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VHF FM TRANSCEIVER / VHF调频对讲机

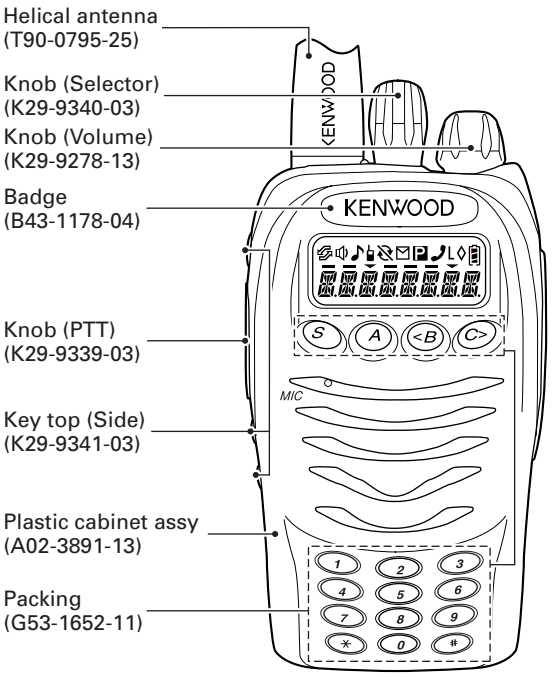
TK-2178

SERVICE MANUAL / 维修手册

KENWOOD

Kenwood Corporation

B51-8733-00 (N) 566



无铅焊接通信产品
保护环境建伍领先

⚠ 注意：本产品是无铅化焊接产品
在维修时请使用无铅焊锡
和相应的焊接工具
详细事项请访问如下网址了解:
http://www.kenwoodhk.com.hk/

CONTENTS

This product uses Lead Free solder.

目　　录

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

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

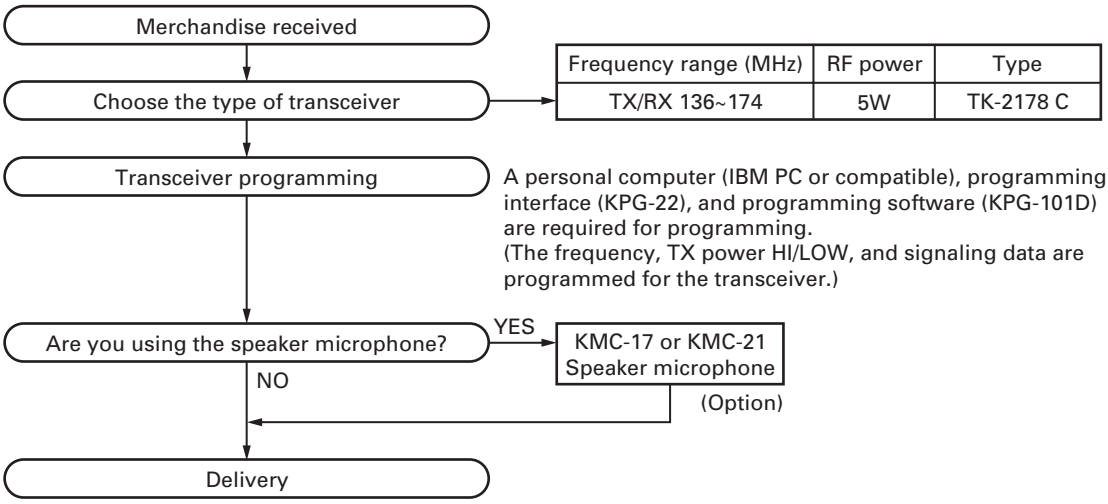
为了个人的安全, 请注意下列事项：

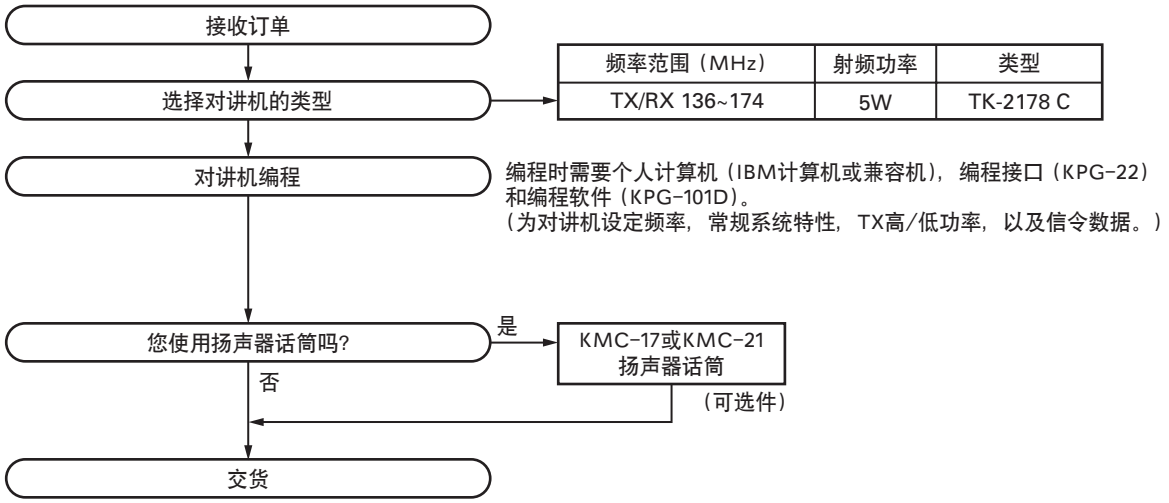
- 在没有认真核实所有射频插头之前或有任何一个脱开的插头没有连接到相应端口上的情况下均不要发射。
- 在电爆管附近或在易燃性气体环境中, 必须关闭电源, 不要操作本设备。
- 本设备只应该由有资格的技术人员进行维修。

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。

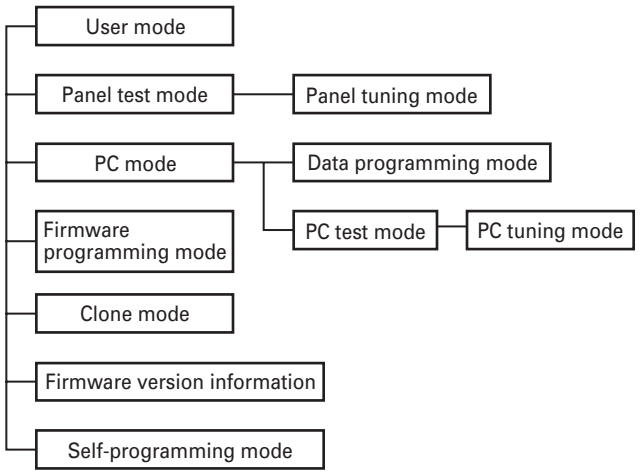
SYSTEM SET-UP / 系统体系





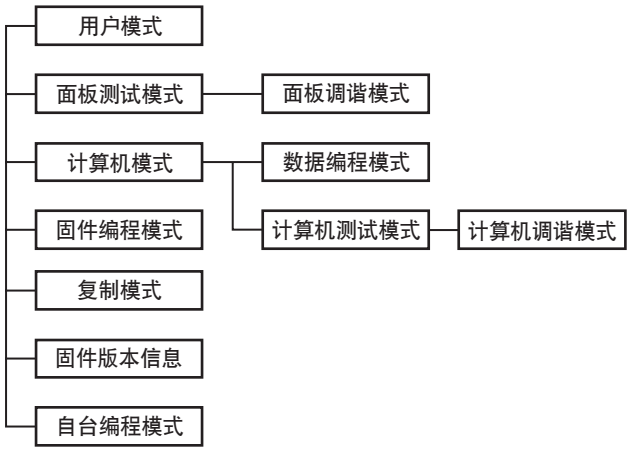
REALIGNMENT / 模式组合

1. Modes



Mode	Function
User mode	For normal use.
Panel test mode	Used by the dealer to check the fundamental characteristics.
Panel tuning mode	Used by the dealer to tune the transceiver.
PC mode	Used for communication between the transceiver and PC (IBM compatible).
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. See panel tuning.
Firmware programming mode	Used when changing the main program of the flash memory.
Clone mode	Used to transfer programming data from one transceiver to another.
Firmware version information	Used to confirm the internal firmware version.
Self-programming mode	You can program the frequency signaling and other function using only the transceiver.

1. 模式



模　式	功　能
用户模式	一般使用。
面板测试模式	用于经销商检查基本功能。
面板调谐模式	用于经销商调整对讲机指标。
计算机模式	用于对讲机与计算机 (IBM兼容机) 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。
计算机测试模式	用于使用计算机检测。此特性包括在FPU内。参见面板调谐。
固件编程模式	当改变Flash Rom中操作主程序时使用。
复制模式	用于从一个对讲机编程数据复制到另一个对讲机。
固件版本信息	用于确认内部固件版本。
自台编程模式	您可以只使用对讲机自身来进行编程频率信令和其他功能。

2. How to Enter Each Mode

Mode	Operation
User mode	Power ON
Panel test mode	[A] + Power ON
PC mode	Received commands from PC
Panel tuning mode	[Panel test mode] + [S]
Firmware programming mode	[Side2] + Power ON
Clone mode	[B] + Power ON
Firmware version information	[Side1] + Power ON
Self-programming mode	[C] + Power ON

2. 如何进入每一种模式

模　式	操　作
用户模式	接通电源
面板测试模式	[A] + 接通电源
计算机模式	从计算机接收指令
面板调谐模式	[面板测试模式] + [S]
固件编程模式	[Side2] + 接通电源
复制模式	[B] + 接通电源
固件版本信息	[Side1] + 接通电源
自台编程模式	[C] + 接通电源

REALIGNMENT / 模式组合

3. Panel Test Mode

Setting method refer to ADJUSTMENT.

4. Panel Tuning Mode

Setting method refer to ADJUSTMENT.

5. PC Mode

5-1. Preface

The transceiver is programmed by using a personal computer, programming interface (KPG-22) and programming software (KPG-101D).

The programming software can be used with an IBM PC or compatible. Figure 1 shows the setup of an IBM PC for programming.

5-2. Connection Procedure

1. Connect the transceiver to the personal computer with the interface cable.
2. When the POWER switch on, user mode can be entered immediately. When PC sends command the transceiver enter PC mode, and "PROGRAM" is displayed on the LCD.
   When data transmitting from transceiver, the red LED is lights.
   When data receiving to transceiver, the green LED is lights.

Note:

- The data stored in the personal computer must match model type, when it is written into the flash memory.

3. 关于面板测试模式

关于设定方式, 参见调整。

4. 关于面板调谐模式

关于设定方式, 参见调整。

5. 计算机模式

5-1. 前言

对讲机使用计算机、编程电缆 (KPG-22) 和编程软件 (KPG-101D) 进行编程。

IBM计算机或兼容机可以使用编程软件。图1显示IBM计算机编程的设置。

5-2. 连接步骤

1. 使用编程电缆将对讲机与计算机连接。
2. 当接通电源时, 立即进入用户模式。当计算机发出指令使对讲机进入计算机模式时, "PROGRAM" 出现在显示器上。
   对讲机正在发送数据时, 红色的LED点亮。
   对讲机正在接收数据时, 绿色的LED点亮。

注释：

- 储存在计算机内的数据在写入对讲机的存储器中时必须与对讲机的型号相匹配。

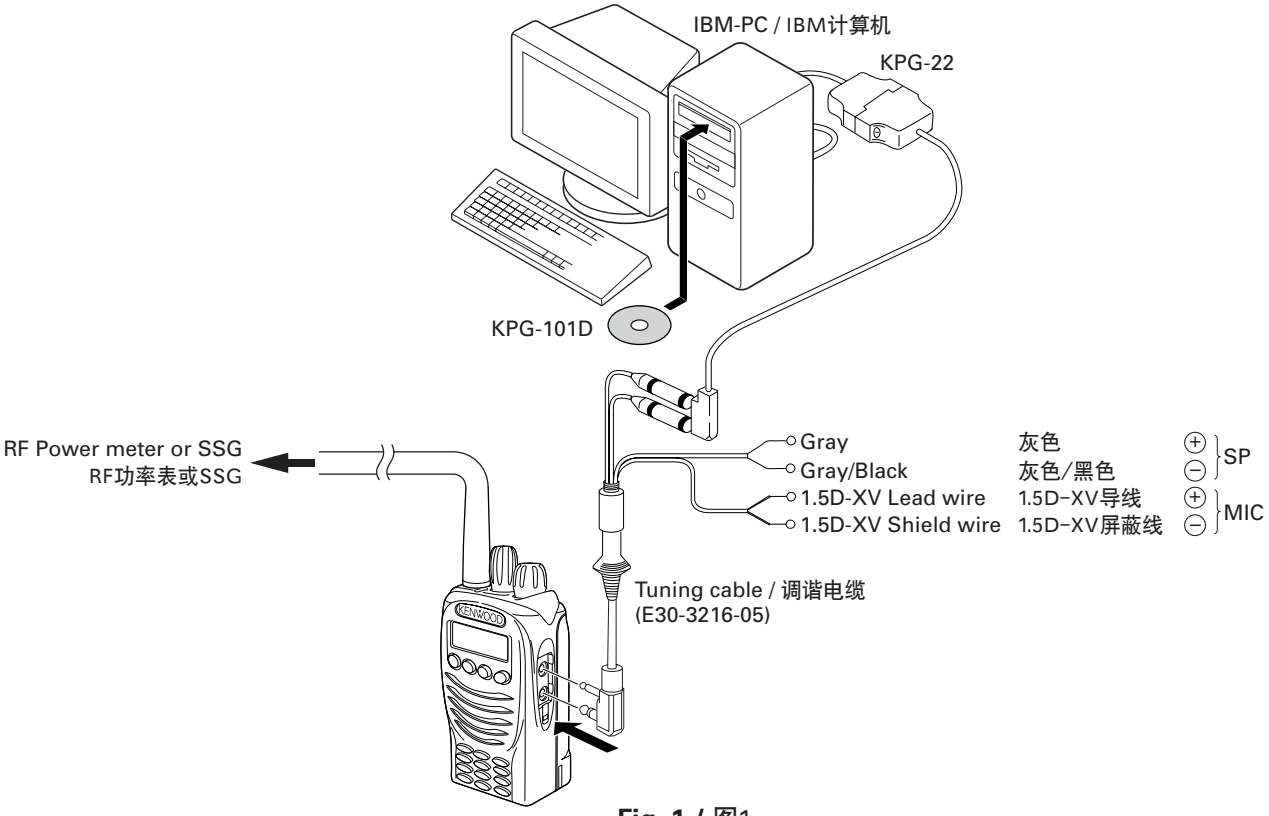


Fig. 1 / 图1

REALIGNMENT / 模式组合

5-3. KPG-22 Description (PC programming interface cable: Option)

The KPG-22 is required to interface the transceiver to the computer. It has a circuit in its D-subconnector (25-pin) case that converts the RS-232C logic level to the TTL level.

The KPG-22 connects the SP/MIC connector of the transceiver to the computers RS-232C serial port.

5-4. Programming Software KPG-101D Description

The KPG-101D is the programming software for the transceiver supplied on a CD-ROM. This software runs under MS-Windows 98, ME, Windows 2000 or XP on an IBM-PC or compatible machine.

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

6. Firmware Programming Mode

6-1. Preface

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

6-2. Connection Procedure

Connect the transceiver to the personal computer (IBM PC or compatible) with the interface cable (KPG-22). (Connection is the same as in the PC Mode.)

6-3. Programming

1. Start up the firmware programming software (Fpro.exe).
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. Turn the transceiver power ON with the [Side2] key held down. Then, the orange LED on the transceiver lights and "PROG 1152" is displayed.
5. Check the connection between the transceiver and the personal computer, and make sure that the transceiver is in the Program mode.
6. Press write button in the window. When the transceiver starts to receive data, the "LOADING" is displayed.
7. If writing ends successfully, the checksum is calculated and a result is displayed.
8. If you want to continue programming other transceivers, repeat steps 4 to 7.

Note:

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

5-3. KPG-22说明 (计算机编程电缆：可选件)

KPG-22用于将对讲机与计算机连接。在其D型副插座 (25芯) 中有一个电平转换电路, 此电路可以把RS-232C逻辑电平转换为TTL电平。

KPG-22将对讲机的SP/MIC连接器连接到电脑的RS-232C串行端口。

5-4. 编程软件说明

KPG-101D是对讲机的编程软件。此软件的运行环境为IBM-PC机或兼容机的Windows 98、ME、Windows 2000或XP。

数据可以被输入到对讲机或从对讲机中读取数据, 并且在屏幕上进行编辑。已被编程或编辑的数据可以打印出来。也可以调整对讲机的指标。

6. 固件编程模式

6-1. 前言

Flash Rom被安装在对讲机上。当将来出现新功能时, 允许对讲机升级。(要了解如何获得固件的详细情况, 请与供应商联系。)

6-2. 连接步骤

使用编程电缆 (KPG-22) 将对讲机与计算机 (IBM计算机或兼容机) 连接。(与计算机编程模式中的连接方法一样。)

6-3. 编程

1. 启动固件编程软件 (FPRO.exe)。
2. 在配置项中设定通信速率 (通常为115200bps) 和通信端口。
3. 在文件名称项中选定新固件。
4. 向下按动 [Side2] 键并接通对讲机的电源。向下按住键直到显示器出现 "PROG1152" 为止。然后, 对讲机上的橙色LED点亮, 并显示 "PROG 1152"。
5. 检查对讲机与个人电脑之间的连接是否正确, 并且确认对讲机是否处于编程模式。
6. 按窗口中的写入按钮。对讲机开始接收数据时, 显示 "LOADING"。
7. 如果写入成功结束, 则计算校验和并显示结果。
8. 如果用户需要继续编程其他的对讲机, 重复步骤4到7。

注释：

如果在编程软件 (KPG-101D) 中固件编程模式设定为禁用, 则不能进入此模式。

REALIGNMENT / 模式组合

6-4. Function

1. If you press the [Side2] key while "PROG 1152" is displayed, the display changes to "PROG 192" to indicate that the write speed is low speed (19200 bps). If you press the [Side2] key again while "PROG 192" is displayed, the display changes to "PROG 384". If you press the [Side2] key again while "PROG 384" is displayed, the display changes to "PROG 576". If you press the [Side2] key again while "PROG 576" is displayed, the display returns to "PROG 1152".
2. If you press the [Side1] key while "PROG 1152" is displayed, the checksum is calculated, and a result is displayed. If you press the [Side1] key again while the checksum is displayed, "PROG 1152" is redisplayed.

Note:

Normally, write in the high-speed mode.

7. Clone Mode

Programming data can be transferred from one radio to another by connecting them via their SP/MIC connectors. The operation is as follows (the transmit radio is the master and the receive radio is a slave).

The following data cannot be cloned.

- Tuning data
- Embedded message with password
- Serial number

The "password" of description by explanation of 1. to 7. are "Read Authorization Password".

1. Turn the master transceiver power ON with the [B] key held down. If the Data password is set to the transceiver, the transceiver displays "CLN LOCK". If the password is not set, the transceiver displays "CLONE".
2. When you enter the correct password, and "CLONE" is displayed, the transceiver can be used as the cloning master. The following describes how to enter the password.
3. How to enter the password with the keypad;
   If you press a key while "CLN LOCK" is displayed, the number that was pressed is displayed on the transceiver. Each press of the key shifts the display in order to the left. When you enter the password and press the [*] or [S] key, "CLONE" is displayed if the entered password is correct. If the password is incorrect, "CLN LOCK" is redisplayed.
   How to enter the password with the selector;
   If the selector is rotated while "CLN LOCK" is displayed, numbers (0 to 9) are displayed flashing. When you press the [C] key, the currently selected number is determined. If you press the [S] key after entering the password in this procedure, "CLONE" is displayed if the entered password is correct. If the password is incorrect, "CLN LOCK" is redisplayed.
4. Power on the slave transceiver.
5. Connect the cloning cable (part No. E30-3410-05) to the SP/MIC connectors on the master and slave.

6-4. 功能

1. 如果在显示 "PROG 1152" 时按 [Side2] 键, 则显示变为 "PROG 192" 以表示写入速度为低速 (19200bps)。如果在显示 "PROG 192" 时再次按 [Side2] 键, 则显示变为 "PROG 384"。如果在显示 "PROG 384" 时再次按 [Side2] 键, 则显示变为 "PROG 576"。如果在显示 "PROG 576" 时再次按 [Side2] 键, 则显示返回到 "PROG 1152"。
2. 如果在显示 "PROG 1152" 时按 [Side1] 键, 则计算校验和并显示结果。如果在显示校验和时再次按 [Side1] 键, 则重新显示 "PROG 1152"。

注释：

通常以高速模式写入。

7. 复制模式

用SP/MIC连接器连接对讲机, 可以将编程数据从一台对讲机传输到另一台对讲机。具体操作如下 (发射机是主机, 接收机是子机)。

以下数据不能复制。

- 调谐数据
- 带密码的嵌入消息
- 序列号

说明1 ~ 7所描述的 "密码" 是 "读取授权密码"。

1. 按住 [B] 键打开主对讲机的电源。如果对讲机设置了数据密码, 则对讲机会显示 "CLN LOCK"。如果没有设置密码, 则对讲机显示 "CLONE"。
2. 输入正确的密码后, 显示 "CLONE", 对讲机可以作为复制主机使用。下面描述如何输入密码。
3. **如何用键盘输入密码;**
   如果在显示 "CLN LOCK" 时按某个键, 则会在对讲机上显示被按下的数字。每次按该键按向左的顺序移动显示。输入密码时, 按 [*] 或 [S] 键, 如果输入的密码正确, 则显示 "CLONE"。如果密码不正确, 则重新显示 "CLN LOCK"。
   如何用选择器输入密码;
   如果在显示 "CLN LOCK" 时转动选择器, 闪烁显示数字 (0~9)。按 [C] 键时, 确定当前选择的数字。如果按该步骤输入密码后按 [S] 键, 如果输入的密码正确, 则显示 "CLONE"。如果密码不正确, 则重新显示 "CLN LOCK"。
4. 打开子对讲机的电源。
5. 将复制电缆 (零件号E30-3410-05) 连接到主, 子对讲机的SP/MIC连接器上。

REALIGNMENT / 模式组合

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

Notes:

Cannot be cloned if the password (over write password) is programmed to the slave.

Only the same models can be cloned together.

6. 主对讲机显示 "CLONE" 时, 按主对讲机上的 [S] 键。主对讲机的数据被发送到子对讲机。子对讲机正在接收数据时, 显示 "PROGRAM"。数据复制完成后, 主对讲机显示 "END", 子对讲机自动按用户模式操作。然后子对讲机就可以按与主对讲机相同的程序操作。
7. 可以继续对另一台子对讲机进行复制。如果在主对讲机显示 "END" 时按主对讲机上的 [S] 键, 则主对讲机显示 "CLONE"。执行步骤4~6的操作。

注释：

如果子对讲机编程有密码 (改写密码), 则无法复制。

只有相同型号的对讲机才能放在一起复制

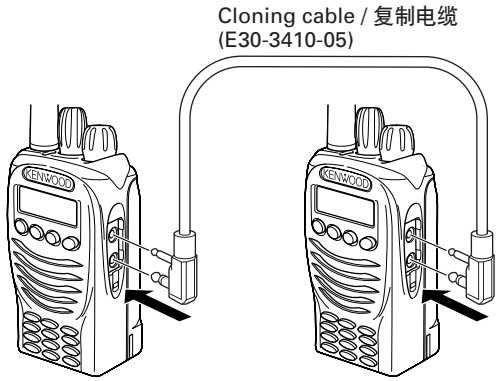


Fig. 2 / 图2

8. Self-Programming Mode

This mode allows you to write the frequency data and signaling, etc. to the equipment. This mode is to be used ONLY by authorized service personnel who are maintaining the user's equipment. After programming, reset the FPU to disable "Self- Programming" mode. Radios CANNOT be delivered to the end-user with self-programming mode enabled.

8-1. Entering Self-Programming Mode

1. Press and hold the [C] key for 2 seconds while turning the power on.
2. When self-programming mode is enabled, "SELF" appears on the display.

8-2. Adding a Data Password

If a data password is set in the optional feature menu, you must enter the password to activate self-programming mode.

The password can consist of 6 digits, ranging from 0~9.

8. 自台编程模式

该模式允许您将频率数据和信令等写入设备。该模式只能由维修用户设备的授权维修人员使用。编程后, 请复位FPU以禁用 "自台编程" 模式。无线电对讲机不能以自台编程模式启用的状态交付最终用户。

8-1. 进入自台编程模式

1. 打开电源时按住 [C] 键约2秒钟。
2. 自台编程模式启用时, 显示屏上显示 "SELF"。

8-2. 添加数据密码

如果在FPU的 "可选功能" 菜单中设置了数据密码, 则您必须输入密码以激活自台编程模式。

密码由6位数字组成, 范围为0 ~ 9。

REALIGNMENT / 模式组合

■ To enter the password using the keypad:

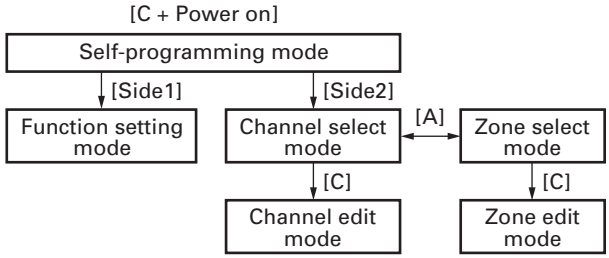
1. Press a key while "SLF.LOCK.R" or "SLF.LOCK.W" is displayed. The number that was pressed will appear on the display.
2. Each press of the key shifts the display in order to the left.
3. When you have entered the entire password, press the [∗] or [S] key. "SELF" appears on the display if the entered password is correct. If the password is incorrect, "SLF.LOCK.R" or "SLF.LOCK.W" is redisplayed.

■ To enter the password using the selector:

1. Rotate the selector while "SLF.LOCK.R" or "SLF.LOCK.W" is displayed. A number (0 to 9) will appear on the display and flash.
2. Press the [C] key. The currently selected number is set.
3. When you have entered the entire password, press the [S] key. "SELF" appears on the display if the entered password is correct. If the password is incorrect, "SLF.LOCK.R" or "SLF.LOCK.W" is redisplayed.

Note:

- Self-programming mode cannot be set when it has been disabled by the FPU.



■用键盘输入密码：

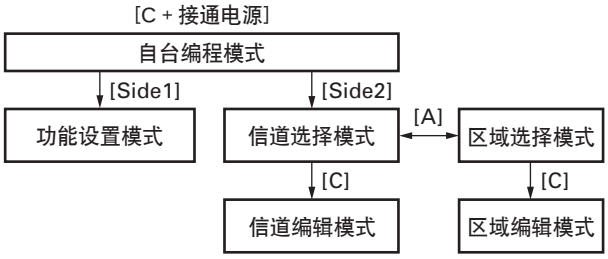
1. 在显示 "SLF.LOCK.R" 或 "SLF.LOCK.W" 时按某个键。被按下的数字显示在显示屏上。
2. 每次按该键按向左的顺序移动显示。
3. 输入全部密码后, 按 [∗] 或 [S] 键。如果输入的密码正确, 则显示屏上显示 "SELF"。如果密码不正确, 则重新显示 "SLF.LOCK.R" 或 "SLF.LOCK.W"。

■用选择器输入密码：

1. 在显示 "SLF.LOCK.R" 或 "SLF.LOCK.W" 时转动选择器。数字 (0 ~ 9) 出现在显示屏上并闪烁。
2. 按 [C] 键。设置当前选择的数字。
3. 输入全部密码后, 按[S]键。如果输入的密码正确, 则显示屏上显示 "SELF"。如果密码不正确, 则重新显示 "SLF.LOCK.R" 或 "SLF.LOCK.W"。

注释：

- 如果FPU已经禁用自台编程模式, 则不能设置自台编程模式。

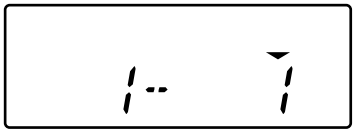


REALIGNMENT

8-3. Zone/Channel Select Mode

■ To enable Zone/Channel select mode

1. Press the [Side2] key when "SELF" is displayed. The transceiver enters Channel Select Mode. On the left half of the display, the zone number is displayed. On the right half of the display, the channel number is displayed.
2. Each press of the [A] key changes the position of the "▼" indicator between the zone select (left side) and the channel select (right side).
3. Rotate the selector to set the zone or channel number, depending on the location or the "▼" indicator.



■ Channel edit mode

1. Press the [A] key so that the "▼" indicator is located on the right side, above the channel number.
2. Rotate the selector select your desired channel number.
3. Press the [C] key to enter Channel Edit Mode.
4. Press the [C] key again to select the setting you wish to modify.
5. Rotate the selector to select the desired value.
6. Press the [B] key to store the value in memory and advance to the next setting.
7. Press the [C] key to skip any settings you do not wish to modify.
8. Press the [S] key to exit. "SELF" appears on the display.

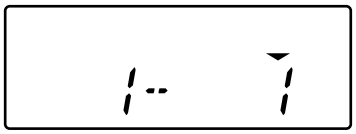
No.	Function	Choices	Display	Remarks
Zone/Channel Setting Mode				
	Select Channel	1-128	▼ 1 - 1	[A] : Zone Selection/Channel Selection change
			▼ 1 - 1 2 8	
	Select Zone	1-128	▼ 1 - 1	
			▼ 1 2 8 - 1	
Channel Edit				
1	RX Frequency	Step 2.5kHz	S T P _ _ 2 5 0	Display when an item is selected or when a step is changed (about 0.5 seconds) [A] : Step change Default=6.25kHz
		Step 5.0kHz	S T P _ _ 5 0 0	
		Step 6.25kHz	S T P _ _ 6 2 5	
		Step 7.5kHz	S T P _ _ 7 5 0	
		Step 1MHz	S T P _ _ _ 1 M	
		Blank	R.– – – – – – –	[Side1] : Freq On/Blank switching
		100.0000~280.0000MHz	R.1 5 0. 0 0 0 0	The rightmost dot indicates 50Hz digit (On=5; Off=0)
2	RX Signaling	OFF	– – – – – – – –	[Side1] : Off/QT/DQT switching [A] : Mode switching [Side2] : Normal/Inverse switching Default=OFF
		QT 67.0~250.3Hz (EIA Mode)	Q T _ _ 6 7.0 _	
			Q T _ 2 5 0.3 _	
		QT 67.0~254.1Hz (0.1Hz Step Mode)	Q T _ _ 6 7.0 *	
			Q T _ 2 5 4.1 *	
		DQT 023~754 Normal (Standard Table Mode)	D Q T 0 2 3 N _	
			D Q T 7 5 4 N _	
		DQT 000~777 Normal (1 Step Mode)	D Q T 0 0 0 N *	
			D Q T 7 7 7 N *	

模式组合

8-3. 区域/信道选择模式

■启用区域/信道选择模式

1. 显示 “SELF” 时按 [Side2] 键。对讲机进入信道选择模式。在显示屏的左半部显示区域号。在显示屏的右半部显示信道号。
2. 每次按 [A] 键在区域选择 (左边) 和信道选择 (右边) 之间改变 “▼” 指示的位置。
3. 根据位置或 “▼” 指示, 转动选择器设置区域号或信道号。



■信道编辑模式

1. 按 [A] 键使 “▼” 指示位于右边的信道号之上。
2. 转动选择器选择您想要的信道号。
3. 按 [C] 键进入信道编辑模式。
4. 再按一次 [C] 键选择您想要更改的设置。
5. 转动选择器选择想要的值。
6. 按 [B] 键将该值保存在存储器中, 然后进入下一设置。
7. 按 [C] 键跳过您不想更改的设置。
8. 按 [S] 退出。显示屏上出现 “SELF”。

号码	功　能	选　择	显　示	备　注
区域/信道设置模式				
	选择信道	1-128	▼ 1 -　1	[A]：区域选择/信道选择改变
			▼ 1 - 1 2 8	
	选择区域	1-128	▼ 1 -　1	
			▼ 1 2 8 -　1	
信道编辑				
1	接收频率	步长2.5kHz	S T P _ _ 2 5 0	选择了一个项目或改变了步长时显示 (约0.5秒)
		步长5.0kHz	S T P _ _ 5 0 0	[A]：步长改变
		步长6.25kHz	S T P _ _ 6 2 5	出厂设定 = 6.25kHz
		步长7.5kHz	S T P _ _ 7 5 0	
		步长1MHz	S T P _ _ _ 1 M	
		空白	R.– – – – – – –	[Side1]：频率开/空白切换
		100.0000~280.0000MHz	R.1 5 0.0 0 0 0	最右边的点表示 50Hz数字 (点显示 = 5;　点不显示 = 0)
2	接收信令	OFF	– – – – – – – –	[Side1]：Off/QT/DQT切换
		QT 67.0~250.3Hz	Q T _ _ 6 7.0 _	[A]：模式切换
		(EIA模式)	Q T _ 2 5 0.3 _	[Side2]：常规/反向切换
		QT 67.0~254.1Hz	Q T _ _ 6 7.0 *	出厂设定 = OFF
		(0.1Hz步长模式)	Q T _ 2 5 4.1 *	
		DQT 023~754常规	D Q T 0 2 3 N _	
		(标准表模式)	D Q T 7 5 4 N _	
		DQT 000~777常规	D Q T 0 0 0 N *	
		(1步长模式)	D Q T 7 7 7 N *	

REALIGNMENT

No.	Function	Choices	Display	Remarks
		DQT 023~754 Inverse	DQT 023 I _	
		(Standard Table Mode)	DQT 754 I _	
		DQT 000~777 Inverse	DQT 000 I *	
		(1 Step Mode)	DQT 777 I *	
3	TX Frequency	Step 2.5kHz	STP __ 250	Same as RX frequency
		Step 5.0kHz	STP __ 500	
		Step 6.25kHz	STP __ 625	
		Step 7.5kHz	STP __ 750	
		Step 1MHz	STP ___ 1M	
		Blank	T.--------	Same as RX frequency
		100.0000~280.0000MHz	T.150.0000	Same as RX frequency
4	TX Signaling	OFF	---------	Same as RX signaling
		QT 67.0~250.3Hz	QT __ 67.0 _	
		(EIA Mode)	QT _ 250.3 _	
		QT 67.0~254.1Hz	QT __ 67.0 *	
		(0.1Hz Step Mode)	QT _ 254.1 *	
		DQT 023~754 Normal	DQT 023N _	
		(Standard Table Mode)	DQT 754N _	
		DQT 000~777 Normal	DQT 000N *	
		(1 Step Mode)	DQT 777N *	
		DQT 023~754 Inverse	DQT 023 I _	
		(Standard Table Mode)	DQT 754 I _	
		DQT 000~777 Inverse	DQT 000 I *	
		(1 Step Mode)	DQT 777 I *	
5	Option Signaling	OFF	OP _ OFF __	←Default
		DTMF	OP _ DTMF _	
		2-tone	OP _ 2TON1	
			OP _ 2TON2	
			OP _ 2TON3	
		FleetSync	OP _ FLSY _	
6	ID	DTMF Signaling = Code SQ	___ ID ___	Display when an item is selected
		000~9999999999		(about 0.5 seconds)
		DTMF Signaling = Selective Call	12345678	Display of the current setting
		000~9999		(If it is 8 or more digits, scroll it)
			-----123	Display when a code is input
				(Input it with DTMF key)
		Code Default	_____000	[Side1] : Data clear
7	Transmit Power	High Transmit Power	PWR _H___	←Default
		Low Transmit Power	PWR _L___	

模式组合

号码	功　能	选　择	显　示	备　注
		DQT 023~754反向	DQT023I_	
		(标准表模式)	DQT754I_	
		DQT 000~777反向	DQT000I*	
		(1步长模式)	DQT777I*	
3	发射频率	步长2.5kHz	STP__250	与接收频率相同
		步长5.0kHz	STP__500	
		步长6.25kHz	STP__625	
		步长7.5kHz	STP__750	
		步长1MHz	STP___1M	
		空白	T.--------	与接收频率相同
		100.0000~280.0000MHz	T.150.0000	与接收频率相同
4	发射信令	OFF	---------	与接收频率相同
		QT 67.0~250.3Hz	QT__67.0_	
		(EIA模式)	QT_250.3_	
		QT 67.0~254.1Hz	QT__67.0*	
		(0.1Hz步长模式)	QT_254.1*	
		DQT 023~754常规	DQT023N_	
		(标准表模式)	DQT754N_	
		DQT 000~777常规	DQT000N*	
		(1步长模式)	DQT777N*	
		DQT 023~754反向	DQT023I_	
		(标准表模式)	DQT754I_	
		DQT 000~777反向	DQT000I*	
		(1步长模式)	DQT777I*	
5	可选信令	OFF	OP__OFF_	←出厂设定
		DTMF	OP__DTMF	
		2-音	OP_2TON1	
			OP_2TON2	
			OP_2TON3	
		FleetSync	OP_FLSY_	
6	ID	DTMF信令 = 代码SQ	___ID___	选择某个项目时显示 (约0.5秒)
		000~9999999999		
		DTMF信令 = 选择呼叫	12345678	当前设置显示
		000~9999		(如果是8或以上的数字, 请滚动它)
			-----123	输入代码时显示 (用DTMF键输入)
		代码出厂设定	_____000	[Side1]：数据清除
7	发射功率	高发射功率	PWR_H___	←出厂设定
		低发射功率	PWR_L___	

REALIGNMENT

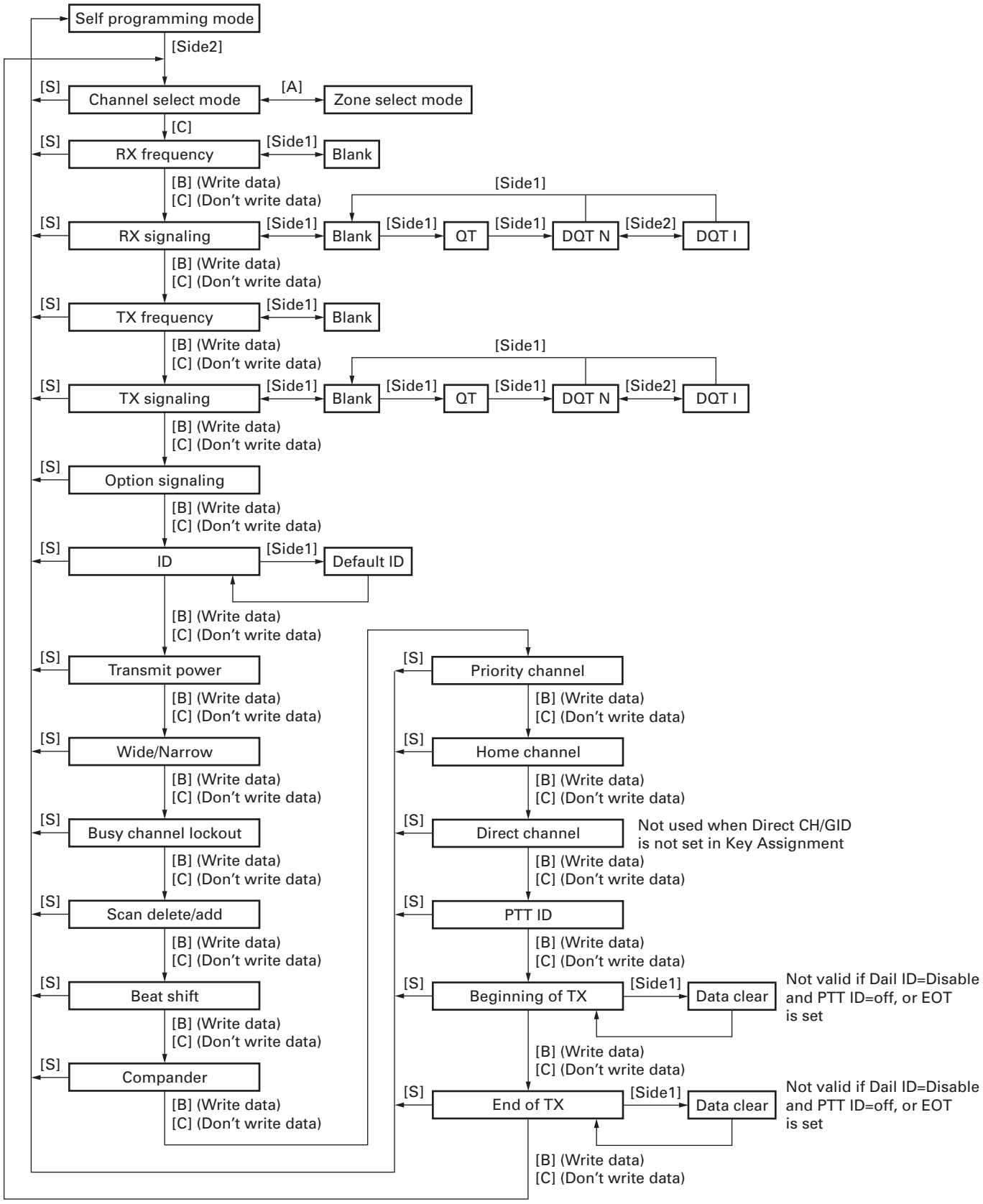
No.	Function	Choices	Display	Remarks
8	Wide/Narrow	Wide	W I D E _ _ _ _	←Default
		Narrow	N A R R O W _ _	
9	Busy Channel Lockout	No	B C L _ N O _ _	←Default
		QT/DQT Tone	B C L _ Q T _ _	
		Option Signaling	B C L _ O P T _	
		Carrier Only	B C L _ C A R R	
10	Scan Delete/Add	Add	S C A N _ A D D	←Default
		Delete	S C A N _ D E L	
11	Beat Shift	NO	S H F T _ N O _	←Default
		YES	S H F T _ Y E S	
12	Compander	NO	C O M P _ N O _	←Default
		YES	C O M P _ Y E S	
13	Priority Channel	NO	P R C H _ N O _	←Default
		YES	P R C H _ Y E S	
14	Home Channel	NO	H M C H _ N O _	Current zone outside cannot be set up
		YES	H M C H _ Y E S	Default=NO
15	Direct Channel	NO	D I R C T _ N O	Default=NO
		1~4	D I R C T _ _ 1	
16	PTT ID	OFF	P I D _ O F F _	Default=OFF
		Beginning of Transmit	P I D _ B O T _	
		End of Transmit	P I D _ E O T _	
		Both	P I D _ B O T H	
17	Beginning of Transmit	Code which it can input, 0~9, A~D, ∗ and #, maximum of 16 digits.	B O T _ I D _ _	Not display if Dial ID =Uncheck and PTT ID=OFF, or EOT is set
			1 2 3 4 5 6 7 8	Display of the current setting (If it is 8 or more digits, scroll it)
			– – – – – 9 8 7	Display when a code is input (Input it with DTMF key)
		Blank	– – – – – – – –	[Side1] : Data clear
18	End of Transmit	Code which it can input, 0~9, A~D, ∗ and #, maximum of 16 digits.	E O T _ I D _ _	Not display if Dial ID =Uncheck and PTT ID=OFF, or EOT is set
			1 2 3 4 5 6 7 8	Display of the current setting (If it is 8 or more digits, scroll it)
			– – – – – 9 8 7	Display when a code is input (Input it with DTMF key)
		Blank	– – – – – – – –	[Side1] : Data clear

模式组合

号码	功　能	选　择	显　示	备　注
8	宽/窄	宽	WIDE____	←出厂设定
		窄	NARROW__	
9	繁忙信道锁定	否	BCL_NO__	←出厂设定
		QT/DQT音	BCL_QT__	
		可选信令	BCL_OPT_	
		仅于载波	BCL_CARR	
10	扫描删除/添加	添加	SCAN_ADD	←出厂设定
		删除	SCAN_DEL	
11	拍频偏移	否	SHFT_NO_	←出厂设定
		是	SHFT_YES	
12	压缩器	否	COMP_NO_	←出厂设定
		是	COMP_YES	
13	优先信道	否	PRCH_NO_	←出厂设定
		是	PRCH_YES	
14	归属信道	否	HMCH_NO_	当前区段之外不能设置 出厂设定 = 否
		是	HMCH_YES	
15	直接信道	否	DIRCT_NO	出厂设定 = 否
		1~4	DIRCT__1	
16	PTT ID	OFF	PID_OFF_	出厂设定 = OFF
		发射开始	PID_BOT_	
		发射结束	PID_EOT_	
		发射开始和发射结束	PID_BOTH	
17	发射开始	可以输入的代码是0~9、A~D、*和#, 最多16个数字。	BOT_ID__	如果拨号ID = 不选, PTT ID = 关或设置了EOT (发射结束), 则不显示。
			12345678	当前设置显示 (如果是8或以上的数字, 请滚动它)
			-----987	输入代码时显示 (用DTMF键输入)
		空白	--------	[Side1]：数据清除
18	发射结束	可以输入的代码是0~9、A~D、*和#, 最多16个数字。	EOT_ID__	如果拨号ID = 不选, PTT ID = 关或设置了EOT (发射结束), 则不显示。
			12345678	当前设置显示 (如果是8或以上的数字, 请滚动它)
			-----987	输入代码时显示 (用DTMF键输入)
		空白	--------	[Side1]：数据清除

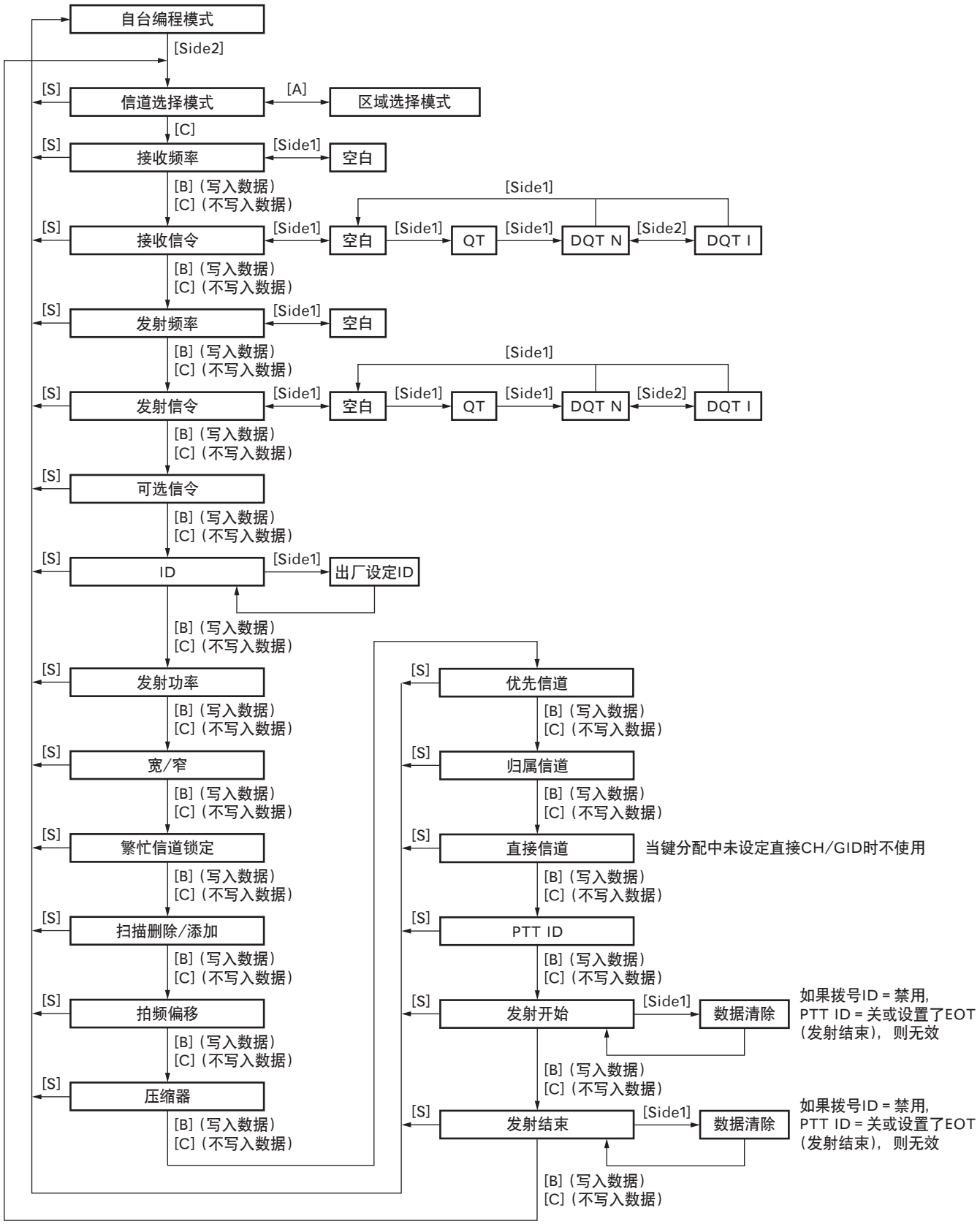
REALIGNMENT

■ Channel edit mode flow chart



模式组合

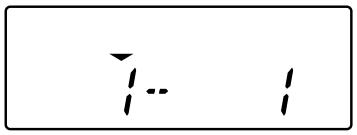
■信道编辑模式流程图



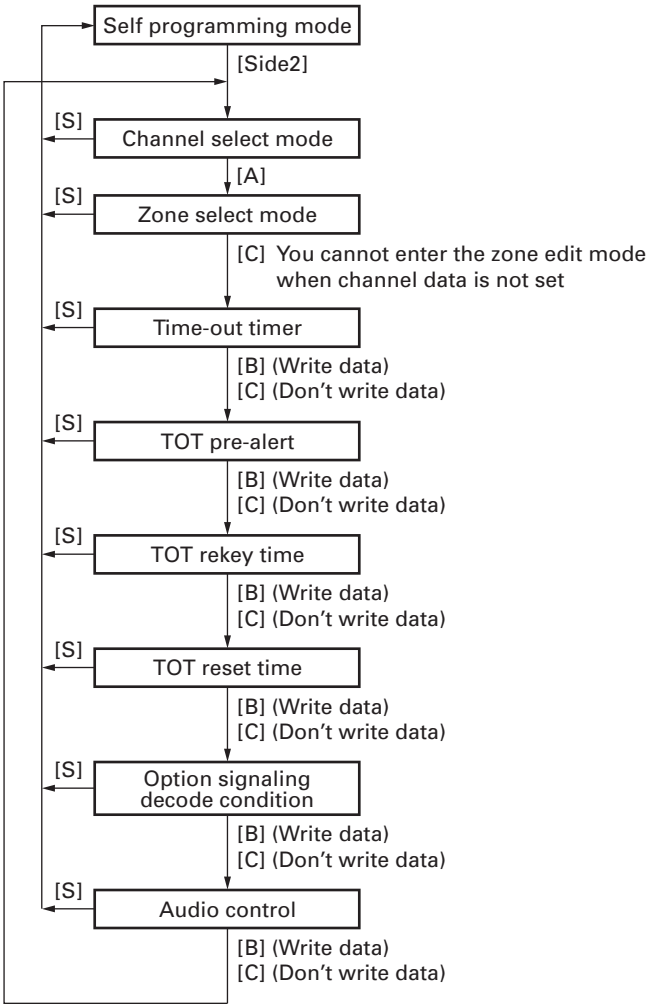
REALIGNMENT

■ Zone edit mode

1. Press the [A] key so that the "▼" indicator is located on the left side, above the zone number.
2. Rotate the selector select your desired zone number.
3. Press the [C] key to enter Zone Edit Mode.
4. Press the [C] key again to select the setting you wish to modify.
5. Rotate the selector to select the desired value.
6. Press the [B] key to store the value in memory and advance to the next setting.
7. Press the [C] key to skip any settings you do not wish to modify.
   Press the [S] key to exit. "SELF" appears on the display.



■ Zone edit mode flow chart

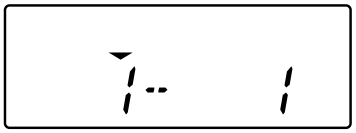


No.	Function	Choices	Display	Remarks
Zone Edit				
1	Time-out Timer	15~1200/15s	T O T _ _ _ 6 0	Default=60
2	TOT Pre-alert	Off, 1~10/1s	T O T P _ O F F	Default=Off
3	TOT Rekey Time	Off, 1~60/1s	T O T K _ O F F	Default=Off
4	TOT Reset Time	Off, 1~15/1s	T O T S _ O F F	Default=Off
5	Option Signaling Decode Condition	QT/DQT	O P D C _ Q T _	←Default
		Carrier	O P D C _ C R _	
6	Audio Control	QT/DQT	A D C _ Q T _ _	←Default
		QT/DQT and Option Signaling	A D C _ A N D _	
		QT/DQT or Option Signaling	A D C _ O R _ _	

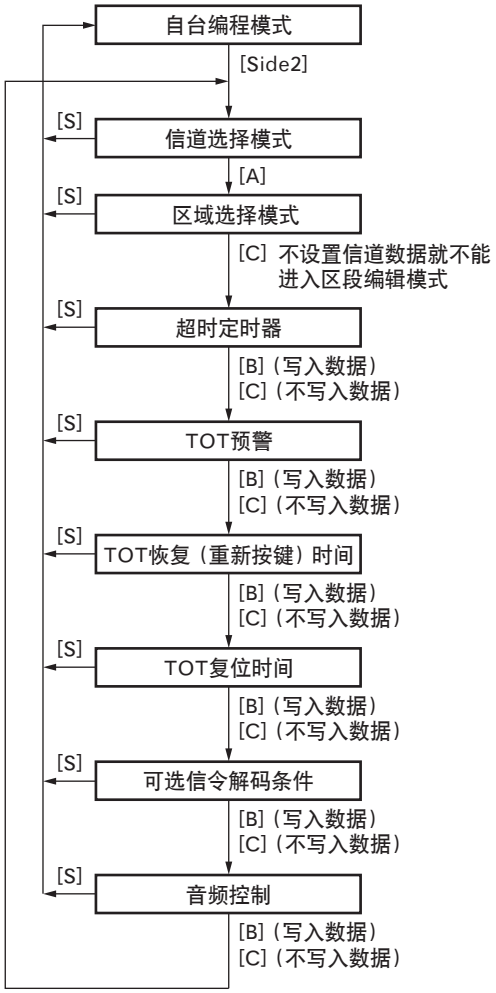
模式组合

■区段编辑模式

1. 按 [A] 键使 “▼” 指示位于左边的区段号之上。
2. 转动选择器选择您想要的区段号。
3. 按 [C] 键进入区段编辑模式。
4. 再按一次 [C] 键选择您想要更改的设置。
5. 转动选择器选择想要的值。
6. 按 [B] 键将该值保存在存储器中, 然后进入下一设置。
7. 按 [C] 键跳过您不想更改的设置。
   按 [S] 退出。显示屏上出现 “SELF”。



■区段编辑模式流程图



号码	功　能	选　择	显　示	备　注
区段编辑				
1	超时定时器	15~1200/15s	TOT___60	出厂设定 = 60
2	TOT预警	Off, 1~10/1s	TOTP_OFF	出厂设定 = Off
3	TOT恢复 (重新按键) 时间	Off, 1~60/1s	TOTK_OFF	出厂设定 = Off
4	TOT复位时间	Off, 1~15/1s	TOTS_OFF	出厂设定 = Off
5	可选信令解码条件	QT/DQT	OPDC_QT_	←出厂设定
		载波	OPDC_CR_	
6	音频控制	QT/DQT	ADC_QT__	←出厂设定
		QT/DQT和可选信令	ADC_AND_	
		QT/DQT或可选信令	ADC_OR__	

REALIGNMENT

8-4. Function Setting Mode

1. Press the [Side1] key when "SELF" is displayed. The transceiver enters Function Setting Mode.
2. Press the [C] key to select the setting you wish to modify.
3. Rotate the selector to select the desired value.
4. Press the [B] key to store the value in memory and advance to the next setting.
5. Press the [C] key to skip any settings you do not wish to modify.
6. Press the [S] key to exit. "SELF" appears on the display.

No.	Function	Choices	Display	Remarks
Function Key				
1	[AUX]	None	A U X _ O F F _	←Default
		2-tone	A U X _ _ _ 1 _	
		Autodial	A U X _ _ _ 2 _	
		Autodial Programming	A U X _ _ _ 3 _	
		AUX	A U X _ _ _ 4 _	Optional Board=None
		Call 1	A U X _ _ _ 5 _	
		Call 2	A U X _ _ _ 6 _	
		CH/GID Down	A U X _ _ _ 7 _	
		CH/GID Up	A U X _ _ _ 8 _	
		Channel Entry	A U X _ _ _ 9 _	
		Direct CH1	A U X _ _ 1 0 _	
		Direct CH2	A U X _ _ 1 1 _	
		Direct CH3	A U X _ _ 1 2 _	
		Direct CH4	A U X _ _ 1 3 _	
		Display Character	A U X _ _ 1 4 _	
		Emergency	A U X _ _ 1 5 _	
		Home/CH/GID	A U X _ _ 1 6 _	
		Key Lock	A U X _ _ 1 7 _	
		Lamp	A U X _ _ 1 8 _	
		Low Transmit Power	A U X _ _ 1 9 _	
		Monitor	A U X _ _ 2 0 _	
		Monitor Momentary	A U X _ _ 2 1 _	
		OST	A U X _ _ 2 2 _	
		Transceiver Password	A U X _ _ 2 3 _	
		Scan	A U X _ _ 2 4 _	
		Scan Delete/Add	A U X _ _ 2 5 _	
		Scrambler	A U X _ _ 2 6 _	
		SelCall	A U X _ _ 2 7 _	
		SelCall+Status	A U X _ _ 2 8 _	
		Squelch Level	A U X _ _ 2 9 _	
		Squelch Off	A U X _ _ 3 0 _	
		Squelch Off Momentary	A U X _ _ 3 1 _	
		Status	A U X _ _ 3 2 _	

模式组合

8-4. 功能设置模式

1. 显示 “SELF” 时按 [Side1] 键。对讲机进入功能设置模式。
2. 按 [C] 键选择您想要更改的设置。
3. 转动选择器选择想要的值。
4. 按 [B] 键将该值保存在存储器中, 然后进入下一设置。
5. 按 [C] 键跳过您不想更改的设置。
6. 按 [S] 退出。显示屏上出现 “SELF。

号码	功　能	选　择	显　示	备　注
功能键				
1	[AUX]	无	AUX_OFF_	←出厂设定
		2-音	AUX___1_	
		自动拨号	AUX___2_	
		自动拨号编程	AUX___3_	
		辅助	AUX___4_	选件板 = 无
		呼叫1	AUX___5_	
		呼叫2	AUX___6_	
		信道/组ID下调	AUX___7_	
		信道/组ID上调	AUX___8_	
		信道输入	AUX___9_	
		直接信道1	AUX__10_	
		直接信道2	AUX__11_	
		直接信道3	AUX__12_	
		直接信道4	AUX__13_	
		显示字符	AUX__14_	
		紧急报警	AUX__15_	
		归属/信道/组ID	AUX__16_	
		按键盘锁定	AUX__17_	
		照明灯	AUX__18_	
		低发射功率	AUX__19_	
		监听器	AUX__20_	
		瞬时监听	AUX__21_	
		OST	AUX__22_	
		对讲机密码	AUX__23_	
		扫描	AUX__24_	
		扫描删除/添加	AUX__25_	
		扰频器	AUX__26_	
		选择呼叫	AUX__27_	
		选择呼叫 + 状态	AUX__28_	
		静噪电平	AUX__29_	
		静噪打开	AUX__30_	
		瞬时静噪打开	AUX__31_	
		状态	AUX__32_	

REALIGNMENT

No.	Function	Choices	Display	Remarks
		Talk Around	A U X _ _ 3 3 _	
		VOX	A U X _ _ 3 4 _	
		Zone Up	A U X _ _ 3 5 _	
		Zone Down	A U X _ _ 3 6 _	
2	[S1]	No Function	S 1 _ _ O F F _	
		2-tone	S 1 _ _ _ _ 1 _	
		Autodial	S 1 _ _ _ _ 2 _	
		Autodial Programming	S 1 _ _ _ _ 3 _	
		AUX	S 1 _ _ _ _ 4 _	Optional Board=None
		Call 1	S 1 _ _ _ _ 5 _	
		Call 2	S 1 _ _ _ _ 6 _	
		CH/GID Down	S 1 _ _ _ _ 7 _	
		CH/GID Up	S 1 _ _ _ _ 8 _	
		Channel Entry	S 1 _ _ _ _ 9 _	
		Direct CH1	S 1 _ _ _ 1 0 _	
		Direct CH2	S 1 _ _ _ 1 1 _	
		Direct CH3	S 1 _ _ _ 1 2 _	
		Direct CH4	S 1 _ _ _ 1 3 _	
		Display Character	S 1 _ _ _ 1 4 _	
		Home/CH/GID	S 1 _ _ _ 1 6 _	
		Key Lock	S 1 _ _ _ 1 7 _	
		Lamp	S 1 _ _ _ 1 8 _	←Default
		Low Transmit Power	S 1 _ _ _ 1 9 _	
		Monitor	S 1 _ _ _ 2 0 _	
		Monitor Momentary	S 1 _ _ _ 2 1 _	
		OST	S 1 _ _ _ 2 2 _	
		Transceiver Password	S 1 _ _ _ 2 3 _	
		Scan	S 1 _ _ _ 2 4 _	
		Scan Delete/Add	S 1 _ _ _ 2 5 _	
		Scrambler	S 1 _ _ _ 2 6 _	
		SelCall	S 1 _ _ _ 2 7 _	
		SelCall+Status	S 1 _ _ _ 2 8 _	
		Squelch Level	S 1 _ _ _ 2 9 _	
		Squelch Off	S 1 _ _ _ 3 0 _	
		Squelch Off Momentary	S 1 _ _ _ 3 1 _	
		Status	S 1 _ _ _ 3 2 _	
		Talk Around	S 1 _ _ _ 3 3 _	
		VOX	S 1 _ _ _ 3 4 _	
		Zone Up	S 1 _ _ _ 3 5 _	
		Zone Down	S 1 _ _ _ 3 6 _	

模式组合

号码	功　能	选　择	显　示	备　注
		脱网通信	AUX__33_	
		VOX (声控发射)	AUX__34_	
		区域上调	AUX__35_	
		区域下调	AUX__36_	
2	[S1]	无功能	S1__OFF_	
		2-音	S1____1_	
		自动拨号	S1____2_	
		自动拨号编程	S1____3_	
		辅助	S1____4_	选件板 = 无
		呼叫1	S1____5_	
		呼叫2	S1____6_	
		信道/组ID下调	S1____7_	
		信道/组ID上调	S1____8_	
		信道输入	S1____9_	
		直接信道1	S1___10_	
		直接信道2	S1___11_	
		直接信道3	S1___12_	
		直接信道4	S1___13_	
		显示字符	S1___14_	
		归属/信道/组ID	S1___16_	
		按键盘锁定	S1___17_	
		照明灯	S1___18_	←出厂设定
		低发射功率	S1___19_	
		监听器	S1___20_	
		瞬时监听	S1___21_	
		OST	S1___22_	
		对讲机密码	S1___23_	
		扫描	S1___24_	
		扫描删除/添加	S1___25_	
		扰频器	S1___26_	
		选择呼叫	S1___27_	
		选择呼叫 + 状态	S1___28_	
		静噪电平	S1___29_	
		静噪打开	S1___30_	
		瞬时静噪打开	S1___31_	
		状态	S1___32_	
		脱网通信	S1___33_	
		VOX (声控发射)	S1___34_	
		区域上调	S1___35_	
		区域下调	S1___36_	

REALIGNMENT

No.	Function	Choices	Display	Remarks
3	[S2]	No Function	S 2 _ _ O F F _	
		2-tone	S 2 _ _ _ _ 1 _	
		Autodial	S 2 _ _ _ _ 2 _	
		AUX	S 2 _ _ _ _ 3 _	Optional Board=None
		Autodial Programming	S 2 _ _ _ _ 4 _	
		Call 1	S 2 _ _ _ _ 5 _	
		Call 2	S 2 _ _ _ _ 6 _	
		CH/GID Down	S 2 _ _ _ _ 7 _	
		CH/GID Up	S 2 _ _ _ _ 8 _	
		Channel Entry	S 2 _ _ _ _ 9 _	
		Direct CH1	S 2 _ _ _ 1 0 _	
		Direct CH2	S 2 _ _ _ 1 1 _	
		Direct CH3	S 2 _ _ _ 1 2 _	
		Direct CH4	S 2 _ _ _ 1 3 _	
		Display Character	S 2 _ _ _ 1 4 _	
		Home/CH/GID	S 2 _ _ _ 1 6 _	
		Key Lock	S 2 _ _ _ 1 7 _	
		Lamp	S 2 _ _ _ 1 8 _	
		Low Transmit Power	S 2 _ _ _ 1 9 _	
		Monitor	S 2 _ _ _ 2 0 _	
		Monitor Momentary	S 2 _ _ _ 2 1 _	
		OST	S 2 _ _ _ 2 2 _	
		Transceiver Password	S 2 _ _ _ 2 3 _	
		Scan	S 2 _ _ _ 2 4 _	
		Scan Delete/Add	S 2 _ _ _ 2 5 _	
		Scrambler	S 2 _ _ _ 2 6 _	
		SelCall	S 2 _ _ _ 2 7 _	
		SelCall+Status	S 2 _ _ _ 2 8 _	
		Squelch Level	S 2 _ _ _ 2 9 _	
		Squelch Off	S 2 _ _ _ 3 0 _	
		Squelch Off Momentary	S 2 _ _ _ 3 1 _	←Default
		Status	S 2 _ _ _ 3 2 _	
		Talk Around	S 2 _ _ _ 3 3 _	
		VOX	S 2 _ _ _ 3 4 _	
		Zone Up	S 2 _ _ _ 3 5 _	
		Zone Down	S 2 _ _ _ 3 6 _	
4	[S]	No Function	S _ _ _ O F F _	
		2-tone	S _ _ _ _ _ 1 _	
		Autodial	S _ _ _ _ _ 2 _	
		AUX	S _ _ _ _ _ 3 _	Optional Board=None

模式组合

号码	功　能	选　择	显　示	备　注
3	[S2]	无功能	S 2 _ _ O F F _	
		2-音	S 2 _ _ _ _ 1 _	
		自动拨号	S 2 _ _ _ _ 2 _	
		辅助	S 2 _ _ _ _ 3 _	选件板 = 无
		自动拨号编程	S 2 _ _ _ _ 4 _	
		呼叫1	S 2 _ _ _ _ 5 _	
		呼叫2	S 2 _ _ _ _ 6 _	
		信道/组ID下调	S 2 _ _ _ _ 7 _	
		信道/组ID上调	S 2 _ _ _ _ 8 _	
		信道输入	S 2 _ _ _ _ 9 _	
		直接信道1	S 2 _ _ _ 1 0 _	
		直接信道2	S 2 _ _ _ 1 1 _	
		直接信道3	S 2 _ _ _ 1 2 _	
		直接信道4	S 2 _ _ _ 1 3 _	
		显示字符	S 2 _ _ _ 1 4 _	
		归属/信道/组ID	S 2 _ _ _ 1 6 _	
		按键盘锁定	S 2 _ _ _ 1 7 _	
		照明灯	S 2 _ _ _ 1 8 _	
		低发射功率	S 2 _ _ _ 1 9 _	
		监听器	S 2 _ _ _ 2 0 _	
		瞬时监听	S 2 _ _ _ 2 1 _	
		OST	S 2 _ _ _ 2 2 _	
		对讲机密码	S 2 _ _ _ 2 3 _	
		扫描	S 2 _ _ _ 2 4 _	
		扫描删除/添加	S 2 _ _ _ 2 5 _	
		扰频器	S 2 _ _ _ 2 6 _	
		选择呼叫	S 2 _ _ _ 2 7 _	
		选择呼叫 + 状态	S 2 _ _ _ 2 8 _	
		静噪电平	S 2 _ _ _ 2 9 _	
		静噪打开	S 2 _ _ _ 3 0 _	
		瞬时静噪打开	S 2 _ _ _ 3 1 _	←出厂设定
		状态	S 2 _ _ _ 3 2 _	
		脱网通信	S 2 _ _ _ 3 3 _	
		VOX (声控发射)	S 2 _ _ _ 3 4 _	
		区域上调	S 2 _ _ _ 3 5 _	
		区域下调	S 2 _ _ _ 3 6 _	
4	[S]	无功能	S _ _ _ O F F _	
		2-音	S _ _ _ _ _ 1 _	
		自动拨号	S _ _ _ _ _ 2 _	
		辅助	S _ _ _ _ _ 3 _	选件板 = 无

REALIGNMENT

No.	Function	Choices	Display	Remarks
		Autodial Programming	S _ _ _ _ _ 4 _	
		Call 1	S _ _ _ _ _ 5 _	
		Call 2	S _ _ _ _ _ 6 _	
		CH/GID Down	S _ _ _ _ _ 7 _	
		CH/GID Up	S _ _ _ _ _ 8 _	
		Channel Entry	S _ _ _ _ _ 9 _	
		Direct CH1	S _ _ _ _ 1 0 _	
		Direct CH2	S _ _ _ _ 1 1 _	
		Direct CH3	S _ _ _ _ 1 2 _	
		Direct CH4	S _ _ _ _ 1 3 _	
		Display Character	S _ _ _ _ 1 4 _	
		Home/CH/GID	S _ _ _ _ 1 6 _	
		Key Lock	S _ _ _ _ 1 7 _	
		Lamp	S _ _ _ _ 1 8 _	
		Low Transmit Power	S _ _ _ _ 1 9 _	
		Monitor	S _ _ _ _ 2 0 _	
		Monitor Momentary	S _ _ _ _ 2 1 _	
		OST	S _ _ _ _ 2 2 _	
		Transceiver Password	S _ _ _ _ 2 3 _	
		Scan	S _ _ _ _ 2 4 _	←Default
		Scan Delete/Add	S _ _ _ _ 2 5 _	
		Scrambler	S _ _ _ _ 2 6 _	
		SelCall	S _ _ _ _ 2 7 _	
		SelCall+Status	S _ _ _ _ 2 8 _	
		Squelch Level	S _ _ _ _ 2 9 _	
		Squelch Off	S _ _ _ _ 3 0 _	
		Squelch Off Momentary	S _ _ _ _ 3 1 _	
		Status	S _ _ _ _ 3 2 _	
		Talk Around	S _ _ _ _ 3 3 _	
		VOX	S _ _ _ _ 3 4 _	
		Zone Up	S _ _ _ _ 3 5 _	
		Zone Down	S _ _ _ _ 3 6 _	
5	[A]	No Function	A _ _ _ O F F _	
		2-tone	A _ _ _ _ _ 1 _	
		Autodial	A _ _ _ _ _ 2 _	
		Autodial Programming	A _ _ _ _ _ 3 _	
		AUX	A _ _ _ _ _ 4 _	Optional Board=None
		Call 1	A _ _ _ _ _ 5 _	
		Call 2	A _ _ _ _ _ 6 _	
		CH/GID Down	A _ _ _ _ _ 7 _	

模式组合

号码	功　能	选　择	显　示	备　注
		自动拨号编程	S _ _ _ _ _ 4 _	
		呼叫1	S _ _ _ _ _ 5 _	
		呼叫2	S _ _ _ _ _ 6 _	
		信道/组ID下调	S _ _ _ _ _ 7 _	
		信道/组ID上调	S _ _ _ _ _ 8 _	
		信道输入	S _ _ _ _ _ 9 _	
		直接信道1	S _ _ _ _ 1 0 _	
		直接信道2	S _ _ _ _ 1 1 _	
		直接信道3	S _ _ _ _ 1 2 _	
		直接信道4	S _ _ _ _ 1 3 _	
		显示字符	S _ _ _ _ 1 4 _	
		归属/信道/组ID	S _ _ _ _ 1 6 _	
		按键盘锁定	S _ _ _ _ 1 7 _	
		照明灯	S _ _ _ _ 1 8 _	
		低发射功率	S _ _ _ _ 1 9 _	
		监听器	S _ _ _ _ 2 0 _	
		瞬时监听	S _ _ _ _ 2 1 _	
		OST	S _ _ _ _ 2 2 _	
		对讲机密码	S _ _ _ _ 2 3 _	
		扫描	S _ _ _ _ 2 4 _	←出厂设定
		扫描删除/添加	S _ _ _ _ 2 5 _	
		扰频器	S _ _ _ _ 2 6 _	
		选择呼叫	S _ _ _ _ 2 7 _	
		选择呼叫 + 状态	S _ _ _ _ 2 8 _	
		静噪电平	S _ _ _ _ 2 9 _	
		静噪打开	S _ _ _ _ 3 0 _	
		瞬时静噪打开	S _ _ _ _ 3 1 _	
		状态	S _ _ _ _ 3 2 _	
		脱网通信	S _ _ _ _ 3 3 _	
		VOX (声控发射)	S _ _ _ _ 3 4 _	
		区域上调	S _ _ _ _ 3 5 _	
		区域下调	S _ _ _ _ 3 6 _	
5	[A]	无功能	A _ _ _ O F F _	
		2-音	A _ _ _ _ _ 1 _	
		自动拨号	A _ _ _ _ _ 2 _	
		自动拨号编程	A _ _ _ _ _ 3 _	
		辅助	A _ _ _ _ _ 4 _	选件板 = 无
		呼叫1	A _ _ _ _ _ 5 _	
		呼叫2	A _ _ _ _ _ 6 _	
		信道/组ID下调	A _ _ _ _ _ 7 _	

REALIGNMENT

No.	Function	Choices	Display	Remarks
		CH/GID Up	A _ _ _ _ _ 8 _	
		Channel Entry	A _ _ _ _ _ 9 _	
		Direct CH1	A _ _ _ _ 1 0 _	
		Direct CH2	A _ _ _ _ 1 1 _	
		Direct CH3	A _ _ _ _ 1 2 _	
		Direct CH4	A _ _ _ _ 1 3 _	
		Display Character	A _ _ _ _ 1 4 _	
		Home/CH/GID	A _ _ _ _ 1 6 _	
		Key Lock	A _ _ _ _ 1 7 _	
		Lamp	A _ _ _ _ 1 8 _	
		Low Transmit Power	A _ _ _ _ 1 9 _	
		Monitor	A _ _ _ _ 2 0 _	
		Monitor Momentary	A _ _ _ _ 2 1 _	
		OST	A _ _ _ _ 2 2 _	
		Transceiver Password	A _ _ _ _ 2 3 _	
		Scan	A _ _ _ _ 2 4 _	
		Scan Delete/Add	A _ _ _ _ 2 5 _	←Default
		Scrambler	A _ _ _ _ 2 6 _	
		SelCall	A _ _ _ _ 2 7 _	
		SelCall+Status	A _ _ _ _ 2 8 _	
		Squelch Level	A _ _ _ _ 2 9 _	
		Squelch Off	A _ _ _ _ 3 0 _	
		Squelch Off Momentary	A _ _ _ _ 3 1 _	
		Status	A _ _ _ _ 3 2 _	
		Talk Around	A _ _ _ _ 3 3 _	
		VOX	A _ _ _ _ 3 4 _	
		Zone Up	A _ _ _ _ 3 5 _	
		Zone Down	A _ _ _ _ 3 6 _	
6	[B]	No Function	B _ _ _ O F F _	
		2-tone	B _ _ _ _ _ 1 _	
		Autodial	B _ _ _ _ _ 2 _	
		Autodial Programming	B _ _ _ _ _ 3 _	
		AUX	B _ _ _ _ _ 4 _	Optional Board=None
		Call 1	B _ _ _ _ _ 5 _	
		Call 2	B _ _ _ _ _ 6 _	
		CH/GID Down	B _ _ _ _ _ 7 _	
		CH/GID Up	B _ _ _ _ _ 8 _	
		Channel Entry	B _ _ _ _ _ 9 _	
		Direct CH1	B _ _ _ _ 1 0 _	
		Direct CH2	B _ _ _ _ 1 1 _	

模式组合

号码	功　能	选　择	显　示	备　注
		信道/组ID上调	A _ _ _ _ _ 8 _	
		信道输入	A _ _ _ _ _ 9 _	
		直接信道1	A _ _ _ _ 1 0 _	
		直接信道2	A _ _ _ _ 1 1 _	
		直接信道3	A _ _ _ _ 1 2 _	
		直接信道4	A _ _ _ _ 1 3 _	
		显示字符	A _ _ _ _ 1 4 _	
		归属/信道/组ID	A _ _ _ _ 1 6 _	
		按键盘锁定	A _ _ _ _ 1 7 _	
		照明灯	A _ _ _ _ 1 8 _	
		低发射功率	A _ _ _ _ 1 9 _	
		监听器	A _ _ _ _ 2 0 _	
		瞬时监听	A _ _ _ _ 2 1 _	
		OST	A _ _ _ _ 2 2 _	
		对讲机密码	A _ _ _ _ 2 3 _	
		扫描	A _ _ _ _ 2 4 _	
		扫描删除/添加	A _ _ _ _ 2 5 _	←出厂设定
		扰频器	A _ _ _ _ 2 6 _	
		选择呼叫	A _ _ _ _ 2 7 _	
		选择呼叫 + 状态	A _ _ _ _ 2 8 _	
		静噪电平	A _ _ _ _ 2 9 _	
		静噪打开	A _ _ _ _ 3 0 _	
		瞬时静噪打开	A _ _ _ _ 3 1 _	
		状态	A _ _ _ _ 3 2 _	
		脱网通信	A _ _ _ _ 3 3 _	
		VOX (声控发射)	A _ _ _ _ 3 4 _	
		区域上调	A _ _ _ _ 3 5 _	
		区域下调	A _ _ _ _ 3 6 _	
6	[B]	无功能	B _ _ _ O F F _	
		2-音	B _ _ _ _ _ 1 _	
		自动拨号	B _ _ _ _ _ 2 _	
		自动拨号编程	B _ _ _ _ _ 3 _	
		辅助	B _ _ _ _ _ 4 _	选件板 = 无
		呼叫1	B _ _ _ _ _ 5 _	
		呼叫2	B _ _ _ _ _ 6 _	
		信道/组ID下调	B _ _ _ _ _ 7 _	
		信道/组ID上调	B _ _ _ _ _ 8 _	
		信道输入	B _ _ _ _ _ 9 _	
		直接信道1	B _ _ _ _ 1 0 _	
		直接信道2	B _ _ _ _ 1 1 _	

REALIGNMENT

No.	Function	Choices	Display	Remarks
		Direct CH3	B _ _ _ _ 1 2 _	
		Direct CH4	B _ _ _ _ 1 3 _	
		Display Character	B _ _ _ _ 1 4 _	
		Home/CH/GID	B _ _ _ _ 1 6 _	
		Key Lock	B _ _ _ _ 1 7 _	
		Lamp	B _ _ _ _ 1 8 _	
		Low Transmit Power	B _ _ _ _ 1 9 _	
		Monitor	B _ _ _ _ 2 0 _	
		Monitor Momentary	B _ _ _ _ 2 1 _	
		OST	B _ _ _ _ 2 2 _	
		Transceiver Password	B _ _ _ _ 2 3 _	
		Scan	B _ _ _ _ 2 4 _	
		Scan Delete/Add	B _ _ _ _ 2 5 _	
		Scrambler	B _ _ _ _ 2 6 _	
		SelCall	B _ _ _ _ 2 7 _	
		SelCall+Status	B _ _ _ _ 2 8 _	
		Squelch Level	B _ _ _ _ 2 9 _	
		Squelch Off	B _ _ _ _ 3 0 _	
		Squelch Off Momentary	B _ _ _ _ 3 1 _	
		Status	B _ _ _ _ 3 2 _	
		Talk Around	B _ _ _ _ 3 3 _	←Default
		VOX	B _ _ _ _ 3 4 _	
		Zone Up	B _ _ _ _ 3 5 _	
		Zone Down	B _ _ _ _ 3 6 _	
7	[C]	No Function	C _ _ _ O F F _	
		2-tone	C _ _ _ _ _ 1 _	
		Autodial	C _ _ _ _ _ 2 _	
		Autodial Programming	C _ _ _ _ _ 3 _	
		AUX	C _ _ _ _ _ 4 _	Optional Board=None
		Call 1	C _ _ _ _ _ 5 _	
		Call 2	C _ _ _ _ _ 6 _	
		CH/GID Down	C _ _ _ _ _ 7 _	
		CH/GID Up	C _ _ _ _ _ 8 _	
		Channel Entry	C _ _ _ _ _ 9 _	
		Direct CH1	C _ _ _ _ 1 0 _	
		Direct CH2	C _ _ _ _ 1 1 _	
		Direct CH3	C _ _ _ _ 1 2 _	
		Direct CH4	C _ _ _ _ 1 3 _	
		Display Character	C _ _ _ _ 1 4 _	
		Home/CH/GID	C _ _ _ _ 1 6 _	

模式组合

号码	功　能	选　择	显　示	备　注
		直接信道3	B _ _ _ _ 1 2 _	
		直接信道4	B _ _ _ _ 1 3 _	
		显示字符	B _ _ _ _ 1 4 _	
		归属/信道/组ID	B _ _ _ _ 1 6 _	
		按键盘锁定	B _ _ _ _ 1 7 _	
		照明灯	B _ _ _ _ 1 8 _	
		低发射功率	B _ _ _ _ 1 9 _	
		监听器	B _ _ _ _ 2 0 _	
		瞬时监听	B _ _ _ _ 2 1 _	
		OST	B _ _ _ _ 2 2 _	
		对讲机密码	B _ _ _ _ 2 3 _	
		扫描	B _ _ _ _ 2 4 _	
		扫描删除/添加	B _ _ _ _ 2 5 _	
		扰频器	B _ _ _ _ 2 6 _	
		选择呼叫	B _ _ _ _ 2 7 _	
		选择呼叫 + 状态	B _ _ _ _ 2 8 _	
		静噪电平	B _ _ _ _ 2 9 _	
		静噪打开	B _ _ _ _ 3 0 _	
		瞬时静噪打开	B _ _ _ _ 3 1 _	
		状态	B _ _ _ _ 3 2 _	
		脱网通信	B _ _ _ _ 3 3 _	←出厂设定
		VOX (声控发射)	B _ _ _ _ 3 4 _	
		区域上调	B _ _ _ _ 3 5 _	
		区域下调	B _ _ _ _ 3 6 _	
7	[C]	无功能	C _ _ _ O F F _	
		2-音	C _ _ _ _ _ 1 _	
		自动拨号	C _ _ _ _ _ 2 _	
		自动拨号编程	C _ _ _ _ _ 3 _	
		辅助	C _ _ _ _ _ 4 _	选件板 = 无
		呼叫1	C _ _ _ _ _ 5 _	
		呼叫2	C _ _ _ _ _ 6 _	
		信道/组ID下调	C _ _ _ _ _ 7 _	
		信道/组ID上调	C _ _ _ _ _ 8 _	
		信道输入	C _ _ _ _ _ 9 _	
		直接信道1	C _ _ _ _ 1 0 _	
		直接信道2	C _ _ _ _ 1 1 _	
		直接信道3	C _ _ _ _ 1 2 _	
		直接信道4	C _ _ _ _ 1 3 _	
		显示字符	C _ _ _ _ 1 4 _	
		归属/信道/组ID	C _ _ _ _ 1 6 _	

REALIGNMENT

No.	Function	Choices	Display	Remarks
		Key Lock	C _ _ _ _ 1 7 _	
		Lamp	C _ _ _ _ 1 8 _	
		Low Transmit Power	C _ _ _ _ 1 9 _	←Default
		Monitor	C _ _ _ _ 2 0 _	
		Monitor Momentary	C _ _ _ _ 2 1 _	
		OST	C _ _ _ _ 2 2 _	
		Transceiver Password	C _ _ _ _ 2 3 _	
		Scan	C _ _ _ _ 2 4 _	
		Scan Delete/Add	C _ _ _ _ 2 5 _	
		Scrambler	C _ _ _ _ 2 6 _	
		SelCall	C _ _ _ _ 2 7 _	
		SelCall+Status	C _ _ _ _ 2 8 _	
		Squelch Level	C _ _ _ _ 2 9 _	
		Squelch Off	C _ _ _ _ 3 0 _	
		Squelch Off Momentary	C _ _ _ _ 3 1 _	
		Status	C _ _ _ _ 3 2 _	
		Talk Around	C _ _ _ _ 3 3 _	
		VOX	C _ _ _ _ 3 4 _	
		Zone Up	C _ _ _ _ 3 5 _	
		Zone Down	C _ _ _ _ 3 6 _	
8	[Selector]	CH/GID Up/Down	C H _ U P / D N	←Default
		Zone Up/Down	Z N _ U P / D N	
		None	K N O B _ O F F	
9	Call 1 (Signaling setting)	DTMF	C A L L 1 _ D T	Only when Call 1 is set.
		2-tone	C A L L 1 _ 2 T	Default=FleetSync (Status)
		FleetSync (Status)	C A L L 1 _ F S	
	Call 1 (List setting)	List None, 1~16	L I S T _ _ _ 1	DTMF
		List None, 1~10	L I S T _ _ _ 1	2-tone
		List None, 1~50	L I S T _ _ _ 1	FleetSync, Default=None
10	Call 2 (Signaling setting)	DTMF	C A L L 2 _ D T	Only when Call 2 is set.
		2-tone	C A L L 2 _ 2 T	Default=FleetSync (Status)
		FleetSync (Status)	C A L L 2 _ F S	
	Call 2 (List setting)	List None, 1~16	L I S T _ _ _ 1	DTMF
		List None, 1~10	L I S T _ _ _ 1	2-tone
		List None, 1~50	L I S T _ _ _ 1	FleetSync, Default=None
11	Operator Selectable	No	D C O S _ _ N O	←Default
	(Direct CH)	Yes	D C O S _ Y E S	
12	Keypad Operation	None	K E Y O _ N O N	←Default, Key=16key only
		Channel Entry	K E Y O _ C H E	
		OST	K E Y O _ O S T	

模式组合

号码	功　能	选　择	显　示	备　注
		按键盘锁定	C_ _ _ _17_	
		照明灯	C_ _ _ _18_	
		低发射功率	C_ _ _ _19_	←出厂设定
		监听器	C_ _ _ _20_	
		瞬时监听	C_ _ _ _21_	
		OST	C_ _ _ _22_	
		对讲机密码	C_ _ _ _23_	
		扫描	C_ _ _ _24_	
		扫描删除/添加	C_ _ _ _25_	
		扰频器	C_ _ _ _26_	
		选择呼叫	C_ _ _ _27_	
		选择呼叫 + 状态	C_ _ _ _28_	
		静噪电平	C_ _ _ _29_	
		静噪打开	C_ _ _ _30_	
		瞬时静噪打开	C_ _ _ _31_	
		状态	C_ _ _ _32_	
		脱网通信	C_ _ _ _33_	
		VOX (声控发射)	C_ _ _ _34_	
		区域上调	C_ _ _ _35_	
		区域下调	C_ _ _ _36_	
8	[选择器]	信道/组ID上调/下调	CH_UP/DN	←出厂设定
		区域上调/下调	ZN_UP/DN	
		无	KNOB_OFF	
9	呼叫1 (信令设置)	DTMF	CALL1_DT	仅当呼叫1设置时。
		2-音	CALL1_2T	出厂设定 = FleetSync (状态)
		FleetSync (状态)	CALL1_FS	
	呼叫1 (列表设置)	无列表, 1~16	LIST_ _ _1	DTMF
		无列表, 1~10	LIST_ _ _1	2-音
		无列表, 1~50	LIST_ _ _1	FleetSync，出厂设定 = 无
10	呼叫2 (信令设置)	DTMF	CALL2_DT	仅当呼叫2设置时。
		2-音	CALL2_2T	出厂设定 = FleetSync (状态)
		FleetSync (状态)	CALL2_FS	
	呼叫2 (列表设置)	无列表, 1~16	LIST_ _ _1	DTMF
		无列表, 1~10	LIST_ _ _1	2-音
		无列表, 1~50	LIST_ _ _1	FleetSync，出厂设定 = 无
11	操作者可选 (直接信道)	否	DCOS_ _NO	←出厂设定
		是	DCOS_YES	
12	键盘操作	无	KEYO_NON	←出厂设定，按键 = 仅16键
		信道输入	KEYO_CHE	
		OST	KEYO_OST	

REALIGNMENT

No.	Function	Choices	Display	Remarks
		DTMF (Autodial)	K E Y O _ A T D	
		DTMF (Keypad Auto PTT)	K E Y O _ K A P	
		FleetSync (SelCall)	K E Y O _ S E L	
		FleetSync (Status)	K E Y O _ S T A	
		FleetSync (SelCall+Status)	K E Y O _ S / S	
Optional Features				
13	Auto Backlight	YES/NO	A T L T _ N O _	Default=No
14	Power-on Tone	Current/Off, 1~31	P O N T _ C U R	Default=Current
15	Control Tone	Current/Off, 1~31	C N T T _ C U R	During Self-Programming, it is constant Default=Current
16	Warning Tone	Current/Off, 1~31	W A R T _ C U R	Default=Current
17	Alert Tone	Current/Off, 1~31	A L T T _ C U R	Default=Current
18	Sidetone	Current/Off, 1~31	S I D T _ C U R	Default=Current
19	Locator Tone	Current/Off, 1~31	L O C T _ C U R	Default=Current
20	Minimum Volume	0~31	M I N I _ _ _ 0	Default=0
21	Battery Saver	ON/OFF	B A T T _ O F F	Default=OFF
22	Battery Warning	Off	B TW _ O F F _	
		While Transmitting	B TW _ WT X _	←Default
		Always	B TW _ A LWY	
		Always w/Beep	B TW _ A LWB	
23	Squelch Level	0~9/1STEP	S Q L _ _ _ 5 _	Default=5
Scan				
24	Priority	None	P R I _ N O N E	←Default
		Fixed	P R I _ F I X _	
		Selected	P R I _ S E L _	
		Operator Selectable	P R I _ O S E L	
25	Lookback Time A	500~5000ms/50ms Step	L B A _ _ 5 0 0	Default=500
26	Lookback Time B	500~5000ms/50ms Step	L B B _ 2 0 0 0	Default=2000
27	Revert Channel	Last Called	R E V _ L / C _	←Default
		Last Used	R E V _ L / U _	
		Selected	R E V _ S E L _	
		Selected+TalkBack	R E V _ S / T _	
		Priority	R E V _ P R I _	Cannot be set when priority=None or selected
		Priority+TalkBack	R E V _ P / T _	Cannot be set when priority=None or selected
28	Dropout Delay Time	0~300/1s	D O D T _ _ _ 3	Default=3
29	Dwell Time	0~300/1s	D W L _ _ _ _ 3	Default=3
DTMF				
30	DTMF Speed	6, 8, 10, 15	D T S P _ _ 6 _	Default=6
31	First Digit Delay Time	0~1000ms/50ms	F D D T _ 2 0 0	Default=200
32	First Digit Delay Time with QT	0~1000ms/50ms	F D W Q _ 2 0 0	Default=200

模式组合

号码	功　能	选　择	显　示	备　注
		DTMF (自动拨号)	KEYO_ATD	
		DTMF (键盘自动PTT)	KEYO_KAP	
		FleetSync (选择呼叫)	KEYO_SEL	
		FleetSync (状态)	KEYO_STA	
		FleetSync (选择呼叫 + 状态)	KEYO_S/S	
可选功能				
13	自动背光照明	是/否	ATLT_NO_	出厂设定 = 否
14	开机提示音	当前/关, 1~31	PONT_CUR	出厂设定 = 当前
15	控制音	当前/关, 1~31	CNTT_CUR	自台编程期间, 它保持不变 出厂设定 = 当前
16	警告音	当前/关, 1~31	WART_CUR	出厂设定 = 当前
17	提示音	当前/关, 1~31	ALTT_CUR	出厂设定 = 当前
18	侧音	当前/关, 1~31	SIDT_CUR	出厂设定 = 当前
19	定位器音	当前/关, 1~31	LOCT_CUR	出厂设定 = 当前
20	最小音量	0~31	MINI___0	出厂设定 = 0
21	电池省电	ON/OFF	BATT_OFF	出厂设定 = OFF
22	电池告警	Off	BTW_OFF_	
		发射时	BTW_WTX_	←出厂设定
		始终	BTW_ALWY	
		始终w/Beep	BTW_ALWB	
23	静噪电平	0~9/1步长	SQL___5_	出厂设定 = 5
扫描				
24	优先	无	PRI_NONE	←出厂设定
		固定	PRI_FIX_	
		选择	PRI_SEL_	
		操作者可选	PRI_OSEL	
25	回扫时间A	500~5000ms/50ms步长	LBA__500	出厂设定 = 500
26	回扫时间B	500~5000ms/50ms步长	LBB_2000	出厂设定 = 2000
27	返回信道	最后呼叫	REV_L/C_	←出厂设定
		最后使用	REV_L/U_	
		选择	REV_SEL_	
		选择 + 当前通话	REV_S/T_	
		优先	REV_PRI_	当优先 = 无或选择时不能设置
		优先 + 当前通话	REV_P/T_	当优先 = 无或选择时不能设置
28	失落延迟时间	0~300/1s	DODT___3	出厂设定 = 3
29	停留时间	0~300/1s	DWL____3	出厂设定 = 3
DTMF				
30	DTMF速率	6, 8, 10, 15	DTSP__6_	出厂设定 = 6
31	首位数码延迟时间	0~1000ms/50ms	FDDT_200	出厂设定 = 200
32	带QT的首位数码延迟时间	0~1000ms/50ms	FDWQ_200	出厂设定 = 200

REALIGNMENT

No.	Function	Choices	Display	Remarks
33	First Digit Time	0, 100, 500, 1000	F D T _ _ _ _ 0	Default=0
34	∗ and # Digit	0, 100, 500, 1000	∗ # _ _ _ _ _ 0	Default=0
35	Dial ID	ON/OFF	D I D _ O F F _	Default=OFF, Key=16key only
36	D Code Assignment	D Code	D C A _ D _ C D	Default=D Code
		1~16/1s	D C A _ _ _ 1 6	
37	DTMF Signaling	OFF	D T M S _ O F F	
		Code SQ	D T M S _ C S Q	←Default
		SelCall	D T M S _ S E L	
38	Inter Mediate Code	0~9, A~D, ∗, #	I M C _ _ # _ _	DTMF Signaling=SelCall, Default=#
39	Group Code	Off, A~D, ∗, #	G P C D _ O F F	Default=Off
40	Auto Reset Timer	Off, 1~300/1s	A R T _ _ 1 0 _	Default=10
41	Alert Tone (Individual)	Off, 1~8/ 1	C A T I _ _ _ 1	Default=1
42	Alert Tone (Group)	Off, 1~8/ 1	C A T G _ _ _ 2	Default=2
43	Transpond	Off	T R P _ _ O F F	←Default
		Alert	T R P _ _ A L T	
		ID Code	T R P _ _ I D C	
		Transpond Code	T R P _ _ T R C	
		Ringing Tone	T R P _ _ R I N	
Others				
44	Panel Test/	Enable	P T M _ E N A _	
	Panel Tuning Mode	Disable	P T M _ D I S _	←Default

Refer to the function setting mode flow chart on page 38.

8-5. Memory Reset Mode

- This mode is used to clear data for functions that can be set in Self-Programming Mode or to return to reset values (default).
- Pressing [S] key when "SELF" is shown, sets the display to "CANCEL".
- Turning the selector alternately switches the display between "CANCEL" ↔ "READY".
- Pressing [B] key when "READY" is shown, clears the data and sets the display to "CLEAR".
- Pressing [S] key again, returns the display to "SELF".
- Pressing [S] key when "CANCEL" is shown, returns the display to "SELF" without resetting the data.

9. Firmware Version Information Mode

Turn the transceiver ON with the [Side1] key held down. Then, the version is displayed during holding the [Side1] key.

模式组合

号码	功　能	选　择	显　示	备　注
33	首位数码时间	0, 100, 500, 1000	FDT____0	出厂设定 = 0
34	*和#数码	0, 100, 500, 1000	*#_____0	出厂设定 = 0
35	拨号ID	ON/OFF	DID_OFF_	出厂设定 = OFF，按键 = 仅16键
36	D代码分配	D代码	DCA_D_CD	出厂设定 = D代码
		1~16/1s	DCA___16	
37	DTMF信令	OFF	DTMS_OFF	
		代码SQ	DTMS_CSQ	←出厂设定
		选择呼叫	DTMS_SEL	
38	中间代码	0~9, A~D, *, #	IMC__#__	DTMF信令 = 选择呼叫，出厂设定 = #
39	组代码	Off, A~D, *, #	GPCD_OFF	出厂设定 = Off
40	自动复位定时器	Off, 1~300/1s	ART__10_	出厂设定 = 10
41	提示音 (单呼)	Off, 1~8/ 1	CATI___1	出厂设定 = 1
42	提示音 (组呼)	Off, 1~8/ 1	CATG___2	出厂设定 = 2
43	自动应答	Off	TRP__OFF	←出厂设定
		提示音	TRP__ALT	
		ID代码	TRP__IDC	
		自动应答代码	TRP__TRC	
		振铃音	TRP__RIN	
其他				
44	面板测试/面板调谐模式	启用	PTM_ENA_	
		禁用	PTM_DIS_	←出厂设定

参阅第39页的功能设置模式流程图。

8-5. 存储器复位模式

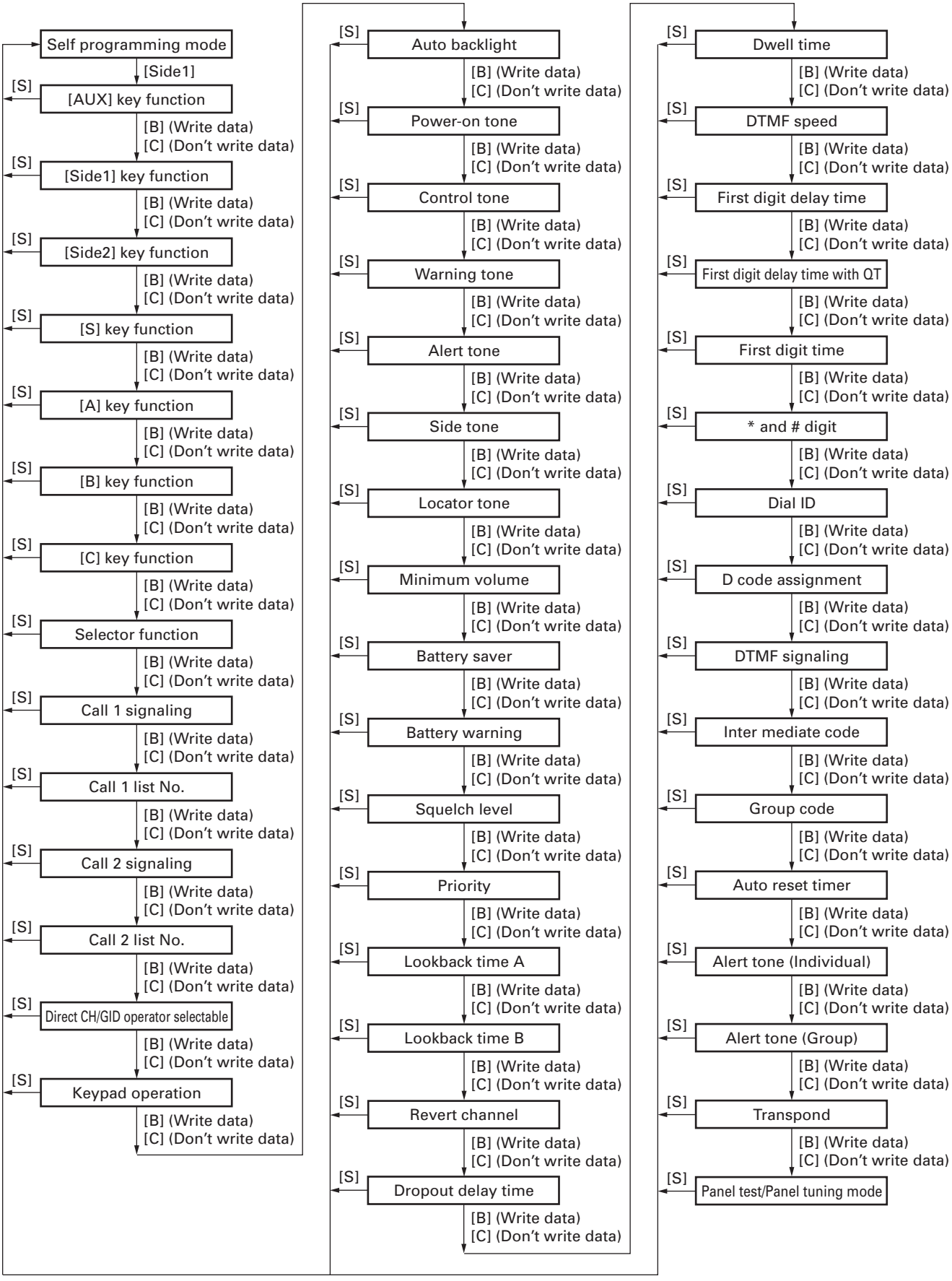
- 该模式用于清除在自台编程模式中设置的功能的数据, 或返回到复位值 (默认)。
- 显示 “SELF” 时按 [S] 键将显示设为 “CANCEL”。
- 转动选择器在 “CANCEL” ↔ “READY” 之间切换显示。
- 显示 “READY” 时按 [B] 键清除数据并将显示设为 “CLEAR”。
- 再按一次 [S] 键使显示返回到 “SELF”。
- 显示 “CANCEL” 时按 [S] 键使显示返回到 “SELF” 而不进行数据复位。

9. 固件版本信息模式

按下 [Side1] 键打开对讲机的电源。然后按 [Side1] 键显示版本。

REALIGNMENT

■ Function setting mode flow chart



模式组合

■功能设置模式流程图

DISASSEMBLY FOR REPAIR / 维修拆卸

1. Removing the FPC

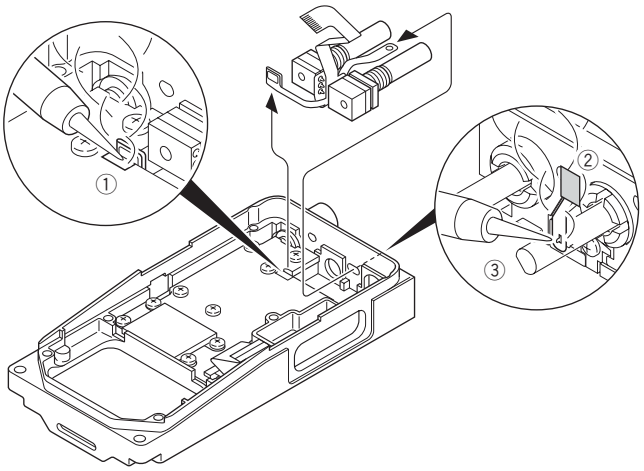
1) Remove the solder from the TX-RX unit using a solder iron (①).
2) Peel the double-sided tape (②).
3) Remove the solder from the battery terminal block using the solder iron (③).

Note : You must replace the FPC and the double-sided tape (4 x 7 mm) when replacing the volume or the selector.

1. 取下FPC

1) 用电烙铁从TX-RX单元上焊下焊锡 (①)。
2) 揭去双面胶带 (②)。
3) 用电烙铁从电池端子上焊下焊锡 (③)。

注意：更换音量开关或选择器后, 必须更换FPC和双面胶带 (4 × 7mm)。

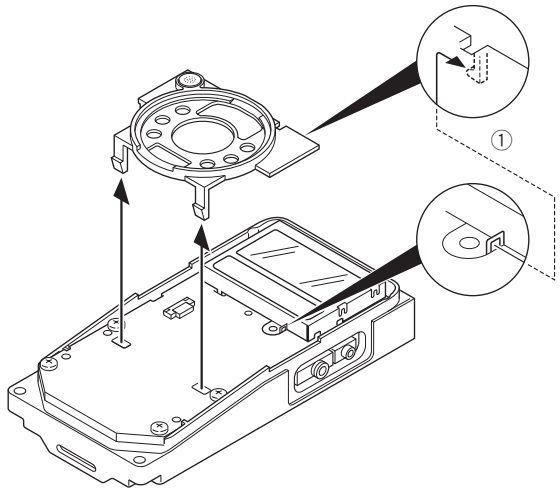


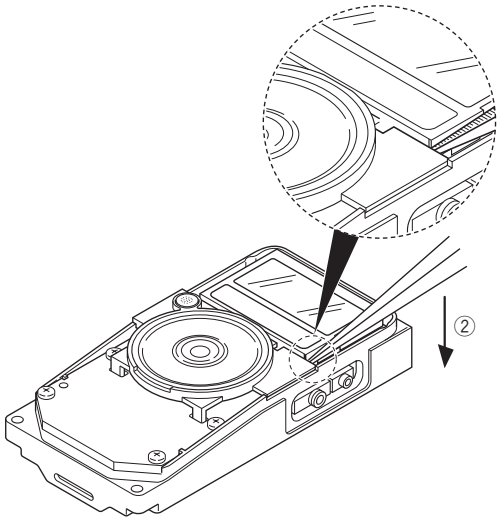
2. Separating the Speaker Holder from the Control Unit

1) As in shown in the figure below, the speaker holder is attached to the LCD cover with tab (①).
   Use a pair of tweezers or similar instrument to lift the speaker holder away from the control unit (②).

2. 从控制单元上拆下扬声器座

1) 如下图所示, 扬声器座固定在带凸起的LCD盖上 (①)。
   用一对镊子或类似的工具将扬声器座从控制单元中提出来 (②)。



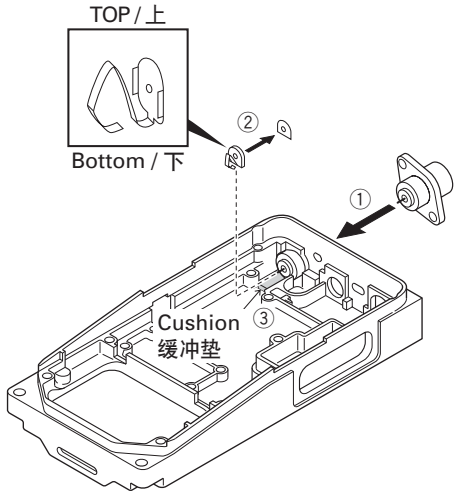


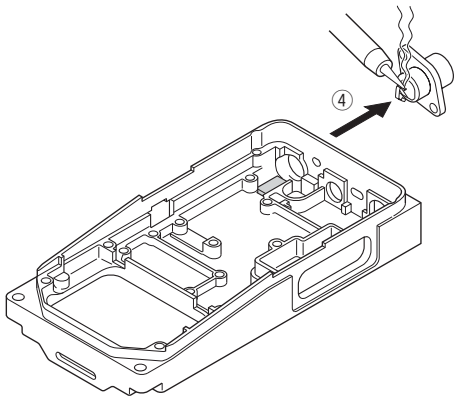
DISASSEMBLY FOR REPAIR / 维修拆卸

3. How to Assemble the Antenna Connector and its Terminal

The antenna connector and its terminal are supplied as separate parts.
When replacing the antenna connector and/ or terminal, assemble the parts prior to the replacement.

1) Mount the antenna connector onto the chassis (①).
   Double-sided tape is attached to the terminal; peel off the tape cover (②).
   Attach the terminal to the antenna connector as shown below.
   Slide the antenna terminal along the adhesive cushion on the chassis so that the adhesive part on the terminal is firmly attached to the antenna connector (③).
2) Remove the antenna connector from the chassis with its terminal attached, then solder the center part of antenna connector to its terminal (④).
   Do not use excessive solder on terminal.





3. 如何组装天线连接器和它的端子

天线连接器和它的端子是作为单独的零件提供的。
更换天线连接器和/或端子时, 应在更换前组装零件。

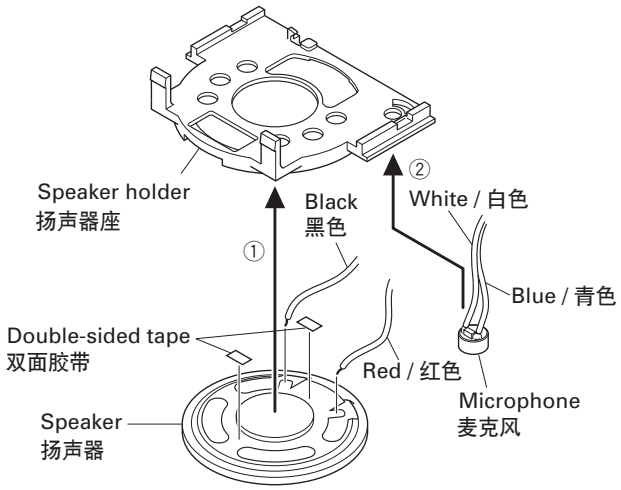
1) 将天线连接器安装到底座上 (①)。
   将双面胶带粘在端子上; 然后揭去胶带保护纸 (②)。
   如下图所示将端子连接到天线连接器上。
   沿粘性垫的方向在底座上滑动天线端子, 使端子的胶着部分牢牢地粘在天线连接器上 (③)。
2) 将天线连接器连同连着的端子一起从底座上取下, 然后将天线连接器的中间部焊到它的端子上 (④)。
   请勿在端子上使用过多的焊料。

4. Replacing the Speaker and Microphone

1) After affixing the double-sided tape (5.4 x 2.7 mm) to the speaker, attach the speaker to the speaker holder (①).
2) Insert the microphone into the hold of the holder, as shown by the diagram (②).

4. 更换扬声器和麦克风

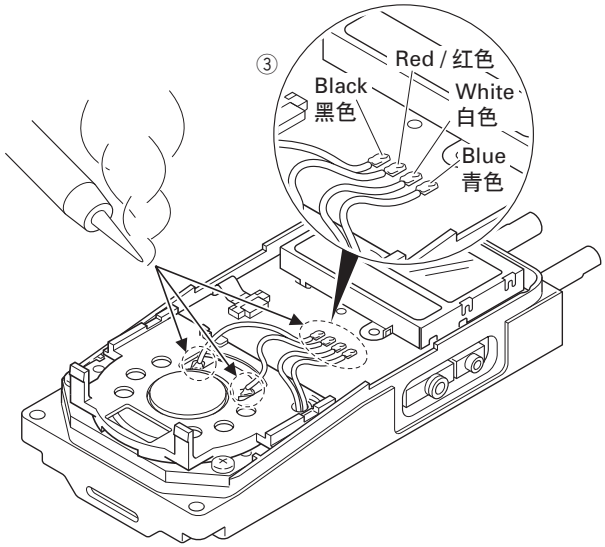
1) 将双面胶带 (5.4 × 2.7mm) 粘到扬声器上后, 再将扬声器粘到扬声器座上 (①)。
2) 如图所示将麦克风插入座孔中 (②)。



DISASSEMBLY FOR REPAIR / 维修拆卸

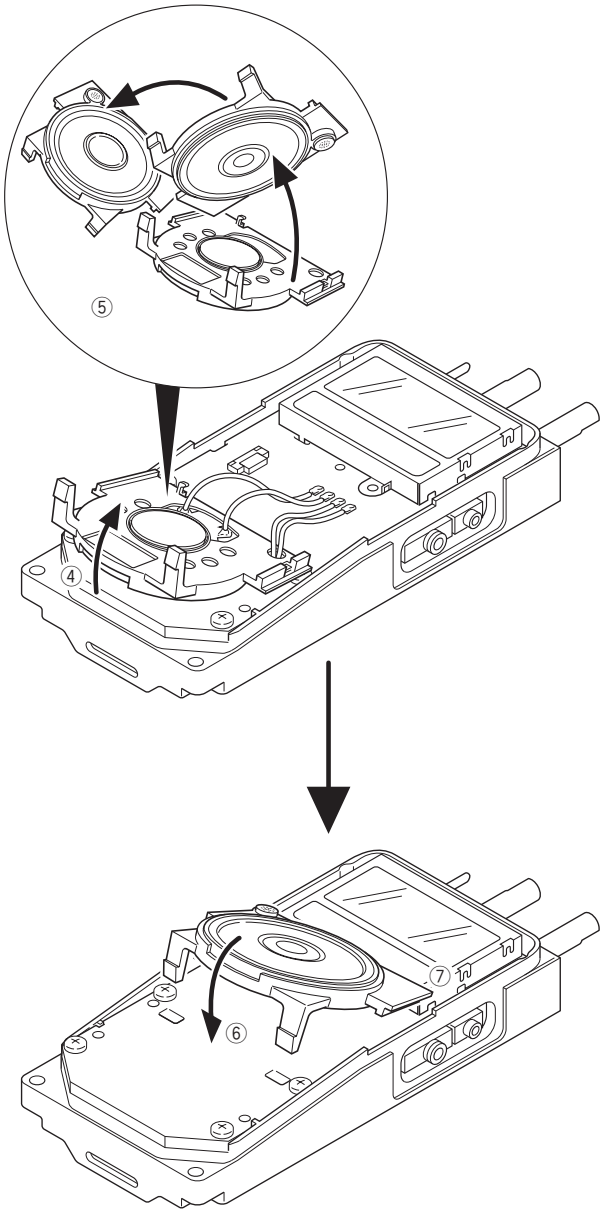
3) Match the speaker and microphone lead wires with the color-code of silkscreen of the printed circuit board (③), then solder them in place.

3) 使扬声器导线和麦克风导线与印刷电路板的丝网印制的色码一致 (③), 然后焊好。



4) Lift the speaker holder (④), then flip it over to the left (⑤).
5) Insert the tabs of the speaker holder into the slots of the transceiver.
First insert the bottom tabs into the control unit (⑥), then insert the top tabs into the LCD cover (⑦).

4) 抬起扬声器座(④), 然后将它翻到左边 (⑤)。
5) 将扬声器座的凸起插入对讲机的槽中。
先将底部的凸起插入控制单元 (⑥), 然后将顶部的凸起插入LCD盖中 (⑦)。



CIRCUIT DESCRIPTION / 电路说明

1. Frequency Configuration

The receiver utilizes double conversion. The first IF is 49.95MHz and the second IF is 450kHz. The first local oscillator signal is supplied from the PLL circuit.

The PLL circuit in the transmitter generates the necessary frequencies. Figure 1 shows the frequencies.

1. 频率构成

接收部采用二次变频超外差方式。第一中频为49.95MHz, 第二中频为450kHz。第一本振频率信号由锁相环电路提供。

发射部由锁相环电路直接产生所需要的频率。图1显示各种频率。

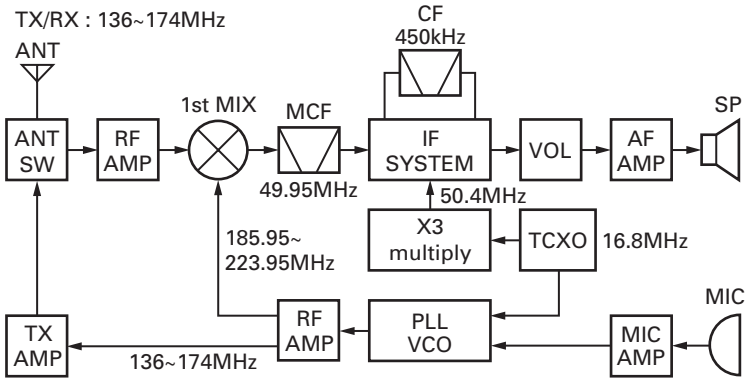


Fig. 1 Frequency configuration / 图1 频率构成

2. Receiver System

The receiver system is shown in Figure 2.

2-1. Front End (RF AMP) Circuit

The signal coming from the antenna passes through the transmit/receive switching diode circuit (D604, D605, D606 and D608), passes through a BPF (L715 and L716), and is amplified by the RF amplifier (Q705).

The resulting signal passes through a BPF (L711 and L713) and goes to the mixer. These BPFs are adjusted by variable capacitors (D703, D704, D705 and D706). The input voltage to the variable capacitor is regulated by voltage output from the DC amplifier (IC19).

2-2. First Mixer

The signal from the front end is mixed with the first local oscillator signal generated in the PLL circuit by Q704 to produce a first IF frequency of 49.95 MHz.

The resulting signal passes through the XF701 MCF to cut the adjacent spurious and provide the optimum characteristics, such as adjacent frequency selectivity.

2. 接收部系统

接收部系统的如图2所示。

2–1. 前级（射频放大器）电路

从天线接收的信号进入发送/接收转换开关二极管电路 (D604、D605、D606和D608), 然后通过BPF (L715和L716), 并且被射频放大器 (Q705) 放大。

此信号通过BPF (L711和L713) 然后进入混频。这些BPF被可变电容器 (D703、D704、D705和D706) 调整。输入可变电容器的电压被经直流放大器 (IC19) 的电压输出调整。

2–2. 第一混频器

前端的信号与PLL电路产生的第一本振信号在Q704混频, 生成49.95MHz频率的第一中频信号。

生成的信号通过XF701 MCF。

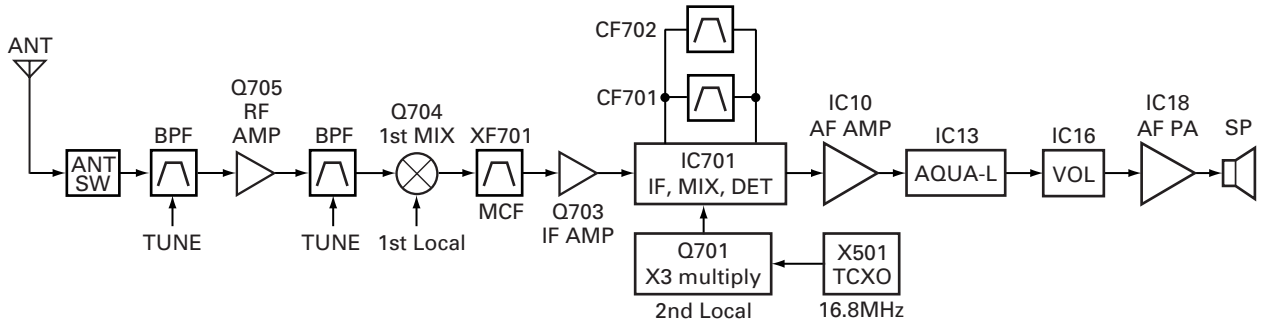


Fig. 2 Receiver system / 图2 接收部系统

CIRCUIT DESCRIPTION / 电路说明

2-3. IF Amplifier Circuit

The first IF signal is passed through a four-pole monolithic crystal filter (XF701) to remove the adjacent channel signal. The filtered first IF signal is amplified by the first IF amplifier (Q703) and then applied to the IF system IC (IC701). The IF system IC provides a second mixer, second local oscillator, limiting amplifier, quadrature detector and RSSI (Received Signal Strength Indicator). The second mixer mixes the first IF signal with the 50.4MHz of the second local oscillator output (TCXO X501) and produces the second IF signal of 450kHz.

The second IF signal is passed through the ceramic filter (Wide : CF701, Narrow : CF702) to remove the adjacent channel signal. The filtered second IF signal is amplified by the limiting amplifier and demodulated by the quadrature detector with the ceramic discriminator (CD701). The demodulated signal is routed to the audio circuit.

2-4. Wide/Narrow Switching Circuit

Wide and Narrow settings can be made for each channel by switching the ceramic filters CF701 (Wide), CF702 (Narrow). The Wide and Narrow is output from IC4.

D701 and D702 are switched to ceramic filters when a Wide/Narrow level is selected.

Q702 turns on/off with the Narrow and the IC701 detector output level is changed to maintain a constant output level during wide or narrow signals.

2-5. Audio Amplifier Circuit

The demodulated signal from IC701 is amplified by IC10, and goes to AF amplifier through IC13.

The signal then goes through an volume control (IC16), and is routed to an audio power amplifier (IC18) where it is amplified and output to the speaker.

2–3. 中频放大电路

第一中频信号通过晶体滤波器 (XF701) 消除相邻信道的信号。经滤波的第一中频信号被第一中频放大器 (Q703) 放大并进入中频系统芯片 (IC701)。中频系统芯片提供第二混频器、第二本振信号、限幅放大器、正交检测器和RSSI (接收信号强度指示器)。第二混频器将第一中频信号与50.4MHz的第二本振信号输出 (TCXO X501) 进行混频, 并生成450kHz的第二中频信号。

第二中频信号通过陶瓷滤波器 (宽：CF701、窄：CF702) 继续消除相邻信道的信号。经滤波的第二中频信号被限幅放大器放大并被带有陶瓷鉴频器 (CD701) 的正交检测器解调。经解调的信号进入音频电路。

2–4. 宽/窄切换电路

通过切换陶瓷滤波器CF701 (宽)、CF702 (窄) 可以对每一信道进行宽, 窄设置。宽、窄控制信号从IC4输出。

选择宽/窄电平时, 将D701和D702切换到陶瓷滤波器。

在宽或窄信号期间, Q702随窄信号打开/关闭, IC701检测器输出电平变为保持恒定输出电平。

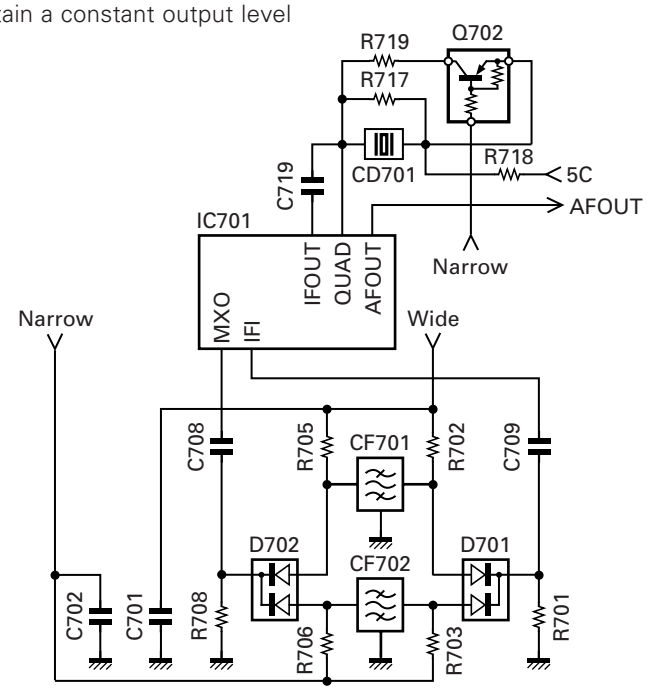


Fig. 3　Wide/Narrow switching circuit / 图3　宽/窄切换电路

2–5. 音频放大器电路

来自于IC701的解调信号被IC10放大, 并通过IC13送到AF放大器。

信号通过AF音量控制 (IC16), 在音频功率放大器 (IC18) 进行放大后输出到扬声器。

CIRCUIT DESCRIPTION / 电路说明

2-6. Squelch Circuit

Part of the AF signal from the IC enters the FM IC (IC701) again, and the noise component is amplified and rectified by a filter and an amplifier to produce a DC voltage corresponding to the noise level.

The DC signal from the FM IC goes to the analog port of the microprocessor (IC7). IC7 determines whether to output sounds from the speaker by checking whether the input voltage is higher or lower than the preset value.

To output sounds from the speaker, IC7 sends a high signal to the AM2 line and IC5 sends a high signal to the AM1 line, and turns IC18 on through Q23, Q24, Q27, Q28 and Q35. (See Figure 4)

2-6. 静噪电路

FM IC (IC701) 输出的AF信号的一部分再进入IC, 噪声成份通过滤波器和放大器进行放大和修正, 生成与噪声电平相应的DC电压。

DC信号通过FM IC被送到微处理器的模拟端口 (IC7)。IC7通过检测输入的电压是高于还是低于预设值来决定是否从扬声器输出声音。

由扬声器输出声音时, IC7发送高电平信号给AM2线和IC5发送高电平信号给AM1线, 通过Q23、Q24、Q27、Q28和Q35打开IC18。(见图4)。

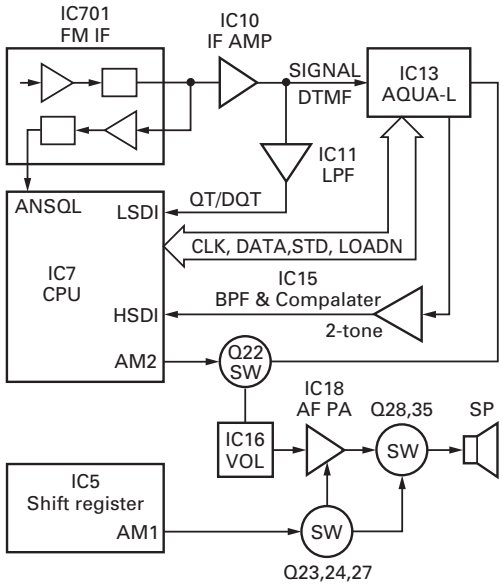


Fig. 4 Audio amplifier and squelch circuit / 图4 音频放大器电路和静噪电路

3. Transmitter System

3-1. Microphone Amplifier Circuit

The signal from microphone amplified by IC13 (1/2) and limited by AGC circuit composed of D30, D31, Q25 and Q26, and goes through mute switch (Q30). IC13 is composed of high-pass filter, low-pass filter and pre-emphasis/IDC circuit.

The signal enters the summing amplifier consisting of IC12 (2/2), and passes through the D/A converter (IC16) for the maximum deviation adjustment, and is mixed with the low speed data from the CPU (IC7).

The output signal from the D/A converter goes to the VCO modulation input. The other output signal from the D/A converter passes through the D/A converter (IC16) again for the BAL adjustment, and the buffer amplifier (IC17), and goes to the TCXO modulation input.

3. 发射机系统

3-1. 麦克风放大器电路

麦克风的信号被IC13 (1/2) 放大, 并受由D30、D31、Q25和Q26组成的AGC电路的限幅, 然后通过静音开关 (Q30)。IC13由高通滤波器、低通滤波器和预加重/IDC电路组成。

信号送入由IC12 (2/2) 组成的加法放大器, 通过最大频偏调节的数模转换器 (IC16), 然后与CPU (IC7) 的低速数据混合。

数模转换器的输出信号送入VCO调制输入。数模转换器的其他输出信号再次通过BAL调节的数模转换器 (IC16) 和缓冲放大器 (IC17), 然后送入TCXO调制输入。

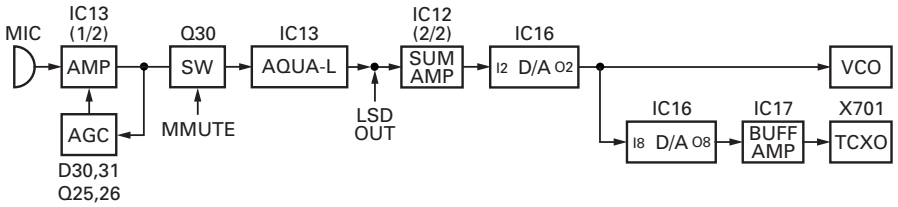


Fig. 5 Microphone amplifier circuit / 图5 麦克风放大器电路

CIRCUIT DESCRIPTION / 电路说明

3-2. Drive and Final Amplifier Circuit

The signal from the T/R switch (D518 is on) is amplified by the drive amplifier (Q603) to 50mW.

The output of the drive amplifier is amplified by the RF final amplifier (Q604) to 5.0W (1W when the power is low). The RF final amplifier consists of two MOS FET stages.

The output of the RF final amplifier is then passed through the harmonic filter (LPF) and antenna switch (D604 and D605) and applied to the antenna terminal.

3-3. APC Circuit

The APC circuit always monitors the current flowing through the RF power amplifier (Q604) and keeps a constant current. The voltage drop at R621, R623 and R629 is caused by the current flowing through the RF final amplifier and this voltage is applied to the differential amplifier IC601(1/2).

IC601(2/2) compares the output voltage of IC601(1/2) with the reference voltage from IC7. The output of IC601(2/2) controls the VG of the RF power amplifier, drive amplifier and pre-drive amplifier to make both voltages the same.

The change of power high/low is carried out by the change of the reference voltage.

3-2. 驱动器和终端放大器电路

来自于T/R开关 (D518 ON) 的信号被驱动放大器 (Q603) 放大到50mW。

驱动放大器的输出被RF功率放大器 (Q604) 放大到5.0W (当低功率时为1W)。RF功率放大器由2个MOS FET构成。

RF功率放大器的输出通过谐波滤波器（LPF）和天线开关 (D604和D605) 并且送到天线终端。

3-3. 自动功率控制（APC）电路

APC电路一直监视通过射频功率放大器 (Q604) 的电流并保持电流稳定。经过射频功率放大器的电流的变化会引起R621、R623和R629的电压降低, 此电压送到差分放大器IC601 (1/2)。

IC601 (2/2) 将IC601 (1/2) 的输出电压与来自IC7的参考电压进行比较。IC601 (2/2) 的输出电压控制射频功率放大器、驱动放大器、预驱动放大器的VG, 使电压保持一致。

功率高/低的变化是通过变更参考电压来实现的。

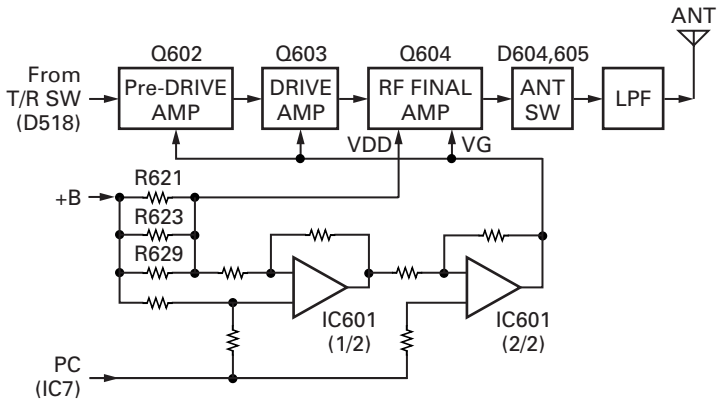


Fig. 6 Drive and final amplifier and APC circuit / 图6 驱动器和终端放大器和自动功率控制（APC）电路

4. Frequency Synthesizer Circuit

4-1. Frequency Synthesizer

The frequency synthesizer consists of the TCXO (X501), VCO, PLL IC (IC501) and buffer amplifiers.

The TCXO generates 16.8MHz. The frequency stability is 2.5ppm within the temperature range of –30 to +60°C. The frequency tuning and modulation of the TCXO are done to apply a voltage to pin 1 of the TCXO. The output of the TCXO is applied to pin 8 of the PLL IC.

The VCO consists of 2VCO and covers a dual range of the 185.95~223.95MHz and the 136~174MHz. The VCO generates 185.95~223.95MHz for providing to the first local signal in receive. The operating frequency is generated by Q502 in transmit mode and Q503 in receive mode. The oscillator frequency is controlled by applying the VCO control voltage, obtained from the phase comparator (IC501) to the variable capacitor diodes (D504, D505, D506 and D507 in transmit mode and D508, D509, D510 and D511 in receive mode).

4. 频率合成器电路

4-1. 频率合成器

频率合成器由TCXO (X501)、VCO、PLL IC (IC501) 和缓冲放大器组成。

TCXO产生16.8MHz的频率。在温度为−30 ~ +60℃的范围内, 频率的稳定性为2.5ppm。进行频率调谐和TCXO调制, 以便给TCXO的针脚1提供电压。TCXO的输出加在PLL IC的针脚8上。

VCO由2VCO组成, 并且覆盖了185.95 ~ 223.95MHz和136 ~ 174MHz双波段。VCO产生185.95 ~ 223.95MHz的频率, 以提供接收的第一个本振信号。发射模式时, 操作频率由Q502产生, 而接收模式时, 操作频率由Q503产生。振荡频率由加在VCO上的控制电压控制, 控制电压从可变电容二极管（在发射模式是D504、D505、D506和D507, 在接收模式是D508、D509、D510和D511) 的相位比较器 (IC501) 处获得。

CIRCUIT DESCRIPTION / 电路说明

The RX pin of IC4 goes "low" in receive mode causing Q503 and Q504 (2/2) turn on. The TX pin goes "low" in transmit mode causing Q502 and Q504 (1/2) turn on.

The outputs from Q502 and Q503 are amplified by buffer amplifier (Q506) and doubled by Q501 and then sent to PLL IC.

The PLL IC consists of a prescaler, reference divider, phase comparator, charge pump (The frequency step of the PLL circuit is 5 or 6.25kHz). The input signal from the pins 8 and 5 of the PLL IC is divided down to the 5 or 6.25kHz and compared at phase comparator. The pulsed output signal of the phase comparator is applied to the charge pump and transformed into DC signal in the loop filter (LPF). The DC signal is applied to the CV of the VCO and locked to keep the VCO frequency constant.

PLL data is output from PLLDAT (pin 93), PCK (pin 79) and PLE (pin 78) of the microprocessor (IC7). The data are input to the PLL IC when the channel is changed or when transmission is changed to reception and vice versa. A PLL lock condition is always monitored by the pin 77 (UL) of the microprocessor. When the PLL is unlocked, the UL goes low.

IC4的RX针脚在接收模式时为 "低" 电位, 使Q503和Q504 (2/2) 打开。TX针脚在发射模式时为"低"电位, 使Q502和Q504 (1/2) 导通。

Q502和Q503的输出由缓冲放大器 (Q506) 放大, 并由Q501倍频, 然后发送到PLL IC。

PLL IC由预计数器、基准除法器、相位比较器、电荷泵组成 (PLL电路的频率步长为5kHz或6.25kHz)。PLL IC的针脚8和5的输入信号下分成5kHz或6.25kHz, 并在相位比较器处进行比较。相位比较器的脉冲输出信号加在电荷泵上, 并转换成环路滤波器 (LPF) 的DC信号。DC信号加在VCO的CV上并锁定, 使VCO的频率恒定。

PLL数据从微处理器 (IC7) 的PLLDAT (针脚93), PCK (针脚79) 和PLE (针脚78) 输出。当信道改变时, 或当由发射变为接收或由接收变为发射时, 数据输入PLL IC。PLL的锁定条件总是由微处理器的针脚77 (UL) 监控。当PLL失锁时, UL为低电位。

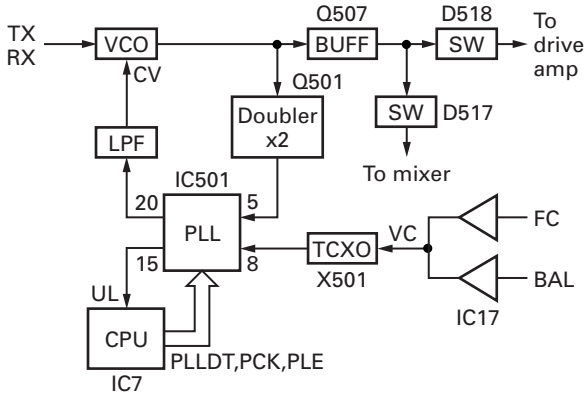


Fig. 7 PLL block diagram / 图7 PLL方块图

5. Control Circuit

The control circuit consists of microprocessor (IC7) and its peripheral circuits. It controls the TX-RX unit. IC7 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) Transmitting tone and encode data.

5. 控制电路

控制电路是由微处理器 (IC7) 和外部电路构成。它控制TX-RX单元。IC7的主要功能如下：

1) 根据PTT的输入信号来转换发射和接收状态。
2) 从存储电路读出系统、区域、频率以及编程数据。
3) 发送频率数据给PLL。
4) 根据静噪电路输出的DC电压来控制静噪的开启和关闭。
5) 根据解码数据控制音频静音。
6) 发射Tone及编码数据。

CIRCUIT DESCRIPTION / 电路说明

5-1. Frequency Shift Circuit

The microprocessor (IC7) operates at a clock of 11.0592 MHz. This oscillator has a circuit that shifts the frequency by Beat shift switch (Q17).

A beat sound may be able to be evaded from generation if "Beat Shift" is set to ON when it is generated in the internal spurious transmission modulated sound of a transceiver.

5-1. 频率偏移电路

微处理器 (IC7) 在11.0592MHz时钟下工作。此振荡器有可以被拍频偏移开关 (Q17) 变换频率的电路。

如果 "拍频偏移" 被设定为ON, 可以避免产生拍频声音。

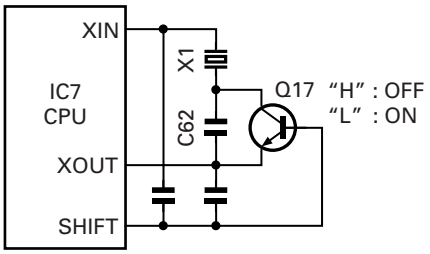


Fig. 8 Frequency shift circuit / 图8 频率偏移电路

5-2. Memory Circuit

Memory circuit consists of the CPU (IC7) and a flash memory (IC8). A flash memory has a capacity of 4M bits and contains the transceiver control program for the CPU. It also stores the data for transceiver channels and operating parameter that are written by the FPU. This program can be easily written from an external devices.

The EEPROM (IC9) stores the last channel data, the scan on status, and other parameters.

5-2. 存储电路

存储电路由CPU (IC7) 和闪存 (IC8) 组成。闪存的容量为4M位, 并包括CPU的对讲机控制程序。它也保存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。

EEPROM (IC9) 保存最后的信道数据、扫描状态和其他参数。

■ Flash memory

Note : The flash memory stores the data that is written by the FPU (KPG-101D), and firmware program (User mode, Test mode, Tuning mode, etc.). This data must be rewritten when replacing the flash memory.

■闪存

注意：闪存保存由FPU (KPG-101D) 写入的数据和固件程序 (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。

■ EEPROM

Note : The EEPROM stores tuning data (Deviation, Squelch, etc.).
Realign the transceiver after replacing the EEPROM.

■EEPROM

注意：EEPROM保存调谐数据 (频偏、静噪等)。
更换EEPROM后, 请重新校正对讲机。

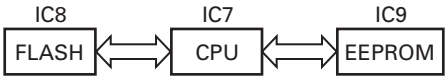


Fig. 9 Memory circuit / 图9 存储电路

5-3. Low Battery Warning

The battery voltage is monitored by the microprocessor (IC7 pin 123 : BATTLVL). When the battery voltage falls below the voltage set by the Low Battery Warning adjustment during the transmission, the red LED blinks to notify the operator that it is time to replace the battery (When the "On TX" option (default setting) under the Battery Warning / status function in the FPU is selected.). If the battery voltage falls below 5.9V, the transceiver does not transmit and the warning tone beeps while the PTT switch is pressed.

5-3. 低电池电量警告

电池电压由微处理器 (IC7针脚123：BATTLVL) 监控。发射期间, 当电池电压低于低电池电量警告调节设置的电压时, 红色LED闪烁, 通知操作者应该更换电池了 (当选择了FPU电池告警/状态功能下的 "On TX (发射时)" 选项 (默认) 时)。如果电池电压低于5.9V, 按下PTT开关时对讲机不发射并响起警告音。

CIRCUIT DESCRIPTION / 电路说明

Low battery warning	Battery status
The red LED blinks during the 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.

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, 但对讲机仍能使用。
按下PTT开关时, 红色LED闪烁并响起警告音。	电池电压低, 不能使用对讲机进行呼叫。

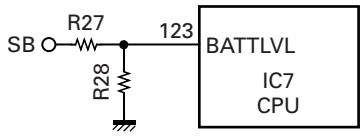


Fig. 10 Low battery warning / 图10 低电池电量警告

5-4. Battery Type Detection

The transceiver automatically detects the battery type, measuring the resistance between the S-terminal and + terminal on the battery pack and changes the supplied voltage to the S-terminal as below. The microprocessor then detects the battery type.

Resistor value	Battery type	Input voltage of S-terminal
1.8MΩ	Li-ion	0.3~1.3V
560kΩ	Ni-Cd	1.3~2.6V
220kΩ	Ni-MH	2.6~5.0V
OPEN	Battery case	0~0.3V

5-4. 电池类型检测

对讲机自动地检测电池类型, 测量电池组在S终端和 + 终端之间的电压的变化。然后微处理器检测电池类型。

阻抗	电池类型	S终端的输入电压
1.8MΩ	Li-ion	0.3 ~ 1.3V
560kΩ	Ni-Cd	1.3 ~ 2.6V
220kΩ	Ni-MH	2.6 ~ 5.0V
开放	电池盒	0 ~ 0.3V

5-5. Key Input

Keys and channel selector circuit.

The signal from the keys and channel selector are directly input to the microprocessor, as shown in Figure 11.

5-5. 键输入

键和信道选择电路。

如图11所示, 键和信道选择器的信号被直接输入微处理器。

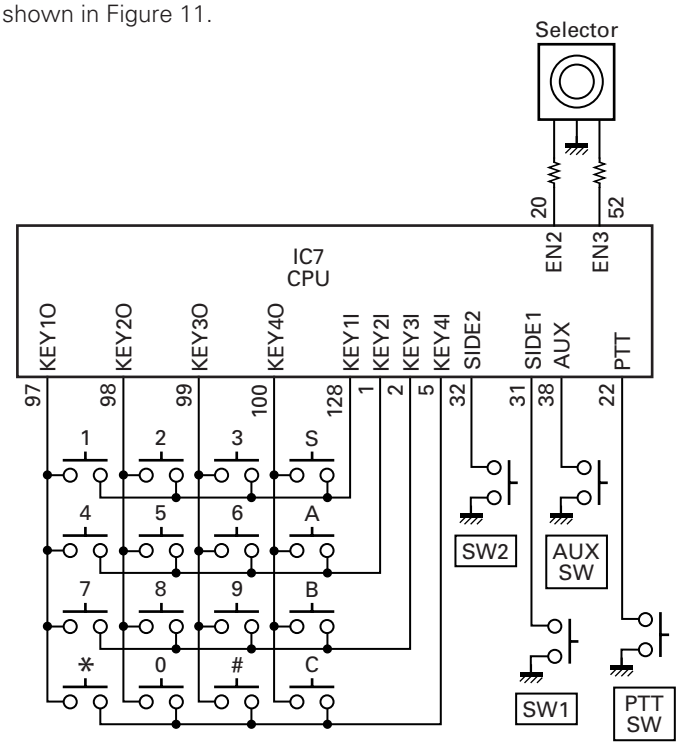


Fig. 11 Key input / 图11 键输入

CIRCUIT DESCRIPTION / 电路说明

6. Signaling Circuit

6-1. Encode

■ Low-speed data (QT, DQT)

Low-speed data is output from pin 30 of the CPU. The signal passes through MOD amplifier (IC12 1/2), and goes to the buffer amplifier (IC17 2/2). The signal is mixed with the audio signal and goes to the VCO and TCXO (X501) modulation input after passing through the D/A converter (IC16) for BAL adjustment.

■ High-speed data (2-tone, DTMF)

High-speed data (HSD) is output from pin 4 of the CPU. The signal passes through a low-pass CR filter and provides a TX HSD tone and a RX HSD tone. TX HSD deviation making an adjustment by microprocessor is passed through the switch (IC14) and then applied to the audio processor (IC13).

The signal is mixed with the audio signal and goes to the VCO and TCXO. The RX HSD tone is passed a summing amplifier (IC18). The D/A converter (IC16) for audio control, audio power amplifier and then to the speaker.

■ MSK

MSK signal is output from pin 6 of IC13. The signal passes through the D/A converter (IC16) and is routed to the VCO. When encoding MSK, the microphone input signal is muted.

6. 信令电路

6–1. 编码

■低速数据（QT, DQT）

低速数据从CPU的针脚30输出。信号通过MOD放大器 (IC12 1/2), 然后送入缓冲放大器 (IC17 2/2)。此信号与音频信号混合, 通过BAL调节的数模转换器 (IC16) 后送入VCO和TCXO (X501) 调制输入。

■高速数据（2–音, DTMF）

高速数据 (HSD) 从CPU的针脚4输出。信号通过低通CR滤波器, 并提供TX HSD音和RX HSD音。微处理器调节TX HSD的频偏并通过开关 (IC14), 然后加到音频处理器 (IC13) 上。

此信号与音频信号混合, 然后送入VCO和TCXO。RX HSD音通过加法放大器（IC18）。经过用于音频控制的数模转换器 (IC16)、音频功率放大器, 然后到扬声器。

■MSK

MSK信号从IC13的针脚6输出。此信号通过数模转换器 (IC16), 然后发送给VCO。编码MSK时, 麦克风输入信号被静音。

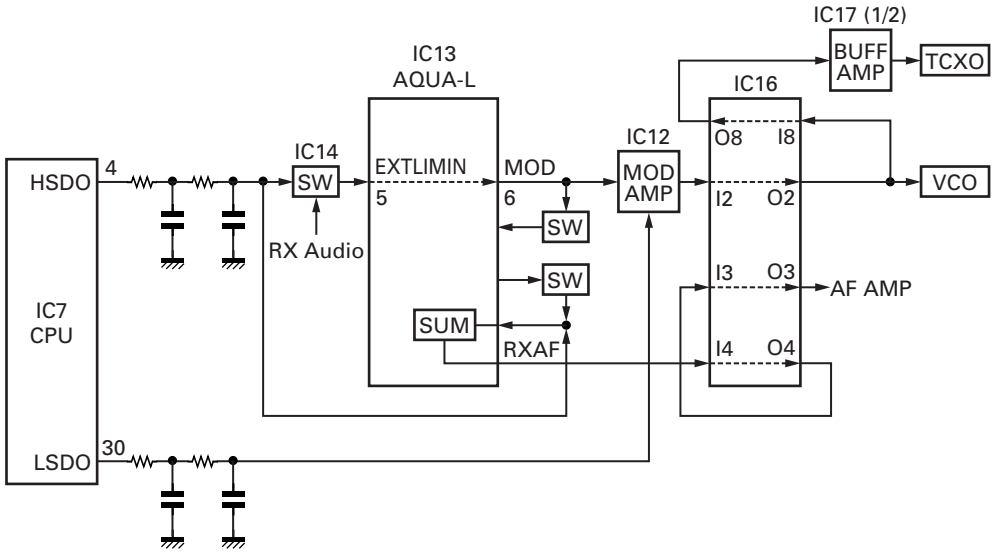


Fig. 12 Encode / 图12 编码

CIRCUIT DESCRIPTION / 电路说明

6-2. Decode

■ QT/DQT

The output signal from IF IC (IC701) enters the microprocessor (IC7) through IC11. IC7 determines whether the QT or DQT matches the preset value, and controls the AM1 using IC5 and the speaker output sounds according to the squelch results.

■ 2-tone

Part of the received AF signal output from the AF amplifier IC10, and then passes through an audio processor (IC13), goes to the other AF amplifier IC15, is compared, and then goes to IC7. IC7 checks whether 2-tone data is necessary. If it matches, IC7 carries out a specified operation, such as turning the speaker on. (See Figure 4)

■ MSK (Fleet Sync)

Fleet Sync utilizes 1200bps and 2400bps MSK signal is output from pin 6 of IC13. And is routed to the VCO. When encoding MSK, the microphone input signal is muted.

■ DTMF

The DTMF input signal from the IF IC (IC701) is amplified by IC10 and goes to IC13. The decoded information is then processed by the CPU.

7. Power Supply

There are five 5V power supplies for the microprocessor: 5M, 5MS, 5C, 5R and 5T.

5M is always output while the power is on. 5M is always output, but turns off when the power is turned off to prevent malfunction of the microprocessor.

5C is a common 5V and is output when SAVE is not set to OFF.

5R is 5V for reception and output during reception.

5T is 5V for transmission and output during transmission.

6-2. 解码

■QT/DQT

IF IC (IC701) 的输出信号通过IC11送入微处理器 (IC7)。IC7确认QT或DQT是否与预设值匹配, 并用IC5控制AM1, 然后扬声器根据静噪结果输出声音。

■2-音

部分接收的AF信号从AF放大器IC10输出, 然后通过音频处理器 (IC13) 送入另一个AF放大器IC15进行比较, 然后送入IC7。IC7检查是否需要2-音数据。如果匹配, IC7就执行特定的操作, 如打开扬声器。(参看图4)

■MSK（Fleet Sync）

Fleet Sync使用1200bps和2400bps MSK信号从IC13的针脚6输出。并发送给VCO。编码MSK时, 麦克风输入信号被静音。

■DTMF

IF IC (IC701) 的DTMF输入信号由IC10放大, 然后送入IC13。然后由CPU处理解码信息。

7. 电源

微处理器有5个5V电源。5M、5MS、5C、5R和5T。

电源打开时, 5M总是输出。5M总是输出, 但电源关闭时5M关闭, 以防止微处理器出现故障。

5C是普通的5V电源, 它在SAVE没有设为OFF时输出。

5R是接收用5V电源, 它在接收期间输出。

5T是发射用5V电源, 它在发射期间输出。

SEMICONDUCTOR DATA / 半导体数据

Microprocessor
: 30625MGP234HU (TX-RX unit IC7)

Pin No.	Port Name	I/O	Function
1	KEY2	I	Key matrix 2 input
2	KEY3	I	Key matrix 3 input
3	PC	O	TX APC adjust
4	HSDO	O	High speed data output
5	KEY4	I	Key matrix 4 input
6	EEPCL	O	EEPROM clock
7	HSDIN	I	High speed data input
8	MDSW	I	Man down switch input
9	DACDAT	O	DAC data
10	BYTE	-	5V
11	CNVSS	-	5V
12	EEPDAT	O	EEPROM data
13	AM2	O	Audio mute 2
14	RESET	I	BATT reset
15	XOUT	O	11.0592MHz clock output
16	DGND	-	DGND (Vss)
17	XIN	I	11.0592MHz clock input
18	VCC	-	5V
19	NMI	-	5V
20	EN2	I	Selector input 2
21	INT	I	BATT voltage INT
22	PTT	I	PTT
23	SHIFT	O	Beat shift
24	BEEP	O	Beep output
25	SFTOE	O	BU4094BCFV output enable
26	DACLD	O	M62364FP LD
27	LEDR	O	LED red
28	LEDG	O	LED green
29	OPTDET	I	Option DET
30	LSDOUT	O	Low speed data output
31	SIDE1	I	Side1 key
32	SIDE2	I	Side2 key
33	TXD	I/O	TXD (COM0)
34	VCC1	-	5V (Vcc1)
35	RXD	I	RXD (COM0)
36	DGND	-	DGND (Vss)
37	DACCLK	O	DAC CLK
38	AUX	I	AUX KEY

微处理器
：30625MGP234HU（TX-RX单元IC7）

管脚号	端口名称	输入/输出	功　　能
1	KEY2	输入	键矩阵2输入
2	KEY3	输入	键矩阵3输入
3	PC	输出	TX自动功率控制调整
4	HSDO	输出	高速数据输出
5	KEY4	输入	键矩阵4输入
6	EEPCL	输出	EEPROM时钟
7	HSDIN	输入	高速数据输入
8	MDSW	输入	人员事故开关输入
9	DACDAT	输出	DAC数据
10	BYTE	–	5V
11	CNVSS	–	5V
12	EEPDAT	输出	EEPROM数据
13	AM2	输出	音频静音2
14	RESET	输入	电池复位
15	XOUT	输出	11.0592MHz时钟输出
16	DGND	–	DGND (Vss)
17	XIN	输入	11.0592MHz时钟输入
18	VCC	–	5V
19	NMI	–	5V
20	EN2	输入	选择器输入2
21	INT	输入	电池电压INT
22	PTT	输入	PTT
23	SHIFT	输出	拍频偏移
24	BEEP	输出	Beep输出
25	SFTOE	输出	BU4094BCFV输出启动
26	DACLD	输出	M62364FP LD
27	LEDR	输出	LED红色
28	LEDG	输出	LED绿色
29	OPTDET	输入	可选DET
30	LSDOUT	输出	低速数据输出
31	SIDE1	输入	Side1键
32	SIDE2	输入	Side2键
33	TXD	输入/输出	TXD (COM0)
34	VCC1	–	5V (Vcc1)
35	RXD	输入	RXD (COM0)
36	DGND	–	DGND (Vss)
37	DACCLK	输出	DAC CLK
38	AUX	输入	AUX键

SEMICONDUCTOR DATA / 半导体数据

Pin No.	Port Name	I/O	Function
39	TXD2	O	TXD2 (COM1)
40	RXD2/AINH	I	RXD2 (COM1)
41	AFDAT	O	BB TDATA and DTRCLK
42	AFDIO	I/O	BB DI/O
43	AFDIR	O	BB DIR
44	DTRLOAD	O	BB DTMF enable
45	AFSTD	I	BB STD
46	SCLK	O	BB SCLK
47	RDY	-	5V
48	ALE	-	NC
49	HOLD	-	5V
50	HLDA	-	NC
51	EN4	I	Selector input 4
52	EN3	I	Selector input 3
53	5TC	O	5T control
54	EN1	I	Selector input 1
55	BCLK	O	NC
56	RD	O	Read (RD)
57	BHE	O	NC
58	WR	O	Write (WR)
59	APCSW	O	APC SW
60	DSW	O	APC voltage discharge SW
61	LCDINH	O	LCD INH
62	LCDDAT	O	LCD DATA
63	LCDCLK	O	LCD CLK
64	SIM/LCDCE	O	LCD chip select
65	CS0	O	Chip select 0
66	A19	-	NC
67~76	A18~A9	O	Address bus 18~9
77	UL	I	PLL unlock
78	PLE	O	PLL enable
79	PCK	O	PLL clock
80	SFTSTB	-	SFTSTB
81	SELF	I/O	Self progamming
82	VCC2	-	5V
83	A8	O	Address bus 8
84	DGND	-	DGND (Vss)
85~92	A7~A0	O	Address bus 7~0
93	PLLDAT	O	PLL data
94	BB RDF/FD	I	BB RDF/FD

管脚号	端口名称	输入/输出	功　　能
39	TXD2	输出	TXD2 (COM1)
40	RXD2/AINH	输入	RXD2 (COM1)
41	AFDAT	输出	BB TDATA和DTRCLK
42	AFDIO	输入/输出	BB DI/O
43	AFDIR	输出	BB DIR
44	DTRLOAD	输出	BB DTMF启动
45	AFSTD	输入	BB STD
46	SCLK	输出	BB SCLK
47	RDY	–	5V
48	ALE	–	NC
49	HOLD	–	5V
50	HLDA	–	NC
51	EN4	输入	选择器输入4
52	EN3	输入	选择器输入3
53	5TC	输出	5T控制
54	EN1	输入	选择器输入1
55	BCLK	输出	NC
56	RD	输出	读出 (RD)
57	BHE	输出	NC
58	WR	输出	写入 (WR)
59	APCSW	输出	APC开关
60	DSW	输出	APC电压放电开关
61	LCDINH	输出	LCD INH
62	LCDDAT	输出	LCD DATA
63	LCDCLK	输出	LCD CLK
64	SIM/LCDCE	输出	LCD芯片选择
65	CS0	输出	芯片选择0
66	A19	–	NC
67~76	A18~A9	输出	地址总线18~9
77	UL	输入	PLL解锁
78	PLE	输出	PLL启动
79	PCK	输出	PLL时钟
80	SFTSTB	–	SFTSTB
81	SELF	输入/输出	自台编程
82	VCC2	–	5V
83	A8	输出	地址总线8
84	DGND	–	DGND (Vss)
85~92	A7~A0	输出	地址总线7~0
93	PLLDAT	输出	PLL数据
94	BB RDF/FD	输入	BB RDF/FD

SEMICONDUCTOR DATA / 半导体数据

Pin No.	Port Name	I/O	Function
95	TCLK/DTRDO	I	BB TCLK and DTRDO
96	5RC	O	5R control
97	KEY1O	O	Key matrix output
98	KEY2O	O	Key matrix output
99	KEY3O	O	Key matrix output
100	KEY4O	O	Key matrix output
101~108	D7~D0	I/O	Data bus 7~0
109	DT	O	Serial data
110	CK	O	Serial clock
111	AUX3	I/O	Auxiliary 3
112	AUX1	I/O	Auxiliary 1
113	AUX6	I/O	Auxiliary 6
114	AUX2	O	Auxiliary 2
115	AUX5	O	Auxiliary 5
116	AUX4	I/O	Auxiliary 4
117	BATTSEL	I	BATT select
118	THP	I	TX thermal input
119	VOLIN	I	VOL input
120	VOXIN	I	VOX input
121	ASQ	I	RX analog SQ. input
122	RSSI	I	RX RSSI input
123	BATTLVL	I	BATT level
124	AGND	-	DGND (Vss)
125	LSDIN	I	Low speed data input
126	VREF	-	5V (Vref)
127	AVCC	-	5V (AVcc)
128	KEY1	I	Key matrix 1 input

管脚号	端口名称	输入/输出	功　能
95	TCLK/DTRDO	输入	BB TCLK和DTRDO
96	5RC	输出	5R控制
97	KEY1O	输出	键矩阵输出
98	KEY2O	输出	键矩阵输出
99	KEY3O	输出	键矩阵输出
100	KEY4O	输出	键矩阵输出
101~108	D7~D0	输入/输出	数据总线7~0
109	DT	输出	串行数据
110	CK	输出	串行时钟
111	AUX3	输入/输出	辅助3
112	AUX1	输入/输出	辅助1
113	AUX6	输入/输出	辅助6
114	AUX2	输出	辅助2
115	AUX5	输出	辅助5
116	AUX4	输入/输出	辅助4
117	BATTSEL	输入	电池选择
118	THP	输入	发射热感输入
119	VOLIN	输入	VOL输入
120	VOXIN	输入	VOX输入
121	ASQ	输入	RX模拟静噪输入
122	RSSI	输入	RX RSSI输入
123	BATTLVL	输入	电池电平
124	AGND	–	DGND (Vss)
125	LSDIN	输入	低速数据输入
126	VREF	–	5V (Vref)
127	AVCC	–	5V (AVcc)
128	KEY1	输入	键矩阵1输入

COMPONENTS DESCRIPTION / 元件说明

TX-RX unit (X57-7003-01)

Ref. No.	Use / Function	Operation / Condition
IC1	IC	Voltage detector / INT
IC2	IC	Voltage regulator / 5V
IC3	IC	Voltage detector / RESET
IC4	IC	Shift register
IC5	IC	Shift register
IC6	IC	LCD driver
IC7	Microprocessor	Microprocessor
IC8	IC	Flash memory
IC9	IC	EEPROM
IC10	IC	DET amplifier / VREF
IC11	IC	LSD filter
IC12	IC	TX SUM amplifier
IC13	IC	Audio processor
IC14	IC	AF switch
IC15	IC	RX HSD filter
IC16	IC	D/A converter
IC17	IC	TCXO buffer amplifier
IC18	IC	AF amplifier
IC19	IC	RX BPF tune voltage amplifier
IC501	IC	PLL system
IC601	IC	Comparator (APC)
IC701	IC	FM IF system
Q1	Transistor	5T voltage control
Q4 (1/2)	Transistor	AVR / 5C
Q4 (2/2)	Transistor	AVR / 5T
Q5 (1/2)	FET	5TC switch
Q5 (2/2)	FET	Save switch
Q6	Transistor	5C voltage control
Q7	FET	TX/RX indicator control
Q8	Transistor	5R control switch
Q9	Transistor	5MS control switch
Q12	Transistor	Back light control
Q13	Transistor	Back light DC supply
Q14	FET	RX AF mute
Q15	FET	SSB DC supply control switch
Q16	Transistor	SSB DC supply switch
Q17	Transistor	CPU clock shift switch
Q19	FET	VOX level detector control switch
Q21	Transistor	AF switch

TX-RX单元（X57-7003-01）

有关号码	使 用 / 功 能	操 作 / 状 态
IC1	IC	电压检测器 / INT
IC2	IC	电压调节器 / 5V
IC3	IC	电压检测器 / 复位
IC4	IC	位移寄存器
IC5	IC	位移寄存器
IC6	IC	LCD驱动器
IC7	微处理器	微处理器
IC8	IC	闪存
IC9	IC	EEPROM
IC10	IC	DET放大器 / VREF
IC11	IC	LSD滤波器
IC12	IC	TX SUM放大器
IC13	IC	音频处理器
IC14	IC	AF开关
IC15	IC	RX HSD滤波器
IC16	IC	数/模转换器
IC17	IC	TCXO缓冲放大器
IC18	IC	AF放大器
IC19	IC	RX BPF调谐电压放大器
IC501	IC	PLL系统
IC601	IC	比较器 (APC)
IC701	IC	FM IF系统
Q1	晶体管	5T电压控制
Q4 (1/2)	晶体管	AVR / 5C
Q4 (2/2)	晶体管	AVR / 5T
Q5 (1/2)	场效应管	5TC开关
Q5 (2/2)	场效应管	节电开关
Q6	晶体管	5C电压控制
Q7	场效应管	TX/RX指示灯控制
Q8	晶体管	5R控制开关
Q9	晶体管	5MS控制开关
Q12	晶体管	背光控制
Q13	晶体管	背光直流电源
Q14	场效应管	RX AF静音
Q15	场效应管	SSB直流电源控制开关
Q16	晶体管	SSB直流电源开关
Q17	晶体管	CPU时钟位移开关
Q19	场效应管	VOX电平检测器控制开关
Q21	晶体管	AF开关

COMPONENTS DESCRIPTION / 元件说明

Ref. No.	Use / Function	Operation / Condition
Q22	FET	AF mute switch
Q23	Transistor	AF amplifier DC supply control switch
Q24	FET	AF amplifier DC supply switch
Q25,26	FET	MIC ALC
Q27	Transistor	AF mute control switch
Q28	FET	AF mute switch
Q29	FET	Logic inverter
Q30	FET	MIC mute switch
Q31,32	Transistor	Audio processor clock shift switch
Q33	FET	TX HSD side tone mute
Q34	FET	Ext. alert input ATT switch
Q35	FET	AF mute switch
Q501	Transistor	F-IN doubler
Q502	FET	TX VCO oscillator
Q503	FET	RX VCO oscillator
Q504	FET	TX/RX VCO DC switch
Q505	Transistor	Ripple filter
Q506	Transistor	RF buffer amplifier
Q507	Transistor	RF amplifier (Common)
Q602	FET	Pre-drive amplifier
Q603	FET	TX drive amplifier
Q604	FET	RF final amplifier
Q605	Transistor	APC voltage switch
Q607	Transistor	APC DC switch
Q608	Transistor	APC mute switch
Q609	FET	APC mute switch
Q701	Transistor	2nd local tripler
Q702	Transistor	W/N switch / RX
Q703	Transistor	IF amplifier
Q704	FET	Mixer
Q705	FET	RF amplifier
D1	Diode	5M protect
D2	LED	TX/RX indicator
D4	Diode	Back light current control
D5	LED	LCD back light
D7	LED	LCD back light
D8,9	LED	10 key back light
D12,13	LED	10 key back light

有关号码	使 用 / 功 能	操 作 / 状 态
Q22	场效应管	AF静音开关
Q23	晶体管	AF放大器直流电源控制开关
Q24	场效应管	AF放大器直流电源开关
Q25,26	场效应管	麦克风ALC
Q27	晶体管	AF静音控制开关
Q28	场效应管	AF静音开关
Q29	场效应管	逻辑变换器
Q30	场效应管	麦克风静音开关
Q31,32	晶体管	音频处理器时钟变换开关
Q33	场效应管	TX HSD侧音静音
Q34	场效应管	外部提示音输入ATT开关
Q35	场效应管	AF静音开关
Q501	晶体管	F-IN倍频器
Q502	场效应管	TX VCO振荡器
Q503	场效应管	RX VCO振荡器
Q504	场效应管	TX/RX VCO直流开关
Q505	晶体管	纹波滤波器
Q506	晶体管	射频缓冲放大器
Q507	晶体管	RF放大器 (公用)
Q602	场效应管	预驱动放大器
Q603	场效应管	TX驱动放大器
Q604	场效应管	RF末级放大器
Q605	晶体管	自动功率控制电压开关
Q607	晶体管	自动功率控制直流开关
Q608	晶体管	自动功率控制静音开关
Q609	场效应管	自动功率控制静音开关
Q701	晶体管	第二本地三倍频器
Q702	晶体管	W/N开关 / RX
Q703	晶体管	IF放大器
Q704	场效应管	混频器
Q705	场效应管	RF放大器
D1	二极管	5M保护
D2	LED	TX/RX指示灯
D4	二极管	背光电流控制
D5	LED	LCD背光
D7	LED	LCD背光
D8,9	LED	10键背光
D12,13	LED	10键背光

COMPONENTS DESCRIPTION / 元件说明

Ref. No.	Use / Function	Operation / Condition
D17	Diode	RX DET mute control voltage discharge
D24~27	Diode	Key input detect
D28	Diode	AF reference voltage bias supply
D29	Diode	VOX level detector
D30,31	Diode	MIC input level detector
D32	Diode	VOX amplifier gain limiter
D33	Varistor	Surge absorber
D501	Diode	Fast lock up diode
D502,503	Diode	F-IN filter shift switch
D504~507	Variable capacitance diode	Frequency control / TX VCO
D508~511	Variable capacitance diode	Frequency control / RX VCO
D512	Diode	F-IN filter shift switch
D513	Variable capacitance diode	TX VCO modulator
D514	Diode	Ripple filter stabilization diode
D516	Diode	TX RF switch
D519	Diode	RX local switch
D601	Zener diode	APC voltage limiter
D604~606	Diode	ANT switch
D608	Diode	ANT switch
D609	Zener diode	Surge absorber
D610	Varistor	Surge absorber
D701,702	Diode	Ceramic filter W/N switch
D703~706	Variable capacitance diode	RX BPF tuning
D901	Diode	Voltage limiter
TH501	Thermistor	TX temperature protect
TH701,702	Thermistor	Temperature compensation for ASQL
F901	Fuse	Fuse : 2.5A/32V/1608 size (F53-0324-05)

有关号码	使 用 / 功 能	操 作 / 状 态
D17	二极管	RX DET静音控制电压放电
D24~27	二极管	键输入检测
D28	二极管	AF基准电压偏置电源
D29	二极管	VOX电平检测器
D30,31	二极管	麦克风输入电平检测器
D32	二极管	VOX放大器增益限幅器
D33	变阻器	电涌吸收器
D501	二极管	快速锁定二极管
D502,503	二极管	F-IN滤波器位移开关
D504~507	可变电容二极管	频率控制 / TX VCO
D508~511	可变电容二极管	频率控制 / RX VCO
D512	二极管	F-IN滤波器位移开关
D513	可变电容二极管	TX VCO调制器
D514	二极管	纹波滤波器稳定二极管
D516	二极管	TX RF开关
D519	二极管	RX本地开关
D601	稳压二极管	APC电压限幅器
D604~606	二极管	天线开关
D608	二极管	天线开关
D609	稳压二极管	电涌吸收器
D610	变阻器	电涌吸收器
D701,702	二极管	陶瓷滤波器W/N开关
D703~706	可变电容二极管	RX BPF调谐
D901	二极管	电压限幅器
TH501	热敏电阻	TX温度保护
TH701,702	热敏电阻	ASQL的温度补偿
F901	保险丝	保险丝：2.5A/32V/1608尺寸 (F53-0324-05)

TK-2178

PARTS LIST / 零件表

✻ New Parts. ⚠ indicates safety critical components.
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

L : Scandinavia **K** : USA **P** : Canada
Y : PX (Far East, Hawaii) **T** : England **E** : Europe
Y : AAFES (Europe) **X** : Australia **M** : Other Areas

TK-2178 (Y50-5853-01)
TX-RX UNIT (X57-7003-01)

Ref. No.	Address	New parts	Parts No.	Description	Destination
TK-2178					
2	1B	✻	A02-3891-13	PLASTIC CABINET ASSY	
3	3A	✻	A10-4088-01	CHASSIS	
5	3A		B01-0694-03	ESCUTCHEON	
6	2D	✻	B09-0686-03	CAP ACCESSORY	
7	2B	✻	B11-1826-03	ILLUMINATION GUIDE	
8	2A	✻	B11-1827-04	ILLUMINATION GUIDE	
9	2B	✻	B11-1828-04	FILTER	
10	2B	✻	B38-0901-05	LCD	
13	1B	✻	B43-1178-04	BADGE	
17	1C	✻	B62-1811-00	INSTRUCTION MANUAL	
20	2A		E04-0436-05	RF COAXIAL RECEPTACLE (SMA)	
21	2A		E23-1188-04	TERMINAL	
22	3A		E23-1189-14	TERMINAL	
23	2B	✻	E29-1204-04	INTER CONNECTOR (LCD)	
24	2B	✻	E29-1211-04	INTER CONNECTOR (4-KEY)	
25	2A	✻	E37-1142-05	FLAT CABLE	
26	3A	✻	E72-0421-03	TERMINAL BLOCK	
28	3A		F07-1890-04	COVER	
30	1B		G10-1304-04	FIBROUS SHEET	
-		✻	G10-1333-04	FIBROUS SHEET (CABINET ASSY)	
-		✻	G11-4312-04	SHEET	
31	3A	✻	G11-4315-04	SHEET	
32	2A	✻	G11-4316-04	SHEET	
33	2B	✻	G11-4335-14	SHEET	
34	1B	✻	G11-4351-04	SHEET	
35	2A		G13-1885-04	CUSHION	
36	3A		G13-2001-04	CUSHION	
38	2A		G53-1603-04	PACKING	
39	2B	✻	G53-1650-12	PACKING	
41	1B	✻	G53-1652-11	PACKING	
42	2B	✻	G53-1653-03	PACKING	
43	3A	✻	G53-1654-04	PACKING	
44	3A	✻	G53-1655-04	PACKING	
46	3C		H12-3150-02	PACKING FIXTURE	
47	2D		H25-0029-04	PROTECTION BAG (60/110/0.07)	
48	1D	✻	H52-2114-02	ITEM CARTON CASE	
50	2B	✻	J19-5481-03	HOLDER	
51	2D	✻	J19-5483-23	HOLDER ACCESSORY	
52	1B	✻	J21-8488-03	MOUNTING HARDWARE	
53	2C		J29-0701-15	HOOK ACCESSORY	
60	2C		J69-0342-05	HANDSTRAP ACCESSORY	
54	3A	✻	J82-0106-05	FPC	
55	2A	✻	J99-0399-04	DOUBLE-SIDED TAPE (4x7mm)	
56	1B	✻	K29-9278-13	KNOB (VOLUME)	
57	1B	✻	K29-9339-03	KNOB (PTT)	
58	1B	✻	K29-9340-03	KNOB (SELECTOR)	
59	1B	✻	K29-9341-03	KEY TOP (SIDE)	
A	2A,3A	✻	N09-2438-05	BINDING HEAD SCREW	
B	2A		N14-0583-04	CIRCULAR NUT	
C	3B		N14-0805-04	CIRCULAR NUT	
D	3A	✻	N30-2610-48	PAN HEAD MACHINE SCREW	
E	3A		N30-3006-45	PAN HEAD MACHINE SCREW	
F	3A	✻	N79-2030-48	PAN HEAD TAPTITE SCREW	
G	2A,2B	✻	N83-2005-48	PAN HEAD TAPTITE SCREW	
61	3A	✻	R31-0655-05	VARIABLE RESISTOR	
63	1B		T07-0369-05	SPEAKER	
65	2C		T90-0795-25	HELICAL ANTENNA ACCESSORY	
64	2B		T91-0650-05	MIC ELEMENT	
66	2A		W02-3684-05	SELECTOR	
TX-RX UNIT (X57-7003-01)					
D2			B30-2278-05	LED (RED/YELLOW)	
D5			B30-2210-05	LED (TLY)	
D7			B30-2210-05	LED (TLY)	
D8,9			B30-2050-05	LED	
D12,13			B30-2050-05	LED	
C2			CK73HB1H102K	CHIP C 1000PF K	
C3			CK73FB1A475K	CHIP C 4.7UF K	
C4			CK73GB1E105K	CHIP C 1.0UF K	
C5,6			CK73HB1H102K	CHIP C 1000PF K	
C7			CK73HB1A104K	CHIP C 0.10UF K	
C9			CK73GB1E105K	CHIP C 1.0UF K	
C11			CK73FB1A225K	CHIP C 2.2UF K	
C13			CK73HB1H102K	CHIP C 1000PF K	
C14,15			CK73HB1E472K	CHIP C 4700PF K	
C16,17			CK73HB1H102K	CHIP C 1000PF K	
C18			CK73HB1A104K	CHIP C 0.10UF K	
C19			CK73HB1H102K	CHIP C 1000PF K	
C20			CK73HB1E472K	CHIP C 4700PF K	
C21			CK73HB1H102K	CHIP C 1000PF K	
C22			CK73HB1E472K	CHIP C 4700PF K	
C23,24			CK73GB1E105K	CHIP C 1.0UF K	
C25			CK73HB1E472K	CHIP C 4700PF K	
C26			CK73HB1H102K	CHIP C 1000PF K	
C27			C92-0712-05	CHIP-TAN 22UF 6.3WV	
C28-31			CK73HB1H102K	CHIP C 1000PF K	
C32			CK73HB1A104K	CHIP C 0.10UF K	
C33,34			CK73HB1H102K	CHIP C 1000PF K	
C35			CK73HB1A104K	CHIP C 0.10UF K	
C38,39			CK73HB1A473K	CHIP C 0.047UF K	
C40			CK73HB1H102K	CHIP C 1000PF K	
C42			CK73HB1H681K	CHIP C 680PF K	
C43,44			CK73HB1C103K	CHIP C 0.010UF K	
C45			C92-0712-05	CHIP-TAN 22UF 6.3WV	
C46			CK73HB1H102K	CHIP C 1000PF K	
C47			CK73GB1E105K	CHIP C 1.0UF K	
C48-51			CK73HB1H102K	CHIP C 1000PF K	
C52			CK73HB1A104K	CHIP C 0.10UF K	
C53			CK73HB1C103K	CHIP C 0.010UF K	
C54			CK73HB1H471K	CHIP C 470PF K	
C55			CK73GB1E105K	CHIP C 1.0UF K	
C56			CK73HB1A104K	CHIP C 0.10UF K	
C57			C92-0662-05	CHIP-TAN 15UF 6.3WV	

PARTS LIST / 零件表

TX-RX UNIT (X57-7003-01)

Ref. No.	Address	New parts	Parts No.	Description			Destination
C58			CK73HB1H102K	CHIP C	1000PF	K	
C59			CC73HCH1H220J	CHIP C	22PF	J	
C60			CC73HCH1H120J	CHIP C	12PF	J	
C61			CK73HB1A104K	CHIP C	0.10UF	K	
C62			CC73HCH1H010C	CHIP C	1.0PF	C	
C63			CC73HCH1H120J	CHIP C	12PF	J	
C65			CK73HB1A104K	CHIP C	0.10UF	K	
C66			CK73HB1C103K	CHIP C	0.010UF	K	
C67			C92-0514-05	CHIP-TAN	2.2UF	10WV	
C68			CK73HB1H102K	CHIP C	1000PF	K	
C69			C92-0560-05	CHIP-TAN	10UF	6.3WV	
C70			CK73HB1E682K	CHIP C	6800PF	K	
C71			CK73HB1H392K	CHIP C	3900PF	K	
C72			CK73HB1H122K	CHIP C	1200PF	K	
C73			CC73HCH1H470J	CHIP C	47PF	J	
C74			CK73HB1H122K	CHIP C	1200PF	K	
C75			CK73HB1C153K	CHIP C	0.015UF	K	
C76			CK73HB1H332K	CHIP C	3300PF	K	
C77			CK73HB1C153K	CHIP C	0.015UF	K	
C78			CK73HB1H221K	CHIP C	220PF	K	
C79			CK73HB1H222K	CHIP C	2200PF	K	
C81			CK73HB1A104K	CHIP C	0.10UF	K	
C82			CC73HCH1H101J	CHIP C	100PF	J	
C84			CK73HB1H102K	CHIP C	1000PF	K	
C85			CK73HB1C123K	CHIP C	0.012UF	K	
C87			CK73HB1A104K	CHIP C	0.10UF	K	
C88,89			CC73HCH1H010B	CHIP C	1.0PF	B	
C90,91			CK73GB1E104K	CHIP C	0.10UF	K	
C93			CK73GB1E105K	CHIP C	1.0UF	K	
C95		✻	CK73HB1A224K	CHIP C	0.22UF	K	
C96			CK73GB1E105K	CHIP C	1.0UF	K	
C97			CC73HCH1H101J	CHIP C	100PF	J	
C98			CK73HB1A683K	CHIP C	0.068UF	K	
C99,100			CK73FB1A475K	CHIP C	4.7UF	K	
C102			CK73HB1C103K	CHIP C	0.010UF	K	
C104			CK73GB1E104K	CHIP C	0.10UF	K	
C106			CK73HB1H102K	CHIP C	1000PF	K	
C107			CK73HB1A104K	CHIP C	0.10UF	K	
C108			CK73GB1E105K	CHIP C	1.0UF	K	
C109			CC73HCH1H100D	CHIP C	10PF	D	
C110			CK73HB1H102K	CHIP C	1000PF	K	
C111			CK73HB1C103K	CHIP C	0.010UF	K	
C112			CC73HCH1H680J	CHIP C	68PF	J	
C113-115			CK73HB1A104K	CHIP C	0.10UF	K	
C116			CC73HCH1H120J	CHIP C	12PF	J	
C117			CK73GB1E105K	CHIP C	1.0UF	K	
C118			CK73HB1A104K	CHIP C	0.10UF	K	
C119			CK73HB1C103K	CHIP C	0.010UF	K	
C120			CK73FB1A225K	CHIP C	2.2UF	K	
C121			CK73HB1A393K	CHIP C	0.039UF	K	
C122			CK73HB1H102K	CHIP C	1000PF	K	
C123			CC73HCH1H680J	CHIP C	68PF	J	
C125			CK73HB1A104K	CHIP C	0.10UF	K	
C126			CC73HCH1H470J	CHIP C	47PF	J	
C127			CC73HCH1H181J	CHIP C	180PF	J	
C128			CK73HB1H102K	CHIP C	1000PF	K	
C129			CK73GB1E105K	CHIP C	1.0UF	K	
C130			CK73HB1A104K	CHIP C	0.10UF	K	
C131			CK73HB1H821K	CHIP C	820PF	K	
C132			CK73HB1A104K	CHIP C	0.10UF	K	

Ref. No.	Address	New parts	Parts No.	Description			Destination
C133			CK73GB0J475K	CHIP C	4.7UF	K	
C134			CK73HB1A104K	CHIP C	0.10UF	K	
C135			CK73GB1E105K	CHIP C	1.0UF	K	
C136			CK73HB1H561K	CHIP C	560PF	K	
C137			CK73HB1H102K	CHIP C	1000PF	K	
C138			CK73HB1A104K	CHIP C	0.10UF	K	
C140			CK73HB1A104K	CHIP C	0.10UF	K	
C142,143			CK73GB1E105K	CHIP C	1.0UF	K	
C145-148			CK73HB1H102K	CHIP C	1000PF	K	
C149			CK73HB1H221K	CHIP C	220PF	K	
C150,151			CK73FB1A225K	CHIP C	2.2UF	K	
C153			CK73GB1E105K	CHIP C	1.0UF	K	
C154,155			CK73HB1H102K	CHIP C	1000PF	K	
C157			CK73GB1A224K	CHIP C	0.22UF	K	
C158			CK73HB1A104K	CHIP C	0.10UF	K	
C159			CC73HCH1H101J	CHIP C	100PF	J	
C161			CC73HCH1H101J	CHIP C	100PF	J	
C162			C92-0560-05	CHIP-TAN	10UF	6.3WV	
C166			CK73HB1H102K	CHIP C	1000PF	K	
C168			CK73HB1A473K	CHIP C	0.047UF	K	
C169			CK73HB1A393K	CHIP C	0.039UF	K	
C170			CK73HB1H102K	CHIP C	1000PF	K	
C171			C92-0560-05	CHIP-TAN	10UF	6.3WV	
C172			C92-0665-05	CHIP-TAN	100UF	6.3WV	
C173			CK73HB1H221K	CHIP C	220PF	K	
C174			CK73HB1H102K	CHIP C	1000PF	K	
C175			CK73HB1C103K	CHIP C	0.010UF	K	
C176		✻	CK73HB1A224K	CHIP C	0.22UF	K	
C177			CK73HB1A104K	CHIP C	0.10UF	K	
C178			CK73GB1E105K	CHIP C	1.0UF	K	
C180			CC73HCH1H101J	CHIP C	100PF	J	
C181			CK73GB0J475K	CHIP C	4.7UF	K	
C182			CK73HB1H681K	CHIP C	680PF	K	
C183			CK73HB1H102K	CHIP C	1000PF	K	
C184			CK73HB1H222K	CHIP C	2200PF	K	
C185			CK73HB1C103K	CHIP C	0.010UF	K	
C186			CC73HCH1H270J	CHIP C	27PF	J	
C187			CK73HB1C103K	CHIP C	0.010UF	K	
C188			CC73HCH1H270J	CHIP C	27PF	J	
C189			CK73GB1E104K	CHIP C	0.10UF	K	
C190-192			CK73HB1H102K	CHIP C	1000PF	K	
C196			CK73GB1C473K	CHIP C	0.047UF	K	
C197,198			CK73HB1H102K	CHIP C	1000PF	K	
C199,200			CK73HB1A104K	CHIP C	0.10UF	K	
C201		✻	CK73HB1A224K	CHIP C	0.22UF	K	
C202			CK73GB1E105K	CHIP C	1.0UF	K	
C423			CK73FB1A475K	CHIP C	4.7UF	K	
C501			CK73HB1C103K	CHIP C	0.010UF	K	
C502			CC73HCH1H470J	CHIP C	47PF	J	
C503			CC73HCH1H101J	CHIP C	100PF	J	
C504			CC73HCH1H100D	CHIP C	10PF	D	
C505			CC73HCH1H101J	CHIP C	100PF	J	
C506			CK73HB1C103K	CHIP C	0.010UF	K	
C507			CC73HCH1H101J	CHIP C	100PF	J	
C508			CK73HB1H471K	CHIP C	470PF	K	
C509			CC73HCH1H100D	CHIP C	10PF	D	
C510			CK73HB1C223K	CHIP C	0.022UF	K	
C511			CK73GB1E105K	CHIP C	1.0UF	K	
C512			CK73HB1C103K	CHIP C	0.010UF	K	
C513			CK73HB1H102K	CHIP C	1000PF	K	

PARTS LIST / 零件表

TX-RX UNIT (X57-7003-01)

Ref. No.	Address	New parts	Parts No.	Description			Destination
C514			CK73HB1H471K	CHIP C	470PF	K	
C515			CK73HB1H102K	CHIP C	1000PF	K	
C516			CK73GB1E105K	CHIP C	1.0UF	K	
C517			CK73HB1C103K	CHIP C	0.010UF	K	
C518			CK73HB1H102K	CHIP C	1000PF	K	
C519-521			CK73GB1E105K	CHIP C	1.0UF	K	
C522			CK73HB1H471K	CHIP C	470PF	K	
C523			C92-0001-05	CHIP-TAN	0.1UF	35WV	
C524			CK73HB1H471K	CHIP C	470PF	K	
C525			C92-0543-05	CHIP-TAN	3.3UF	10WV	
C526			C92-0001-05	CHIP-TAN	0.1UF	35WV	
C527			CC73HCH1H120J	CHIP C	12PF	J	
C528			C92-0002-05	CHIP-TAN	0.22UF	35WV	
C529			CC73HCH1H020C	CHIP C	2.0PF	C	
C530			CC73HCH1H080B	CHIP C	8.0PF	B	
C531			CC73HCH1H120J	CHIP C	12PF	J	
C532			CK73HB1H471K	CHIP C	470PF	K	
C533			CC73HCH1H050C	CHIP C	5.0PF	C	
C534,535			CK73HB1H102K	CHIP C	1000PF	K	
C536			CC73HCH1H330J	CHIP C	33PF	J	
C537			CC73HCH1H180J	CHIP C	18PF	J	
C538			CC73HCH1H050C	CHIP C	5.0PF	C	
C541			CC73HCH1H560J	CHIP C	56PF	J	
C542			CK73GB1E105K	CHIP C	1.0UF	K	
C543			CC73HCH1H090D	CHIP C	9.0PF	D	
C544			CC73HCH1H050C	CHIP C	5.0PF	C	
C545			CC73HCH1H220J	CHIP C	22PF	J	
C548			CC73HCH1H300J	CHIP C	30PF	J	
C549			CC73HCH1H150J	CHIP C	15PF	J	
C550			CK73HB1H471K	CHIP C	470PF	K	
C551			CC73HCH1HR75B	CHIP C	0.75PF	B	
C552			CK73HB1H471K	CHIP C	470PF	K	
C555,556			CC73HCH1H080B	CHIP C	8.0PF	B	
C558			CC73HCH1H100D	CHIP C	10PF	D	
C559			CC73HCH1H100B	CHIP C	10PF	B	
C560			CK73HB1H471K	CHIP C	470PF	K	
C562,563			CK73HB1H102K	CHIP C	1000PF	K	
C564,565			CK73HB1A104K	CHIP C	0.10UF	K	
C566,567			CC73HCH1H0R5B	CHIP C	0.5PF	B	
C568			CK73HB1C103K	CHIP C	0.010UF	K	
C569			CK73HB1H102K	CHIP C	1000PF	K	
C570			CK73HB1C103K	CHIP C	0.010UF	K	
C571			CK73HB1H102K	CHIP C	1000PF	K	
C572			C92-0628-05	CHIP-TAN	10UF	10WV	
C573			CK73HB1H102K	CHIP C	1000PF	K	
C574			CC73HCH1H330J	CHIP C	33PF	J	
C575			CC73HCH1H040C	CHIP C	4.0PF	C	
C576			CC73HCH1H150J	CHIP C	15PF	J	
C577,578			CK73HB1H102K	CHIP C	1000PF	K	
C579			CC73HCH1H100D	CHIP C	10PF	D	
C580,581			CK73HB1H102K	CHIP C	1000PF	K	
C601			CK73HB1H102K	CHIP C	1000PF	K	
C602			CC73HCH1H060D	CHIP C	6.0PF	D	
C603			CK73HB1H102K	CHIP C	1000PF	K	
C604			CC73HCH1H060D	CHIP C	6.0PF	D	
C610			CK73HB1H102K	CHIP C	1000PF	K	
C611			CC73HCH1H470J	CHIP C	47PF	J	
C612			CK73HB1H102K	CHIP C	1000PF	K	
C613			CK73GB1E105K	CHIP C	1.0UF	K	
C615,616			CK73HB1H102K	CHIP C	1000PF	K	

Ref. No.	Address	New parts	Parts No.	Description			Destination
C617			CC73HCH1H390J	CHIP C	39PF	J	
C618			CK73HB1H102K	CHIP C	1000PF	K	
C619			CC73HCH1H150J	CHIP C	15PF	J	
C622			CK73HB1H102K	CHIP C	1000PF	K	
C625			CK73HB1H102K	CHIP C	1000PF	K	
C626			CC73HCH1H101J	CHIP C	100PF	J	
C629			CC73HCH1H270J	CHIP C	27PF	J	
C632			C92-0514-05	CHIP-TAN	2.2UF	10WV	
C633			CK73HB1H102K	CHIP C	1000PF	K	
C635			CK73HB1H102K	CHIP C	1000PF	K	
C638,639			CK73HB1H102K	CHIP C	1000PF	K	
C640		*	C93-0901-05	CHIP C	10PF	50WV	
C641			CC73HCH1H101J	CHIP C	100PF	J	
C643			CK73HB1C103K	CHIP C	0.010UF	K	
C644			CK73FB1A225K	CHIP C	2.2UF	K	
C646-648			CK73HB1H102K	CHIP C	1000PF	K	
C651			CK73HB1A104K	CHIP C	0.10UF	K	
C652			CC73GCH1H180G	CHIP C	18PF	G	
C655			CC73GCH1H680G	CHIP C	68PF	G	
C657			CC73GCH1H100D	CHIP C	10PF	D	
C658			CK73HB1H102K	CHIP C	1000PF	K	
C669			CC73GCH1H220J	CHIP C	22PF	J	
C670			CC73GCH1H820J	CHIP C	82PF	J	
C673			CK73HB1H102K	CHIP C	1000PF	K	
C675			CC73GCH1H220J	CHIP C	22PF	J	
C676			CK73GB1H102K	CHIP C	1000PF	K	
C677			CC73GCH1H270J	CHIP C	27PF	J	
C678			CC73GCH1H060D	CHIP C	6.0PF	D	
C679			CC73GCH1H100D	CHIP C	10PF	D	
C680			CC73GCH1H200J	CHIP C	20PF	J	
C681			CC73GCH1H120J	CHIP C	12PF	J	
C682			CC73GCH1H130J	CHIP C	13PF	J	
C683			CC73GCH1H070D	CHIP C	7.0PF	D	
C684			CC73GCH1H1R5B	CHIP C	1.5PF	B	
C701,702			CK73HB1A104K	CHIP C	0.10UF	K	
C703			CC73HCH1H560J	CHIP C	56PF	J	
C704			CK73HB1C103K	CHIP C	0.010UF	K	
C705			CC73HCH1H220J	CHIP C	22PF	J	
C706			CC73HCH1H560J	CHIP C	56PF	J	
C707			CK73HB1H331K	CHIP C	330PF	K	
C708,709			CK73HB1A104K	CHIP C	0.10UF	K	
C710			CC73HCH1H470J	CHIP C	47PF	J	
C711			CC73HCH1H680J	CHIP C	68PF	J	
C712			CK73HB1H331K	CHIP C	330PF	K	
C713			CK73HB1A104K	CHIP C	0.10UF	K	
C714			CC73HCH1H390J	CHIP C	39PF	J	
C715			CK73HB1H471K	CHIP C	470PF	K	
C716			CK73HB1H182K	CHIP C	1800PF	K	
C717			CK73GB1E105K	CHIP C	1.0UF	K	
C718			C92-0712-05	CHIP-TAN	22UF	6.3WV	
C719			CC73HCH1H820J	CHIP C	82PF	J	
C720			CK73HB1C103K	CHIP C	0.010UF	K	
C721			CK73HB1H102K	CHIP C	1000PF	K	
C722			CK73HB1A104K	CHIP C	0.10UF	K	
C723			CK73HB1A333K	CHIP C	0.033UF	K	
C724			CC73HCH1H330J	CHIP C	33PF	J	
C725			CK73HB1A104K	CHIP C	0.10UF	K	
C726			CK73HB1C103K	CHIP C	0.010UF	K	
C727			CK73HB1H102K	CHIP C	1000PF	K	
C728			CK73HB1C103K	CHIP C	0.010UF	K	

PARTS LIST / 零件表

TX-RX UNIT (X57-7003-01)

Ref. No.	Address	New parts	Parts No.	Description	Destination
C729			CC73HCH1H010B	CHIP C 1.0PF B	
C730			CC73HCH1H080B	CHIP C 8.0PF B	
C732,733			CK73HB1C103K	CHIP C 0.010UF K	
C734,735			CK73HB1H102K	CHIP C 1000PF K	
C736			CC73HCH1H120G	CHIP C 12PF G	
C737			CK73HB1C103K	CHIP C 0.010UF K	
C738			CC73HCH1H020B	CHIP C 2.0PF B	
C739,740			CC73HCH1H120J	CHIP C 12PF J	
C741			CC73HCH1H030B	CHIP C 3.0PF B	
C742			CC73HCH1H050B	CHIP C 5.0PF B	
C743			CK73HB1C103K	CHIP C 0.010UF K	
C744			CC73HCH1H010B	CHIP C 1.0PF B	
C745,746			CK73HB1H102K	CHIP C 1000PF K	
C747			CC73HCH1H050B	CHIP C 5.0PF B	
C748,749			CK73HB1H102K	CHIP C 1000PF K	
C750			CC73HCH1H080B	CHIP C 8.0PF B	
C751			CC73HCH1H020B	CHIP C 2.0PF B	
C752			CC73HCH1H390J	CHIP C 39PF J	
C753			CK73HB1H102K	CHIP C 1000PF K	
C755			CC73HCH1H030B	CHIP C 3.0PF B	
C756			CK73HB1H102K	CHIP C 1000PF K	
C757			CC73HCH1H040B	CHIP C 4.0PF B	
C758			CC73HCH1H270J	CHIP C 27PF J	
C759			CC73HCH1H1R5B	CHIP C 1.5PF B	
C760			CK73HB1H102K	CHIP C 1000PF K	
C764,765			CK73HB1H102K	CHIP C 1000PF K	
C767			CK73HB1H102K	CHIP C 1000PF K	
C768			CC73HCH1H080B	CHIP C 8.0PF B	
C769			CC73HCH1H1R5B	CHIP C 1.5PF B	
C770			CC73HCH1H220J	CHIP C 22PF J	
C771			CC73HCH1H470J	CHIP C 47PF J	
C772			CC73HCH1H040B	CHIP C 4.0PF B	
C773			CC73HCH1H030B	CHIP C 3.0PF B	
C774			CK73HB1H102K	CHIP C 1000PF K	
C775			CC73HCH1H150J	CHIP C 15PF J	
C776			CC73HCH1H010B	CHIP C 1.0PF B	
C777			CC73HCH1H100B	CHIP C 10PF B	
C778			CC73HCH1H030B	CHIP C 3.0PF B	
C779			CC73HCH1H330J	CHIP C 33PF J	
C901			CK73HB1H102K	CHIP C 1000PF K	
C904			CK73HB1H102K	CHIP C 1000PF K	
C906			CK73HB1H102K	CHIP C 1000PF K	
C916			CK73HB1H102K	CHIP C 1000PF K	
C924-926			CK73HB1H102K	CHIP C 1000PF K	
C928			CK73HB1H102K	CHIP C 1000PF K	
C929			CC73HCH1H470J	CHIP C 47PF J	
TC501,502			C05-0384-05	CERAMIC TRIMMER (10PF)	
101	2A	✻	E37-1141-15	FLAT CABLE	
-			E37-1145-05	PROCESSED LEAD WIRE	
CN1		✻	E41-2440-05	FLAT CABLE CONNECTOR	
CN8			E40-5915-05	FLAT CABLE CONNECTOR	
CN18			E40-6420-05	FLAT CABLE CONNECTOR	
CN60			E40-5932-05	SOCKET FOR PIN ASSY	
CN71			E40-5915-05	FLAT CABLE CONNECTOR	
CN901		✻	E40-6420-05	FLAT CABLE CONNECTOR	
J1			E11-0457-05	PHONE JACK (2.5/3.5)	
F901			F53-0324-05	FUSE	
CD701			L79-1474-05	TUNING COIL	

Ref. No.	Address	New parts	Parts No.	Description	Destination
CF701		✻	L72-1010-05	CERAMIC FILTER	
CF702		✻	L72-1012-05	CERAMIC FILTER	
L1			L92-0140-05	CHIP FERRITE	
L2-9			L92-0138-05	CHIP FERRITE	
L10			L92-0140-05	CHIP FERRITE	
L11			L92-0149-05	CHIP FERRITE	
L12,13			L92-0419-15	CHIP FERRITE	
L14,15			L92-0138-05	CHIP FERRITE	
L501			L41-4795-39	SMALL FIXED INDUCTOR (4.7UH)	
L502			L40-1075-57	SMALL FIXED INDUCTOR (10.0NH)	
L503			L92-0138-05	CHIP FERRITE	
L504			L40-3375-57	SMALL FIXED INDUCTOR (33.0NH)	
L505			L40-1001-86	SMALL FIXED INDUCTOR (10UH)	
L506			L40-1802-86	SMALL FIXED INDUCTOR (18UH)	
L507			L40-2775-57	SMALL FIXED INDUCTOR (27.0NH)	
L508,509			L40-1502-86	SMALL FIXED INDUCTOR (15UH)	
L511			L40-1085-57	SMALL FIXED INDUCTOR (100NH)	
L512			L41-3378-14	SMALL FIXED INDUCTOR (33NH)	
L513			L41-2278-14	SMALL FIXED INDUCTOR (22NH)	
L517,518			L40-1001-86	SMALL FIXED INDUCTOR (10UH)	
L519			L92-0138-05	CHIP FERRITE	
L520,521			L40-1085-57	SMALL FIXED INDUCTOR (100NH)	
L601			L40-4775-57	SMALL FIXED INDUCTOR (47.0NH)	
L602			L40-1085-57	SMALL FIXED INDUCTOR (100NH)	
L603			L92-0138-05	CHIP FERRITE	
L604			L40-4775-57	SMALL FIXED INDUCTOR (47.0NH)	
L605		✻	L41-1585-45	SMALL FIXED INDUCTOR (150NH)	
L606			L92-0149-05	CHIP FERRITE	
L607		✻	L41-1275-45	SMALL FIXED INDUCTOR (12NH)	
L609			L92-0149-05	CHIP FERRITE	
L610			L34-4563-05	AIR-CORE COIL	
L611			L34-4577-05	AIR-CORE COIL	
L612			L34-4573-05	AIR-CORE COIL	
L613			L34-4572-05	AIR-CORE COIL	
L614			L41-2295-39	SMALL FIXED INDUCTOR (2.2UH)	
L615			L34-4576-05	AIR-CORE COIL	
L616			L34-4575-05	AIR-CORE COIL	
L617			L34-4567-05	AIR-CORE COIL	
L618			L34-4566-05	AIR-CORE COIL	
L619			L41-1092-44	SMALL FIXED INDUCTOR (1UH)	
L701			L40-1585-92	SMALL FIXED INDUCTOR (150NH)	
L702			L40-1085-57	SMALL FIXED INDUCTOR (100NH)	
L703			L40-1591-86	SMALL FIXED INDUCTOR (1.5UH)	
L704			L92-0138-05	CHIP FERRITE	
L705			L41-5685-39	SMALL FIXED INDUCTOR (0.56UH)	
L706			L40-5675-57	SMALL FIXED INDUCTOR (56.0NH)	
L707			L40-2785-92	SMALL FIXED INDUCTOR (270NH)	
L708			L40-5675-57	SMALL FIXED INDUCTOR (56.0NH)	
L709			L40-1285-92	SMALL FIXED INDUCTOR (120NH)	
L710			L40-2785-92	SMALL FIXED INDUCTOR (270NH)	
L711			L41-6878-14	SMALL FIXED INDUCTOR (68NH)	
L712			L92-0138-05	CHIP FERRITE	
L713			L41-6878-14	SMALL FIXED INDUCTOR (68NH)	
L715			L41-6878-14	SMALL FIXED INDUCTOR (68NH)	
L716			L41-5678-14	SMALL FIXED INDUCTOR (56NH)	
L717			L40-5675-57	SMALL FIXED INDUCTOR (56.0NH)	
L901			L92-0149-05	CHIP FERRITE	
X1			L77-1950-05	CRYSTAL RESONATOR(11.0592MHZ)	
X2		✻	L77-1976-05	CRYSTAL RESONATOR(3.6864MHZ)	
X501			L77-1969-05	TCXO (16.8MHZ)	

PARTS LIST / 零件表

TX-RX UNIT (X57-7003-01)

Ref. No.	Address	New parts	Parts No.	Description	Destination
XF701			L71-0617-25	MCF (49.95MHZ)	
CP1			RK74HB1J473J	CHIP-COM 47K J 1/16W	
CP3,4			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
CP5			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
CP7,8			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
CP10			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
CP11			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
CP12,13			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
CP16			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
CP18			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
CP19			RK75HA1J473J	CHIP-COM 47K J 1/16W	
CP22-24			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
CP28			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
CP30			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
CP32			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
CP34			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
CP36			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
CP38			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
CP40			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
CP42,43			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
CP44			RK75HA1J474J	CHIP-COM 470K J 1/16W	
CP45-47			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
CP48,49			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
CP50			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
CP54			RK75HA1J473J	CHIP-COM 47K J 1/16W	
R1			R92-1252-05	CHIP R 0 OHM J 1/16W	
R2			RK73HB1J153J	CHIP R 15K J 1/16W	
R7		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R8			RK73HB1J272J	CHIP R 2.7K J 1/16W	
R9			RK73HB1J332J	CHIP R 3.3K J 1/16W	
R11		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R12			RK73HB1J334J	CHIP R 330K J 1/16W	
R13			RK73HB1J332J	CHIP R 3.3K J 1/16W	
R14		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R15			RK73HB1J272J	CHIP R 2.7K J 1/16W	
R16			RK73HB1J331J	CHIP R 330 J 1/16W	
R17			RK73HB1J821J	CHIP R 820 J 1/16W	
R18			RK73GB1J100J	CHIP R 10 J 1/16W	
R20			RK73HB1J103J	CHIP R 10K J 1/16W	
R21			RK73HB1J821J	CHIP R 820 J 1/16W	
R22,23			R92-1368-05	CHIP R 0 OHM	
R24			RK73HB1J224J	CHIP R 220K J 1/16W	
R25			RK73HB1J153J	CHIP R 15K J 1/16W	
R26			R92-1368-05	CHIP R 0 OHM	
R27,28			RK73HH1J474D	CHIP R 470K D 1/16W	
R31			RK73HB1J103J	CHIP R 10K J 1/16W	
R36			RK73GB1J433J	CHIP R 43K J 1/16W	
R37			RK73HB1J103J	CHIP R 10K J 1/16W	
R39,40		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R42-44			RK73HB1J103J	CHIP R 10K J 1/16W	
R45,46		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R48-52		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R53		✻	RK73HB1J474J	CHIP R 470K J 1/16W	
R54		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R55,56		✻	RK73HB1J474J	CHIP R 470K J 1/16W	
R57			RK73HB1J103J	CHIP R 10K J 1/16W	
R58,59		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R61			RK73HB1J331J	CHIP R 330 J 1/16W	
R62			RK73HB1J103J	CHIP R 10K J 1/16W	

Ref. No.	Address	New parts	Parts No.	Description	Destination
R63			RK73HB1J332J	CHIP R 3.3K J 1/16W	
R64		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R65,66		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R67			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R68			RK73GB1J181J	CHIP R 180 J 1/16W	
R69		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R71		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R72			RK73GB1J181J	CHIP R 180 J 1/16W	
R73,74		✻	RK73HB1J474J	CHIP R 470K J 1/16W	
R75			RK73GB1J391J	CHIP R 390 J 1/16W	
R76-80		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R82			RK73GB1J391J	CHIP R 390 J 1/16W	
R83			R92-1252-05	CHIP R 0 OHM J 1/16W	
R84			RK73HB1J184J	CHIP R 180K J 1/16W	
R89		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R90			RK73HB1J394J	CHIP R 390K J 1/16W	
R91			RK73HB1J332J	CHIP R 3.3K J 1/16W	
R92		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R93			RK73HB1J393J	CHIP R 39K J 1/16W	
R94			RK73HB1J684J	CHIP R 680K J 1/16W	
R95,96		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R97		✻	RK73HB1J474J	CHIP R 470K J 1/16W	
R98,99		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R100			RK73HB1J223J	CHIP R 22K J 1/16W	
R101			RK73HB1J103J	CHIP R 10K J 1/16W	
R102		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R103			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R104			RK73HB1J103J	CHIP R 10K J 1/16W	
R105			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R106		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R107			RK73HB1J564J	CHIP R 560K J 1/16W	
R108			RK73HB1J334J	CHIP R 330K J 1/16W	
R109			RK73HB1J824J	CHIP R 820K J 1/16W	
R111			RK73HB1J564J	CHIP R 560K J 1/16W	
R112			RK73HB1J334J	CHIP R 330K J 1/16W	
R113			R92-1368-05	CHIP R 0 OHM	
R114			RK73HB1J184J	CHIP R 180K J 1/16W	
R115			RK73GB1J103J	CHIP R 10K J 1/16W	
R116			RK73HB1J393J	CHIP R 39K J 1/16W	
R117			RK73HB1J683J	CHIP R 68K J 1/16W	
R119			RK73HB1J101J	CHIP R 100 J 1/16W	
R121			RK73HB1J184J	CHIP R 180K J 1/16W	
R122			RK73HB1J104J	CHIP R 100K J 1/16W	
R125			RK73GB1J152J	CHIP R 1.5K J 1/16W	
R129			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R130		✻	RK73HB1J474J	CHIP R 470K J 1/16W	
R131,132			R92-1368-05	CHIP R 0 OHM	
R134			RK73HB1J154J	CHIP R 150K J 1/16W	
R135			R92-1368-05	CHIP R 0 OHM	
R137			RK73HB1J223J	CHIP R 22K J 1/16W	
R139			RK73HB1J103J	CHIP R 10K J 1/16W	
R140		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R141			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R142			RK73HB1J223J	CHIP R 22K J 1/16W	
R143		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R144			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R145			RK73HB1J154J	CHIP R 150K J 1/16W	
R146			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R147			RK73HB1J103J	CHIP R 10K J 1/16W	
R149			RK73HB1J105J	CHIP R 1.0M J 1/16W	

PARTS LIST / 零件表

TX-RX UNIT (X57-7003-01)

Ref. No.	Address	New parts	Parts No.	Description	Destination
R150			RK73HB1J153J	CHIP R 15K J 1/16W	
R151			RK73HB1J183J	CHIP R 18K J 1/16W	
R152			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R153			RK73HB1J332J	CHIP R 3.3K J 1/16W	
R154			RK73HB1J333J	CHIP R 33K J 1/16W	
R155			RK73HB1J223J	CHIP R 22K J 1/16W	
R156-158			RK73HB1J334J	CHIP R 330K J 1/16W	
R159		✻	RK73HB1J474J	CHIP R 470K J 1/16W	
R160			RK73HB1J224J	CHIP R 220K J 1/16W	
R161,162			RK73HB1J124J	CHIP R 120K J 1/16W	
R163			RK73HB1J393J	CHIP R 39K J 1/16W	
R164			RK73HB1J184J	CHIP R 180K J 1/16W	
R165			RK73HB1J154J	CHIP R 150K J 1/16W	
R166			RK73HB1J103J	CHIP R 10K J 1/16W	
R167			RK73GB1J104J	CHIP R 100K J 1/16W	
R168		✻	RK73HB1J474J	CHIP R 470K J 1/16W	
R169			RK73HB1J223J	CHIP R 22K J 1/16W	
R170			R92-1252-05	CHIP R 0 OHM J 1/16W	
R171			R92-1368-05	CHIP R 0 OHM	
R172			RK73HB1J684J	CHIP R 680K J 1/16W	
R173			RK73HB1J184J	CHIP R 180K J 1/16W	
R174			RK73HB1J123J	CHIP R 12K J 1/16W	
R175			RK73HB1J103J	CHIP R 10K J 1/16W	
R176			RK73HB1J683J	CHIP R 68K J 1/16W	
R177			R92-1368-05	CHIP R 0 OHM	
R178		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R180			RK73HB1J103J	CHIP R 10K J 1/16W	
R181			R92-1368-05	CHIP R 0 OHM	
R183			RK73HB1J103J	CHIP R 10K J 1/16W	
R187		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R189,190			R92-1368-05	CHIP R 0 OHM	
R192,193			RK73HB1J104J	CHIP R 100K J 1/16W	
R194,195		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R196			RK73HB1J151J	CHIP R 150 J 1/16W	
R198			R92-1252-05	CHIP R 0 OHM J 1/16W	
R199		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R200		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R202		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R203			RK73HB1J222J	CHIP R 2.2K J 1/16W	
R204			RK73HB1J104J	CHIP R 100K J 1/16W	
R206			R92-1368-05	CHIP R 0 OHM	
R207			RK73HB1J154J	CHIP R 150K J 1/16W	
R210			RK73HB1J471J	CHIP R 470 J 1/16W	
R211		✻	RK73HB1J474J	CHIP R 470K J 1/16W	
R212			RK73GB1J101J	CHIP R 100 J 1/16W	
R213			RK73HB1J101J	CHIP R 100 J 1/16W	
R214			RK73HB1J182J	CHIP R 1.8K J 1/16W	
R215			RK73HB1J334J	CHIP R 330K J 1/16W	
R216			RK73HB1J274J	CHIP R 270K J 1/16W	
R218			R92-1252-05	CHIP R 0 OHM J 1/16W	
R220			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R221		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R222,223		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R224,225			RK73HB1J104J	CHIP R 100K J 1/16W	
R226			RK73HB1J184J	CHIP R 180K J 1/16W	
R229,230			RK73HB1J123J	CHIP R 12K J 1/16W	
R231			RK73HB1J103J	CHIP R 10K J 1/16W	
R232			RK73HB1J153J	CHIP R 15K J 1/16W	
R236			RK73HB1J124J	CHIP R 120K J 1/16W	
R239			RK73HB1J104J	CHIP R 100K J 1/16W	

Ref. No.	Address	New parts	Parts No.	Description	Destination
R240		✻	RK73HB1J474J	CHIP R 470K J 1/16W	
R241		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R242			RK73HB1J104J	CHIP R 100K J 1/16W	
R243		✻	RK73HB1J474J	CHIP R 470K J 1/16W	
R244		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R245			RK73HB1J103J	CHIP R 10K J 1/16W	
R246			RK73HB1J223J	CHIP R 22K J 1/16W	
R247			RK73HB1J184J	CHIP R 180K J 1/16W	
R248			R92-1252-05	CHIP R 0 OHM J 1/16W	
R250			R92-1252-05	CHIP R 0 OHM J 1/16W	
R251		✻	RK73HB1J474J	CHIP R 470K J 1/16W	
R254,255		✻	RK73HB1J474J	CHIP R 470K J 1/16W	
R259			RK73HB1J103J	CHIP R 10K J 1/16W	
R261			RK73HB1J103J	CHIP R 10K J 1/16W	
R262		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R501			R92-1368-05	CHIP R 0 OHM	
R502		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R503			RK73HB1J100J	CHIP R 10 J 1/16W	
R504			RK73HB1J103J	CHIP R 10K J 1/16W	
R505		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R506			RK73HB1J154J	CHIP R 150K J 1/16W	
R507			RK73HB1J470J	CHIP R 47 J 1/16W	
R508			RK73HB1J100J	CHIP R 10 J 1/16W	
R509			RK73HB1J332J	CHIP R 3.3K J 1/16W	
R510			RK73HB1J100J	CHIP R 10 J 1/16W	
R511,512			R92-1368-05	CHIP R 0 OHM	
R513			RK73HB1J470J	CHIP R 47 J 1/16W	
R514,515		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R516			RK73HB1J471J	CHIP R 470 J 1/16W	
R517			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R518			RK73HB1J103J	CHIP R 10K J 1/16W	
R519			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R520,521			RK73HB1J103J	CHIP R 10K J 1/16W	
R522			RK73HB1J184J	CHIP R 180K J 1/16W	
R523			RK73HB1J220J	CHIP R 22 J 1/16W	
R525			RK73HB1J274J	CHIP R 270K J 1/16W	
R527			RK73HB1J683J	CHIP R 68K J 1/16W	
R528			RK73HB1J331J	CHIP R 330 J 1/16W	
R529			RK73HB1J181J	CHIP R 180 J 1/16W	
R530			RK73HB1J271J	CHIP R 270 J 1/16W	
R531,532			RK73HB1J220J	CHIP R 22 J 1/16W	
R533			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R534			RK73HB1J154J	CHIP R 150K J 1/16W	
R535			RK73HB1J101J	CHIP R 100 J 1/16W	
R537			R92-1368-05	CHIP R 0 OHM	
R540			RK73HB1J332J	CHIP R 3.3K J 1/16W	
R541			RK73HB1J103J	CHIP R 10K J 1/16W	
R542			RK73HB1J331J	CHIP R 330 J 1/16W	
R543			RK73HB1J222J	CHIP R 2.2K J 1/16W	
R544			RK73HB1J470J	CHIP R 47 J 1/16W	
R545			RK73HH1J333D	CHIP R 33K D 1/16W	
R546			RK73HH1J104D	CHIP R 100K D 1/16W	
R547			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R601			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R602			R92-1252-05	CHIP R 0 OHM J 1/16W	
R611			RK73HB1J393J	CHIP R 39K J 1/16W	
R612			RK73HB1J101J	CHIP R 100 J 1/16W	
R613		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R614			RK73HB1J331J	CHIP R 330 J 1/16W	
R616			R92-1368-05	CHIP R 0 OHM	

PARTS LIST / 零件表

TX-RX UNIT (X57-7003-01)

Ref. No.	Address	New parts	Parts No.	Description	Destination
R618			RK73HB1J101J	CHIP R 100 J 1/16W	
R619			RK73HB1J103J	CHIP R 10K J 1/16W	
R621			RK73EB2ER39K	CHIP R 0.39 K 1/4W	
R622			RK73HB1J270J	CHIP R 27 J 1/16W	
R623			RK73EB2ER39K	CHIP R 0.39 K 1/4W	
R624		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R625			RK73HB1J151J	CHIP R 150 J 1/16W	
R626			R92-1252-05	CHIP R 0 OHM J 1/16W	
R627			RK73HB1J123J	CHIP R 12K J 1/16W	
R628			RK73HB1J392J	CHIP R 3.9K J 1/16W	
R629			RK73EB2ER39K	CHIP R 0.39 K 1/4W	
R630,631			RK73HH1J104D	CHIP R 100K D 1/16W	
R632,633			RK73HH1J334D	CHIP R 330K D 1/16W	
R634			RK73HB1J103J	CHIP R 10K J 1/16W	
R635		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R636			R92-1368-05	CHIP R 0 OHM	
R637			RK73HB1J103J	CHIP R 10K J 1/16W	
R638		✻	RK73HB1J474J	CHIP R 470K J 1/16W	
R639			RK73HB1J154J	CHIP R 150K J 1/16W	
R640		✻	RK73HB1J474J	CHIP R 470K J 1/16W	
R642			RK73HB1J820J	CHIP R 82 J 1/16W	
R643		✻	RK73HB1J473J	CHIP R 47K J 1/16W	
R645,646			RK73GB1J271J	CHIP R 270 J 1/16W	
R647			R92-1252-05	CHIP R 0 OHM J 1/16W	
R648			R92-1368-05	CHIP R 0 OHM	
R701			RK73HB1J103J	CHIP R 10K J 1/16W	
R702,703			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R704			RK73HB1J334J	CHIP R 330K J 1/16W	
R705,706			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R707			RK73HB1J101J	CHIP R 100 J 1/16W	
R708			RK73HB1J103J	CHIP R 10K J 1/16W	
R710		✻	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R711		✻	RK73HB1J474J	CHIP R 470K J 1/16W	
R713			RK73HB1J334J	CHIP R 330K J 1/16W	
R715,716			RK73HB1J332J	CHIP R 3.3K J 1/16W	
R717			RK73HB1J272J	CHIP R 2.7K J 1/16W	
R718			RK73HB1J100J	CHIP R 10 J 1/16W	
R719			RK73HB1J332J	CHIP R 3.3K J 1/16W	
R721			RK73HB1J124J	CHIP R 120K J 1/16W	
R722			RK73HB1J101J	CHIP R 100 J 1/16W	
R726			RK73HB1J224J	CHIP R 220K J 1/16W	
R727			RK73HB1J681J	CHIP R 680 J 1/16W	
R728			RK73HB1J471J	CHIP R 470 J 1/16W	
R729			RK73HB1J101J	CHIP R 100 J 1/16W	
R730			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R731			RK73HB1J222J	CHIP R 2.2K J 1/16W	
R732			RK73HB1J391J	CHIP R 390 J 1/16W	
R733			RK73HB1J563J	CHIP R 56K J 1/16W	
R734			RK73HB1J104J	CHIP R 100K J 1/16W	
R735			RK73HB1J563J	CHIP R 56K J 1/16W	
R736			RK73HB1J104J	CHIP R 100K J 1/16W	
R738,739			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R740			RK73HB1J471J	CHIP R 470 J 1/16W	
R741			RK73HB1J470J	CHIP R 47 J 1/16W	
R742			RK73HB1J471J	CHIP R 470 J 1/16W	
R745			RK73HB1J104J	CHIP R 100K J 1/16W	
R748			RK73HB1J104J	CHIP R 100K J 1/16W	
R749			RK73HB1J184J	CHIP R 180K J 1/16W	
R750			RK73HB1J150J	CHIP R 15 J 1/16W	
R751			R92-1368-05	CHIP R 0 OHM	

Ref. No.	Address	New parts	Parts No.	Description	Destination
R752,753			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R754,755			R92-0670-05	CHIP R 0 OHM	
R759			R92-1252-05	CHIP R 0 OHM J 1/16W	
R760,761			R92-1368-05	CHIP R 0 OHM	
R901-903			RK73HB1J471J	CHIP R 470 J 1/16W	
R912			RK73HB1J101J	CHIP R 100 J 1/16W	
R913			RK73HB1J471J	CHIP R 470 J 1/16W	
R918			RK73HB1J470J	CHIP R 47 J 1/16W	
R921,922			RK73HB1J101J	CHIP R 100 J 1/16W	
R923			R92-1252-05	CHIP R 0 OHM J 1/16W	
S1			S70-0424-05	TACT SWITCH	
S2			S70-0457-05	TACT SWITCH	
S3,4			S70-0424-05	TACT SWITCH	
D1			RB521S-30	DIODE	
D4			MA2S111	DIODE	
D17			MA2S111	DIODE	
D24-27			MA2S111	DIODE	
D28-31			RB706F-40	DIODE	
D32			DA221	DIODE	
D33			AVRM1608270MAB	VARISTOR	
D501-503			HSC277	DIODE	
D504-511		✻	1SV325F	VARIABLE CAPACITANCE DIODE	
D512			HSC277	DIODE	
D513		✻	1SV278F	VARIABLE CAPACITANCE DIODE	
D514			HSC277	DIODE	
D516			HSC277	DIODE	
D519			HSC277	DIODE	
D601			UDZS4.7B	ZENER DIODE	
D604-606			HVC131	DIODE	
D608			HVC131	DIODE	
D609		✻	AVRM1608180M6A	VARISTOR	
D610		✻	AVRM1608270MAB	VARISTOR	
D701,702			DAN235E	DIODE	
D703-706		✻	1SV323F	VARIABLE CAPACITANCE DIODE	
D901			1SR154-400	DIODE	
IC1		✻	XC61CC5002NR	MOS-IC	
IC2			XC6204B502PR	MOS-IC	
IC3		✻	XC61CN3402NR	MOS-IC	
IC4,5			BU4094BCFV	MOS-IC	
IC6			LC75834W	MOS-IC	
IC7		✻	30625MGP234HU	MICROPROCESSOR IC	
IC8			AT29C040A-90TU	ROM IC	
IC9			CAT24WC64JI	ROM IC	
IC10-12		✻	TK62012F	MOS-IC	
IC13			AQUA-L	MOS-IC	
IC14		✻	TC7W53FK(F)	MOS-IC	
IC15		✻	TK62012F	MOS-IC	
IC16			M62364FP-F	MOS-IC	
IC17		✻	TK62012F	MOS-IC	
IC18			TA7368F	MOS-IC	
IC19		✻	TC75S51FE(F)	MOS-IC	
IC501			ADF4111BCP7	MOS-IC	
IC601		✻	TA75W01FUF	MOS-IC	
IC701		✻	TA31136FNG	MOS-IC	
Q1			UMG3N	TRANSISTOR	
Q4			FP210	TRANSISTOR	
Q5			UPA672T	FET	
Q6			UMG3N	TRANSISTOR	
Q7			UPA672T	FET	

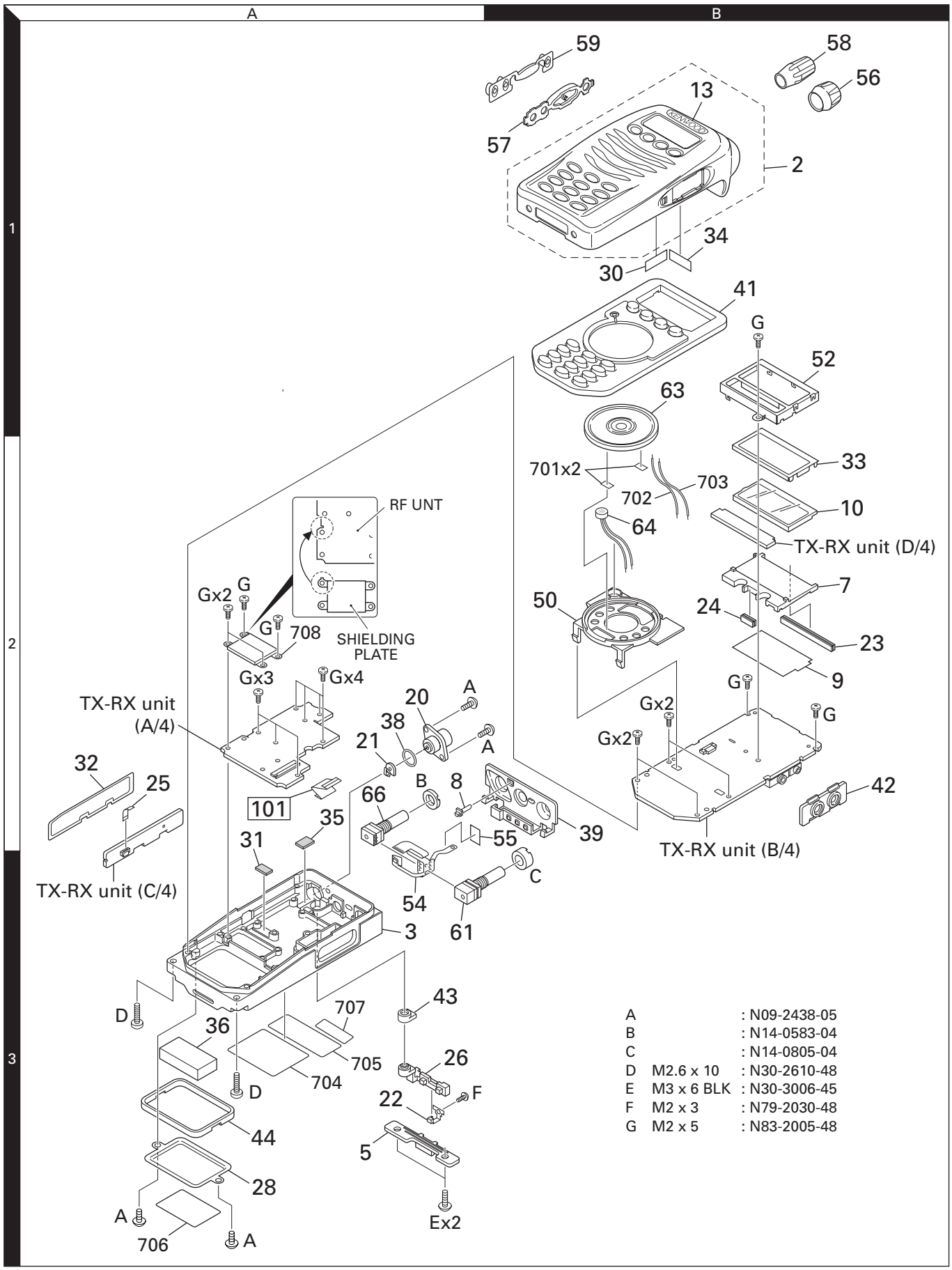
PARTS LIST / 零件表

TX-RX UNIT (X57-7003-01)

Ref. No.	Address	New parts	Parts No.	Description	Destination
Q8			DTA114EE	DIGITAL TRANSISTOR	
Q9		✻	SSM6J08FU(F)	FET	
Q12			2SC4617(S)	TRANSISTOR	
Q13			2SB1132(Q,R)	TRANSISTOR	
Q14,15		✻	SSM3K15TE(F)	FET	
Q16			2SA1774(S)	TRANSISTOR	
Q17			2SC4649(N,P)	TRANSISTOR	
Q19		✻	SSM3K15TE(F)	FET	
Q21		✻	RN4910(F)	TRANSISTOR	
Q22		✻	SSM3K15TE(F)	FET	
Q23			DTC144EE	DIGITAL TRANSISTOR	
Q24			SSM6J08FU(F)	FET	
Q25		✻	2SK1830F	FET	
Q26		✻	2SJ347F	FET	
Q27			DTC144EE	DIGITAL TRANSISTOR	
Q28		✻	SSM3K01T(F)	FET	
Q29		✻	SSM3K15TE(F)	FET	
Q30			2SJ243	FET	
Q31,32			2SC4649(N,P)	TRANSISTOR	
Q33		✻	2SJ347F	FET	
Q34		✻	SSM3K15TE(F)	FET	
Q35		✻	SSM3K01T(F)	FET	
Q501			2SC5488	TRANSISTOR	
Q502,503			2SK508NV(K52)	FET	
Q504		✻	SSM6P05FU(F)	FET	
Q505			2SC4617(S)	TRANSISTOR	
Q506,507			2SC5488	TRANSISTOR	
Q602		✻	2SK3077F	FET	
Q603			RD01MUS1	FET	
Q604			2SK2595	FET	
Q605			DTC114EE	DIGITAL TRANSISTOR	
Q607			DTC114EE	DIGITAL TRANSISTOR	
Q608			DTA144EE	DIGITAL TRANSISTOR	
Q609		✻	SSM3K15TE(F)	FET	
Q701			2SC4649(N,P)	TRANSISTOR	
Q702			DTA144EE	DIGITAL TRANSISTOR	
Q703			2SC4649(N,P)	TRANSISTOR	
Q704			3SK318	FET	
Q705		✻	3SK294(F)	FET	
TH501			B57331V2104J	THERMISTOR	
TH701,702			B57331V2104J	THERMISTOR	

Ref. No.	Address	New parts	Parts No.	Description	Destination

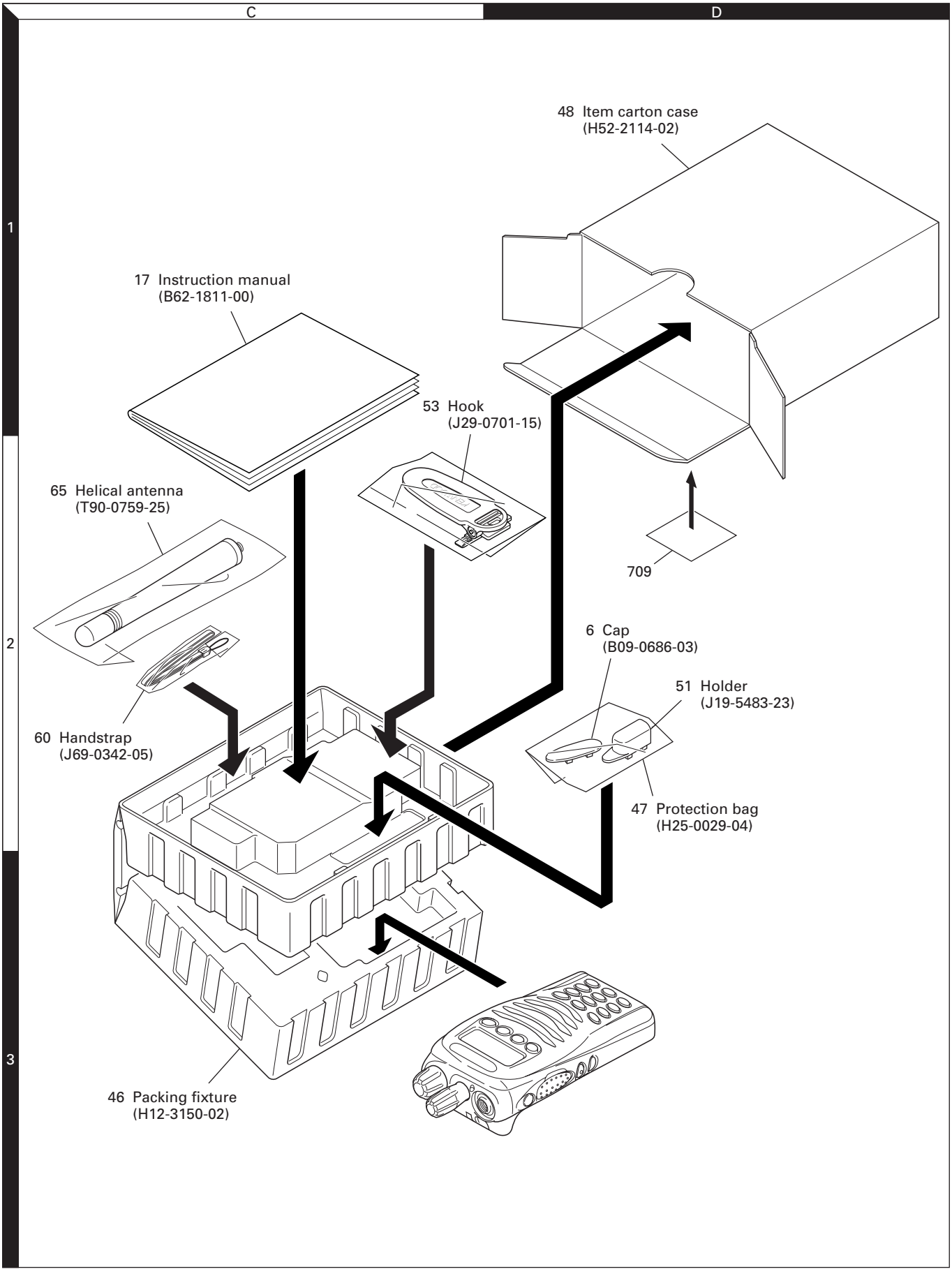
EXPLODED VIEW / 部件分解图



A		: N09-2438-05
B		: N14-0583-04
C		: N14-0805-04
D	M2.6 x 10	: N30-2610-48
E	M3 x 6 BLK	: N30-3006-45
F	M2 x 3	: N79-2030-48
G	M2 x 5	: N83-2005-48

Parts with the exploded numbers larger than 700 are not supplied.

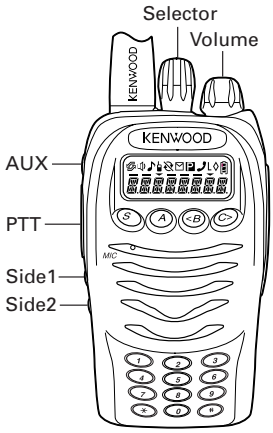
PACKING / 包装



Parts with the exploded numbers larger than 700 are not supplied.

ADJUSTMENT

Controls



Panel Test Mode

■ Test mode operation features

This transceiver has a test mode. ***To enter test mode, press [A] key and turn power on. Hold [A] key until frequency version appears on LCD.*** Test mode can be inhibited by programming. To exit test mode, switch the power on again. The following functions are available in test mode.

■ Key operation

Key	Function	Display
[S]	Shifts to Panel tuning mode	-
[A]	Low transmit power	"L" appears
[B]	MSK 1200bps and 2400bps	2400bps : ✉ icon appears
[C]	Test signaling CH up	Signaling No.
[Selector]	Test frequency CH up/down	Channel No.
[Side1]	Squelch on/off	🔊
[Side2]	Narrow/Wide	Narrow : "N", Wide : "W"
[PTT]	Transmit	-
[0] to [9] and [#],[*] (16 key model only)	Use as the DTMF keypad. If a key is pressed during transmission, the DTMF corresponding to the key that was presses is sent.	-
[AUX]	Segment check	All segment appears

Note :

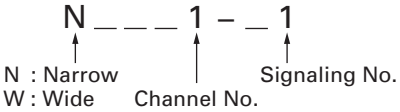
- If a [S], [A], [B], [C] key is pressed during transmission, the DTMF corresponding to the key that was pressed is sent.

• LED indicator

Red LED Lights during transmission. Blinks at the low battery voltage warning.

Green LED Lights when there is carrier.

• LCD display in panel test mode



■ Frequency and Signaling

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

• Test frequency

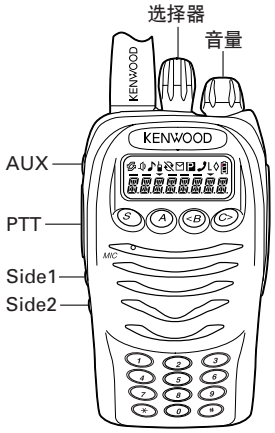
CH	RX (MHz)	TX (MHz)
1	155.05000	155.10000
2	136.05000	136.10000
3	173.95000	173.90000
4	155.00000	155.00000
5	155.20000	155.20000
6	155.40000	155.40000
7~16	-	-

• Test signaling

No.	RX	TX
1	None	None
2	None	100Hz Square Wave
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 : 023N	DQT : 023N
9	DQT : 754I	DQT : 754I
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	Skip	Skip
16	None	MSK
17	MSK : Preamble : 0xAAAA Sync : 0x23EB Data : 0x230960C6AAAA CRC : 0xC4D7	MSK : Preamble : 0xAAAA Sync : 0x23EB Data : 0x230960C6AAAA CRC : 0xC4D7

调　整

控制



面板测试模式

■测试模式操作功能

本对讲机有测试模式。***要进入测试模式, 请按 [A] 键打开电源。按住 [A] 键, 直到频率版本出现在LCD上为止。***可以通过编程禁用测试模式。要退出测试模式, 请再次打开电源。在测试模式可以使用下列功能。

■键操作

键	功　能	显　示
[S]	换到面板调谐模式	–
[A]	低发射功率	显示 “L”
[B]	MSK 1200bps和2400bps	2400bps：✉图标出现
[C]	测试信令CH上调	信令号
[选择器]	测试频率CH上调/下调	信道号
[Side1]	静噪打开/关闭	🔊
[Side2]	窄/宽	窄：“N”, 宽：“W”
[PTT]	发射	–
[0] 到 [9]、[#]、[*]	用作DTMF键盘。如果在发射时按下某个键, 则发送与按下的键对应的DTMF。	–
[AUX]	段检查	显示所有的段

注意：

- 如果在发射时按下[S]、[A]、[B]、[C]键, 则发送与按下的键对应的DTMF。

●LED指示灯

红色LED　　发射时点亮。低电池电压警告时闪烁。
绿色LED　　有载波时点亮。

●面板测试模式时的LCD显示

■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	155.05000	155.10000
2	136.05000	136.10000
3	173.95000	173.90000
4	155.00000	155.00000
5	155.20000	155.20000
6	155.40000	155.40000
7~16	–	–

●测试信令

号	接　收	发　射
1	无	无
2	无	100Hz方波
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：023N	DQT：023N
9	DQT：754I	DQT：754I
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	跳跃	跳跃
16	无	MSK
17	MSK： 前同步码：0xAAAA 同步：0x23EB 数据：0x230960C6AAAA CRC：0xC4D7	MSK： 前同步码：0xAAAA 同步：0x23EB 数据：0x230960C6AAAA CRC：0xC4D7

ADJUSTMENT

Panel 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.

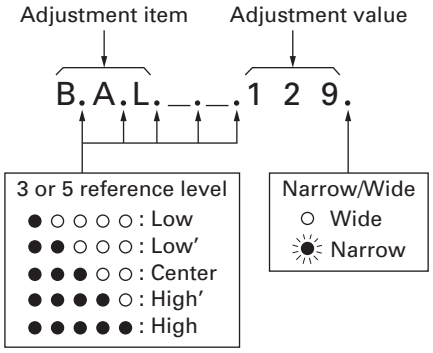
■ Transceiver tuning
(To place transceiver in tuning mode)

Press [S] key, now in tuning mode. Use [B] key to write tuning data through tuning modes, and [Selector] to adjust tuning requirements (1 to 256 appeares on LCD).

Use [C] key to select the adjustment item through tuning modes. Use [A] key to adjust 3 or 5 reference level adjustments, and use [Side2] key to switch between Wide/Narrow.

Channel appears on LCD. Set channel according to tuning requirements.

• LCD display in panel tuning mode



■ Key operation

Key	Function	
	Push	Hold (1 second)
[S]	End of panel tuning mode	-
[A]	To enter 3 or 5 reference level adjustments	-
[B]	Writes the adjustment value	-
[C]	Go to next adjustment item	Back to last adjustment item
[Selector]	Adjustment value up/down	
[Volume]	Volume level up/down	
[Side1]	Squelch on/off	-
[Side2]	Selects Narrow, Wide	-
[AUX]	All segment appears	-

■ 3 or 5 reference level adjustments frequency

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

■ Adjustment item and Display

(✳✳✳ : 1~256, MSK only : 1~64)

Order	Adjustment item	Display
1	Frequency	F R E Q_✳✳✳
2	High power	HPWR_✳✳✳
3	Low power	L P W R _ ✳ ✳ ✳
4	DQT balance	B A L _ _ ✳ ✳ ✳
5	Max deviation	D E V _ _ ✳ ✳ ✳
6	VOX 1	V X 1 _ _ ✳ ✳ ✳
7	VOX 10	V X 1 0 _ ✳ ✳ ✳
8	QT deviation	Q T _ _ _ ✳ ✳ ✳
9	DQT deviation	D Q T _ _ ✳ ✳ ✳
10	DTMF deviation	D T M F _ ✳ ✳ ✳
11	MSK deviation	M S K _ _ _ ✳ ✳
12	Tone deviation	T O N E _ ✳ ✳ ✳
13	Sensitivity	S E N S _ ✳ ✳ ✳
14	Squelch	S Q L _ _ ✳ ✳ ✳
15	Low RSSI	L R S S I ✳ ✳ ✳
16	Squelch tight	S Q L T _ ✳ ✳ ✳
17	High RSSI	H R S S I ✳ ✳ ✳
18	Battery detection	B A T T _ ✳ ✳ ✳

调　整

面板调谐模式

■调谐对讲机的准备

在尝试调谐对讲机前, 请将对讲机连接到合适的电源上。

发射打开时, 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。

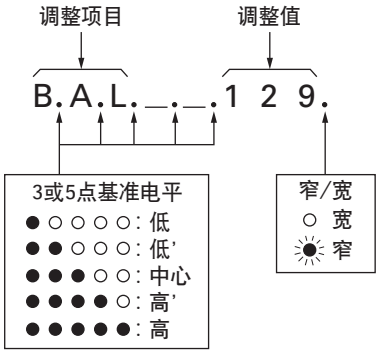
■对讲机调谐
（要使对讲机进入调谐模式）

按 [S] 键, 现在处于调谐模式。用 [B] 键写入调谐模式的调谐数据, 用[选择器]调整调谐要求 (1 ~ 256出现在LCD上)。

用 [C] 键选择调谐模式的调整项目。用 [A] 键调整3或5点基准电平调节, 然后用 [Side2] 键切换宽/窄。

信道出现在LCD上。根据调谐要求设置信道。

●面板调谐模式时的LCD显示。



■键操作

键	功　能	
	按　下	按住（1秒钟）
[S]	结束面板调谐模式	–
[A]	进入3或5点基准电平调节	–
[B]	写入调整值	–
[C]	转到下一调整项目	返回到最后调整的项目
[选择器]	调整值增大/减小	
[音量]	音量升高/降低	
[Side1]	静噪打开/关闭	–
[Side2]	选择窄、宽	–
[AUX]	显示所有的段	–

■3或5点基准电平调节频率

调 谐 点	接收（MHz）	发射（MHz）
低	136.05000	136.10000
低'	145.55000	145.60000
中心	155.05000	155.10000
高'	164.55000	164.60000
高	173.95000	173.90000

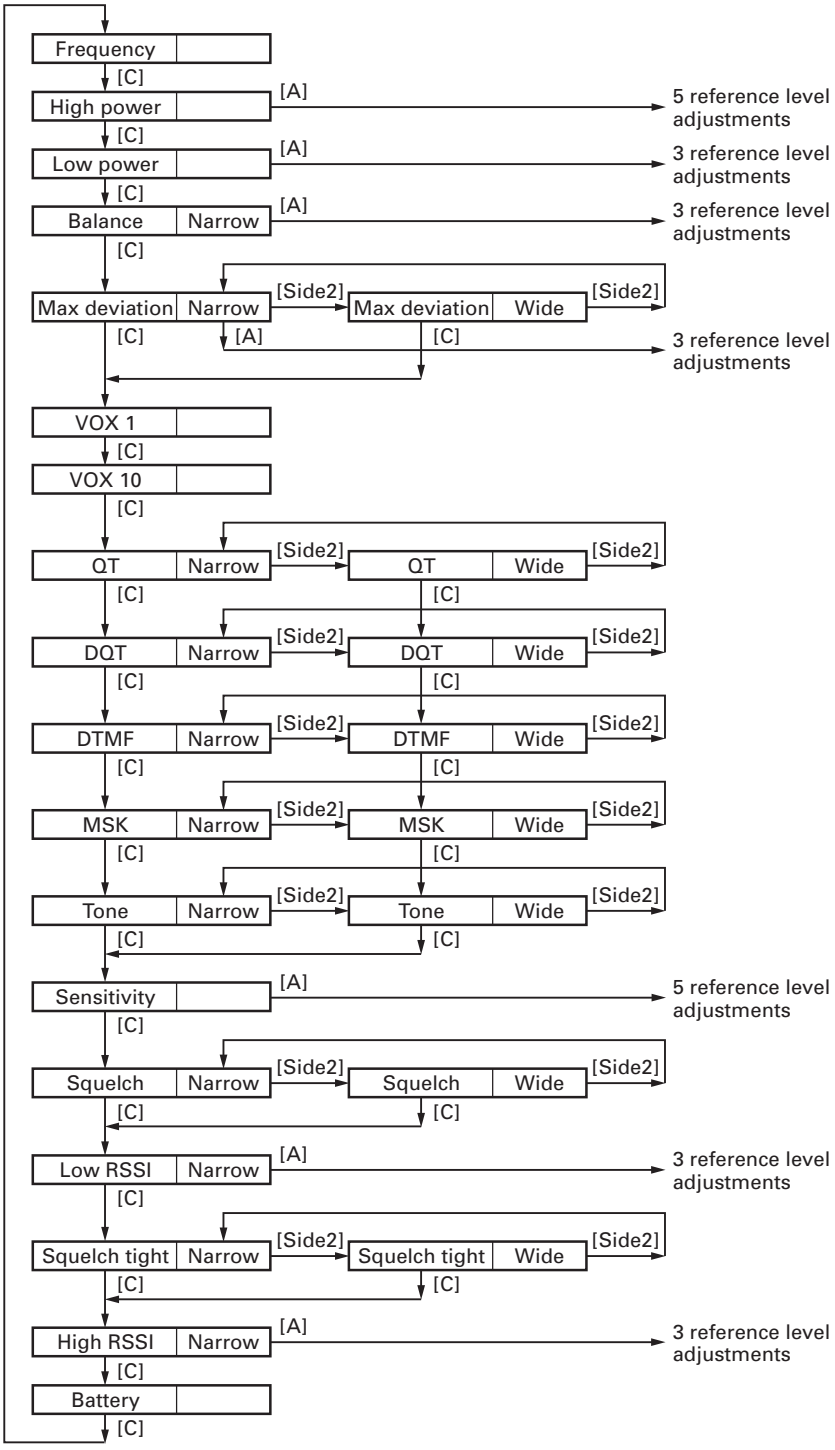
■调整项目和显示

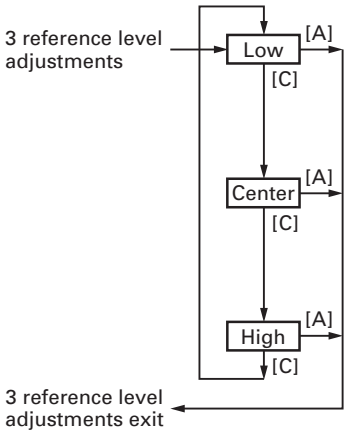
（✳✳✳：1 ~ 256, 仅MSK：1 ~ 64）

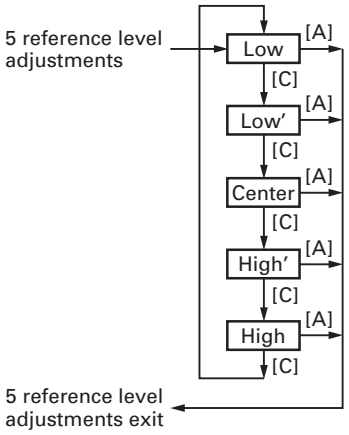
顺序	调 整 项 目	显　示
1	频率	FREQ_✳✳✳
2	高功率	HPWR_✳✳✳
3	低功率	LPWR_✳✳✳
4	DQT平衡	BAL__✳✳✳
5	最大频偏	DEV__✳✳✳
6	VOX 1	VX1__✳✳✳
7	VOX 10	VX10_✳✳✳
8	QT频偏	QT___✳✳✳
9	DQT频偏	DQT__✳✳✳
10	DTMF频偏	DTMF_✳✳✳
11	MSK频偏	MSK___✳✳
12	单音频偏	TONE_✳✳✳
13	灵敏度	SENS_✳✳✳
14	静噪	SQL__✳✳✳
15	低RSSI	LRSSI✳✳✳
16	静噪深	SQLT_✳✳✳
17	高RSSI	HRSSI✳✳✳
18	电池检测	BATT_✳✳✳

ADJUSTMENT

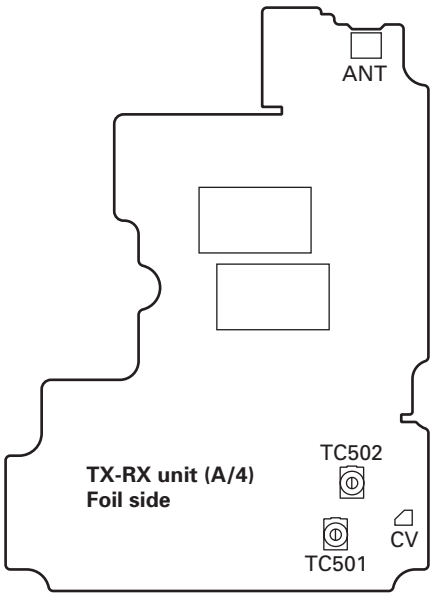
■ Flow chart





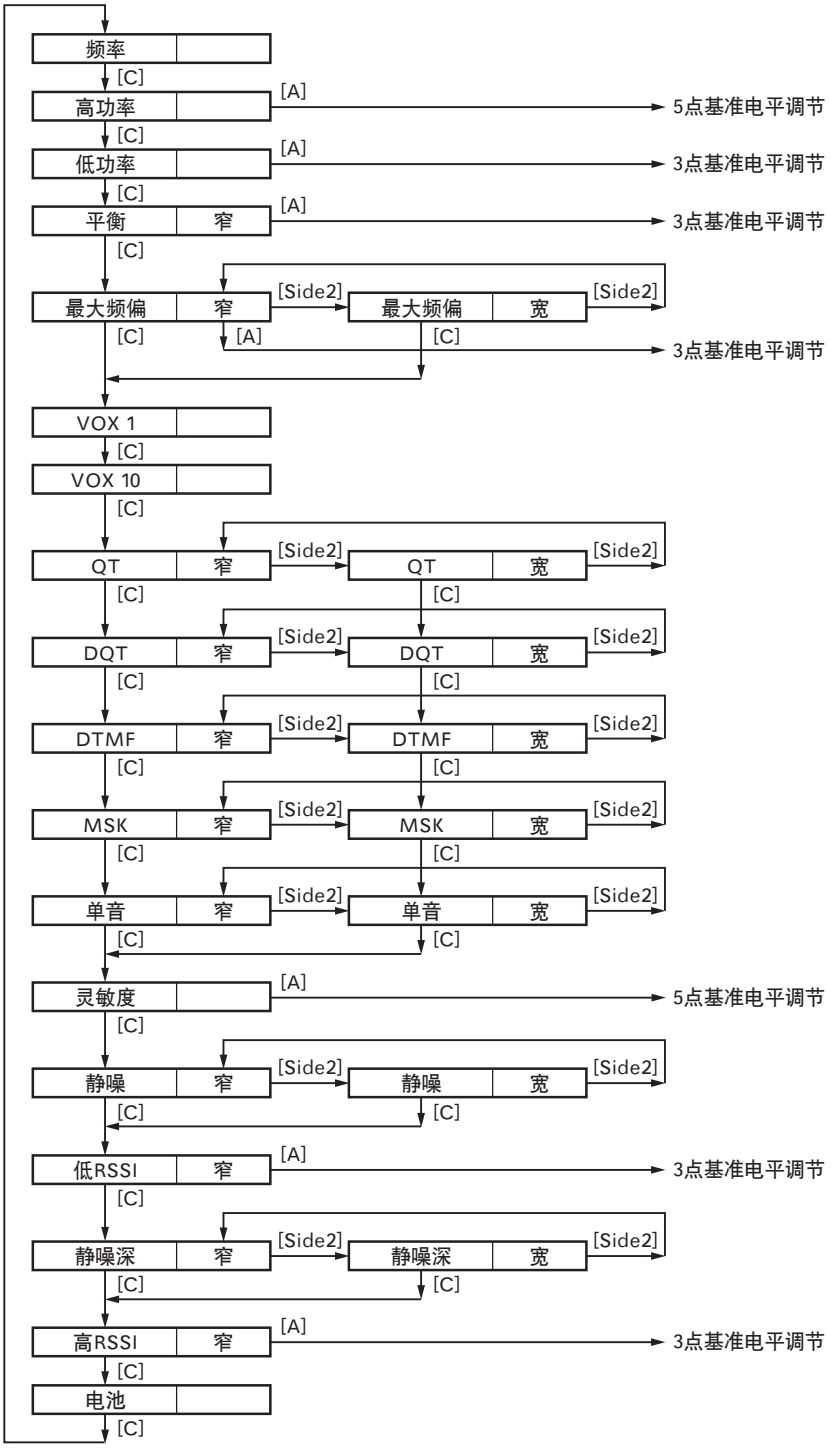


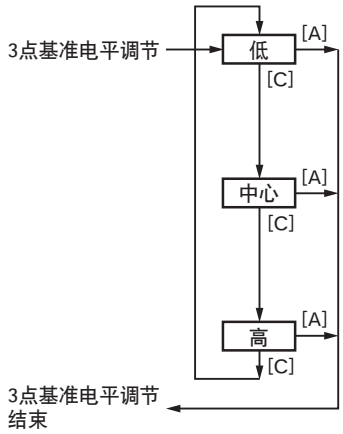
Adjustment Points

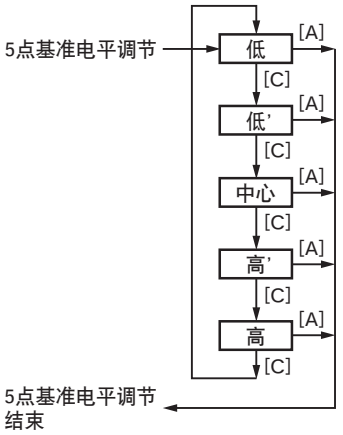


调　整

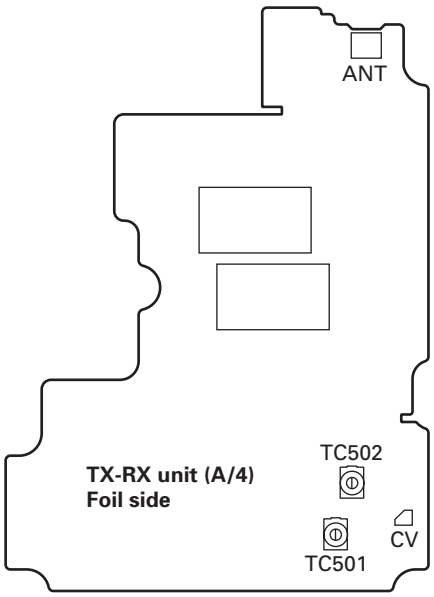
■流程图


频率
[C]
高功率
[A]
5点基准电平调节
[C]
低功率
[A]
3点基准电平调节
[C]
平衡
窄
[A]
3点基准电平调节
[C]
最大频偏
窄
[Side2]
最大频偏
宽
[Side2]
[C]
[A]
[C]
3点基准电平调节
VOX 1
[C]
VOX 10
[C]
QT
窄
[Side2]
QT
宽
[Side2]
[C]
[C]
DQT
窄
[Side2]
DQT
宽
[Side2]
[C]
[C]
DTMF
窄
[Side2]
DTMF
宽
[Side2]
[C]
[C]
MSK
窄
[Side2]
MSK
宽
[Side2]
[C]
[C]
单音
窄
[Side2]
单音
宽
[Side2]
[C]
[C]
灵敏度
[A]
5点基准电平调节
[C]
静噪
窄
[Side2]
静噪
宽
[Side2]
[C]
[C]
低RSSI
窄
[A]
3点基准电平调节
[C]
静噪深
窄
[Side2]
静噪深
宽
[Side2]
[C]
[C]
高RSSI
窄
[A]
3点基准电平调节
[C]
电池
[C]


3点基准电平调节
低
[A]
[C]
中心
[A]
[C]
高
[A]
[C]
3点基准电平调节
结束


5点基准电平调节
低
[A]
[C]
低'
[A]
[C]
中心
[A]
[C]
高'
[A]
[C]
高
[A]
[C]
5点基准电平调节
结束

调整点


ANT
TC502
TX-RX unit (A/4)
Foil side
CV
TC501

ADJUSTMENT

Test Equipment Required for Alignment

Test Equipment	Major Specifications	
1. Standard Signal Generator (SSG)	Frequency Range	136 to 174MHz
	Modulation	Frequency modulation and external modulation
	Output	–127dBm/0.1μV to greater than –47dBm/1mV
2. Power Meter	Input Impedance	50Ω
	Operation Frequency	136 to 174MHz or more
	Measurement Capability	Vicinity of 10W
3. Deviation Meter	Frequency Range	136 to 174MHz
4. Digital Volt Meter (DVM)	Measuring Range	10mV to 10V DC
	Input Impedance	High input impedance for minimum circuit loading
5. Oscilloscope		DC through 30MHz
6. High Sensitivity Frequency Counter	Frequency Range	10Hz to 1000MHz
	Frequency Stability	0.2ppm or less
7. Ammeter		5A
8. AF Volt Meter (AF VTVM)	Frequency Range	50Hz to 10kHz
	Voltage Range	1mV to 10V
9. Audio Generator (AG)	Frequency Range	50Hz to 5kHz or more
	Output	0 to 1V
10. Distortion Meter	Capability	3% or less at 1kHz
	Input Level	50mV to 10Vrms
11. 8Ω Dummy Load		Approx. 8Ω, 3W
12. Regulated Power Supply		5V to 10V, approx. 5A
		Useful if ammeter equipped

■ Antenna Connector Adapter

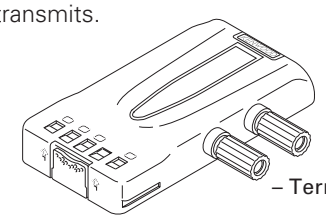
The antenna connector of this radio uses an SMA terminal. Use an antenna connector adapter [SMA(f) – BNC(f) or SMA(f) – N(f)] for adjustment. (The adapter is not provided as an option, so buy a commercially-available one.)

■ Battery Jig (W05-0909-00)

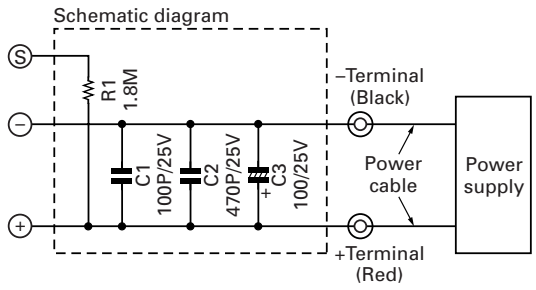
Connect the power cable properly between the battery jig installed in the transceiver and the power supply, and be sure output voltage and the power supply polarity prior to switching the power supply ON, otherwise over voltage and reverse connection may damage the transceiver, or the power supply or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

When using the battery jig in user mode, the transceiver assumes that a lithium-ion battery pack is attached to the transceiver. In adjustment mode, battery type detection is not performed. Refer to page 26 for details.

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.



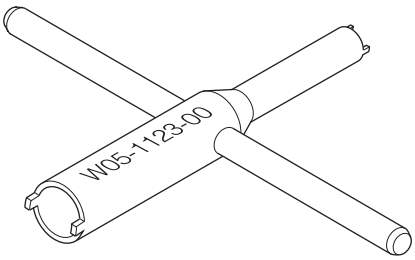
Schematic diagram



■ Nut wrench

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

KENWOOD part No. : W05-1123-00



调　整

所需的用于调整的测试设备

测 试 设 备	主 要 特 性	
1. 标准信号发生器 (SSG)	频率范围	136到174MHz
	调制	调频和外部调制
	输出	−127dBm/0.1μV到大于 − 47dBm/1mV
2. 功率计	输入阻抗	50Ω
	工作频率	136到174MHz或更高
	测量范围	10W左右
3. 频偏仪	频率范围	136到174MHz
4. 数字电压表 (DVM)	测量范围	直流10mV到10V
	输入阻抗	最小电路负载时为高输入阻抗
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 VTVM)	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	测量能力	在1kHz时3 % 或更低
	输入电平	50mV到10Vrms
11. 4Ω假负载		大约8Ω, 3W
12. 可调电源		5V到10V, 大约5A
		最好具备电流表

■天线接口转换头

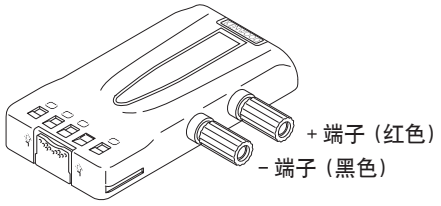
此通信机的天线接口使用SMA终端。 使用天线接口转换头 [SMA(f) − BNC(f)或SMA(f) − N(f)] 进行调整。(转换头不作为可选件提供, 因此请购买商用转换头。)

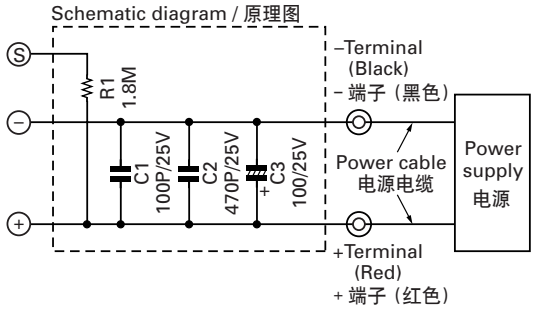
■电池夹具 (W05-0909-00)

在通信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通信机。

当在用户模式使用电池夹具时, 通信机假定安装的是锂离子电池。在调整模式, 请确认电池类型。详细内容请参照第49页。

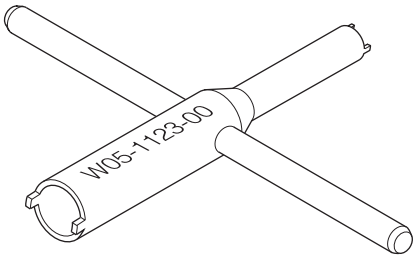
注：当使用电池夹具时, 你必须测定电池夹具的终端电压。因为, 电源和电池夹具之间会有一些的电压下降, 尤其在通信机发射的时候。





■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



ADJUSTMENT

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. VCO lock voltage • RX	**[Panel test mode]** 1) CH-Sig : 3-1	Power meter DVM	Panel TX-RX (A/4)	ANT CV	TX-RX (A/4)	TC502	3.8V	±0.1V
	2) CH-Sig : 2-1						Check	0.6V or more
• TX	**[Panel tuning mode] LPWR*** 3) CH-Sig : 3-1 PTT : ON				TX-RX (A/4)	TC501	3.8V	±0.1V
	4) CH-Sig : 2-1 PTT : ON						Check	0.6V or more

* TX can be continued on unlock condition in panel tuning mode.

Transmitter Section

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Frequency adjust	1) Adj item : [FREQ_] Adjust : [✳✳✳] CH-Sig : 3-1 PTT : ON	f. counter	Panel	ANT	Panel	Selector knob	High frequency ±50Hz	Note : After replacing the TCXO (X501) align frequency.
2. High power adjust	1) Adj item : [HPWR_] Adjust : [✳✳✳] 2) Adj item : [H.PWR_] → [H.P.WR_] → [H.P.W.R_] → [H.P.W.R._] → [H.P.W.R._.] Adjust : [✳✳✳] PTT : ON	Power meter Ammeter					5.0W	±0.1W 1.8A or less
3. High power check	**[Panel test mode]** 1) CH-Sig : 1-1 PTT : ON						Check	4.5~5.5W 1.9A or less
	2) CH-Sig : 2-1 PTT : ON							
	3) CH-Sig : 3-1 PTT : ON							
4. Low power adjust	1) Adj item : [LPWR_] Adjust : [✳✳✳] 2) Adj item : [L.PWR_] → [L.P.W.R_] → [L.P.W.R._.] Adjust : [✳✳✳] PTT : ON				Panel	Selector knob	1.0W	±0.1W 0.9A or less

调　整

公用部分

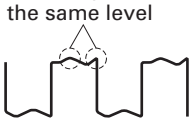
项　目	条　件	测　量			调　整			规　格 / 备　注
		测量装置	单元	端子	单元	部件	方　法	
1. 设定	1) BATT端子电压：7.5V 2) 标准信号发生器调制 [宽] 调制：1kHz, 频偏：3kHz [窄] 调制：1kHz, 频偏：1.5kHz							
2. 压控振荡器锁定电压 ● 接收	[面板测试模式] 1) CH-Sig：3-1	功率计 DVM	面板 TX-RX (A/4)	天线 CV	TX-RX (A/4)	TC502	3.8V	± 0.1V
	2) CH-Sig：2-1						检查	0.6V或更高
● 发射	[面板调谐模式] LPWR* 3) CH-Sig：3-1 PTT：开启				TX-RX (A/4)	TC501	3.8V	± 0.1V
	4) CH-Sig：2-1 PTT：开启						检查	0.6V或更高

* 面板调谐模式中失锁条件下TX可持续。

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. 频率调整	1) 调整项目：[FREQ_] 调整：[***] CH-Sig：3-1 PTT：开启	频率计数器	面板	天线	面板	选择器	高频率 ± 50Hz	注意：更换TCXO (X501) 后，请调整频率。
2. 高功率调整	1) 调整项目：[HPWR_] 调整：[***] 2) 调整项目：[H.PWR_]→[H.P.WR_]→[H.P.W.R_]→[H.P.W.R._]→[H.P.W.R._.] 调整：[***] PTT：开启	功率计 电流表					5.0W	± 0.1W 1.8A或更低
3. 高功率检查	[面板测试模式] 1) CH-Sig：1-1 PTT：开启						检查	4.5~5.5W 1.9A 或更低
	2) CH-Sig：2-1 PTT：开启							
	3) CH-Sig：3-1 PTT：开启							
4. 低功率调整	1) 调整项目：[LPWR_] 调整：[***] 2) 调整项目：[L.PWR_]→[L.P.W.R_]→[L.P.W.R._.] 调整：[***] PTT：开启				面板	选择器	1.0W	± 0.1W 0.9A或更低

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
5. Low power check	**[Panel test mode]** 1) CH-Sig : 1-1 Set low power (Push [S]) PTT : ON	Power meter Ammeter	Panel	ANT			Check	0.7~1.4W 1.0A or less
	2) CH-Sig : 2-1 PTT : ON							
	3) CH-Sig : 3-1 PTT : ON							
6. DQT balance adjust • Narrow	1) Adj item : [BAL_ _] Adjust : [✳✳✳.] Deviation meter filter LPF : 3kHz HPF : OFF 2) Adj item : [B.AL_ _] → [B.A.L._ _] → [B.A.L._. _.] Adjust : [✳✳✳.] PTT : ON	Deviation meter Oscilloscope AG AF VTVM	Panel	ANT SP/MIC	Panel	Selector knob	Make the demodulation waves into square waves.	These 2 peaks to the same level 
7. Max DEV adjust • Narrow	1) Adj item : [DEV_ _] Adjust : [✳✳✳.] AG : 1kHz/75mV at MIC terminal Deviation meter filter LPF : 15kHz HPF : OFF 2) Adj item : [D.EV_ _] → [D.E.V._ _] → [D.E.V._. _.] Adjust : [✳✳✳.] PTT : ON						2.20kHz (According to the larger +, –)	±50Hz
• Wide	3) Adj item : [DEV_ _] Adjust : [✳✳✳] PTT : ON						4.40kHz (According to the larger +, –)	±50Hz
8. MIC sensitivity check	**[Panel test mode]** 1) CH-Sig : 1-1 AG : 1kHz/15.0mV at MIC terminal PTT : ON						Check	1.3~1.8kHz (Narrow) 2.5~3.5kHz (Wide)
9. VOX1 adjust	1) Adj item : [VOX1_] Adjust : [✳✳✳] AG : 1kHz/150mV at MIC terminal	AG	Panel	SP/MIC	Panel		After apply signal from AG, press [B] key that numeric will be stored in memory.	
10. VOX10 adjust	1) Adj item : [VOX10] Adjust : [✳✳✳] AG : 1kHz/2mV at MIC terminal							
11. QT deviation adjust • Narrow	1) Remove the panel tuning cable assembly from the universal connector. Adj item : [QT_ _ _] Adjust : [✳✳✳.] Deviation meter filter LPF : 3kHz HPF : OFF PTT : ON	Power meter Deviation meter Oscilloscope AG AF VTVM	Panel	ANT SP/MIC	Panel	Selector knob	0.35kHz	±40Hz
• Wide	2) Adj item : [QT_ _ _] Adjust : [✳✳✳] PTT : ON						0.75kHz	±40Hz

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. 低功率检查	[面板测试模式] 1) CH-Sig：1-1 设为低功率 (按 [S] 键) PTT：开启	功率计 电流表	面板	天线			检查	0.7~1.4W 1.0A或更低
	2) CH-Sig：2-1 PTT：开启							
	3) CH-Sig：3-1 PTT：开启							
6. DQT平衡调整 ● 窄	1) 调整项目：[BAL_ _] 调整：[∗∗∗.] 频偏仪滤波器 LPF：3kHz HPF：OFF 2) 调整项目：[B.AL_ _]→[B.A.L._ _]→[B.A.L._. _.] 调整：[∗∗∗.] PTT：开启	频偏仪 示波器 AG AF VTVM	面板	天线 SP/MIC	面板	选择器	使解调波形为方形波	两个尖峰具有同样电平 
7. 最大频偏调整 ● 窄	1) 调整项目：[DEV_ _] 调整：[∗∗∗.] AG：1kHz/75mV (MIC端子) 频偏仪滤波器 LPF：15kHz HPF：OFF 2) 调整项目：[D.EV_ _]→[D.E.V._ _]→[D.E.V._. _.] 调整：[∗∗∗.] PTT：开启						2.20kHz (按照较大 +，−)	± 50Hz
● 宽	3) 调整项目：[DEV_ _] 调整：[∗∗∗] PTT：开启						4.40kHz (按照较大 +，−)	± 50Hz
8. MIC灵敏度检查	[面板测试模式] 1) CH-Sig：1-1 AG：1kHz/15.0mV (MIC端子) PTT：开启						检查	1.3~1.8kHz (窄) 2.5~3.5kHz (宽)
9. VOX1调整	1) 调整项目：[VOX1_] 调整：[∗∗∗] AG：1kHz/150mV (MIC端子)	AG	面板	SP/MIC	面板		施加AG信号后，按 [B] 键，数字将保存在存储器中。	
10. VOX10调整	1) 调整项目：[VOX10] 调整：[∗∗∗] AG：1kHz/2mV (MIC端子)							
11. QT频偏调整 ● 窄	1) 从通用连接器上拆下面板调谐电缆组件。 调整项目：[QT_ _ _] 调整：[∗∗∗.] 频偏仪滤波器 LPF：3kHz HPF：OFF PTT：开启	功率计 频偏仪 示波器 AG AF VTVM	面板	天线 SP/MIC	面板	选择器	0.35kHz	± 40Hz
● 宽	2) 调整项目：[QT_ _ _] 调整：[∗∗∗] PTT：开启						0.75kHz	± 40Hz

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
12. DQT deviation adjust • Narrow	1) Adj item : [DQT_ _] Adjust : [✳✳✳.] Deviation meter filter LPF : 3kHz HPF : OFF PTT : ON	Power meter Deviation meter Oscilloscope AG AF VTVM	Panel	ANT SP/MIC	Panel	Selector knob	0.35kHz	±40Hz
• Wide	2) Adj item : [DQT_ _] Adjust : [✳✳✳] PTT : ON						0.75kHz	±40Hz
13. DTMF deviation adjust • Narrow	1) Adj item : [DTMF_] Adjust : [✳✳✳.] Deviation meter filter LPF : 15kHz HPF : OFF PTT : ON						1.5kHz	±0.1kHz
• Wide	2) Adj item : [DTMF_] Adjust : [✳✳✳] PTT : ON						3.0kHz	±0.1kHz
14. MSK deviation adjust • Narrow	1) Adj item : [MSK_ _ _] Adjust : [✳✳✳.] Deviation meter filter LPF : 15kHz HPF : OFF PTT : ON						1.5kHz	±0.1kHz
• Wide	2) Adj item : [MSK_ _ _] Adjust : [✳✳✳] PTT : ON						3.0kHz	±0.1kHz
15. TONE deviation adjust • Narrow	1) Adj item : [TONE_] Adjust : [✳✳✳.] Deviation meter filter LPF : 15kHz HPF : OFF PTT : ON						1.5kHz	±0.1kHz
• Wide	2) Adj item : [TONE_] Adjust : [✳✳✳] PTT : ON						3.0kHz	±0.1kHz
16. BATT detection writing	1) Adj item : [BATT_] Adjust : [✳✳✳] PTT : ON	Power meter DVM	Panel	ANT BATT terminal	Panel		After pressing the PTT switch, confirm that one predetermined numeric in the range 1 to 256 appears and then press [B] key. That numeric will be stored in memory.	BATT terminal voltage : 5.9V
17. BATT detection check	**[Panel test mode]** 1) CH-Sig : 1-1 BATT terminal voltage : 7.5V PTT : ON						Check	The transceiver can transmit without causing the LED to blink.
	2) BATT terminal voltage : 5.7V PTT : ON							The transceiver should not transmit and LED blinking.

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	
12. DQT频偏调整 ● 窄	1) 调整项目：[DQT_ _] 调整：[∗∗∗.] 频偏仪滤波器 LPF：3kHz HPF：OFF PTT：开启	功率计 频偏仪 示波器 AG AF VTVM	面板	天线 SP/MIC	面板	选择器	0.35kHz	± 40Hz
● 宽	2) 调整项目：[DQT_ _] 调整：[∗∗∗] PTT：开启						0.75kHz	± 40Hz
13. DTMF 频偏调整 ● 窄	1) 调整项目：[DTMF_] 调整：[∗∗∗.] 频偏仪滤波器 LPF：15kHz HPF：OFF PTT：开启						1.5kHz	± 0.1kHz
● 宽	2) 调整项目：[DTMF_] 调整：[∗∗∗] PTT：开启						3.0kHz	± 0.1kHz
14. MSK 频偏调整 ● 窄	1) 调整项目：[MSK_ _ _] 调整：[∗∗∗.] 频偏仪滤波器 LPF：15kHz HPF：OFF PTT：开启						1.5kHz	± 0.1kHz
● 宽	2) 调整项目：[MSK_ _ _] 调整：[∗∗∗] PTT：开启						3.0kHz	± 0.1kHz
15. 单音 频偏调整 ● 窄	1) 调整项目：[TONE_] 调整：[∗∗∗.] 频偏仪滤波器 LPF：15kHz HPF：OFF PTT：开启						1.5kHz	± 0.1kHz
● 宽	2) 调整项目：[TONE_] 调整：[∗∗∗] PTT：开启						3.0kHz	± 0.1kHz
16. 电池 检测写入	1) 调整项目：[BATT_] 调整：[∗∗∗] PTT：开启	功率计 DVM	面板	天线 BATT 端子	面板		按PTT开关后, 确认在1~256范围内的预定数字是否出现, 然后按 [B] 键。 数字将保存在存储器中。	BATT端子电压：5.9V
17. 电池 检测检查	**[面板测试模式]** 1) CH-Sig：1-1 BATT端子电压：7.5V PTT：开启						检查	对讲机可以发射, 不会引起LED闪烁。
	2) BATT端子电压：5.7V PTT：开启							对讲机不能发射, LED闪烁。

ADJUSTMENT

Receiver Section

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Sensitivity adjust	1) Adj item : [SENS_] Adjust : [✳✳✳] 2) Adj item : [S.ENS_] → [S.E.NS_] → [S.E.N.S_] → [S.E.N.S._] → [S.E.N.S._.] Adjust : [✳✳✳] SSG output : –103dBm (1.58µV) (MOD : 1kHz/±1.5kHz)	SSG AF VTVM Oscilloscope	Panel	ANT SP/MIC	Panel	Selector knob	Adjust for RSSI MAX	Rotate the selector knob and increase the adjustment value starting from "1" to obtain RSSI MAX.
2. Sensitivity check	**[Panel test mode]** 1) CH-Sig : 1-1 SSG output Wide : –117dBm (0.32µV) (MOD : 1kHz/±3kHz) Narrow : –116dBm (0.35µV) (MOD : 1kHz/±1.5kHz)						Check	13dB SINAD or more
3. Squelch (Preset) adjust • Narrow	1) Adj item : [SQL_ _] Adjust : [✳✳✳.] SSG output : –119dBm (0.25µV) (MOD : 1kHz/±1.5kHz)				Panel	Selector knob	After input signal from SSG, press [B] key. That numeric will be stored in memory.	After adjusting SQL, check SQL open/close. SSG –118dBm : Open SSG OFF : Close
• Wide	2) Adj item : [SQL_ _] Adjust : [✳✳✳] SSG output : –120dBm (0.22µV) (MOD : 1kHz/±3.0kHz)							
4. Low RSSI adjust • Narrow	1) Adj item : [LRSSI] Adjust : [✳✳✳.] SSG output : –118dBm (0.28µV) (MOD : 1kHz/±1.5kHz)						After input signal from SSG, press [B] key. That numeric will be stored in memory.	
	2) Adj item : [L.RSSI] → [L.R.S.SI] → [L.R.S.S.I.] Adjust : [✳✳✳.]							
5. Squelch (Tight) adjust • Narrow	1) Adj item : [SQLT_] Adjust : [✳✳✳.] SSG output : –115dBm (0.4µV) (MOD : 1kHz/±1.5kHz)						After input signal from SSG, press [B] key. That numeric will be stored in memory.	After adjusting SQL, check SQL open/close. SSG –113dBm : Open SSG OFF : Close
• Wide	2) Adj item : [SQLT_] Adjust : [✳✳✳] SSG output : –116dBm (0.35µV) (MOD : 1kHz/±3.0kHz)							
6. High RSSI adjust • Narrow	1) Adj item : [HRSSI] Adjust : [✳✳✳.] SSG output : –70dBm (70.8µV) (MOD : 1kHz/±1.5kHz)						After input signal from SSG, press [B] key. That numeric will be stored in memory.	
	2) Adj item : [H.RSSI] → [H.R.S.SI] → [H.R.S.S.I.] Adjust : [✳✳✳.]							

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. 灵敏度调整	1) 调整项目：[SENS_] 调整：[✳✳✳] 2) 调整项目：[S.ENS_]→[S.E.NS_]→[S.E.N.S_]→[S.E.N.S._]→[S.E.N.S._.] 调整：[✳✳✳] SSG输出：−103dBm (1.58μV) (调制：1kHz/ ± 1.5kHz)	SSG AF VTVM 示波器	面板	天线 SP/MIC	面板	选择器	RSSI MAX调节	转动选择旋钮, 从 “1” 开始增大调整值, 直到获得RSSI MAX。
2. 灵敏度检查	[面板测试模式] 1) CH−Sig：1−1 SSG输出 宽：−117dBm (0.32μV) (调制：1kHz/ ± 3kHz) 窄：−116dBm (0.35μV) (调制：1kHz/ ± 1.5kHz)						检查	13dB SINAD或更高
3. 静噪 (预设定) 调整 ● 窄	1) 调整项目：[SQL_ _] 调整：[✳✳✳.] SSG输出：−119dBm (0.25μV) (调制：1kHz/ ± 1.5kHz)				面板	选择器	从SSG输入信号后按 [B] 键。数字将保存在存储器中。	调节静噪后, 检查静噪的打开/关闭。 SSG −118dBm：打开 SSG OFF：关闭
● 宽	2) 调整项目：[SQL_ _] 调整：[✳✳✳] SSG输出：−120dBm (0.22μV) (调制：1kHz/ ± 3.0kHz)							
4. 低RSSI调整 ● 窄	1) 调整项目：[LRSSI] 调整：[✳✳✳.] SSG输出：−118dBm (0.28μV) (调制：1kHz/ ± 1.5kHz)						从SSG输入信号后按 [B] 键。数字将保存在存储器中。	
	2) 调整项目：[L.RSSI]→[L.R.S.SI]→[L.R.S.S.I.] 调整：[✳✳✳.]							
5. 静噪深 调整 ● 窄	1) 调整项目：[SQLT_] 调整：[✳✳✳.] SSG输出：−115dBm (0.4μV) (调制：1kHz/ ± 1.5kHz)						从SSG输入信号后按 [B] 键。数字将保存在存储器中。	调节静噪后, 检查静噪的打开/关闭。 SSG −113dBm：打开 SSG OFF：关闭
● 宽	2) 调整项目：[SQLT_] 调整：[✳✳✳] SSG输出：−116dBm (0.35μV) (调制：1kHz/ ± 3.0kHz)							
6. 高RSSI调整 ● 窄	1) 调整项目：[HRSSI] 调整：[✳✳✳.] SSG输出：−70dBm (70.8μV) (调制：1kHz/ ± 1.5kHz)						从SSG输入信号后按 [B] 键。数字将保存在存储器中。	
	2) 调整项目：[H.RSSI]→[H.R.S.SI]→[H.R.S.S.I.] 调整：[✳✳✳.]							

TERMINAL FUNCTION

■ CN60

Pin No.	Pin Name	I/O	Function
1	GND	-	GND
2	SSB	O	Switched B output DC (Battery terminal)±0.5V, 150mA max
3	AUX1	I/O	Auxiliary 1 Input: L ≤ 0.45V, H ≥ 4.7V/25kΩ load Output: L ≤ 0.4V, H ≥ 4.2V/100kΩ load
4	AUX2	O	Auxiliary 2 Output: L ≤ 0.4V, H ≥ 4.2V/100kΩ load
5	RXD2	I	RXD Input: L ≤ 0.4V, H ≥ 4.2V/100kΩ load
6	AUX3	I/O	Auxiliary 3 Input: Active "L", L ≤ 1.0V, H ≥ 4.0V Output: L ≤ 0.4V, H ≥ 4.2V/100kΩ load
7	AUX4	O	Auxiliary 4 Output: L ≤ 0.4V, H ≥ 4.2V/100kΩ load
8	AUX5	O	Auxiliary 5 Output: L ≤ 0.4V, H ≥ 4.2V/100kΩ load
9	TXD2	O	TXD Output: L ≤ 0.4V, H ≥ 4.2V/100kΩ load
10	TA1	I	Transmit audio 1 Input: Zin > 22kΩ, 350±50mVp-p (Standard modulation)
11	5C	-	5V power supply (50mA max)
12	MIC O	O	TX input Input: ZL ≥ 2.2kΩ, 130±50mVp-p (Standard modulation)
13	TA2	I	Transmit audio 2 Input: Zin > 22kΩ, 350±50mVp-p (Standard modulation)
14	DEO	O	Discriminator audio, 1Vp-p
15	ALT2	I	Alert tone audio 2, 0.5Vp-p
16	ALT1	I	Alert tone audio 1, 0.5Vp-p
17	MIC I	I	MIC signal input (AC coupled) Before pre-emphasis Zin ≥ 22kΩ, 130±50mVp-p (Standard modulation)
18	RA O	O	Audio signal output (DC coupled) After de-emphasis ZL ≥ 30kΩ, 1±0.3Vp-p (Standard modulation)
19	RA I	I	Audio signal input (DC coupled) After de-emphasis Zin ≥ 15kΩ, 1±0.3Vp-p (Standard modulation)
20	AUX6	I/O	Auxiliary 6 Input: L ≤ 0.8V, H ≥ 4.2V Output: L ≤ 0.4V, H ≥ 4.2V/100kΩ load

■ Solder Point Connection

Designation	Function	Condiition / Value
MIC_I	MIC input	Input sensitivity / impedance (1kHz std. dev.) 500mVrms±100mV, @22kΩ load
MIC_O	MIC output	Output voltage / impedance (1kHz, 15mVrms MIC input) 60mVrms±20mV, @2.2kΩ load
RA_I	Receiver AF input	Input sensitivity / impedance (1kHz rated AF power / Vol. max) 150mV±50mV, @22kΩ load
RA_O	Receiver AF output	Output voltage / impedance (1kHz std. mod.) 200mV±50mV, @2.2kΩ load
SP_M	Speaker mute	Load >100kΩ (Low) Vss~0.4V, (High) Vdd–0.8V~Vdd
RXD	RXD	Load >100kΩ (Low) Vss~0.4V, (High) Vdd–0.8V~Vdd
TXD	TXD	Load >100kΩ (Low) Vss~0.4V, (High) Vdd–0.8V~Vdd
RSSI	RSSI output	Load >100kΩ (Low) Vss~0.4V, (High) Vdd–0.8V~Vdd
LSDFO	LSDIN output	Load >100kΩ (Low) Vss~0.4V, (High) Vdd–0.8V~Vdd
MDSW	Mandown SW input	Load >100kΩ (Low) Vss~0.4V, (High) Vdd–0.8V~Vdd
5C	DC 5V	Output voltage / 10mA load 5.0V±0.5V / 50mA max
DEO	Discriminator signal output	Output voltage / impedance (1kHz std. mod.) 400mVrms±100mV, @2.2kΩ load
ALT	Sidetone input	Input sensitivity / impedance (1kHz rated AF power / Vol. max) 140mVrms±50mV, @22kΩ load
DATAO	Transmit AF input	Input sensitivity / impedance (1kHz std. dev.) 310Vrms±50mV, @22kΩ load
A1	AUX1	Load >100kΩ (Low) Vss~0.4V, (High) Vdd–0.8V~Vdd
A2	AUX2	Load >100kΩ (Low) Vss~0.4V, (High) Vdd–0.8V~Vdd
A3	AUX3	Load >100kΩ (Low) Vss~0.4V, (High) Vdd–0.8V~Vdd
A4	AUX4	Load >100kΩ (Low) Vss~0.4V, (High) Vdd–0.8V~Vdd
A5	AUX5	Load >100kΩ (Low) Vss~0.4V, (High) Vdd–0.8V~Vdd
A6	AUX6	Load >100kΩ (Low) Vss~0.4V, (High) Vdd–0.8V~Vdd
SB	Switched B	Output voltage / 7mA load DC (Battery terminal) ±0.5V / 150mA max
G	GND	Vss
TA1	Transmit AF input	Input sensitivity / impedance (1kHz std. dev.) 310Vrms±50mV, @22kΩ load

端子功能

■CN60

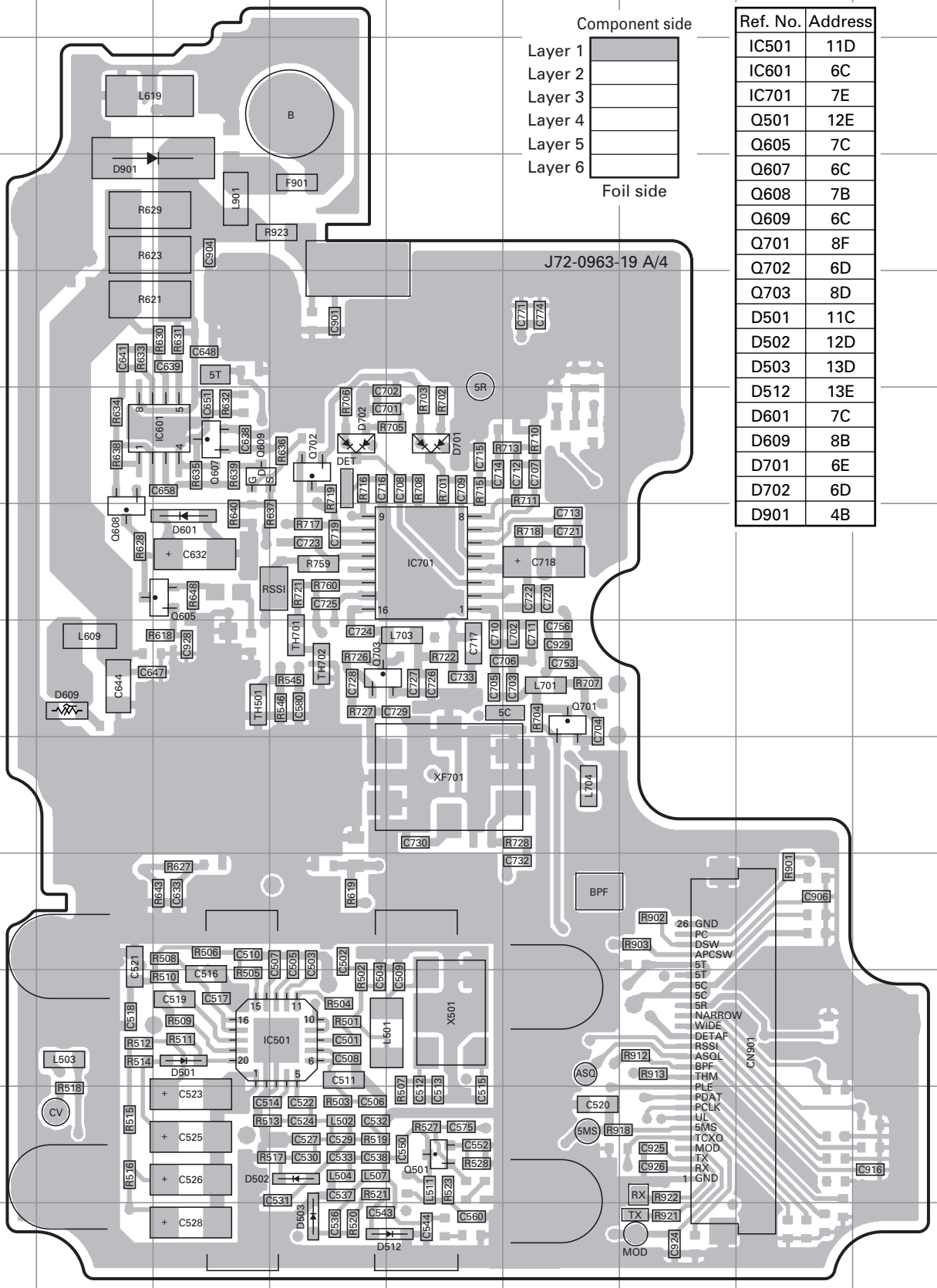
号码	名 称	I/O	功 能
1	GND	–	接地
2	SSB	O	开关B输出 直流 (电池端子) ± 0.5V, 最大150mA
3	AUX1	I/O	辅助1 输入：L ≤ 0.45V, H ≥ 4.7V/25kΩ load 输出：L ≤ 0.4V, H ≥ 4.2V/100kΩ load
4	AUX2	O	辅助2 输出：L ≤ 0.4V, H ≥ 4.2V/100kΩ load
5	RXD2	I	RXD 输入：L ≤ 0.4V, H ≥ 4.2V/100kΩ load
6	AUX3	I/O	辅助3 输入：有效 “L” , L ≤ 1.0V, H ≥ 4.0V 输出：L ≤ 0.4V, H ≥ 4.2V/100kΩ load
7	AUX4	O	辅助4 输出：L ≤ 0.4V, H ≥ 4.2V/100kΩ load
8	AUX5	O	辅助5 输出：L ≤ 0.4V, H ≥ 4.2V/100kΩ load
9	TXD2	O	TXD 输出：L ≤ 0.4V, H ≥ 4.2V/100kΩ load
10	TA1	I	发射音频1 输入：Zin > 22kΩ, 350 ± 50mVp-p (标准调制)
11	5C	–	5V电源 (最大50mA)
12	MIC O	O	发射输入 输入：ZL ≥ 2.2kΩ, 130 ± 50mVp-p (标准调制)
13	TA2	I	发射音频2 输入：Zin > 22kΩ, 350 ± 50mVp-p (标准调制)
14	DEO	O	鉴频器音频, 1Vp-p
15	ALT2	I	提示音2, 0.5Vp-p
16	ALT1	I	提示音1, 0.5Vp-p
17	MIC I	I	麦克风信号输入 (交流耦合) 在预加重之前 Zin ≥ 22kΩ, 130 ± 50mVp-p (标准调制)
18	RA O	O	音频信号输出 (直流耦合) 在去加重后 ZL ≥ 30kΩ, 1 ± 0.3Vp-p (标准调制)
19	RA I	I	音频信号输入 (直流耦合) 在去加重后 Zin ≥ 15kΩ, 1 ± 0.3Vp-p (标准调制)
20	AUX6	I/O	辅助6 输入：L ≤ 0.8V, H ≥ 4.2V 输出：L ≤ 0.4V, H ≥ 4.2V/100kΩ load

■焊点连接

规 定	功 能	条 件 / 值
MIC_I	麦克风输入	输入灵敏度 / 阻抗 (1kHz标准频偏) 500mVrms ± 100mV, @22kΩ load
MIC_O	麦克风输出	输出电压 / 阻抗 (1kHz, 15mVrms麦克风输入) 60mVrms ± 20mV, @2.2kΩ load
RA_I	接收机 AF输出	输入灵敏度 / 阻抗 (1kHz额定AF功率 / 最大音量) 150mV ± 50mV, @22kΩ load
RA_O	接收机 AF输出	输出电压 / 阻抗 (1kHz标准调制) 200mV ± 50mV, @2.2kΩ load
SP_M	扬声器静音	负载 > 100kΩ (低) Vss~0.4V, (高) Vdd-0.8V~Vdd
RXD	RXD	负载 > 100kΩ (低) Vss~0.4V, (高) Vdd-0.8V~Vdd
TXD	TXD	负载 > 100kΩ (低) Vss~0.4V, (高) Vdd-0.8V~Vdd
RSSI	RSSI输出	负载 > 100kΩ (低) Vss~0.4V, (高) Vdd-0.8V~Vdd
LSDFO	LSDIN输出	负载 > 100kΩ (低) Vss~0.4V, (高) Vdd-0.8V~Vdd
MDSW	人员事故 开关输入	负载 > 100kΩ (低) Vss~0.4V, (高) Vdd-0.8V~Vdd
5C	DC 5V	输出电压 / 10mA负载 5.0V ± 0.5V / 最大50mA
DEO	鉴频器信号 输出	输出电压 / 阻抗 (1kHz标准调制) 400mVrms ± 100mV, @2.2kΩ load
ALT	侧音输入	输入灵敏度 / 阻抗 (1kHz额定AF功率 / 最大音量) 140mVrms ± 50mV, @22kΩ load
DATAO	发射AF 输入	输入灵敏度 / 阻抗 (1kHz标准设备) 310Vrms ± 50mV, @22kΩ load
A1	AUX1	负载 > 100kΩ (低) Vss~0.4V, (高) Vdd-0.8V~Vdd
A2	AUX2	负载 > 100kΩ (低) Vss~0.4V, (高) Vdd-0.8V~Vdd
A3	AUX3	负载 > 100kΩ (低) Vss~0.4V, (高) Vdd-0.8V~Vdd
A4	AUX4	负载 > 100kΩ (低) Vss~0.4V, (高) Vdd-0.8V~Vdd
A5	AUX5	负载 > 100kΩ (低) Vss~0.4V, (高) Vdd-0.8V~Vdd
A6	AUX6	负载 > 100kΩ (低) Vss~0.4V, (高) Vdd-0.8V~Vdd
SB	开关B	输出电压 / 7mA负载 直流 (电池端子) ± 0.5V / 最大150mA
G	GND	Vss
TA1	发射AF 输入	输入灵敏度 / 阻抗 (1kHz标准设备) 310Vrms ± 50mV, @22kΩ load

TK-2178 PC BOARD / PC板

TX-RX UNIT (X57-7003-01) (A/4)
Component side view (J72-0963-19 A/4)



Component side

Layer 1	
Layer 2	
Layer 3	
Layer 4	
Layer 5	
Layer 6	

Foil side

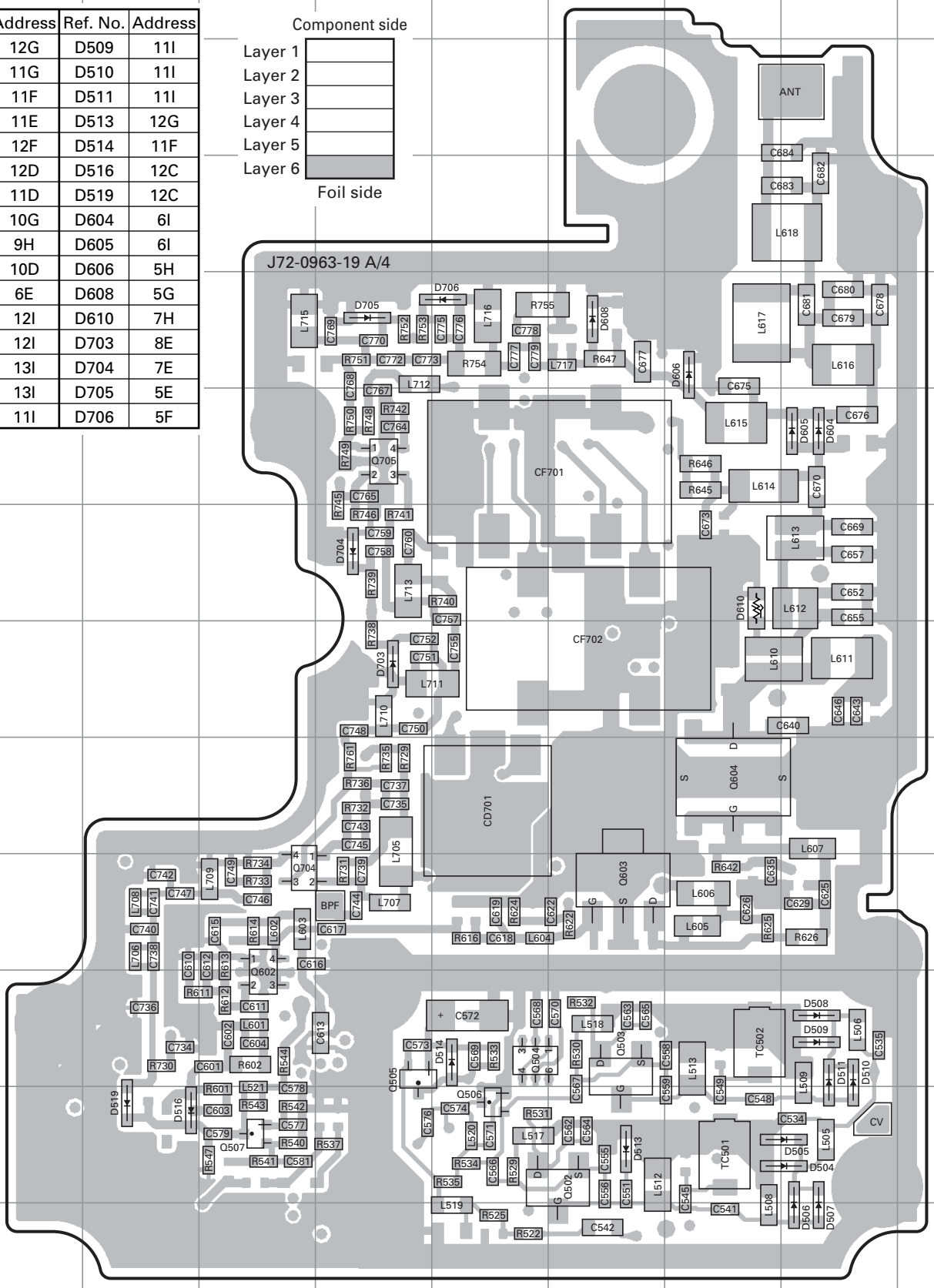
Ref. No.	Address
IC501	11D
IC601	6C
IC701	7E
Q501	12E
Q605	7C
Q607	6C
Q608	7B
Q609	6C
Q701	8F
Q702	6D
Q703	8D
D501	11C
D502	12D
D503	13D
D512	13E
D601	7C
D609	8B
D701	6E
D702	6D
D901	4B

PC BOARD / PC板 TK-2178

TX-RX UNIT (X57-7003-01) (A/4)
Foil side view (J72-0963-19 A/4)

Ref. No.	Address	Ref. No.	Address
Q502	12G	D509	11I
Q503	11G	D510	11I
Q504	11F	D511	11I
Q505	11E	D513	12G
Q506	12F	D514	11F
Q507	12D	D516	12C
Q602	11D	D519	12C
Q603	10G	D604	6I
Q604	9H	D605	6I
Q704	10D	D606	5H
Q705	6E	D608	5G
D504	12I	D610	7H
D505	12I	D703	8E
D506	13I	D704	7E
D507	13I	D705	5E
D508	11I	D706	5F

Component side
Layer 1
Layer 2
Layer 3
Layer 4
Layer 5
Layer 6
Foil side



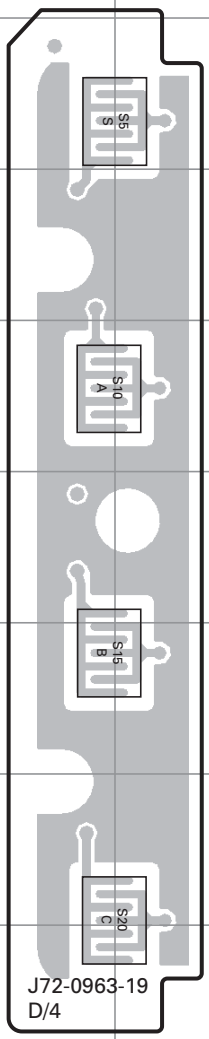
TK-2178 PC BOARD / PC板

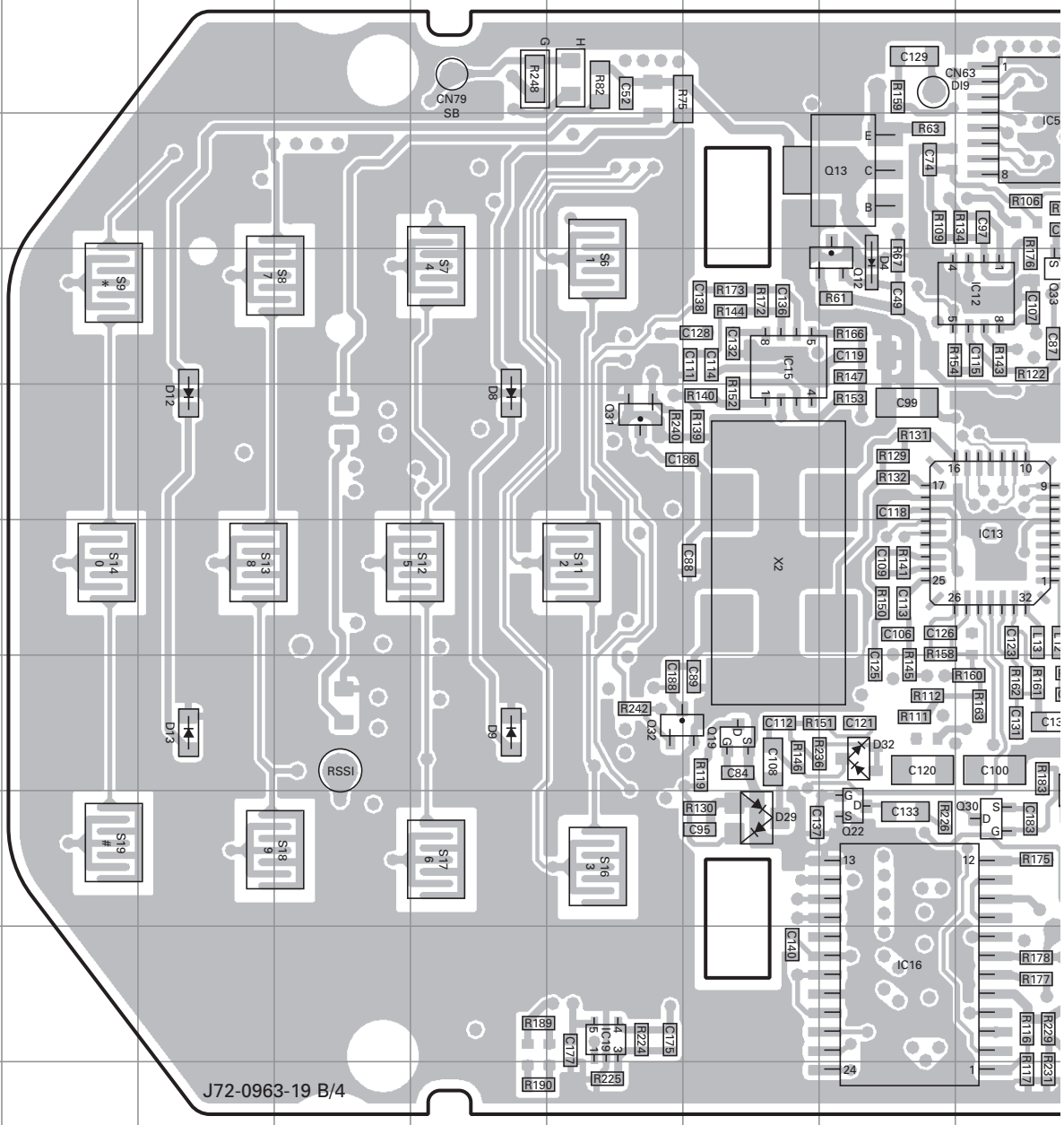
Component side
Layer 1
Layer 2
Layer 3
Layer 4
Layer 5
Layer 6
Foil side

Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC4	6M	IC17	12K	Q23	8N	Q32	10G	D12	8D
IC5	6J	IC18	8M	Q24	7M	Q33	7J	D13	10D
IC11	8K	IC19	12G	Q25	12K	Q35	9M	D29	11H
IC12	7J	Q12	7I	Q26	12K	D4	7I	D30	10K
IC13	9J	Q13	6I	Q27	9M	D5	8N	D31	10J
IC14	9K	Q19	10H	Q28	9N	D7	10N	D32	10I
IC15	7H	Q21	10K	Q30	11J	D8	8F	D33	12N
IC16	12I	Q22	11I	Q31	8G	D9	10F		

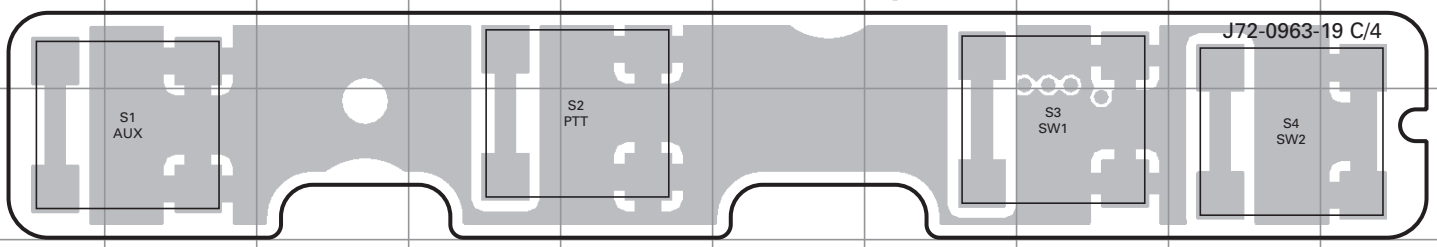
TX-RX UNIT (X57-7003-01) (B/4)
Component side view (J72-0963-19 B/4)

(D/4)

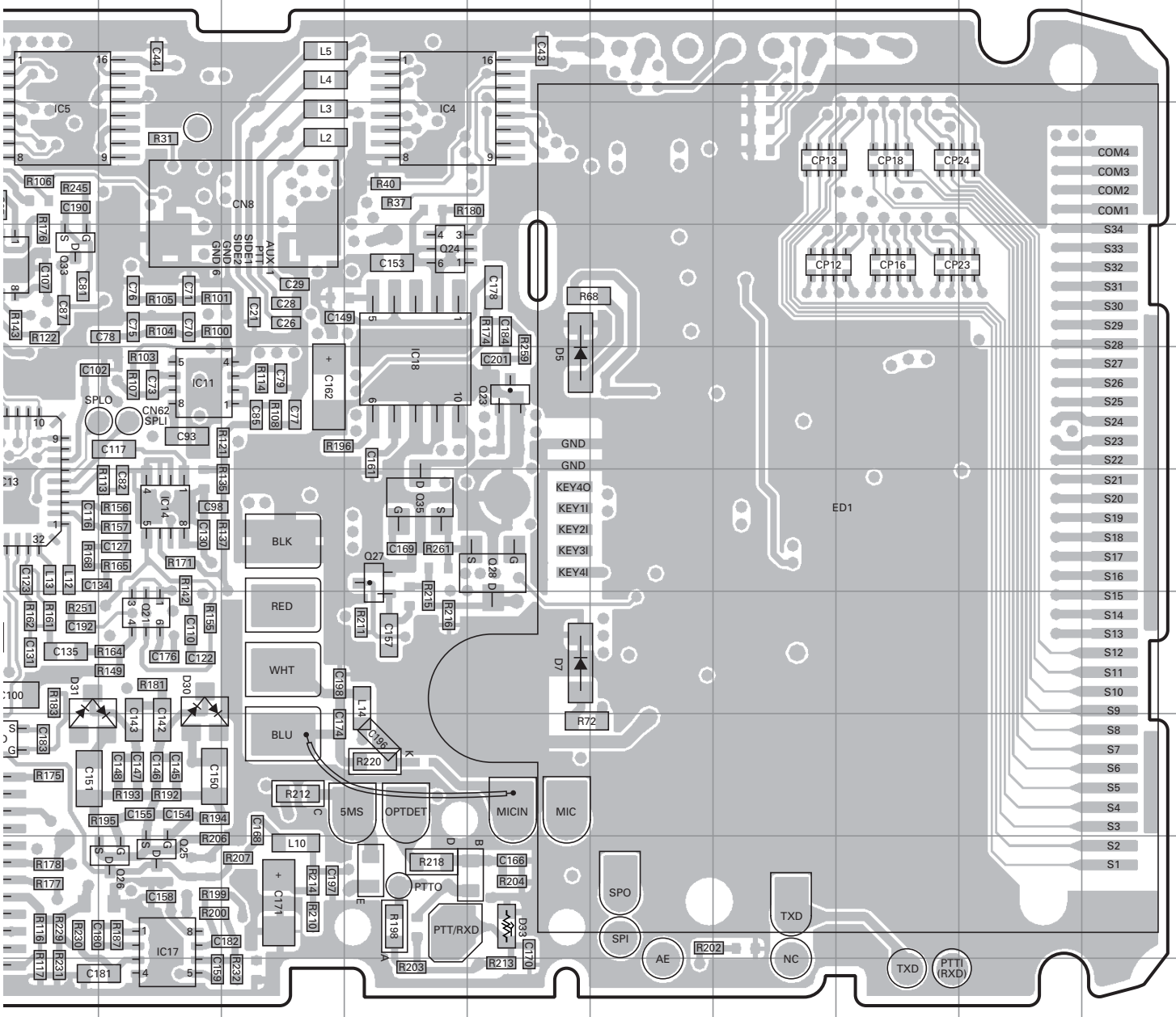




TX-RX UNIT (X57-7003-01) (C/4)
Component side view (J72-0963-19 C/4)



TX-RX UNIT (X57-7003-01) (B/4)
Component side view (J72-0963-19 B/4)



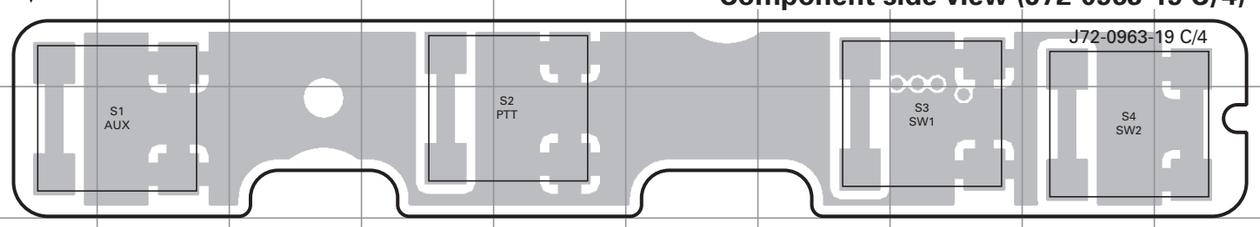
TK-2178 PC BOARD / PC板

PC BOARD / PC板 TK-2178

Component side
Layer 1
Layer 2
Layer 3
Layer 4
Layer 5
Layer 6
Foil side

Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC4	6M	IC17	12K	Q23	8N	Q32	10G	D12	8D
IC5	6J	IC18	8M	Q24	7M	Q33	7J	D13	10D
IC11	8K	IC19	12G	Q25	12K	Q35	9M	D29	11H
IC12	7J	Q12	7I	Q26	12K	D4	7I	D30	10K
IC13	9J	Q13	6I	Q27	9M	D5	8N	D31	10J
IC14	9K	Q19	10H	Q28	9N	D7	10N	D32	10I
IC15	7H	Q21	10K	Q30	11J	D8	8F	D33	12N
IC16	12I	Q22	11I	Q31	8G	D9	10F		

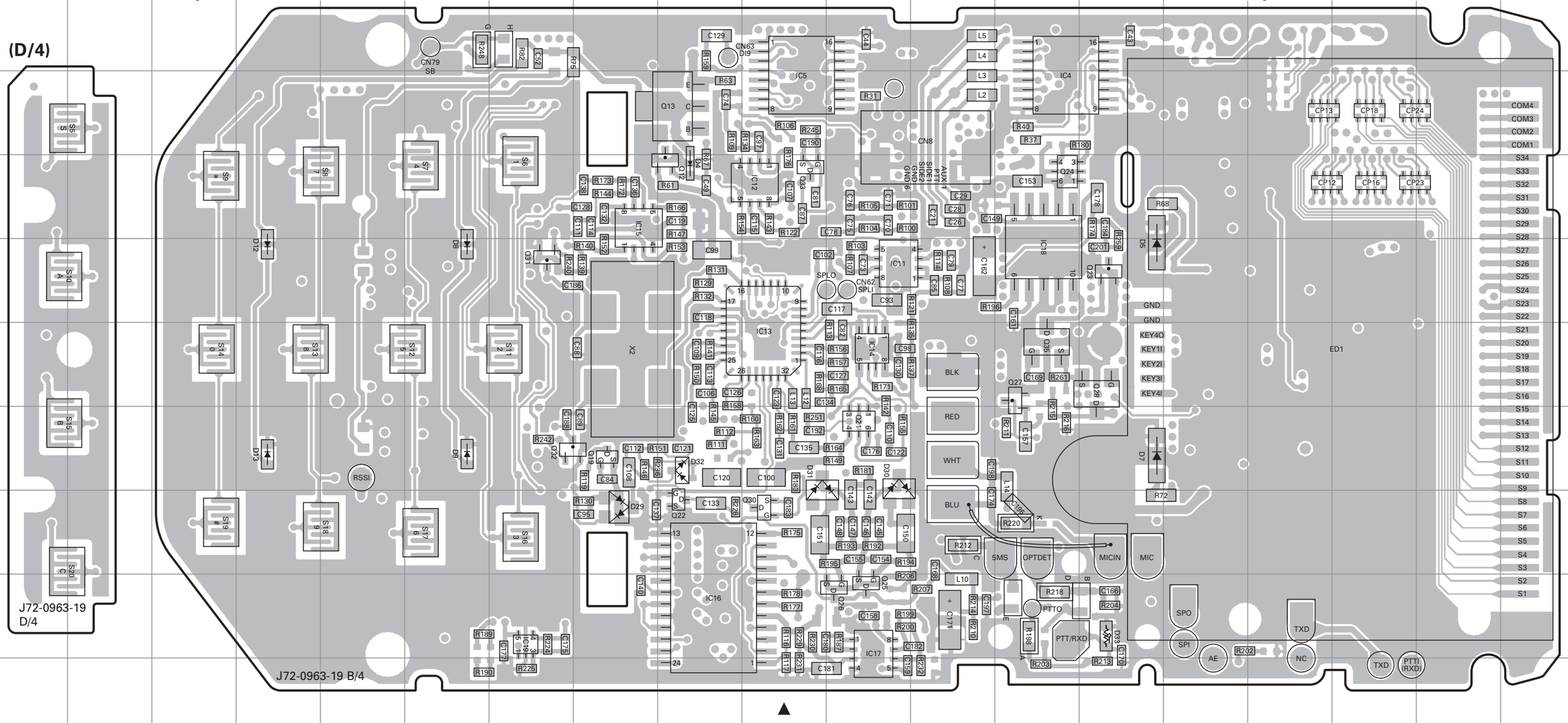
TX-RX UNIT (X57-7003-01) (C/4)
Component side view (J72-0963-19 C/4)



TX-RX UNIT (X57-7003-01) (B/4)
Component side view (J72-0963-19 B/4)

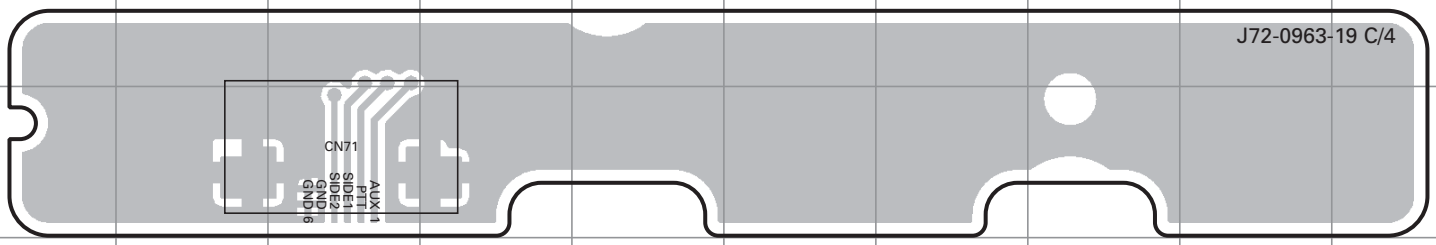
TX-RX UNIT (X57-7003-01) (B/4)
Component side view (J72-0963-19 B/4)

(D/4)

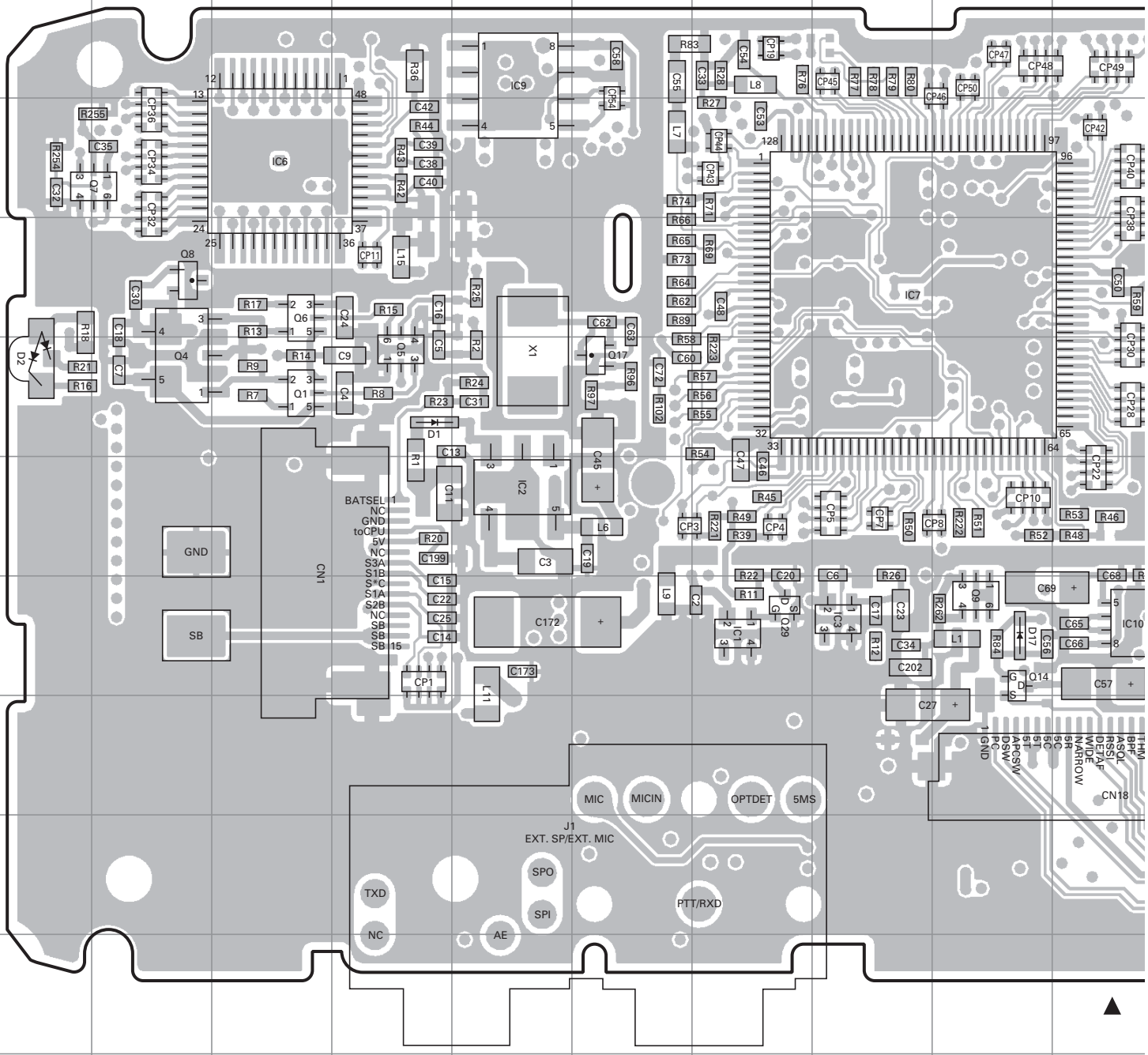


TK-2178 PC BOARD / PC板

TX-RX UNIT (X57-7003-01) (C/4)
Foil side view (J72-0963-19 C/4)



TX-RX UNIT (X57-7003-01) (B/4)
Foil side view (J72-0963-19 B/4)

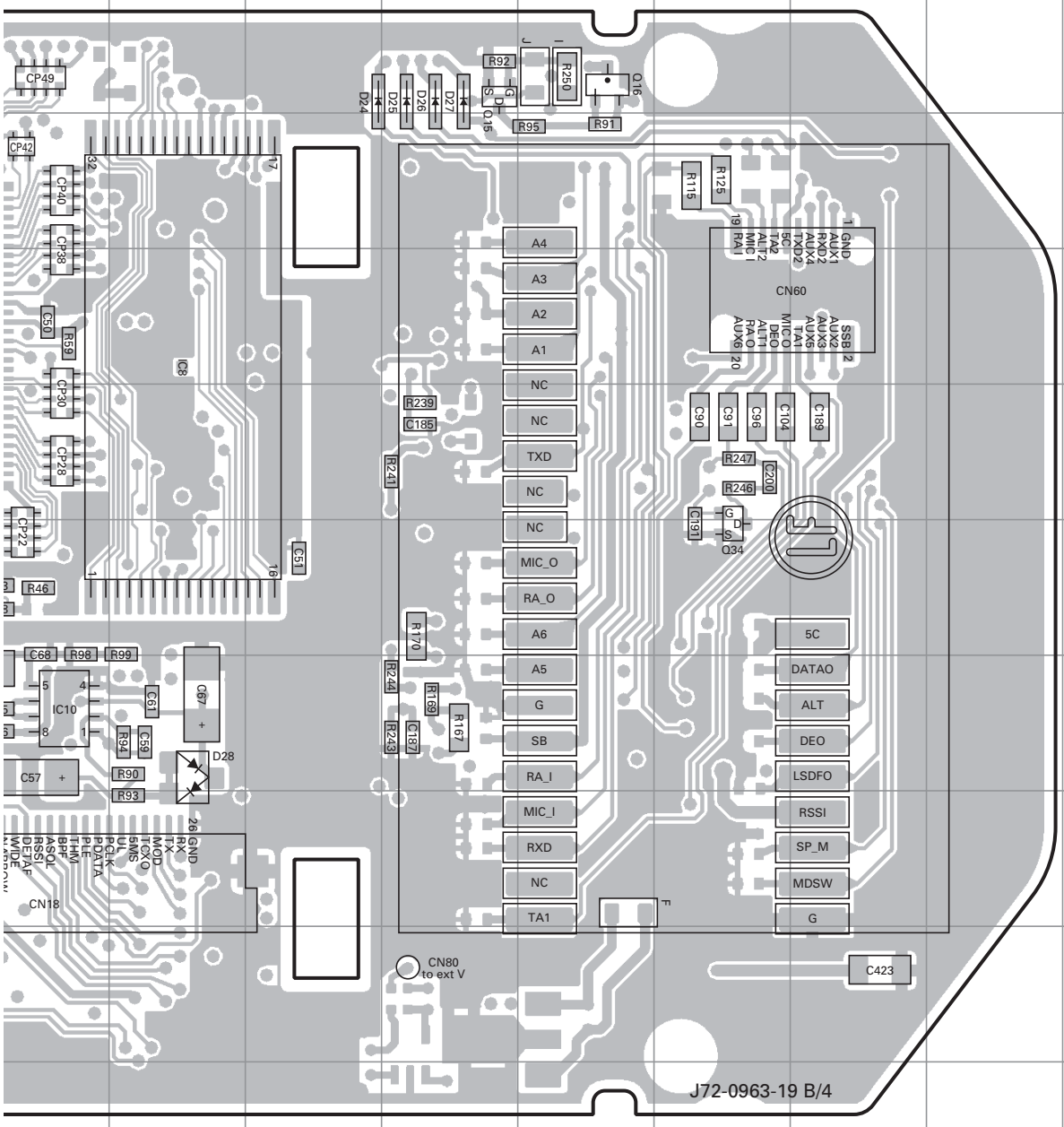


PC BOARD / PC板 TK-2178

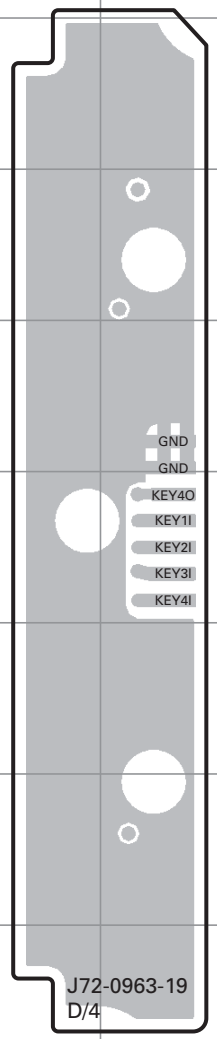
Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC1	10G	Q1	8C	Q15	5M	D24	5L
IC2	9E	Q4	8B	Q16	5N	D25	5M
IC3	10H	Q5	8D	Q17	8F	D26	5M
IC6	6C	Q6	7C	Q29	10G	D27	5M
IC7	7H	Q7	6B	Q34	9O	D28	10K
IC8	7K	Q8	7B	D1	8D		
IC9	5E	Q9	10I	D2	8A		
IC10	10J	Q14	10I	D17	10I		

Component side
Layer 1
Layer 2
Layer 3
Layer 4
Layer 5
Layer 6
Foil side

TX-RX UNIT (X57-7003-01) (B/4)
Foil side view (J72-0963-19 B/4)



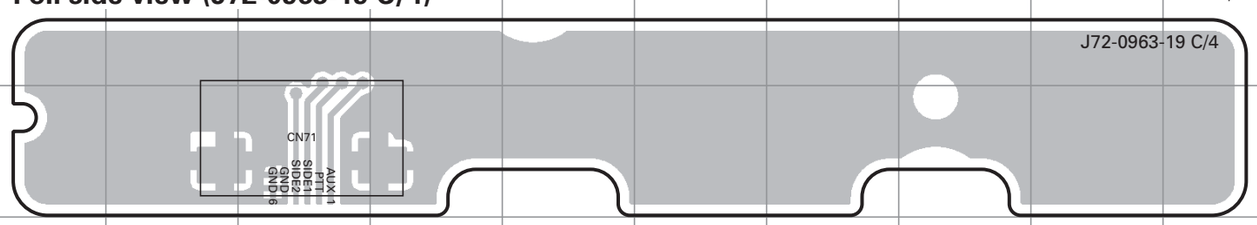
(D/4)



TK-2178 PC BOARD / PC板

PC BOARD / PC板 TK-2178

TX-RX UNIT (X57-7003-01) (C/4)
Foil side view (J72-0963-19 C/4)

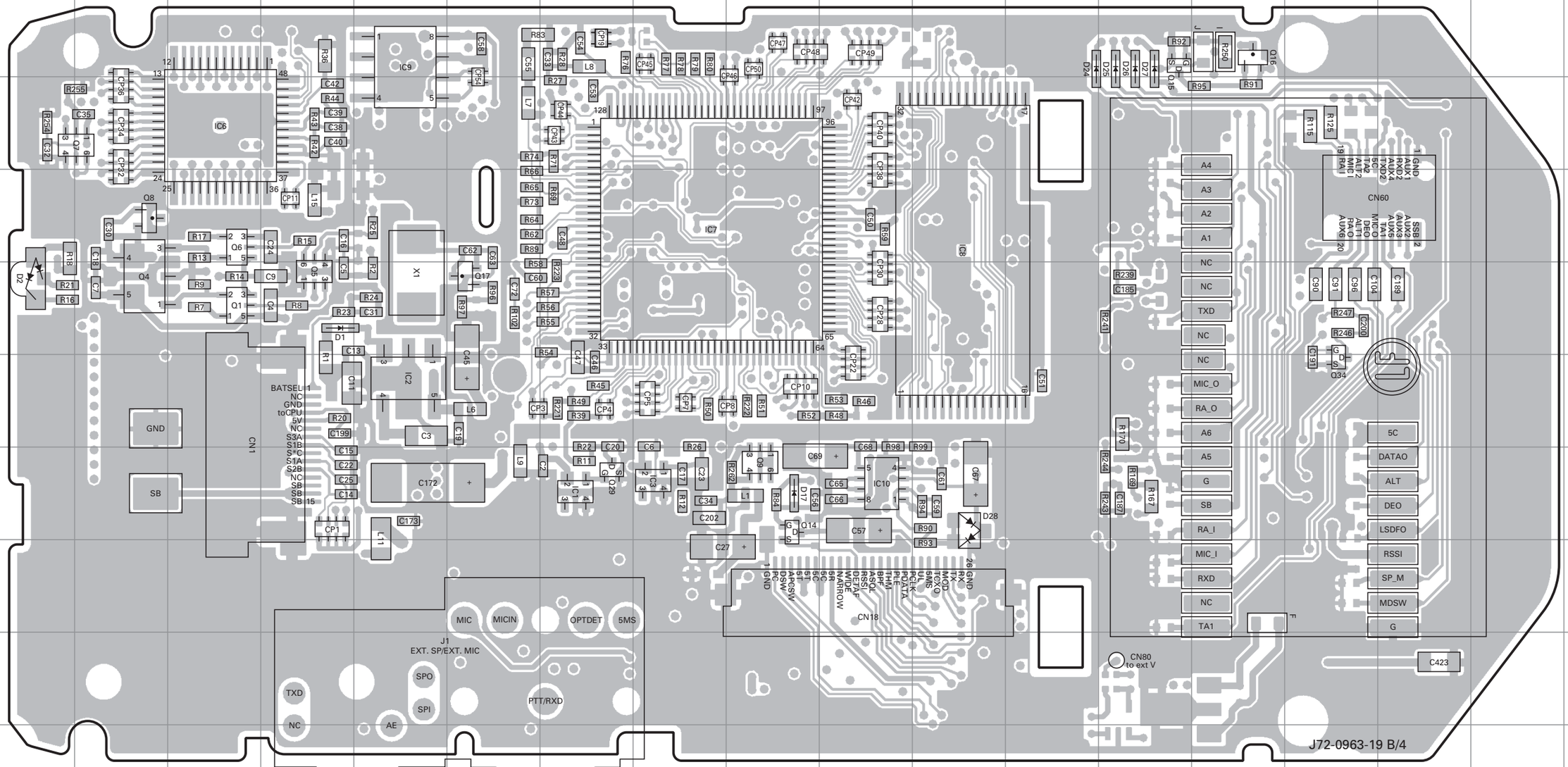


Ref. No.	Address	Ref. No.	Address	Ref. No.	Address	Ref. No.	Address
IC1	10G	Q1	8C	Q15	5M	D24	5L
IC2	9E	Q4	8B	Q16	5N	D25	5M
IC3	10H	Q5	8D	Q17	8F	D26	5M
IC6	6C	Q6	7C	Q29	10G	D27	5M
IC7	7H	Q7	6B	Q34	9O	D28	10K
IC8	7K	Q8	7B	D1	8D		
IC9	5E	Q9	10I	D2	8A		
IC10	10J	Q14	10I	D17	10I		

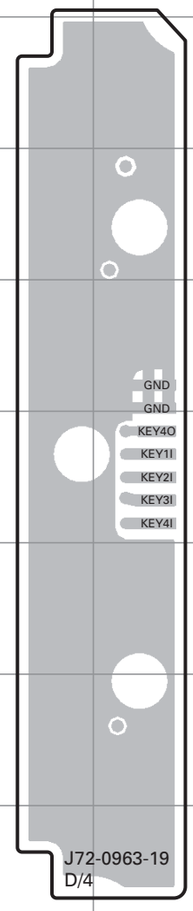
Component side
Layer 1
Layer 2
Layer 3
Layer 4
Layer 5
Layer 6
Foil side

TX-RX UNIT (X57-7003-01) (B/4)
Foil side view (J72-0963-19 B/4)

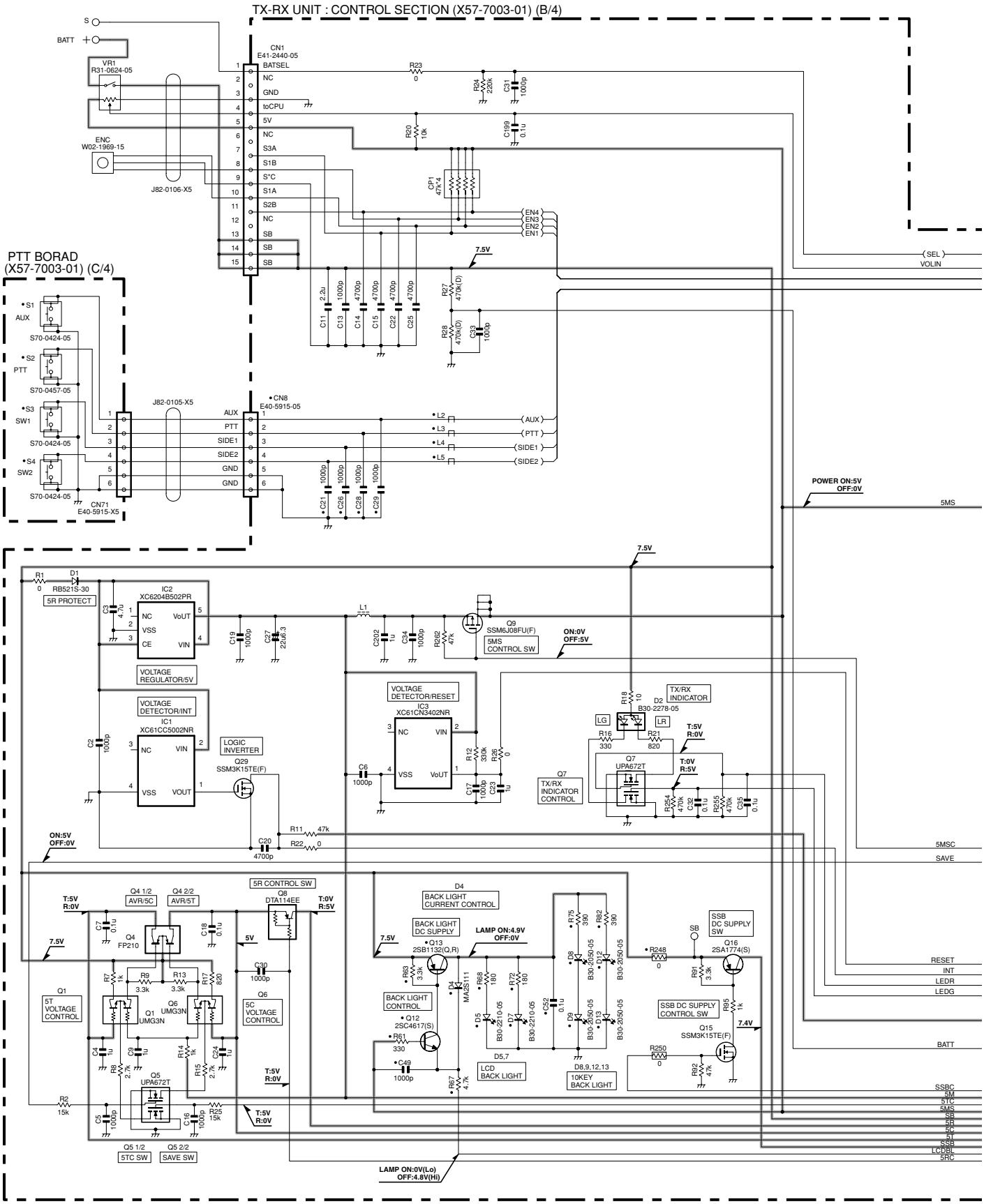
TX-RX UNIT (X57-7003-01) (B/4)
Foil side view (J72-0963-19 B/4)



(D/4)

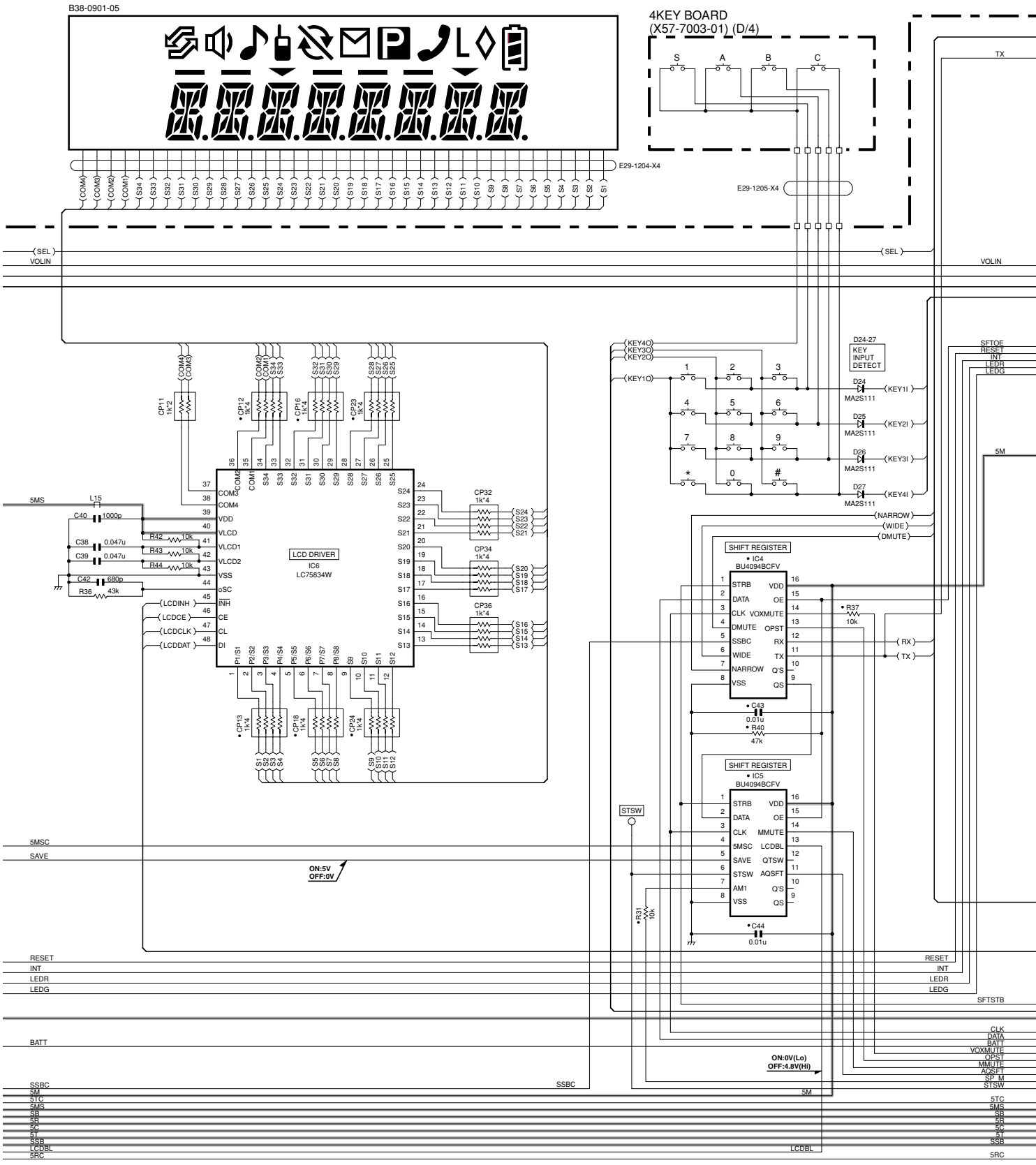


TK-2178 SCHEMATIC DIAGRAM / 原理图



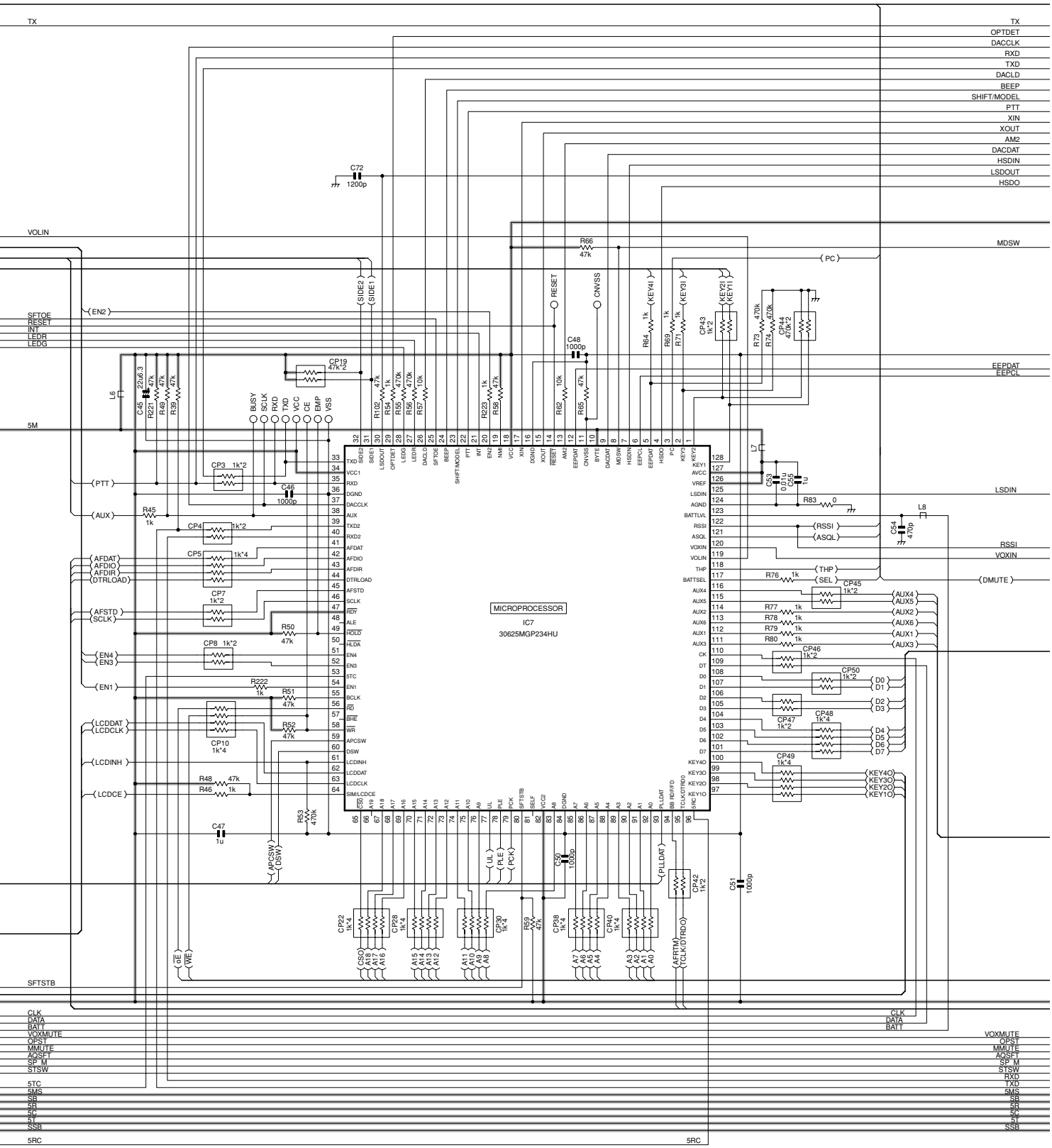
SCHEMATIC DIAGRAM / 原理图 TK-2178

TX-RX UNIT (X57-7003-01) (B/4)



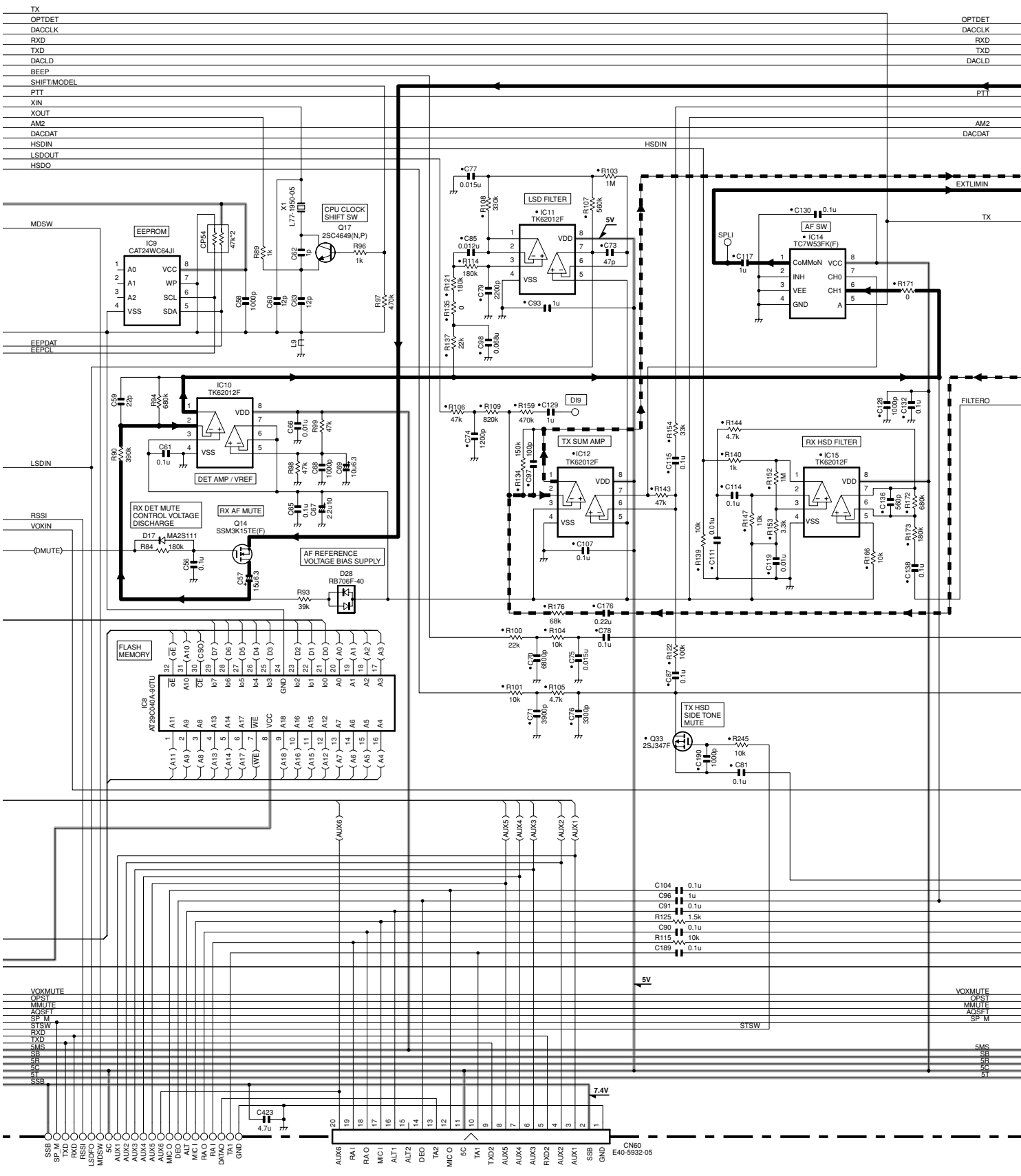
TK-2178 SCHEMATIC DIAGRAM / 原理图

TX-RX UNIT (X57-7003-01) (B/4)



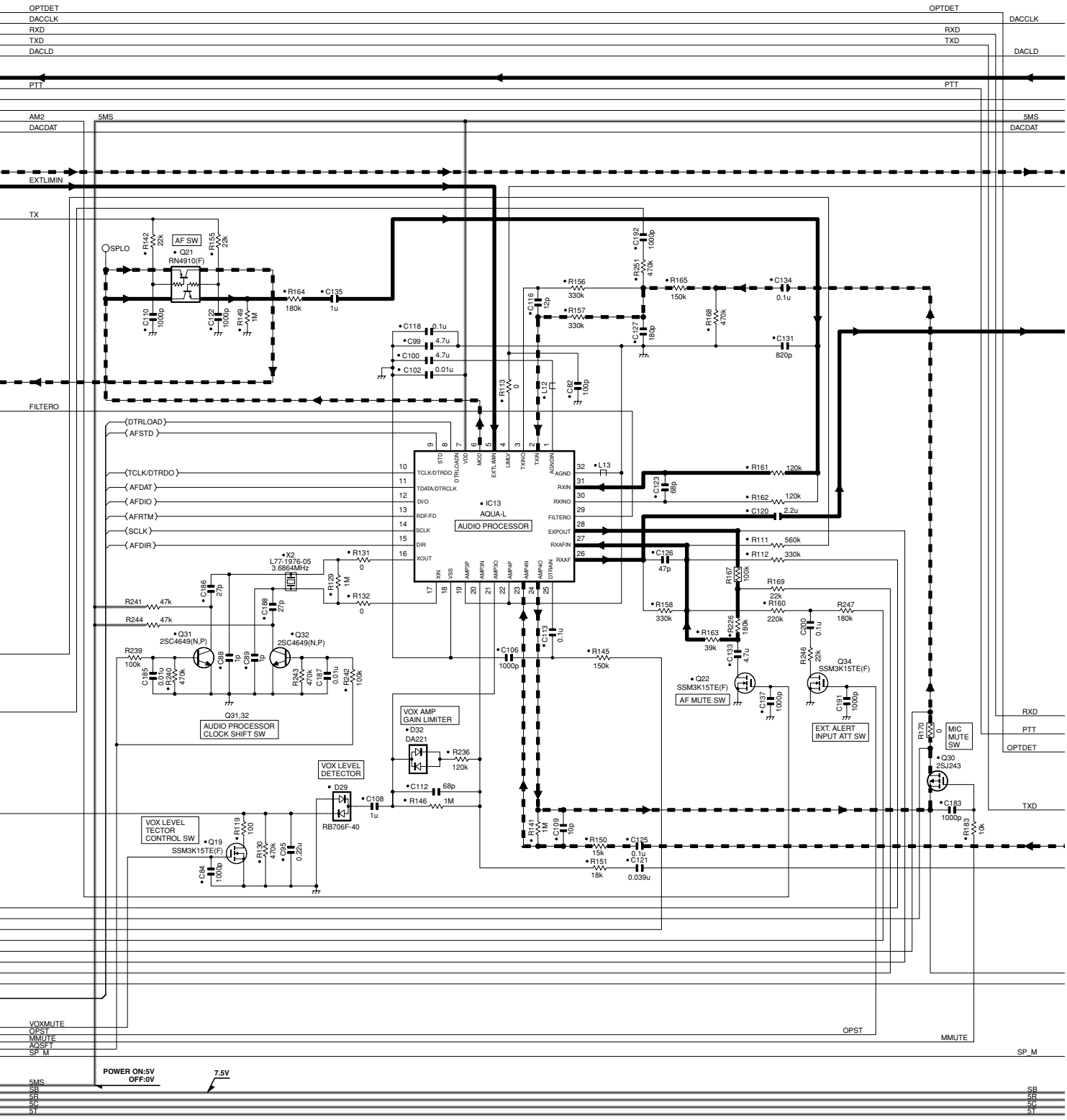
SCHEMATIC DIAGRAM / 原理图 TK-2178

TX-RX UNIT (X57-7003-01) (B/4)



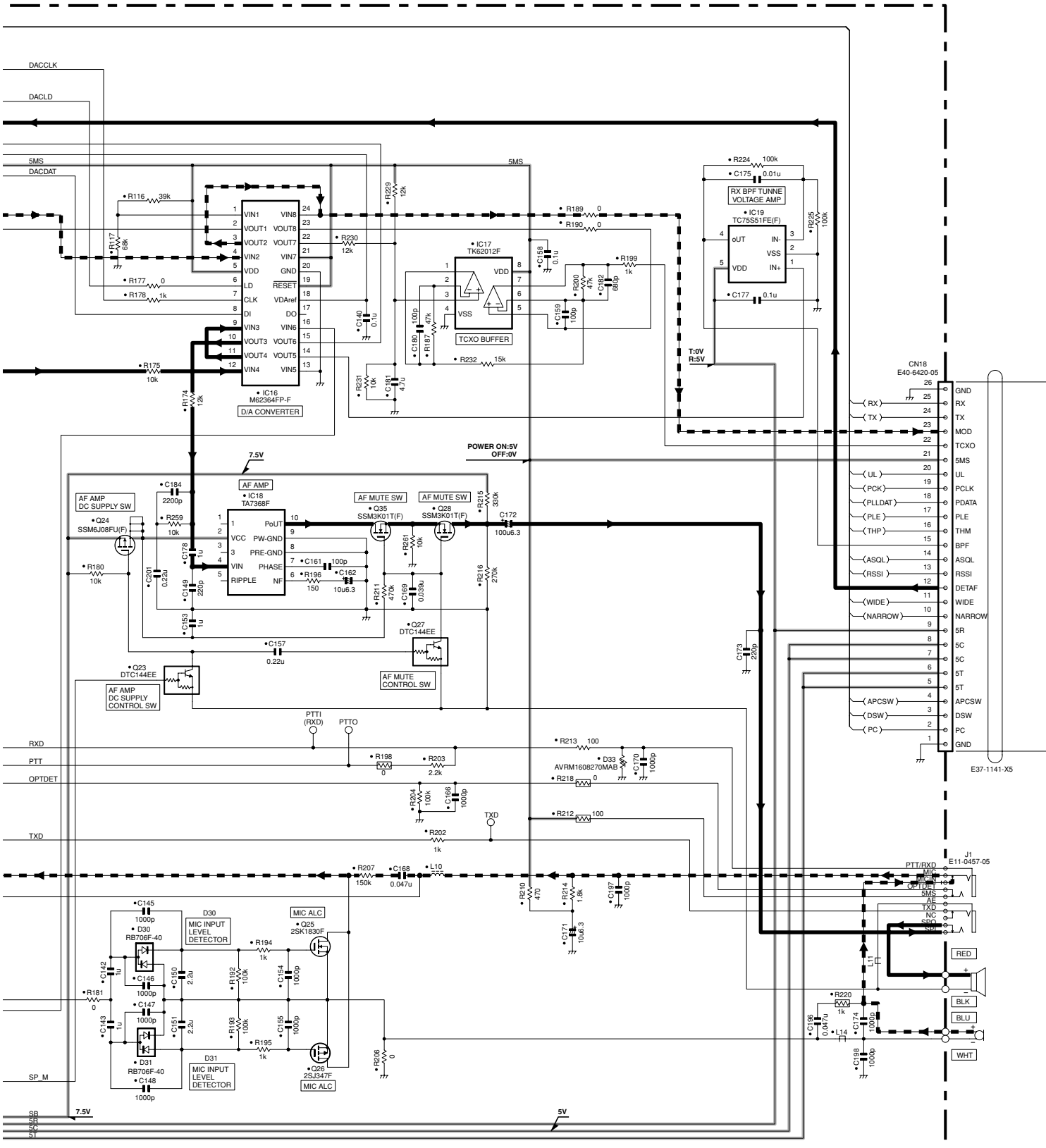
TK-2178 SCHEMATIC DIAGRAM / 原理图

TX-RX UNIT (X57-7003-01) (B/4)

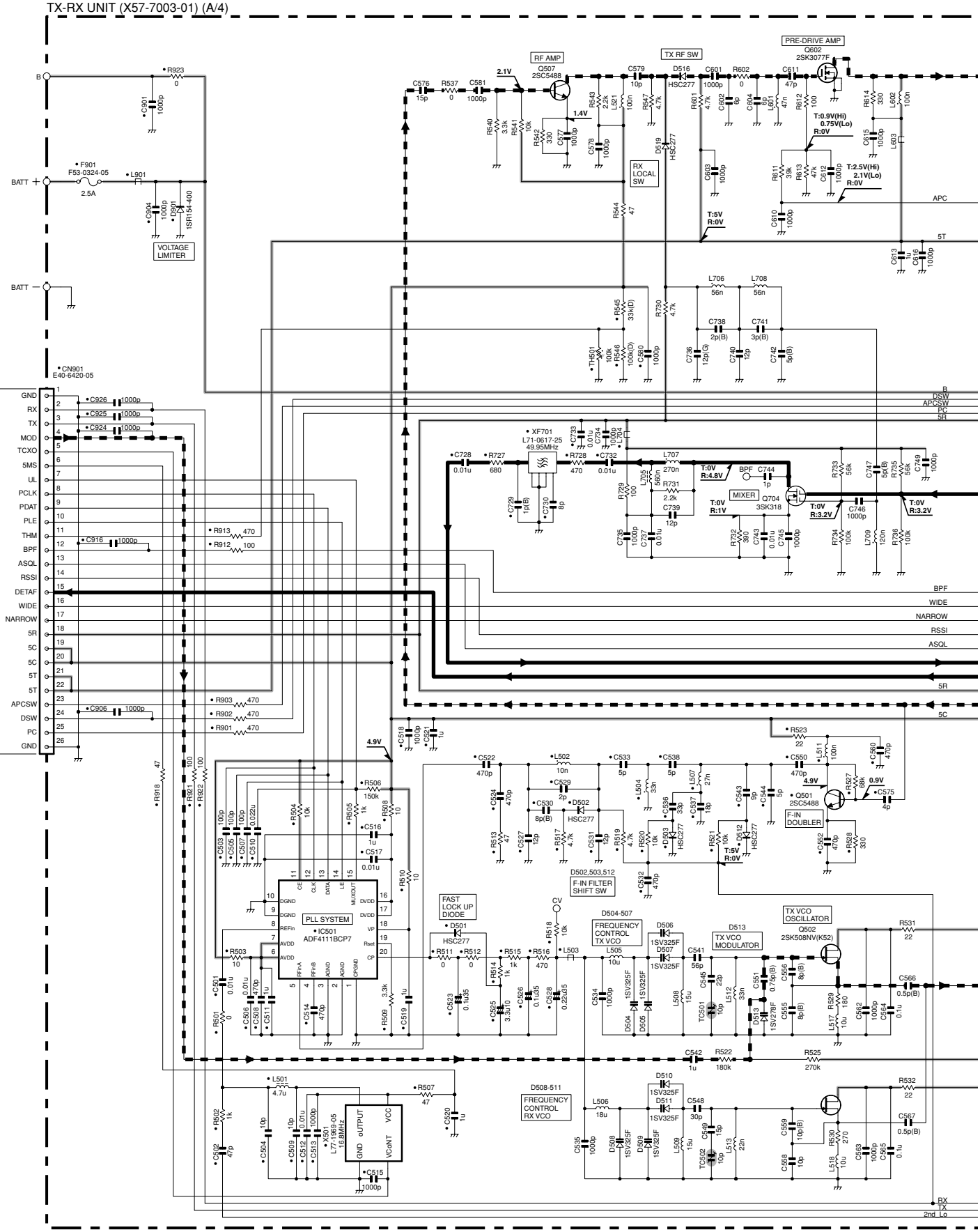


SCHEMATIC DIAGRAM / 原理图 TK-2178

TX-RX UNIT (X57-7003-01) (B/4)

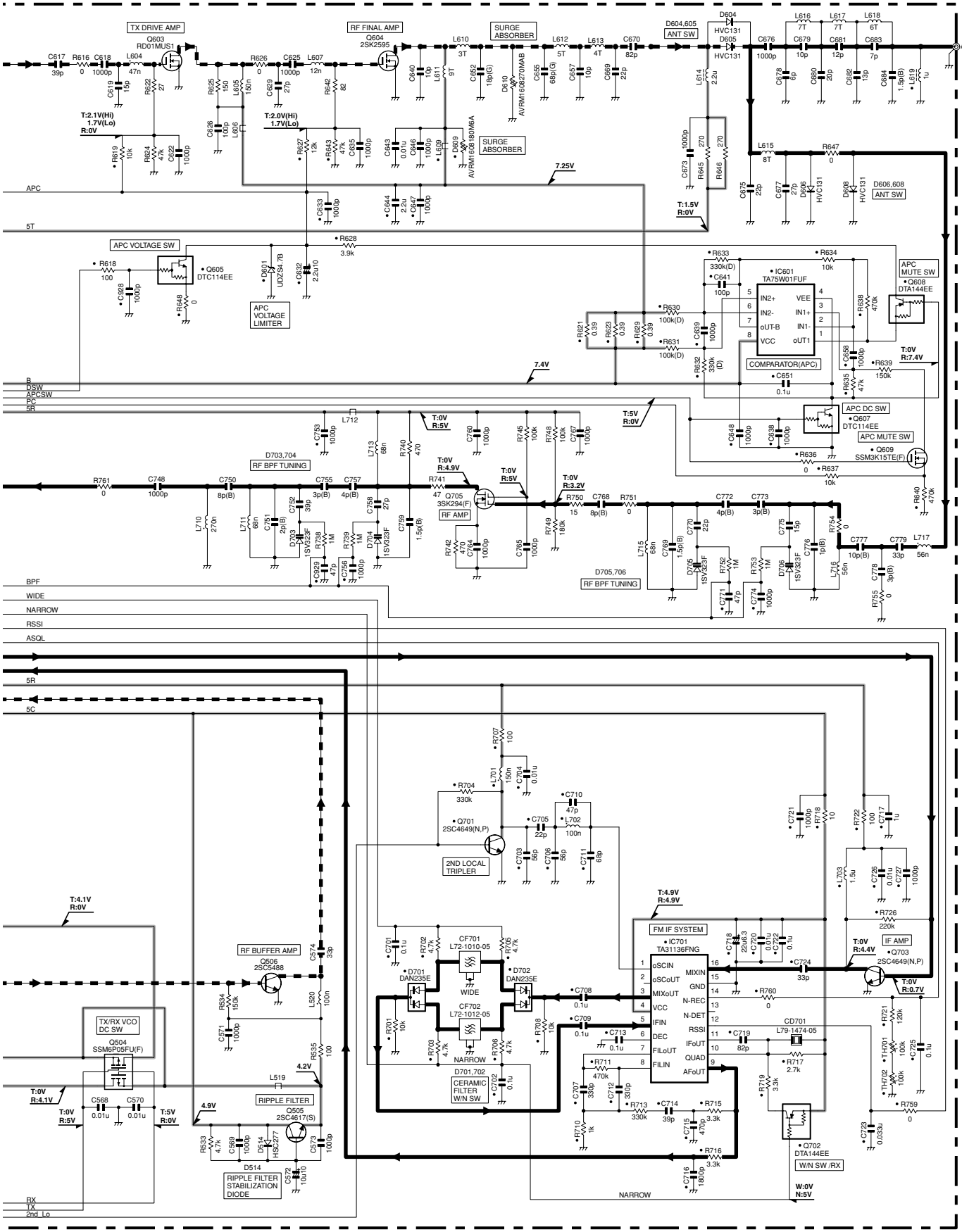


TK-2178 SCHEMATIC DIAGRAM / 原理图

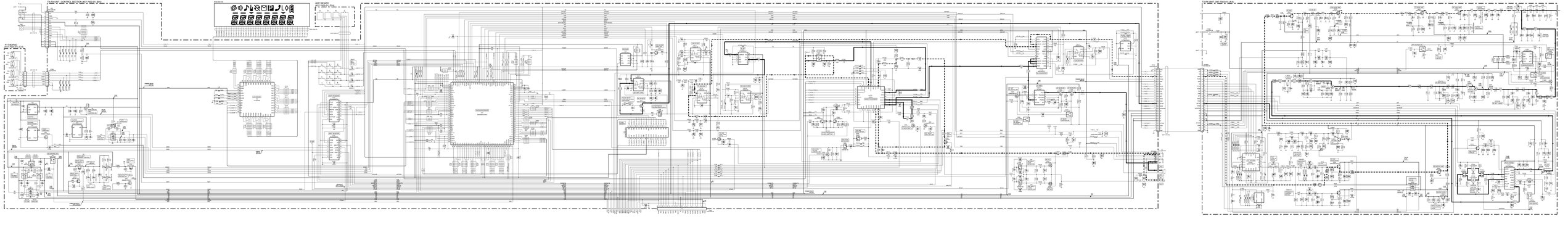


SCHEMATIC DIAGRAM / 原理图 TK-2178

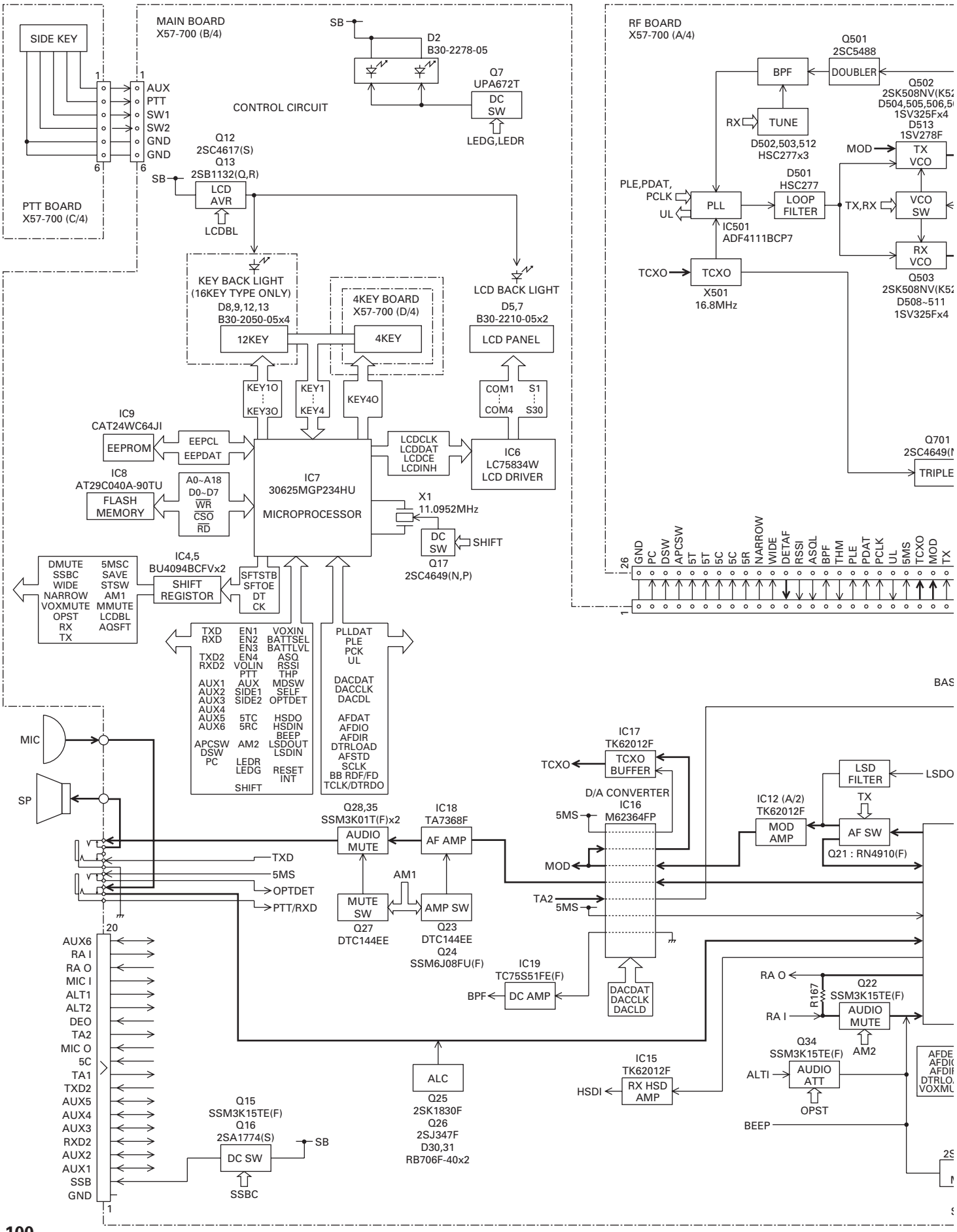
TX-RX UNIT (X57-7003-01) (A/4)

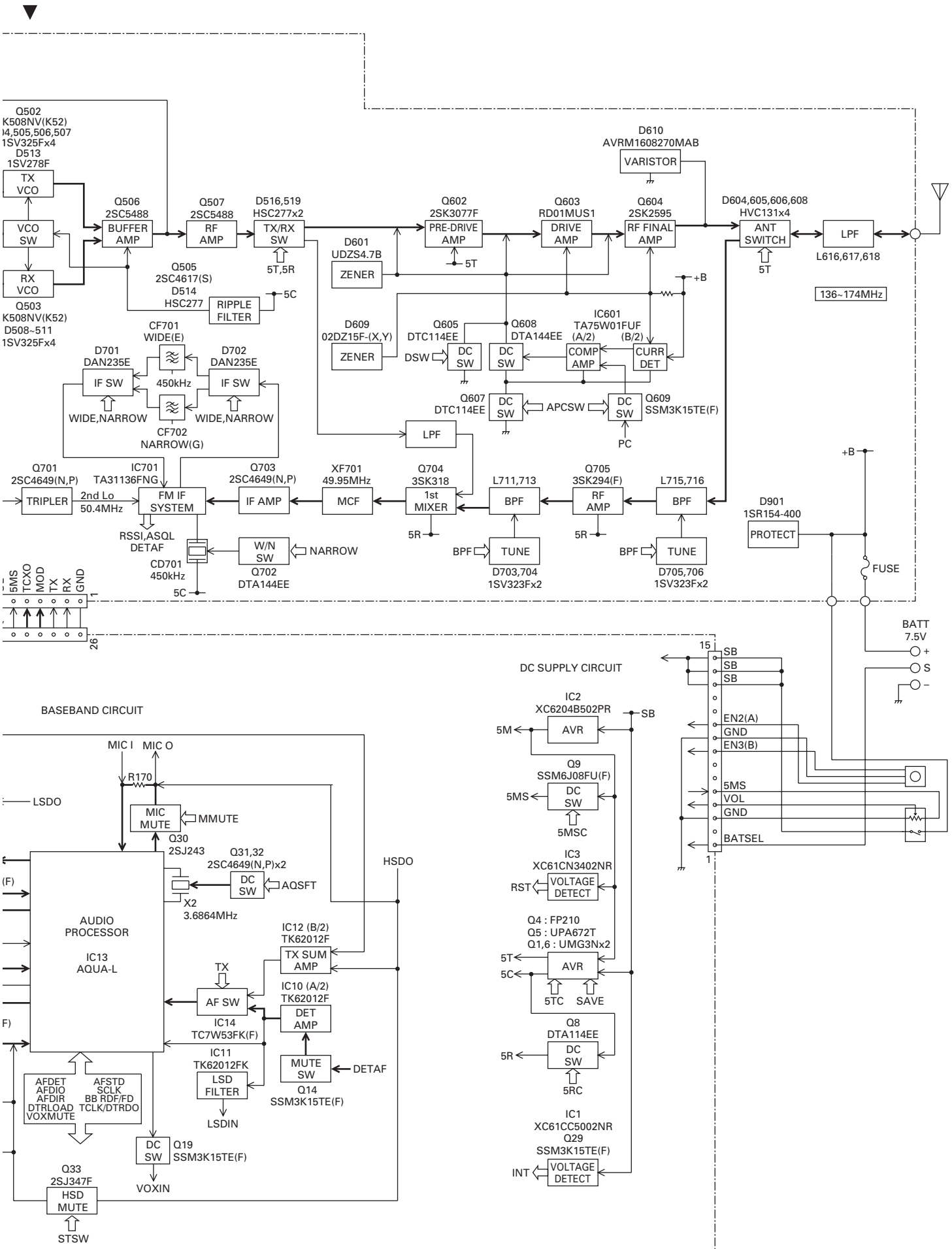


Note : The components marked with a dot (•) are parts of layer 1.

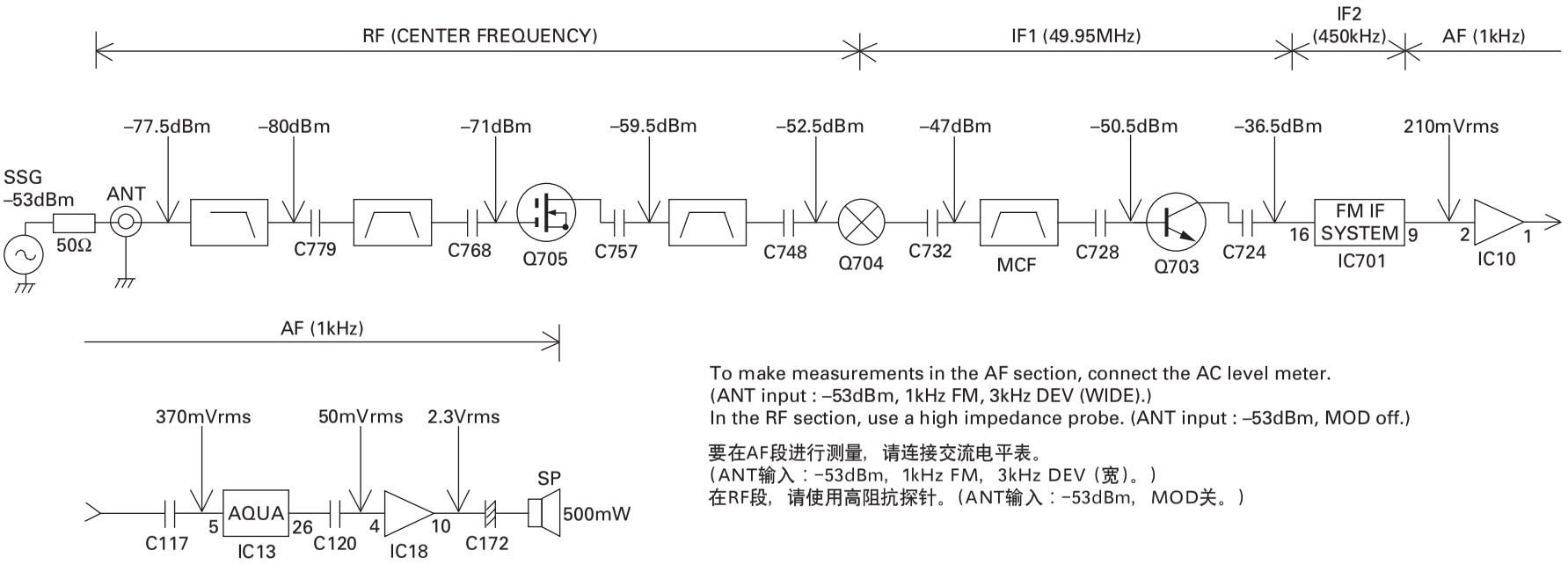


TK-2178 BLOCK DIAGRAM / 方块图




Q502
K508NV(K52)
4,505,506,507
1SV325Fx4
D513
1SV278F
TX VCO
VCO SW
RX VCO
Q503
K508NV(K52)
D508~511
1SV325Fx4
Q506
2SC5488
BUFFER AMP
Q507
2SC5488
RF AMP
D516,519
HSC277x2
TX/RX SW
5T,5R
Q505
2SC4617(S)
D514
HSC277
RIPPLE FILTER
5C
D601
UDZS4.7B
ZENER
Q602
2SK3077F
PRE-DRIVE AMP
5T
Q603
RD01MUS1
DRIVE AMP
Q604
2SK2595
RF FINAL AMP
D610
AVRM1608270MAB
VARISTOR
D604,605,606,608
HVC131x4
ANT SWITCH
5T
LPF
L616,617,618
136~174MHz
+B
CF701
WIDE(E)
D701
DAN235E
IF SW
D702
DAN235E
IF SW
450kHz
WIDE,NARROW
WIDE,NARROW
CF702
NARROW(G)
D609
02DZ15F-(X,Y)
ZENER
Q605
DTC114EE
DSW
DC SW
Q608
DTA144EE
DC SW
IC601
TA75W01FUF
(A/2)
(B/2)
COMP AMP
CURR DET
Q607
DTC114EE
DC SW
APCSW
DC SW
Q609
SSM3K15TE(F)
PC
LPF
Q701
2SC4649(N,P)
TRIPLER
2nd Lo
50.4MHz
IC701
TA31136FNG
FM IF SYSTEM
RSSI,ASQL
DETAF
CD701
450kHz
5C
Q703
2SC4649(N,P)
IF AMP
W/N SW
NARROW
Q702
DTA144EE
XF701
49.95MHz
MCF
Q704
3SK318
1st MIXER
5R
L711,713
BPF
BPF
TUNE
D703,704
1SV323Fx2
Q705
3SK294(F)
RF AMP
5R
L715,716
BPF
BPF
TUNE
D705,706
1SV323Fx2
+B
D901
1SR154-400
PROTECT
FUSE
5MS
TCXO
MOD
TX
RX
GND
1
26
BATT
7.5V
+
S
–
15
SB
SB
SB
EN2(A)
GND
EN3(B)
5MS
VOL
GND
BATSEL
1
BASEBAND CIRCUIT
MIC I
MIC O
R170
LSDO
MIC MUTE
MMUTE
Q30
2SJ243
Q31,32
2SC4649(N,P)x2
DC SW
AQSFT
X2
3.6864MHz
HSDO
AUDIO PROCESSOR
IC13
AQUA-L
IC12 (B/2)
TK62012F
TX SUM AMP
TX
AF SW
IC10 (A/2)
TK62012F
DET AMP
IC14
TC7W53FK(F)
IC11
TK62012FK
LSD FILTER
LSDIN
MUTE SW
DETAF
Q14
SSM3K15TE(F)
AFDET
AFDIO
AFDIR
DTRLOAD
VOXMUTE
AFSTD
SCLK
BB RDF/FD
TCLK/DTRDO
DC SW
Q19
SSM3K15TE(F)
VOXIN
Q33
2SJ347F
HSD MUTE
STSW
DC SUPPLY CIRCUIT
IC2
XC6204B502PR
SB
5M
AVR
Q9
SSM6J08FU(F)
5MS
DC SW
5MSC
IC3
XC61CN3402NR
RST
VOLTAGE DETECT
Q4 : FP210
Q5 : UPA672T
Q1,6 : UMG3Nx2
5T
5C
AVR
5TC
SAVE
Q8
DTA114EE
5R
DC SW
5RC
IC1
XC61CC5002NR
Q29
SSM3K15TE(F)
INT
VOLTAGE DETECT

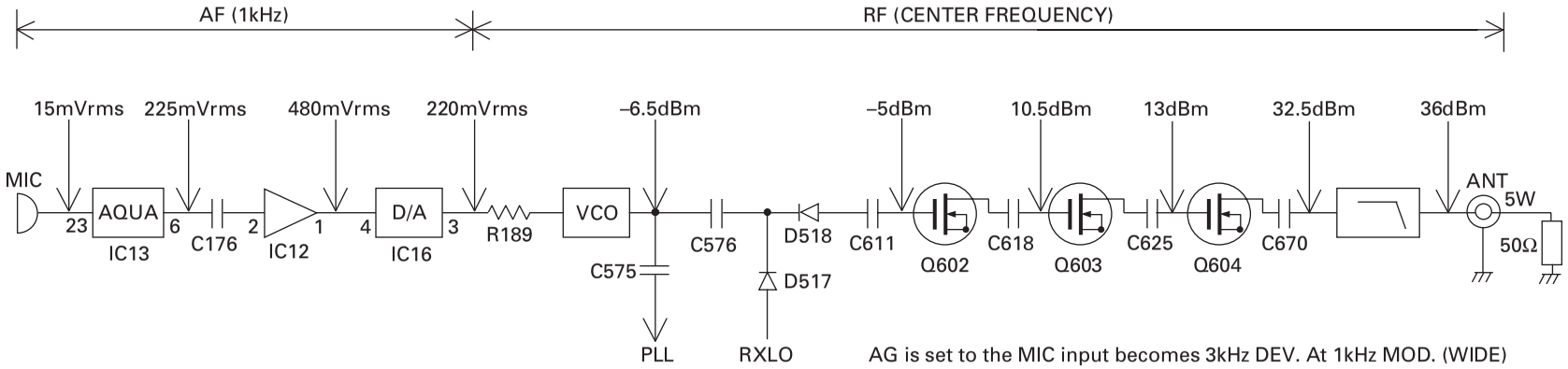
Receiver Section / 接收部



To make measurements in the AF section, connect the AC level meter.
(ANT input : –53dBm, 1kHz FM, 3kHz DEV (WIDE).)
In the RF section, use a high impedance probe. (ANT input : –53dBm, MOD off.)

要在AF段进行测量，请连接交流电平表。
（ANT输入：–53dBm，1kHz FM，3kHz DEV（宽）。）
在RF段，请使用高阻抗探针。（ANT输入：–53dBm，MOD关。）

Transmitter Section / 发射部



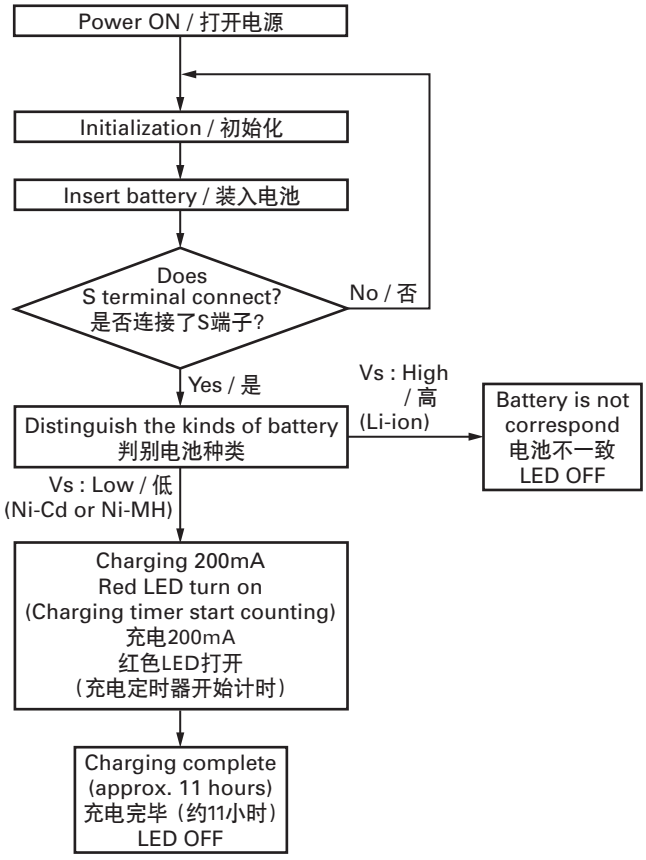
AG is set to the MIC input becomes 3kHz DEV. At 1kHz MOD. (WIDE)
To make measurements in the AF section, connect the AC level meter.
In the RF section, use a 1000pF coupling capacitor.

AG被设为麦克风输入，为3kHz频偏。在1kHz调制。（宽）
要在AF段进行测量，请连接交流电平表。
在RF段，请使用1000pF耦合电容。

KSC-30 (RAPID CHARGER / 快速充电器)

External View / 外视图

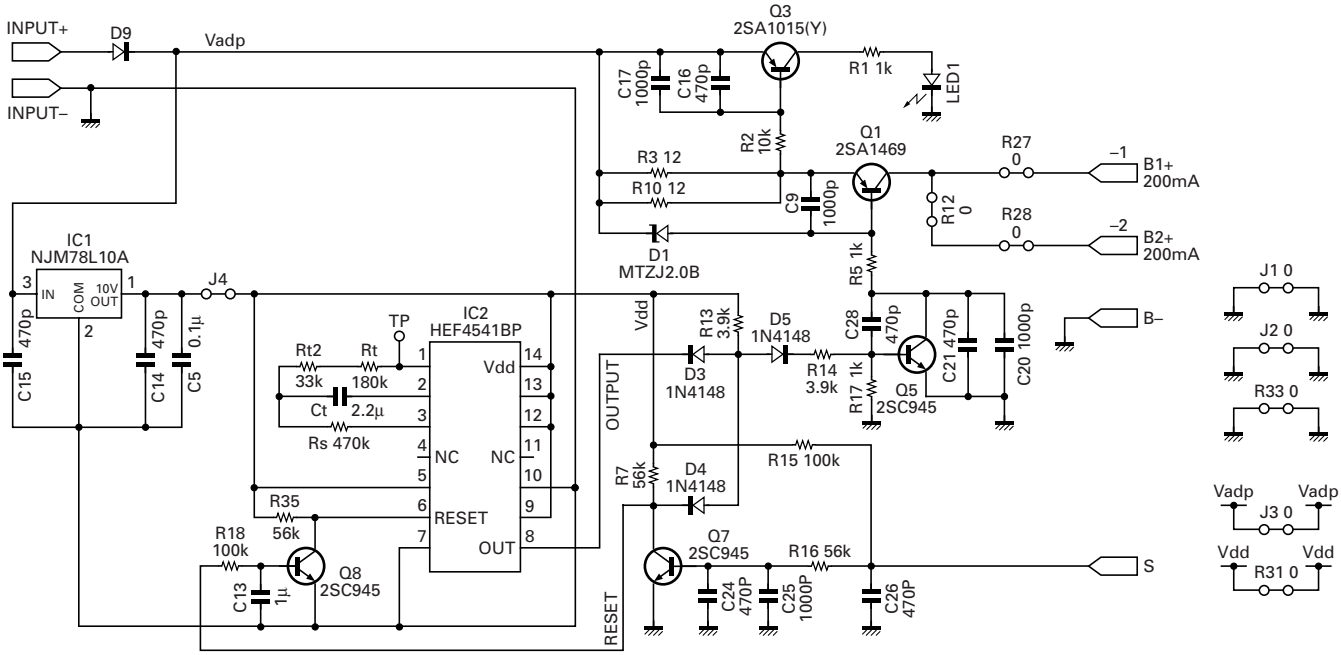
Operating Flow Chart / 操作流程图



Parts List / 零件表

Ref. No.	New parts	Parts No.	Description	Destination
		A02-3656-08	Cabinet Bottom	
		A02-3841-08	Cabinet Upper	
		B43-1151-08	Badge	
		B62-1754-08	Instruction manual	K,T
		B62-1755-08	Instruction manual	E
		B72-2209-08	Model name plate	
		E03-0453-08	DC jack	
		E23-1190-08	Relay terminal	
		G13-1547-08	Cushion	
		N83-2610-45	Pan head taptite screw	
		W02-3671-08	Electric circuit module	
		W08-0479-05	AC adapter 120V AC 60Hz	K
		W08-0513-05	AC adapter 230V AC 50Hz	T
		W08-0558-15	AC adapter 230V AC 50Hz	E

Schematic Diagram / 原理图



SPECIFICATIONS

GENERAL

Frequency range ..... 136~174MHz
Number of channels ..... Zone : Max. 128 per radio Conv. Ch : Max. 128 per zone
Channel spacing ..... Wide : 25, 30kHz Narrow : 12.5, 15kHz
Battery voltage ..... 7.5V DC ±20%
Battery life (5-5-90 duty cycle)/Approx. hours
  KNB-24L (1400mAh) 9
  KNB-25A (1200mAh) 8
  KNB-26N (2000mAh) 12
  KNB-35L (1950mAh) 11
Operating temperature range ..... –22°F~+140°F (–30°C~+60°C)
Frequency stability ..... ±0.00025% (–22°F~+140°F)
Antenna impedance 50Ω
Channel frequency spread 38MHz
Dimensions (W x H x D) ..... 2-7/32 x 4-9/32 x 1-1/4 in. (56 x 109 x 31.7 mm) with KNB-24L or 35L battery
(Projections not included) 2-7/32 x 4-9/32 x 1-1/2 in. (56 x 109 x 37.9 mm) with KNB-25A or 26N battery
Weight (net) ..... 12.0 oz. (340 g) with battery (KNB-35L), antenna (KRA-22) and beltclip (KBH-12)

RECEIVER (Measurements made per EIA/TIA-603)

Sensitivity (12dB SINAD) ..... Wide : 0.25μV Narrow : 0.28μV
Selectivity ..... Wide : 70dB Narrow : 65dB
Intermodulation distortion ..... Wide : 65dB Narrow : 60dB
Spurious response 65dB
Audio output (8Ω impedance) ..... 500mW with less than 10% distortion

TRANSMITTER (Measurements made per EIA/TIA-603)

RF power output ..... HI : 5W LO : 1W
Spurious response 70dB
Modulation ..... Wide : 16K0F3E Narrow : 11K0F3E
FM hum & noise ..... Wide : 45dB Narrow : 43dB
Audio distortion ..... W/N : Less than 5%

规　　格

概　　述

频率范围 ..... 136~174MHz
频 道 数 最大128
区 域 数 最大128
信道间距 ..... 宽：25, 30kHz　　窄：12.5, 15kHz
电池电压 ..... 7.5V DC ± 20%
电池寿命 (5-5-90工作周期)
　KNB-24L (1400mAh) 约9时间
　KNB-25A (1200mAh) 约8时间
　KNB-26N (2000mAh) 约12时间
　KNB-35L (1950mAh) 约11时间
温度范围 ..... －30℃到 + 60℃
频率稳定性 ..... ± 0.00025% (－ 30℃到 + 60℃)
阻　　抗 50Ω
信道频率扩展 38MHz
尺寸 (宽 × 高 × 长)
　带有KNB-24L或KNB-35L ..... 56 × 109 × 31.7 mm
　带有KNB-25A或KNB-26N ..... 56 × 109 × 37.9 mm
重量 (带有KNB-35L, KRA-22和KBH-12) 340g

接收部 (根据EIA标准EIA/TIA-603测定)

灵敏度 (EIA 12dB SINAD) ..... 宽：0.25μV　　窄：0.28μV
选 择 性 ..... 宽：70dB　　窄：65dB
互　　调 ..... 宽：65dB　　窄：60dB
杂散响应抗扰性 65dB
音频功率输出 8Ω时500mW, 失真低于10%

发射部 (根据EIA标准EIA/TIA-603测定)

射频功率输出 ..... 高：5W　　低：1W
杂散射频分量 70dB
调　　制 ..... 宽：16K0F3E　　窄：11K0F3E
FM噪音 ..... 宽：45dB　　窄：43dB
音频失真 低于5%

TK-2178

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