

NX-300S

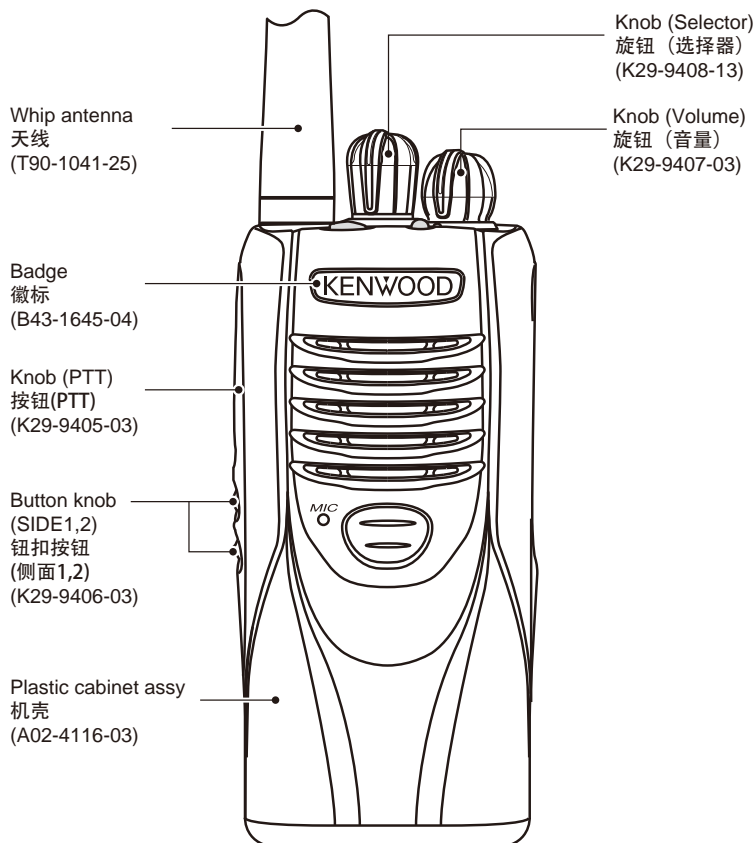
SERVICE MANUAL / 维修手册

C version / C 版本

KENWOOD

JVC KENWOOD Corporation

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B51-8993-00 (Y) PDF



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GENERAL / 概述

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.

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(C) version 2.70 or later for this transceiver. KPG-111D(C) versions earlier than version 2.70 will not work properly.

引言

本手册的范围

本手册是提供给熟悉通信专业并且具有维修经验的技术人员使用的。它包括了维修该设备所需要的全部资料和现行出版日期。在出版后可能发生变动，如果需要，可以参照《维修通报》或《手册修订本》进行补充。

替换零件的订购

当订购替换零件或设备资料时，应注意完整的零件识别号码。所有的零件均有识别号码：元件，组件或机壳。如果不知道零件的号码，为了正确地识别，必须注明此元件所属的机壳或组件的号码，并对元件进行充分的说明。

个人安全

为了个人的安全，请注意下列事项：

- 在没有认真核实所有射频插头之前或有任何一个脱开的插头没有连接到相应端口上的情况下均不要发射。
- 在电爆管附近或在易燃性气体环境中，必须关闭电源，不要操作本设备。
- 本设备只应该由有资格的技术人员进行维修。

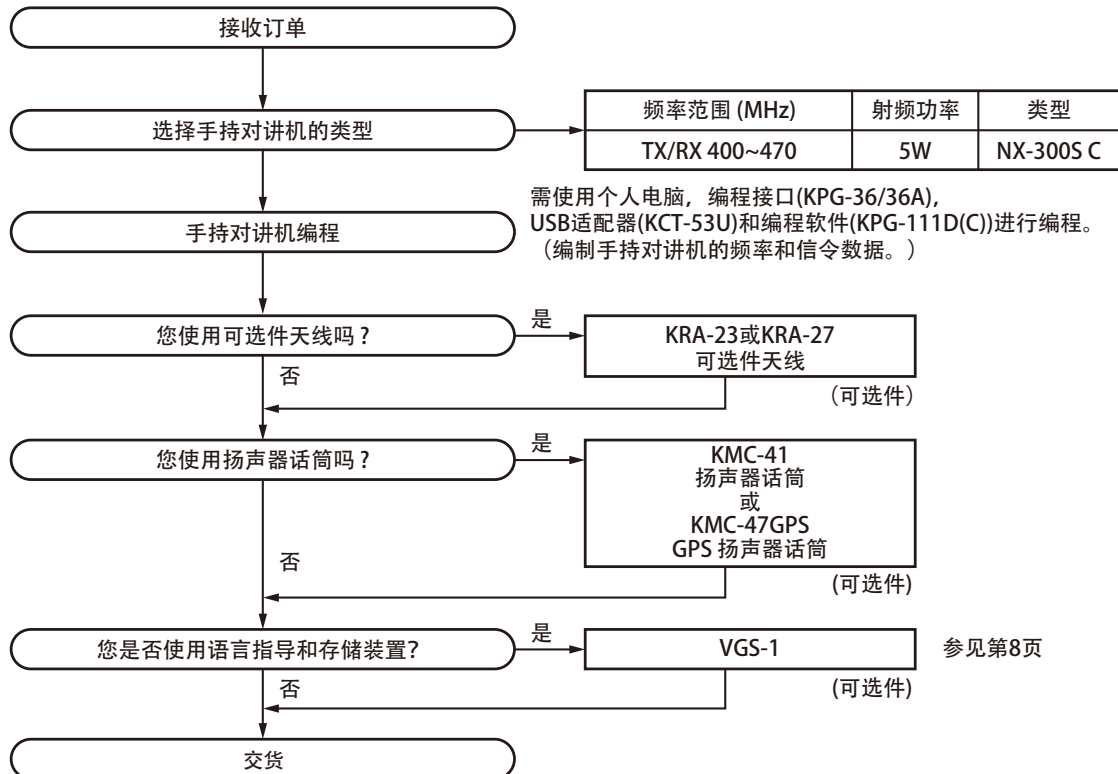
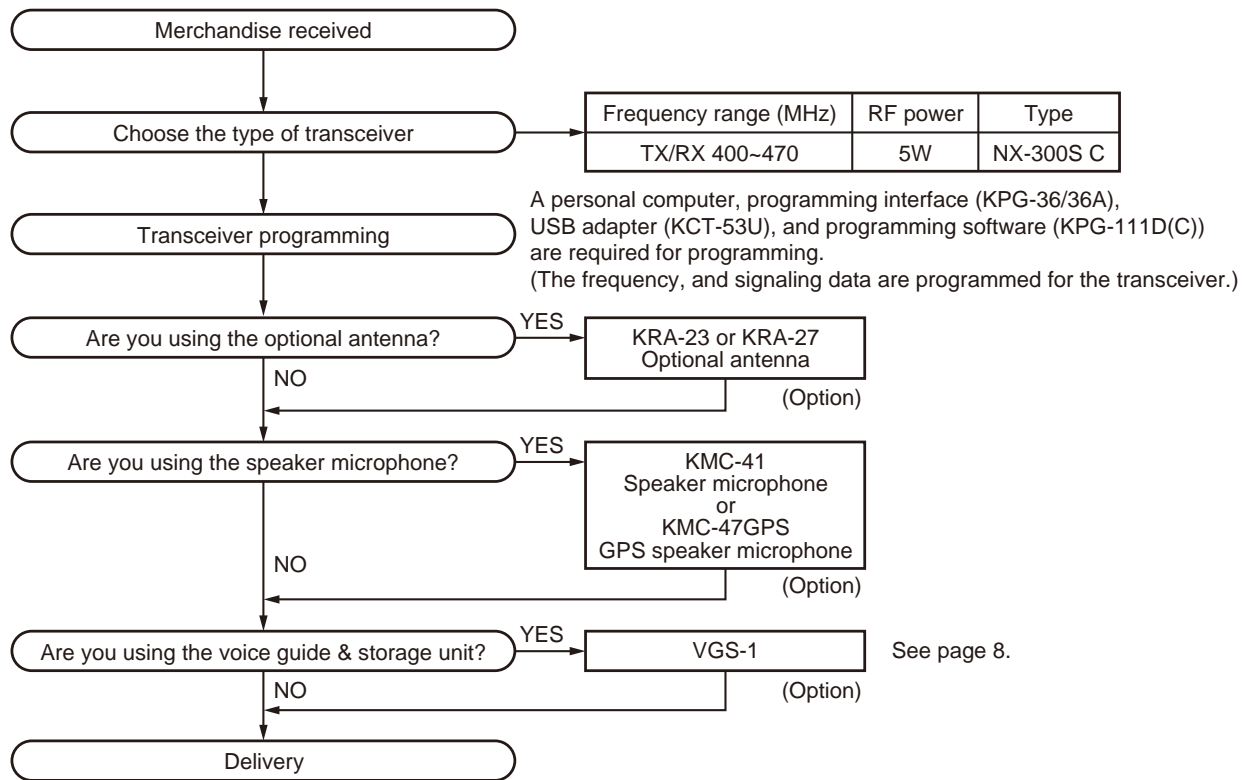
维修服务

为了便于维修本设备，建立了完整的维修服务体系，提供了包括原理图，印刷电路板图和调整步骤在内的资料供参考。

注意

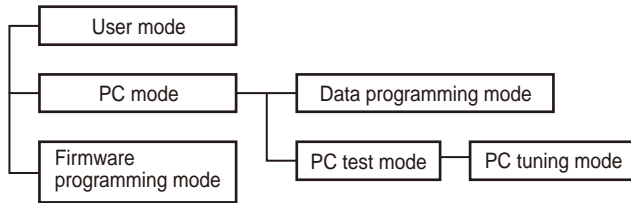
对于此对讲机您必须使用 KPG-111D(C) 版本 2.70 或更高版本。KPG-111D(C) 版本早于 2.70 不能正确工作。

SYSTEM SET-UP / 系统体系



REALIGNMENT / 模式组合

1. Modes



Mode	Function
User mode	For normal use.
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.

2. How to Enter Each Mode

Mode	Operation
User mode	Power ON
PC mode	Received commands from PC
Firmware programming mode	[AUX (orange)] + Power ON

3. PC Mode

3-1. Preface

The transceiver is programmed by using a personal computer, programming interface (KPG-36/36A), USB adapter (KCT-53U) and programming software (KPG-111D(C) ver. 2.70 or later).

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

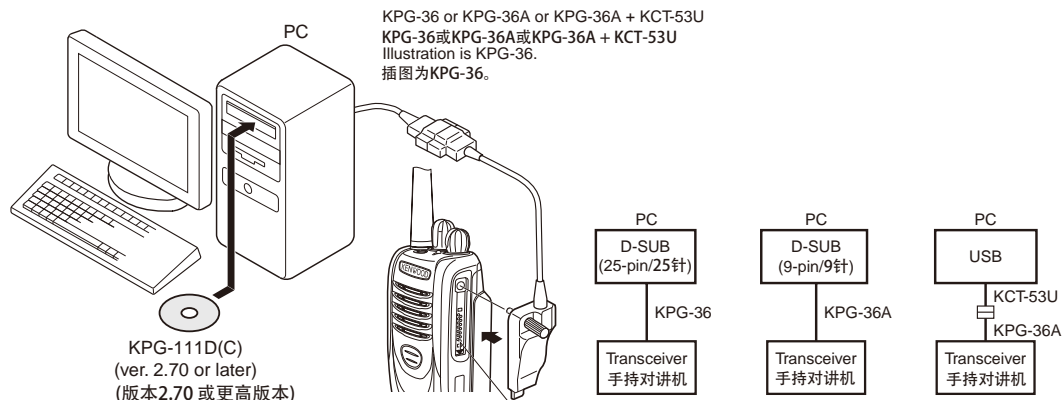
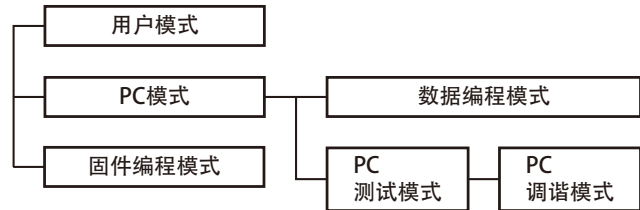


Fig. 1 / 图 1

1. 模式



模式	功能
用户模式	一般使用。
PC模式	用于手持对讲机与PC之间的通信。
数据编程模式	用于阅读和写入频率数据以及其他功能。
PC测试模式	用于通过PC检查手持对讲机。该功能内置于FPU中。
固件编程模式	当改变闪存中操作主程序时使用。

2. 如何进入每一种模式

模式	操作
用户模式	接通电源
PC模式	从PC接收指令
固件编程模式	[辅助(橙色)] + 接通电源

3. PC模式

3-1. 前言

手持对讲机采用个人电脑，编程接口 (KPG-36/36A)，USB适配器 (KCT-53U) 和编程软件 (KPG-111D(C) 版本 2.70 或更高版本) 进行编程。

编程软件可在PC上使用。图1说明了PC进行编程的设置。

REALIGNMENT / 模式组合

3-2. Connection procedure

1. Connect the transceiver to the computer using the interface cable and USB adapter (When the interface cable is KPG-36A, the KCT-53U can be used.).

Note:

- You must install the KCT-53U driver in the computer to use the USB adapter (KCT-53U).
 - When using the USB adapter (KCT-53U) for the first time, plug the KCT-53U into a USB port on the computer with the computer power ON.
2. When the POWER is switched on, you can immediately enter user mode.
When data is transmitting from the transceiver, the red LED lights.
When data is receiving by the transceiver, the green LED lights.

Note:

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

3-3. KPG-36/KPG-36A description

(PC programming interface cable: Option)

The KPG-36/36A is required to interface the transceiver to the computer. It has a circuit in its D-sub connector (KPG-36: 25-pin, KPG-36A: 9-pin) case that converts the RS-232C logic level to the TTL level.

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

3-4. KCT-53U description (USB adapter: Option)

The KCT-53U is a cable which connects the KPG-36A to a USB port on a computer.

When using the KCT-53U, install the supplied CD-ROM (with driver software) in the computer. The KCT-53U driver runs under Windows 2000, XP or Vista (32-bit).

3-5. Programming software KPG-111D(C) description

The KPG-111D(C) is the programming software for the transceiver supplied on a CD-ROM. This software runs under Windows XP, Vista or 7 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.

4. Firmware Programming Mode

4-1. 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.)

3-2. 连接操作

1. 用接口电缆和 USB 适配器将手持对讲机连接到电脑（接口电缆为 KPG-36A 时，可以使用 KCT-53U）。

注意：

- 必须在电脑上安装 KCT-53U 驱动程序才能使用 USB 适配器 (KCT-53U)。
 - 首次使用 USB 适配器 (KCT-53U) 时，请在电脑电源打开的情况下将 KCT-53U 插入电脑的 USB 端口。
2. 手持对讲机电源开关打开时，可以立即进入用户模式。
手持对讲机正在发送数据时，红色的 LED 点亮。
手持对讲机正在接收数据时，绿色的 LED 点亮。

注意：

电脑保存的数据写入闪存时，必须与“型号名称”相符。

3-3. KPG-36/KPG-36A 说明

(PC 编程接口电缆：选配件)

将手持对讲机连接到电脑需要 KPG-36/36A。该电缆的 D-sub 连接器 (KPG-36: 25 针, KPG-36A: 9 针) 盒具有将 RS-232C 逻辑电平转换为 TTL 电平的电路。

KPG-36/36A 将手持对讲机的通用连接器连接到电脑的 RS-232C 串行端口。

3-4. KCT-53U 说明 (USB 适配器：选配件)

KCT-53U 是将 KPG-36A 连接到电脑 USB 端口的电缆。

使用 KCT-53U 时，请在电脑上安装附带的 CD-ROM (带有驱动程序软件)。KCT-53U 驱动程序在 Windows 2000, XP 或 Vista (32 位) 下运行。

3-5. 编程软件 KPG-111D (C) 说明

KPG-111D (C) 是 CD-ROM 附带的用于手持对讲机的编程软件。该软件在 PC 的 Windows XP, Vista 或 7 下运行。

可在手持对讲机上写入或读取数据，并可在电脑屏幕上进行编辑。可以打印编程或编辑的数据。此外，还可调谐手持对讲机。

4. 固件编程模式

4-1. 前言

闪存安装在手持对讲机上。将来发布新功能时，可以使手持对讲机进行升级。(有关如何获得固件的详情，请咨询客户服务机构。)

REALIGNMENT / 模式组合

4-2. Connection procedure

Connect the transceiver to the personal computer using the interface cable (KPG-36/36A) and USB adapter (KCT-53U: when the interface cable is KPG-36A, the KCT-53U can be used.). (Connection is the same as in the PC Mode.)

4-3. Programming

1. Start up the firmware programming software (Fpro.exe (ver. 6.10 or later)). The Fpro.exe exists in the KPG-111D(C) installed folder.
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 [AUX (orange)] key while turning the transceiver power ON. Then, the orange LED on the transceiver lights.
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 green LED on the transceiver lights.
7. If writing ends successfully, the red LED on the transceiver lights.
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.

4-4. Function

1. Each press of the [Side2] key changes the writing speed as shown below. Additionally, the LED color changes according to the writing speed.

19200 bps	LED blinks green
38400 bps	LED alternates between red and orange
57600 bps	LED blinks orange
115200 bps	LED lights orange

Note:

Normally, write in the high-speed mode.

4-2. 连接操作

用接口电缆 (KPG-36/36A) 和 USB 适配器 (KCT-53U: 接口电缆为 KPG-36A 时, 可以使用 KCT-53U) 将手持对讲机连接到个人电脑。(连接方式与 PC 模式下相同。)

4-3. 编程

1. 启动固件编程软件 (Fpro.exe (ver. 6.10 或更高版本))。Fpro.exe 存在于 KPG-111D(C) 安装文件夹内。
2. 在配置项中设置通信速度 (通常为 115200 bps) 和通信端口。
3. 通过文件名项目设置要更新的固件。
4. 打开手持对讲机电源时, 按住 [辅助 (橙色)] 键。然后, 手持对讲机上的橙色 LED 点亮。
5. 检查手持对讲机与个人电脑之间的连接, 确认手持对讲机处于编程模式。
6. 按窗口中的 "write" 按钮。手持对讲机开始接收数据时, 手持对讲机上的绿色 LED 点亮。
7. 如果写入操作成功完成, 手持对讲机上的红色 LED 点亮。
8. 若要继续为其他手持对讲机编程, 请重复步骤 4 至 7。

注意:

如果手持对讲机的固件编程模式设为禁用, 则无法进入此模式。

4-4. 功能

1. 每按一次 [侧面 2] 键将按下面所述改变写入的速度。另外, LED 的颜色也会根据写入的速度而改变。

19200 bps	LED 呈绿色闪烁
38400 bps	LED 呈红色和橙色交替点亮
57600 bps	LED 呈橙色闪烁
115200 bps	LED 呈橙色点亮

注意:

通常以高速模式写入。

INSTALLATION / 安装

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

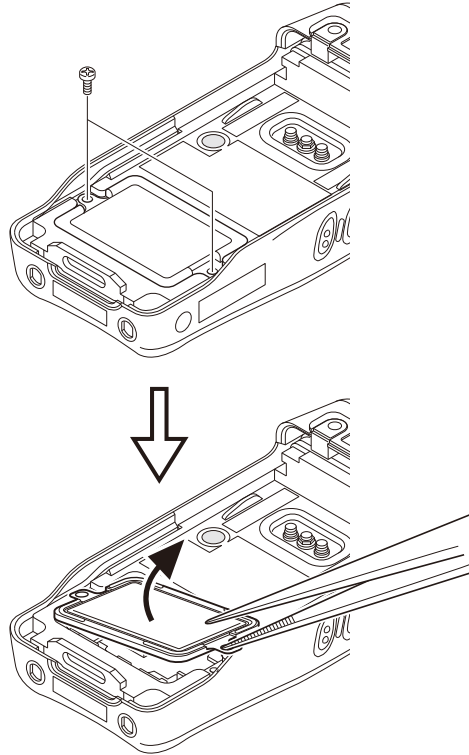
语言指导及存储单元 (VGS-1: 选购件)

■ Installing the VGS-1 (Voice Guide & Storage Unit) in the transceiver

■ 在手持对讲机中安装 VGS-1 (语言指导及存储单元)

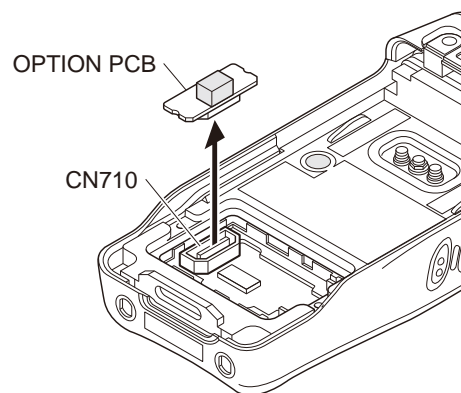
1. Remove the two screws from the cover.
2. Remove the cover by inserting the tip of a pair of tweezers into the screw hole of the cover and prying it open.

1. 卸下盖子上的两颗螺丝。
2. 将镊子的尖端插入盖子的螺丝孔将其撬开，取下盖子。



3. Remove the OPTION PCB from the connector (CN710) of the Control PCB.

3. 从控制 PCB 的连接器 (CN710) 上取下 OPTION PCB。



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

4. 如图所示，将板簧 (G02-1846-03) 安装到 VGS-1 上。

Note:

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

注意：

安装板簧时，应使其凸起部分与 VGS-1 的 PCB 凹槽相吻合。

INSTALLATION / 安装

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

Note:

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

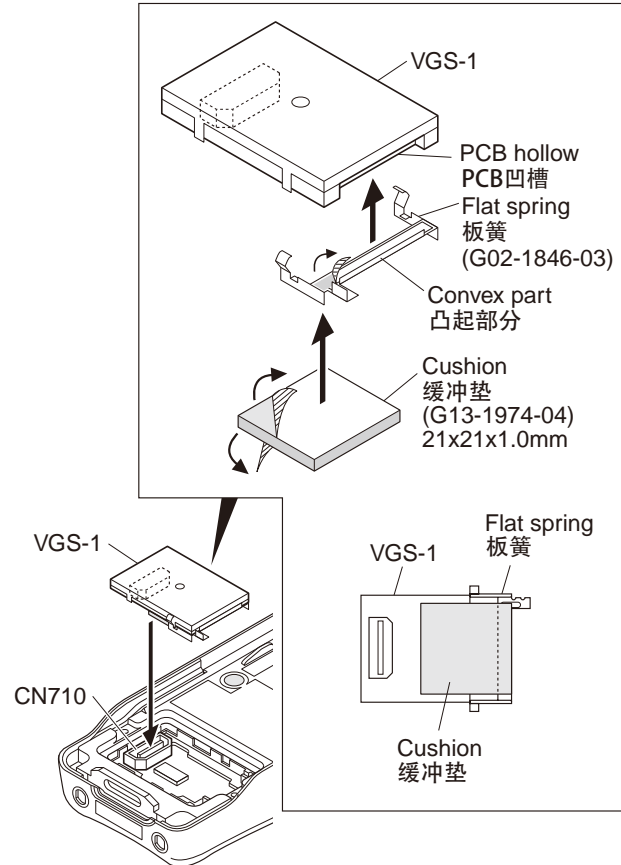
6. Insert the VGS-1 connector into the connector (CN710) of the Control PCB.

5. 如图所示，将缓冲垫 (G13-1974-04) 安装到 VGS-1 上。

注意：

请勿将缓冲垫盖住 VGS-1 连接器。

6. 将 VGS-1 连接器插入控制 PCB 的连接器 (CN710)。



7. Reinstall the cover using the two screws removed in step 2.

7. 用步骤 2 拆下的两颗螺丝重新安装盖子。

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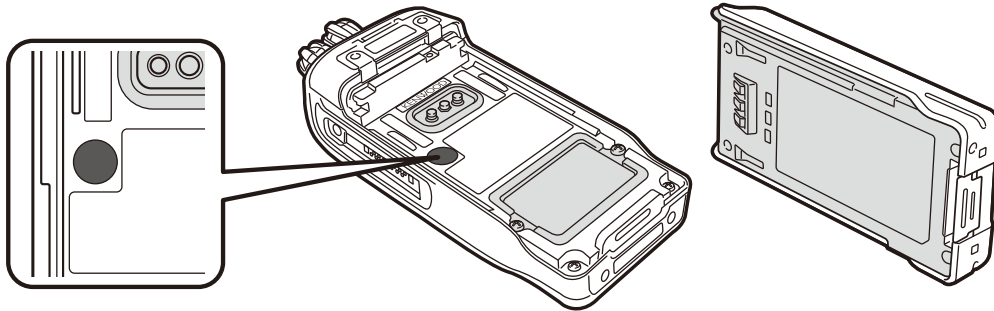
DISASSEMBLY FOR REPAIR / 维修拆卸

1. Precautions for Waterproof

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

1. 防水注意事项

- 请勿拆下手持对讲机背面的黑色薄片（参见下图）。拆下该薄片会降低手持对讲机的防水效能，如果有水渗入手持对讲机内部，可能会引发故障。
- 手持对讲机背面的橙色包装材料对手持对讲机的防水效能十分重要。请勿在图中所示的包装材料的上面或周围，或者在电池的背面贴标签或其他材料。否则可能削弱手持对讲机的防水效能，并可能导致手持对讲机毁坏。此外，为防止包装材料的损坏，请勿使其接触异物。



2. Precautions for Disassembly

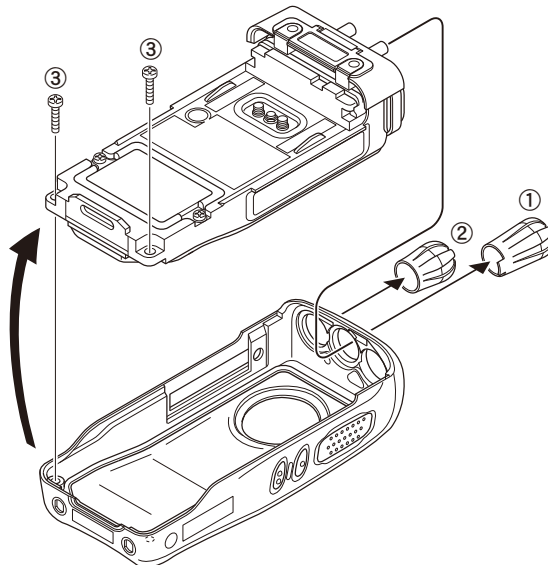
■ Disassembly procedure

1. Remove the channel knob ① and volume knob ②.
2. Remove the two screws ③.
3. Lift and remove the chassis from the case.

2. 拆卸注意事项

■ 拆卸步骤

1. 拆下信道旋钮 ① 和音量旋钮 ②。
2. 拆下两颗螺丝 ③。
3. 从壳体中提起并取出底座。



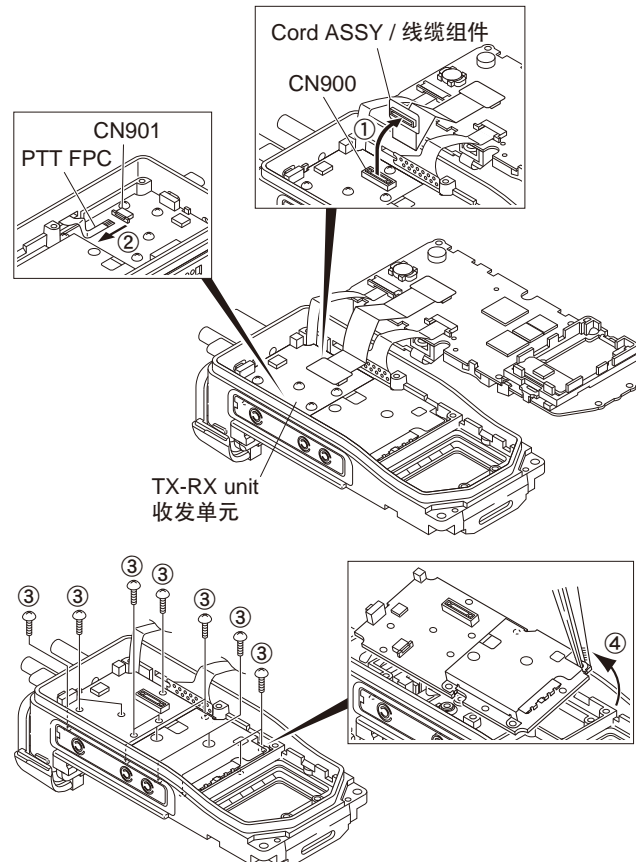
DISASSEMBLY FOR REPAIR / 维修拆卸

■ Removing the TX-RX unit from the chassis

1. Remove the cord ASSY from the connector of the TX-RX unit (CN900) ①.
2. Remove the PTT FPC from the connector of the TX-RX unit (CN901) 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.

■ 从底座取下收发单元

1. 拆下收发单元 (CN900) 连接器的线缆组件 ①。
2. 拆下收发单元 (CN901) 连接器的 PTT FPC ②。
3. 拆下 14 颗螺丝 ③。
4. 如图所示，用镊子的末端固定收发单元的螺丝孔。然后，提起收发单元，将其从底座取下 ④。



NX-300S

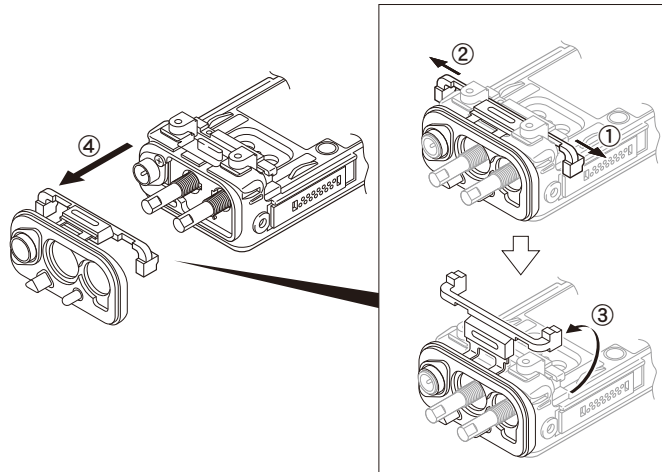
DISASSEMBLY FOR REPAIR / 维修拆卸

■ 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.

■ 拆下顶盖 (G53-1762-02)

1. 向左拉顶盖，拆下装在底座左侧凹槽内的盖 ①。
2. 向右拉顶盖，拆下装在底座右侧凹槽内的盖 ②。
3. 如图所示回转顶盖 ③。
4. 取下顶盖 ④。

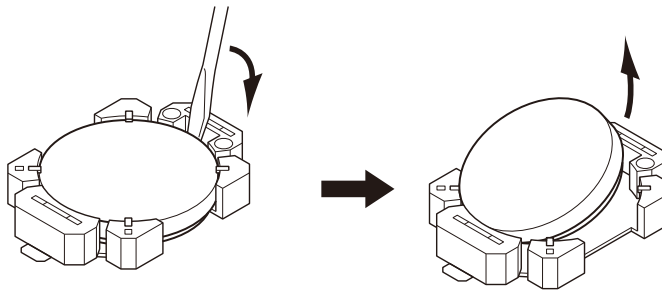


■ Removing the lithium cell (W09-0971-05)

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

■ 取出锂电池 (W09-0971-05)

将不导电的螺丝刀插入电池座 (CN401) 的一侧，从电池座中撬起锂电池。

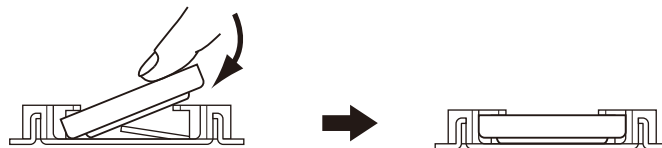


■ Installing the lithium cell (W09-0971-05)

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

■ 安装锂电池 (W09-0971-05)

将锂电池插入电池座 (CN401) 的一侧。推动锂电池，将其插入电池座中。



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3. Precautions for Reassembly

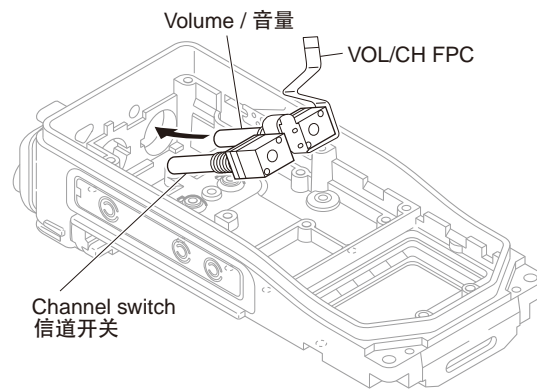
- **Installing the option board cover onto the chassis**
Install the option board cover onto the chassis using the two screws.

Note:

Confirm that there is no foreign matters on the waterproof rib of the option board cover. (Wipe it clean when foreign matters adhere to it.)

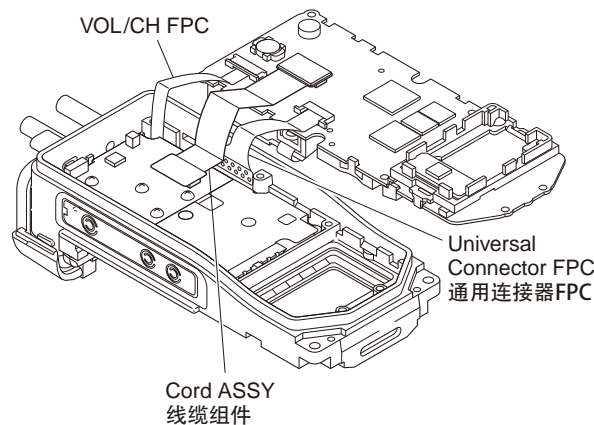
- **Inserting the Volume and Channel switch into the chassis**

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.



3. 重新组装注意事项

- 将可选板盖安装到底座
用两颗螺丝将可选板盖安装到底座上。

注意：

确认可选板盖的防水肋片上没有异物。（如有附着的异物，应将其擦干净。）

- 将音量和信道开关插入底座

将音量和信道开关插入底座，使 VOL/CH FPC 的形状如图所示。

- 确定 VOL/CH FPC，线缆组件和通用连接器 FPC 的形状
使 VOL/CH FPC，线缆组件和通用连接器 FPC 的形状如图所示。

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DISASSEMBLY FOR REPAIR / 维修拆卸

Note:

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

“——” line shows creased line on the top.

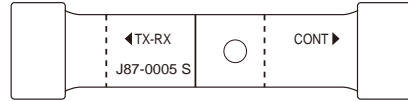
“- - -” line shows creased line on the bottom.

注意：

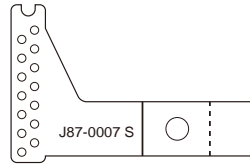
线缆组件和通用连接器 FPC 上印有折叠标志。

“——” 线表示顶部的折线。

“- - -” 线表示底部的折线。



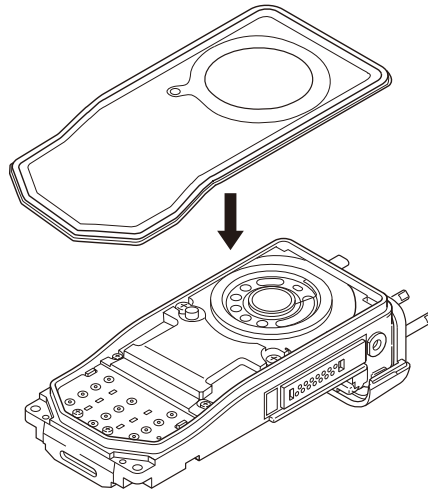
Cord ASSY
线缆组件



Universal Connector FPC
通用连接器FPC

■ Mounting the chassis onto the case

■ 将底座安装到壳体上



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

Note:

Confirm that the entire groove of the packing fits to the chassis tightly.

2. Mount the chassis onto the case ②.

Note:

After mounting the chassis onto the case, 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 packing.

1. 将衬垫安置到底座上。然后，将底座紧密装配到衬垫的凹槽内①。

注意：

确认衬垫的整个凹槽与底座紧密吻合。

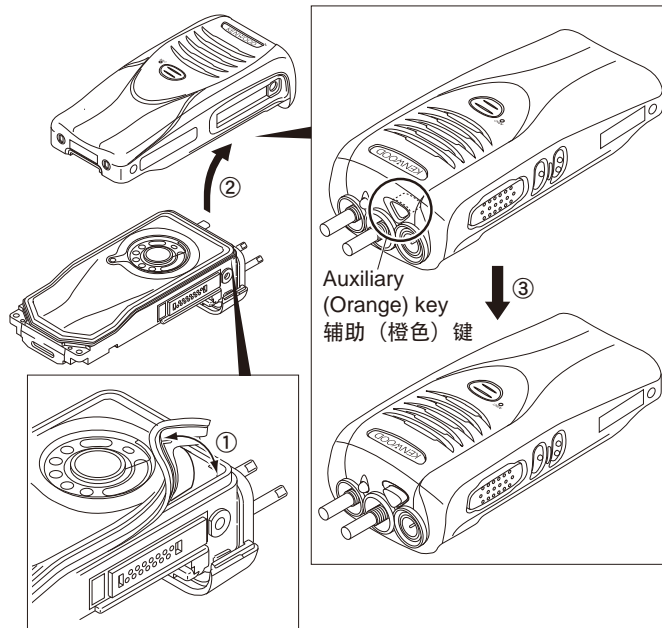
2. 将底座安装到壳体上②。

注意：

将底座安装到壳体上之后，VOL/CH 衬垫的辅助（橙色）键部分如图所示卡在壳体内，请使用末端柔软的物体（例如手指）将其恢复到正常位置③。

用镊子等尖头金属工具撬动可能会损坏衬垫。

DISASSEMBLY FOR REPAIR / 维修拆卸

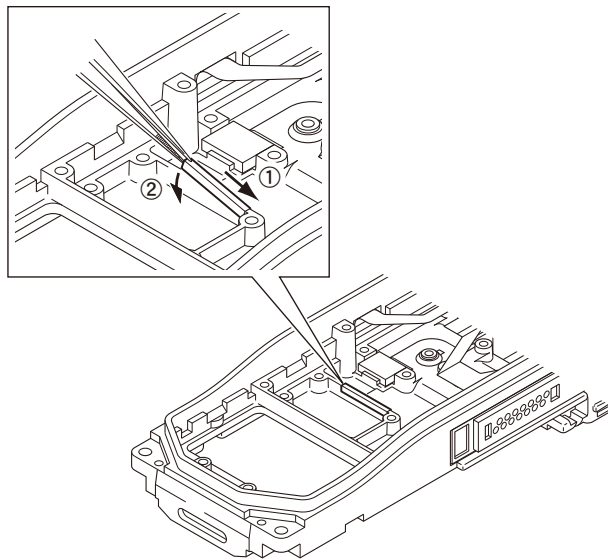


■ Relay hardware (E29-1221-14) installation procedure

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.

■ 中间硬件 (E29-1221-14) 安装操作

1. 用镊子将中间硬件的一侧装配到底座的右边角 ①。
2. 将中间硬件的另一侧装到底座的肋片 ②。



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DISASSEMBLY FOR REPAIR / 维修拆卸

■ 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 (A02-4116-03)" is changed, "Sticker (B42-7463-04)", "Badge (B43-1645-04)", "Fibrous Sheet (G10-1806-04)", "Fibrous Sheet (G10-1822-04)" and "Dressing Panel (A21-1664-03)" should be ordered and changed together because Sticker (B42-7463-04), Badge (B43-1645-04), Fibrous Sheet (G10-1806-04), Fibrous Sheet (G10-1822-04) and Dressing Panel (A21-1664-03) are non-reusable.

Main Parts		Assembled Sheet/ Cushion		
Part Name	Part Number	Part Name	Part Number	Remark
Plastic Cabinet	A02-4116-03	Sticker	B42-7463-04	"NXDN" is printed.
		Badge	B43-1645-04	"KENWOOD" is printed.
		Fibrous Sheet (SP)	G10-1806-04	
		Fibrous Sheet (MIC)	G10-1822-04	
		Dressing Panel	A21-1664-03	
Cord ASSY (50-pin FPC)	X42-3380-10	Cushion (50-pin FPC)	G13-2293-04	
Speaker	T07-0749-25	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.
Switch Unit (PTT FPC)	X41-3760-10	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	A10-4111-21	Relay Hardware (VCO-Chassis)	E29-1221-14	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 (G11-4500-04).
		Cushion (ANT)	G13-2220-04	Used for fixing the Terminal ASSY.
		Sheet (Chassis bottom)	G11-4538-04	2 pieces
Terminal Block	E72-0425-03	Adhesive Sheet (Terminal Block)	J99-0747-04	Used for fixing the Terminal Block and the Packing (Terminal Block).

DISASSEMBLY FOR REPAIR / 维修拆卸

■ 组装信息（薄片 / 缓冲垫）

更换（订购）“主要部件”时，“组装的薄片 / 缓冲垫”也应当一同更换（订购）。

标签和薄片等属于不可重复使用的部件。需使用新部件方可在维修后获得手持对讲机的性能。

例如，更换“塑料机壳（A02-4116-03）”时，“标签（B42-7463-04）”，“徽标（B43-1645-04）”，“纤维片（G10-1806-04）”，“纤维片（G10-1822-04）”和“装饰面板（A21-1664-03）”也应当一并订购和更换，因为标签（B42-7463-04），徽标（B43-1645-04），纤维片（G10-1806-04），纤维片（G10-1822-04）和装饰面板（A21-1664-03）不能重复使用。

主要部件		组装的薄片 / 缓冲垫		
零件名称	零件号	零件名称	零件号	备注
塑料机壳	A02-4116-03	标签	B42-7463-04	印有“NXDN”。
		徽标	B43-1645-04	印有“KENWOOD”。
		纤维片（SP）	G10-1806-04	
		纤维片（MIC）	G10-1822-04	
		装饰面板	A21-1664-03	
线缆组件（50 针 FPC）	X42-3380-10	缓冲垫（50 针 FPC）	G13-2293-04	
扬声器	T07-0749-25	橡胶垫（SP）	G11-4272-14	
		薄片（SP）	G11-4458-14	用于稳定防水性能。 薄片（SP）上的“·”（一个孔）表示上侧。
开关单元（PTT FPC）	X41-3760-10	薄片（PTT）	G11-4428-04	用于将掀下旋钮（PTT）固定到开关单元（PTT FPC）上，并稳定防水性能。
		黏结片（PTT FPC）	J99-0711-04	用于将开关单元（PTT FPC）固定到底座上。
底座	A10-4111-21	中间硬件（VCO-底座）	E29-1221-14	用于稳定 VCO 的屏蔽性能。
		薄片（空气）	G11-4500-04	该薄片可让空气透过，而不让水透过。
		橡胶片（FET）	G11-4429-04	用于稳定 FET 的辐射性能。
		薄片（空气）	G11-4440-04	该薄片是薄片（G11-4500-04）的防护盖。
		缓冲垫（ANT）	G13-2220-04	用于固定端子组件。
		薄片（底座底部）	G11-4538-04	两片
接线盒	E72-0425-03	黏结片（接线盒）	J99-0747-04	用于固定接线盒和衬垫（接线盒）。

NX-300S

CIRCUIT DESCRIPTION / 电路说明

1. Overview

The NX-300S is a UHF portable transceiver designed to operate in the frequency range of 400 to 470MHz. The unit consists of receiver, transmitter, phase-locked loop (PLL) frequency synthesizer, baseband 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.

1. 概述

NX-300S 为 UHF 便携式手持对讲机，设计用于 400 至 470MHz 的频率范围。该设备由接收机，发射机，锁相环 (PLL) 频率合成器，基带部分，电源和控制电路组成。

2. 频率构成

接收机为二次变频超外差方式，使用的第一中频 (IF) 为 58.05MHz，第二中频为 450kHz。天线接收到的信号与 PLL 电路的本振信号混频，从而产生第一个 58.05MHz 的中频。然后与第二个 57.6MHz 的本地振荡器输出信号混频，进而产生第二个 450kHz 的中频。发射的信号频率由 PLL VCO 生成，并经 DSP 信号调制。最后，该信号频率经过放大并发送到天线。

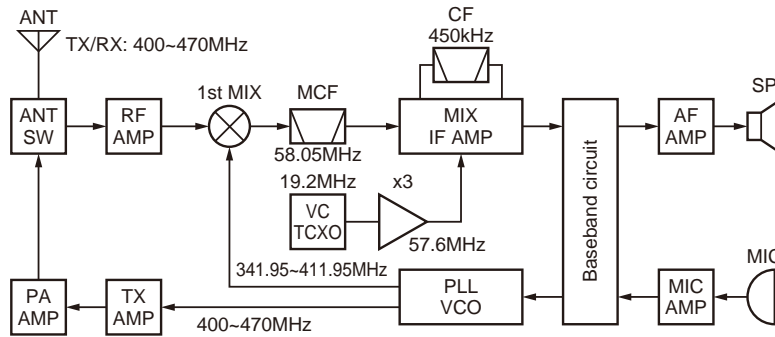


Fig. 1 Frequency configuration / 图 1 频率构成

CIRCUIT DESCRIPTION / 电路说明

3. Receiver System

3-1. RF Circuit

An incoming RF signal from the antenna terminal is passed through the antenna switch (D606, D607, D709, D711) and then the bandpass filter (L721, L722). 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 (Q705), and passed through the bandpass filter (L713, L714, L715). The resulting signal is applied to the first mixer (Q703), 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 (XF700) to reject adjacent channel signals. The filtered first IF signal is amplified by the first IF amplifier (Q701) and then applied to the IF system IC (IC701). 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 (CF700) 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 (CF701) and operational amplifier (IC700).

3. 接收部系统

3-1. RF 电路

天线端子接收到的 RF 信号依次通过天线开关 (D606, D607, D709 和 D711) 和带通滤波器 (L721, L722)。带通滤波器经由可变电容器调整。可变电容器的输入电压经由数模转换器 (IC703) 的输出电压调整。随后, 信号被 RF 放大器 (Q705) 放大, 然后通过带通滤波器 (L713, L714, L715)。最终的信号被运用到第一混频器 (Q703)。在该混频器中, 信号与频率合成器输出的第一本地振荡器信号混频, 从而产生第一中频 (58.05MHz)。

3-2. 中频电路

第一中频信号经过一个四极的单片晶体滤波器 (XF700) 以消除临近信道的信号。滤波后的第一中频信号经过第一中频放大器 (Q701) 的放大后, 加到中频系统 IC (IC701) 上。中频系统 IC 提供一个第二混频器, AGC 放大器和 RSSI (接收信号强度指示器)。

第二混频器混合第一中频信号及 57.6MHz 的第二本地振荡器输出, 生成 450kHz 的第二中频信号。

第二中频信号通过陶瓷滤波器 (CF700) 以消除临近信道的信号。滤波后的信号由 AGC 放大器进行放大。

AGC 放大器的信号通过陶瓷滤波器 (CF701) 和运算放大器 (IC700) 输入 ASIC (IC108)。

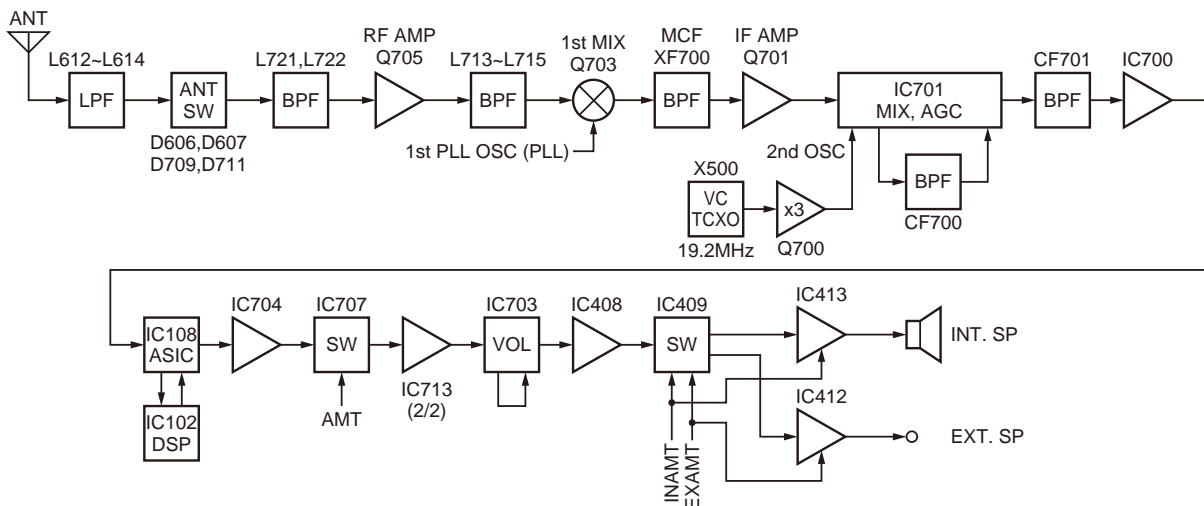


Fig. 2 RF and IF circuit / 图 2 RF 和 IF 电路

CIRCUIT DESCRIPTION / 电路说明

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 IC102 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.

3-3. 音频放大器电路

FM模式的音频处理（高通滤波器，低通滤波器，去加重等）和NXDN模式的解码由DSP进行处理。IC108和IC102的音频信号通过放大器（IC704）。然后，信号通过静音开关（IC707），放大器（IC713），电子音量控制器（IC703）和AF放大器（IC408）。

繁忙时，AMT变低以开启IC707，信号被送到AF开关。INAMT变高时，AF开关（IC409）选择内部扬声器，音频信号被送到内部音频功率放大器（IC413），并输出到内部扬声器。而EXAMT变高时，AF开关（IC409）选择外部扬声器，音频信号被送到外部音频功率放大器（IC412），并输出到外部扬声器。INAMT或EXAMT变高时，IC413和IC412的电源开启。

扬声器由通用连接器上的扬声器切换端子SSW的逻辑进行切换。未安装SP-MIC时，SSW变高。IC108检测SSW的逻辑并启动INAMT或EXAMT。

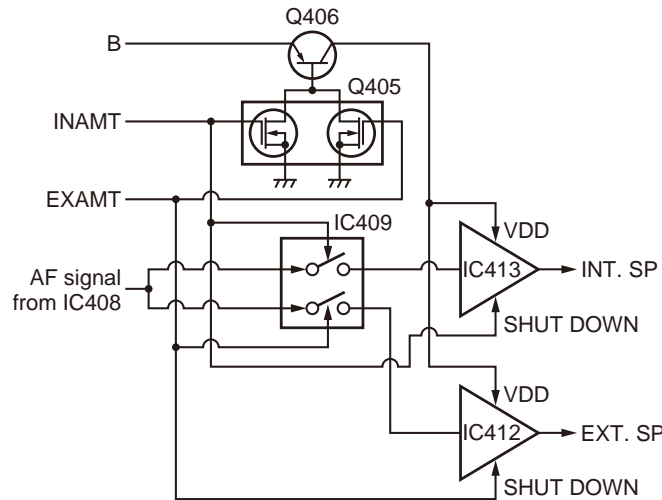


Fig. 3 Audio amplifier circuit / 图3 音频放大器电路

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.

3-4. 静噪电路

通过BPF电路滤波后，该电路放大IC108的已解调噪声信号。随后，放大的信号由检测电路转换为DC信号。转换的信号被反馈给IC108。

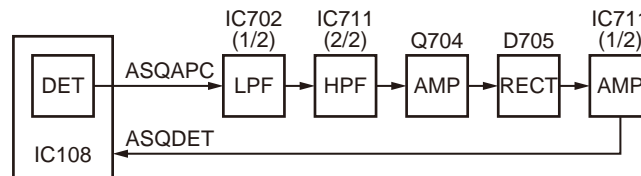


Fig. 4 Squelch circuit / 图4 静噪电路

CIRCUIT DESCRIPTION / 电路说明

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. Baseband Circuit

The audio signal output from the baseband circuit is converted to digital data with a sampling frequency of 48kHz. This digital data is sent to the DSP (IC102), 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 baseband signal and output from IC108. The DTMF and MSK baseband signals are also generated by the DSP and output by IC108.

LPF (IC705) works as a smoothing filter. The DAC (IC703) assigns the baseband signal to the VCO and VCTCXO (X500). At this time, the level output according to the transmit carrier is fine-adjusted according to each modulation method.

4. 发射部系统

4-1. 音频频带电路

内部麦克风的信号通过静音开关 (Q5)。如未连接 SP-MIC, 则通用连接器上的麦克风切换端子 (MSW) 变为高, 同时静音开关 (Q5) 打开。如连接 SP-MIC, MSW 在 SP-MIC 内部与 GND 连接。因此, Q5 关闭, 内部麦克风静音, 仅外部麦克风的输入被提供到麦克风放大器。麦克风的信号通过静音开关 (Q707), 由 IC716 (1/2) 进行放大, 并由 AGC 电路限幅。AGC 电路由 D703, D704, Q705 和 Q706 组成。

4-2. 基带电路

从基带电路输出的音频信号被转换为取样频率为 48kHz 的数字信号。该数字信号被发送给 DSP (IC102), 300Hz 或更低的语音信号和 3kHz 或更高的频率被截止, 并选取 300Hz 至 3kHz 的音频范围。然后, 音频信号以 FM 模式预加重, 并与所需的 QT 和 DQT 等信号合成, 然后从 IC108 输出。在数字模式下, 音频信号被转换为 4 级 FSK 基带信号, 从 IC108 输出。DTMF 和 MSK 基带信号也由 DSP 生成并由 IC108 输出。

LPF (IC705) 用作平滑滤波器。DAC (IC703) 将基带信号分配到 VCO 和 VCTCXO (X500)。此时, 将按照各自的调制方式对按照发射载波输出的电平进行微调。

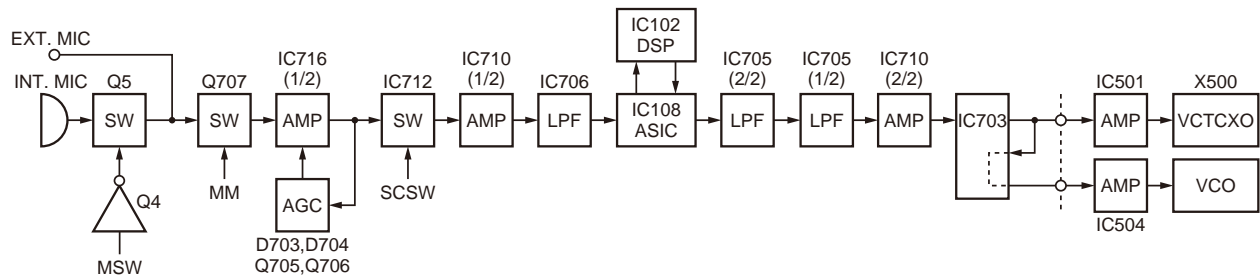


Fig. 5 Audio band and Baseband circuit / 图 5 音频频带和基带电路

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.

4-3. VOX (声控发射)

IC716 (2/2) 放大麦克风采集的音频信号。然后, 信号由 D706 进行整流, 转换为 DC 电压。DC 电压激活 ASIC (IC108), VOX 启动。

4-4. Drive and Final Amplifier

The signal from the T/R switch (D601 is on) is amplified by the drive amplifier (Q601, Q602 and Q603) to 25~27dBm. The output of the drive amplifier is amplified by the RF power amplifier (Q606) to 5.0W (1W when the power is low). The RF power amplifier is MOS FET. The output of the RF power amplifier is then passed through the harmonic filter (LPF) and antenna switch (D606, D607 are on) and applied to the antenna terminal.

4-4. 驱动和末级放大器

来自 T/R 开关 (D601 打开) 的信号由驱动放大器 (Q601, Q602 和 Q603) 放大到 25 ~ 27dBm。驱动放大器的输出由 RF 功率放大器 (Q606) 放大到 5.0W (当功率低时为 1W)。RF 功率放大器为 MOS FET。RF 功率放大器的输出随之通过谐波滤波器 (LPF) 及天线开关 (D606, D607 打开), 然后加到天线端子上。

4-5. APC Circuit

The APC circuit always monitors the current flowing through the RF power amplifier (Q606) and keeps a constant current. The voltage drop at R642, R645 and R647 is caused by the current flowing through the RF power amplifier and this voltage is applied to the differential amplifier (IC600 1/2). IC600 (2/2) compares the output voltage of IC600 (1/2) with the reference voltage from IC108, and the output of IC600 (2/2) controls the VGG of Q602, Q603 and Q606 to make the both voltages the same. The change of power high/low is carried out by the change of the reference voltage. Q607, Q608 and Q610 are turned on and Q604 and Q605 are turned off in transmit and the APC circuit is active.

4-5. APC 电路

APC 电路随时监测通过 RF 功率放大器 (Q606) 的电流, 并保持恒定电流。R642, R645 及 R647 的压降是由通过 RF 功率放大器的电流所形成的, 并且该电压加到差分放大器 (IC600 1/2)。IC600 (2/2) 比较 IC600 (1/2) 的输出电压及 IC108 的基准电压, 同时 IC600 (2/2) 的输出对 Q602, Q603 及 Q606 的 VGG 进行控制, 使两个电压相同。功率高 / 低的变化通过基准电压的变化来执行。在发射时 Q607, Q608 及 Q610 打开, Q604 和 Q605 关闭, 同时 APC 电路激活。

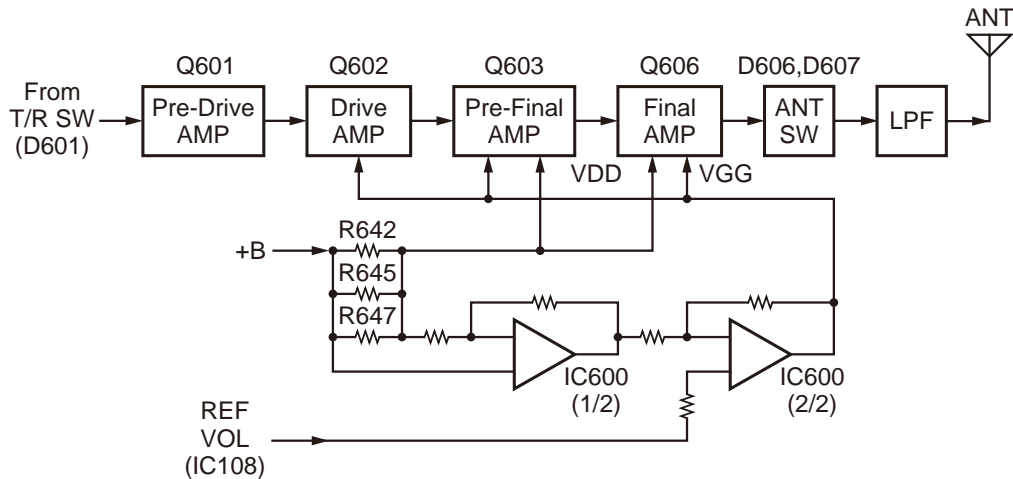


Fig. 6 Drive and final amplifier and APC circuit / 图 6 驱动和末级放大器和 APC 电路

CIRCUIT DESCRIPTION / 电路说明

5. PLL Frequency Synthesizer

5-1. VCTCXO (X500)

VCTCXO (X500) generates a reference frequency of 19.2MHz for the PLL frequency synthesizer. This reference frequency is applied to pin 9 of the PLL IC (IC502) and connected to the IF circuit as a 2nd local signal through the Tripler (Q700). The VCTCXO oscillation frequency is determined by the DC voltage of the VC terminal. The VC voltage is fixed to 1.65V by R500 and R501, and supplied to the VC terminal through IC501. The modulation signal is also fed to the VC terminal through IC501.

The frequency adjustment is achieved by switching the ratio of the dividing frequency that is not adjusted by the DC voltage impressed to the VC. The resolution of the adjusting frequency is approximately 4Hz.

5-2. VCO

There is a RX VCO and a TX VCO.

The TX VCO (Q509) generates a transmit carrier and the RX VCO (Q508) generates a 1st local signal. For the VCO oscillation frequency, the transmit carrier is 400 to 470MHz and the 1st local signal is 341.95 to 411.95MHz.

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 (IC502) 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.

5-3. PLL IC (IC502)

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. PLL 频率合成器

5-1. VCTCXO (X500)

VCTCXO (X500) 为 PLL 频率合成器产生 19.2MHz 的基准频率。该基准频率被施加到 PLL IC (IC502) 的第 9 针，作为第 2 本振信号通过三倍频器 (Q700) 后送到 IF 电路。VCTCXO 振荡频率由 VC 端子的 DC 电压决定。VC 电压由 R500 和 R501 固定为 1.65V，通过 IC501 施加于 VC 端子。调制信号也通过 IC501 送入 VC 端子。

通过切换未经外加到 VC 的 DC 电压调整的分割频率的比率，实现频率调整。调整频率的分辨率约为 4Hz。

5-2. VCO

有一个 RX VCO 和一个 TX VCO。

TX VCO (Q509) 生成发射载波，RX VCO (Q508) 生成第 1 本振信号。对于 VCO 振荡频率，发射载波为 400 到 470MHz，第 1 本振信号为 341.95 到 411.95MHz。

VCO 振荡频率由一个操作切换端子 "T/R" 系统和两个电压控制端子 "CV" 和 "ASSIST" 系统决定。

操作切换端子 "T/R" 由 ASIC (IC108) 输出的控制线路 (/T_R) 进行控制。/T_R 逻辑较低时，VCO 输出发射载波，较高时，输出第 1 本地接收信号。

电压控制端子 "CV" 和 "ASSIST" 由 PLL IC (IC502) 和 ASIC (IC108) 控制，输出频率根据施加的电压持续改变。对于调制输入端子 "VCO_MOD"，输出频率根据施加的电压改变。籍此调制 VCO 输出。"VCO_MOD" 仅在 "/T_R" 低时工作。

5-3. PLL IC (IC502)

PLL IC 对比 VCO 振荡频率和 VCTCXO 基准频率的相位差，将相位差返回 VCO CV 端子，实现返回控制的 "锁相环路"。这可以使 VCO 振荡频率与所需的频率精确匹配 (锁定)。

频率由 PLL 控制时，频率锁定时间将随着设定频率改变时频率差的增大而增加。为对此进行补充，在由 PLL IC 控制之前使用 ASIC 以使 VCO 振荡频率接近所需的频率。因此，VCO CV 的电压不变，始终稳定在约 2.5V。

PLL IC 的所需电压由 ASIC (IC108) 通过 3 线路 "SDO1"，"SCK1"，"/PCS_RF" 串行总线进行设置。PLL IC 是否锁定由 ASIC 通过 "PLD" 信号线路进行监测。如果 VCO 不是所需的频率 (失锁)，则 "PLD" 逻辑较低。

5-4. Local Switch (D600, D601)

The connection destination of the signal output from the buffer amplifier (Q600) is changed with the diode switch (D601) that is controlled by the transmission power supply, 50T, and the diode switch (D600) that is controlled by the receive power supply, 50R. If the 50T logic is high, it is connected to a send-side pre-drive (Q601). If the 50T logic is low, it is connected to a receive-side mixer (Q703).

5-4. 本振开关 (D600, D601)

缓冲放大器 (Q600) 输出信号的连接目标由二极管开关 (D601) (由发射电源 50T 控制) 和二极管开关 (D600) (由接收电源 50R 控制) 进行改变。如果 50T 逻辑高, 则它被连接到发送侧预驱动 (Q601)。如果 50T 逻辑低, 则它被连接到接收侧混频器 (Q703)。

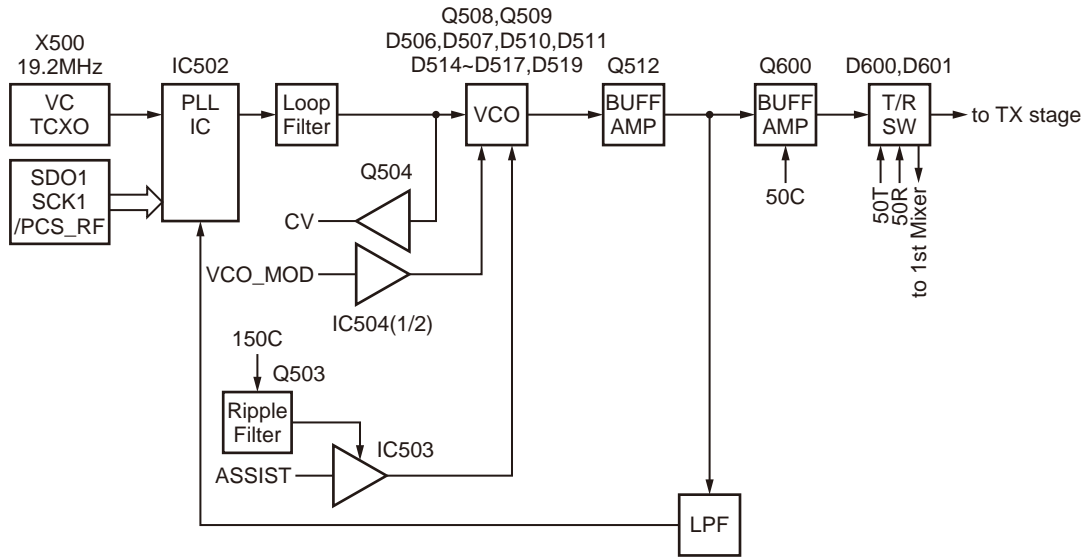


Fig. 7 PLL block diagram / 图 7 PLL 结构图

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, and the control circuit and transfers data to or from an external device.

6. 控制电路

控制电路由 ASIC (IC108) 和外围电路组成。IC108 主要有以下功能：

- 1) 由输入的 PTT 信号切换发射和接收。
- 2) 从存储电路读取系统, 区域, 频率和编程数据。
- 3) 将频率数据发送到 PLL。
- 4) 由静噪电路的 DC 电压控制静噪的开 / 关。
- 5) 由输入的解码数据控制音频静音电路。

6-1. ASIC

ASIC (IC108) 是一个 32 位 RISC 处理器, 具备外围功能和 ADC/DAC。

该 ASIC 以 18.432MHz 时钟和 3.3V/1.5V DC 运行。它控制闪存, SRAM, DSP, 接收电路, 发射机电路, 控制电路以及显示电路, 并与外部设备双向传输数据。

CIRCUIT DESCRIPTION / 电路说明

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(C)), 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.

6-3. 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.

6-4. 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.

6-2. 存储电路

存储电路由 ASIC (IC108), SRAM (IC103) 和闪存 (IC101) 组成。闪存具有 32M 位的容量, 包含 ASIC 的手持对讲机控制程序并储存数据。它也保存手持对讲机信道的数据和由 FPU 写入的操作参数。此程序很容易从外部设备写入。SRAM 具有 1M 位的容量, 包含工作区和数据区。

■ 闪存

注意: 闪存可储存由 FPU (KPG-111D (C)) 写入的数据, 调谐数据 (频偏, 静噪等) 以及固件程序 (用户模式, 测试模式, 调谐模式等)。更换闪存后, 此数据必须重写。

■ SRAM (静态存储器)

注意: SRAM 含有临时数据区和工作区。当电源关闭时, 则以内部二次锂电池作为后备电源。因此, 保存的数据不会丢失。

6-3. 按键检测电路

按键用 IC108 中的按键扫描电路进行检测。按任意按键时, 通常降低的 /KEYI* 信号会升高。

6-4. 低电池电量警告

电池电压用 R444 和 R445 进行分割, 由 ASIC (IC108) 进行检测。当电池电压下降到由低电池电量警告调整设定的电压以下时, 红色 LED 闪烁, 通知操作者应当更换电池了。如果电池电压进一步下降 (约 5.8V), 则会响起提示音, 发射将停止。

低电池电量警告	电池状态
发射期间红色 LED 闪烁。	电池电压低, 但手持对讲机仍可使用。
按下 PTT 开关时, 红色 LED 闪烁并响起警告音。	电池电压低, 不能使用手持对讲机进行呼叫。

6-5. DSP

The DSP circuit consists of a DSP (IC102) and processes the baseband 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 (F900), and goes to the RF final amplifier, AVR ICs (IC902, IC903), and Control unit (X53-443).

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 Q901 on the TX-RX unit (SB3) are turned on. IC901 and IC903 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, IC902 (50C) operates. The output of IC902 is connected to three FET switches (Q902, Q903, Q905). When the SBC signal becomes High, IC903 (33C) operates. The FET switches are controlled by the CPU. Q905 (50T) is turned on in transmit mode. Q902 (50R) and Q903 (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 SBC signal to Low. Then the power supplies except IC416 (31BU) stop.

6-5. DSP

DSP 电路由 DSP (IC102) 组成, 可处理基带信号。DSP 在 18.432MHz 的外部时钟上运行 (与 IC108 相同), I/O 部分以 3.3V 运行, 核心部分以 1.5V 运行。DSP 执行以下处理:

- 4 级 FSK 处理
- 模拟 FM 预加重 / 去加重
- 音频编解码器和调制 / 解调之间的声码器处理
- CAI 处理, 例如纠错编码
- QT/DQT 编码 / 解码
- LTR 编码 / 解码
- DTMF 编码 / 解码
- MSK 编码 / 解码
- 2 音编码 / 解码
- 压缩器 / 扩展器处理
- 语音扰频器处理
- 发射 / 接收音频滤波处理
- 麦克风放大器 AGC 处理
- 音频静音处理
- 调制电平处理

7. 电源电路

电池电压 (+B) 从收发单元 (X57) 上的电池端子提供。电池电压通过 2.5A 保险丝 (F900), 进入 RF 末级放大器, AVR IC (IC902, IC903) 和控制单元 (X53-443)。

在控制单元中, +B 被连接到 DC/DC (IC407), AVR IC (IC411, IC708, IC416) 和电压检测器 IC (IC414)。电压检测器观测电池电压。如果电池电压为 5.6V 或更高, 则检测器输出高。IC414 的输出高时, IC416 和 Q409 为后备部分提供 3.1V (31BU)。

VOL SW 打开时, SB1 变高 (电池电压)。如果 SB1 和检测器的输出都很高, DC/DC (IC407) 将会运行。IC407 输出 3.8V 并激活 IC404 (33M), IC717 (15M) 和 IC406 (33A)。从而使 ASIC 和 DSP 运行。

SBC 信号在 ASIC 运行后变高, 控制单元 (SB2) 上的 IC708 (5A), Q901 和收发单元 (SB3) 上的 Q403 打开。IC901 和 IC903 通过打开这些 AVR IC 和 FET 开关运行。

通用连接器上装有选购件时, 5UC 信号变高。此时 IC411 (50U) 运行。

/SAVE 信号变高时, IC902 (50C) 运行。IC902 的输出连接到三个 FET 开关 (Q902, Q903, Q905)。SBC 信号变高时, IC903 (33C) 运行。FET 开关由 ASIC 控制。发射模式中打开 Q905 (50T)。接收模式中打开 Q902 (50R) 和 Q903 (50IF)。

VOL SW 关闭时, /PSW 信号变低。检测 /PSW 信号之后, ASIC 将 SBC 信号改为低。随后除 IC416 (31BU) 以外的供电停止。

CIRCUIT DESCRIPTION / 电路说明

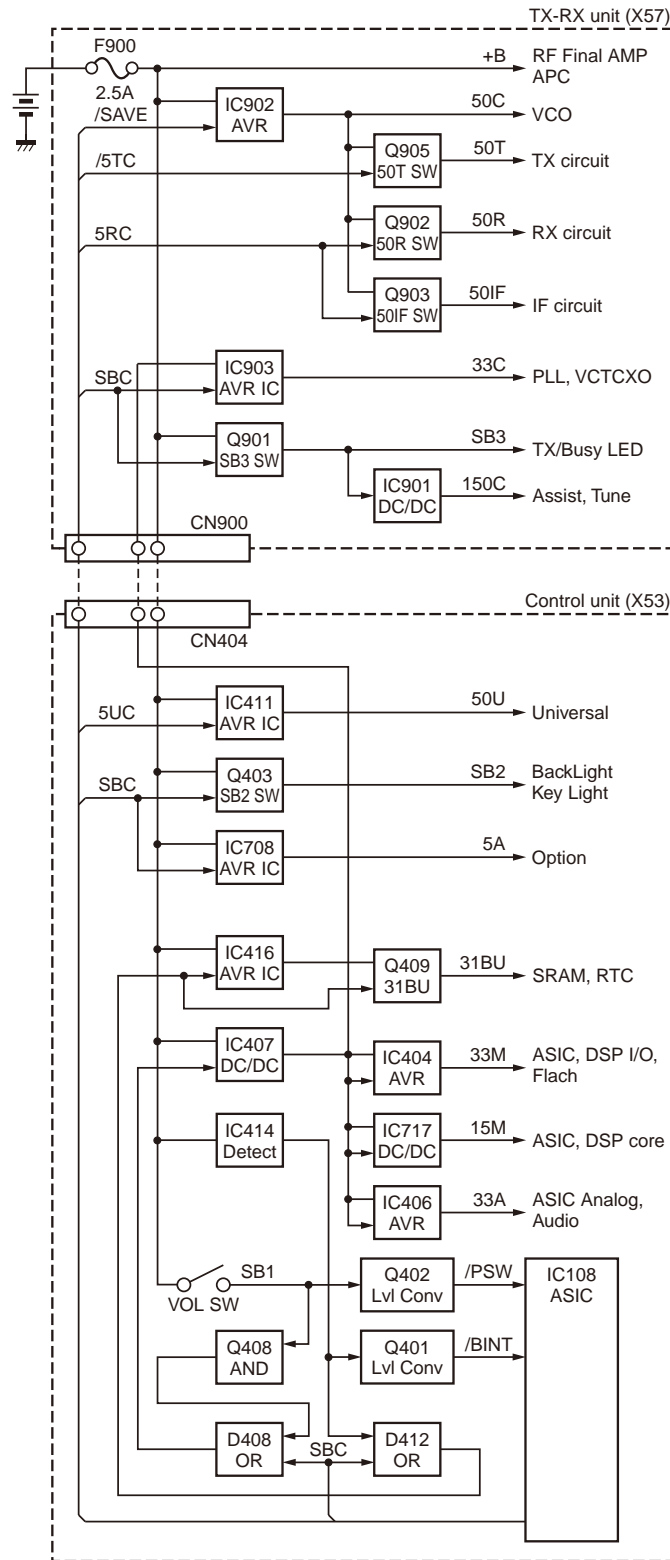


Fig. 8 Power supply circuit / 图 8 电源电路

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 and VCXO (X500). 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 and VCXO. 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. Compander Circuit

The term “compander” means compressor and expander. The compander reduces noise by utilizing a compressor and an expander. The transceiver contains a DSP (IC102) to perform this operation. The transceiver compander can be turned on or off using the FPU.

8. 信令电路

8-1. 编码 (QT/DQT/LTR/DTMF/2 音 /MSK)

QT, DQT, LTR, DTMF, 2 音和 MSK 的各信令信号由 DSP 电路产生, 叠加到调制信号上并从 IC108 输出。QT/DQT/LTR 信号的调制平衡由数模转换器 (IC703) 进行调整, 产生的信号送入 VCO 和 VCXO (X500) 的调制输入。TX QT, DQT, LTR, DTMF, 2 音和 MSK 音各自的频偏通过 IC108 输出电平的变化进行调整, 产生的信号被送入 VCO 和 VCXO。RX DTMF 音被送入接收音频信号系统, 从扬声器输出。

8-2. 解码 (QT/DQT/LTR/DTMF/2 音 /MSK)

音频信号从发送到 DSP 电路的 FM 检测信号中移除, 产生的信号被解码。

9. 压扩器电路

“compander” 一词表示压缩器和扩展器。压扩器利用压缩器和扩展器减低噪音。手持对讲机含有 DSP (IC102), 用以执行此操作。可用 FPU 打开或关闭手持对讲机的压扩器。

COMPONENTS DESCRIPTION / 元件说明

Control unit (X53-4433-01)

Ref. No.	Part Name	Description
IC101	IC	Flash memory
IC102	IC	DSP
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
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)
Q4	FET	MIC mute control
Q5	FET	MIC mute 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

控制单元 (X53-4433-01)

有关号码	零件名称	说 明
IC101	IC	闪存
IC102	IC	DSP
IC103	IC	SRAM
IC104	IC	2 输入 AND 栅
IC105	IC	复位
IC106	IC	RTC
IC107	IC	缓冲器
IC108	IC	ASIC
IC109	IC	2 输入 AND 栅
IC404	IC	稳压器 (33M)
IC406	IC	稳压器 (33A)
IC407	IC	DC/DC 转换器
IC408	IC	AF 放大器
IC409	IC	AF 开关
IC411	IC	稳压器 (50U)
IC412, 413	IC	音频放大器
IC414	IC	复位
IC415	IC	2 输入 AND 栅
IC416	IC	稳压器
IC417, 418	IC	双总线缓冲器
IC701	IC	I/O 控制
IC702	IC	APC LPF
IC703	IC	数模转换器
IC704	IC	RX AF LPF
IC705	IC	调制 LPF
IC706	IC	麦克风放大器
IC707	IC	RX AF 开关
IC708	IC	稳压器 (5A)
IC709	IC	侧音静音
IC710	IC	调制 / 麦克风加法放大器
IC711	IC	静噪 BPF / 静噪直流放大器
IC712	IC	麦克风开关
IC713	IC	1.65V REF/RX 加法放大器
IC714	IC	OPT 开关
IC715, 716	IC	VOX 放大器
IC717	IC	DC/DC 转换器 (15M)
Q4	场效应管	麦克风静音控制
Q5	场效应管	麦克风静音开关
Q401, 402	场效应管	电平转换器
Q403	晶体管	SB2 开关
Q404	场效应管	SB2 开关控制
Q405	场效应管	AF 放大器开关
Q406, 407	晶体管	稳压器 (AF 放大器)
Q408, 409	晶体管	直流开关

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COMPONENTS DESCRIPTION / 元件说明

Ref. No.	Part Name	Description
Q410	FET	DC switch
Q411	FET	Level converter
Q412	FET	DC switch control
Q413~415	Transistor	DC 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
D12~16	Diode	Reverse current prevention
D17~21	Zener diode	Surge absorption
D22,23	Diode	Surge absorption
D102	Diode	Reverse current prevention
D401~404	Diode	Key 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

有关号码	零件名称	说明
Q410	场效应管	直流开关
Q411	场效应管	电平转换器
Q412	场效应管	直流开关控制
Q413 ~ 415	晶体管	直流开关
Q702	场效应管	音调开关
Q703	场效应管	宽 / 窄噪音开关
Q704	晶体管	静噪噪音放大器
Q705, 706	晶体管	麦克风 AGC
Q707	场效应管	麦克风静音
D12 ~ 16	二极管	逆向电流防止
D17 ~ 21	稳压二极管	电涌吸收
D22, 23	二极管	电涌吸收
D102	二极管	逆向电流防止
D401 ~ 404	二极管	键控制
D405, 406	二极管	DC/DC 转换器
D407	二极管	过电压防护
D408	二极管	DC/DC 转换器控制
D409, 410	二极管	扬声器控制
D411	二极管	RTC BATT 控制
D412	二极管	直流开关控制
D413	二极管	RTC BATT 控制
D414, 415	二极管	逆向电流防止
D416	二极管	33M 控制
D417	二极管	33A 控制
D701	二极管	5A 开关
D702	二极管	PLD 控制
D703, 704	二极管	检测器
D705	二极管	噪声检测
D706	二极管	VOX 检测
D707	二极管	VOX

COMPONENTS DESCRIPTION / 元件说明

TX-RX unit (X57-7830-11)

Ref. No.	Part Name	Description
IC404	IC	OP AMP (RSSI/VAGC)
IC500	IC	Temperature sensor
IC501	IC	AF AMP for TCXO MOD
IC502	IC	PLL IC
IC503	IC	DC AMP for VCO tune
IC504	IC	OP AMP (VCO MOD/APC)
IC600	IC	Auto power control
IC700	IC	Buffer
IC701	IC	FM IC
IC702,703	IC	DC AMP for BPF
IC900	IC	50T control
IC901	IC	DC/DC converter
IC902	IC	Voltage regulator (50C)
IC903	IC	Voltage regulator (33C)
Q503	Transistor	Ripple filter
Q504	FET	Buffer AMP
Q507	Transistor	Ripple filter
Q508,509	FET	VCO oscillation
Q510,511	FET	T/R switch
Q512,600	Transistor	Buffer AMP
Q601	Transistor	Pre-drive AMP
Q602	FET	Drive AMP
Q603	FET	Pre-final AMP
Q604	Transistor	APC switch
Q605	FET	APC switch
Q606	FET	RF final AMP
Q607	Transistor	APC switch
Q608	FET	APC switch
Q610	Transistor	APC switch
Q700	Transistor	2nd Local tripler
Q701	Transistor	IF AMP
Q703	FET	Mixer
Q704	Transistor	Ripple filter
Q705	FET	RF AMP
Q706	FET	RF AGC
Q900	Transistor	TX/RX LED switch
Q901	FET	SB3 switch
Q902	FET	50R switch
Q903	FET	50IF switch
Q904	FET	DC/DC converter switch
Q905	Transistor	50T switch
D501	Diode	Ripple filter
D505	Diode	Bypass diode

收发单元 (X57-7830-11)

有关号码	零件名称	说 明
IC404	IC	OP 放大器 (RSSI/VAGC)
IC500	IC	温度传感器
IC501	IC	TCXO 调制的 AF 放大器
IC502	IC	PLL IC
IC503	IC	VCO 调谐用直流放大器
IC504	IC	OP 放大器 (VCO 调制 /APC)
IC600	IC	自动电源控制
IC700	IC	缓冲器
IC701	IC	FM IC
IC702, 703	IC	BPF 的直流放大器
IC900	IC	50T 控制
IC901	IC	DC/DC 转换器
IC902	IC	稳压器 (50C)
IC903	IC	稳压器 (33C)
Q503	晶体管	纹波滤波器
Q504	场效应管	射频缓冲放大器
Q507	晶体管	纹波滤波器
Q508, 509	场效应管	VCO 振荡
Q510, 511	场效应管	收发开关
Q512, 600	晶体管	射频缓冲放大器
Q601	晶体管	预驱动放大器
Q602	场效应管	驱动放大器
Q603	场效应管	预末级放大器
Q604	晶体管	APC 开关
Q605	场效应管	APC 开关
Q606	场效应管	RF 末级放大器
Q607	晶体管	APC 开关
Q608	场效应管	APC 开关
Q610	晶体管	APC 开关
Q700	晶体管	第二本振三倍频器
Q701	晶体管	IF 放大器
Q703	场效应管	混频器
Q704	晶体管	纹波滤波器
Q705	场效应管	射频放大器
Q706	场效应管	RF AGC
Q900	晶体管	收发 LED 开关
Q901	场效应管	SB3 开关
Q902	场效应管	50R 开关
Q903	场效应管	50IF 开关
Q904	场效应管	DC/DC 转换器开关
Q905	晶体管	50T 开关
D501	二极管	纹波滤波器
D505	二极管	旁路二极管

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COMPONENTS DESCRIPTION / 元件说明

Ref. No.	Part Name	Description
D506,507, D510,511	Variable capacitance diode	Frequency control
D514~517	Variable capacitance diode	Frequency control
D518	Diode	Ripple filter
D519	Variable capacitance diode	TX modulation
D600,601	Diode	Local switch
D604	Zener diode	APC switch
D605	Zener diode	APC protect
D606,607	Diode	Antenna switch
D611,700	Diode	Ripple filter
D702~704	Variable capacitance diode	Vari-cap tune
D705	Diode	RF AGC
D706,708	Variable capacitance diode	Vari-cap tune
D709	Diode	Antenna switch
D710	Variable capacitance diode	Vari-cap tune
D711	Diode	Antenna switch
D900	LED	TX/RX LED
D901	Diode	Reverse protection
D902	Diode	50T control

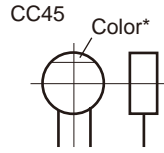
有关号码	零件名称	说明
D506, 507, D510, 511	可变电容二极管	频率控制
D514 ~ 517	可变电容二极管	频率控制
D518	二极管	纹波滤波器
D519	可变电容二极管	TX 调制器
D600, 601	二极管	本振开关
D604	稳压二极管	APC 开关
D605	稳压二极管	APC 保护
D606, 607	二极管	天线开关
D611, 700	二极管	纹波滤波器
D702 ~ 704	可变电容二极管	变容二极管调谐
D705	二极管	RF AGC
D706, 708	可变电容二极管	变容二极管调谐
D709	二极管	天线开关
D710	可变电容二极管	变容二极管调谐
D711	二极管	天线开关
D900	LED	收发 LED
D901	二极管	逆向保护
D902	二极管	50T 控制

PARTS LIST / 零件表

CAPACITORS

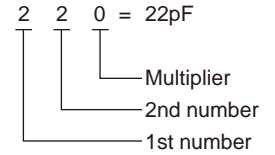
C C 4 5 T H 1 H 2 2 0 J
1 2 3 4 5 6

- 1 = Type ... ceramic, electrolytic, etc.
- 2 = Shape ... round, square, etc.
- 3 = Temp. coefficient
- 4 = Voltage rating
- 5 = Value
- 6 = Tolerance



• Capacitor value

- 010 = 1pF
- 100 = 10pF
- 101 = 100pF
- 102 = 1000pF = 0.001μF
- 103 = 0.01μF



• Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	-80	-150	-220	-330	-470	-750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = -470±60ppm/°C

• Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40 -20	+80 -20	+100 -0	More than 10μF : -10~+50 Less than 4.7μF : -10~+75

(Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

• Voltage rating

2nd word \ 1st word	A	B	C	D	E	F	G	H	J	K	V
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	-
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	-
3	1000	1250	1600	2000	2500	2150	4000	5000	6300	8000	-

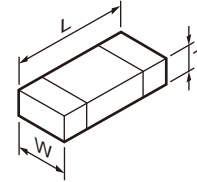
• Chip capacitors

(EX) C C 7 3 F S L 1 H 0 0 0 J
1 2 3 4 5 6 7
(Chip) (CH, RH, UJ, SL)

(EX) C K 7 3 F F 1 H 0 0 0 Z
1 2 3 4 5 6 7
(Chip) (B, F)

- Refer to the table above.
- 1 = Type
- 2 = Shape
- 3 = Dimension
- 4 = Temp. coefficient
- 5 = Voltage rating
- 6 = Value
- 7 = Tolerance

• Dimension



Chip capacitor

Code	L	W	T
Empty	5.6±0.5	5.0±0.5	Less than 2.0
A	4.5±0.5	3.2±0.4	Less than 2.0
B	4.5±0.5	2.0±0.3	Less than 2.0
C	4.5±0.5	1.25±0.2	Less than 1.25
D	3.2±0.4	2.5±0.3	Less than 1.5
E	3.2±0.2	1.6±0.2	Less than 1.25
F	2.0±0.3	1.25±0.2	Less than 1.25
G	1.6±0.2	0.8±0.2	Less than 1.0
H	1.0±0.05	0.5±0.05	0.5±0.05

Chip resistor

Code	L	W	T
E	3.2±0.2	1.6±0.2	1.0
F	2.0±0.3	1.25±0.2	1.0
G	1.6±0.2	0.8±0.2	0.5±0.1
H	1.0±0.05	0.5±0.05	0.35±0.05

• Rating wattage

Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/6W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

RESISTORS

• Chip resistor (Carbon)

(EX) R D 7 3 E B 2 B 0 0 0 J
1 2 3 4 5 6 7
(Chip) (B, F)

• Carbon resistor (Normal type)

(EX) R D 1 4 B B 2 C 0 0 0 J
1 2 3 4 5 6 7

- 1 = Type
- 2 = Shape
- 3 = Dimension
- 4 = Temp. coefficient
- 5 = Rating wattage
- 6 = Value
- 7 = Tolerance

NX-300S

PARTS LIST / 零件表

* New Parts. △ indicates safety critical components.

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

* 新零件。△代表对安全至关重要的零件。

我们不会提供没有零件号的零件。

L : Scandinavia

Y : PX (Far East, Hawaii)

C : China

K : USA

T : England

X : Australia

P : Canada

E : Europe

M : Other Areas

NX-300S

CONTROL UNIT (X53-4433-01)

Ref. No.	Address	New parts	Parts No.	Description	Destination
NX-300S					
1	1A		A02-4116-03	PLASTIC CABINET	
2	3A		A10-4111-21	CHASSIS	
3	1A		A21-1664-03	DRESSING PANEL	
4	2B		A62-1156-02	PANEL(TOP)	
6	1B,1D		B09-0712-03	CAP ACCESSORY	
9	3B		B11-1855-04	ILLUMINATION GUIDE(TX/BUSY)	
12	1A		B42-7463-04	STICKER(NEXEDGE)	
13	1B		B43-1645-04	BADGE(KENWOOD)	
15	2C	*	B62-2367-00	INSTRUCTION MANUAL	
16	2A		CC73GCH1H101J	CHIP C 100PF J	
17	2B		D32-0446-14	STOPPER(16CH)	
19	2A		E29-1220-04	RELAY HARDWARE(VCO-PCB)	
20	3A		E29-1221-14	RELAY HARDWARE(VCO-CHASSIS)	
21	3B		E58-0532-05	RECTANGULAR RECEPTACLE(SP/MIC)	
22	3B		E72-0425-03	TERMINAL BLOCK	
23	3A		F07-1931-04	COVER(OP BOARD)	
24	2A		F10-3106-03	SHIELDING CASEASSY	
25	1A		G10-1806-04	FIBROUS SHEET(SP)	
26	2B		G10-1807-04	FIBROUS SHEET(TOP PANEL)	
27	1A		G10-1822-04	FIBROUS SHEET(ECM)	
30	2A		G11-4272-14	RUBBER CUSHION(SP)	
33	2A		G11-4428-04	SHEET(PTT)	
34	3A		G11-4429-04	RUBBER SHEET(FET)	
35	3A		G11-4440-04	SHEET(AIR)	
36	2A		G11-4458-14	SHEET(SP)	
37	2A		G11-4459-04	SHEET(TX-RX PCB)	
38	3A		G11-4500-04	SHEET(AIR)	
39	3A		G11-4538-04	SHEET(CHASSIS)	
40	2A,3B		G13-2220-04	CUSHION(ANT/OP BOARD)	
41	2A		G13-2249-04	CUSHION(TX-RX PCB)	
42	2A		G13-2292-04	CUSHION(TX-RX PCB)	
43	2A		G13-2293-04	CUSHION(50PIN FPC)	
46	2B		G53-1762-02	PACKING(TOP)	
47	3B		G53-1763-03	PACKING(TERMINAL BLOCK)	
48	3A		G53-1764-03	PACKING(OP BOARD)	
49	2B		G53-1768-04	PACKING(VOL,SELECTOR O-RING)	
50	1B,1D		G53-1769-04	PACKING(CAP) ACCESSORY	
51	1A		G53-1824-01	PACKING	
57	2B		J19-5506-03	HOLDER(VOL,SELECTOR)	
58	2A		J19-5507-02	HOLDER(OP BOARD)	
59	2A		J19-5539-01	HOLDER(SP)	
60	1C		J29-0730-05	BELT CLIP ACCESSORY	
62	2B		J30-1296-04	SPACER(VOL)	
65	3B		J87-0007-25	FPC(LEAD FREE/UNIVERSAL)	
66	2B		J87-0028-05	FPC(LEAD FREE/VOL,SELECTOR)	
67	2A		J87-0037-05	FPC(LEAD FREE/ECM,SP)	
68	3A		J99-0711-04	ADHESIVE SHEET(PTT FPC)	
69	2A		J99-0714-04	ADHESIVE SHEET(TX-RX PCB)	
70	3B		J99-0715-08	ADHESIVE SHEET(UNIVERSAL)	
72	3B		J99-0747-04	ADHESIVE SHEET(TERMINAL BLOCK)	
77	3A		K25-2001-03	PUSH KNOB(PTT)	

Ref. No.	Address	New parts	Parts No.	Description	Destination
78	1A		K29-9405-03	KNOB(PTT)	
79	1A		K29-9406-03	BUTTON KNOB(SIDE KEY)	
80	1B		K29-9407-03	KNOB(VOL)	
81	1B		K29-9408-13	KNOB(SELECTOR)	
A	1B,1D		N08-0564-04	DRESSED SCREW ACCESSORY	
B	3B		N09-2426-14	HEXAGON HEAD SCREW(BATT-)	
C	3A		N09-2440-15	SPECIAL SCREW(CASE/CHASSIS)	
D	2A,2B		N09-6549-04	STEPPED SCREW(FG-SP HOLDER)	
E	2B,3A		N09-6554-05	PAN HEAD SCREW(ANT/OP BOARD)	
F	1C		N09-6585-05	PAN HEAD MACHINE SCREW(BELT CLIP)	
G	2B		N14-0844-04	CIRCULAR NUT(VOL,SELECTOR)	
H	1A,2A,2B		N83-2005-48	PAN HEAD TAPTITE SCREW(PCB)	
VR1	2B		R31-0666-05	VARIABLE RESISTOR(VOL)	
S1	2B		S60-0437-05	ROTARY SWITCH(SELECTOR)	
85	2A		T07-0749-25	SPEAKER	
86	1C		T90-1041-25	WHIP ANTENNA ACCESSORY	
87	2A		T91-0579-05	MIC ELEMENT	
88	2A		W09-0971-05	LITHIUM CELL	
90	3A		X41-3760-10	SWITCH UNIT(PTT FPC)	
92	2A		X42-3380-10	CORD ASSY(50PIN FPC)	
93	2B		X60-3910-10	TERMINAL ASSY(SMA)	
CONTROL UNIT (X53-4433-01)					
C13 -15			CK73HB1H471K	CHIP C 470PF	K
C16 ,17			CC73HCH1H101J	CHIP C 100PF	J
C23			CK73HB1H102K	CHIP C 1000PF	K
C24			CC73HCH1H470J	CHIP C 47PF	J
C25 -27			CK73HB1H102K	CHIP C 1000PF	K
C28			CC73HCH1H101J	CHIP C 100PF	J
C30 -32			CC73HCH1H101J	CHIP C 100PF	J
C35			CK73HB1H102K	CHIP C 1000PF	K
C36			CK73HB1E682K	CHIP C 6800PF	K
C37			CK73HB1H102K	CHIP C 1000PF	K
C38			CC73HCH1H101J	CHIP C 100PF	J
C101-104			CK73HB1A104K	CHIP C 0.10UF	K
C105			CK73HB0J105K	CHIP C 1.0UF	K
C106			CK73HB1E103K	CHIP C 0.010UF	K
C107			CK73HB1A104K	CHIP C 0.10UF	K
C109,110			CK73HB1H102K	CHIP C 1000PF	K
C111-113			CK73HB1A104K	CHIP C 0.10UF	K
C116,117			CK73HB1A104K	CHIP C 0.10UF	K
C118,119			CK73HB0J105K	CHIP C 1.0UF	K
C120,121			CK73HB1A104K	CHIP C 0.10UF	K
C122-124			CK73HB1E103K	CHIP C 0.010UF	K
C130			CK73HB1E103K	CHIP C 0.010UF	K
C131			CK73HB1A104K	CHIP C 0.10UF	K
C133			CS77CP0J100M	CHIP TNL 10UF 6.3WV	
C134			CK73HB1E103K	CHIP C 0.010UF	K

PARTS LIST / 零件表

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Ref. No.	Address	New parts	Parts No.	Description	Desti-nation	Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
C135			CK73HB1H102K	CHIP C 1000PF K		C708			CK73HB1A104K	CHIP C 0.10UF K	
C136			CK73HB1E103K	CHIP C 0.010UF K		C709			CK73HB0J105K	CHIP C 1.0UF K	
C137			CK73GB1E105K	CHIP C 1.0UF K		C710			CK73HB1E103K	CHIP C 0.010UF K	
C138-140			CK73HB1A104K	CHIP C 0.10UF K		C711			CK73HB1A104K	CHIP C 0.10UF K	
C141			CC73HCH1H101J	CHIP C 100PF J		C712			CK73HB1E103K	CHIP C 0.010UF K	
C142			CS77CP0J100M	CHIP TNTL 10UF 6.3VV		C713			CK73HB1H332K	CHIP C 3300PF K	
C143			CK73HB1E103K	CHIP C 0.010UF K		C714			CK73HB1H122K	CHIP C 1200PF K	
C144			CK73GB1E105K	CHIP C 1.0UF K		C715			CK73HB1A104K	CHIP C 0.10UF K	
C145-148			CK73HB1A104K	CHIP C 0.10UF K		C716			CK73HB1H681K	CHIP C 680PF K	
C149			CK73HB1E103K	CHIP C 0.010UF K		C717			CK73HB1E103K	CHIP C 0.010UF K	
C150			CK73GB1E105K	CHIP C 1.0UF K		C718			CK73HB1H152K	CHIP C 1500PF K	
C151-155			CK73HB1A104K	CHIP C 0.10UF K		C720			CK73HB1E103K	CHIP C 0.010UF K	
C156,157			CK73HB1H102K	CHIP C 1000PF K		C721			CK73HB1A104K	CHIP C 0.10UF K	
C158			CK73HB1E103K	CHIP C 0.010UF K		C722			CK73HB1E103K	CHIP C 0.010UF K	
C159			CK73HB1A104K	CHIP C 0.10UF K		C723			CK73HB1A104K	CHIP C 0.10UF K	
C160,161			CK73HB1E682K	CHIP C 6800PF K		C724			CK73HB1E103K	CHIP C 0.010UF K	
C409			CK73HB0J105K	CHIP C 1.0UF K		C725			CC73HCH1E181J	CHIP C 180PF J	
C411,412			CK73HB0J105K	CHIP C 1.0UF K		C726,727			CK73HB1A104K	CHIP C 0.10UF K	
C414			CK73HB0J105K	CHIP C 1.0UF K		C728			CK73HB1H331K	CHIP C 330PF K	
C415			CS77CP1A100M	CHIP TNTL 10UF 10VV		C730			CK73HB1H331K	CHIP C 330PF K	
C416			CK73FB1A106K	CHIP C 10UF K		C731,732			CK73HB1E103K	CHIP C 0.010UF K	
C417			CC73HCH1H221J	CHIP C 220PF J		C734			CK73HB1H102K	CHIP C 1000PF K	
C418			CK73HB1E103K	CHIP C 0.010UF K		C735			CK73HB1H122K	CHIP C 1200PF K	
C419			CK73FB1E475K	CHIP C 4.7UF K		C736,737			CK73HB1A104K	CHIP C 0.10UF K	
C420			CK73HB1E103K	CHIP C 0.010UF K		C738			CK73HB1H102K	CHIP C 1000PF K	
C421			CK73HB1E682K	CHIP C 6800PF K		C739			CK73HB1E682K	CHIP C 6800PF K	
C422			CC73HCH1H100C	CHIP C 10PF C		C740			CK73HB1H102K	CHIP C 1000PF K	
C424,425			CK73HB1A104K	CHIP C 0.10UF K		C742			CK73GB1E105K	CHIP C 1.0UF K	
C427			CK73HB1E103K	CHIP C 0.010UF K		C743			CK73HB0J105K	CHIP C 1.0UF K	
C428			CC73HCH1H030C	CHIP C 3.0PF C		C744-746			CK73HB1E103K	CHIP C 0.010UF K	
C429,430			CK73HB1A104K	CHIP C 0.10UF K		C747,748			CK73HB1A104K	CHIP C 0.10UF K	
C431			CK73FB1A106K	CHIP C 10UF K		C749,750			CC73HCH1H470J	CHIP C 47PF J	
C433			CK73FB1A106K	CHIP C 10UF K		C751			CK73GB1E105K	CHIP C 1.0UF K	
C435-438			CK73HB1A563K	CHIP C 0.056UF K		C752,753			CC73HCH1H101J	CHIP C 100PF J	
C439,440			CK73HB1A104K	CHIP C 0.10UF K		C755			CC73HCH1H470J	CHIP C 47PF J	
C441			CK73GB1E105K	CHIP C 1.0UF K		C756			CK73HB1A104K	CHIP C 0.10UF K	
C442			CK73HB1H471K	CHIP C 470PF K		C757,758			CK73GB0J475K	CHIP C 4.7UF K	
C443			CK73HB1E103K	CHIP C 0.010UF K		C759,760			CK73HB1E103K	CHIP C 0.010UF K	
C445			CK73HB1H102K	CHIP C 1000PF K		C761			CC73HCH1H100D	CHIP C 10PF D	
C446			CK73GB1E105K	CHIP C 1.0UF K		C762			CK73HB1A104K	CHIP C 0.10UF K	
C447			CK73HB1H102K	CHIP C 1000PF K		C763			CK73HB1E103K	CHIP C 0.010UF K	
C448-450			CK73HB0J105K	CHIP C 1.0UF K		C764			CK73HB1H102K	CHIP C 1000PF K	
C452,453			CK73HB1E103K	CHIP C 0.010UF K		C765-767			CK73HB1A104K	CHIP C 0.10UF K	
C454			CK73GB1E105K	CHIP C 1.0UF K		C768			CK73HB1H102K	CHIP C 1000PF K	
C455-457			CK73HB1H471K	CHIP C 470PF K		C771			CK73HB1A224K	CHIP C 0.22UF K	
C459			CK73HB1H471K	CHIP C 470PF K		C772			CK73HB1E103K	CHIP C 0.010UF K	
C460			CK73HB1E682K	CHIP C 6800PF K		C775			CC73HCH1H470J	CHIP C 47PF J	
C461-463			CK73HB1H471K	CHIP C 470PF K		C777			CK73HB1H102K	CHIP C 1000PF K	
C464			CK73HB1E103K	CHIP C 0.010UF K		C778			CK73HB0J105K	CHIP C 1.0UF K	
C465			CK73HB1H102K	CHIP C 1000PF K		C779			CK73HB1E103K	CHIP C 0.010UF K	
C466			CK73HB1E682K	CHIP C 6800PF K		C780			CK73HB1A224K	CHIP C 0.22UF K	
C467,468			CK73HB1A104K	CHIP C 0.10UF K		C781,782			CK73HB0J105K	CHIP C 1.0UF K	
C469,470			CK73HB1H102K	CHIP C 1000PF K		C785			CK73HB1A224K	CHIP C 0.22UF K	
C471			CK73HB1C473K	CHIP C 0.047UF K		C786			CK73HB1E103K	CHIP C 0.010UF K	
C480			CK73HB1E103K	CHIP C 0.010UF K		C787			CK73HB0J105K	CHIP C 1.0UF K	
C701			CK73HB1A104K	CHIP C 0.10UF K		C788			CC73HCH1H150J	CHIP C 15PF J	
C703			CK73GB0J475K	CHIP C 4.7UF K		C789			CC73HCH1H680J	CHIP C 68PF J	
C704,705			CK73HB1A104K	CHIP C 0.10UF K		C790			CK73HB1A104K	CHIP C 0.10UF K	
C706			CC73HCH1H680J	CHIP C 68PF J		C791			CK73HB1A393K	CHIP C 0.039UF K	
C707			CC73HCH1H270J	CHIP C 27PF J		C792			CK73HB0J105K	CHIP C 1.0UF K	

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CONTROL UNIT (X53-4433-01)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
C793,794			CK73HB1A104K	CHIP C 0.10UF K		R31			RK73HB1J102J	CHIP R 1.0K J 1/16W	
C795			CK73HB1E103K	CHIP C 0.010UF K		R32-35			RK73HB1J101J	CHIP R 100 J 1/16W	
C796			CK73HB1A104K	CHIP C 0.10UF K		R40			RK73HB1J000J	CHIP R 0 J 1/16W	
C797			CK73HB0J105K	CHIP C 1.0UF K		R41			RK73GB2A000J	CHIP R 0 J 1/10W	
C798			CS77CP1A100M	CHIP TNTL 10UF 10WV		R43			RK73GB2A000J	CHIP R 0 J 1/10W	
C799			CK73HB1A104K	CHIP C 0.10UF K		R45			RK73GB2A000J	CHIP R 0 J 1/10W	
C800			CK73HB1H152K	CHIP C 1500PF K		R101,102			RK73HB1J474J	CHIP R 470K J 1/16W	
C801			CK73HB1C223K	CHIP C 0.022UF K		R103			RK73HB1J102J	CHIP R 1.0K J 1/16W	
C802			CK73HB1E103K	CHIP C 0.010UF K		R105			RK73HB1J104J	CHIP R 100K J 1/16W	
C803			CK73HB1H102K	CHIP C 1000PF K		R107			RK73HB1J104J	CHIP R 100K J 1/16W	
C804			CC73HCH1H470J	CHIP C 47PF J		R110,111			RK73HB1J104J	CHIP R 100K J 1/16W	
C805,806			CK73HB1H471K	CHIP C 470PF K		R113			RK73HB1J104J	CHIP R 100K J 1/16W	
C808			CK73GB0J475K	CHIP C 4.7UF K		R115			RK73HB1J104J	CHIP R 100K J 1/16W	
C809			CK73FB1A106K	CHIP C 10UF K		R116			RK73HB1J473J	CHIP R 47K J 1/16W	
C812,813			CK73HB0J105K	CHIP C 1.0UF K		R118			RK73HB1J473J	CHIP R 47K J 1/16W	
C814			CK73HB1E103K	CHIP C 0.010UF K		R119			RK73HB1J104J	CHIP R 100K J 1/16W	
C815			CK73HB1H471K	CHIP C 470PF K		R120			RK73HB1J474J	CHIP R 470K J 1/16W	
CN22			E23-1325-05	TERMINAL		R121-123			RK73HB1J104J	CHIP R 100K J 1/16W	
CN23			E40-6758-05	PIN ASSY		R126			RK73HB1J101J	CHIP R 100 J 1/16W	
CN24			E23-1325-05	TERMINAL		R127,128			RK73HB1J000J	CHIP R 0 J 1/16W	
CN403			E40-6813-05	PIN ASSY		R129-131			RK73HB1J101J	CHIP R 100 J 1/16W	
CN404			E40-6421-15	PIN ASSY		R132,133			RK73HB1J104J	CHIP R 100K J 1/16W	
CN405			E40-6754-05	FLAT CABLE CONNECTOR		R135-137			RK73HB1J104J	CHIP R 100K J 1/16W	
CN710			E40-6757-05	PIN ASSY		R138			RK73HB1J473J	CHIP R 47K J 1/16W	
F701			F53-0360-05	FUSE(0.25A)		R139			RK73HB1J104J	CHIP R 100K J 1/16W	
CN401			J19-5386-05	HOLDER(LITHIUM CELL)		R140			RK73HB1J000J	CHIP R 0 J 1/16W	
L1 ,2			L92-0408-05	CHIP FERRITE		R141-143			RK73HB1J104J	CHIP R 100K J 1/16W	
L3			L92-0140-05	CHIP FERRITE		R144			RK73HB1J471J	CHIP R 470 J 1/16W	
L4 -7			L92-0408-05	CHIP FERRITE		R145-147			RK73HB1J104J	CHIP R 100K J 1/16W	
L8			L92-0140-05	CHIP FERRITE		R148			RK73HB1J151J	CHIP R 150 J 1/16W	
L101,102			L92-0408-05	CHIP FERRITE		R149			RK73HB1J000J	CHIP R 0 J 1/16W	
L401			L33-1496-05	SMALL FIXED INDUCTOR(22UH)		R150			RK73HB1J102J	CHIP R 1.0K J 1/16W	
L402			L92-0467-05	CHIP FERRITE		R153,154			RK73HB1J104J	CHIP R 100K J 1/16W	
L403			L92-0466-05	CHIP FERRITE		R155			RK73HB1J473J	CHIP R 47K J 1/16W	
L409-411			L92-0467-05	CHIP FERRITE		R156,157			RK73HB1J472J	CHIP R 4.7K J 1/16W	
L701			L92-0140-05	CHIP FERRITE		R158,159			RK73HB1J220J	CHIP R 22 J 1/16W	
L702			L92-0162-05	BEADS CORE		R160,161			RK73HB1J000J	CHIP R 0 J 1/16W	
L704-706			L92-0162-05	BEADS CORE		R162			RK73HB1J474J	CHIP R 470K J 1/16W	
L708,709			L92-0162-05	BEADS CORE		R163			RK73HH1J104D	CHIP R 100K D 1/16W	
L710-712			L92-0444-05	CHIP FERRITE		R165			RK73HB1J102J	CHIP R 1.0K J 1/16W	
L713			L92-0163-05	BEADS CORE		R166			RK73HB1J104J	CHIP R 100K J 1/16W	
L714-717			L92-0444-05	CHIP FERRITE		R167			RK73HB1J102J	CHIP R 1.0K J 1/16W	
L718			L92-0408-05	CHIP FERRITE		R168			RK73HB1J000J	CHIP R 0 J 1/16W	
L719			L33-1494-05	SMALL FIXED INDUCTOR(4.7UH)		R170			RK73HH1J103D	CHIP R 10K D 1/16W	
L720			L92-0408-05	CHIP FERRITE		R171-173			RK73HB1J000J	CHIP R 0 J 1/16W	
X101			L77-1802-05	CRYSTAL RESONATOR(32.768KHZ)		R174-178			RK73HB1J104J	CHIP R 100K J 1/16W	
X102			L77-3015-05	TCXO(18.432MHZ)		R180,181			RK73HB1J104J	CHIP R 100K J 1/16W	
R18			RK73HB1J822J	CHIP R 8.2K J 1/16W		R182			RK73HB1J474J	CHIP R 470K J 1/16W	
R19			RK73HB1J471J	CHIP R 470 J 1/16W		R183			RK73HB1J104J	CHIP R 100K J 1/16W	
R20			RK73HB1J102J	CHIP R 1.0K J 1/16W		R184			RK73HB1J473J	CHIP R 47K J 1/16W	
R21			RK73HB1J122J	CHIP R 1.2K J 1/16W		R185			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R22 -24			RK73HB1J102J	CHIP R 1.0K J 1/16W		R186			RK73HB1J473J	CHIP R 47K J 1/16W	
R25			RK73HB1J122J	CHIP R 1.2K J 1/16W		R187			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R26			RK73HB1J102J	CHIP R 1.0K J 1/16W		R188			RK73HB1J473J	CHIP R 47K J 1/16W	
R27			RK73HB1J104J	CHIP R 100K J 1/16W		R189			RK73HB1J104J	CHIP R 100K J 1/16W	
R28 ,29			RK73HB1J102J	CHIP R 1.0K J 1/16W		R190			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R30			RK73HB1J101J	CHIP R 100 J 1/16W		R191			RK73HB1J474J	CHIP R 470K J 1/16W	
						R192			RK73HB1J102J	CHIP R 1.0K J 1/16W	
						R193,194			RK73HB1J104J	CHIP R 100K J 1/16W	
						R410-416			RK73HB1J471J	CHIP R 470 J 1/16W	

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Ref. No.	Address	New parts	Parts No.	Description	Desti-nation	Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
R419,420			RK73HB1J000J	CHIP R 0 J 1/16W		R519-528			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R424			RK73HH1J683D	CHIP R 68K D 1/16W		R529-531			RK73HB1J101J	CHIP R 100 J 1/16W	
R425			RK73HH1J333D	CHIP R 33K D 1/16W		R532			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R426-429			RK73HB1J000J	CHIP R 0 J 1/16W		R533-535			RK73HB1J101J	CHIP R 100 J 1/16W	
R431			RK73HB1J474J	CHIP R 470K J 1/16W		R536-540			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R432,433			RK73HB1J000J	CHIP R 0 J 1/16W		R541			RK73HB1J101J	CHIP R 100 J 1/16W	
R434			RK73HB1J393J	CHIP R 39K J 1/16W		R543			RK73HB1J101J	CHIP R 100 J 1/16W	
R435,436			RK73HB1J104J	CHIP R 100K J 1/16W		R544			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R437			RK73HB1J471J	CHIP R 470 J 1/16W		R545			RK73HB1J101J	CHIP R 100 J 1/16W	
R438,439			RK73HB1J104J	CHIP R 100K J 1/16W		R546,547			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R440			RK73HB1J000J	CHIP R 0 J 1/16W		R548,549			RK73HB1J473J	CHIP R 47K J 1/16W	
R441			RK73HB1J153J	CHIP R 15K J 1/16W		R550			RK73HB1J000J	CHIP R 0 J 1/16W	
R442			RK73HB1J102J	CHIP R 1.0K J 1/16W		R716			RK73GB2A000J	CHIP R 0 J 1/10W	
R443			RK73HB1J474J	CHIP R 470K J 1/16W		R717-722			RK73HB1J104J	CHIP R 100K J 1/16W	
R444			RK73HB1J564J	CHIP R 560K J 1/16W		R723			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R445			RK73HB1J154J	CHIP R 150K J 1/16W		R724			RK73HB1J104J	CHIP R 100K J 1/16W	
R446			RK73HB1J274J	CHIP R 270K J 1/16W		R725			RK73HB1J100J	CHIP R 10 J 1/16W	
R447			RK73HB1J104J	CHIP R 100K J 1/16W		R726			RK73HB1J104J	CHIP R 100K J 1/16W	
R448			RK73HB1J103J	CHIP R 10K J 1/16W		R727-729			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R449-452			RK73HB1J474J	CHIP R 470K J 1/16W		R730			RK73HB1J471J	CHIP R 470 J 1/16W	
R453			RK73HB1J104J	CHIP R 100K J 1/16W		R731,732			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R454			RK73HB1J474J	CHIP R 470K J 1/16W		R733			RK73HB1J473J	CHIP R 47K J 1/16W	
R455			RK73HB1J102J	CHIP R 1.0K J 1/16W		R735			RK73HB1J473J	CHIP R 47K J 1/16W	
R456			RK73HB1J474J	CHIP R 470K J 1/16W		R736			RK73HB1J823J	CHIP R 82K J 1/16W	
R457,458			RK73HB1J104J	CHIP R 100K J 1/16W		R737			RK73HB1J153J	CHIP R 15K J 1/16W	
R459,460			RK73HB1J102J	CHIP R 1.0K J 1/16W		R738			RK73HB1J563J	CHIP R 56K J 1/16W	
R461			RK73HB1J103J	CHIP R 10K J 1/16W		R739			RK73HB1J823J	CHIP R 82K J 1/16W	
R462			RK73HB1J102J	CHIP R 1.0K J 1/16W		R740			RK73HB1J000J	CHIP R 0 J 1/16W	
R463			RK73HB1J104J	CHIP R 100K J 1/16W		R741			RK73HB1J474J	CHIP R 470K J 1/16W	
R465			RK73HB1J103J	CHIP R 10K J 1/16W		R742,743			RK73HB1J103J	CHIP R 10K J 1/16W	
R466,467			RK73HB1J104J	CHIP R 100K J 1/16W		R744			RK73HB1J223J	CHIP R 22K J 1/16W	
R468			RK73HB1J000J	CHIP R 0 J 1/16W		R745			RK73HB1J682J	CHIP R 6.8K J 1/16W	
R469			RK73HB1J474J	CHIP R 470K J 1/16W		R746			RK73HB1J563J	CHIP R 56K J 1/16W	
R470			RK73HB1J183J	CHIP R 18K J 1/16W		R748			RK73HB1J103J	CHIP R 10K J 1/16W	
R471			RK73HB1J000J	CHIP R 0 J 1/16W		R749			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R472			RK73HB1J223J	CHIP R 22K J 1/16W		R750			RK73HB1J103J	CHIP R 10K J 1/16W	
R473			RK73HB1J332J	CHIP R 3.3K J 1/16W		R752			RK73HB1J101J	CHIP R 100 J 1/16W	
R474,475			RK73HB1J333J	CHIP R 33K J 1/16W		R753			RK73HB1J683J	CHIP R 68K J 1/16W	
R477,478			RK73HB1J000J	CHIP R 0 J 1/16W		R754			RK73HB1J564J	CHIP R 560K J 1/16W	
R479			RK73HB1J102J	CHIP R 1.0K J 1/16W		R755			RK73HB1J104J	CHIP R 100K J 1/16W	
R481			RK73HB1J474J	CHIP R 470K J 1/16W		R756			RK73HB1J101J	CHIP R 100 J 1/16W	
R483			RK73HB1J473J	CHIP R 47K J 1/16W		R757			RK73HB1J223J	CHIP R 22K J 1/16W	
R484			RK73HB1J223J	CHIP R 22K J 1/16W		R758			RK73HB1J103J	CHIP R 10K J 1/16W	
R485			RK73HB1J103J	CHIP R 10K J 1/16W		R759			RK73HB1J101J	CHIP R 100 J 1/16W	
R487-490			RK73HH1J223D	CHIP R 22K D 1/16W		R761-764			RK73HB1J223J	CHIP R 22K J 1/16W	
R491			RK73HB1J104J	CHIP R 100K J 1/16W		R765			RK73HB1J334J	CHIP R 330K J 1/16W	
R492			RK73HB1J474J	CHIP R 470K J 1/16W		R766			RK73HB1J000J	CHIP R 0 J 1/16W	
R493			RK73HB1J000J	CHIP R 0 J 1/16W		R767			RK73HB1J103J	CHIP R 10K J 1/16W	
R494-497			RK73HB1J104D	CHIP R 100K D 1/16W		R768			RK73HB1J224J	CHIP R 220K J 1/16W	
R500			RK73HB1J473J	CHIP R 47K J 1/16W		R769,770			RK73HB1J334J	CHIP R 330K J 1/16W	
R501			RK73HB1J222J	CHIP R 2.2K J 1/16W		R771			RK73HB1J153J	CHIP R 15K J 1/16W	
R502,503			RK73HB1J103J	CHIP R 10K J 1/16W		R775			RK73HB1J183J	CHIP R 18K J 1/16W	
R504			RK73HB1J102J	CHIP R 1.0K J 1/16W		R777			RK73HB1J473J	CHIP R 47K J 1/16W	
R506			RK73HB1J222J	CHIP R 2.2K J 1/16W		R778			RK73HB1J333J	CHIP R 33K J 1/16W	
R507-511			RK73HB1J102J	CHIP R 1.0K J 1/16W		R779			RK73HB1J473J	CHIP R 47K J 1/16W	
R512			RK73HB1J101J	CHIP R 100 J 1/16W		R780			RK73HB1J104J	CHIP R 100K J 1/16W	
R513-515			RK73HB1J102J	CHIP R 1.0K J 1/16W		R782			RK73HB1J104J	CHIP R 100K J 1/16W	
R516			RK73HB1J101J	CHIP R 100 J 1/16W		R783			RK73HB1J183J	CHIP R 18K J 1/16W	
R517			RK73HB1J102J	CHIP R 1.0K J 1/16W		R784			RK73HB1J104J	CHIP R 100K J 1/16W	
R518			RK73HB1J101J	CHIP R 100 J 1/16W		R785			RK73HB1J682J	CHIP R 6.8K J 1/16W	

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PARTS LIST / 零件表

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Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
R786			RK73HB1J000J	CHIP R 0 J 1/16W		D12 -16			1SS416	DIODE	
R787			RK73HB1J124J	CHIP R 120K J 1/16W		D17			EMZ6.8N	ZENER DIODE	
R788			RK73HB1J473J	CHIP R 47K J 1/16W		D18 ,19			HZC6.8-E	ZENER DIODE	
R789			RK73HB1J154J	CHIP R 150K J 1/16W		D20 ,21			NNCD6.8G-A	ZENER DIODE	
R790			RK73HB1J102J	CHIP R 1.0K J 1/16W		D22 ,23			DA221	DIODE	
R791			RK73HB1J474J	CHIP R 470K J 1/16W		D102			1SS416	DIODE	
R793			RK73HB1J102J	CHIP R 1.0K J 1/16W		D401-405			1SS388F	DIODE	
R794			RK73HB1J104J	CHIP R 100K J 1/16W		D406			HRB0502A	DIODE	
R795			RK73HB1J000J	CHIP R 0 J 1/16W		D407			MA2S111-F	DIODE	
R796			RK73HB1J333J	CHIP R 33K J 1/16W		D408			1SS301F	DIODE	
R797			RK73HB1J102J	CHIP R 1.0K J 1/16W		D409,410			MA2S111-F	DIODE	
R798			RK73HB1J104J	CHIP R 100K J 1/16W		D411			1SS416	DIODE	
R799			RK73HB1J334J	CHIP R 330K J 1/16W		D412			1SS301F	DIODE	
R800			RK73HB1J474J	CHIP R 470K J 1/16W		D413			1SS388F	DIODE	
R801			RK73HB1J473J	CHIP R 47K J 1/16W		D414,415			1SS416	DIODE	
R802			RK73HB1J474J	CHIP R 470K J 1/16W		D416,417			1SS388F	DIODE	
R803			RK73HB1J103J	CHIP R 10K J 1/16W		D701			1SS301F	DIODE	
R804			RK73HB1J000J	CHIP R 0 J 1/16W		D702			MA2S111-F	DIODE	
R805,806			RK73HB1J473J	CHIP R 47K J 1/16W		D703-706			KDR731	DIODE	
R807			RK73HB1J102J	CHIP R 1.0K J 1/16W		D707			DA221	DIODE	
R808			RK73HB1J471J	CHIP R 470 J 1/16W		IC101			Note 1	ROM IC	
R809			RK73HB1J334J	CHIP R 330K J 1/16W		IC102			Note 1	MICROPROCESSOR IC	
R810			RK73HB1J332J	CHIP R 3.3K J 1/16W		IC103			Note 1	SRAM IC	
R811			RK73HB1J823J	CHIP R 82K J 1/16W		IC104			TC7SH08FU-F	MOS-IC	
R812			RK73HB1J562J	CHIP R 5.6K J 1/16W		IC105			XC6109C29AN-G	MOS-IC	
R813			RK73HB1J273J	CHIP R 27K J 1/16W		IC106			RV5C386A	MOS-IC	
R814			RK73HB1J564J	CHIP R 560K J 1/16W		IC107			SM5023CNDH-G	MOS-IC	
R815			RK73HB1J104J	CHIP R 100K J 1/16W		IC108			Note 1	MOS-IC	
R816			RK73HB1J683J	CHIP R 68K J 1/16W		IC109			TC7SH08FU-F	MOS-IC	
R818			RK73HB1J104J	CHIP R 100K J 1/16W		IC404			XC6204B332D-G	MOS-IC	
R819,820			RK73HB1J103J	CHIP R 10K J 1/16W		IC406			XC6204B332M-G	MOS-IC	
R821			RK73HB1J104J	CHIP R 100K J 1/16W		IC407			LT1616ES6-PBF	ANALOGUE IC	
R822,823			RK73HB1J103J	CHIP R 10K J 1/16W		IC408			TC75S51FE(F)	MOS-IC	
R824			RK73HB1J393J	CHIP R 39K J 1/16W		IC409			TC7W66FK-F	MOS-IC	
R825			RK73HB1J104J	CHIP R 100K J 1/16W		IC411			NJM2880U105ZB	ANALOGUE IC	
R826			RK73HB1J334J	CHIP R 330K J 1/16W		IC412,413			TPA6201A1DRBR	ANALOGUE IC	
R827			RK73HB1J184J	CHIP R 180K J 1/16W		IC414			XC61CC5602N-G	MOS-IC	
R828,829			RK73HB1J000J	CHIP R 0 J 1/16W		IC415			TC7SET08FU-F	MOS-IC	
R830			RK73HB1J105J	CHIP R 1.0M J 1/16W		IC416			S-812C31BPI-G	ANALOGUE IC	
R831			RK73HB1J474J	CHIP R 470K J 1/16W		IC417			TC7WH126FK	MOS-IC	
R832			RK73HB1J473J	CHIP R 47K J 1/16W		IC418			TC7WT125FUF	MOS-IC	
R833			RK73HB1J684J	CHIP R 680K J 1/16W		IC701			PCA9535BS	MOS-IC	
R834			RK73HB1J000J	CHIP R 0 J 1/16W		IC702			TC75W51FK(F)	MOS-IC	
R835			RK73HB1J153J	CHIP R 15K J 1/16W		IC703			M62364FP-F	MOS-IC	
R836			RK73HB1J473J	CHIP R 47K J 1/16W		IC704			TC75S51FE(F)	MOS-IC	
R837			RK73HB1J683J	CHIP R 68K J 1/16W		IC705			TC75W51FK(F)	MOS-IC	
R838			RK73HB1J564J	CHIP R 560K J 1/16W		IC706			TC75S51FE(F)	MOS-IC	
R839			RK73HB1J333J	CHIP R 33K J 1/16W		IC707			TC7W53FK(F)	MOS-IC	
R840			RK73HB1J123J	CHIP R 12K J 1/16W		IC708			XC6209B502P-G	MOS-IC	
R841			RK73HB1J564J	CHIP R 560K J 1/16W		IC709			TC7W53FK(F)	MOS-IC	
R842			RK73HB1J104J	CHIP R 100K J 1/16W		IC710,711			TC75W51FK(F)	MOS-IC	
R843			RK73HB1J102J	CHIP R 1.0K J 1/16W		IC712			TC7S66FUF	MOS-IC	
R844			RK73HB1J472J	CHIP R 4.7K J 1/16W		IC713			TC75W51FK(F)	MOS-IC	
R845			RK73HB1J104J	CHIP R 100K J 1/16W		IC714			TC7W53FK(F)	MOS-IC	
R846			RK73HB1J471J	CHIP R 470 J 1/16W		IC715			TC75S51FE(F)	MOS-IC	
R847			RK73HB1J182J	CHIP R 1.8K J 1/16W		IC716			TC75W51FK(F)	MOS-IC	
R850			RK73HB1J000J	CHIP R 0 J 1/16W		IC717			XC9235A15CM-G	MOS-IC	
R851,852			RK73HB1J683J	CHIP R 68K J 1/16W		Q4			SSM3K15TE(F)	FET	
R855			RK73HB1J332J	CHIP R 3.3K J 1/16W		Q5			2S.J347F	FET	
						Q401,402			SSM6N16FE-F	FET	

PARTS LIST / 零件表

CONTROL UNIT (X53-4433-01)

TX-RX UNIT (X57-7830-11)

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation	Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
Q403			2SJ648-A	FET		C554			CC73HCH1H470J	CHIP C 47PF	J
Q404			SSM3K15TE(F)	FET		C555			CK73HB0J105K	CHIP C 1.0UF	K
Q405			SSM6N16FE-F	FET		C556,557			CK73HB1H471K	CHIP C 470PF	K
Q406			2SB1132(Q,R)	TRANSISTOR		C561			CK73HB1C103K	CHIP C 0.010UF	K
Q407			UMG3N	TRANSISTOR		C562			CK73HB0J105K	CHIP C 1.0UF	K
Q408			EMD12	TRANSISTOR		C563			CC73HCH1H101J	CHIP C 100PF	J
Q409			2SA1955A-F	TRANSISTOR		C565			CC73HCH1H330J	CHIP C 33PF	J
Q410			SSM3K15TE(F)	FET		C566			CC73HCH1H820J	CHIP C 82PF	J
Q411			SSM6N16FE-F	FET		C567			CC73HCH1H0R5B	CHIP C 0.5PF	B
Q412			SSM3K15TE(F)	FET		C568			CC73HCH1H1R5B	CHIP C 1.5PF	B
Q413			2SA1955A-F	TRANSISTOR		C570			CC73HCH1HR75B	CHIP C 0.75PF	B
Q414,415			EMD12	TRANSISTOR		C571			CC73HCH1H030B	CHIP C 3.0PF	B
Q702,703			SSM3K15TE(F)	FET		C572			CK73FB0J106K	CHIP C 10UF	K
Q704			KTC4075E(Y,GR)	TRANSISTOR		C573			CC73HCH1H060B	CHIP C 6.0PF	B
Q705			2SC4738(GR)F	TRANSISTOR		C574			CC73HCH1H020B	CHIP C 2.0PF	B
Q706			2SA1832(GR)F	TRANSISTOR		C575			CC73HCH1H060B	CHIP C 6.0PF	B
Q707			2SJ243-A	FET		C576			CC73HCH1H050B	CHIP C 5.0PF	B
TH701			ERTJ0EV104H	THERMISTOR		C577			CK73HB1H471K	CHIP C 470PF	K
						C578			CK73GB0J475K	CHIP C 4.7UF	K
						C579			CC73HCH1H050B	CHIP C 5.0PF	B
TX-RX UNIT (X57-7830-11)						C580			CK73HB1H471K	CHIP C 470PF	K
D900			B30-2278-05	LED(RED/YELLOW)		C581			CC73HCH1H0R5B	CHIP C 0.5PF	B
C500			CK73HB1A104K	CHIP C 0.10UF	K	C582			CK73HB1H471K	CHIP C 470PF	K
C501			CC73HCH1H101J	CHIP C 100PF	J	C583			CC73HCH1H0R5B	CHIP C 0.5PF	B
C502			CK73HB1H471K	CHIP C 470PF	K	C584,585			CK73HB1H471K	CHIP C 470PF	K
C503			CK73HB1A104K	CHIP C 0.10UF	K	C586			CC73HCH1H100B	CHIP C 10PF	B
C504			CK73HB1C103K	CHIP C 0.010UF	K	C587			CK73HB1H471K	CHIP C 470PF	K
C505			CC73HCH1H101J	CHIP C 100PF	J	C588			CC73HCH1H100B	CHIP C 10PF	B
C506			CC73HCH1H100C	CHIP C 10PF	C	C600			CK73HB1A104K	CHIP C 0.10UF	K
C508			CK73HB1C103K	CHIP C 0.010UF	K	C601			CC73HCH1H101J	CHIP C 100PF	J
C509			CC73HCH1H100C	CHIP C 10PF	C	C602			CK73HB1A104K	CHIP C 0.10UF	K
C511			CK73FB0J106K	CHIP C 10UF	K	C603			CC73HCH1H100B	CHIP C 10PF	B
C512			CK73HB1C103K	CHIP C 0.010UF	K	C604,605			CK73HB1H471K	CHIP C 470PF	K
C513			CC73HCH1H101J	CHIP C 100PF	J	C607			CC73HCH1H070B	CHIP C 7.0PF	B
C514,515			CK73HB1C103K	CHIP C 0.010UF	K	C609			CC73GCH1H010B	CHIP C 1.0PF	B
C517-519			CC73HCH1H101J	CHIP C 100PF	J	C610-612			CK73HB1H471K	CHIP C 470PF	K
C520			CK73GB1E105K	CHIP C 1.0UF	K	C613			CC73HCH1H040B	CHIP C 4.0PF	B
C521			CC73HCH1H101J	CHIP C 100PF	J	C614,615			CK73HB1H471K	CHIP C 470PF	K
C522			CK73HB1A104K	CHIP C 0.10UF	K	C617,618			CK73HB1H471K	CHIP C 470PF	K
C523,524			CC73HCH1H101J	CHIP C 100PF	J	C619			CK73HB1A104K	CHIP C 0.10UF	K
C525			CC73HCH1H470J	CHIP C 47PF	J	C621			CC73HCH1H040B	CHIP C 4.0PF	B
C526			CK73HB1A104K	CHIP C 0.10UF	K	C622			CK73HB1H471K	CHIP C 470PF	K
C527,528			CC73HCH1H101J	CHIP C 100PF	J	C623			CC73HCH1H120J	CHIP C 12PF	J
C533			CK73HB1H471K	CHIP C 470PF	K	C625			CK73HB1H471K	CHIP C 470PF	K
C534			CC73HCH1H101J	CHIP C 100PF	J	C626			CK73HB1A104K	CHIP C 0.10UF	K
C535			CS77CA1VR15M	CHIP TNTL 0.15UF	35WV	C627			CC73HCH1H080B	CHIP C 8.0PF	B
C536			CC73HCH1H470J	CHIP C 47PF	J	C628			CC73HCH1H100C	CHIP C 10PF	C
C539			CS77BA1D100M	CHIP TNTL 10UF	20WV	C629			CK73HB1H471K	CHIP C 470PF	K
C541			C92-0863-05	CHIP TNTL 0.047UF	35WV	C630			CK73GB1E105K	CHIP C 1.0UF	K
C542			C93-0787-05	CHIP C 0.1UF	J	C631			CS77CA1A6R8M	CHIP TNTL 6.8UF	10WV
C543			CC73HCH1H040B	CHIP C 4.0PF	B	C632			CK73HB1H471K	CHIP C 470PF	K
C545			CK73HB1H471K	CHIP C 470PF	K	C634-637			CK73HB1H471K	CHIP C 470PF	K
C546			CK73HB1H472K	CHIP C 4700PF	K	C639			CC73HCH1H330J	CHIP C 33PF	J
C547			CK73HB1H471K	CHIP C 470PF	K	C640			CC73HCH1H470J	CHIP C 47PF	J
C548			CC73HCH1H101J	CHIP C 100PF	J	C641			CC73HCH1H100C	CHIP C 10PF	C
C550			CC73HCH1H050B	CHIP C 5.0PF	B	C642,643			CC73HCH1H151J	CHIP C 150PF	J
C553			CC73HCH1H100B	CHIP C 10PF	B	C645			CK73GB1C104K	CHIP C 0.10UF	K
						C646			CK73GB1E105K	CHIP C 1.0UF	K
						C648,649			CK73HB1C103K	CHIP C 0.010UF	K
						C651			CK73HB1H471K	CHIP C 470PF	K

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Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
C653			CK73HB1H471K	CHIP C 470PF K		C754			CC73HCH1H090B	CHIP C 9.0PF B	
C660			CC73GCH1H101J	CHIP C 100PF J		C755			CC73HCH1H050B	CHIP C 5.0PF B	
C661			CK73HB1H471K	CHIP C 470PF K		C756			CK73HB1H471K	CHIP C 470PF K	
C662			CC73GCH1H040B	CHIP C 4.0PF B		C758			CK73HB1H471K	CHIP C 470PF K	
C663			CC73GCH1H101J	CHIP C 100PF J		C759,760			CK73HB1A104K	CHIP C 0.10UF K	
C664			CC73GCH1H2R5B	CHIP C 2.5PF B		C761			CK73GB1E105K	CHIP C 1.0UF K	
C665			CC73GCH1H030B	CHIP C 3.0PF B		C764			CC73HCH1H1R5B	CHIP C 1.5PF B	
C666			CC73GCH1H080B	CHIP C 8.0PF B		C765			CK73HB1H471K	CHIP C 470PF K	
C667			CC73GCH1H2R5B	CHIP C 2.5PF B		C766			CK73GB1H104K	CHIP C 0.10UF K	
C668			CC73GCH1H100C	CHIP C 10PF C		C767			CC73HCH1H120G	CHIP C 12PF G	
C669			CC73GCH1H1R5B	CHIP C 1.5PF B		C768			CC73HCH1H010B	CHIP C 1.0PF B	
C670			CK73HB1H471K	CHIP C 470PF K		C769			CK73HB1H471K	CHIP C 470PF K	
C671			CC73HCH1H100B	CHIP C 10PF B		C770			CC73HCH1H030B	CHIP C 3.0PF B	
C689-691			CK73HB1A104K	CHIP C 0.10UF K		C771			CK73HB1H471K	CHIP C 470PF K	
C692			C93-0951-05	CHIP C 47PF G		C772			CC73HCH1H120G	CHIP C 12PF G	
C693			CK73GB1C224K	CHIP C 0.22UF K		C773			CC73HCH1H1R5B	CHIP C 1.5PF B	
C700			CC73HCH1H070B	CHIP C 7.0PF B		C774			CC73HCH1H020B	CHIP C 2.0PF B	
C701			CK73HB1C103K	CHIP C 0.010UF K		C775			CK73HB1H471K	CHIP C 470PF K	
C702			CC73GCH1H820J	CHIP C 82PF J		C776			CC73HCH1H120G	CHIP C 12PF G	
C703			CK73HB1A104K	CHIP C 0.10UF K		C777,778			CK73HB1H471K	CHIP C 470PF K	
C704			CC73HCH1H100B	CHIP C 10PF B		C779			CK73HB1C103K	CHIP C 0.010UF K	
C705			CK73FB1E475K	CHIP C 4.7UF K		C780			CK73GB1H104K	CHIP C 0.10UF K	
C706			CC73HCH1H100B	CHIP C 10PF B		C782			CC73HCH1H0R5B	CHIP C 0.5PF B	
C707			CC73HCH1H680J	CHIP C 68PF J		C783			CK73GB1E105K	CHIP C 1.0UF K	
C708			CC73HCH1H101J	CHIP C 100PF J		C784-786			CK73HB1H471K	CHIP C 470PF K	
C709-711			CK73HB1A104K	CHIP C 0.10UF K		C788			CK73GB1H104K	CHIP C 0.10UF K	
C712			CC73HCH1H680J	CHIP C 68PF J		C789			CK73HB1H471K	CHIP C 470PF K	
C713			CK73FB1A106K	CHIP C 10UF K		C790			CK73HB1A104K	CHIP C 0.10UF K	
C714			CK73GB1H102K	CHIP C 1000PF K		C791			CK73HB1H471K	CHIP C 470PF K	
C715			CC73HCH1H470J	CHIP C 47PF J		C792			CK73HB1A104K	CHIP C 0.10UF K	
C717			CK73HB1C103K	CHIP C 0.010UF K		C794,795			CK73HB1H471K	CHIP C 470PF K	
C718			CK73HB1A104K	CHIP C 0.10UF K		C796			CC73HCH1H110G	CHIP C 11PF G	
C719			CK73FB1A106K	CHIP C 10UF K		C798			CC73HCH1H030B	CHIP C 3.0PF B	
C720			CC73HCH1H100B	CHIP C 10PF B		C799			CK73HB1H471K	CHIP C 470PF K	
C721			CK73HB1A104K	CHIP C 0.10UF K		C800			CC73HCH1H1R5B	CHIP C 1.5PF B	
C722			CC73HCH1H470G	CHIP C 47PF G		C801			CK73HB1H471K	CHIP C 470PF K	
C723,724			CK73HB1A104K	CHIP C 0.10UF K		C802,803			CC73HCH1H040B	CHIP C 4.0PF B	
C725			CK73HB1C103K	CHIP C 0.010UF K		C804			CC73HCH1H110G	CHIP C 11PF G	
C727,728			CK73HB1A104K	CHIP C 0.10UF K		C807			CC73HCH1H030B	CHIP C 3.0PF B	
C729			CK73FB1E474K	CHIP C 0.47UF K		C810			CC73HCH1H040B	CHIP C 4.0PF B	
C730			CK73HB1C103K	CHIP C 0.010UF K		C811			CC73HCH1H070B	CHIP C 7.0PF B	
C732			CK73HB1H471K	CHIP C 470PF K		C813,814			CC73HCH1H270J	CHIP C 27PF J	
C733,734			CK73HB1C103K	CHIP C 0.010UF K		C849			CK73HB1H471K	CHIP C 470PF K	
C735			CC73HCH1H470G	CHIP C 47PF G		C850			CC73HCH1H101J	CHIP C 100PF J	
C736			CK73HB1C103K	CHIP C 0.010UF K		C900			CK73GB1H102K	CHIP C 1000PF K	
C737			CC73HCH1H020B	CHIP C 2.0PF B		C901,902			CK73HB1H471K	CHIP C 470PF K	
C738			CC73HCH1H220G	CHIP C 22PF G		C903			CK73GB1H471K	CHIP C 470PF K	
C739			CC73HCH1H060B	CHIP C 6.0PF B		C904-908			CC73HCH1H470J	CHIP C 47PF J	
C740,741			CK73HB1C103K	CHIP C 0.010UF K		C910			CC73HCH1H470J	CHIP C 47PF J	
C742			CK73FB1A475K	CHIP C 4.7UF K		C912-920			CC73HCH1H470J	CHIP C 47PF J	
C743			CK73HB1C103K	CHIP C 0.010UF K		C922,923			CC73HCH1H470J	CHIP C 47PF J	
C744,745			CK73HB1H471K	CHIP C 470PF K		C925-943			CC73HCH1H470J	CHIP C 47PF J	
C746			CC73HCH1H090B	CHIP C 9.0PF B		C944			CK73HB1H471K	CHIP C 470PF K	
C747			CC73HCH1H100B	CHIP C 10PF B		C945,946			CC73HCH1H470J	CHIP C 47PF J	
C748			CK73HB1H471K	CHIP C 470PF K		C947			CK73HB1H471K	CHIP C 470PF K	
C749			CC73HCH1H040B	CHIP C 4.0PF B		C948,949			CK73GB1E105K	CHIP C 1.0UF K	
C750			CK73HB1C103K	CHIP C 0.010UF K		C950			C92-0765-05	CHIP TNLT 4.7UF 16WV	
C751			CC73HCH1H090B	CHIP C 9.0PF B		C951			CK73GB1C224K	CHIP C 0.22UF K	
C752			CK73HB1H471K	CHIP C 470PF K		C952			CK73HB1H102K	CHIP C 1000PF K	
C753			CC73HCH1H040B	CHIP C 4.0PF B		C953			CK73HB1A104K	CHIP C 0.10UF K	

PARTS LIST / 零件表

TX-RX UNIT (X57-7830-11)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
C954			CK73GB1C224K	CHIP C 0.22UF K		L704			L40-1891-86	SMALL FIXED INDUCTOR(1.8UH)	
C955,956			CK73HB1H102K	CHIP C 1000PF K		L705,706			L92-0138-05	CHIP FERRITE	
C957,958			CK73GB1E105K	CHIP C 1.0UF K		L707			L41-2785-39	SMALL FIXED INDUCTOR(0.27UH)	
C961			CK73HB1H471K	CHIP C 470PF K		L708			L41-5685-39	SMALL FIXED INDUCTOR(0.56UH)	
C962			CC73HCH1E181J	CHIP C 180PF J		L709,710			L40-1575-92	SMALL FIXED INDUCTOR(15NH)	
C963			CK73GB1E105K	CHIP C 1.0UF K		L711			L40-3375-92	SMALL FIXED INDUCTOR(33NH)	
C964,965			CK73GB1C224K	CHIP C 0.22UF K		L713-715			L41-1078-14	SMALL FIXED INDUCTOR(10NH)	
C966			CC73HCH1H220J	CHIP C 22PF J		L716			L92-0138-05	CHIP FERRITE	
C967			CK73HB1H471K	CHIP C 470PF K		L717			L41-2285-14	SMALL FIXED INDUCTOR(220NH)	
C968			CK73GB1C224K	CHIP C 0.22UF K		L721,722			L41-1078-14	SMALL FIXED INDUCTOR(10NH)	
C969			CK73GB1E105K	CHIP C 1.0UF K		L723			L34-4564-05	AIR-CORE COIL	
C970,971			CK73HB1H102K	CHIP C 1000PF K		L725			L40-6865-92	SMALL FIXED INDUCTOR(6.8NH)	
C972-974			CK73GB1E105K	CHIP C 1.0UF K		L726			L41-3978-03	SMALL FIXED INDUCTOR(39NH)	
C975			C93-0899-05	CHIP C 9.0PF C		L780			L40-1085-57	SMALL FIXED INDUCTOR(100NH)	
C976			CC73HCH1H470J	CHIP C 47PF J		L900			L92-0149-05	CHIP FERRITE	
C977			CK73GB1E105K	CHIP C 1.0UF K		L901			L33-1462-05	SMALL FIXED INDUCTOR	
C980			CK73GB1E105K	CHIP C 1.0UF K		L902			L40-2702-86	SMALL FIXED INDUCTOR(27UH)	
C981			CK73HB1A474K	CHIP C 0.47UF K		L903			L41-6869-16	SMALL FIXED INDUCTOR(6.8NH)	
C987			CC73HCH1H050B	CHIP C 5.0PF B		X500			L77-3016-05	TCXO (19.2MHZ)	
C988			C93-0945-05	CHIP C 27PF G		XF700			L71-0640-05	MCF (58.05MHZ)	
C989			C93-0939-05	CHIP C 15PF G		R430			RK73GB2A000J	CHIP R 0 J 1/10W	
CN600			E23-1326-05	TERMINAL		R431,432			RK73HB1J000J	CHIP R 0 J 1/16W	
CN601			E23-1167-05	TERMINAL		R500,501			RN73HH1J104D	CHIP R 100K D 1/16W	
CN737			E40-6358-05	SOCKET FOR PIN ASSY		R503			RK73HB1J100J	CHIP R 10 J 1/16W	
CN900			E40-6422-15	SOCKET FOR PIN ASSY		R504			RK73HB1J104J	CHIP R 100K J 1/16W	
CN901			E40-6752-05	FLAT CABLE CONNECTOR		R505			RK73HB1J000J	CHIP R 0 J 1/16W	
CN902			E23-1326-05	TERMINAL		R506			RK73HB1J473J	CHIP R 47K J 1/16W	
F900			F53-0324-15	FUSE(2.5A)		R511-514			RK73HB1J100J	CHIP R 10 J 1/16W	
CF700			L72-1017-05	CERAMIC FILTER		R515			RK73HB1J472J	CHIP R 4.7K J 1/16W	
CF701			L72-1020-05	CERAMIC FILTER		R519			RK73HB1J100J	CHIP R 10 J 1/16W	
L500			L41-4795-39	SMALL FIXED INDUCTOR(4.7UH)		R520			RK73HB1J102J	CHIP R 1.0K J 1/16W	
L503			L92-0163-05	BEADS CORE		R522			RK73HB1J100J	CHIP R 10 J 1/16W	
L504			L40-1275-92	SMALL FIXED INDUCTOR(12NH)		R523			RK73HB1J102J	CHIP R 1.0K J 1/16W	
L508,509			L40-2285-92	SMALL FIXED INDUCTOR(220NH)		R527			RK73HB1J000J	CHIP R 0 J 1/16W	
L514-519			L40-2285-92	SMALL FIXED INDUCTOR(220NH)		R529			RK73HB1J102J	CHIP R 1.0K J 1/16W	
L520			L40-2278-67	SMALL FIXED INDUCTOR(22NH)		R530			RK73HB1J473J	CHIP R 47K J 1/16W	
L521			L40-2778-67	SMALL FIXED INDUCTOR(27NH)		R531			RK73HB1J683J	CHIP R 68K J 1/16W	
L522			L40-2285-92	SMALL FIXED INDUCTOR(220NH)		R532			RK73HB1J000J	CHIP R 0 J 1/16W	
L523			L92-0446-05	BEADS CORE		R533			RK73HH1J224D	CHIP R 220K D 1/16W	
L524-526			L40-2285-92	SMALL FIXED INDUCTOR(220NH)		R534			RK73HH1J473D	CHIP R 47K D 1/16W	
L527			L92-0446-05	BEADS CORE		R535			RK73HB1J151J	CHIP R 150 J 1/16W	
L528			L40-3375-71	SMALL FIXED INDUCTOR(33NH)		R536			RK73HB1J000J	CHIP R 0 J 1/16W	
L530			L40-5675-57	SMALL FIXED INDUCTOR(56.0NH)		R537			RK73HB1J102J	CHIP R 1.0K J 1/16W	
L598,599			L92-0163-05	BEADS CORE		R538			RK73HH1J391D	CHIP R 390 D 1/16W	
L600			L40-2275-92	SMALL FIXED INDUCTOR(22NH)		R539			RK73HB1J106J	CHIP R 10M J 1/16W	
L602			L40-2775-92	SMALL FIXED INDUCTOR(27NH)		R541			RK73HB1J103J	CHIP R 10K J 1/16W	
L603			L40-1875-92	SMALL FIXED INDUCTOR(18NH)		R546			RK73HB1J104J	CHIP R 100K J 1/16W	
L604			L92-0138-05	CHIP FERRITE		R547			RK73HB1J000J	CHIP R 0 J 1/16W	
L605			L40-1275-92	SMALL FIXED INDUCTOR(12NH)		R548			RK73HB1J104J	CHIP R 100K J 1/16W	
L606			L41-1875-43	SMALL FIXED INDUCTOR(18NH)		R550			RK73HB1J000J	CHIP R 0 J 1/16W	
L607			L92-0149-05	CHIP FERRITE		R552			RK73HB1J104J	CHIP R 100K J 1/16W	
L609			L34-4575-05	AIR-CORE COIL		R554,555			RK73HB1J473J	CHIP R 47K J 1/16W	
L610			L92-0149-05	CHIP FERRITE		R557			RK73HB1J152J	CHIP R 1.5K J 1/16W	
L611			L41-2285-14	SMALL FIXED INDUCTOR(220NH)		R558			RK73HB1J474J	CHIP R 470K J 1/16W	
L612-614			L34-4564-05	AIR-CORE COIL		R559			RK73HH1J221D	CHIP R 220 D 1/16W	
L615			L40-2275-57	SMALL FIXED INDUCTOR(22.0NH)		R560			RK73HB1J220J	CHIP R 22 J 1/16W	
L701			L40-5681-86	SMALL FIXED INDUCTOR(0.56UH)		R561			RK73HH1J221D	CHIP R 220 D 1/16W	
L703			L41-4778-45	SMALL FIXED INDUCTOR(47NH)		R562			RK73HB1J102J	CHIP R 1.0K J 1/16W	
						R563			RK73HB1J473J	CHIP R 47K J 1/16W	
						R564			RK73HB1J154J	CHIP R 150K J 1/16W	

NX-300S

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Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
R565			RK73HB1J101J	CHIP R 100 J 1/16W		R661			RK73HB1J104J	CHIP R 100K J 1/16W	
R566			RK73HH1J474D	CHIP R 470K D 1/16W		R664			RK73HB1J000J	CHIP R 0 J 1/16W	
R567			RK73HB1J472J	CHIP R 4.7K J 1/16W		R665,666			RK73HB1J271J	CHIP R 270 J 1/16W	
R570,571			RK73HB1J000J	CHIP R 0 J 1/16W		R667			RK73EB2E823J	CHIP R 82K J 1/4W	
R572			RK73HB1J100J	CHIP R 10 J 1/16W		R670			RK73HB1J224J	CHIP R 220K J 1/16W	
R573			RK73HB1J124J	CHIP R 120K J 1/16W		R671			RK73GB2A000J	CHIP R 0 J 1/10W	
R574-576			RK73HB1J000J	CHIP R 0 J 1/16W		R701			RK73HB1J561J	CHIP R 560 J 1/16W	
R577			RK73GB2A000J	CHIP R 0 J 1/10W		R702			RK73HB1J334J	CHIP R 330K J 1/16W	
R580,581			RK73HB1J000J	CHIP R 0 J 1/16W		R703			RK73HB1J100J	CHIP R 10 J 1/16W	
R583			RK73HB1J000J	CHIP R 0 J 1/16W		R704			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R586			RK73HB1J000J	CHIP R 0 J 1/16W		R705			RK73HB1J000J	CHIP R 0 J 1/16W	
R589,590			RK73HB1J103J	CHIP R 10K J 1/16W		R709			RK73HB1J103J	CHIP R 10K J 1/16W	
R599			RK73HB1J104J	CHIP R 100K J 1/16W		R712			RK73HB1J103J	CHIP R 10K J 1/16W	
R600			RK73HB1J103J	CHIP R 10K J 1/16W		R714			RK73HB1J100J	CHIP R 10 J 1/16W	
R601			RK73HB1J183J	CHIP R 18K J 1/16W		R717			RK73HB1J473J	CHIP R 47K J 1/16W	
R602			RK73HB1J124J	CHIP R 120K J 1/16W		R718			RK73HB1J183J	CHIP R 18K J 1/16W	
R603			RK73HB1J222J	CHIP R 2.2K J 1/16W		R719			RK73HB1J274J	CHIP R 270K J 1/16W	
R604			RK73HB1J682J	CHIP R 6.8K J 1/16W		R720			RK73HB1J222J	CHIP R 2.2K J 1/16W	
R605			RK73HB1J103J	CHIP R 10K J 1/16W		R721			RK73HB1J103J	CHIP R 10K J 1/16W	
R606			RK73HB1J331J	CHIP R 330 J 1/16W		R722			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R607			RK73HB1J222J	CHIP R 2.2K J 1/16W		R724			RK73HB1J104J	CHIP R 100K J 1/16W	
R608			RK73HB1J470J	CHIP R 47 J 1/16W		R725			RK73HB1J223J	CHIP R 22K J 1/16W	
R610			RK73HB1J472J	CHIP R 4.7K J 1/16W		R726			RK73HB1J183J	CHIP R 18K J 1/16W	
R612			RK73HB1J472J	CHIP R 4.7K J 1/16W		R727			RK73HB1J222J	CHIP R 2.2K J 1/16W	
R613			RK73HB1J000J	CHIP R 0 J 1/16W		R728			RK73HB1J221J	CHIP R 220 J 1/16W	
R616			RK73HB1J181J	CHIP R 180 J 1/16W		R730			RK73HB1J000J	CHIP R 0 J 1/16W	
R617			RK73HB1J331J	CHIP R 330 J 1/16W		R731			RK73HB1J103J	CHIP R 10K J 1/16W	
R618			RK73HB1J220J	CHIP R 22 J 1/16W		R733			RK73HB1J564J	CHIP R 560K J 1/16W	
R619			RK73HB1J821J	CHIP R 820 J 1/16W		R735			RK73HB1J101J	CHIP R 100 J 1/16W	
R620			RK73HB1J5R6J	CHIP R 5.6 J 1/16W		R736			RK73HB1J104J	CHIP R 100K J 1/16W	
R621			RK73HB1J821J	CHIP R 820 J 1/16W		R737			RK73HB1J221J	CHIP R 220 J 1/16W	
R622			RK73HB1J101J	CHIP R 100 J 1/16W		R738			RK73HB1J272J	CHIP R 2.7K J 1/16W	
R623			RK73HB1J123J	CHIP R 12K J 1/16W		R739			RK73HB1J221J	CHIP R 220 J 1/16W	
R624			RK73HB1J333J	CHIP R 33K J 1/16W		R740			RK73HB1J470J	CHIP R 47 J 1/16W	
R626			RK73HB1J221J	CHIP R 220 J 1/16W		R742			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R627,628			RK73HB1J000J	CHIP R 0 J 1/16W		R743			RK73HB1J681J	CHIP R 680 J 1/16W	
R629			RK73HB1J273J	CHIP R 27K J 1/16W		R744			RK73HB1J221J	CHIP R 220 J 1/16W	
R630			RK73HB1J103J	CHIP R 10K J 1/16W		R745			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R631			RK73HB1J470J	CHIP R 47 J 1/16W		R746			RK73HB1J104J	CHIP R 100K J 1/16W	
R632			RK73HB1J562J	CHIP R 5.6K J 1/16W		R747			RK73HB1J154J	CHIP R 150K J 1/16W	
R633			RK73HB1J101J	CHIP R 100 J 1/16W		R748			RK73HB1J104J	CHIP R 100K J 1/16W	
R634			RK73HB1J000J	CHIP R 0 J 1/16W		R749			RK73HB1J224J	CHIP R 220K J 1/16W	
R635			RK73HB1J561J	CHIP R 560 J 1/16W		R750			RK73GB2A000J	CHIP R 0 J 1/10W	
R636			RK73HB1J221J	CHIP R 220 J 1/16W		R752,753			RK73HB1J000J	CHIP R 0 J 1/16W	
R639			RK73HB1J103J	CHIP R 10K J 1/16W		R755			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R641			RK73HB1J103J	CHIP R 10K J 1/16W		R757			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R642			RK73EB2ER39K	CHIP R 0.39 K 1/4W		R758			RK73HB1J103J	CHIP R 10K J 1/16W	
R644			RK73HB1J220J	CHIP R 22 J 1/16W		R759,760			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R645			RK73EB2ER39K	CHIP R 0.39 K 1/4W		R761			RK73HB1J101J	CHIP R 100 J 1/16W	
R646			RK73HB1J333J	CHIP R 33K J 1/16W		R762			RK73HB1J103J	CHIP R 10K J 1/16W	
R647			RK73EB2ER39K	CHIP R 0.39 K 1/4W		R763			RK73HB1J824J	CHIP R 820K J 1/16W	
R648,649			RK73HH1J154D	CHIP R 150K D 1/16W		R764			RK73HB1J104J	CHIP R 100K J 1/16W	
R650			RK73GB2A000J	CHIP R 0 J 1/10W		R765			RK73HB1J000J	CHIP R 0 J 1/16W	
R651-654			RK73HH1J274D	CHIP R 270K D 1/16W		R768			RK73HB1J000J	CHIP R 0 J 1/16W	
R655			RK73HB1J103J	CHIP R 10K J 1/16W		R769			RK73HB1J103J	CHIP R 10K J 1/16W	
R656			RK73HB1J563J	CHIP R 56K J 1/16W		R770			RK73HB1J680J	CHIP R 68 J 1/16W	
R657			RK73HB1J000J	CHIP R 0 J 1/16W		R771			RK73HB1J151J	CHIP R 150 J 1/16W	
R658			RK73HB1J821J	CHIP R 820 J 1/16W		R772			RK73HB1J000J	CHIP R 0 J 1/16W	
R659			RK73HB1J474J	CHIP R 470K J 1/16W		R773			RK73HB1J824J	CHIP R 820K J 1/16W	
R660			RK73HB1J473J	CHIP R 47K J 1/16W		R774,775			RK73HB1J104J	CHIP R 100K J 1/16W	

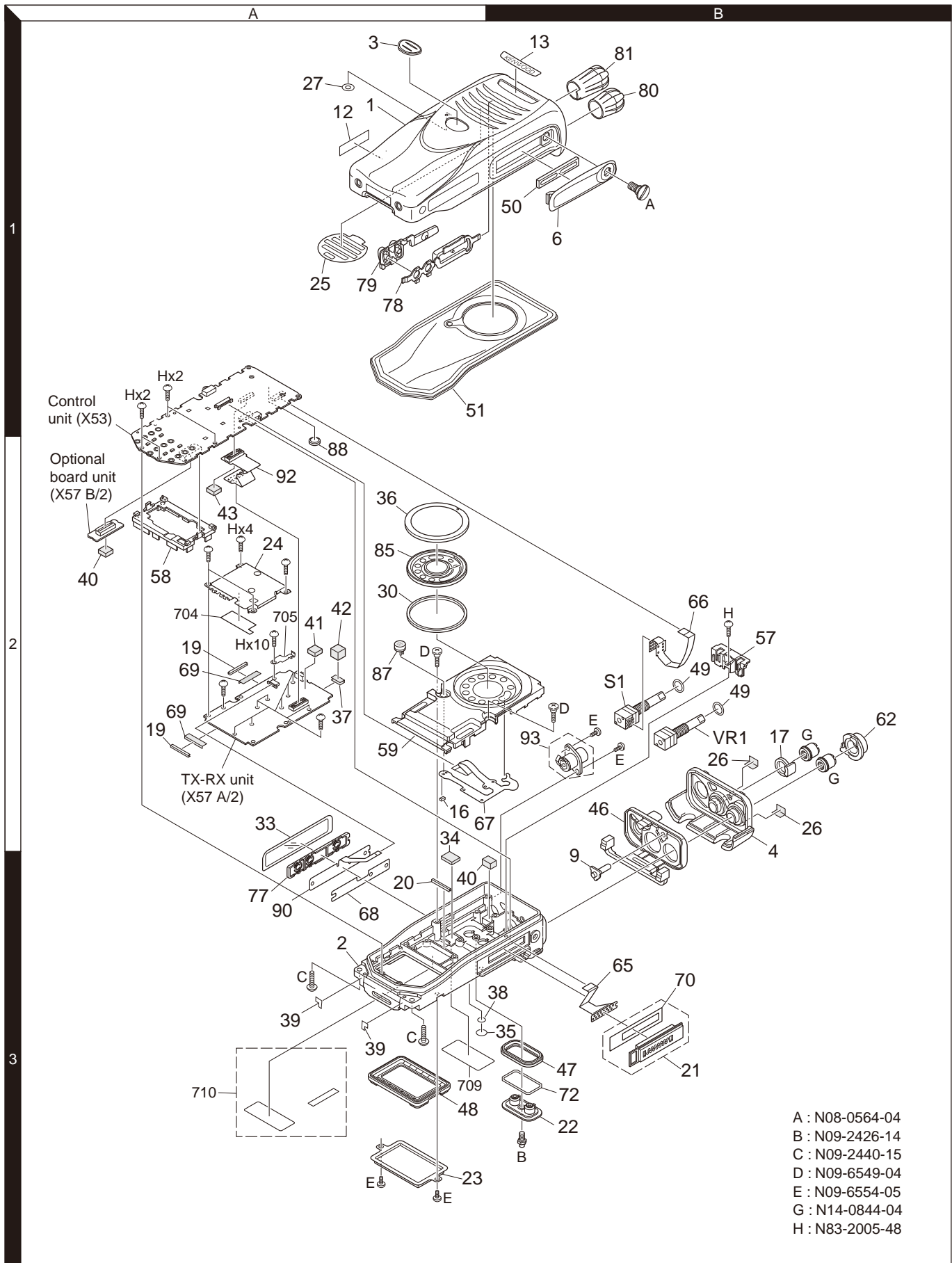
PARTS LIST / 零件表

TX-RX UNIT (X57-7830-11)

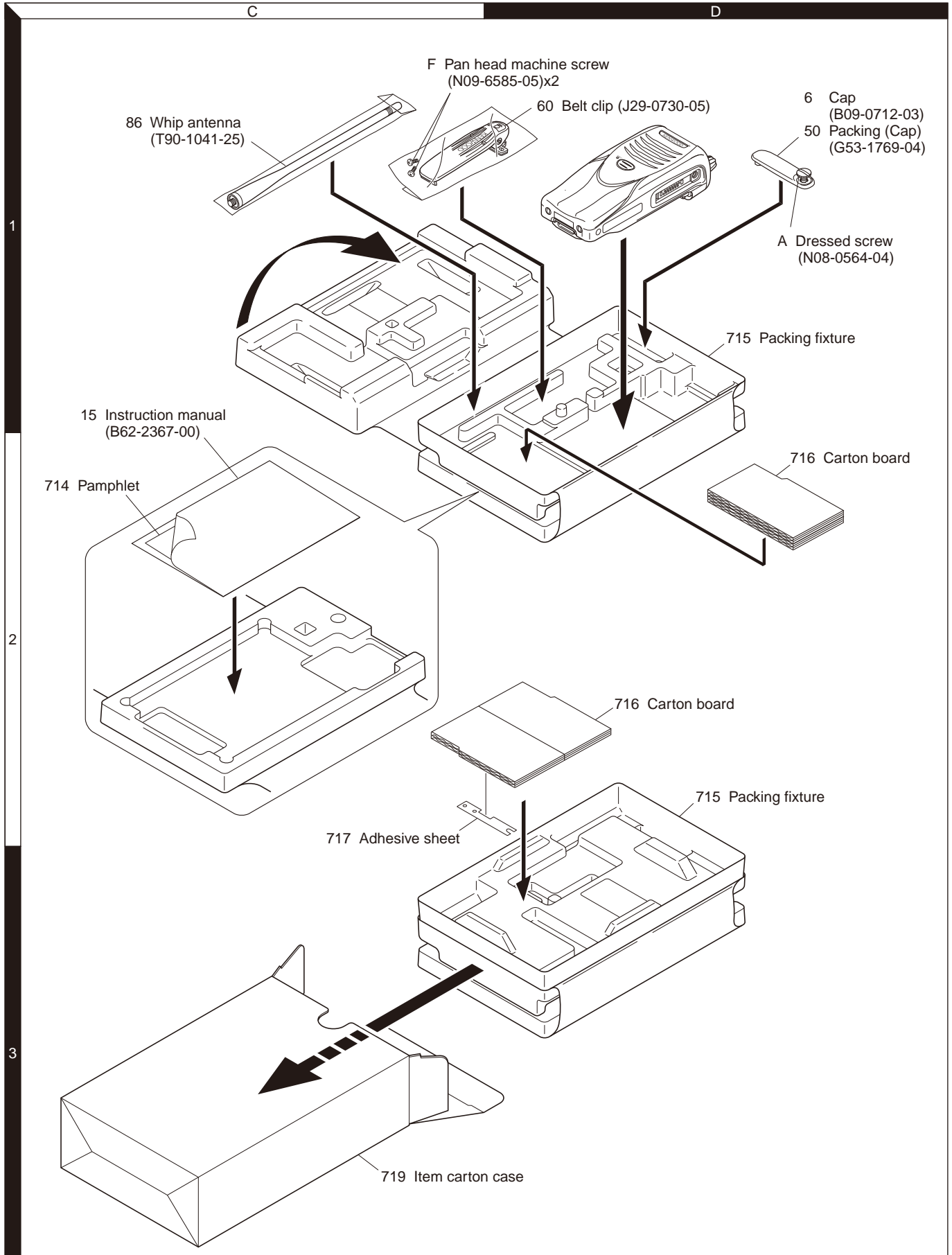
Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
R777			RK73HB1J103J	CHIP R 10K J 1/16W		D516,517			1SV282-F	VARIABLE CAPACITANCE DIODE	
R778			RK73HB1J104J	CHIP R 100K J 1/16W		D518			HSC119	DIODE	
R779			RK73HB1J683J	CHIP R 68K J 1/16W		D519			1SV278F	VARIABLE CAPACITANCE DIODE	
R780			RK73HB1J000J	CHIP R 0 J 1/16W		D600,601			HSC277	DIODE	
R781			RK73HB1J182J	CHIP R 1.8K J 1/16W		D604			HZU2ALL	ZENER DIODE	
R783			RK73HB1J224J	CHIP R 220K J 1/16W		D605			HZU5CLL	ZENER DIODE	
R784			RK73HB1J474J	CHIP R 470K J 1/16W		D606,607			HVC131	DIODE	
R785			RK73HB1J105J	CHIP R 1.0M J 1/16W		D611			HSC119	DIODE	
R786			RK73HB1J000J	CHIP R 0 J 1/16W		D700			HSC119	DIODE	
R788			RK73HB1J105J	CHIP R 1.0M J 1/16W		D702-704			1SV286F	VARIABLE CAPACITANCE DIODE	
R790			RK73HB1J105J	CHIP R 1.0M J 1/16W		D705			HSC119	DIODE	
R791			RK73HB1J000J	CHIP R 0 J 1/16W		D706			1SV286F	VARIABLE CAPACITANCE DIODE	
R792			RK73HB1J104J	CHIP R 100K J 1/16W		D708			1SV286F	VARIABLE CAPACITANCE DIODE	
R794,795			RK73HB1J103J	CHIP R 10K J 1/16W		D709			HVC131	DIODE	
R796			RK73HB1J000J	CHIP R 0 J 1/16W		D710			1SV286F	VARIABLE CAPACITANCE DIODE	
R797			RK73HB1J473J	CHIP R 47K J 1/16W		D711			HVC131	DIODE	
R798			RK73HB1J470J	CHIP R 47 J 1/16W		D901			1SR154-400	DIODE	
R799			RK73HB1J000J	CHIP R 0 J 1/16W		D902			HSC119	DIODE	
R800			RK73GB2A000J	CHIP R 0 J 1/10W		IC404			TC75W51FUF	MOS-IC	
R900			RK73HB1J391J	CHIP R 390 J 1/16W		IC500			LM73CIMKX-0	MOS-IC	
R901			RK73GB2A000J	CHIP R 0 J 1/10W		IC501			TLV2381IDBV	MOS-IC	
R902			RK73HB1J100J	CHIP R 10 J 1/16W		IC502			SKY72310-362	MOS-IC	
R903			RK73HB1J821J	CHIP R 820 J 1/16W		IC503			TLV2381IDBV	MOS-IC	
R904			RK73HB1J000J	CHIP R 0 J 1/16W		IC504			TC75W51FUF	MOS-IC	
R905			RK73HB1J330J	CHIP R 33 J 1/16W		IC600			TA75W01FUF	MOS-IC	
R906			RK73HB1J474J	CHIP R 470K J 1/16W		IC700			MCP6021-E/OT	MOS-IC	
R907			RK73GB2A100J	CHIP R 10 J 1/10W		IC701			TK10931VTL-G	ANALOGUE IC	
R908			RK73HB1J473J	CHIP R 47K J 1/16W		IC702,703			TLV2381IDBV	MOS-IC	
R909			RK73GB2A000J	CHIP R 0 J 1/10W		IC900			TC75S51FE(F)	MOS-IC	
R910-912			RK73HB1J474J	CHIP R 470K J 1/16W		IC901			XC9101D09AK-G	MOS-IC	
R913			RK73HB1J102J	CHIP R 1.0K J 1/16W		IC902			TK11250CUCB	MOS-IC	
R914			RK73HB1J154J	CHIP R 150K J 1/16W		IC903			TK71733S	BI-POLAR IC	
R915-917			RK73HB1J474J	CHIP R 470K J 1/16W		Q503			2SC5383-T111	TRANSISTOR	
R918			RK73HB1J102J	CHIP R 1.0K J 1/16W		Q504			2SK879-F(Y)	FET	
R920,921			RK73HB1J473J	CHIP R 47K J 1/16W		Q507			2SC5383-T111	TRANSISTOR	
R922			RK73HB1J102J	CHIP R 1.0K J 1/16W		Q508,509			2SK508NV(K52)	FET	
R923			RK73HB1J123J	CHIP R 12K J 1/16W		Q510			SSM6L05FU-F	FET	
R925			RK73HH1J334D	CHIP R 330K D 1/16W		Q511			2SJ347F	FET	
R926			RK73HH1J223D	CHIP R 22K D 1/16W		Q512			2SC5636	TRANSISTOR	
R927			RK73HB1J102J	CHIP R 1.0K J 1/16W		Q600,601			2SC5636	TRANSISTOR	
R928			RK73HB1J000J	CHIP R 0 J 1/16W		Q602			2SK3077F	FET	
R929			RK73HB1J102J	CHIP R 1.0K J 1/16W		Q603			RD01MUS1-T113	FET	
R931			RK73GB2A000J	CHIP R 0 J 1/10W		Q604			2SC5383-T111	TRANSISTOR	
R932			RK73HB1J104J	CHIP R 100K J 1/16W		Q605			SSM3K15TE(F)	FET	
R933			RK73HB1J102J	CHIP R 1.0K J 1/16W		Q606			RD07MVS1BT122	FET	
R934			RK73HB1J273J	CHIP R 27K J 1/16W		Q607			RT1N441U-T111	TRANSISTOR	
R935			RK73HB1J153J	CHIP R 15K J 1/16W		Q608			2SK1824-A	FET	
R951			RK73HB1J000J	CHIP R 0 J 1/16W		Q610			EMD5	TRANSISTOR	
R954			RK73GB2A000J	CHIP R 0 J 1/10W		Q700			2SC5108(Y)F	TRANSISTOR	
R955-958			RK73HB1J000J	CHIP R 0 J 1/16W		Q701			2SC4215-F(Y)	TRANSISTOR	
R959			RK73HB1J104J	CHIP R 100K J 1/16W		Q703			3SK318	FET	
S1			S70-0483-05	TACT SWITCH		Q704			2SC5383-T111	TRANSISTOR	
D501			HSC119	DIODE		Q705			3SK318	FET	
D505			DA221	DIODE		Q706			2SK1830F	FET	
D506,507			1SV325F	VARIABLE CAPACITANCE DIODE		Q900			UMG9N	TRANSISTOR	
D510			1SV290B-F	VARIABLE CAPACITANCE DIODE		Q901-903			SSM6L05FU-F	FET	
D511			1SV282-F	VARIABLE CAPACITANCE DIODE		Q904			SSM5H01TU-F	FET	
D514,515			1SV290B-F	VARIABLE CAPACITANCE DIODE		Q905			2SA1955A-F	TRANSISTOR	
						TH600			ERTJ0EV104H	THERMISTOR	

NX-300S

EXPLODED VIEW / 部件分解图



PACKING / 包装



Parts with the exploded numbers larger than 700 are not supplied. / 编号大于 700 的零件未提供分解图。

Fault Diagnosis of the BGA (Ball Grid Array) IC

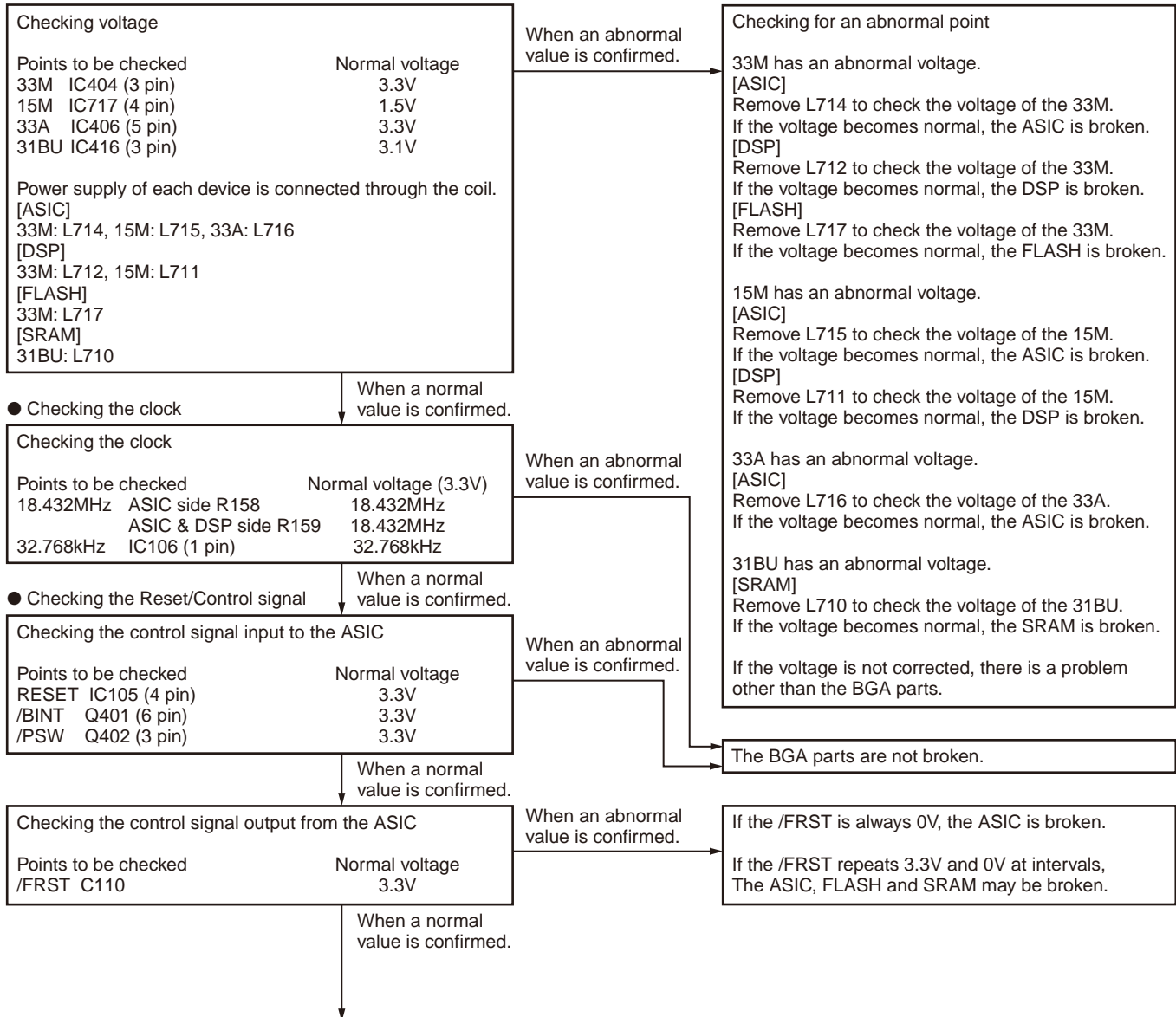
■ Overview

A flowchart for determining whether or not the transceiver can be powered on due to broken BGA parts.

■ BGA parts

ASIC (IC108), DSP (IC102), FLASH (IC101), SRAM (IC103)

● Checking power supply voltage



TROUBLE SHOOTING / 故障排除

BGA (球状矩阵排列) IC 的故障诊断

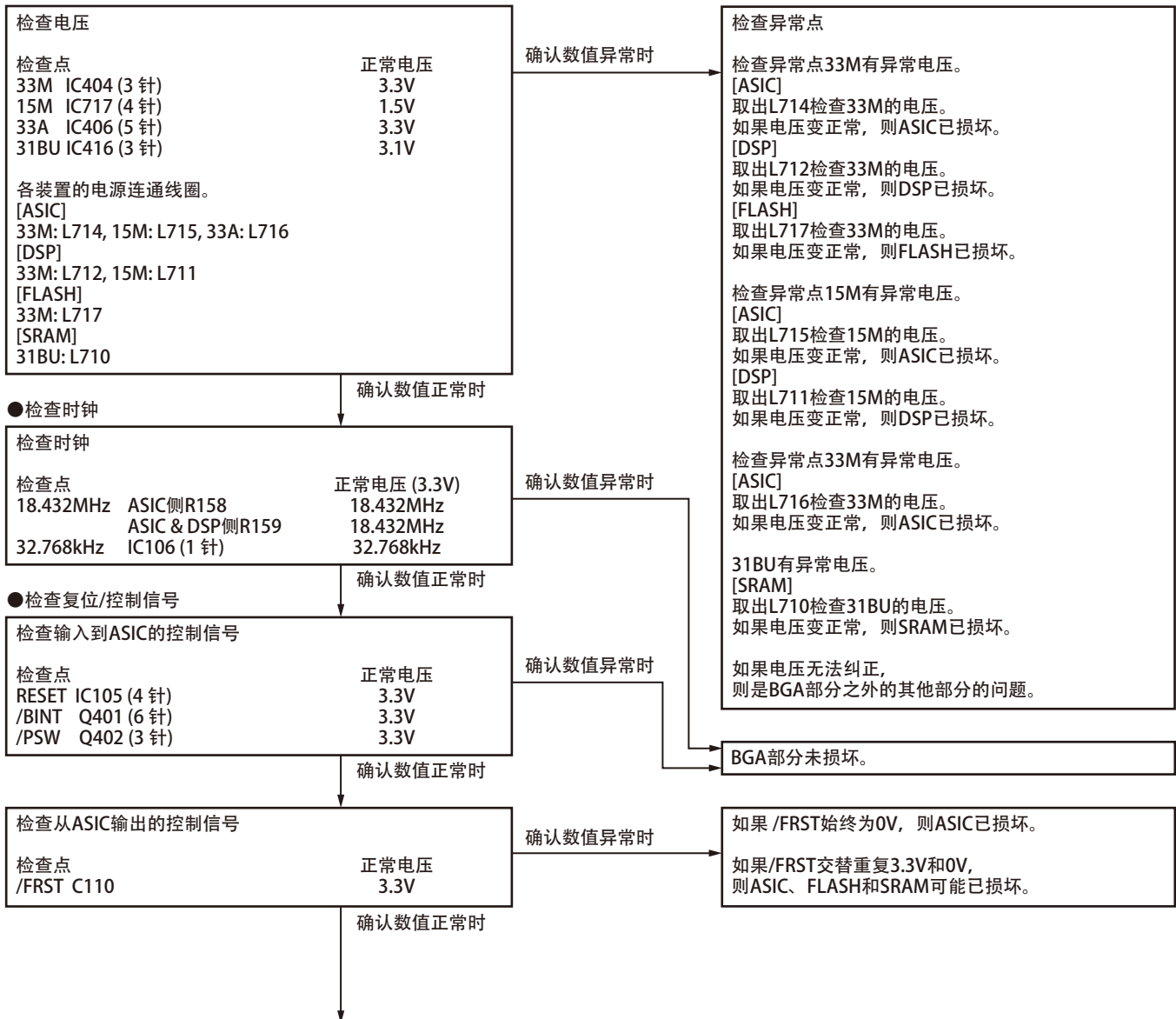
■ 概述

用于确定手持对讲机因 BGA 部分损坏时是否可以开启电源的流程。

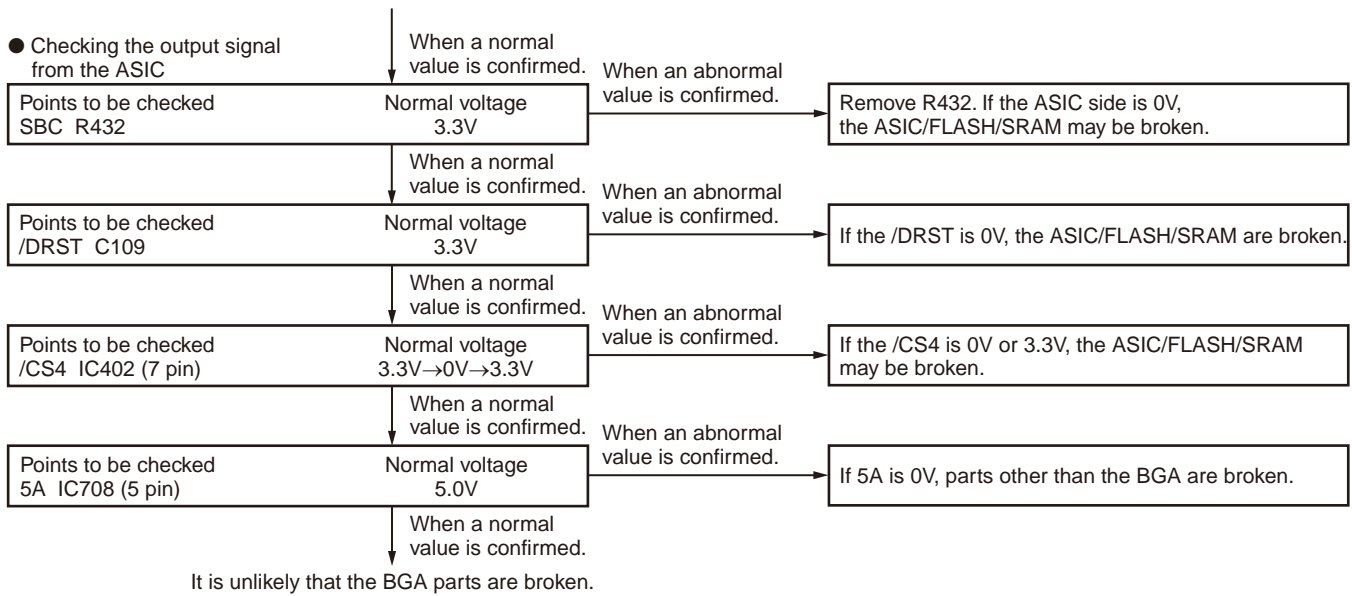
■ BGA 部分

ASIC(IC108), DSP(IC102), FLASH(IC101), SRAM(IC103)

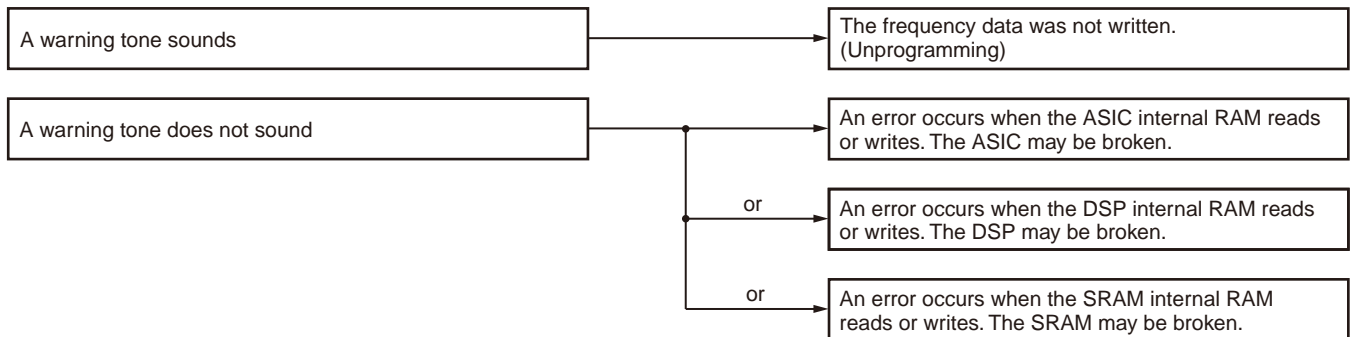
● 检查电源电压



TROUBLE SHOOTING / 故障排除



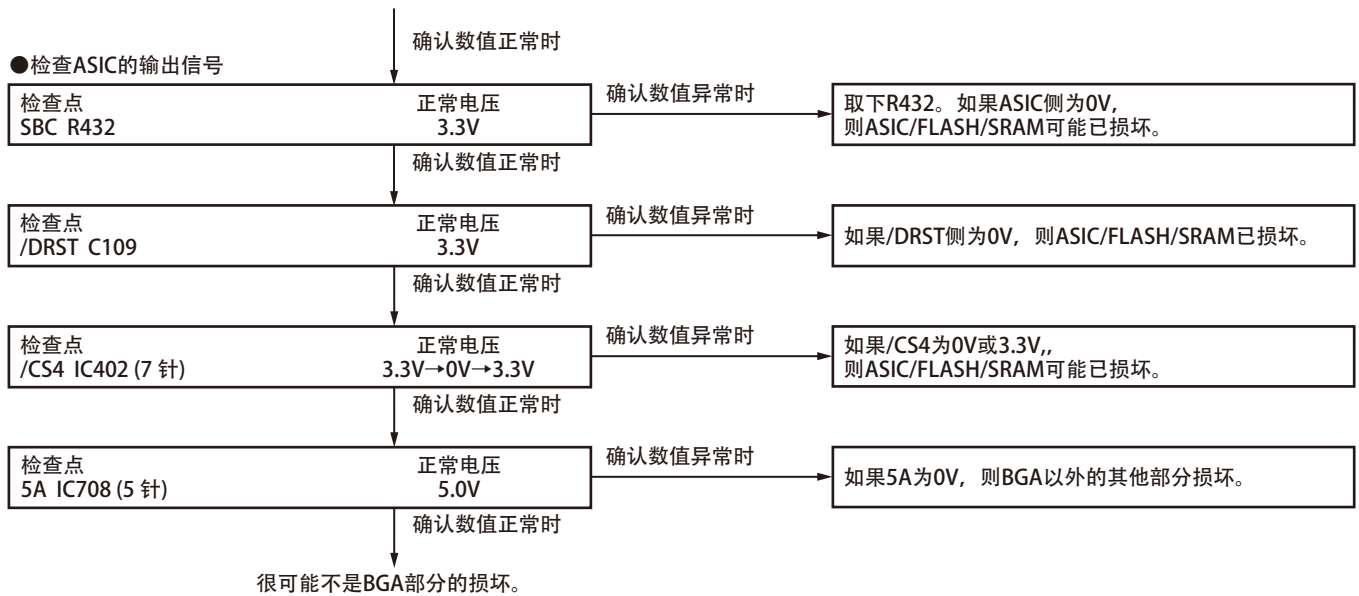
● When the LED color changes red and orange alternately.



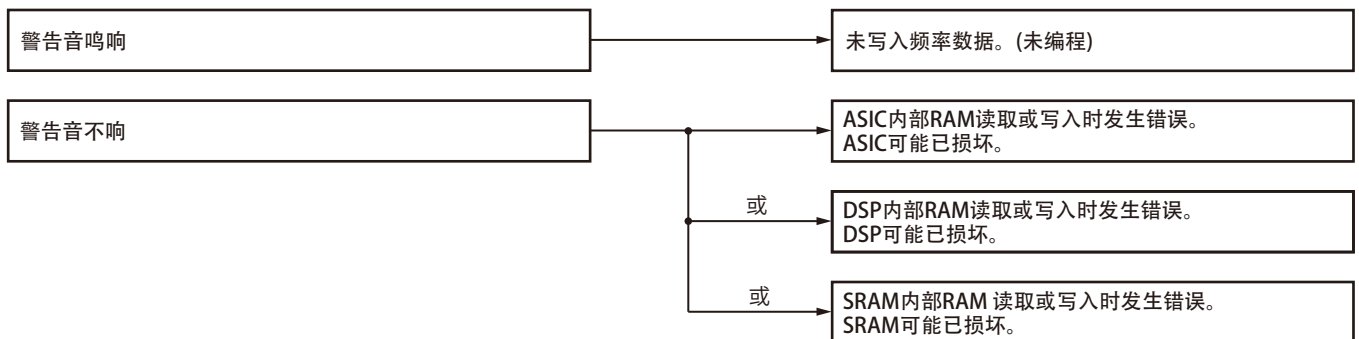
■ Descriptions of signal names

- | | | |
|---------------|---|---------------------|
| 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) /CS4 | : LCD controller chip select signal | LOW → Active |
| 8) 5A | : Analog peripheral control 5.0V power supply | |

TROUBLE SHOOTING / 故障排除



●当LED呈红色和橙色交替变化时



■信号名称说明

- | | | |
|----------------|------------------|------------|
| 1) RST (RESET) | : ASIC 复位信号 | LOW → 复位 |
| 2) /BINT | : 电池终止电压监测 | LOW → 终止电压 |
| 3) /PSW | : 电源开关信号 | LOW → ON |
| 4) /FRST | : FLASH 复位信号 | LOW → 复位 |
| 5) SBC | : 开关 B 控制 | HIGH → ON |
| 6) /DRST | : DSP 复位信号 | LOW → 复位 |
| 7) /CS4 | : LCD 控制器芯片选择信号 | LOW → 激活 |
| 8) 5A | : 模拟外围控制 5.0V 电源 | |

ADJUSTMENT / 调整

PC Test Mode

Used to check the transceiver using the PC.
This feature is included in the FPU.

■ 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	435.05000	435.10000
2	400.05000	400.10000
3	469.95000	469.90000
4	435.00000	435.00000
5	435.20000	435.20000
6	435.40000	435.40000
7~16	-	-

• 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

PC 测试模式

用于通过 PC 检查手持对讲机。
该功能内置于 FPU 中。

■ 频率和信令

已经根据下表所示的频率调整了设置。需要时，按调整步骤重新调整，以获得实际操作时想要的频率

• 测试频率

信道	接收 (MHz)	发射 (MHz)
1	435.05000	435.10000
2	400.05000	400.10000
3	469.95000	469.90000
4	435.00000	435.00000
5	435.20000	435.20000
6	435.40000	435.40000
7 ~ 16	-	-

• 模拟模式信令

编号	接收	发射
1	无	无
2	无	100Hz 方波
3	LTR 数据： AREA=0, GOTO=12 HOME=12 ID=47, FREE=25	LTR 数据： 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	无	DTMF 代码 9
12	2-音： A: 304.7Hz B: 3106.0Hz	2-音： A: 304.7Hz B: 3106.0Hz
13	单音：979.9Hz	单音：979.9Hz
14	无	单音：1000Hz
15	无	MSK
16	MSK	MSK

ADJUSTMENT / 调整

• NXDN mode signaling

No.	RX	TX
1	RAN1	RAN1
2	None	PN9
3	RAN1	Maximum deviation pattern
7	None	FSW+PN9

RAN: Radio Access Number

PN9: Pseudo-Random Pattern (for production only)

• NXDN 模式信令

编号	接收	发射
1	RAN1	RAN1
2	无	PN9
3	RAN1	最大频偏模式
7	无	FSW+PN9

RAN: 无线接入编号

PN9: 伪随机模式 (仅用于生产)

PC Tuning Mode

■ Preparations for 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 tuning.

PC 调谐模式

■ 调谐手持对讲机的准备

在尝试调谐手持对讲机前, 请将手持对讲机连接到合适的电源上。

发射打开时, 手持对讲机必须连接到合适的等效负载上 (如功率表)。

扬声器输出连接器必须端接 8Ω 的等效负载, 调谐期间, 必须始终连接到交流电压表和音频失真仪或 SINAD 测量仪表上。

■ 5 reference level adjustments frequency

Tuning point	RX (MHz)	TX (MHz)
Low	400.05000	400.10000
Low'	417.55000	417.60000
Center	435.05000	435.10000
High'	452.55000	452.60000
High	469.95000	469.90000

■ 5 点基准电平调节频率

调谐点	接收 (MHz)	发射 (MHz)
低	400.05000	400.10000
低'	417.55000	417.60000
中	435.05000	435.10000
高'	452.55000	452.60000
高	469.95000	469.90000

ADJUSTMENT / 调整

Adjustment item supplement

Adjustment Item	Description
Counterclockwise Volume	<p>“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. Both “Counterclockwise Volume” and “Clockwise Volume” must be adjusted. (The curve data of volume is applied.)</p>
Clockwise Volume	
Receive Assist	<p>The lock voltage of VCO (Receive) is adjusted. This item must be adjusted before all adjustment items for receiver section are adjusted.</p>
Transmit Assist	<p>The lock voltage of VCO (Transmit) is adjusted. This item must be adjusted before all adjustment items for transmitter section are adjusted.</p>
Frequency	<p>Frequency stability is adjusted under receiving condition with SSG. The SSG needs 0.001ppm accuracy so please use a standard oscillator if necessary. This item can be adjusted only in PC Test Mode so that the adjustment value is not changed easily.</p>
High Transmit Power	High Transmit Power is adjusted.
Low Transmit Power	Low Transmit Power is adjusted.
Balance	<p>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.</p>
Maximum Deviation (NXDN Narrow/Very Narrow)	Maximum Deviation of NXDN (Narrow/Very Narrow) is adjusted.
Maximum Deviation (Analog Wide/Narrow)	<p>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 “CW ID Deviation (NXDN Very Narrow)” is adjusted.</p>
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.
CW ID Deviation	<p>CW ID tone deviation is adjusted. CW ID is used to inform the others who is transmitting on a 6.25-kHz spacing channel. (In FCC rule, Analog mode or CW ID is required for each channel-spacing.)</p>
VOX 1	VOX sensitivity at “VOX 1” is adjusted.
VOX 10	VOX sensitivity at “VOX 10” is adjusted.
Sensitivity 1	<p>Notch filter is adjusted. The performance of Receive Spurious Response is improved.</p>
Sensitivity 2	<p>Band-Pass Filter is adjusted. The performance of Receive Sensitivity is improved.</p>
RSSI Reference	The minimum RSSI level for scan stop is adjusted.
Open Squelch	The squelch level at level “5” is adjusted.
Low RSSI	<p>Both “Low RSSI” and “High RSSI” must be adjusted. (The curve data of RSSI level is applied.)</p>
High RSSI	
Tight Squelch	The squelch level at level “9” is adjusted.
Battery Warning Level	<p>Battery Warning Level (LED blinking level) is adjusted. Battery Warning Level minus 0.4V is the transmission inhibited level.</p>

ADJUSTMENT / 调整

调整项目补充

调整项目	说 明
逆时针音量	“逆时针音量”调整在最小音量位置。 “顺时针音量”调整在最大音量位置。 这些调整可纠正音量差异。 “逆时针音量”和“顺时针音量”都必须调整。 (应用音量的曲线数据。)
顺时针音量	
接收辅助	调整 VCO (接收) 的锁定电压。 必须在调整接收机部分的所有调整项目之前调整此项。
发射辅助	调整 VCO (发射) 的锁定电压。 必须在调整发射机部分的所有调整项目之前调整此项。
频率	调整 SSG 接收条件下的频率稳定性。 SSG 需要 0.001ppm 的精度, 因此, 必要时请使用标准振荡器。 此项只能在 PC 测试模式下进行调整, 以使调整值不易改变。
高发射功率	调整高发射功率。
低发射功率	调整低发射功率。
平衡	调整发射音频频率响应。 通过调整此项, 使 2kHz 的频偏变成 20Hz 的相同频偏。 必须在调整频偏的所有调整项目之前调整此项。
最大频偏 (NXDN 窄带 / 甚窄带)	调整 NXDN 最大频偏 (窄带 / 甚窄带)。
最大频偏 (模拟宽带 / 窄带)	调整模拟最大频偏 (宽带 / 窄带)。 必须在调整音调频偏的所有调整项目之前调整此项。 注意: 必须在调整“CW ID 频偏 (NXDN 甚窄带)”之前调整“最大频偏 (模拟窄带)”。
QT 频偏	调整 QT 音调频偏。
DQT 频偏	调整 DQT 音调频偏。
LTR 频偏	调整 LTR 音调频偏。
DTMF 频偏	调整 DTMF 音调频偏。
单音频偏	调整“2 音”中使用的单音频偏。
MSK 频偏	调整 MSK 音调频偏。
CW ID 频偏	调整 CW ID 音调频偏。 CW ID 用于通知在 6.25-kHz 间隔信道上发射的其他人。 (按照 FCC 规则, 各信道间隔须使用模拟模式或 CW ID。)
声控发射 1	调整“声控发射 1”的 VOX 灵敏度。
声控发射 10	调整“声控发射 10”的 VOX 灵敏度。
灵敏度 1	调整陷波滤波器。 提高接收杂散响应的性能。
灵敏度 2	调整带通滤波器。 提高接收灵敏度的性能。
RSSI 参考	调整扫描停止的最低 RSSI 电平。
静噪 (浅)	调整“5”级的静噪电平。
低 RSSI	“低 RSSI”和“高 RSSI”都必须调整。 (应用 RSSI 电平的曲线数据。)
高 RSSI	
静噪 (深)	调整电平“9”的静噪电平。
电池警告电平	调整电池警告电平 (LED 闪烁电平)。 电池警告电平减去 0.4V 为发射禁止电平。

ADJUSTMENT / 调整

Adjustment item

Order	Adjustment item	Analog Wide	Analog Narrow	NXDN Narrow	NXDN Very Narrow	Adjust item Number
		Adjustment range				
1	Counterclockwise Volume	1 point ADJ				Common Section 2
		1~256				
2	Clockwise Volume	1 point ADJ				Common Section 3
		1~256				
3	Receive Assist	5 point ADJ				Common Section 4
		1~4096				
4	Transmit Assist	5 point ADJ				Common Section 4
		1~4096				
5	High Transmit Power	-	5	-	-	Transmitter Section 1
		1~1024				
6	Low Transmit Power	-	5	-	-	Transmitter Section 2
		1~1024				
7	Balance	-	5	-	-	Transmitter Section 3
		1~256				
8	Maximum Deviation (NXDN)	-	-	5	5	Transmitter Section 4
		1~1024				
9	Maximum Deviation (Analog)	5	5	-	-	Transmitter Section 5
		1~1024				
10	QT Deviation	1	1	-	-	Transmitter Section 6
		1~1024				
11	DQT Deviation	1	1	-	-	Transmitter Section 7
		1~1024				
12	LTR Deviation	1	1	-	-	Transmitter Section 8
		1~1024				
13	DTMF Deviation	1	1	-	-	Transmitter Section 9
		1~1024				
14	Single Tone Deviation	1	1	-	-	Transmitter Section 10
		1~1024				
15	MSK Deviation	1	1	-	-	Transmitter Section 11
		1~1024				
16	CW ID Deviation	-	-	-	1	Transmitter Section 12
		1~1024				
17	VOX 1	1 point ADJ				Transmitter Section 13
		1~256				
18	VOX 10	1 point ADJ				Transmitter Section 14
		1~256				
19	Sensitivity 1	-	5	-	-	Receiver Section 2
		1~256				
20	Sensitivity 2	-	5	-	-	Receiver Section 3
		1~256				
21	RSSI Reference	5	5	- *1	5	Receiver Section 4
		1~256				

ADJUSTMENT / 调整

调整项目

顺序	调整项目	模拟宽带	模拟窄带	NXDN 窄带	NXDN 甚窄带	调整项目编号
1	逆时针音量	1 点调整				共通部分 2
		1 ~ 256				
2	顺时针音量	1 点调整				共通部分 3
		1 ~ 256				
3	接收辅助	5 点调整				共通部分 4
		1 ~ 4096				
4	发射辅助	5 点调整				共通部分 4
		1 ~ 4096				
5	高发射功率	-	5	-	-	发射部分 1
		1 ~ 1024				
6	低发射功率	-	5	-	-	发射部分 2
		1 ~ 1024				
7	平衡	-	5	-	-	发射部分 3
		1 ~ 256				
8	最大频偏 (NXDN)	-	-	5	5	发射部分 4
		1 ~ 1024				
9	最大频偏 (模拟)	5	5	-	-	发射部分 5
		1 ~ 1024				
10	QT 频偏	1	1	-	-	发射部分 6
		1 ~ 1024				
11	DQT 频偏	1	1	-	-	发射部分 7
		1 ~ 1024				
12	LTR 频偏	1	1	-	-	发射部分 8
		1 ~ 1024				
13	DTMF 频偏	1	1	-	-	发射部分 9
		1 ~ 1024				
14	单音频偏	1	1	-	-	发射部分 10
		1 ~ 1024				
15	MSK 频偏	1	1	-	-	发射部分 11
		1 ~ 1024				
16	CW ID 频偏	-	-	-	1	发射部分 12
		1 ~ 1024				
17	声控发射 1	1 点调整				发射部分 13
		1 ~ 256				
18	声控发射 10	1 点调整				发射部分 14
		1 ~ 256				
19	灵敏度 1	-	5	-	-	接收部分 2
		1 ~ 256				
20	灵敏度 2	-	5	-	-	接收部分 3
		1 ~ 256				
21	RSSI 参考	5	5	- *1	5	接收部分 4
		1 ~ 256				

ADJUSTMENT / 调整

Order	Adjustment item	Analog Wide	Analog Narrow	NXDN Narrow	NXDN Very Narrow	Adjust item Number
		Adjustment range				
22	Open Squelch	5	5	- *1	5	Receiver Section 5
		1~256				
23	Low RSSI	5	5	- *1	5	Receiver Section 6
		1~256				
24	High RSSI	5	5	- *1	5	Receiver Section 7
		1~256				
25	Tight Squelch	5	5	-	-	Receiver Section 8
		1~256				
26	Battery Warning Level	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.

ADJUSTMENT / 调整

顺序	调整项目	模拟宽带	模拟窄带	NXDN 窄带	NXDN 甚窄带	调整项目 编号
		调整范围				
22	静噪 (浅)	5	5	- *1	5	接收部分 5
		1 ~ 256				
23	低 RSSI	5	5	- *1	5	接收部分 6
		1 ~ 256				
24	高 RSSI	5	5	- *1	5	接收部分 7
		1 ~ 256				
25	静噪 (深)	5	5	-	-	接收部分 8
		1 ~ 256				
26	电池警告电平	1 点调整				发射部分 15
		1 ~ 256				

*1: 由于 NXDN 窄带通过调整模拟窄带进行调整, 因此不需要调整 NXDN 窄带。

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. • 0.001ppm Use a standard oscillator for adjustments, if necessary.	400 to 520MHz Frequency modulation and external modulation -127dBm/0.1μV to greater than -20dBm/22.4mV
2. Power Meter	Input Impedance Operation Frequency Measurement Capability	50Ω 400 to 520MHz Vicinity of 10W
3. Deviation Meter	Frequency Range	400 to 520MHz
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.)

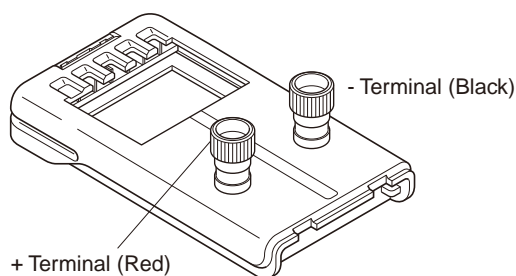
■ Nut wrench

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

Kenwood part No.: W05-1123-00

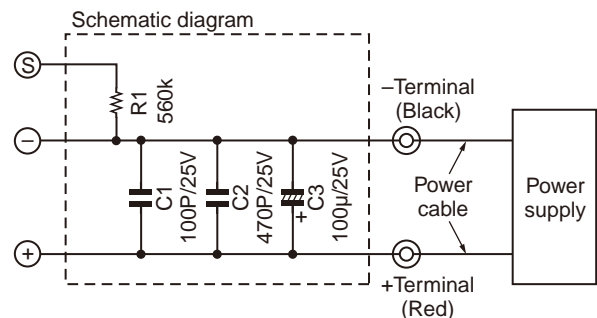
■ Battery jig (W05-1370-00)

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.



ADJUSTMENT / 调整

调整所需的测试设备

测试设备	主要规格
1. 标准信号发生器 (SSG)	频率范围 400 到 520MHz 调制 调频和外部调制 输出 -127dBm/0.1 μ V 到大于 -20dBm/22.4mV 进行频率调整时，需要以下精度。 • 0.001ppm 如有必要，请使用标准振荡器进行调整。
2. 功率计	输入阻抗 50 Ω 操作频率 400 到 520MHz 测量范围 10W 左右
3. 频偏仪	频率范围 400 到 520MHz
4. 数字电压表 (DVM)	测量范围 直流 10mV 到 10V 输入阻抗 为最小电路负载高输入阻抗
5. 示波器	直流到 30MHz
6. 高灵敏度频率计数器	频率范围 10Hz 到 1000MHz 频率稳定性 0.2ppm 或更低
7. 电流表	5A
8. 音频电压表 (AF VM)	频率范围 50Hz 到 10kHz 电压范围 1mV 到 10V
9. 音频发生器 (AG)	频率范围 50Hz 到 5kHz 或更高 输出 0 到 1V
10. 失真测试仪	能力 在 1kHz 时 3% 或更低 输入电平 50mV 到 10Vrms
11. 8 Ω 假负载	大约 8 Ω , 3W
12. 可调电源	5V 到 10V, 大约 3A 配备了电流表时更好

■ 天线接口转换头

此对讲机的天线接口使用 SMA 终端。

使用天线接口转换头 [SMA (f) -BNC (f) 或 SMA (f) -N (f)] 进行调整。(转换头不作为可选件提供，因此请购买商用转换头。)

注意：

当使用电池夹具时，你必须测定电池夹具的终端电压。因为，电源和电池夹具之间会有一些的电压下降，尤其在对讲机发射的时候。

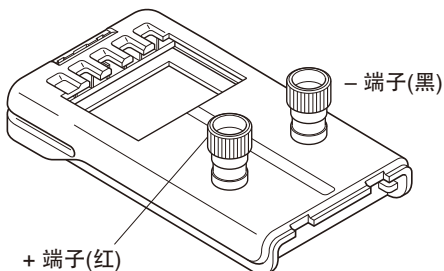
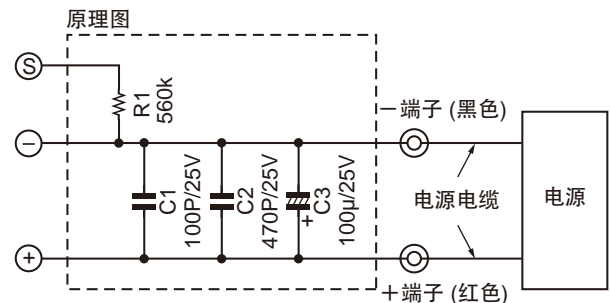
■ 螺母扳手

为了转动音量螺母和信道选择螺母，请使用推荐的工具。

Kenwood 零件号 :W05-1123-00

■ 电池夹具 (W05-1370-00)

在对讲机的电池夹具和电源之间连接适当的电源电缆，确认了输出电压之后接通电源开关，电压超过或极性颠倒都有可能损坏对讲机。



ADJUSTMENT / 调整

■ Universal connector

Use the interface cable (KPG-36/36A) 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

■ 通用连接器

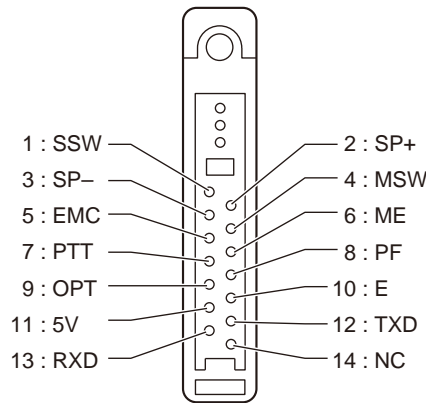
使用用于 PC 调谐的接口电缆 (KPG-36/36A)，或带有插头 (E30-3287-28) 的导线及用于面板调谐的螺丝 (N08-0535-08)。将插头连接到手持对讲机的通用连接器并旋紧螺丝。

带有插头 (E30-3287-28) 的导线及用于面板调谐的螺丝 (N08-0535-08) 如图所示。数字为通用连接器上的端子编号。

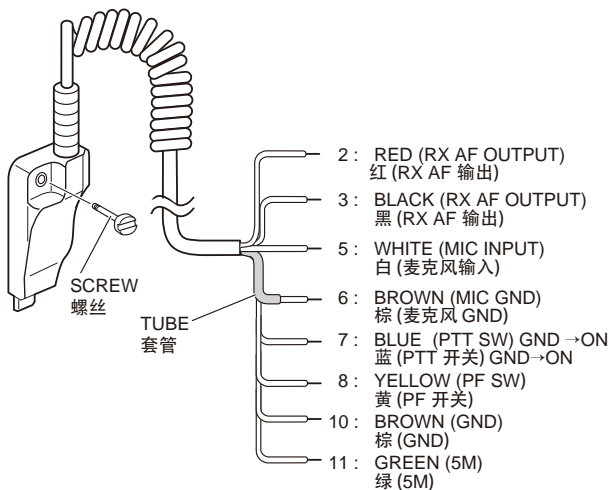
警告

1. 将插头连接到手持对讲机的通用连接器时，可能发生短路。为避免该情况，请确定关闭手持对讲机的电源开关。
2. 由于 RX AF 输出为 BTL 输出，因此可能会产生直流分量。如图所示，用一个电容或变压器隔离该分量。
3. 请勿在红线（或黑线）与 GND 间连接设备。

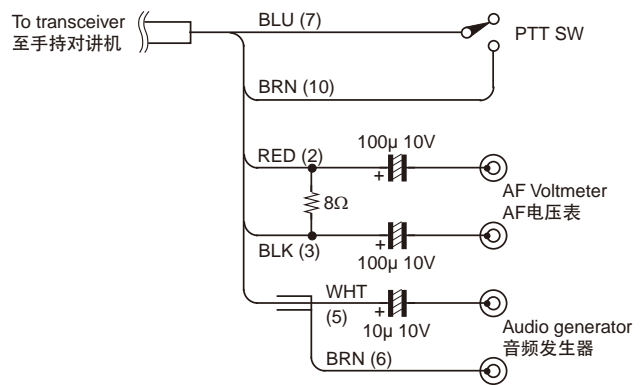
• 通用连接器



• Panel tuning



• 面板调谐



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

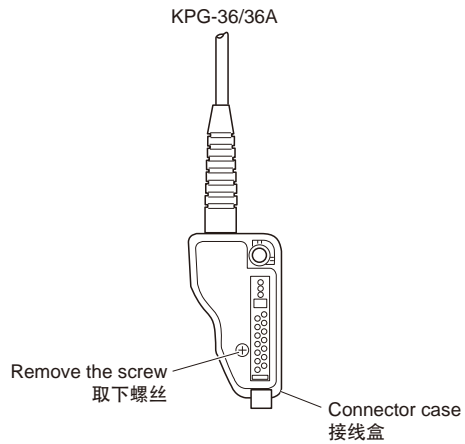
注意：引脚 1 (SSW) 和引脚 4 (MSW) 连接到引脚 10 (GND) 以启动外部扬声器和外部麦克风。

ADJUSTMENT / 调整

• PC tuning

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

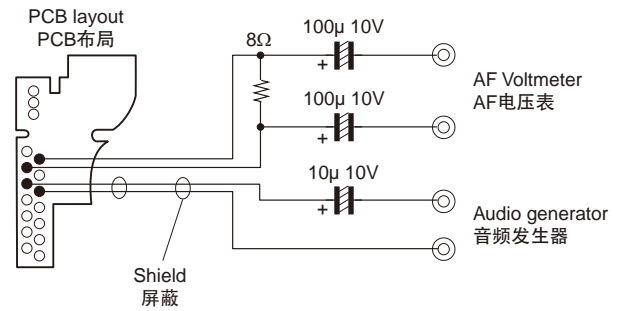
For output the wires out of the connector case, need to process the connector case.



• PC 调谐

将配线连接到接口电缆接线盒内的 PCB。

为将配线引出接线盒，需要对接线盒进行处理。



ADJUSTMENT

Radio Check Section

Item	Condition	Measurement			Adjustment			Specifications / Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Frequency check	1) Test Channel Channel: 1 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.	f. counter		ANT			Check an internal temperature of radio within 25°C ± 2°C.	435.100021~ 435.100239MHz (+0.05/+0.55ppm @435.1MHz)
2. High power check (Battery voltage: 7.5V)	1) Test Channel Channel: 1 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.	Power meter Ammeter					Check	4.5W~5.5W 2.3A or less
	2) Test Channel Channel: 2 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.							
	3) Test Channel Channel: 3 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.							
3. Low power check (Battery voltage: 7.5V)	1) Test Channel Channel: 1 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.							0.7W~1.2W 1.2A or less
	2) Test Channel Channel: 2 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.							
	3) Test Channel Channel: 3 Test Signaling Mode: Analog Signaling: 1 PTT: Press [Transmit] button.							
4. MIC sensitivity check	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

调 整

通信机检查部分

项 目	条 件	测 量			调 整			规 格 / 备 注
		测量装置	单元	端子	单元	部件	方 法	
1. 频率检查	1) 测试信道 信道 :1 测试信令 模式 : 模拟 信令 :1 PTT: 按 [发射] 按钮。	频率计数器		天线			确认手持对讲机的内部温度在 25°C ±2°C 范围内。	435.100021 ~ 435.100239MHz (+0.05/+0.55ppm @435.1MHz)
2. 高功率检查 (电池电压 :7.5V)	1) 测试信道 信道 :1 测试信令 模式 : 模拟 信令 :1 PTT: 按 [发射] 按钮。	功率计 电流表					检查	4.5W ~ 5.5W 2.3A 或更低
	2) 测试信道 信道 :2 测试信令 模式 : 模拟 信令 :1 PTT: 按 [发射] 按钮。							
	3) 测试信道 信道 :3 测试信令 模式 : 模拟 信令 :1 PTT: 按 [发射] 按钮。							
3. 低功率检查 (电池电压 :7.5V)	1) 测试信道 信道 :1 测试信令 模式 : 模拟 信令 :1 PTT: 按 [发射] 按钮。							0.7W ~ 1.2W 1.2A 或更低
	2) 测试信道 信道 :2 测试信令 模式 : 模拟 信令 :1 PTT: 按 [发射] 按钮。							
	3) 测试信道 信道 :3 测试信令 模式 : 模拟 信令 :1 PTT: 按 [发射] 按钮。							
4. 麦克风灵敏度检查	1) 测试信道 信道 :1 测试信令 模式 : 模拟 信令 :1 AG: 1kHz PTT: 按 [发射] 按钮。	频偏仪 示波器 AG AF VM		天线 通用连接器			调整 AG 输入以获得标准 MOD。	12.5mV ± 5.8mV

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications / Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
5. Sensitivity check	1) Test Channel Channel: 1 Test Signaling Mode: Analog Signaling: 1 SSG output Wide: -116dBm (0.35μV) (MOD: 1kHz/±3kHz) Narrow: -115dBm (0.40μV) (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
		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. Counterclockwise Volume	1) Adj item: [Counterclockwise Volume]						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.
3. Clockwise Volume	1) Adj item: [Clockwise Volume]						Turn the volume knob clockwise fully. Press [Apply] button to store the adjustment value.	This item is needed when the variable resistor (R31-0666-05) is replaced.
4. Receive Assist	1) Adj item: [Receive Assist] 2) Adj item: [Low], [Low'], [Center], [High'], [High] Press [Apply All] button to store the adjustment value.						[◀],[▶] [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 Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
Transmit Assist	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.						Note: Confirm the VCO lock voltage approximately 3 seconds after the adjustment value is changed.	

调 整

项 目	条 件	测 量			调 整			规 格 / 备 注
		测量装置	单元	端子	单元	部件	方 法	
5. 灵敏度检查	1) 测试信道 信道:1 测试信令 模式:模拟 信令:1 SSG 输出 宽带: -116dBm (0.35 μV) (MOD:1kHz/±3kHz) 窄带: -115dBm (0.40 μV) (MOD:1kHz/±1.5kHz)	SSG AF VM 示波器 失真测试仪 8 Ω 假负载		天线 通用连 接器			检查	12dB SINAD 或更高

共通部分

项 目	条 件	测 量			调 整			规 格 / 备 注
		测量装置	单元	端子	单元	部件	方 法	
1. 设置	1) BATT 端子电压: 7.5V 2) SSG 标准调制 [宽带] MOD:1kHz, DEV:3kHz [窄带] MOD:1kHz, DEV:1.5kHz							
2. 逆时针音量	1) 调整项目: [逆时针音量]						逆时针完全转动音量旋钮。 按 [应用] 按钮储存调整值。	更换可变电阻器 (R31-0666-05) 时需调整此项。
3. 顺时针音量	1) 调整项目: [顺时针音量]						顺时针完全转动音量旋钮。 按 [应用] 按钮储存调整值。	更换可变电阻器 (R31-0666-05) 时需调整此项。
4. 接收辅助	1) 调整项目: [接收辅助] 2) 调整项目: [低], [低'], [中], [高'], [高] 按 [全部应用] 按钮储存调整值。					[◀], [▶]	PC 窗口上的 [V] 指示显示了 VCO 锁定电压。 更改调整值, 以获得指定电压范围内的 VCO 锁定电压。	2. 5V ± 0.1V 调整所有调整点之后, 按 [全部应用] 按钮储存调整值。
发射辅助	1) 调整项目: [发射辅助] 2) 调整项目: [低], [低'], [中], [高'], [高] PTT: 按 [发射] 按钮。 按 [全部应用] 按钮储存调整值。						注意: 在更改调整值约 3 秒后确认 VCO 锁定电压。	

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications / Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
5. Frequency adjust	1) Adj item: [Frequency] SSG output : -20dBm (22.4mV) (CW (without modulation)) Caution: Perform the frequency adjustment under the following conditions. <ul style="list-style-type: none"> 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(C).) Use an accuracy of 0.001ppm for the SSG. (Use a standard oscillator if necessary.) 	SSG		ANT			Press [Start] button of "Auto Tuning". Press [Apply] button to store the adjustment value after the automatic adjustment has finished.	"IF20" value = Within 0±12 digits. The value of "IF20" will become around "0" after the adjustment has finished. Remark: "Frequency" is adjusted under receiving condition with SSG.

Transmitter Section

Item	Condition	Measurement			Adjustment			Specifications / Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. High Transmit Power adjust (Battery voltage: 7.5V)	1) Adj item: [High Transmit Power] 2) Adj item: [Low], [Low'], [Center], [High'], [High] PTT: Press [Transmit] button. Press [Apply All] button to store the adjustment value.	Power meter Ammeter		ANT		[◀],[▶]	5.0W	±0.2W 2.3A or less Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
2. Low Transmit Power adjust (Battery voltage: 7.5V)	1) Adj item: [Low Transmit Power] 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 1.2A or less Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
3. Balance adjust *2	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	

*2: Refer to the "Necessary Deviation adjustment item for each signaling and mode" table on page 76.
 Balance adjustment is common with the adjustment of all signaling deviations.

调 整

项 目	条 件	测 量			调 整			规 格 / 备 注
		测量装置	单元	端子	单元	部件	方 法	
5. 频率调整	1) 调整项目 : [频率] SSG 输出 : - 20dBm (22. 4mV) (CW (无调制)) 注意 : 在 下 述 条 件 下 进 行 频 率 调 整 。 • 温度范围 +23°C 至 +27°C。 (KPG-111D (C) 的 频 率 调 整 画 面 上 显 示 频 率 。) • 使用 0. 001ppm 的 SSG 精度。(如有必要, 请使用标准振荡器。)	SSG		天线			按“自动调整”的 [开始] 按钮。 自动调整完成之后, 按 [应用] 按钮储存调整值。	“IF20” 值 = 0 ± 12 位以内。 调整结束后, “IF20” 的值将变成 “0” 左右。 备注 : 在 SSG 接收条件下调整 “频率”。

发射部分

项 目	条 件	测 量			调 整			规 格 / 备 注
		测量装置	单元	端子	单元	部件	方 法	
1. 高发射功率调整 (电 池 电 压 : 7. 5V)	1) 调整项目 : [高发射功率] 2) 调整项目 : [低], [低'], [中], [高'], [高] PTT: 按 [发射] 按钮。 按 [全部应用] 按钮储存调整值。	功率计 电流表		天线		[◀], [▶]	5. 0W	± 0. 2W 2. 3A 或更低 调整所有调整点之后, 按 [全部应用] 按钮储存调整值。
2. 低发射功率调整 (电 池 电 压 : 7. 5V)	1) 调整项目 : [低发射功率] 2) 调整项目 : [低], [低'], [中], [高'], [高] PTT: 按 [发射] 按钮。 按 [全部应用] 按钮储存调整值。						0. 8W	± 0. 1W 1. 2A 或更低 调整所有调整点之后, 按 [全部应用] 按钮储存调整值。
3. 平衡调整 *2	1) 调整项目 : [平衡] 频偏仪 LPF: 3kHz HPF: 关闭 2) 调整项目 : [低], [低'], [中], [高'], [高] PTT: 按 [发射] 按钮。 按 [全部应用] 按钮储存调整值。 [2kHz 正弦波] 复选框 : 发射时复选此项改为 2kHz。	频偏仪 示波器					20Hz 频率的频偏固定。 更改 2kHz 调整值, 变成指定范围内 20Hz 的相同频偏。 2kHz 音调频偏在 20Hz 音调频偏的 ± 1. 0% 以内。 调整所有调整点之后, 按 [全部应用] 按钮储存调整值。	
*2: 请参阅第 77 页的 “各信令和模式所需的频偏调整项目” 表。 所有信令频偏的平衡调整共用。								

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications / Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
4. Maximum Deviation (NXDN) adjust *3 [Narrow]	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		ANT		[◀],[▶]	3056Hz	2995~3117Hz Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
	[Very Narrow]						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.	1337Hz
5. Maximum Deviation (Analog) adjust *3 [Narrow]	1) Adj item: [Maximum Deviation (Analog Narrow)] Deviation meter LPF: 15kHz HPF: OFF 2) Adj item: [Low], [Low'], [Center], [High'], [High] Press [Apply All] button to store the adjustment value.						Write the same adjustment value of "NXDN Deviation [Narrow]" for each adjustment point. Transmit at each adjustment point and check that the Analog deviation is between 2050Hz and 2150Hz. Deviation meter LPF: 15kHz HPF: OFF PTT: Press [Transmit] button	2050~2150Hz Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.

调 整

项 目	条 件	测 量			调 整			规 格 / 备 注
		测量装置	单元	端子	单元	部件	方 法	
4. 最大频偏 (NXDN) 调整 *3 [窄带]	1) 调整项目 : [最大频偏 (NXDN 窄带)] 频偏仪 LPF: 3kHz HPF: 关闭 2) 调整项目 : [低], [低'], [中], [高'], [高] PTT: 按 [发射] 按钮。 按 [全部应用] 按钮储存调整值。	频偏仪 示波器		天线		[◀], [▶]	3056Hz	2995 ~ 3117Hz 调整所有调整点之后, 按 [全部应用] 按钮储存调整值。
	[甚窄带]						1) 调整项目 : [最大频偏 (NXDN 甚窄带)] 2) 调整项目 : [低], [低'], [中], [高'], [高] PTT: 按 [发射] 按钮。 按 [全部应用] 按钮储存调整值。	1337Hz
5. 最大频偏 (模拟) 调整 *3 [窄带]	1) 调整项目 : [最大频偏 (模拟窄带)] 频偏仪 LPF: 15kHz HPF: 关闭 2) 调整项目 : [低], [低'], [中], [高'], [高] 按 [全部应用] 按钮储存调整值。						为每个调整点写入相同的“NXDN 频偏 [窄带]”调整值。在每个调整点发射, 检查模拟频偏是否在 2050Hz 和 2150Hz 之间。 频偏仪 LPF: 15kHz HPF: 关闭 PTT: 按 [发射] 按钮。	2050 ~ 2150Hz 调整所有调整点之后, 按 [全部应用] 按钮储存调整值。

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications / Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
Maximum Deviation (Analog) adjust *3 [Wide]	1) Adj item: [Maximum Deviation (Analog Wide)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] Press [Apply All] button to store the adjustment value.	Deviation meter Oscilloscope		ANT		[◀],[▶]	Write the same adjustment value of "NXDN Deviation [Narrow]" for each adjustment point. Transmit at each adjustment point and check that the Analog deviation is between 4150Hz and 4250Hz. Deviation meter LPF: 15kHz HPF: OFF PTT: Press [Transmit] button	4150~4250Hz Press [Apply All] button to store the adjustment value after all adjustment points have been adjusted.
*3: Refer to the "Necessary Deviation adjustment item for each signaling and mode" table on page 76. Regarding Maximum Deviation (Analog), it is common with the adjustment of all analog signalings.								
6. QT Deviation adjust *4 [Narrow]	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		ANT		[◀],[▶]	Write the value as followings. 513 (Reference value)	0.35kHz±0.05kHz
[Wide]	1) Adj item: [QT Deviation (Analog Wide)] PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.							0.75kHz±0.05kHz
7. DQT Deviation adjust *4 [Narrow]	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.	Deviation meter Oscilloscope		ANT		[◀],[▶]	Write the value as followings. 415 (Reference value)	0.35kHz±0.05kHz
[Wide]	1) Adj item: [DQT Deviation (Analog Wide)] PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.							0.75kHz±0.05kHz

调 整

项 目	条 件	测 量			调 整			规 格 / 备 注
		测量装置	单元	端子	单元	部件	方 法	
最大频偏 (模拟) 调整 *3 [宽带]	1)调整项目:[最大频偏(模拟宽带)] 2)调整项目:[低],[低'],[中],[高'], [高] 按[全部应用]按钮储存调整值。	频偏仪 示波器		天线		[◀], [▶]	为每个调整点写入 相同的“NXDN 频偏 [窄带]”调整值。 在每个调整点发射, 检查模拟频偏是否 在 4150Hz 和 4250Hz 之间。 频偏仪 LPF: 15kHz HPF: 关闭 PTT: 按[发射]按 钮。	4150 ~ 4250Hz 调整所有调整点之 后,按[全部应用] 按钮储存调整值。
*3: 请参阅第 77 页的“各信令和模式所需的频偏调整项目”表。 对于最大频偏(模拟),所有模拟信令的调整共用。								
6. QT 频偏调整 *4 [窄带]	1)调整项目:[QT 频偏(模拟窄带)] 频偏仪 LPF: 3kHz HPF: 关闭 PTT: 按[发射]按钮。 按[应用]按钮储存调整值。	频偏仪 示波器		天线		[◀], [▶]	写入以下值。 513(基准值)	0.35kHz ± 0.05kHz
[宽带]	1)调整项目:[QT 频偏(模拟宽带)] PTT: 按[发射]按钮。 按[应用]按钮储存调整值。							0.75kHz ± 0.05kHz
7. DQT 频偏调整 *4 [窄带]	1)调整项目:[DQT 频偏(模拟窄带)] 频偏仪 LPF: 3kHz HPF: 关闭 PTT: 按[发射]按钮。 按[应用]按钮储存调整值。							0.35kHz ± 0.05kHz
[宽带]	1)调整项目:[DQT 频偏(模拟宽带)] PTT: 按[发射]按钮。 按[应用]按钮储存调整值。							0.75kHz ± 0.05kHz

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications / Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
8. LTR Deviation adjust *4 [Narrow]	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.	Deviation meter Oscilloscope		ANT		[◀],[▶]	Write the value as followings. 465 (Reference value)	0.75kHz±0.05kHz
	[Wide]							1) Adj item: [LTR Deviation (Analog Wide)] PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.
9. DTMF Deviation adjust *4 [Narrow]	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: [DTMF Deviation (Analog Wide)] PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.
10. Single Tone Deviation adjust *4 [Narrow]	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.						Write the value as followings. 513 (Reference value)	1.50kHz±0.05kHz
	[Wide]							1) Adj item: [Single Tone Deviation (Analog Wide)] PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.

调 整

项 目	条 件	测 量			调 整			规 格 / 备 注												
		测量装置	单元	端子	单元	部件	方 法													
8. LTR 频偏调整 *4 [窄带]	1)调整项目:[LTR频偏(模拟窄带)] 频偏仪 LPF:3kHz HPF:关闭 PTT:按[发射]按钮。 按[应用]按钮储存调整值。	频偏仪 示波器		天线		[◀], [▶]	写入以下值。 465(基准值)	0.75kHz±0.05kHz												
	[宽带]							1)调整项目:[LTR频偏(模拟宽带)] PTT:按[发射]按钮。 按[应用]按钮储存调整值。	1.00kHz±0.05kHz											
9. DTMF 频偏调整 *4 [窄带]	1)调整项目:[DTMF频偏(模拟窄带)] 频偏仪 LPF:15kHz HPF:关闭 PTT:按[发射]按钮。 按[应用]按钮储存调整值。							频偏仪 示波器		天线		[◀], [▶]	写入以下值。 540(基准值)	1.25kHz±0.05kHz						
	[宽带]													1)调整项目:[DTMF频偏(模拟宽带)] PTT:按[发射]按钮。 按[应用]按钮储存调整值。	2.50kHz±0.05kHz					
10. 单音 频偏调整 *4 [窄带]	1)调整项目:[单音频偏(模拟窄带)] 频偏仪 LPF:15kHz HPF:关闭 PTT:按[发射]按钮。 按[应用]按钮储存调整值。													频偏仪 示波器		天线		[◀], [▶]	写入以下值。 513(基准值)	1.50kHz±0.05kHz
	[宽带]																			1)调整项目:[单音频偏(模拟宽带)] PTT:按[发射]按钮。 按[应用]按钮储存调整值。

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications / Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
11. MSK Deviation adjust *4 [Narrow]	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.	Deviation meter Oscilloscope		ANT		[◀],[▶]	Write the value as followings. 513 (Reference value)	1.50kHz±0.05kHz
	[Wide]							1) Adj item: [MSK Deviation (Analog Wide)] PTT: Press [Transmit] button. Press [Apply] button to store the adjustment value.
12. CW ID Deviation adjust *4 [Very Narrow]	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 page 76.								
13. VOX 1	1) Adj item: [VOX 1] AG: 1kHz/45mV at MIC terminal	AG		Universal connector			After apply signal from AG, press [Apply] button to store the adjustment value.	
14. VOX 10	1) Adj item: [VOX 10] AG: 1kHz/3mV at MIC terminal							
15. Battery Warning Level writing	1) Adj item: [Battery Warning Level] PTT: Press [Transmit] button.	Power meter DVM		ANT BATT terminal			[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. Press [Apply] button to store the adjustment value.	
16. Battery Warning Level check	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.

调 整

项 目	条 件	测 量			调 整			规 格 / 备 注
		测量装置	单元	端子	单元	部件	方 法	
11. MSK 频偏调整 *4 [窄带]	1)调整项目:[MSK 频偏(模拟窄带)] 频偏仪 LPF:15kHz HPF:关闭 PTT:按[发射]按钮。 按[应用]按钮储存调整值。	频偏仪 示波器		天线		[◀], [▶]	写入以下值。 513(基准值)	1.50kHz±0.05kHz
	[宽带]							1)调整项目:[MSK 频偏(模拟宽带)] PTT:按[发射]按钮。 按[应用]按钮储存调整值。
12. CW ID 频偏调整 *4 [甚窄带]	1)调整项目:[CW ID 频偏(NXDN 甚窄带)] 频偏仪 LPF:15kHz HPF:关闭 PTT:按[发射]按钮。 按[应用]按钮储存调整值。						写入以下值。 376(基准值)	1.10kHz±0.10kHz
*4: 请参阅第 77 页的“各信令和模式所需的频偏调整项目”表。								
13. 声控发 射 1	1)调整项目:[声控发射 1] AG:MIC 端子处 1kHz/45mV	AG		通用连 接器			从 AG 施加信号之 后,按[应用]按 钮储存调整值。	
14. 声控发 射 10	1)调整项目:[声控发射 10] AG:MIC 端子处 1kHz/3mV							
15. 电池 告警电平 写入	1)调整项目:[电池告警电平] PTT:按[发射]按钮。	功率计 DVM		天线 BATT 终端			PC 窗口上的[发 射]按钮。 在电池端子上施加 6.20V。确认范围 1 至 256 中出现预定 的数字。 按[应用]按钮储 存调整值。	
16. 电池 告警电平 检查	1)测试信道 信道:1 测试信令 模式:模拟 信令:1 BATT 端子电压:发射时 6.0V						检查	手持对讲机可以发 射,使 LED 闪烁。

ADJUSTMENT

■ 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)	-
NXDN	Audio	-	Step1. Balance adjust Step2. Maximum Deviation (NXDN Narrow)	Step1. Balance adjust Step2. Maximum Deviation (NXDN Very Narrow)
	CW ID	-	-	Step1. Balance adjust Step2. Maximum Deviation (Analog Narrow) Step3. CW ID 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 CW ID 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.

调 整

■ 各信令和模式所需的频偏调整项目

下表显示了各信令频偏所需的调整项目。请按照以下示例阅读下表。对于信令“QT(宽带)”，该信令包含三个组成部分 [平衡, 最大频偏 (模拟宽带) 和 QT 频偏 (宽带)]。请在调整 QT 频偏 (宽带) 之前调整平衡和最大频偏 (模拟宽带)。

模式	信令	所需的调整和顺序		
		宽带	窄带	甚窄带
模拟	音频	步骤 1. 平衡调整 步骤 2. 最大频偏 (模拟宽带)	步骤 1. 平衡调整 步骤 2. 最大频偏 (模拟窄带)	-
	QT	步骤 1. 平衡调整 步骤 2. 最大频偏 (模拟宽带) 步骤 3. QT 频偏 (宽带)	步骤 1. 平衡调整 步骤 2. 最大频偏 (模拟窄带) 步骤 3. QT 频偏 (窄带)	-
	DQT	步骤 1. 平衡调整 步骤 2. 最大频偏 (模拟宽带) 步骤 3. DQT 频偏 (宽带)	步骤 1. 平衡调整 步骤 2. 最大频偏 (模拟窄带) 步骤 3. DQT 频偏 (窄带)	-
	LTR	步骤 1. 平衡调整 步骤 2. 最大频偏 (模拟宽带) 步骤 3. LTR 频偏 (宽带)	步骤 1. 平衡调整 步骤 2. 最大频偏 (模拟窄带) 步骤 3. LTR 频偏 (窄带)	-
	DTMF	步骤 1. 平衡调整 步骤 2. 最大频偏 (模拟宽带) 步骤 3. DTMF 频偏 (宽带)	步骤 1. 平衡调整 步骤 2. 最大频偏 (模拟窄带) 步骤 3. DTMF 频偏 (窄带)	-
	2-音	步骤 1. 平衡调整 步骤 2. 最大频偏 (模拟宽带) 步骤 3. 单音频偏 (模拟宽带)	步骤 1. 平衡调整 步骤 2. 最大频偏 (模拟窄带) 步骤 3. 单音频偏 (模拟窄带)	-
	MSK (FleetSync)	步骤 1. 平衡调整 步骤 2. 最大频偏 (模拟宽带) 步骤 3. MSK 频偏 (模拟宽带)	步骤 1. 平衡调整 步骤 2. 最大频偏 (模拟窄带) 步骤 3. MSK 频偏 (模拟窄带)	-
NXDN	音频	-	步骤 1. 平衡调整 步骤 2. 最大频偏 (NXDN 窄带)	步骤 1. 平衡调整 步骤 2. 最大频偏 (NXDN 甚窄带)
	CW ID	-	-	步骤 1. 平衡调整 步骤 2. 最大频偏 (模拟窄带) 步骤 3. CW ID 频偏 (NXDN 甚窄带)

- 上述所有频偏调整的平衡共用。如果已经调整了平衡 (发射部分 3)，请跳过步骤 1，从步骤 2 开始调整。
- 对于所有的模拟信令频偏和 CW ID 频偏 (NXDN 甚窄带)，最大频偏 (模拟宽带 / 窄带) 共用。
如果已经调整了平衡和最大频偏 (模拟宽带 / 窄带) (发射部分 5)，请跳过步骤 2，从步骤 3 开始调整。

ADJUSTMENT

Receiver Section

Item	Condition	Measurement			Adjustment			Specifications / Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. AF level setting	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		ANT Universal connector		Volume knob	Turn the Volume knob to obtain 0.63V AF output.	0.63V±0.1V
2. Sensitivity 1 adjust	1) Adj item: [Sensitivity 1] 2) Adj item: [Low], [Low'], [Center], [High'] Press [Apply All] button to store the adjustment value.	SSG AF VM Oscilloscope		ANT Universal connector	[◀],[▶]	Write the value as followings. [Low]: 100(Fixed) [Low']: 115(Fixed) [Center]: 128(Fixed) [High']: 142(Fixed)	Increase the adjustment value from 1 to get 12dB SINAD. Note: If the SINAD value is less than 12dB SINAD, conduct the following. At first, apply "104" as the temporary value for "Sensitivity 1 [High]". Next, decrease "Sensitivity 2 [High]" from "256" until the SINAD value becomes 13dB SINAD, then apply the adjustment value. (Keep this "Sensitivity 2 [High]" adjustment value and no need to restore the adjustment value to "256".) Finally, increase "Sensitivity 1 [High]" adjustment value from 1 to get 12dB SINAD.	
	3) Adj item: [High] Caution: Perform the step 3 adjustments of "3. Sensitivity 2 adjust" before performing the adjustment. SSG output: -118dBm (0.28µV) (MOD: 1kHz/±1.5kHz) Press [Apply All] button to store the adjustment value.							
3. Sensitivity 2 adjust	1) Adj item: [Sensitivity 2] 2) Adj item: [Low], [Low'], [Center], [High'] SSG output: -118dBm (0.28µV) (MOD: 1kHz/±1.5kHz) Press [Apply All] button to store the adjustment value.					Decrease the adjustment value from 256 to get 12dB SINAD.		
	3) Adj item: [High] Press [Apply All] button to store the adjustment value.					Write the value as followings. [High]: 256		

调 整

接收部分

项 目	条 件	测 量			调 整			规 格 / 备 注
		测量装置	单元	端子	单元	部件	方 法	
1. AF 电平设置	1) 测试信道 信道 : 1 测试信令 模式 : 模拟 信令 : 1 宽带 / 窄带 : 窄带 拍频偏移 : 不选 压缩扩展器 : 不选 SSG 输出 : - 47dBm (1mV) (MOD: 1kHz/±1.5kHz)	SSG DVM AF VM 假负载		天线 通用连 接器		音量 旋钮	转动音量旋钮以获得 0.63V AF 输出。	0.63V ± 0.1V
2. 灵敏度 1 调整	1) 调整项目 : [灵敏度 1] 2) 调整项目 : [低], [低'], [中], [高'] 按 [全部应用] 按钮储存调整值。	SSG AF VM 示波器		天线 通用连 接器	[◀], [▶]	写入以下值。 [低] : 100 (固定) [低'] : 115 (固定) [中] : 128 (固定) [高'] : 142 (固定)		
	3) 调整项目 : [高] 注意 : 进行调整之前, 请进行 “3. 灵敏度 2 调整” 的步骤 3 的调整。 SSG 输出 : - 118dBm (0.28 μV) (MOD: 1kHz/±1.5kHz) 按 [全部应用] 按钮储存调整值。					从 1 增大调整值以 获得 12dB SINAD。 注意 : 如果 SINAD 值小于 12dB SINAD, 可进 行以下操作。 首先, 将 “104” 用作 “灵敏度 1 [高]” 的临时值。 接下来, 从 “256” 减小 “灵敏度 2 [高]”, 直至 SINAD 值变成 13dB SINAD, 然后应用 调整值。 (请保持此 “灵敏 度 2 [高]” 调整值, 而无需将调整值恢 复到 “256”。) 最后, 从 1 增大 “灵 敏度 1 [高]” 调 整值以获得 12dB SINAD。		
3. 灵敏度 2 调整	1) 调整项目 : [灵敏度 2] 2) 调整项目 : [低], [低'], [中], [高'] SSG 输出 : - 118dBm (0.28 μV) (MOD: 1kHz/±1.5kHz) 按 [全部应用] 按钮储存调整值。					从预设值 (256) 减 小调整值以获得 12dB SINAD。		
	3) 调整项目 : [高] 按 [全部应用] 按钮储存调整值。					写入以下值。 [高] : 256		

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications / Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
4. RSSI Reference adjust *5 [Analog Narrow]	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		ANT Universal connector			After input signal from SSG, press [Apply] button to store the adjustment value.	Adjust with the analog signal.
[Analog Wide]	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: [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)							
*5: Because RSSI reference (NXDN Narrow) is adjusted by adjusting RSSI reference (Analog Narrow), it is not necessary to adjust RSSI reference (NXDN Narrow).								
5. Open Squelch adjust *6 [Analog Narrow]	1) Adj item: [Open Squelch (Analog Narrow)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: 12dB SINAD level (MOD: 1kHz/±1.5kHz)	SSG Distortion meter Oscilloscope		ANT Universal connector			After input signal from SSG, press [Apply] button to store the adjustment value.	"Open Squelch" will not be adjusted correctly if MOD and Deviation are wrong.
[Analog Wide]	1) Adj item: [Open Squelch (Analog Wide)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: 12dB SINAD level (MOD: 1kHz/±3kHz)							

调 整

项 目	条 件	测 量			调 整			规 格 / 备 注
		测量装置	单元	端子	单元	部件	方 法	
4. RSSI 参考调整 *5 [模拟窄带]	1) 调整项目 : [RSSI 参考 (模拟窄带)] 2) 调整项目 : [低], [低'], [中], [高'], [高] SSG 输出 : 12dB SINAD 电平 - 3dB (MOD: 1kHz/±1.5kHz)	SSG 失真测试仪 示波器		天线 通用连接 器			从 SSG 输入信号之后, 按 [应用] 按钮储存调整值。	用模拟信号进行调整。
[模拟宽带]	1) 调整项目 : [RSSI 参考 (模拟宽带)] 2) 调整项目 : [低], [低'], [中], [高'], [高] SSG 输出 : 12dB SINAD 电平 - 3dB (MOD: 1kHz/±3kHz)							
[NXDN 甚窄带]	1) 调整项目 : [RSSI 参考 (NXDN 甚窄带)] 2) 调整项目 : [低], [低'], [中], [高'], [高] SSG 输出 : 模拟窄的 12dB SINAD 电平 - 3dB (MOD: 1kHz/±1.5kHz)							
*5: 由于 RSSI 参考 (NXDN 窄带) 通过调整 RSSI 参考 (模拟窄带) 进行调整, 因此不需要调整 RSSI 参考 (NXDN 窄带)。								
5. 静噪 (浅) 调整 *6 [模拟窄带]	1) 调整项目 : [静噪 (浅) (模拟窄带)] 2) 调整项目 : [低], [低'], [中], [高'], [高] SSG 输出 : 12dB SINAD 电平 (MOD: 1kHz/±1.5kHz)	SSG 失真测试仪 示波器		天线 通用连接 器			从 SSG 输入信号之后, 按 [应用] 按钮储存调整值。	如果 MOD 和频偏错误, 则不能正确调整“静噪 (浅)”。
[模拟宽带]	1) 调整项目 : [静噪 (浅) (模拟宽带)] 2) 调整项目 : [低], [低'], [中], [高'], [高] SSG 输出 : 12dB SINAD 电平 (MOD: 1kHz/±3kHz)							

NX-300S

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications / Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
Open Squelch adjust *6 [NXDN Very Narrow]	1) Adj item: [Open Squelch (NXDN Very Narrow)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: 12dB SINAD level for Analog Narrow -4dB (MOD: 400Hz/±1.1kHz)	SSG Distortion meter Oscilloscope		ANT Universal connector			After input signal from SSG, press [Apply] button to store the adjustment value.	Adjust with the analog signal. This item is adjusted under the condition that MOD is "400Hz" and Deviation is "±1.1kHz" due to the circuit configuration.
*6: Because Open Squelch (NXDN Narrow) is adjusted by adjusting Open Squelch (Analog Narrow), it is not necessary to adjust Open Squelch (NXDN Narrow).								
6. Low RSSI at -118dBm adjust *7 [Analog Narrow]	1) Adj item: [Low RSSI (Analog Narrow)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: -118dBm (0.28μV) (MOD: 1kHz/±1.5kHz)	SSG		ANT Universal connector			After input signal from SSG, press [Apply] button to store the adjustment value.	
[Analog Wide]	1) Adj item: [Low RSSI (Analog Wide)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: -118dBm (0.28μV) (MOD: 1kHz/±3kHz)							
[NXDN Very Narrow]	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).								

调 整

项 目	条 件	测 量			调 整			规 格 / 备 注
		测量装置	单元	端子	单元	部件	方 法	
静噪（浅） 调整 *6 [NXDN 甚窄带]	1) 调整项目：[静噪（浅）(NXDN 甚窄带)] 2) 调整项目：[低]，[低']，[中]，[高']， [高] SSG 输出：模拟窄的 12dB SINAD 电平 - 4dB (MOD: 400Hz/±1.1kHz)	SSG 失真测试 仪 示波器		天线 通用连 接器			从 SSG 输入信号之 后，按 [应用] 按 钮储存调整值。	用模拟信号进行调 整。 由于电路结构， 此项在 MOD 为 “400Hz” 和频偏为 “±1.1kHz” 的条 件下进行调整。
*6: 由于静噪（浅）(NXDN 窄带) 通过调整静噪（浅）(模拟窄带) 进行调整，因此不需要调整静噪（浅）(NXDN 窄带)。								
6. - 118dBm 低 RSSI 调整 *7 [模拟 窄带]	1) 调整项目：[低 RSSI (模拟窄带)] 2) 调整项目：[低]，[低']，[中]，[高']， [高] SSG 输出：- 118dBm (0.28 μV) (MOD: 1kHz/±1.5kHz)	SSG		天线 通用连 接器			从 SSG 输入信号之 后，按 [应用] 按 钮储存调整值。	
[模拟 宽带]	1) 调整项目：[低 RSSI (模拟宽带)] 2) 调整项目：[低]，[低']，[中]，[高']， [高] SSG 输出：- 118dBm (0.28 μV) (MOD: 1kHz/±3kHz)							
[NXDN 甚窄带]	1) 调整项目：[低 RSSI (NXDN 甚窄带)] 2) 调整项目：[低]，[低']，[中]，[高']， [高] SSG 输出：- 118dBm (0.28 μV) (MOD: 1kHz/±1.5kHz)							用模拟信号进行调 整。
*7: 由于 - 118dBm 低 RSSI (NXDN 窄带) 通过调整 - 118dBm 低 RSSI (模拟窄带) 进行调整，因此不需要调整 - 118dBm 低 RSSI (NXDN 窄带)。								

NX-300S

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications / Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
7. High RSSI at -80dBm adjust *8 [Analog Narrow]	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		ANT Universal connector			After input signal from SSG, press [Apply] button to store the adjustment value.	Adjust with the analog signal.
[Analog Wide]	1) Adj item: [High RSSI (Analog Wide)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: -80dBm (22.4μV) (MOD: 1kHz/±3kHz)							
[NXDN Very Narrow]	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)							
*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 [Analog Narrow]	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		ANT Universal connector			After input signal from SSG, press [Apply] button to store the adjustment value.	
[Analog Wide]	1) Adj item: [Tight Squelch (Analog Wide)] 2) Adj item: [Low], [Low'], [Center], [High'], [High] SSG output: 12dB SINAD level +5dB (MOD: 1kHz/±3kHz)							

调 整

项 目	条 件	测 量			调 整			规 格 / 备 注
		测量装置	单元	端子	单元	部件	方 法	
7. - 80dB 高 RSSI 调整 *8 [模拟 窄带]	1) 调整项目 : [高 RSSI (模拟窄带)] 2) 调整项目 : [低], [低'], [中], [高'], [高] SSG 输出 : - 80dBm (22.4 μV) (MOD: 1kHz/±1.5kHz)	SSG		天线 通用连 接器			从 SSG 输入信号之 后, 按 [应用] 按 钮储存调整值。	用模拟信号进行调 整。
[模拟 宽带]	1) 调整项目 : [高 RSSI (模拟宽带)] 2) 调整项目 : [低], [低'], [中], [高'], [高] SSG 输出 : - 80dBm (22.4 μV) (MOD: 1kHz/±3kHz)							
[NXDN 甚窄带]	1) 调整项目 : [高 RSSI (NXDN 甚窄带)] 2) 调整项目 : [低], [低'], [中], [高'], [高] SSG 输出 : - 80dBm (22.4 μV) (MOD: 1kHz/±1.5kHz)							
*8: 由于 - 80dBm 高 RSSI (NXDN 窄带) 通过调整 - 80dBm 高 RSSI (模拟窄带) 进行调整, 因此不需要调整 - 80dBm 高 RSSI (NXDN 窄带)。								
8. 静噪 (深) 调整 [模拟 窄带]	1) 调整项目 : [静噪 (深) (模拟窄带)] 2) 调整项目 : [低], [低'], [中], [高'], [高] SSG 输出 : 12dB SINAD 电平 +5dB (MOD: 1kHz/±1.5kHz)	SSG		天线 通用连 接器			从 SSG 输入信号之 后, 按 [应用] 按 钮储存调整值。	
[模拟 宽带]	1) 调整项目 : [静噪 (深) (模拟宽带)] 2) 调整项目 : [低], [低'], [中], [高'], [高] SSG 输出 : 12dB SINAD 电平 +5dB (MOD: 1kHz/±3kHz)							

TERMINAL FUNCTION / 端子功能

Control unit (X53-4433-01)

Pin No.	Name	I/O	Function
CN23			
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_/KEY11	-	No connection
8	6_/KEYO2	-	No connection
9	BL_SB	-	No connection
10	6_/KEYO0	-	No connection
11	6_/KEYO1	-	No connection
12	BL_SB	-	No connection
13	6_/KEYI0	-	No connection
14	AGND	-	GND
CN403			
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
9	+B	O	Power output after passing through the fuse
10	SB1	I	Power input after power switch
CN404			
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 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

控制单元 (X53-4433-01)

管脚号码	名称	输入/输出	功能
CN23			
1	ME	-	内部麦克风 GND
2	EMC	输入	内部麦克风输入
3	SP+	输出	内部扬声器的 BTL 输出 +
4	SP+	输出	内部扬声器的 BTL 输出 +
5	SP-	输出	内部扬声器的 BTL 输出 -
6	SP-	输出	内部扬声器的 BTL 输出 -
7	6_/KEY11	-	未连接
8	6_/KEYO2	-	未连接
9	BL_SB	-	未连接
10	6_/KEYO0	-	未连接
11	6_/KEYO1	-	未连接
12	BL_SB	-	未连接
13	6_/KEYI0	-	未连接
14	AGND	-	GND
CN403			
1	33A	输出	用于音量电平的 3.3V
2	VOL_GND	-	用于音量电平的 GND
3	VOL	输入	用于音频控制的音量电平输入
4	EN3	输入	旋转开关输入
5	AGND	-	GND
6	EN4	输入	旋转开关输入
7	EN1	输入	旋转开关输入
8	EN2	输入	旋转开关输入
9	+B	输出	通过保险丝后的电源输出
10	SB1	输入	电源开关后的电源输入
CN404			
1	LED_G	输出	绿色 LED 控制输出
2	/EMG	输入	紧急报警 (橙色) 键输入
3	LED_R	输出	红色 LED 控制输出
4	IFC	输入	收发 PCB 版本确认输入
5	/SAVE	输出	50C 稳压器控制输出
6	I2CCK	输出	TCXO 温度计时钟输出
7	/5TC	输出	50T 开关控制输出
8	I2CSDA	输入/输出	TCXO 温度计时钟输入/输出
9	SBC	输出	SB3 开关控制输出
10	/T_R	输出	收发控制输出
11	TV2	输出	RX 调谐电压 2 输出
12	ASSIST	输出	VCO 调谐电压输出
13	TV1	输出	RX 调谐电压 1 输出
14	VAGC	输入	AGC 电压输入
15	5RC	输出	50R 开关控制输出
16	TCXO_MOD	输出	TCXO 调制输出
17	PGND	-	GND

TERMINAL FUNCTION / 端子功能

Pin No.	Name	I/O	Function
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
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

管脚号码	名称	输入/输出	功能
18	RSSI	输入	RSSI 电压输入
19	PGND	-	GND
20	CV	输入	CV 电压输入
21	AGND	-	GND
22	NC	-	未连接
23	NC	-	未连接
24	+B	输入	通过保险丝后的电源输入
25	+B	输入	通过保险丝后的电源输入
26	+B	输入	通过保险丝后的电源输入
27	+B	输入	通过保险丝后的电源输入
28	NC	-	未连接
29	NC	-	未连接
30	AGND	-	GND
31	/PTT	输入	PTT 输入
32	Side_G	输出	键矩阵输出 (侧面 1, 2 键)
33	Side_1	输入	键矩阵输入 (侧面 1 键)
34	W_/N	输出	宽 / 窄控制输出
35	SDO1	输出	PLL 串行数据输出
36	Side_2	输入	键矩阵输入 (侧面 2 键)
37	/PCS_RF	输出	PLL 启用输出
38	/DSW	输出	APC 电压放电开关控制输出
39	APC	输出	APC 控制电压输出
40	/APCSW	输出	APC 开关控制输出
41	VCO_MOD	输出	VCO 调制输出
42	THP	输入	热敏电阻电压输入
43	PLD	输入	PLL 锁定检测输入
44	38M	输出	38M 输出
45	SCK1	输出	PLL 锁定输出
46	GND	-	GND
47	S_DET	输入	电池选择输入
48	GND	-	GND
49	NC	-	未连接
50	IF_DET	输入	IF 输入
CN405			
1	SSW	输入	EXT/INT 扬声器开关输入
2	SP+	输出	外部扬声器的 BTL 输出 +
3	SP-	输出	外部扬声器的 BTL 输出 -
4	MSW	输入	EXT/INT 麦克风开关输入
5	EMC	输入	外部麦克风输入
6	ME	-	外部麦克风接地
7	PTT	输入	外部 PTT 输入
8	PF	输入	可编程功能键输入
9	OPT	输入/输出	可选接口 I/O
10	E	-	GND
11	5V	输出	5V 输出

TERMINAL FUNCTION / 端子功能

Pin No.	Name	I/O	Function
12	TXD	O	Serial data output
13	RXD	I	Serial data input
14	NC	-	No connection
CN710			
1	OPT1	I/O	Refer to "CN710 26-pin connector specification" described on pages 98 to 103.
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	O	
15	OPT9	I	
16	DTI	I	
17	OPT8	I/O	
18	OPT11	O	
19	OPT7	I/O	
20	OPT2	I/O	
21	TXO	O	
22	RXEO	O	
23	RXEI	I	
24	TXI	I	
25	OPT6	O	
26	POW	O	

管脚号码	名称	输入/输出	功能
12	TXD	输出	串行数据输出
13	RXD	输入	串行数据输入
14	NC	-	未连接
CN710			
1	OPT1	输入/输出	请参阅第 98 至 103 页介绍的“CN710 26 针连接器规格”。
2	OPT3	输入/输出	
3	26P_RD	输入	
4	26P_TD	输出	
5	NC	-	
6	OPT4	输出	
7	OPT10	输出	
8	OPT5	输出	
9	DGND	-	
10	AGND	-	
11	AI	输入	
12	AO	输出	
13	AGND	-	
14	5V	输出	
15	OPT9	输入	
16	DTI	输入	
17	OPT8	输入/输出	
18	OPT11	输出	
19	OPT7	输入/输出	
20	OPT2	输入/输出	
21	TXO	输出	
22	RXEO	输出	
23	RXEI	输入	
24	TXI	输入	
25	OPT6	输出	
26	POW	输出	

TX-RX unit (X57-7830-11 A/2)

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 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

收发单元 (X57-7830-11 A/2)

管脚号码	名称	输入/输出	功能
CN900			
1	LED_G	输入	绿色 LED 控制输入
2	/EMG	输出	紧急报警 (橙色) 键输出
3	LED_R	输入	红色 LED 控制输入
4	IFC	输出	收发 PCB 版本确认输出
5	/SAVE	输入	50C 稳压器控制输入
6	I2CCK	输入	TCXO 温度计时钟输入
7	/5TC	输入	50T 开关控制输入
8	I2CSDA	输入/输出	TCXO 温度计时钟输出 / 输入
9	SBC	输入	SB3 开关控制输入
10	/T_R	输入	收发控制输入

TERMINAL FUNCTION / 端子功能

Pin No.	Name	I/O	Function
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
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

管脚号码	名称	输入/输出	功能
11	TV2	输入	RX 调谐电压 2 输入
12	ASSIST	输入	VCO 调谐电压输入
13	TV1	输入	RX 调谐电压 1 输入
14	VAGC	输出	AGC 电压输出
15	5RC	输入	50R 开关控制输入
16	TCXO_MOD	输入	TCXO 调制输入
17	GND	-	GND
18	RSSI	输出	RSSI 电压输出
19	GND	-	GND
20	CV	输出	CV 电压输出
21	GND	-	GND
22	NC	-	未连接
23	NC	-	未连接
24	+B	输出	通过保险丝后的电源输出
25	+B	输出	通过保险丝后的电源输出
26	+B	输出	通过保险丝后的电源输出
27	+B	输出	通过保险丝后的电源输出
28	NC	-	未连接
29	NC	-	未连接
30	GND	-	GND
31	/PTT	输出	PTT 输出
32	Side_G	输入	键矩阵输入 (侧面 1, 2 键)
33	Side_1	输出	键矩阵输出 (侧面 1 键)
34	W_/N	输入	未连接
35	SDO1	输入	PLL 串行数据输入
36	Side_2	输出	键矩阵输出 (侧面 2 键)
37	/PCS_RF	输入	PLL 启用输入
38	/DSW	输入	APC 电压放电开关控制输入
39	APC	输入	APC 控制电压输入
40	/APCSW	输入	APC 开关控制输入
41	VCO_MOD	输入	VCO 调制输入
42	THP	输出	热敏电阻电压输出
43	PLD	输出	PLL 锁定检测输出
44	38M	输入	38M 输入
45	SCK1	输入	PLL 锁定输入
46	GND	-	GND
47	S_DET	输出	电池选择输出
48	GND	-	GND
49	NC	-	未连接
50	IF_DET	输出	IF 输出

NX-300S

TERMINAL FUNCTION / 端子功能

Pin No.	Name	I/O	Function
CN901			
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)

管脚号码	名称	输入/输出	功能
CN901			
1	PTT	输入	内部 PTT 输入
2	GND	-	GND
3	Side_G	输出	键矩阵输出 (侧面 1, 2 键)
4	Side_1	输入	键矩阵输入 (侧面 1 键)
5	Side_2	输入	键矩阵输入 (侧面 2 键)

TERMINAL FUNCTION / 端子功能

Solder Pad (Control unit (X53-443) Foil side)

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(Io=-5mA)	4.0	-	5.3	V
				VOL(Io=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

焊盘 (控制单元 (X53-443) 箔面)

名称	输入/输出	信号类型	功能	额定值和条件				
				参数	最小	标准	最大	单位
PTT2	输出	数字	PTT 输出	[输出] 输出阻抗			10k	Ω
PTT1	输入	数字	PTT 输入	[输入] VIH	2.8		3.3	V
				[输入] VIL	0		0.5	V
MDSW	输入	数字	人员事故开关输入	[输入] VIH	2.8		3.3	V
				[输入] VIL	0		0.5	V
GND	-	GND	GND	容许电流值				mA
TXD	输出	数字	串行数据输出	VOH(Io=-5mA)	4.0	-	5.3	V
				VOL(Io=5mA)	0	-	0.8	V
				波特率			19200	bps
RXD	输入	数字	串行数据输入	VIH	2.8	-	5.3	V
				VIL	0	-	0.8	V
				波特率			19200	bps
RSSI	输出	模拟	RSSI 输出	输出阻抗			10k	Ω

TERMINAL FUNCTION / 端子功能

Solder Pad (Control unit (X53-443) Component side)

Name	I/O	Signal Type	Function	Rating and Condition				
				Parameter	Min	Typ	Max	Unit
TXO	O	Analog	Audio output	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	-	uF
				Output Impedance	-	-	2.2k	Ω
				Allowable Frequency	300	-	3000	Hz
OPT8	I/O	Digital	CMOS input/output	[Input] VIH	2.8	-	3.3	V
				[Input] VIL	0	-	0.5	V
				[Output] VOH	2.8	-	3.5	V
				[Output] VOL	0	-	0.5	V
OPT9	I	Analog	Audio input	Input Amplitude (Square wave)	-	3.3	-	Vp-p
				Coupling Capacitor	-	0.01	-	uF
				Input Impedance	22k	-	-	Ω
				Allowable Frequency	300	-	3000	Hz
26P_TD	O	Digital	CMOS output	[Output] VOH	2.8	-	3.5	V
				[Output] VOL	0	-	0.5	V
				Baud rate	-	-	19200	bps
26P_RD	I	Digital	CMOS input	[Input] VIH	2.8	-	3.3	V
				[Input] VIL	0	-	0.5	V
				Baud rate	-	-	19200	bps
RXEO	O	Analog	Audio output	Output Amplitude (1kHz, 60% deviation)	450	640	830	mVp-p
				Coupling Capacitor	-	0.1	-	uF
				Output Impedance	-	-	2.2k	Ω
				Allowable Frequency	300	-	3000	Hz
GND	-	GND	GND					
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
SP+	O	Analog	BTL output + for external speaker	[8Ω load] Max output power (1kHz, Battery voltage=7.5V)	-	1.3	1.8	W
				[8Ω load] DC Bias	-	2.5	-	V
				[8Ω load] Allowable Frequency	300	-	3000	Hz
SP-	O	Analog	BTL output - for external speaker	[16Ω load] Max output power (1kHz, Battery voltage=7.5V)	-	0.9	1.4	W
				[16Ω load] DC Bias	-	2.5	-	V
				[16Ω load] Allowable Frequency	300	-	3000	Hz
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

TERMINAL FUNCTION / 端子功能

焊盘 (控制单元 (X53-443) 元件面)

名称	输入/输出	信号类型	功能	额定值和条件				
				参数	最小	标准	最大	单位
TX0	输出	模拟	音频输出	输出振幅 (1kHz, 60% 频偏) 外部麦克风时	160	260	360	mVp-p
				输出振幅 (1kHz, 60% 频偏) 内部麦克风时	-	130	-	mVp-p
				耦合电容	-	0.1	-	uF
				输出阻抗	-	-	2.2k	Ω
				容许频率	300	-	3000	Hz
OPT8	输入/输出	数字	CMOS 输入 / 输出	[输入] VIH	2.8	-	3.3	V
				[输入] VIL	0	-	0.5	V
				[输出] VOH	2.8	-	3.5	V
				[输出] VOL	0	-	0.5	V
OPT9	输入	模拟	音频输入	输入振幅 (方波)	-	3.3	-	Vp-p
				耦合电容	-	0.01	-	uF
				输入阻抗	22k	-	-	Ω
				容许频率	300	-	3000	Hz
26P_TD	输出	数字	CMOS 输出	[输出] VOH	2.8	-	3.5	V
				[输出] VOL	0	-	0.5	V
				波特率	-	-	19200	bps
26P_RD	输入	数字	CMOS 输入	[输入] VIH	2.8	-	3.3	V
				[输入] VIL	0	-	0.5	V
				波特率	-	-	19200	bps
RXE0	输出	模拟	音频输出	输出振幅 (1kHz, 60% 频偏)	450	640	830	mVp-p
				耦合电容	-	0.1	-	uF
				输出阻抗	-	-	2.2k	Ω
				容许频率	300	-	3000	Hz
GND	-	GND	GND					
SSW	输入	数字	EXT/INT 扬声器开关输入 L: 外部扬声器 ON H: 内部扬声器 ON	VIH	2.8	-	5.3	V
				VIL	0	-	0.7	V
SP+	输出	模拟	外部扬声器的 BTL 输出 +	[8Ω 负载] 最大输出功率 (1kHz, 电池 电压 =7.5V)	-	1.3	1.8	W
				[8Ω 负载] DC 偏置	-	2.5	-	V
				[8Ω 负载] 容许频率	300	-	3000	Hz
SP-	输出	模拟	外部扬声器的 BTL 输出 -	[16Ω 负载] 最大输出功率 (1kHz, 电池 电压 =7.5V)	-	0.9	1.4	W
				[16Ω 负载] DC 偏置	-	2.5	-	V
				[16Ω 负载] 容许频率	300	-	3000	Hz
MSW	输入	数字	EXT/INT 麦克风开关输入 L: 外部麦克风 ON H: 内部麦克风 ON	VIH	2.8	-	5.3	V
				VIL	0	-	0.5	V

TERMINAL FUNCTION / 端子功能

Name	I/O	Signal Type	Function	Rating and Condition				
				Parameter	Min	Typ	Max	Unit
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
ME	-	-	External MIC GND					
PTT	I	Digital	External PTT input	VIH	2.8	-	5.3	V
			L: PTT ON	VIL	0	-	0.7	V
5V	-	Power	5V power supply output	Output Voltage (Iout=100mA)	4.9	5	5.1	V
			(Output control is FPU programmable)	Maximum Current	-	-	0.2	A
TXD	O	Digital	Serial data output	VOH(Io=-5mA)	4	-	5.3	V
				VOL(Io=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			115200	bps
SB1	O	Power	Power output after power switch	Output Voltage	6.0	7.5	9.0	V
				Maximum Current	-	-	0.2	A
GND	-	GND	GND					
PFKEY	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
OPT	I	Digital	Man-down input	VIH	2.8	-	5.3	V
			Programmable active H/L	VIL	0	-	0.7	V
NC	-	-	Not used (reserved for future option)					
33A	O	Analog	3.3V for volume level	Output Voltage (Iout=30mA)	3.2	3.3	3.4	V
				Maximum Current	-	-	0.2	A

TERMINAL FUNCTION / 端子功能

名称	输入/输出	信号类型	功能	额定值和条件				
				参数	最小	标准	最大	单位
EMC	输入	模拟	外部麦克风输入	音频电平 (STD 频偏)	7.7	12.5	17.3	mV
				DC 偏置		3.3		V
				容许频率	300		3000	Hz
				输入阻抗	-	1.8	-	kΩ
ME	-	-	外部麦克风接地					
PTT	输入	数字	外部 PTT 输入	V _{IH}	2.8	-	5.3	V
			L: PTT ON	V _{IL}	0	-	0.7	V
5V	-	功率	5V 电源输出	输出电压 (I _{out} =100mA)	4.9	5	5.1	V
			(输出控制为 FPU 可编程)	最大电流	-	-	0.2	A
TXD	输出	数字	串行数据输出	V _{OH} (I _o =-5mA)	4	-	5.3	V
				V _{OL} (I _o =5mA)	0	-	0.8	V
				波特率			19200	bps
RXD	输入	数字	串行数据输入	V _{IH}	2.8	-	5.3	V
				V _{IL}	0	-	0.8	V
				波特率			115200	bps
SB1	输出	功率	电源开关后的电源输出	输出电压	6.0	7.5	9.0	V
				最大电流	-	-	0.2	A
GND	-	GND	GND					
PFKEY	输入	模拟	可编程功能键输入	V (PF2 键 ON)	2.2	-	2.8	V
				V (PF1 键 ON)	1.7	-	2.2	V
				V (PF1, PF2 键 ON)	1.3	-	1.7	V
OPT	输入	数字	人员事故输入	V _{IH}	2.8	-	5.3	V
			可编程启动 H/L	V _{IL}	0	-	0.7	V
NC	-	-	未使用 (留待以后的选购件使用)					
33A	输出	模拟	用于音量电平的 3.3V	输出电压 (I _{out} =30mA)	3.2	3.3	3.4	V
				最大电流	-	-	0.2	A

TERMINAL FUNCTION / 端子功能

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 / 端子功能

通用连接器

管脚号码	名称	输入/输出	信号类型	功能	额定值和条件				
					参数	最小	标准	最大	单位
1	SSW	输入	数字	EXT/INT 扬声器开关输入 L: 外部扬声器 ON H: 内部扬声器 ON	VIH	2.8	-	5.3	V
					VIL	0	-	0.7	V
2	SP+	输出	模拟	外部扬声器的 BTL 输出 +	[8Ω 负载] 最大输出功率 (1kHz, 电池电压 =7.5V)		1.3	1.8	W
					[8Ω 负载] DC 偏置		2.5		V
					[8Ω 负载] 容许频率	300		3000	Hz
3	SP -	输出	模拟	外部扬声器的 BTL 输出 -	[16Ω 负载] 最大输出功率 (1kHz, 电池电压 =7.5V)		0.9	1.4	W
					[16Ω 负载] DC 偏置		2.5		V
					[16Ω 负载] 容许频率	300		3000	Hz
4	MSW	输入	数字	EXT/INT 麦克风开关输入 L: 外部麦克风 ON H: 内部麦克风 ON	VIH	2.8	-	5.3	V
					VIL	0	-	0.5	V
5	EMC	输入	模拟	外部麦克风输入	音频电平 (STD 频偏)	7.7	12.5	17.3	mV
					DC 偏置		3.3		V
					容许频率	300		3000	Hz
					输入阻抗	-	1.8	-	kΩ
6	ME	-	-	外部麦克风接地					
7	PTT	输入	数字	外部 PTT 输入 L: PTT ON	VIH	2.8	-	5.3	V
					VIL	0	-	0.7	V
8	PF	输入	模拟	可编程功能键输入	V (PF2 键 ON)	2.2	-	2.8	V
					V (PF1 键 ON)	1.7	-	2.2	V
					V (PF1, PF2 键 ON)	1.3	-	1.7	V
9	OPT	输入	数字	人员事故输入 可编程启动 H/L	VIH	2.8	-	5.3	V
					VIL	0	-	0.7	V
10	E	-	-	GND					
11	5V	-	功率	5V 电源输出 (输出控制为 FPU 可编程)	输出电压 (I _{out} =100mA)	4.9	5.0	5.1	V
					最大电流	-	-	0.2	A
12	TXD	输出	数字	串行数据输出	VOH (I _o = -5mA)	4.0	-	5.3	V
					VOL (I _o =5mA)	0	-	0.8	V
					波特率			19200	bps
13	RXD	输入	数字	串行数据输入	VIH	2.8	-	5.3	V
					VIL	0	-	0.8	V
					波特率			115200	bps
14	NC	-	-	未使用 (留待以后的选购件使用)					

TERMINAL FUNCTION / 端子功能

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

TERMINAL FUNCTION / 端子功能

CN710 26 针连接器规格

管脚号码	名称	输入/输出	信号类型	额定值和条件				
				参数	最小	标准	最大	单位
1	OPT1	输入/输出	数字	[输入] VIH	2.8		3.3	V
6	OPT4			[输入] VIL	0		0.5	V
8	OPT5			[输出] VOH	2.8		3.5	V
17	OPT8			[输出] VOL	0		0.5	V
18	OPT11							
2	OPT3	输入/输出	数字	[输入] VIH	2.8		3.3	V
19	OPT7			[输入] VIL	0		0.5	V
20	OPT2			[输出] VOH	2.8		3.5	V
25	OPT6			[输出] VOL	0		0.5	V
3	26P_RD	输入	数字	[输入] VIH	2.8		3.3	V
				[输入] VIL	0		0.5	V
				波特率			19200	bps
4	26P_TD	输出	数字	[输出] VOH	2.8		3.5	V
				[输出] VOL	0		0.5	V
				波特率			19200	bps
15	OPT9	输入	模拟	输入振幅(方波)	-	3.3	-	V _{p-p}
				耦合电容	-	0.01	-	μF
				输入阻抗	22k	-	-	Ω
				容许频率	300	-	3000	Hz
7	OPT10	输出	模拟/数字	输出振幅(1kHz, 60%频偏)	0.9	1.3	1.7	V _{p-p}
				耦合电容		0.1		μF
				输出阻抗			22k	Ω
				容许频率	300		3000	Hz
11	AI	输入	模拟	输入振幅(1kHz, 60%频偏)	0.3	0.5	0.7	V _{p-p}
				耦合电容	-	0.1	-	μF
				输入阻抗	-	12k	-	Ω
				容许频率	300	-	3000	Hz
12	AO	输出	模拟	输出振幅(1kHz, 60%频偏)	30	50	70	mV _{p-p}
				耦合电容	-	0.1	-	μF
				输出阻抗	-	35k	-	Ω
				容许频率	300	-	3000	Hz
16	DTI	输入	模拟	输入振幅(1kHz, 60%频偏)	0.8	1.1	1.4	V _{p-p}
				耦合电容	-	0.1	-	μF
				输入阻抗	22k	-	-	Ω
				容许频率	300	-	3000	Hz
21	TX0	输出	模拟	输出振幅(1kHz, 60%频偏) 外部麦克风时	160	260	360	mV _{p-p}
				输出振幅(1kHz, 60%频偏) 内部麦克风时	-	130	-	mV _{p-p}
				耦合电容	-	0.1	-	μF
				输出阻抗	-	-	2.2k	Ω
				容许频率	300	-	3000	Hz

TERMINAL FUNCTION / 端子功能

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	-	-	-				

TERMINAL FUNCTION / 端子功能

管脚号码	名称	输入/输出	信号类型	额定值和条件				
				参数	最小	标准	最大	单位
22	RXEO	输出	模拟	输出振幅 (1kHz, , 60% 频偏)	450	640	830	mVp-p
				耦合电容	-	0.1	-	μ F
				输出阻抗	-	-	2.2k	Ω
				容许频率	300	-	3000	Hz
23	RXEI	输入	模拟	输入振幅 (1kHz, , 60% 频偏)	450	640	830	mVp-p
				耦合电容		0.1		μ F
				输入阻抗	22k			Ω
				容许频率	300		3000	Hz
24	TXI	输入	模拟	输入振幅 (1kHz, , 60% 频偏) 外部麦克风时	160	260	360	mVp-p
				输入振幅 (1kHz, , 60% 频偏) 内部麦克风时	-	130	-	mVp-p
				耦合电容	-	0.1	-	μ F
				输入阻抗	22k	-	-	Ω
				容许频率	300	-	3000	Hz
14	5V	输出	功率	输出电压		5		V
				输出电流			78	mA
26	POW	输出	功率	输出电压		7.5		V
				输出电流			100	mA
9	DGND	-	GND	容许电流值 (3 针的总电流)			100	mA
10	AGND							
13								
5	NC	-	-	-				

TERMINAL FUNCTION / 端子功能

CN710 26-pin connector specification

Pin No.	Name	Device	I/O	Connection	Function
1	OPT1	VGS-1	I	BUSY	BUSY indication
2	OPT3	VGS-1	I	PLAY	PLAY indication
3	26P_RD	VGS-1	I	SO	Serial data input
4	26P_TD	VGS-1	O	SI	Serial data output
5	NC	-	-	-	-
6	OPT4	VGS-1	O	EN	Enable
7	OPT10	VGS-1	O	USEL	UART speed select output
8	OPT5	VGS-1	O	RST	Reset output
9	DGND	VGS-1	-	DGND	DGND
10	AGND	VGS-1	-	AGND	AGND
11	AI	VGS-1	I	AO	VGS Audio input
12	AO	VGS-1	O	AI	VGS Audio output
13	AGND	VGS-1	-	AGND	AGND
14	5V	VGS-1	O	5C	5V power supply
15	OPT9	VGS-1	-	-	-
16	DTI	VGS-1	-	-	-
17	OPT8	VGS-1	-	-	-
18	OPT11	VGS-1	-	-	-
19	OPT7	VGS-1	-	-	-
20	OPT2	VGS-1	-	-	-
21	TXO	VGS-1	-	-	-
22	RXEO	VGS-1	-	-	-
23	RXEI	VGS-1	-	-	-
24	TXI	VGS-1	-	-	-
25	OPT6	VGS-1	-	-	-
26	POW	VGS-1	-	-	Note: POW and 5V can not be used simultaneously.

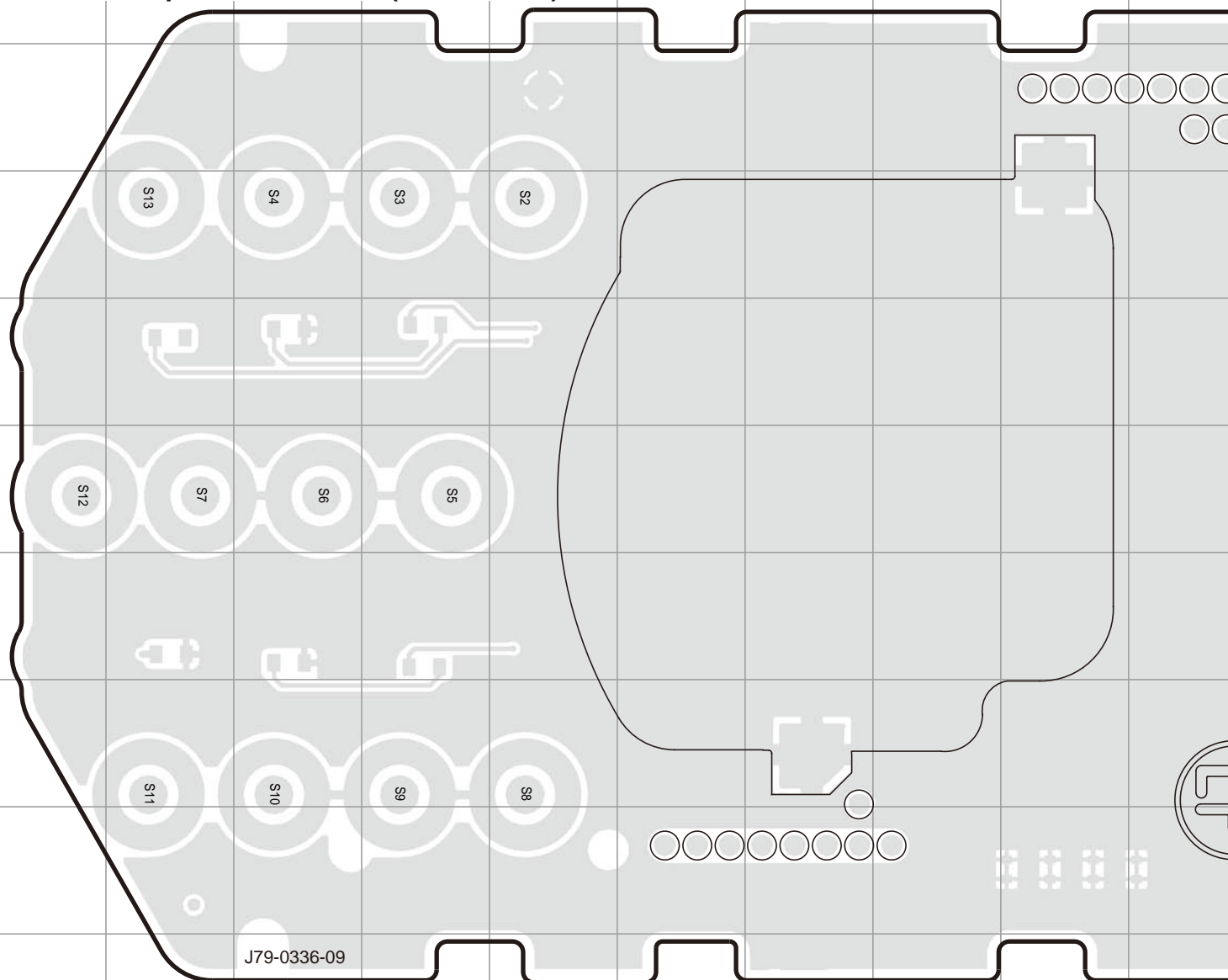
TERMINAL FUNCTION / 端子功能

CN710 26 针连接器规格

管脚号码	名称	装置	输入/输出	连接	功能
1	OPT1	VGS-1	输入	BUSY	繁忙指示
2	OPT3	VGS-1	输入	PLAY	播放指示
3	26P_RD	VGS-1	输入	S0	串行数据输入
4	26P_TD	VGS-1	输出	S1	串行数据输出
5	NC	-	-	-	-
6	OPT4	VGS-1	输出	EN	启用
7	OPT10	VGS-1	输出	USEL	UART 速度选择输出
8	OPT5	VGS-1	输出	RST	复位输出
9	DGND	VGS-1	-	DGND	DGND
10	AGND	VGS-1	-	AGND	AGND
11	AI	VGS-1	输入	A0	VGS 音频输入
12	A0	VGS-1	输出	AI	VGS 音频输出
13	AGND	VGS-1	-	AGND	AGND
14	5V	VGS-1	输出	5C	5V 电源
15	OPT9	VGS-1	-	-	-
15	OPT9	VGS-1	-	-	-
17	OPT8	VGS-1	-	-	-
18	OPT11	VGS-1	-	-	-
19	OPT7	VGS-1	-	-	-
20	OPT2	VGS-1	-	-	-
21	TX0	VGS-1	-	-	-
22	RXE0	VGS-1	-	-	-
23	RXE1	VGS-1	-	-	-
24	TX1	VGS-1	-	-	-
25	OPT6	VGS-1	-	-	-
26	POW	VGS-1	-	-	注意 : POW 和 5V 不能同时使用。

NX-300S PC BOARD / 印刷电路板

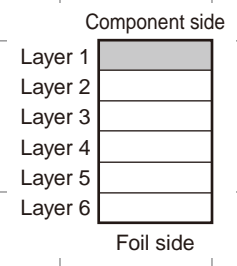
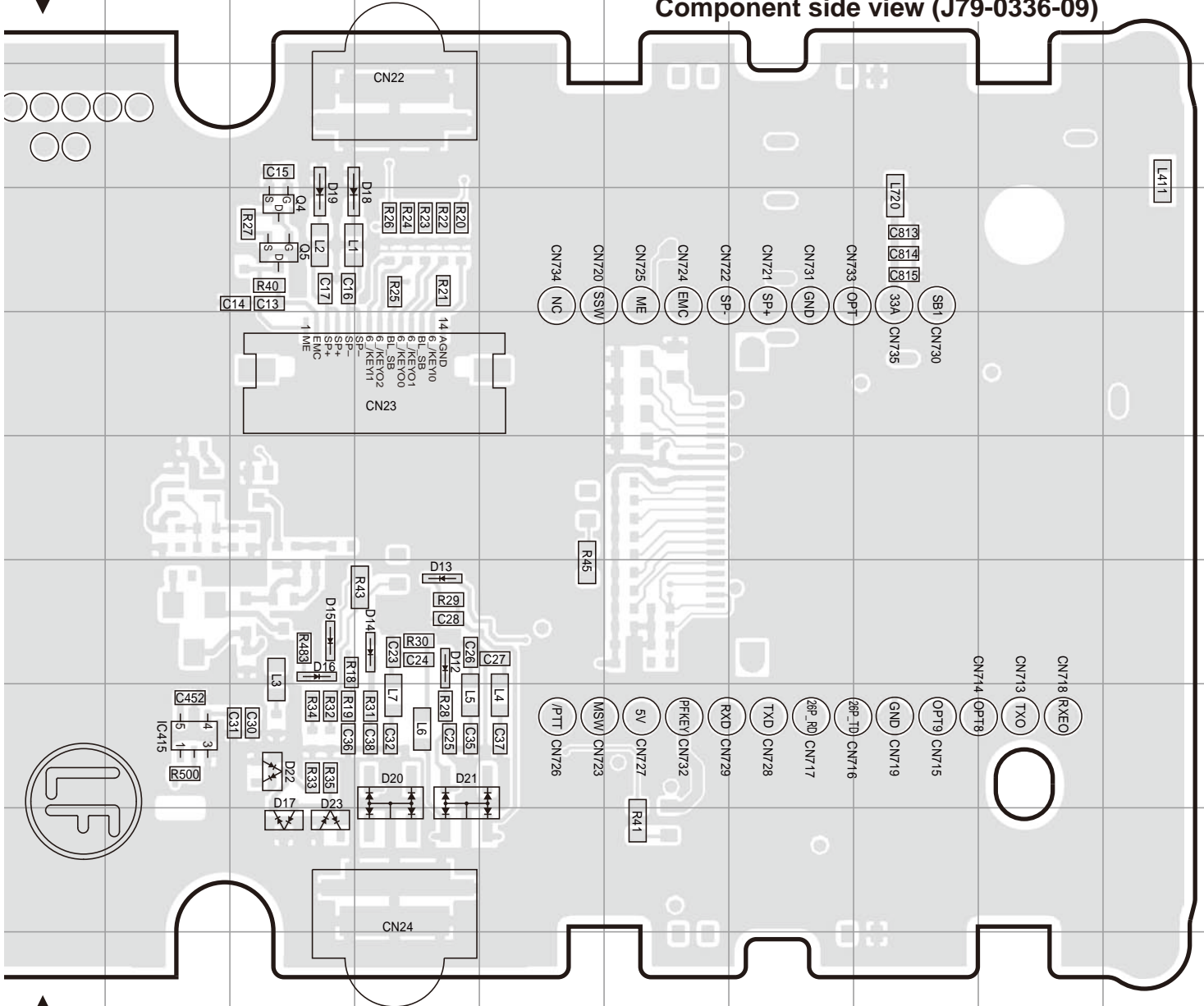
CONTROL UNIT (X53-4433-01)
Component side view (J79-0336-09)



Ref. No.	Address	Ref. No.	Address
IC415	8K	D19	4L
Q4	4L	D20	8M
Q5	4L	D21	8M
D12	7M	D22	8L
D13	7M	D23	9L
D14	7M		
D15	7L		
D16	7L		
D17	9L		
D18	4L		

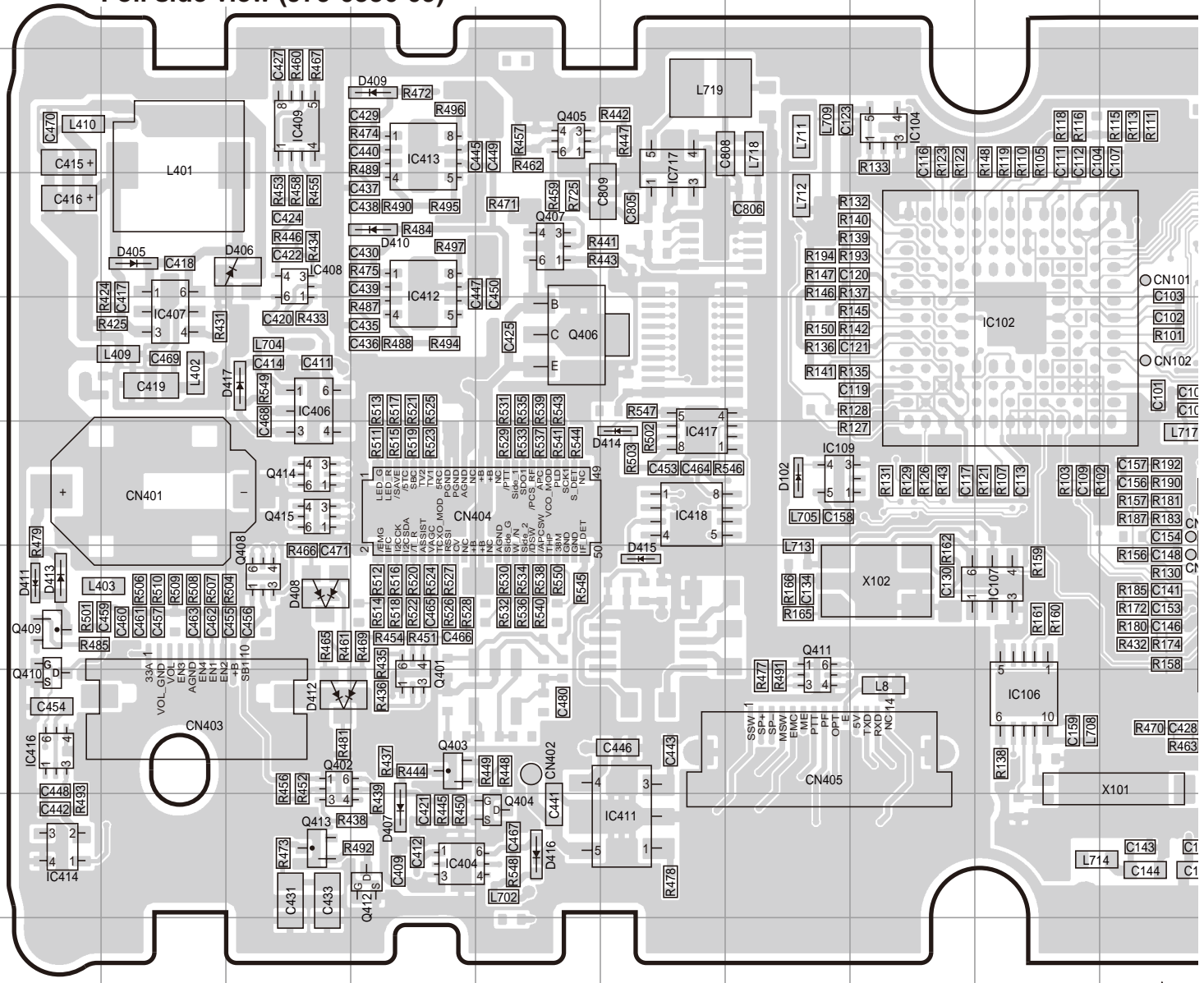
PC BOARD / 印刷电路板 NX-300S

CONTROL UNIT (X53-4433-01) Component side view (J79-0336-09)



NX-300S PC BOARD / 印刷电路板

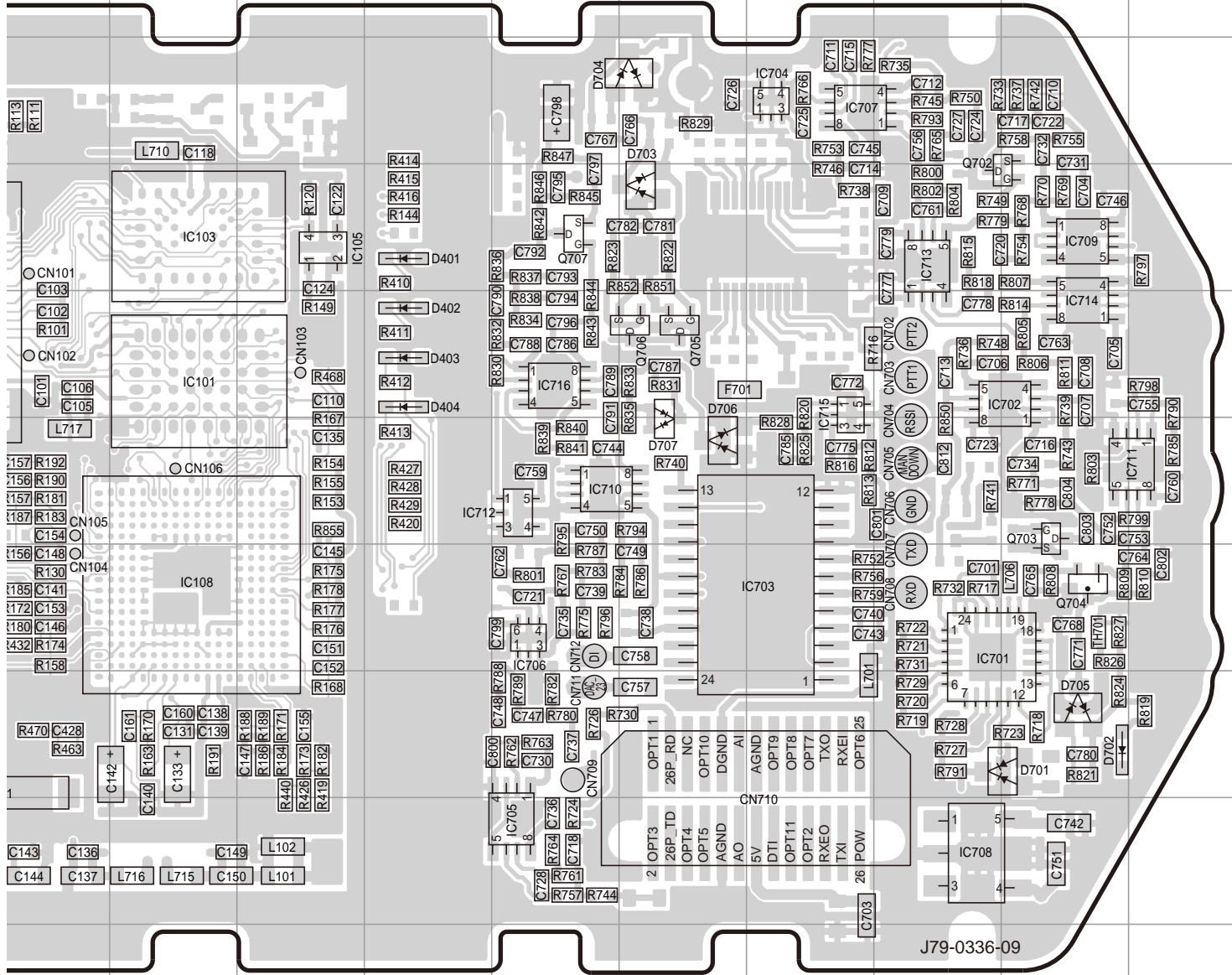
CONTROL UNIT (X53-4433-01) Foil side view (J79-0336-09)



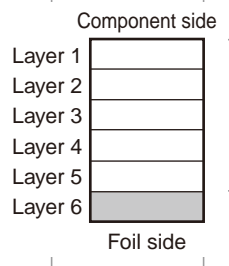
Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC101	5K	IC408	4C	IC704	3P	IC716	5N	Q411	8G	D401	4M	D413	7A
IC102	5I	IC409	3C	IC705	9N	IC717	3F	Q412	9D	D402	5M	D414	6F
IC103	4K	IC411	9F	IC706	7N	Q401	8D	Q413	9C	D403	5M	D415	7F
IC104	3H	IC412	4D	IC707	3P	Q402	8C	Q414	6C	D404	5M	D416	9E
IC105	4L	IC413	3D	IC708	9Q	Q403	8D	Q415	6C	D405	4B	D417	5C
IC106	8I	IC414	9A	IC709	4R	Q404	9E	Q702	4R	D406	4C	D701	8R
IC107	7I	IC416	8A	IC710	6N	Q405	3E	Q703	6R	D407	9D	D702	8R
IC108	7K	IC417	6F	IC711	6S	Q406	5E	Q704	7R	D408	7C	D703	4O
IC109	6G	IC418	6F	IC712	6N	Q407	4E	Q705	5O	D409	3D	D704	3O
IC404	9D	IC701	7Q	IC713	4Q	Q408	7C	Q706	5O	D410	4D	D705	8R
IC406	5C	IC702	5R	IC714	5R	Q409	7A	Q707	4N	D411	7A	D706	6O
IC407	5B	IC703	7P	IC715	5P	Q410	8A	D102	6G	D412	8C	D707	6O

PC BOARD / 印刷电路板 NX-300S

CONTROL UNIT (X53-4433-01) Foil side view (J79-0336-09)



J79-0336-09

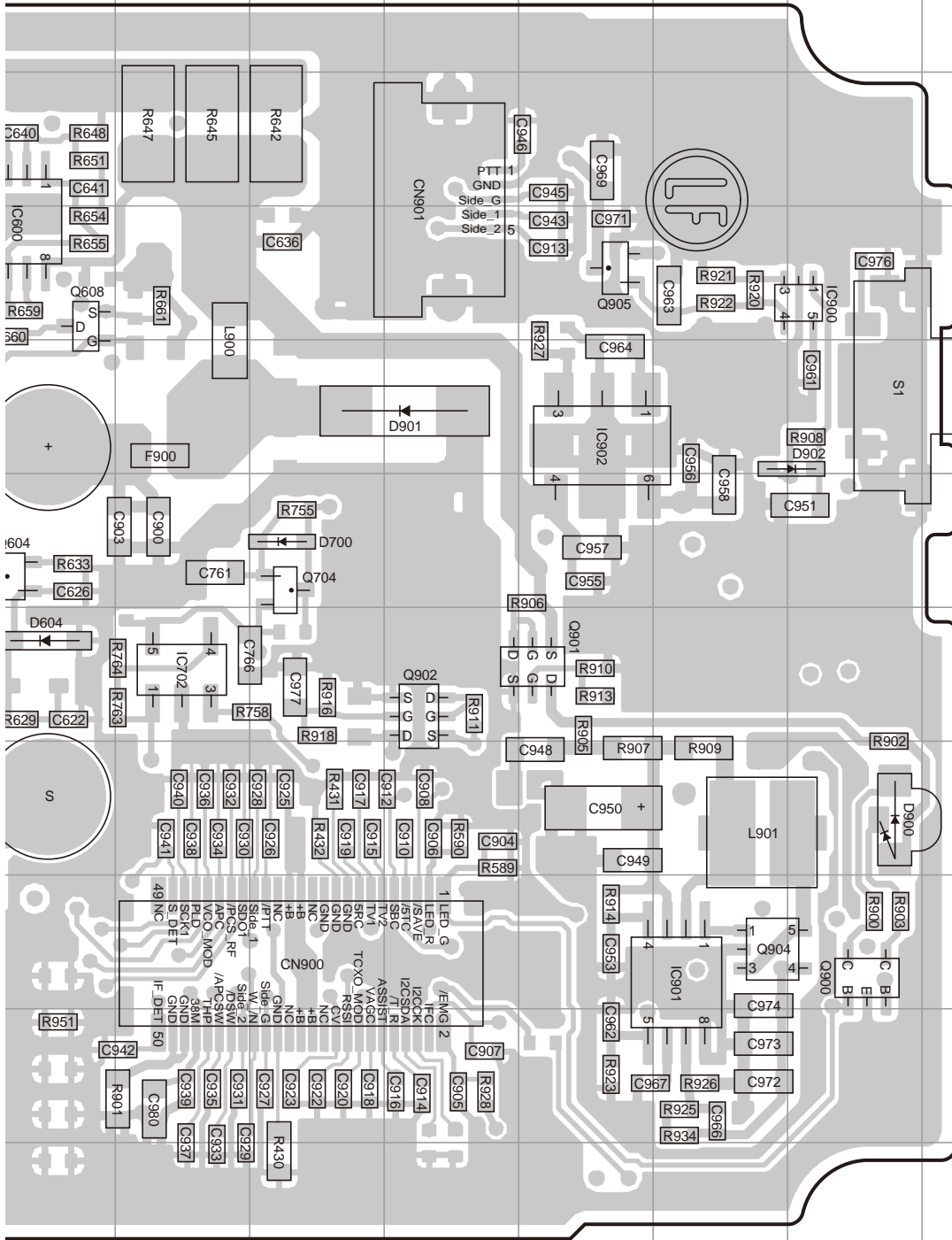


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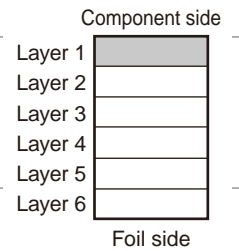
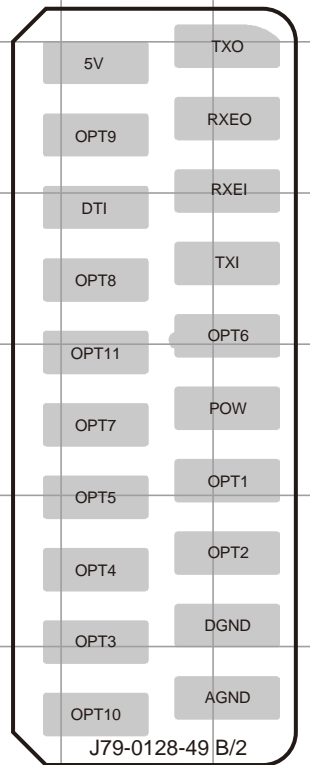
PC BOARD / 印刷电路板

NX-300S

TX-RX UNIT (X57-7830-11) (A/2) Component side view (J79-0128-49 A/2)



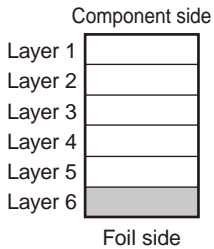
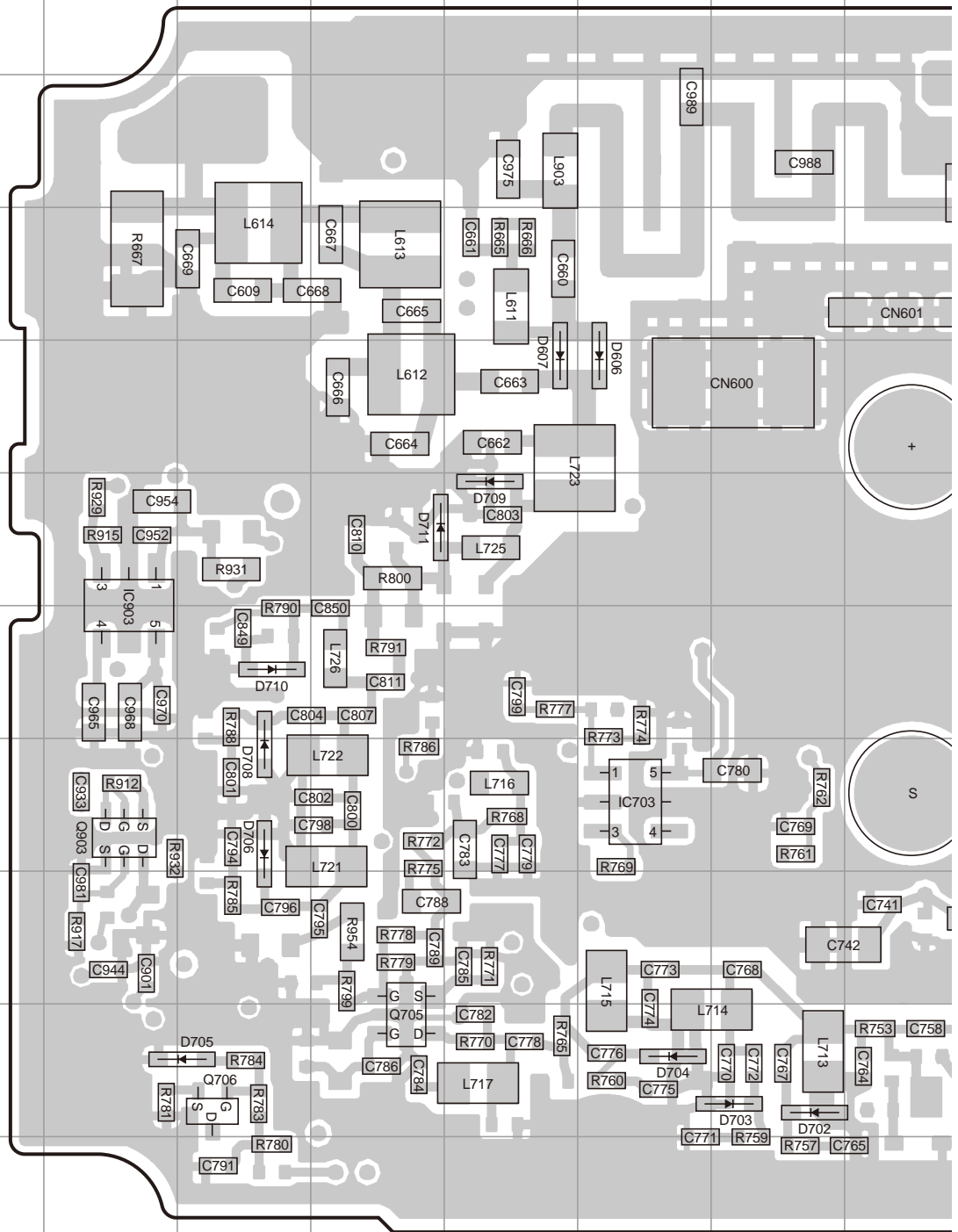
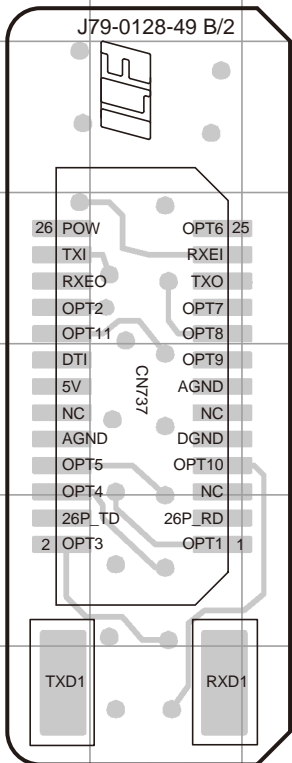
TX-RX UNIT (X57-7830-11) (B/2)



NX-300S PC BOARD / 印刷电路板

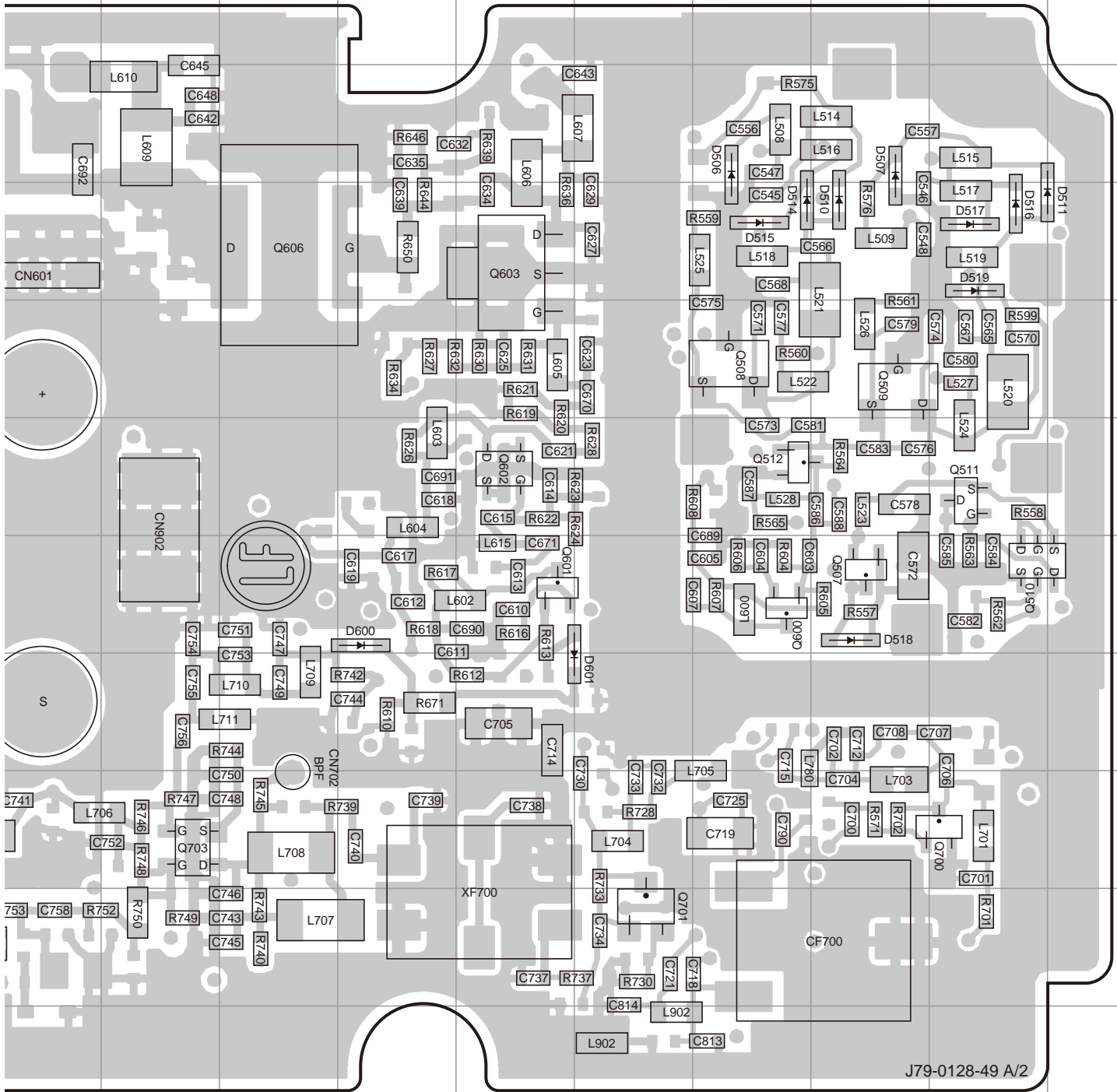
TX-RX UNIT (X57-7830-11) (A/2)
Foil side view (J79-0128-49 A/2)

TX-RX UNIT (X57-7830-11) (B/2)



PC BOARD / 印刷电路板 NX-300S

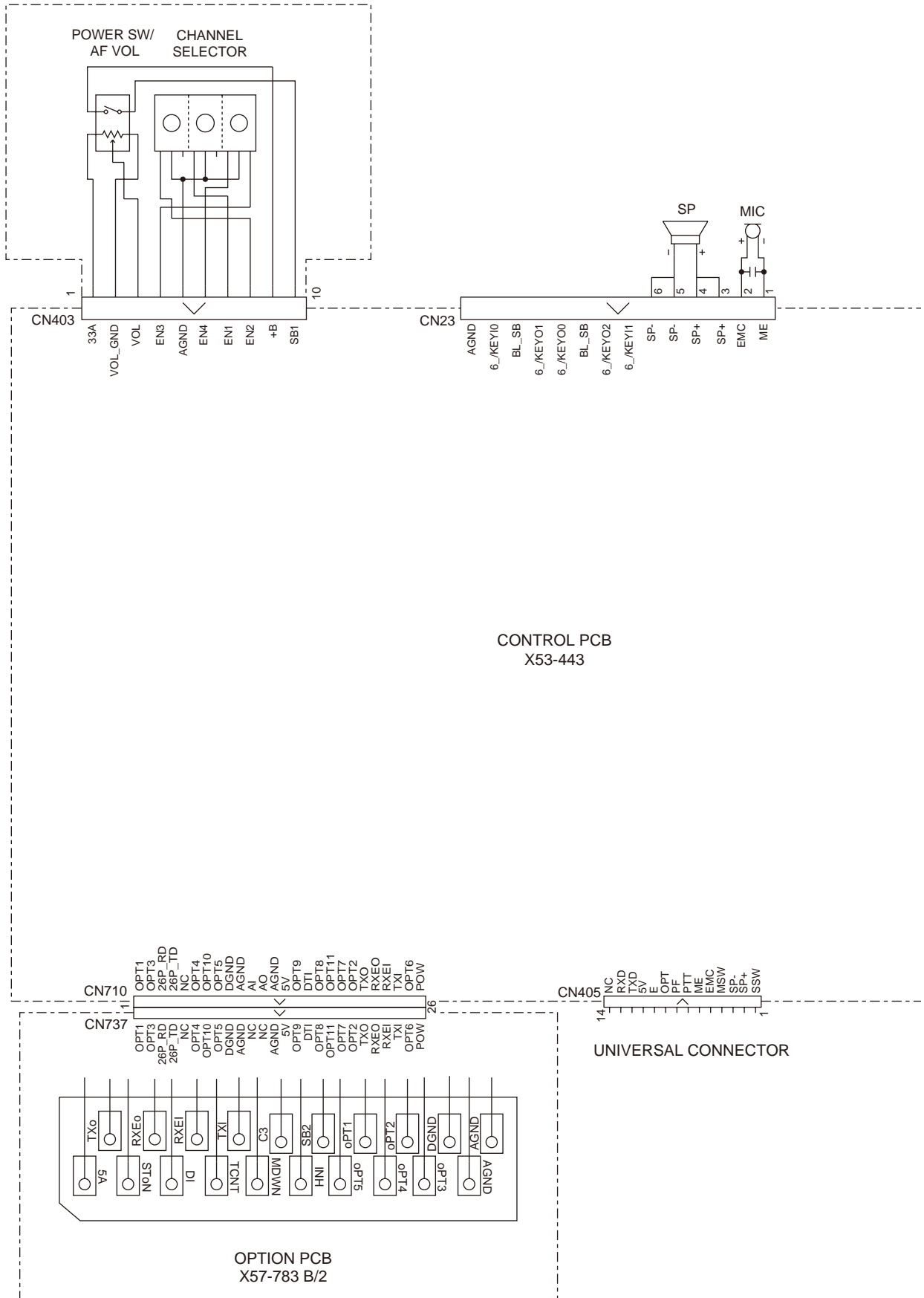
TX-RX UNIT (X57-7830-11) (A/2)
Foil side view (J79-0128-49 A/2)



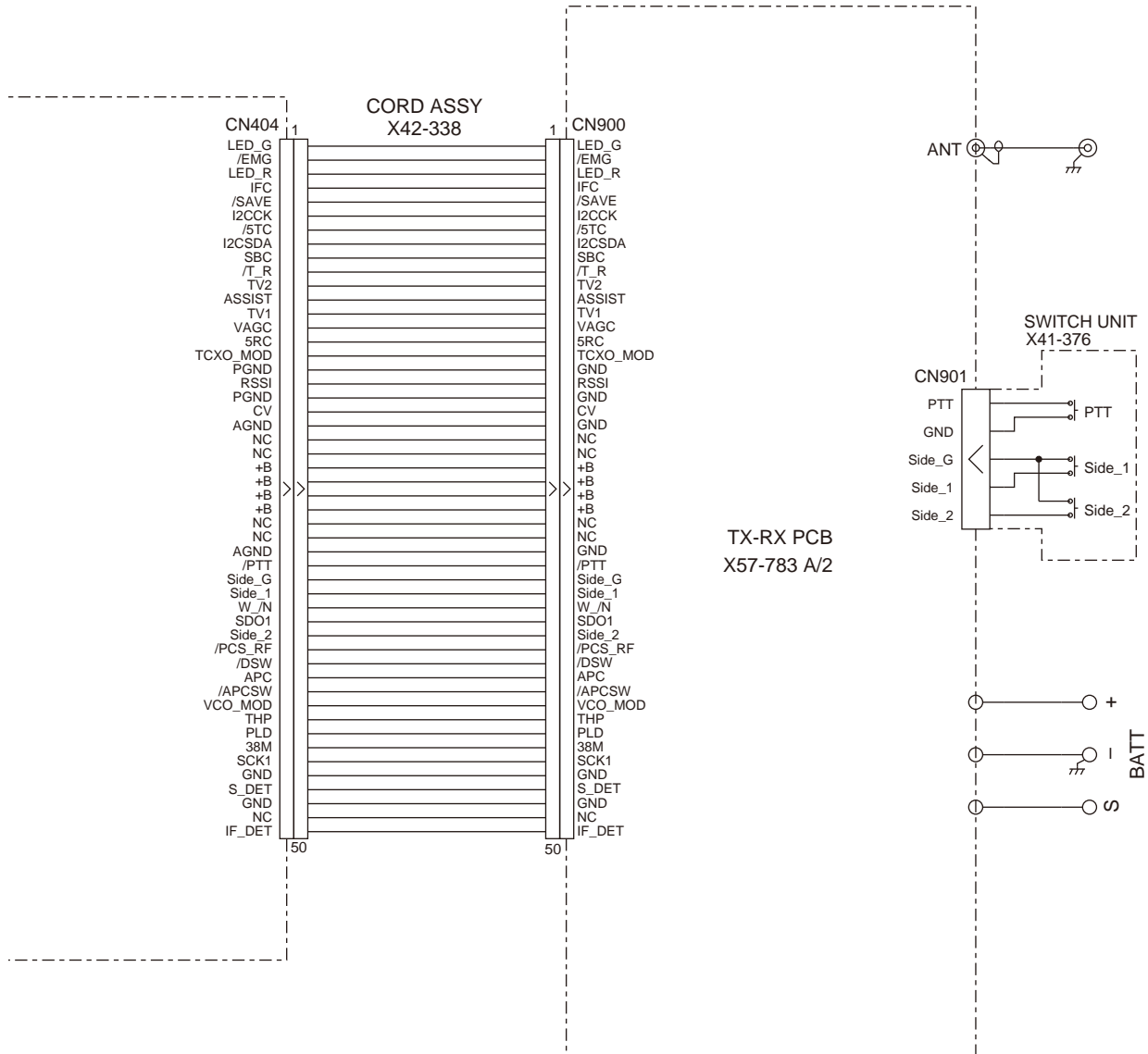
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IC703	8H	Q512	6P	Q701	10O	D510	4Q	D519	4R	D704	10H
IC903	7D	Q600	7P	Q703	9K	D511	4S	D600	7M	D705	10E
Q507	7Q	Q601	7N	Q705	10F	D514	4P	D601	8O	D706	8E
Q508	5P	Q602	6N	Q706	10E	D515	4P	D606	5H	D708	8E
Q509	5Q	Q603	4N	Q903	8D	D516	4R	D607	5G	D709	6G
Q510	7R	Q606	4L	D506	3P	D517	4R	D702	10I	D710	7E
Q511	6R	Q700	9R	D507	3Q	D518	7Q	D703	10I	D711	6F

NX-300S

INTERCONNECTION DIAGRAM / 互连图

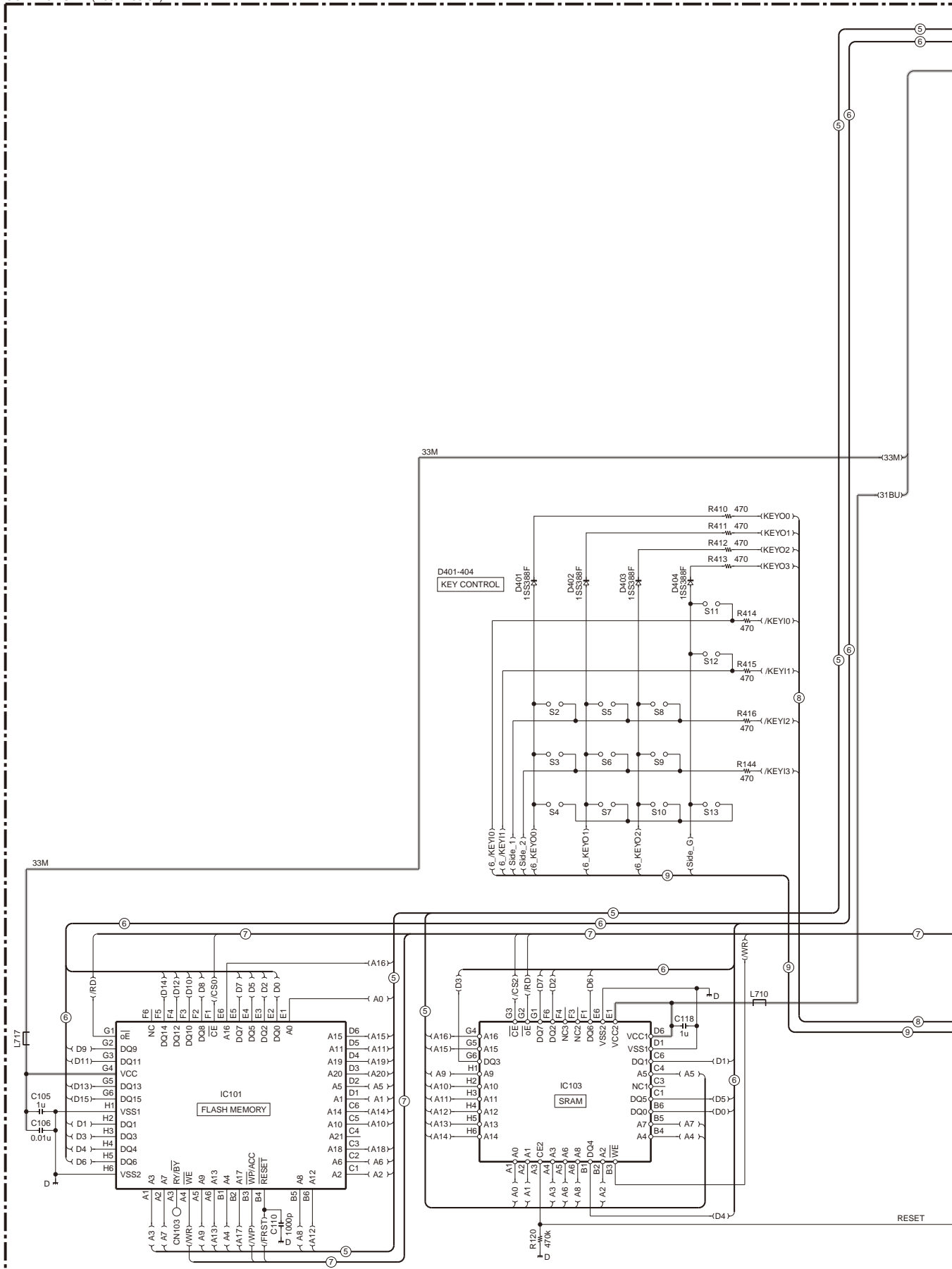


INTERCONNECTION DIAGRAM / 互连图



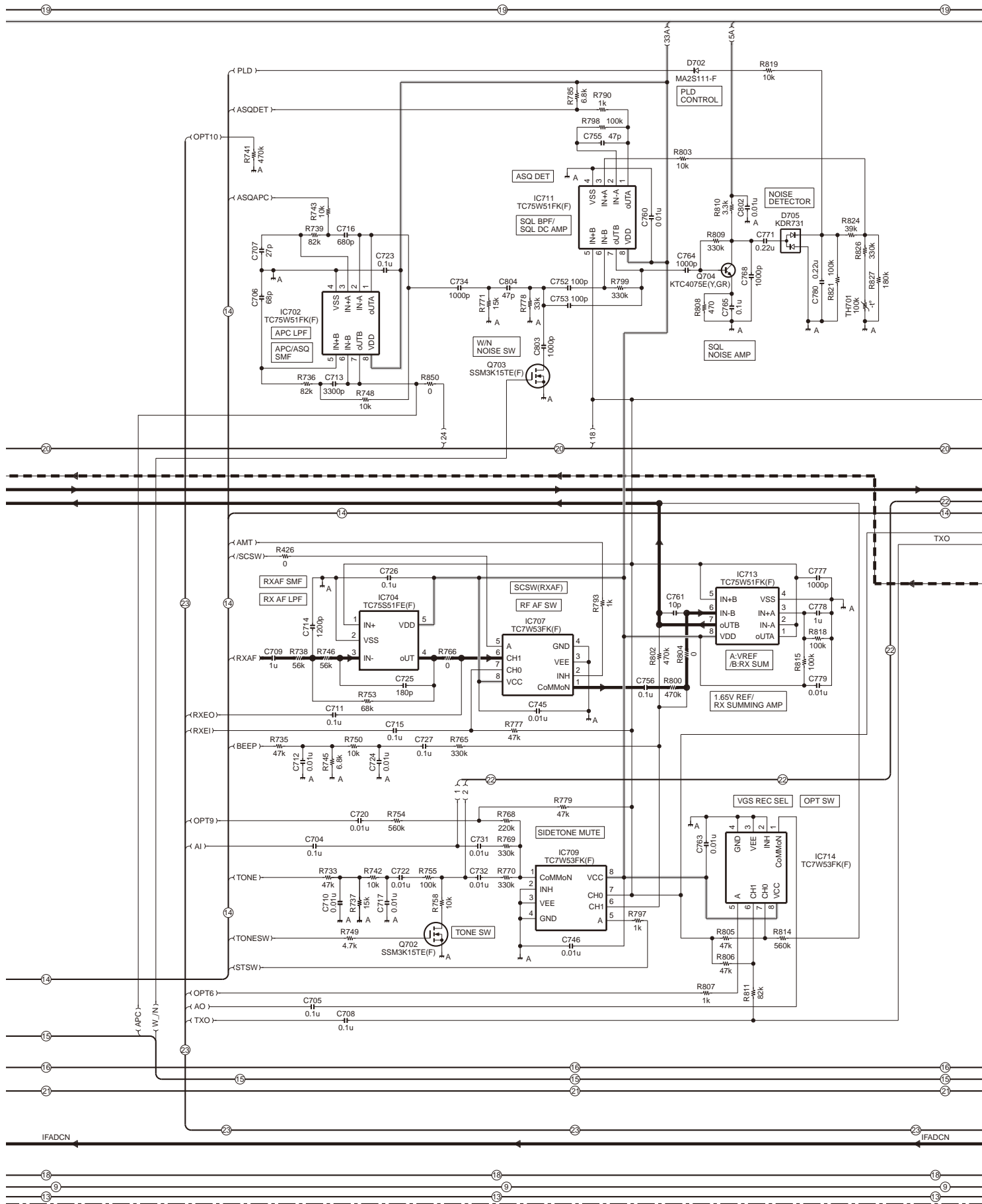
NX-300S SCHEMATIC DIAGRAM / 原理图

CONTROL UNIT (X53-4433-01)



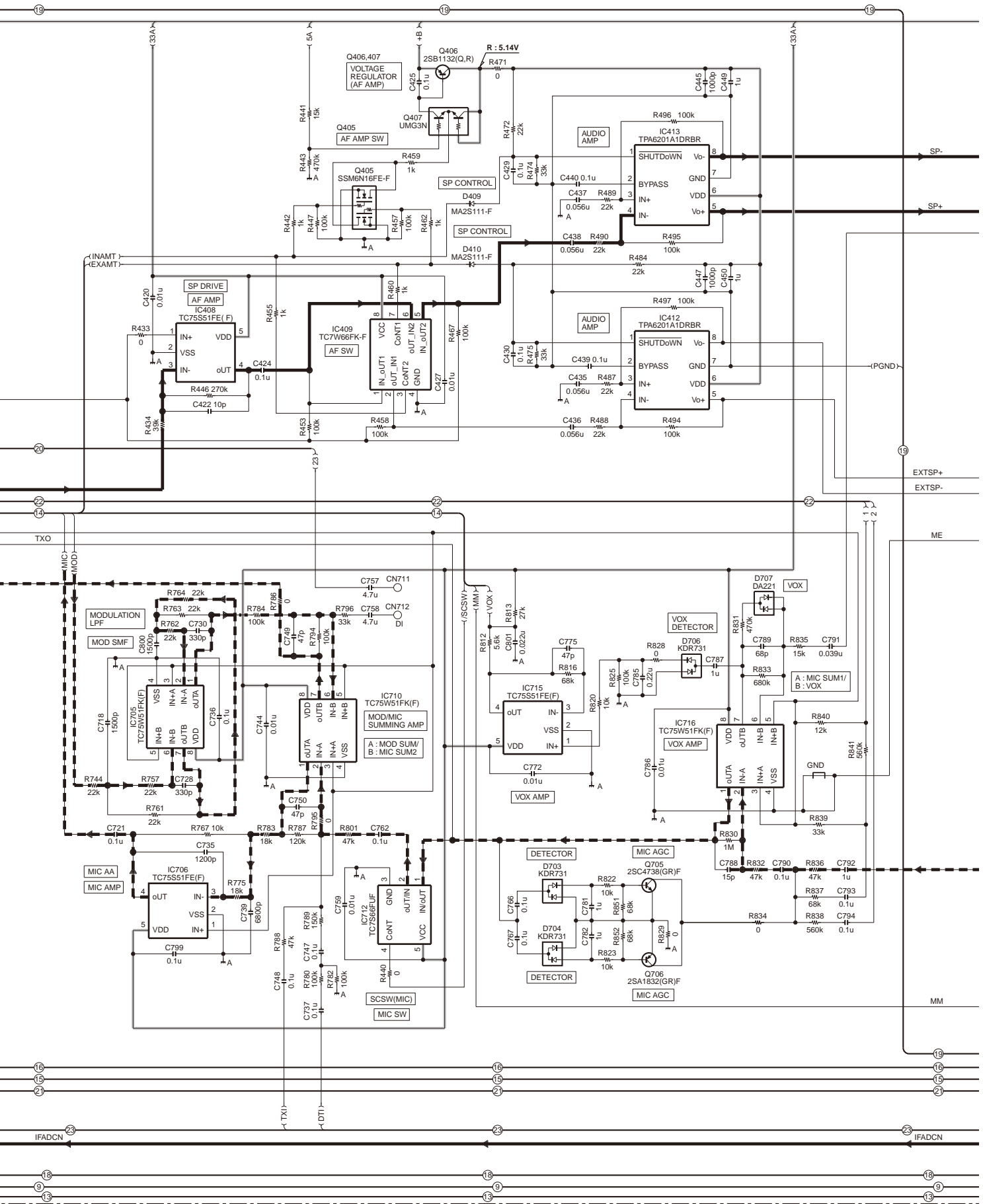
SCHEMATIC DIAGRAM / 原理图 NX-300S

CONTROL UNIT (X53-4433-01)



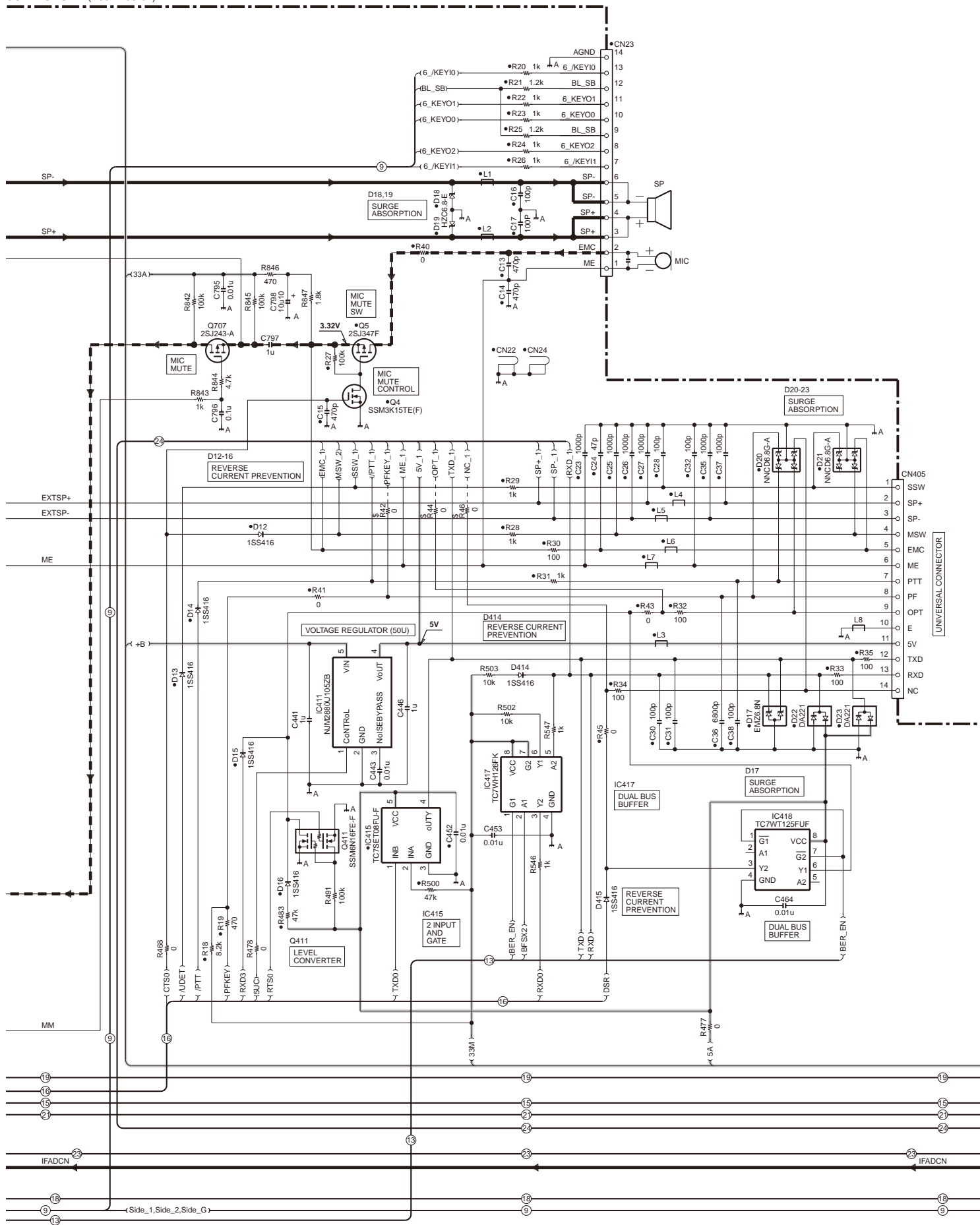
NX-300S SCHEMATIC DIAGRAM / 原理图

CONTROL UNIT (X53-4433-01)



SCHEMATIC DIAGRAM / 原理图 NX-300S

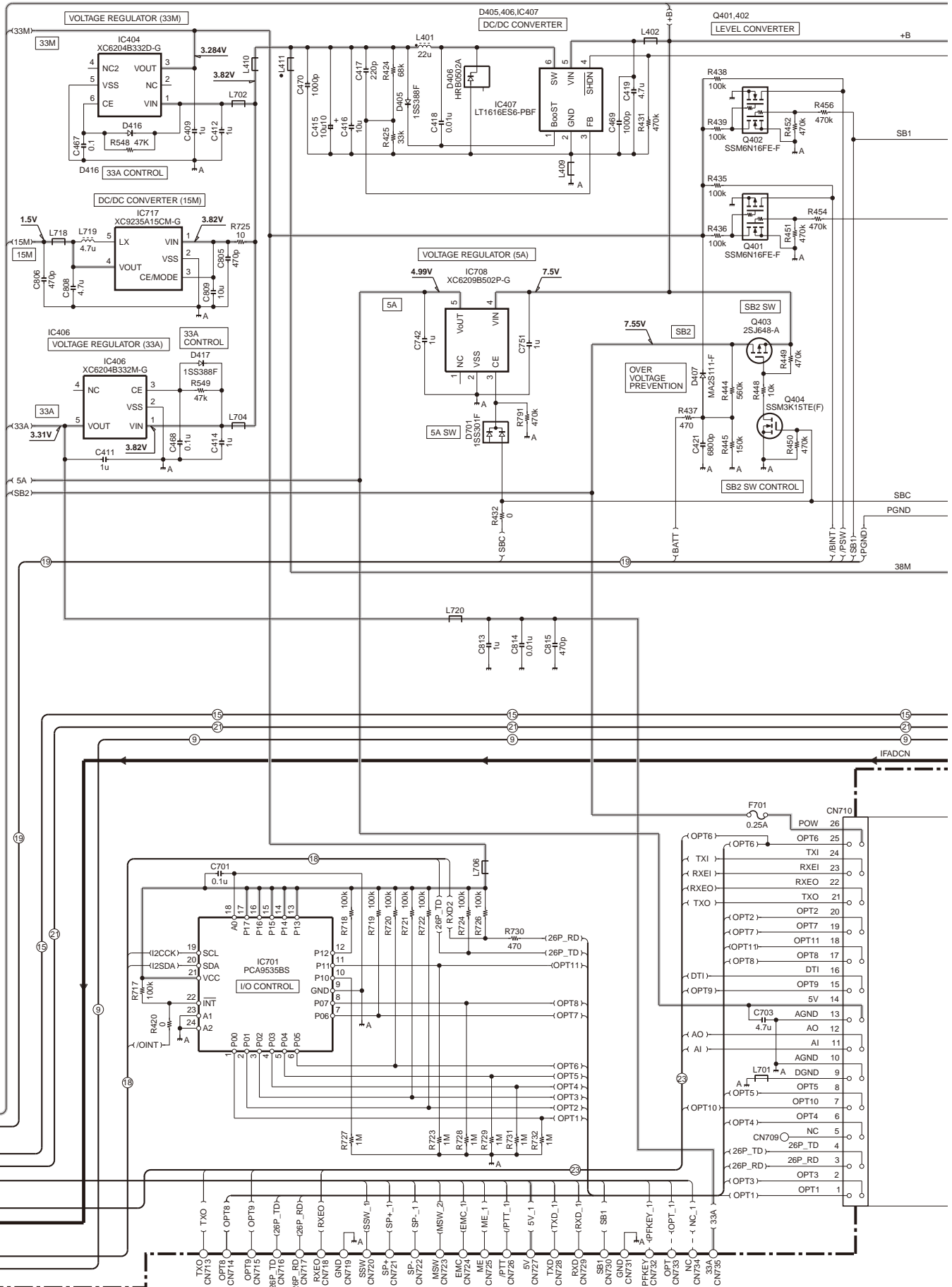
CONTROL UNIT (X53-4433-01)



(Side_1, Side_2, Side_G)

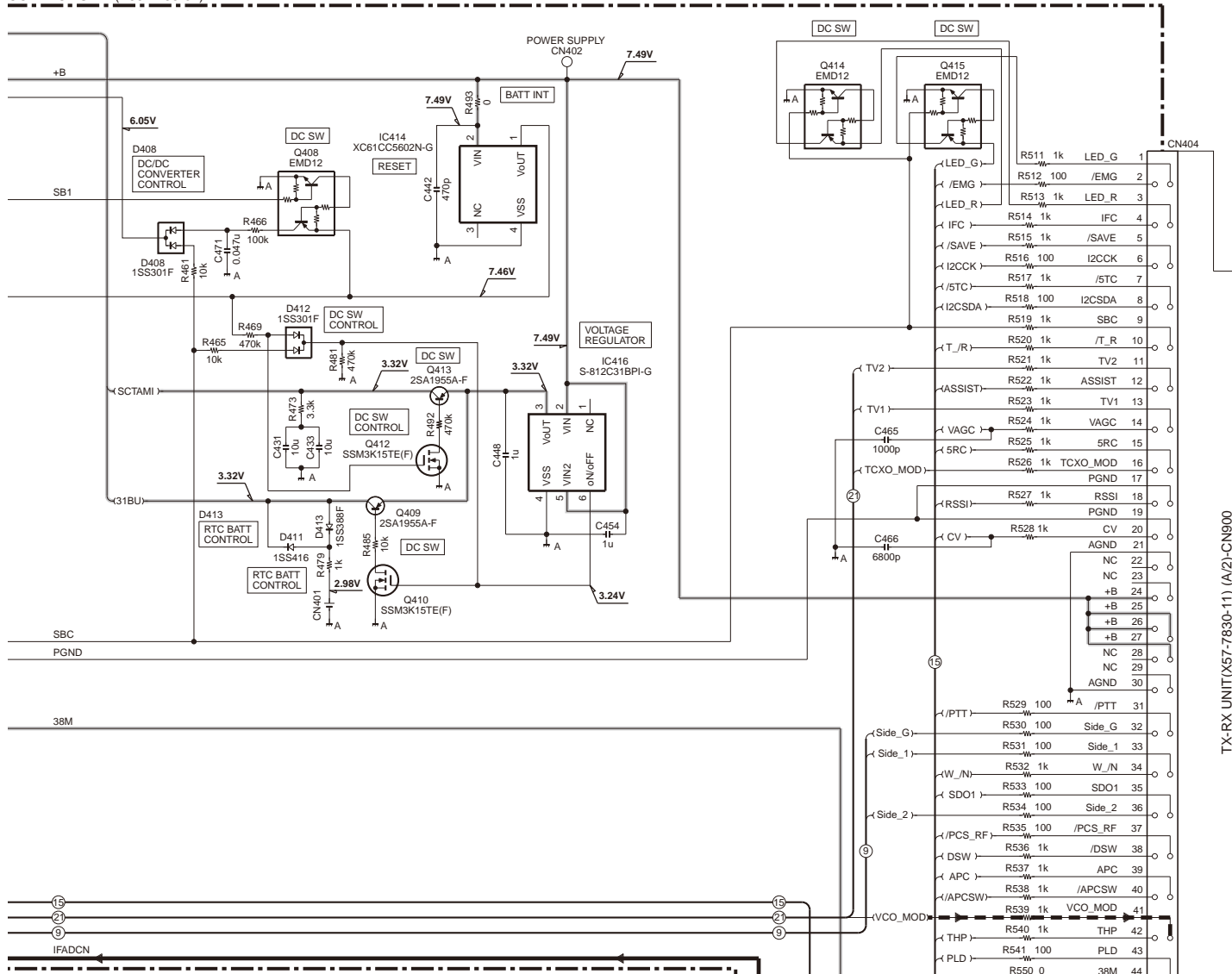
NX-300S SCHEMATIC DIAGRAM / 原理图

CONTROL UNIT (X53-4433-01)



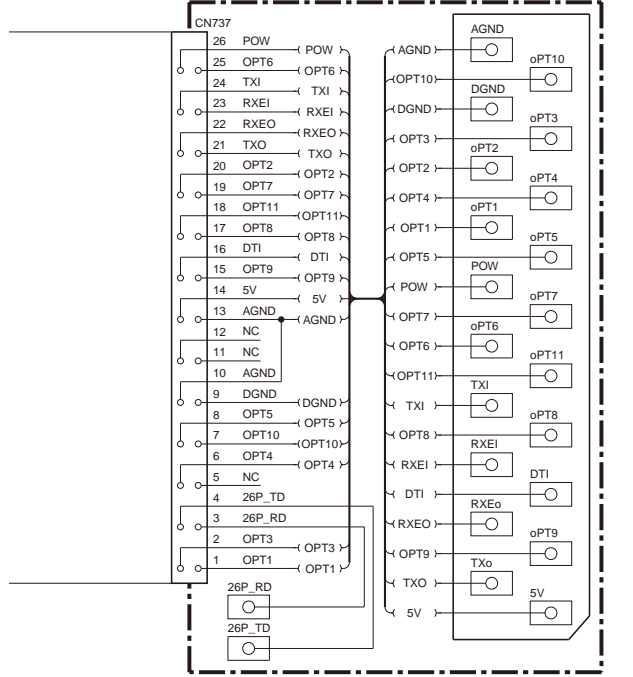
SCHEMATIC DIAGRAM / 原理图 NX-300S

CONTROL UNIT (X53-4433-01)

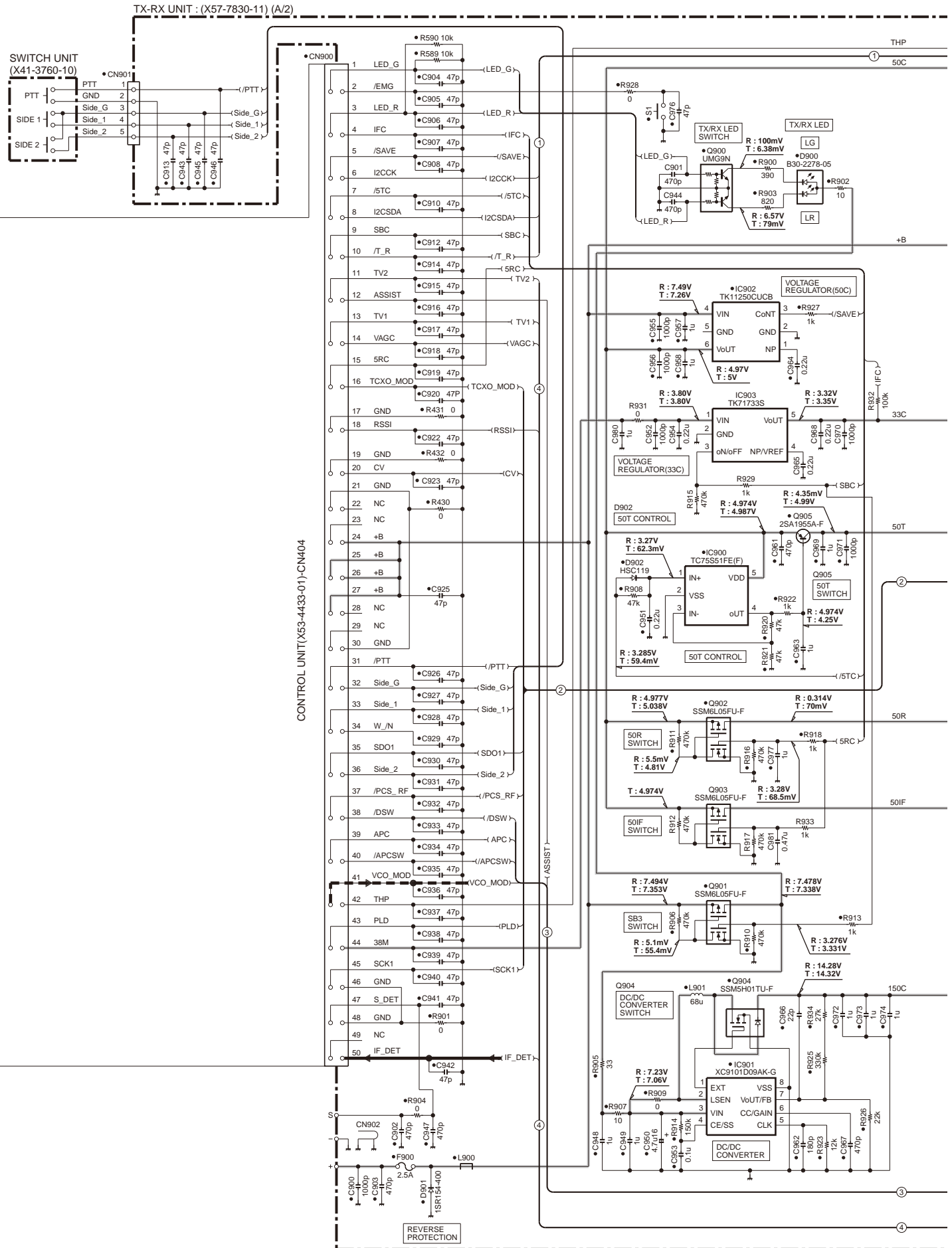


TX-RX UNIT (X57-7830-11) (A/2)-CN900

TX-RX UNIT : OPTION BOARD SECTION (X57-7830-11) (B/2)

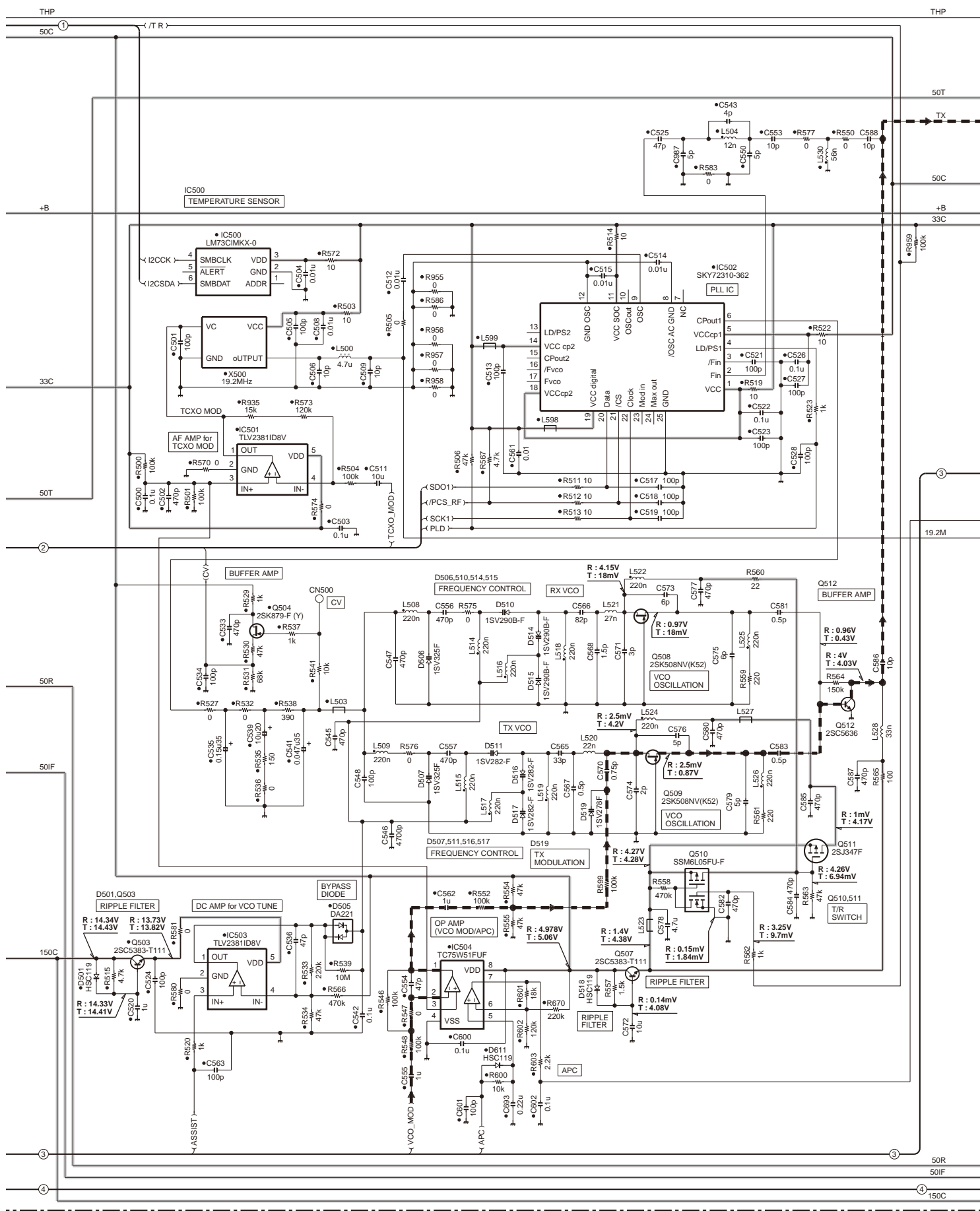


NX-300S SCHEMATIC DIAGRAM / 原理图



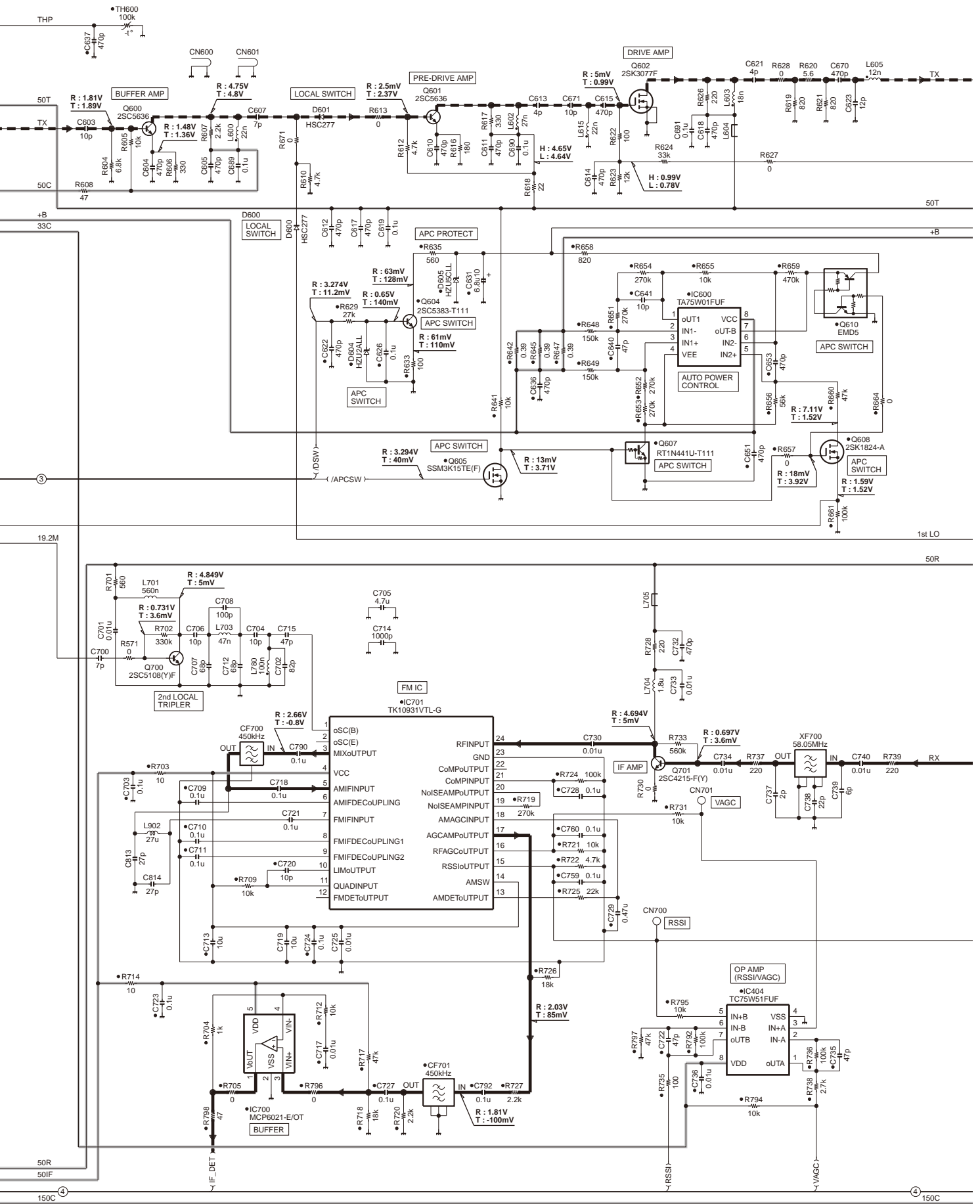
SCHEMATIC DIAGRAM / 原理图 NX-300S

TX-RX UNIT (X57-7830-11) (A/2)



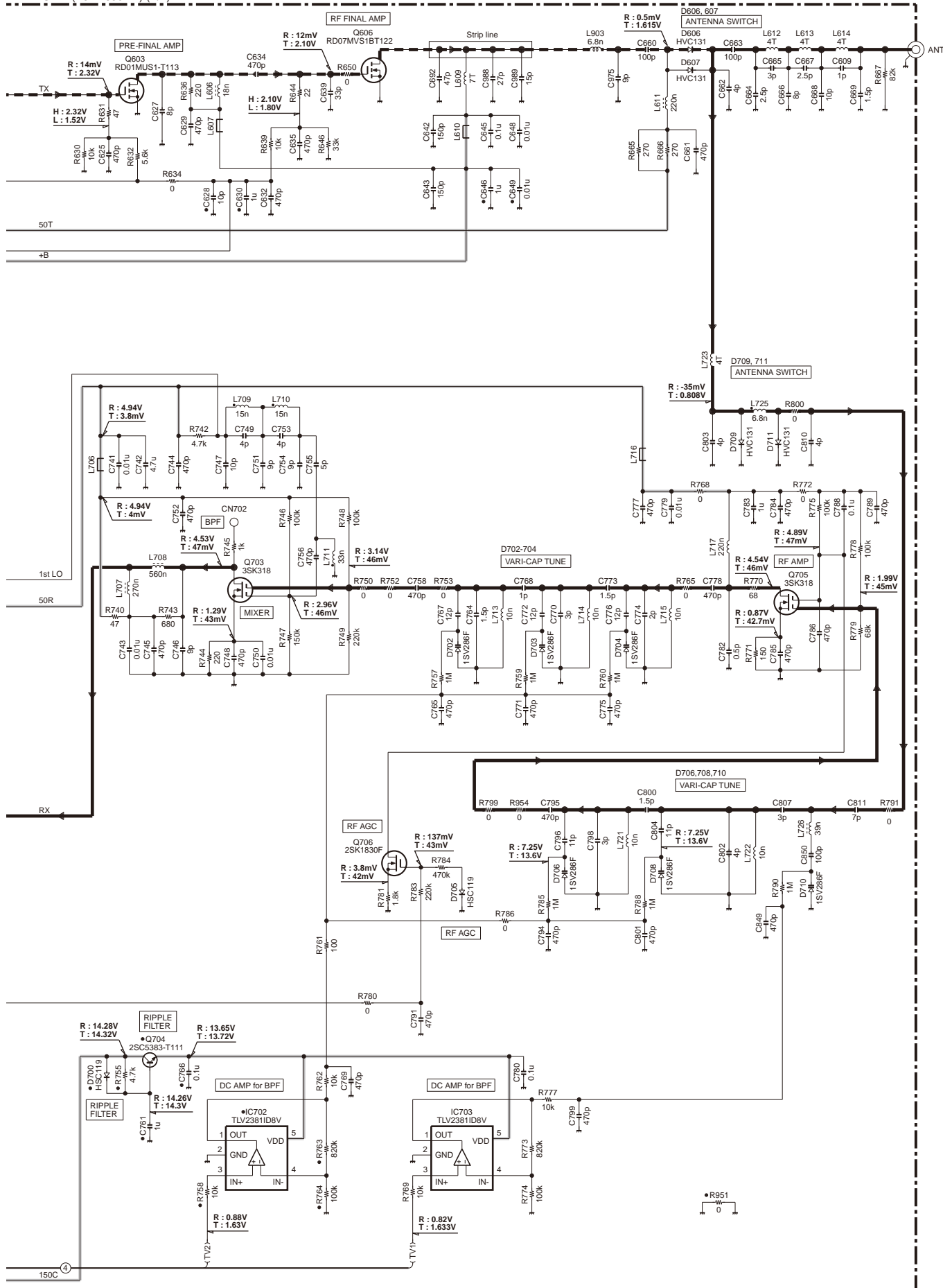
NX-300S SCHEMATIC DIAGRAM / 原理图

TX-RX UNIT (X57-7830-11) (A/2)



SCHEMATIC DIAGRAM / 原理图 NX-300S

TX-RX UNIT (X57-7830-11) (A/2)

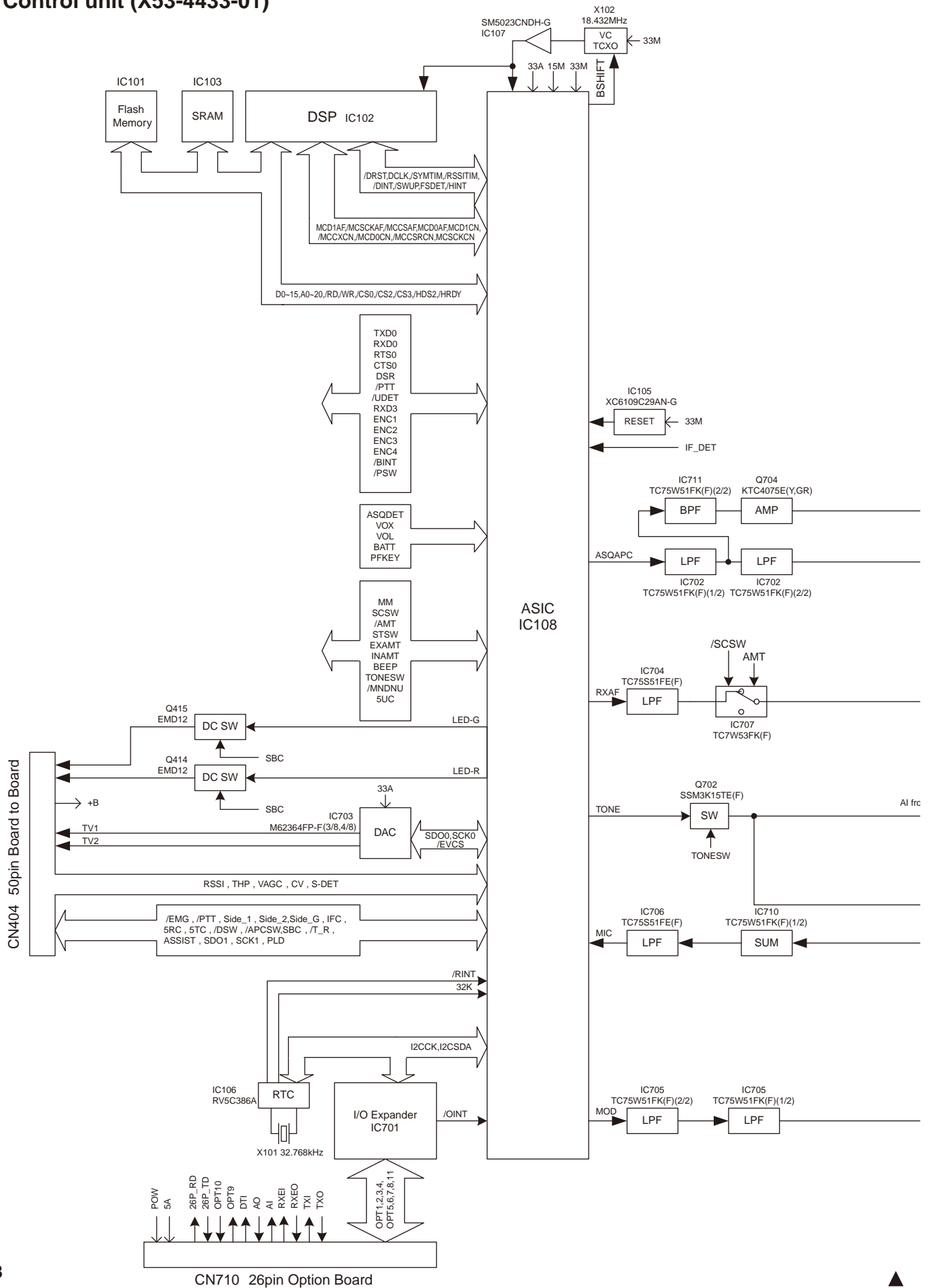


Note : The components marked with a dot (•) are parts of layer 1.

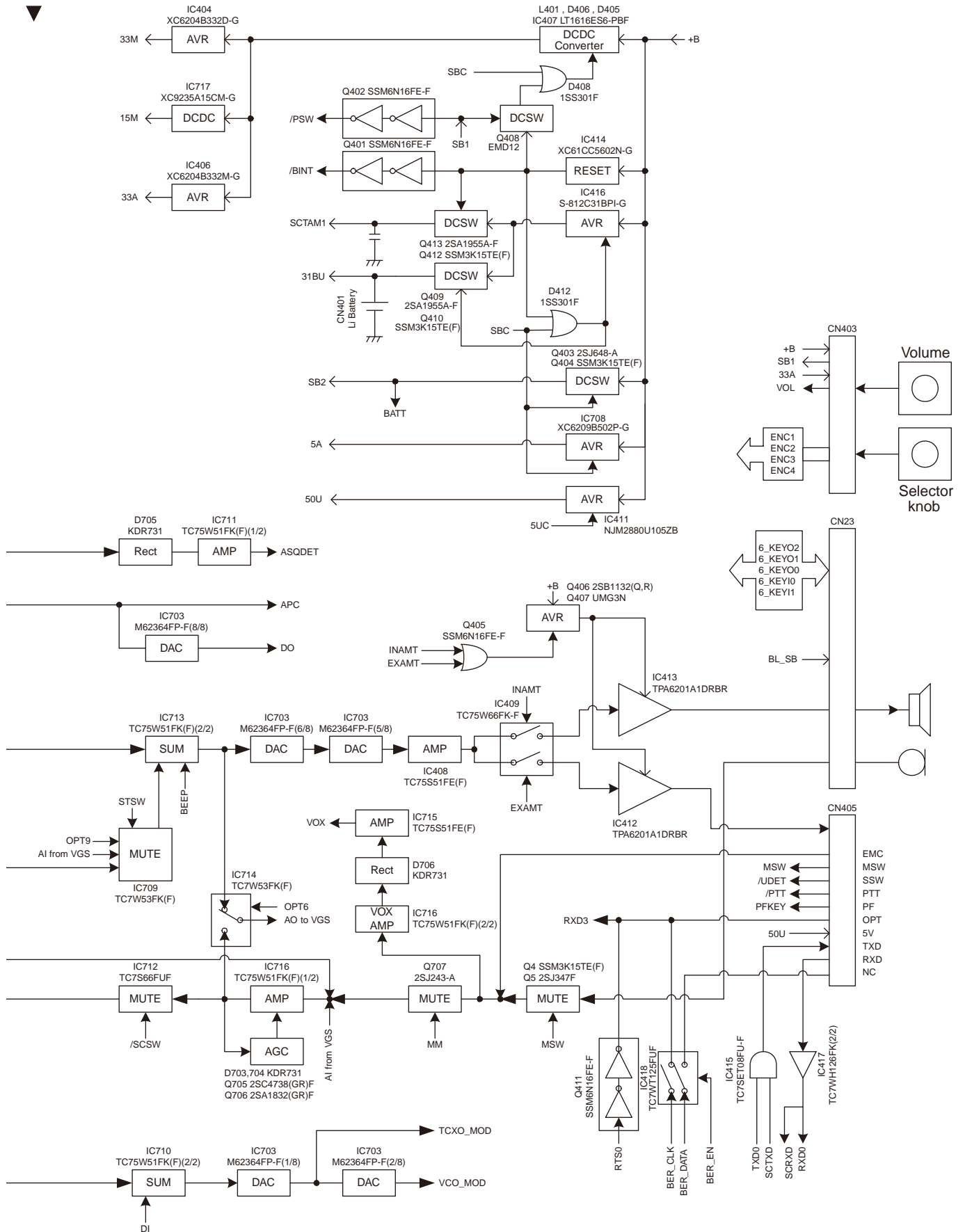
注意: 标有点号 (•) 的零件为第一层的零件。

NX-300S BLOCK DIAGRAM / 方块图

Control unit (X53-4433-01)

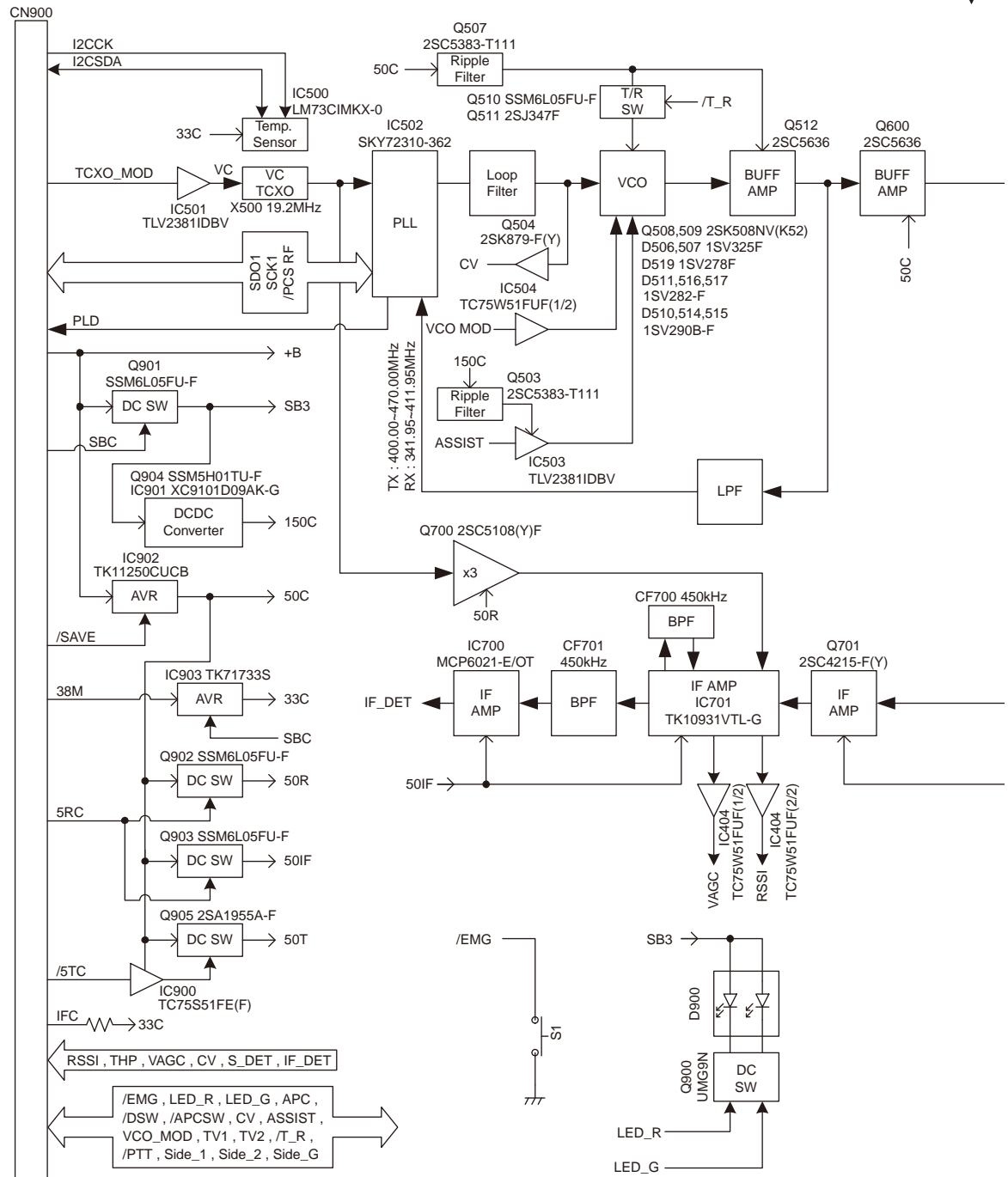


BLOCK DIAGRAM / 方块图 NX-300S

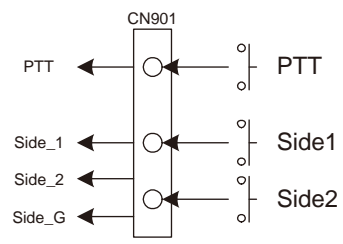
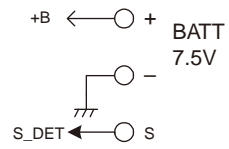
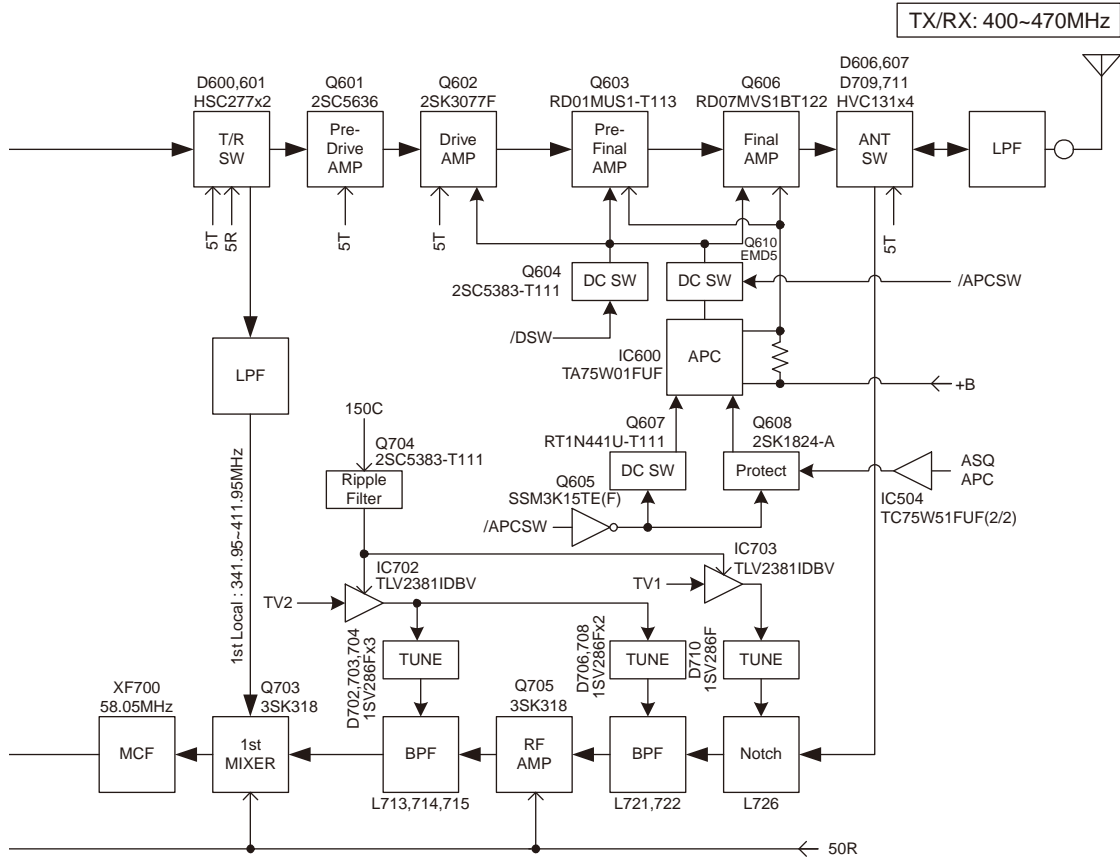


BLOCK DIAGRAM / 方块图

TX-RX unit (X57-7830-11)

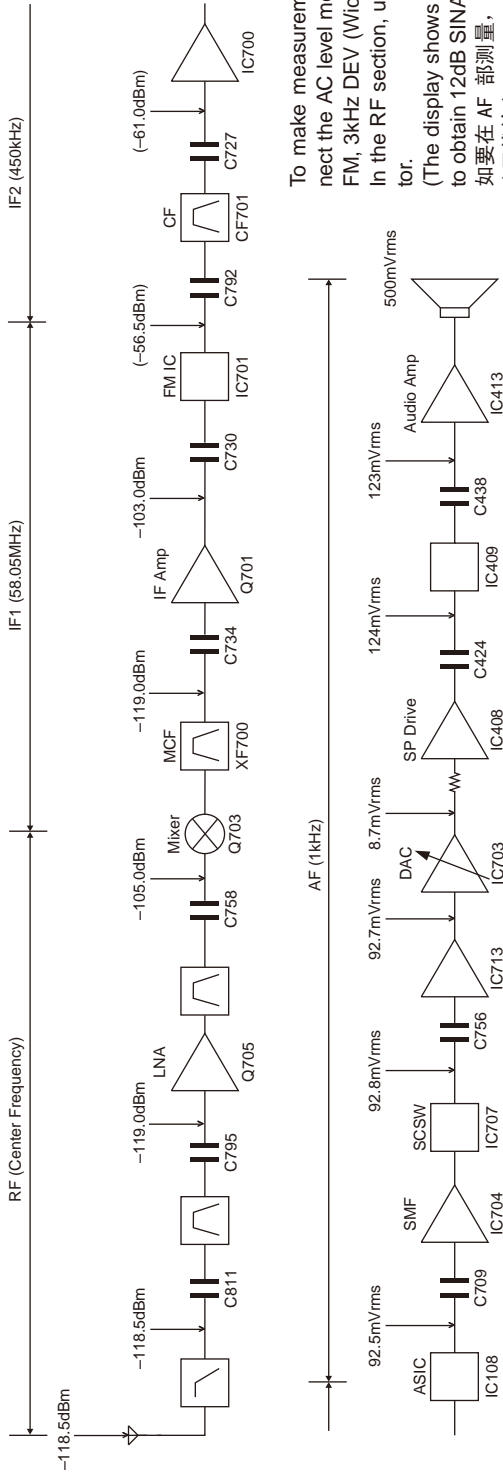


BLOCK DIAGRAM / 方块图



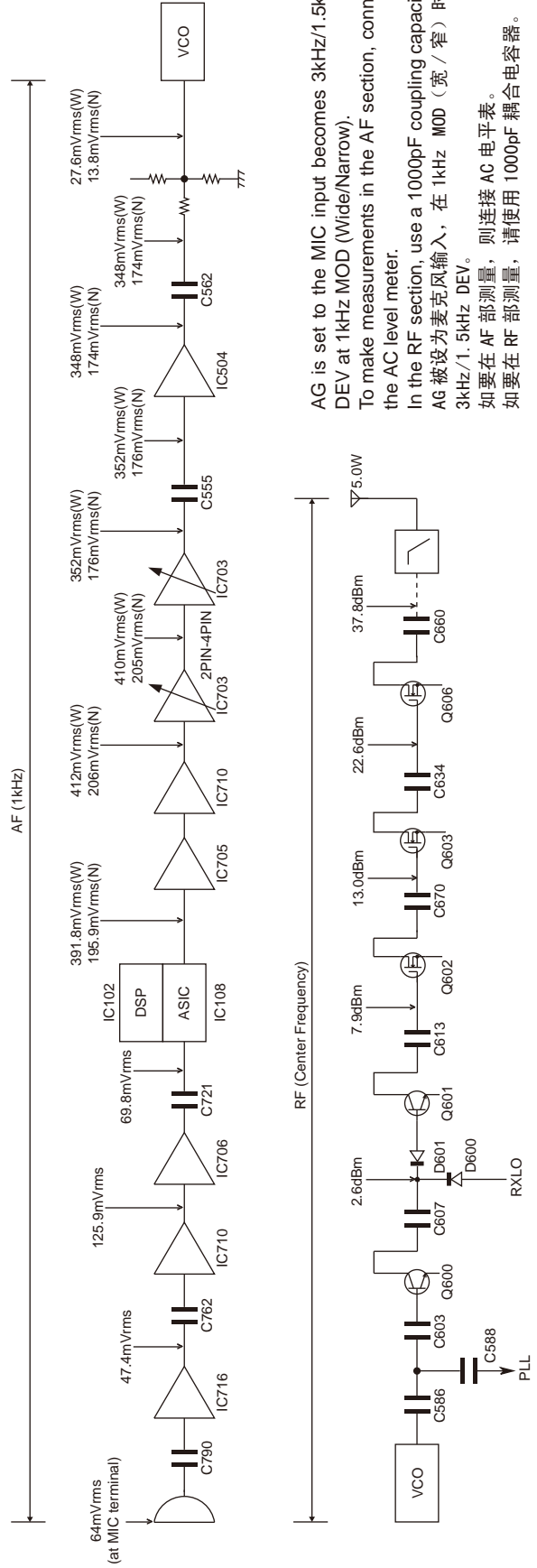
LEVEL DIAGRAM / 电平图

Receiver Section / 接收部分



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.)
 如要在 AF 部测量, 则连接 AC 电表。
 (天线输入: -53dB, 1kHz FM, 3kHz DEV (宽))
 如要在 RF 部测量, 请使用 1000pF 耦合电容器。
 (图中显示了获得 12dB SINAD 所需的 SSG 输入值, 没有本地电平。)

Transmitter Section / 发射部分



AG is set to the MIC input becomes 3kHz/1.5kHz DEV 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.
 AG 被设为麦克风输入, 在 1kHz MOD (宽/窄) 时为 3kHz/1.5kHz DEV。
 如要在 AF 部测量, 则连接 AC 电表。
 如要在 RF 部测量, 请使用 1000pF 耦合电容器。

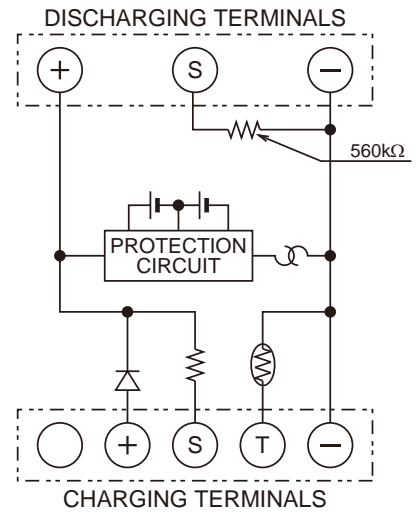
OPTIONAL ACCESSORIES / 可选附件

KNB-47L (Li-ion Battery Pack / 锂离子电池)

External View / 外视图



Schematic Diagram / 电路图



Specifications / 规格

Voltage / 电压	7.4V
Battery capacity / 电池容量	typ.1950mAh min.1850mAh

SPECIFICATIONS

GENERAL

Frequency Range	400~470MHz
Number of Channels.....	64
Zones.....	4
Max. Channels per Zone	16
Channel Spacing	Analog: 12.5/25 kHz Digital: 6.25/12.5 kHz
Operating Voltage	7.5V DC \pm 20%
Battery Life (with KNB-47L)	5-5-90 duty cycle: More than 11 hours 10-10-80 duty cycle: More than 7 hours
Operating Temperature Range	-30°C~+60°C
Frequency Stability	\pm 1.0ppm
Antenna Impedance	50 Ω
Dimensions (W x H x D)	58 x 128.3 x 41.7 mm (Projections not included)
Weight	
Radio only	255g
with KNB-47L	370g

RECEIVER

Sensitivity	Digital @6.25kHz (3% BER): 0.25 μ V Digital @12.5kHz (3% BER): 0.32 μ V Analog @12.5kHz (12dB SINAD): 0.32 μ V Analog @25kHz (12dB SINAD): 0.28 μ V
Adjacent Channel Selectivity (Analog)	25kHz: 72dB 12.5kHz: 65dB
Intermodulation (Analog)	70dB
Spurious Response Rejection (Analog).....	70dB
Audio Distortion	Less than 3%
Audio Output.....	500mW/8 Ω

TRANSMITTER

RF Power Output	5W/1W
Modulation Limiting (Analog)	\pm 5.0kHz at 25kHz \pm 2.5kHz at 12.5kHz
Spurious Emission.....	-36dBm \leq 1GHz, -30dBm $>$ 1GHz
FM Noise (Analog).....	25kHz: 45dB 12.5kHz: 40dB
Modulation Distortion.....	Less than 3%
Modulation	Analog @25kHz:16K0F3E, Analog @12.5kHz:8K50F3E Digital @12.5kHz:8K30F1E, Digital @6.25kHz:4K00F1E

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

规格

通用

频率范围.....	400 ~ 470MHz
信道数量.....	64
区域分区数量.....	4
每区域最大信道数量.....	16
信道间隔.....	模拟 :12.5/25 kHz 数字 :6.25/12.5 kHz
工作电源电压.....	7.5V DC \pm 20%
电池使用时间 (使用 KNB-47L 电池时).....	5-5-90 工作循环 : 大于 11 小时 10-10-80 工作循环 : 大于 7 小时
工作温度范围.....	-30°C ~ +60°C
频率稳定度.....	\pm 1.0ppm
天线阻抗.....	50 Ω
外型尺寸 (宽 \times 高 \times 长) (未包括凸起部分)	58 \times 128.3 \times 41.7 mm
重量	
仅主机.....	255g
带 KNB-47L 电池时.....	370g

接收

接收灵敏度.....	数字 @6.25kHz (3% 误码率) : 0.25 μ V 数字 @12.5kHz (3% 误码率) : 0.32 μ V 模拟 @12.5kHz (12dB SINAD) : 0.32 μ V 模拟 @25kHz (12dB SINAD) : 0.28 μ V
邻道选择性 (模拟).....	25kHz: 72dB 12.5kHz: 65dB
互调抑制 (模拟).....	70dB
杂散响应 (模拟).....	70dB
音频失真.....	3% 以下
音频输出功率.....	500mW (8 Ω 时)

发射

发射功率.....	5W/1W
调制限制 (模拟).....	\pm 5.0kHz (25kHz 信道) \pm 2.5kHz (12.5kHz 信道)
杂散抑制.....	-36dBm \leq 1GHz, -30dBm $>$ 1GHz
调频噪声 (模拟).....	25kHz: 45dB 12.5kHz: 40dB
调制失真.....	3% 以下
电波类型.....	模拟 @25kHz: 16K0F3E 模拟 @12.5kHz: 8K50F3E 数字 @12.5kHz: 8K30F1E 数字 @6.25kHz: 4K00F1E

依据 EN 标准或 TIA/EIA 603 获得的模拟测量值和所示规格均为典型值。
JVC 建伍株式会社有权变更技术规格，恕不预先通知。

NX-300S

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Barcelona, Spain

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North Ryde NSW 2113 Australia

Kenwood Electronics (Hong Kong) Ltd.

Suite 2504, 25/F, Tower 2, Nina Tower, No. 8 Yeung Uk Road,
Tsuen Wan, New Territories, Hong Kong

Kenwood Electronics Singapore Pte Ltd

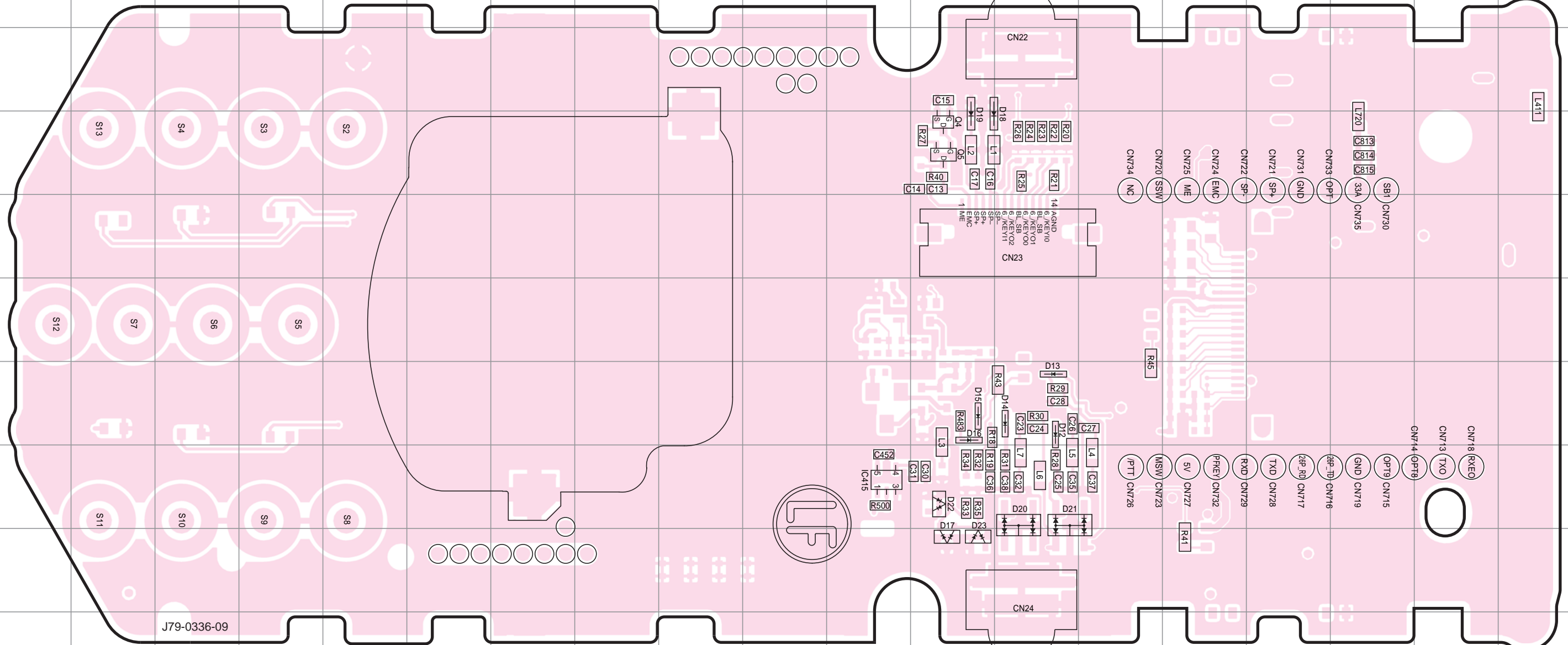
1 Ang Mo Kio Street 63, Singapore 569110

NX-300S PC BOARD / 印刷电路板

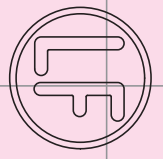
PC BOARD / 印刷电路板 NX-300S

CONTROL UNIT (X53-4433-01)
Component side view (J79-0336-09)

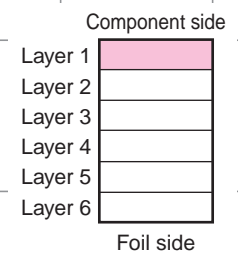
CONTROL UNIT (X53-4433-01)
Component side view (J79-0336-09)



J79-0336-09

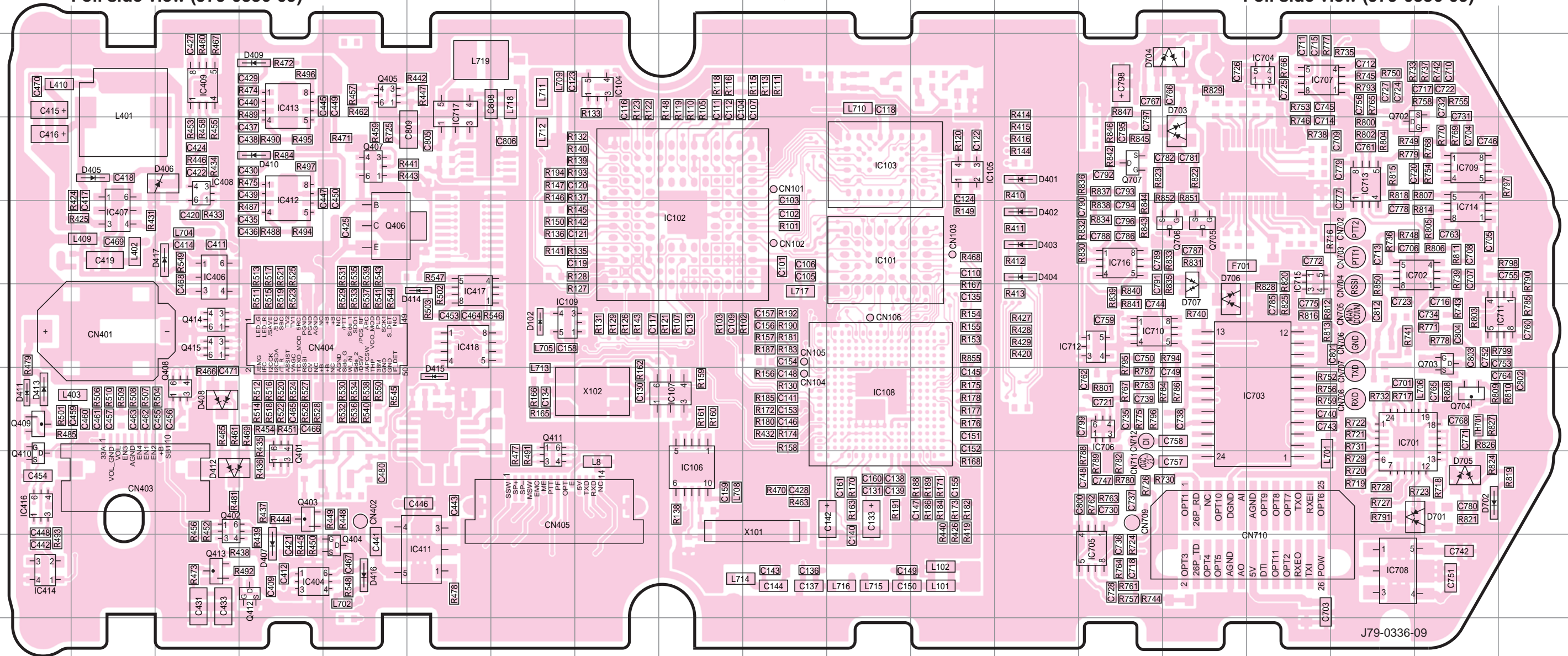


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D12	7M	D22	8L
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D14	7M		
D15	7L		
D16	7L		
D17	9L		
D18	4L		



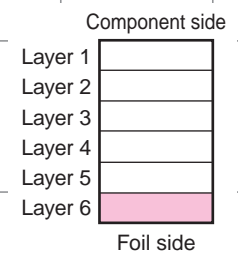
CONTROL UNIT (X53-4433-01)
Foil side view (J79-0336-09)

CONTROL UNIT (X53-4433-01)
Foil side view (J79-0336-09)



J79-0336-09

Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
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IC102	5I	IC409	3C	IC705	9N	IC717	3F	Q412	9D	D402	5M	D414	6F
IC103	4K	IC411	9F	IC706	7N	Q401	8D	Q413	9C	D403	5M	D415	7F
IC104	3H	IC412	4D	IC707	3P	Q402	8C	Q414	6C	D404	5M	D416	9E
IC105	4L	IC413	3D	IC708	9Q	Q403	8D	Q415	6C	D405	4B	D417	5C
IC106	8I	IC414	9A	IC709	4R	Q404	9E	Q702	4R	D406	4C	D701	8R
IC107	7I	IC416	8A	IC710	6N	Q405	3E	Q703	6R	D407	9D	D702	8R
IC108	7K	IC417	6F	IC711	6S	Q406	5E	Q704	7R	D408	7C	D703	4O
IC109	6G	IC418	6F	IC712	6N	Q407	4E	Q705	5O	D409	3D	D704	3O
IC404	9D	IC701	7Q	IC713	4Q	Q408	7C	Q706	5O	D410	4D	D705	8R
IC406	5C	IC702	5R	IC714	5R	Q409	7A	Q707	4N	D411	7A	D706	6O
IC407	5B	IC703	7P	IC715	5P	Q410	8A	D102	6G	D412	8C	D707	6O

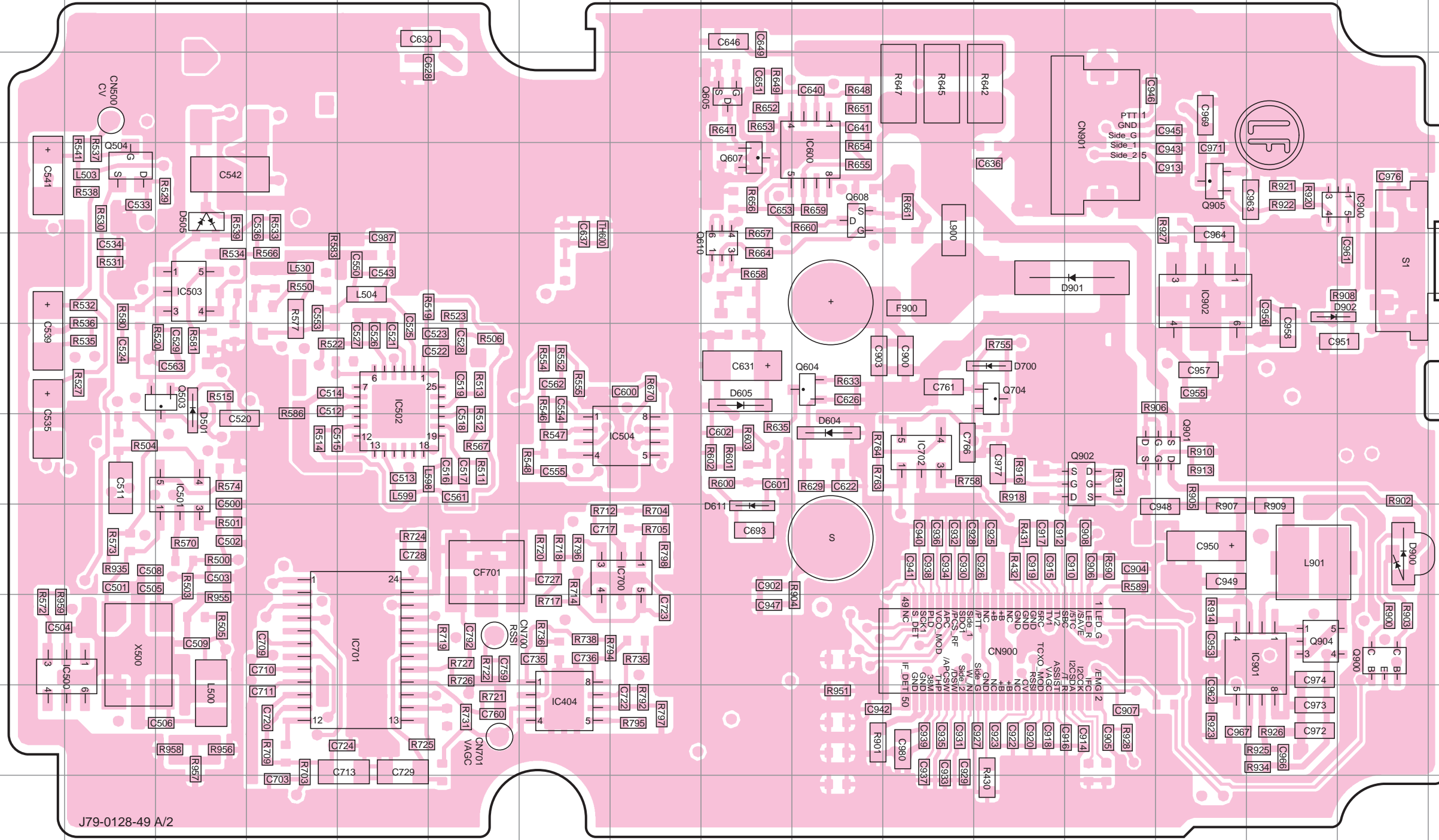


NX-300S PC BOARD / 印刷电路板

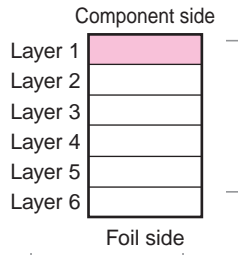
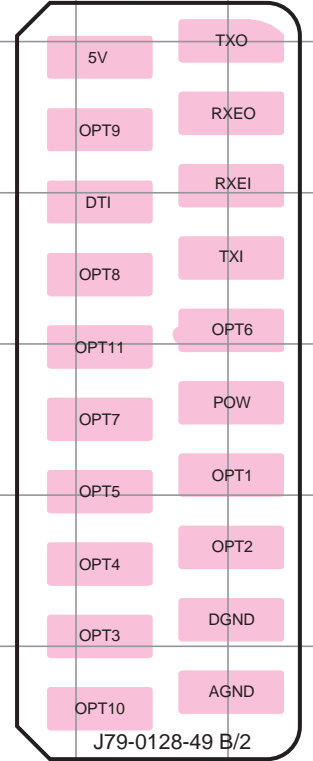
PC BOARD / 印刷电路板 NX-300S

TX-RX UNIT (X57-7830-11) (A/2)
Component side view (J79-0128-49 A/2)

TX-RX UNIT (X57-7830-11) (A/2)
Component side view (J79-0128-49 A/2)



TX-RX UNIT (X57-7830-11) (B/2)



Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC404	10G	IC700	8H	Q504	4B	Q900	9P	D604	7J
IC500	9B	IC701	9E	Q604	6J	Q901	7N	D605	6I
IC501	7C	IC702	7K	Q605	3I	Q902	7M	D611	8I
IC502	7E	IC900	4P	Q607	4I	Q904	9O	D700	6L
IC503	5C	IC901	9O	Q608	4J	Q905	4N	D900	8P
IC504	7H	IC902	5N	Q610	5I	D501	7C	D901	5M
IC600	4J	Q503	6C	Q704	6L	D505	4C	D902	5P

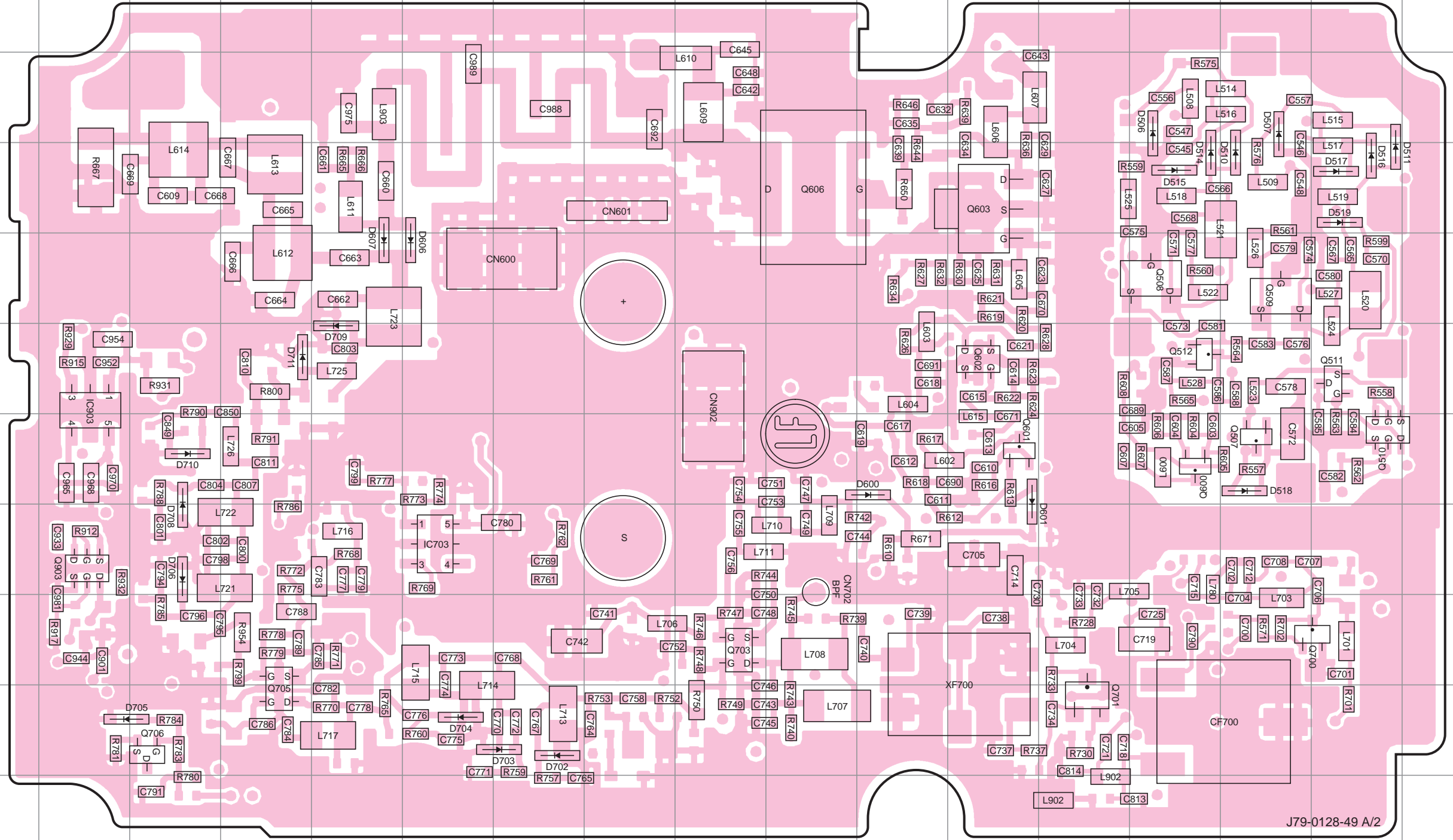
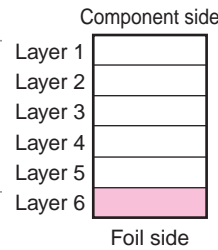
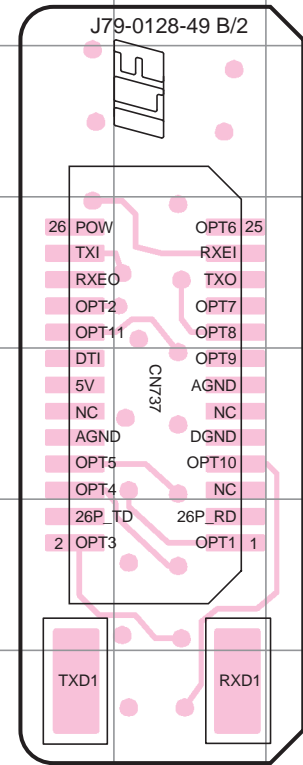
NX-300S PC BOARD / 印刷电路板

PC BOARD / 印刷电路板 NX-300S

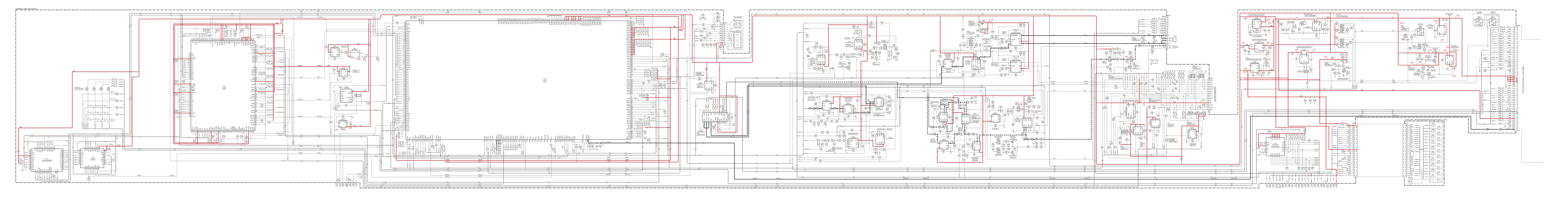
TX-RX UNIT (X57-7830-11) (A/2)
Foil side view (J79-0128-49 A/2)

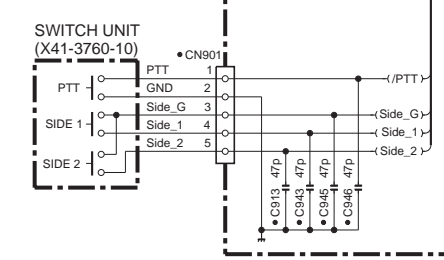
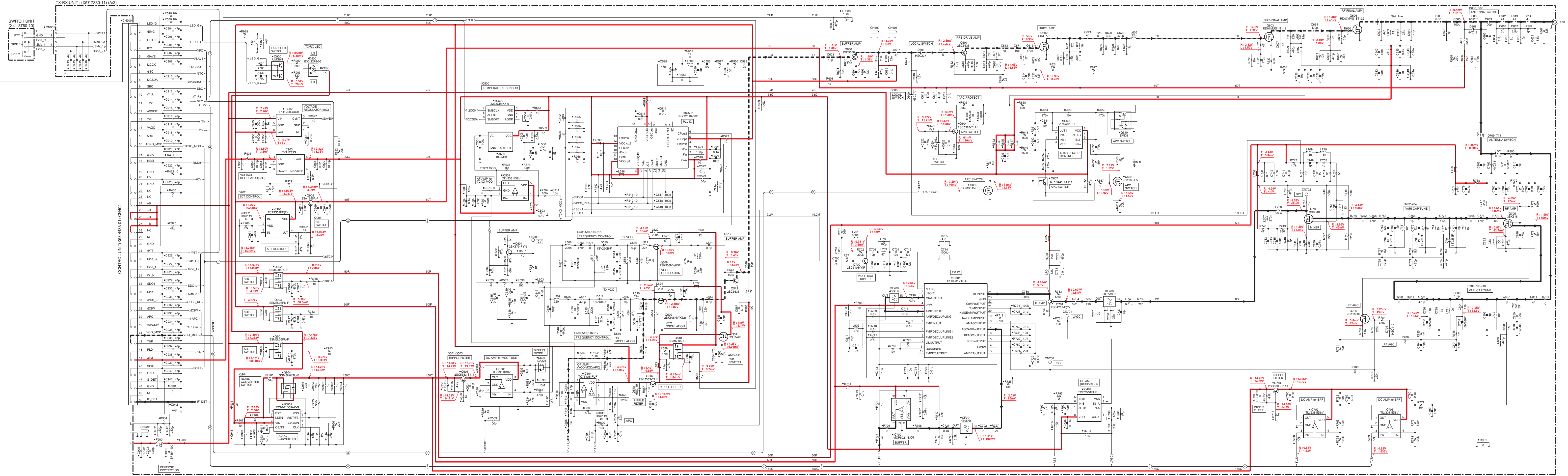
TX-RX UNIT (X57-7830-11) (A/2)
Foil side view (J79-0128-49 A/2)

TX-RX UNIT
(X57-7830-11) (B/2)



Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC703	8H	Q512	6P	Q701	10O	D510	4Q	D519	4R	D704	10H
IC903	7D	Q600	7P	Q703	9K	D511	4S	D600	7M	D705	10E
Q507	7Q	Q601	7N	Q705	10F	D514	4P	D601	8O	D706	8E
Q508	5P	Q602	6N	Q706	10E	D515	4P	D606	5H	D708	8E
Q509	5Q	Q603	4N	Q903	8D	D516	4R	D607	5G	D709	6G
Q510	7R	Q606	4L	D506	3P	D517	4R	D702	10I	D710	7E
Q511	6R	Q700	9R	D507	3Q	D518	7Q	D703	10I	D711	6F



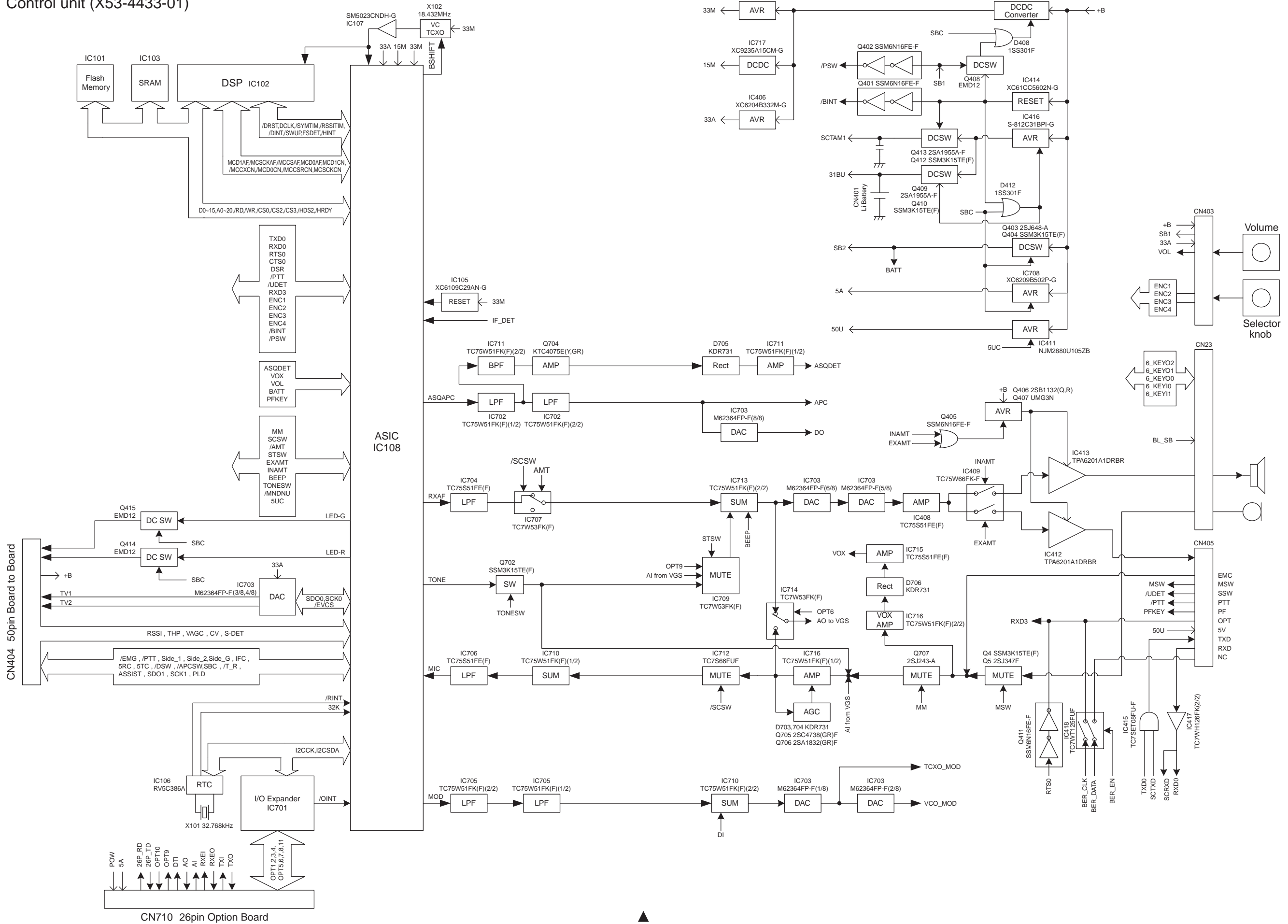


CONTROL UNIT (X53-4433-01) (A404)

TX-RX UNIT (X57-7890-11) (A2)

ANTENNA SWITCH

Control unit (X53-4433-01)



TX-RX unit (X57-7830-11)

