470J	CHIP C 47PF J	
C267		CK73HB1H102K	CHIP C 1000PF K		C428		CC73HCH1H470J	CHIP C 47PF J	
C268		CC73HCH1H390J	CHIP C 39PF J		C429		CC73HCH1H470J	CHIP C 47PF J	
C270		CC73HCH1H1R5B	CHIP C 1.5PF B		C430		CC73HCH1H470J	CHIP C 47PF J	
C273		CC73HCH1H330J	CHIP C 33PF J		C431		CC73HCH1H470J	CHIP C 47PF J	
C274		CK73HB1H102K	CHIP C 1000PF K		C432		CC73HCH1H470J	CHIP C 47PF J	
C275		CK73HB1A104K	CHIP C 0.10UF K		C433		CC73HCH1H470J	CHIP C 47PF J	
C276		CK73HB1A104K	CHIP C 0.10UF K		C434		CC73HCH1H470J	CHIP C 47PF J	
C278		CK73HB1H102K	CHIP C 1000PF K		C435		CC73HCH1H470J	CHIP C 47PF J	
C281		CK73HB1C103K	CHIP C 0.010UF K		C436		CC73HCH1H470J	CHIP C 47PF J	
C282		CK73GB1E105K	CHIP C 1.0UF K		C437		CC73HCH1H470J	CHIP C 47PF J	
C283		CK73HB1H102K	CHIP C 1000PF K		C438		CC73HCH1H470J	CHIP C 47PF J	

## PARTS LIST

TX-RX UNIT (X57-8950-13)

Ref No.	Address	Parts No.	Description	Desti-nation	Ref No.	Address	Parts No.	Description	Desti-nation
C439		CC73HCH1H470J	CHIP C 47PF J		D9		1SV282-F	VARIABLE CAPACITANCE DIODE	
C440		CC73HCH1H470J	CHIP C 47PF J		D12		1SV282-F	VARIABLE CAPACITANCE DIODE	
C441		CC73HCH1H470J	CHIP C 47PF J		D13		HVC376B	VARIABLE CAPACITANCE DIODE	
C442		CC73HCH1H470J	CHIP C 47PF J		D14		1SV282-F	VARIABLE CAPACITANCE DIODE	
C443		CC73HCH1H470J	CHIP C 47PF J		D15		1SV282-F	VARIABLE CAPACITANCE DIODE	
C444		CC73HCH1H470J	CHIP C 47PF J		D16		1SV282-F	VARIABLE CAPACITANCE DIODE	
C445		CC73HCH1H470J	CHIP C 47PF J		D17		1SV282-F	VARIABLE CAPACITANCE DIODE	
C447		CC73HCH1H470J	CHIP C 47PF J		D18		1SV278F	VARIABLE CAPACITANCE DIODE	
C449		CC73HCH1H470J	CHIP C 47PF J		D100		HSC277	DIODE	
C450		CC73HCH1H470J	CHIP C 47PF J		D103		HZU2ALL	ZENER DIODE	
C451		CC73HCH1H470J	CHIP C 47PF J		D104		RN142S	DIODE	
C452		CC73HCH1H470J	CHIP C 47PF J		D105		RN142S	DIODE	
C453		CC73HCH1H470J	CHIP C 47PF J		D106		HZU5CLL	ZENER DIODE	
C454		CC73HCH1H470J	CHIP C 47PF J		D201		HSC277	DIODE	
C455		CC73HCH1H470J	CHIP C 47PF J		D204		1SV305F	VARIABLE CAPACITANCE DIODE	
C456		CC73HCH1H470J	CHIP C 47PF J		D205		1SV305F	VARIABLE CAPACITANCE DIODE	
C457		CC73HCH1H470J	CHIP C 47PF J		D207		1SV305F	VARIABLE CAPACITANCE DIODE	
C458		CC73HCH1H470J	CHIP C 47PF J		D208		1SV305F	VARIABLE CAPACITANCE DIODE	
C460		CC73HCH1H470J	CHIP C 47PF J		D209		RN142S	DIODE	
C462		CK73HB1H471K	CHIP C 470PF K		D211		RN142S	DIODE	
C463		CK73HB1H471K	CHIP C 470PF K		D213		RN142S	DIODE	
C464		CK73HB1H102K	CHIP C 1000PF K		D400		1SR154-400	DIODE	
C465		CK73HB1H102K	CHIP C 1000PF K		D401		1SS400	DIODE	
C466		CK73HB1H102K	CHIP C 1000PF K		D402		B30-2278-05	LED(RED/YELLOW/8)	
C467		CK73HB1H102K	CHIP C 1000PF K		D403		1SS388F	SCHOTTKY BARRIER DIODE	
C468		CK73HB1H102K	CHIP C 1000PF K		D501		RN262CS	DIODE	
C470		CC73HCH1H470J	CHIP C 47PF J		D502		RN262CS	DIODE	
C472		CC73HCH1H470J	CHIP C 47PF J		F400		F53-0324-15	FUSE(2.5A)	
C473		CC73HCH1H470J	CHIP C 47PF J		IC1		LM73CIMKX-0	MOS-IC	
C474		CC73HCH1H470J	CHIP C 47PF J		IC2		LMC7101BIM5	MOS-IC	
C475		CK73HB0J105K	CHIP C 1.0UF K		IC3		SKY72310-362	MOS-IC	
C476		CC73HCH1H470J	CHIP C 47PF J		IC4		BU7442FVM	MOS IC	
C478		CC73HCH1H470J	CHIP C 47PF J		IC100		TA75W01FUF	BIPOLAR IC	
C479		CC73HCH1H470J	CHIP C 47PF J		IC200		TLV2381IDBV	MOS-IC	
C480		CK73GB1E105K	CHIP C 1.0UF K		IC201		TLV2381IDBV	MOS-IC	
C481		CK73HB1A394K	CHIP C 0.39UF K		IC202		TK10931VTL-G	ANALOGUE IC	
C499		CC73HCH1H470J	CHIP C 47PF J		IC203		MCP6021-E/OT	MOS-IC	
C501		CC73HCH1H020B	CHIP C 2.0PF B		IC400		TK11250CUCB	MOS-IC	
C502		CK73HB1H102K	CHIP C 1000PF K		IC401		BU7465HFV	MOS-IC	
C503		CC73HCH1H180J	CHIP C 18PF J		IC402		XC9101D09AK-G	MOS-IC	
C504		CC73HCH1H1R5B	CHIP C 1.5PF B		IC403		TK71733S	BI-POLAR IC	
C505		CC73HCH1H121J	CHIP C 120PF J		IC404		BU7442FVM	MOS IC	
C506		CC73HCH1H010B	CHIP C 1.0PF B		IC501		<b>Note 1</b>	MOS-IC	
C507		CC73HCH1H010B	CHIP C 1.0PF B		L1		L41-4795-39	SMALL FIXED INDUCTOR(4.7UH)	
C508		CC73GCH1H100C	CHIP C 10PF C		L2		L40-5667-92	SMALL FIXED INDUCTOR(5.6NH)	
CF200		L72-1017-05	CERAMIC FILTER(450KHZ)		L3		L40-5667-92	SMALL FIXED INDUCTOR(5.6NH)	
CF201		L72-1020-05	CERAMIC FILTER(450KHZ)		L5		L40-8275-92	SMALL FIXED INDUCTOR(82NH)	
CN102		E23-1326-05	TERMINAL		L6		L40-5667-92	SMALL FIXED INDUCTOR(5.6NH)	
CN400		E40-6422-15	SOCKET FOR PIN ASSY(50P)		L7		L40-5667-92	SMALL FIXED INDUCTOR(5.6NH)	
CN401		E40-6752-05	FLAT CABLE CONNECTOR		L8		L40-3975-92	SMALL FIXED INDUCTOR(39NH)	
CN881		E04-0496-05	PIN SOCKET		L10		L92-0163-05	BEADS CORE	
S1		S70-0970-05	TACT SWITCH		L11		L40-1891-86	SMALL FIXED INDUCTOR(1.8UH)	
D1		1SS400	DIODE		L12		L40-3391-86	SMALL FIXED INDUCTOR(3.3UH)	
D2		RN142S	DIODE		L15		L92-0446-05	BEADS CORE	
D3		RN142S	DIODE		L16		L40-2285-92	SMALL FIXED INDUCTOR(220NH)	
D4		KDS123E-P	DIODE		L17		L40-2285-92	SMALL FIXED INDUCTOR(220NH)	
D5		RN142S	DIODE		L18		L40-2285-92	SMALL FIXED INDUCTOR(220NH)	
D6		RN142S	DIODE		L19		L40-2285-92	SMALL FIXED INDUCTOR(220NH)	
D7		1SS400	DIODE		L20		L40-2285-92	SMALL FIXED INDUCTOR(220NH)	
D8		1SV325F	VARIABLE CAPACITANCE DIODE		L23		L40-5678-67	SMALL FIXED INDUCTOR(56NH)	

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

# NX-200(G)

## PARTS LIST

### TX-RX UNIT (X57-8950-13)

Ref No.	Address	Parts No.	Description	Desti- nation	Ref No.	Address	Parts No.	Description	Desti- nation
L24		L40-2778-67	SMALL FIXED INDUCTOR(27NH)		Q9		2SJ347F	FET	
L25		L40-1285-92	SMALL FIXED INDUCTOR(120NH)		Q10		2SK508NV(K52)	FET	
L26		L40-3391-86	SMALL FIXED INDUCTOR(3.3UH)		Q11		2SC5636	TRANSISTOR	
L27		L40-3391-86	SMALL FIXED INDUCTOR(3.3UH)		Q12		2SK879-F(Y)	FET	
L29		L40-1085-71	SMALL FIXED INDUCTOR(100NH)		Q13		SSM3K15TE(F)	FET	
L30		L40-6875-92	SMALL FIXED INDUCTOR(68NH)		Q100		2SC5636	TRANSISTOR	
L98		L92-0163-05	BEADS CORE		Q102		2SK3077F	FET	
L99		L92-0163-05	BEADS CORE		Q103		RD01MUS1-T113	FET	
L100		L40-1085-92	SMALL FIXED INDUCTOR(100NH)		Q104		2SC5383-T111	TRANSISTOR	
L102		L40-6875-92	SMALL FIXED INDUCTOR(68NH)		Q105		LTC044EEBFS8	DIGITAL TRANSISTOR	
L103		L40-1085-92	SMALL FIXED INDUCTOR(100NH)		Q106		RD07MVS1BT122	FET	
L104		L92-0138-05	CHIP FERRITE		Q107		2SK1824-A	FET	
L105		L40-4775-92	SMALL FIXED INDUCTOR(47NH)		Q109		SSM3K15TE(F)	FET	
L106		L41-1085-43	SMALL FIXED INDUCTOR(100NH)		Q110		EMD5	TRANSISTOR	
L107		L92-0149-05	CHIP FERRITE		Q201		2SC5108(Y)F	TRANSISTOR	
L108		L40-1575-92	SMALL FIXED INDUCTOR(15NH)		Q202		2SC4215-F(Y)	TRANSISTOR	
L109		L34-4575-05	AIR-CORE COIL		Q203		3SK318	FET	
L110		L34-4566-05	AIR-CORE COIL		Q204		3SK294-FP	FET	
L111		L34-4576-05	AIR-CORE COIL		Q401		EM6M2	FET	
L112		L92-0149-05	CHIP FERRITE		Q402		EM6M2	FET	
L113		L34-4566-05	AIR-CORE COIL		Q403		EM6M2	FET	
L114		L34-4565-05	AIR-CORE COIL		Q404		SSM5H01TU-F	FET	
L115		L41-2295-39	SMALL FIXED INDUCTOR(2.2U)		Q405		2SA1955A-F	TRANSISTOR	
L116		L34-4569-05	AIR-CORE COIL		Q406		UMG9N	TRANSISTOR	
L117		L34-4577-05	AIR-CORE COIL		R1		RK73HH1J474D	CHIP R 470K D 1/16W	
L118		L34-4564-05	AIR-CORE COIL		R2		RK73HB1J472J	CHIP R 4.7K J 1/16W	
L119		L34-4563-05	AIR-CORE COIL		R3		RK73HB1J100J	CHIP R 10 J 1/16W	
L201		L40-5681-86	SMALL FIXED INDUCTOR(0.56UH)		R5		RK73HB1J100J	CHIP R 10 J 1/16W	
L202		L40-1891-86	SMALL FIXED INDUCTOR(1.8UH)		R6		RK73HB1J100J	CHIP R 10 J 1/16W	
L203		L41-4778-45	SMALL FIXED INDUCTOR(47NH)		R7		RK73HB1J472J	CHIP R 4.7K J 1/16W	
L204		L92-0138-05	CHIP FERRITE		R8		RK73HB1J100J	CHIP R 10 J 1/16W	
L205		L41-2785-39	SMALL FIXED INDUCTOR(0.27UH)		R9		RK73HB1J102J	CHIP R 1.0K J 1/16W	
L206		L41-5685-39	SMALL FIXED INDUCTOR(0.56UH)		R10		RK73HB1J000J	CHIP R 0.0 J 1/16W	
L207		L40-1085-92	SMALL FIXED INDUCTOR(100NH)		R11		RK73HB1J223J	CHIP R 22K J 1/16W	
L208		L40-3375-92	SMALL FIXED INDUCTOR(33NH)		R12		RK73HB1J223J	CHIP R 22K J 1/16W	
L209		L40-3375-92	SMALL FIXED INDUCTOR(33NH)		R15		RK73HB1J100J	CHIP R 10 J 1/16W	
L210		L41-6878-14	SMALL FIXED INDUCTOR(68NH)		R17		RK73HH1J184D	CHIP R 180K D 1/16W	
L214		L92-0138-05	CHIP FERRITE		R18		RK73HH1J473D	CHIP R 47K D 1/16W	
L215		L41-6878-14	SMALL FIXED INDUCTOR(68NH)		R19		RK73HB1J102J	CHIP R 1.0K J 1/16W	
L220		L41-6878-14	SMALL FIXED INDUCTOR(68NH)		R21		RK73HB1J106J	CHIP R 10M J 1/16W	
L223		L40-5675-92	SMALL FIXED INDUCTOR(56NH)		R22		RK73HB1J100J	CHIP R 10 J 1/16W	
L224		L41-5678-14	SMALL FIXED INDUCTOR(56NH)		R23		RK73HB1J100J	CHIP R 10 J 1/16W	
L226		L92-0138-05	CHIP FERRITE		R24		RK73HB1J000J	CHIP R 0.0 J 1/16W	
L230		L40-2702-86	SMALL FIXED INDUCTOR(27UH)		R25		RK73HB1J000J	CHIP R 0.0 J 1/16W	
L250		L40-1085-57	SMALL FIXED INDUCTOR(100UN)		R26		RK73HB1J331J	CHIP R 330 J 1/16W	
L400		L92-0149-05	CHIP FERRITE		R27		RK73HB1J000J	CHIP R 0.0 J 1/16W	
L401		L33-1462-05	SMALL FIXED INDUCTOR(68UHN)		R28		RK73HB1J223J	CHIP R 22K J 1/16W	
L402		L41-2285-14	SMALL FIXED INDUCTOR(220NH)		R29		RK73HB1J000J	CHIP R 0.0 J 1/16W	
L501		L92-0487-05	CHIP FERRITE		R30		RK73HB1J563J	CHIP R 56K J 1/16W	
L502		L40-8265-71	SMALL FIXED INDUCTOR(8.2NH)		R31		RK73HB1J121J	CHIP R 120 J 1/16W	
L503		L79-1955-05	FILTER		R32		RK73HB1J000J	CHIP R 0.0 J 1/16W	
L504		L41-3965-55	SMALL FIXED INDUCTOR(3.9NH)		R33		RK73HB1J223J	CHIP R 22K J 1/16W	
L505		L41-1561-55	SMALL FIXED INDUCTOR(1.5NH)		R34		RK73HH1J391D	CHIP R 390 D 1/16W	
Q1		KRX206E-P	TRANSISTOR		R35		RK73HB1J103J	CHIP R 10K J 1/16W	
Q2		LTA014YEBFS8	TRANSISTOR		R36		RK73HB1J472J	CHIP R 4.7K J 1/16W	
Q3		2SC5383-T111	TRANSISTOR		R37		RK73HB1J000J	CHIP R 0.0 J 1/16W	
Q4		2SC5636	TRANSISTOR		R38		RK73HB1J000J	CHIP R 0.0 J 1/16W	
Q6		2SC5383-T111	TRANSISTOR		R39		RK73HB1J152J	CHIP R 1.5K J 1/16W	
Q7		EM6M2	FET		R40		RK73HB1J103J	CHIP R 10K J 1/16W	
Q8		2SK508NV(K52)	FET		R41		RK73HB1J474J	CHIP R 470K J 1/16W	



## PARTS LIST

TX-RX UNIT (X57-8950-13)

Ref No.	Address	Parts No.	Description	Desti- nation	Ref No.	Address	Parts No.	Description	Desti- nation
R42		RK73HB1J473J	CHIP R 47K J 1/16W		R145		RK73HH1J154D	CHIP R 150K D 1/16W	
R43		RK73HB1J102J	CHIP R 1.0K J 1/16W		R146		RK73GB2A000J	CHIP R 0.0 J 1/10W	
R44		RK73HB1J473J	CHIP R 47K J 1/16W		R147		RK73HH1J184D	CHIP R 180K D 1/16W	
R45		RK73HB1J473J	CHIP R 47K J 1/16W		R148		RK73HH1J184D	CHIP R 180K D 1/16W	
R46		RK73HH1J331D	CHIP R 330 D 1/16W		R149		RK73HH1J184D	CHIP R 180K D 1/16W	
R47		RK73HB1J220J	CHIP R 22 J 1/16W		R150		RK73HH1J184D	CHIP R 180K D 1/16W	
R48		RK73HH1J271D	CHIP R 270 D 1/16W		R151		RK73HB1J103J	CHIP R 10K J 1/16W	
R49		RK73HB1J154J	CHIP R 150K J 1/16W		R152		RK73GB2A823J	CHIP R 82K J 1/10W	
R50		RK73HB1J101J	CHIP R 100 J 1/16W		R153		RK73HB1J473J	CHIP R 47K J 1/16W	
R51		RK73HB1J102J	CHIP R 1.0K J 1/16W		R154		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R52		RK73HB1J473J	CHIP R 47K J 1/16W		R155		RK73HB1J474J	CHIP R 470K J 1/16W	
R53		RK73HB1J683J	CHIP R 68K J 1/16W		R156		RK73HB1J182J	CHIP R 1.8K J 1/16W	
R54		RK73HB1J102J	CHIP R 1.0K J 1/16W		R157		RK73HB1J104J	CHIP R 100K J 1/16W	
R55		RK73HB1J104J	CHIP R 100K J 1/16W		R158		RK73HB1J104J	CHIP R 100K J 1/16W	
R56		RK73HB1J000J	CHIP R 0.0 J 1/16W		R161		RK73HB1J000J	CHIP R 0.0 J 1/16W	
R59		RN73HH1J104D	CHIP R 100K D 1/16W		R162		RK73HB1J271J	CHIP R 270 J 1/16W	
R60		RN73HH1J104D	CHIP R 100K D 1/16W		R163		RK73HB1J271J	CHIP R 270 J 1/16W	
R62		RK73HB1J104J	CHIP R 100K J 1/16W		R164		RK73HB1J103J	CHIP R 10K J 1/16W	
R63		RK73HB1J220J	CHIP R 22 J 1/16W		R165		RK73HB1J474J	CHIP R 470K J 1/16W	
R64		RK73HB1J473J	CHIP R 47K J 1/16W		R166		RK73HB1J102J	CHIP R 1.0K J 1/16W	
R67		RK73HB1J472J	CHIP R 4.7K J 1/16W		R167		RK73HB1J183J	CHIP R 18K J 1/16W	
R68		RK73HB1J474J	CHIP R 470K J 1/16W		R168		RK73HB1J124J	CHIP R 120K J 1/16W	
R69		RK73HB1J560J	CHIP R 56 J 1/16W		R170		RK73HB1J224J	CHIP R 220K J 1/16W	
R70		RK73HB1J000J	CHIP R 0.0 J 1/16W		R171		RK73GB2A000J	CHIP R 0.0 J 1/10W	
R71		RK73HB1J000J	CHIP R 0.0 J 1/16W		R176		RK73HB1J331J	CHIP R 330 J 1/16W	
R72		RK73HB1J104J	CHIP R 100K J 1/16W		R177		RK73HB1J331J	CHIP R 330 J 1/16W	
R75		RK73HB1J100J	CHIP R 10 J 1/16W		R202		RK73HB1J103J	CHIP R 10K J 1/16W	
R76		RK73HB1J000J	CHIP R 0.0 J 1/16W		R203		RK73HB1J103J	CHIP R 10K J 1/16W	
R77		RK73HB1J000J	CHIP R 0.0 J 1/16W		R204		RK73HB1J561J	CHIP R 560 J 1/16W	
R78		RK73HB1J100J	CHIP R 10 J 1/16W		R205		RK73HB1J224J	CHIP R 220K J 1/16W	
R79		RK73HB1J000J	CHIP R 0.0 J 1/16W		R206		RK73HB1J104J	CHIP R 100K J 1/16W	
R100		RK73HB1J332J	CHIP R 3.3K J 1/16W		R207		RK73HB1J224J	CHIP R 220K J 1/16W	
R101		RK73HB1J103J	CHIP R 10K J 1/16W		R208		RK73HB1J104J	CHIP R 100K J 1/16W	
R102		RK73HB1J271J	CHIP R 270 J 1/16W		R209		RK73HB1J104J	CHIP R 100K J 1/16W	
R103		RK73HB1J222J	CHIP R 2.2K J 1/16W		R210		RK73HB1J104J	CHIP R 100K J 1/16W	
R104		RK73HB1J470J	CHIP R 47 J 1/16W		R211		RK73HB1J334J	CHIP R 330K J 1/16W	
R105		RK73HB1J000J	CHIP R 0.0 J 1/16W		R212		RK73HB1J221J	CHIP R 220 J 1/16W	
R106		RK73HB1J472J	CHIP R 4.7K J 1/16W		R214		RK73HB1J564J	CHIP R 560K J 1/16W	
R107		RK73HB1J472J	CHIP R 4.7K J 1/16W		R216		RK73HB1J221J	CHIP R 220 J 1/16W	
R111		RK73HB1J000J	CHIP R 0.0 J 1/16W		R218		RK73HB1J221J	CHIP R 220 J 1/16W	
R118		RK73HB1J101J	CHIP R 100 J 1/16W		R220		RK73HB1J470J	CHIP R 47 J 1/16W	
R119		RK73HB1J103J	CHIP R 10K J 1/16W		R221		RK73HB1J104J	CHIP R 100K J 1/16W	
R120		RK73HB1J223J	CHIP R 22K J 1/16W		R222		RK73HB1J100J	CHIP R 10 J 1/16W	
R123		RK73HB1J331J	CHIP R 330 J 1/16W		R223		RK73HB1J274J	CHIP R 270K J 1/16W	
R124		RK73HB1J180J	CHIP R 18 J 1/16W		R225		RK73HB1J681J	CHIP R 680 J 1/16W	
R126		RK73HB1J273J	CHIP R 27K J 1/16W		R226		RK73HB1J103J	CHIP R 10K J 1/16W	
R127		RK73HB1J473J	CHIP R 47K J 1/16W		R227		RK73HB1J472J	CHIP R 4.7K J 1/16W	
R129		RK73HB1J470J	CHIP R 47 J 1/16W		R228		RK73HB1J221J	CHIP R 220 J 1/16W	
R130		RK73HB1J333J	CHIP R 33K J 1/16W		R229		RK73HB1J103J	CHIP R 10K J 1/16W	
R131		RK73HB1J561J	CHIP R 560 J 1/16W		R230		RK73HB1J102J	CHIP R 1.0K J 1/16W	
R133		RK73HB1J331J	CHIP R 330 J 1/16W		R231		RK73HB1J223J	CHIP R 22K J 1/16W	
R134		RK73HB1J561J	CHIP R 560 J 1/16W		R233		RK73HB1J183J	CHIP R 18K J 1/16W	
R135		RK73HB1J222J	CHIP R 2.2K J 1/16W		R234		RK73HB1J823J	CHIP R 82K J 1/16W	
R136		RK73EB2ER39J	CHIP R 0.39 J 1/4W		R235		RK73HB1J823J	CHIP R 82K J 1/16W	
R137		RK73HB1J100J	CHIP R 10 J 1/16W		R236		RK73HB1J222J	CHIP R 2.2K J 1/16W	
R138		RK73EB2ER39J	CHIP R 0.39 J 1/4W		R237		RK73HB1J472J	CHIP R 4.7K J 1/16W	
R139		RK73HB1J473J	CHIP R 47K J 1/16W		R238		RK73HB1J222J	CHIP R 2.2K J 1/16W	
R141		RK73EB2ER39J	CHIP R 0.39 J 1/4W		R239		RK73HB1J823J	CHIP R 82K J 1/16W	
R142		RK73HB1J223J	CHIP R 22K J 1/16W		R240		RK73HB1J823J	CHIP R 82K J 1/16W	
R144		RK73HH1J154D	CHIP R 150K D 1/16W		R241		RK73GB2A000J	CHIP R 0.0 J 1/10W	

# NX-200(G)

## PARTS LIST

TX-RX UNIT (X57-8950-13)

SUB (GPS) UNIT (X58-5240-10)

Ref No.	Address	Parts No.	Description	Desti- nation	Ref No.	Address	Parts No.	Description	Desti- nation	
R242		RK73HB1J473J	CHIP R 47K J 1/16W		R417		RK73HB1J154J	CHIP R 150K J 1/16W		
R243		RK73HB1J183J	CHIP R 18K J 1/16W		R418		RK73HB1J102J	CHIP R 1.0K J 1/16W		
R245		RK73HB1J104J	CHIP R 100K J 1/16W		R419		RK73HB1J473J	CHIP R 47K J 1/16W		
R246		RK73HB1J101J	CHIP R 100 J 1/16W		R420		RK73HB1J473J	CHIP R 47K J 1/16W		
R248		RK73HB1J100J	CHIP R 10 J 1/16W		R421		RK73HB1J102J	CHIP R 1.0K J 1/16W		
R251		RK73HB1J000J	CHIP R 0 .0 J 1/16W		R422		RK73HB1J474J	CHIP R 470K J 1/16W		
R253		RK73HB1J102J	CHIP R 1.0K J 1/16W		R423		RK73HB1J123J	CHIP R 12K J 1/16W		
R254		RK73HB1J103J	CHIP R 10K J 1/16W		R424		RK73HH1J334D	CHIP R 330K D 1/16W		
R255		RK73HB1J272J	CHIP R 2.7K J 1/16W		R425		RK73HH1J223D	CHIP R 22K D 1/16W		
R256		RK73HB1J103J	CHIP R 10K J 1/16W		R426		RK73HB1J100J	CHIP R 10 J 1/16W		
R257		RK73HB1J000J	CHIP R 0.0 J 1/16W		R427		RK73HB1J391J	CHIP R 390 J 1/16W		
R260		RK73HB1J105J	CHIP R 1.0M J 1/16W		R428		RK73HB1J821J	CHIP R 820 J 1/16W		
R262		RK73HB1J105J	CHIP R 1.0M J 1/16W		R429		RK73GB2A000J	CHIP R 0.0 J 1/10W		
R263		RK73HB1J000J	CHIP R 0.0 J 1/16W		R430		RK73GB2A000J	CHIP R 0.0 J 1/10W		
R265		RK73HB1J000J	CHIP R 0.0 J 1/16W		R436		RK73HB1J392J	CHIP R 3.9K J 1/16W		
R268		RK73HB1J680J	CHIP R 68 J 1/16W		R438		RK73GB2A000J	CHIP R 0.0 J 1/10W		
R269		RK73HB1J221J	CHIP R 220 J 1/16W		R439		RK73HB1J273J	CHIP R 27K J 1/16W		
R272		RK73HB1J154J	CHIP R 150K J 1/16W		R440		RK73HB1J473J	CHIP R 47K J 1/16W		
R273		RK73HB1J823J	CHIP R 82K J 1/16W		R451		RK73HB1J000J	CHIP R 0.0 J 1/16W		
R274		RK73GB2A000J	CHIP R 0.0 J 1/10W		R452		RK73HB1J102J	CHIP R 1.0K J 1/16W		
R276		RK73HB1J104J	CHIP R 100K J 1/16W		R456		RK73HB1J474J	CHIP R 470K J 1/16W		
R277		RK73HB1J104J	CHIP R 100K J 1/16W		R460		RK73HB1J000J	CHIP R 0.0 J 1/16W		
R279		RK73HB1J000J	CHIP R 0.0 J 1/16W		R490		RK73HB1J000J	CHIP R 0.0 J 1/16W		
R280		RK73GB2A000J	CHIP R 0.0 J 1/10W		R498		RK73HB1J000J	CHIP R 0.0 J 1/16W		
R281		RK73HB1J000J	CHIP R 0.0 J 1/16W		R499		RK73HB1J000J	CHIP R 0.0 J 1/16W		
R282		RK73HB1J103J	CHIP R 10K J 1/16W		R500		RK73HB1J103J	CHIP R 10K J 1/16W		
R283		RK73HB1J104J	CHIP R 100K J 1/16W		R501		RK73HB1J103J	CHIP R 10K J 1/16W		
R285		RK73HB1J103J	CHIP R 10K J 1/16W		R502		RK73HB1J271J	CHIP R 270 J 1/16W		
R289		RK73HB1J000J	CHIP R 0.0 J 1/16W		R503		RK73HB1J180J	CHIP R 18 J 1/16W		
R293		RK73HB1J473J	CHIP R 47K J 1/16W		R504		RK73HB1J391J	CHIP R 390 J 1/16W		
R295		RK73GB2A000J	CHIP R 0.0 J 1/10W		R505		RK73HB1J271J	CHIP R 270 J 1/16W		
R296		RK73HB1J102J	CHIP R 1.0K J 1/16W		R506		RK73HB1J000J	CHIP R 0.0 J 1/16W		
R299		RK73HB1J470J	CHIP R 47 J 1/16W		S1		S70-0483-05	TACT SWITCH		
R300		RK73HB1J000J	CHIP R 0.0 J 1/16W		TH100		ERTJ0EV104H	THERMISTOR		
R301		RK73HB1J000J	CHIP R 0.0 J 1/16W		X1		L77-3014-05	TCXO(19.2M)		
R302		RK73HB1J000J	CHIP R 0.0 J 1/16W		XF200		L71-0679-05	MCF(58.05MHZ)		
R303		RK73HB1J000J	CHIP R 0.0 J 1/16W		<b>SUB (GPS) UNIT (X58-5240-10)</b>					
R304		RK73HB1J000J	CHIP R 0.0 J 1/16W		C1		CC73HCH1H180J	CHIP C 18PF J		
R305		RK73HB1J000J	CHIP R 0.0 J 1/16W		C2		CK73HB1A104K	CHIP C 0.10UF K		
R307		RK73HB1J000J	CHIP R 0.0 J 1/16W		C3		CK73HB1H102K	CHIP C 1000PF K		
R311		RK73HB1J000J	CHIP R 0.0 J 1/16W		C4		CK73GB0J106K	CHIP C 10UF K		
R313		RK73HB1J000J	CHIP R 0.0 J 1/16W		C5		CK73HB1A104K	CHIP C 0.10UF K		
R314		RK73HB1J000J	CHIP R 0.0 J 1/16W		C8		CC73HCH1H180J	CHIP C 18PF J		
R319		RK73HB1J000J	CHIP R 0.0 J 1/16W		C9		CK73HB1A104K	CHIP C 0.10UF K		
R320		RK73HB1J000J	CHIP R 0.0 J 1/16W		C10		CK73HB1H102K	CHIP C 1000PF K		
R323		RK73HB1J000J	CHIP R 0.0 J 1/16W		C11		CK73HB1H102K	CHIP C 1000PF K		
R326		RK73HB1J104J	CHIP R 100K J 1/16W		C16		CC73HCH1H101J	CHIP C 100PF J		
R400		RK73HB1J000J	CHIP R 0.0 J 1/16W		C17		CK73HB1H102K	CHIP C 1000PF K		
R402		RK73HB1J330J	CHIP R 33 J 1/16W		C18		CC73HCH1H101J	CHIP C 100PF J		
R404		RK73HB1J474J	CHIP R 470K J 1/16W		C19		CK73HB1H102K	CHIP C 1000PF K		
R405		RK73HB1J474J	CHIP R 470K J 1/16W		C20		CK73HB1A474K	CHIP C 0.47UF K		
R406		RK73HB1J474J	CHIP R 470K J 1/16W		C21		CK73HB1H102K	CHIP C 1000PF K		
R407		RK73HB1J473J	CHIP R 47K J 1/16W		C22		CK73HB1A474K	CHIP C 0.47UF K		
R408		RK73GB2A100J	CHIP R 10 J 1/10W		CN5		E04-0496-05	PIN SOCKET		
R409		RK73GB2A000J	CHIP R 0.0 J 1/10W		CN10		E40-6358-05	SOCKET FOR PIN ASSY(26P)		
R410		RK73HB1J474J	CHIP R 470K J 1/16W		CN11		J19-5386-05	HOLDER (LITHIUM CELL)		
R411		RK73HB1J474J	CHIP R 470K J 1/16W		D2		1SS388F	SCHOTTKY BARRIER DIODE		
R412		RK73HB1J474J	CHIP R 470K J 1/16W							
R413		RK73HB1J332J	CHIP R 3.3K J 1/16W							
R415		RK73HB1J102J	CHIP R 1.0K J 1/16W							

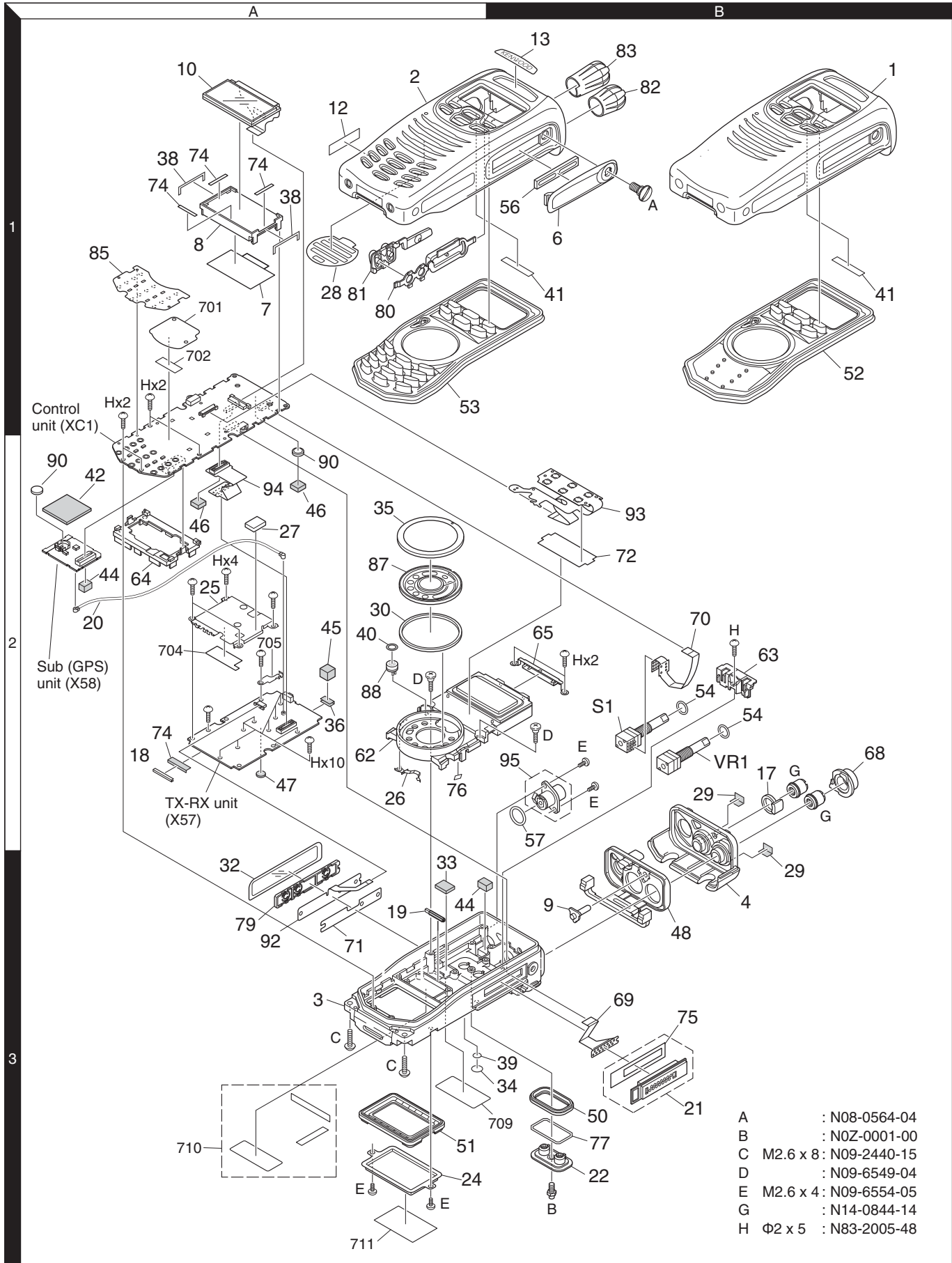
## PARTS LIST

SUB (GPS) UNIT (X58-5240-10)

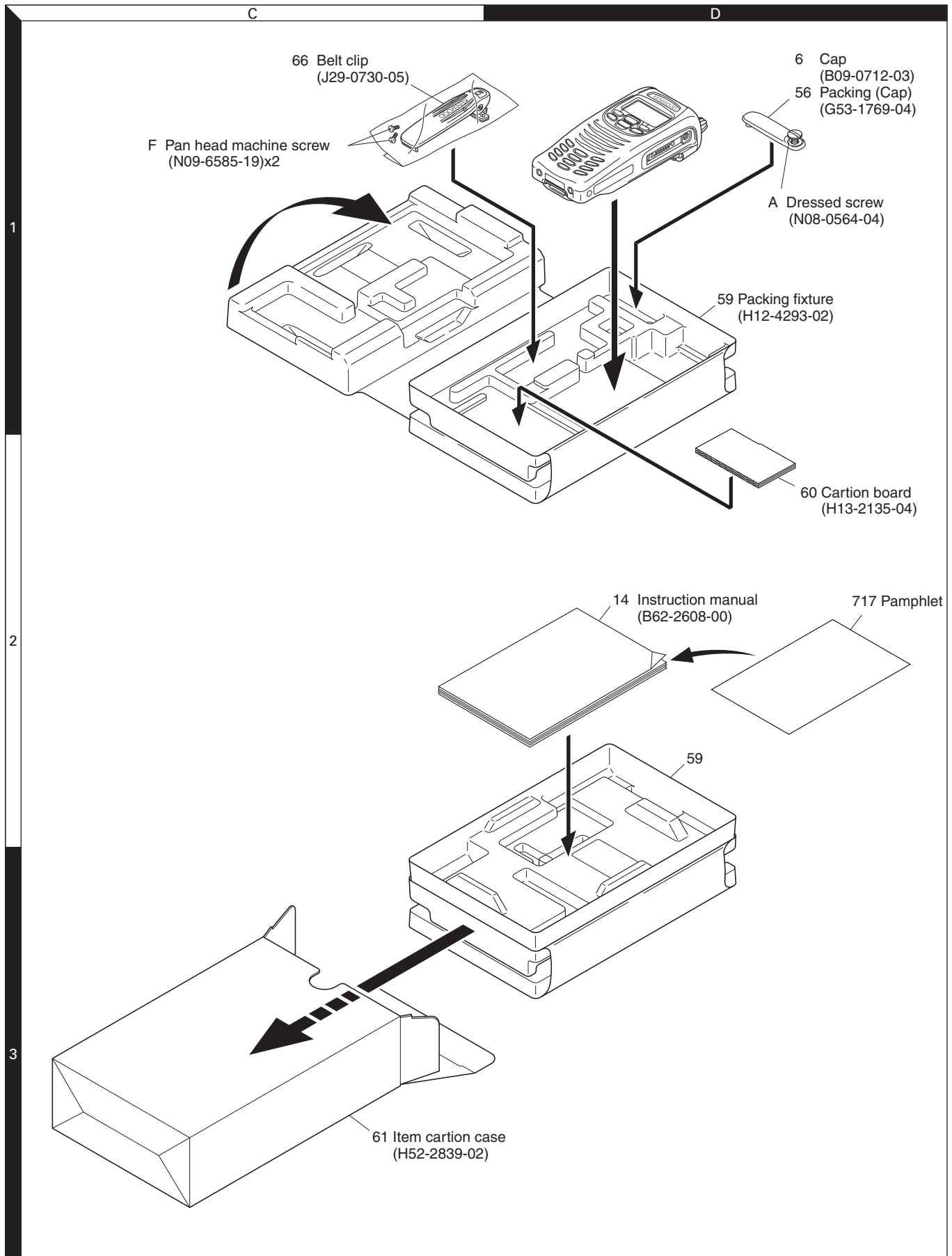
Ref No.	Address	Parts No.	Description	Destination	Ref No.	Address	Parts No.	Description	Destination
IC1		W02-3768-05	ELECTRIC CIRCUIT MODULE						
IC2		TC7WH126FU-F	MOS-IC						
IC4		BU31TD3WG	MOS-IC						
L1		LR73G0AT220K	SMALL FIXED INDUCTOR (22UH)						
L2		L92-0138-05	CHIP FERRITE						
L3		L92-0163-05	BEADS CORE						
R4		RK73HB1J102J	CHIP R 1.0K J 1/16W						
R6		RK73HB1J471J	CHIP R 470 J 1/16W						
R7		RK73HB1J120J	CHIP R 12 J 1/16W						
R9		RK73HB1J101J	CHIP R 100 J 1/16W						
R10		RK73HB1J101J	CHIP R 100 J 1/16W						
R11		RK73GB2A100J	CHIP R 10 J 1/10W						
R13		RK73HB1J471J	CHIP R 470 J 1/16W						
R17		RK73HB1J102J	CHIP R 1.0K J 1/16W						

# NX-200(G)

## EXPLODED VIEW



## PACKING



### 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

ASIC (IC108), DSP (IC719), FLASH (IC101), SRAM (IC103)

When the BGA IC is problematic, please bring the printed circuit board (XC1-0020-12 for 6-key, XC1-0020-13 for 18-key) 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 pages 42 and 43.)

Button type lithium battery (W09-0971-05) does not belong to the printed circuit board for service. Please use the part which has been attached to the printed circuit board. After the printed circuit board has been readjusted, please attach any ESN stickers to the chassis. When "ESN Validation" is used with NXDN Trunking, you must modify the ESN register.

#### ● Checking power supply voltage

Checking voltage	
Points to be checked	Normal voltage
33M IC404 (3 pin)	3.3V
15M IC717 (4 pin)	1.5V
33A IC406 (5 pin)	3.3V
31BU IC416 (3 pin)	3.1V
Power supply of each device is connected through the coil. [ASIC] 33M: L714, 15M: L715, 33A: L716 [DSP] 33M: L712, 15M: L711 [FLASH] 33M: L717 [SRAM] 31BU: L710	

When an abnormal value is confirmed.

Checking for an abnormal point	
33M has an abnormal voltage. [ASIC] Remove L714 to check the voltage of the 33M. If the voltage becomes normal, the ASIC is broken. [DSP] Remove L712 to check the voltage of the 33M. If the voltage becomes normal, the DSP is broken. [FLASH] Remove L717 to check the voltage of the 33M. If the voltage becomes normal, the FLASH is broken.	
15M has an abnormal voltage. [ASIC] Remove L715 to check the voltage of the 15M. If the voltage becomes normal, the ASIC is broken. [DSP] Remove L711 to check the voltage of the 15M. If the voltage becomes normal, the DSP is broken.	
33A has an abnormal voltage. [ASIC] Remove L716 to check the voltage of the 33A. If the voltage becomes normal, the ASIC is broken.	
31BU has an abnormal voltage. [SRAM] Remove L710 to check the voltage of the 31BU. If the voltage becomes normal, the SRAM is broken.	
If the voltage is not corrected, there is a problem other than the BGA parts.	

#### ● Checking the clock

Checking the clock	
Points to be checked	Normal voltage (3.3V)
18.432MHz ASIC side R158	18.432MHz
ASIC & DSP side R159	18.432MHz
32.768kHz IC106 (1 pin)	32.768kHz

When a normal value is confirmed.

When an abnormal value is confirmed.

#### ● Checking the Reset/Control signal

Checking the control signal input to the ASIC	
Points to be checked	Normal voltage
RESET IC105 (4 pin)	3.3V
/BINT Q401 (6 pin)	3.3V
/PSW Q402 (3 pin)	3.3V

When a normal value is confirmed.

When an abnormal value is confirmed.

Checking the control signal output from the ASIC	
Points to be checked	Normal voltage
/FRST C110	3.3V

When a normal value is confirmed.

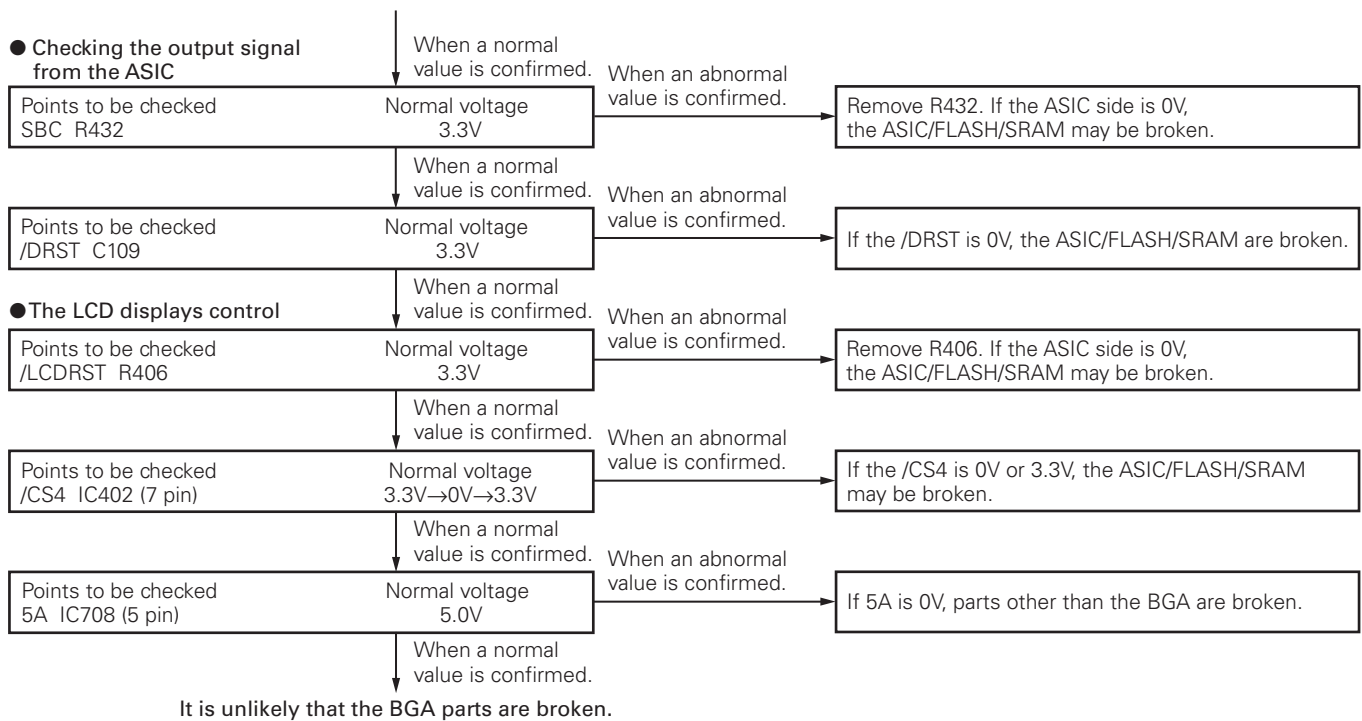
When an abnormal value is confirmed.

The BGA parts are not broken.

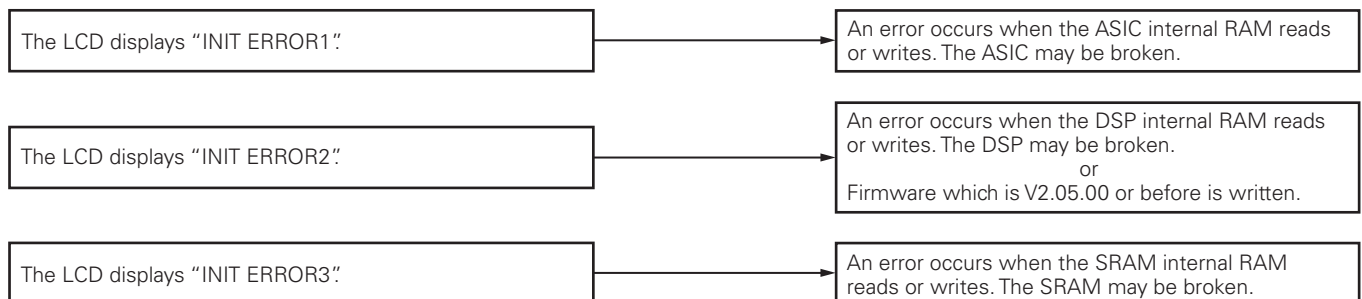
If the /FRST is always 0V, the ASIC is broken.  
If the /FRST repeats 3.3V and 0V at intervals, The ASIC, FLASH and SRAM may be broken.

When a normal value is confirmed.

## TROUBLE SHOOTING



● **When an error display appears on the LCD.**



■ **Descriptions of signal names**

- |   |                     |
|---|---------------------|
| 1) RST(RESET) : ASIC reset signal                   | LOW → Reset         |
| 2) /BINT : Battery final voltage monitoring         | LOW → Final voltage |
| 3) /PSW : Power switch signal                       | LOW → ON            |
| 4) /FRST : FLASH reset signal                       | LOW → Reset         |
| 5) SBC : Switch B control                           | HIGH → ON           |
| 6) /DRST : DSP reset signal                         | LOW → Reset         |
| 7) /LCDRST : LCD reset signal                       | LOW → Reset         |
| 8) /CS4 : LCD controller chip select signal         | LOW → Active        |
| 9) 5A : Analog peripheral control 5.0V power supply |                     |

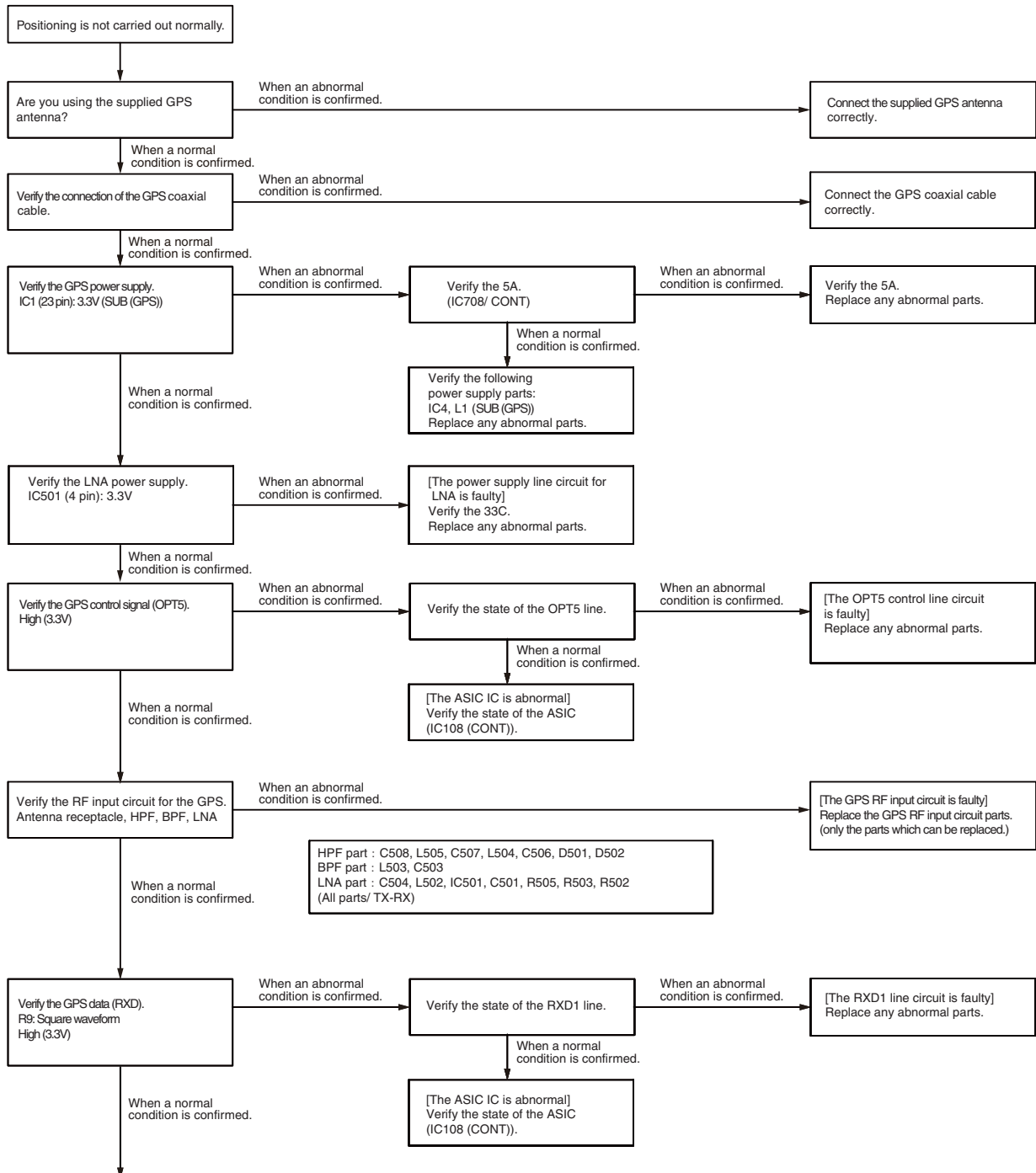
### Failure Diagnosis of the GPS section

#### ■ Overview

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

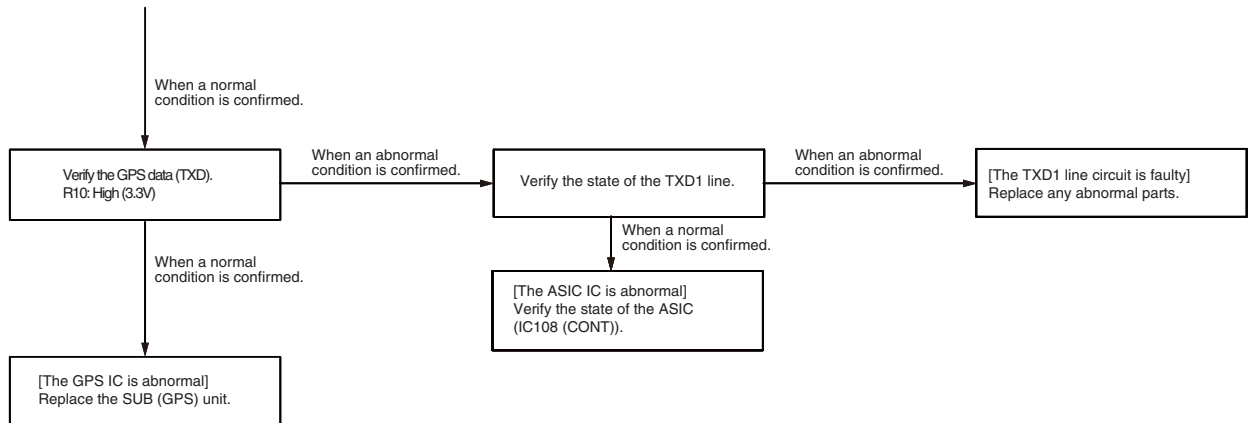
#### ■ Major parts for a GPS circuit (TX-RX unit and Sub (GPS) unit)

- GPS IC (IC1/ SUB (GPS))
- LNA IC (IC501/ TX-RX)
- BPF (L502/ TX-RX)
- 33C AVR (IC403/ TX-RX)
- 5A AVR (IC708/ CONT)
- 3.1V AVR (IC4/ SUB (GPS))





## TROUBLE SHOOTING



### ■ Descriptions of signal names

- 1) 5A : GPS block power supply (from TX-RX unit)
- 2) 33C : GPS block host I/F 3.3V power supply
- 3) OPT5 : GPS power supply control (ASIC to GPS AVR) HIGH → ON
- 4) TXD, TXD1 : GPS control serial data (ASIC to GPS IC)
- 5) RXD, RXD1 : GPS NMEA serial data (GPS IC to ASIC)

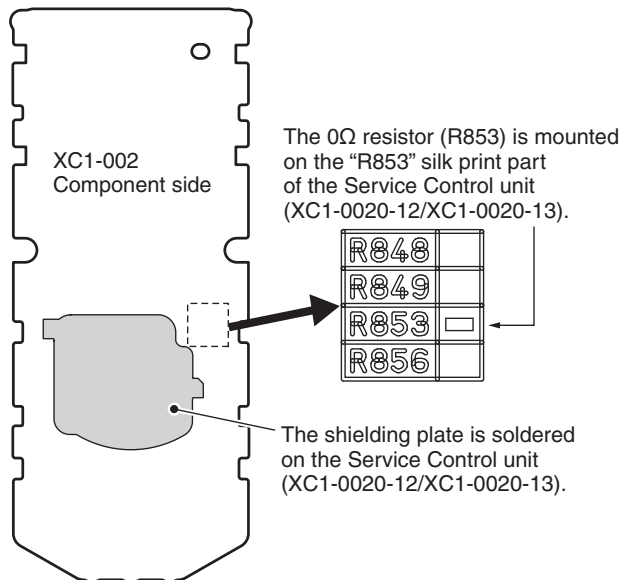
## TROUBLE SHOOTING

### Replacing Control Unit

#### ■ Control unit Information

Model Name	Original Control unit Number	For Service Control unit Number
NX-200(G) (K: 6-key)	XC1-0020-10	XC1-0020-12
NX-200(G) (K2: 18-key)	XC1-0020-11	XC1-0020-13

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



XC1-002	R848	R849	R853	R856
0-10	0Ω	(None)	(None)	(None)
0-11	(None)	0Ω	(None)	(None)
0-12	0Ω	(None)	0Ω	(None)
0-13	(None)	0Ω	0Ω	(None)

#### Note:

- The 0Ω resistor (R848, R849 and R853) 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 Control unit (XC1-0020-12/XC1-0020-13) and the schematic diagram of the original Control unit (XC1-0020-10/XC1-0020-11). (R848, R849 and R853 are connected with GND (ground) only.)

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

Item (Including Parts Number)	Quantity
Control Unit (XC1-002)	1
Kenwood ESN Label	1
NXDN ESN Label	1
Product Number Label	1
MPT ESN Label	1

#### ■ “Service Control unit” Data

The following data is written on the service control unit:

Data Type	Description
Firmware	NX-200G/300G Firmware.
FPU Data (PC programming mode)	XC1-002 (NX-200G) K type data.
Various Adjustment Data (PC Test mode)	General adjustment values for the XC1-002 (NX-200G).
Kenwood ESN	Model name: [XC1-002] NX-200G/300G (No DTMF keypad) or NX-200G/300G (with DTMF keypad) Type: K The same number as the Kenwood ESN label is written.
NXDN ESN/ MPT ESN/ Product number	The same number as the NXDN ESN/ MPT ESN/Product Number label is written.

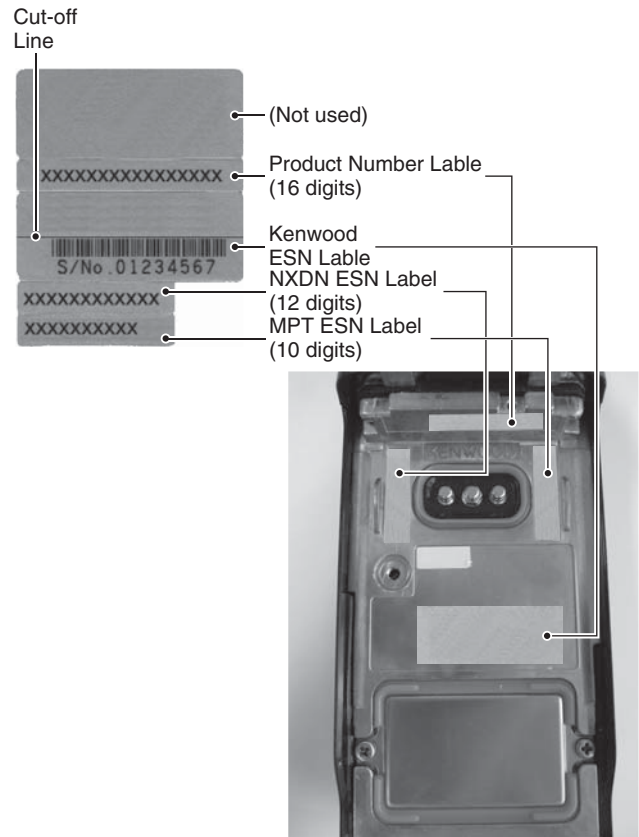
#### ■ After Changing the PCB

- After changing the printed circuit board, write the up-to-date Firmware following the instructions in the “REALIGNMENT - 6.Firmware Programming Mode”.
- Using the KPG-111D/111DN, select your desired item (Model Name and Frequency) from the Model> Product Information menu, then use Program> Write Data to the Transceiver to write the FPU data (PC Programming mode). When writing to the transceiver, a Warning Message, corresponding to the item selected, appears. Click [OK] to continue writing the data.
- Enter Program> Test Mode, then adjust the various adjustment data (PC Test Mode) as described in the “ADJUSTMENT”.
- Attach the new labels corresponding to the new printed circuit board. (Refer to the images on page 43 for label placement.)
- If necessary, write the FPU data used by the customer with the KPG-111D/111DN.

## TROUBLE SHOOTING

### Note:

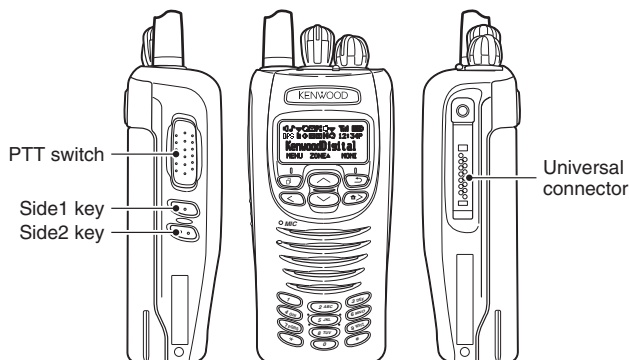
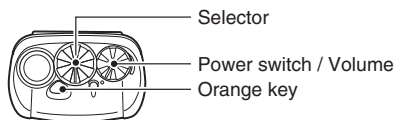
- When using the ESN Validation function of NXDN Trunking, the NXDN ESN number changes when the circuit board is changed (the number is written on the circuit board); the NXDN Trunking System cannot be accessed. Use the KPG-110SM on the NXDN Trunking System side to reprogram the NXDN ESN number.
- When a new printed circuit board is used, the Kenwood ESN changes, as does the Transceiver Information display of the KPG-111D/111DN, but this does not have any effect on the operation of the transceiver.
- If changing to the original Kenwood ESN and NXDN ESN, please contact our service center.



Note: A UPC code and UPC barcode is not printed on the Kenwood ESN Label. If necessary, cut the label at the cut-off line and attach only the serial number.

## ADJUSTMENT

### Controls



### Panel Test Mode

#### ■ Preparations for checking/tuning the transceiver

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

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

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

#### ■ 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.

## ADJUSTMENT

### ■ Key operation

Key	“FNC” not appears on the sub LCD display	
	Function	Display
[Selector]	-	-
[^]	Push: Test channel up Hold: Test channel up continuously	Channel No.
[v]	Push: Test channel down Hold: Test channel down continuously	Channel No.
[Side1]	Push: Squelch level up Hold: Squelch off	Squelch level Squelch off: [icon] icon appears
[Side2]	Wide/Narrow/Very narrow	Wide: “w” Narrow: “n” Very narrow: “v”
[@]	Shift to panel tuning mode	-
[>]	Function on	“FNC” appears on the sub LCD display
[<]	MSK 1200bps and 2400bps	2400bps: [icon] icon appears
[<=>]	Push: Test signaling up Hold: Test signaling up continuously	Signaling No.
[Orange]	-	-
[PTT]	Transmit	-
[0] to [9] and [#], [*]	Use as the DTMF keypad. If a key is pressed during transmission, the DTMF corresponding to the key that was presses is sent.	-

Key	“FNC” appears on the sub LCD display	
	Function	Display
[Selector]	-	-
[^]	Function off	-
[v]	Analog/NXDN	Analog: “A” NXDN: “N”
[Side1]	Function off	-
[Side2]	LCD all lights	LCD all point appears
[@]	High power/Low power	High: “H” Low: “L”
[>]	Function off	-
[<]	Compander on/off	On: [icon] icon appears
[<=>]	Beat shift on/off	On: [icon] icon appears
[Orange]	Function off	-
[PTT]	Transmit	-
[0] to [9] and [#], [*]	Function off	-

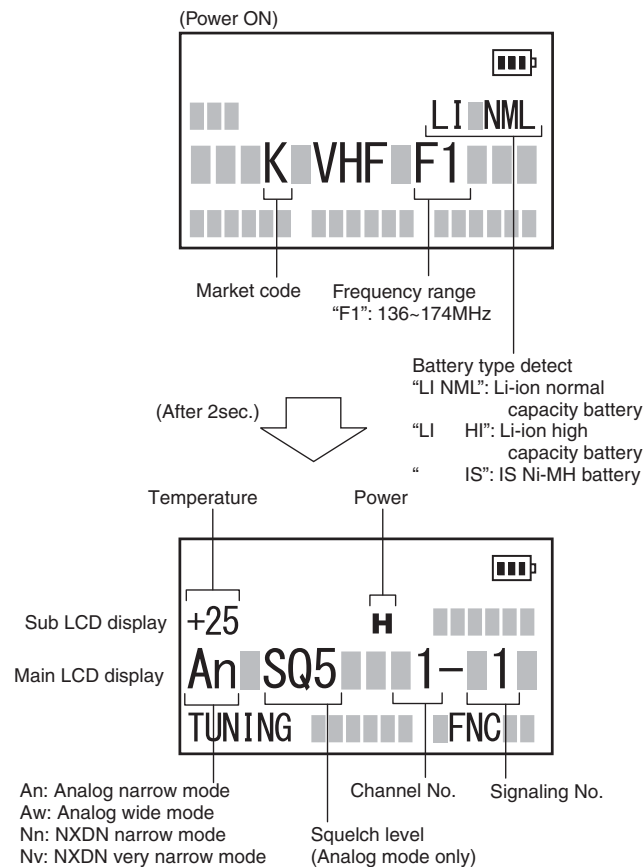
### • LED indicator

Red LED Lights during transmission.  
Green LED Lights when there is carrier.

### • Sub LCD indicator

“FNC” Appears at function on.

### • LCD display in panel test mode



### ■ 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.

### • Test frequency

CH	RX (MHz)	TX (MHz)
1	155.05000	155.10000
2	136.05000	136.10000
3	173.95000	173.90000
4	155.00000	155.00000
5	155.20000	155.20000
6	155.40000	155.40000
7~16	-	-

## ADJUSTMENT

### • Analog mode signaling

No.	RX	TX
1	None	None
2	None	100Hz Square Wave
3	LTR Data: AREA=0, GOTO=12 HOME=12 ID=47, FREE=25	LTR Data: AREA=0, GOTO=12 HOME=12 ID=47, FREE=25
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: 159D	DTMF: 159D
11	None	DTMF Code 9
12	2-tone: A: 304.7Hz B: 3106.0Hz	2-tone: A: 304.7Hz B: 3106.0Hz
13	Single Tone: 979.9Hz	Single Tone: 979.9Hz
14	None	Single Tone: 1000Hz
15	None	MSK
16	MSK	MSK

### • NXDN mode signaling

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

RAN: Radio Access Number

PN9: Pseudo-Random Pattern (for production only)

No.7,9 item: PC test mode only

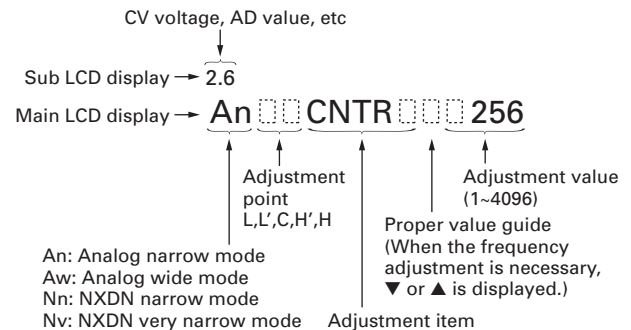
### Panel Tuning Mode

#### ■ 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 [^]/[v] key to adjust tuning requirements (1 to 4096 appears on the LCD).

Use the [\*>] key to select the adjustment item through tuning modes. Use the [→] key to adjust 5 reference level adjustments, and use the [Side2] key to switch between Wide/Narrow/Very narrow.

### • LCD display in panel tuning mode



### ■ Key operation


Key	Function	
	Push	Hold (1 second)
[Selector]	-	-
[^]	Adjustment value up	Continuation up
[v]	Adjustment value down	Continuation down
[Side1]	Auto adjustment start	-
[Side2]	Wide/Narrow/Very narrow	-
[@]	Shift to panel test mode	-
[→]	To enter 5 reference level adjustments	-
[<]	Writes the adjustment value	-
[*>]	Go to next adjustment item	Back to last adjustment item
[Orange]	-	-
[PTT]	Transmit	
[0] to [9] and [#], [*]	-	-

### ■ 5 reference level adjustments frequency

Tuning point	RX (MHz)	TX (MHz)
Low	136.05000	136.10000
Low'	145.55000	145.60000
Center	155.05000	155.10000
High'	164.55000	164.60000
High	173.95000	173.90000

## ADJUSTMENT

### ■ Adjustment item supplement

Adjustment Item	Description
LCD contrast	The contrast of LCD display can be changed.
Counterclockwise Volume	“Counterclockwise Volume” is adjusted at the minimum volume position. “Clockwise Volume” is adjusted at the maximum volume position. These adjustments can correct the volume variation.
Clockwise Volume	Both “Counterclockwise Volume” and “Clockwise Volume” must be adjusted. (The curve data of volume is applied.)
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 stability is adjusted under receiving condition with SSG. The SSG needs 0.003ppm 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.
RTC	Real-Time Clock (RTC) is adjusted. This item uses the internal clock. (Any measurement equipment is not required.)
High Transmit Power	High Transmit Power is adjusted.
Low Transmit Power	Low Transmit Power is adjusted.
Balance	The transmit audio 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.
Maximum Deviation (NXDN Narrow/Very Narrow)	Maximum Deviation of NXDN (Narrow/Very Narrow) 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. Note: “Maximum Deviation (Analog Narrow)” must be adjusted before “CWID Deviation (NXDN Very Narrow)” is 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.
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.)
VOX 1	VOX sensitivity at “VOX 1” is adjusted.
VOX 10	VOX sensitivity at “VOX 10” is adjusted.
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.
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.
High RSSI	Both “Low RSSI” and “High RSSI” must be adjusted. (The curve data of RSSI level is applied.)
Tight Squelch	The squelch level at level “9” is adjusted.
Battery Warning Level	Battery Warning Level (LED blinking level) is adjusted. Battery Warning Level minus 0.4V is the transmission inhibited level.

## ADJUSTMENT

### ■ Adjustment item and Display

Order	Adjustment item	Main LCD display	Sub LCD display	Aw (Analog Wide)	An (Analog Narrow)	Nn (NXDN Narrow)	Nv (NXDN Very Narrow)	Adjust item Number
				Adjustment range				
1	LCD contrast	CNTR	-	1 point ADJ				Common Section 2
				1~256				
2	Counterclockwise Volume	VOL1	VOL measurement value	1 point ADJ				Common Section 3
				1~256				
3	Clockwise Volume	VOL2	VOL measurement value	1 point ADJ				Common Section 4
				1~256				
4	Receive Assist	RAST	(CV voltage)	5 point ADJ				Common Section 5
				1~4096				
5	Transmit Assist	TAST	(CV voltage)	5 point ADJ				Common Section 5
				1~4096				
6	RTC (Real-time clock)	RTC	-	1 point ADJ				Common Section 6
				-62~-1/0/+1~+62				
7	High Transmit Power	HIPWR	-	-	5	-	-	Transmitter Section 1
				1~1024				
8	Low Transmit Power	LOPWR	-	-	5	-	-	Transmitter Section 2
				1~1024				
9	Balance	BAL	(Encode frequency)	-	5	-	-	Transmitter Section 3
				1~256				
10	Maximum Deviation (NXDN)	NDEV	-	-	-	5	5	Transmitter Section 4
				1~1024				
11	Maximum Deviation (Analog)	ADEV	-	5	5	-	-	Transmitter Section 5
				1~1024				
12	QT Deviation	QT	-	1	1	-	-	Transmitter Section 6
				1~1024				
13	DQT Deviation	DQT	-	1	1	-	-	Transmitter Section 7
				1~1024				
14	LTR Deviation	LTR	-	1	1	-	-	Transmitter Section 8
				1~1024				
15	DTMF Deviation	DTMF	-	1	1	-	-	Transmitter Section 9
				1~1024				
16	Single Tone Deviation	TONE	-	1	1	-	-	Transmitter Section 10
				1~1024				
17	MSK Deviation	MSK	-	1	1	-	-	Transmitter Section 11
				1~1024				
18	CWID Deviation	CWID	-	-	-	-	1	Transmitter Section 12
				1~1024				
19	VOX1	VOX1	VOX measurement value	1 point ADJ				Transmitter Section 13
				1~256				
20	VOX10	VOX10	VOX measurement value	1 point ADJ				Transmitter Section 14
				1~256				
21	Sensitivity 1	SENS1	(RSSI measurement value)	-	5	-	-	Receive Section 2
				1~256				

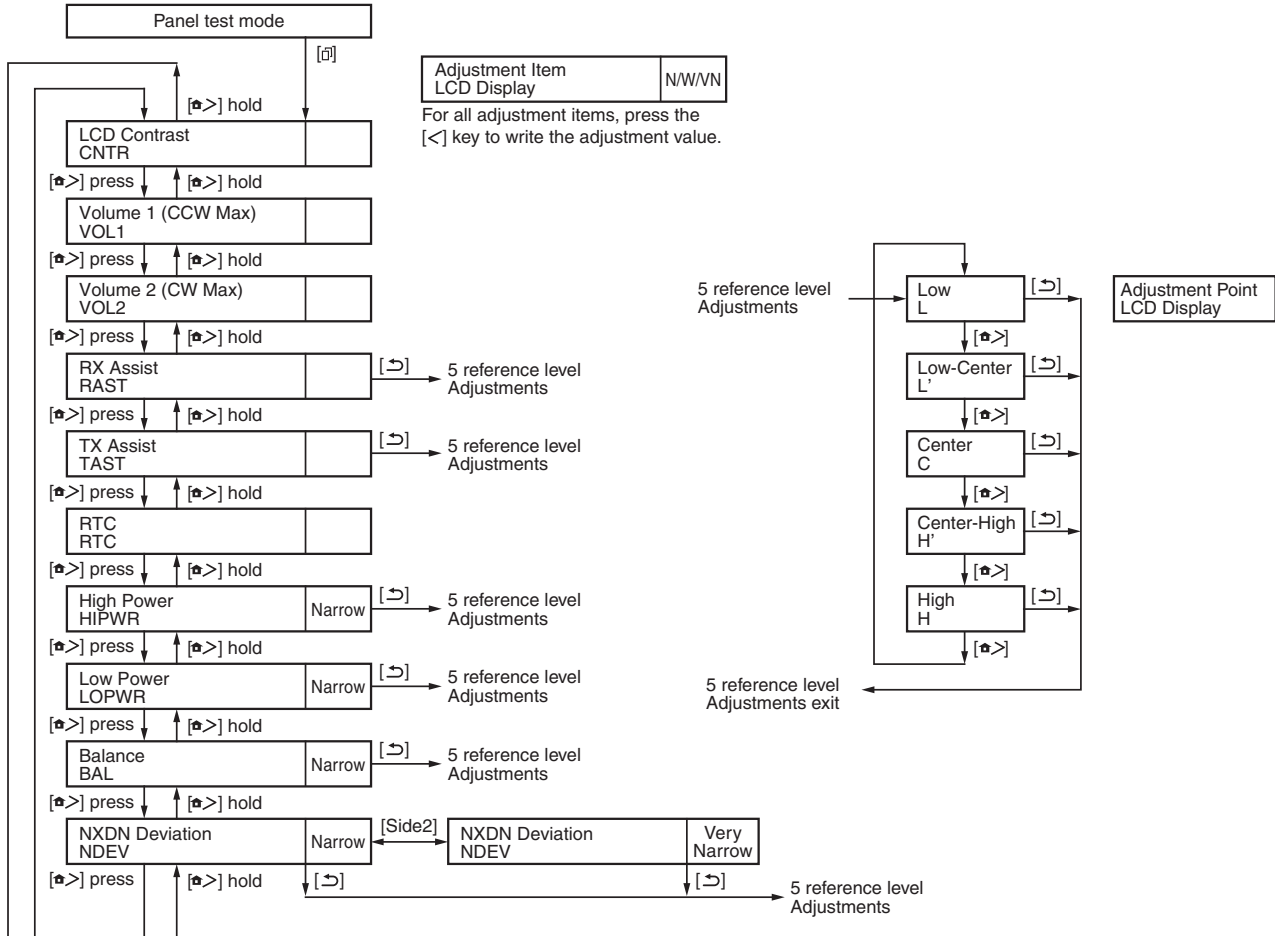
## ADJUSTMENT

Order	Adjustment item	Main LCD display	Sub LCD display	Aw (Analog Wide)	An (Analog Narrow)	Nn (NXDN Narrow)	Nv (NXDN Very Narrow)	Adjust item Number
				Adjustment range				
22	Sensitivity 2	SENS2	(RSSI measurement value)	-	5	-	-	Receive Section 3
				1~256				
23	RSSI Reference	RRSSI	(RSSI measurement value)	5	5	- *1	5	Receive Section 4
				1~256				
24	Open Squelch	SQL	(ASQDET measurement value)	5	5	- *1	5	Receive Section 5
				1~256				
25	Low RSSI	LRSSI	(RSSI measurement value)	5	5	- *1	5	Receive Section 6
				1~256				
26	High RSSI	HRSSI	(RSSI measurement value)	5	5	- *1	5	Receive Section 7
				1~256				
27	Tight Squelch	SQLT	(ASQDET measurement value)	5	5	-	-	Receive Section 8
				1~256				
28	Battery Warning Level	BATT	(BATT measurement value)	1 point ADJ				Transmitter Section 15
				1~256				

\*1: Because NXDN Narrow is adjusted by adjusting Analog Narrow, it is not necessary to adjust NXDN Narrow.

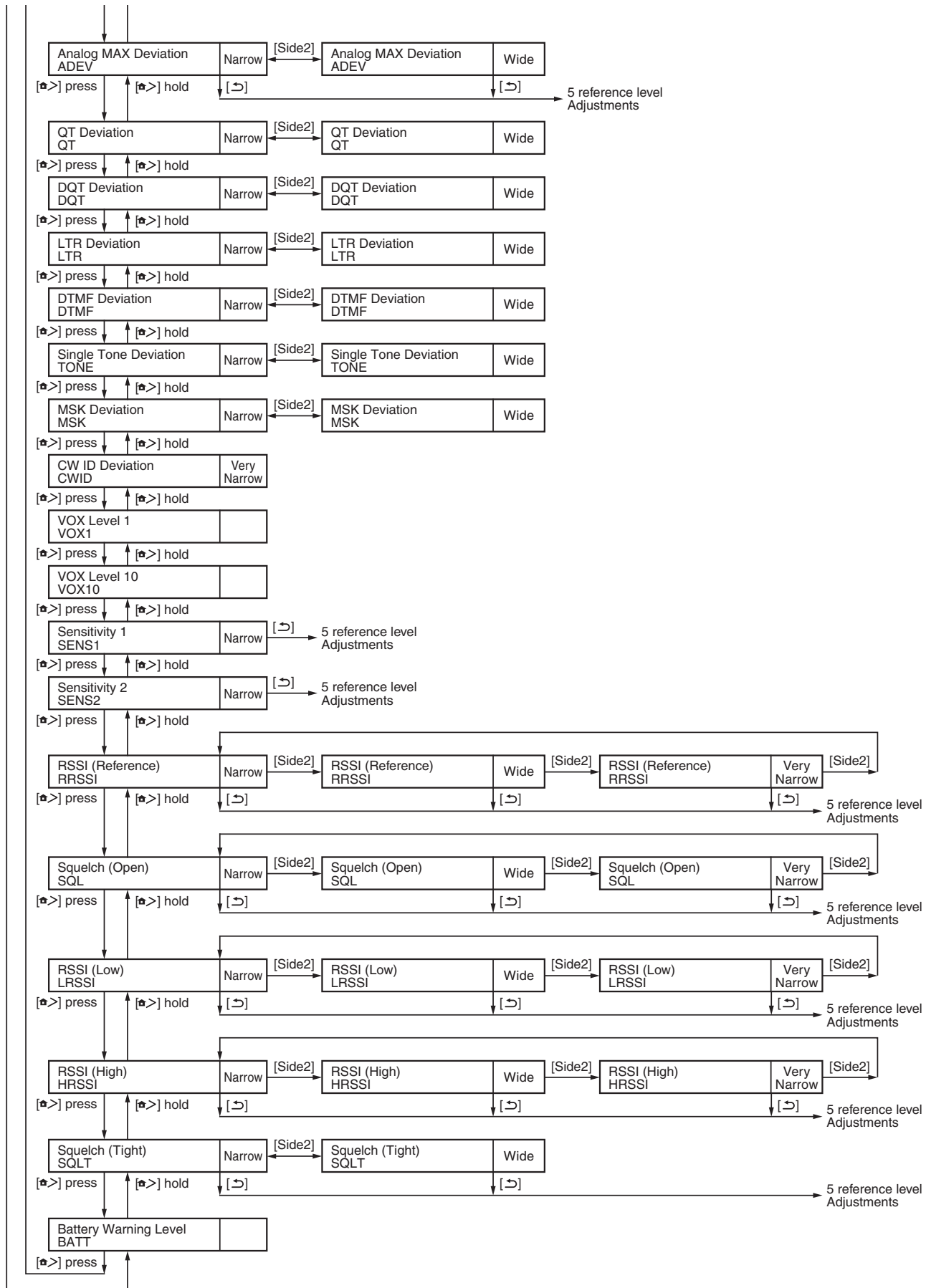
### ■ Panel tuning mode flow chart

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





## ADJUSTMENT



## ADJUSTMENT

### Test Equipment Required for Alignment

Test Equipment	Major Specifications	
1. Standard Signal Generator (SSG)	Frequency Range Modulation Output When performing the Frequency adjustment, the following accuracy is necessary. • 0.003ppm Use a standard oscillator for adjustments, if necessary.	136 to 174MHz Frequency modulation and external modulation -127dBm/0.1μV to greater than -20dBm/22.4mV
2. Power Meter	Input Impedance Operation Frequency Measurement Capability	50Ω 136 to 174MHz Vicinity of 10W
3. Deviation Meter	Frequency Range	136 to 174MHz
4. Digital Volt Meter (DVM)	Measuring Range Input Impedance	10mV to 10V DC High input impedance for minimum circuit loading
5. Oscilloscope		DC through 30MHz
6. High Sensitivity Frequency Counter	Frequency Range Frequency Stability	10Hz to 1000MHz 0.2ppm or less
7. Ammeter		5A
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. 8Ω Dummy Load		Approx. 8Ω, 3W
12. Regulated Power Supply		5V to 10V, approx. 3A Useful if ammeter equipped

#### ■ Antenna connector adapter

The antenna connector of this transceiver uses an SMA terminal.

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

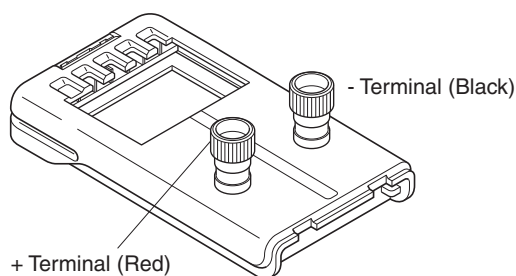
#### ■ Nut wrench

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

KENWOOD part No.: W05-1123-00

#### ■ Battery jig (W05-1370-00)

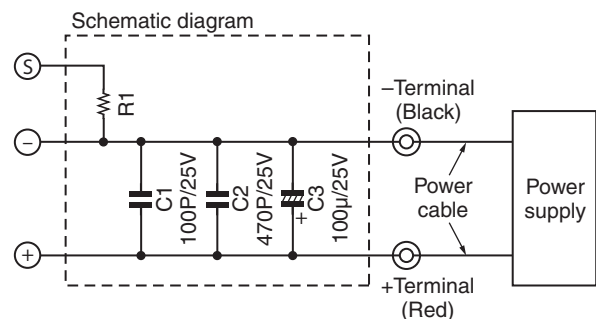
Connect the power cable properly between the battery jig installed in the transceiver and the power supply, and be sure output voltage and the power supply polarity prior to switching the power supply ON, otherwise over voltage and reverse connection may damage the transceiver, or the power supply or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



#### Note:

- When using the battery jig, you must measure the voltage at the terminals of the battery jig. Otherwise, a slight voltage drop may occur within the power cable, between the power supply and the battery jig, especially while the transceiver transmits.
- The battery jig is detected as "Li-ion High Capacity Battery".

Li-ion High Capacity Battery: R1=Open  
Li-ion Normal Capacity Battery: R1=560kΩ



## ADJUSTMENT

### ■ Universal connector

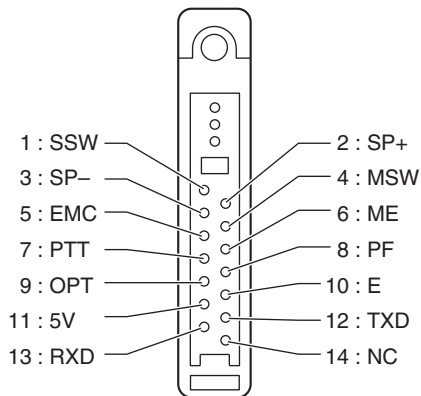
Use the interface cable (KPG-36A/36U) for PC tuning or the lead wire with plug (E30-3287-28) and screw (N08-0535-08) for panel tuning. Connect the plug to the universal connector of the transceiver and tighten the screw.

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

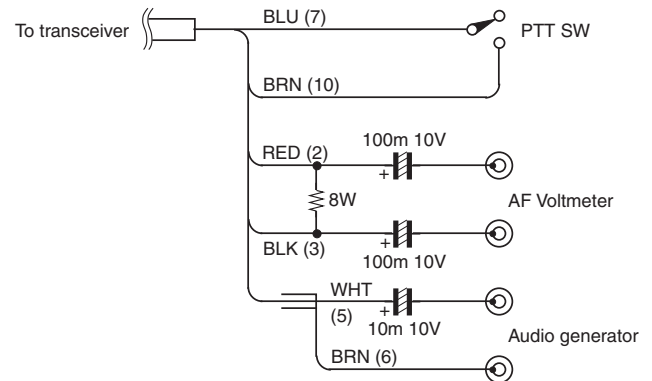
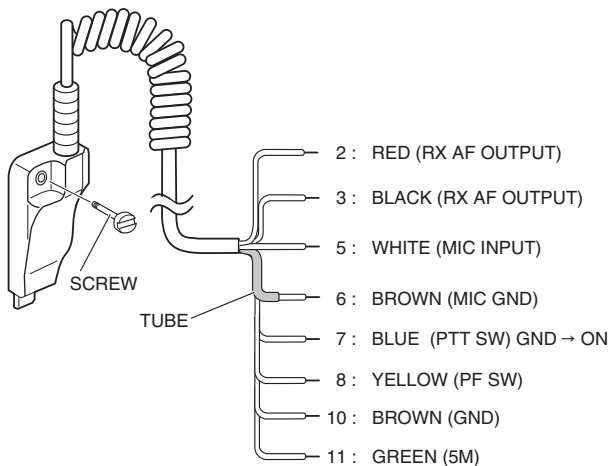
### Caution

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

### • Universal connector



### • Panel tuning

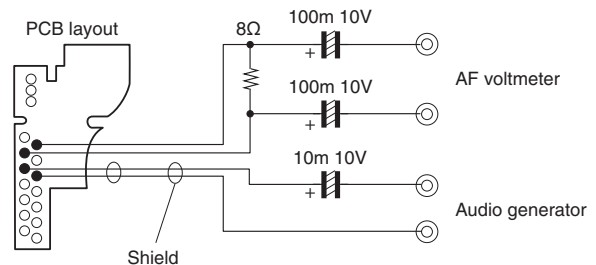
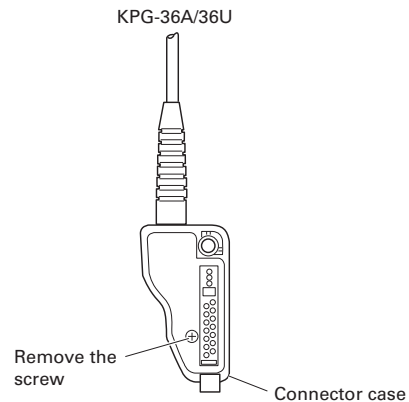


Note: Pin 1 (SSW) and Pin 4 (MSW) are connected to Pin 10 (GND) to active External SP and External MIC.

### • PC tuning

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

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



# NX-200(G)

## ADJUSTMENT

### 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 within 25°C ± 2°C.	±0.5ppm -77.55Hz~ +77.55Hz @155.1MHz
2. High power check (Batt: 7.5V)	1) CH-Sig: 1-1 PTT: ON	1) Test Channel Channel: 1 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.	Power meter Ammeter					Check	4.5W~5.5W 2.0A or less
	2) CH-Sig: 2-1 PTT: ON	2) Test Channel Channel: 2 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.							
	3) CH-Sig: 3-1 PTT: ON	3) Test Channel Channel: 3 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.							
3. Low power check (Batt: 7.5V)	1) CH-Sig: 1-1 PTT: ON	1) Test Channel Channel: 1 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.							0.7W~1.2W 1.0A or less
	2) CH-Sig: 2-1 PTT: ON	2) Test Channel Channel: 2 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.							
	3) CH-Sig: 3-1 PTT: ON	3) Test Channel Channel: 3 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.							
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		ANT Universal connector			Adjust AG input to get a standard MOD.	12.5mV±5.8mV

## ADJUSTMENT

Item	Condition		Measurement			Adjustment			Specifications / Remarks
	Panel test mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
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 8Ω Dummy load		ANT Universal connector			Check	12dB SINAD or more

### Common Section

Item	Condition		Measurement			Adjustment			Specifications / Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Setting	1) BATT terminal voltage: 7.5V 2) SSG standard modulation [Wide] MOD: 1kHz, DEV: 3kHz [Narrow] MOD: 1kHz, DEV: 1.5kHz								
2. LCD contrast	1) Adj item: [CNTR] Adjust: [***] Press [<] key to store the adjustment value.	1) Adj item: [LCD Contrast] Press [Apply] button to store the adjustment value.				Panel	[Panel tuning mode] [<], [>]  [PC test mode] [<],[>]	Adjust the LCD contrast by looking.	This item is needed when the LCD ASSY (B38-0923-05) is replaced.
3. Counterclockwise Volume	1) Adj item: [VOL1] Adjust: [***]	1) Adj item: [Counterclockwise Volume]						[Panel tuning mode] Turn the volume knob counterclockwise fully. Press [<] key to store the adjustment value. [PC test mode] Turn the volume knob counterclockwise fully. Press [Apply] button to store the adjustment value.	This item is needed when the variable resistor (R31-0666-05) is replaced.
4. Clockwise Volume	1) Adj item: [VOL2] Adjust: [***]	1) Adj item: [Clockwise Volume]						[Panel tuning mode] Turn the volume knob clockwise fully. Press [<] key to store the adjustment value. [PC test mode] Turn the volume knob clockwise fully. Press [Apply] button to store the adjustment value.	

## ADJUSTMENT

Item	Condition		Measurement			Adjustment			Specifications / Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
5. Receive Assist	1) Adj item: [RAST] Adjust: [***] 2) Adj item: [L RAST]→ [L' RAST]→[C RAST]→ [H' RAST]→[H RAST] Adjust: [****] Press [<] key to store the adjustment value.	1) Adj item: [Receive Assist] 2) Adj item: [Low], [Low'], [Center], [High'], [High] Press [Apply All] button to store the adjustment value.				Panel	[Panel tuning mode] [<], [>]  [PC test mode] [Left], [Right]	The sub LCD display and [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.	2.5V±0.1V  [PC test mode] Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
Transmit Assist	1) Adj item: [TAST] Adjust: [***] 2) Adj item: [L TAST]→ [L' TAST]→[C TAST]→ [H' TAST]→[H TAST] Adjust: [****] PTT : ON (RF power is not output.) Press [<] key to store the adjustment value.	1) Adj item: [Transmit Assist] 2) Adj item: [Low], [Low'], [Center], [High'], [High] PTT: Press [Transmit] button. Press [Apply All] button to store the adjustment value.					<b>Note:</b> Confirm the VCO lock voltage approximately 3 seconds after the adjustment value is changed.		
6. RTC oscillation frequency adjust	1) Adj item: [RTC] Adjust: [***]	1) Adj item: [RTC (Real-time clock)]					[Panel tuning mode] Press [Side1] key. After automatic adjustment adjusted value is displayed on the LCD. Press [<] key to store the adjustment value. [PC test mode] Press [Start] button of "Auto Tuning". Press [Apply] button to store the adjustment value after the automatic adjustment was finished.		
7. Frequency adjust	* 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 +23°C to +27°C (+73.4°F to +80.6°F). (The temperature is displayed on the Frequency adjustment screen of the KPG-111D/111DN and the LCD of the transceiver.) • Use an accuracy of 0.003ppm for the SSG. (Use a standard oscillator if necessary.)	SSG	Panel	ANT		[PC test mode] Press [Start] button of "Auto Tuning". Press [Apply] button to store the adjustment value after the automatic adjustment was finished.	[PC test mode] The value of "IF20" will become around "0" after the adjustment was finished. <b>Remark:</b> "Frequency" is adjusted under receiving condition with SSG.	

## ADJUSTMENT

### Transmitter Section

Item	Condition		Measurement			Adjustment			Specifications / Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. High Transmit Power adjust (Batt: 7.5V)	1) Adj item: [HIPWR] Adjust: [****]	1) Adj item: [High Transmit Power]	Power meter Ammeter	Panel	ANT	Panel	[Panel tuning mode] [<], [>]  [PC test mode] [◀],[▶]	5.0W	±0.2W 2.0A or less  [PC test mode] Press [Apply All] button to store the adjustment value after all adjustment point was adjusted.
	2) Adj item: [L HIPWR]→ [L' HIPWR]→ [C HIPWR]→ [H' HIPWR]→ [H HIPWR] Adjust: [****] PTT: ON Press [<] key to store the adjustment value.	2) Adj item: [Low], [Low'], [Center], [High'], [High] PTT: Press [Transmit] button. Press [Apply All] button to store the adjustment value.						0.8W	±0.1W 1.0A or less  [PC test mode] Press [Apply All] button to store the adjustment value after all adjustment point was adjusted.
3. Balance adjust *2	1) Adj item: [BAL] Adjust: [***] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [L BAL]→ [L' BAL]→[C BAL]→ [H' BAL]→[H BAL] Adjust: [***] PTT: ON Press [<] key to store the adjustment value. Sub LCD: Tone frequency [Side1] key: Press while transmitting to change 20Hz and 2kHz.	1) Adj item: [Balance] Deviation meter LPF : 3kHz HPF : OFF 2) Adj item: [Low], [Low'], [Center], [High'], [High] PTT: Press [Transmit] button. Press [Apply All] button to store the adjustment value. [2kHz Sine Wave Check box]: Check while transmitting change to 2kHz.	Deviation meter Oscilloscope					The Deviation of 20Hz frequency is fixed. Change the 2kHz adjustment value to become the same deviation of 20Hz within the specified range.	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 point was adjusted.
*2: Refer to the "Necessary Deviation adjustment item for each signaling and mode" table on pages 59 and 60. Balance adjustment is common with the adjustment of all signaling deviations.									
4. Maximum Deviation (NXDN) adjust *3  [Narrow]	1) Adj item: [Nn NDEV] Adjust: [****] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [NnL NDEV]→ [NnL' NDEV]→ [NnC NDEV]→ [NnH' NDEV]→ [NnH NDEV] Adjust: [****] PTT: ON Press [<] key to store the adjustment value.	1) Adj item: [Maximum Deviation (NXDN Narrow)] Deviation meter LPF: 3kHz HPF: OFF 2) Adj item: [Low], [Low'], [Center], [High'], [High] PTT: Press [Transmit] button. Press [Apply All] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [<], [>]  [PC test mode] [◀],[▶]	3056Hz  Write the value as followings. 497 (Reference)	2995~3117Hz  [PC test mode] Press [Apply All] button to store the adjustment value after all adjustment point was adjusted.

## ADJUSTMENT

Item	Condition		Measurement			Adjustment			Specifications / Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
Maximum Deviation (NXDN) adjust *3  [Very Narrow]	1) Adj item: [Nv NDEV] Adjust: [****] 2) Adj item: [NvL NDEV]→ [NvL' NDEV]→ [NvC NDEV]→ [NvH' NDEV] Adjust: [****] PTT: ON Press [<] key to store the adjustment value.	1) Adj item: [Maximum Deviation (NXDN Very Narrow)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] PTT: Press [Transmit] button. Press [Apply All] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [^], [v]  [PC test mode] [◀],[▶]	1337Hz  Write the value as followings. 497 (Reference value)	1311~1363Hz  [PC test mode] Press [Apply All] button to store the adjustment value after all adjustment point was adjusted.
5. Maximum Deviation (Analog) adjust *3  [Narrow]	1) Adj item: [An ADEV] Adjust: [****] 2) Adj item: [AnL ADEV]→ [AnL' ADEV]→ [AnC ADEV]→ [AnH' ADEV] Adjust: [****] Press [<] key to store the adjustment value.	1) Adj item: [Maximum Deviation (Analog Narrow)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] Press [Apply All] button to store the adjustment value.						2100Hz  Write the value as followings. 495 (Reference value)	2050~2150Hz  [PC test mode] Press [Apply All] button to store the adjustment value after all adjustment point was adjusted.
[Wide]	1) Adj item: [Aw ADEV] Adjust: [****] 2) Adj item: [AwL ADEV]→ [AwL' ADEV]→ [AwC ADEV]→ [AwH' ADEV] Adjust: [****] Press [<] key to store the adjustment value.	1) Adj item: [Maximum Deviation (Analog Wide)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] Press [Apply All] button to store the adjustment value.						4200Hz  Write the value as followings. 495 (Reference value)	4150~4250Hz  [PC test mode] Press [Apply All] button to store the adjustment value after all adjustment point was adjusted.
*3: Refer to the "Necessary Deviation adjustment item for each signaling and mode" table on pages 59 and 60. Regarding Maximum Deviation (Analog), it is common with the adjustment of all analog signalings.									
6. QT Deviation adjust *4  [Narrow]	1) Adj item: [An QT] Adjust: [****] Deviation meter LPF: 3kHz HPF: OFF PTT: ON Press [<] key to store the adjustment value.	1) Adj item: [QT Deviation (Analog Narrow)] Deviation meter LPF: 3kHz HPF: OFF PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [^], [v]  [PC test mode] [◀],[▶]	Write the value as followings. 513 (Reference value)	0.35kHz±0.05kHz



## ADJUSTMENT

Item	Condition		Measurement			Adjustment			Specifications / Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
QT Deviation adjust *4  [Wide]	1) Adj item: [Aw QT] Adjust: [****] PTT: ON Press [<] key to store the adjustment value.	1) Adj item: [QT Deviation (Analog Wide)] PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [<], [>]  [PC test mode] [<],[>]	Write the value as followings. 513 (Reference value)	0.75kHz±0.05kHz
7. DQT Deviation adjust *4  [Narrow]	1) Adj item: [An DQT] Adjust: [****] Deviation meter LPF: 3kHz HPF: OFF PTT: ON Press [<] key to store the adjustment value.	1) Adj item: [DQT Deviation (Analog Narrow)] Deviation meter LPF: 3kHz HPF: OFF PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.						Write the value as followings. 415 (Reference value)	0.35kHz±0.05kHz
[Wide]	1) Adj item: [Aw DQT] Adjust: [****] PTT: ON Press [<] key to store the adjustment value.	1) Adj item: [DQT Deviation (Analog Wide)] PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.							0.75kHz±0.05kHz
8. LTR Deviation adjust *4  [Narrow]	1) Adj item: [An LTR] Adjust: [****] Deviation meter LPF: 3kHz HPF: OFF PTT: ON Press [<] key to store the adjustment value.	1) Adj item: [LTR Deviation (Analog Narrow)] Deviation meter LPF: 3kHz HPF: OFF PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.						Write the value as followings. 505 (Reference value)	0.75kHz±0.05kHz
[Wide]	1) Adj item: [Aw LTR] Adjust: [****] PTT: ON Press [<] key to store the adjustment value.	1) Adj item: [LTR Deviation (Analog Wide)] PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.							1.00kHz±0.05kHz
9. DTMF Deviation adjust *4  [Narrow]	1) Adj item: [An DTMF] Adjust: [****] Deviation meter LPF: 15kHz HPF: OFF PTT: ON Press [<] key to store the adjustment value.	1) Adj item: [DTMF Deviation (Analog Narrow)] Deviation meter LPF: 15kHz HPF: OFF PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.						Write the value as followings. 540 (Reference value)	1.25kHz±0.05kHz
[Wide]	1) Adj item: [Aw DTMF] Adjust: [****] PTT: ON Press [<] key to store the adjustment value.	1) Adj item: [DTMF Deviation (Analog Wide)] PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.							2.50kHz±0.05kHz

## ADJUSTMENT

Item	Condition		Measurement			Adjustment			Specifications / Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
10. Single Tone Deviation adjust *4  [Narrow]	1) Adj item: [An TONE] Adjust: [****] Deviation meter LPF: 15kHz HPF: OFF PTT: ON Press [<] key to store the adjustment value.	1) Adj item: [Single Tone Deviation (Analog Narrow)] Deviation meter LPF: 15kHz HPF: OFF PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.	Deviation meter Oscilloscope	Panel	ANT	Panel	[Panel tuning mode] [<], [>]  [PC test mode] [Left], [Right]	Write the value as followings. 513 (Reference value)	1.50kHz±0.05kHz
	[Wide]	1) Adj item: [Aw TONE] Adjust: [****] PTT: ON Press [<] key to store the adjustment value.							1) Adj item: [Single Tone Deviation (Analog Wide)] PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.
11. MSK Deviation adjust *4  [Narrow]	1) Adj item: [An MSK] Adjust: [****] Deviation meter LPF: 15kHz HPF: OFF PTT: ON Press [<] key to store the adjustment value.	1) Adj item: [MSK Deviation (Analog Narrow)] Deviation meter LPF: 15kHz HPF: OFF PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.						Write the value as followings. 505 (Reference value)	1.50kHz±0.05kHz
	[Wide]	1) Adj item: [Aw MSK] Adjust: [****] PTT: ON Press [<] key to store the adjustment value.							1) Adj item: [MSK Deviation (Analog Wide)] PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.
12. CWID Deviation adjust *4  [Very Narrow]	1) Adj item: [Nv CWID] Adjust: [****] Deviation meter LPF: 15kHz HPF: OFF PTT: ON Press [<] key to store the adjustment value.	1) Adj item: [CW ID Deviation (NXDN Very Narrow)] Deviation meter LPF: 15kHz HPF: OFF PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.						Write the value as followings. 376 (Reference value)	1.10kHz±0.10kHz
*4: Refer to the "Necessary Deviation adjustment item for each signaling and mode" table on pages 59 and 60.									
13. VOX1 adjust	1) Adj item: [VOX1] Adjust: [***] AG: 1kHz/45mV at MIC terminal	1) Adj item: [VOX1] AG: 1kHz/45mV at MIC terminal	AG	Panel	Universal connector			[Panel tuning mode] After apply signal from AG, press [<] key to store the adjustment value. [PC test mode] After apply signal from AG, press [Apply] button to store the adjustment value.	
14. VOX10 adjust	1) Adj item: [VOX10] Adjust: [***] AG: 1kHz/3mV at MIC terminal	1) Adj item: [VOX10] AG: 1kHz/3mV at MIC terminal							

## ADJUSTMENT

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

### ■ 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 (Wide)", this signaling is composed of three elements [Balance, Maximum Deviation (Analog Wide) and QT Deviation (Wide)]. Please adjust Balance and Maximum Deviation (Analog Wide) before adjusting QT Deviation (Wide).

Mode	Signaling	Necessary adjustment and order		
		Wide	Narrow	Very Narrow
Analog	Audio	Step1. Balance adjust Step2. Maximum Deviation (Analog Wide)	Step1. Balance adjust Step2. Maximum Deviation (Analog Narrow)	-
	QT	Step1. Balance adjust Step2. Maximum Deviation (Analog Wide) Step3. QT Deviation (Wide)	Step1. Balance adjust Step2. Maximum Deviation (Analog Narrow) Step3. QT Deviation (Narrow)	-
	DQT	Step1. Balance adjust Step2. Maximum Deviation (Analog Wide) Step3. DQT Deviation (Wide)	Step1. Balance adjust Step2. Maximum Deviation (Analog Narrow) Step3. DQT Deviation (Narrow)	-
	LTR	Step1. Balance adjust Step2. Maximum Deviation (Analog Wide) Step3. LTR Deviation (Wide)	Step1. Balance adjust Step2. Maximum Deviation (Analog Narrow) Step3. LTR Deviation (Narrow)	-
	DTMF	Step1. Balance adjust Step2. Maximum Deviation (Analog Wide) Step3. DTMF Deviation (Wide)	Step1. Balance adjust Step2. Maximum Deviation (Analog Narrow) Step3. DTMF Deviation (Narrow)	-
	2TONE	Step1. Balance adjust Step2. Maximum Deviation (Analog Wide) Step3. Single Tone Deviation (Analog Wide)	Step1. Balance adjust Step2. Maximum Deviation (Analog Narrow) Step3. Single Tone Deviation (Analog Narrow)	-
	MSK (FleetSync)	Step1. Balance adjust Step2. Maximum Deviation (Analog Wide) Step3. MSK Deviation (Analog Wide)	Step1. Balance adjust Step2. Maximum Deviation (Analog Narrow) Step3. MSK Deviation (Analog Narrow)	-

## ADJUSTMENT

Mode	Signaling	Necessary adjustment and order		
		Wide	Narrow	Very Narrow
NXDN	Audio	-	Step1. Balance adjust Step2. Maximum Deviation (NXDN Narrow)	Step1. Balance adjust Step2. Maximum Deviation (NXDN Very Narrow)
	CWID	-	-	Step1. Balance adjust Step2. Maximum Deviation (Analog Narrow) Step3. CWID Deviation (NXDN Very Narrow)

- Balance is common with all the above deviation adjustments. If Balance (Transmitter Section 3) has already adjusted, please skip Step1 and adjust from Step2.
- Maximum Deviation (Analog Wide/Narrow) is common with all the analog signaling deviations and CWID Deviation (NXDN Very Narrow). If Balance and Maximum Deviation (Analog Wide/Narrow) (Transmitter Section 5) have already adjusted, please skip Step2 and adjust from Step3.

### 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) Wide/Narrow: Narrow Beat Shift: Uncheck Compander: Uncheck	1) Test Channel Channel: 1 Test Signaling Mode: Analog Signaling: 1 Wide/Narrow: Narrow Beat Shift: Uncheck Compander: Uncheck SSG output: -47dBm (1mV) (MOD: 1kHz±1.5kHz)	SSG DVM AF VM Dummy load	Panel	ANT Universal connector	Panel	Volume knob	Turn the Volume knob to obtain 0.63V AF output.	0.63V±0.1V
2. Sensitivity 1 adjust	1) Adj item: [SENS1] Adjust: [***] 2) Adj item: [L SENS1]→ [L' SENS1]→ [C SENS1]→ [H' SENS1]→ [H SENS1] Adjust: [***] Press [<] key to store the adjustment value.	1) Adj item: [Sensitivity 1] 2) Adj item: [Low], [Low'], [Center], [High'], [High] Press [Apply All] button to store the adjustment value.	SSG AF VTVM Oscilloscope	Panel	ANT Universal connector	[Panel tuning mode] [∧], [∨] [PC test mode] [◀,▶]	Write the value as followings. [L SENS1] / [Low] : 10 (Preset) [L' SENS1] / [Low'] : 50 (Preset) [C SENS1] / [Center] : 95 (Fixed) [H' SENS1] / [High'] : 135 (Fixed) [H SENS1] / [High] : 180 (Fixed)	Increase the adjustment value from step 2 adjustment value (preset value) of "2. Sensitivity 1 adjust".	
	3) Adj item: [L SENS1]→ [L' SENS1]→ Adjust: [***]	3) Adj item: [Low], [Low']							
	Caution: Perform the step 3 adjustments of "3. Sensitivity 2 adjust" before performing the [L SENS1] and [L' SENS1] adjustment.								
	SSG output: -90dBm (7.08μV) (MOD: 1kHz±1.5kHz) Press [<] key to store the adjustment value.	SSG output: -90dBm (7.08μV) (MOD: 1kHz±1.5kHz) Press [Apply All] button to store the adjustment value.							

## ADJUSTMENT

Item	Condition		Measurement			Adjustment			Specifications / Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
3. Sensitivity 2 adjust	1) Adj item: [SENS2] Adjust: [***] 2) Adj item: [L SENS2]→ [L' SENS2]→ [C SENS2]→ [H' SENS2]→ [H SENS2] Adjust: [***] Press [<] key to store the adjustment value.	1) Adj item: [Sensitivity 2] 2) Adj item: [Low], [Low'], [Center], [High'], [High] Press [Apply All] button to store the adjustment value.	SSG AF VTVM Oscilloscope	Panel	ANT Universal connector	Panel	[Panel tuning mode] [<], [>]  [PC test mode] [Left], [Right]	Write the value as followings. [L SENS2] / [Low] : 180 (Fixed) [L' SENS2] / [Low'] : 180 (Fixed) [C SENS2] / [Center] : 175 (Fixed) [H' SENS2] / [High'] : 175 (Fixed) [H SENS2] / [High] : 185 (Fixed)	
	3) Adj item: [L SENS2]→ [L' SENS2] Adjust: [***] Press [<] key to store the adjustment value.	3) Adj item: [Low], [Low'] Press [Apply All] button to store the adjustment value.						Write the value as followings. [L SENS2]/[Low] : 256 [L' SENS2]/[Low'] : 256	
4. RSSI reference adjust *5  [Analog Narrow]	1) Adj item: [An RRSSI] Adjust: [***] 2) Adj item: [AnL RRSSI]→ [AnL' RRSSI]→ [AnC RRSSI]→ [AnH' RRSSI]→ [AnH RRSSI] Adjust: [***] SSG output: 12dB SINAD level -3dB (MOD: 1kHz/±1.5kHz)	1) Adj item: [RSSI Reference (Analog Narrow)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: 12dB SINAD level -3dB (MOD: 1kHz/±1.5kHz)	SSG Distortion meter Oscilloscope	Panel	ANT Universal connector			[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]	1) Adj item: [Aw RRSSI] Adjust: [***] 2) Adj item: [AwL RRSSI]→ [AwL' RRSSI]→ [AwC RRSSI]→ [AwH' RRSSI]→ [AwH RRSSI] Adjust: [***] SSG output: 12dB SINAD level -3dB (MOD: 1kHz/±3kHz)						1) Adj item: [RSSI Reference (Analog Wide)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: 12dB SINAD level -3dB (MOD: 1kHz/±3kHz)	
[NXDN Very Narrow]	1) Adj item: [Nv RRSSI] Adjust: [***] 2) Adj item: [NvL RRSSI]→ [NvL' RRSSI]→ [NvC RRSSI]→ [NvH' RRSSI]→ [NvH RRSSI] Adjust: [***] SSG output: 12dB SINAD level for Analog Narrow -3dB (MOD: 1kHz/±1.5kHz)	1) Adj item: [RSSI Reference (NXDN Very Narrow)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: 12dB SINAD level for Analog Narrow -3dB (MOD: 1kHz/±1.5kHz)						Adjust with the analog signal.	
*5: Because RSSI reference (NXDN Narrow) is adjusted by adjusting RSSI reference (Analog Narrow), it is not necessary to adjust RSSI reference (NXDN Narrow).									



## ADJUSTMENT

Item	Condition		Measurement			Adjustment			Specifications / Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
Low RSSI at -118dBm adjust *7  [Analog Wide]	1) Adj item: [Aw LRSSI] Adjust: [***] 2) Adj item: [AwL LRSSI]→ [AwL' LRSSI]→ [AwC LRSSI]→ [AwH' LRSSI]→ [AwH LRSSI] Adjust: [***] SSG output: -118dBm (0.28μV) (MOD: 1kHz/±3kHz)	1) Adj item: [Low RSSI (Analog Wide)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: -118dBm (0.28μV) (MOD: 1kHz/±3kHz)	SSG	Panel	ANT Universal connector			[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 LRSSI] Adjust: [***] 2) Adj item: [NvL LRSSI]→ [NvL' LRSSI]→ [NvC LRSSI]→ [NvH' LRSSI]→ [NvH LRSSI] Adjust: [***] SSG output: -118dBm (0.28μV) (MOD: 1kHz/±1.5kHz)	1) Adj item: [Low RSSI (NXDN Very Narrow)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: -118dBm (0.28μV) (MOD: 1kHz/±1.5kHz)							Adjust with the analog signal.
*7: Because Low RSSI at -118dBm (NXDN Narrow) is adjusted by adjusting Low RSSI at -118dBm (Analog Narrow), it is not necessary to adjust Low RSSI at -118dBm (NXDN Narrow).									
7. High RSSI at -80dBm adjust *8  [Analog Narrow]	1) Adj item: [An HRSSI] Adjust: [***] 2) Adj item: [AnL HRSSI]→ [AnL' HRSSI]→ [AnC HRSSI]→ [AnH' HRSSI]→ [AnH HRSSI] Adjust: [***] SSG output: -80dBm (22.4μV) (MOD: 1kHz/±1.5kHz)	1) Adj item: [High RSSI (Analog Narrow)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: -80dBm (22.4μV) (MOD: 1kHz/±1.5kHz)	SSG	Panel	ANT Universal connector			[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]	1) Adj item: [Aw HRSSI] Adjust: [***] 2) Adj item: [AwL HRSSI]→ [AwL' HRSSI]→ [AwC HRSSI]→ [AwH' HRSSI]→ [AwH HRSSI] Adjust: [***] SSG output: -80dBm (22.4μV) (MOD: 1kHz/±3kHz)	1) Adj item: [High RSSI (Analog Wide)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: -80dBm (22.4μV) (MOD: 1kHz/±3kHz)							

# NX-200(G)

## ADJUSTMENT

Item	Condition		Measurement			Adjustment			Specifications / Remarks
	Panel tuning mode	PC test mode	Test-equipment	Unit	Terminal	Unit	Parts	Method	
High RSSI at -80dBm adjust *8  [NXDN Very Narrow]	1) Adj item: [Nv HRSSI] Adjust: [***] 2) Adj item: [NvL HRSSI]→ [NvL' HRSSI]→ [NvC HRSSI]→ [NvH' HRSSI]→ [NvH HRSSI] Adjust: [***] SSG output: -80dBm (22.4μV) (MOD: 1kHz±1.5kHz)	1) Adj item: [High RSSI (NXDN Very Narrow)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: -80dBm (22.4μV) (MOD: 1kHz±1.5kHz)	SSG	Panel	ANT Universal connector			[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.	Adjust with the analog signal.
*8: Because High RSSI at -80dBm (NXDN Narrow) is adjusted by adjusting High RSSI at -80dBm (Analog Narrow), it is not necessary to adjust High RSSI at -80dBm (NXDN Narrow).									
8. Tight Squelch adjust (Squelch level 9 adjust)  [Analog Narrow]	1) Adj item: [An SQLT] Adjust: [***] 2) Adj item: [AnL SQLT]→ [AnL' SQLT]→ [AnC SQLT]→ [AnH' SQLT]→ [AnH SQLT] Adjust: [***] SSG output: 12dB SINAD level +5dB (MOD: 1kHz±1.5kHz)	1) Adj item: [Tight Squelch (Analog Narrow)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: 12dB SINAD level +5dB (MOD: 1kHz±1.5kHz)	SSG	Panel	ANT Universal connector			[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]	1) Adj item: [Aw SQLT] Adjust: [***] 2) Adj item: [AwL SQLT]→ [AwL' SQLT]→ [AwC SQLT]→ [AwH' SQLT]→ [AwH SQLT] Adjust: [***] SSG output: 12dB SINAD level +5dB (MOD: 1kHz±3kHz)	1) Adj item: [Tight Squelch (Analog Wide)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: 12dB SINAD level +5dB (MOD: 1kHz±3kHz)							



## TERMINAL FUNCTION

### Control unit (XC1-0020-XX)

Pin No.	Name	I/O	Function
<b>CN1</b>			
1	/CS	O	Chip select output
2	/RES	O	LCD reset output
3	A0	O	Address bus 0 output
4	/WR	O	WR bus output
5	D0	I/O	Data bus 0
6	D1	I/O	Data bus 1
7	D2	I/O	Data bus 2
8	D3	I/O	Data bus 3
9	D4	I/O	Data bus 4
10	D5	I/O	Data bus 5
11	D6	I/O	Data bus 6
12	D7	I/O	Data bus 7
13	VDD	O	3.3V LCD power supply output
14	VSS	-	GND
15	VDD	O	3.3V LCD power supply output
16	V1	-	LCD drive power supply
17	V2	-	LCD drive power supply
18	V3	-	LCD drive power supply
19	V4	-	LCD drive power supply
20	V5	O	LCD drive power supply
<b>CN23</b>			
1	ME	-	Internal MIC GND
2	EMC	I	Internal MIC input
3	SP+	O	BTL output + for internal speaker
4	SP+	O	BTL output + for internal speaker
5	SP-	O	BTL output – for internal speaker
6	SP-	O	BTL output – for internal speaker
7	6_/KEYI1	I	Key matrix input (KEYI1 for 6-key)
8	6_/KEYO2	O	Key matrix output (KEYO2 for 6-key)
9	BL_SB	O	LCD backlight voltage output
10	6_/KEYO0	O	Key matrix output (KEYO0 for 6-key)
11	6_/KEYO1	O	Key matrix output (KEYO1 for 6-key)
12	BL_SB	O	LCD backlight voltage output
13	6_/KEYI0	I	Key matrix input (KEYI0 for 6-key)
14	AGND	-	GND
<b>CN403</b>			
1	33A	O	3.3V for volume level
2	VOL_GND	-	GND for volume level
3	VOL	I	Volume level input for audio control
4	EN3	I	Rotary switch input
5	AGND	-	GND
6	EN4	I	Rotary switch input
7	EN1	I	Rotary switch input
8	EN2	I	Rotary switch input

Pin No.	Name	I/O	Function
9	+B	O	Power output after passing through the fuse
10	SB1	I	Power input after power switch
<b>CN404</b>			
1	LED_G	O	Green LED control output
2	/EMG	I	Emergency (Orange) key input
3	LED_R	O	Red LED control output
4	IFC	I	TX-RX PCB version recognition input
5	/SAVE	O	50C Reg. control output
6	I2CCK	O	TCXO thermometer clock output
7	/5TC	O	50T Reg. switch control output
8	I2CSDA	I/O	TCXO thermometer data input/output
9	SBC	O	SB3 switch control output
10	/T_R	O	TX/RX control output
11	TV2	O	RX tuning voltage 2 output
12	ASSIST	O	VCO tuning voltage output
13	TV1	O	RX tuning voltage 1 output
14	VAGC	I	AGC voltage input
15	5RC	O	50R switch control output
16	TCXO_MOD	O	TCXO modulation output
17	PGND	-	GND
18	RSSI	I	RSSI voltage input
19	PGND	-	GND
20	CV	I	CV voltage input
21	AGND	-	GND
22	NC	-	No connection
23	NC	-	No connection
24	+B	I	Power input after passing through the fuse
25	+B	I	Power input after passing through the fuse
26	+B	I	Power input after passing through the fuse
27	+B	I	Power input after passing through the fuse
28	NC	-	No connection
29	NC	-	No connection
30	AGND	-	GND
31	/PTT	I	PTT input
32	Side_G	O	Key matrix output (SIDE1,2 key)
33	Side_1	I	Key matrix input (SIDE1 key)
34	W_N	O	W/N control output
35	SDO1	O	PLL serial data output
36	Side_2	I	Key matrix input (SIDE2 key)
37	/PCS_RF	O	PLL enable output
38	/DSW	O	APC voltage discharge switch control output
39	APC	O	APC control voltage output
40	/APCSW	O	APC switch control output
41	VCO_MOD	O	VCO modulation output

# NX-200(G)

## TERMINAL FUNCTION

Pin No.	Name	I/O	Function
42	THP	I	Thermistor voltage input
43	PLD	I	PLL lock detect input
44	38M	O	38M output
45	SCK1	O	PLL clock output
46	GND	-	GND
47	S_DET	I	Battery select input
48	GND	-	GND
49	NC	-	No connection
50	IF_DET	I	IF input
CN405			
1	SSW	I	EXT/INT speaker switch input
2	SP+	O	BTL output + for external speaker
3	SP-	O	BTL output – for external speaker
4	MSW	I	EXT/INT MIC switch input
5	EMC	I	External MIC input
6	ME	-	External MIC GND
7	PTT	I	External PTT input
8	PF	I	Programmable function key input
9	OPT	I/O	Option interface I/O
10	E	-	GND
11	5V	O	5V output
12	TXD	O	Serial data output
13	RXD	I	Serial data input
14	NC	-	No connection
CN701 (for production)			
1~20			
CN710			
1	OPT1	I/O	Refer to “CN710 26-pin connector specification” described on pages 69 to 72.
2	OPT3	I/O	
3	26P_RD	I	
4	26P_TD	O	
5	NC	-	
6	OPT4	O	
7	OPT10	O	
8	OPT5	O	
9	DGND	-	
10	AGND	-	
11	AI	I	
12	AO	O	
13	AGND	-	
14	5V	-	
15	OPT9	I	
16	DTI	I	
17	OPT8	I/O	
18	OPT11	O	
19	OPT7	I/O	

Pin No.	Name	I/O	Function
20	OPT2	I/O	Refer to “CN710 26-pin connector specification” described on pages 69 to 72.
21	TXO	O	
22	RXEO	O	
23	RXEI	I	
24	TXI	I	
25	OPT6	O	
26	POW	O	

### TX-RX unit (X57-8950-13)

Pin No.	Name	I/O	Function
CN900			
1	LED_G	I	Green LED control input
2	/EMG	O	Emergency (Orange) key output
3	LED_R	I	Red LED control input
4	IFC	O	TX-RX PCB version recognition output
5	/SAVE	I	50C Reg. control input
6	I2CCK	I	TCXO thermometer clock input
7	/5TC	I	50T Reg. switch control input
8	I2CSDA	I/O	TCXO thermometer data input/output
9	SBC	I	SB3 switch control input
10	/T_R	I	TX/RX control input
11	TV2	I	RX tuning voltage 2 input
12	ASSIST	I	VCO tuning voltage input
13	TV1	I	RX tuning voltage 1 input
14	VAGC	O	AGC voltage output
15	5RC	I	50R switch control input
16	TCXO_MOD	I	TCXO modulation input
17	GND	-	GND
18	RSSI	O	RSSI voltage output
19	GND	-	GND
20	CV	O	CV voltage output
21	GND	-	GND
22	NC	-	No connection
23	NC	-	No connection
24	+B	O	Power output after passing through the fuse
25	+B	O	Power output after passing through the fuse
26	+B	O	Power output after passing through the fuse
27	+B	O	Power output after passing through the fuse
28	NC	-	No connection
29	NC	-	No connection
30	GND	-	GND
31	/PTT	O	PTT output

## TERMINAL FUNCTION

Pin No.	Name	I/O	Function
32	Side_G	I	Key matrix input (SIDE1,2 key)
33	Side_1	O	Key matrix output (SIDE1 key)
34	W_N	I	No connection
35	SDO1	I	PLL serial data input
36	Side_2	O	Key matrix output (SIDE2 key)
37	/PCS_RF	I	PLL enable input
38	/DSW	I	APC voltage discharge switch control input
39	APC	I	APC control voltage input
40	/APCSW	I	APC switch control input
41	VCO_MOD	I	VCO modulation input
42	THP	O	Thermistor voltage output
43	PLD	O	PLL lock detect output
44	38M	I	38M input
45	SCK1	I	PLL clock input
46	GND	-	GND
47	S_DET	O	Battery select output
48	GND	-	GND
49	NC	-	No connection
50	IF_DET	O	IF output
<b>CN401</b>			
1	PTT	I	Internal PTT input
2	GND	-	GND
3	Side_G	O	Key matrix output (SIDE1,2 key)
4	Side_1	I	Key matrix input (SIDE1 key)
5	Side_2	I	Key matrix input (SIDE2 key)

### SUB (GPS) unit (X58-5240-10)

Pin No.	Name	I/O	Function
<b>CN10</b>			
1,2	NC	-	No connection
3	TXD	O	UART data output
4	RXD	I	UART data input
5-7	NC	-	No connection
8	OPT5	I	GPS module control
9	DG	-	Digital GND
10	AG	-	Analog GND
11,12	NC	-	No connection
13	AG	-	Analog GND
14	5C	-	5V power supply
15-26	NC	-	No connection

### Solder Pad

Name	I/O	Signal Type	Function	Rating and Condition				
				Parameter	Min	Typ	Max	Unit
PTT2	O	Digital	PTT output	[Output] Output Impedance			10k	Ω
PTT1	I	Digital	PTT input	[Input] VIH	2.8		3.3	V
				[Input] VIL	0		0.5	V
MDSW	I	Digital	Man-down switch input	[Input] VIH	2.8		3.3	V
				[Input] VIL	0		0.5	V
GND	-	GND	GND	Allowable current value				mA
TXD	O	Digital	Serial data output	VOH (I <sub>o</sub> =-5mA)	4.0	-	5.3	V
				VOL (I <sub>o</sub> =5mA)	0	-	0.8	V
				Baud Rate			19200	bps
RXD	I	Digital	Serial data input	VIH	2.8	-	5.3	V
				VIL	0	-	0.8	V
				Baud Rate			19200	bps
RSSI	O	Analog	RSSI output	Output Impedance			10k	Ω

## TERMINAL FUNCTION

### Universal connector

Pin No.	Name	I/O	Signal Type	Function	Rating and Condition				
					Parameter	Min	Typ	Max	Unit
1	SSW	I	Digital	EXT/INT speaker switch input L: External speaker ON H: Internal speaker ON	VIH	2.8	-	5.3	V
					VIL	0	-	0.7	V
2	SP+	O	Analog	BTL output + for external speaker	[8Ω load] Max output power (1kHz, Batt=7.5V)		1.3	1.8	W
					[8Ω load] DC Bias		2.5		V
					[8Ω load] Allowable Frequency	300		3000	Hz
3	SP-	O	Analog	BTL output - for external speaker	[16Ω load] Max output power (1kHz, Batt=7.5V)		0.9	1.4	W
					[16Ω load] DC Bias		2.5		V
					[16Ω load] Allowable Frequency	300		3000	Hz
4	MSW	I	Digital	EXT/INT MIC switch input L: External MIC ON H: Internal MIC ON	VIH	2.8	-	5.3	V
					VIL	0	-	0.5	V
5	EMC	I	Analog	External MIC input	Audio Level (STD deviation)	7.7	12.5	17.3	mV
					DC Bias		3.3		V
					Allowable Frequency	300		3000	Hz
					Input Impedance	-	1.8	-	kΩ
6	ME	-	-	External MIC GND					
7	PTT	I	Digital	External PTT input L: PTT ON	VIH	2.8	-	5.3	V
					VIL	0	-	0.7	V
8	PF	I	Analog	Programmable function key input	V (PF2 key ON)	2.2	-	2.8	V
					V (PF1 key ON)	1.7	-	2.2	V
					V (PF1, PF2 key ON)	1.3	-	1.7	V
9	OPT	I	Digital	Man-down input Programmable active H/L	VIH	2.8	-	5.3	V
					VIL	0	-	0.7	V
10	E	-	-	GND					
11	5V	-	Power	5V power supply output (Output control is FPU programmable)	Output Voltage (Iout=100mA)	4.9	5.0	5.1	V
					Maximum Current	-	-	0.2	A
12	TXD	O	Digital	Serial data output	VOH (Io=-5mA)	4.0	-	5.3	V
					VOL (Io=5mA)	0	-	0.8	V
					Baud Rate			19200	bps
13	RXD	I	Digital	Serial data input	VIH	2.8	-	5.3	V
					VIL	0	-	0.8	V
					Baud Rate			115200	bps
14	NC	-	-	Not used (reserved for future option)					

# TERMINAL FUNCTION

## CN710 26-pin connector specification

Pin No.	Name	I/O	Signal Type	Rating and Condition				
				Parameter	Min	Typ	Max	Unit
1	OPT1	I/O	Digital	[Input] VIH	2.8		3.3	V
6	OPT4			[Input] VIL	0		0.5	V
8	OPT5			[Output] VOH	2.8		3.5	V
17	OPT8			[Output] VOL	0		0.5	V
18	OPT11							
2	OPT3	I/O	Digital	[Input] VIH	2.8		3.3	V
19	OPT7			[Input] VIL	0		0.5	V
20	OPT2			[Output] VOH	2.8		3.5	V
25	OPT6			[Output] VOL	0		0.5	V
3	26P_RD	I	Digital	[Input] VIH	2.8		3.3	V
				[Input] VIL	0		0.5	V
				Baud Rate			19200	bps
4	26P_TD	O	Digital	[Output] VOH	2.8		3.5	V
				[Output] VOL	0		0.5	V
				Baud Rate			19200	bps
15	OPT9	I	Analog	Input Amplitude (Square wave)	-	3.3	-	Vp-p
				Coupling Capacitor	-	0.01	-	μF
				Input Impedance	22k	-	-	Ω
				Allowable Frequency	300	-	3000	Hz
7	OPT10	O	Analog/Digital	Output Amplitude (1kHz, 60% deviation)	0.9	1.3	1.7	Vp-p
				Coupling Capacitor		0.1		μF
				Output Impedance			22k	Ω
				Allowable Frequency	300		3000	Hz
11	AI	I	Analog	Input Amplitude (1kHz, 60% deviation)	0.3	0.5	0.7	Vp-p
				Coupling Capacitor	-	0.1	-	μF
				Input Impedance	-	12k	-	Ω
				Allowable Frequency	300		3000	Hz
12	AO	O	Analog	Output Amplitude (1kHz, 60% deviation)	30	50	70	mVp-p
				Coupling Capacitor	-	0.1	-	μF
				Output Impedance	-	35k	-	Ω
				Allowable Frequency	300		3000	Hz
16	DTI	I	Analog	Input Amplitude (1kHz, 60% deviation)	0.8	1.1	1.4	Vp-p
				Coupling Capacitor	-	0.1	-	μF
				Input Impedance	22k	-	-	Ω
				Allowable Frequency	300	-	3000	Hz
21	TXO	O	Analog	Output Amplitude (1kHz, 60% deviation) while external MIC	160	260	360	mVp-p
				Output Amplitude (1kHz, 60% deviation) while internal MIC	-	130	-	mVp-p
				Coupling Capacitor	-	0.1	-	μF
				Output Impedance	-	-	2.2k	Ω
				Allowable Frequency	300		3000	Hz

# NX-200(G)

## TERMINAL FUNCTION

Pin No.	Name	I/O	Signal Type	Rating and Condition				
				Parameter	Min	Typ	Max	Unit
22	RXEO	O	Analog	Output Amplitude (1kHz, 60% deviation)	450	640	830	mVp-p
				Coupling Capacitor	-	0.1	-	μF
				Output Impedance	-	-	2.2k	Ω
				Allowable Frequency	300	-	3000	Hz
23	RXEI	I	Analog	Input Amplitude (1kHz, 60% deviation)	450	640	830	mVp-p
				Coupling Capacitor		0.1		μF
				Input Impedance	22k			Ω
				Allowable Frequency	300		3000	Hz
24	TXI	I	Analog	Input Amplitude (1kHz, 60% deviation) while external MIC	160	260	360	mVp-p
				Input Amplitude (1kHz, 60% deviation) while internal MIC	-	130	-	mVp-p
				Coupling Capacitor	-	0.1	-	μF
				Input Impedance	22k	-	-	Ω
				Allowable Frequency	300	-	3000	Hz
14	5V	O	Power	Output Voltage		5		V
				Output Current			78	mA
26	POW	O	Power	Output Voltage		7.5		V
				Output Current			100	mA
9	DGND	-	GND	Allowable current value (Total current of 3 pins)			100	mA
10	AGND							
13								
5	NC	-	-	-				

### CN710 26-pin connector specification

Pin No.	Name	Device	I/O	Connection	Function
1	OPT1	ANI board	O	Aux Input	[COR] Conv/LTR L: Activity receiving H: Not activity receiving [TOR] Conv/LTR L: Activity receiving (Sub Tone or LTR ID is OK) H: Not activity receiving [LOK] Conv L: TX Complete H: Not TX Complete LTR L: TX Link Complete (until TX finishes) H: Not TX Link Complete
		VGS-1	I	BUSY	BUSY indication
		Scrambler board	O	Binary Code Select 1	Scrambler code signal output 1
2	OPT3	ANI board	I	KEY	TX requirement input
		VGS-1	I	PLAY	PLAY indication
		Scrambler board	O	Binary Code Select 2	Scrambler code signal output 2

# TERMINAL FUNCTION

Pin No.	Name	Device	I/O	Connection	Function
3	26P_RD	ANI board	-	-	-
		VGS-1	I	SO	Serial data input
		Scrambler board	I	SDI	Serial data input
4	26P_TD	ANI board	-	-	-
		VGS-1	O	SI	Serial data output
		Scrambler board	O	SDO	Serial data output
5	NC	-	-	-	-
6	OPT4	ANI board	O	PTT	PTT signal output
		VGS-1	O	EN	Enable
		Scrambler board	O	PTT Out	PTT signal output When Echo PTT is allowed.
7	OPT10	ANI board	-	-	-
		VGS-1	O	USEL	UART speed select output
		Scrambler board	-	-	-
8	OPT5	ANI board	O	Emergency	Emergency signal output
		VGS-1	O	RST	Reset output
		Scrambler board	-	-	-
9	DGND	ANI board	-	A-	GND
		VGS-1	-	DGND	DGND
		Scrambler board	-	-	-
10	AGND	ANI board	-	A-	GND
		VGS-1	-	AGND	AGND
		Scrambler board	-	GND	GND
11	AI	ANI board	-	-	-
		VGS-1	I	AO	VGS Audio input
		Scrambler board	-	-	-
12	AO	ANI board	-	-	-
		VGS-1	O	AI	VGS Audio output
		Scrambler board	-	-	-
13	AGND	ANI board	-	A-	GND
		VGS-1	-	AGND	AGND
		Scrambler board	-	GND	GND
14	5V	ANI board	-	-	Note: POW and 5V can not be used simultaneously.
		VGS-1	O	5C	5V power supply
		Scrambler board	-	5V	Power supply output
15	OPT9	ANI board	I	Sidetone	Sidetone input
		VGS-1	-	-	-
		Scrambler board	I	Sidetone	Sidetone input
16	DTI	ANI board	I	Data Out	Data signal input
		VGS-1	-	-	-
		Scrambler board	-	-	-
17	OPT8	ANI board	I	Tone Control	Speaker mute signal input
		VGS-1	-	-	-
		Scrambler board	O	LOK	Link completed L: Link When Echo PTT is allowed.

# NX-200(G)

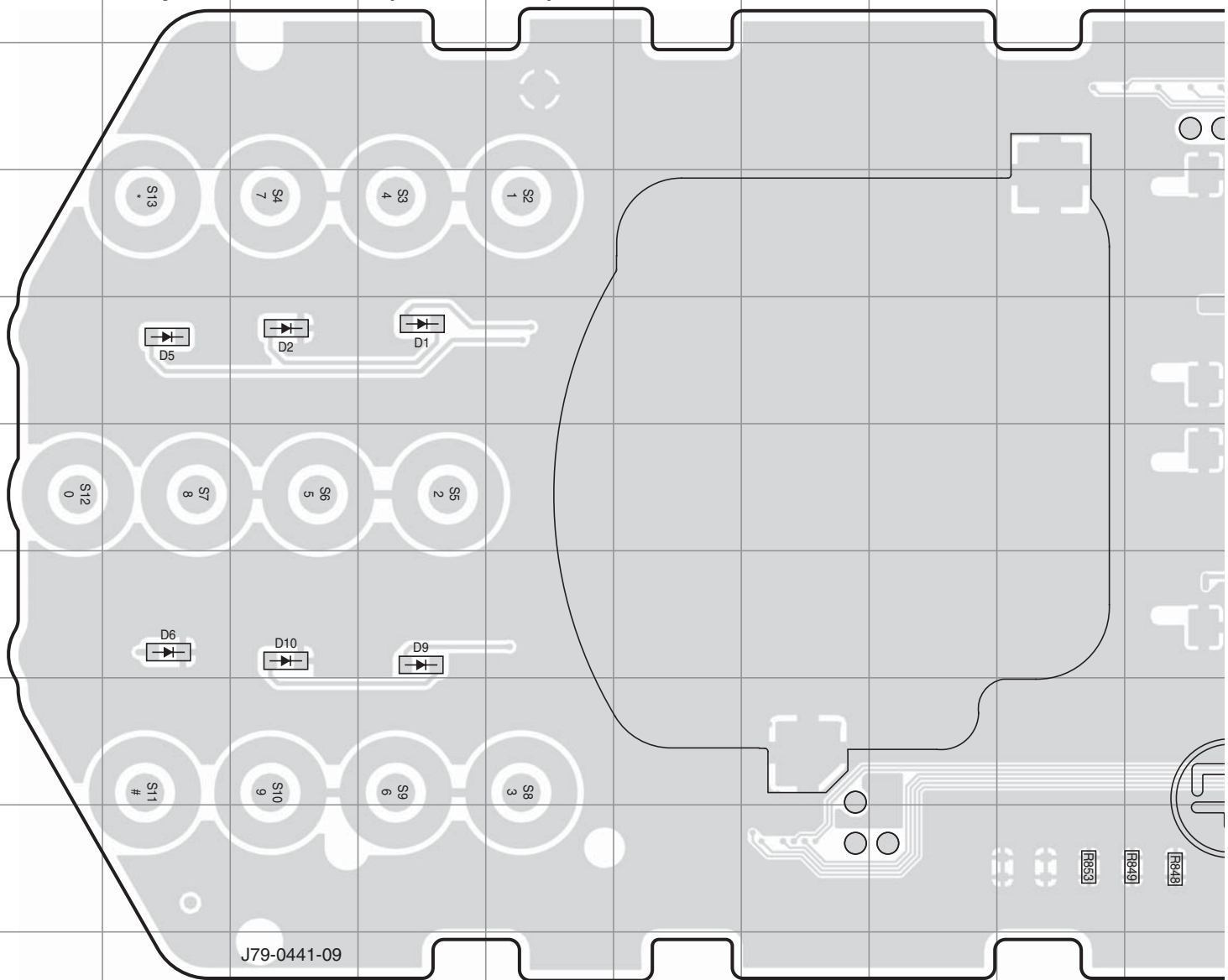
## TERMINAL FUNCTION

Pin No.	Name	Device	I/O	Connection	Function
18	OPT11	ANI board	O	Man-Down	Man-Down output
		VGS-1	-	-	-
		Scrambler board	O	-	User programmable port None: Hi-Z with Pull up [COR] L: Detect carrier [TOR] L: Detect signaling [LOK](Conventional) L: Transmitting [LOK](LTR) L: Link
19	OPT7	ANI board	I	MIC Mute	MIC mute signal input
		VGS-1	-	-	-
		Scrambler board	O I	PTT Out PTT In	Echo PTT no used: PTT signal output Echo PTT used : PTT signal input
20	OPT2	ANI board	I	Aux Output	Emergency signal input
		VGS-1	-	-	-
		Scrambler board	O	CLEAR / CODE	Scrambler control signal output H: Clear / L: Code
21	TXO	ANI board	-	-	-
		VGS-1	-	-	-
		Scrambler board	O	TX IN	MIC signal output Before Pre-emphasis
22	RXEO	ANI board	-	-	-
		VGS-1	-	-	-
		Scrambler board	O	RX IN	Audio signal output After De-emphasis
23	RXEI	ANI board	-	-	-
		VGS-1	-	-	-
		Scrambler board	I	RX OUT	Audio signal input After De-emphasis
24	TXI	ANI board	-	-	-
		VGS-1	-	-	-
		Scrambler board	I	TX OUT	MIC signal input Before Pre-emphasis
25	OPT6	ANI board	-	-	-
		VGS-1	-	-	-
		Scrambler board	-	-	-
26	POW	ANI board	O	A+	Switched B output
		VGS-1	-	-	Note: POW and 5V can not be used simultaneously.
		Scrambler board	O	POWER (+B)	Power supply output



# NX-200(G) PC BOARD

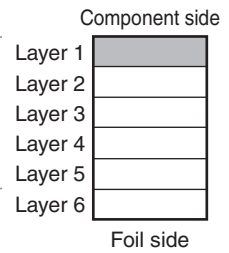
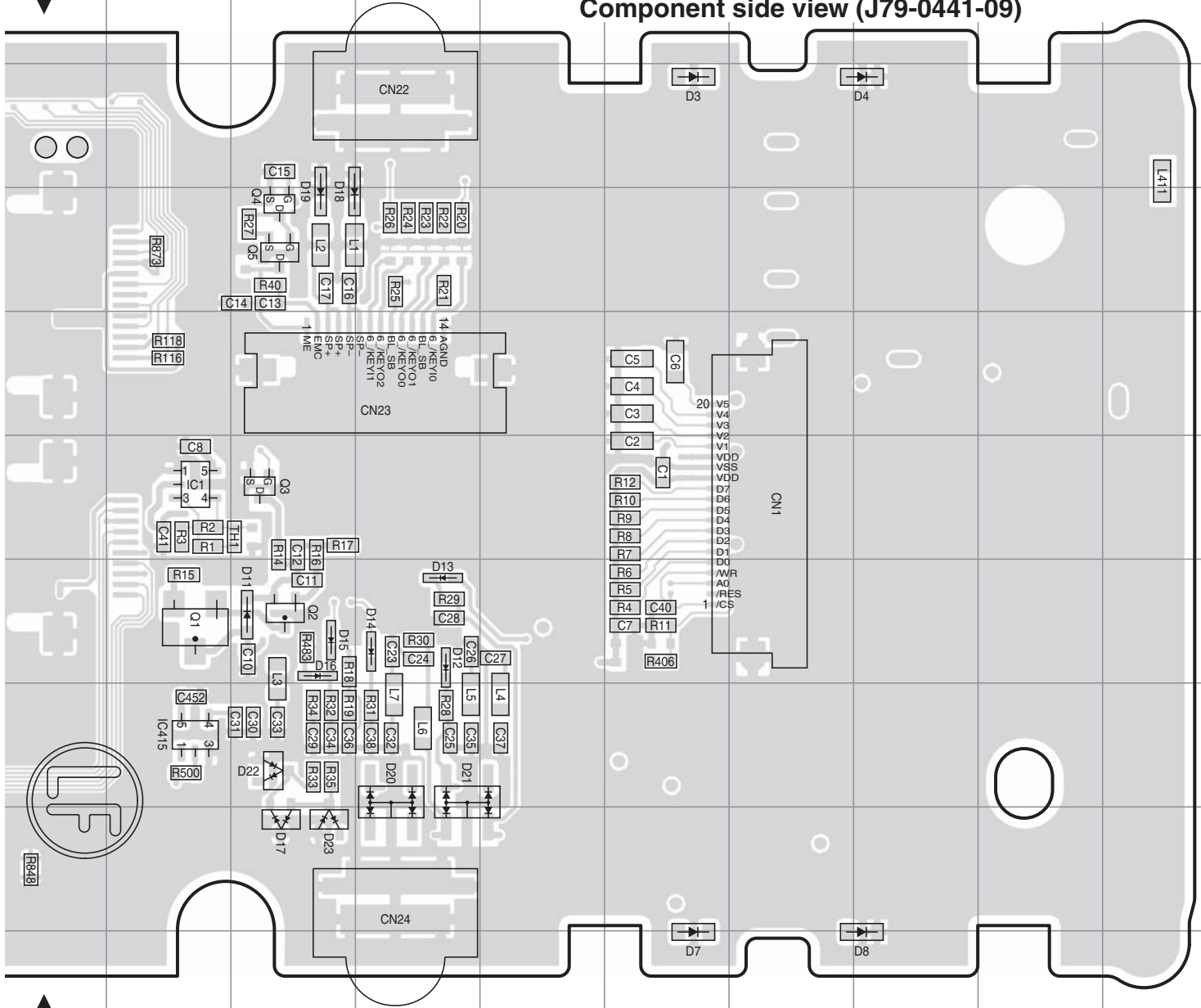
**CONTROL UNIT (XC1-0020-XX) -10: K -11: K2**  
**Component side view (J79-0441-09)**



Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC1	6K	D4	3Q	D14	7M
IC415	8K	D5	5B	D15	7L
Q1	7K	D6	7B	D16	7L
Q2	7L	D7	10O	D17	9L
Q3	6L	D8	10Q	D18	4L
Q4	4L	D9	7D	D19	4L
Q5	4L	D10	7C	D20	8M
D1	5D	D11	7L	D21	8M
D2	5C	D12	7M	D22	8L
D3	3O	D13	7M	D23	9L

# PC BOARD NX-200(G)

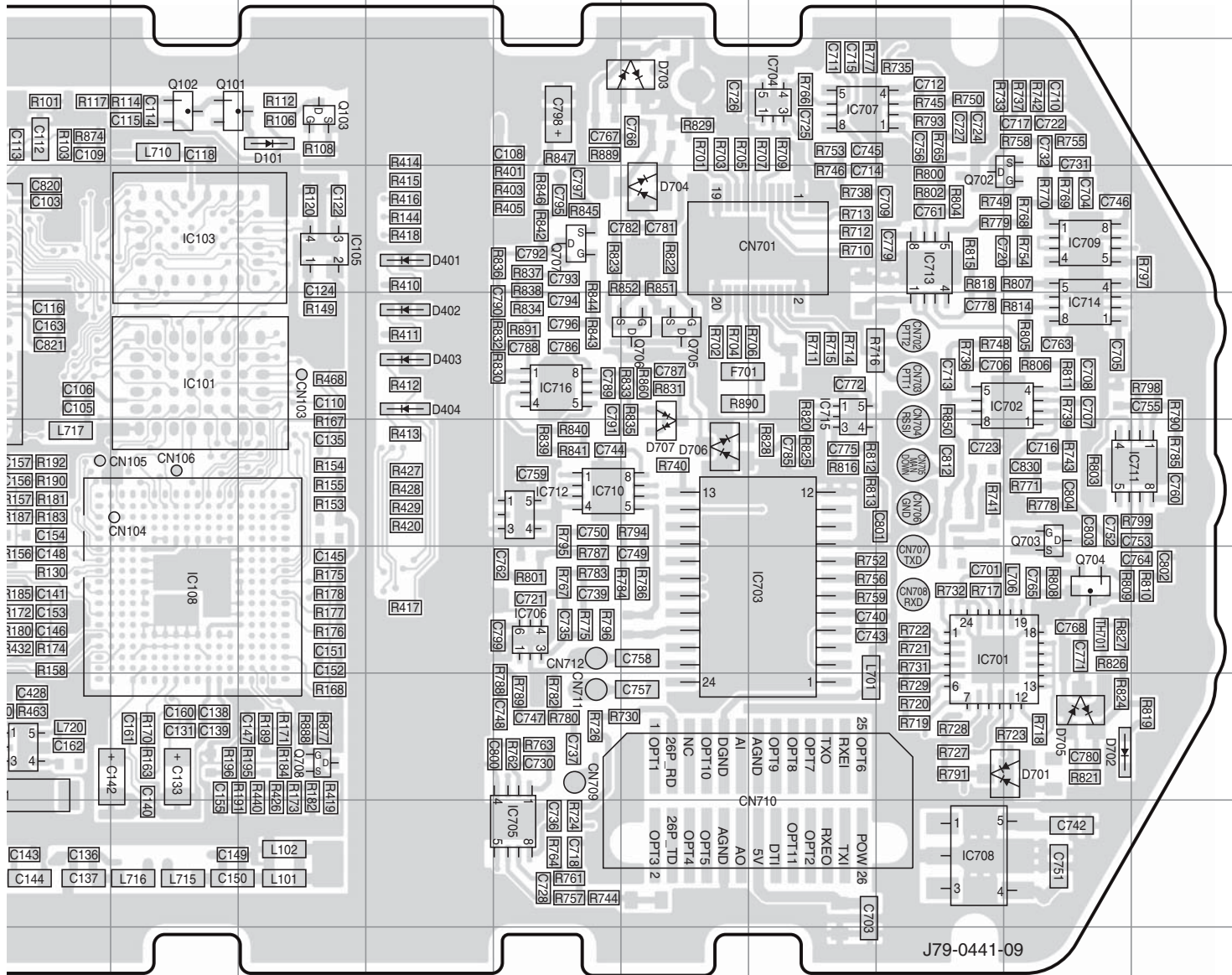
CONTROL UNIT (XC1-0020-XX) -10: K -11: K2  
Component side view (J79-0441-09)



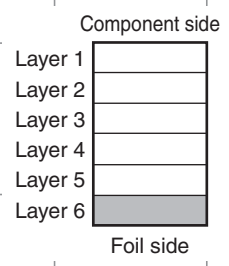


# PC BOARD NX-200(G)

CONTROL UNIT (XC1-0020-XX) -10: K -11: K2  
Foil side view (J79-0441-09)

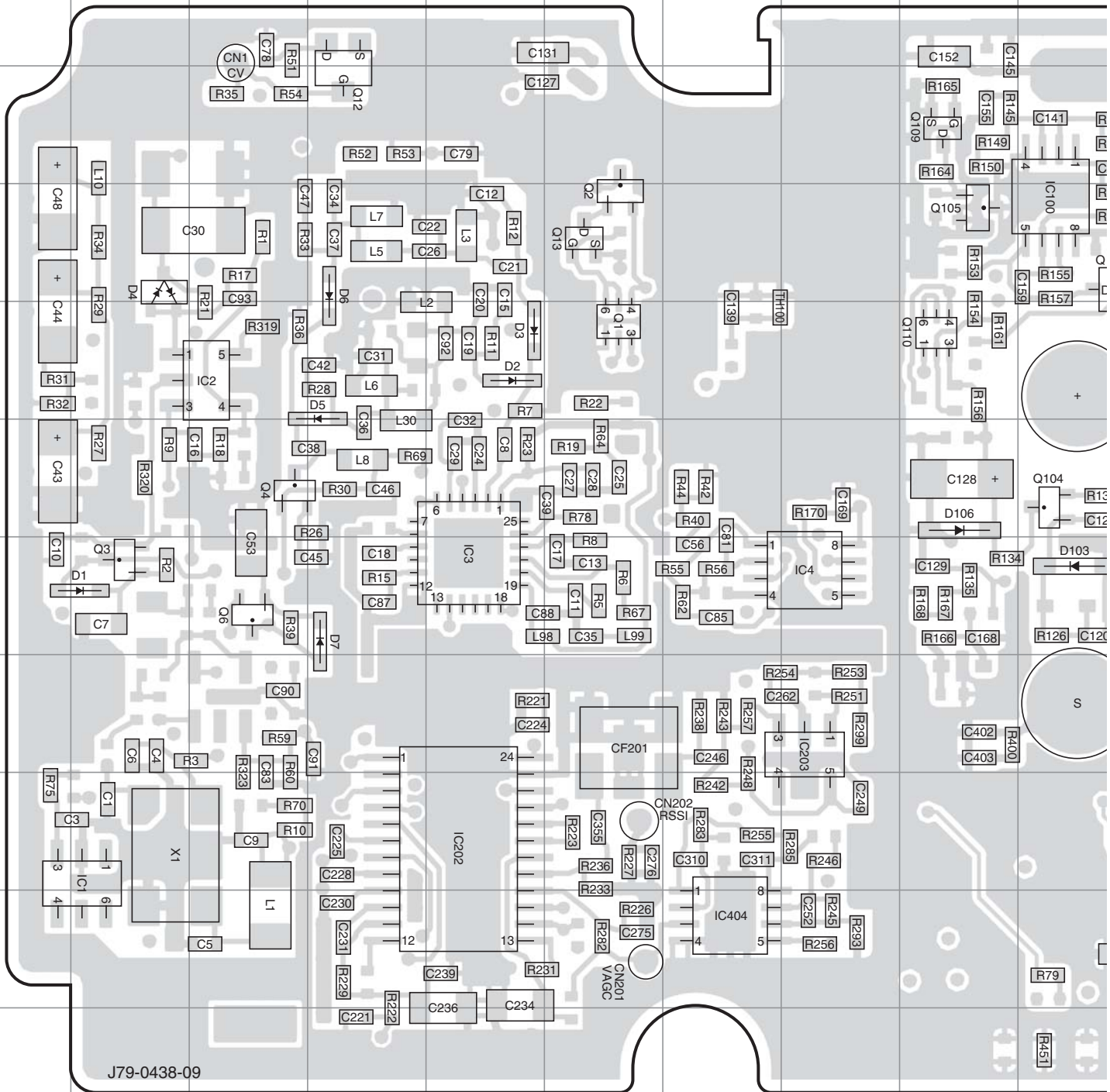


ss	Ref. No.	Address
	D701	8R
	D702	8R
	D703	4O
	D704	3O
	D705	8R
	D706	6O
	D707	6O



# NX-200(G) PC BOARD

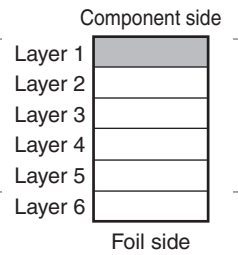
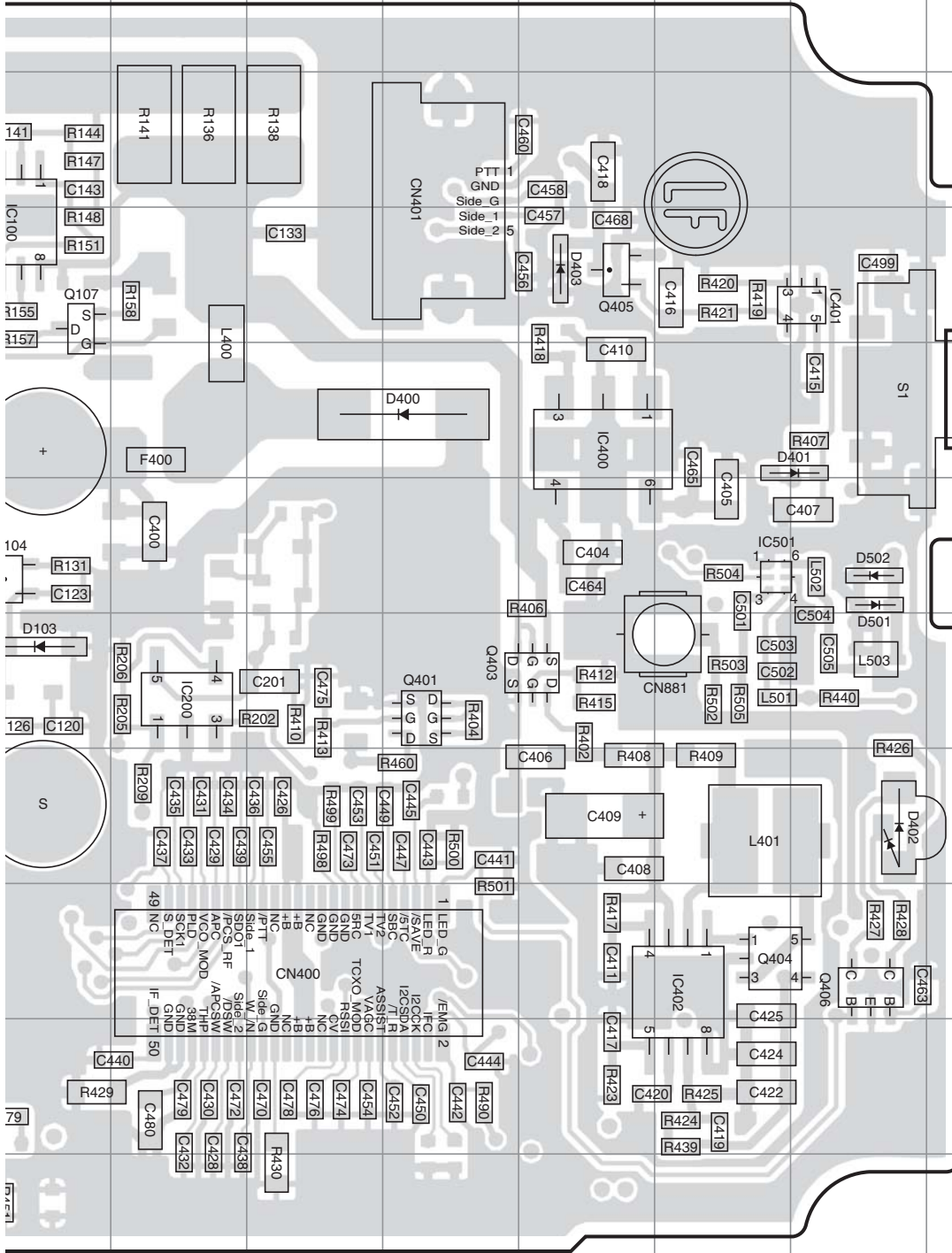
TX-RX UNIT (X57-8950-13)  
Component side view (J79-0438-09)



Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC1	9B	IC400	5N	Q6	7C	Q401	7M	D4	4B	D402	8P
IC2	5C	IC401	4P	Q12	3D	Q403	7N	D5	5D	D403	4N
IC3	7E	IC402	9O	Q13	4F	Q404	9O	D6	4D		
IC4	7H	IC404	10G	Q104	6J	Q405	4N	D7	7D		
IC100	4J	Q1	5F	Q105	4I	Q406	9P	D103	7J		
IC200	7K	Q2	4F	Q107	4J	D1	7B	D106	6I		
IC202	9E	Q3	7B	Q109	3I	D2	5E	D400	5M		
IC203	8H	Q4	6C	Q110	5I	D3	5E	D401	5P		

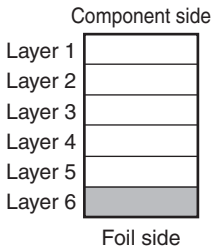
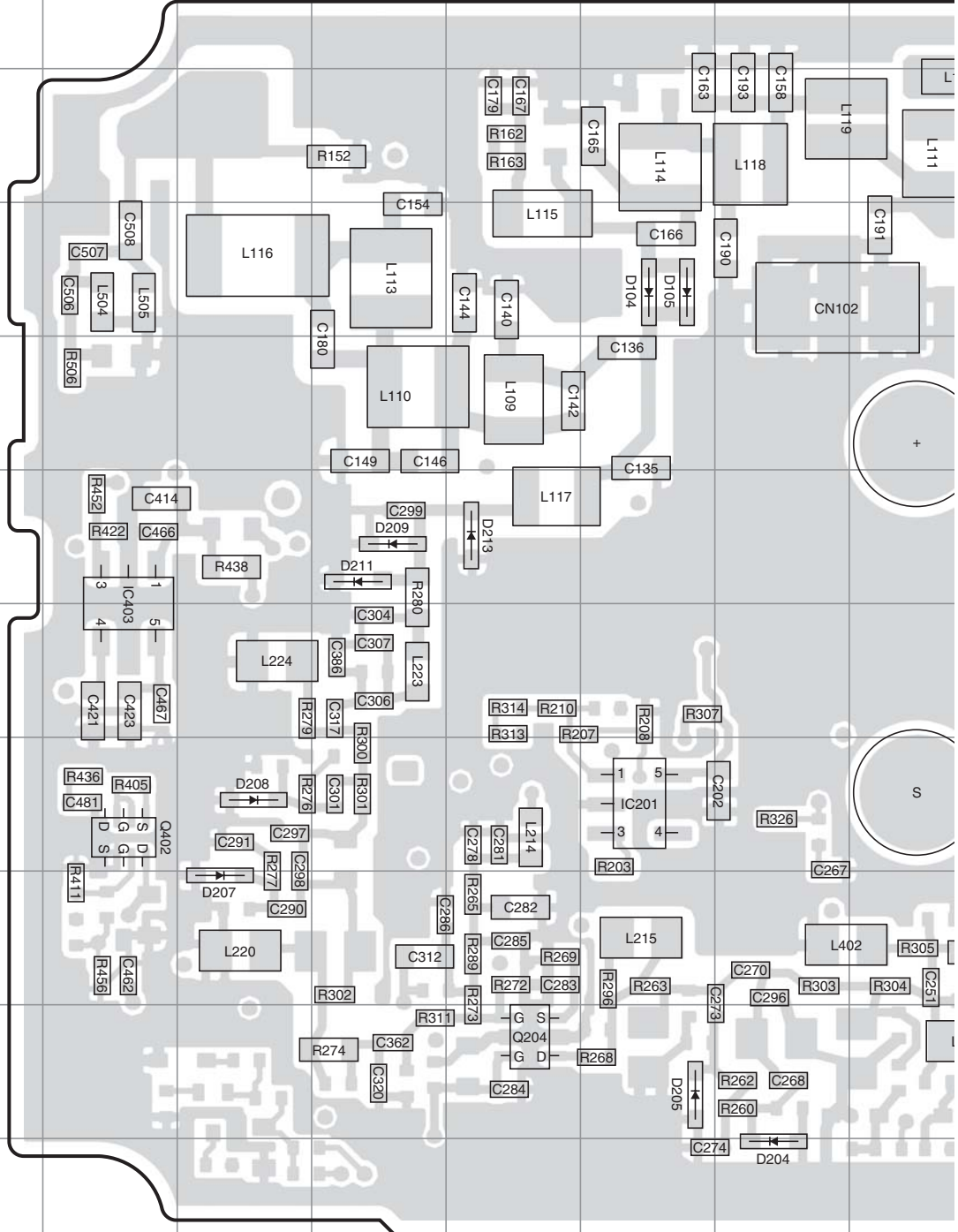
# PC BOARD NX-200(G)

## TX-RX UNIT (X57-8950-13) Component side view (J79-0438-09)



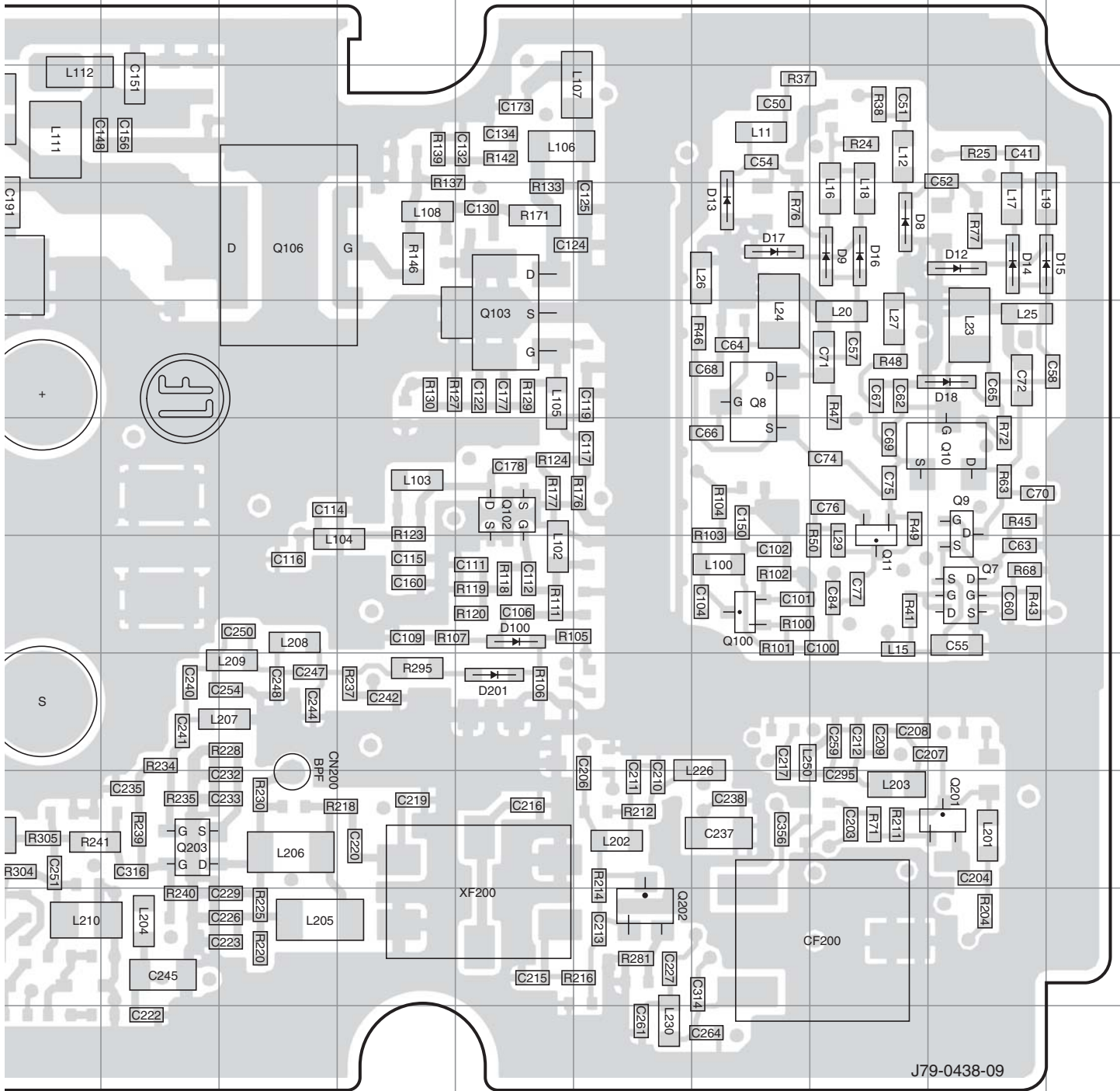
# NX-200(G) PC BOARD

**TX-RX UNIT (X57-8950-13)**  
**Foil side view (J79-0438-09)**



# PC BOARD NX-200(G)

TX-RX UNIT (X57-8950-13)  
Foil side view (J79-0438-09)



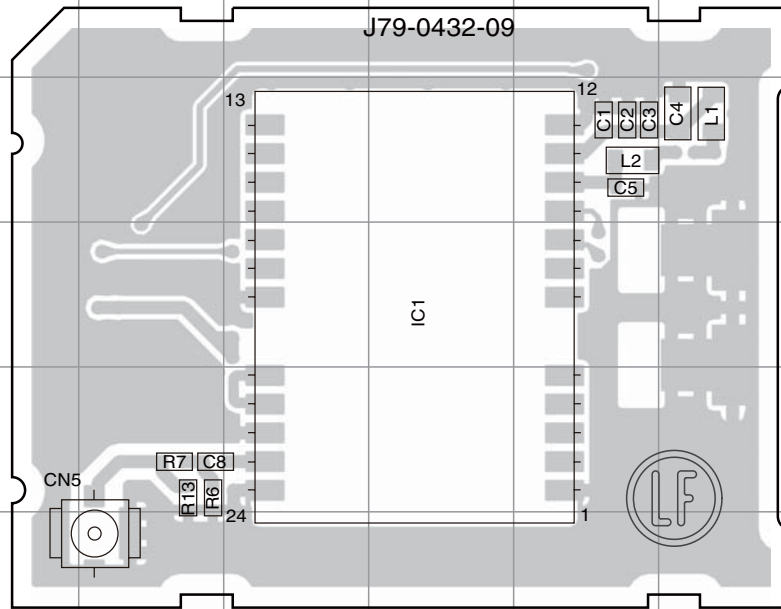
Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC201	8H	Q100	7P	Q204	10G	D15	4S	D201	8N	D213	6G
IC403	7D	Q102	6N	Q402	8D	D16	4Q	D204	11I		
Q7	7R	Q103	5N	D8	4Q	D17	4P	D205	10H		
Q8	5P	Q106	4L	D9	4Q	D18	5R	D207	9E		
Q9	6R	Q201	9R	D12	4R	D100	7N	D208	8E		
Q10	6R	Q202	10O	D13	4P	D104	4H	D209	6F		
Q11	7Q	Q203	9K	D14	4R	D105	4H	D211	6F		



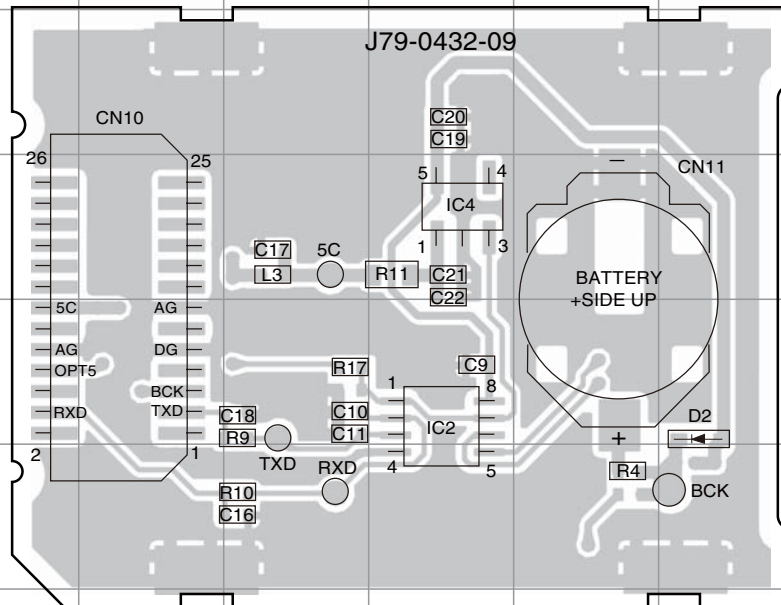
# PC BOARD

# NX-200(G)

**SUB (GPS) UNIT (X58-5240-10) Component side view (J79-0432-09)**



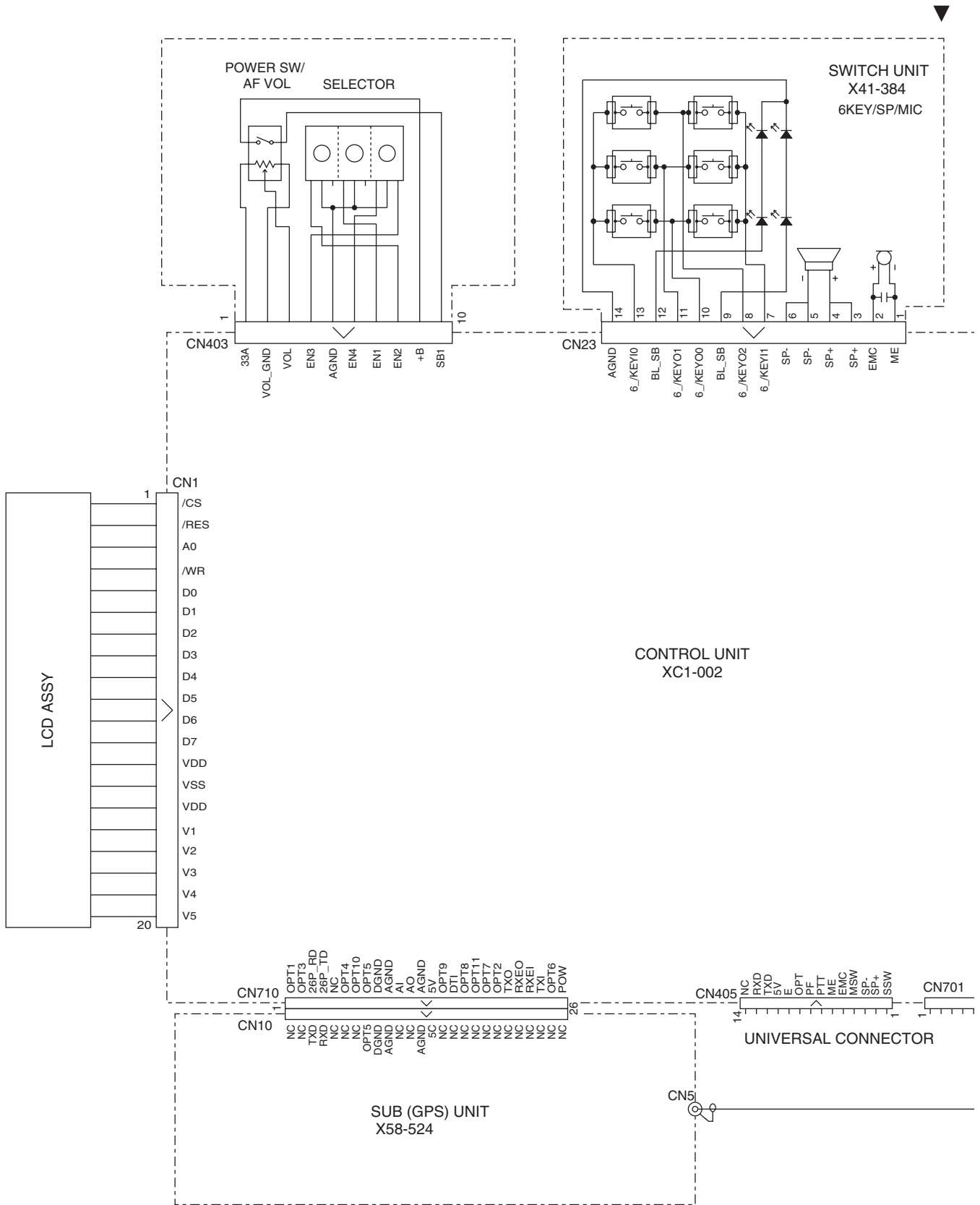
**SUB (GPS) UNIT (X58-5240-10) Foil side view (J79-0432-09)**



Ref. No.	Address	Ref. No.	Address
IC1	4F	IC4	9F
IC2	10F	D2	10H

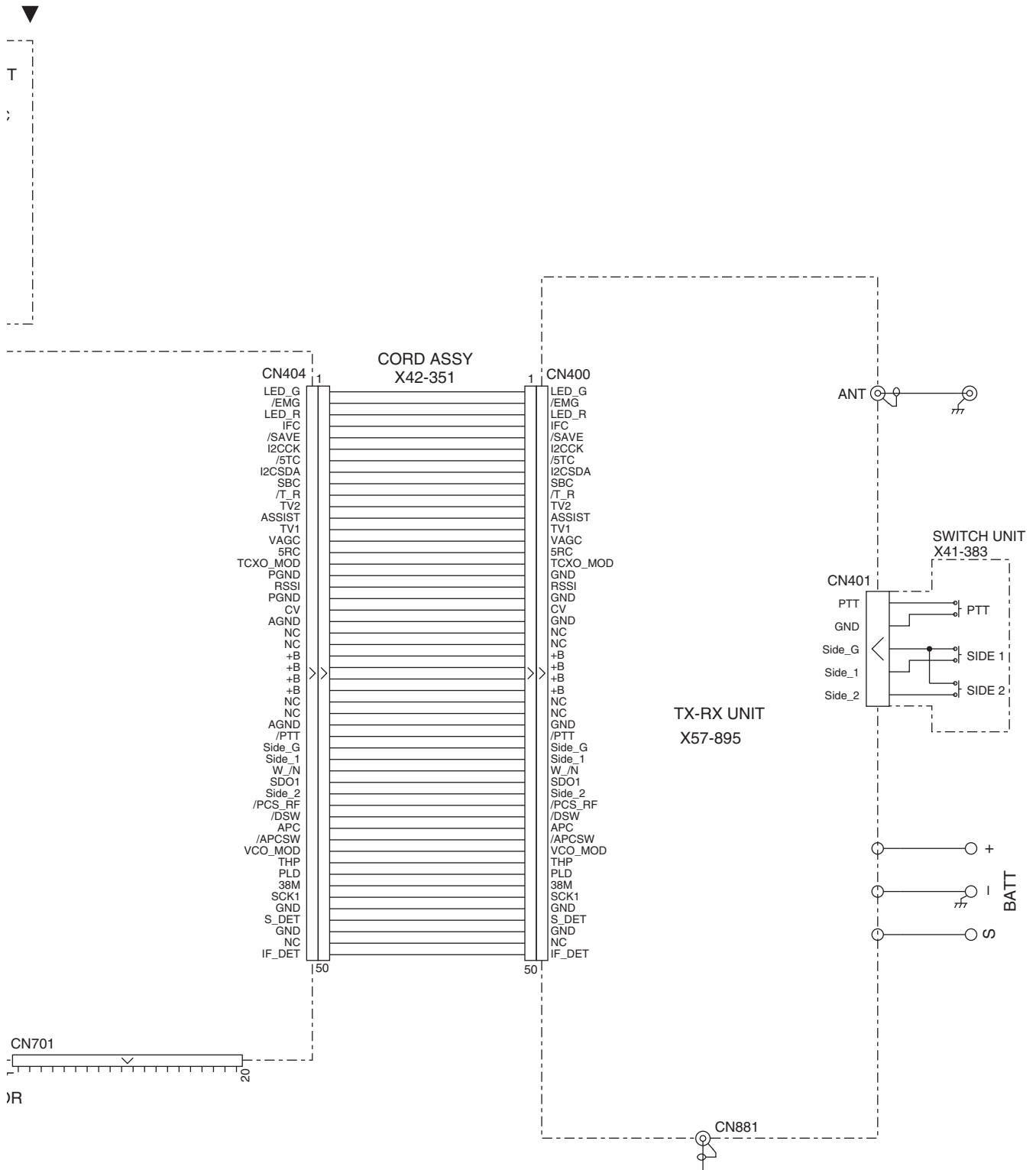
# NX-200(G)

## INTERCONNECTION DIAGRAM

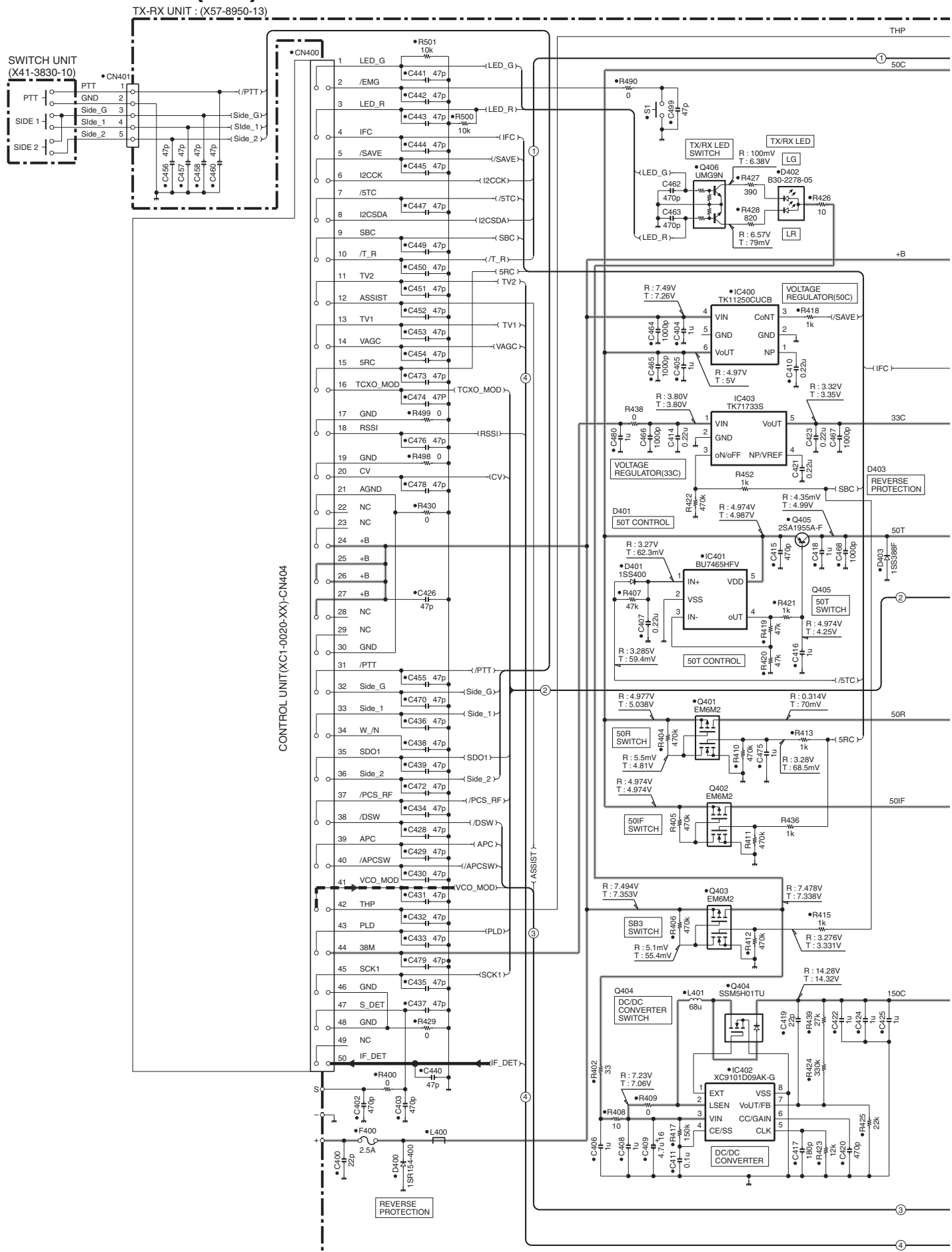


# NX-200(G)

## INTERCONNECTION DIAGRAM

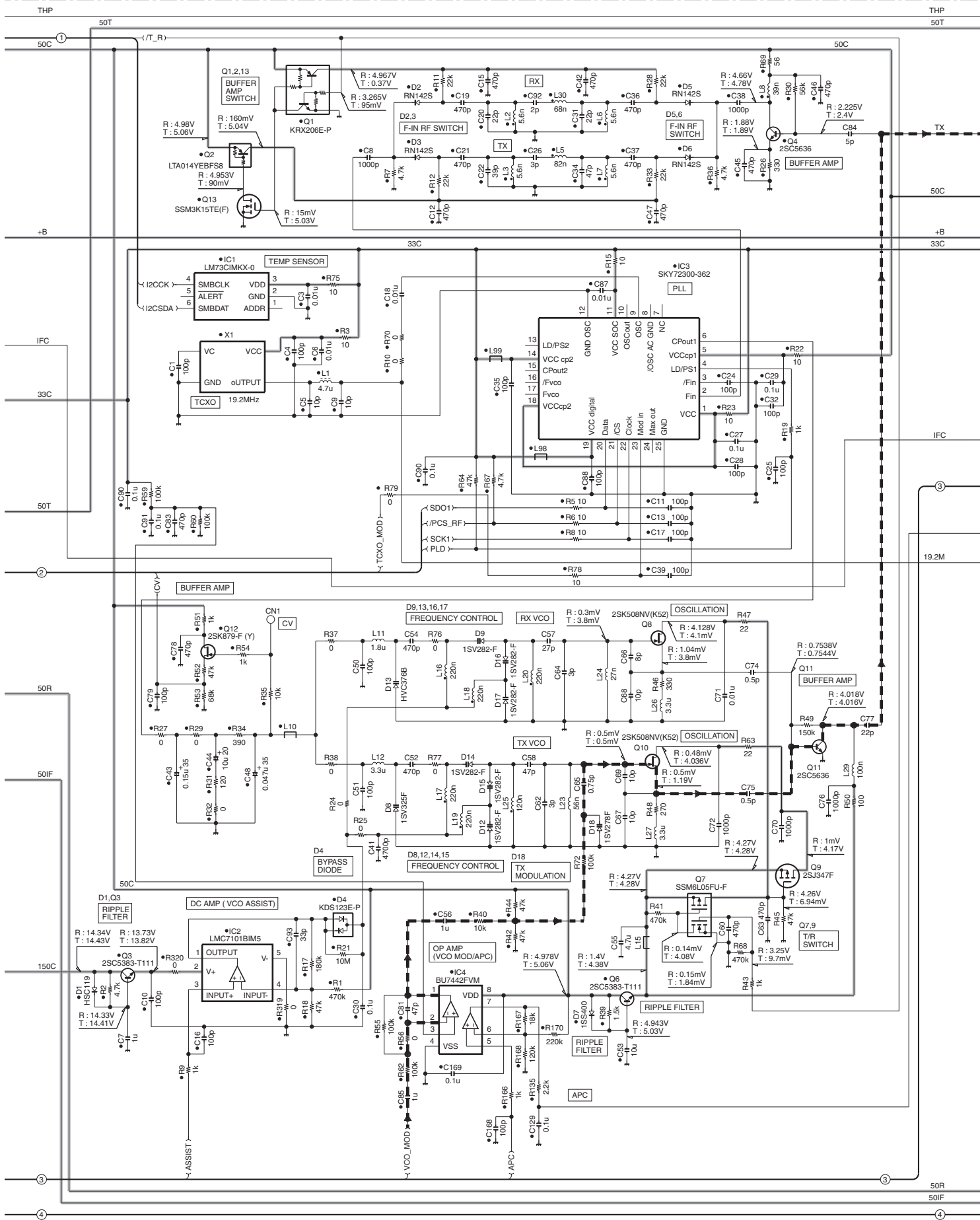


# NX-200(G) SCHEMATIC DIAGRAM



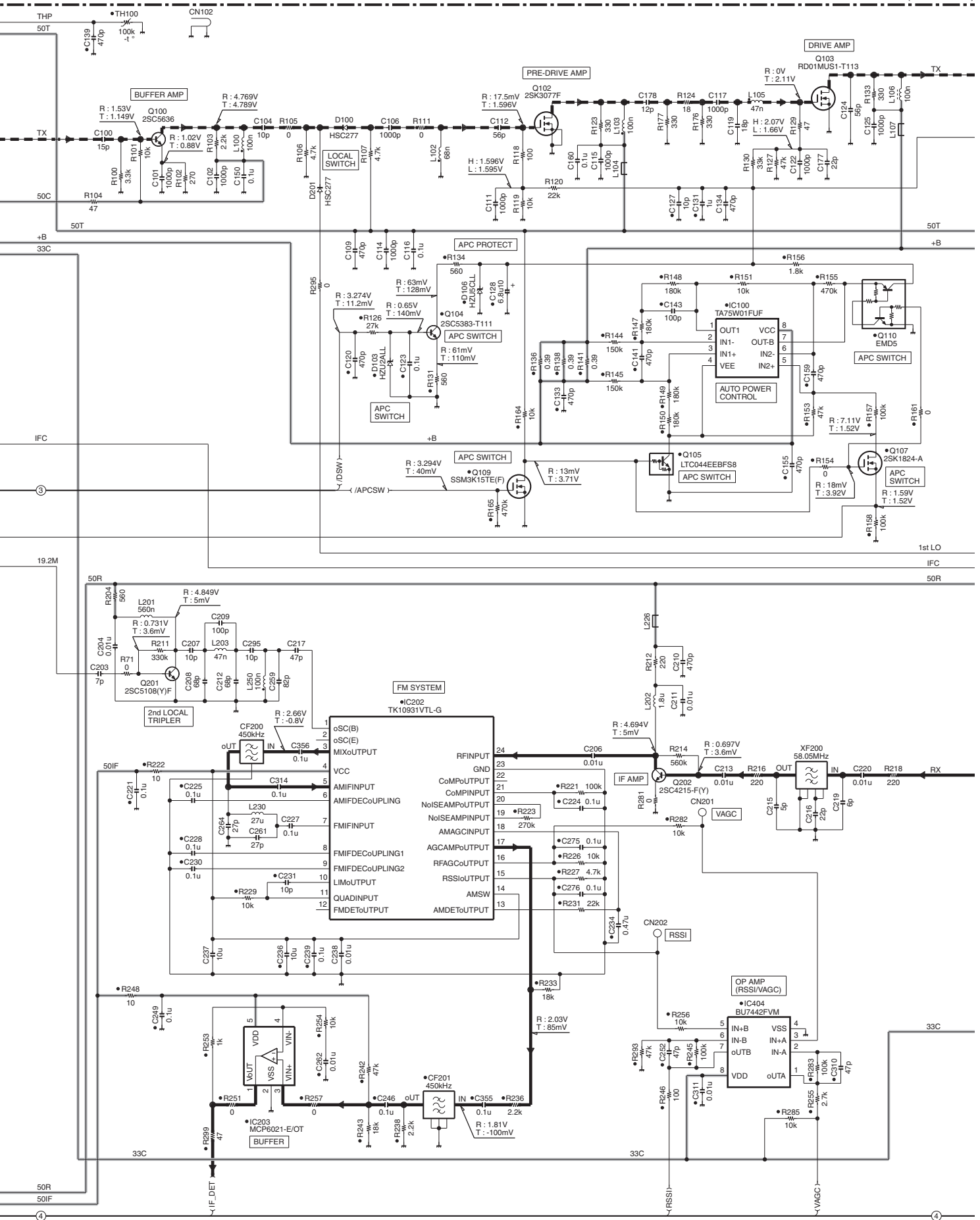
# SCHEMATIC DIAGRAM NX-200(G)

TX-RX UNIT (X57-8950-13)



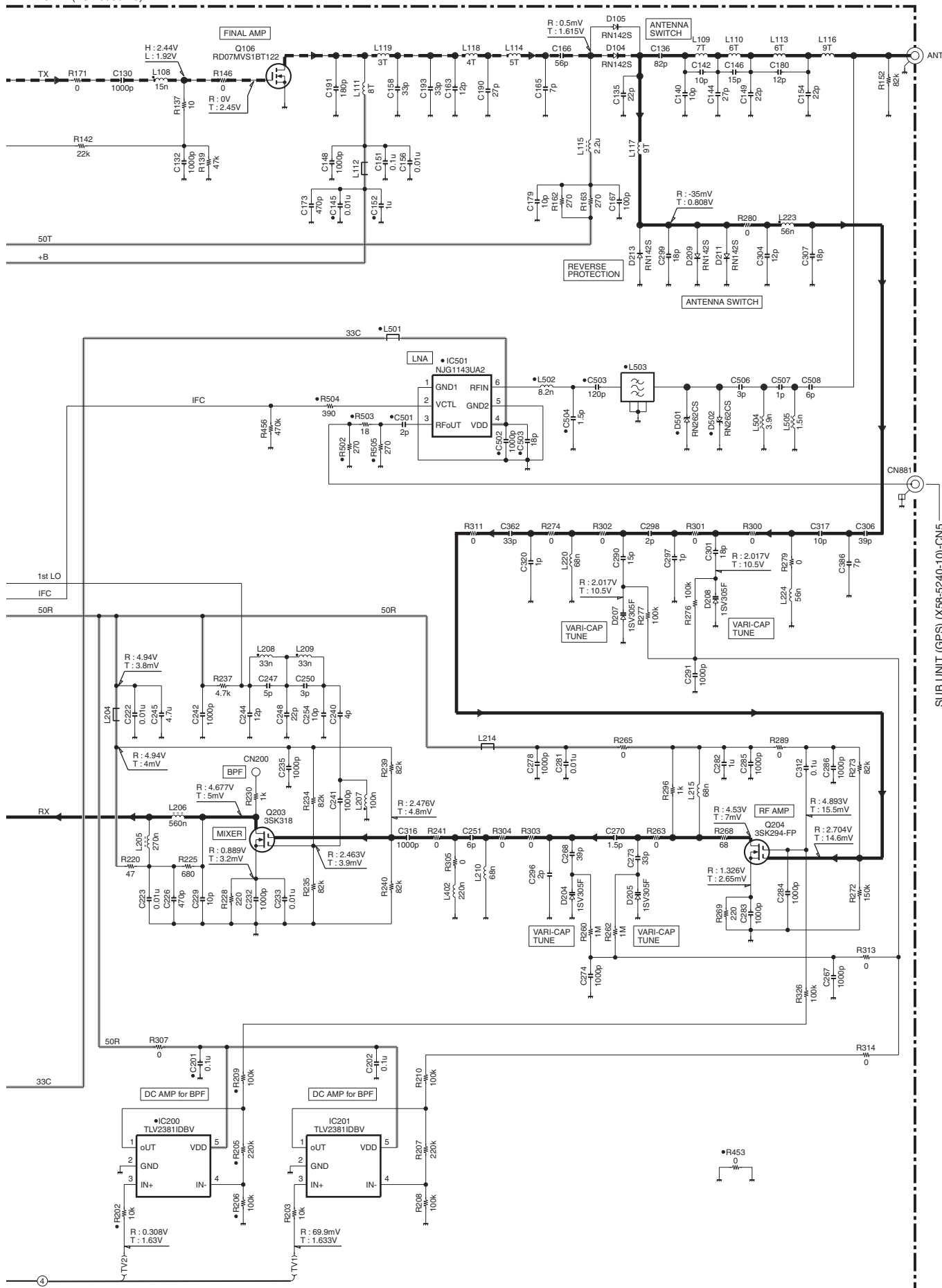
# NX-200(G) SCHEMATIC DIAGRAM

TX-RX UNIT (X57-8950-13)



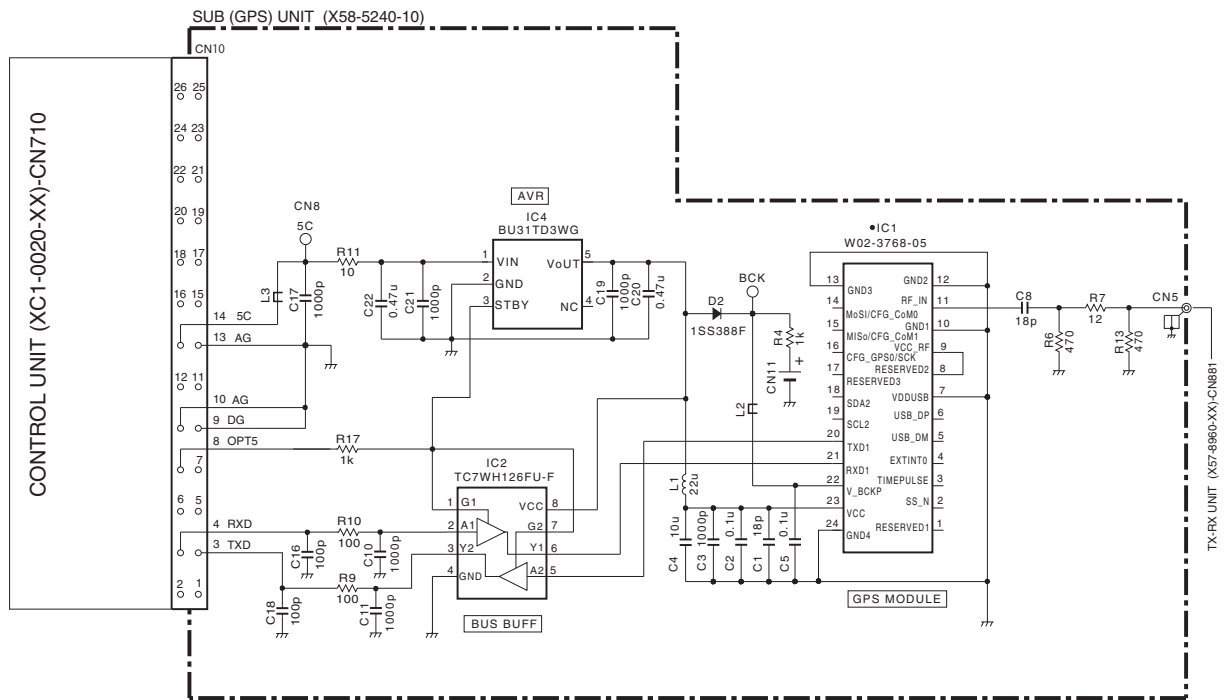
# SCHEMATIC DIAGRAM NX-200(G)

TX-RX UNIT (X57-8950-13)



Note : The components marked with a dot (•) are parts of layer 1.

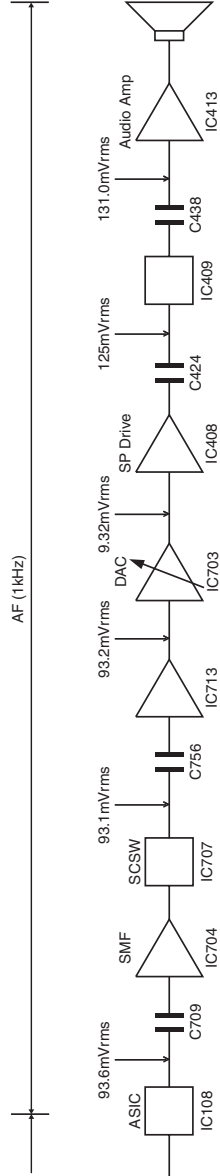
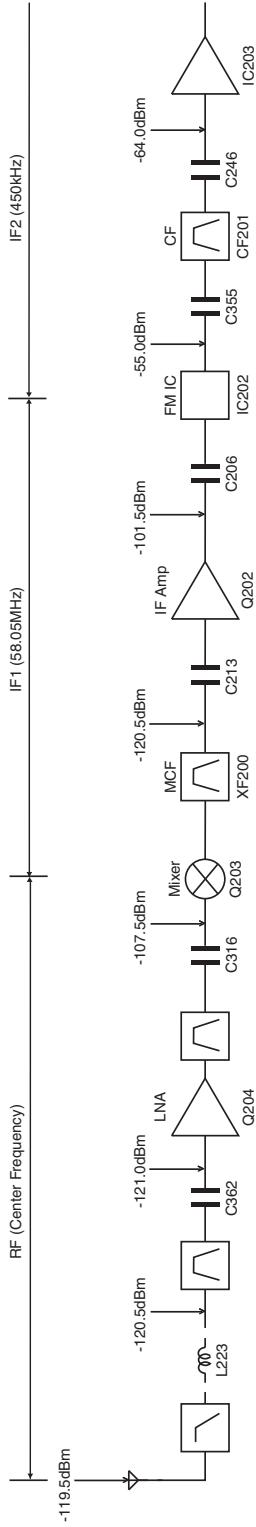
# NX-200(G) SCHEMATIC DIAGRAM





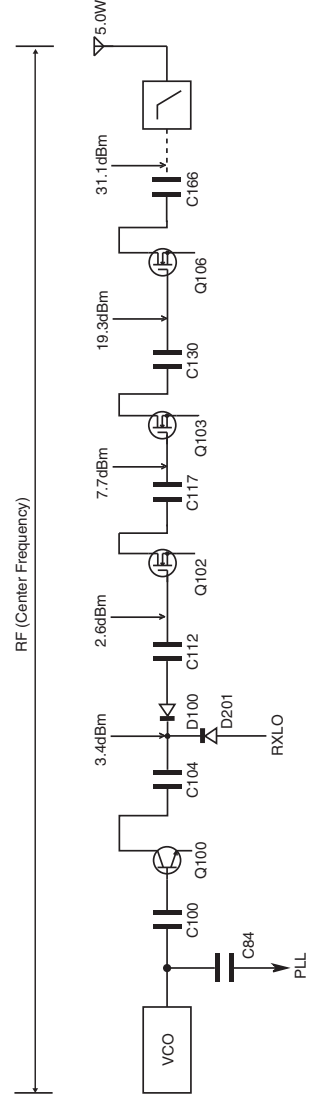
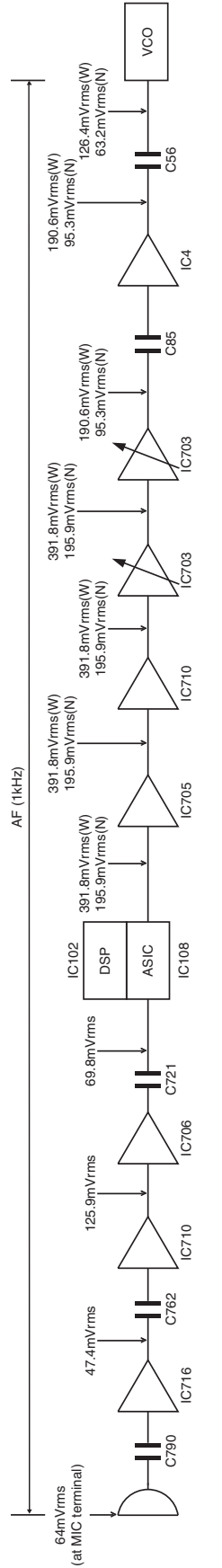
## LEVEL DIAGRAM

### Receiver Section



To make measurements in the AF section, connect the AC level meter. (ANT input: -53dB, 1kHz FM, 3kHz DEV (Wide)) In the RF section, use a 1000pF coupling capacitor. (The display shows the SSG input value required to obtain 12dB SINAD without local level.)

### Transmitter Section

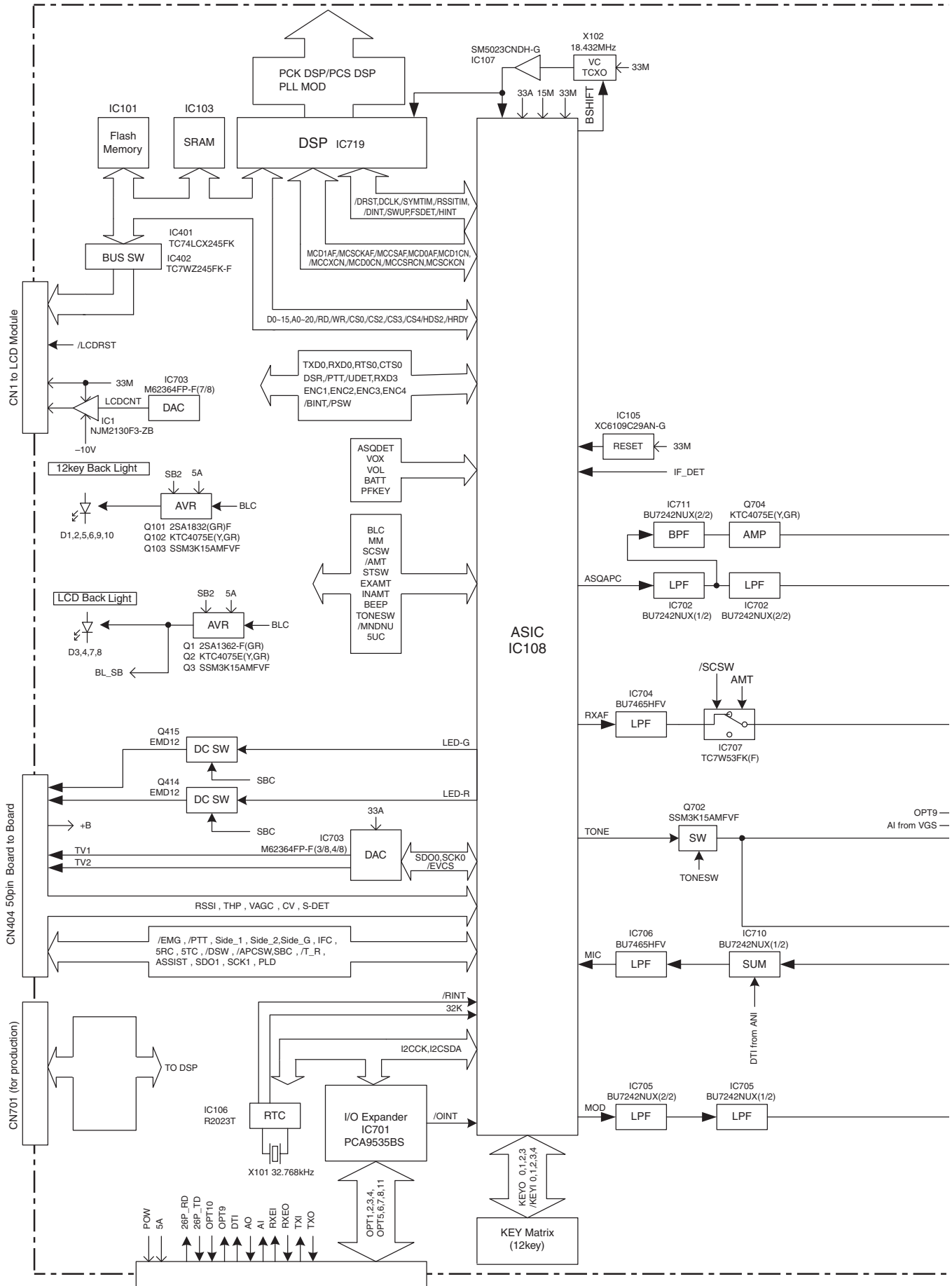


AG is set to the MIC input becomes (3kHz/1.5kHz) at 1kHz MOD (Wide/Narrow). To make measurements in the AF section, connect the AC level meter. In the RF section, use a 1000pF coupling capacitor.

# NX-200(G)

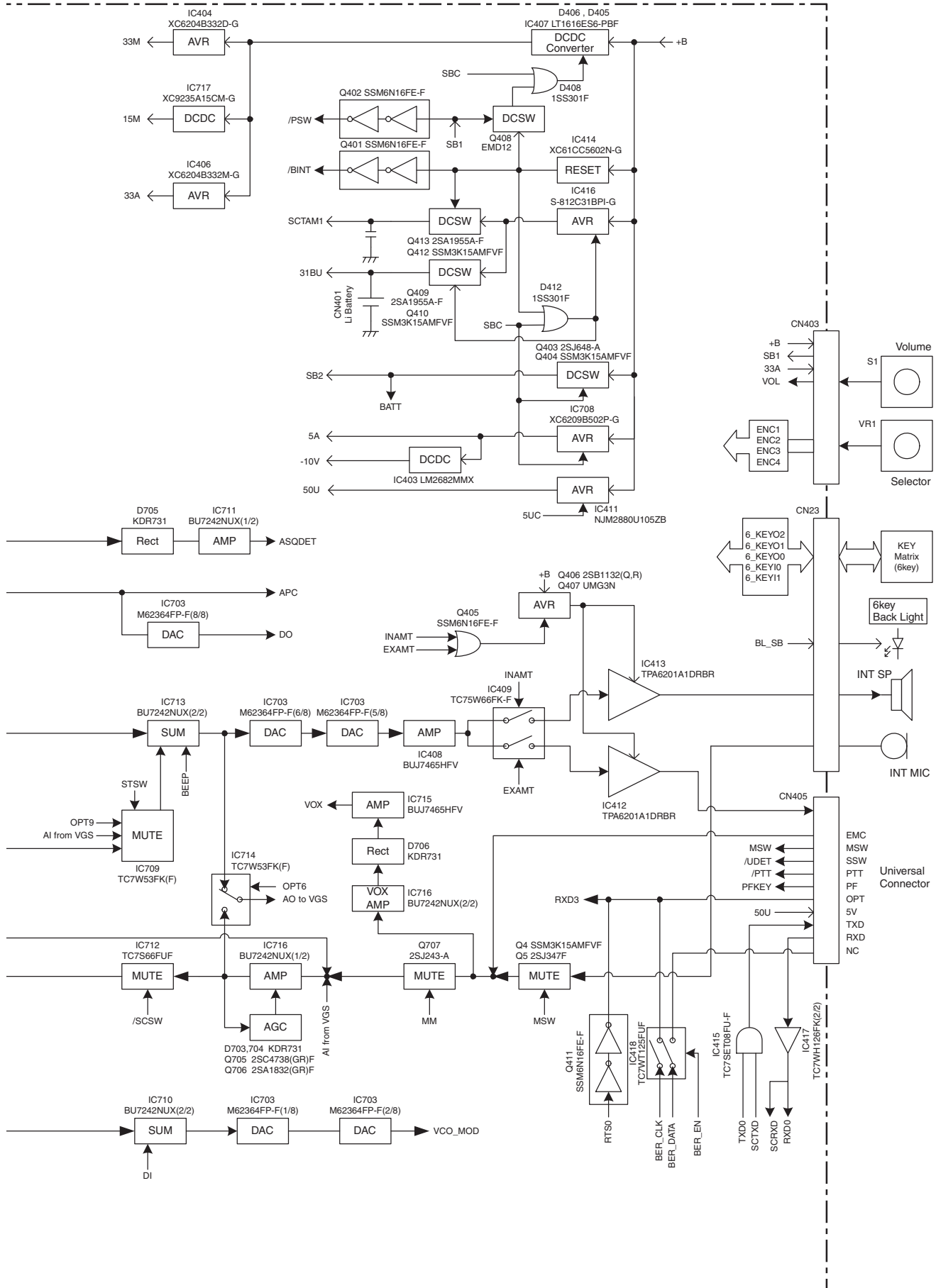
# BLOCK DIAGRAM

Control unit (XC1-0020-XX)



# BLOCK DIAGRAM

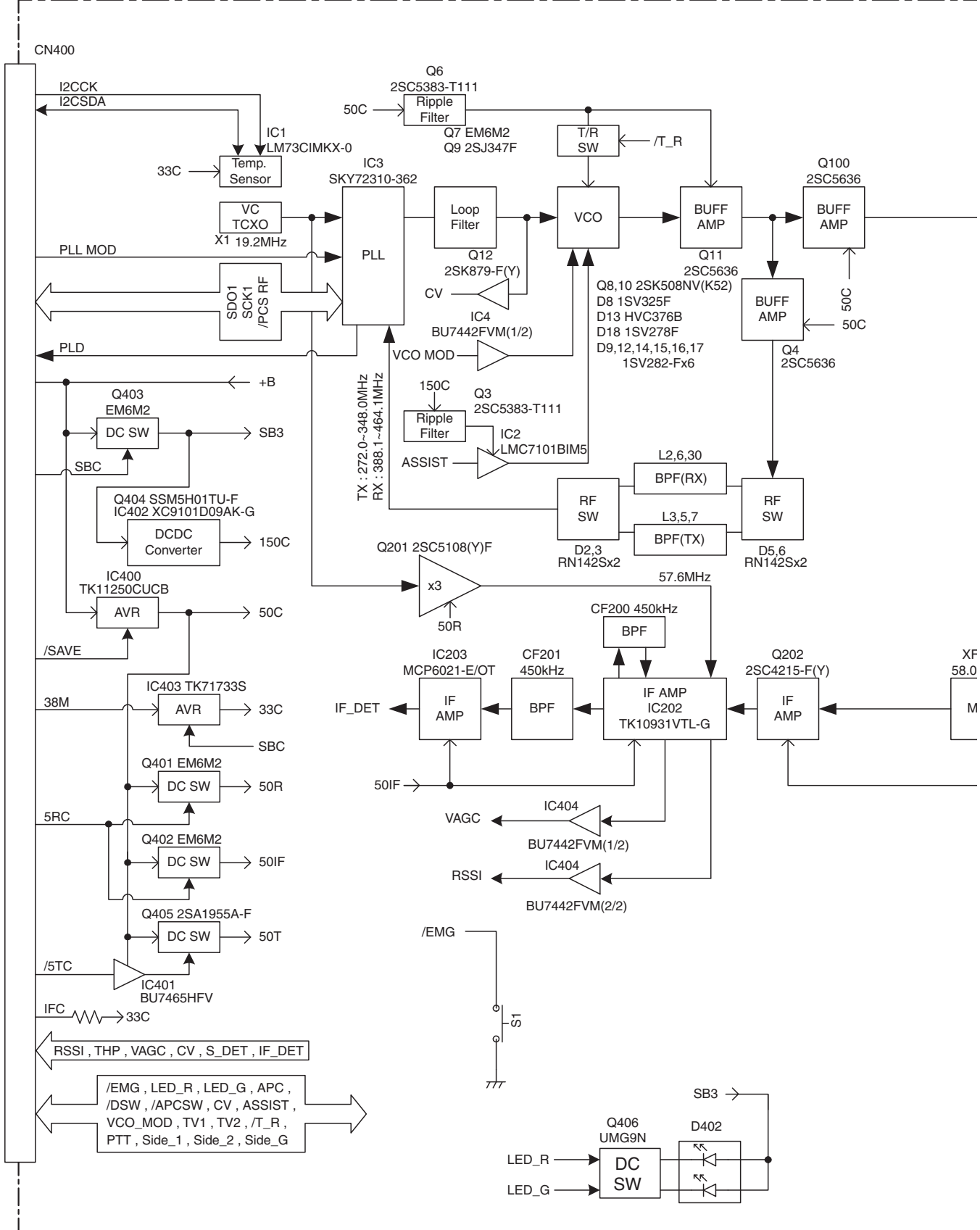
# NX-200(G)



# NX-200(G)

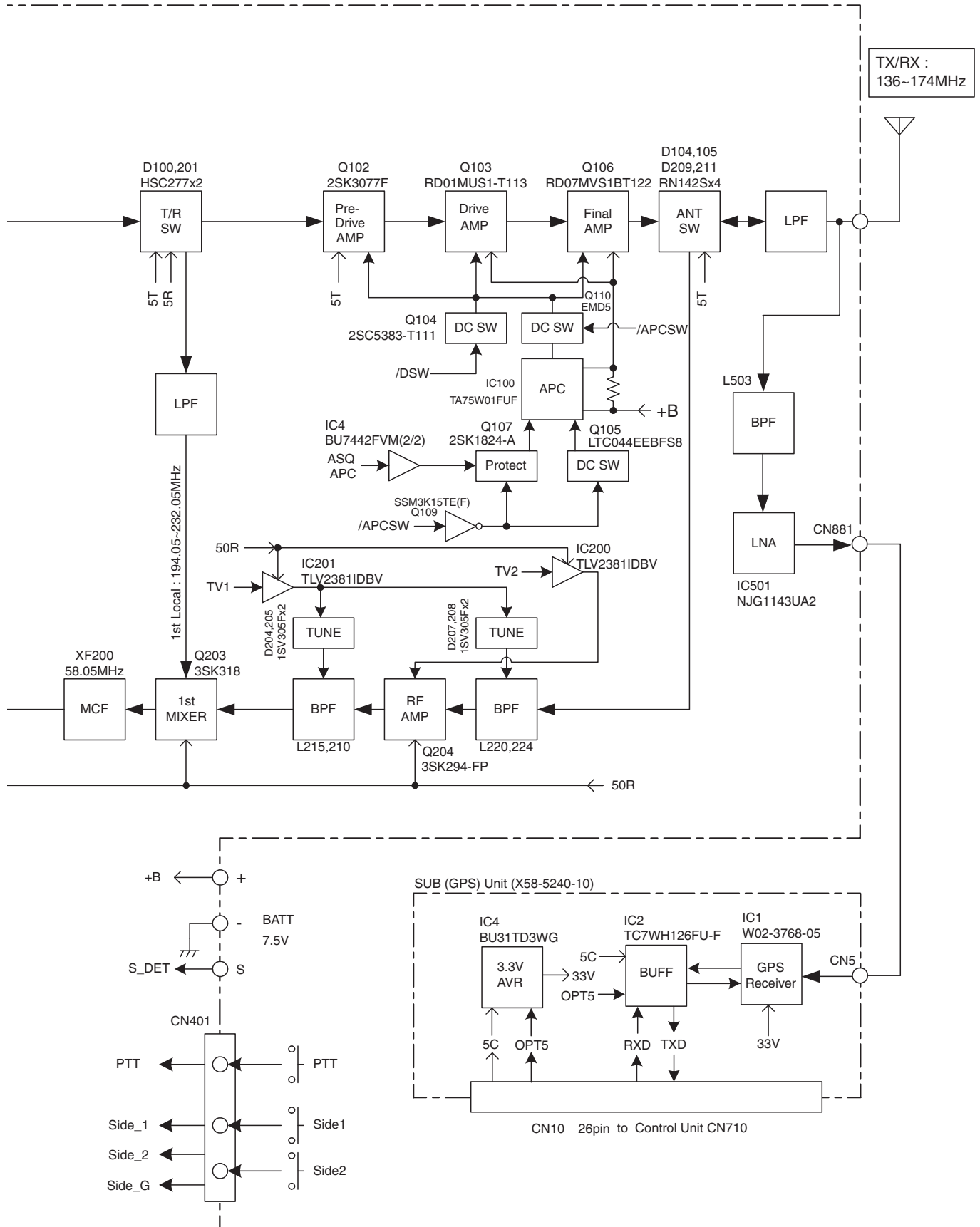
## BLOCK DIAGRAM

TX-RX unit (X57-8950-13)



# NX-200(G)

## BLOCK DIAGRAM



# NX-200(G)

## OPTIONAL ACCESSORIES

### KNB-47L (Li-ion Battery Pack)

■ External View



#### ■ Specifications

Voltage..... 7.4V  
Battery capacity..... 1950mAh

### KNB-48L (Li-ion Battery Pack)

■ External View



#### ■ Specifications

Voltage..... 7.4V  
Battery capacity..... 2550mAh

### KRA-43G (VHF Helical Antenna)

■ External View



KRA-43G M : 146-162 MHz  
KRA-43G M2 : 162-174 MHz  
KRA-43G M3 : 136-150 MHz

**MEMO**

# NX-200(G)

## SPECIFICATIONS

### GENERAL

Models .....	K: Basic Model	K2: w/12-key Model
Frequency Range .....	136~174 MHz	
Number of Channels.....	512	
Zones.....	128	
Max. Channels per Zone .....	250	
Channel Spacing .....	Analog: 12.5/15/25/30 kHz	Digital: 6.25/12.5 kHz
Operating Voltage .....	7.5V DC $\pm$ 20%	
Battery Life (with KNB-48L,GPS:OFF) .....	5-5-90 duty cycle: More than 14.5 hours 10-10-80 duty cycle: More than 9.0 hours	
Operating Temperature Range .....	-22°F to +140°F (-30°C to +60°C)	
Frequency Stability .....	$\pm$ 2.0ppm	
Antenna Impedance .....	50 $\Omega$	
Dimensions (W x H x D) (Projections not included)		
Radio only .....	2.28 x 5.02 x 1.63 in (58 x 127.5 x 41.3 mm)	
with KNB-47L .....	2.28 x 5.02 x 1.63 in (58 x 127.5 x 41.3 mm)	
with KNB-48L .....	2.28 x 5.02 x 1.91 in (58 x 127.5 x 48.5 mm)	
Weight		
Radio only .....	9.17 oz (260 g)	
with KNB-47L .....	13.23 oz (375 g)	
with KNB-48L .....	14.29 oz (405 g)	

### RECEIVER

Sensitivity .....	Digital @6.25kHz (3% BER): 0.20 $\mu$ V	Digital @ 12.5kHz (3% BER): 0.25 $\mu$ V
	Analog (12dB SINAD): 0.25 $\mu$ V	
Selectivity .....	Analog @25kHz: 72dB	Analog @ 12.5kHz: 65dB
Intermodulation Distortion .....	Analog: 70dB ( $\pm$ 50, 100kHz)	
Spurious Response .....	Analog: 70dB	
Audio Distortion .....	Less than 3%	
Audio Output.....	500mW/8 $\Omega$	

### TRANSMITTER

RF Power Output .....	5W/1W	
Spurious Response .....	70dB	
FM Hum and Noise.....	Analog @25kHz: 45dB	Analog @ 12.5kHz: 40dB
Audio Distortion .....	Less than 3%	
Modulation .....	16K0F3E, 11K0F3E, 8K30F1E, 8K30F1D, 8K30F7W, 4K00F1E, 4K00F1D, 4K00F7W, 4K00F2D	

### GPS

Time to First Fix.....	Cold Start: < 60 seconds	Hot Start: < 10 seconds
Horizontal Accuracy.....	< 10 meters	

Analog measurements made per TIA/EIA 603 and specifications shown are typical.  
JVC KENWOOD reserves the right to change specifications without prior notice or obligation.

# KENWOOD

JVC KENWOOD Corporation  
Communications Equipment BU

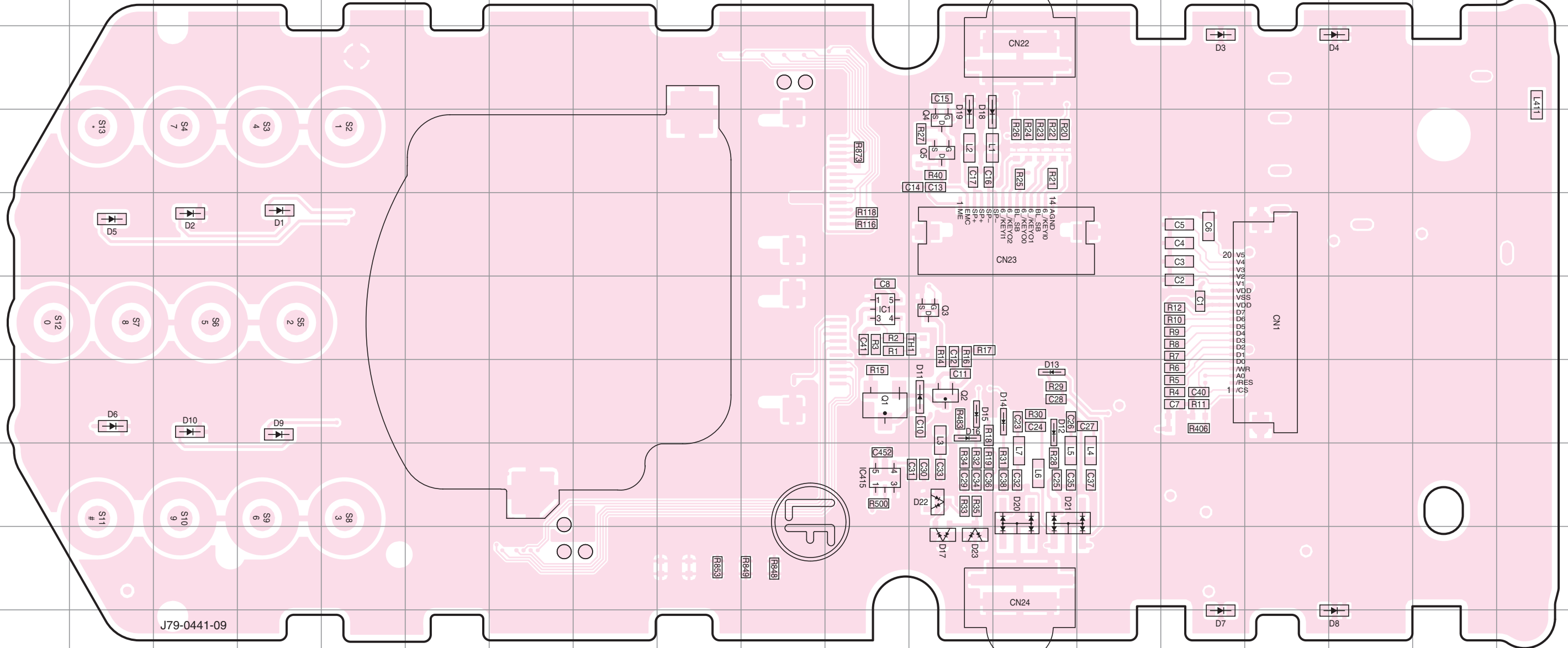


# NX-200(G) PC BOARD

# PC BOARD NX-200(G)

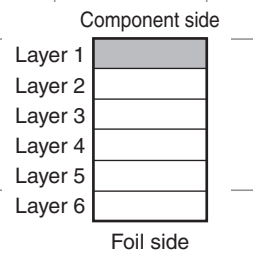
CONTROL UNIT (XC1-0020-XX) -10: K -11: K2  
Component side view (J79-0441-09)

CONTROL UNIT (XC1-0020-XX) -10: K -11: K2  
Component side view (J79-0441-09)



J79-0441-09

Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC1	6K	D4	3Q	D14	7M
IC415	8K	D5	5B	D15	7L
Q1	7K	D6	7B	D16	7L
Q2	7L	D7	10O	D17	9L
Q3	6L	D8	10Q	D18	4L
Q4	4L	D9	7D	D19	4L
Q5	4L	D10	7C	D20	8M
D1	5D	D11	7L	D21	8M
D2	5C	D12	7M	D22	8L
D3	3O	D13	7M	D23	9L

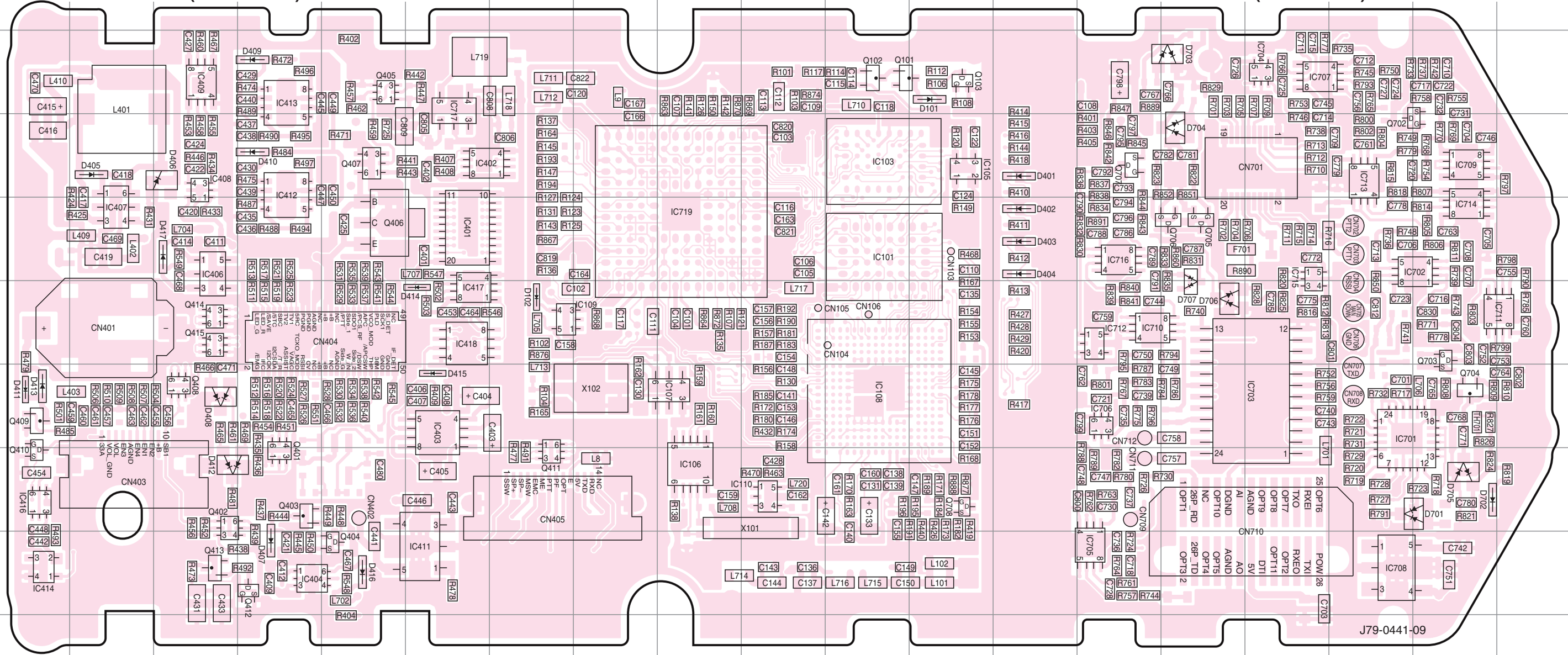


# NX-200(G) PC BOARD

# PC BOARD NX-200(G)

CONTROL UNIT (XC1-0020-XX) -10: K -11: K2  
Foil side view (J79-0441-09)

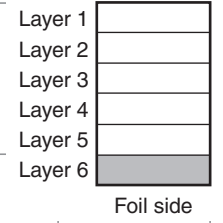
CONTROL UNIT (XC1-0020-XX) -10: K -11: K2  
Foil side view (J79-0441-09)



J79-0441-09

Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC101	5K	IC404	9D	IC701	7Q	IC713	4Q	Q405	3E	Q703	6R	D406	4C	D701	8R
IC719	5I	IC406	5C	IC702	5R	IC714	5R	Q406	5E	Q704	7R	D407	9D	D702	8R
IC103	4K	IC407	5B	IC703	7P	IC715	5P	Q407	4E	Q705	5O	D408	7C	D703	4O
IC104	3H	IC408	4C	IC704	3P	IC716	5N	Q408	7C	Q706	5O	D409	3D	D704	3O
IC105	4L	IC409	3C	IC705	9N	IC717	3F	Q409	7A	Q707	4N	D410	4D	D705	8R
IC106	8I	IC411	9F	IC706	7N	Q101	3K	Q410	8A	D101	3L	D411	7A	D706	6O
IC107	7I	IC412	4D	IC707	3P	Q102	3K	Q411	8G	D102	6G	D412	8C	D707	6O
IC108	7K	IC413	3D	IC708	9Q	Q103	3L	Q412	9D	D401	4M	D413	7A		
IC109	6G	IC414	9A	IC709	4R	Q401	8D	Q413	9C	D402	5M	D414	6F		
IC401	5F	IC416	8A	IC710	6N	Q402	8C	Q414	6C	D403	5M	D415	7F		
IC402	4F	IC417	6F	IC711	6S	Q403	8D	Q415	6C	D404	5M	D416	9E		
IC403	7F	IC418	6F	IC712	6N	Q404	9E	Q702	4R	D405	4B	D417	5C		

Component side



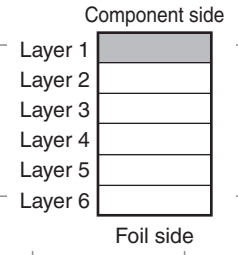
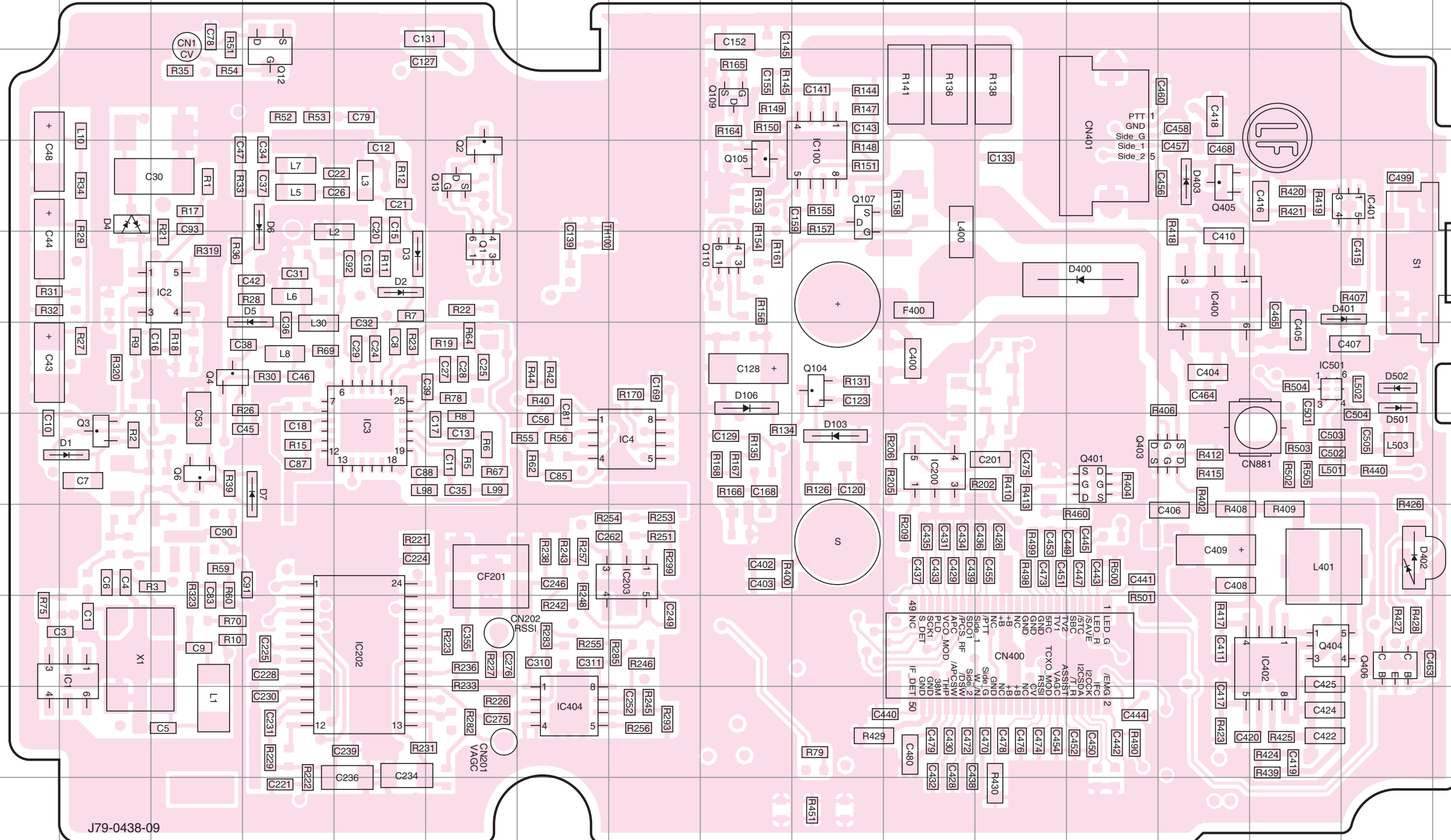
Foil side

# NX-200(G) PC BOARD

# PC BOARD NX-200(G)

**TX-RX UNIT (X57-8950-13)  
Component side view (J79-0438-09)**

**TX-RX UNIT (X57-8950-13)  
Component side view (J79-0438-09)**



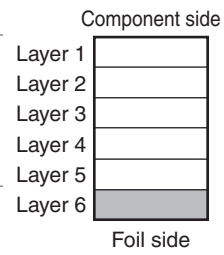
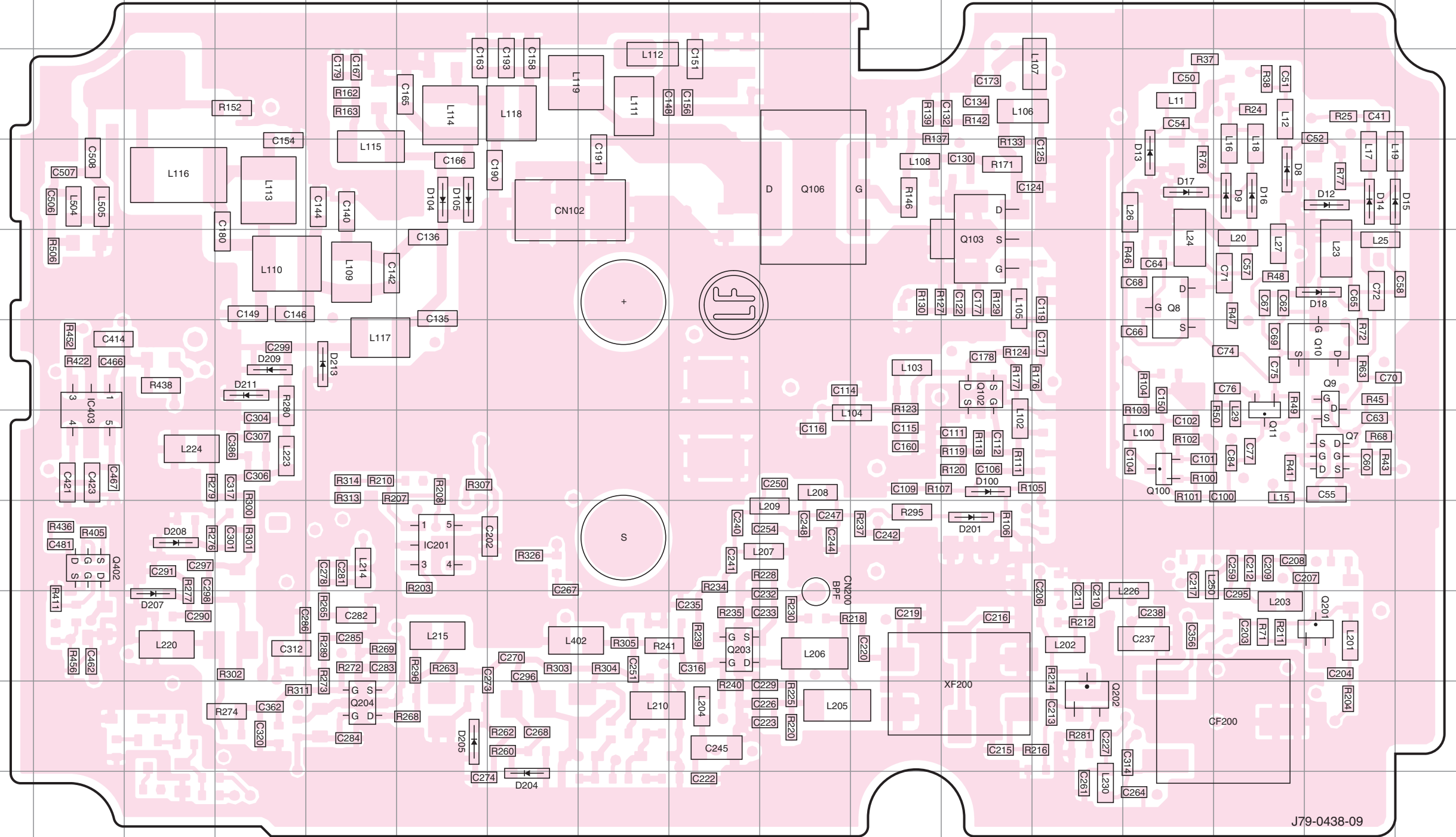
Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC1	9B	IC400	5N	Q6	7C	Q401	7M	D4	4B	D402	8P
IC2	5C	IC401	4P	Q12	3D	Q403	7N	D5	5D	D403	4N
IC3	7E	IC402	9O	Q13	4F	Q404	9O	D6	4D		
IC4	7H	IC404	10G	Q104	6J	Q405	4N	D7	7D		
IC100	4J	Q1	5F	Q105	4I	Q406	9P	D103	7J		
IC200	7K	Q2	4F	Q107	4J	D1	7B	D106	6I		
IC202	9E	Q3	7B	Q109	3I	D2	5E	D400	5M		
IC203	8H	Q4	6C	Q110	5I	D3	5E	D401	5P		

# NX-200(G) PC BOARD

TX-RX UNIT (X57-8950-13)  
Foil side view (J79-0438-09)

# PC BOARD NX-200(G)

TX-RX UNIT (X57-8950-13)  
Foil side view (J79-0438-09)

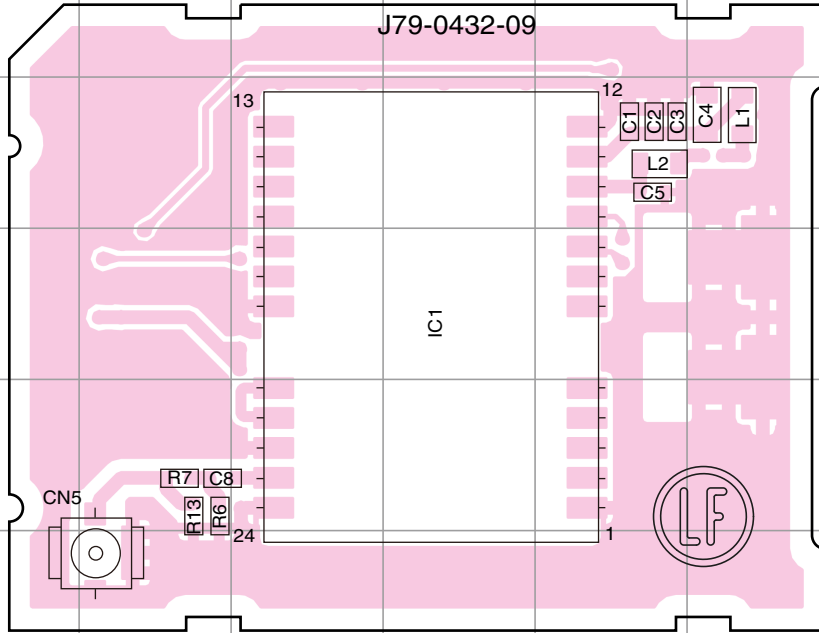


Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC201	8H	Q100	7P	Q204	10G	D15	4S	D201	8N	D213	6G
IC403	7D	Q102	6N	Q402	8D	D16	4Q	D204	11I		
Q7	7R	Q103	5N	D8	4Q	D17	4P	D205	10H		
Q8	5P	Q106	4L	D9	4Q	D18	5R	D207	9E		
Q9	6R	Q201	9R	D12	4R	D100	7N	D208	8E		
Q10	6R	Q202	10O	D13	4P	D104	4H	D209	6F		
Q11	7Q	Q203	9K	D14	4R	D105	4H	D211	6F		

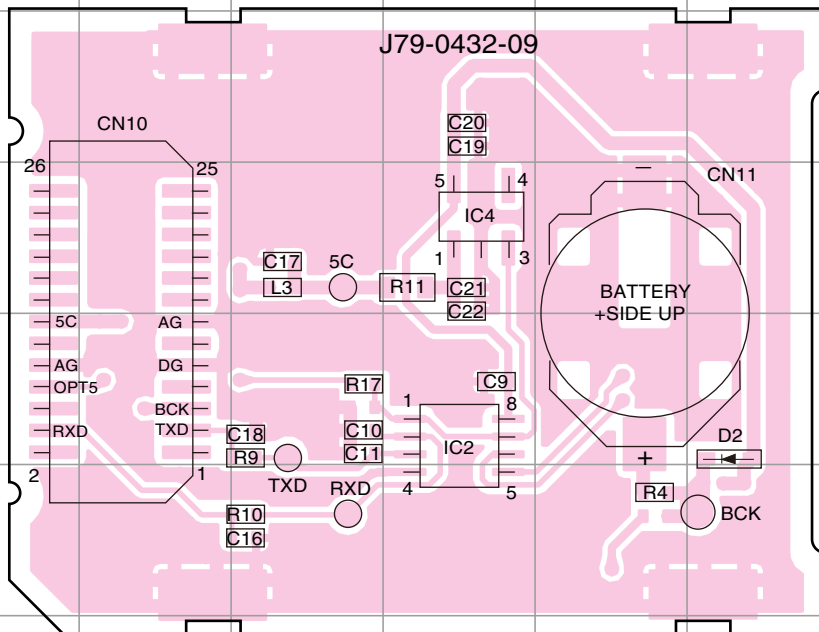
# PC BOARD

# NX-200(G)

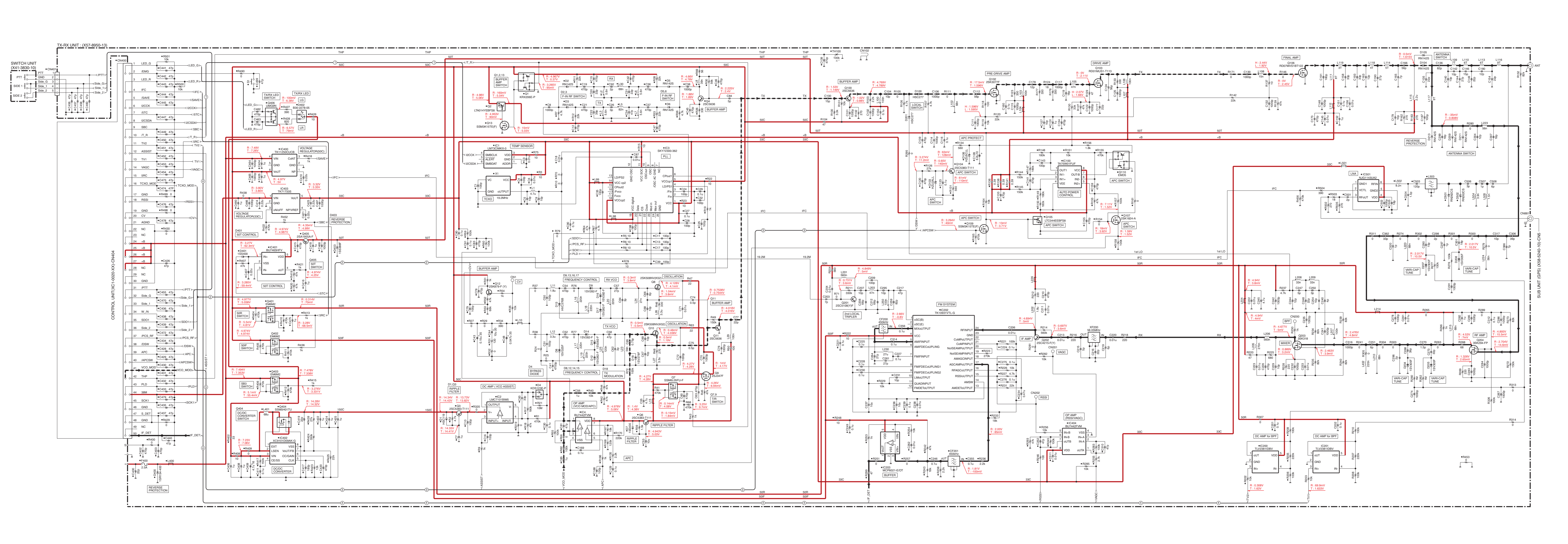
**SUB (GPS) UNIT (X58-5240-10) Component side view (J79-0432-09)**

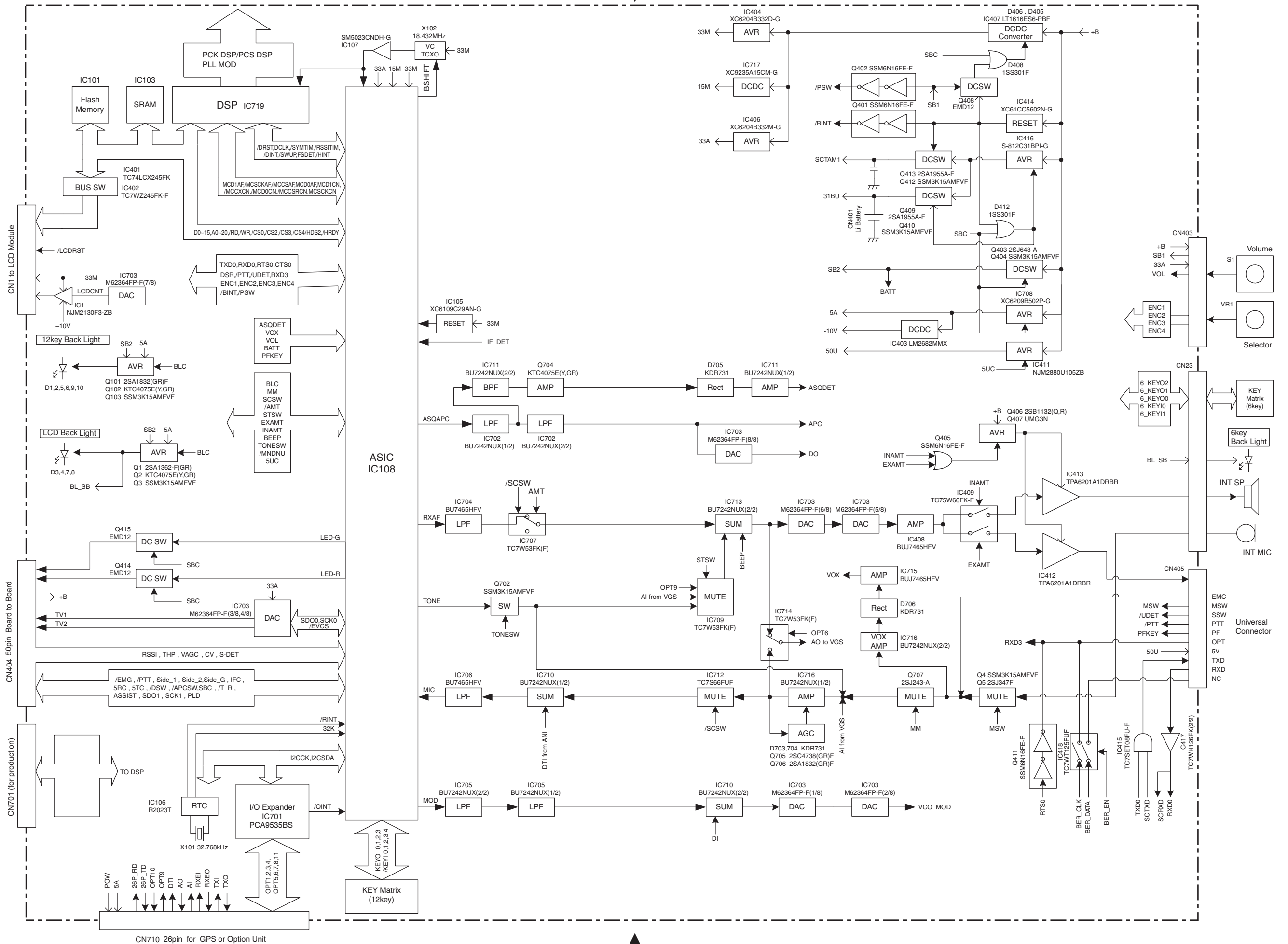


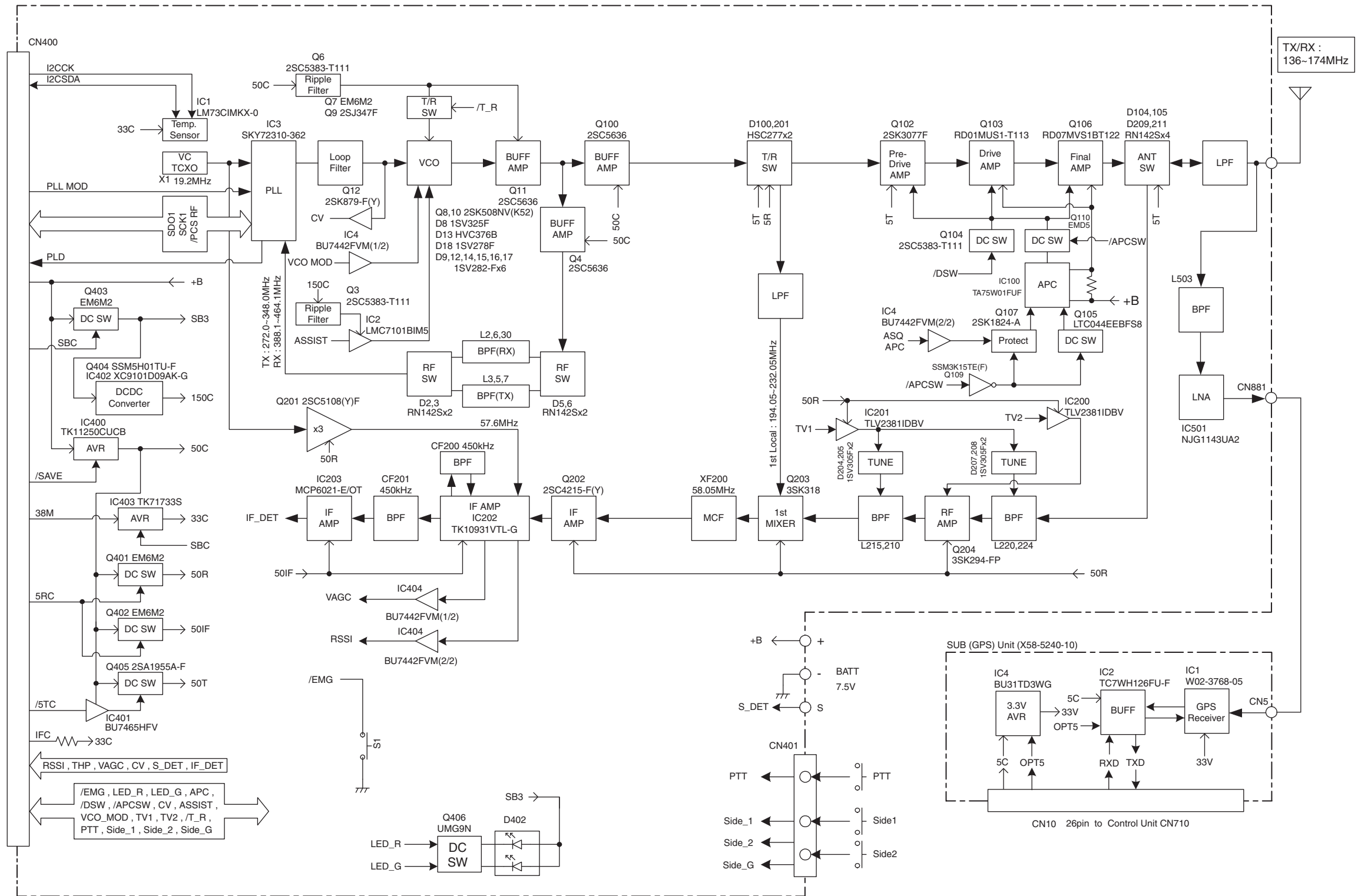
**SUB (GPS) UNIT (X58-5240-10) Foil side view (J79-0432-09)**



Ref. No.	Address	Ref. No.	Address
IC1	4F	IC4	9F
IC2	10F	D2	10H

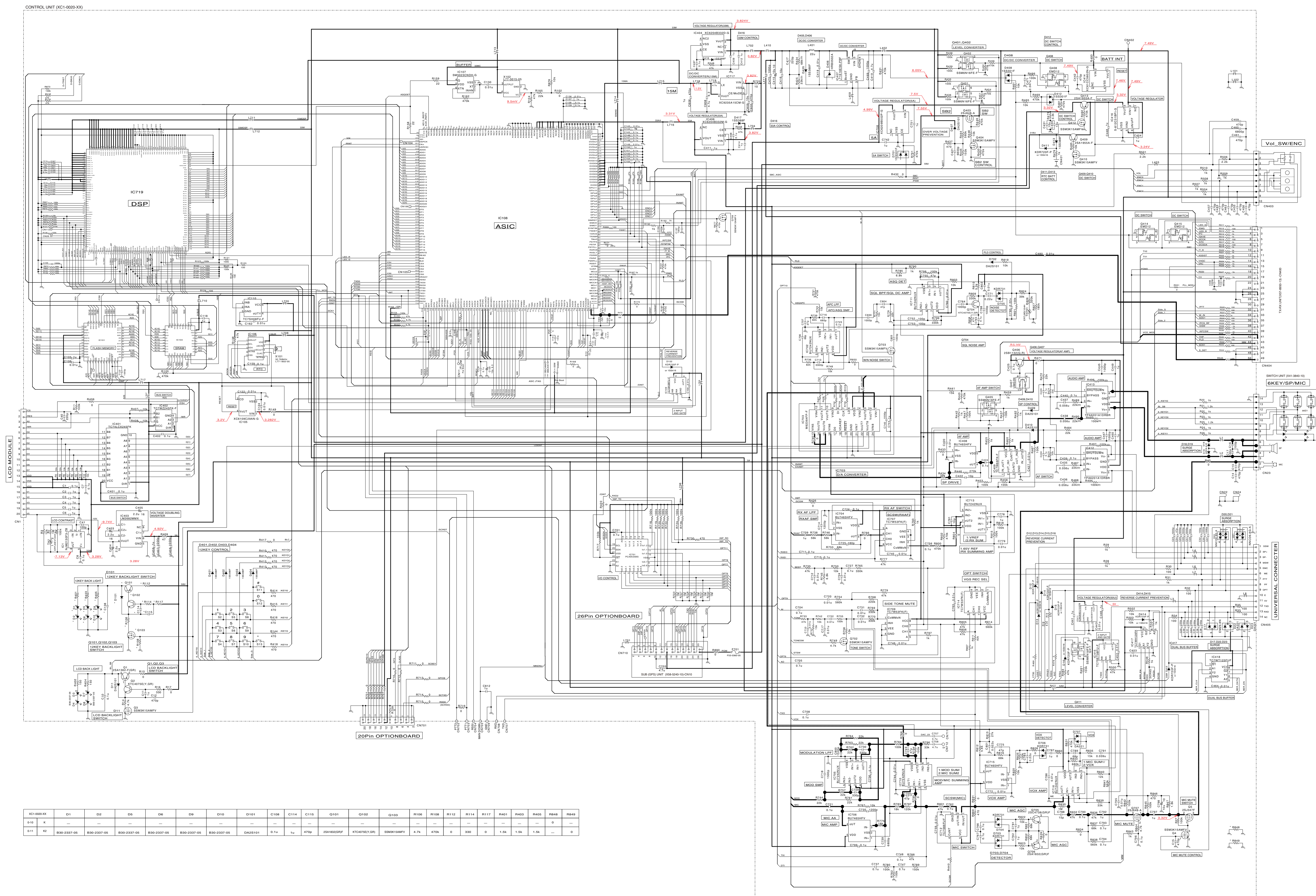












XC1000-XX	D1	D2	D5	D6	D9	D10	D101	C108	C114	C115	Q101	Q102	Q103	R108	R108	R112	R114	R117	R401	R403	R405	R408	R409	
0-19	K	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0-11	K2	B30-2337-05	B30-2337-05	B30-2337-05	B30-2337-05	B30-2337-05	DA25101	0.1u	1u	470p	2SA1823GRF	5SMK15AMPV	4.7k	470k	0	330	0	1.5k	1.5k	1.5k	-	0	-	0