

KENWOOD

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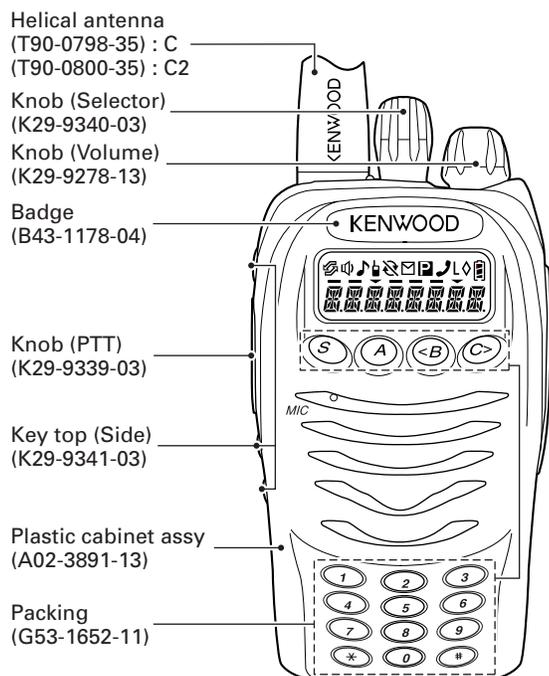
TK-3178

SERVICE MANUAL / 维修手册

KENWOOD

Kenwood Corporation

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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

GENERAL	2	ADJUSTMENT	68
SYSTEM SET-UP	3	TERMINAL FUNCTION	84
REALIGNMENT	4	PC BOARD	
DISASSEMBLY FOR REPAIR	40	TX-RX UNIT (X57-7013-XX) (A/4)	86
CIRCUIT DESCRIPTION	43	TX-RX UNIT (X57-7013-XX) (B,C,D/4)	88
SEMICONDUCTOR DATA	52	SCHEMATIC DIAGRAM	92
COMPONENTS DESCRIPTION	55	BLOCK DIAGRAM	100
PARTS LIST	58	LEVEL DIAGRAM	102
EXPLODED VIEW	66	KSC-30 (RAPID CHARGER)	103
PACKING	67	SPECIFICATIONS	104



目 录

概 述	2	调 整	69
系统体系	3	端子功能	85
模式组合	4	PC板	
维修拆卸	40	TX-RX单元 (X57-7013-XX) (A/4)	86
电路说明	43	TX-RX单元 (X57-7013-XX) (B,C,D/4)	88
半导体数据	52	原 理 图	92
元件说明	55	方 块 图	100
零 件 表	58	电 平 图	102
部件分解图	66	KSC-30 (快速充电器)	103
包 装	67	规 格	105

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

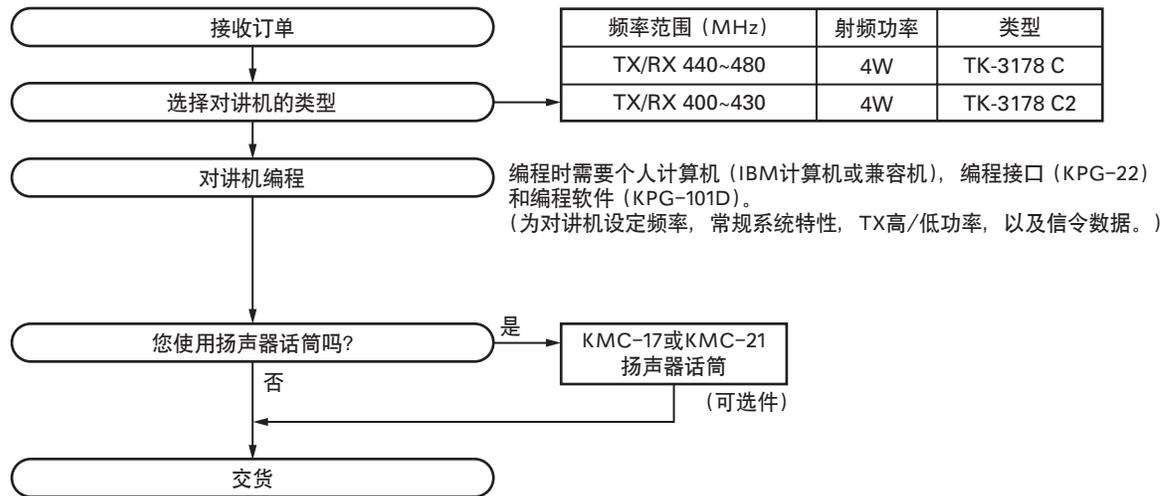
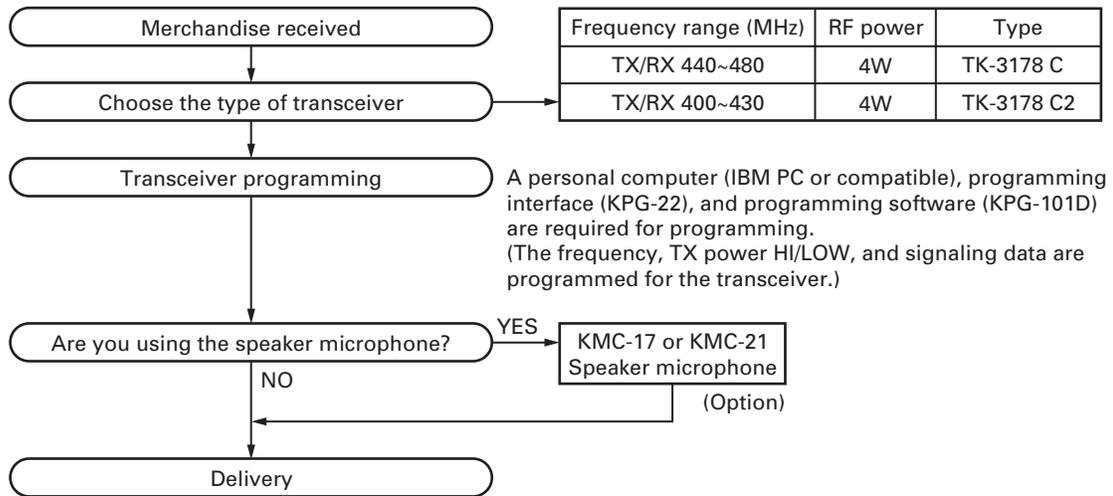
为了个人的安全,请注意下列事项:

- 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

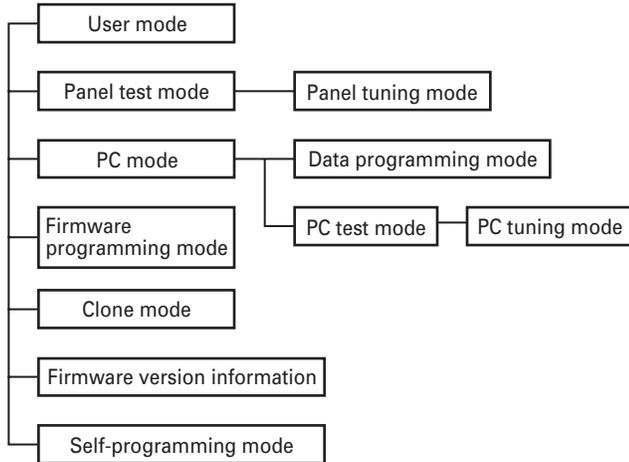
为了便于维修本设备,建立了完整的维修服务体系,提供了包括原理图,印刷电路板图和调整步骤在内的资料供参考。

SYSTEM SET-UP / 系统体系



REALIGNMENT / 模式组合

1. Modes

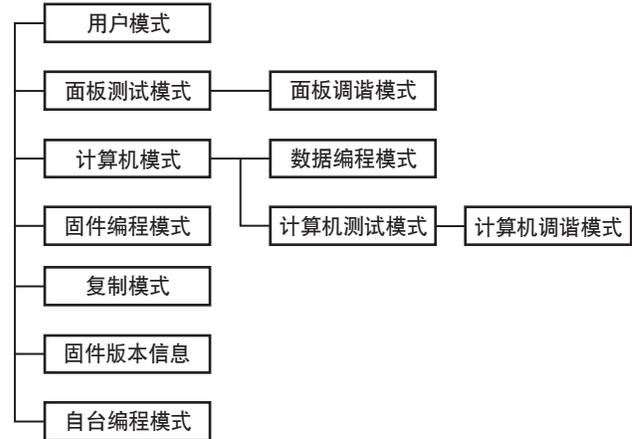


Mode	Function
User mode	For normal use.
Panel test mode	Used by the dealer to check the fundamental characteristics.
Panel tuning mode	Used by the dealer to tune the transceiver.
PC mode	Used for communication between the transceiver and PC (IBM compatible).
Data programming mode	Used to read and write 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.

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

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. 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。

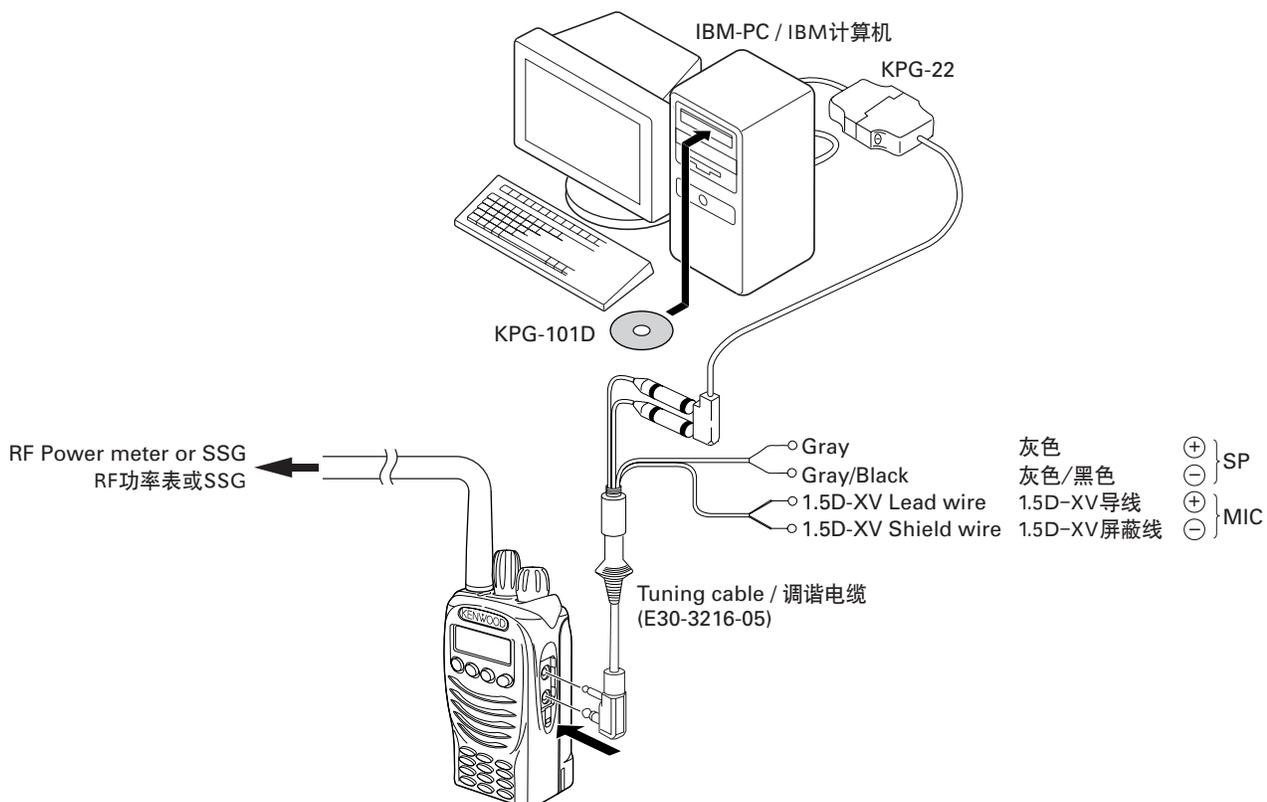


Fig. 1 / 图1

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：可选项)**

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

- 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.
- 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.

- 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。
- 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

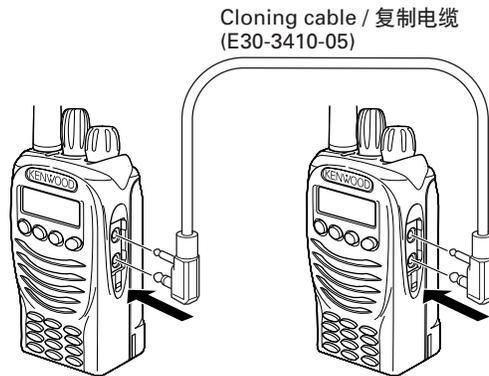


Fig. 2 / 图2

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

- Press and hold the [C] key for 2 seconds while turning the power on.
- 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

- 打开电源时按住[C]键约2秒钟。
- 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:

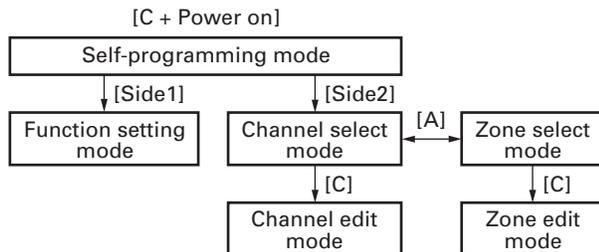
1. Press a key while "SLF.LOCK.R" or "SLF.LOCK.W" is displayed. The number that was pressed will appear on the display.
2. Each press of the key shifts the display in order to the left.
3. When you have entered the entire password, press the [*] or [S] key. "SELF" appears on the display if the entered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

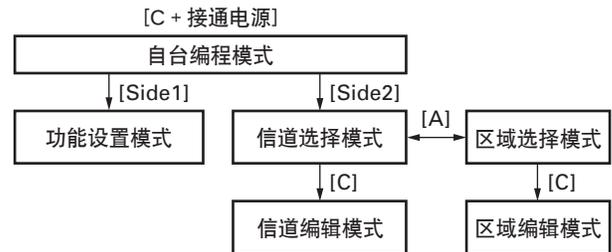
1. 在显示“SLF.LOCK.R”或“SLF.LOCK.W”时按某个键。被按下的数字显示在显示屏上。
2. 每次按该键按向左的顺序移动显示。
3. 输入全部密码后，按[*]或[S]键。如果输入的密码正确，则显示屏上显示“SELF”。如果密码不正确，则重新显示“SLF.LOCK.R”或“SLF.LOCK.W”。

■ 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。

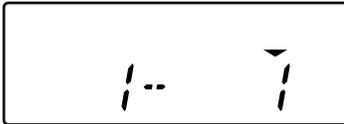


REALIGNMENT

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 of 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.

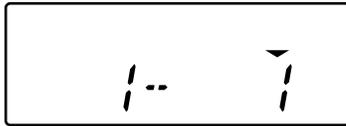
No.	Function	Choices	Display	Remarks
Zone/Channel Setting Mode				
	Select Channel	1~128	▼ 1 - 1	[A] : Zone Selection/Channel Selection change
			▼ 1 - 1 2 8	
	Select Zone	1~128	▼ 1 - 1	
			▼ 1 2 8 - 1	
Channel Edit				
1	RX Frequency	Step 5.0kHz	S T P _ _ 5 0 0	Display when an item is selected or when a step is changed (about 0.5 seconds)
		Step 6.25kHz	S T P _ _ 6 2 5	
		Step 1MHz	S T P _ _ _ 1 M	[A] : Step change, Default=6.25kHz
		Blank	R.- - - - -	[Side1] : Freq On/Blank switching
		327.0000~550.0000MHz	R.4 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
		QT 67.0~250.3Hz (EIA Mode)	Q T _ _ 6 7.0 _ Q T _ 2 5 0.3 _	[A] : Mode switching [Side2] : Normal/Inverse switching
		QT 67.0~254.1Hz (0.1Hz Step Mode)	Q T _ _ 6 7.0 * Q T _ 2 5 4.1 *	Default=OFF
		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5.0kHz	S T P _ _ 5 0 0	选择了一个项目或改变了步长时显示 (约0.5秒)
		步长6.25kHz	S T P _ _ 6 2 5	[A] : 步长改变
		步长1MHz	S T P _ _ _ 1 M	出厂设定 = 6.25kHz
		空白	R. - - - - -	[Side1] : 频率开/空白切换
		327.0000~550.0000MHz	R.4 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 (EIA模式)	Q T _ _ 6 7 . 0 _ Q T _ 2 5 0 . 3 _	[A] : 模式切换 [Side2] : 常规/反向切换
		QT 67.0~254.1Hz (0.1Hz步长模式)	Q T _ _ 6 7 . 0 * Q T _ 2 5 4 . 1 *	出厂设定 = OFF
		DQT 023~754常规 (标准表模式)	D Q T 0 2 3 N _ D Q T 7 5 4 N _	
		DQT 000~777常规 (1步长模式)	D Q T 0 0 0 N * D Q T 7 7 7 N *	

REALIGNMENT

No.	Function	Choices	Display	Remarks
		DQT 023~754 Inverse (Standard Table Mode)	D Q T 0 2 3 I _ D Q T 7 5 4 I _	
		DQT 000~777 Inverse (1 Step Mode)	D Q T 0 0 0 I * D Q T 7 7 7 I *	
3	TX Frequency	Step 5.0kHz	S T P _ _ 5 0 0	Same as RX frequency
		Step 6.25kHz	S T P _ _ 6 2 5	
		Step 1MHz	S T P _ _ _ 1 M	
		Blank	T . - - - - -	Same as RX frequency
		327.0000~550.0000MHz	T . 4 5 0 . 0 0 0 0	Same as RX frequency
4	TX Signaling	OFF	- - - - -	Same as RX signaling
		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 *	
		DQT 023~754 Inverse (Standard Table Mode)	D Q T 0 2 3 I _ D Q T 7 5 4 I _	
		DQT 000~777 Inverse (1 Step Mode)	D Q T 0 0 0 I * D Q T 7 7 7 I *	
5	Option Signaling	OFF	O P _ O F F _ _	←Default
		DTMF	O P _ D T M F _	
		2-tone	O P _ 2 T O N 1 O P _ 2 T O N 2 O P _ 2 T O N 3	
		FleetSync	O P _ F L S Y _	
6	ID	DTMF Signaling = Code SQ 000~9999999999	_ _ _ I D _ _ _	Display when an item is selected (about 0.5 seconds)
		DTMF Signaling = Selective Call 000~9999	1 2 3 4 5 6 7 8	Display of the current setting (If it is 8 or more digits, scroll it)
			- - - - - 1 2 3	Display when a code is input (Input it with DTMF key)
		Code Default	_ _ _ _ _ 0 0 0	[Side1] : Data clear
7	Transmit Power	High Transmit Power	P W R _ H _ _ _	←Default
		Low Transmit Power	P W R _ L _ _ _	
8	Wide/Narrow	Wide	W I D E _ _ _ _	←Default
		Narrow	N A R R O W _ _	

模式组合

号码	功 能	选 择	显 示	备 注
		DQT 023~754反向 (标准表模式)	DQT 0 2 3 _ DQT 7 5 4 _	
		DQT 000~777反向 (1步长模式)	DQT 0 0 0 * DQT 7 7 7 *	
3	发射频率	步长5.0kHz	STP _ _ 5 0 0	与接收频率相同
		步长6.25kHz	STP _ _ 6 2 5	
		步长1MHz	STP _ _ _ 1 M	
		空白	T. - - - - -	与接收频率相同
		327.0000~550.0000MHz	T.4 5 0.0 0 0 0	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 (EIA模式)	QT _ _ 6 7.0 _ QT _ 2 5 0.3 _	
		QT 67.0~254.1Hz (0.1Hz步长模式)	QT _ _ 6 7.0 * QT _ 2 5 4.1 *	
		DQT 023~754常规 (标准表模式)	DQT 0 2 3 N _ DQT 7 5 4 N _	
		DQT 000~777常规 (1步长模式)	DQT 0 0 0 N * DQT 7 7 7 N *	
		DQT 023~754反向 (标准表模式)	DQT 0 2 3 _ DQT 7 5 4 _	
		DQT 000~777反向 (1步长模式)	DQT 0 0 0 * DQT 7 7 7 *	
5	可选信令	OFF	OP _ _ OFF _	← 出厂设定
		DTMF	OP _ _ DTMF	
		2-音	OP _ 2 TON 1 OP _ 2 TON 2 OP _ 2 TON 3	
		FleetSync	OP _ FLSY _	
6	ID	DTMF信令 = 代码SQ 000~9999999999	_ _ _ ID _ _ _	选择某个项目时显示 (约0.5秒)
		DTMF信令 = 选择呼叫 000~9999	1 2 3 4 5 6 7 8	当前设置显示 (如果是8或以上的数字, 请滚动它)
			- - - - - 1 2 3	输入代码时显示 (用DTMF键输入)
		代码出厂设定	_ _ _ _ _ 0 0 0	[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 _ _ _	
8	宽/窄	宽	W I D E _ _ _ _	← 出厂设定
		窄	N A R R O W _ _	

REALIGNMENT

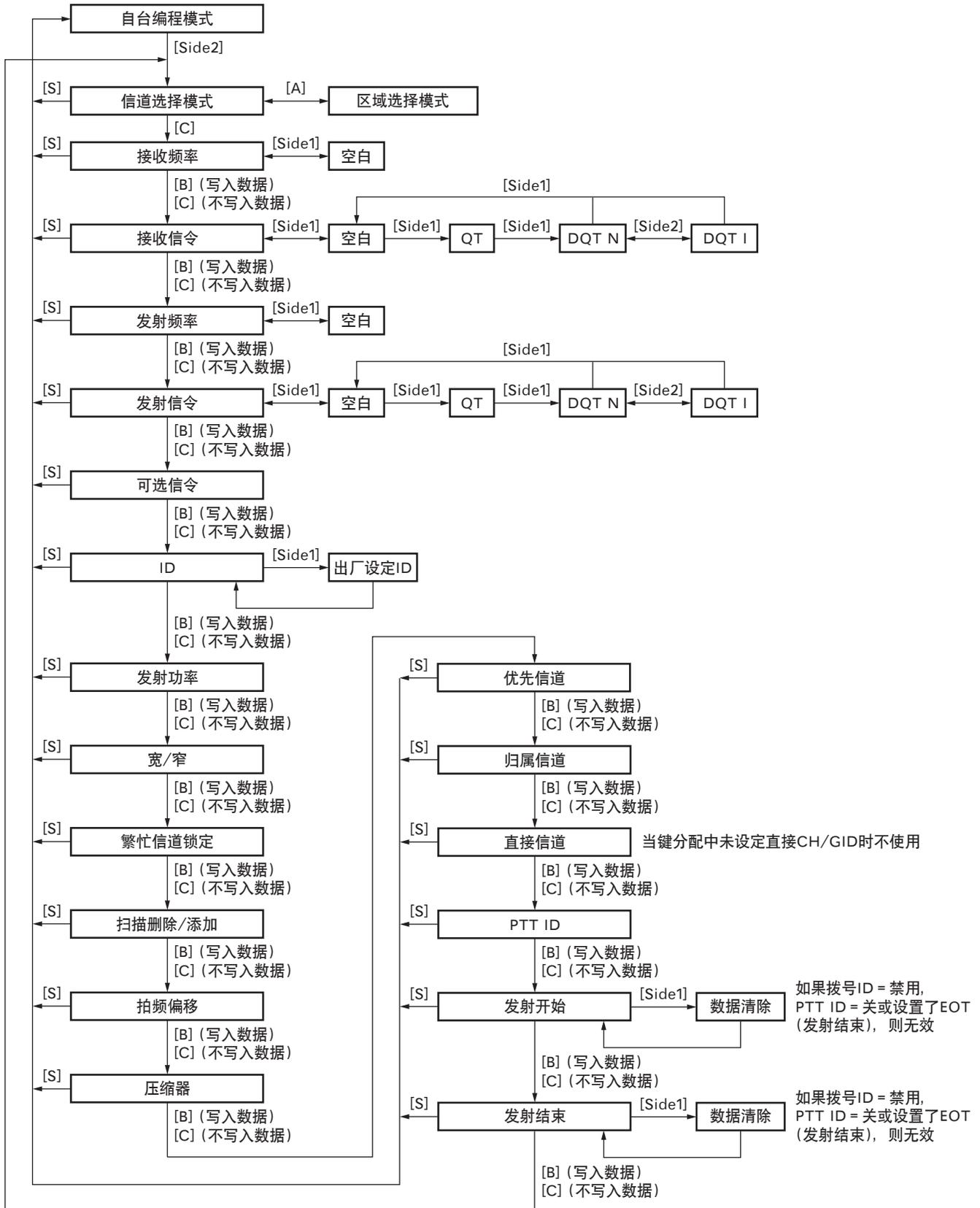
No.	Function	Choices	Display	Remarks
9	Busy Channel Lockout	No	B C L _ N O _ _	←Default
		QT/DQT Tone	B C L _ Q T _ _	
		Option Signaling	B C L _ O P T _	
		Carrier Only	B C L _ C A R R	
10	Scan Delete/Add	Add	S C A N _ A D D	←Default
		Delete	S C A N _ D E L	
11	Beat Shift	NO	S H F T _ N O _	←Default
		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
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
		是	HMCH_YES	出厂设定 = 否
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。
			1 2 3 4 5 6 7 8	当前设置显示 (如果是8或以上的数字, 请滚动它)
			----- 9 8 7	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。
			1 2 3 4 5 6 7 8	当前设置显示 (如果是8或以上的数字, 请滚动它)
			----- 9 8 7	输入代码时显示 (用DTMF键输入)
		空白	-----	[Side1]: 数据清除

模式组合

■ 信道编辑模式流程图



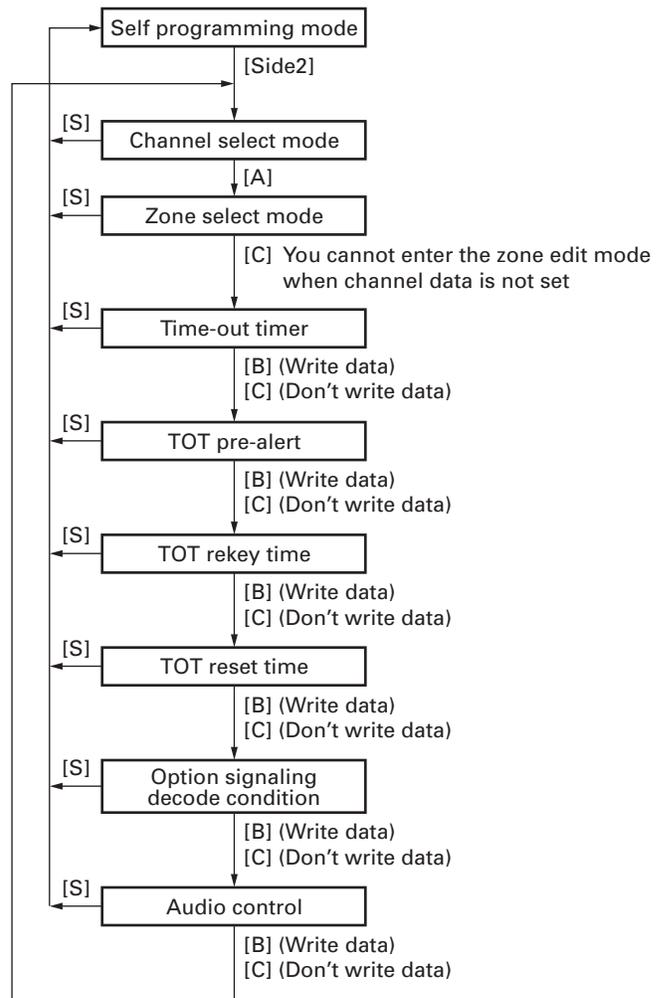
REALIGNMENT

■ 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	TOT _ _ _ 6 0	Default=60
2	TOT Pre-alert	Off, 1~10/1s	TOT P _ OFF	Default=Off
3	TOT Rekey Time	Off, 1~60/1s	TOT K _ OFF	Default=Off
4	TOT Reset Time	Off, 1~15/1s	TOT S _ OFF	Default=Off
5	Option Signaling Decode Condition	QT/DQT	OPDC _ QT _	←Default
		Carrier	OPDC _ CR _	
6	Audio Control	QT/DQT	ADC _ QT _ _	←Default
		QT/DQT and Option Signaling	ADC _ AND _	
		QT/DQT or Option Signaling	ADC _ OR _ _	

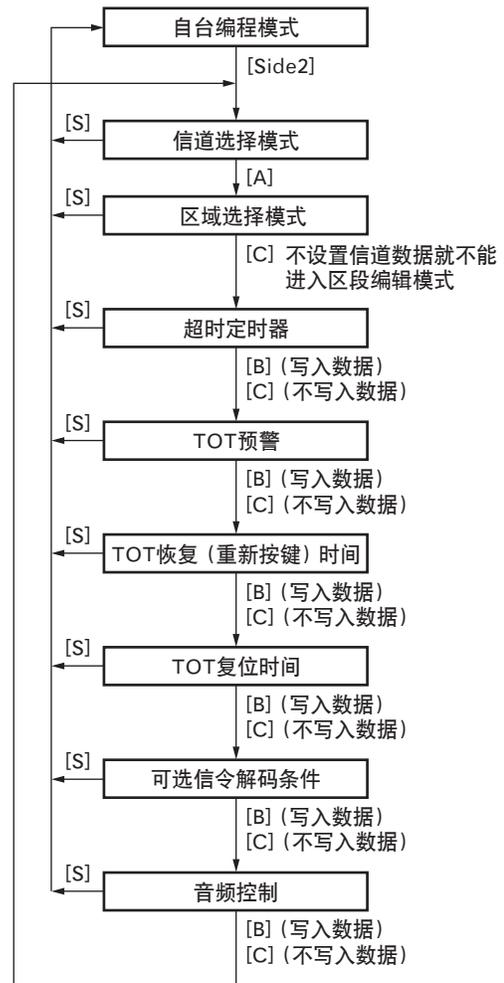
模式组合

■ 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	AUX _OFF_	←Default
		2-tone	AUX _ _ _ 1 _	
		Autodial	AUX _ _ _ 2 _	
		Autodial Programming	AUX _ _ _ 3 _	
		AUX	AUX _ _ _ 4 _	Optional Board=None
		Call 1	AUX _ _ _ 5 _	
		Call 2	AUX _ _ _ 6 _	
		CH/GID Down	AUX _ _ _ 7 _	
		CH/GID Up	AUX _ _ _ 8 _	
		Channel Entry	AUX _ _ _ 9 _	
		Direct CH1	AUX _ _ 1 0 _	
		Direct CH2	AUX _ _ 1 1 _	
		Direct CH3	AUX _ _ 1 2 _	
		Direct CH4	AUX _ _ 1 3 _	
		Display Character	AUX _ _ 1 4 _	
		Emergency	AUX _ _ 1 5 _	
		Home/CH/GID	AUX _ _ 1 6 _	
		Key Lock	AUX _ _ 1 7 _	
		Lamp	AUX _ _ 1 8 _	
		Low Transmit Power	AUX _ _ 1 9 _	
		Monitor	AUX _ _ 2 0 _	
		Monitor Momentary	AUX _ _ 2 1 _	
		OST	AUX _ _ 2 2 _	
		Transceiver Password	AUX _ _ 2 3 _	
		Scan	AUX _ _ 2 4 _	
		Scan Delete/Add	AUX _ _ 2 5 _	
		Scrambler	AUX _ _ 2 6 _	
		SelCall	AUX _ _ 2 7 _	
		SelCall+Status	AUX _ _ 2 8 _	
		Squelch Level	AUX _ _ 2 9 _	
		Squelch Off	AUX _ _ 3 0 _	
		Squelch Off Momentary	AUX _ _ 3 1 _	
		Status	AUX _ _ 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	AUX __ 3 3 _	
		VOX	AUX __ 3 4 _	
		Zone Up	AUX __ 3 5 _	
		Zone Down	AUX __ 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 __ 3 3 _	
		VOX (声控发射)	AUX __ 3 4 _	
		区域上调	AUX __ 3 5 _	
		区域下调	AUX __ 3 6 _	
2	[S1]	无功能	S 1 __ OFF _	
		2-音	S 1 _ _ _ _ 1 _	
		自动拨号	S 1 _ _ _ _ 2 _	
		自动拨号编程	S 1 _ _ _ _ 3 _	
		辅助	S 1 _ _ _ _ 4 _	选件板 = 无
		呼叫1	S 1 _ _ _ _ 5 _	
		呼叫2	S 1 _ _ _ _ 6 _	
		信道/组ID下调	S 1 _ _ _ _ 7 _	
		信道/组ID上调	S 1 _ _ _ _ 8 _	
		信道输入	S 1 _ _ _ _ 9 _	
		直接信道1	S 1 _ _ _ 1 0 _	
		直接信道2	S 1 _ _ _ 1 1 _	
		直接信道3	S 1 _ _ _ 1 2 _	
		直接信道4	S 1 _ _ _ 1 3 _	
		显示字符	S 1 _ _ _ 1 4 _	
		归属/信道/组ID	S 1 _ _ _ 1 6 _	
		按键盘锁定	S 1 _ _ _ 1 7 _	
		照明灯	S 1 _ _ _ 1 8 _	← 出厂设定
		低发射功率	S 1 _ _ _ 1 9 _	
		监听器	S 1 _ _ _ 2 0 _	
		瞬时监听	S 1 _ _ _ 2 1 _	
		OST	S 1 _ _ _ 2 2 _	
		对讲机密码	S 1 _ _ _ 2 3 _	
		扫描	S 1 _ _ _ 2 4 _	
		扫描删除/添加	S 1 _ _ _ 2 5 _	
		扰频器	S 1 _ _ _ 2 6 _	
		选择呼叫	S 1 _ _ _ 2 7 _	
		选择呼叫 + 状态	S 1 _ _ _ 2 8 _	
		静噪电平	S 1 _ _ _ 2 9 _	
		静噪打开	S 1 _ _ _ 3 0 _	
		瞬时静噪打开	S 1 _ _ _ 3 1 _	
		状态	S 1 _ _ _ 3 2 _	
		脱网通信	S 1 _ _ _ 3 3 _	
		VOX (声控发射)	S 1 _ _ _ 3 4 _	
		区域上调	S 1 _ _ _ 3 5 _	
		区域下调	S 1 _ _ _ 3 6 _	

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 _ _ _ _ 10 _	
		直接信道2	S _ _ _ _ 11 _	
		直接信道3	S _ _ _ _ 12 _	
		直接信道4	S _ _ _ _ 13 _	
		显示字符	S _ _ _ _ 14 _	
		归属/信道/组ID	S _ _ _ _ 16 _	
		按键盘锁定	S _ _ _ _ 17 _	
		照明灯	S _ _ _ _ 18 _	
		低发射功率	S _ _ _ _ 19 _	
		监听器	S _ _ _ _ 20 _	
		瞬时监听	S _ _ _ _ 21 _	
		OST	S _ _ _ _ 22 _	
		对讲机密码	S _ _ _ _ 23 _	
		扫描	S _ _ _ _ 24 _	← 出厂设定
		扫描删除/添加	S _ _ _ _ 25 _	
		扰频器	S _ _ _ _ 26 _	
		选择呼叫	S _ _ _ _ 27 _	
		选择呼叫 + 状态	S _ _ _ _ 28 _	
		静噪电平	S _ _ _ _ 29 _	
		静噪打开	S _ _ _ _ 30 _	
		瞬时静噪打开	S _ _ _ _ 31 _	
		状态	S _ _ _ _ 32 _	
		脱网通信	S _ _ _ _ 33 _	
		VOX (声控发射)	S _ _ _ _ 34 _	
		区域上调	S _ _ _ _ 35 _	
		区域下调	S _ _ _ _ 36 _	
5	[A]	无功能	A _ _ _ OFF _	
		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 _ _ _ _ 10 _	
		直接信道2	A _ _ _ _ 11 _	
		直接信道3	A _ _ _ _ 12 _	
		直接信道4	A _ _ _ _ 13 _	
		显示字符	A _ _ _ _ 14 _	
		归属/信道/组ID	A _ _ _ _ 16 _	
		按键盘锁定	A _ _ _ _ 17 _	
		照明灯	A _ _ _ _ 18 _	
		低发射功率	A _ _ _ _ 19 _	
		监听器	A _ _ _ _ 20 _	
		瞬时监听	A _ _ _ _ 21 _	
		OST	A _ _ _ _ 22 _	
		对讲机密码	A _ _ _ _ 23 _	
		扫描	A _ _ _ _ 24 _	
		扫描删除/添加	A _ _ _ _ 25 _	← 出厂设定
		扰频器	A _ _ _ _ 26 _	
		选择呼叫	A _ _ _ _ 27 _	
		选择呼叫 + 状态	A _ _ _ _ 28 _	
		静噪电平	A _ _ _ _ 29 _	
		静噪打开	A _ _ _ _ 30 _	
		瞬时静噪打开	A _ _ _ _ 31 _	
		状态	A _ _ _ _ 32 _	
		脱网通信	A _ _ _ _ 33 _	
		VOX (声控发射)	A _ _ _ _ 34 _	
		区域上调	A _ _ _ _ 35 _	
		区域下调	A _ _ _ _ 36 _	
6	[B]	无功能	B _ _ _ OFF _	
		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 _ _ _ _ 10 _	
		直接信道2	B _ _ _ _ 11 _	

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	CH _ UP / DN	←Default
		Zone Up/Down	ZN _ UP / DN	
		None	KNOB _ OFF	
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 (Direct CH)	No	D C O S _ _ N O	←Default
		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 _ _ _ _ 1 7 _	
		照明灯	C _ _ _ _ 1 8 _	
		低发射功率	C _ _ _ _ 1 9 _	← 出厂设定
		监听器	C _ _ _ _ 2 0 _	
		瞬时监听	C _ _ _ _ 2 1 _	
		OST	C _ _ _ _ 2 2 _	
		对讲机密码	C _ _ _ _ 2 3 _	
		扫描	C _ _ _ _ 2 4 _	
		扫描删除/添加	C _ _ _ _ 2 5 _	
		扰频器	C _ _ _ _ 2 6 _	
		选择呼叫	C _ _ _ _ 2 7 _	
		选择呼叫 + 状态	C _ _ _ _ 2 8 _	
		静噪电平	C _ _ _ _ 2 9 _	
		静噪打开	C _ _ _ _ 3 0 _	
		瞬时静噪打开	C _ _ _ _ 3 1 _	
		状态	C _ _ _ _ 3 2 _	
		脱网通信	C _ _ _ _ 3 3 _	
		VOX (声控发射)	C _ _ _ _ 3 4 _	
		区域上调	C _ _ _ _ 3 5 _	
		区域下调	C _ _ _ _ 3 6 _	
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 _ 2 T	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 _ 2 T	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)	KEYO_ATD	
		DTMF (Keypad Auto PTT)	KEYO_KAP	
		FleetSync (SelCall)	KEYO_SEL	
		FleetSync (Status)	KEYO_STA	
		FleetSync (SelCall+Status)	KEYO_S / S	
Optional Features				
13	Auto Backlight	YES/NO	ATLT_NO_	Default=No
14	Power-on Tone	Current/Off, 1~31	PONT_CUR	Default=Current
15	Control Tone	Current/Off, 1~31	CNTT_CUR	During Self-Programming, it is constant Default=Current
16	Warning Tone	Current/Off, 1~31	WART_CUR	Default=Current
17	Alert Tone	Current/Off, 1~31	ALTT_CUR	Default=Current
18	Sidetone	Current/Off, 1~31	SIDT_CUR	Default=Current
19	Locator Tone	Current/Off, 1~31	LOCT_CUR	Default=Current
20	Minimum Volume	0~31	MINI___0	Default=0
21	Battery Saver	ON/OFF	BATT_OFF	Default=OFF
22	Battery Warning	Off	BTW_OFF_	
		While Transmitting	BTW_WTX_	←Default
		Always	BTW_ALWY	
		Always w/Beep	BTW_ALWB	
23	Squelch Level	0~9/1STEP	SQL___5_	Default=5
Scan				
24	Priority	None	PRI_NONE	←Default
		Fixed	PRI_FIX_	
		Selected	PRI_SEL_	
		Operator Selectable	PRI_OSEL	
25	Lookback Time A	500~5000ms/50ms Step	LBA___500	Default=500
26	Lookback Time B	500~5000ms/50ms Step	LBB_2000	Default=2000
27	Revert Channel	Last Called	REV_L / C_	←Default
		Last Used	REV_L / U_	
		Selected	REV_SEL_	
		Selected+TalkBack	REV_S / T_	
		Priority	REV_PRI_	Cannot be set when priority=None or selected
		Priority+TalkBack	REV_P / T_	Cannot be set when priority=None or selected
28	Dropout Delay Time	0~300/1s	DODT___3	Default=3
29	Dwell Time	0~300/1s	DWL___3	Default=3
DTMF				
30	DTMF Speed	6, 8, 10, 15	DTSP___6_	Default=6
31	First Digit Delay Time	0~1000ms/50ms	FDDT_200	Default=200
32	First Digit Delay Time with QT	0~1000ms/50ms	FDWQ_200	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	FDT _ _ _ _ 0	Default=0
34	* and # Digit	0, 100, 500, 1000	* # _ _ _ _ 0	Default=0
35	Dial ID	ON/OFF	DID _ OFF _	Default=OFF, Key=16key only
36	D Code Assignment	D Code	DCA _ D _ CD	Default=D Code
		1~16/1s	DCA _ _ _ 1 6	
37	DTMF Signaling	OFF	DTMS _ OFF	
		Code SQ	DTMS _ CSQ	←Default
		SelCall	DTMS _ SEL	
38	Inter Mediate Code	0~9, A~D, *, #	IMC _ _ # _ _	DTMF Signaling=SelCall, Default=#
39	Group Code	Off, A~D, *, #	GPCD _ OFF	Default=Off
40	Auto Reset Timer	Off, 1~300/1s	ART _ _ 1 0 _	Default=10
41	Alert Tone (Individual)	Off, 1~8/ 1	CATI _ _ _ 1	Default=1
42	Alert Tone (Group)	Off, 1~8/ 1	CATG _ _ _ 2	Default=2
43	Transpond	Off	TRP _ _ OFF	←Default
		Alert	TRP _ _ ALT	
		ID Code	TRP _ _ IDC	
		Transpond Code	TRP _ _ TRC	
		Ringing Tone	TRP _ _ RIN	
Others				
44	Panel Test/	Enable	PTM _ ENA _	
	Panel Tuning Mode	Disable	PTM _ DIS _	←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

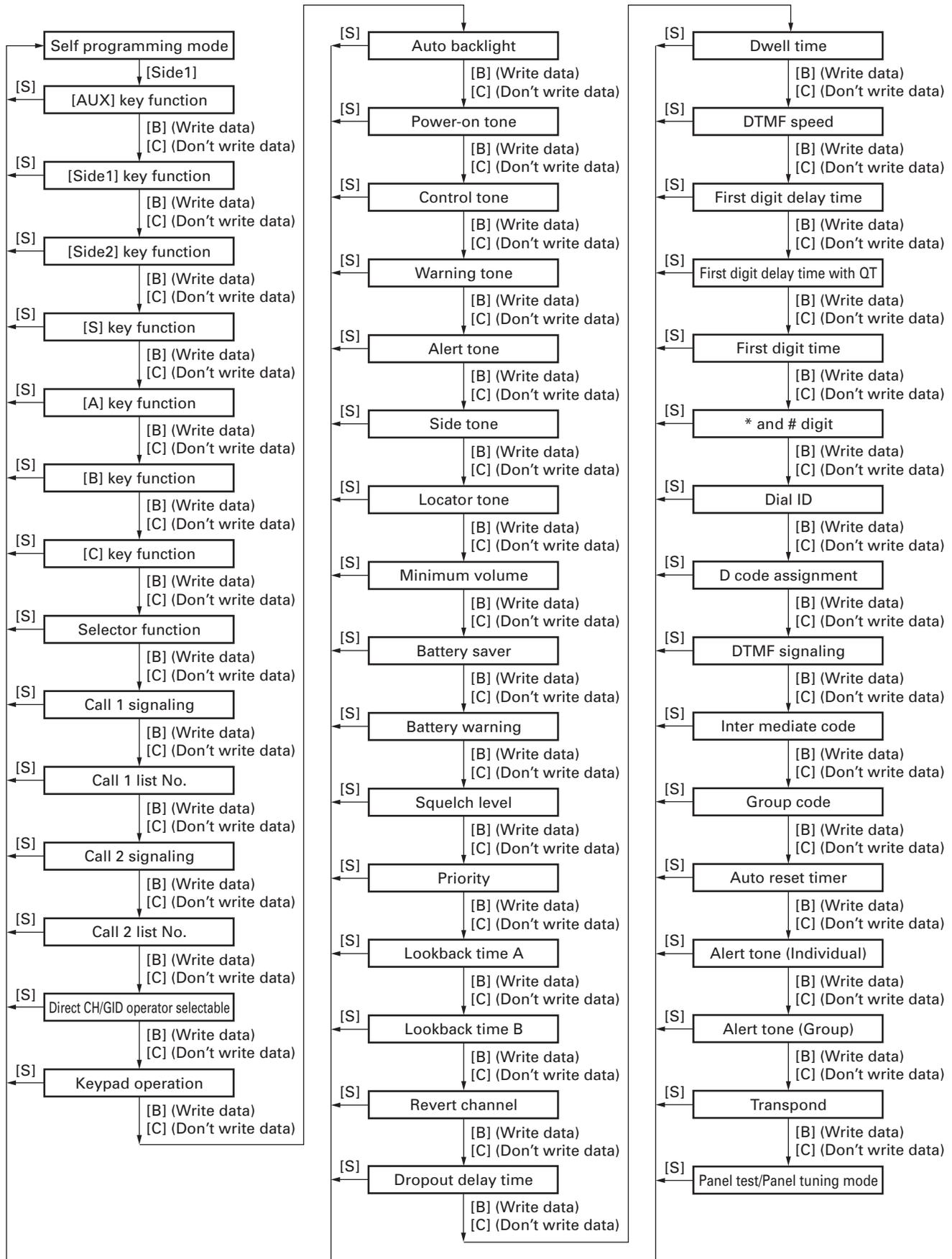
- 该模式用于清除在自台编程模式中设置的功能的数据, 或返回到复位值 (默认)。
- 显示“SELF”时按 [S] 键将显示设为“CANCEL”。
- 转动选择器在“CANCEL” ↔ “READY”之间切换显示。
- 显示“READY”时按 [B] 键清除数据并将显示设为“CLEAR”。
- 再按一次 [S] 键使显示返回到“SELF”。
- 显示“CANCEL”时按 [S] 键使显示返回到“SELF”而不进行数据复位。

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

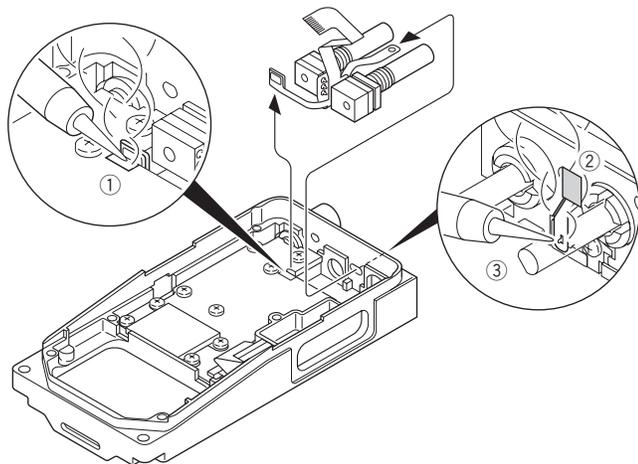
- 1) Remove the solder from the TX-RX unit using a solder iron (①).
- 2) Peel the double-sided tape (②).
- 3) Remove the solder from the battery terminal block using the solder iron (③).

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)。

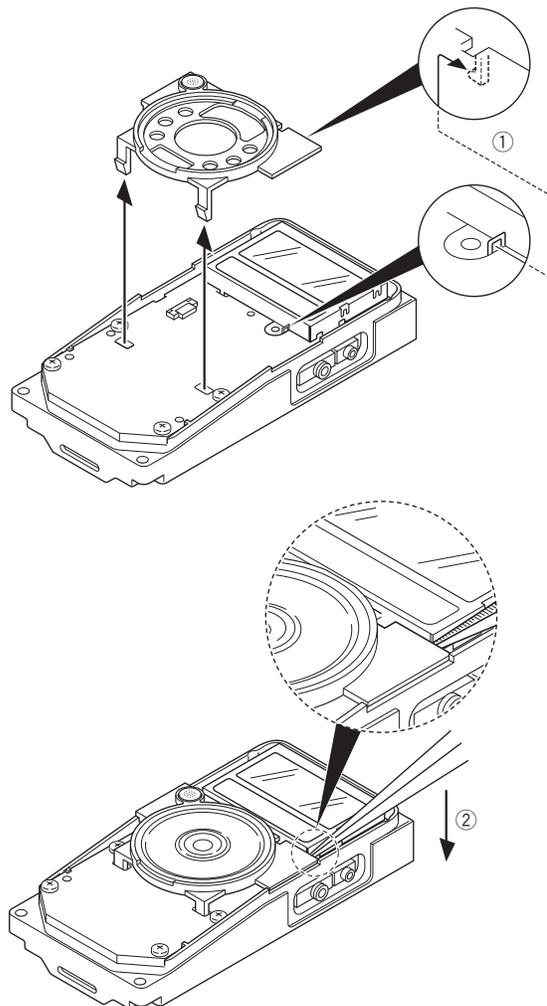


2. Separating the Speaker Holder from the Control Unit

- 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)。



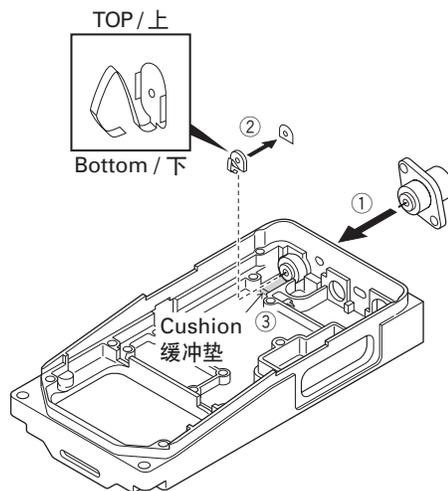
DISASSEMBLY FOR REPAIR / 维修拆卸

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.

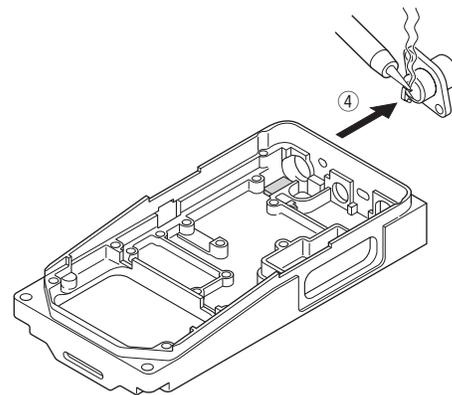
- 1) Mount the antenna connector onto the chassis (①).
Double-sided tape is attached to the terminal; peel off the tape cover (②).
Attach the terminal to the antenna connector as shown below.
Slide the antenna terminal along the adhesive cushion on the chassis so that the adhesive part on the terminal 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。

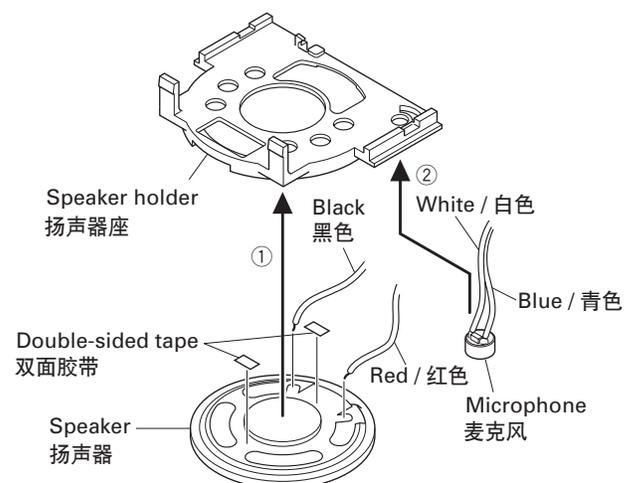


4. Replacing the Speaker and Microphone

- 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)。

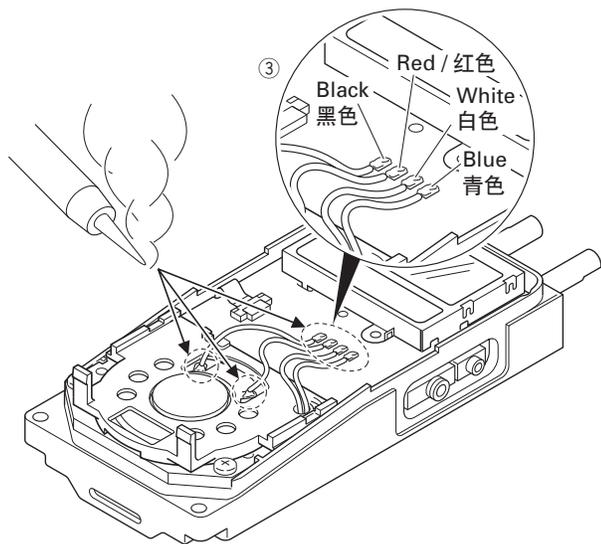


TK-3178

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。



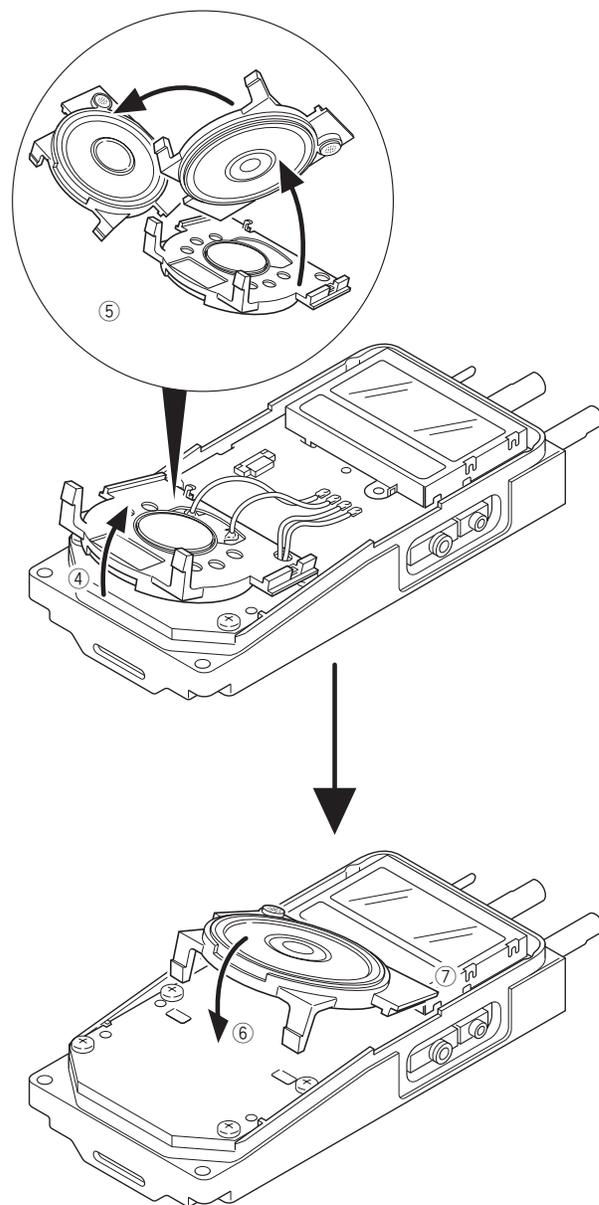
4) Lift the speaker holder (④), then flip it over to the left (⑤).

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. Figure 1 shows the frequencies.

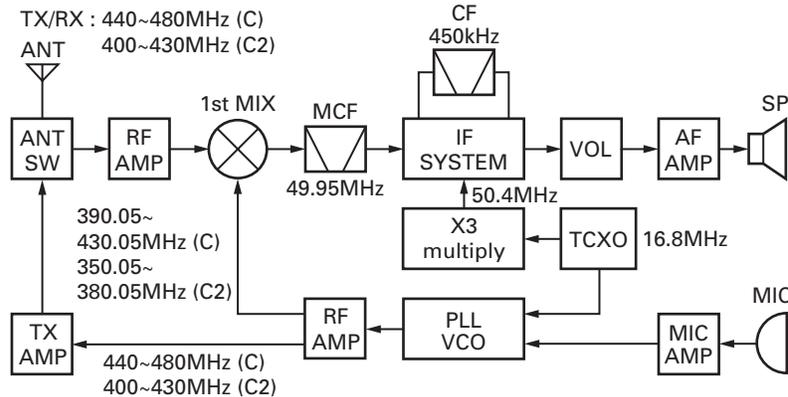


Fig. 1 Frequency configuration / 图1 频率构成

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 (L717 and L718), and is amplified by the RF amplifier (Q705).

The resulting signal passes through a BPF (L711, L712 and L713) and goes to the mixer. These BPFs are adjusted by variable capacitors (D703, D704, D705, D706 and D707). 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.

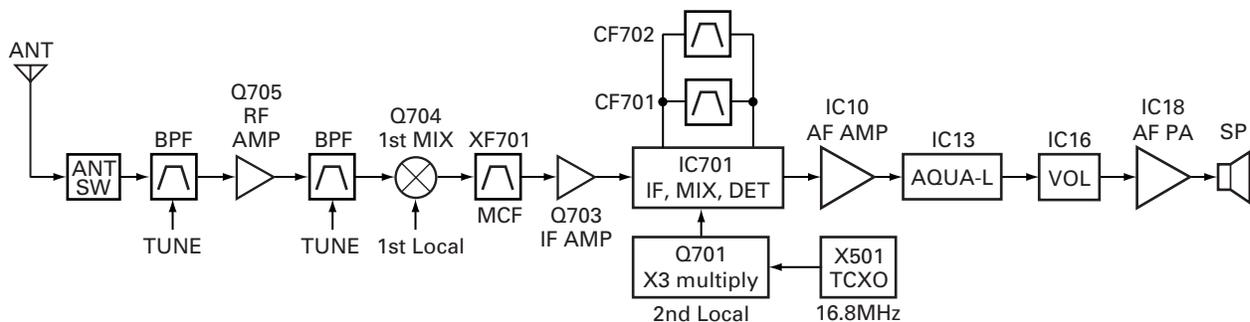


Fig. 2 Receiver system / 图2 接收部系统

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。

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 (L717和L718)，并且被射频放大器 (Q705) 放大。

此信号通过BPF (L711、L712和L713) 然后进入混频。这些BPF被可变电容器 (D703、D704、D705、D706和D707) 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。

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.

2-3. 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。

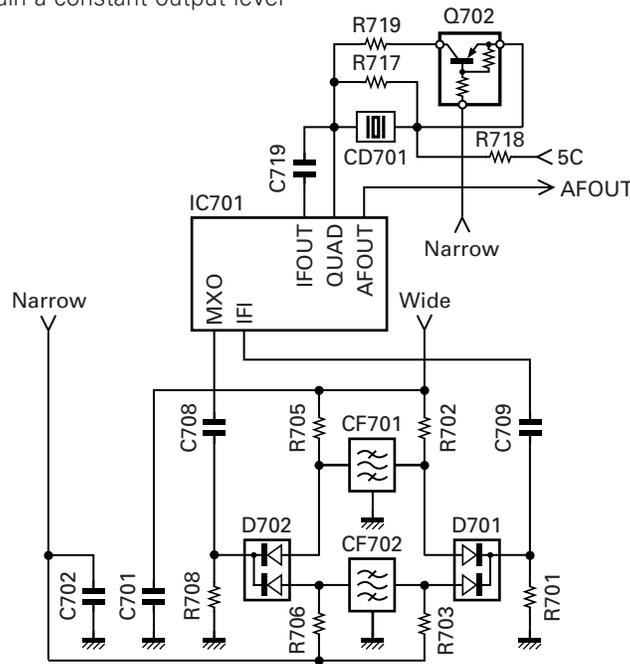


Fig. 3 Wide/Narrow switching circuit / 图3 宽/窄切换电路

2-5. 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.

2-5. 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)。

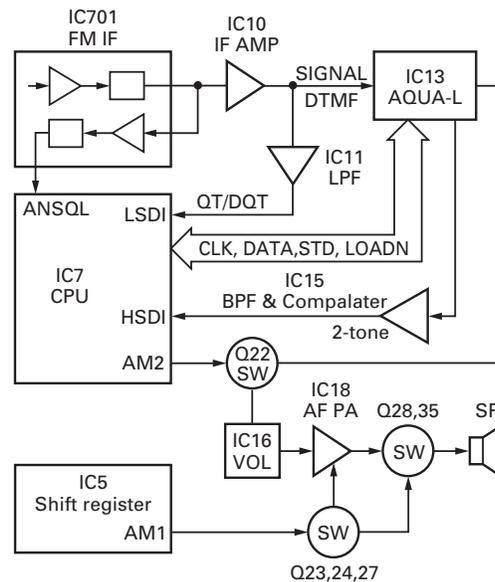


Fig. 4 Audio amplifier and squelch circuit / 图4 音频放大器电路和静噪电路

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。

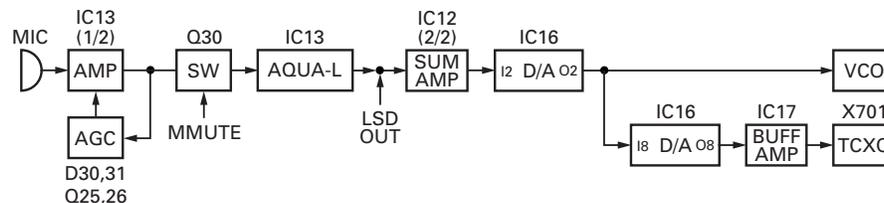


Fig. 5 Microphone amplifier circuit / 图5 麦克风放大器电路

CIRCUIT DESCRIPTION / 电路说明

3-2. Drive and Final Amplifier Circuit

The signal from the T/R switch (D516 is on) is amplified by the pre-drive (Q602) and drive amplifier (Q603) to 50mW.

The output of the drive amplifier is amplified by the RF final amplifier (Q604) to 4.0W (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 (D516 ON) 的信号被预驱动放大器 (Q602) 和驱动放大器 (Q603) 放大到50mW。

驱动放大器的输出被RF功率放大器 (Q604) 放大到4.0W (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。

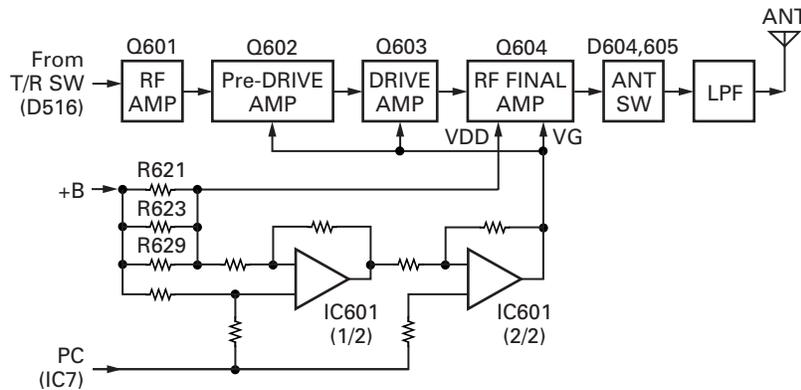


Fig. 6 Drive and final amplifier and APC circuit / 图6 驱动器和终端放大器和自动功率控制 (APC) 电路

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 $+60^{\circ}\text{C}$. 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 390.05~430.05MHz (C), 350.05~380.05MHz (C2) and the 440~480MHz (C), 400~430MHz (C2). The VCO generates 390.05~430.05MHz (C), 350.05~380.05MHz (C2) 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 (D505 and D507 in transmit mode and D509 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 ~ $+60^{\circ}\text{C}$ 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390.05~430.05MHz (C)、350.05~380.05MHz (C2)和440~480MHz (C)、400~430MHz (C2)双波段。VCO产生390.05~430.05MHz (C)、350.05~380.05MHz (C2) 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D505和D507, 在接收模式是D509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引脚在接收模式时为“低”电位,使Q503和Q504 (2/2) 打开。TX引脚在发射模式时为“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倍增,然后发送到PLL IC。

PLL IC由预计计数器、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的引脚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(引脚93),PCK(引脚79)和PLE(引脚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引脚77(UL)监控。当PLL失锁时,UL为低电位。

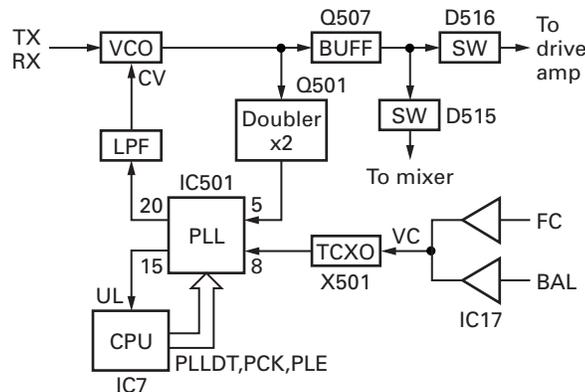


Fig. 7 PLL block diagram / 图7 PLL方块图

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.

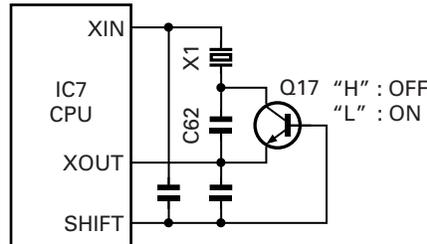


Fig. 8 Frequency shift circuit / 图8 频率偏移电路

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。

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.

■ 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.

■ EEPROM

Note : The EEPROM stores tuning data (Deviation, Squelch, etc.).

Realign the transceiver after replacing the EEPROM.

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。

■ 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

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。

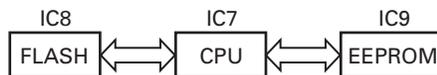


Fig. 9 Memory circuit / 图9 存储电路

5-3. Low Battery Warning

The battery voltage is monitored by the microprocessor (IC7 pin 123 : BATTTLVL). 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 引脚 123 : BATTTLVL) 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。

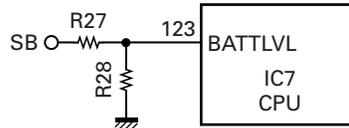


Fig. 10 Low battery warning / 图10 低电池电量警告

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.

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。

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

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。

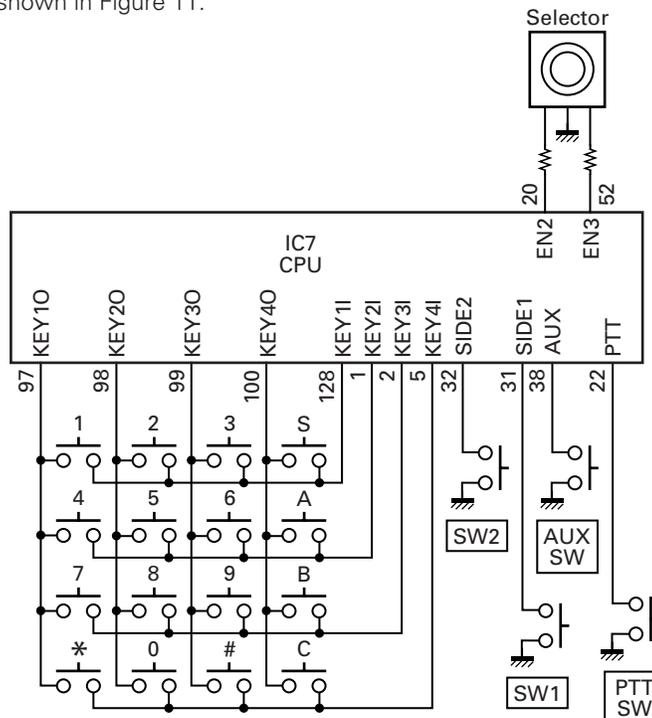


Fig. 11 Key input / 图11 键输入

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的引脚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的引脚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的引脚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。

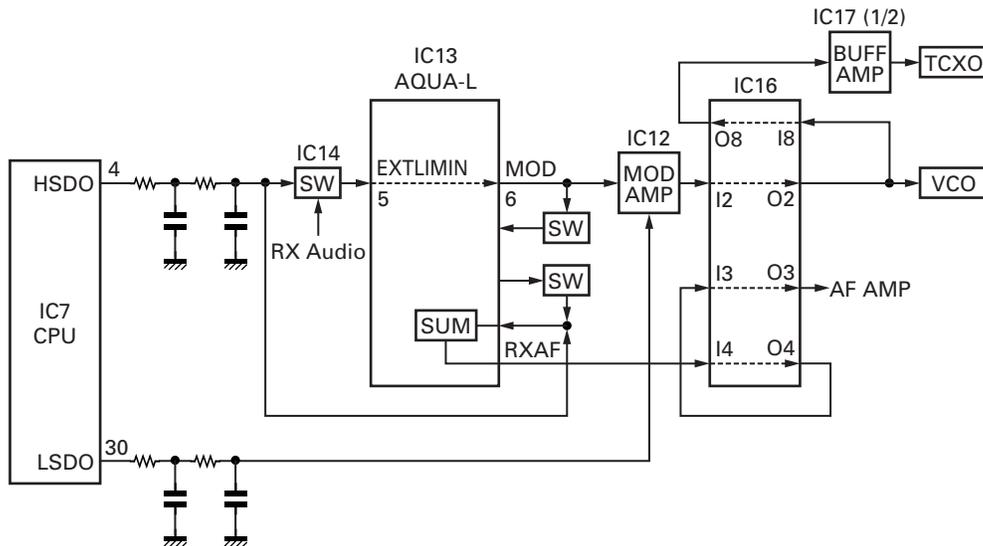


Fig. 12 Encode / 图12 编码

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的引脚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。

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	DACL	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	DACL	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	KEY10	O	Key matrix output
98	KEY20	O	Key matrix output
99	KEY30	O	Key matrix output
100	KEY40	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	KEY10	输出	键矩阵输出
98	KEY20	输出	键矩阵输出
99	KEY30	输出	键矩阵输出
100	KEY40	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 (X57-7013-XX)

Ref. No.	Use / Function	Operation / Condition
IC1	IC	Voltage detector / INT
IC2	IC	Voltage regulator / 5V
IC3	IC	Voltage detector / RESET
IC4,5	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
Q22	FET	AF mute switch

TX-RX单元 (X57-7013-XX)

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
IC4,5	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
Q22	场效应管	AF静音开关

COMPONENTS DESCRIPTION / 元件说明

Ref. No.	Use / Function	Operation / Condition
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 amplifier
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)
Q601	FET	RF amplifier
Q602	FET	Pre-drive amplifier
Q603	FET	TX drive amplifier
Q604	FET	RF final amplifier
Q605	Transistor	APC voltage switch
Q606	FET	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
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放大器
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)
Q601	场效应管	RF放大器
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
Q606	场效应管	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
D505	Variable capacitance diode	Frequency control / TX VCO
D507	Variable capacitance diode	Frequency control / TX VCO
D509	Variable capacitance diode	Frequency control / RX VCO
D511	Variable capacitance diode	Frequency control / RX VCO
D513	Variable capacitance diode	TX VCO modulator
D514	Diode	Ripple filter stabilization diode
D515	Diode	RX local switch
D516	Diode	TX RF switch
D517	Diode	Fast lock up diode
D601	Zener diode	APC voltage limiter
D604~606	Diode	ANT switch
D608	Diode	ANT switch
D701,702	Diode	Ceramic filter W/N switch
D703~708	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
D505	可变电容二极管	频率控制 / TX VCO
D507	可变电容二极管	频率控制 / TX VCO
D509	可变电容二极管	频率控制 / RX VCO
D511	可变电容二极管	频率控制 / RX VCO
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
D515	二极管	RX本地开关
D516	二极管	TX RF开关
D517	二极管	快速锁定二极管
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
D701,702	二极管	陶瓷滤波器W/N开关
D703~708	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-3178

PARTS LIST / 零件表

* New Parts. △ indicates safety critical components.

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

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

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

L : Scandinavia

Y : PX (Far East, Hawaii)

Y : AAFES (Europe)

K : USA

T : England

X : Australia

P : Canada

E : Europe

M : Other Areas

TK-3178 (Y50-5863-XX)

TX-RX UNIT (X57-7013-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination
TK-3178					
2	1B	*	A02-3891-13	PLASTIC CABINET ASSY	
3	3A	*	A10-4088-01	CHASSIS	
5	3A		B01-0694-03	ESCUICHEON	
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	1A,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	1A,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	*	H52-2116-02	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	

Ref. No.	Address	New parts	Parts No.	Description	Destination
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		T90-0798-35	HELICAL ANTENNA	C
65	2C		T90-0800-35	HELICAL ANTENNA	C2
64	2B		T91-0650-05	MIC ELEMENT	
66	2A		W02-3684-05	SELECTOR	
TX-RX UNIT (X57-7013-XX) -01 : C -02 : C2					
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			CK73HB1H471K	CHIP C 470PF	K
C3			CK73FB1A475K	CHIP C 4.7UF	K
C4			CK73GB1E105K	CHIP C 1.0UF	K
C5,6			CK73HB1H471K	CHIP C 470PF	K
C7			CK73HB1A104K	CHIP C 0.10UF	K
C9			CK73GB1E105K	CHIP C 1.0UF	K
C11			CK73FB1A225K	CHIP C 2.2UF	K
C13			CK73HB1H471K	CHIP C 470PF	K
C14,15			CK73HB1E472K	CHIP C 4700PF	K
C16,17			CK73HB1H471K	CHIP C 470PF	K
C18			CK73HB1A104K	CHIP C 0.10UF	K
C19			CK73HB1H471K	CHIP C 470PF	K
C20			CK73HB1E472K	CHIP C 4700PF	K
C21			CK73HB1H471K	CHIP C 470PF	K
C22			CK73HB1E472K	CHIP C 4700PF	K
C23,24			CK73GB1E105K	CHIP C 1.0UF	K
C25			CK73HB1E472K	CHIP C 4700PF	K
C26			CK73HB1H471K	CHIP C 470PF	K
C27			C92-0712-05	CHIP-TAN 22UF	6.3WV
C28-31			CK73HB1H471K	CHIP C 470PF	K
C32,33			CK73HB1A104K	CHIP C 0.10UF	K
C34			CK73HB1H471K	CHIP C 470PF	K
C35			CK73HB1A104K	CHIP C 0.10UF	K
C38,39			CK73HB1A473K	CHIP C 0.047UF	K
C40			CK73HB1H471K	CHIP C 470PF	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			CK73HB1H471K	CHIP C 470PF	K
C47			CK73GB1E105K	CHIP C 1.0UF	K
C48-51			CK73HB1H471K	CHIP C 470PF	K
C52			CK73HB1A104K	CHIP C 0.10UF	K
C53			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
C58			CK73HB1H471K	CHIP C 470PF	K
C59			CC73HCH1H220J	CHIP C 22PF	J

PARTS LIST / 零件表

TX-RX UNIT (X57-7013-XX)

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation	Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
C60			CC73HCH1H120J	CHIP C 12PF J		C135			CK73GB1E105K	CHIP C 1.0UF K	
C61			CK73HB1A104K	CHIP C 0.10UF K		C136			CK73HB1H561K	CHIP C 560PF K	
C62			CC73HCH1H010C	CHIP C 1.0PF C		C137			CK73HB1H471K	CHIP C 470PF K	
C63			CC73HCH1H120J	CHIP C 12PF J		C138			CK73HB1A104K	CHIP C 0.10UF K	
C65			CK73HB1A104K	CHIP C 0.10UF K		C140			CK73HB1A104K	CHIP C 0.10UF K	
C66			CK73HB1C103K	CHIP C 0.010UF K		C142,143			CK73GB1E105K	CHIP C 1.0UF K	
C67			C92-0514-05	CHIP-TAN 2.2UF 10WV		C145-148			CK73HB1H471K	CHIP C 470PF K	
C68			CK73HB1H471K	CHIP C 470PF K		C149			CK73HB1H221K	CHIP C 220PF K	
C69			C92-0560-05	CHIP-TAN 10UF 6.3WV		C150,151			CK73FB1A225K	CHIP C 2.2UF K	
C70			CK73HB1E682K	CHIP C 6800PF K		C153			CK73GB1E105K	CHIP C 1.0UF K	
C71			CK73HB1H392K	CHIP C 3900PF K		C154,155			CK73HB1H471K	CHIP C 470PF K	
C72			CK73HB1H122K	CHIP C 1200PF K		C157			CK73GB1A224K	CHIP C 0.22UF K	
C73			CC73HCH1H470J	CHIP C 47PF J		C158			CK73HB1A104K	CHIP C 0.10UF K	
C74			CK73HB1H122K	CHIP C 1200PF K		C159			CC73HCH1H101J	CHIP C 100PF J	
C75			CK73HB1C153K	CHIP C 0.015UF K		C161			CC73HCH1H101J	CHIP C 100PF J	
C76			CK73HB1H332K	CHIP C 3300PF K		C162			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C77			CK73HB1C153K	CHIP C 0.015UF K		C166			CK73HB1H471K	CHIP C 470PF K	
C78			CK73HB1H221K	CHIP C 220PF K		C168,169			CK73HB1A393K	CHIP C 0.039UF K	
C79			CK73HB1H222K	CHIP C 2200PF K		C170			CK73HB1H471K	CHIP C 470PF K	
C81			CK73HB1A104K	CHIP C 0.10UF K		C171			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C82			CC73HCH1H101J	CHIP C 100PF J		C172			C92-0665-05	CHIP-TAN 100UF 6.3WV	
C84			CK73HB1H471K	CHIP C 470PF K		C173			CK73HB1H221K	CHIP C 220PF K	
C85			CK73HB1C123K	CHIP C 0.012UF K		C174			CK73HB1H471K	CHIP C 470PF K	
C87			CK73HB1A104K	CHIP C 0.10UF K		C175			CK73HB1C103K	CHIP C 0.010UF K	
C88,89			CC73HCH1H010B	CHIP C 1.0PF B		C176	*		CK73HB1A224K	CHIP C 0.22UF K	
C90,91			CK73GB1E104K	CHIP C 0.10UF K		C177			CK73HB1A104K	CHIP C 0.10UF K	
C93			CK73GB1E105K	CHIP C 1.0UF K		C178			CK73GB1E105K	CHIP C 1.0UF K	
C95		*	CK73HB1A224K	CHIP C 0.22UF K		C181			CK73GB0J475K	CHIP C 4.7UF K	
C96			CK73GB1E105K	CHIP C 1.0UF K		C182			CK73HB1H681K	CHIP C 680PF K	
C97			CC73HCH1H151J	CHIP C 150PF J		C183			CK73HB1H471K	CHIP C 470PF K	
C98			CK73HB1A683K	CHIP C 0.068UF K		C184			CK73HB1H222K	CHIP C 2200PF K	
C99,100			CK73FB1A475K	CHIP C 4.7UF K		C185			CK73HB1C103K	CHIP C 0.010UF K	
C102			CK73HB1C103K	CHIP C 0.010UF K		C186			CC73HCH1H270J	CHIP C 27PF J	
C104			CK73GB1E104K	CHIP C 0.10UF K		C187			CK73HB1C103K	CHIP C 0.010UF K	
C106			CK73HB1H471K	CHIP C 470PF K		C188			CC73HCH1H270J	CHIP C 27PF J	
C107			CK73HB1A104K	CHIP C 0.10UF K		C189			CK73GB1E104K	CHIP C 0.10UF K	
C108			CK73GB1E105K	CHIP C 1.0UF K		C190,191			CK73HB1H471K	CHIP C 470PF K	
C109			CC73HCH1H100D	CHIP C 10PF D		C192			CK73HB1H102K	CHIP C 1000PF K	
C110			CK73HB1H471K	CHIP C 470PF K		C196			CK73GB1C473K	CHIP C 0.047UF K	
C111			CK73HB1C103K	CHIP C 0.010UF K		C197,198			CK73HB1H471K	CHIP C 470PF K	
C112			CC73HCH1H680J	CHIP C 68PF J		C199,200			CK73HB1A104K	CHIP C 0.10UF K	
C113-115			CK73HB1A104K	CHIP C 0.10UF K		C200			CK73HB1A104K	CHIP C 0.10UF K	
C116			CC73HCH1H220J	CHIP C 22PF J		C201	*		CK73HB1A224K	CHIP C 0.22UF K	
C117			CK73GB1E105K	CHIP C 1.0UF K		C202			CK73GB1E105K	CHIP C 1.0UF K	
C118			CK73HB1A104K	CHIP C 0.10UF K		C423			CK73FB1A475K	CHIP C 4.7UF K	
C119			CK73HB1C103K	CHIP C 0.010UF K		C501			CK73HB1C103K	CHIP C 0.010UF K	
C120			CK73FB1A225K	CHIP C 2.2UF K		C502			CC73HCH1H470J	CHIP C 47PF J	
C121			CK73HB1A393K	CHIP C 0.039UF K		C503			CC73HCH1H101J	CHIP C 100PF J	
C122			CK73HB1H471K	CHIP C 470PF K		C504			CC73HCH1H100D	CHIP C 10PF D	
C123			CC73HCH1H680J	CHIP C 68PF J		C505			CC73HCH1H101J	CHIP C 100PF J	
C125			CK73HB1A104K	CHIP C 0.10UF K		C506			CK73HB1C103K	CHIP C 0.010UF K	
C126			CC73HCH1H470J	CHIP C 47PF J		C507,508			CC73HCH1H101J	CHIP C 100PF J	
C127			CC73HCH1H181J	CHIP C 180PF J		C509			CC73HCH1H100D	CHIP C 10PF D	
C128			CK73HB1H471K	CHIP C 470PF K		C512			CK73HB1C103K	CHIP C 0.010UF K	
C129			CK73GB1E105K	CHIP C 1.0UF K		C513			CK73HB1H471K	CHIP C 470PF K	
C130			CK73HB1A104K	CHIP C 0.10UF K		C514			CC73HCH1H101J	CHIP C 100PF J	
C131			CK73HB1H821K	CHIP C 820PF K		C515			CK73HB1H471K	CHIP C 470PF K	
C132			CK73HB1A104K	CHIP C 0.10UF K		C518			CC73HCH1H101J	CHIP C 100PF J	
C133			CK73GB0J475K	CHIP C 4.7UF K		C520			CK73GB1E105K	CHIP C 1.0UF K	
C134			CK73HB1A473K	CHIP C 0.047UF K		C522			CC73HCH1H050C	CHIP C 5.0PF C	

PARTS LIST / 零件表

TX-RX UNIT (X57-7013-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
C523			C92-0001-05	CHIP-TAN 0.1UF 35WV		C601			CK73HB1H471K	CHIP C 470PF K	
C524			CC73HCH1H101J	CHIP C 100PF J		C604		*	CK73HB1A224K	CHIP C 0.22UF K	
C525			C92-0514-05	CHIP-TAN 2.2UF 10WV	C	C606			CK73HB1H471K	CHIP C 470PF K	
C525			C92-0519-05	CHIP-TAN 1.0UF 25WV	C2	C608			CK73HB1H471K	CHIP C 470PF K	
C526			C92-0002-05	CHIP-TAN 0.22UF 35WV		C609			CC73HCH1H050C	CHIP C 5.0PF C	
C527			CC73HCH1H050C	CHIP C 5.0PF C	C	C610			CK73HB1H471K	CHIP C 470PF K	C2
C527			CC73HCH1H080D	CHIP C 8.0PF D	C2	C611-613			CK73HB1H471K	CHIP C 470PF K	
C529			CC73HCH1H020C	CHIP C 2.0PF C	C2	C615			CK73HB1H471K	CHIP C 470PF K	
C529			CC73HCH1H030C	CHIP C 3.0PF C	C	C617			CC73HCH1H150J	CHIP C 15PF J	
C530			CC73HCH1H101J	CHIP C 100PF J		C619			CC73HCH1H150J	CHIP C 15PF J	C
C533			CC73HCH1H1R5C	CHIP C 1.5PF C		C622			CC73HCH1H101J	CHIP C 100PF K	
C536			CC73HCH1H030C	CHIP C 3.0PF C		C623			CK73HB1H102K	CHIP C 1000PF K	
C537			CC73HCH1H050C	CHIP C 5.0PF C		C625			CC73HCH1H070D	CHIP C 7.0PF D	C
C538			CC73HCH1H101J	CHIP C 100PF J		C625			CC73HCH1H120J	CHIP C 12PF J	C2
C539			CC73HCH1H1R5B	CHIP C 1.5PF B		C626			CC73HCH1H101J	CHIP C 100PF K	
C540			CC73HCH1H020B	CHIP C 2.0PF B		C627			CC73HCH1H270J	CHIP C 27PF J	C2
C541			CC73HCH1H220J	CHIP C 22PF J		C627			CC73HCH1H390J	CHIP C 39PF J	C
C542			CC73HCH1H030C	CHIP C 3.0PF C	C2	C629			CC73HCH1H150J	CHIP C 15PF J	C
C542			CC73HCH1H1R5C	CHIP C 1.5PF C	C	C629			CC73HCH1H270J	CHIP C 27PF J	C2
C544			CC73HCH1H1R5C	CHIP C 1.5PF C		C631			CC73HCH1H180J	CHIP C 18PF J	
C545			CC73HCH1H090D	CHIP C 9.0PF D	C	C632			C92-0514-05	CHIP-TAN 2.2UF 10WV	
C545			CC73HCH1H120J	CHIP C 12PF J	C2	C633			CK73HB1H471K	CHIP C 470PF K	
C546			CC73HCH1H050C	CHIP C 5.0PF C	C2	C635			CC73HCH1H101J	CHIP C 100PF K	
C546			CC73HCH1H1R5C	CHIP C 1.5PF C	C	C636			CC73HCH1H180J	CHIP C 18PF J	C2
C548			CC73HCH1H330J	CHIP C 33PF J	C2	C636			CC73HCH1H220J	CHIP C 22PF J	C
C548			CC73HCH1H470J	CHIP C 47PF J	C	C637			CK73HB1H102K	CHIP C 1000PF K	
C549			CC73HCH1H080B	CHIP C 8.0PF B	C	C638,639			CK73HB1H471K	CHIP C 470PF K	
C549			CC73HCH1H150J	CHIP C 15PF J	C2	C641			CC73HCH1H101J	CHIP C 100PF J	
C551			CC73HCH1H0R5B	CHIP C 0.5PF B		C643			CK73HB1C103K	CHIP C 0.010UF K	
C552			CC73HCH1H101J	CHIP C 100PF J		C645			CC73GCH1H150J	CHIP C 15PF J	C2
C553			CC73HCH1H050B	CHIP C 5.0PF B	C	C645			CC73GCH1H270J	CHIP C 27PF J	C
C553-555			CC73HCH1H050B	CHIP C 5.0PF B	C2	C646			CK73HB1H471K	CHIP C 470PF K	
C554-556			CC73HCH1H040B	CHIP C 4.0PF B	C	C648			CK73HB1H471K	CHIP C 470PF K	
C556			CC73HCH1H060B	CHIP C 6.0PF B	C2	C651			CK73HB1A104K	CHIP C 0.10UF K	
C558			CC73HCH1H050B	CHIP C 5.0PF B	C2	C652			CC73GCH1H220J	CHIP C 22PF J	C
C558			CC73HCH1H060B	CHIP C 6.0PF B	C	C655			CC73GCH1H270J	CHIP C 27PF J	C2
C559			CC73HCH1H080B	CHIP C 8.0PF B	C2	C658			CK73HB1H471K	CHIP C 470PF K	
C559			CC73HCH1H090B	CHIP C 9.0PF B	C	C660			CC73GCH1H150J	CHIP C 15PF J	C2
C560			CC73HCH1H101J	CHIP C 100PF J		C660			CC73GCH1H220J	CHIP C 22PF J	C
C562,563			CK73HB1H471K	CHIP C 470PF K		C665			CK73HB1A104K	CHIP C 0.10UF K	
C564,565			CK73HB1A104K	CHIP C 0.10UF K		C669			CC73GCH1H060B	CHIP C 6.0PF B	C
C566,567			CC73HCH1H0R5B	CHIP C 0.5PF B		C669			CC73GCH1H080B	CHIP C 8.0PF B	C2
C568			CK73HB1C103K	CHIP C 0.010UF K		C670			CC73GCH1H330J	CHIP C 33PF J	C
C569			CK73HB1H471K	CHIP C 470PF K		C670			CC73GCH1H101J	CHIP C 100PF J	C2
C570			CK73HB1C103K	CHIP C 0.010UF K		C671			CC73GCH1H050B	CHIP C 5.0PF B	C2
C571			CK73HB1A104K	CHIP C 0.10UF K	C	C671			CC73GCH1H3R5B	CHIP C 3.5PF B	C
C571			CK73HB1H471K	CHIP C 470PF K	C2	C673			CK73HB1H471K	CHIP C 470PF K	
C572			C92-0628-05	CHIP-TAN 10UF 10WV		C675			CC73GCH1H020B	CHIP C 2.0PF B	C
C573			CK73HB1H471K	CHIP C 470PF K		C675			CC73GCH1H040B	CHIP C 4.0PF B	C2
C574			CC73HCH1H101J	CHIP C 100PF J	C	C676			CC73GCH1H101J	CHIP C 100PF J	
C574,575			CC73HCH1H100D	CHIP C 10PF D	C2	C677			CC73GCH1H050B	CHIP C 5.0PF B	
C575			CC73HCH1H020B	CHIP C 2.0PF B	C	C678			CC73GCH1H030B	CHIP C 3.0PF B	C
C576			CC73HCH1H010B	CHIP C 1.0PF B	C	C678			CC73GCH1H040B	CHIP C 4.0PF B	C2
C577,578			CK73HB1H471K	CHIP C 470PF K		C679			CC73GCH1H1R5B	CHIP C 1.5PF B	
C579			CC73HCH1H030B	CHIP C 3.0PF B	C2	C680			CC73GCH1H040B	CHIP C 4.0PF B	C
C579			CC73HCH1H040B	CHIP C 4.0PF B	C	C680			CC73GCH1H070B	CHIP C 7.0PF B	C2
C580,581			CK73HB1H471K	CHIP C 470PF K		C681			CC73GCH1H020B	CHIP C 2.0PF B	C
C582			CC73HCH1H020B	CHIP C 2.0PF B		C681			CC73GCH1H030B	CHIP C 3.0PF B	C2
C583			CK73HB1A104K	CHIP C 0.10UF K		C682			CC73GCH1H050B	CHIP C 5.0PF B	C
C584			CC73HCH1H100D	CHIP C 10PF D	C2	C682			CC73GCH1H070B	CHIP C 7.0PF B	C2

PARTS LIST / 零件表

TX-RX UNIT (X57-7013-XX)

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation	Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
C683			CC73GCH1H020B	CHIP C 2.0PF B	C	C765			CK73HB1H471K	CHIP C 470PF K	
C683			CC73GCH1H2R5B	CHIP C 2.5PF B	C2	C767			CK73HB1H471K	CHIP C 470PF K	
C684			CC73GCH1H1R5B	CHIP C 1.5PF B		C769			CK73HB1H471K	CHIP C 470PF K	
C701,702			CK73HB1A104K	CHIP C 0.10UF K		C771			CK73HB1A104K	CHIP C 0.10UF K	
C703			CC73HCH1H330J	CHIP C 33PF J		C772			CK73HB1H471K	CHIP C 470PF K	
C704			CK73HB1C103K	CHIP C 0.010UF K		C773			CC73HCH1H030B	CHIP C 3.0PF B	
C705			CC73HCH1H220J	CHIP C 22PF J		C774			CC73HCH1H180J	CHIP C 18PF J	C2
C706			CC73HCH1H820J	CHIP C 82PF J		C774			CC73HCH1H330J	CHIP C 33PF J	C
C707			CK73HB1H331K	CHIP C 330PF K		C776			CC73HCH1H030B	CHIP C 3.0PF B	
C708,709			CK73HB1A104K	CHIP C 0.10UF K		C777			CK73HB1H471K	CHIP C 470PF K	
C710			CC73HCH1H390J	CHIP C 39PF J		C778			CC73HCH1H030B	CHIP C 3.0PF B	
C711			CC73HCH1H820J	CHIP C 82PF J		C779			CC73HCH1H180J	CHIP C 18PF J	C2
C712			CK73HB1H331K	CHIP C 330PF K		C779			CC73HCH1H330J	CHIP C 33PF J	C
C713			CK73HB1A104K	CHIP C 0.10UF K		C781			CK73HB1H471K	CHIP C 470PF K	
C714			CC73HCH1H390J	CHIP C 39PF J		C782			CC73HCH1H220J	CHIP C 22PF J	C2
C715			CK73HB1H471K	CHIP C 470PF K		C782			CC73HCH1H330J	CHIP C 33PF J	C
C716			CK73HB1H182K	CHIP C 1800PF K		C783			CC73HCH1H060B	CHIP C 6.0PF B	C
C717			CK73GB1E105K	CHIP C 1.0UF K		C783			CC73HCH1H080B	CHIP C 8.0PF B	C2
C718			C92-0712-05	CHIP-TAN 22UF 6.3WV		C784			CC73HCH1H100D	CHIP C 10PF D	
C719			CC73HCH1H820J	CHIP C 82PF J		C901			CK73HB1H471K	CHIP C 470PF K	
C720			CK73HB1C103K	CHIP C 0.010UF K		C904			CK73HB1H471K	CHIP C 470PF K	
C721			CK73HB1H471K	CHIP C 470PF K		C906			CK73HB1C103K	CHIP C 0.010UF K	
C722			CK73HB1A104K	CHIP C 0.10UF K		C917			CK73HB1A104K	CHIP C 0.10UF K	
C723			CK73HB1A333K	CHIP C 0.033UF K		C921			CK73HB1C223K	CHIP C 0.022UF K	
C724			CC73HCH1H330J	CHIP C 33PF J		C923-926			CK73HB1H471K	CHIP C 470PF K	
C725			CK73HB1A104K	CHIP C 0.10UF K		TC501,502			C05-0384-05	CERAMIC TRIMMER (10PF)	
C726			CK73HB1C103K	CHIP C 0.010UF K		101	2A	*	E37-1141-15	FLAT CABLE	
C727			CK73HB1H471K	CHIP C 470PF K		-		*	E37-1145-05	PROCESSED LEAD WIRE	
C728			CK73HB1C103K	CHIP C 0.010UF K		CN1		*	E41-2440-05	FLAT CABLE CONNECTOR	
C730			CC73HCH1H080B	CHIP C 8.0PF B		CN8		*	E40-5915-05	FLAT CABLE CONNECTOR	
C732,733			CK73HB1C103K	CHIP C 0.010UF K		CN18		*	E40-6420-05	FLAT CABLE CONNECTOR	
C734,735			CK73HB1H471K	CHIP C 470PF K		CN60		*	E40-5932-05	SOCKET FOR PIN ASSY	
C736			CK73HB1C103K	CHIP C 0.010UF K		CN71		*	E40-5915-05	FLAT CABLE CONNECTOR	
C737			CC73HCH1H060B	CHIP C 6.0PF B		CN901		*	E40-6420-05	FLAT CABLE CONNECTOR	
C738			CC73HCH1H120J	CHIP C 12PF J		J1		*	E11-0457-05	PHONE JACK (2.5/3.5)	
C739			CC73HCH1H020B	CHIP C 2.0PF B		-		*	F20-3369-04	INSULATING SHEET	
C740			CC73HCH1H100D	CHIP C 10PF D		F901		*	F53-0324-05	FUSE	
C741			CK73HB1C103K	CHIP C 0.010UF K		CD701		*	L79-1474-05	TUNING COIL	
C743			CC73HCH1H010B	CHIP C 1.0PF B		CF701		*	L72-1010-05	CERAMIC FILTER	
C744,745			CK73HB1H471K	CHIP C 470PF K		CF702		*	L72-1012-05	CERAMIC FILTER	
C746			CC73HCH1H040B	CHIP C 4.0PF B		L1		*	L92-0140-05	CHIP FERRITE	
C747,748			CK73HB1H471K	CHIP C 470PF K		L2-5		*	L92-0138-05	CHIP FERRITE	
C749			CC73HCH1H040B	CHIP C 4.0PF B	C2	L8		*	L92-0138-05	CHIP FERRITE	
C749			CC73HCH1H3R5B	CHIP C 3.5PF B	C	L10		*	L92-0140-05	CHIP FERRITE	
C750			CC73HCH1H180J	CHIP C 18PF J	C2	L11		*	L92-0149-05	CHIP FERRITE	
C750			CC73HCH1H330J	CHIP C 33PF J	C	L12,13		*	L92-0419-15	CHIP FERRITE	
C752			CC73HCH1H020B	CHIP C 2.0PF B		L14,15		*	L92-0138-05	CHIP FERRITE	
C754			CC73HCH1H020B	CHIP C 2.0PF B		L501		*	L41-4795-39	SMALL FIXED INDUCTOR (4.7UH)	
C755			CC73HCH1H180J	CHIP C 18PF J	C2	L502		*	L40-3363-57	SMALL FIXED INDUCTOR (3.3NH)	C
C755			CC73HCH1H330J	CHIP C 33PF J	C	L502		*	L40-3963-57	SMALL FIXED INDUCTOR (3.9NH)	C2
C756			CC73HCH1H050B	CHIP C 5.0PF B		L503		*	L92-0138-05	CHIP FERRITE	
C757			CC73HCH1H020B	CHIP C 2.0PF B	C2	L505		*	L40-2285-92	SMALL FIXED INDUCTOR (220NH)	C2
C757			CC73HCH1H1R5B	CHIP C 1.5PF B	C	L505,506		*	L40-2285-92	SMALL FIXED INDUCTOR (220NH)	C
C758			CK73HB1H471K	CHIP C 470PF K		L506		*	L40-2785-92	SMALL FIXED INDUCTOR (270NH)	C2
C759			CC73HCH1H020B	CHIP C 2.0PF B		L507		*	L40-3363-57	SMALL FIXED INDUCTOR (3.3NH)	C
C760			CK73HB1H471K	CHIP C 470PF K		L507		*	L40-3963-57	SMALL FIXED INDUCTOR (3.9NH)	C2
C761			CC73HCH1H180J	CHIP C 18PF J	C2	L508		*	L40-2285-92	SMALL FIXED INDUCTOR (220NH)	C2
C761			CC73HCH1H330J	CHIP C 33PF J	C	L508,509		*	L40-8275-92	SMALL FIXED INDUCTOR (82NH)	C
C762			CC73HCH1H050B	CHIP C 5.0PF B				*			
C763			CK73HB1H471K	CHIP C 470PF K				*			

PARTS LIST / 零件表

TX-RX UNIT (X57-7013-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
L509			L40-1285-92	SMALL FIXED INDUCTOR (120NH)	C2	CP16			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
L511			L40-1275-57	SMALL FIXED INDUCTOR (12.0NH)	C	CP18			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
L511			L40-1575-57	SMALL FIXED INDUCTOR (15.0NH)	C2	CP19			RK75HA1J473J	CHIP-COM 47K J 1/16W	
L512			L40-1875-54	SMALL FIXED INDUCTOR (18NH)	C	CP22-24			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
L512			L40-2275-54	SMALL FIXED INDUCTOR (22NH)	C2	CP28			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
L513			L41-2278-14	SMALL FIXED INDUCTOR (22NH)	C	CP30			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
L513			L41-2778-14	SMALL FIXED INDUCTOR (27NH)	C2	CP32			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
L514			L41-1585-45	SMALL FIXED INDUCTOR (150NH)	C	CP34			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
L514,515		*	L41-2285-45	SMALL FIXED INDUCTOR (220NH)	C2	CP36			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
L515		*	L41-1885-45	SMALL FIXED INDUCTOR (180NH)	C	CP38			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
L517		*	L41-2785-45	SMALL FIXED INDUCTOR (270NH)		CP40			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
L518			L40-1585-92	SMALL FIXED INDUCTOR (150NH)	C	CP42,43			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
L518			L40-2785-92	SMALL FIXED INDUCTOR (270NH)	C2	CP44			RK75HA1J474J	CHIP-COM 470K J 1/16W	
L519			L92-0138-05	CHIP FERRITE		CP45-47			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
L520			L40-6875-57	SMALL FIXED INDUCTOR (68.0NH)	C	CP48,49			RK74HB1J102J	CHIP-COM 1.0K J 1/16W	
L521			L40-2775-57	SMALL FIXED INDUCTOR (27.0NH)		CP50			RK75HA1J102J	CHIP-COM 1.0K J 1/16W	
L522,523			L40-4775-57	SMALL FIXED INDUCTOR (47.0NH)	C	CP54			RK75HA1J473J	CHIP-COM 47K J 1/16W	
L524			L40-2275-57	SMALL FIXED INDUCTOR (22.0NH)	C2	R1			R92-1252-05	CHIP R 0 OHM J 1/16W	
L601			L40-2775-57	SMALL FIXED INDUCTOR (27.0NH)		R2			RK73HB1J153J	CHIP R 15K J 1/16W	
L602			L40-1875-57	SMALL FIXED INDUCTOR (18.0NH)		R7		*	RK73HB1J102J	CHIP R 1.0K J 1/16W	
L603			L92-0138-05	CHIP FERRITE		R8			RK73HB1J272J	CHIP R 2.7K J 1/16W	
L604			L40-1875-57	SMALL FIXED INDUCTOR (18.0NH)	C	R9			RK73HB1J332J	CHIP R 3.3K J 1/16W	
L605			L40-6865-57	SMALL FIXED INDUCTOR (6.8NH)		R11		*	RK73HB1J473J	CHIP R 47K J 1/16W	
L606		*	L41-1575-45	SMALL FIXED INDUCTOR (15NH)		R12			RK73HB1J334J	CHIP R 330K J 1/16W	
L607			L92-0149-05	CHIP FERRITE		R13			RK73HB1J332J	CHIP R 3.3K J 1/16W	
L608			L40-1263-92	SMALL FIXED INDUCTOR (1.20NH)	C2	R14		*	RK73HB1J102J	CHIP R 1.0K J 1/16W	
L611			L34-4576-05	AIR-CORE COIL		R15			RK73HB1J272J	CHIP R 2.7K J 1/16W	
L612			L92-0149-05	CHIP FERRITE		R16			RK73HB1J331J	CHIP R 330 J 1/16W	
L613			L41-5668-14	SMALL FIXED INDUCTOR (5.6NH)		R17			RK73HB1J821J	CHIP R 820 J 1/16W	
L614		*	L41-2285-45	SMALL FIXED INDUCTOR (220NH)		R18			RK73GB1J100J	CHIP R 10 J 1/16W	
L615-618			L34-4564-05	AIR-CORE COIL		R20			RK73HB1J103J	CHIP R 10K J 1/16W	
L619			L41-1092-44	SMALL FIXED INDUCTOR (1UH)		R21			RK73HB1J821J	CHIP R 820 J 1/16W	
L701			L40-1885-92	SMALL FIXED INDUCTOR (180NH)		R22,23			R92-1368-05	CHIP R 0 OHM	
L702			L40-1085-57	SMALL FIXED INDUCTOR (100NH)		R24			RK73HB1J224J	CHIP R 220K J 1/16W	
L703			L40-1591-86	SMALL FIXED INDUCTOR (1.5U)		R25			RK73HB1J153J	CHIP R 15K J 1/16W	
L704			L92-0138-05	CHIP FERRITE		R26			R92-1368-05	CHIP R 0 OHM	
L705			L41-5685-39	SMALL FIXED INDUCTOR (0.56UH)		R27,28			RK73HB1J474D	CHIP R 470K D 1/16W	
L706			L40-2785-92	SMALL FIXED INDUCTOR (270NH)		R31			RK73HB1J103J	CHIP R 10K J 1/16W	
L707			L40-1875-57	SMALL FIXED INDUCTOR (18.0NH)		R36			RK73GB1J433J	CHIP R 43K J 1/16W	
L709			L40-2775-57	SMALL FIXED INDUCTOR (27.0NH)	C	R37			RK73HB1J103J	CHIP R 10K J 1/16W	
L709			L40-3375-57	SMALL FIXED INDUCTOR (33.0NH)	C2	R39,40		*	RK73HB1J473J	CHIP R 47K J 1/16W	
L711-713			L41-8268-14	SMALL FIXED INDUCTOR (8.2NH)		R42-44			RK73HB1J103J	CHIP R 10K J 1/16W	
L714			L92-0138-05	CHIP FERRITE		R45,46		*	RK73HB1J102J	CHIP R 1.0K J 1/16W	
L715		*	L41-2785-45	SMALL FIXED INDUCTOR (270NH)		R48-52		*	RK73HB1J473J	CHIP R 47K J 1/16W	
L717,718			L41-8268-14	SMALL FIXED INDUCTOR (8.2NH)		R53		*	RK73HB1J474J	CHIP R 470K J 1/16W	
L719		*	L41-4775-45	SMALL FIXED INDUCTOR (47NH)		R54		*	RK73HB1J102J	CHIP R 1.0K J 1/16W	
L720			L40-6865-57	SMALL FIXED INDUCTOR (6.8NH)		R55,56		*	RK73HB1J474J	CHIP R 470K J 1/16W	
L901			L92-0149-05	CHIP FERRITE		R57			RK73HB1J103J	CHIP R 10K J 1/16W	
X1			L77-1950-05	CRYSTAL RESONATOR (11.0592MHZ)		R58,59		*	RK73HB1J473J	CHIP R 47K J 1/16W	
X2		*	L77-1976-05	CRYSTAL RESONATOR (3.6864MHZ)		R61			RK73HB1J331J	CHIP R 330 J 1/16W	
X501			L77-1971-05	TCXO (16.8MHZ)		R62			RK73HB1J103J	CHIP R 10K J 1/16W	
XF701			L71-0617-25	MCF (49.95MHZ)		R63			RK73HB1J332J	CHIP R 3.3K J 1/16W	
CP1			RK74HB1J473J	CHIP-COM 47K J 1/16W		R64		*	RK73HB1J102J	CHIP R 1.0K J 1/16W	
CP3,4			RK75HA1J102J	CHIP-COM 1.0K J 1/16W		R65,66		*	RK73HB1J473J	CHIP R 47K J 1/16W	
CP5			RK74HB1J102J	CHIP-COM 1.0K J 1/16W		R67			RK73HB1J472J	CHIP R 4.7K J 1/16W	
CP7,8			RK75HA1J102J	CHIP-COM 1.0K J 1/16W		R68			RK73GB1J181J	CHIP R 180 J 1/16W	
CP10			RK74HB1J102J	CHIP-COM 1.0K J 1/16W		R69		*	RK73HB1J102J	CHIP R 1.0K J 1/16W	
CP11			RK75HA1J102J	CHIP-COM 1.0K J 1/16W		R71		*	RK73HB1J102J	CHIP R 1.0K J 1/16W	
CP12,13			RK74HB1J102J	CHIP-COM 1.0K J 1/16W		R72			RK73GB1J181J	CHIP R 180 J 1/16W	
						R73,74		*	RK73HB1J474J	CHIP R 470K J 1/16W	

PARTS LIST / 零件表

TX-RX UNIT (X57-7013-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
R75			RK73GB1J391J	CHIP R 390 J 1/16W		R160			RK73HB1J224J	CHIP R 220K J 1/16W	
R76-80		*	RK73HB1J102J	CHIP R 1.0K J 1/16W		R161,162			RK73HB1J124J	CHIP R 120K J 1/16W	
R82			RK73GB1J391J	CHIP R 390 J 1/16W		R163			RK73HB1J393J	CHIP R 39K J 1/16W	
R83			R92-1252-05	CHIP R 0 OHM J 1/16W		R164			RK73HB1J184J	CHIP R 180K J 1/16W	
R84			RK73HB1J184J	CHIP R 180K J 1/16W		R165			RK73HB1J154J	CHIP R 150K J 1/16W	
R89		*	RK73HB1J102J	CHIP R 1.0K J 1/16W		R166			RK73HB1J103J	CHIP R 10K J 1/16W	
R90			RK73HB1J394J	CHIP R 390K J 1/16W		R167			R92-1252-05	CHIP R 0 OHM J 1/16W	
R91			RK73HB1J332J	CHIP R 3.3K J 1/16W		R168	*		RK73HB1J474J	CHIP R 470K J 1/16W	
R92		*	RK73HB1J473J	CHIP R 47K J 1/16W		R169			RK73HB1J223J	CHIP R 22K J 1/16W	
R93			RK73HB1J393J	CHIP R 39K J 1/16W		R170			R92-1252-05	CHIP R 0 OHM J 1/16W	
R94			RK73HB1J684J	CHIP R 680K J 1/16W		R171			R92-1368-05	CHIP R 0 OHM	
R95,96		*	RK73HB1J102J	CHIP R 1.0K J 1/16W		R172			RK73HB1J684J	CHIP R 680K J 1/16W	
R97		*	RK73HB1J474J	CHIP R 470K J 1/16W		R173			RK73HB1J184J	CHIP R 180K J 1/16W	
R98,99		*	RK73HB1J473J	CHIP R 47K J 1/16W		R174			RK73HB1J123J	CHIP R 12K J 1/16W	
R100			RK73HB1J223J	CHIP R 22K J 1/16W		R175			RK73HB1J103J	CHIP R 10K J 1/16W	
R101			RK73HB1J103J	CHIP R 10K J 1/16W		R176			RK73HB1J683J	CHIP R 68K J 1/16W	
R102		*	RK73HB1J473J	CHIP R 47K J 1/16W		R177			R92-1368-05	CHIP R 0 OHM	
R103			RK73HB1J105J	CHIP R 1.0M J 1/16W		R178	*		RK73HB1J102J	CHIP R 1.0K J 1/16W	
R104			RK73HB1J103J	CHIP R 10K J 1/16W		R180			RK73HB1J103J	CHIP R 10K J 1/16W	
R105			RK73HB1J472J	CHIP R 4.7K J 1/16W		R181			R92-1368-05	CHIP R 0 OHM	
R106		*	RK73HB1J473J	CHIP R 47K J 1/16W		R183			RK73HB1J103J	CHIP R 10K J 1/16W	
R107			RK73HB1J564J	CHIP R 560K J 1/16W		R184			R92-1368-05	CHIP R 0 OHM	
R108			RK73HB1J334J	CHIP R 330K J 1/16W		R187			R92-1368-05	CHIP R 0 OHM	
R109			RK73HB1J684J	CHIP R 680K J 1/16W		R191			R92-1368-05	CHIP R 0 OHM	
R111			RK73HB1J564J	CHIP R 560K J 1/16W		R192,193			RK73HB1J104J	CHIP R 100K J 1/16W	
R112			RK73HB1J334J	CHIP R 330K J 1/16W		R194,195	*		RK73HB1J102J	CHIP R 1.0K J 1/16W	
R113			R92-1368-05	CHIP R 0 OHM		R196			RK73HB1J151J	CHIP R 150 J 1/16W	
R114			RK73HB1J184J	CHIP R 180K J 1/16W		R198			R92-1252-05	CHIP R 0 OHM J 1/16W	
R115			RK73GB1J103J	CHIP R 10K J 1/16W		R199			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R116			RK73HB1J393J	CHIP R 39K J 1/16W		R200	*		RK73HB1J473J	CHIP R 47K J 1/16W	
R117			RK73HB1J683J	CHIP R 68K J 1/16W		R202	*		RK73HB1J102J	CHIP R 1.0K J 1/16W	
R119			RK73HB1J101J	CHIP R 100 J 1/16W		R203			RK73HB1J222J	CHIP R 2.2K J 1/16W	
R121			RK73HB1J184J	CHIP R 180K J 1/16W		R204			RK73HB1J104J	CHIP R 100K J 1/16W	
R122			RK73HB1J154J	CHIP R 150K J 1/16W		R206			R92-1368-05	CHIP R 0 OHM	
R125			RK73GB1J152J	CHIP R 1.5K J 1/16W		R207			RK73HB1J154J	CHIP R 150K J 1/16W	
R129			RK73HB1J105J	CHIP R 1.0M J 1/16W		R210			RK73HB1J471J	CHIP R 470 J 1/16W	
R130		*	RK73HB1J474J	CHIP R 470K J 1/16W		R211	*		RK73HB1J474J	CHIP R 470K J 1/16W	
R131,132			R92-1368-05	CHIP R 0 OHM		R212			RK73GB1J101J	CHIP R 100 J 1/16W	
R134			RK73HB1J104J	CHIP R 100K J 1/16W		R213			RK73HB1J101J	CHIP R 100 J 1/16W	
R135			R92-1368-05	CHIP R 0 OHM		R214			RK73HB1J182J	CHIP R 1.8K J 1/16W	
R137			RK73HB1J223J	CHIP R 22K J 1/16W		R215			RK73HB1J334J	CHIP R 330K J 1/16W	
R139			RK73HB1J103J	CHIP R 10K J 1/16W		R216			RK73HB1J224J	CHIP R 270K J 1/16W	
R140		*	RK73HB1J102J	CHIP R 1.0K J 1/16W		R218			R92-1252-05	CHIP R 0 OHM J 1/16W	
R141			RK73HB1J105J	CHIP R 1.0M J 1/16W		R220			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R142			RK73HB1J223J	CHIP R 22K J 1/16W		R221	*		RK73HB1J473J	CHIP R 47K J 1/16W	
R143		*	RK73HB1J473J	CHIP R 47K J 1/16W		R222,223	*		RK73HB1J102J	CHIP R 1.0K J 1/16W	
R144			RK73HB1J472J	CHIP R 4.7K J 1/16W		R224			RK73HB1J104J	CHIP R 100K J 1/16W	
R145			RK73HB1J154J	CHIP R 150K J 1/16W		R225			RK73HB1J154J	CHIP R 150K J 1/16W	
R146			RK73HB1J105J	CHIP R 1.0M J 1/16W		R226			RK73HB1J184J	CHIP R 180K J 1/16W	
R147			RK73HB1J103J	CHIP R 10K J 1/16W		R229	*		RK73HB1J473J	CHIP R 47K J 1/16W	
R149			RK73HB1J105J	CHIP R 1.0M J 1/16W		R230			RK73HB1J123J	CHIP R 12K J 1/16W	
R150			RK73HB1J153J	CHIP R 15K J 1/16W		R232			RK73HB1J823J	CHIP R 82K J 1/16W	
R151			RK73HB1J183J	CHIP R 18K J 1/16W		R236			RK73HB1J124J	CHIP R 120K J 1/16W	
R152			RK73HB1J105J	CHIP R 1.0M J 1/16W		R239			RK73HB1J104J	CHIP R 100K J 1/16W	
R153			RK73HB1J332J	CHIP R 3.3K J 1/16W		R240	*		RK73HB1J474J	CHIP R 470K J 1/16W	
R154			RK73HB1J333J	CHIP R 33K J 1/16W		R241	*		RK73HB1J473J	CHIP R 47K J 1/16W	
R155			RK73HB1J223J	CHIP R 22K J 1/16W		R242			RK73HB1J104J	CHIP R 100K J 1/16W	
R156,157		*	RK73HB1J304J	CHIP R 300K J 1/16W		R243	*		RK73HB1J474J	CHIP R 470K J 1/16W	
R158			RK73HB1J334J	CHIP R 330K J 1/16W		R244	*		RK73HB1J473J	CHIP R 47K J 1/16W	
R159		*	RK73HB1J474J	CHIP R 470K J 1/16W		R245			RK73HB1J103J	CHIP R 10K J 1/16W	

PARTS LIST / 零件表

TX-RX UNIT (X57-7013-XX)

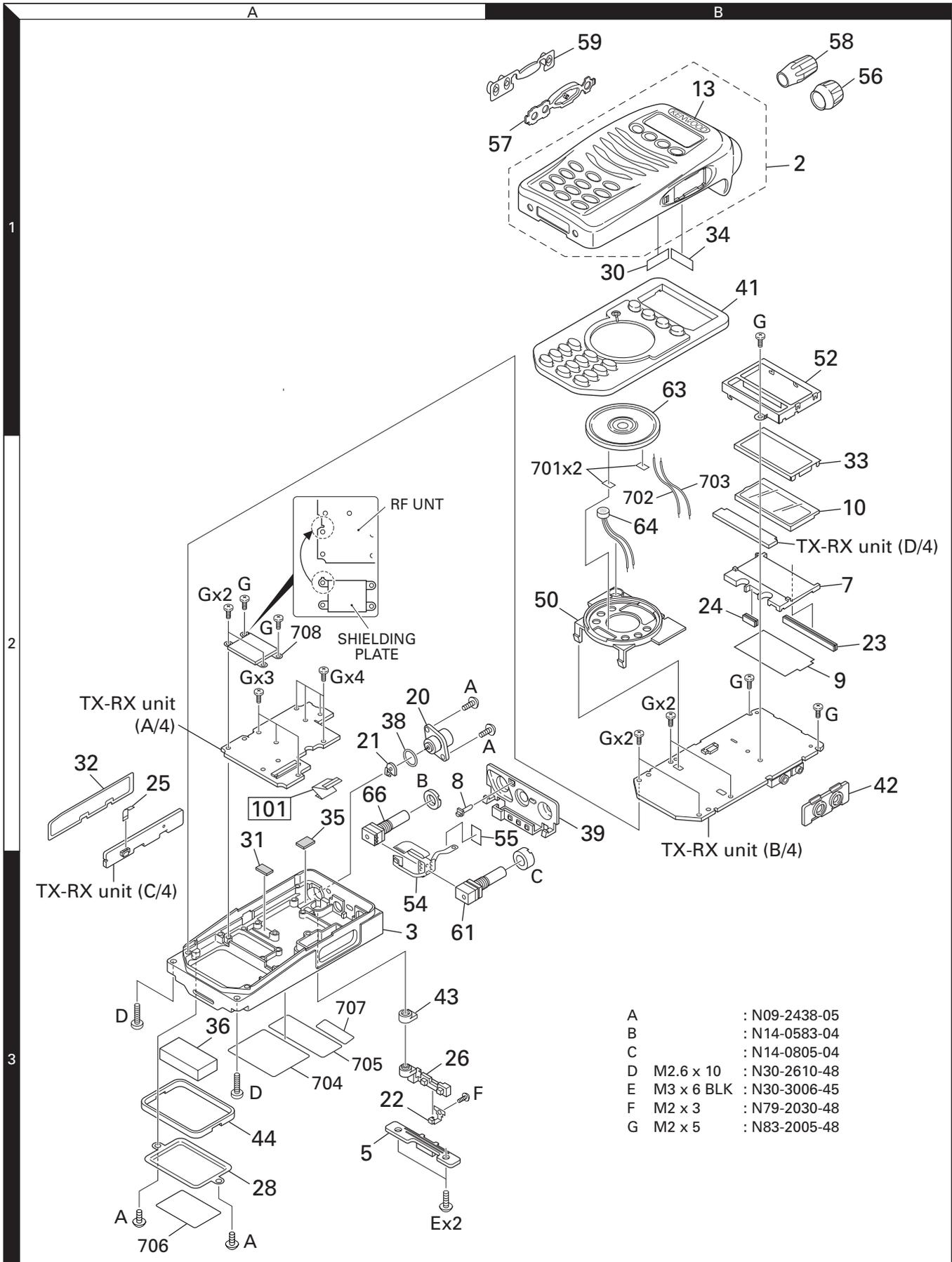
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R246			RK73HB1J223J	CHIP R 22K J 1/16W		R605			RK73HB1J470J	CHIP R 47 J 1/16W	C
R247			RK73HB1J184J	CHIP R 180K J 1/16W		R606			RK73HB1J471J	CHIP R 470 J 1/16W	C2
R248			R92-1252-05	CHIP R 0 OHM J 1/16W		R607			RK73HB1J220J	CHIP R 22 J 1/16W	
R250			R92-1252-05	CHIP R 0 OHM J 1/16W		R608			RK73HB1J331J	CHIP R 330 J 1/16W	
R251		*	RK73HB1J474J	CHIP R 470K J 1/16W		R609			RK73HB1J330J	CHIP R 33 J 1/16W	
R254,255		*	RK73HB1J474J	CHIP R 470K J 1/16W		R610			RK73HB1J331J	CHIP R 330 J 1/16W	
R256-258			R92-1252-05	CHIP R 0 OHM J 1/16W		R611			RK73HB1J823J	CHIP R 82K J 1/16W	
R259			RK73HB1J103J	CHIP R 10K J 1/16W		R612			RK73HB1J221J	CHIP R 220 J 1/16W	
R261			RK73HB1J103J	CHIP R 10K J 1/16W		R613			RK73HB1J563J	CHIP R 56K J 1/16W	
R262		*	RK73HB1J473J	CHIP R 47K J 1/16W		R614			RK73HB1J471J	CHIP R 470 J 1/16W	
R501			R92-1368-05	CHIP R 0 OHM		R618			R92-1368-05	CHIP R 0 OHM	
R502		*	RK73HB1J102J	CHIP R 1.0K J 1/16W		R619			RK73HB1J103J	CHIP R 10K J 1/16W	
R503			RK73HB1J470J	CHIP R 47 J 1/16W		R620			R92-1368-05	CHIP R 0 OHM	
R504			RK73HB1J103J	CHIP R 10K J 1/16W		R621			RK73EB2ER39K	CHIP R 0.39 K 1/4W	
R505		*	RK73HB1J102J	CHIP R 1.0K J 1/16W		R622			RK73HB1J220J	CHIP R 22 J 1/16W	
R506			RK73HB1J154J	CHIP R 150K J 1/16W		R623			RK73EB2ER39K	CHIP R 0.39 K 1/4W	
R507			RK73HB1J101J	CHIP R 100 J 1/16W		R624			RK73HB1J104J	CHIP R 100K J 1/16W	
R508			RK73HB1J330J	CHIP R 33 J 1/16W	C	R625			RK73HB1J680J	CHIP R 68 J 1/16W	
R508			RK73HB1J470J	CHIP R 47 J 1/16W	C2	R626			R92-1252-05	CHIP R 0 OHM J 1/16W	C
R509			RK73HB1J272J	CHIP R 2.7K J 1/16W		R627			RK73HB1J223J	CHIP R 22K J 1/16W	
R510-512			R92-1368-05	CHIP R 0 OHM		R628			RK73HB1J183J	CHIP R 18K J 1/16W	
R513			RK73HB1J470J	CHIP R 47 J 1/16W		R629			RK73EB2ER39K	CHIP R 0.39 K 1/4W	
R514		*	RK73HB1J102J	CHIP R 1.0K J 1/16W		R630,631			RK73HH1J154D	CHIP R 150K D 1/16W	
R515			RK73HB1J331J	CHIP R 330 J 1/16W	C2	R632,633			RK73HH1J334D	CHIP R 330K D 1/16W	
R515			RK73HB1J561J	CHIP R 560 J 1/16W	C	R634			RK73HB1J103J	CHIP R 10K J 1/16W	
R516			R92-1368-05	CHIP R 0 OHM		R635		*	RK73HB1J473J	CHIP R 47K J 1/16W	
R517			RK73HB1J103J	CHIP R 10K J 1/16W		R636			R92-1368-05	CHIP R 0 OHM	
R518			RK73HB1J101J	CHIP R 100 J 1/16W		R637			RK73HB1J223J	CHIP R 22K J 1/16W	
R519,520			RK73HB1J103J	CHIP R 10K J 1/16W		R638		*	RK73HB1J474J	CHIP R 470K J 1/16W	
R521			RK73HB1J101J	CHIP R 100 J 1/16W	C	R639			RK73HB1J184J	CHIP R 180K J 1/16W	
R521,522			RK73HB1J101J	CHIP R 100 J 1/16W	C2	R640		*	RK73HB1J474J	CHIP R 470K J 1/16W	
R522			RK73HB1J220J	CHIP R 22 J 1/16W	C	R641			R92-1252-05	CHIP R 0 OHM J 1/16W	
R523		*	RK73HB1J473J	CHIP R 47K J 1/16W		R642			RK73HB1J220J	CHIP R 22 J 1/16W	
R525			RK73HB1J101J	CHIP R 100 J 1/16W		R643			RK73HB1J683J	CHIP R 68K J 1/16W	
R527			RK73HB1J104J	CHIP R 100K J 1/16W	C2	R645,646			RK73GB1J271J	CHIP R 270 J 1/16W	
R527			RK73HB1J224J	CHIP R 220K J 1/16W	C	R647			R92-1252-05	CHIP R 0 OHM J 1/16W	
R529			RK73HB1J151J	CHIP R 150 J 1/16W	C	R648			R92-1368-05	CHIP R 0 OHM	C
R529,530			RK73HB1J181J	CHIP R 180 J 1/16W	C2	R648			RK73HB1J5R6J	CHIP R 5.6 J 1/16W	C2
R530			RK73HB1J181J	CHIP R 180 J 1/16W	C	R701			RK73HB1J103J	CHIP R 10K J 1/16W	
R531,532			RK73HB1J220J	CHIP R 22 J 1/16W		R702,703			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R533			RK73HB1J472J	CHIP R 4.7K J 1/16W		R704			RK73HB1J224J	CHIP R 220K J 1/16W	
R534			RK73HB1J154J	CHIP R 150K J 1/16W		R705,706			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R535			RK73HB1J101J	CHIP R 100 J 1/16W		R707			RK73HB1J101J	CHIP R 100 J 1/16W	
R541			RK73HB1J154J	CHIP R 150K J 1/16W		R708			RK73HB1J103J	CHIP R 10K J 1/16W	
R542			RK73HB1J331J	CHIP R 330 J 1/16W	C2	R710		*	RK73HB1J102J	CHIP R 1.0K J 1/16W	
R542			RK73HB1J680J	CHIP R 68 J 1/16W	C	R711		*	RK73HB1J474J	CHIP R 470K J 1/16W	
R544			RK73HB1J470J	CHIP R 47 J 1/16W		R713			RK73HB1J334J	CHIP R 330K J 1/16W	
R545			RK73HH1J333D	CHIP R 33K D 1/16W		R715,716			RK73HB1J332J	CHIP R 3.3K J 1/16W	
R546			RK73HH1J104D	CHIP R 100K D 1/16W		R717			RK73HB1J272J	CHIP R 2.7K J 1/16W	
R547			RK73HB1J472J	CHIP R 4.7K J 1/16W		R718			RK73HB1J100J	CHIP R 10 J 1/16W	
R548			RK73HB1J470J	CHIP R 47 J 1/16W	C	R719			RK73HB1J332J	CHIP R 3.3K J 1/16W	
R548			R92-1368-05	CHIP R 0 OHM	C2	R721			RK73HB1J224J	CHIP R 220K J 1/16W	
R549			RK73HB1J681J	CHIP R 680 J 1/16W	C	R722			RK73HB1J101J	CHIP R 100 J 1/16W	
R550			R92-1252-05	CHIP R 0 OHM J 1/16W		R726		*	RK73HB1J474J	CHIP R 470K J 1/16W	
R551,552			R92-1368-05	CHIP R 0 OHM	C2	R727			RK73HB1J681J	CHIP R 680 J 1/16W	
R601			RK73HB1J472J	CHIP R 4.7K J 1/16W		R728			RK73HB1J101J	CHIP R 100 J 1/16W	
R602			R92-1368-05	CHIP R 0 OHM	C2	R729			RK73HB1J470J	CHIP R 47 J 1/16W	
R603		*	RK73HB1J102J	CHIP R 1.0K J 1/16W		R730			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R604			RK73HB1J333J	CHIP R 33K J 1/16W		R731			RK73HB1J222J	CHIP R 2.2K J 1/16W	
R605			RK73HB1J101J	CHIP R 100 J 1/16W	C2	R732			RK73HB1J151J	CHIP R 150 J 1/16W	

PARTS LIST / 零件表

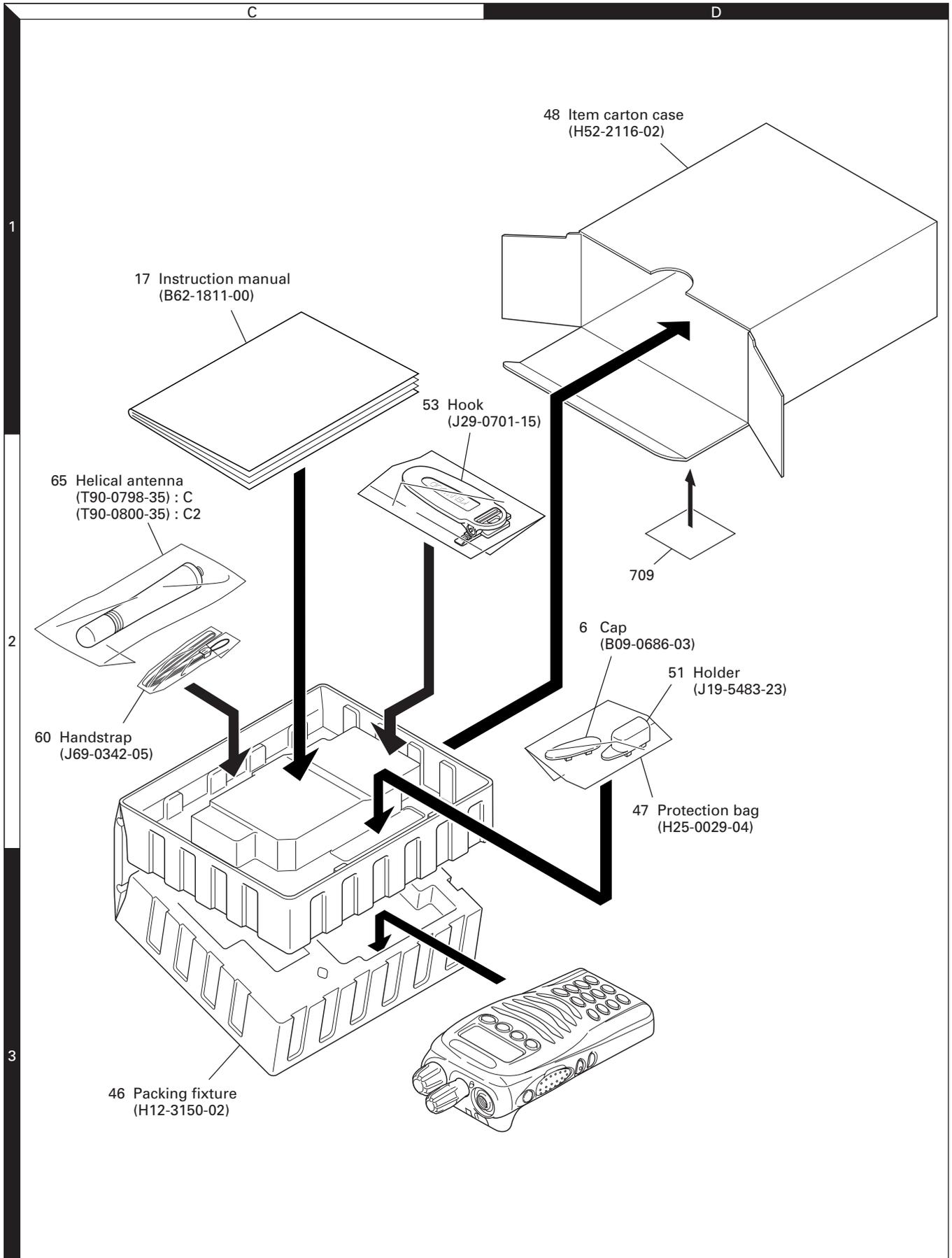
TX-RX UNIT (X57-7013-XX)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
R733			R92-1368-05	CHIP R 0 OHM		IC13			AQUA-L	MOS-IC	
R734			RK73HB1J104J	CHIP R 100K J 1/16W		IC14		*	TC7W53FK(F)	MOS-IC	
R735			RK73HB1J563J	CHIP R 56K J 1/16W		IC15		*	TK62012F	MOS-IC	
R736			RK73HB1J104J	CHIP R 100K J 1/16W		IC16			M62364FP-F	MOS-IC	
R737			RK73HB1J563J	CHIP R 56K J 1/16W		IC17		*	TK62012F	MOS-IC	
R738			R92-1368-05	CHIP R 0 OHM		IC18			TA7368F	MOS-IC	
R739-741			RK73HB1J105J	CHIP R 1.0M J 1/16W		IC19		*	TC75S51FE(F)	MOS-IC	
R743			RK73HB1J101J	CHIP R 100 J 1/16W	C	IC501			ADF4111BCP7	MOS-IC	
R743			RK73HB1J470J	CHIP R 47 J 1/16W	C2	IC601		*	TA75W01FUF	MOS-IC	
R744			RK73HB1J221J	CHIP R 220 J 1/16W		IC701		*	TA31136FNG	MOS-IC	
R747			RK73HB1J104J	CHIP R 100K J 1/16W		Q1			UMG3N	TRANSISTOR	
R750			RK73HB1J104J	CHIP R 100K J 1/16W		Q4			FP210	TRANSISTOR	
R751			RK73HB1J683J	CHIP R 68K J 1/16W		Q5			UPA672T	FET	
R753			R92-1368-05	CHIP R 0 OHM		Q6			UMG3N	TRANSISTOR	
R754,755			RK73HB1J105J	CHIP R 1.0M J 1/16W		Q7			UPA672T	FET	
R756			R92-0670-05	CHIP R 0 OHM		Q8			DTA114EE	DIGITAL TRANSISTOR	
R757			RK73HB1J105J	CHIP R 1.0M J 1/16W		Q9		*	SSM6J08FU(F)	FET	
R758			R92-1368-05	CHIP R 0 OHM		Q12			2SC4617(S)	TRANSISTOR	
R759			R92-1252-05	CHIP R 0 OHM J 1/16W		Q13			2SB1132(Q,R)	TRANSISTOR	
R760			R92-1368-05	CHIP R 0 OHM		Q14,15		*	SSM3K15TE(F)	FET	
R903		*	RK73HB1J102J	CHIP R 1.0K J 1/16W		Q16			2SA1774(S)	TRANSISTOR	
R913-916		*	RK73HB1J102J	CHIP R 1.0K J 1/16W		Q17			2SC4649(N,P)	TRANSISTOR	
R923			R92-1252-05	CHIP R 0 OHM J 1/16W		Q19		*	SSM3K15TE(F)	FET	
S1			S70-0424-05	TACT SWITCH		Q21		*	RN4910(F)	TRANSISTOR	
S2			S70-0457-05	TACT SWITCH		Q22		*	SSM3K15TE(F)	FET	
S3,4			S70-0424-05	TACT SWITCH		Q23			DTC144EE	DIGITAL TRANSISTOR	
D1			RB521S-30	DIODE		Q24		*	SSM6J08FU(F)	FET	
D4			MA2S111	DIODE		Q25		*	2SK1830F	FET	
D17			MA2S111	DIODE		Q26		*	2SJ347F	FET	
D24-27			MA2S111	DIODE		Q27			DTC144EE	DIGITAL TRANSISTOR	
D28-31			RB706F-40	DIODE		Q28		*	SSM3K01T(F)	FET	
D32			DA221	DIODE		Q29		*	SSM3K15TE(F)	FET	
D33			AVRM1608270MAB	VARIATOR		Q30			2SJ243	FET	
D501			MA2S077	DIODE		Q31,32			2SC4649(N,P)	TRANSISTOR	
D502,503			HSC277	DIODE		Q33			2SJ347F	FET	
D505		*	1SV325F	VARIABLE CAPACITANCE DIODE		Q34		*	SSM3K15TE(F)	FET	
D507		*	1SV325F	VARIABLE CAPACITANCE DIODE		Q35		*	SSM3K01T(F)	FET	
D509		*	1SV325F	VARIABLE CAPACITANCE DIODE		Q501			2SC5488	TRANSISTOR	
D511		*	1SV325F	VARIABLE CAPACITANCE DIODE		Q502,503			2SK508NV(K52)	FET	
D513		*	1SV278F	VARIABLE CAPACITANCE DIODE		Q504		*	SSM6P05FU(F)	FET	
D514-516			HSC277	DIODE		Q505			2SC4617(S)	TRANSISTOR	
D517			MA2S077	DIODE		Q506,507			2SC5488	TRANSISTOR	
D601			UD2S4.7B	ZENER DIODE		Q601			2SC5488	TRANSISTOR	
D604-606			HVC131	DIODE		Q602		*	2SK3077F	FET	
D608			HVC131	DIODE		Q603			RD01MUS1	FET	
D701,702			DAN235E	DIODE		Q604			2SK3476	FET	
D703-707			HVC355B	VARIABLE CAPACITANCE DIODE	C	Q605			DTC114EE	DIGITAL TRANSISTOR	
D703-708			HVC350B	VARIABLE CAPACITANCE DIODE	C2	Q606			2SK879(GR)	FET	
D708			HVC350B	VARIABLE CAPACITANCE DIODE	C	Q607			DTC114EE	DIGITAL TRANSISTOR	
D901			1SR154-400	DIODE		Q608			DTA144EE	DIGITAL TRANSISTOR	
IC1		*	XC61CC5002NR	MOS-IC		Q609		*	SSM3K15TE(F)	FET	
IC2			XC6204B502PR	MOS-IC		Q701			2SC4649(N,P)	TRANSISTOR	
IC3		*	XC61CN3402NR	MOS-IC		Q702			DTA144EE	DIGITAL TRANSISTOR	
IC4,5			BU4094BCFV	MOS-IC		Q703			2SC4649(N,P)	TRANSISTOR	
IC6			LC75834W	MOS-IC		Q704,705			3SK318	FET	
IC7		*	30625MGP234HU	MICROPROCESSOR IC		TH501			B57331V2104J	THERMISTOR	
IC8			AT29C040A-90TU	ROM IC		TH701,702			B57331V2104J	THERMISTOR	
IC9			CAT24WC64JI	ROM IC							
IC10-12		*	TK62012F	MOS-IC							

EXPLODED VIEW / 部件分解图



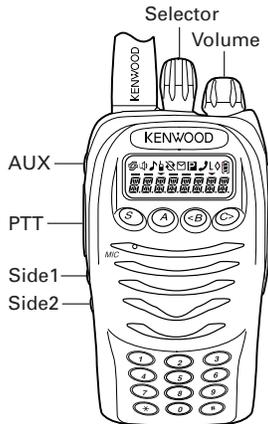
PACKING / 包装



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 : <input checked="" type="checkbox"/> 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 [#],[*]	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

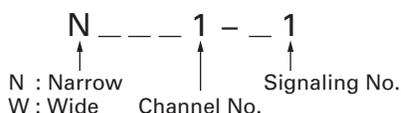
Note :

- 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

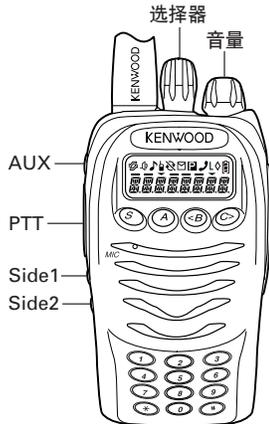
CH	C2		C	
	RX (MHz)	TX (MHz)	RX (MHz)	TX (MHz)
1	415.05000	415.10000	465.05000	465.10000
2	400.05000	400.10000	440.05000	440.10000
3	429.95000	429.90000	489.95000	489.90000
4	415.00000	415.00000	465.00000	465.00000
5	415.20000	415.20000	465.20000	465.20000
6	415.40000	415.40000	465.40000	465.40000
7~16	-	-	-	-

• 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]	静音打开/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	C2		C	
	接收 (MHz)	发射 (MHz)	接收 (MHz)	发射 (MHz)
1	415.05000	415.10000	465.05000	465.10000
2	400.05000	400.10000	440.05000	440.10000
3	429.95000	429.90000	489.95000	489.90000
4	415.00000	415.00000	465.00000	465.00000
5	415.20000	415.20000	465.20000	465.20000
6	415.40000	415.40000	465.40000	465.40000
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

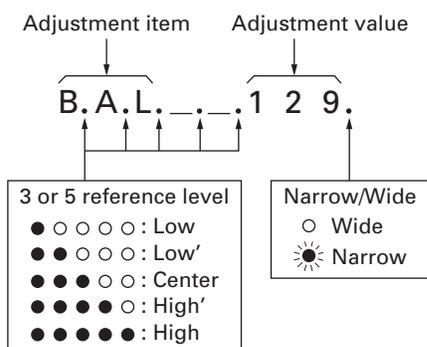
(To place transceiver in tuning mode)

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 appears 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



■ 3 or 5 reference level adjustments frequency

Tuning point	C2		C	
	RX (MHz)	TX (MHz)	RX (MHz)	TX (MHz)
Low	400.05000	400.10000	440.05000	440.10000
Low'	407.55000	407.60000	452.55000	452.60000
Center	415.05000	415.10000	465.05000	465.10000
High'	422.55000	422.60000	477.55000	477.60000
High	429.95000	429.90000	489.95000	489.90000

■ Adjustment item and Display

(*** : 1~256, MSK only : 1~64)

Order	Adjustment item	Display
1	Frequency	F R E Q _ * * *
2	High power	H P W R _ * * *
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 _ * * *

■ 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	-

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

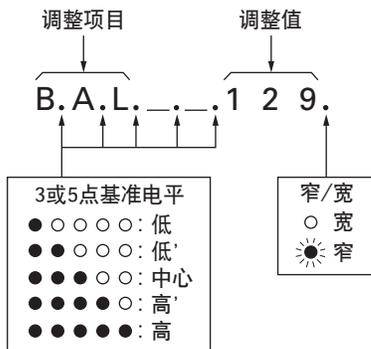
(要使对讲机进入调谐模式)

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	C2		C	
	接收 (MHz)	发射 (MHz)	接收 (MHz)	发射 (MHz)
低	400.05000	400.10000	440.05000	440.10000
低'	407.55000	407.60000	452.55000	452.60000
中心	415.05000	415.10000	465.05000	465.10000
高'	422.55000	422.60000	477.55000	477.60000
高	429.95000	429.90000	489.95000	489.90000

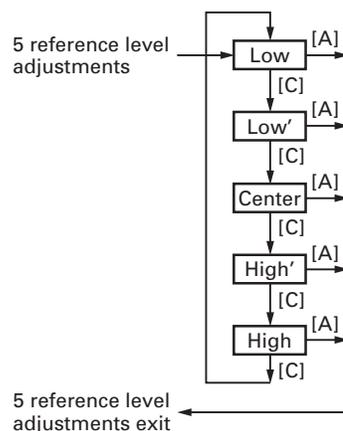
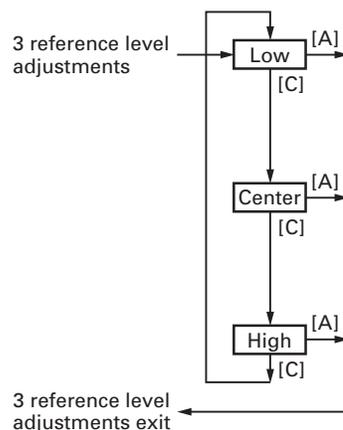
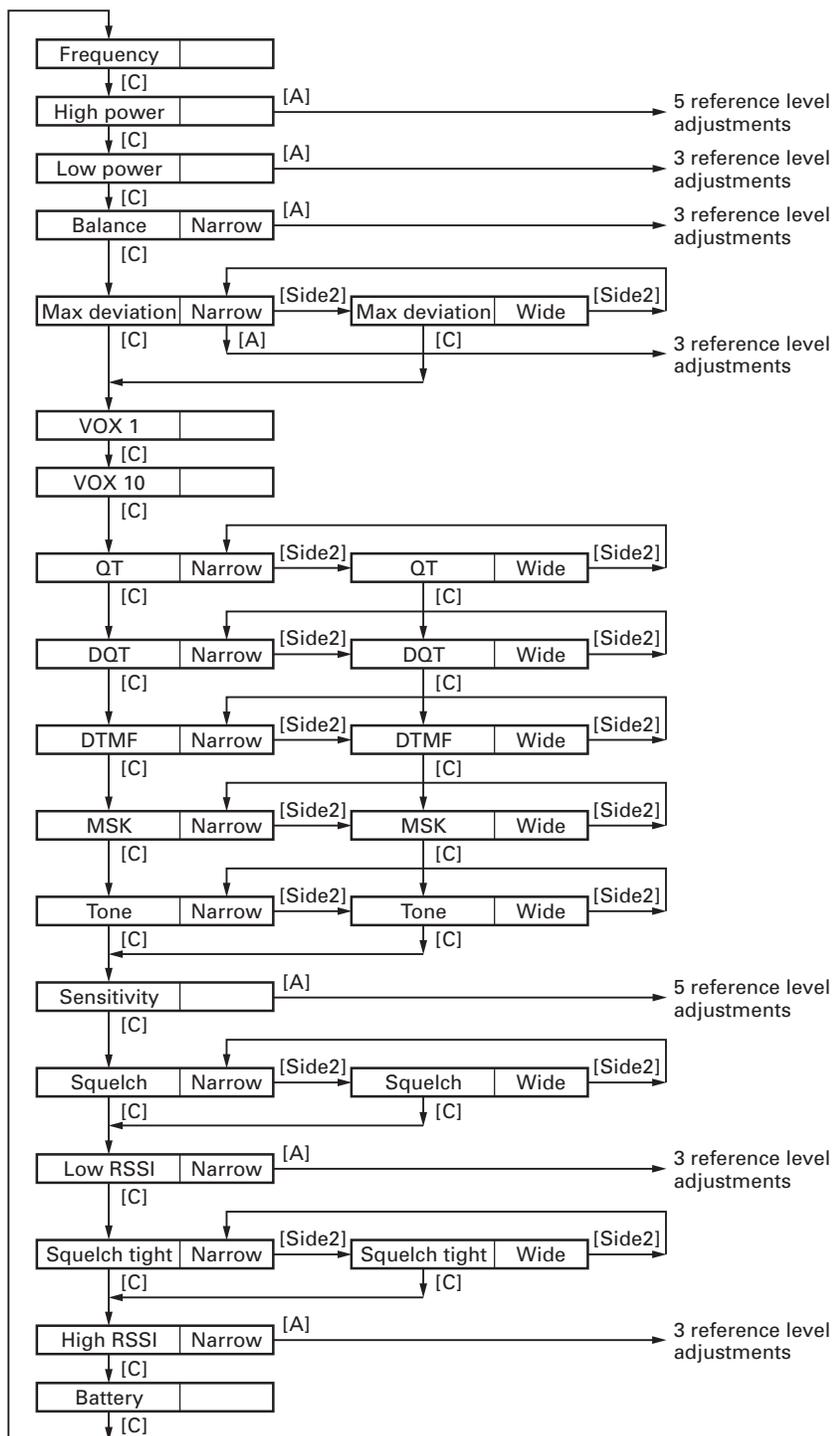
■ 调整项目和显示

(*** : 1~256, 仅MSK : 1~64)

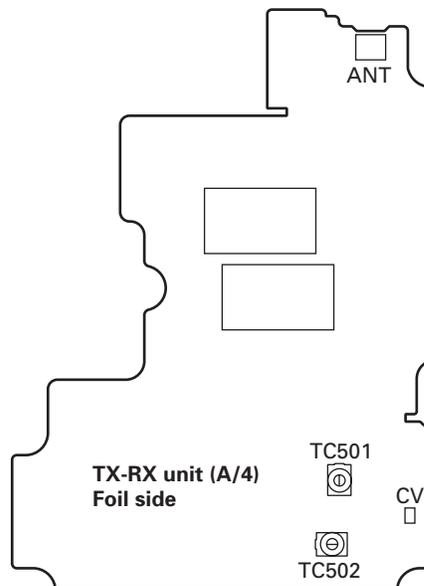
顺序	调整项目	显 示
1	频率	FREQ_***
2	高功率	HPWR_***
3	低功率	LPWR_***
4	DQT平衡	BAL_***
5	最大频偏	DEV_***
6	VOX 1	VX1_***
7	VOX 10	VX10_***
8	QT频偏	QT_***
9	DQT频偏	DQT_***
10	DTMF频偏	DTMF_***
11	MSK频偏	MSK_**
12	单音频偏	TONE_***
13	灵敏度	SENS_***
14	静噪	SQL_***
15	低RSSI	LRSSI***
16	静噪深	SQLT_***
17	高RSSI	HRSSI***
18	电池检测	BATT_***

ADJUSTMENT

Flow chart

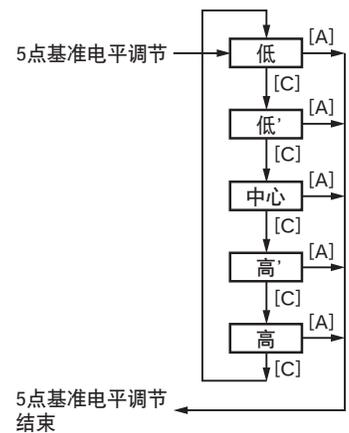
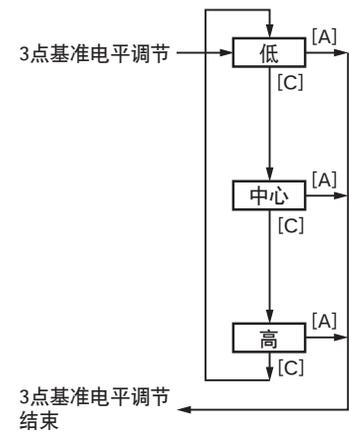
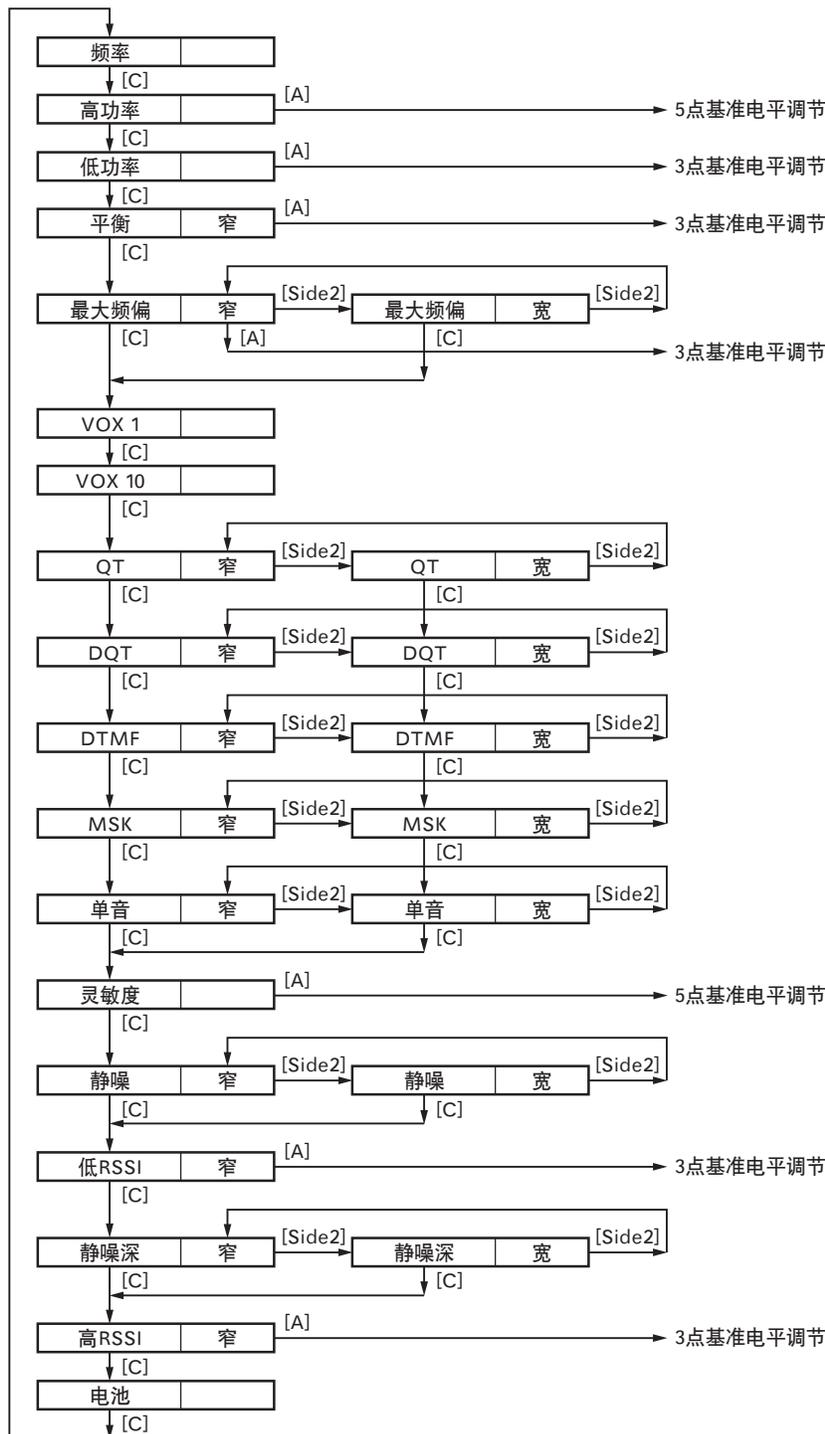


Adjustment Points

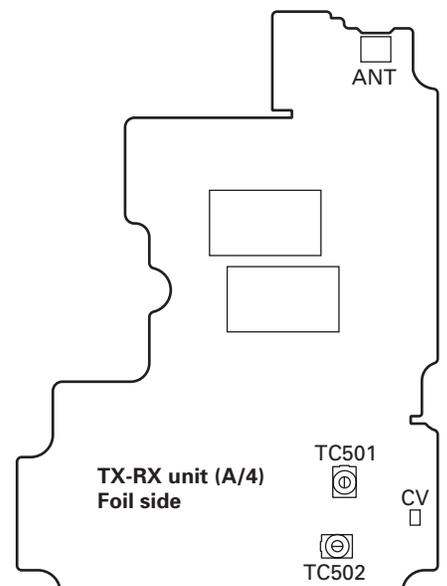


调整

流程图



调整点



ADJUSTMENT

Test Equipment Required for Alignment

Test Equipment	Major Specifications	
1. Standard Signal Generator (SSG)	Frequency Range	400 to 520MHz
	Modulation	Frequency modulation and external modulation
	Output	-127dBm/0.1μV to greater than -47dBm/1mV
2. Power Meter	Input Impedance	50Ω
	Operation Frequency	400 to 520MHz or more
	Measurement Capability	Vicinity of 10W
3. Deviation Meter	Frequency Range	400 to 520MHz
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

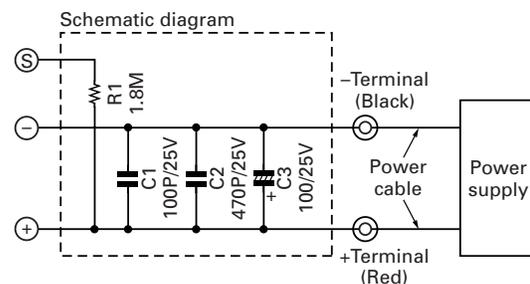
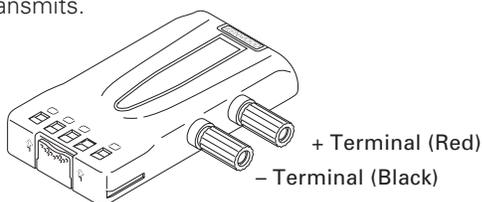
The antenna connector of this radio uses an SMA terminal. Use an antenna connector adapter [SMA(f) – BNC(f) or SMA(f) – N(f)] for adjustment. (The adapter is not provided as an option, so buy a commercially-available one.)

■ 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.

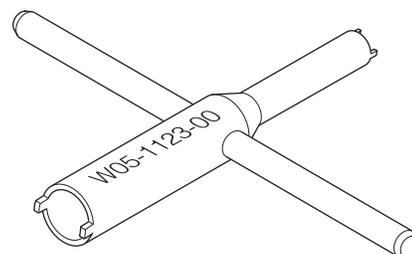
When using the battery jig in user mode, the transceiver assumes that a lithium-ion battery pack is attached to the transceiver. In adjustment mode, battery type detection is not performed. Refer to page 26 for details.

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.



■ 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 调制 输出	400到520MHz 调频和外部调制 -127dBm/0.1 μ V到大于 -47dBm/1mV
2. 功率计	输入阻抗 工作频率 测量范围	50 Ω 400到520MHz或更高 10W左右
3. 频偏仪	频率范围	400到520MHz
4. 数字电压表 (DVM)	测量范围 输入阻抗	直流10mV到10V 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 频率稳定性	10Hz到1000MHz 0.2ppm或更低
7. 电流表		5A
8. 音频电压表 (AF VTVM)	频率范围 电压范围	50Hz到10kHz 1mV到10V
9. 音频发生器 (AG)	频率范围 输出	50Hz到5kHz或更高 0到1V
10. 失真测试仪	测量能力 输入电平	在1kHz时3%或更低 50mV到10Vrms
11. 4 Ω 假负载		大约8 Ω , 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

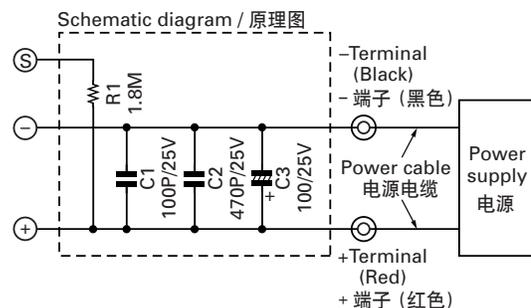
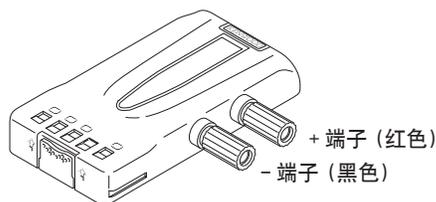
此通信机的天线接口使用SMA终端。使用天线接口转换头 [SMA(f) - BNC(f)或SMA(f) - N(f)] 进行调整。(转换头不作为可选件提供, 因此请购买商用转换头。)

■ 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。

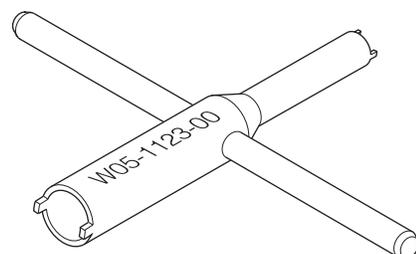
当在用户模式使用电池夹具时, 通信机假定安装的是锂离子电池。在调整模式, 请确认电池类型。详细内容请参照第49页。

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	Panel	ANT	TX-RX (A/4)	TC502	3.6V C 3.4V C2	±0.1V
	2) CH-Sig : 2-1	DVM	TX-RX (A/4)	CV			Check	0.6V or more
	[Panel tuning mode] LPWR* 3) CH-Sig : 3-1 PTT : ON				TX-RX (A/4)	TC501	3.6V C 3.4V C2	±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._] Adjust : [***] PTT : ON	Power meter Ammeter					4.0W	±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 1.0A or less

调 整

公用部分

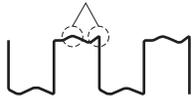
项 目	条 件	测 量			调 整			规 格 / 备 注
		测量装置	单元	端子	单元	部件	方 法	
1. 设定	1) BATT端子电压：7.5V 2) 标准信号发生器调制 [宽] 调制：1kHz, 频偏：3kHz [窄] 调制：1kHz, 频偏：1.5kHz							
2. 压控振荡器 锁定电压 ●接收	[面板测试模式] 1) CH-Sig：3-1	功率计	面板	天线	TX-RX (A/4)	TC502	3.6V C 3.4V C2	± 0.1V
	2) CH-Sig：2-1						检查	0.6V或更高
	●发射	[面板调谐模式] LPWR*						
	3) CH-Sig：3-1 PTT：开启						3.6V C 3.4V C2	± 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			4.0W	± 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 1.0A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 2) CH-Sig : 2-1 PTT : ON 3) CH-Sig : 3-1 PTT : ON	Power meter Ammeter	Panel	ANT			Check	0.7~1.4W 1.0A or less
6. DQT balance adjust	1) Adj item : [BAL_ _] Adjust : [***.] Deviation meter filter LPF : 3kHz HPF : OFF • Narrow 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	1) Adj item : [DEV_ _] Adjust : [***.] AG : 1kHz/75mV at MIC terminal Deviation meter filter LPF : 15kHz HPF : OFF • Narrow 2) Adj item : [D.EV_ _] → [D.E.V._ _] → [D.E.V._ _] Adjust : [***.] PTT : ON							
• 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	1) Remove the panel tuning cable assembly from the universal connector. Adj item : [QT_ _ _] Adjust : [***.] Deviation meter filter LPF : 3kHz HPF : OFF PTT : ON • Narrow	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							
● 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

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
13. DTMF deviation adjust • Narrow	1) Adj item : [DTMF_] Adjust : [***.] Deviation meter filter LPF : 15kHz HPF : OFF PTT : ON						1.25kHz	±0.1kHz
	• Wide						2) Adj item : [DTMF_] Adjust : [***.] PTT : ON	2.5kHz
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
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
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						1.25kHz	± 0.1kHz					
	●宽						2) 调整项目:[DTMF_]调整:[***]PTT: 开启	2.5kHz	± 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.N.S_] → [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 : -120dBm (0.22μV) (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) 2) Adj item : [L.RSSI] → [L.R.S.SI] → [L.R.S.S.I.] Adjust : [***]						After input signal from SSG, press [B] key. That numeric will be stored in memory.	
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) 2) Adj item : [H.RSSI] → [H.R.S.SI] → [H.R.S.S.I.] Adjust : [***]						After input signal from SSG, press [B] key. That numeric will be stored in memory.	

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.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：-120dBm (0.22μV) (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) 2) 调整项目：[L.RSSI]→[L.R.S.S.I]→[L.R.S.S.I.]调整：[***]						从SSG输入信号后按[B]键。数字将保存在存储器中。	
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) 2) 调整项目：[H.RSSI]→[H.R.S.S.I]→[H.R.S.S.I.]调整：[***]						从SSG输入信号后按[B]键。数字将保存在存储器中。	

TERMINAL FUNCTION

■ CN60

Pin No.	Pin Name	I/O	Function
1	GND	-	GND
2	SSB	O	Switched B output DC (Battery terminal) $\pm 0.5V$, 150mA max
3	AUX1	I/O	Auxiliary 1 Input: $L \leq 0.45V$, $H \geq 4.7V/25k\Omega$ load Output: $L \leq 0.4V$, $H \geq 4.2V/100k\Omega$ load
4	AUX2	O	Auxiliary 2 Output: $L \leq 0.4V$, $H \geq 4.2V/100k\Omega$ load
5	RXD2	I	RXD Input: $L \leq 0.4V$, $H \geq 4.2V/100k\Omega$ load
6	AUX3	I/O	Auxiliary 3 Input: Active "L", $L \leq 1.0V$, $H \geq 4.0V$ Output: $L \leq 0.4V$, $H \geq 4.2V/100k\Omega$ load
7	AUX4	O	Auxiliary 4 Output: $L \leq 0.4V$, $H \geq 4.2V/100k\Omega$ load
8	AUX5	O	Auxiliary 5 Output: $L \leq 0.4V$, $H \geq 4.2V/100k\Omega$ load
9	TXD2	O	TXD Output: $L \leq 0.4V$, $H \geq 4.2V/100k\Omega$ load
10	TA1	I	Transmit audio 1 Input: $Z_{in} > 22k\Omega$, $350 \pm 50mV_{p-p}$ (Standard modulation)
11	5C	-	5V power supply (50mA max)
12	MIC O	O	TX input Input: $Z_L \geq 2.2k\Omega$, $130 \pm 50mV_{p-p}$ (Standard modulation)
13	TA2	I	Transmit audio 2 Input: $Z_{in} > 22k\Omega$, $350 \pm 50mV_{p-p}$ (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 $Z_{in} \geq 22k\Omega$, $130 \pm 50mV_{p-p}$ (Standard modulation)
18	RA O	O	Audio signal output (DC coupled) After de-emphasis $Z_L \geq 30k\Omega$, $1 \pm 0.3V_{p-p}$ (Standard modulation)
19	RA I	I	Audio signal input (DC coupled) After de-emphasis $Z_{in} \geq 15k\Omega$, $1 \pm 0.3V_{p-p}$ (Standard modulation)
20	AUX6	I/O	Auxiliary 6 Input: $L \leq 0.8V$, $H \geq 4.2V$ Output: $L \leq 0.4V$, $H \geq 4.2V/100k\Omega$ load

■ Solder Point Connection

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

端子功能

■ CN60

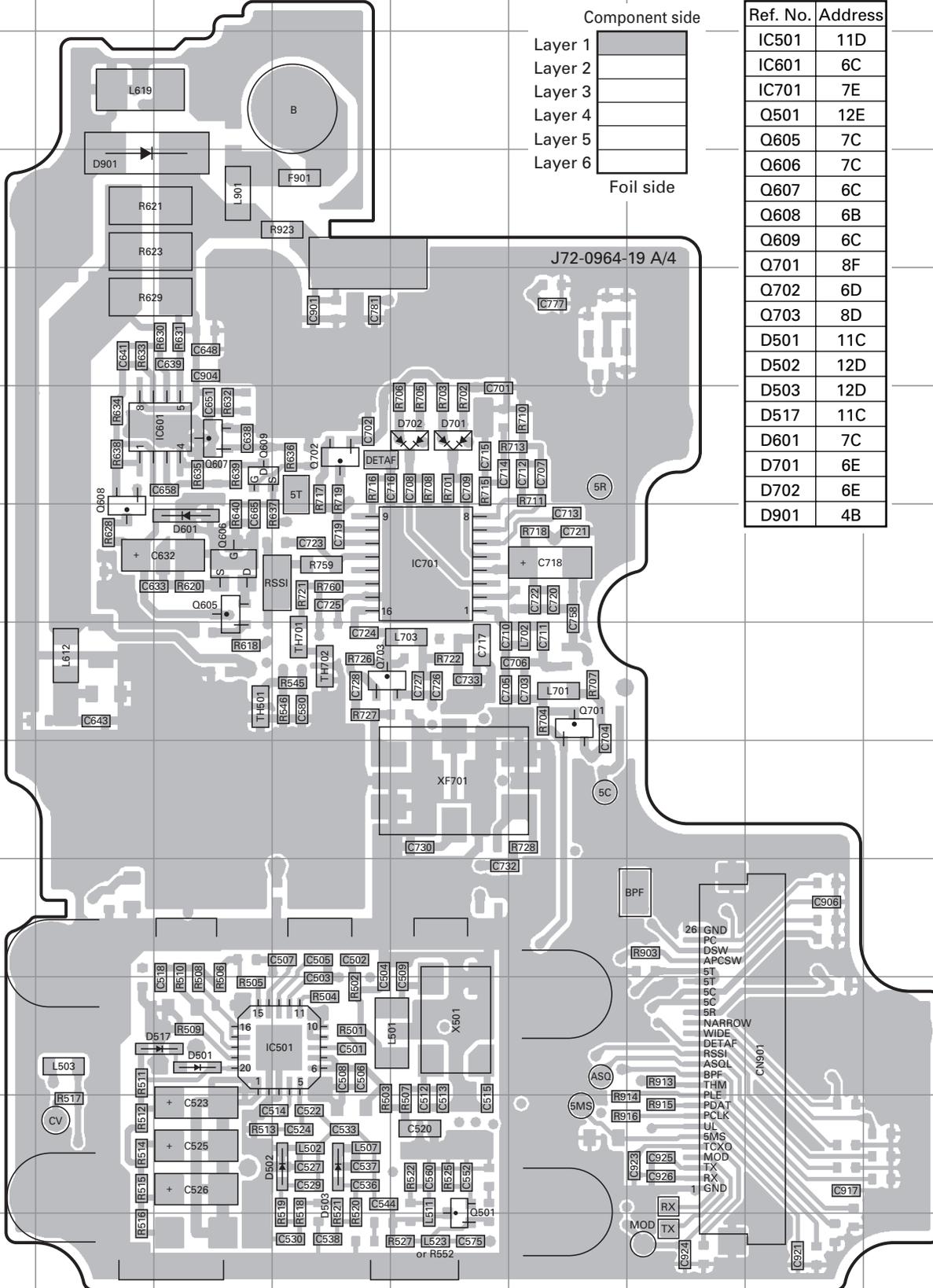
号码	名称	I/O	功能
1	GND	-	接地
2	SSB	O	开关B输出 直流 (电池端子) $\pm 0.5V$, 最大150mA
3	AUX1	I/O	辅助1 输入: $L \leq 0.45V$, $H \geq 4.7V/25k\Omega$ load 输出: $L \leq 0.4V$, $H \geq 4.2V/100k\Omega$ load
4	AUX2	O	辅助2 输出: $L \leq 0.4V$, $H \geq 4.2V/100k\Omega$ load
5	RXD2	I	RXD 输入: $L \leq 0.4V$, $H \geq 4.2V/100k\Omega$ load
6	AUX3	I/O	辅助3 输入: 有效“L”, $L \leq 1.0V$, $H \geq 4.0V$ 输出: $L \leq 0.4V$, $H \geq 4.2V/100k\Omega$ load
7	AUX4	O	辅助4 输出: $L \leq 0.4V$, $H \geq 4.2V/100k\Omega$ load
8	AUX5	O	辅助5 输出: $L \leq 0.4V$, $H \geq 4.2V/100k\Omega$ load
9	TXD2	O	TXD 输出: $L \leq 0.4V$, $H \geq 4.2V/100k\Omega$ load
10	TA1	I	发射音频1 输入: $Z_{in} > 22k\Omega$, $350 \pm 50mV_{p-p}$ (标准调制)
11	5C	-	5V电源 (最大50mA)
12	MIC O	O	发射输入 输入: $Z_L \geq 2.2k\Omega$, $130 \pm 50mV_{p-p}$ (标准调制)
13	TA2	I	发射音频2 输入: $Z_{in} > 22k\Omega$, $350 \pm 50mV_{p-p}$ (标准调制)
14	DEO	O	鉴频器音频, $1V_{p-p}$
15	ALT2	I	提示音2, $0.5V_{p-p}$
16	ALT1	I	提示音1, $0.5V_{p-p}$
17	MIC I	I	麦克风信号输入 (交流耦合) 在预加重之前 $Z_{in} \geq 22k\Omega$, $130 \pm 50mV_{p-p}$ (标准调制)
18	RA O	O	音频信号输出 (直流耦合) 在去加重后 $Z_L \geq 30k\Omega$, $1 \pm 0.3V_{p-p}$ (标准调制)
19	RA I	I	音频信号输入 (直流耦合) 在去加重后 $Z_{in} \geq 15k\Omega$, $1 \pm 0.3V_{p-p}$ (标准调制)
20	AUX6	I/O	辅助6 输入: $L \leq 0.8V$, $H \geq 4.2V$ 输出: $L \leq 0.4V$, $H \geq 4.2V/100k\Omega$ 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) $500mV_{rms} \pm 100mV$, @ $22k\Omega$ load
MIC_O	麦克风输出	输出电压 / 阻抗 (1kHz, $15mV_{rms}$ 麦克风输入) $60mV_{rms} \pm 20mV$, @ $2.2k\Omega$ 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) $150mV \pm 50mV$, @ $22k\Omega$ load
RA_O	接收机 AF输出	输出电压 / 阻抗 (1kHz标准调制) $200mV \pm 50mV$, @ $2.2k\Omega$ load
SP_M	扬声器静音	负载 $> 100k\Omega$ (低) $V_{ss} \sim 0.4V$, (高) $V_{dd} - 0.8V \sim V_{dd}$
RXD	RXD	负载 $> 100k\Omega$ (低) $V_{ss} \sim 0.4V$, (高) $V_{dd} - 0.8V \sim V_{dd}$
TXD	TXD	负载 $> 100k\Omega$ (低) $V_{ss} \sim 0.4V$, (高) $V_{dd} - 0.8V \sim V_{dd}$
RSSI	RSSI输出	负载 $> 100k\Omega$ (低) $V_{ss} \sim 0.4V$, (高) $V_{dd} - 0.8V \sim V_{dd}$
LSDFO	LSDIN输出	负载 $> 100k\Omega$ (低) $V_{ss} \sim 0.4V$, (高) $V_{dd} - 0.8V \sim V_{dd}$
MDSW	人员事故 开关输入	负载 $> 100k\Omega$ (低) $V_{ss} \sim 0.4V$, (高) $V_{dd} - 0.8V \sim V_{dd}$
5C	DC 5V	输出电压 / 10mA负载 $5.0V \pm 0.5V$ / 最大50mA
DEO	鉴频器信号 输出	输出电压 / 阻抗 (1kHz标准调制) $400mV_{rms} \pm 100mV$, @ $2.2k\Omega$ load
ALT	侧音输入	输入灵敏度 / 阻抗 (1kHz额定AF功率 / 最大音量) $140mV_{rms} \pm 50mV$, @ $22k\Omega$ load
DATAO	发射AF 输入	输入灵敏度 / 阻抗 (1kHz标准设备) $310V_{rms} \pm 50mV$, @ $22k\Omega$ load
A1	AUX1	负载 $> 100k\Omega$ (低) $V_{ss} \sim 0.4V$, (高) $V_{dd} - 0.8V \sim V_{dd}$
A2	AUX2	负载 $> 100k\Omega$ (低) $V_{ss} \sim 0.4V$, (高) $V_{dd} - 0.8V \sim V_{dd}$
A3	AUX3	负载 $> 100k\Omega$ (低) $V_{ss} \sim 0.4V$, (高) $V_{dd} - 0.8V \sim V_{dd}$
A4	AUX4	负载 $> 100k\Omega$ (低) $V_{ss} \sim 0.4V$, (高) $V_{dd} - 0.8V \sim V_{dd}$
A5	AUX5	负载 $> 100k\Omega$ (低) $V_{ss} \sim 0.4V$, (高) $V_{dd} - 0.8V \sim V_{dd}$
A6	AUX6	负载 $> 100k\Omega$ (低) $V_{ss} \sim 0.4V$, (高) $V_{dd} - 0.8V \sim V_{dd}$
SB	开关B	输出电压 / 7mA负载 直流 (电池端子) $\pm 0.5V$ / 最大150mA
G	GND	V_{ss}
TA1	发射AF 输入	输入灵敏度 / 阻抗 (1kHz标准设备) $310V_{rms} \pm 50mV$, @ $22k\Omega$ load

TK-3178 PC BOARD / PC板

TX-RX UNIT (X57-7013-XX) (A/4) -01 : C -02 : C2
 Component side view (J72-0964-19 A/4)

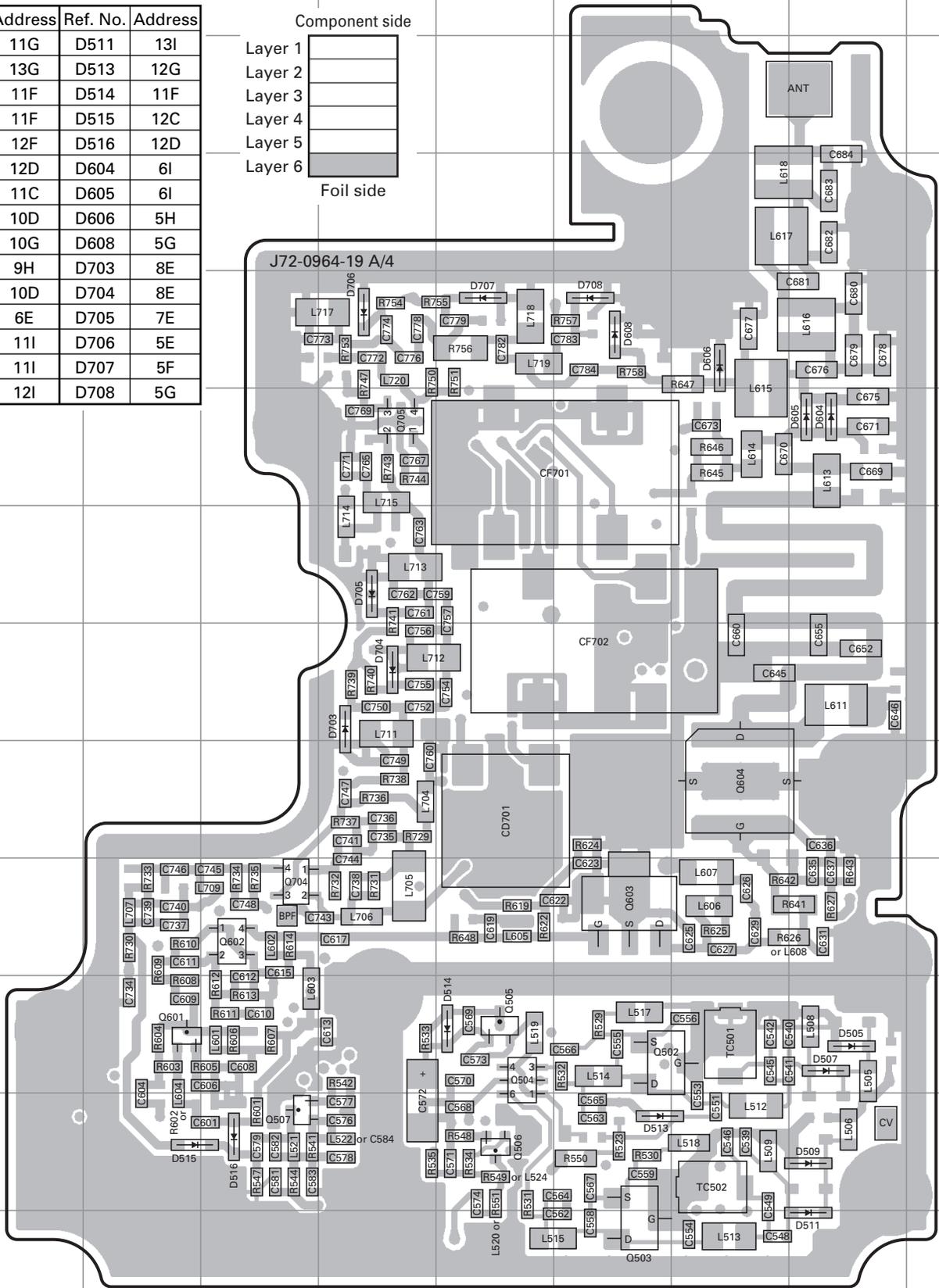
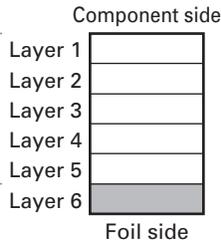


Ref. No.	Address
IC501	11D
IC601	6C
IC701	7E
Q501	12E
Q605	7C
Q606	7C
Q607	6C
Q608	6B
Q609	6C
Q701	8F
Q702	6D
Q703	8D
D501	11C
D502	12D
D503	12D
D517	11C
D601	7C
D701	6E
D702	6E
D901	4B

PC BOARD / PC板 TK-3178

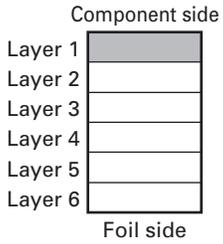
TX-RX UNIT (X57-7013-XX) (A/4) -01 : C -02 : C2
Foil side view (J72-0964-19 A/4)

Ref. No.	Address	Ref. No.	Address
Q502	11G	D511	13I
Q503	13G	D513	12G
Q504	11F	D514	11F
Q505	11F	D515	12C
Q506	12F	D516	12D
Q507	12D	D604	6I
Q601	11C	D605	6I
Q602	10D	D606	5H
Q603	10G	D608	5G
Q604	9H	D703	8E
Q704	10D	D704	8E
Q705	6E	D705	7E
D505	11I	D706	5E
D507	11I	D707	5F
D509	12I	D708	5G

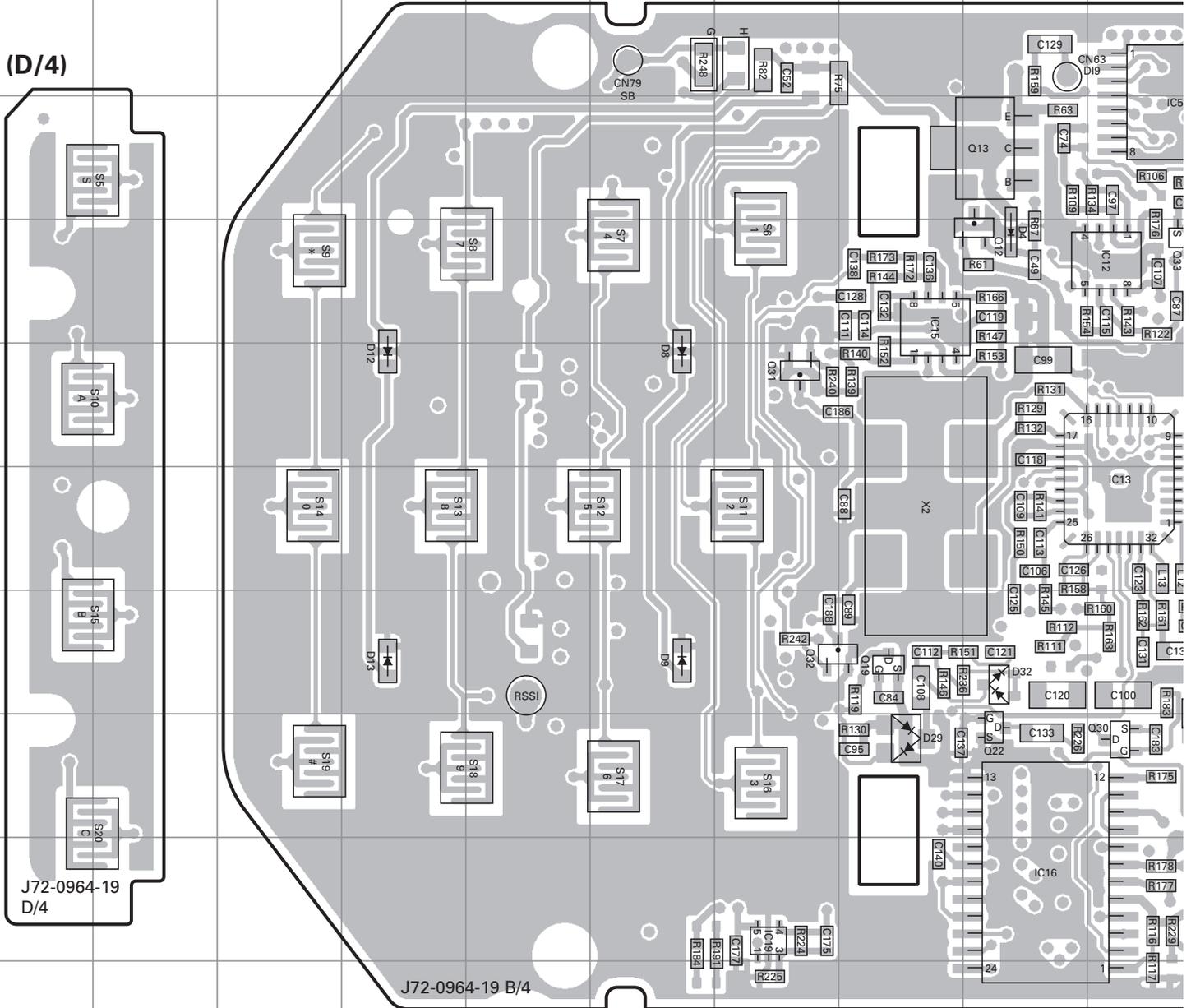


TK-3178 PC BOARD / PC板

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		

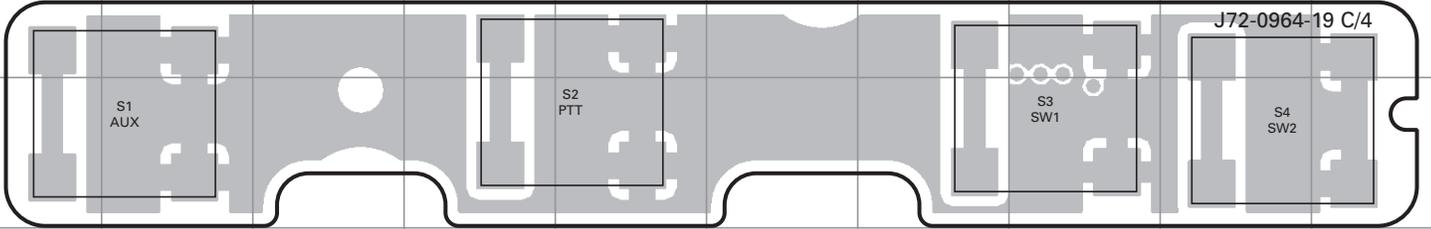


TX-RX UNIT (X57-7013-XX) (B/4) -01 : C -02 : C2
Component side view (J72-0964-19 B/4)

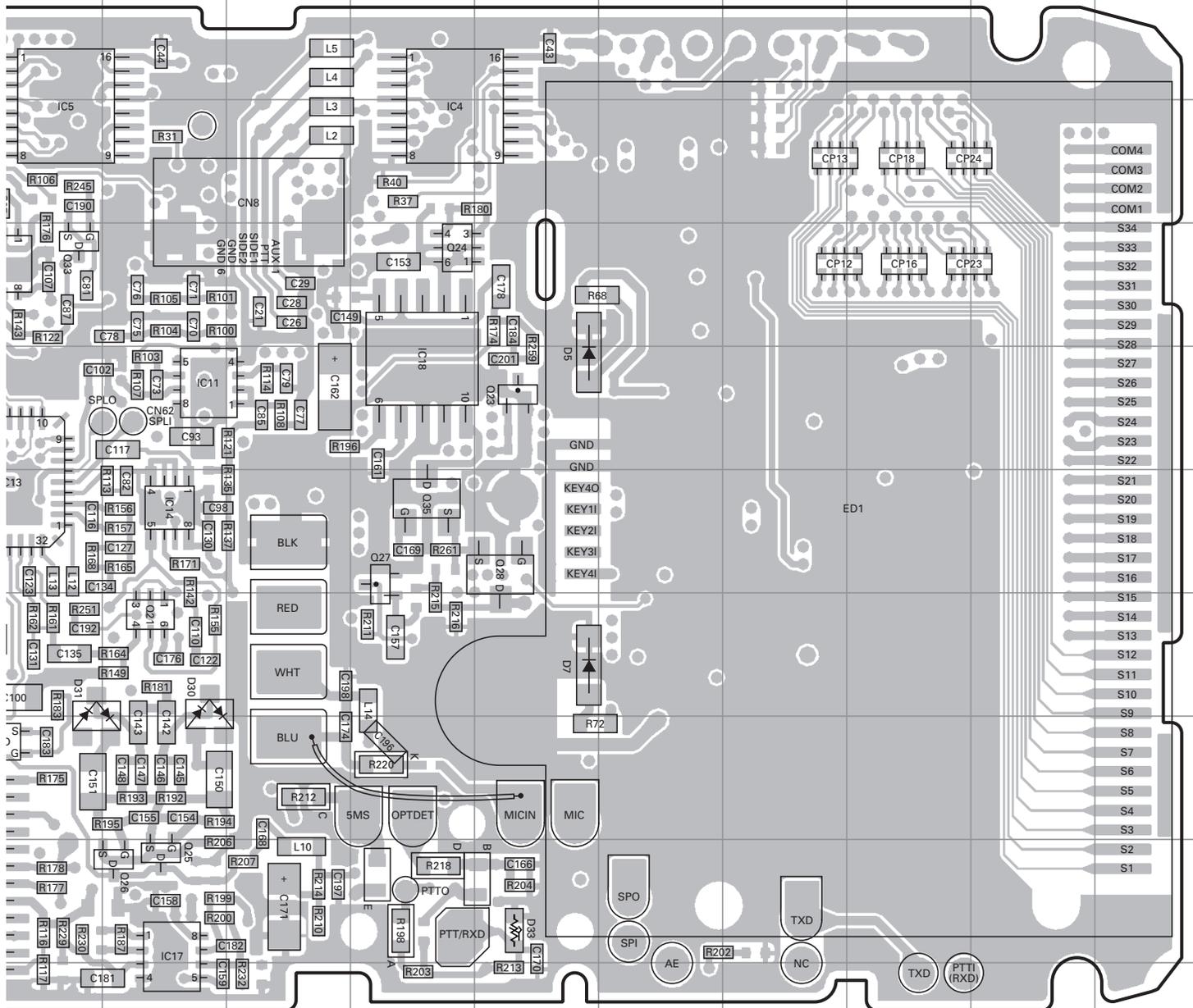


PC BOARD / PC板 TK-3178

TX-RX UNIT (X57-7013-XX) (C/4) -01 : C -02 : C2
 Component side view (J72-0964-19 C/4)



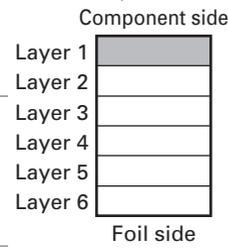
TX-RX UNIT (X57-7013-XX) (B/4) -01 : C -02 : C2
 Component side view (J72-0964-19 B/4)



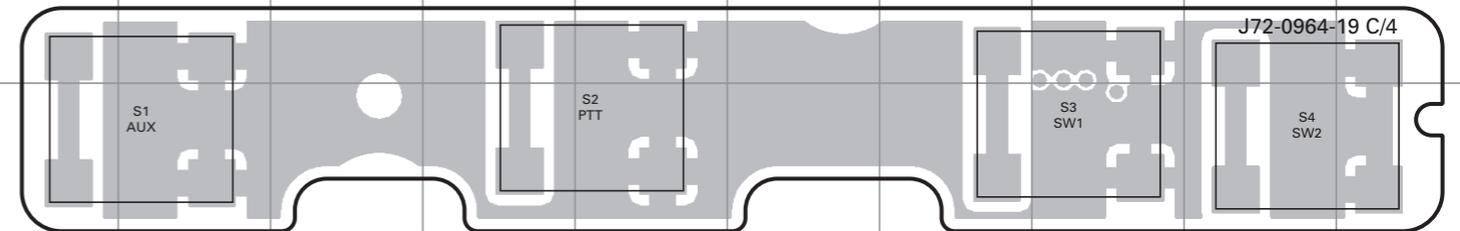
TK-3178 PC BOARD / PC板

PC BOARD / PC板 TK-3178

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		



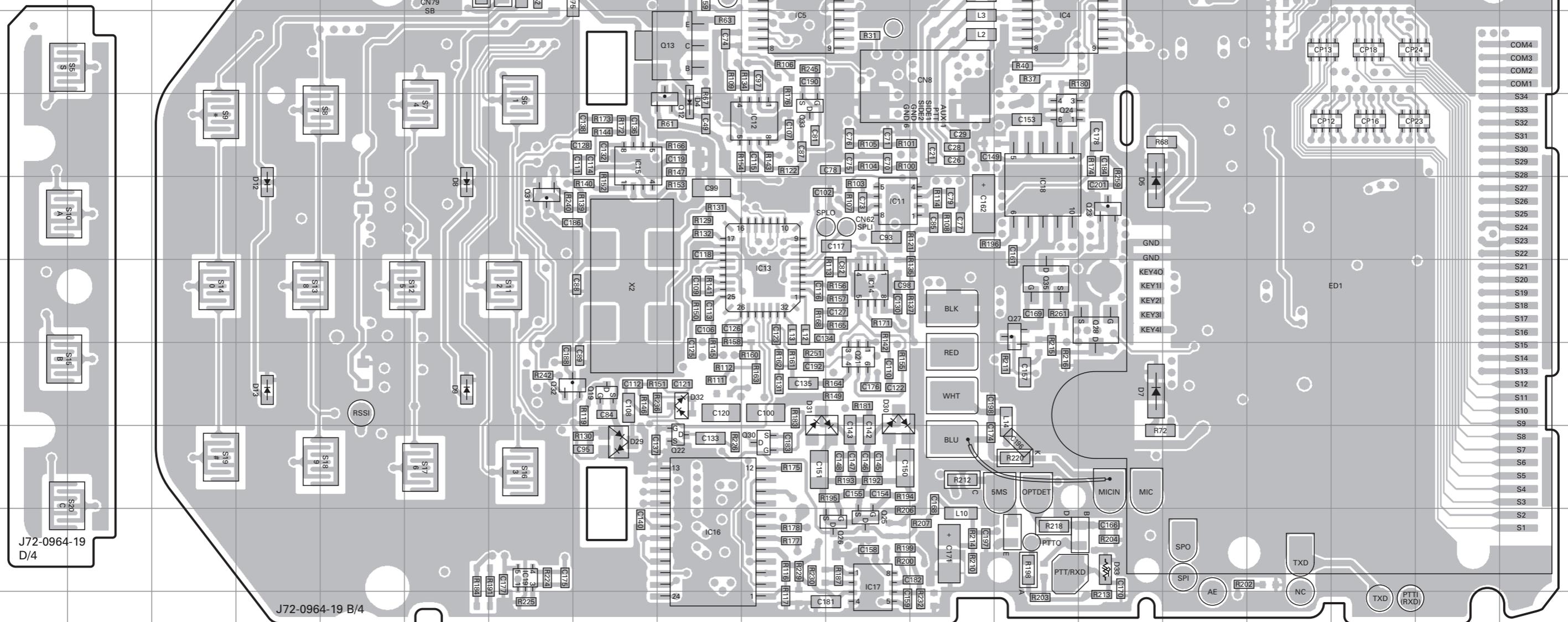
TX-RX UNIT (X57-7013-XX) (C/4) -01 : C -02 : C2
Component side view (J72-0964-19 C/4)



TX-RX UNIT (X57-7013-XX) (B/4) -01 : C -02 : C2
Component side view (J72-0964-19 B/4)

TX-RX UNIT (X57-7013-XX) (B/4) -01 : C -02 : C2
Component side view (J72-0964-19 B/4)

(D/4)



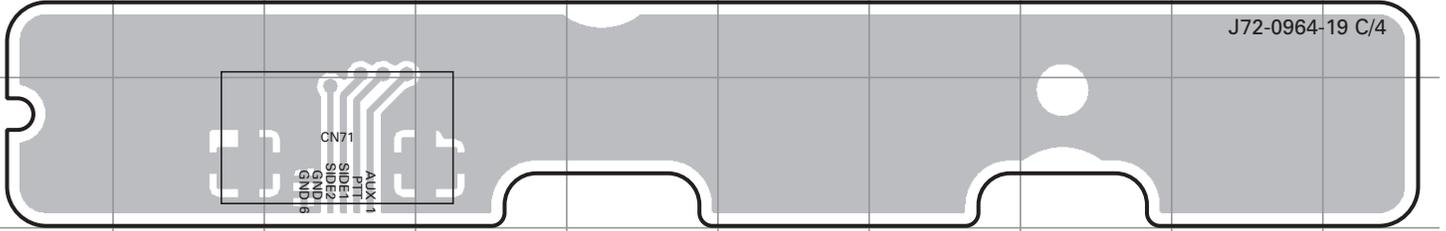
- COM4
- COM3
- COM2
- COM1
- S34
- S33
- S32
- S31
- S30
- S29
- S28
- S27
- S26
- S25
- S24
- S23
- S22
- S21
- S20
- S19
- S18
- S17
- S16
- S15
- S14
- S13
- S12
- S11
- S10
- S9
- S8
- S7
- S6
- S5
- S4
- S3
- S2
- S1

J72-0964-19 B/4

TK-3178 PC BOARD / PC板

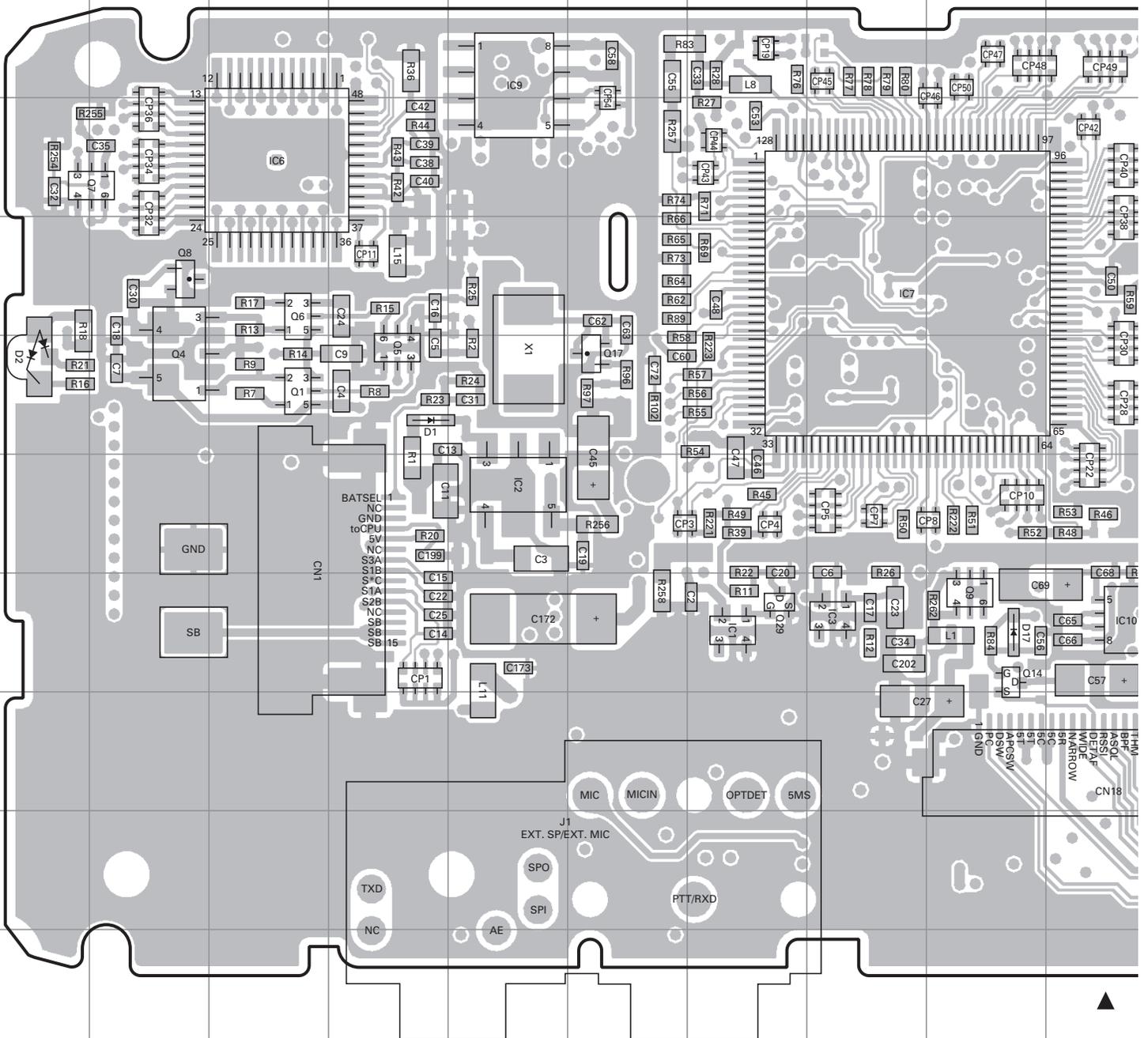
TX-RX UNIT (X57-7013-XX) (C/4) -01 : C -02 : C2

Foil side view (J72-0964-19 C/4)



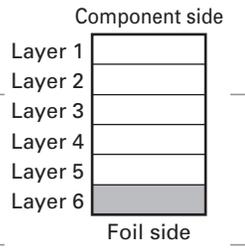
TX-RX UNIT (X57-7013-XX) (B/4) -01 : C -02 : C2

Foil side view (J72-0964-19 B/4)

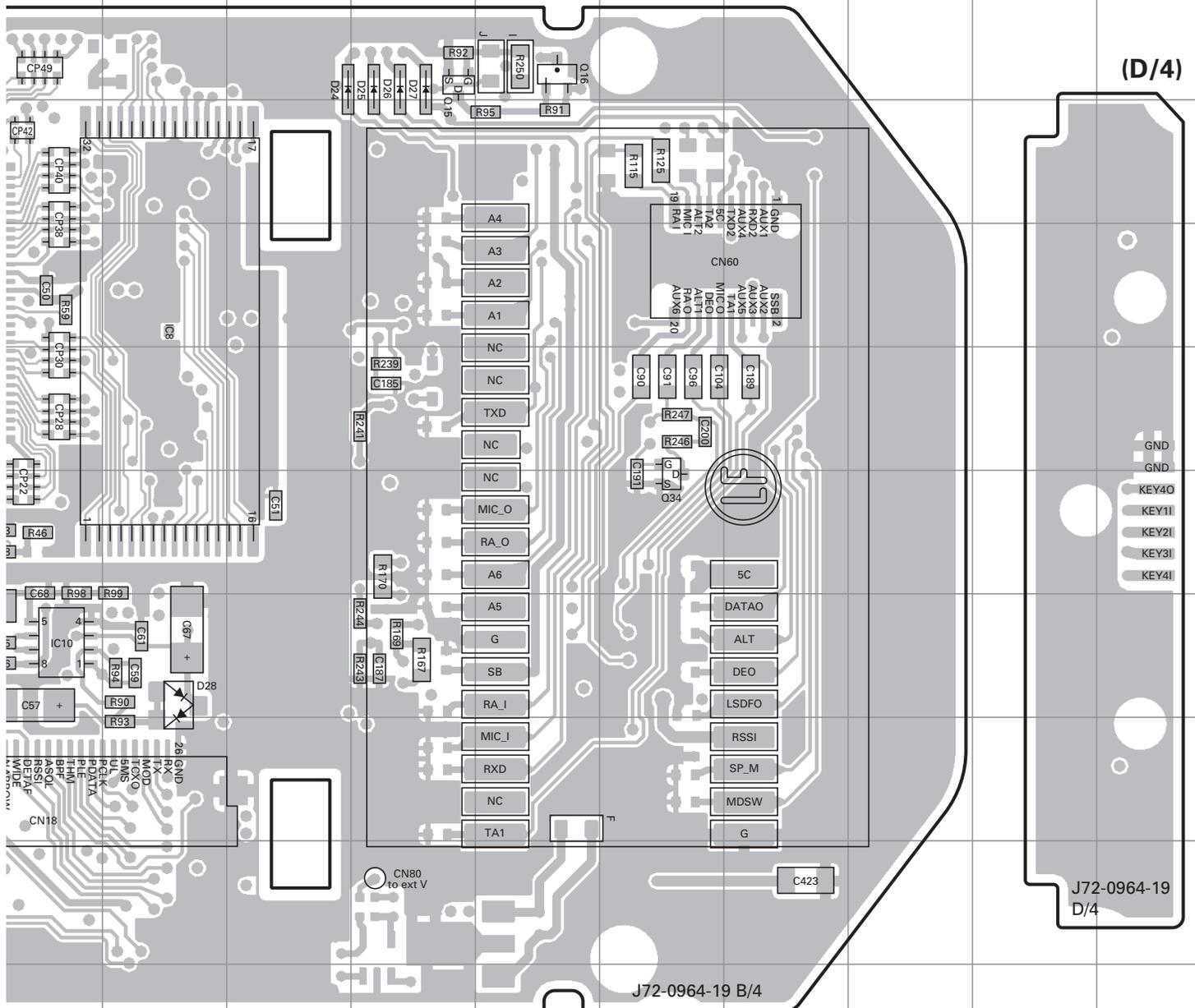


PC BOARD / PC板 TK-3178

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		



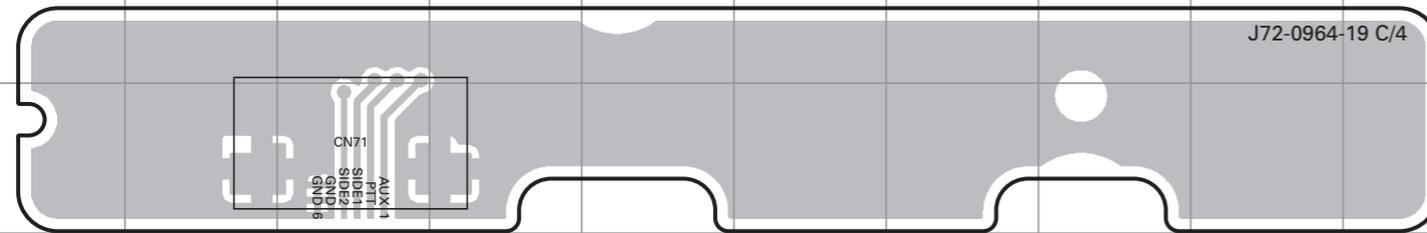
TX-RX UNIT (X57-7013-XX) (B/4) -01 : C -02 : C2 Foil side view (J72-0964-19 B/4)



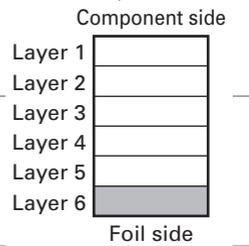
TK-3178 PC BOARD / PC板

PC BOARD / PC板 TK-3178

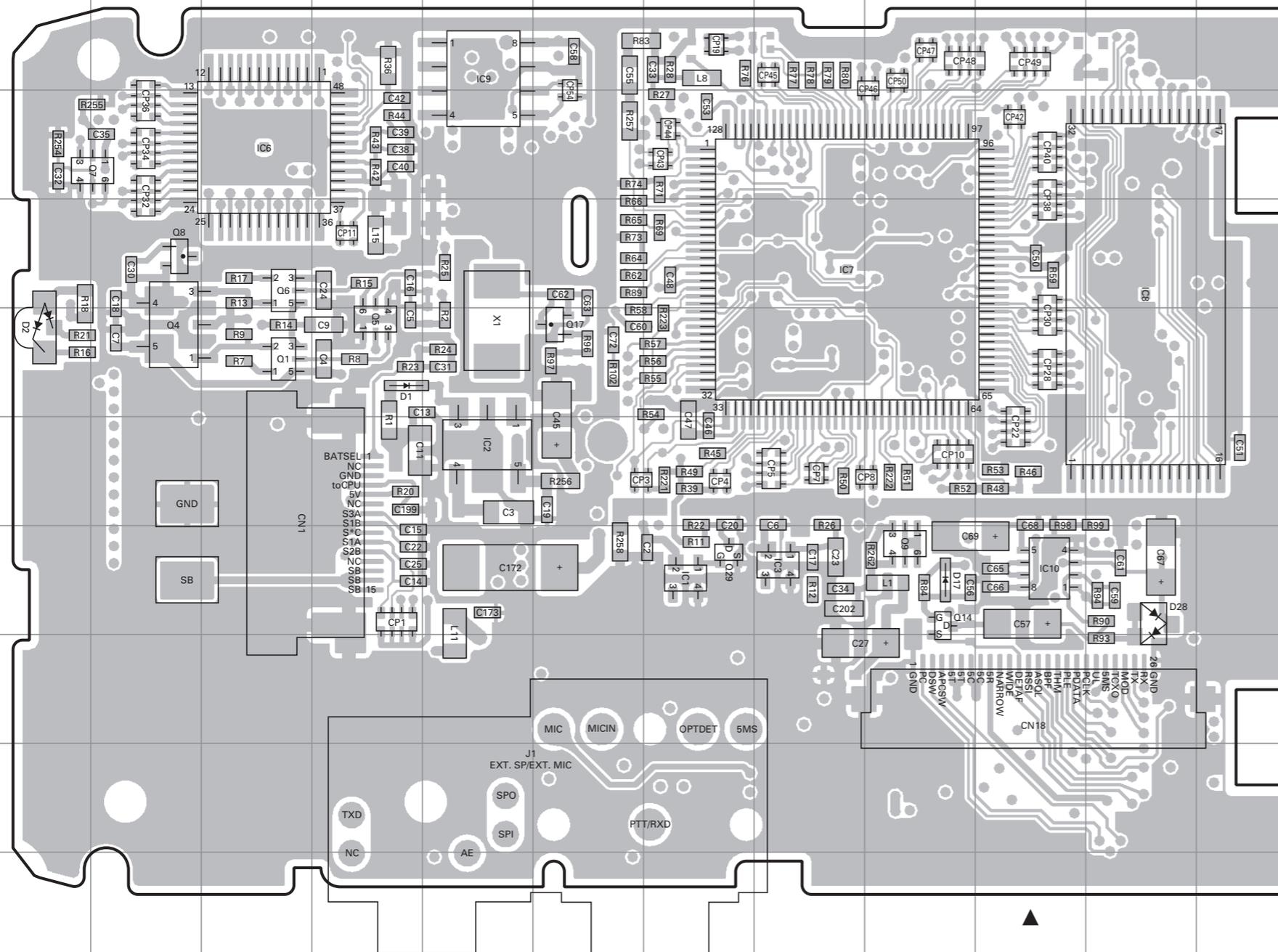
TX-RX UNIT (X57-7013-XX) (C/4) -01 : C -02 : C2
Foil side view (J72-0964-19 C/4)



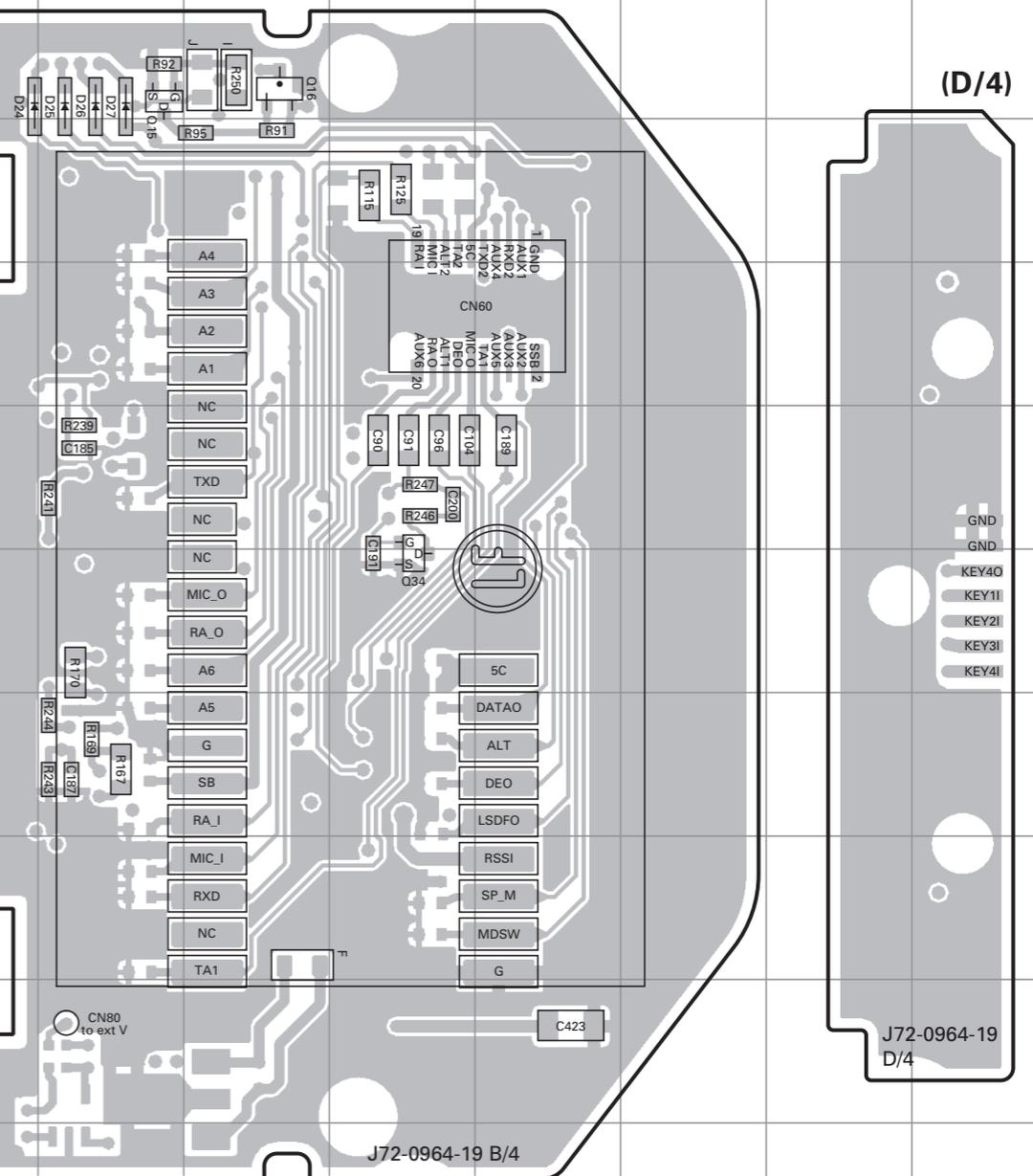
Ref. No.	Address						
IC1	10G	Q1	8C	Q15	5M	D24	5L
IC2	9E	Q4	8B	Q16	5N	D25	5M
IC3	10H	Q5	8D	Q17	8F	D26	5M
IC6	6C	Q6	7C	Q29	10G	D27	5M
IC7	7H	Q7	6B	Q34	9O	D28	10K
IC8	7K	Q8	7B	D1	8D		
IC9	5E	Q9	10I	D2	8A		
IC10	10J	Q14	10I	D17	10I		



TX-RX UNIT (X57-7013-XX) (B/4) -01 : C -02 : C2
Foil side view (J72-0964-19 B/4)



TX-RX UNIT (X57-7013-XX) (B/4) -01 : C -02 : C2
Foil side view (J72-0964-19 B/4)

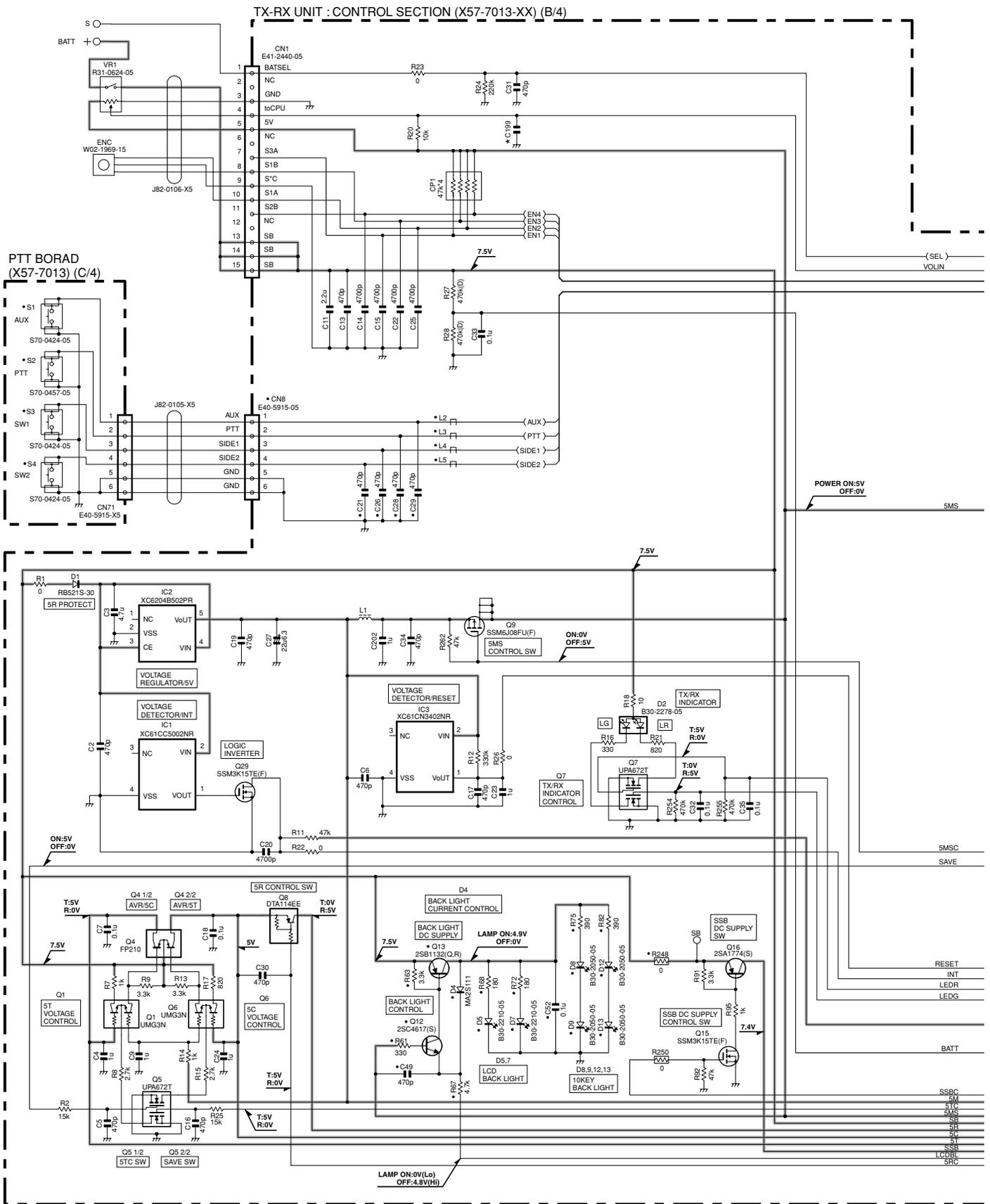


(D/4)

- GND
- GND
- KEY40
- KEY11
- KEY21
- KEY31
- KEY41

J72-0964-19
D/4

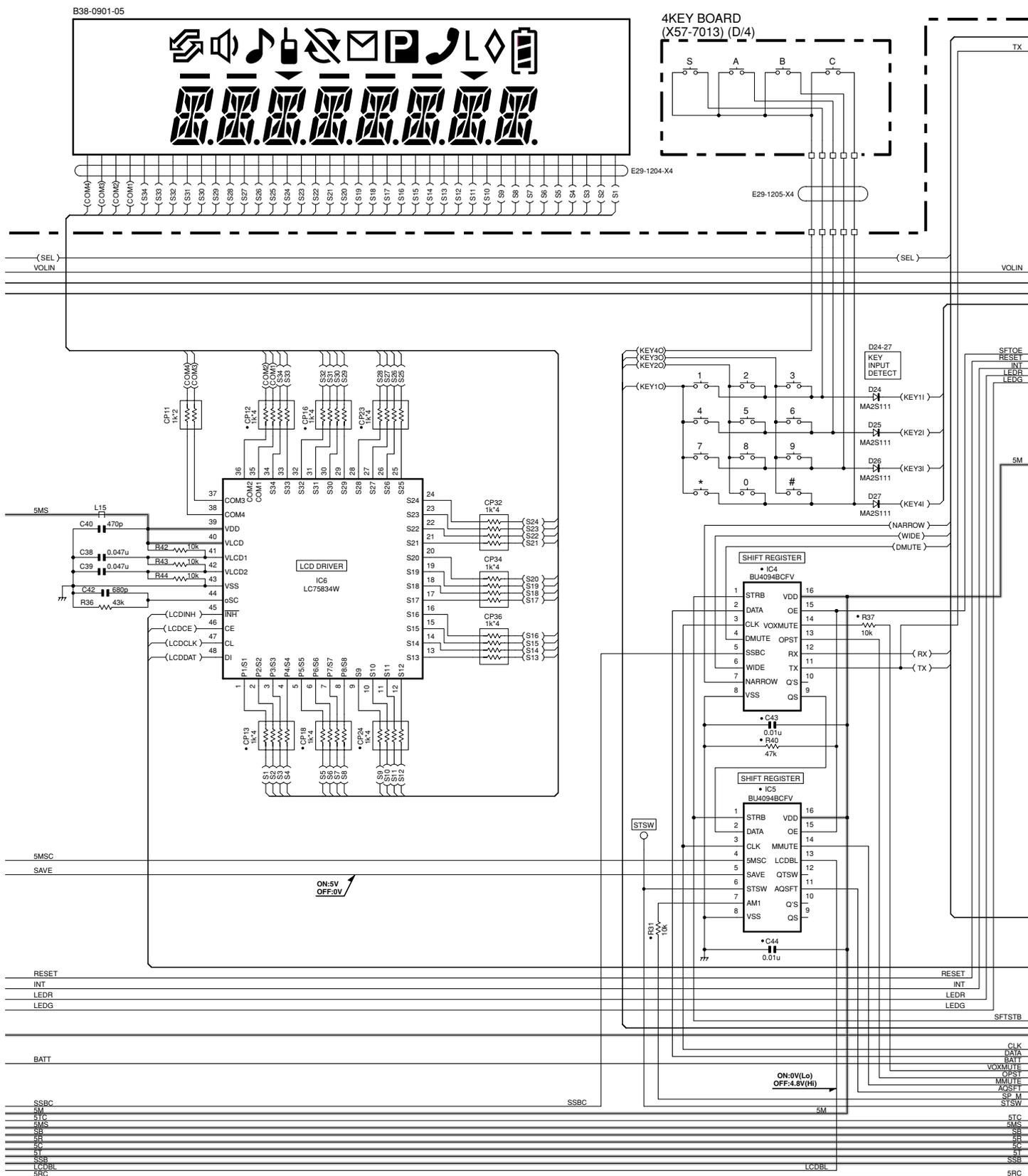
TK-3178 SCHEMATIC DIAGRAM / 原理图



X57-7013-XX	C199
-01	C 0.1u
-02	C2 NO

SCHEMATIC DIAGRAM / 原理图 TK-3178

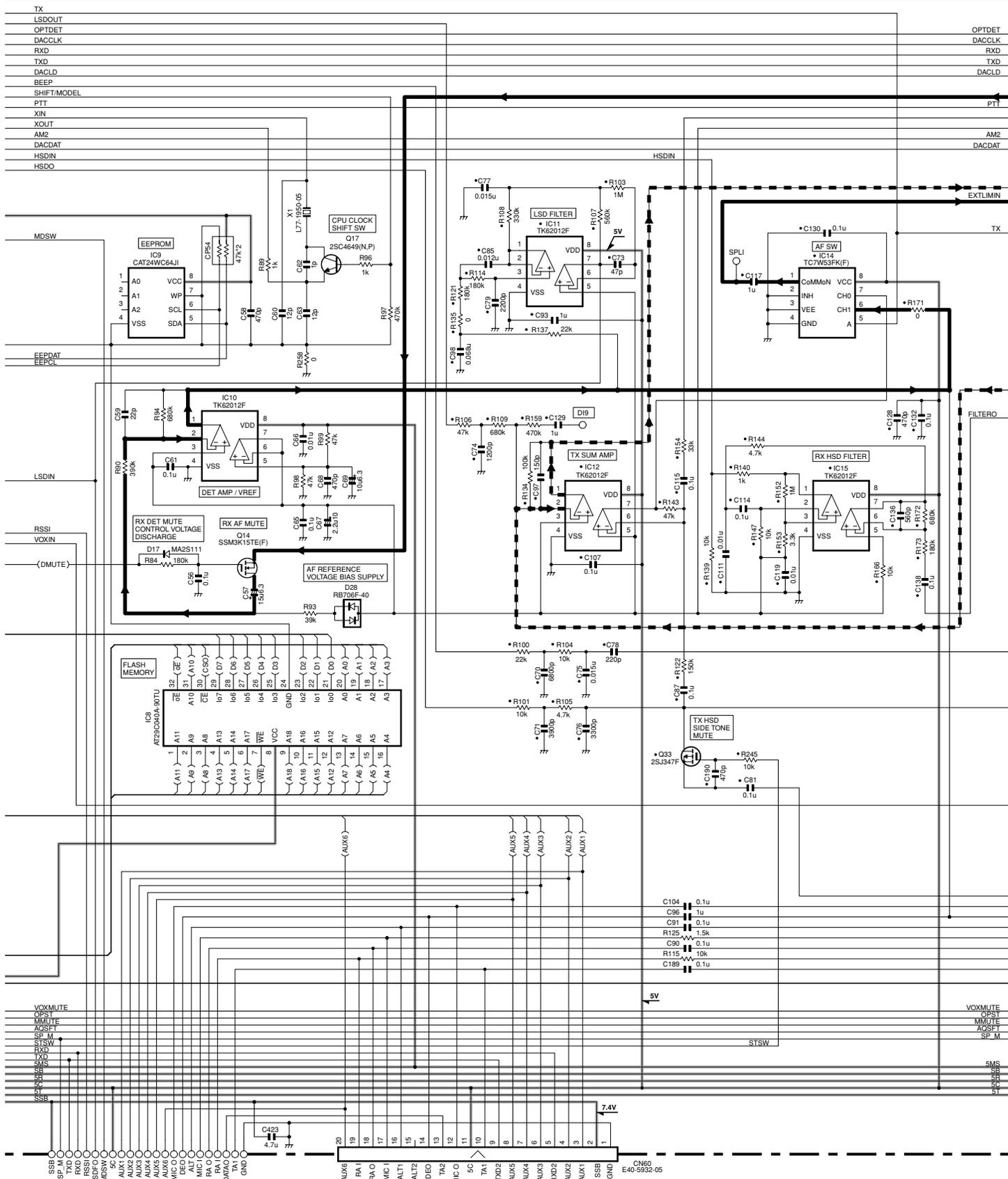
TX-RX UNIT (X57-7013-XX) (B/4)



SCHEMATIC DIAGRAM / 原理图

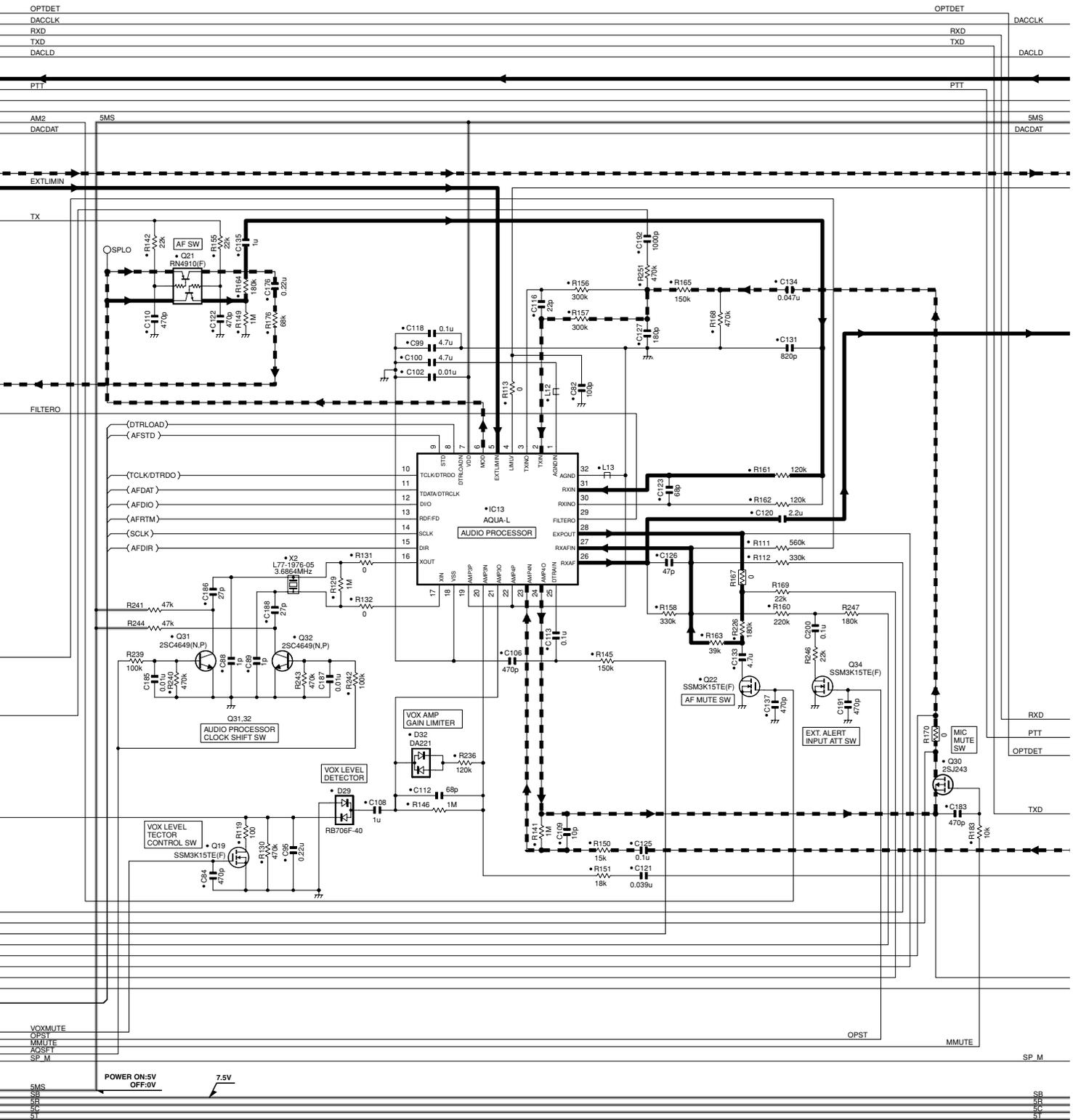
TK-3178

TX-RX UNIT (X57-7013-XX) (B/4)



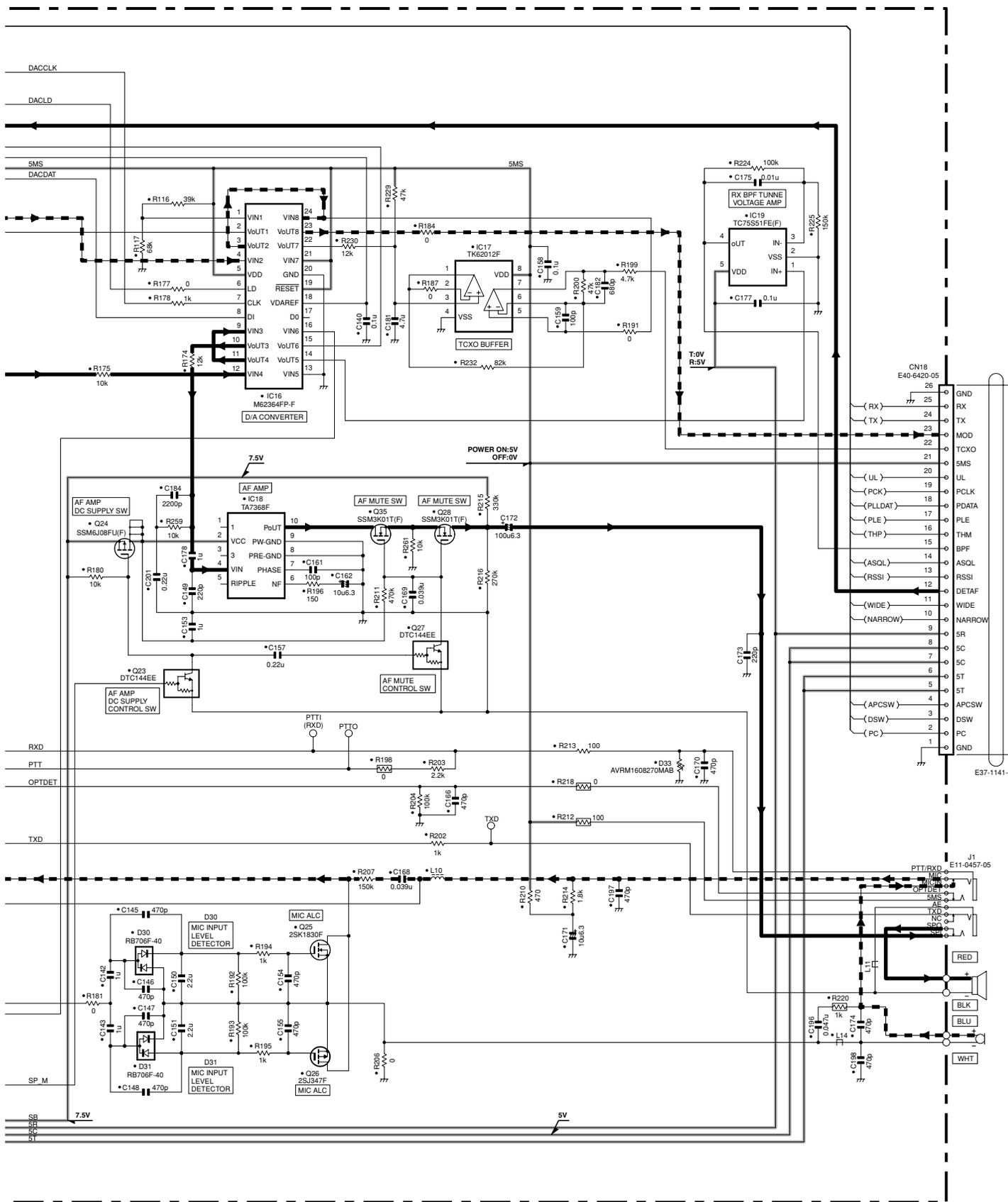
TK-3178 SCHEMATIC DIAGRAM / 原理图

TX-RX UNIT (X57-7013-XX) (B/4)



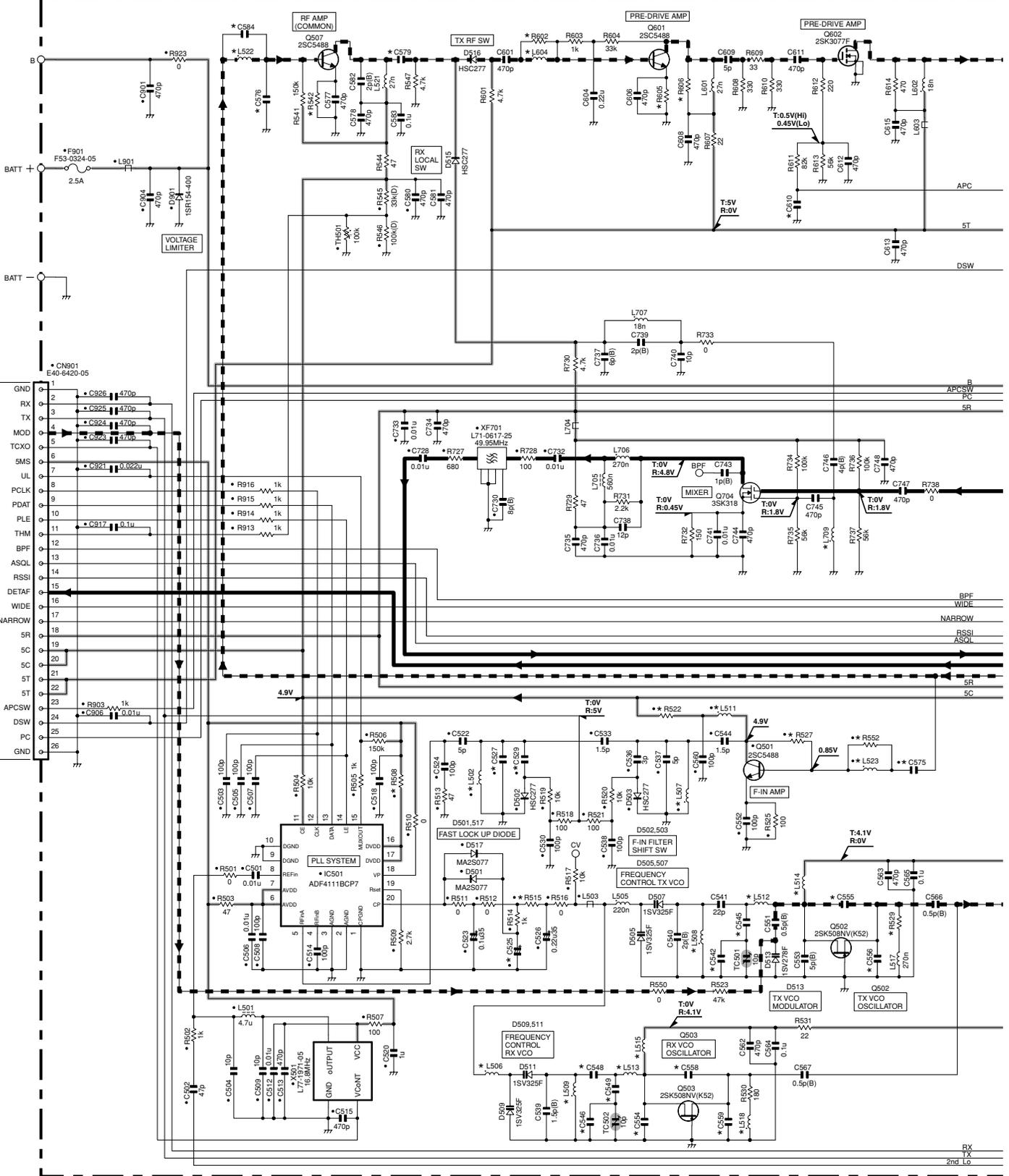
SCHEMATIC DIAGRAM / 原理图 TK-3178

TX-RX UNIT (X57-7013-XX) (B/4)



TK-3178 SCHEMATIC DIAGRAM / 原理图

TX-RX UNIT (X57-7013-XX) (A/4)

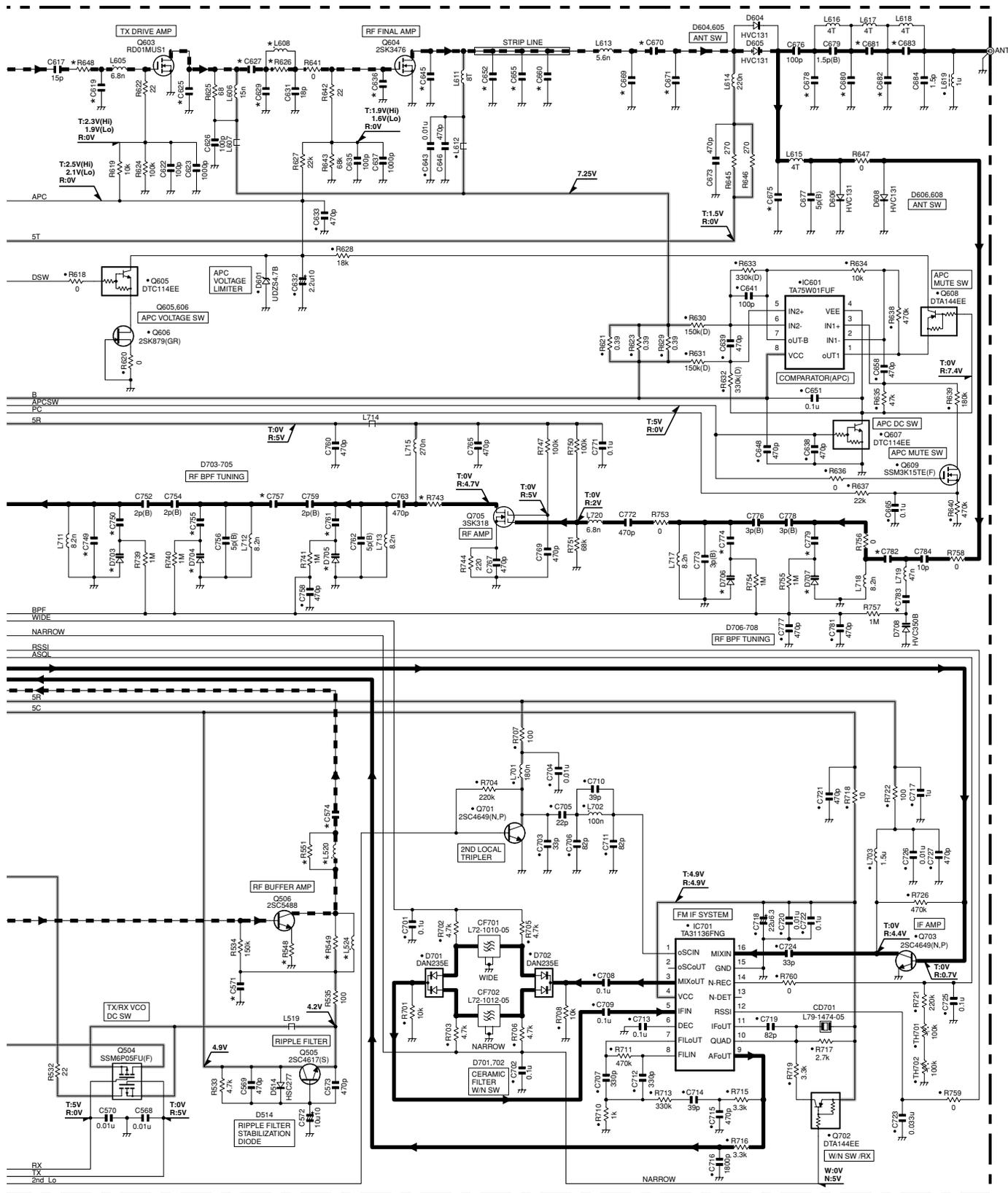


X57-7013-XX	L502	L506	L507	L508	L509	L511	L512	L513	L514	L515	L518	L522	L523	L604	L709	R508	R515	R522	R527	R529	R542	R552	R602	R605	R606	
-01	C	3.3n	220n	3.3n	82n	82n	12n	18n	22n	150n	180n	150n	47n	47n	18n	27n	33	560	22	220k	150	68	NO	NO	47	NO
-02	C2	3.9n	270n	3.9n	220n	120n	15n	22n	27n	220n	220n	270n	NO	NO	NO	33n	47	330	100	100k	180	330	0	0	100	470

X57-7013-XX	C525	C527	C529	C542	C545	C546	C548	C549	C554	C555	C556	C558	C559	C575	C576	C579	C584	C610	
-01	C	2.2u/10V	5p	3p	1.5p	9p	1.5p	47p	8p(B)	4p(B)	4p(B)	4p(B)	6p(B)	9p(B)	2p(B)	1p(B)	4p(B)	NO	NO
-02	C2	1u/25V	8p	2p	3p	12p	5p	33p	15p	5p(B)	5p(B)	6p(B)	5p(B)	8p(B)	10p	NO	3p(B)	10p	470p

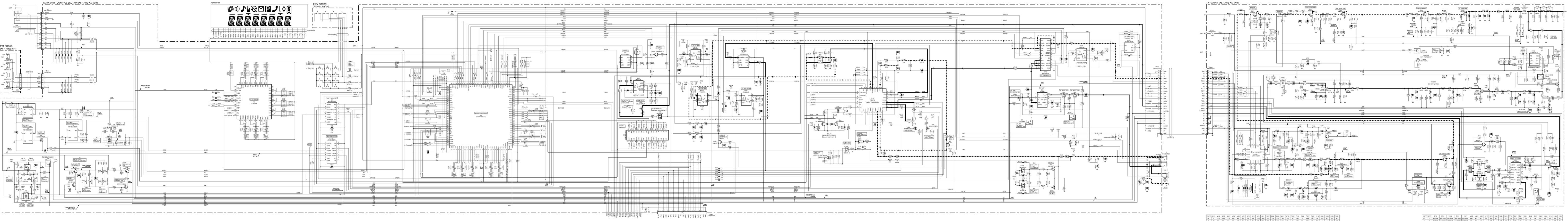
SCHEMATIC DIAGRAM / 原理图 TK-3178

TX-RX UNIT (X57-7013-XX) (A/4)



X57-7013-XX	D703	D704	D705	D706	D707	L520	L524	L608	R548	R549	R551	R626	R648	R743	C571	C574	C619	C625	C627	C629	C636	C645	C652	C655	
-01	C	HVC355B	HVC355B	HVC355B	HVC355B	HVC355B	68n	NO	NO	47	680	NO	0	100	0.1u	100p	15p	7p	39p	15p	22p	27p	22p	NO	
-02	C2	HVC350B	HVC350B	HVC350B	HVC350B	HVC350B	NO	22n	1.2n	0	NO	0	NO	5.6	47	470p	10p	NO	12p	27p	27p	18p	15p	NO	27p

X57-7013-XX	C660	C669	C670	C671	C675	C678	C680	C681	C682	C683	C749	C750	C755	C757	C761	C774	C779	C782	C783
-01	C2	22p	6p(B)	33p	3.5p(B)	2p(B)	3p(B)	3p(B)	2p(B)	3p(B)	3.5p(B)	33p	33p	1.5p(B)	33p	33p	33p	33p	6p(B)
-02	C2	15p	8p(B)	100p	5p(B)	4p(B)	4p(B)	7p(B)	7p(B)	2.5p(B)	4p(B)	18p	18p	2p(B)	18p	18p	18p	22p	8p(B)



Legend:

- K57-7013-XI C/4
- IC C R 14
- IC C MC

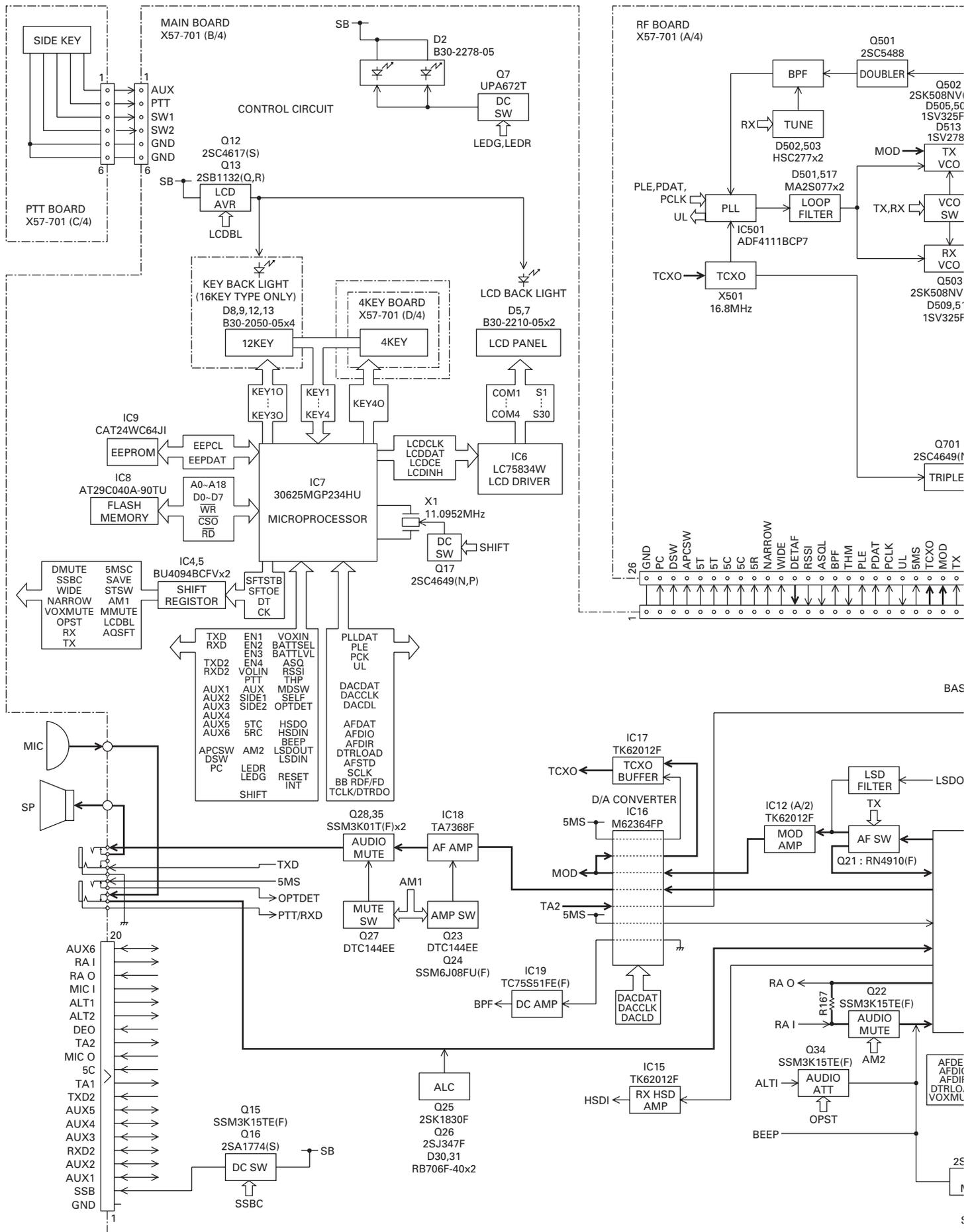
Legend:

- K57-7013-XI C/4
- IC C R 14
- IC C MC

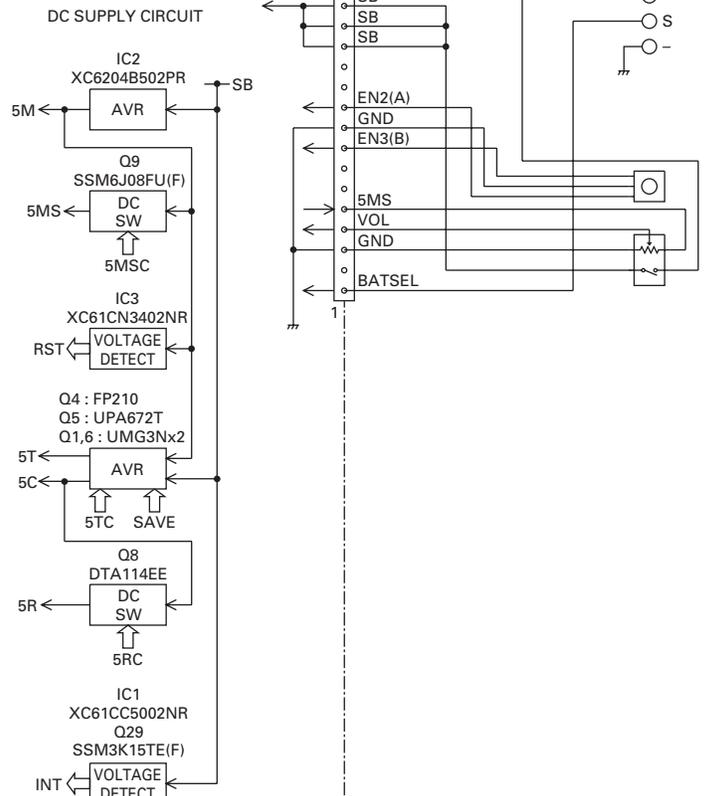
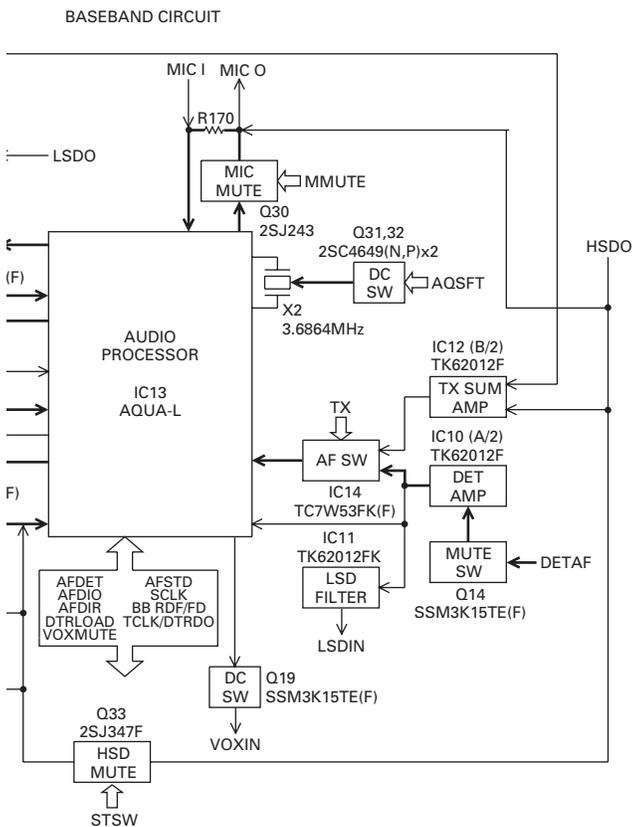
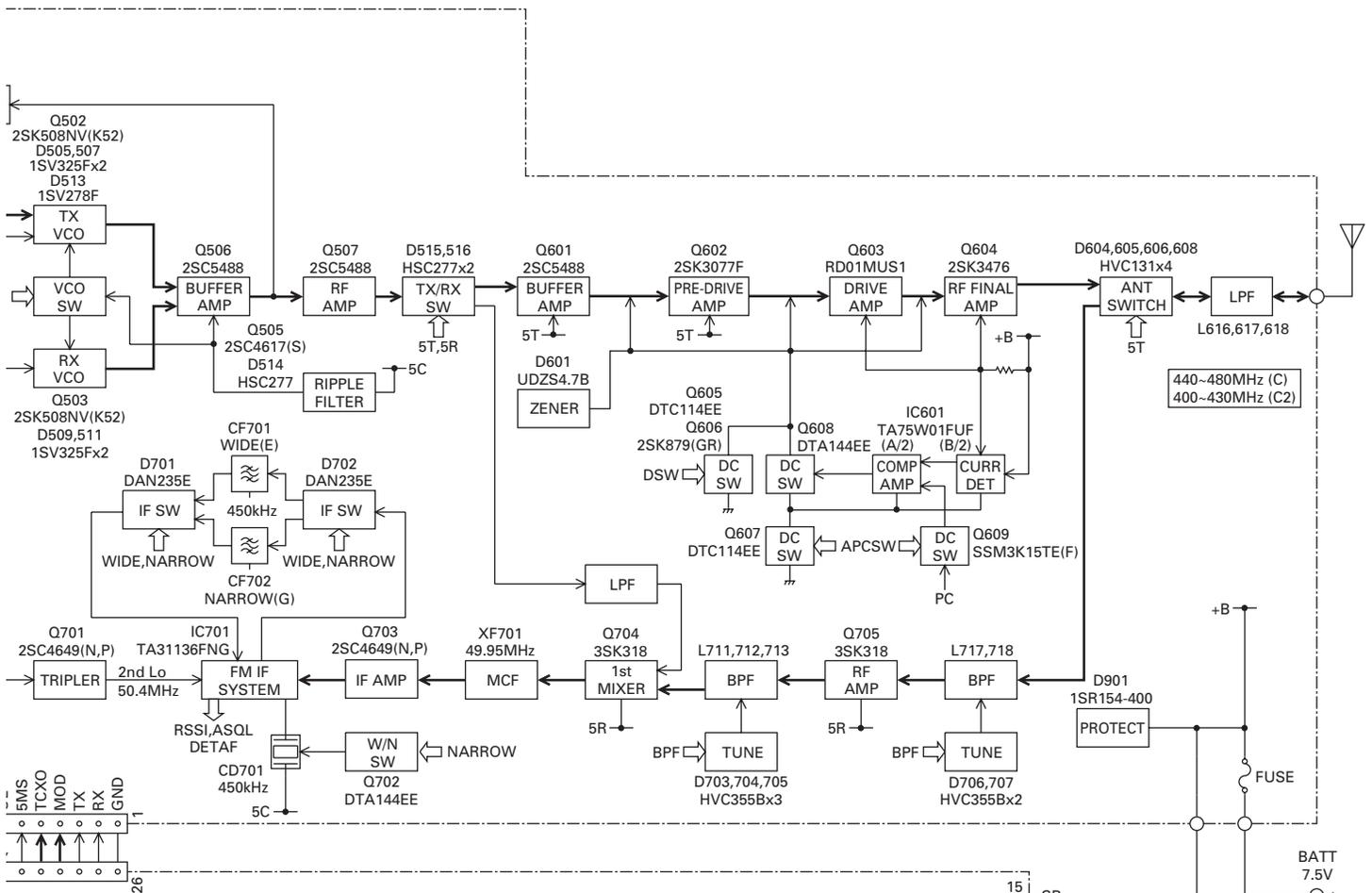
Legend:

- K57-7013-XI C/4
- IC C R 14
- IC C MC

TK-3178 BLOCK DIAGRAM / 方块图



BLOCK DIAGRAM / 方块图 TK-3178

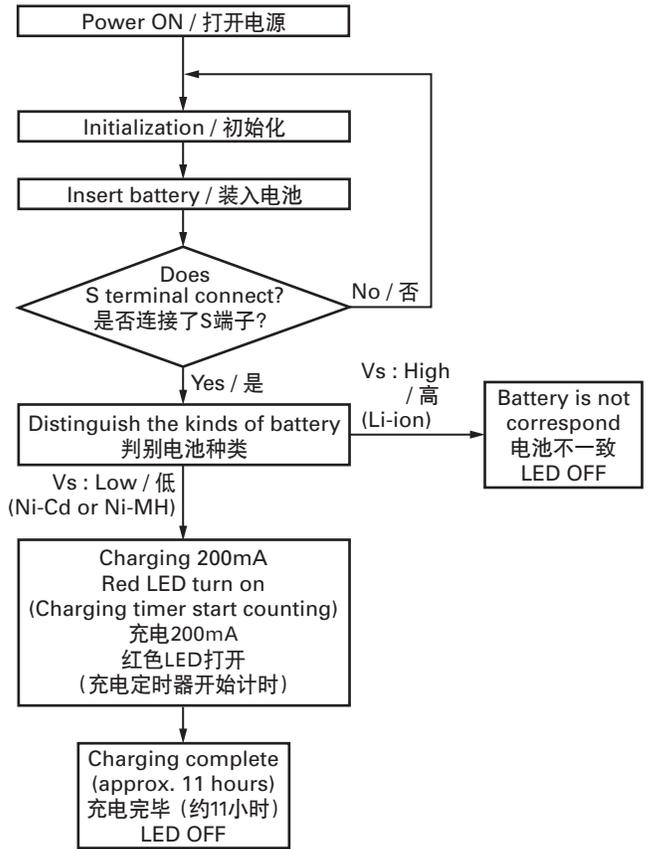


KSC-30 (RAPID CHARGER / 快速充电器)

External View / 外视图



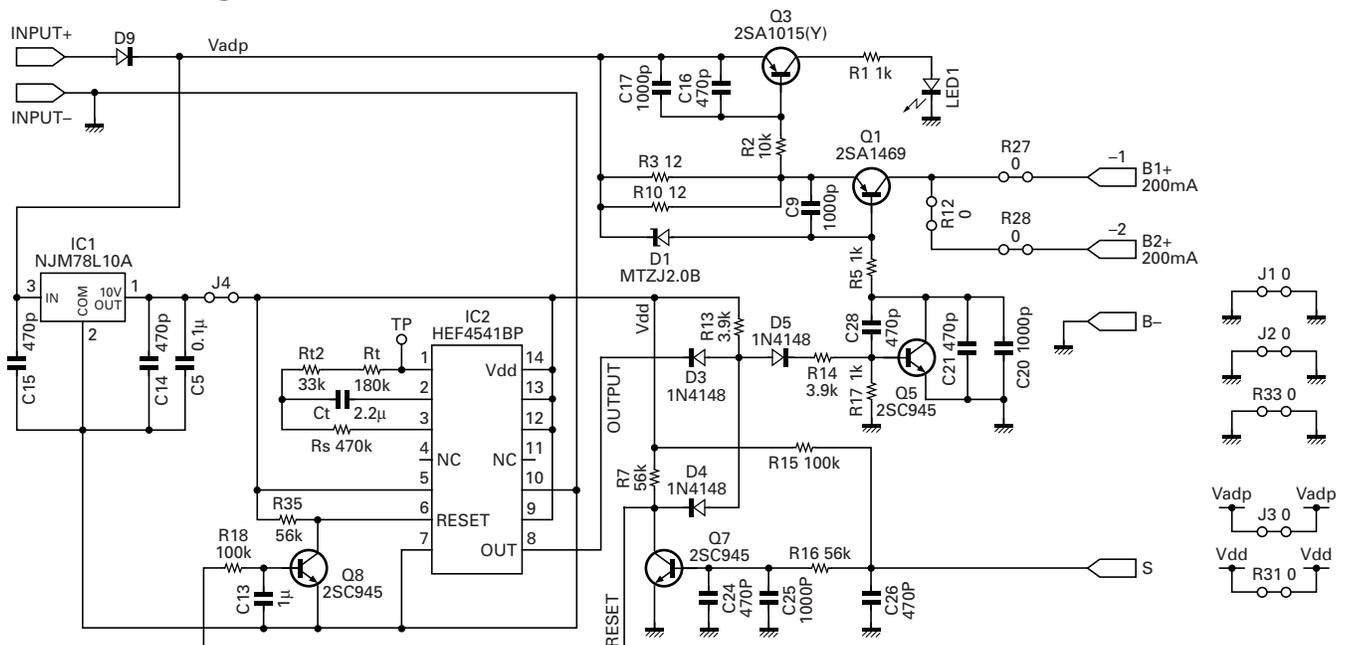
Operating Flow Chart / 操作流程图



Parts List / 零件表

Ref. No.	New parts	Parts No.	Description	Destination
		A02-3656-08	Cabinet Bottom	K, T, E
		A02-3841-08	Cabinet Upper	
		B43-1151-08	Badge	
		B62-1754-08	Instruction manual	
		B62-1755-08	Instruction manual	
		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	K, T, E
		W08-0479-05	AC adapter 120V AC 60Hz	
		W08-0513-05	AC adapter 230V AC 50Hz	
		W08-0558-15	AC adapter 230V AC 50Hz	

Schematic Diagram / 原理图



SPECIFICATIONS

GENERAL

Frequency range	440~480MHz (C)	400~430MHz (C2)
Number of channels	Zone : Max. 128 per radio	Conv. Ch : Max. 128 per zone
Channel spacing	Wide : 25kHz	Narrow : 12.5kHz
Battery voltage	7.5V DC \pm 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	\pm 0.00025% (-22°F~+140°F)	
Antenna impedance	50 Ω	
Channel frequency spread	40MHz (C)	30MHz (C2)
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-23) and beltclip (KBH-12)	

RECEIVER (Measurements made per EIA/TIA-603)

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

TRANSMITTER (Measurements made per EIA/TIA-603)

RF power output	HI : 4W	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	440~480MHz (C)	400~430MHz (C2)
频道数	最大128	
区域数	最大128	
信道间距	宽：25kHz	窄：12.5kHz
电池电压	7.5V DC \pm 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°C 到 + 60°C	
频率稳定性	\pm 0.00025% (- 30°C 到 + 60°C)	
阻 抗	50 Ω	
信道频率扩展	40MHz (C)	30MHz (C2)
尺寸 (宽 \times 高 \times 长)		
带有KNB-24L或KNB-35L	56 \times 109 \times 31.7 mm	
带有KNB-25A或KNB-26N	56 \times 109 \times 37.9 mm	
重量 (带有KNB-35L, KRA-23和KBH-12)	340g	

接收部 (根据EIA标准EIA/TIA-603测定)

灵敏度 (EIA 12dB SINAD)	宽：0.25 μ V	窄：0.28 μ V
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	8 Ω 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：4W	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%	

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