

## CONTENTS

|                                       |                   |
|---------------------------------------|-------------------|
| <b>GENERAL</b> .....                  | <b>2</b>          |
| <b>SYSTEM SET-UP</b> .....            | <b>3</b>          |
| <b>REALIGNMENT</b> .....              | <b>3</b>          |
| <b>DISASSEMBLY FOR REPAIR</b> .....   | <b>6</b>          |
| <b>CIRCUIT DESCRIPTION</b> .....      | <b>7</b>          |
| <b>SEMICONDUCTOR DATA</b> .....       | <b>10</b>         |
| <b>COMPONENTS DESCRIPTION</b> .....   | <b>11</b>         |
| <b>PARTS LIST</b> .....               | <b>12</b>         |
| <b>EXPLODED VIEW</b> .....            | <b>17</b>         |
| <b>ADJUSTMENT</b> .....               | <b>18</b>         |
| <b>PC BOARD</b>                       |                   |
| <b>TX-RX UNIT (X57-8103-XX)</b> ..... | <b>22</b>         |
| <b>SCHEMATIC DIAGRAM</b> .....        | <b>26</b>         |
| <b>BLOCK DIAGRAM</b> .....            | <b>27</b>         |
| <b>LEVEL DIAGRAM</b> .....            | <b>29</b>         |
| <b>SPECIFICATIONS</b> .....           | <b>BACK COVER</b> |

# TK-3000

## Document Copyrights

Copyright 2010 by Kenwood Corporation. All rights reserved.

No part of this manual may be reproduced, translated, distributed, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, for any purpose without the prior written permission of Kenwood.

## Disclaimer

While every precaution has been taken in the preparation of this manual, Kenwood assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained herein. Kenwood reserves the right to make changes to any products herein at any time for improvement purposes.

## Firmware Copyrights

The title to and ownership of copyrights for firmware embedded in Kenwood product memories are reserved for Kenwood Corporation. Any modifying, reverse engineering, copy, reproducing or disclosing on an Internet website of the firmware is strictly prohibited without prior written consent of Kenwood Corporation. Furthermore, any reselling, assigning or transferring of the firmware is also strictly prohibited without embedding the firmware in Kenwood product memories.

# GENERAL

## INTRODUCTION

### SCOPE OF THIS MANUAL

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

## ORDERING REPLACEMENT PARTS

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

## PERSONAL SAFETY

The following precautions are recommended for personal safety:

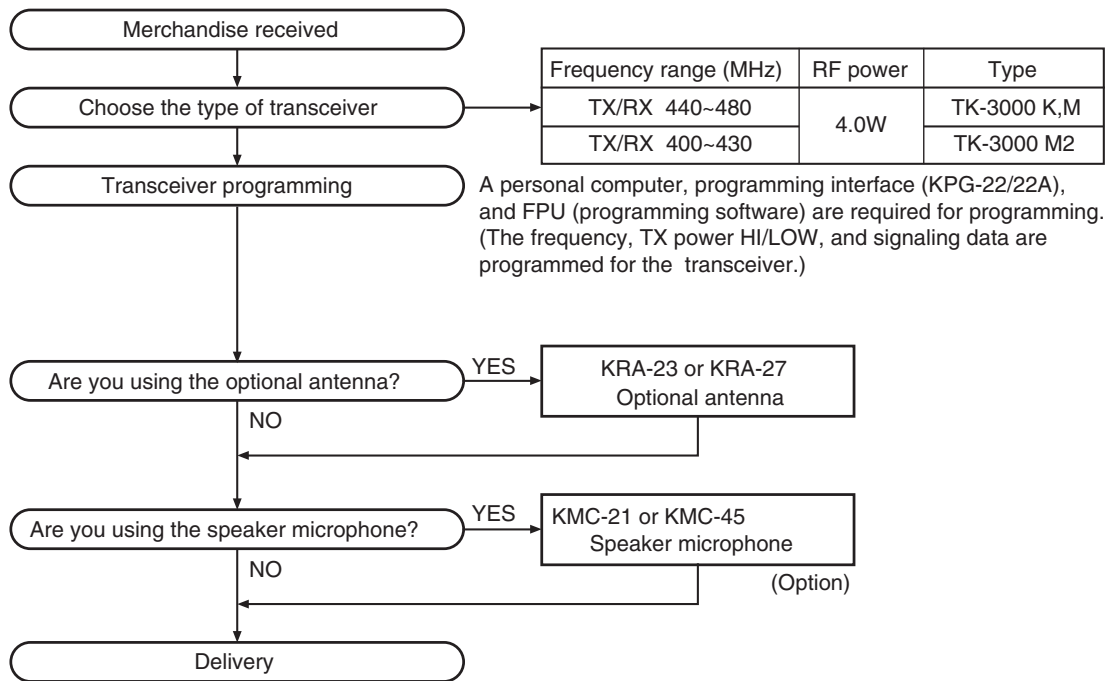
- DO NOT transmit until all RF connectors are verified secure and any open connectors are properly terminated.
- SHUT OFF and DO NOT operate this equipment near electrical blasting caps or in an explosive atmosphere.
- This equipment should be serviced by a qualified technician only.

## SERVICE

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

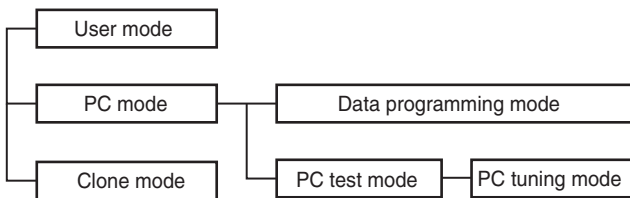
| Model   | Type | TX-RX unit  | Frequency range | Remarks                       |
|---------|------|-------------|-----------------|-------------------------------|
| TK-3000 | K,M  | X57-8103-00 | 440~480MHz      | IF1: 38.85MHz<br>LOC: 38.4MHz |
|         | M2   | X57-8103-01 | 400~430MHz      |                               |

## SYSTEM SET-UP



## REALIGNMENT

### 1. Modes



| Mode                  | Function  |
|-----------------------|---|
| User mode             | For normal use.   |
| PC mode               | Used for communication between the transceiver and PC.                                |
| Data programming mode | Used to read and write frequency data and other features to and from the transceiver. |
| PC test mode          | Used to check the transceiver using the PC. This feature is included in the FPU.      |
| Clone mode            | Used to transfer programming data from one transceiver to another.                    |

### 2. How to Enter Each Mode

| Mode       | Operation                           |
|------------|-------------------------------------|
| User mode  | Power ON                            |
| PC mode    | Received commands from PC           |
| Clone mode | [PTT]+[Side]+Power ON (Two seconds) |

### 3. PC Mode

#### 3-1. Preface

The transceiver is programmed by using a personal computer, a programming interface (KPG-22/22A, USB adapter (KCT-53U)) and FPU (programming software).

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

#### 3-2. Connection Procedure

1. Connect the transceiver to the personal computer with the interface cable and USB adapter (when the interface cable is KPG-22A, the KCT-53U can be used).

## REALIGNMENT

### Note:

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

### Note:

- The data stored in the personal computer must match Model Name and Model Type when it is written into EEPROM.
- Do not press the [PTT] key during data transmission or reception.

### 3-3. KPG-22/KPG-22A Description

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

The KPG-22/22A is required to interface the transceiver with the computer. It has a circuit in its D-sub connector (KPG-22: 25-pin, KPG-22A: 9-pin) case that converts the RS-232C logic level to the TTL level.

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

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

The KCT-53U is a cable which connects the KPG-22A to a USB port on a computer.

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

### 3-5. FPU (Programming Software) Description

The FPU is the programming software for the transceiver supplied on a CD-ROM. This software runs under windows XP, Vista or 7 on a PC. The software on this disk allows a user to program the transceiver via Programming interface cable (KPG-22/22A).

### Note:

- Use the FPU that matches the market when you first set the market code and model name/frequency data to the service unit. The unit set by mistake cannot be restored.
- Receive frequencies listed below may result in the interference of reception due to the harmonics of internal oscillators. Enter a frequency not listed in the table.

| No. | FREQUENCY (MHz) |            |
|-----|-----------------|------------|
|     | TK-3000 K,M     | TK-3000 M2 |
| 1   | 441.59375       | 403.19375  |
| 2   | 441.59500       | 403.19500  |
| 3   | 441.60000       | 403.20000  |
| 4   | 441.60500       | 403.20500  |
| 5   | 441.60625       | 403.20625  |
| 6   | 460.79375       | 422.39375  |
| 7   | 460.79500       | 422.39500  |
| 8   | 460.80000       | 422.40000  |
| 9   | 460.80500       | 422.40500  |
| 10  | 460.80625       | 422.40625  |
| 11  | 479.99375       | -          |
| 12  | 479.99500       | -          |
| 13  | 480.00000       | -          |

### 3-6. Programming with PC

If data is transferred to the transceiver from a PC with the FPU, the data for each set can be modified.

Data can be programmed into the EEPROM in RS-232C format via the SP/MIC jack.

In this mode the PTT line operate as TXD and RXD data lines respectively.

#### List of FPU for transceiver

| Model   | Type | FPU                              |
|---------|------|----------------------------------|
| TK-3000 | K    | KPG-137D(K) (ver. 1.01 or later) |
|         | M,M2 | KPG-137D(E) (ver. 1.01 or later) |

## REALIGNMENT

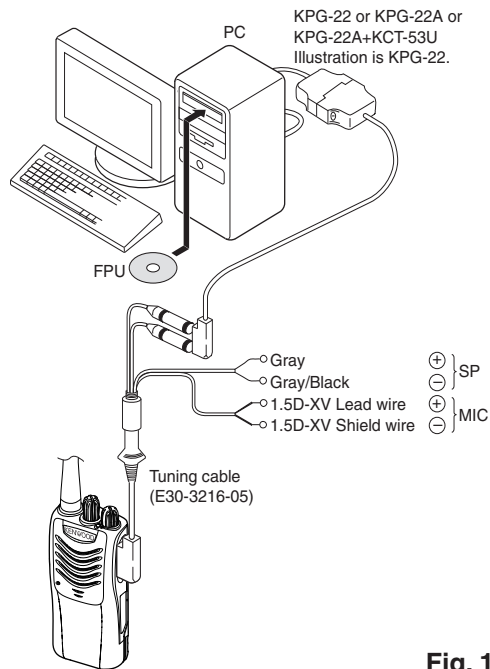


Fig. 1

### 4. Clone mode

Programming data can be transferred from one transceiver to another by connecting them via their SP/MIC connectors.

Cloning can be performed as described below (the transmit transceiver is the source and the receive transceiver is the target).

The following data cannot be cloned.

- Tuning data
- Model name data
- ESN data

1. Turn the source transceiver and target transceiver power OFF.
2. Turn the source transceiver power ON while pressing the [PTT] and [Side] keys, to enter clone mode.
3. Connect the cloning cable (part No. E30-3410-05) to the SP/MIC connectors on the source and target transceivers.
4. Turn the target transceiver power ON.
5. Press the [Side] key on the source transceiver. The data of the source is sent to the target. While the source is sending data, red LED will light. While the target is receiving the data, green LED will light. When cloning of data is completed, the source red LED turned off, and the target automatically operates in the User mode.
6. Additional targets can be continuously cloned. When the [Side] key on the source is pressed, the data of the source is sent to the target again. Repeat steps 3 to 5 to clone additional transceivers.

#### Note:

- The Model name and Market codes must be the same in order to clone the transceiver.

- If the transceivers clone mode is configured as “Disabled”, the transceiver cannot enter clone mode.
- If the Read authorization password is set to the transceiver, the transceiver cannot enter to the clone mode.
- Cannot be cloned if the password (overwrite password) is programmed to the target.

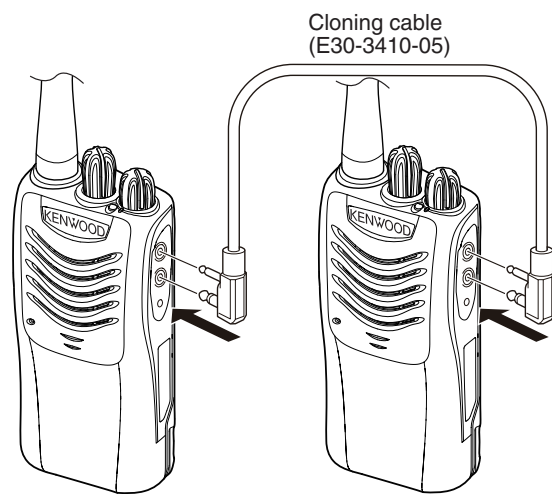
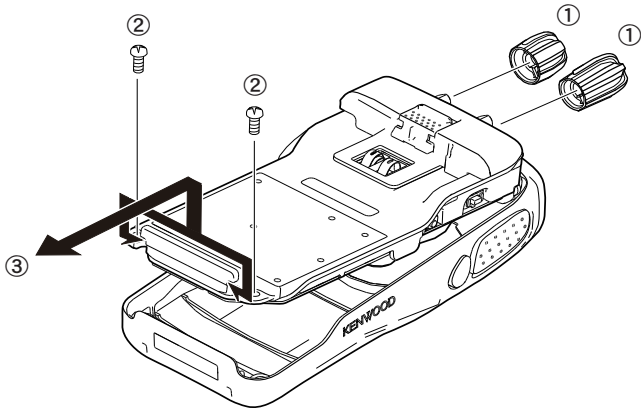


Fig. 2

## DISASSEMBLY FOR REPAIR

### 1. Separating the Case Assembly from the Chassis

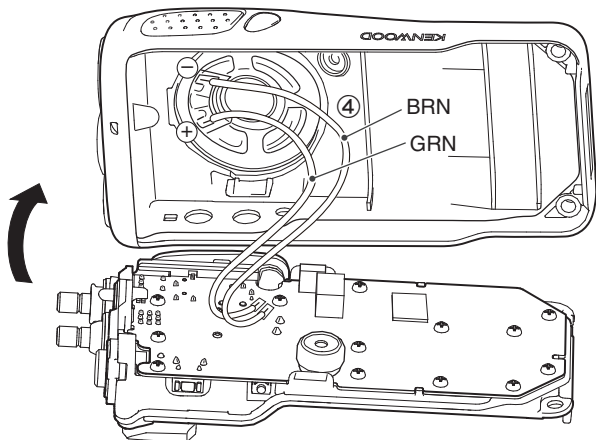
1. Remove the two knobs (①).
2. Remove the two screws (②).
3. Expand the right and left sides of the bottom of the case assembly, lift the chassis, and remove it from the case assembly (③).



4. Taking care not to cut the speaker lead (④), open the chassis and case assembly.

**Note:**

Solder the speaker wire back in its original position if you have removed it.

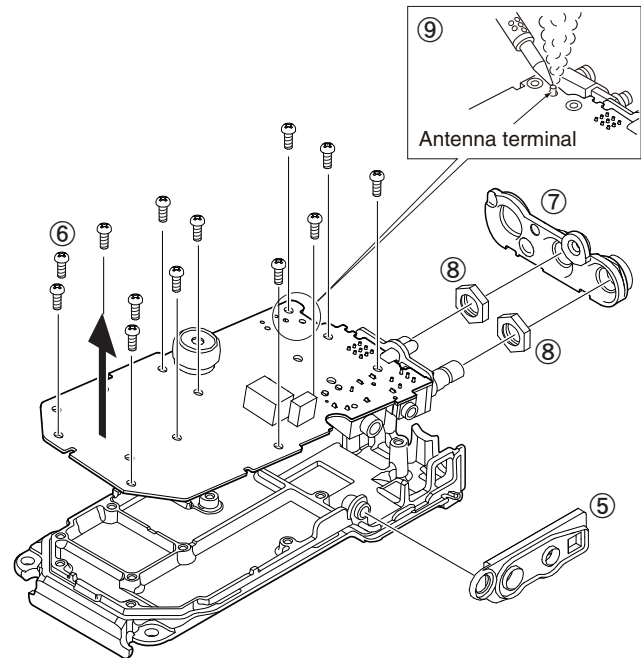


### 2. Removing the TX-RX unit from the Chassis

1. Remove the packing (⑤).
2. Remove the 13 screws (⑥).
3. Remove the packing (⑦) and two hexagon nuts (⑧).
4. Remove the solder from the antenna terminal using a soldering iron then lift the unit off (⑨).

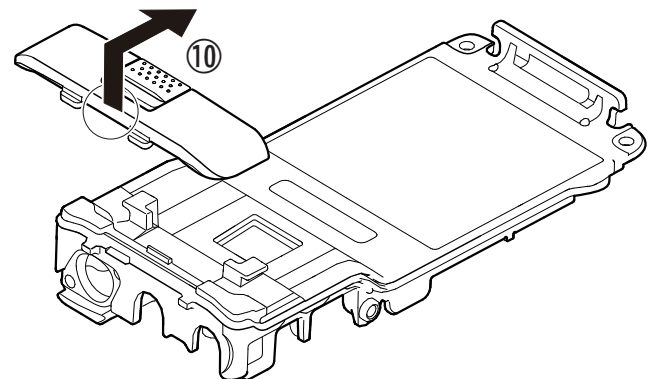
**Note:**

When reassembling the unit in the chassis, be sure to solder the antenna terminal.



### 3. Removing the Rear Panel

1. Raise the rear panel on the chassis (⑩).



# CIRCUIT DESCRIPTION

## 1. Frequency Configuration

The receiver utilizes double conversion. The first IF is 38.85MHz and the second IF is 450kHz. The first Local oscillator is supplied from the PLL circuit.

The PLL circuit in the transmitter generates the necessary frequencies.

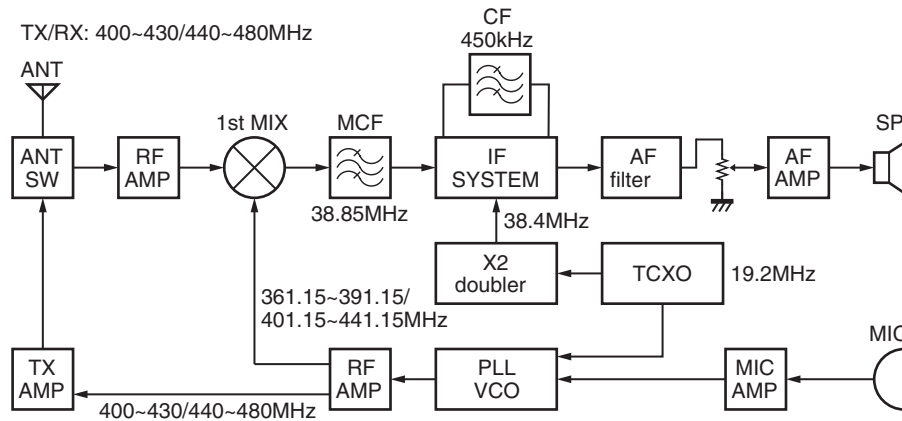


Fig. 1 Frequency configuration

## 2. Receiver System

The receiver system is shown in Figure 2.

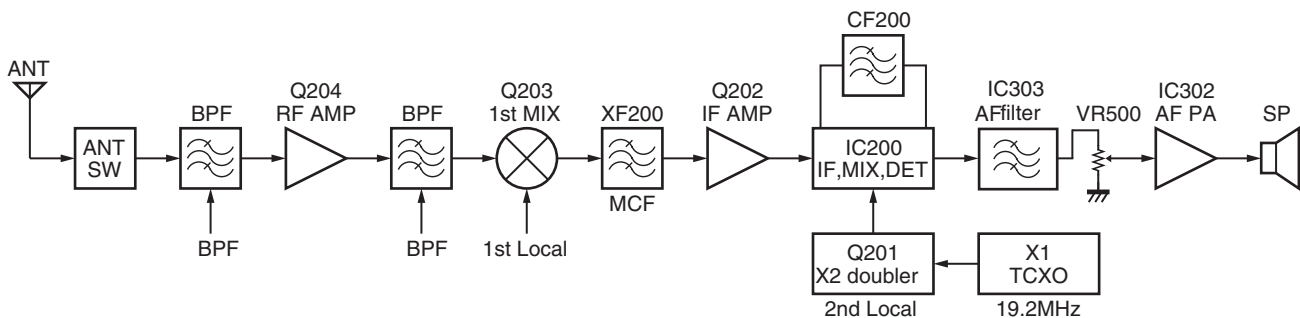


Fig. 2 Receiver system

### 2-1. Front End (RF Amplifier) Circuit

The signal coming from the antenna passes through the transmit/receive switching diode circuit (D101, D102, D103 and D105) and a BPF (L208 and L210), and is then amplified by the RF amplifier (Q204).

The resulting signal passes through a BPF (L215, L218 and L219) and goes to the mixer. These BPFs are adjusted by variable capacitors (D201, D202, and D204). The input voltage to the variable capacitor is a regulated voltage output from the DAC (IC300).

### 2-2. First Mixer

The signal from the front end is mixed with the first local oscillator signal generated in the PLL circuit by Q203 to produce a first IF frequency of 38.85 MHz.

The resulting signal passes through the XF200 MCF to cut the adjacent spurious and provide the optimum characteristics, such as adjacent frequency selectivity.

## CIRCUIT DESCRIPTION

### 2-3. IF Amplifier Circuit

The first IF signal is passed through a four-pole monolithic crystal filter (XF200) to remove the adjacent channel signal.

The filtered first IF signal is amplified by the first IF amplifier (Q202) and then applied to the IF system IC (IC200).

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 38.4MHz of the second local oscillator output (TCXO X1) and produces the second IF signal of 450kHz.

The second IF signal is passed through the ceramic filter (CF200) 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 (CD201). The demodulated signal is routed to the audio circuit.

### 2-4. Audio Amplifier Circuit

The demodulated signal from IC200 is amplified by IC305, IC303 and goes to AF amplifier through IC302.

The signal then goes through an volume control (VR500), and is routed to an audio power amplifier (IC302) where it is amplified and output to the speaker.

To output sounds from the speaker, IC400 sends a high signal to the SPMUT line and turns IC400 on through Q300, Q301, Q302 and Q306.

### 3. Transmitter System

#### 3-1. Microphone Amplifier Circuit

The signal from microphone amplified by IC301 and goes through mute switch (IC300).

IC304 is composed of high-pass filter, low-pass filter and pre-emphasis/IDC circuit.

The output signal from the DAC IC (IC300) goes to the VCO modulation input.

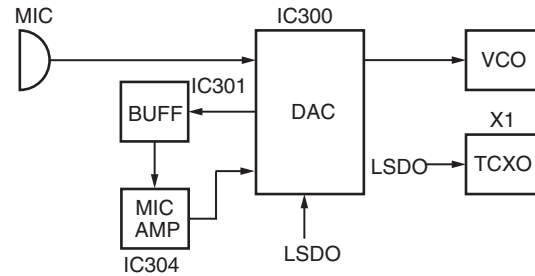


Fig. 3 Microphone amplifier circuit

#### 3-2. Driver and Final Amplifier Circuit

The signal from the T/R switch (D100 is on) is amplified by the pre-drive amplifier (Q100) to 30mW.

The output of the pre-drive amplifier is amplified by the drive amplifier (Q101) and the RF final amplifier (Q102) to 4.0W (1W when the power is low).

The drive amplifier and the RF final amplifier consist of two MOS FET stages.

The output of the RF final amplifier is then passed through the harmonic filter (LPF) and antenna switch (D101 and D102) and is applied to the antenna terminal.

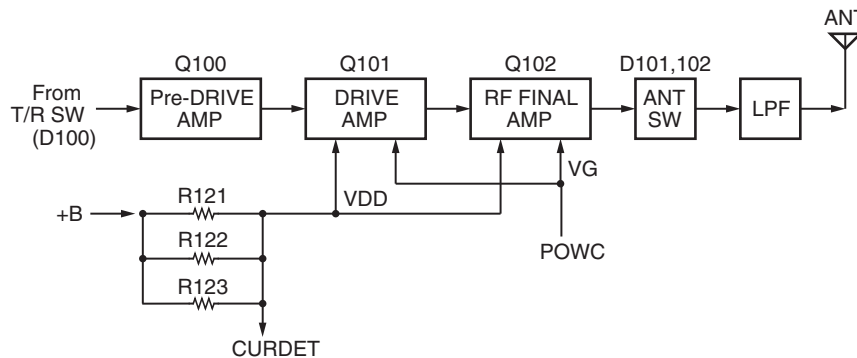


Fig. 4 Drive and final amplifier circuit



## CIRCUIT DESCRIPTION

### 4. Frequency Synthesizer Circuit

#### 4-1. Frequency Synthesizer

The frequency synthesizer consists of the TCXO (X1), VCO, PLL IC (IC1) and buffer amplifiers.

The TCXO generates 19.2MHz. The frequency stability is 2.5 ppm 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 1 of the PLL IC.

The VCO consists of 1VCO and covers a dual range of the 400.00~430.00/440.00~480.00MHz and the 361.15~391.15/401.15~441.15MHz. The VCO generates 361.15~391.15/401.15~441.15MHz for providing to the first local signal in receive.

The PLL IC consists of a prescaler, reference divider, phase comparator, charge pump (The frequency step of the PLL circuit is 5 or 6.25 kHz).

PLL data is output from DATA (pin 19), CLOCK (pin 18) and PLDL (pin 20) of the MCU (IC400). 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 22 (PLUL) of the MCU. When the PLL is unlocked, the PLUL goes low.

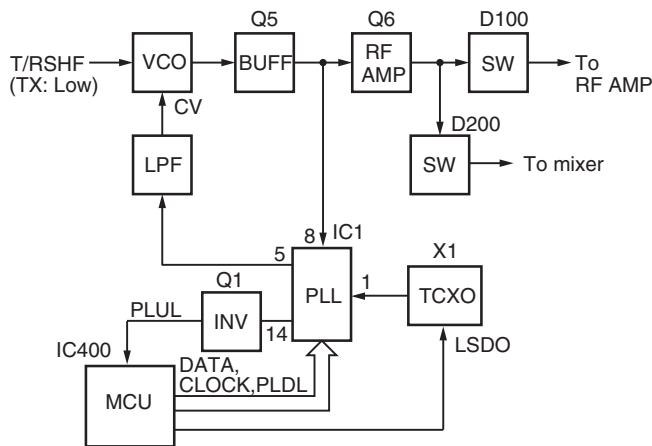


Fig. 5 PLL block diagram

### 5. Control Circuit

The control consists of the MCU (IC400) and its peripheral circuits. It controls the TX-RX unit. IC400 mainly performs the following;

- 1) Switching between transmission and reception by PTT signal input.
- 2) Reading channel information, frequency, and program data from the memory circuit.
- 3) Sending frequency program data to the PLL.
- 4) Controlling squelch on/off via the DC voltage from the squelch circuit.
- 5) Controlling the audio mute circuit via the decode data input.
- 6) Transmitting tone and encode data.

#### Note:

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

Realign the transceiver after replacing the EEPROM.

### 6. Signaling Circuit

#### 6-1. Encode

##### ■ Low-speed data (QT, DQT)

Low-speed data is output from pin 49 (LSDO) of the MCU (IC400). The signal passes through a low-pass CR filter. The signal is mixed with the audio signal and goes to the VCO and TCXO (X1) modulation input after signal processing in the DAC IC (IC300).

##### ■ High-speed data (DTMF)

High-speed data (HSD) is output from pin 50 (HSDO) of the MCU.

The signal passes through a low-pass CR filter. TX deviation making an adjustment by MCU is applied to the DAC IC (IC300). The signal is mixed with the audio signal and goes to the VCO and TCXO.

#### 6-2. Decode

##### ■ QT/DQT

The output signal from IF IC (IC200) enters the MCU (IC400) through IC300. IC400 determines whether the QT or DQT matches the preset value, and controls the SPMUT and the speaker output sounds according to the squelch results.

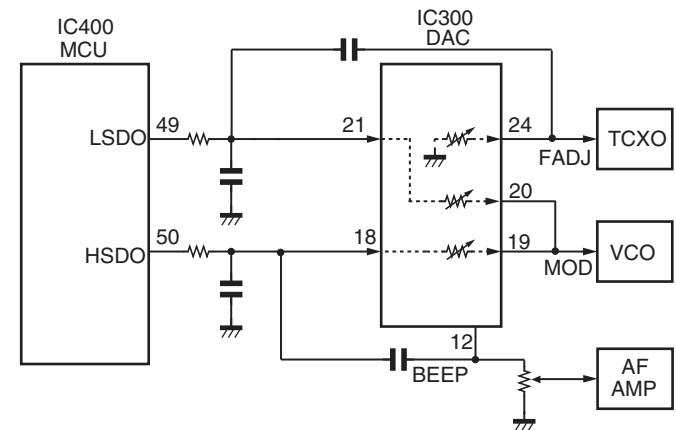


Fig. 6 Encode

### 7. Power Supply

There are five 5V power supplies for the MCU:

5M is always output while the power is on.

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

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

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

5MS is 5V for the SP/MIC connector and the DAC IC (IC300)

## SEMICONDUCTOR DATA

## MCU:F2136ACNKDRB (TX-RX unit: IC400)

| Pin No. | Signal Name | I/O | Function                       |
|---------|-------------|-----|--------------------------------|
| 1       | NC          | O   | NC                             |
| 2       | VREF        | -   | Reference voltage input        |
| 3       | MODE        | I   | Mode select for MCU            |
| 4       | NC          | O   | NC                             |
| 5       | NC          | O   | NC                             |
| 6       | RESET       | I   | Reset signal input             |
| 7       | XOUT        | O   | Oscillation circuit            |
| 8       | Vss         | -   | GND                            |
| 9       | XIN         | I   | Oscillation circuit            |
| 10      | Vcc         | -   | Power supply                   |
| 11      | BSFT        | O   | Beat shift for MCU clock       |
| 12      | NC          | O   | NC                             |
| 13      | NC          | O   | NC                             |
| 14      | NC          | O   | NC                             |
| 15      | E2WP        | O   | Write protect for EEPROM       |
| 16      | E2DAT       | I/O | Data input/output from EEPROM  |
| 17      | E2CLK       | O   | Clock for EEPROM               |
| 18      | CLOCK       | O   | Clock for PLL/DAC IC           |
| 19      | DATA        | O   | Data for PLL/DAC IC            |
| 20      | PLDL        | O   | Load enable for PLL IC         |
| 21      | PLPS        | O   | Power saving for PLL IC        |
| 22      | PLUL        | I   | Lock detect signal from PLL IC |
| 23      | NC          | O   | NC                             |
| 24      | EN4         | I   | Encoder input 4                |
| 25      | EN3         | I   | Encoder input 3                |
| 26      | EN2         | I   | Encoder input 2                |
| 27      | EN1         | I   | Encoder input 1                |
| 28      | NC          | O   | NC                             |
| 29      | OPTDET      | I   | 2pin option detection          |
| 30      | LEDR        | O   | LED (Red) control              |
| 31      | LEDG        | O   | LED (Green) control            |
| 32      | SPMUT       | O   | Power switch for AF amp        |
| 33      | NC          | O   | NC                             |
| 34      | 5TC         | O   | 5T control                     |
| 35      | 5CC         | O   | 5C control (SAVE)              |
| 36      | 5MSC        | O   | 5MS control                    |
| 37      | DACLD       | O   | Load enable for DAC IC         |
| 38      | PTT         | I   | PTT key input                  |
| 39      | PFKEY       | I   | PF key input                   |
| 40      | INT         | I   | INT signal input               |
| 41      | VDCSW       | O   | Voltage discharge switch       |
| 42      | WID/NAR     | O   | Wide/Narrow control            |
| 43      | RXD         | I   | Serial data input (FPU)        |
| 44      | TXD         | O   | Serial data output (FPU)       |

| Pin No. | Signal Name | I/O | Function                |
|---------|-------------|-----|-------------------------|
| 45      | NC          | O   | NC                      |
| 46      | NC          | O   | NC                      |
| 47      | VOXIN       | I   | VOX level input         |
| 48      | CVDET       | I   | VCO voltage detection   |
| 49      | LSDO        | O   | Low speed data output   |
| 50      | HSDO        | O   | DTMF/beep output        |
| 51      | BATT        | I   | Battery voltage input   |
| 52      | RSSI        | I   | RSSI input              |
| 53      | SQL         | I   | Squelch input           |
| 54      | LSDIN       | I   | LSD input               |
| 55      | THDET       | I   | Thermistor input        |
| 56      | CURDET      | I   | Current detection       |
| 57      | T/RSHF      | O   | VCO Shift control       |
| 58      | 5VC         | O   | 5V control              |
| 59      | NC          | O   | NC                      |
| 60      | NC          | O   | NC                      |
| 61      | NC          | O   | NC                      |
| 62      | TYPE2       | I   | Destination selection 2 |
| 63      | TYPE1       | I   | Destination selection 1 |
| 64      | 5RC         | O   | 5R control              |

## COMPONENTS DESCRIPTION

## TX-RX unit (X57-8103-XX)

| Ref. No. | Part Name  | Description              |
|----------|------------|--------------------------|
| IC1      | IC         | PLL system               |
| IC200    | IC         | FM IF system             |
| IC300    | IC         | DAC                      |
| IC301    | IC         | LSD buffer               |
| IC302    | IC         | AF power AMP             |
| IC303    | IC         | AF filter                |
| IC304    | IC         | MIC AMP                  |
| IC305    | IC         | QT/DQT filter            |
| IC400    | IC         | MCU                      |
| IC401    | IC         | EEPROM                   |
| IC500    | IC         | Voltage detector/RESET   |
| IC501    | IC         | Voltage regulator/5V     |
| IC503    | IC         | Voltage regulator/5V     |
| Q1       | Transistor | DC switch                |
| Q2       | Transistor | TX/RX RF switch          |
| Q3       | Transistor | Ripple filter            |
| Q4       | FET        | VCO                      |
| Q5       | Transistor | RF buffer AMP            |
| Q6       | Transistor | RF AMP                   |
| Q7       | Transistor | Voltage regulator/3V     |
| Q100     | Transistor | Pre drive AMP            |
| Q101     | FET        | Drive AMP                |
| Q102     | FET        | Final AMP                |
| Q103     | Transistor | Voltage discharge switch |
| Q200     | Transistor | W/N switch               |
| Q201     | Transistor | Doubler                  |
| Q202     | Transistor | IF AMP                   |
| Q203     | FET        | Mixer                    |
| Q204     | FET        | RF AMP                   |
| Q300     | Transistor | DC switch                |
| Q301     | Transistor | DC switch                |
| Q302     | FET        | Mute switch              |
| Q303     | FET        | DC switch                |
| Q304     | Transistor | DC switch                |
| Q305     | Transistor | W/N switch               |
| Q306     | FET        | Mute switch              |
| Q400     | Transistor | Switch                   |
| Q401     | Transistor | DC switch                |
| Q402     | Transistor | DC switch                |
| Q500     | FET        | DC switch                |
| Q501     | FET        | DC switch                |
| Q502     | Transistor | DC switch                |
| D1       | Diode      | Current steering         |

| Ref. No. | Part Name                  | Description            |
|----------|----------------------------|------------------------|
| D2       | Variable capacitance diode | Frequency control/ VCO |
| D3       | Variable capacitance diode | Frequency control/ VCO |
| D4       | Diode                      | TX/RX RF switch        |
| D5       | Variable capacitance diode | Frequency control/ VCO |
| D6       | Variable capacitance diode | Modulator /TX VCO      |
| D7       | Diode                      | Ripple filter          |
| D8       | Diode                      | Current steering       |
| D100     | Diode                      | TX/RX RF switch        |
| D101     | Diode                      | ANT switch             |
| D102     | Diode                      | ANT switch             |
| D103     | Diode                      | ANT switch             |
| D105     | Diode                      | ANT switch             |
| D200     | Diode                      | TX/RX RF switch        |
| D201     | Variable capacitance diode | RX BPF tuning          |
| D202     | Variable capacitance diode | RX BPF tuning          |
| D204     | Variable capacitance diode | RX BPF tuning          |
| D260     | Variable capacitance diode | RX BPF tuning          |
| D261     | Variable capacitance diode | RX BPF tuning          |
| D301     | Diode                      | Current steering       |
| D400     | LED                        | LED/green              |
| D401     | LED                        | LED/red                |
| D402     | Diode                      | VCO speed up           |
| D500     | Diode                      | Protect                |
| D501     | Diode                      | Current steering       |

# TK-3000

## PARTS LIST

\* New Parts.  $\Delta$  indicates safety critical components.

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

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

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

L : Scandinavia

Y : PX (Far East, Hawaii)

C : China

K : USA

T : England

X : Australia

P : Canada

E : Europe

M : Other Areas

### TK-3000

#### TX-RX UNIT (X57-8103-XX)

| Ref. No.         | Address | New parts | Parts No.   | Description                         | Destination |
|------------------|---------|-----------|-------------|-------------------------------------|-------------|
| <b>TK-3000</b>   |         |           |             |                                     |             |
| 1                | 1A      |           | A02-4135-03 | PLASTIC CABINET ASSY                |             |
| 2                | 3A      |           | A10-4150-11 | CHASSIS                             |             |
| 3                | 3B      |           | A82-0081-02 | REAR PANEL                          |             |
| 4                | 2B      |           | B11-1892-03 | ILLUMINATION GUIDE                  |             |
| 6                | 3B      |           | E04-0486-05 | RF COAXIAL RECEPTACLE(SMA)          |             |
| 7                | 2A      |           | E23-1364-04 | TERMINAL (BATT)                     |             |
| 8                | 1B      |           | E37-1535-05 | PROCESSED LEAD WIRE(SP-/BROWN)      |             |
| 9                | 1B      |           | E37-1536-05 | PROCESSED LEAD WIRE(SP+/GREEN)      |             |
| 10               | 2A      |           | E72-0436-03 | TERMINAL BLOCK                      |             |
| 12               | 3B      |           | G01-4571-04 | COIL SPRING                         |             |
| 14               | 2A      |           | G11-4437-04 | SHEET(Q102-SHASSIS)                 |             |
| 15               | 3B      |           | G13-2348-14 | CUSHION(BATT-TERMINAL)              |             |
| 16               | 2A      |           | G53-1867-03 | PACKING(CHASSIS)                    |             |
| 18               | 1B      |           | G53-1868-02 | PACKING(TOP)                        |             |
| 19               | 3B      |           | G53-1869-03 | PACKING(JACK)                       |             |
| 20               | 1A      |           | G53-1871-04 | PACKING(MIC)                        |             |
| 22               | 1B      |           | K29-9487-03 | KNOB(VOL)                           |             |
| 23               | 1B      |           | K29-9488-03 | KNOB(SELECTOR)                      |             |
| 24               | 1A      |           | K29-9489-03 | KNOB(PTT)                           |             |
| 25               | 1A      |           | K29-9490-03 | BUTTON KNOB(SIDE KEY)               |             |
| 26               | 3B      |           | K29-9491-03 | LEVER KNOB(BATTERY)                 |             |
| A                | 2B      |           | N09-2438-05 | BINDING HEAD SCREW(ANT)             |             |
| B                | 3A      |           | N30-2606-48 | PAN HEAD MACHINE SCREW(CABINET)     |             |
| C                | 1A,2A   |           | N83-2005-48 | PAN HEAD TAPTITE SCREW(X57)         |             |
| 28               | 1B      |           | T07-0787-05 | SPEAKER                             |             |
| <b>ACCESSORY</b> |         |           |             |                                     |             |
|                  |         |           | B09-0744-03 | CAP (SP/MIC) ACCESSORY              |             |
|                  |         |           | B62-2299-00 | INSTRUCTION MANUAL(E) ACCESSORY     |             |
|                  |         |           | B62-2300-00 | INSTRUCTION MANUAL(R) ACCESSORY     | M,M2        |
|                  |         |           | B62-2301-00 | INSTRUCTION MANUAL(S) ACCESSORY     | K           |
|                  |         |           | J29-0751-05 | BELT CLIP ACCESSORY                 |             |
|                  |         |           | N35-3005-43 | BINDING HEAD SCREW ACCESSORY        |             |
|                  |         |           | T90-1096-05 | WHIP ANTENNA (440-480MHZ) ACCESSORY | K,M         |
|                  |         |           | T90-1097-05 | WHIP ANTENNA (400-430MHZ) ACCESSORY | M2          |
|                  |         |           | W08-1246-05 | AC ADAPTER (KSC-35S) ACCESSORY      | M,M2        |
|                  |         |           | W08-1247-05 | AC ADAPTER (KSC-35S) ACCESSORY      | K           |
|                  |         |           | W08-1249-05 | CHARGER (KSC-35S) ACCESSORY         |             |
|                  |         |           | X57-8100-21 | TX-RX UNIT (FOR SERVICE)            | K,M         |
|                  |         |           | X57-8100-22 | TX-RX UNIT (FOR SERVICE)            | M2          |

| Ref. No.  | Address | New parts | Parts No.     | Description           | Destination |
|---|---------|-----------|---------------|-----------------------|-------------|
| <b>TX-RX UNIT (X57-8103-XX) -00 : K, M -01 : M2</b> |         |           |               |                       |             |
| D400  |         |           | B30-1782-05   | LED(GREEN)            |             |
| D401  |         |           | B30-1779-05   | LED(RED)              |             |
| C1  |         |           | CS77CA1ER47M  | CHIP TNTL 0.47UF 25WV |             |
| C2  |         |           | CK73HB1H102K  | CHIP C 1000PF K       |             |
| C3  |         |           | CK73HB1A104K  | CHIP C 0.10UF K       |             |
| C4  |         |           | CS77CA1C100M  | CHIP TNTL 10UF 16WV   |             |
| C5  |         |           | CS77CA1E010M  | CHIP TNTL 1.0UF 25WV  |             |
| C7  |         |           | CC73HCH1H150J | CHIP C 15PF J         | K,M         |
| C7  |         |           | CC73HCH1H270J | CHIP C 27PF J         | M2          |
| C8  |         |           | CK73HB1A104K  | CHIP C 0.10UF K       |             |
| C9  |         |           | CC73HCH1H030B | CHIP C 3.0PF B        |             |
| C10 ,11   |         |           | CK73HB1A105K  | CHIP C 1.0UF K        |             |
| C12   |         |           | CC73HCH1H220J | CHIP C 22PF J         | K,M         |
| C12   |         |           | CC73HCH1H270J | CHIP C 27PF J         | M2          |
| C13   |         |           | CS77CP0J010M  | CHIP TNTL 1.0UF 6.3WV |             |
| C14 ,15   |         |           | CK73HB1C103K  | CHIP C 0.010UF K      |             |
| C16   |         |           | CK73HB1H102K  | CHIP C 1000PF K       |             |
| C17   |         |           | CC73HCH1H040B | CHIP C 4.0PF B        |             |
| C19   |         |           | CK73HB1H102K  | CHIP C 1000PF K       |             |
| C20   |         |           | CS77CA1A220M  | CHIP TNTL 2.2UF 10WV  |             |
| C21   |         |           | CC73GCH1H0R5B | CHIP C 0.5PF B        | M2          |
| C21,22  |         |           | CC73GCH1HR75B | CHIP C 0.75PF B       | K,M         |
| C22   |         |           | CK73GB1H102K  | CHIP C 1000PF K       | M2          |
| C23 ,24   |         |           | CK73HB1H102K  | CHIP C 1000PF K       |             |
| C25   |         |           | CC73HCH1H050B | CHIP C 5.0PF B        |             |
| C26   |         |           | CK73HB1H102K  | CHIP C 1000PF K       |             |
| C27   |         |           | CC73HCH1H220J | CHIP C 22PF J         |             |
| C28   |         |           | CK73HB1H102K  | CHIP C 1000PF K       |             |
| C29   |         |           | CC73GCH1H0R5B | CHIP C 0.5PF B        |             |
| C30   |         |           | CK73HB1H102K  | CHIP C 1000PF K       |             |
| C31   |         |           | CK73HB1C103K  | CHIP C 0.010UF K      |             |
| C32   |         |           | CK73HB1H102K  | CHIP C 1000PF K       |             |
| C33   |         |           | CC73HCH1H330J | CHIP C 33PF J         |             |
| C34   |         |           | CK73HB1H102K  | CHIP C 1000PF K       |             |
| C35   |         |           | CC73HCH1H060B | CHIP C 6.0PF B        |             |
| C36   |         |           | CC73HCH1H020B | CHIP C 2.0PF B        |             |
| C37   |         |           | CC73HCH1H060B | CHIP C 6.0PF B        |             |
| C38   |         |           | CC73GCH1H220J | CHIP C 22PF J         |             |
| C39   |         |           | CC73HCH1H100B | CHIP C 10PF B         |             |
| C40 ,41   |         |           | CK73HB1H102K  | CHIP C 1000PF K       |             |
| C42   |         |           | CC73HCH1H040B | CHIP C 4.0PF B        |             |
| C43   |         |           | CK73HB1H102K  | CHIP C 1000PF K       |             |
| C54   |         |           | CC73HCH1H040B | CHIP C 4.0PF B        | K,M         |
| C100  |         |           | CC73HCH1H100B | CHIP C 10PF B         |             |
| C101  |         |           | CC73HCH1H271J | CHIP C 270PF J        |             |
| C102  |         |           | CC73HCH1H220J | CHIP C 22PF J         |             |
| C103,104  |         |           | CC73HCH1H271J | CHIP C 270PF J        |             |
| C105  |         |           | CK73HB1A104K  | CHIP C 0.10UF K       |             |
| C107  |         |           | CC73HCH1H271J | CHIP C 270PF J        |             |
| C108  |         |           | CC73HCH1H120J | CHIP C 12PF J         |             |
| C109  |         |           | CC73HCH1H090B | CHIP C 9.0PF B        |             |
| C110,111  |         |           | CC73HCH1H271J | CHIP C 270PF J        |             |
| C112  |         |           | CC73HCH1H221J | CHIP C 220PF J        |             |

## PARTS LIST

TX-RX UNIT (X57-8103-XX)

| Ref. No. | Address | New parts | Parts No.     | Description      | Desti-nation | Ref. No. | Address | New parts | Parts No.     | Description        | Desti-nation |
|----------|---------|-----------|---------------|------------------|--------------|----------|---------|-----------|---------------|--------------------|--------------|
| C113,114 |         |           | CC73HCH1H271J | CHIP C 270PF J   |              | C228     |         |           | CC73HCH1H020B | CHIP C 2.0PF B     |              |
| C116     |         |           | CK73HB1C103K  | CHIP C 0.010UF K |              | C230     |         |           | CC73HCH1H050B | CHIP C 5.0PF B     | M2           |
| C117     |         |           | CK73FB1A225K  | CHIP C 2.2UF K   |              | C230     |         |           | CC73HCH1H060B | CHIP C 6.0PF B     | K,M          |
| C119,120 |         |           | CC73HCH1H271J | CHIP C 270PF J   |              | C233     |         |           | CC73HCH1H040B | CHIP C 4.0PF B     | K,M          |
| C124     |         |           | CC73HCH1H271J | CHIP C 270PF J   |              | C233     |         |           | CC73HCH1H060B | CHIP C 6.0PF B     | M2           |
| C127     |         |           | CC73GCH1H181J | CHIP C 180PF J   |              | C236,237 |         |           | CC73HCH1H100B | CHIP C 10PF B      | M2           |
| C129     |         |           | CC73HCH1H271J | CHIP C 270PF J   |              | C236,237 |         |           | CC73HCH1H220J | CHIP C 22PF J      | K,M          |
| C130     |         |           | CC73GCH1H060B | CHIP C 6.0PF B   |              | C238     |         |           | CC73HCH1H050B | CHIP C 5.0PF B     | K,M          |
| C131     |         |           | CC73GCH1H181J | CHIP C 180PF J   |              | C238     |         |           | CC73HCH1H090B | CHIP C 9.0PF B     | M2           |
| C132     |         |           | CC73GCH1H050B | CHIP C 5.0PF B   |              | C239     |         |           | CC73HCH1H0R5B | CHIP C 0.5PF B     | M2           |
| C133     |         |           | CC73HCH1H060B | CHIP C 6.0PF B   |              | C239     |         |           | CC73HCH1H010B | CHIP C 1.0PF B     | K,M          |
| C134     |         |           | CC73HCH1H271J | CHIP C 270PF J   |              | C240-242 |         |           | CK73HB1H471K  | CHIP C 470PF K     | M2           |
| C135     |         |           | CC73GCH1H020B | CHIP C 2.0PF B   |              | C240-244 |         |           | CK73HB1H471K  | CHIP C 470PF K     | K,M          |
| C136     |         |           | CC73GCH1H080B | CHIP C 8.0PF B   |              | C243     |         |           | CK73HB1A104K  | CHIP C 0.10UF K    | M2           |
| C137     |         |           | CC73GCH1H020B | CHIP C 2.0PF B   |              | C244     |         |           | CK73HB1H471K  | CHIP C 470PF K     | M2           |
| C138     |         |           | CC73GCH1H030B | CHIP C 3.0PF B   |              | C245     |         |           | CC73HCH1H030B | CHIP C 3.0PF B     | K,M          |
| C139     |         |           | CK73FB1A475K  | CHIP C 4.7UF K   |              | C245     |         |           | CC73HCH1H070B | CHIP C 7.0PF B     | M2           |
| C145     |         |           | CC73HCH1H271J | CHIP C 270PF J   |              | C247     |         |           | CC73HCH1HR75B | CHIP C 0.75PF B    | M2           |
| C146     |         |           | CC73GCH1H1R5B | CHIP C 1.5PF B   |              | C247     |         |           | CC73HCH1H010B | CHIP C 1.0PF B     | K,M          |
| C150     |         |           | CC73HCH1H020C | CHIP C 2.0PF C   |              | C248     |         |           | CK73HB1A104K  | CHIP C 0.10UF K    | M2           |
| C153     |         |           | CC73HCH1H390J | CHIP C 39PF J    |              | C248     |         |           | CK73HB1H471K  | CHIP C 470PF K     | K,M          |
| C158,159 |         |           | CC73HCH1H271J | CHIP C 270PF J   |              | C250     |         |           | CC73HCH1H120J | CHIP C 12PF J      | M2           |
| C171     |         |           | CC73GCH1H470J | CHIP C 47PF J    |              | C250     |         |           | CC73HCH1H271J | CHIP C 270PF J     | K,M          |
| C172     |         |           | CC73GCH1H070B | CHIP C 7.0PF B   |              | C252     |         |           | CC73HCH1HR75B | CHIP C 0.75PF B    | K,M          |
| C174     |         |           | CC73GCH1H150J | CHIP C 15PF J    | M2           | C252     |         |           | CK73HB1H471K  | CHIP C 470PF K     | M2           |
| C174     |         |           | CC73GCH1H330J | CHIP C 33PF J    | K,M          | C253     |         |           | CC73HCH1H220J | CHIP C 22PF J      | K,M          |
| C175     |         |           | CC73GCH1H030B | CHIP C 3.0PF B   | K,M          | C254     |         |           | CC73HCH1H040B | CHIP C 4.0PF B     | K,M          |
| C176     |         |           | CC73GCH1H220J | CHIP C 22PF J    | M2           | C255     |         |           | CK73HB1A104K  | CHIP C 0.10UF K    |              |
| C181     |         |           | CC73GCH1H020B | CHIP C 2.0PF B   | K,M          | C256     |         |           | CK73HB1H471K  | CHIP C 470PF K     |              |
| C181     |         |           | CC73GCH1H030B | CHIP C 3.0PF B   | M2           | C257     |         |           | CC73HCH1H020B | CHIP C 2.0PF B     |              |
| C184     |         |           | CC73GCH1H060B | CHIP C 6.0PF B   |              | C258     |         |           | CK73HB1H102K  | CHIP C 1000PF K    | M2           |
| C186     |         |           | CC73GCH1H060B | CHIP C 6.0PF B   |              | C258     |         |           | CK73HB1H471K  | CHIP C 470PF K     | K,M          |
| C187     |         |           | CC73GCH1H020B | CHIP C 2.0PF B   | M2           | C259     |         |           | CK73HB1C103K  | CHIP C 0.010UF K   |              |
| C200     |         |           | CK73FB1A106K  | CHIP C 10UF K    |              | C262     |         |           | CK73HB1H471K  | CHIP C 470PF K     |              |
| C201     |         |           | CK73HB1H102K  | CHIP C 1000PF K  |              | C263     |         |           | CC73HCH1H180J | CHIP C 18PF J      |              |
| C202     |         |           | CK73HB1C103K  | CHIP C 0.010UF K |              | C268,269 |         |           | CC73HCH1H100B | CHIP C 10PF B      | M2           |
| C203     |         |           | CC73HCH1H101J | CHIP C 100PF J   |              | C268,269 |         |           | CC73HCH1H220J | CHIP C 22PF J      | K,M          |
| C204     |         |           | CK73HB1E223K  | CHIP C 0.022UF K |              | C270     |         |           | CC73HCH1H010B | CHIP C 1.0PF B     | K,M          |
| C205     |         |           | CK73HB1A104K  | CHIP C 0.10UF K  |              | C270     |         |           | CC73HCH1H050B | CHIP C 5.0PF B     | M2           |
| C206,207 |         |           | CC73HCH1H151J | CHIP C 150PF J   |              | C271     |         |           | CC73HCH1H020B | CHIP C 2.0PF B     | M2           |
| C208     |         |           | CK73HB1A104K  | CHIP C 0.10UF K  |              | C271     |         |           | CC73HCH1H030B | CHIP C 3.0PF B     | K,M          |
| C209     |         |           | CC73HCH1H220J | CHIP C 22PF J    |              | C274     |         |           | CK73HB1H471K  | CHIP C 470PF K     |              |
| C210     |         |           | CK73HB1C104K  | CHIP C 0.10UF K  |              | C275     |         |           | CK73HB1C103K  | CHIP C 0.010UF K   |              |
| C211     |         |           | CK73HB1C333K  | CHIP C 0.033UF K |              | C276     |         |           | CK73HB1H471K  | CHIP C 470PF K     |              |
| C212,213 |         |           | CK73HB1A104K  | CHIP C 0.10UF K  |              | C277     |         |           | CK73HB1A104K  | CHIP C 0.10UF K    |              |
| C214     |         |           | CK73HB1C103K  | CHIP C 0.010UF K |              | C300,301 |         |           | CK73HB1H102K  | CHIP C 1000PF K    |              |
| C215     |         |           | CC73HCH1H220J | CHIP C 22PF J    |              | C302     |         |           | C92-0953-05   | ELECTRO 100U 6.3WV |              |
| C216     |         |           | CK73HB1C103K  | CHIP C 0.010UF K |              | C303     |         |           | CK73HB1C473K  | CHIP C 0.047UF K   |              |
| C217     |         |           | CC73HCH1H050C | CHIP C 5.0PF C   |              | C304     |         |           | CK73FB1A106K  | CHIP C 10UF K      |              |
| C218     |         |           | CK73HB1C103K  | CHIP C 0.010UF K |              | C305     |         |           | CK73HB1C103K  | CHIP C 0.010UF K   |              |
| C219     |         |           | CC73HCH1H220J | CHIP C 22PF J    |              | C306     |         |           | CK73HB1A224K  | CHIP C 0.22UF K    |              |
| C220     |         |           | CK73HB1H102K  | CHIP C 1000PF K  |              | C308     |         |           | CK73GB1E105K  | CHIP C 1.0UF K     |              |
| C221     |         |           | CK73HB1C103K  | CHIP C 0.010UF K |              | C309     |         |           | CK73HB1A104K  | CHIP C 0.10UF K    |              |
| C222     |         |           | CC73HCH1H080D | CHIP C 8.0PF D   |              | C310     |         |           | CK73HB1C473K  | CHIP C 0.047UF K   |              |
| C223     |         |           | CC73HCH1H080B | CHIP C 8.0PF B   |              | C311     |         |           | CK73HB1A105K  | CHIP C 1.0UF K     |              |
| C224     |         |           | CK73HB1C103K  | CHIP C 0.010UF K |              | C312     |         |           | CK73HB1C473K  | CHIP C 0.047UF K   |              |
| C225     |         |           | CC73HCH1H020B | CHIP C 2.0PF B   | M2           | C313     |         |           | CK73HB1A104K  | CHIP C 0.10UF K    |              |
| C225     |         |           | CC73HCH1H060B | CHIP C 6.0PF B   | K,M          | C314     |         |           | CC73HCH1H101J | CHIP C 100PF J     |              |
| C226     |         |           | CK73HB1H471K  | CHIP C 470PF K   |              | C315     |         |           | CK73FB1A106K  | CHIP C 10UF K      |              |
| C227     |         |           | CK73HB1C103K  | CHIP C 0.010UF K |              | C316     |         |           | CK73HB1A104K  | CHIP C 0.10UF K    |              |

## PARTS LIST

### TX-RX UNIT (X57-8103-XX)

| Ref. No. | Address | New parts | Parts No.     | Description      | Destination | Ref. No. | Address | New parts | Parts No.     | Description                   | Destination |
|----------|---------|-----------|---------------|------------------|-------------|----------|---------|-----------|---------------|-------------------------------|-------------|
| C317     |         |           | CK73HB1C103K  | CHIP C 0.010UF K |             | C522-524 |         |           | CC73HCH1H271J | CHIP C 270PF J                |             |
| C318     |         |           | CC73HCH1H221J | CHIP C 220PF J   |             | J300     | 2B      |           | E11-0484-05   | 3.5D PHONE JACK(3.5D/MIC)     |             |
| C319     |         |           | CK73HB1C103K  | CHIP C 0.010UF K |             | J301     | 2B      |           | E11-0717-05   | 2.5D PHONE JACK(2.5D/SP)      |             |
| C320     |         |           | CK73GB1E104K  | CHIP C 0.10UF K  |             | CN101    |         |           | E23-1167-05   | TERMINAL                      |             |
| C321     |         |           | CK73HB1C103K  | CHIP C 0.010UF K |             | F101     |         |           | F53-0287-05   | FUSE(0.5A)                    |             |
| C322     |         |           | CC73HCH1H271J | CHIP C 270PF J   |             | F300     |         |           | F53-0467-05   | FUSE(0.315A)                  |             |
| C323     |         |           | CK73HB1A104K  | CHIP C 0.10UF K  |             | F500     |         |           | F53-0372-05   | FUSE(3.15A)                   |             |
| C324     |         |           | CK73HB1A184K  | CHIP C 0.18UF K  |             | 101      | 2A      |           | J30-1308-04   | SPACER(MIC300)                |             |
| C326     |         |           | CK73HB1H822K  | CHIP C 8200PF K  |             | CD200    | 2A      |           | L79-1914-05   | CERAMIC DISCRIMINATOR(450KHZ) |             |
| C328     |         |           | CK73HB1A394K  | CHIP C 0.39UF K  |             | CF200    | 2A      |           | L72-1046-05   | CERAMIC FILTER(450KHZ)        |             |
| C329     |         |           | CK73HB1C273K  | CHIP C 0.027UF K | K,M         | L1       |         |           | L40-2785-92   | SMALL FIXED INDUCTOR(270NH)   |             |
| C329     |         |           | CK73HB1C333K  | CHIP C 0.033UF K | M2          | L2       |         |           | L41-5668-14   | SMALL FIXED INDUCTOR(5.6NH)   | K,M         |
| C330     |         |           | CK73HB1H561K  | CHIP C 560PF K   | M2          | L2       |         |           | L41-6868-14   | SMALL FIXED INDUCTOR(6.8NH)   | M2          |
| C330     |         |           | CK73HB1H821K  | CHIP C 820PF K   | K,M         | L3       |         |           | L41-1878-14   | SMALL FIXED INDUCTOR(18NH)    | K,M         |
| C332     |         |           | CK73HB1C103K  | CHIP C 0.010UF K |             | L3       |         |           | L41-2278-14   | SMALL FIXED INDUCTOR(22NH)    | M2          |
| C333     |         |           | CK73HB1H102K  | CHIP C 1000PF K  |             | L4 -6    |         |           | L40-2785-92   | SMALL FIXED INDUCTOR(270NH)   |             |
| C334,335 |         |           | CK73HB1A184K  | CHIP C 0.18UF K  |             | L7       |         |           | L40-2775-71   | SMALL FIXED INDUCTOR(27NH)    |             |
| C336     |         |           | CK73HB1C103K  | CHIP C 0.010UF K |             | L8       |         |           | L40-1575-71   | SMALL FIXED INDUCTOR(15NH)    |             |
| C337     |         |           | CK73HB1A184K  | CHIP C 0.18UF K  |             | L9       |         |           | L40-2275-71   | SMALL FIXED INDUCTOR(22NH)    |             |
| C338     |         |           | CC73HCH1H331J | CHIP C 330PF J   |             | L10      |         |           | L40-2785-92   | SMALL FIXED INDUCTOR(270NH)   |             |
| C339     |         |           | CK73HB1A104K  | CHIP C 0.10UF K  |             | L12      |         |           | L40-2785-92   | SMALL FIXED INDUCTOR(270NH)   |             |
| C340     |         |           | CC73HCH1H100B | CHIP C 10PF B    |             | L100     |         |           | L40-1575-71   | SMALL FIXED INDUCTOR(15NH)    |             |
| C341     |         |           | CK73HB1H222K  | CHIP C 2200PF K  |             | L101     |         |           | L40-3375-71   | SMALL FIXED INDUCTOR(33NH)    |             |
| C342     |         |           | CK73HB1C103K  | CHIP C 0.010UF K |             | L102     |         |           | L40-1275-71   | SMALL FIXED INDUCTOR(12NH)    |             |
| C343     |         |           | CK73HB1A184K  | CHIP C 0.18UF K  |             | L103     |         |           | L41-3375-53   | SMALL FIXED INDUCTOR(33NH)    |             |
| C344     |         |           | CK73HB1C273K  | CHIP C 0.027UF K |             | L104     |         |           | L34-4572-05   | AIR-CORE COIL                 |             |
| C345     |         |           | CK73HB1H102K  | CHIP C 1000PF K  |             | L109     |         |           | L41-2285-43   | SMALL FIXED INDUCTOR(220NH)   |             |
| C346     |         |           | CK73HB1A184K  | CHIP C 0.18UF K  |             | L110-112 |         |           | L34-4572-05   | AIR-CORE COIL                 |             |
| C347     |         |           | CK73GB1A105K  | CHIP C 1.0UF K   |             | L113     |         |           | L41-1075-53   | SMALL FIXED INDUCTOR(10NH)    | M2          |
| C349     |         |           | CK73HB1A154K  | CHIP C 0.15UF K  | K,M         | L204     |         |           | L41-5685-39   | SMALL FIXED INDUCTOR(0.56UH)  |             |
| C349     |         |           | CK73HB1C473K  | CHIP C 0.047UF K | M2          | L205     |         |           | L40-1575-71   | SMALL FIXED INDUCTOR(15NH)    | K,M         |
| C350     |         |           | CK73HB1H102K  | CHIP C 1000PF K  |             | L205     |         |           | L40-1875-71   | SMALL FIXED INDUCTOR(18NH)    | M2          |
| C352     |         |           | CK73HB1H102K  | CHIP C 1000PF K  |             | L208     |         |           | L41-8268-14   | SMALL FIXED INDUCTOR(8.2NH)   |             |
| C353     |         |           | CK73GB1E105K  | CHIP C 1.0UF K   |             | L210     |         |           | L41-8268-14   | SMALL FIXED INDUCTOR(8.2NH)   |             |
| C354     |         |           | CK73HB1A224K  | CHIP C 0.22UF K  |             | L211     |         |           | L40-5681-86   | SMALL FIXED INDUCTOR(0.56UH)  |             |
| C355     |         |           | CK73HB1A105K  | CHIP C 1.0UF K   |             | L212     |         |           | L40-8281-86   | SMALL FIXED INDUCTOR(0.82UH)  |             |
| C357,358 |         |           | CK73HB1A104K  | CHIP C 0.10UF K  |             | L213     |         |           | L40-5681-86   | SMALL FIXED INDUCTOR(0.56UH)  |             |
| C360     |         |           | CK73HB1A104K  | CHIP C 0.10UF K  |             | L214     |         |           | L40-2775-71   | SMALL FIXED INDUCTOR(27NH)    | K,M         |
| C400     |         |           | CK73HB1A104K  | CHIP C 0.10UF K  |             | L214     |         |           | L40-3975-71   | SMALL FIXED INDUCTOR(39NH)    | M2          |
| C401     |         |           | CK73HB1H102K  | CHIP C 1000PF K  |             | L215     |         |           | L41-8268-14   | SMALL FIXED INDUCTOR(8.2NH)   | K,M         |
| C402     |         |           | CC73HCH1H120J | CHIP C 12PF J    |             | L216     |         |           | L40-1885-92   | SMALL FIXED INDUCTOR(180NH)   |             |
| C403     |         |           | CC73HCH1H010B | CHIP C 1.0PF B   |             | L217     |         |           | L41-2785-45   | SMALL FIXED INDUCTOR(270NH)   |             |
| C404     |         |           | CK73HB1A104K  | CHIP C 0.10UF K  |             | L218,219 |         |           | L41-8268-14   | SMALL FIXED INDUCTOR(8.2NH)   |             |
| C405     |         |           | CK73HB1H102K  | CHIP C 1000PF K  |             | X1       |         |           | L77-3074-05   | TCXO(19.2 MHZ/8)              |             |
| C406     |         |           | CC73HCH1H120J | CHIP C 12PF J    |             | X400     |         |           | L77-2974-05   | CRYSTAL RESONATOR(11.0592MHZ) |             |
| C407     |         |           | CK73HB1H102K  | CHIP C 1000PF K  |             | XF200    |         |           | L71-0669-05   | MCF                           |             |
| C408     |         |           | CK73HB1C103K  | CHIP C 0.010UF K |             | R1       |         |           | RK73HB1J105J  | CHIP R 1.0M J 1/16W           |             |
| C409     |         |           | CK73HB1H102K  | CHIP C 1000PF K  |             | R2       |         |           | RK73HB1J103J  | CHIP R 10K J 1/16W            |             |
| C411-415 |         |           | CK73HB1H102K  | CHIP C 1000PF K  |             | R3       |         |           | RK73HB1J222J  | CHIP R 2.2K J 1/16W           |             |
| C500     |         |           | CC73HCH1H101J | CHIP C 100PF J   |             | R5       |         |           | RK73HB1J821J  | CHIP R 820 J 1/16W            |             |
| C501,502 |         |           | CK73HB1H102K  | CHIP C 1000PF K  |             | R7       |         |           | RK73HB1J272J  | CHIP R 2.7K J 1/16W           |             |
| C503     |         |           | CK73FB1A475K  | CHIP C 4.7UF K   |             | R9       |         |           | RK73HB1J103J  | CHIP R 10K J 1/16W            |             |
| C504     |         |           | CK73HB1H102K  | CHIP C 1000PF K  |             | R11      |         |           | RK73HB1J104J  | CHIP R 100K J 1/16W           |             |
| C505     |         |           | CK73GB1E105K  | CHIP C 1.0UF K   |             | R12      |         |           | RK73HB1J272J  | CHIP R 2.7K J 1/16W           |             |
| C506     |         |           | CK73HB1H102K  | CHIP C 1000PF K  |             | R13      |         |           | RK73HB1J104J  | CHIP R 100K J 1/16W           |             |
| C507     |         |           | CK73FB1A106K  | CHIP C 10UF K    |             | R14      |         |           | RK73HB1J103J  | CHIP R 10K J 1/16W            |             |
| C511     |         |           | CK73HB1H102K  | CHIP C 1000PF K  |             |          |         |           |               |                               |             |
| C513,514 |         |           | CK73GB1E105K  | CHIP C 1.0UF K   |             |          |         |           |               |                               |             |
| C515,516 |         |           | CC73HCH1H271J | CHIP C 270PF J   |             |          |         |           |               |                               |             |
| C517     |         |           | CK73FB1A475K  | CHIP C 4.7UF K   |             |          |         |           |               |                               |             |

## PARTS LIST

TX-RX UNIT (X57-8103-XX)

| Ref. No. | Address | New parts | Parts No.    | Description         | Desti-nation | Ref. No. | Address | New parts | Parts No.    | Description         | Desti-nation |
|----------|---------|-----------|--------------|---------------------|--------------|----------|---------|-----------|--------------|---------------------|--------------|
| R15      |         |           | RK73HB1J104J | CHIP R 100K J 1/16W |              | R210     |         |           | RK73HB1J334J | CHIP R 330K J 1/16W |              |
| R16 ,17  |         |           | RK73HB1J103J | CHIP R 10K J 1/16W  |              | R212     |         |           | RK73HB1J184J | CHIP R 180K J 1/16W |              |
| R18      |         |           | RK73HB1J223J | CHIP R 22K J 1/16W  |              | R213     |         |           | RK73HB1J332J | CHIP R 3.3K J 1/16W |              |
| R19 -22  |         |           | RK73HB1J103J | CHIP R 10K J 1/16W  |              | R214     |         |           | RK73HB1J561J | CHIP R 560 J 1/16W  |              |
| R25      |         |           | RK73HB1J100J | CHIP R 10 J 1/16W   |              | R215     |         |           | RK73HB1J331J | CHIP R 330 J 1/16W  |              |
| R26      |         |           | RK73HB1J392J | CHIP R 3.9K J 1/16W |              | R217     |         |           | RK73HB1J222J | CHIP R 2.2K J 1/16W |              |
| R27      |         |           | RK73HB1J221J | CHIP R 220 J 1/16W  |              | R218     |         |           | RK73HB1J102J | CHIP R 1.0K J 1/16W |              |
| R28      |         |           | RK73HB1J680J | CHIP R 68 J 1/16W   |              | R220     |         |           | RK73HB1J104J | CHIP R 100K J 1/16W |              |
| R29      |         |           | RK73HB1J472J | CHIP R 4.7K J 1/16W |              | R221     |         |           | RK73HB1J563J | CHIP R 56K J 1/16W  | K,M          |
| R30      |         |           | RK73HB1J470J | CHIP R 47 J 1/16W   |              | R221     |         |           | RK73HB1J823J | CHIP R 82K J 1/16W  | M2           |
| R32      |         |           | RK73HB1J102J | CHIP R 1.0K J 1/16W |              | R222     |         |           | RK73HB1J104J | CHIP R 100K J 1/16W |              |
| R33      |         |           | RK73HB1J473J | CHIP R 47K J 1/16W  |              | R223     |         |           | RK73HB1J000J | CHIP R 0 J 1/16W    |              |
| R34      |         |           | RK73HB1J100J | CHIP R 10 J 1/16W   |              | R224     |         |           | RK73HB1J563J | CHIP R 56K J 1/16W  |              |
| R37      |         |           | RK73HB1J562J | CHIP R 5.6K J 1/16W |              | R226,227 |         |           | RK73HB1J474J | CHIP R 470K J 1/16W |              |
| R38      |         |           | RK73HB1J332J | CHIP R 3.3K J 1/16W |              | R229     |         |           | RK73HB1J474J | CHIP R 470K J 1/16W | K,M          |
| R39      |         |           | RK73HB1J271J | CHIP R 270 J 1/16W  |              | R230     |         |           | RK73HB1J150J | CHIP R 15 J 1/16W   | M2           |
| R40      |         |           | RK73HB1J222J | CHIP R 2.2K J 1/16W |              | R230     |         |           | RK73HB1J220J | CHIP R 22 J 1/16W   | K,M          |
| R41      |         |           | RK73HB1J100J | CHIP R 10 J 1/16W   |              | R231     |         |           | RK73HB1J121J | CHIP R 120 J 1/16W  | M2           |
| R42      |         |           | RK73HB1J332J | CHIP R 3.3K J 1/16W |              | R231     |         |           | RK73HB1J331J | CHIP R 330 J 1/16W  | K,M          |
| R43      |         |           | RK73HB1J103J | CHIP R 10K J 1/16W  |              | R232,233 |         |           | RK73HB1J104J | CHIP R 100K J 1/16W |              |
| R45      |         |           | RK73HB1J000J | CHIP R 0 J 1/16W    |              | R237,238 |         |           | RK73HB1J474J | CHIP R 470K J 1/16W |              |
| R50      |         |           | RK73HB1J104J | CHIP R 100K J 1/16W |              | R239     |         |           | RK73HB1J151J | CHIP R 150 J 1/16W  |              |
| R51      |         |           | RK73HB1J333J | CHIP R 33K J 1/16W  |              | R240     |         |           | RK73HB1J683J | CHIP R 68K J 1/16W  |              |
| R100     |         |           | RK73HB1J472J | CHIP R 4.7K J 1/16W |              | R241,242 |         |           | RK73HB1J470J | CHIP R 47 J 1/16W   |              |
| R101     |         |           | RK73HB1J102J | CHIP R 1.0K J 1/16W |              | R243,244 |         |           | RK73HB1J000J | CHIP R 0 J 1/16W    |              |
| R102     |         |           | RK73HB1J222J | CHIP R 2.2K J 1/16W |              | R258     |         |           | RK73HB1J000J | CHIP R 0 J 1/16W    |              |
| R103     |         |           | RK73HB1J150J | CHIP R 15 J 1/16W   |              | R267     |         |           | RK73HB1J000J | CHIP R 0 J 1/16W    |              |
| R104     |         |           | RK73HB1J222J | CHIP R 2.2K J 1/16W |              | R300     |         |           | RK73HB1J000J | CHIP R 0 J 1/16W    | M2           |
| R105     |         |           | RK73HB1J100J | CHIP R 10 J 1/16W   |              | R300     |         |           | RK73HB1J152J | CHIP R 1.5k J 1/16W | K,M          |
| R106     |         |           | RK73HB1J473J | CHIP R 47K J 1/16W  |              | R301     |         |           | RK73HB1J101J | CHIP R 100 J 1/16W  |              |
| R107     |         |           | RK73HB1J270J | CHIP R 27 J 1/16W   |              | R302     |         |           | RK73HB1J102J | CHIP R 1.0K J 1/16W |              |
| R108     |         |           | RK73HB1J683J | CHIP R 68K J 1/16W  |              | R303     |         |           | RK73HB1J471J | CHIP R 470 J 1/16W  |              |
| R109     |         |           | RK73HB1J470J | CHIP R 47 J 1/16W   |              | R304     |         |           | RK73HB1J473J | CHIP R 47K J 1/16W  |              |
| R111     |         |           | RK73HB1J683J | CHIP R 68K J 1/16W  |              | R305-308 |         |           | RK73HB1J102J | CHIP R 1.0K J 1/16W |              |
| R112     |         |           | RK73HB1J390J | CHIP R 39 J 1/16W   |              | R309     |         |           | RK73HB1J182J | CHIP R 1.8K J 1/16W |              |
| R113     |         |           | RK73HB1J473J | CHIP R 47K J 1/16W  |              | R310,311 |         |           | RK73HB1J102J | CHIP R 1.0K J 1/16W |              |
| R114     |         |           | RK73GB2A000J | CHIP R 0 J 1/10W    |              | R312,313 |         |           | RK73HB1J222J | CHIP R 2.2K J 1/16W |              |
| R115     |         |           | RK73FB2B000J | CHIP R 0 J 1/8W     |              | R314     |         |           | RK73HB1J392J | CHIP R 3.9K J 1/16W | K,M          |
| R116     |         |           | RK73HB1J393J | CHIP R 39K J 1/16W  |              | R314     |         |           | RK73HB1J103J | CHIP R 10K J 1/16W  | M2           |
| R117     |         |           | RK73HB1J271J | CHIP R 270 J 1/16W  |              | R315     |         |           | RK73HB1J103J | CHIP R 10K J 1/16W  |              |
| R119     |         |           | RK73HB1J271J | CHIP R 270 J 1/16W  |              | R316     |         |           | RK73HB1J000J | CHIP R 0 J 1/16W    |              |
| R120     |         |           | RK73HB1J331J | CHIP R 330 J 1/16W  |              | R317     |         |           | RK73HB1J334J | CHIP R 330K J 1/16W |              |
| R121-123 |         |           | RK73EB2ER39K | CHIP R 0.39 K 1/4W  |              | R318     |         |           | RK73HB1J274J | CHIP R 270K J 1/16W |              |
| R136     |         |           | RK73HB1J182J | CHIP R 1.8K J 1/16W |              | R321     |         |           | RK73HB1J474J | CHIP R 470K J 1/16W |              |
| R138     |         |           | RK73GB2A000J | CHIP R 0 J 1/10W    | M2           | R322     |         |           | RK73HB1J105J | CHIP R 1.0M J 1/16W |              |
| R138,139 |         |           | RK73GB2A000J | CHIP R 0 J 1/10W    | K,M          | R323     |         |           | RK73HB1J562J | CHIP R 5.6K J 1/16W |              |
| R155     |         |           | RK73HB1J150J | CHIP R 15 J 1/16W   |              | R324,325 |         |           | RK73HB1J473D | CHIP R 47K D 1/16W  |              |
| R156,157 |         |           | RK73HB1J000J | CHIP R 0 J 1/16W    |              | R326     |         |           | RK73HB1J000J | CHIP R 0 J 1/16W    |              |
| R200     |         |           | RK73HB1J103J | CHIP R 10K J 1/16W  |              | R327     |         |           | RK73HB1J824J | CHIP R 820K J 1/16W |              |
| R201     |         |           | RK73HB1J470J | CHIP R 47 J 1/16W   |              | R328     |         |           | RK73HB1J684J | CHIP R 680K J 1/16W |              |
| R202     |         |           | RK73HB1J272J | CHIP R 2.7K J 1/16W |              | R329,330 |         |           | RK73HB1J103J | CHIP R 10K J 1/16W  |              |
| R203     |         |           | RK73HB1J223J | CHIP R 22K J 1/16W  | M2           | R332     |         |           | RK73HB1J272J | CHIP R 2.7K J 1/16W |              |
| R203     |         |           | RK73HB1J473J | CHIP R 47K J 1/16W  | K,M          | R334     |         |           | RK73HB1J103J | CHIP R 10K J 1/16W  |              |
| R204     |         |           | RK73HB1J271J | CHIP R 270 J 1/16W  |              | R335     |         |           | RK73HB1J102J | CHIP R 1.0K J 1/16W |              |
| R205     |         |           | RK73HB1J682J | CHIP R 6.8K J 1/16W |              | R336     |         |           | RK73HB1J823J | CHIP R 82K J 1/16W  |              |
| R206     |         |           | RK73HB1J564J | CHIP R 560K J 1/16W | K,M          | R337     |         |           | RK73HB1J000J | CHIP R 0 J 1/16W    |              |
| R206     |         |           | RK73HB1J684J | CHIP R 680K J 1/16W | M2           | R340     |         |           | RK73HB1J103J | CHIP R 10K J 1/16W  |              |
| R207     |         |           | RK73HB1J562J | CHIP R 5.6K J 1/16W |              | R342     |         |           | RK73HB1J153J | CHIP R 15K J 1/16W  |              |
| R208     |         |           | RK73HB1J101J | CHIP R 100 J 1/16W  |              | R344     |         |           | RK73HB1J103J | CHIP R 10K J 1/16W  |              |
| R209     |         |           | RK73HB1J470J | CHIP R 47 J 1/16W   |              | R345     |         |           | RK73HB1J000J | CHIP R 0 J 1/16W    |              |

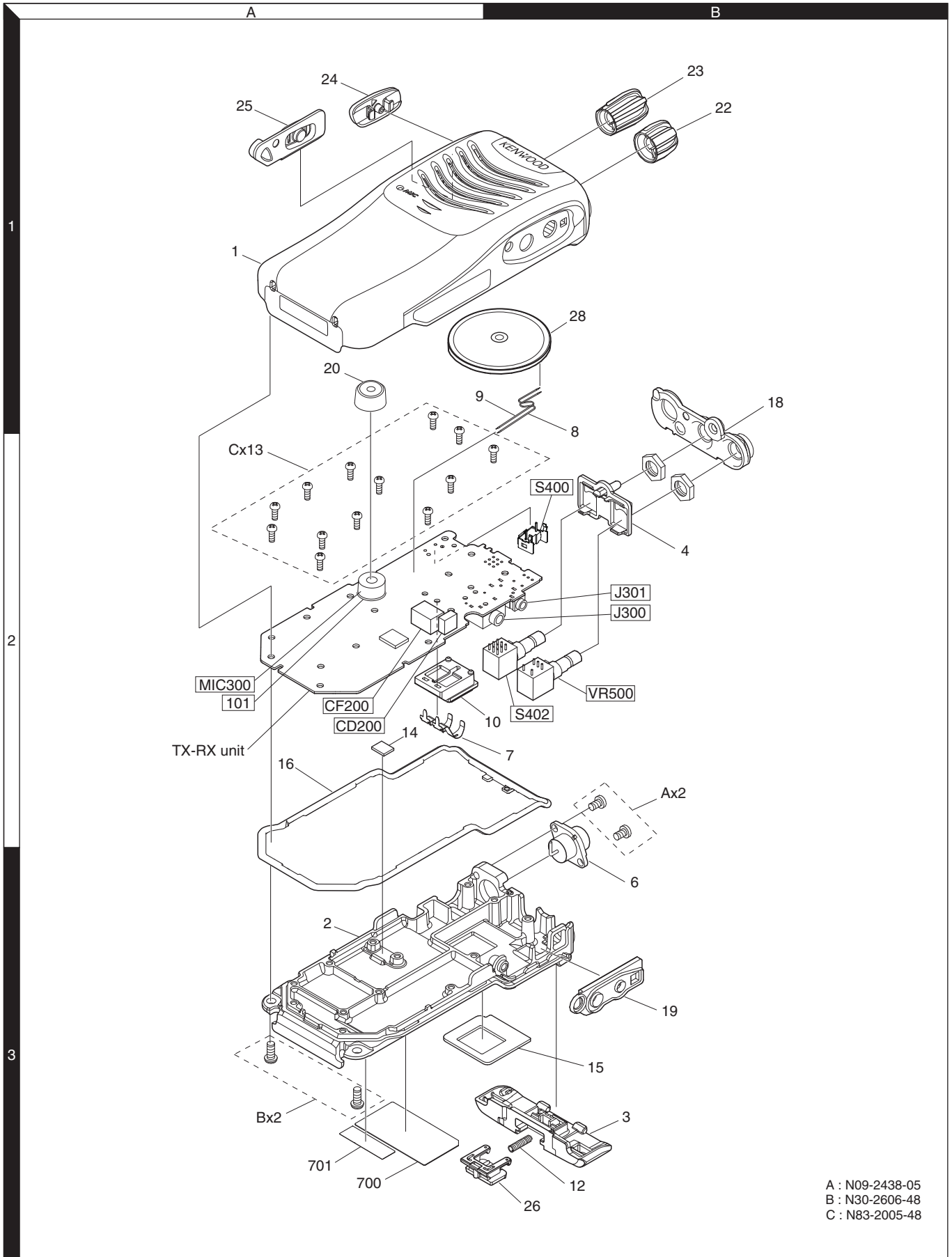
## PARTS LIST

### TX-RX UNIT (X57-8103-XX)

| Ref. No.     | Address | New parts | Parts No.    | Description             | Destination | Ref. No.      | Address | New parts | Parts No.     | Description                | Destination |
|--------------|---------|-----------|--------------|-------------------------|-------------|---------------|---------|-----------|---------------|----------------------------|-------------|
| R347         |         |           | RK73HB1J103J | CHIP R 10K J 1/16W      |             | <b>MIC300</b> | 2A      |           | T91-0674-05   | MIC ELEMENT                |             |
| R348         |         |           | RK73HB1J563J | CHIP R 56K J 1/16W      |             | D1            |         |           | DA2S101       | DIODE                      |             |
| R350         |         |           | RK73HB1J471J | CHIP R 470 J 1/16W      |             | D2 ,3         |         |           | 1SV325F       | VARIABLE CAPACITANCE DIODE |             |
| R351         |         |           | RK73HB1J181J | CHIP R 180 J 1/16W      |             | D4            |         |           | HSC277        | DIODE                      |             |
| R352         |         |           | RK73HB1J104J | CHIP R 100K J 1/16W     |             | D5 ,6         |         |           | HVC350B       | VARIABLE CAPACITANCE DIODE |             |
| R353         |         |           | RK73HB1J102J | CHIP R 1.0K J 1/16W     |             | D7 ,8         |         |           | DA2S101       | DIODE                      |             |
| R354         |         |           | RK73HB1J334J | CHIP R 330K J 1/16W     |             | D100          |         |           | HSC277        | DIODE                      |             |
| R355         |         |           | RK73HB1J473J | CHIP R 47K J 1/16W      |             | D101,102      |         |           | HVC131        | DIODE                      |             |
| R356         |         |           | RK73HB1J183J | CHIP R 18K J 1/16W      |             | D103,105      |         |           | HVC131        | DIODE                      |             |
| R357         |         |           | RK73HB1J564J | CHIP R 560K J 1/16W     |             | D200          |         |           | HSC277        | DIODE                      |             |
| R358         |         |           | RK73HB1J473J | CHIP R 47K J 1/16W      |             | D201,202      |         |           | HVC350B       | VARIABLE CAPACITANCE DIODE | M2          |
| R360         |         |           | RK73HB1J184J | CHIP R 180K J 1/16W     | K,M         | D201,202      |         |           | HVC355B       | VARIABLE CAPACITANCE DIODE | K,M         |
| R360         |         |           | RK73HB1J224J | CHIP R 220K J 1/16W     | M2          | D204          |         |           | HVC355B       | VARIABLE CAPACITANCE DIODE | K,M         |
| R361         |         |           | RK73HB1J821J | CHIP R 820 J 1/16W      |             | D260,261      |         |           | HVC350B       | VARIABLE CAPACITANCE DIODE | M2          |
| R363         |         |           | RK73HB1J562J | CHIP R 5.6K J 1/16W     |             | D260,261      |         |           | HVC355B       | VARIABLE CAPACITANCE DIODE | K,M         |
| R364         |         |           | RK73HB1J471J | CHIP R 470 J 1/16W      |             | D301          |         |           | KDR731        | DIODE                      |             |
| R365         |         |           | RK73HB1J000J | CHIP R 0 J 1/16W        |             | D402          |         |           | DA2S101       | DIODE                      |             |
| R366         |         |           | RK73HB1J104J | CHIP R 100K J 1/16W     |             | D500          |         |           | GN1G          | DIODE                      |             |
| R367         |         |           | RK73HB1J473J | CHIP R 47K J 1/16W      |             | D501          |         |           | RB521S-30     | DIODE                      |             |
| R369         |         |           | RK73HB1J103J | CHIP R 10K J 1/16W      |             | IC1           |         |           | MB15E03SL-E1  | MOS-IC                     |             |
| R370         |         |           | RK73HH1J473D | CHIP R 47K D 1/16W      |             | IC200         |         |           | NJM2591V      | BI-POLAR IC                |             |
| R371         |         |           | RK73HB1J182J | CHIP R 1.8K J 1/16W     | K,M         | IC300         |         |           | R2A20178NP    | DAC-IC                     |             |
| R371         |         |           | RK73HB1J822J | CHIP R 8.2K J 1/16W     | M2          | IC301         |         |           | NJM12904RB1   | MOS-IC                     |             |
| R372         |         |           | RK73HH1J473D | CHIP R 47K D 1/16W      |             | IC302         |         |           | TA7368PL      | MOS-IC                     |             |
| R373         |         |           | RK73HB1J000J | CHIP R 0 J 1/16W        |             | IC303-305     |         |           | NJM12904RB1   | MOS-IC                     |             |
| R374         |         |           | RK73HH1J473D | CHIP R 47K D 1/16W      |             | IC400         |         |           | F2136ACNKDRB  | MCU                        |             |
| R375         |         |           | RK73HB1J103J | CHIP R 10K J 1/16W      |             | IC401         |         |           | EX24016ATAS0A | ROM IC                     |             |
| R376         |         |           | RK73HH1J473D | CHIP R 47K D 1/16W      |             | IC500         |         |           | XC6120N302N-G | MOS-IC                     |             |
| R377         |         |           | RK73HB1J393J | CHIP R 39K J 1/16W      |             | IC501         |         |           | XC6209B502P-G | MOS-IC                     |             |
| R378         |         |           | RK73HB1J102J | CHIP R 1.0K J 1/16W     |             | IC503         |         |           | XC6209B502P-G | MOS-IC                     |             |
| R379         |         |           | RK73HB1J104J | CHIP R 100K J 1/16W     |             | Q1 ,2         |         |           | RT1N141U-T111 | TRANSISTOR                 |             |
| R386         |         |           | RK73HB1J392J | CHIP R 3.9K J 1/16W     |             | Q3            |         |           | 2SC5383-T111  | TRANSISTOR                 |             |
| R388         |         |           | RK73HB1J182J | CHIP R 1.8K J 1/16W     | K,M         | Q4            |         |           | MCH3914(7)-H  | FET                        |             |
| R388         |         |           | RK73HB1J822J | CHIP R 8.2K J 1/16W     | M2          | Q5            |         |           | 2SC5108(Y)F   | TRANSISTOR                 |             |
| R389         |         |           | RK73HB1J102J | CHIP R 1.0K J 1/16W     |             | Q6            |         |           | 2SC5636       | TRANSISTOR                 |             |
| R390         |         |           | RK73HB1J000J | CHIP R 0 J 1/16W        |             | Q7            |         |           | 2SC5383-T111  | TRANSISTOR                 |             |
| R392,393     |         |           | RK73HB1J102J | CHIP R 1.0K J 1/16W     |             | Q100          |         |           | 2SC4926YD     | TRANSISTOR                 |             |
| R400         |         |           | RK73HB1J472J | CHIP R 4.7K J 1/16W     |             | Q101          |         |           | RFM01U7P      | FET                        |             |
| R401         |         |           | RK73HB1J102J | CHIP R 1.0K J 1/16W     |             | Q102          |         |           | RD07MUS2BT112 | FET                        |             |
| R406         |         |           | RK73HB1J101J | CHIP R 100 J 1/16W      |             | Q103          |         |           | RT1N141U-T111 | TRANSISTOR                 |             |
| R407         |         |           | RK73HB1J473J | CHIP R 47K J 1/16W      |             | Q200          |         |           | RT1P237U-T111 | TRANSISTOR                 |             |
| R408         |         |           | RK73HB1J101J | CHIP R 100 J 1/16W      |             | Q201,202      |         |           | KTC4080E-P    | TRANSISTOR                 |             |
| R409,410     |         |           | RK73GB2A221J | CHIP R 220 J 1/10W      |             | Q203,204      |         |           | 3SK318        | FET                        |             |
| R411,412     |         |           | RK73HB1J472J | CHIP R 4.7K J 1/16W     |             | Q300,301      |         |           | RT1N441U-T111 | TRANSISTOR                 |             |
| R413         |         |           | RK73HB1J102J | CHIP R 1.0K J 1/16W     |             | Q302          |         |           | 2SK3577-A     | FET                        |             |
| R414         |         |           | RK73HB1J474J | CHIP R 470K J 1/16W     |             | Q303          |         |           | SSM6J08FU(F)  | FET                        |             |
| R438         |         |           | RK73HB1J473J | CHIP R 47K J 1/16W      |             | Q304          |         |           | RT1P237U-T111 | TRANSISTOR                 |             |
| R455         |         |           | RK73HB1J102J | CHIP R 1.0K J 1/16W     |             | Q305          |         |           | RT1N144U-T111 | TRANSISTOR                 |             |
| R471         |         |           | RK73HB1J103J | CHIP R 10K J 1/16W      | K,M         | Q306          |         |           | 2SK3577-A     | FET                        |             |
| R472         |         |           | RK73HB1J103J | CHIP R 10K J 1/16W      | M2          | Q400          |         |           | 2SC4919-S     | TRANSISTOR                 |             |
| R502         |         |           | RK73HB1J334J | CHIP R 330K J 1/16W     |             | Q401,402      |         |           | RT1N144U-T111 | TRANSISTOR                 |             |
| R505         |         |           | RK73HB1J473J | CHIP R 47K J 1/16W      |             | Q500,501      |         |           | SSM3J05FU-F   | FET                        |             |
| R508         |         |           | RK73HB1J473J | CHIP R 47K J 1/16W      |             | Q502          |         |           | RT1P237U-T111 | TRANSISTOR                 |             |
| R509         |         |           | RK73HB1J104J | CHIP R 100K J 1/16W     |             |               |         |           |               |                            |             |
| R511         |         |           | RK73HB1J334J | CHIP R 330K J 1/16W     |             |               |         |           |               |                            |             |
| <b>VR500</b> | 2B      |           | R31-0684-05  | VARIABLE RESISTOR(VOL)  |             | <b>TH100</b>  |         |           | B57331V2104J  | THERMISTOR                 |             |
| <b>S400</b>  | 2B      |           | S70-0414-05  | TACT SWITCH(PTT)        |             |               |         |           |               |                            |             |
| S401         |         |           | S70-0514-05  | TACT SWITCH(SIDE)       |             |               |         |           |               |                            |             |
| <b>S402</b>  | 2B      |           | S60-0447-05  | ROTARY SWITCH(SELECTOR) |             |               |         |           |               |                            |             |



## EXPLODED VIEW



A : N09-2438-05  
 B : N30-2606-48  
 C : N83-2005-48

Parts with the exploded numbers larger than 700 are not supplied.  
 If a part reference number is listed in a box on the exploded view of the PCB, that part does not come with the PCB.  
 These parts must be ordered separately.

## ADJUSTMENT

### Test Equipment Required for Alignment

| Test Equipment                        | Major Specifications  |   |
|---------------------------------------|---|---|
| 1. Standard Signal Generator (SSG)    | Frequency Range<br>Modulation<br>Output                     | 400 to 480MHz<br>Frequency modulation and external modulation<br>-127dBm/0.1μV to greater than -47dBm/1mV |
| 2. RF Power Meter                     | Input Impedance<br>Operation Frequency<br>Measurement Range | 50Ω<br>400 to 480MHz<br>Vicinity of 10W   |
| 3. Deviation Meter                    | Frequency Range   | 400 to 480MHz   |
| 4. Digital Volt Meter (DVM)           | Measuring Range<br>Input Impedance                          | 10mV to 10V DC<br>High input impedance for minimum circuit loading  |
| 5. Oscilloscope                       |   | DC through 30MHz  |
| 6. High Sensitivity Frequency Counter | Frequency Range<br>Frequency Stability                      | 10Hz to 1000MHz<br>0.2ppm or less   |
| 7. DC Ammeter                         |   | 5A  |
| 8. AF Volt Meter (AF VTVM)            | Frequency Range<br>Voltage Range                            | 50Hz to 10kHz<br>1mV to 10V   |
| 9. Audio Generator (AG)               | Frequency Range<br>Output                                   | 50Hz to 5kHz or more<br>0 to 1V   |
| 10. Distortion Meter                  | Capability<br>Input Level                                   | 3% or less at 1kHz<br>50mV to 10Vrms  |
| 11. Spectrum Analyzer                 | Measuring Range   | DC to 1GHz or more  |
| 12. Tracking Generator                | Center frequency<br>Output Voltage                          | 50kHz to 600MHz<br>100mV or more  |
| 13. 8Ω Dummy Load                     |   | Approx. 8Ω, 3W  |
| 14. Regulated Power Supply            |   | 5V to 10V, approx. 3A<br>Useful if ammeter equipped   |

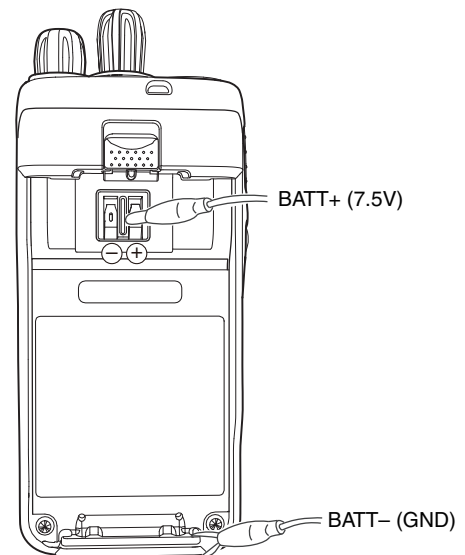
#### ■ Antenna connector adapter

The antenna connector of this transceiver uses an SMA terminal.

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

#### ■ DC Supply

BATT+, BATT- : External power supply terminal (Fasten it with an alligator clip.)



## ADJUSTMENT

### Frequency and Signaling

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

#### ■ Test Frequency (MHz)

| CH   | TK-3000 K,M  |              |
|------|--------------|--------------|
|      | RX Frequency | TX Frequency |
| 1    | 460.05000    | 460.10000    |
| 2    | 440.05000    | 440.10000    |
| 3    | 479.95000    | 479.90000    |
| 4    | 460.00000    | 460.00000    |
| 5    | 460.20000    | 460.20000    |
| 6    | 460.40000    | 460.40000    |
| 7~16 | -            | -            |

| CH   | TK-3000 M2   |              |
|------|--------------|--------------|
|      | RX Frequency | TX Frequency |
| 1    | 415.05000    | 415.10000    |
| 2    | 400.05000    | 400.10000    |
| 3    | 429.95000    | 429.90000    |
| 4    | 415.00000    | 415.00000    |
| 5    | 415.20000    | 415.20000    |
| 6    | 415.40000    | 415.40000    |
| 7~16 | -            | -            |

#### ■ Signaling

| No. | RX (Decode) | TX (Encode)          |
|-----|-------------|----------------------|
| 1   | None        | None                 |
| 2   | None        | 100Hz Square Wave    |
| 3   | QT 67.0Hz   | QT 67.0Hz            |
| 4   | QT 151.4Hz  | QT 151.4Hz           |
| 5   | QT 210.7Hz  | QT 210.7Hz           |
| 6   | QT 254.1Hz  | QT 254.1Hz           |
| 7   | DQT D023N   | DQT D023N            |
| 8   | DQT D754I   | DQT D754I            |
| 9   | None        | DTMF<br>(Code: 159D) |
| 10  | None        | DTMF<br>(Code: 9)    |

### Preparations for Tuning the Transceiver

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

Whenever the transmitter is tuned, 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.

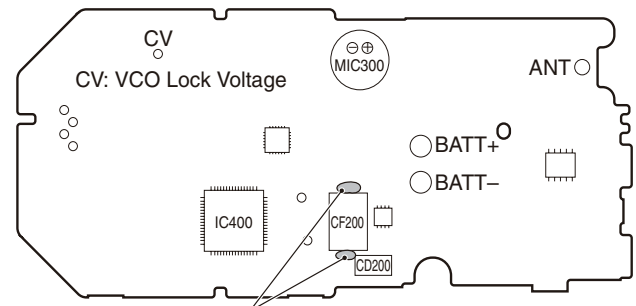
#### ■ Adjustment frequency (MHz)

| Tuning point | TK-3000 K,M |           |
|--------------|-------------|-----------|
|              | RX          | TX        |
| Low          | 440.05000   | 440.10000 |
| Center       | 460.05000   | 460.10000 |
| High         | 479.95000   | 479.90000 |

| Tuning point | TK-3000 M2 |           |
|--------------|------------|-----------|
|              | RX         | TX        |
| Low          | 400.05000  | 400.10000 |
| Center       | 415.05000  | 415.10000 |
| High         | 429.95000  | 429.90000 |

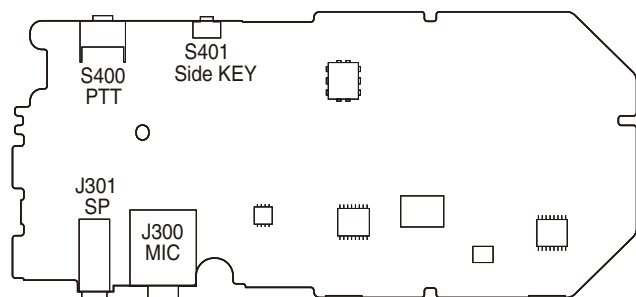
### Adjustment Points

TX-RX UNIT Component side view



**Note:** When replacing CF200, apply bond to the point shown in the figure.

TX-RX UNIT Foil side view




## ADJUSTMENT

### Common Section

| Item                | Condition  | Measurement    |       |             | Adjustment |       |  | Specifications / Remarks |
|---------------------|--|----------------|-------|-------------|------------|-------|--|--------------------------|
|                     |  | Test-equipment | Unit  | Terminal    | Unit       | Parts | Method                                 |                          |
| 1. Setting          | 1) BATT terminal voltage: 7.5V<br>2) SSG standard modulation<br>[Wide]<br>MOD: 1kHz, DEV: 3kHz<br>[Narrow]<br>MOD: 1kHz, DEV: 1.5kHz |                |       |             |            |       |  |                          |
| 2. VCO Lock Voltage | 1) Adj item: High  |                | TX-RX | ANT<br>(CV) |            | FPU   | 4.0V : <b>K, M</b><br>3.7V : <b>M2</b> | ±0.1V                    |

### Transmitter Section

| Item  | Condition   | Measurement   |       |                             | Adjustment |       |  | Specifications / Remarks  |
|---|---|---|-------|-----------------------------|------------|-------|--|---|
|   |   | Test-equipment  | Unit  | Terminal                    | Unit       | Parts | Method   |   |
| 1. Frequency                                  | 1) Adj item: High<br>Press [Transmit] button.   | f. counter  | TX-RX | ANT                         |            | FPU   | 479.900MHz : <b>K, M</b><br>429.900MHz : <b>M2</b> | ±50Hz   |
| 2. High Transmit Power and Protective Current | 1) Adj item: Low, Center, High (3 points)<br>BATT terminal voltage: 7.5V<br>Press [Transmit] button.  | Power meter<br>Ammeter  | TX-RX | ANT                         |            | FPU   | 3.8W   | ±0.1W<br>2.0A or less   |
| 3. Low Transmit Power                         | 1) Adj item: Low, Center, High (3 points)<br>BATT terminal voltage: 7.5V<br>Press [Transmit] button.  |   |       |                             |            |       | 1.0W   | ±0.1W<br>1.0A or less   |
| 4. DQT Balance [Wide]                         | 1) Adj item: Low, Center, High (3 points)<br>(Signaling Square Wave)<br>Deviation meter filter<br>LPF: 3kHz<br>HPF: OFF<br>Press [Transmit] button. | Power meter<br>Deviation meter<br>Oscilloscope<br>AG<br>AF VTVM | TX-RX | ANT<br><br>SP/MIC connector |            | FPU   | Make the modulation wave into square waves.        |  |
| 5. Maximum Deviation [Wide]                   | 1) Adj item: Center, Low, High (3 points)<br>AG: 1kHz/150mV<br>Deviation meter filter<br>LPF: 15kHz<br>HPF: OFF<br>Press [Transmit] button.         |   |       |                             |            |       | 4.0kHz<br>(According to the lager +, -)            |   |
| 6. Battery Warning Level                      | 1) BATT terminal voltage: 5.9V  | DVM   | TX-RX | BATT terminal               |            | FPU   | Write  | BATT terminal voltage: 5.9V   |
| 7. Battery Detection Check (User mode)        | 1) BATT terminal voltage: 5.7V<br>PTT: ON   | Power meter   |       | ANT                         |            |       | Check  | LED blinks<br>No transmit power   |
|   | 2) BATT terminal voltage: 7.5V<br>PTT: ON   | DVM   |       | BATT terminal               |            |       |  | LED does not blink  |

- This transceiver is designed to make adjustments simple.
- It is not necessary to adjust the fixed values for the DTMF-DEV, DQT-DEV, QT-DEV, and MIC sensitivity.
- The TX-DEV Narrow setting uses the Wide calculated adjustment level value.

## ADJUSTMENT

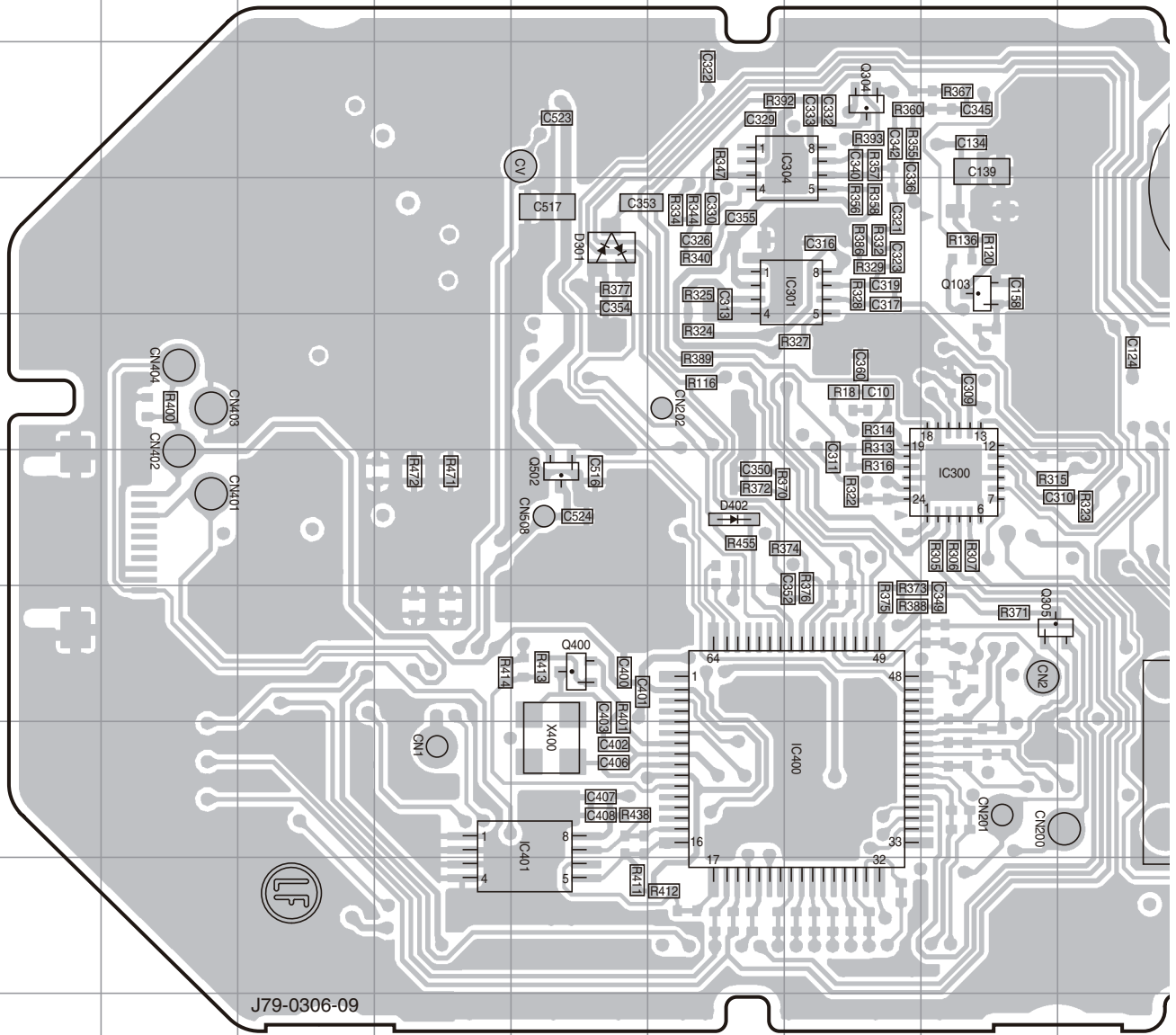
## Receiver Section

| Item                               | Condition  | Measurement                           |       |                            | Adjustment |       |        | Specifications / Remarks |
|------------------------------------|--|---------------------------------------|-------|----------------------------|------------|-------|--------|--------------------------|
|                                    |  | Test-equipment                        | Unit  | Terminal                   | Unit       | Parts | Method |                          |
| 1. Sensitivity Check<br>[Narrow]   | 1) Adj item: Low, High (2 points)<br>SSG output: -115dBm<br>(0.4 $\mu$ V)<br>SSG DEV: 1.5kHz   | SSG<br>DVM<br>Oscilloscope<br>AF VTVM | TX-RX | ANT<br>SP/MIC<br>connector |            |       | Check  | 12dB SINAD or more       |
| [Wide]                             | 2) TEST CH: 1<br>SSG output: -117dBm<br>(0.32 $\mu$ V)<br>SSG DEV: 3.0kHz  |                                       |       |                            |            |       |        |                          |
| 2. Squelch Level 5 Write<br>[Wide] | (3 points)<br>1) Adj item: Low<br>SSG output:<br>-120dBm (0.22 $\mu$ V): <b>K, M</b><br>-120dBm (0.22 $\mu$ V): <b>M2</b><br>SSG DEV: 3.0kHz<br>2) Adj item: Center<br>SSG output:<br>-122dBm (0.178 $\mu$ V): <b>K, M</b><br>-121dBm (0.2 $\mu$ V): <b>M2</b><br>SSG DEV: 3.0kHz<br>3) Adj item: High<br>SSG output:<br>-123dBm (0.158 $\mu$ V): <b>K, M</b><br>-121dBm (0.2 $\mu$ V): <b>M2</b><br>SSG DEV: 3.0kHz   |                                       |       |                            | FPU        | Write |        |                          |
| [Narrow]                           | (3 points)<br>4) Adj item: Low<br>SSG output:<br>-120dBm (0.22 $\mu$ V): <b>K, M</b><br>-119dBm (0.25 $\mu$ V): <b>M2</b><br>SSG DEV: 1.5kHz<br>5) Adj item: Center<br>SSG output:<br>-122dBm (0.178 $\mu$ V): <b>K, M</b><br>-120dBm (0.22 $\mu$ V): <b>M2</b><br>SSG DEV: 1.5kHz<br>6) Adj item: High<br>SSG output:<br>-123dBm (0.158 $\mu$ V): <b>K, M</b><br>-120dBm (0.22 $\mu$ V): <b>M2</b><br>SSG DEV: 1.5kHz |                                       |       |                            |            |       |        |                          |

• It is not necessary to adjust the fixed value for the BPF.  
• The Squelch Level 9 setting uses the Squelch Level 5 calculated adjustment level value.

# TK-3000 PC BOARD

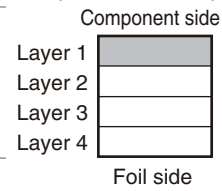
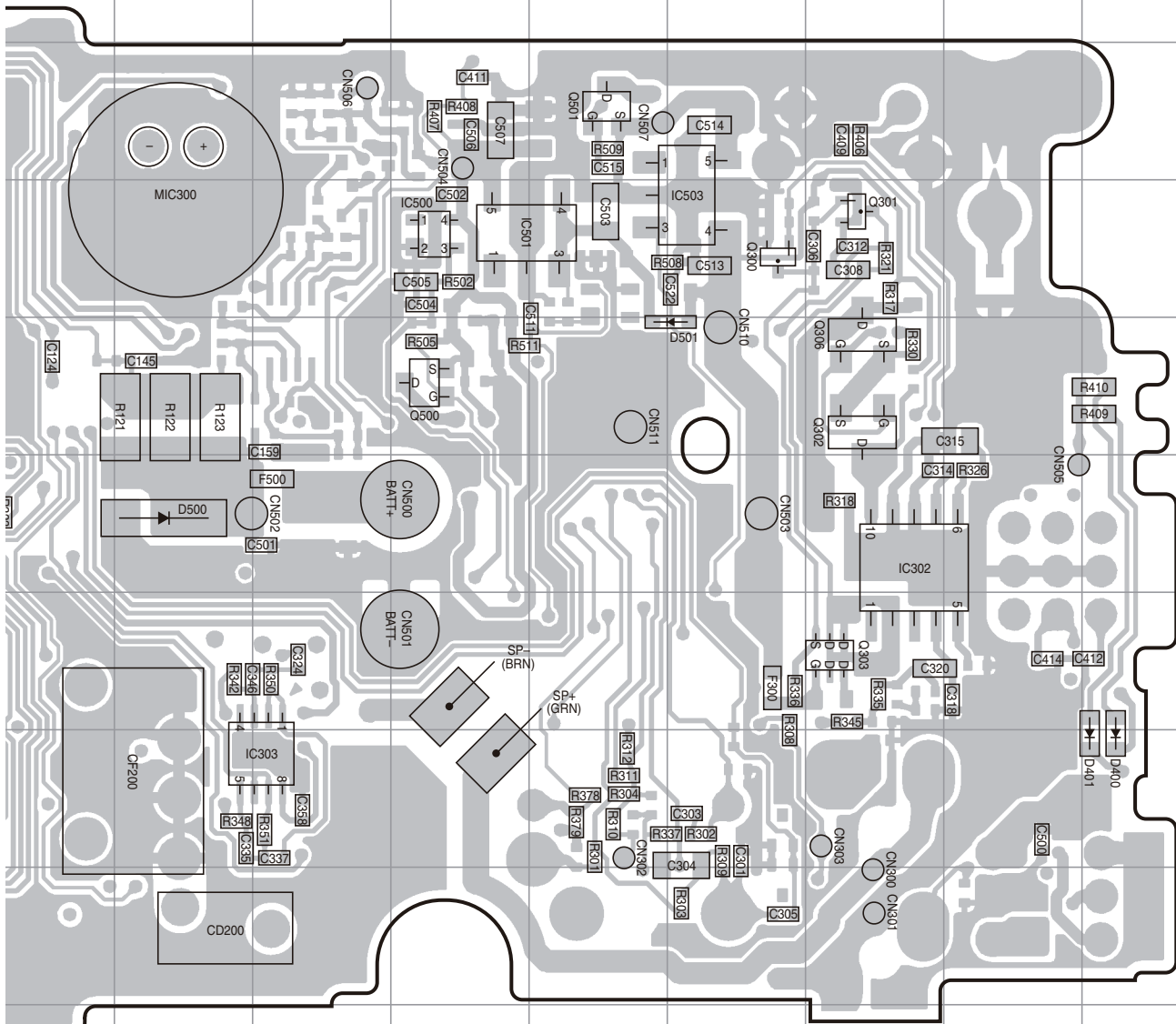
TX-RX UNIT (X57-8103-XX) -00: K, M -01: M2  
Component side view (J79-0306-09)



| Ref. No. | Address | Ref. No. | Address | Ref. No. | Address |
|----------|---------|----------|---------|----------|---------|
| IC300    | 6I      | Q103     | 4I      | Q501     | 3N      |
| IC301    | 4H      | Q300     | 4O      | Q502     | 6F      |
| IC302    | 6P      | Q301     | 4P      | D301     | 4F      |
| IC303    | 8L      | Q302     | 5P      | D400     | 8R      |
| IC304    | 3H      | Q303     | 7P      | D401     | 8R      |
| IC400    | 8H      | Q304     | 3H      | D402     | 6G      |
| IC401    | 8F      | Q305     | 7I      | D500     | 6K      |
| IC500    | 4M      | Q306     | 5P      | D501     | 5O      |
| IC501    | 4M      | Q400     | 7F      |          |         |
| IC503    | 4O      | Q500     | 5M      |          |         |

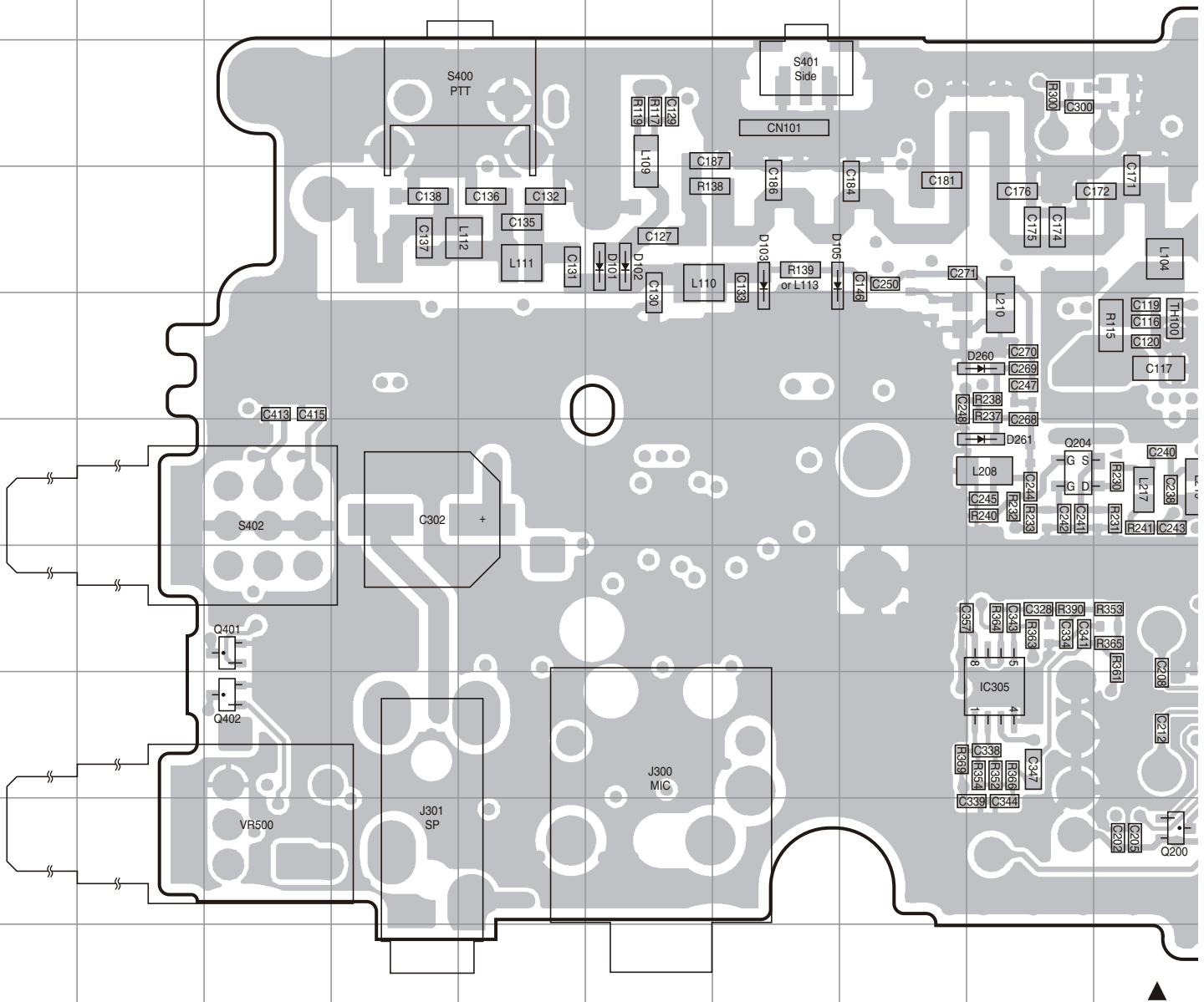
# PC BOARD TK-3000

TX-RX UNIT (X57-8103-XX) -00: K, M -01: M2  
Component side view (J79-0306-09)



# TK-3000 PC BOARD

TX-RX UNIT (X57-8103-XX) -00: K, M -01: M2  
Foil side view (J79-0306-09)

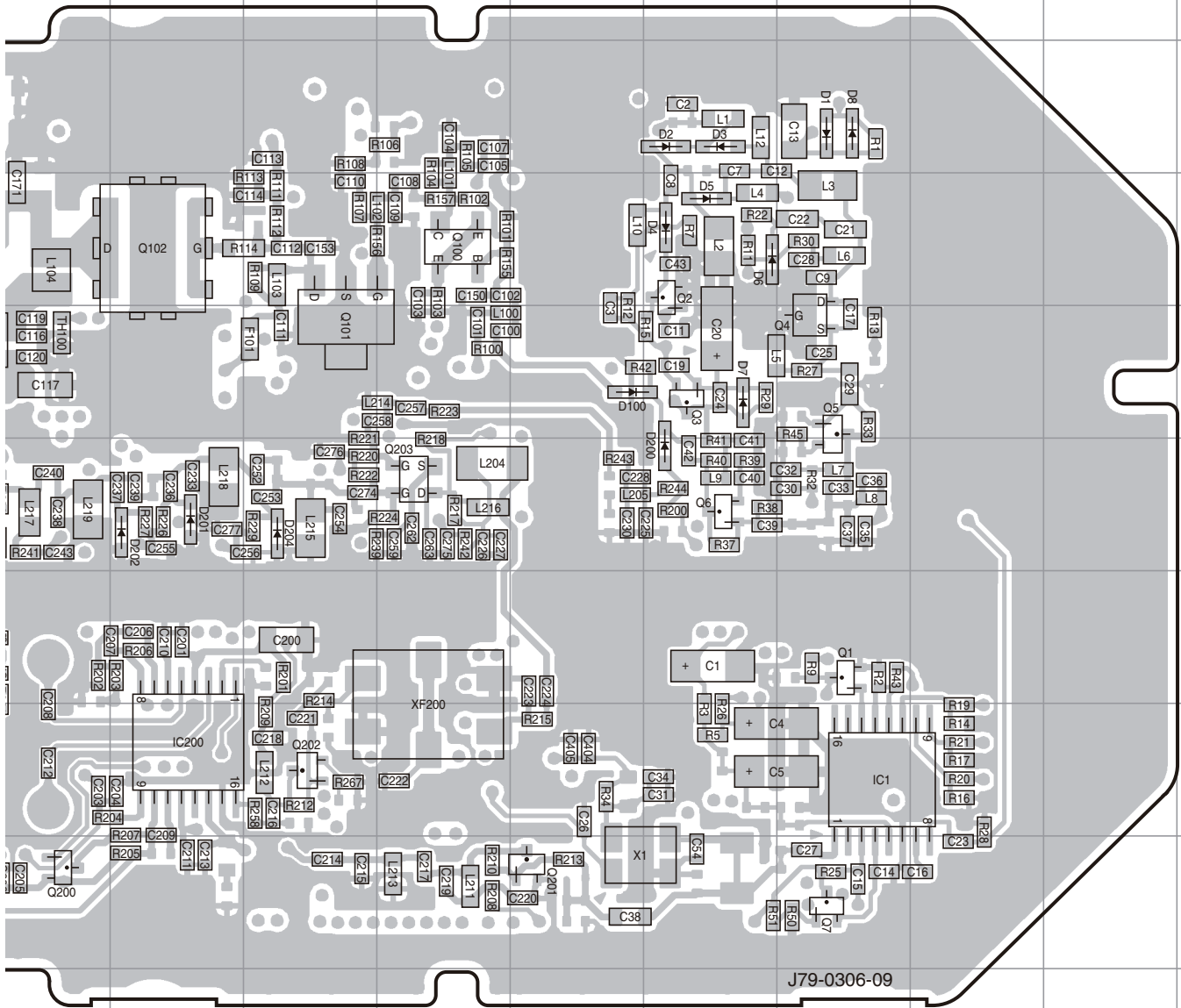


| Ref. No. | Address | Ref. No. | Address | Ref. No. | Address | Ref. No. | Address |
|----------|---------|----------|---------|----------|---------|----------|---------|
| IC1      | 8P      | Q100     | 4M      | D1       | 3P      | D102     | 4F      |
| IC200    | 8K      | Q101     | 5L      | D2       | 3O      | D103     | 4G      |
| IC305    | 8I      | Q102     | 4K      | D3       | 3O      | D105     | 4G      |
| Q1       | 7P      | Q200     | 9J      | D4       | 4O      | D200     | 6O      |
| Q2       | 4O      | Q201     | 9N      | D5       | 4O      | D201     | 6K      |
| Q3       | 5O      | Q202     | 8L      | D6       | 4O      | D202     | 6K      |
| Q4       | 5P      | Q203     | 6M      | D7       | 5O      | D204     | 6L      |
| Q5       | 5P      | Q204     | 6I      | D8       | 3P      | D260     | 5I      |
| Q6       | 6O      | Q401     | 7C      | D100     | 5N      | D261     | 6I      |
| Q7       | 9P      | Q402     | 8C      | D101     | 4F      |          |         |

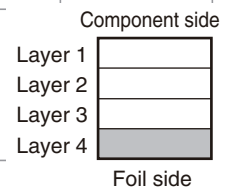


# PC BOARD TK-3000

TX-RX UNIT (X57-8103-XX) -00: K, M -01: M2  
Foil side view (J79-0306-09)

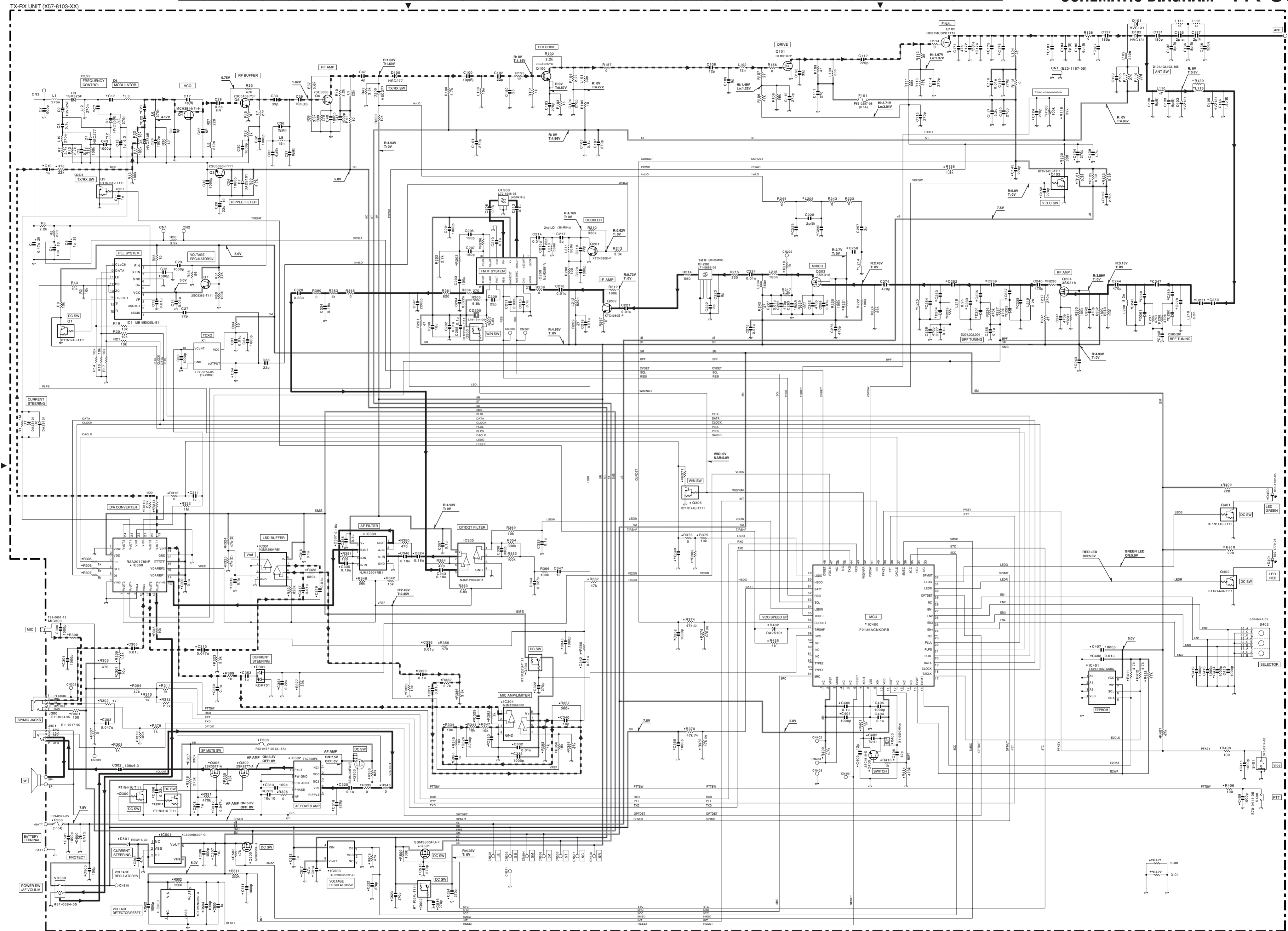


J79-0306-09



|    |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
|----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| C7 | C12 | C21 | C22 | C24 | C174 | C175 | C176 | C181 | C187 | C225 | C226 | C228 | C229 | C230 | C231 | C232 | C233 | C234 | C236 | C238 | C239 | C240 | C241 | C242 | C243 | C245 | C247 | C248 | C250 | C252 | C253 | C254 | C256 | C258 | C259 | C260 | C270 | C271 | C273 | C274 | C275 | C276 | C277 | C278 | C279 | C280 | C281 | C282 | C283 | C284 | C285 | C286 | C287 | C288 | C289 | C290 | C291 | C292 | C293 | C294 | C295 | C296 | C297 | C298 | C299 | C300 | C301 | C302 | C303 | C304 | C305 | C306 | C307 | C308 | C309 | C310 | C311 | C312 | C313 | C314 | C315 | C316 | C317 | C318 | C319 | C320 | C321 | C322 | C323 | C324 | C325 | C326 | C327 | C328 | C329 | C330 | C331 | C332 | C333 | C334 | C335 | C336 | C337 | C338 | C339 | C340 | C341 | C342 | C343 | C344 | C345 | C346 | C347 | C348 | C349 | C350 | C351 | C352 | C353 | C354 | C355 | C356 | C357 | C358 | C359 | C360 | C361 | C362 | C363 | C364 | C365 | C366 | C367 | C368 | C369 | C370 | C371 | C372 | C373 | C374 | C375 | C376 | C377 | C378 | C379 | C380 | C381 | C382 | C383 | C384 | C385 | C386 | C387 | C388 | C389 | C390 | C391 | C392 | C393 | C394 | C395 | C396 | C397 | C398 | C399 | C400 | C401 | C402 | C403 | C404 | C405 | C406 | C407 | C408 | C409 | C410 | C411 | C412 | C413 | C414 | C415 | C416 | C417 | C418 | C419 | C420 | C421 | C422 | C423 | C424 | C425 | C426 | C427 | C428 | C429 | C430 | C431 | C432 | C433 | C434 | C435 | C436 | C437 | C438 | C439 | C440 | C441 | C442 | C443 | C444 | C445 | C446 | C447 | C448 | C449 | C450 | C451 | C452 | C453 | C454 | C455 | C456 | C457 | C458 | C459 | C460 | C461 | C462 | C463 | C464 | C465 | C466 | C467 | C468 | C469 | C470 | C471 | C472 | C473 | C474 | C475 | C476 | C477 | C478 | C479 | C480 | C481 | C482 | C483 | C484 | C485 | C486 | C487 | C488 | C489 | C490 | C491 | C492 | C493 | C494 | C495 | C496 | C497 | C498 | C499 | C500 | C501 | C502 | C503 | C504 | C505 | C506 | C507 | C508 | C509 | C510 | C511 | C512 | C513 | C514 | C515 | C516 | C517 | C518 | C519 | C520 | C521 | C522 | C523 | C524 | C525 | C526 | C527 | C528 | C529 | C530 | C531 | C532 | C533 | C534 | C535 | C536 | C537 | C538 | C539 | C540 | C541 | C542 | C543 | C544 | C545 | C546 | C547 | C548 | C549 | C550 | C551 | C552 | C553 | C554 | C555 | C556 | C557 | C558 | C559 | C560 | C561 | C562 | C563 | C564 | C565 | C566 | C567 | C568 | C569 | C570 | C571 | C572 | C573 | C574 | C575 | C576 | C577 | C578 | C579 | C580 | C581 | C582 | C583 | C584 | C585 | C586 | C587 | C588 | C589 | C590 | C591 | C592 | C593 | C594 | C595 | C596 | C597 | C598 | C599 | C600 | C601 | C602 | C603 | C604 | C605 | C606 | C607 | C608 | C609 | C610 | C611 | C612 | C613 | C614 | C615 | C616 | C617 | C618 | C619 | C620 | C621 | C622 | C623 | C624 | C625 | C626 | C627 | C628 | C629 | C630 | C631 | C632 | C633 | C634 | C635 | C636 | C637 | C638 | C639 | C640 | C641 | C642 | C643 | C644 | C645 | C646 | C647 | C648 | C649 | C650 | C651 | C652 | C653 | C654 | C655 | C656 | C657 | C658 | C659 | C660 | C661 | C662 | C663 | C664 | C665 | C666 | C667 | C668 | C669 | C670 | C671 | C672 | C673 | C674 | C675 | C676 | C677 | C678 | C679 | C680 | C681 | C682 | C683 | C684 | C685 | C686 | C687 | C688 | C689 | C690 | C691 | C692 | C693 | C694 | C695 | C696 | C697 | C698 | C699 | C700 | C701 | C702 | C703 | C704 | C705 | C706 | C707 | C708 | C709 | C710 | C711 | C712 | C713 | C714 | C715 | C716 | C717 | C718 | C719 | C720 | C721 | C722 | C723 | C724 | C725 | C726 | C727 | C728 | C729 | C730 | C731 | C732 | C733 | C734 | C735 | C736 | C737 | C738 | C739 | C740 | C741 | C742 | C743 | C744 | C745 | C746 | C747 | C748 | C749 | C750 | C751 | C752 | C753 | C754 | C755 | C756 | C757 | C758 | C759 | C760 | C761 | C762 | C763 | C764 | C765 | C766 | C767 | C768 | C769 | C770 | C771 | C772 | C773 | C774 | C775 | C776 | C777 | C778 | C779 | C780 | C781 | C782 | C783 | C784 | C785 | C786 | C787 | C788 | C789 | C790 | C791 | C792 | C793 | C794 | C795 | C796 | C797 | C798 | C799 | C800 | C801 | C802 | C803 | C804 | C805 | C806 | C807 | C808 | C809 | C810 | C811 | C812 | C813 | C814 | C815 | C816 | C817 | C818 | C819 | C820 | C821 | C822 | C823 | C824 | C825 | C826 | C827 | C828 | C829 | C830 | C831 | C832 | C833 | C834 | C835 | C836 | C837 | C838 | C839 | C840 | C841 | C842 | C843 | C844 | C845 | C846 | C847 | C848 | C849 | C850 | C851 | C852 | C853 | C854 | C855 | C856 | C857 | C858 | C859 | C860 | C861 | C862 | C863 | C864 | C865 | C866 | C867 | C868 | C869 | C870 | C871 | C872 | C873 | C874 | C875 | C876 | C877 | C878 | C879 | C880 | C881 | C882 | C883 | C884 | C885 | C886 | C887 | C888 | C889 | C890 | C891 | C892 | C893 | C894 | C895 | C896 | C897 | C898 | C899 | C900 | C901 | C902 | C903 | C904 | C905 | C906 | C907 | C908 | C909 | C910 | C911 | C912 | C913 | C914 | C915 | C916 | C917 | C918 | C919 | C920 | C921 | C922 | C923 | C924 | C925 | C926 | C927 | C928 | C929 | C930 | C931 | C932 | C933 | C934 | C935 | C936 | C937 | C938 | C939 | C940 | C941 | C942 | C943 | C944 | C945 | C946 | C947 | C948 | C949 | C950 | C951 | C952 | C953 | C954 | C955 | C956 | C957 | C958 | C959 | C960 | C961 | C962 | C963 | C964 | C965 | C966 | C967 | C968 | C969 | C970 | C971 | C972 | C973 | C974 | C975 | C976 | C977 | C978 | C979 | C980 | C981 | C982 | C983 | C984 | C985 | C986 | C987 | C988 | C989 | C990 | C991 | C992 | C993 | C994 | C995 | C996 | C997 | C998 | C999 | C1000 |
|----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|

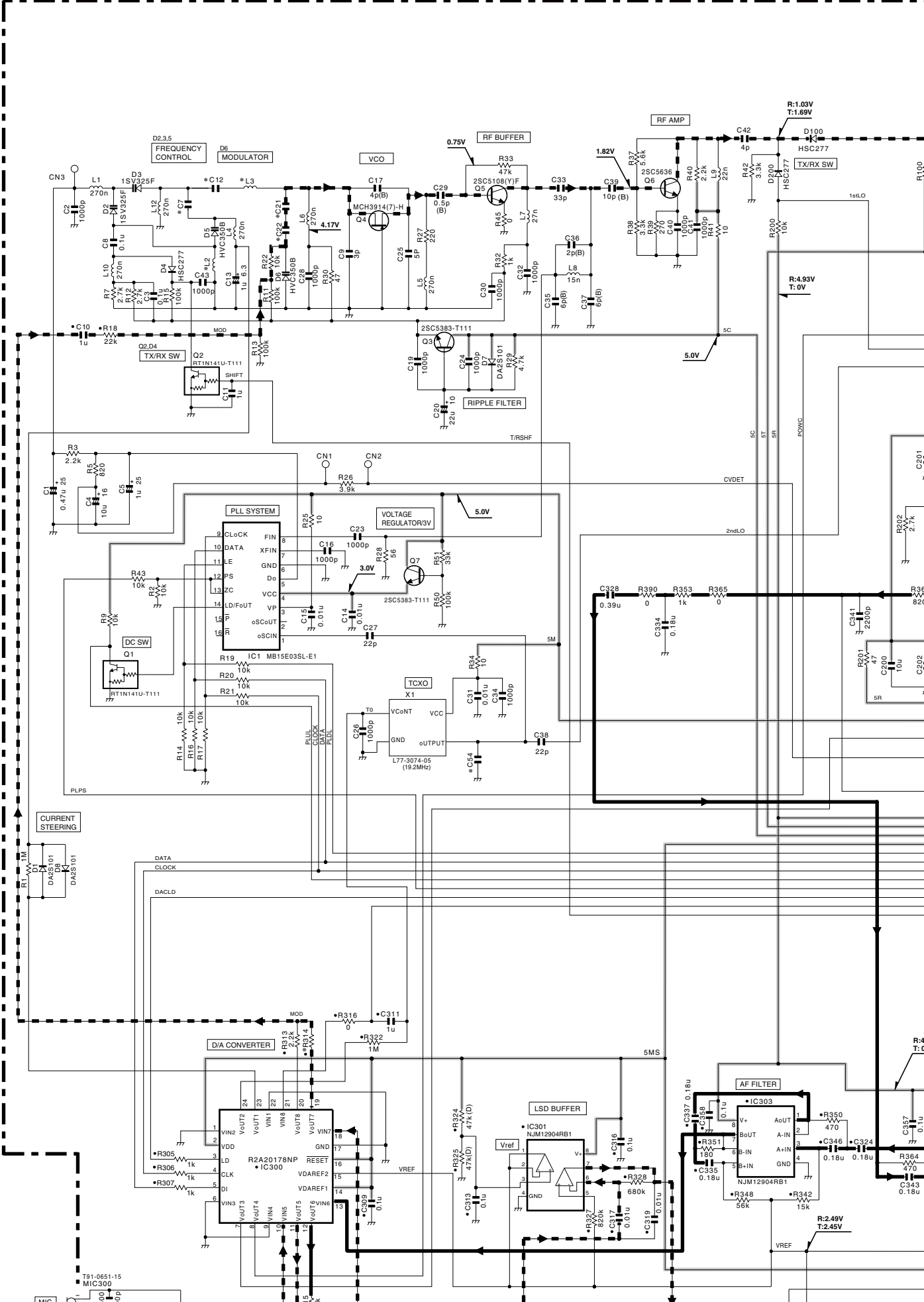
# SCHEMATIC DIAGRAM TK-3000



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

|             |     |     |     |       |       |      |      |       |      |      |      |      |      |      |      |      |      |      |    |
|-------------|-----|-----|-----|-------|-------|------|------|-------|------|------|------|------|------|------|------|------|------|------|----|
| C7          | C12 | C21 | C22 | C54   | C174  | C175 | C176 | C181  | C187 | C225 | C230 | C233 | C236 | C237 | C238 | C239 | C243 | C245 |    |
| X57-8103-00 | K.M | 15p | 22p | 0.75p | 0.75p | 4p   | 33p  | 3p(B) | NO   | 6p   | 6p   | 4p   | 22p  | 22p  | 5p   | 1p   | 470p | 3p   |    |
| X57-8103-01 | M2  | 27p | 27p | 0.5p  | 1000p | NO   | 15p  | NO    | 22p  | 3p   | 2p   | 5p   | 6p   | 10p  | 10p  | 9p   | 0.5p | 0.1u | 7p |

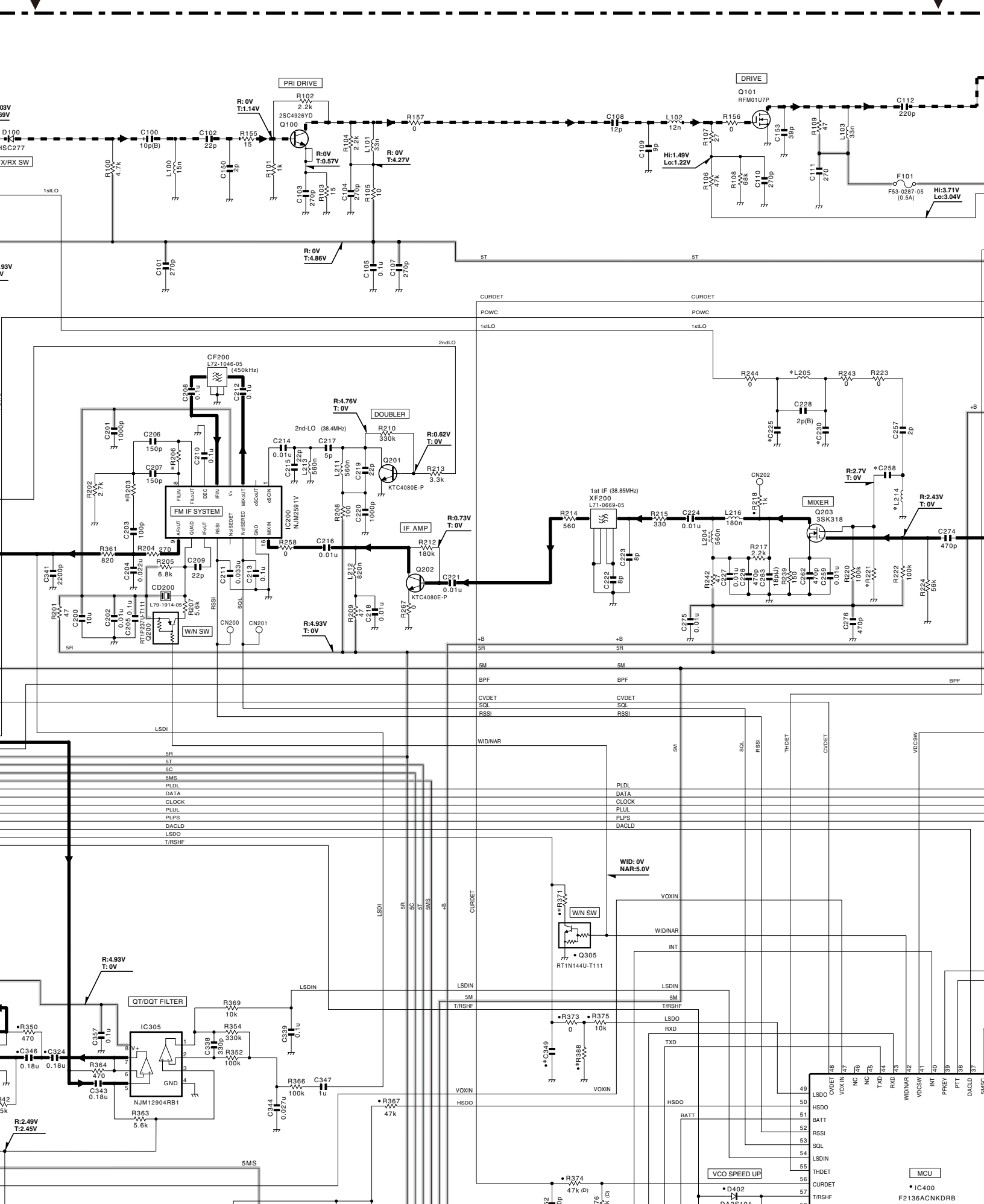
TX-RX UNIT (X57-8103-XX)



T91-0651-15  
MIC300

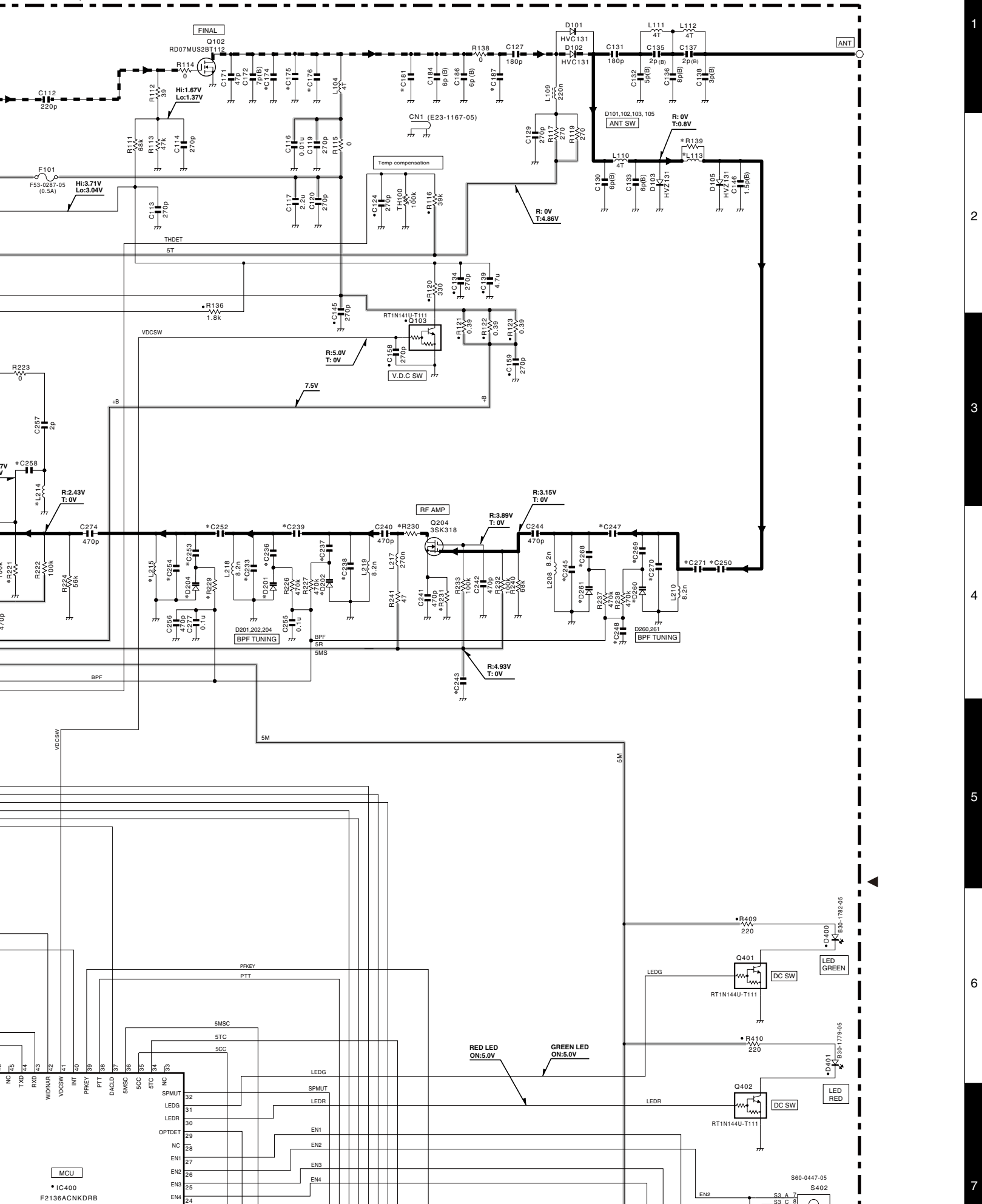
MIC

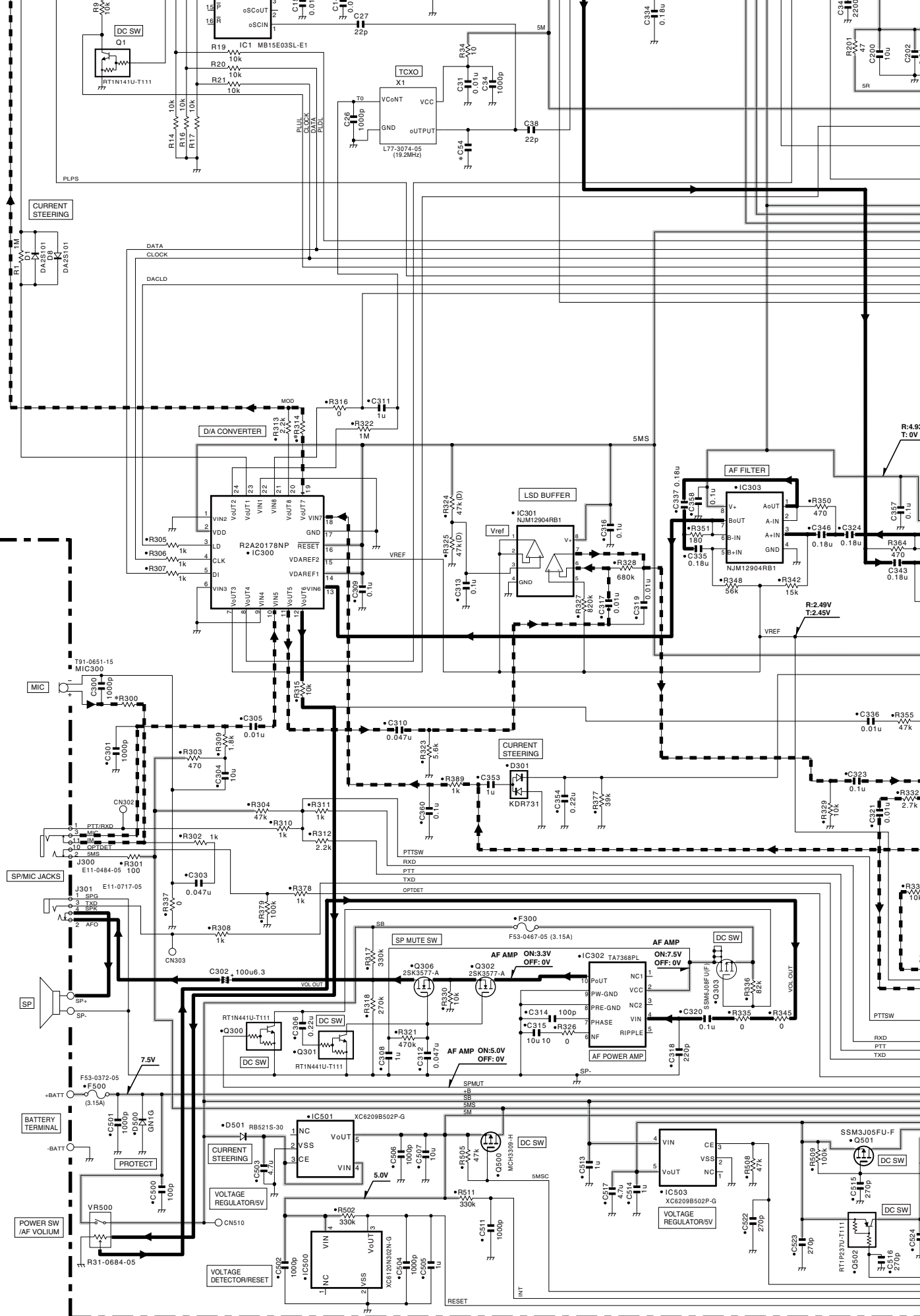
|      |      |      |      |      |       |      |      |       |      |      |       |      |      |      |      |        |      |        |         |         |         |         |         |      |     |      |      |      |      |      |      |      |      |      |      |    |
|------|------|------|------|------|-------|------|------|-------|------|------|-------|------|------|------|------|--------|------|--------|---------|---------|---------|---------|---------|------|-----|------|------|------|------|------|------|------|------|------|------|----|
| C237 | C238 | C239 | C243 | C245 | C247  | C248 | C250 | C252  | C253 | C254 | C258  | C268 | C269 | C270 | C271 | C329   | C330 | C349   | D201    | D202    | D204    | D260    | D261    | L2   | L3  | L113 | L205 | L214 | L215 | R139 | R203 | R206 | R221 | R229 | R230 |    |
| 22p  | 5p   | 1p   | 470p | 3p   | 1p    | 470p | 270p | 0.75p | 22p  | 4p   | 470p  | 22p  | 22p  | 1p   | 3p   | 0.027u | 820p | 0.15u  | HVC355B | HVC355B | HVC355B | HVC355B | HVC355B | 5.6n | 18n | 10n  | NO   | 15n  | 27n  | 8.2n | 0    | 47k  | 560k | 56k  | 470k | 22 |
| 10p  | 9p   | 0.5p | 0.1u | 7p   | 0.75p | 0.1u | 12p  | 470p  | NO   | NO   | 1000p | 10p  | 10p  | 5p   | 2p   | 0.033u | 560p | 0.047u | HVC350B | HVC350B | NO      | HVC350B | HVC350B | 6.8n | 22n | 10n  | 18n  | 39n  | NO   | NO   | 22k  | 680k | 82k  | NO   | 15   |    |

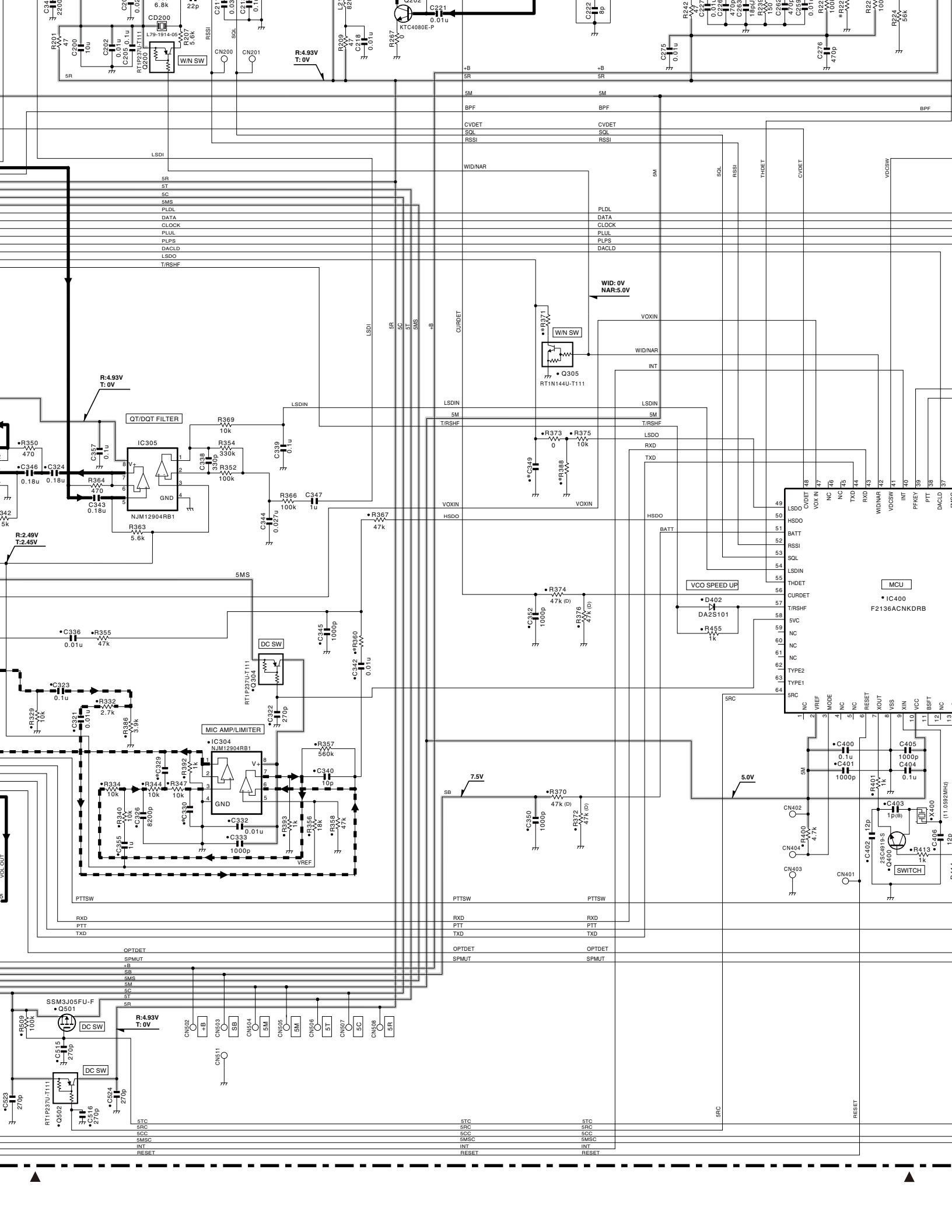


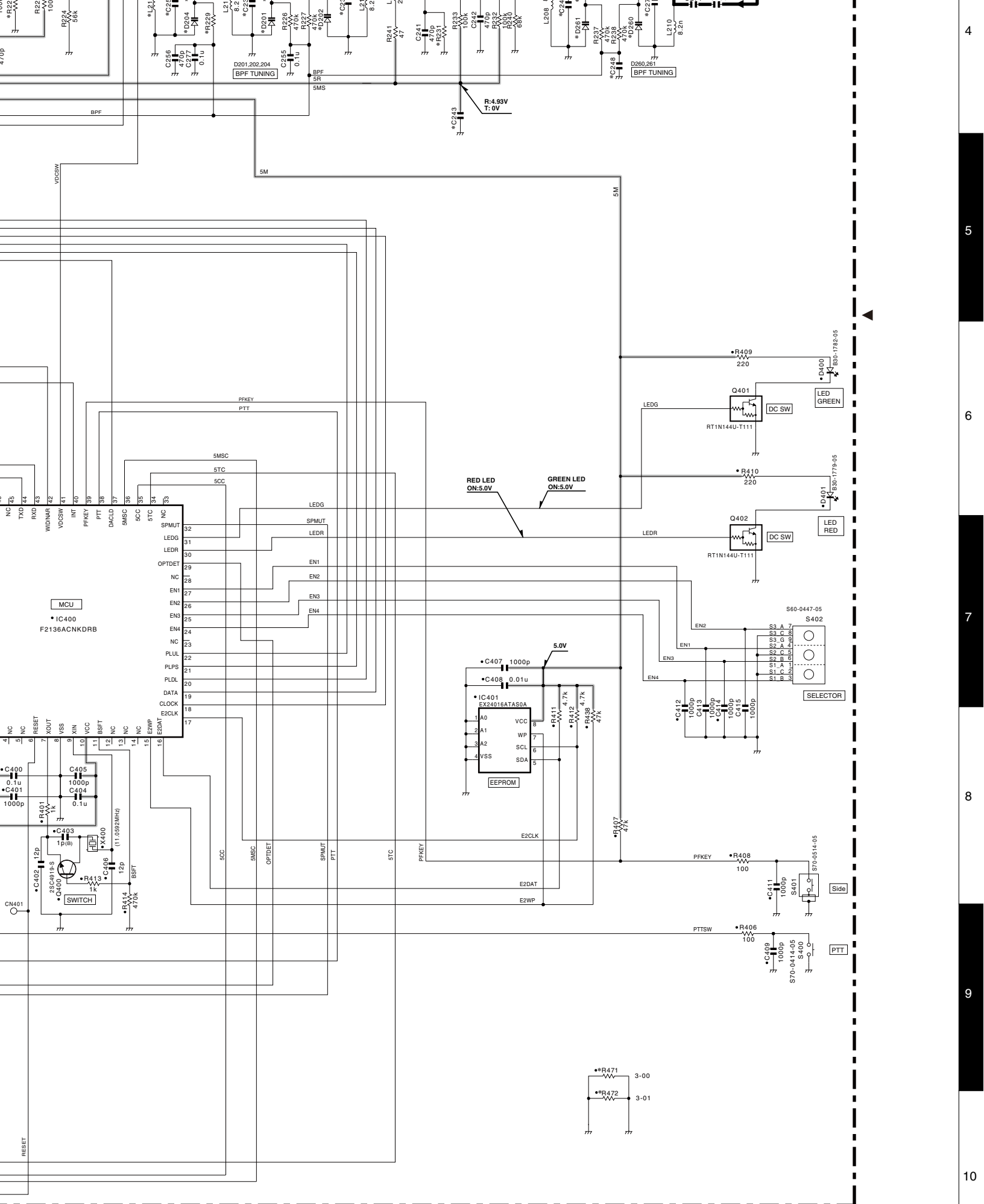
|      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| R203 | R206 | R221 | R229 | R230 | R231 | R300 | R314 | R360 | R371 | R388 | R471 | R472 |
| 47k  | 560k | 56k  | 470k | 22   | 330  | 1.5k | 3.9k | 180k | 1.8k | 1.8k | 10k  | NO   |
| 22k  | 680k | 82k  | NO   | 15   | 120  | 0    | 10k  | 220k | 8.2k | 8.2k | NO   | 10k  |

# SCHEMATIC DIAGRAM TK-3000





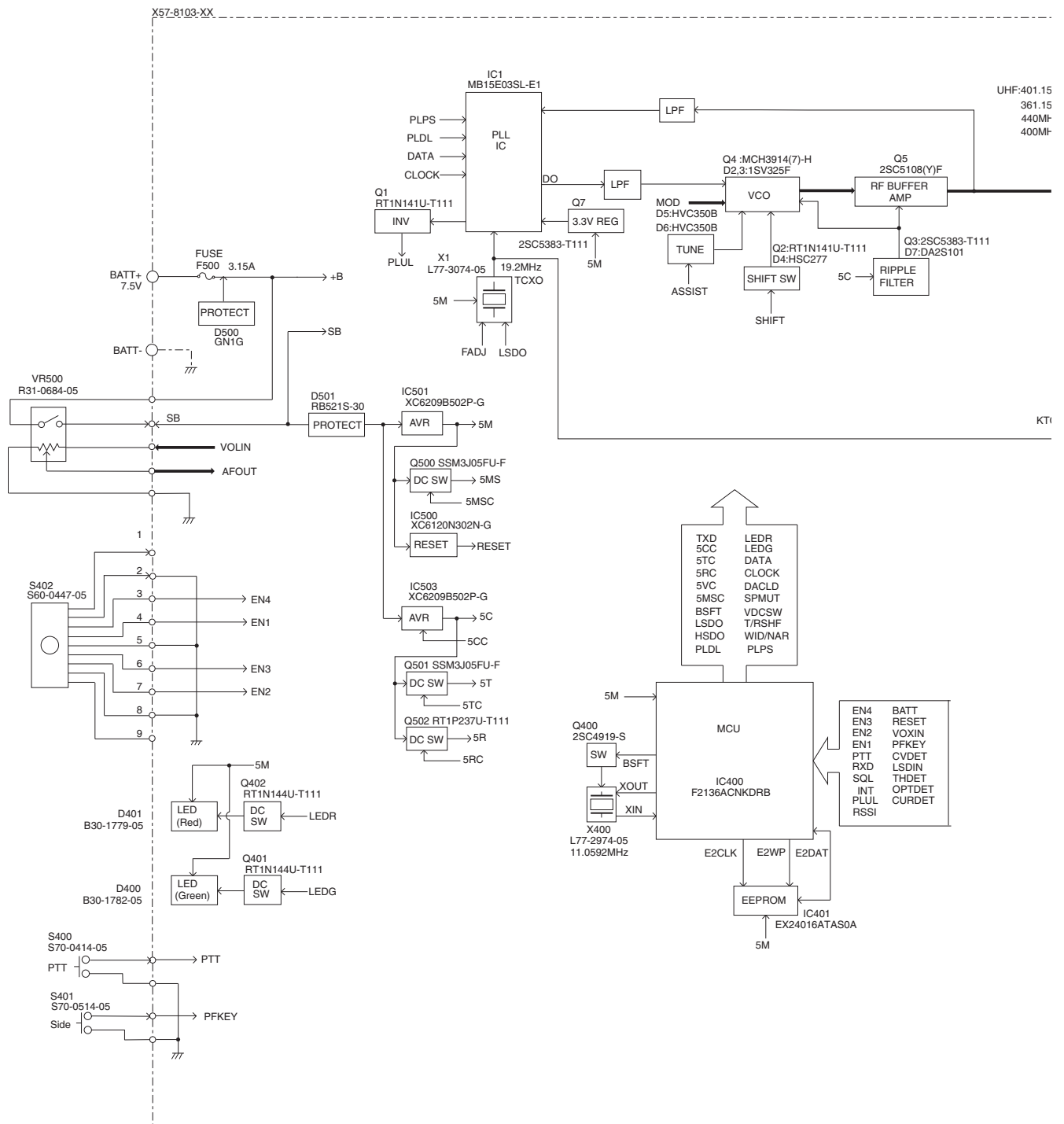




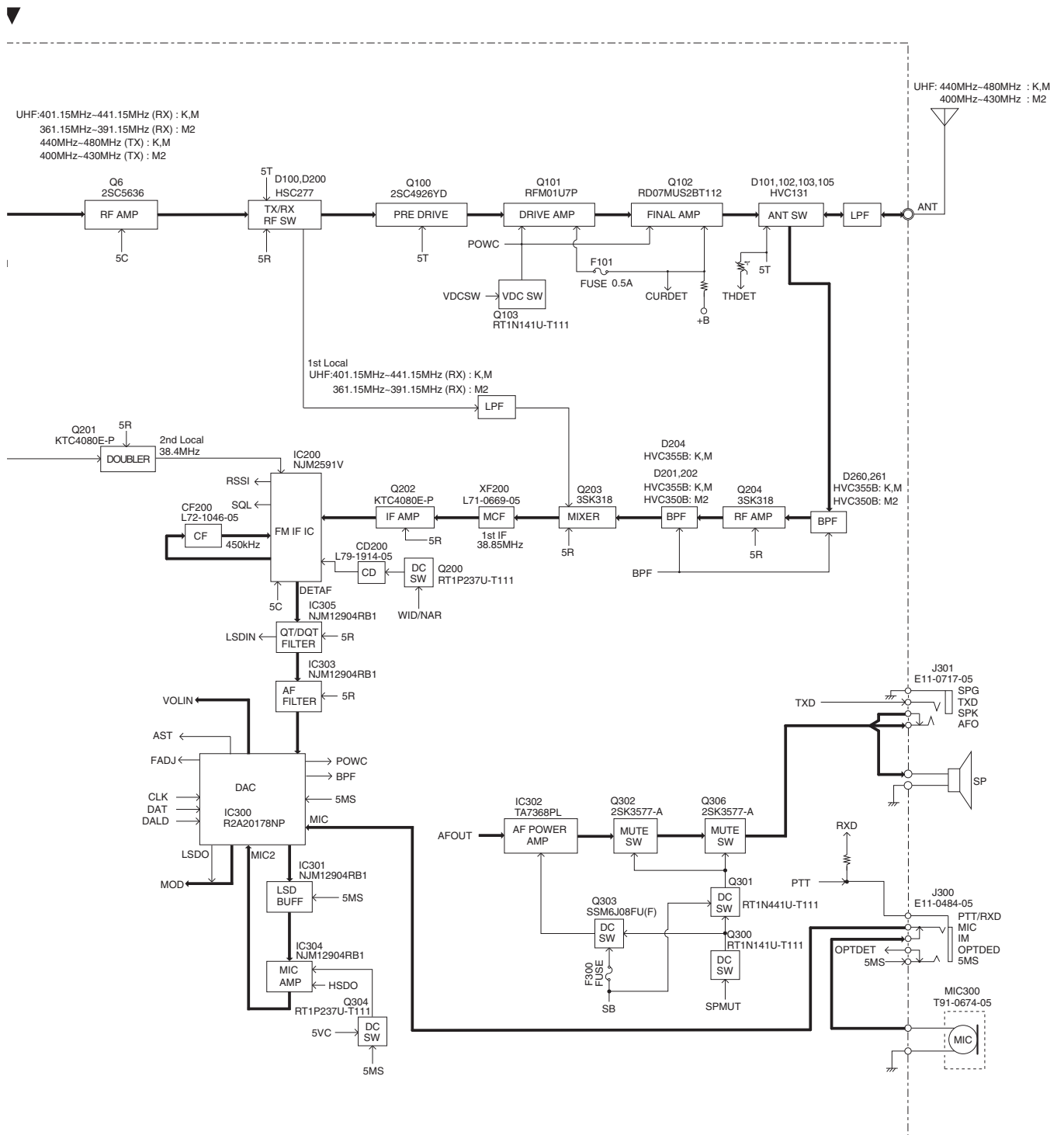
Note : The components marked with a dot (•) are parts of layer 1.



## BLOCK DIAGRAM

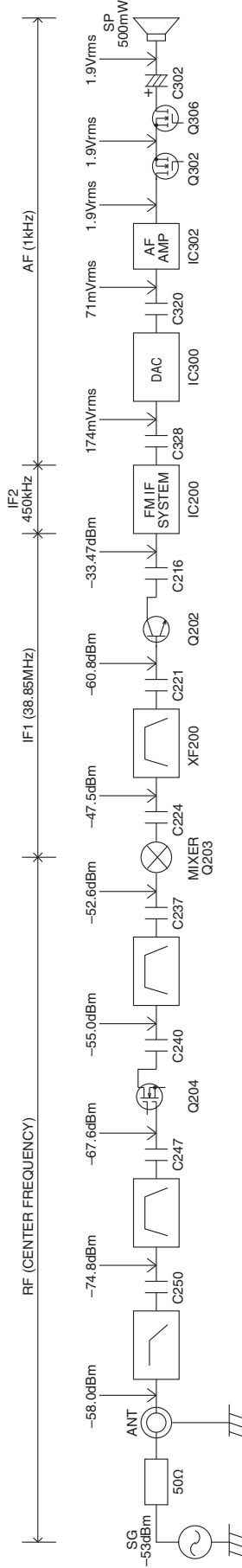


## BLOCK DIAGRAM



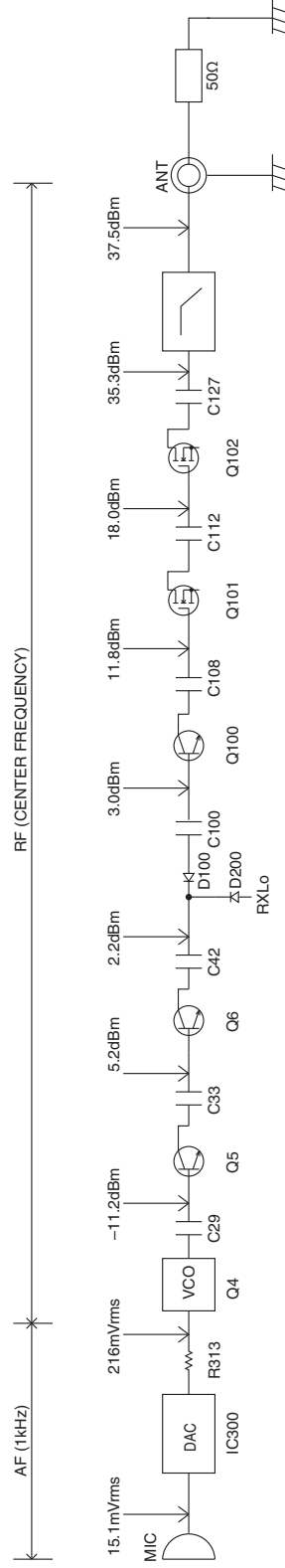
## LEVEL DIAGRAM

### Receiver Section



To make measurements in the AF section, connect the AC level meter.  
 (ANT input: -53dBm, 1kHz FM, 1.5kHz Dev (Narrow).)  
 In the RF section, use a high impedance probe. (ANT input: -53dBm, MOD off).

### Transmitter Section



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

# TK-3000

## SPECIFICATIONS

### General

|  |  |
|--|--|
| Frequency Range .....  | 440~480MHz (K, M) 400~430MHz (M2)                                      |
| Number of Channels .....                                     | Max. 16  |
| Channel Spacing .....  | 25kHz (Wide) / 12.5kHz (Narrow)  |
| PLL Channel Stepping .....                                   | 5kHz, 6.25kHz  |
| Operating Voltage .....                                      | 7.5 V DC±20%   |
| Battery Life .....   | More than 10 hours at 4 watts (5-5-90 duty cycle with KNB-63L battery) |
| Operating Temperature Range .....                            | -20°C to +60°C (-4°F to +140°F)  |
| Frequency Stability .....                                    | ±2.5ppm  |
| Channel Frequency Spread .....                               | 40MHz (K, M) 30MHz (M2)  |
| Dimensions and Weight (Dimensions not including protrusions) |  |
| Radio Only .....   | 54 (2.13) W x 113 (4.45) H x 14 (0.55) D mm (in), 130g (4.6oz)         |
| With KNB-63L battery (1130mAh battery) .....                 | 54 (2.13) W x 113 (4.45) H x 24.9 (0.98) D mm (in), 203g (7.2oz)       |

### Receiver (Measurements made per TIA/EIA-603)

|                                  |                                 |
|----------------------------------|---------------------------------|
| Sensitivity                      |                                 |
| EIA 12dB SINAD .....             | 0.25µV (Wide) / 0.28µV (Narrow) |
| Selectivity .....                | 70dB (Wide) / 60dB (Narrow)     |
| Intermodulation Distortion ..... | 65dB (Wide) / 60dB (Narrow)     |
| Spurious Response .....          | 65dB                            |
| Audio Output .....               | 500mW at 8Ω                     |

### Transmitter (Measurements made per TIA/EIA-603)

|                             |                                   |
|-----------------------------|-----------------------------------|
| RF Output Power .....       | 4W/1W                             |
| Spurious Response .....     | 65dB                              |
| Modulation .....            | 16K0F3E (Wide) / 11K0F3E (Narrow) |
| FM Hum & Noise .....        | 45dB (Wide) / 40dB (Narrow)       |
| Modulation Distortion ..... | Less than 5%                      |

Measurements made per TIA/EIA-603 and specifications shown are typical.

Kenwood reserves the right to change specifications without prior notice or obligation.

## Kenwood Corporation

2967-3, Ishikawa-machi, Hachioji-shi, Tokyo, 192-8525 Japan

### Kenwood U.S.A. Corporation

P.O. BOX 22745, 2201 East Dominguez Street, Long Beach,  
CA 90801-5745, U.S.A.

### Kenwood Electronics Canada Inc.

6070 Kestrel Road, Mississauga, Ontario, Canada L5T 1S8

### Kenwood Electronics Deutschland GmbH

Rembrücker Str. 15, 63150 Heusenstamm, Germany

### Kenwood Electronics Belgium N.V.

Leuvensesteenweg 248 J, 1800 Vilvoorde, Belgium

### Kenwood Electronics France S.A.

L' Etoile Paris Nord 2, 50 Allée des Impressionnistes,  
Bp 58416 Villepinte, 95944 Roissy Ch De Gaulle Cedex

### Kenwood Electronics UK Limited

KENWOOD House, Dwight Road, Watford, Herts.,  
WD18 9EB United Kingdom

### Kenwood Electronics Europe B.V.

Amsterdamseweg 37, 1422 AC Uithoorn, The Netherlands

### Kenwood Electronics Italia S.p.A.

Via G. Sirtori, 7/9 20129 Milano, Italy

### Kenwood Ibérica, S.A.

Bolivia, 239-08020 Barcelona, Spain

### Kenwood Electronics Australia Pty. Ltd.

Talavera Business Park Building A, 4 Talavera Road,  
North Ryde NSW 2113 Australia

### Kenwood Electronics (Hong Kong) Ltd.

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

### Kenwood Electronics Singapore Pte Ltd

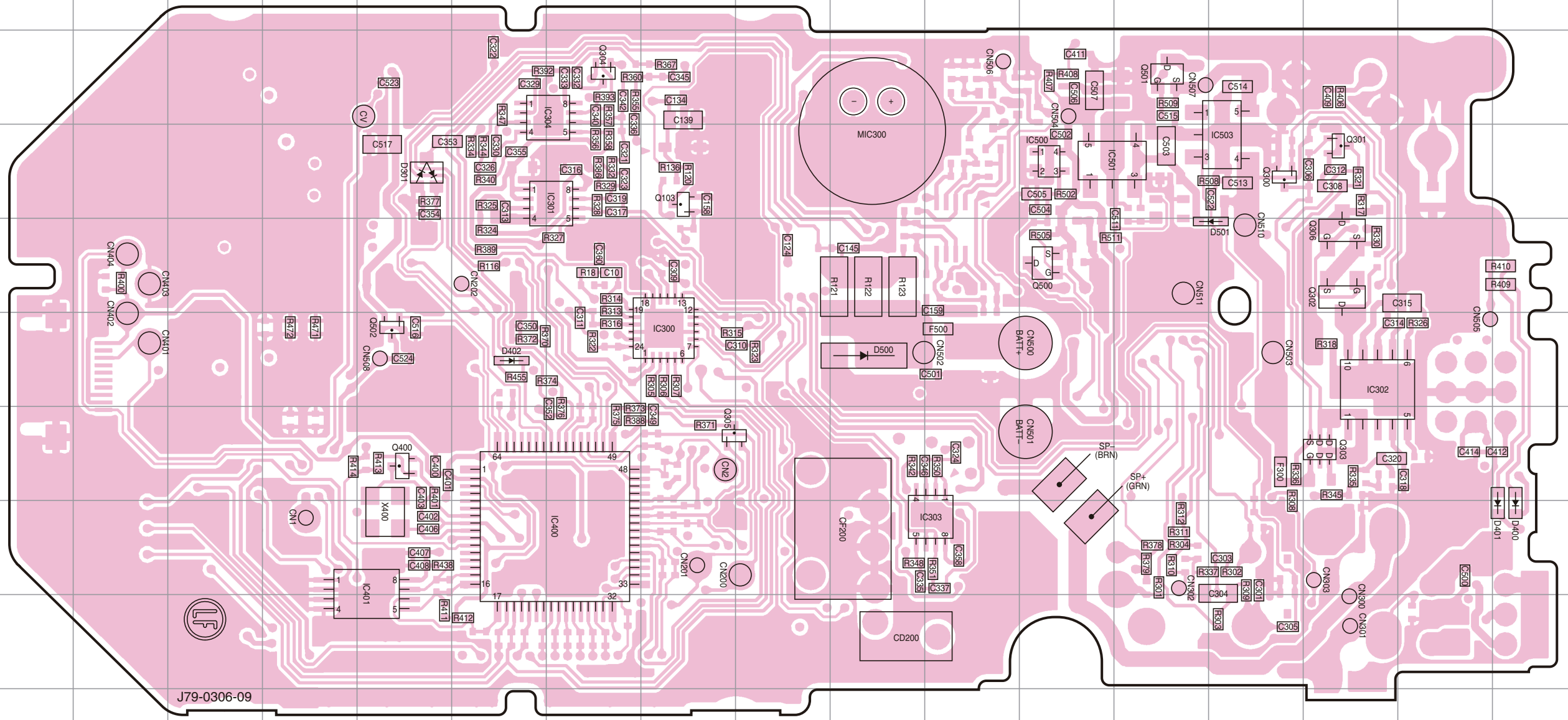
1 Ang Mo Kio Street 63, Singapore 569110

# TK-3000 PC BOARD

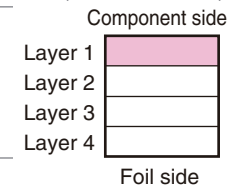
# PC BOARD TK-3000

TX-RX UNIT (X57-8103-XX) -00: K, M -01: M2  
Component side view (J79-0306-09)

TX-RX UNIT (X57-8103-XX) -00: K, M -01: M2  
Component side view (J79-0306-09)



| Ref. No. | Address | Ref. No. | Address | Ref. No. | Address |
|----------|---------|----------|---------|----------|---------|
| IC300    | 6I      | Q103     | 4I      | Q501     | 3N      |
| IC301    | 4H      | Q300     | 4O      | Q502     | 6F      |
| IC302    | 6P      | Q301     | 4P      | D301     | 4F      |
| IC303    | 8L      | Q302     | 5P      | D400     | 8R      |
| IC304    | 3H      | Q303     | 7P      | D401     | 8R      |
| IC400    | 8H      | Q304     | 3H      | D402     | 6G      |
| IC401    | 8F      | Q305     | 7I      | D500     | 6K      |
| IC500    | 4M      | Q306     | 5P      | D501     | 5O      |
| IC501    | 4M      | Q400     | 7F      |          |         |
| IC503    | 4O      | Q500     | 5M      |          |         |

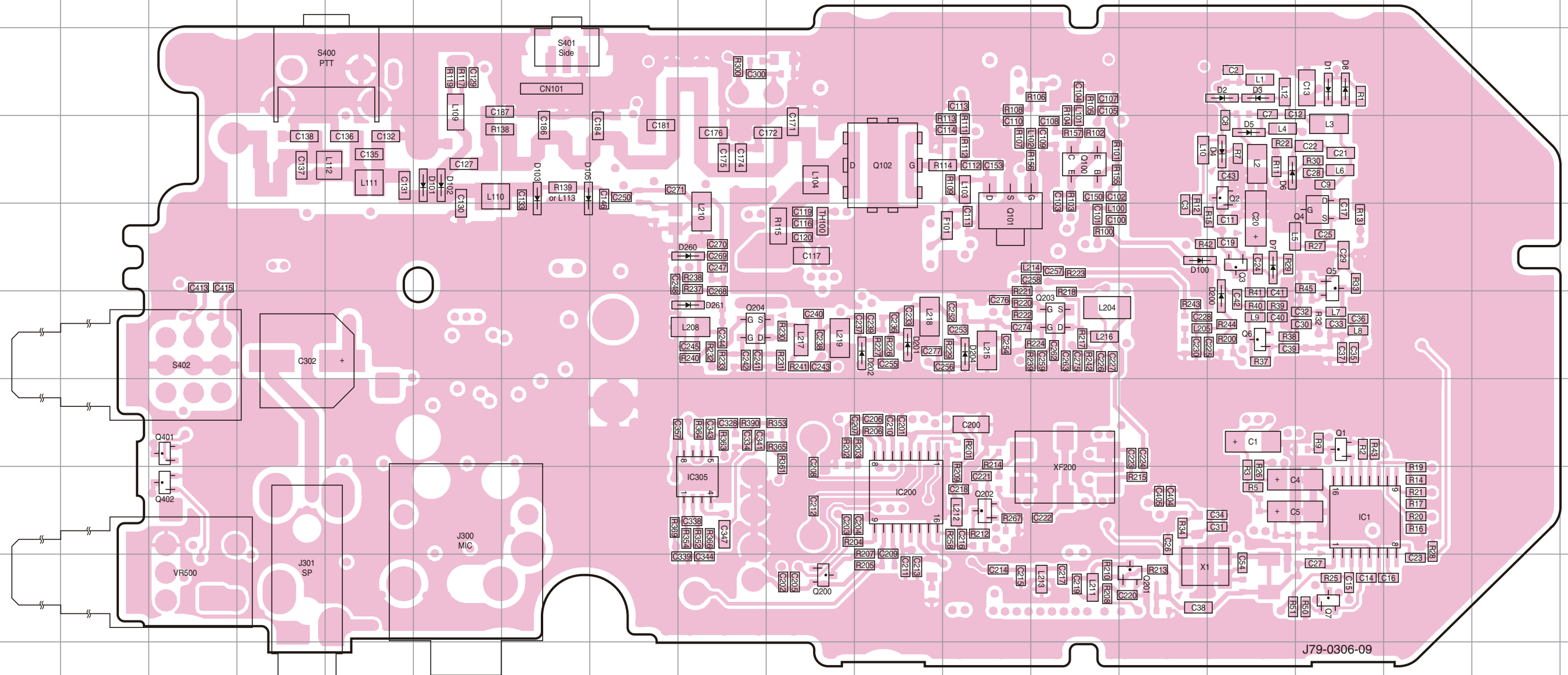


# TK-3000 PC BOARD

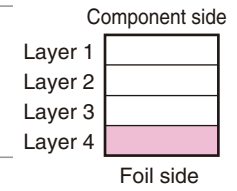
# PC BOARD TK-3000

TX-RX UNIT (X57-8103-XX) -00: K, M -01: M2  
Foil side view (J79-0306-09)

TX-RX UNIT (X57-8103-XX) -00: K, M -01: M2  
Foil side view (J79-0306-09)



| Ref. No. | Address | Ref. No. | Address | Ref. No. | Address | Ref. No. | Address |
|----------|---------|----------|---------|----------|---------|----------|---------|
| IC1      | 8P      | Q100     | 4M      | D1       | 3P      | D102     | 4F      |
| IC200    | 8K      | Q101     | 5L      | D2       | 3O      | D103     | 4G      |
| IC305    | 8I      | Q102     | 4K      | D3       | 3O      | D105     | 4G      |
| Q1       | 7P      | Q200     | 9J      | D4       | 4O      | D200     | 6O      |
| Q2       | 4O      | Q201     | 9N      | D5       | 4O      | D201     | 6K      |
| Q3       | 5O      | Q202     | 8L      | D6       | 4O      | D202     | 6K      |
| Q4       | 5P      | Q203     | 6M      | D7       | 5O      | D204     | 6L      |
| Q5       | 5P      | Q204     | 6I      | D8       | 3P      | D260     | 5I      |
| Q6       | 6O      | Q401     | 7C      | D100     | 5N      | D261     | 6I      |
| Q7       | 9P      | Q402     | 8C      | D101     | 4F      |          |         |



|             |     |     |     |       |       |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |       |      |      |       |      |      |       |      |        |      |        |         |         |         |         |         |         |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |    |    |    |    |     |      |     |    |    |     |   |     |      |      |      |    |     |
|-------------|-----|-----|-----|-------|-------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|-------|------|------|-------|------|------|-------|------|--------|------|--------|---------|---------|---------|---------|---------|---------|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|----|----|----|----|-----|------|-----|----|----|-----|---|-----|------|------|------|----|-----|
| C7          | C12 | C21 | C22 | C54   | C174  | C175 | C176 | C181  | C187 | C225 | C230 | C233 | C236 | C237 | C238 | C239 | C243 | C245 | C247 | C248 | C250  | C253 | C254 | C256  | C268 | C269 | C270  | C271 | C329 | C330  | C349 | D001   | D002 | D004   | D006    | D091    | L2      | L3      | L113    | L205    | L214    | L215 | R139 | R203 | R206 | R221 | R229 | R230 | R231 | R300 | R314 | R330 | R371 | R388 | R471 | R472 |      |      |      |     |     |    |    |    |    |     |      |     |    |    |     |   |     |      |      |      |    |     |
| X57-8103-00 | K.M | 15p | 22p | 0.75p | 0.75p | 4p   | 3p   | 3p(B) | NO   | 2p   | 6p   | 6p   | 4p   | 22p  | 5p   | 1p   | 470p | 1p   | 470p | 270p | 0.75p | 0.1u | 7p   | 0.75p | 0.1u | 17p  | 470p  | NO   | NO   | 1000p | 15p  | 1p     | 5p   | 2p     | 0.027u  | 820p    | 0.15u   | HVC355B | HVC355B | HVC355B | HVC355B | 5.6k | 18k  | NO   | 15n  | 27n  | 8.2n | 0    | 47k  | 560k | 56k  | 470k | 22   | 330  | 1.5k | 3.9k | 180k | 1.8k | 1.8k | 10k | 10k | NO | NO | NO | NO | 22k | 680k | 82k | NO | 15 | 120 | 0 | 10k | 220k | 8.2k | 8.2k | NO | 10k |
| X57-8103-01 | M2  | 27p | 27p | 0.5p  | 1000p | NO   | 15p  | NO    | 22p  | 3p   | 2p   | 2p   | 5p   | 6p   | 10p  | 10p  | 9p   | 0.5p | 0.1u | 7p   | 0.75p | 0.1u | 17p  | 470p  | NO   | NO   | 1000p | 15p  | 1p   | 5p    | 2p   | 0.027u | 560p | 0.047u | HVC350B | HVC350B | HVC355B | HVC355B | HVC355B | HVC355B | 6.8k    | 22k  | 10k  | 18k  | 39k  | NO   | NO   | 22k  | 680k | 82k  | NO   | 15   | 120  | 0    | 10k  | 220k | 8.2k | 8.2k | NO   | 10k |     |    |    |    |    |     |      |     |    |    |     |   |     |      |      |      |    |     |

TX-RX UNIT (X57-8103-XX)

