

TK-3202/3206

SERVICE MANUAL

SUPPLEMENT

This TK-3202/3206 service manual contains a number of sections which differ from the service manual (B51-8678-00) for the TK-3202/3206. For items other than those in this TK-3202/3206 service manual please refer to the service manual (B51-8678-00) for the TK-3202/3206.

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| SPECIFICATIONS | BACK COVER |



Photo is TK-3202.

Service Manual List

| Title | Parts number | Remarks | Destination | PC Board Views |
|---------------|--------------------------------------|------------|----------------------------------------|----------------------------------------------------------------------|
| TK-3202 /3206 | B51-8678-00 | | K,K2,M,M2(TK-3202) M,M3(TK-3206) | J72-0913-09 |
| TK-3202 /3206 | B51-8751-00 (This service manual) | SUPPLEMENT | K,K2,K3,M,M2(TK-3202) M,M3(TK-3206) | J79-0045-09 (TK-3202: S/No.71007031~, TK-3206: S/No.71100001~) |

TK-3206 :
Does not come with antenna.
Antenna is available as an option.



This product uses Lead Free solder.

TK-3202/3206

GENERAL / SYSTEM SET-UP

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:

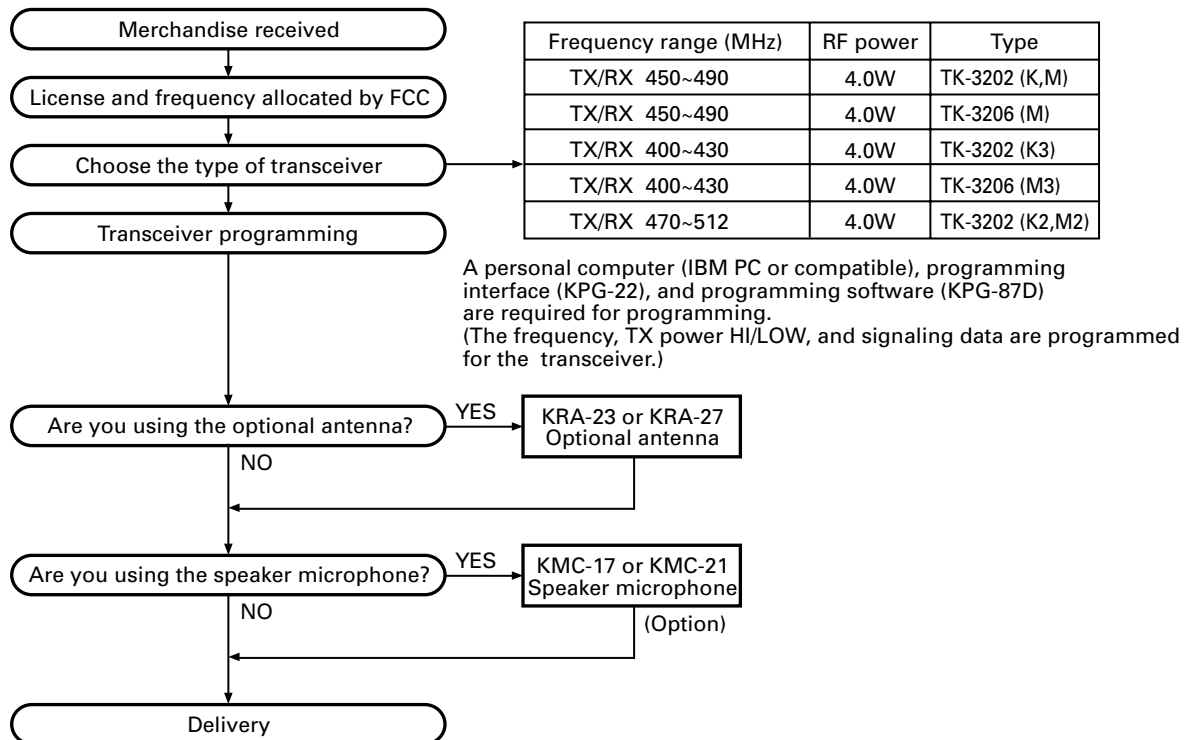
- DO NOT transmit until all RF connectors are verified secure and any open connectors are properly terminated.
- SHUT OFF and DO NOT operate this equipment near electrical blasting caps or in an explosive atmosphere.
- This equipment should be serviced by a qualified technician only.

SERVICE

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

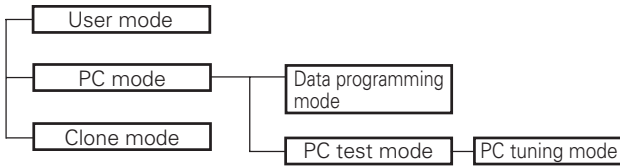
| Unit | | TX-RX Unit | Frequency range | Remarks |
|---------------------|--------|-------------|-----------------|---------------------------------|
| Model & destination | | | | |
| TK-3202 | K,M | X57-6890-20 | 450~490MHz | IF1 : 38.85MHz LOC : 38.4MHz |
| TK-3206 | M | | | |
| TK-3202 | K3 | X57-6890-22 | 400~430MHz | |
| TK-3206 | M3 | | | |
| TK-3202 | K2, M2 | X57-6890-23 | 470~512MHz | |

SYSTEM SET-UP



REALIGNMENT

1. Modes



| Mode | Function |
|-----------------------|---------------------------------------------------------------------------------------|
| User mode | For normal use. |
| PC mode | Used for communication between the transceiver and PC (IBM compatible). |
| Data programming mode | Used to read and write frequency data and other features to and from the transceiver. |
| PC test mode | Used to check the transceiver using the PC. This feature is included in the FPU. |
| 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]+[Side2]+Power ON (Two seconds) |

3. PC Mode

3-1. Preface

The TK-3202/3206 transceivers are programmed using a personal computer, a programming interface cable (KPG-22) and programming software (KPG-87D).

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

3-2. Connection procedure

1. Connect the TK-3202/3206 to the personal computer with the interface cable.
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 transmitting from the transceiver, the red LED lights.
When data is received by the transceiver, the green LED lights.

Notes:

- The data stored in the personal computer must match the model type when it is written into the EEPROM.
- Change the TK-3202/3206 to PC mode, then attach the interface cable.

3-3. KPG-22 description

(PC programming interface cable: Option)

The KPG-22 is required to interface the TK-3202/3206 with the computer. It has a circuit in its D-sub connector (25-pin) case that converts the RS-232C logic level to the TTL level.

The KPG-22 connects the SP/MIC connector of the TK-3202/3206 to the computer's RS-232C serial port.

3-4. Programming software description

KPG-87D is the programming software for TK-3202/3206 supplied on a CD-ROM. This software runs under Windows 98, ME, Windows 2000 or XP on an IBM-PC or compatible machine.

The data can be input to or read from TK-3202/3206 and edited on the screen. The programmed or edited data can be printed out. It is also possible to tune the transceiver.

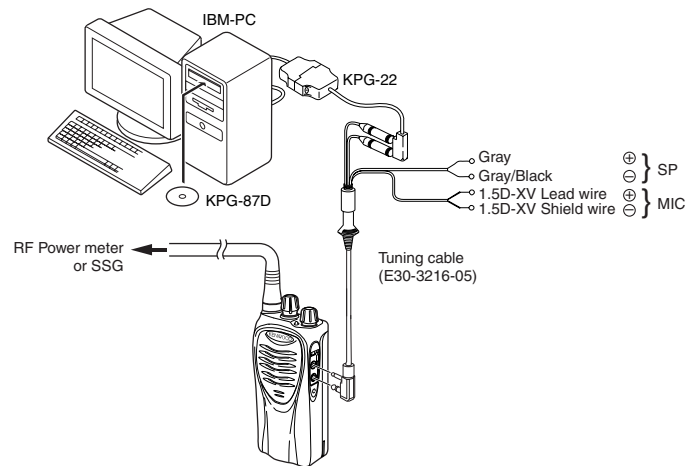


Fig. 1

4. Clone Mode

4-1. Outline

"Clone Mode" copies the transceiver data to another transceiver.

The dealer can copy the transceiver data to another transceiver even without the use of a personal computer.

4-2. Example

The transceiver can copy the programming data to one or more transceivers via RF communication.

The clone source and clone target/s must be in Clone mode.

4-3. Operation

1. To switch the clone target/s to Clone mode, press and hold the [PTT] and [Side2] keys while turning the transceiver power ON.
2. Wait for 2 seconds. The LED will light orange and the transceiver will announce "Clone".
3. Select a channel table number using Side1 (increment channel table) and Side2 (decrement channel table) keys.

TK-3202/3206

REALIGNMENT

4. To switch the clone source to Clone mode, press and hold the [PTT] and [Side2] keys while turning the transceiver power ON.
5. Wait for 2 seconds. The LED will light orange and the transceiver will announce "Clone".
6. Select the same channel table number as the clone target/s.
7. Press [PTT] on the clone source to begin data transmission. When the clone target starts to receive data, the LED will light green.
When the clone source finishes sending data, a "confirmation" tone will sound.
If data transmission fails while cloning, an "error" tone will sound from the target unit.
8. If the cloning fails, no data will be available in the target unit when it is returned to User mode.
9. When the cloning is successful, the target unit's "Scan" and "Key lock" functions will return to their default values (Scan = OFF, Key lock = OFF).

Notes:

- The dealer can clone data to two or more transceivers by repeating the above procedures.
- If the transceivers Clone Mode is configured as "Disabled", the transceiver cannot enter Clone mode.
- The table shown below will cover the frequency tables used for wireless cloning.
- Clone mode cannot be entered in battery low state.
- A unit cannot be a "Source Unit" if it is unprogrammed. If [PTT] is pressed, an "error" tone will sound.
- The language used in cloning depends on the "Model type" setting, not the FPU setting. C, C2, C5 and C6 type TK-3207 transceivers will use Chinese. Other types English.
- Once a unit is set to be the Source, it cannot be a target after the data has been transmitted. This protects the data in the Source unit.
- Electronic interface may cause a failure in data transfer during Wireless Clone, such as when waveforms or electromagnetics are being performed at the workbench.
- **Clone mode can be used ONLY by the authorized service personnel.**
- **The Clone mode setting must be configured as "Disable" before being delivered to the end-user.**
- **To clone, replace the antenna from both the source transceiver and the target transceiver with a dummy load.**
- **The transmit output power is automatically set to Low in Clone mode.**

Clone Frequency Table

| MODEL | TK-3202 | | |
|---------------------------|---------|---------|---------|
| Type | K,M | K2,M2 | K3 |
| Operating Frequency (MHz) | 450~490 | 470~512 | 400~430 |
| Clone Frequency Table | | | |
| 1 | 450.000 | 472.000 | 400.000 |
| 2 | 452.000 | 474.000 | 401.000 |
| 3 | 454.000 | 476.000 | 402.000 |
| 4 | 456.000 | 478.000 | 403.000 |
| 5 | 458.000 | 480.000 | 404.000 |
| 6 | 460.000 | 482.000 | 405.000 |
| 7 | 462.000 | 484.000 | 406.000 |
| 8 | 464.000 | 486.000 | 407.000 |
| 9 | 466.000 | 488.000 | 408.000 |
| 10 | 468.000 | 490.000 | 409.000 |
| 11 | 470.000 | 492.000 | 410.000 |
| 12 | 472.000 | 494.000 | 411.000 |
| 13 | 474.000 | 496.000 | 412.000 |
| 14 | 476.000 | 498.000 | 413.000 |
| 15 | 478.000 | 500.000 | 414.000 |
| 16 | 480.000 | 502.000 | 415.000 |
| 17 | 482.000 | 504.000 | 416.000 |
| 18 | 484.000 | 506.000 | 417.000 |
| 19 | 486.000 | 508.000 | 418.000 |
| 20 | 488.000 | 510.000 | 419.000 |

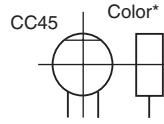
| MODEL | TK-3206 | |
|---------------------------|---------|---------|
| Type | M | M3 |
| Operating Frequency (MHz) | 450~490 | 400~430 |
| Clone Frequency Table | | |
| 1 | 450.000 | 400.000 |
| 2 | 452.000 | 401.000 |
| 3 | 454.000 | 402.000 |
| 4 | 456.000 | 403.000 |
| 5 | 458.000 | 404.000 |
| 6 | 460.000 | 405.000 |
| 7 | 462.000 | 406.000 |
| 8 | 464.000 | 407.000 |
| 9 | 466.000 | 408.000 |
| 10 | 468.000 | 409.000 |
| 11 | 470.000 | 410.000 |
| 12 | 472.000 | 411.000 |
| 13 | 474.000 | 412.000 |
| 14 | 476.000 | 413.000 |
| 15 | 478.000 | 414.000 |
| 16 | 480.000 | 415.000 |
| 17 | 482.000 | 416.000 |
| 18 | 484.000 | 417.000 |
| 19 | 486.000 | 418.000 |
| 20 | 488.000 | 419.000 |

PARTS LIST

CAPACITORS

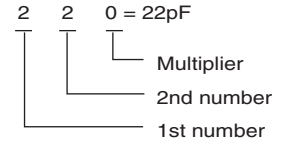
CC 45 TH 1H 220 J
 1 2 3 4 5 6

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



Capacitor value

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



Temperature coefficient

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

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

Example : CC45TH = -470 ± 60ppm/°C

Tolerance (More than 10pF)

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

(Less than 10pF)

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

Voltage rating

| 2nd word \ 1st word | A | B | C | D | E | F | G | H | J | K | V |
|---------------------|------|------|------|------|------|------|------|------|------|------|----|
| 0 | 1.0 | 1.25 | 1.6 | 2.0 | 2.5 | 3.15 | 4.0 | 5.0 | 6.3 | 8.0 | - |
| 1 | 10 | 12.5 | 16 | 20 | 25 | 31.5 | 40 | 50 | 63 | 80 | 35 |
| 2 | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 500 | 630 | 800 | - |
| 3 | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 4000 | 5000 | 6300 | 8000 | - |

Chip capacitors

(EX) C C 7 3 F S L 1 H 0 0 0 J
 1 2 3 4 5 6 7

(Chip)(CH,RH,UJ,SL)

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

(Chip)(B,F)

Refer to the table above.

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

Dimension (Chip capacitors)

| Dimension code | L | W | T |
|----------------|------------|------------|----------------|
| Empty | 5.6 ± 0.5 | 5.0 ± 0.5 | Less than 2.0 |
| A | 4.5 ± 0.5 | 3.2 ± 0.4 | Less than 2.0 |
| B | 4.5 ± 0.5 | 2.0 ± 0.3 | Less than 2.0 |
| C | 4.5 ± 0.5 | 1.25 ± 0.2 | Less than 1.25 |
| D | 3.2 ± 0.4 | 2.5 ± 0.3 | Less than 1.5 |
| E | 3.0 ± 0.2 | 1.6 ± 0.2 | Less than 1.25 |
| F | 2.0 ± 0.3 | 1.25 ± 0.2 | Less than 1.25 |
| G | 1.6 ± 0.2 | 0.8 ± 0.2 | Less than 1.0 |
| H | 1.0 ± 0.05 | 0.5 ± 0.05 | 0.5 ± 0.05 |

RESISTORS

Chip resistor (Carbon)

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

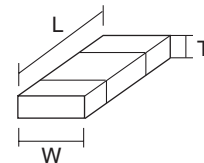
(Chip)(B,F)

Carbon resistor (Normal type)

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

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

Dimension



Dimension (Chip resistor)

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

Rating wattage

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

TK-3202/3206

PARTS LIST

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

TK-3202/3206 (Y50-5900-XX) TX-RX UNIT (X57-6890-XX)

| Ref. No. | Address | New parts | Parts No. | Description | Destination |
|---------------------|---------|-----------|-------------|---------------------------------|-------------|
| TK-3202/3206 | | | | | |
| 1 | 1A | * | A02-3851-83 | PLASTIC CABINET ASSY(16CH) | BM,BM3 |
| 1 | 1A | * | A02-3852-93 | PLASTIC CABINET ASSY(8CH) | AK,AK2,AM |
| 1 | 1A | * | A02-3852-93 | PLASTIC CABINET ASSY(8CH) | AM2,AK3 |
| 2 | 1A | * | A02-3858-53 | PLASTIC CABINET | BM,BM3 |
| 2 | 1A | * | A02-3858-53 | PLASTIC CABINET | AK,AK2,AM |
| 2 | 1A | * | A02-3858-53 | PLASTIC CABINET | AM2,AK3 |
| 3 | 3A | | A10-4078-31 | CHASSIS | |
| 4 | 1B | | A21-1644-23 | DRESSING PANEL(16CH) | BM,BM3 |
| 4 | 1B | * | A21-1645-23 | DRESSING PANEL(8CH) | AK,AK2,AM |
| 4 | 1B | * | A21-1645-23 | DRESSING PANEL(8CH) | AM2,AK3 |
| 6 | 2C,2E | | B09-0680-03 | CAP(SP/MIC) ACCESSORY | |
| 7 | 2B | | B11-1817-04 | ILLUMINATION GUIDE | |
| 8 | 1A | | B43-1156-04 | BADGE | |
| 9 | 1C | * | B62-1762-30 | INSTRUCTION MANUAL | AK,AK2,AM |
| 9 | 1C | * | B62-1762-30 | INSTRUCTION MANUAL | AM2,AK3 |
| 9 | 1C | * | B62-1869-20 | INSTRUCTION MANUAL | AK,AK2,AK3 |
| 10 | 1E | | B62-1763-10 | INSTRUCTION MANUAL | BM,BM3 |
| 11 | 1A | | D10-0649-03 | LEVER | |
| 12 | 1A | | D21-0863-04 | SHAFT | |
| 13 | 1A | | D32-0441-03 | STOPPER | |
| 15 | 2A | | E04-0451-05 | RF COAXIAL RECEPTACLE(SMA) | |
| 16 | 3A | | E23-1253-04 | TERMINAL(BATT-) | |
| 17 | 2B | | E37-1175-05 | PROCESSED LEAD WIRE(BROWN:SP+) | |
| 18 | 2B | | E37-1176-05 | PROCESSED LEAD WIRE(GREEN:SP-) | |
| 20 | 3A | | F20-3353-14 | INSULATING SHEET(CHASSIS BATT+) | |
| 22 | 2A | | G01-4542-04 | COIL SPRING(LEVER) | |
| 23 | 1A | | G01-4543-04 | COIL SPRING(STOPPER) | |
| 24 | 2A | | G10-1330-04 | FIBROUS SHEET(IC302:AUDIO IC) | |
| 25 | 2A | | G11-4283-04 | RUBBER SHEET(Q103:FINAL FET) | |
| 26 | 2A | | G11-4313-04 | SHEET(MIC ELEMENT) | |
| 28 | 3A | | G13-2033-04 | CUSHION(TERMINAL BATT-) | |
| 29 | 3A | | G13-2034-14 | CUSHION(TERMINAL BATT-) | |
| 30 | 3A | | G13-2038-24 | CUSHION(CHASSIS-CERAMIC FILTER) | |
| 31 | 2A | | G13-2039-14 | CUSHION(PCB-CERAMIC FILTER) | |
| 32 | 3B | | G13-2045-04 | CUSHION(CHASSIS) | |
| 33 | 2A | * | G13-2051-04 | CUSHION(VCO) | |
| 34 | 2B | | G13-2088-04 | CUSHION(CHASSIS VOL/CH) | |
| 35 | 3A | | G53-1604-03 | PACKING(CHASSIS) | |
| 36 | 3A | | G53-1605-03 | PACKING(TERMINAL BATT+) | |
| 37 | 2B | | G53-1606-13 | PACKING(VOL/CH/LED) | |
| 38 | 1B | | G53-1607-03 | PACKING(SP/MIC) | |
| 39 | 2B | | G53-1608-03 | PACKING(SP) | |
| 40 | 2A | | G53-1609-14 | PACKING(MIC ELEMENT) | |
| 41 | 2A | | G53-1610-04 | PACKING(SMA) | |
| 43 | 2C,2F | | H12-3179-05 | PACKING FIXTURE | |
| 44 | 1D | | H13-2109-03 | CARTON BOARD | AK,AK2,AM |
| 44 | 1D | | H13-2109-03 | CARTON BOARD | AM2,AK3 |
| 45 | 1C,1E | | H25-0085-04 | PROTECTION BAG (100/200/0.07) | |
| 46 | 3C | | H52-2056-02 | ITEM CARTON CASE | AK,AK2,AM |
| 46 | 3C | | H52-2056-02 | ITEM CARTON CASE | AM2,AK3 |
| 47 | 3F | | H52-2057-02 | ITEM CARTON CASE | BM,BM3 |
| 48 | 2C,2F | | J19-5472-03 | HOLDER(SP/MIC) ACCESSORY | |
| 49 | 2A | | J19-5473-03 | HOLDER ASSY(TERMINAL BATT+) | |

| Ref. No. | Address | New parts | Parts No. | Description | Destination |
|----------|----------|-----------|-------------|---------------------------------|-------------|
| 50 | 2B | | J21-8478-04 | MOUNTING HARDWARE(SP/MIC) | |
| 51 | 2B | | J21-8525-03 | MOUNTING HARDWARE(VOL/CH) | |
| 52 | 2C,2F | | J29-0713-05 | BELT CLIP ACCESSORY | |
| 53 | 2B | | J82-0092-05 | FPC | |
| 54 | 1A | | K29-9307-13 | BUTTON KNOB(SIDE1/SIDE2) | |
| 55 | 1A | | K29-9308-13 | BUTTON KNOB(PTT) | |
| 56 | 1B | | K29-9309-03 | KNOB(VOL) | |
| 57 | 1B | | K29-9318-03 | KNOB(CH) | |
| A | 2B | * | N14-0819-04 | CIRCULAR NUT(VOL KNOB) | |
| B | 2B | | N14-0820-04 | CIRCULAR NUT(CH KNOB) | |
| C | 2A | | N30-2604-48 | PAN HEAD MACHINE SCREW(SMA) | |
| D | 3A | | N30-2606-48 | PAN HEAD MACHINE SCREW(CHASSIS) | |
| E | 2A,3A,2B | | N83-2005-48 | PAN HEAD TAPTITE SCREW(PCB) | |
| 60 | 1C,2F | | N99-2046-05 | SCREW SET ACCESSORY | |
| 61 | 2B | * | R31-0661-05 | VARIABLE RESISTOR(POWER SW/VOL) | |
| 62 | 2B | * | S60-0434-05 | ROTARY SWITCH(16CH) | BM,BM3 |
| 62 | 2B | * | S60-0435-05 | ROTARY SWITCH(8CH) | AK,AK2,AM |
| 62 | 2B | * | S60-0435-05 | ROTARY SWITCH(8CH) | AM2,AK3 |
| 63 | 1B | | T07-0369-15 | SPEAKER | |
| 64 | 1C | * | T90-1039-15 | WHIP ANTENNA ACCESSORY | AK,AM |
| 64 | 1C | * | T90-1040-15 | WHIP ANTENNA ACCESSORY | AK2,AM2 |
| 64 | 1C | * | T90-1041-15 | WHIP ANTENNA ACCESSORY | AK3 |
| 65 | 2D | | W08-0969-15 | CHARGER ACCESSORY | AK,AK2,AM |
| 65 | 2D | | W08-0969-15 | CHARGER ACCESSORY | AM2,AK3 |
| 66 | 1D | * | W08-0970-15 | AC ADAPTER(AC120V) ACCESSORY | AK,AK2,AK3 |
| 66 | 1D | * | W08-0971-15 | AC ADAPTER(AC230V) ACCESSORY | AM,AM2 |

TX-RX UNIT (X57-6890-XX) -20 :TK-3202 (K,M) TK-3206 (M) -22 :TK-3202 (K3) TK-3206 (M3) -23 :TK-3202 (K2,M2)

| | | | | | |
|-------|--|--|---------------|----------------------|--|
| D403 | | | B30-2156-05 | LED(RED) | |
| D404 | | | B30-2157-05 | LED(YELLOW) | |
| C1 | | | CK73HB1H332K | CHIP C 3300PF K | |
| C2 | | | CK73HB1C682K | CHIP C 6800PF K | |
| C3 | | | CK73GB1A105K | CHIP C 1.0UF K | |
| C4 | | | CK73HB1C103K | CHIP C 0.010UF K | |
| C5 | | | CK73HB1H102K | CHIP C 1000PF K | |
| C6 | | | CK73HB1A104K | CHIP C 0.10UF K | |
| C7 ,8 | | | CC73HCH1H101J | CHIP C 100PF J | |
| C9 | | | CC73HCH1H100D | CHIP C 10PF D | |
| C10 | | | CS77CP0J100M | CHIP-TAN 10UF 6.3WV | |
| C11 | | | CC73HCH1H101J | CHIP C 100PF J | |
| C12 | | | CK73HB1H102K | CHIP C 1000PF K | |
| C13 | | | CK73HB1A104K | CHIP C 0.10UF K | |
| C14 | | | CK73HB1C103K | CHIP C 0.010UF K | |
| C15 | | | CC73HCH1H100D | CHIP C 10PF D | |
| C16 | | | CK73HB1H102K | CHIP C 1000PF K | |
| C17 | | | CC73HCH1H470J | CHIP C 47PF J | |
| C18 | | | CC73HCH1H180J | CHIP C 18PF J | |
| C19 | | | CK73HB1A104K | CHIP C 0.10UF K | |
| C21 | | | CS77CP0J100M | CHIP-TAN 10UF 6.3WV | |
| C22 | | | CS77AA1VR33M | CHIP-TAN 0.33UF 35WV | |
| C24 | | | CK73HB1H102K | CHIP C 1000PF K | |
| C25 | | | CC73HCH1H020B | CHIP C 2.0PF B | |

PARTS LIST

TX-RX UNIT (X57-6890-XX)

| Ref. No. | Address | New parts | Parts No. | Description | Destination | Ref. No. | Address | New parts | Parts No. | Description | Destination |
|----------|---------|-----------|---------------|---------------------|-------------|----------|---------|-----------|---------------|---------------------|-------------|
| C26 | | | CC73HCH1H300J | CHIP C 30PF J | | C75, 76 | | | CK73HB1H102K | CHIP C 1000PF K | |
| C27 | | * | CS77CA1C3R3M | CHIP-TAN 3.3UF 16WV | | C77 | | | CK73HB1H471K | CHIP C 470PF K | |
| C29, 30 | | | CK73HB1H471K | CHIP C 470PF K | | C78 | | | CC73HCH1H330J | CHIP C 33PF J | |
| C32 | | * | CS77CA1V0R1M | CHIP-TAN 0.1UF 35WV | | C79 | | | CS77CPOJ100M | CHIP-TAN 10UF 6.3WV | |
| C33, 34 | | | CK73HB1H102K | CHIP C 1000PF K | | C80 | | | CK73HB1H471K | CHIP C 470PF K | |
| C35 | | | CC73HCH1H270J | CHIP C 27PF J | | C83 | | | CC73HCH1H150J | CHIP C 15PF J | |
| C38 | | | CC73HCH1H050B | CHIP C 5.0PF B | | C84-86 | | | CK73HB1H102K | CHIP C 1000PF K | |
| C39 | | | CK73GB1H332K | CHIP C 3300PF K | | C87 | | | CC73HCH1H100D | CHIP C 10PF D | |
| C40 | | | CC73HCH1H030B | CHIP C 3.0PF B | | C90 | | | CK73HB1H102K | CHIP C 1000PF K | |
| C41 | | | CK73GB1H682K | CHIP C 6800PF K | | C100 | | | CK73HB1H471K | CHIP C 470PF K | |
| C42 | | | CC73HCH1H050B | CHIP C 5.0PF B | | C101 | | | CK73GB1H471K | CHIP C 470PF K | |
| C43 | | | CC73HCH1H100C | CHIP C 10PF C | | C102 | | | CC73GCH1H120J | CHIP C 12PF J | |
| C44 | | | CK73HB1H471K | CHIP C 470PF K | | C106 | | | CK73HB1H471K | CHIP C 470PF K | |
| C45 | | | CK73GB1A105K | CHIP C 1.0UF K | | C107 | | | CC73GCH1H060B | CHIP C 6.0PF B | AK,AK2,AM |
| C47 | | | CC73HCH1H101J | CHIP C 100PF J | | C107 | | | CC73GCH1H070D | CHIP C 7.0PF D | AM2,BM |
| C48 | | | CK73HB1H471K | CHIP C 470PF K | | C108 | | | CK73HB1H471K | CHIP C 470PF K | BM3,AK3 |
| C49 | | | CC73HCH1H101J | CHIP C 100PF J | | C110,111 | | | CK73GB1H471K | CHIP C 470PF K | |
| C50 | | | CC73HCH1H100D | CHIP C 10PF D | | C112 | | | CC73GCH1H070D | CHIP C 7.0PF D | |
| C52 | | | CC73HCH1H110J | CHIP C 11PF J | AK,AM,BM | C113 | | | CK73GB1C104K | CHIP C 0.10UF K | |
| C52 | | | CC73HCH1H110J | CHIP C 11PF J | BM3,AK3 | C116 | | | CC73GCH1H030B | CHIP C 3.0PF B | BM3,AK3 |
| C52 | | | CC73HCH1H120J | CHIP C 12PF J | AK2,AM2 | C116 | | | CC73GCH1H110J | CHIP C 11PF J | AK,AK2,AM |
| C53 | | | CC73HCH1H020B | CHIP C 2.0PF B | AK,AK2,AM | C116 | | | CC73GCH1H110J | CHIP C 11PF J | AM2,BM |
| C53 | | | CC73HCH1H020B | CHIP C 2.0PF B | AM2,BM | C119 | | | CK73GB1H471K | CHIP C 470PF K | |
| C53 | | | CC73HCH1H040B | CHIP C 4.0PF B | BM3,AK3 | C121 | | | CC73GCH1H120J | CHIP C 12PF J | BM3,AK3 |
| C54 | | | CC73HCH1H060B | CHIP C 6.0PF B | AK,AM,BM | C122 | | | CC73GCH1H330J | CHIP C 33PF J | |
| C54 | | | CC73HCH1H070B | CHIP C 7.0PF B | BM3,AK3 | C123 | | | CC73GCH1H330G | CHIP C 33PF G | |
| C54 | | | CC73HCH1H090B | CHIP C 9.0PF B | AK2,AM2 | C124 | | | CC73HCH1H100D | CHIP C 10PF D | |
| C55 | | | CC73HCH1H110J | CHIP C 11PF J | AK,AM,BM | C125 | | | CC73GCH1H060B | CHIP C 6.0PF B | AK,AK2,AM |
| C55 | | | CC73HCH1H120J | CHIP C 12PF J | AK2,AM2,BM3 | C125 | | | CC73GCH1H060B | CHIP C 6.0PF B | AM2,BM |
| C55 | | | CC73HCH1H120J | CHIP C 12PF J | AK3 | C125 | * | | CC73GCH1H110G | CHIP C 11PF G | BM3,AK3 |
| C56 | | | CC73HCH1H020B | CHIP C 2.0PF B | AK,AM,BM | C126 | | | CS77CA1C010M | CHIP-TAN 1.0UF 16WV | |
| C56 | | | CC73HCH1H050B | CHIP C 5.0PF B | BM3,AK3 | C127 | | | CC73GCH1H200J | CHIP C 20PF J | AK,AK2,AM |
| C57 | | | CC73HCH1H0R5B | CHIP C 0.5PF B | BM3,AK3 | C127 | | | CC73GCH1H200J | CHIP C 20PF J | AM2,BM |
| C58 | | | CC73HCH1H060B | CHIP C 6.0PF B | AK,AM,BM | C128 | | | CK73HB1H471K | CHIP C 470PF K | |
| C58 | | | CC73HCH1H070B | CHIP C 7.0PF B | BM3,AK3 | C129 | | | CK73GB1H471K | CHIP C 470PF K | |
| C58 | | | CC73HCH1H090B | CHIP C 9.0PF B | AK2,AM2 | C130 | | | CK73HB1H471K | CHIP C 470PF K | |
| C59 | | | CC73HCH1H1R5B | CHIP C 1.5PF B | BM3,AK3 | C132 | | | CC73GCH1H200J | CHIP C 20PF J | AK,AM,BM |
| C59, 60 | | | CC73HCH1H010B | CHIP C 1.0PF B | AK,AK2,AM | C132 | | | CC73GCH1H270J | CHIP C 27PF J | AK2,AM2 |
| C59, 60 | | | CC73HCH1H010B | CHIP C 1.0PF B | AM2,BM | C132 | | | CC73GCH1H390J | CHIP C 39PF J | BM3,AK3 |
| C60 | | | CC73HCH1H010B | CHIP C 1.0PF B | BM3,AK3 | C133 | | | CK73GB1H471K | CHIP C 470PF K | |
| C61 | | | CC73HCH1H030B | CHIP C 3.0PF B | AK,AM,BM | C134 | | | CK73GB1H103K | CHIP C 0.10UF K | |
| C61 | | | CC73HCH1H040B | CHIP C 4.0PF B | AK2,AM2,BM3 | C135 | | | CK73GB1C104K | CHIP C 0.10UF K | |
| C61 | | | CC73HCH1H040B | CHIP C 4.0PF B | AK3 | C136 | | | CK73GB1A105K | CHIP C 1.0UF K | |
| C62 | | | CC73HCH1H020B | CHIP C 2.0PF B | AK,AK2,AM | C138 | | | CK73GB1H102K | CHIP C 1000PF K | |
| C62 | | | CC73HCH1H020B | CHIP C 2.0PF B | AM2,BM | C140 | | | CC73GCH1H101J | CHIP C 100PF J | |
| C62 | | | CC73HCH1H030B | CHIP C 3.0PF B | BM3,AK3 | C145 | | | CC73GCH1H180J | CHIP C 18PF J | AK,AK2,AM |
| C63 | | | CC73HCH1H101J | CHIP C 100PF J | | C145 | | | CC73GCH1H180J | CHIP C 18PF J | AM2,BM |
| C64 | | | CC73HCH1H040B | CHIP C 4.0PF B | AK,AM,BM | C145 | | | CC73GCH1H300J | CHIP C 30PF J | BM3,AK3 |
| C64 | | | CC73HCH1H040B | CHIP C 4.0PF B | BM3,AK3 | C146 | | | CK73GB1H102K | CHIP C 1000PF K | |
| C64, 65 | | | CC73HCH1H050B | CHIP C 5.0PF B | AK2,AM2 | C148 | | | CK73GB1H102K | CHIP C 1000PF K | |
| C65, 66 | | | CC73HCH1H050B | CHIP C 5.0PF B | BM3,AK3 | C149 | | | CC73GCH1H070B | CHIP C 7.0PF B | AK,AM,BM |
| C65, 66 | | | CC73HCH1H060B | CHIP C 6.0PF B | AK,AM,BM | C149 | | | CC73GCH1H070B | CHIP C 7.0PF B | BM3,AK3 |
| C66 | | | CC73HCH1H060B | CHIP C 6.0PF B | AK2,AM2 | C151 | | | CC73GCH1H070B | CHIP C 7.0PF B | AK2,AM2,BM3 |
| C67 | | | CC73HCH1H040B | CHIP C 4.0PF B | BM3,AK3 | C151 | | | CC73GCH1H070B | CHIP C 7.0PF B | AK3 |
| C67 | | | CC73HCH1H050B | CHIP C 5.0PF B | AK,AK2,AM | C152 | | | CC73GCH1H200J | CHIP C 20PF J | |
| C67 | | | CC73HCH1H050B | CHIP C 5.0PF B | AM2,BM | C154 | | | CK73GB1H471K | CHIP C 470PF K | |
| C68-70 | | | CK73HB1H471K | CHIP C 470PF K | | C156 | | | CC73GCH1H030B | CHIP C 3.0PF B | BM3,AK3 |
| C71, 72 | | | CK73HB1A104K | CHIP C 0.10UF K | | C156 | | | CC73GCH1H040B | CHIP C 4.0PF B | AK,AM,BM |
| C73, 74 | | | CC73HCH1H0R5B | CHIP C 0.5PF B | | | | | | | |

AK : TK-3202 (K) AK2 : TK-3202 (K2) AK3 : TK-3202 (K3) AM : TK-3202 (M) AM2 : TK-3202 (M2)
 BM : TK-3206 (M) BM3 : TK-3206 (M3)

TK-3202/3206

PARTS LIST

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| Ref. No. | Address | New parts | Parts No. | Description | Destination | Ref. No. | Address | New parts | Parts No. | Description | Destination |
|----------|---------|-----------|---------------|---------------------|-------------|----------|---------|-----------|---------------|----------------------|-------------|
| C156 | | | CC73GCH1H3R5B | CHIP C 3.5PF B | AK2,AM2 | C244 | | | CC73GCH1H030B | CHIP C 3.0PF B | AK,AM,BM |
| C157 | | | CC73GCH1H040B | CHIP C 4.0PF B | AK2,AM2,BM3 | C244 | | | CC73GCH1H3R5B | CHIP C 3.5PF B | AK2,AM2 |
| C157 | | | CC73GCH1H040B | CHIP C 4.0PF B | AK3 | C245 | | | CC73GCH1H180J | CHIP C 18PF J | AK2,AM2 |
| C157 | | | CC73GCH1H2R5B | CHIP C 2.5PF B | AK,AM,BM | C245 | | | CC73GCH1H220J | CHIP C 22PF J | AK,AM,BM |
| C158 | | | CC73GCH1H101J | CHIP C 100PF J | | C246 | | | CC73GCH1HR75B | CHIP C 0.75PF B | AK2,AM2 |
| C159 | | | CC73GCH1H020C | CHIP C 2.0PF C | AK,AM,BM | C246 | | | CC73GCH1H010B | CHIP C 1.0PF B | AK,AM,BM |
| C159 | | | CC73GCH1H020C | CHIP C 2.0PF C | BM3,AK3 | C247 | | | CK73HB1H471K | CHIP C 470PF K | AK,AK2,AM |
| C159 | | | CC73GCH1H030B | CHIP C 3.0PF B | AK2,AM2 | C247 | | | CK73HB1H471K | CHIP C 470PF K | AM2,BM |
| C160 | | | CC73GCH1H020B | CHIP C 2.0PF B | AK,AM,BM | C248 | | | CC73GCH1H010B | CHIP C 1.0PF B | AK2,AM2 |
| C160 | | | CC73GCH1H020B | CHIP C 2.0PF B | BM3,AK3 | C248 | | | CC73GCH1H020B | CHIP C 2.0PF B | AK,AM,BM |
| C160 | | | CC73GCH1H1R5B | CHIP C 1.5PF B | AK2,AM2 | C249 | | | CC73GCH1H050B | CHIP C 5.0PF B | BM3,AK3 |
| C161 | | | CC73GCH1H050B | CHIP C 5.0PF B | AK,AM,BM | C249 | | | CC73GCH1H060B | CHIP C 6.0PF B | AK,AK2,AM |
| C161 | | | CC73GCH1H050B | CHIP C 5.0PF B | BM3,AK3 | C249 | | | CC73GCH1H060B | CHIP C 6.0PF B | AM2,BM |
| C161 | | | CC73GCH1H060B | CHIP C 6.0PF B | AK2,AM2 | C250 | | | CC73GCH1H180J | CHIP C 18PF J | AK2,AM2 |
| C163 | | | CC73GCH1H030B | CHIP C 3.0PF B | | C250 | | | CC73GCH1H220J | CHIP C 22PF J | AK,AM,BM |
| C164 | | | CC73GCH1H050B | CHIP C 5.0PF B | AK,AM,BM | C250 | | | CC73GCH1H220J | CHIP C 22PF J | BM3,AK3 |
| C164 | | | CC73GCH1H050B | CHIP C 5.0PF B | BM3,AK3 | C251 | | | CK73HB1H471K | CHIP C 470PF K | |
| C164 | | | CC73GCH1H060B | CHIP C 6.0PF B | AK2,AM2 | C252 | | | CC73GCH1HR75B | CHIP C 0.75PF B | AK2,AM2 |
| C166 | | | CC73GCH1HR75B | CHIP C 0.75PF B | AK,AM,BM | C252 | | | CC73GCH1H1R5B | CHIP C 1.5PF B | BM3,AK3 |
| C166 | | | CC73GCH1HR75B | CHIP C 0.75PF B | BM3,AK3 | C252,253 | | | CC73GCH1H020B | CHIP C 2.0PF B | AK,AM,BM |
| C166 | | | CC73GCH1H1R5B | CHIP C 1.5PF B | AK2,AM2 | C253 | | | CC73GCH1H020B | CHIP C 2.0PF B | AK2,AM2,BM3 |
| C168 | | | CC73GCH1H0R3B | CHIP C 0.3PF B | AK2,AM2 | C253 | | | CC73GCH1H020B | CHIP C 2.0PF B | AK3 |
| C168 | | | CC73GCH1H010B | CHIP C 1.0PF B | AK,AM,BM | C254 | | | CK73HB1H471K | CHIP C 470PF K | |
| C169 | | | CC73GCH1H030B | CHIP C 3.0PF B | AK2,AM2 | C255 | | | CC73GCH1H180J | CHIP C 18PF J | AK2,AM2 |
| C169 | | | CC73GCH1H040B | CHIP C 4.0PF B | AK,AM,BM | C255 | | | CC73GCH1H220J | CHIP C 22PF J | AK,AM,BM |
| C169 | | | CC73GCH1H100C | CHIP C 10PF C | BM3,AK3 | C255 | | | CC73GCH1H220J | CHIP C 22PF J | BM3,AK3 |
| C190 | | | CK73GB1A105K | CHIP C 1.0UF K | | C256 | | * | CS77CP0J4R7M | CHIP-TAN 4.7UF 6.3WV | |
| C191 | | | CK73GB1H103K | CHIP C 0.010UF K | | C257 | | | CC73GCH1H060B | CHIP C 6.0PF B | AK2,AM2 |
| C201 | | | CK73GB1A224K | CHIP C 0.22UF K | | C257 | | | CC73GCH1H070B | CHIP C 7.0PF B | BM3,AK3 |
| C206 | | | CK73HB1H102K | CHIP C 1000PF K | | C257 | | | CC73GCH1H4R5B | CHIP C 4.5PF B | AK,AM,BM |
| C207 | | | CK73HB1H182K | CHIP C 1800PF K | | C258 | | | CK73HB1H471K | CHIP C 470PF K | |
| C208 | | | CK73HB1H471K | CHIP C 470PF K | | C259 | | | CK73GB1H471K | CHIP C 470PF K | |
| C209 | | | CS77CP0J100M | CHIP-TAN 10UF 6.3WV | | C262,263 | | | CK73HB1H471K | CHIP C 470PF K | |
| C210 | | | CK73HB1H471K | CHIP C 470PF K | | C265 | | | CK73HB1H471K | CHIP C 470PF K | |
| C211 | | | CK73HB1C103K | CHIP C 0.010UF K | | C266 | | | CK73GB1H471K | CHIP C 470PF K | |
| C213 | | | CK73HB1A104K | CHIP C 0.10UF K | | C267 | | | CC73GCH1H050B | CHIP C 5.0PF B | AK2,AM2 |
| C214 | | | CC73HCH1H680J | CHIP C 68PF J | | C267 | | | CC73GCH1H060B | CHIP C 6.0PF B | BM3,AK3 |
| C215 | | | CK73HB1H102K | CHIP C 1000PF K | | C267 | | | CC73GCH1H3R5B | CHIP C 3.5PF B | AK,AM,BM |
| C216 | | | CK73GB1C104K | CHIP C 0.10UF K | | C268 | | | CC73GCH1H180J | CHIP C 18PF J | AK2,AM2 |
| C217 | | | CK73HB1A104K | CHIP C 0.10UF K | | C268 | | | CC73GCH1H220J | CHIP C 22PF J | AK,AM,BM |
| C218 | | | CK73GB1C104K | CHIP C 0.10UF K | | C268 | | | CC73GCH1H220J | CHIP C 22PF J | BM3,AK3 |
| C219 | | | CC73HCH1H330J | CHIP C 33PF J | | C269 | | | CC73GCH1H020B | CHIP C 2.0PF B | AK,AM,BM |
| C220 | | | CK73HB1H102K | CHIP C 1000PF K | | C269 | | | CC73GCH1H020B | CHIP C 2.0PF B | BM3,AK3 |
| C221 | | | CK73GB1C104K | CHIP C 0.10UF K | | C269 | | | CC73GCH1H2R5B | CHIP C 2.5PF B | AK2,AM2 |
| C222 | | | CK73HB1H102K | CHIP C 1000PF K | | C270,271 | | | CK73HB1H471K | CHIP C 470PF K | |
| C224,225 | | | CK73HB1C103K | CHIP C 0.010UF K | | C272 | | | CC73GCH1H020B | CHIP C 2.0PF B | |
| C228 | | | CC73GCH1H100C | CHIP C 10PF C | | C273 | | | CC73GCH1H180J | CHIP C 18PF J | AK2,AM2 |
| C230 | | | CK73HB1C103K | CHIP C 0.010UF K | | C273 | | | CC73GCH1H220J | CHIP C 22PF J | AK,AM,BM |
| C231 | | | CK73GB1H103K | CHIP C 0.010UF K | | C273 | | | CC73GCH1H220J | CHIP C 22PF J | BM3,AK3 |
| C232 | | | CK73HB1C103K | CHIP C 0.010UF K | | C274 | | | CC73GCH1H010B | CHIP C 1.0PF B | AK,AM,BM |
| C233 | | | CC73GCH1H060B | CHIP C 6.0PF B | | C274 | | | CC73GCH1H020B | CHIP C 2.0PF B | AK2,AM2 |
| C234 | | | CK73HB1H102K | CHIP C 1000PF K | | C274 | | | CC73GCH1H040B | CHIP C 4.0PF B | BM3,AK3 |
| C236 | | | CC73GCH1H180J | CHIP C 18PF J | | C275 | | | CC73GCH1H020B | CHIP C 2.0PF B | AK,AM,BM |
| C237 | | | CK73HB1H102K | CHIP C 1000PF K | | C275 | | | CC73GCH1H020B | CHIP C 2.0PF B | BM3,AK3 |
| C238 | | | CK73GB1C104K | CHIP C 0.10UF K | | C275 | | | CC73GCH1H090B | CHIP C 9.0PF B | AK2,AM2 |
| C239 | | | CK73GB1H102K | CHIP C 1000PF K | | C276 | | | CC73GCH1H040B | CHIP C 4.0PF B | AK2,AM2,BM3 |
| C240 | | | CC73GCH1H010B | CHIP C 1.0PF B | BM3,AK3 | C276 | | | CC73GCH1H040B | CHIP C 4.0PF B | AK3 |
| C240 | | | CC73GCH1H3R5B | CHIP C 3.5PF B | AK,AK2,AM | C276 | | | CC73GCH1H3R5B | CHIP C 3.5PF B | AK,AM,BM |
| C240 | | | CC73GCH1H3R5B | CHIP C 3.5PF B | AM2,BM | C290 | | | CC73GCH1H020B | CHIP C 2.0PF B | |
| C241 | | | CK73GB1H471K | CHIP C 470PF K | | C291 | | | CC73GCH1H060B | CHIP C 6.0PF B | |

PARTS LIST

TX-RX UNIT (X57-6890-XX)

| Ref. No. | Address | New parts | Parts No. | Description | Destination | Ref. No. | Address | New parts | Parts No. | Description | Destination |
|----------|---------|-----------|---------------|----------------------|-------------|----------|---------|-----------|---------------|---------------------------------|-------------|
| C292 | | | CK73HB1H471K | CHIP C 470PF K | | C420 | | | CC73HCH1H101J | CHIP C 100PF J | |
| C301 | | | CK73HB1H392K | CHIP C 3900PF K | | C421 | | | CK73GB1A105K | CHIP C 1.0UF K | |
| C302 | | | CK73HB1H271K | CHIP C 270PF K | | C422 | | | CC73HCH1H101J | CHIP C 100PF J | |
| C304 | | | CK73GB1A224K | CHIP C 0.22UF K | | C424 | | | CC73HCH1H101J | CHIP C 100PF J | |
| C306 | | * | CS77CP0J4R7M | CHIP-TAN 4.7UF 6.3WV | | C426,427 | | | CK73GB1A105K | CHIP C 1.0UF K | |
| C307,308 | | | CK73HB1A104K | CHIP C 0.10UF K | | C428,429 | | | CK73HB1H102K | CHIP C 1000PF K | |
| C309 | | | CC73GCH1H820J | CHIP C 82PF J | | C430 | | | CK73GB1H103K | CHIP C 0.010UF K | |
| C310 | | | CK73HB1A683K | CHIP C 0.068UF K | | C431 | | | CK73HB1C103K | CHIP C 0.010UF K | |
| C311 | | | CK73GB1A105K | CHIP C 1.0UF K | | C432 | | | CC73HCH1H050B | CHIP C 5.0PF B | |
| C312 | | | CC73GCH1H120J | CHIP C 12PF J | | C433,434 | | | CC73HCH1H030B | CHIP C 3.0PF B | |
| C313 | | | CC73GCH1H121J | CHIP C 120PF J | | C435 | | | CC73HCH1H050B | CHIP C 5.0PF B | |
| C314 | | | CK73HB1A104K | CHIP C 0.10UF K | | C440 | | | CC73GCH1H1R5B | CHIP C 1.5PF B | |
| C315 | | | CK73GB1A105K | CHIP C 1.0UF K | | C443 | | | CK73GB1A474K | CHIP C 0.47UF K | |
| C316 | | | CK73GB1C104K | CHIP C 0.10UF K | | C444 | | | CC73GCH1H020B | CHIP C 2.0PF B | BM3,AK3 |
| C317 | | | CK73HB1A104K | CHIP C 0.10UF K | | C445 | | | CC73GCH1H200J | CHIP C 20PF J | AK2,AM2 |
| C318 | | * | CS77CP0J4R7M | CHIP-TAN 4.7UF 6.3WV | | C453,454 | | | CC73HCH1H101J | CHIP C 100PF J | |
| C319 | | | CC73GCH1H271J | CHIP C 270PF J | | C901,902 | | | CK73GB1A105K | CHIP C 1.0UF K | |
| C320 | | | CK73HB1C103K | CHIP C 0.010UF K | | TC1_2 | | | C05-0384-05 | CERAMIC TRIMMER CAPACITOR(10PF) | |
| C321 | | | CK73GB1A105K | CHIP C 1.0UF K | | CN201 | | | E23-1278-05 | TERMINAL | |
| C322 | | | CK73HB1C153K | CHIP C 0.015UF K | | CN401 | | * | E40-6573-05 | FLAT CABLE CONNECTOR | |
| C323 | | | CC73GCH1H820J | CHIP C 82PF J | | J301 | | | E11-0457-05 | PHONE JACK(2.5/3.5) | |
| C324 | | | CC73HCH1H820J | CHIP C 82PF J | | F401 | | | F53-0324-05 | FUSE(2.5A) | |
| C325 | | | CK73HB1A104K | CHIP C 0.10UF K | | 101 | 2A | * | J30-1282-14 | SPACER(MIC ELEMENT) | |
| C326 | | | CK73HB1H102K | CHIP C 1000PF K | | CD201 | | | L79-1582-05 | TUNING COIL | |
| C327 | | | CC73HCH1H101J | CHIP C 100PF J | | CF201 | 2A | | L72-0973-05 | CERAMIC FILTER | |
| C328 | | | CK73HB1H391K | CHIP C 390PF K | | L1 | | | L40-4791-37 | SMALL FIXED INDUCTOR(4.700UH) | |
| C329,330 | | | CK73GB1A105K | CHIP C 1.0UF K | | L3 | | | L40-5681-86 | SMALL FIXED INDUCTOR(0.56UH) | |
| C331 | | | CK73HB1A104K | CHIP C 0.10UF K | | L5 | | | L40-5681-86 | SMALL FIXED INDUCTOR(0.56UH) | |
| C332 | | | CK73HB1H471K | CHIP C 470PF K | | L6_7 | | | L92-0138-05 | CHIP FERRITE | |
| C333,334 | | | CK73GB1C104K | CHIP C 0.10UF K | | L8_9 | | | L40-1875-92 | SMALL FIXED INDUCTOR(18NH) | |
| C335 | | | CC73GCH1H221J | CHIP C 220PF J | | L10,11 | | | L40-1085-92 | SMALL FIXED INDUCTOR(100NH) | |
| C336 | | | CK73FB1C474K | CHIP C 0.47UF K | | L12 | | | L92-0138-05 | CHIP FERRITE | |
| C338 | | | CC73GCH1H101J | CHIP C 100PF J | | L13,14 | | | L40-1085-92 | SMALL FIXED INDUCTOR(100NH) | |
| C339 | | | CS77AAQJ100M | CHIP-TAN 10UF 6.3WV | | L16 | | | L40-1878-67 | SMALL FIXED INDUCTOR(18NH) | AK2,AM2 |
| C340 | | | CK73GB1C104K | CHIP C 0.10UF K | | L16 | | | L40-2278-67 | SMALL FIXED INDUCTOR(22NH) | AK,AM,BM |
| C341 | | | CK73GB1C473K | CHIP C 0.047UF K | | L16 | | | L40-2778-67 | SMALL FIXED INDUCTOR(27NH) | BM3,AK3 |
| C342 | | | CS77AAQJ100M | CHIP-TAN 10UF 6.3WV | | L17 | | | L40-2278-67 | SMALL FIXED INDUCTOR(22NH) | AK2,AM2 |
| C343 | | | CK73GB1C473J | CHIP C 0.047UF J | | L17 | | | L40-2778-67 | SMALL FIXED INDUCTOR(27NH) | AK,AM,BM |
| C344 | | | CC73GCH1H221J | CHIP C 220PF J | | L17 | | | L40-3378-67 | SMALL FIXED INDUCTOR(33NH) | BM3,AK3 |
| C345 | | * | CS77CC0J101M | TANTAL 100UF 6.3WV | BM3,AK3 | L18,19 | | | L41-2285-03 | SMALL FIXED INDUCTOR(220N) | |
| C346 | | | CK73GB1H102K | CHIP C 1000PF K | | L20,21 | | | L40-3391-86 | SMALL FIXED INDUCTOR(3.3UH) | |
| C348 | | | CK73HB1H471K | CHIP C 470PF K | | L22 | | | L92-0138-05 | CHIP FERRITE | |
| C349 | | | CK73HB1A333K | CHIP C 0.033UF K | | L23 | | | L40-2275-92 | SMALL FIXED INDUCTOR(22NH) | |
| C351,352 | | | CK73HB1C103K | CHIP C 0.010UF K | | L24 | | | L92-0470-05 | CHIP FERRITE | |
| C354 | | | CK73HB1A104K | CHIP C 0.10UF K | | L25 | | | L40-2275-92 | SMALL FIXED INDUCTOR(22NH) | |
| C370 | | | CK73HB1A104K | CHIP C 0.10UF K | | L100 | | | L40-3375-92 | SMALL FIXED INDUCTOR(33NH) | BM3,AK3 |
| C401 | | | CC73GCH1H471J | CHIP C 470PF J | | L100,101 | | | L40-1575-92 | SMALL FIXED INDUCTOR(15NH) | AK,AK2,AM |
| C402 | | | CK73HB1H102K | CHIP C 1000PF K | | L100,101 | | | L40-1575-92 | SMALL FIXED INDUCTOR(15NH) | AM2,BM |
| C403 | | | CK73GB1C104K | CHIP C 0.10UF K | | L101 | | | L40-2275-92 | SMALL FIXED INDUCTOR(22NH) | BM3,AK3 |
| C405 | | | CC73GCH1H101J | CHIP C 100PF J | | L102 | | | L92-0138-05 | CHIP FERRITE | |
| C406 | | | CC73HCH1H101J | CHIP C 100PF J | | L103,104 | | | L40-8265-92 | SMALL FIXED INDUCTOR(8.2NH) | |
| C407 | | | CK73HB1H102K | CHIP C 1000PF K | | L105 | | | L40-1575-54 | SMALL FIXED INDUCTOR(15NH) | AK,AM,BM |
| C408 | | | CC73HCH1H101J | CHIP C 100PF J | | L105 | | | L40-1575-54 | SMALL FIXED INDUCTOR(15NH) | BM3,AK3 |
| C409,410 | | | CK73GB1A105K | CHIP C 1.0UF K | | L105 | | | L40-2275-54 | SMALL FIXED INDUCTOR(22NH) | AK2,AM2 |
| C411 | | | CK73HB1H102K | CHIP C 1000PF K | | L106 | | | L92-0149-05 | CHIP FERRITE | |
| C412-414 | | | CC73HCH1H101J | CHIP C 100PF J | | | | | | | |
| C415 | | | CK73HB1H471K | CHIP C 470PF K | | | | | | | |
| C417 | | | CK73GB1A105K | CHIP C 1.0UF K | | | | | | | |
| C418 | | | CK73HB1E562K | CHIP C 5600PF K | | | | | | | |
| C419 | | | CK73HB1H102K | CHIP C 1000PF K | | | | | | | |

AK : TK-3202 (K) AK2 : TK-3202 (K2) AK3 : TK-3202 (K3) AM : TK-3202 (M) AM2 : TK-3202 (M2)
 BM : TK-3206 (M) BM3 : TK-3206 (M3)

If a part reference number is listed in a shaded box (for example, CF 201), that part does not come with the PCB.

TK-3202/3206

PARTS LIST

TX-RX UNIT (X57-6890-XX)

| Ref. No. | Address | New parts | Parts No. | Description | Destination | Ref. No. | Address | New parts | Parts No. | Description | Destination |
|----------|---------|-----------|---------------|-------------------------------|-------------|----------|---------|-----------|---------------|-------------|--------------|
| L107 | | | L40-1263-92 | SMALL FIXED INDUCTOR(1.2NH) | AK,AK2,AM | R19 | | | RK73GB2A122J | CHIP R | 1.2K J 1/10W |
| L107 | | | L40-1263-92 | SMALL FIXED INDUCTOR(1.2NH) | AM2,BM | R20 | | | RK73HB1J100J | CHIP R | 10 J 1/16W |
| L109 | | | L92-0149-05 | CHIP FERRITE | | R21 | | | RK73GB2A681J | CHIP R | 680 J 1/10W |
| L110 | | | L40-2285-54 | SMALL FIXED INDUCTOR(220NH) | | R22 | | | RK73GB2A000JX | CHIP R | 0.0 J 1/10W |
| L111 | | | L41-1092-44 | SMALL FIXED INDUCTOR(1UH) | | R23 | | | RK73GB2A103J | CHIP R | 10K J 1/10W |
| L201 | | | L40-1091-37 | SMALL FIXED INDUCTOR(1.000UH) | | R25 | | | RK73HB1J223J | CHIP R | 22K J 1/16W |
| L202 | | | L92-0138-05 | CHIP FERRITE | | R26 | | | RK73HB1J103J | CHIP R | 10K J 1/16W |
| L203 | | | L40-5685-85 | SMALL FIXED INDUCTOR(0.56UH) | | R27 | | | RK73HB1J220J | CHIP R | 22 J 1/16W |
| L204 | | | L40-2785-92 | SMALL FIXED INDUCTOR(270NH) | | R30 | | | RK73HB1J333J | CHIP R | 33K J 1/16W |
| L206 | | | L40-2775-92 | SMALL FIXED INDUCTOR(27NH) | AK2,AM2 | R31 | | | RK73HB1J474J | CHIP R | 470K J 1/16W |
| L206 | | | L40-3975-92 | SMALL FIXED INDUCTOR(39NH) | BM3,AK3 | R32 | | | RK73HB1J102J | CHIP R | 1.0K J 1/16W |
| L211,212 | | | L41-8268-14 | SMALL FIXED INDUCTOR(8.2NH) | AK,AK2,AM | R33 | | | RK73HB1J154J | CHIP R | 150K J 1/16W |
| L211,212 | | | L41-8268-14 | SMALL FIXED INDUCTOR(8.2NH) | AM2,BM | R34 | | | RK73HB1J474J | CHIP R | 470K J 1/16W |
| L212 | | | L41-8268-14 | SMALL FIXED INDUCTOR(8.2NH) | BM3,AK3 | R35,36 | | | RK73HB1J274J | CHIP R | 270K J 1/16W |
| L214 | | | L41-6868-14 | SMALL FIXED INDUCTOR(6.8NH) | AK2,AM2 | R37 | | | RK73HB1J101J | CHIP R | 100 J 1/16W |
| L214 | | | L41-8268-14 | SMALL FIXED INDUCTOR(8.2NH) | AK,AM,BM | R38 | | | RK73HB1J181J | CHIP R | 180 J 1/16W |
| L214 | | | L41-8268-14 | SMALL FIXED INDUCTOR(8.2NH) | BM3,AK3 | R39 | | | RK73HB1J151J | CHIP R | 150 J 1/16W |
| L215 | | | L41-2285-03 | SMALL FIXED INDUCTOR(220NH) | | R40 | | | RK73HB1J101J | CHIP R | 100 J 1/16W |
| L220 | | | L34-4602-05 | AIR-CORE COIL | | R41 | | | RK73HB1J154J | CHIP R | 150K J 1/16W |
| L223 | | | L34-4572-05 | AIR-CORE COIL | AK,AK2,AM | R42 | | | RK73HB1J472J | CHIP R | 4.7K J 1/16W |
| L223 | | | L34-4572-05 | AIR-CORE COIL | AM2,BM | R43 | | | RK73HB1J101J | CHIP R | 100 J 1/16W |
| L224-226 | | | L34-4564-05 | AIR-CORE COIL | | R46 | | | RK73HB1J103J | CHIP R | 10K J 1/16W |
| L228 | | | L41-6868-14 | SMALL FIXED INDUCTOR(6.8NH) | AK2,AM2 | R47 | | | RK73HB1J220J | CHIP R | 22 J 1/16W |
| L228,229 | | | L41-8268-14 | SMALL FIXED INDUCTOR(8.2NH) | AK,AM,BM | R48 | | | RK73HB1J331J | CHIP R | 330 J 1/16W |
| L228,229 | | | L41-8268-14 | SMALL FIXED INDUCTOR(8.2NH) | BM3,AK3 | R49 | | | RK73HB1J222J | CHIP R | 2.2K J 1/16W |
| L229 | | | L41-8268-14 | SMALL FIXED INDUCTOR(8.2NH) | AK2,AM2 | R50 | | | RK73HB1J472J | CHIP R | 4.7K J 1/16W |
| L230 | | | L41-4778-03 | SMALL FIXED INDUCTOR(47NH) | AK,AK2,AM | R100 | | | RK73HB1J472J | CHIP R | 4.7K J 1/16W |
| L230 | | | L41-4778-03 | SMALL FIXED INDUCTOR(47NH) | AM2,BM | R103 | | | RK73GB2A333J | CHIP R | 33K J 1/10W |
| L230 | | | L41-5678-03 | SMALL FIXED INDUCTOR(56NH) | BM3,AK3 | R103 | | | RK73GB2A473J | CHIP R | 47K J 1/10W |
| L250 | | | L40-1875-92 | SMALL FIXED INDUCTOR(18NH) | | R103 | | | RK73GB2A473J | CHIP R | 47K J 1/10W |
| L290 | | | L41-3078-17 | SMALL FIXED INDUCTOR(30NH) | AK,AM,BM | R105 | | | RK73GB2A331J | CHIP R | 330 J 1/10W |
| L301 | | | L92-0140-05 | CHIP FERRITE | | R106 | | | RK73GB2A121J | CHIP R | 120 J 1/10W |
| L302 | | | L92-0149-05 | CHIP FERRITE | | R106 | | | RK73GB2A220J | CHIP R | 22 J 1/10W |
| L401 | | | L92-0149-05 | CHIP FERRITE | | R106 | | | RK73GB2A220J | CHIP R | 22 J 1/10W |
| L402-404 | | | L92-0138-05 | CHIP FERRITE | | R107 | | | RK73HB1J101J | CHIP R | 100 J 1/16W |
| L410 | | | L92-0138-05 | CHIP FERRITE | | R110 | | | RK73GB2A331J | CHIP R | 330 J 1/10W |
| L411 | | | L40-1875-92 | SMALL FIXED INDUCTOR(18NH) | | R111,112 | | | RK73GB2A000JX | CHIP R | 0.0 J 1/10W |
| L412 | | | L34-4564-05 | AIR-CORE COIL | BM3,AK3 | R114 | | | RK73GB2A124J | CHIP R | 120K J 1/10W |
| X1 | | | L77-1931-05 | TCXO(12.8MHZ) | | R114 | | | RK73GB2A473J | CHIP R | 47K J 1/10W |
| X2 | | | L78-1414-05 | RESONATOR(7.37MHZ) | | R114 | | | RK73GB2A683J | CHIP R | 68K J 1/10W |
| XF201 | | | L71-0619-05 | MCF(38.85MHZ) | | R115 | | | RK73GB2A103J | CHIP R | 10K J 1/10W |
| CP404 | | | RK75HA1J473J | CHIP-COM 47K J 1/16W | | R116 | | | RK73GB2A220J | CHIP R | 22 J 1/10W |
| CP405 | | | RK75HA1J102J | CHIP-COM 1.0K J 1/16W | | R120 | | | RK73GB2A000JX | CHIP R | 0.0 J 1/10W |
| R1 | | | RK73HB1J223J | CHIP R 22K J 1/16W | | R121 | | | RK73GB2A220J | CHIP R | 22 J 1/10W |
| R2 | | | RK73HB1J103J | CHIP R 10K J 1/16W | | R123 | | | RK73FB2B000JX | CHIP R | 0.0 J 1/8W |
| R3 | | | RK73HB1J333J | CHIP R 33K J 1/16W | | R124 | | | RK73GB2A473J | CHIP R | 47K J 1/10W |
| R4 | | | RK73HB1J563J | CHIP R 56K J 1/16W | | R126 | | | RK73GB2A222J | CHIP R | 2.2K J 1/10W |
| R5 | | | RK73HB1J104J | CHIP R 100K J 1/16W | | R127-129 | | | RK73EB2ER39K | CHIP R | 0.39 K 1/4W |
| R6 | | | RK73HB1J823J | CHIP R 82K J 1/16W | | R130-135 | | | RK73GH2A154D | CHIP R | 150K D 1/10W |
| R7 | | | RK73HB1J101J | CHIP R 100 J 1/16W | | R137 | | | RK73FB2B000JX | CHIP R | 0.0 J 1/8W |
| R8 -11 | | | RK73HB1J000JX | CHIP R 0.0 J 1/16W | | R138 | | | RK73GB2A105J | CHIP R | 1.0M J 1/10W |
| R12 | | | RK73HB1J222J | CHIP R 2.2K J 1/16W | | R139 | | | RK73GB2A473J | CHIP R | 47K J 1/10W |
| R13 | | | RK73GB2A000JX | CHIP R 0.0 J 1/10W | | R140 | | | RK73GB2A563J | CHIP R | 56K J 1/10W |
| R14 | | | RK73HB1J334J | CHIP R 330K J 1/16W | | R141 | | | RK73GB2A104J | CHIP R | 100K J 1/10W |
| R15 | | | RK73GB2A221J | CHIP R 220 J 1/10W | | R142 | | | RK73GB2A000JX | CHIP R | 0.0 J 1/10W |
| R16 | | | RK73GB2A561J | CHIP R 560 J 1/10W | | R143 | | | RK73GB2A104J | CHIP R | 100K J 1/10W |
| R17 | | | RK73HB1J101J | CHIP R 100 J 1/16W | | R145 | | | RK73GB2A000JX | CHIP R | 0.0 J 1/10W |
| R18 | | | RK73GB2A181J | CHIP R 180 J 1/10W | | R147 | | | RK73GB2A000JX | CHIP R | 0.0 J 1/10W |
| | | | | | | R190 | | | RK73GB2A101J | CHIP R | 100 J 1/10W |
| | | | | | | R191,192 | | | RK73GB2A271J | CHIP R | 270 J 1/10W |

PARTS LIST

TX-RX UNIT (X57-6890-XX)

| Ref. No. | Address | New parts | Parts No. | Description | Destination | Ref. No. | Address | New parts | Parts No. | Description | Destination |
|----------|---------|-----------|---------------|---------------------|-------------|----------|---------|-------------|---------------|----------------------------|-------------|
| R193 | | | RK73GB2A473J | CHIP R 47K J 1/10W | BM3,AK3 | R331 | | | RK73GB2A154J | CHIP R 150K J 1/10W | |
| R193,194 | | | RK73GB2A473J | CHIP R 47K J 1/10W | AK,AK2,AM | R332 | | | RK73GB2A153J | CHIP R 15K J 1/10W | |
| R193,194 | | | RK73GB2A473J | CHIP R 47K J 1/10W | AM2,BM | R334 | | | RK73GB2A473J | CHIP R 47K J 1/10W | |
| R194 | | | RK73GB2A683J | CHIP R 68K J 1/10W | BM3,AK3 | R335 | | | RK73GB2A222J | CHIP R 2.2K J 1/10W | |
| R203 | | | RK73HB1J184J | CHIP R 180K J 1/16W | | R336 | | | RK73GB2A102J | CHIP R 1.0K J 1/10W | |
| R206 | | | RK73GB2A100J | CHIP R 10 J 1/10W | | R337 | | | RK73GB2A151J | CHIP R 150 J 1/10W | |
| R207 | | | RK73HB1J472J | CHIP R 4.7K J 1/16W | | R338 | | | RK73GB2A222J | CHIP R 2.2K J 1/10W | |
| R208 | | | RK73HB1J823J | CHIP R 82K J 1/16W | | R339 | | | RK73GB2A471J | CHIP R 470 J 1/10W | |
| R209 | | | RK73HB1J272J | CHIP R 2.7K J 1/16W | | R340 | | | RK73GB2A182J | CHIP R 1.8K J 1/10W | |
| R210,211 | | | RK73HB1J332J | CHIP R 3.3K J 1/16W | | R341 | | | RK73GB2A103J | CHIP R 10K J 1/10W | |
| R212 | | | RK73HB1J823J | CHIP R 82K J 1/16W | | R342 | | | RK73GB2A101J | CHIP R 100 J 1/10W | |
| R213 | | | RK73HB1J392J | CHIP R 3.9K J 1/16W | | R343 | | | RK73GB2A474J | CHIP R 470K J 1/10W | |
| R215 | | | RK73HB1J101J | CHIP R 100 J 1/16W | | R344 | | | RK73GB2A102J | CHIP R 1.0K J 1/10W | |
| R216 | | | RK73HB1J124J | CHIP R 120K J 1/16W | | R345,346 | | | RK73GB2A101J | CHIP R 100 J 1/10W | |
| R217 | | | RK73HB1J472J | CHIP R 4.7K J 1/16W | | R347 | | | RK73GB2A104J | CHIP R 100K J 1/10W | |
| R218 | | | RK73HB1J561J | CHIP R 560 J 1/16W | | R348 | | | RK73GB2A563J | CHIP R 56K J 1/10W | |
| R219 | | | RK73GB2A561J | CHIP R 560 J 1/10W | | R349 | | | RK73GB2A333J | CHIP R 33K J 1/10W | |
| R226,227 | | | RK73GB2A102J | CHIP R 1.0K J 1/10W | | R350 | | | RK73HB1J000JX | CHIP R 0.0 J 1/16W | AK,AK2,AM |
| R228 | | | RK73GB2A151J | CHIP R 150 J 1/10W | | R350 | | | RK73HB1J000JX | CHIP R 0.0 J 1/16W | AM2,BM |
| R233 | | | RK73HB1J104J | CHIP R 100K J 1/16W | | R350 | | | RK73HB1J103J | CHIP R 10K J 1/16W | BM3,AK3 |
| R236 | | | RK73HB1J563J | CHIP R 56K J 1/16W | | R354,355 | | | RK73HB1J103J | CHIP R 10K J 1/16W | |
| R238 | | | RK73HB1J104J | CHIP R 100K J 1/16W | | R357 | | | RK73HB1J000JX | CHIP R 0.0 J 1/16W | |
| R239 | | | RK73HB1J563J | CHIP R 56K J 1/16W | | R360 | | | RK73HB1J000JX | CHIP R 0.0 J 1/16W | |
| R240 | | | RK73GB2A000JX | CHIP R 0.0 J 1/10W | | R403 | | | RK73GB2A101J | CHIP R 100 J 1/10W | |
| R241 | | | RK73HB1J105J | CHIP R 1.0M J 1/16W | AK,AK2,AM | R404 | | | RK73HH1J474D | CHIP R 470K D 1/16W | |
| R241 | | | RK73HB1J105J | CHIP R 1.0M J 1/16W | AM2,BM | R405 | | | RK73GB2A334J | CHIP R 330K J 1/10W | |
| R243,244 | | | RK73HB1J105J | CHIP R 1.0M J 1/16W | | R406 | | | RK73HH1J474D | CHIP R 470K D 1/16W | |
| R248 | | | RK73GB2A221J | CHIP R 220 J 1/10W | | R407 | | | RK73HB1J334J | CHIP R 330K J 1/16W | |
| R249 | | | RK73GB2A220J | CHIP R 22 J 1/10W | | R408-412 | | | RK73HB1J473J | CHIP R 47K J 1/16W | |
| R251 | | | RK73HB1J104J | CHIP R 100K J 1/16W | | R413,414 | | | RK73GB2A331J | CHIP R 330 J 1/10W | |
| R253 | | | RK73HB1J104J | CHIP R 100K J 1/16W | | R415,416 | | | RK73GB2A473J | CHIP R 47K J 1/10W | |
| R254 | | | RK73HB1J683J | CHIP R 68K J 1/16W | | R417-420 | | | RK73HB1J473J | CHIP R 47K J 1/16W | |
| R255 | | | RK73GB2A000JX | CHIP R 0.0 J 1/10W | | R421,422 | | | RK73HB1J102J | CHIP R 1.0K J 1/16W | |
| R256,257 | | | RK73HB1J105J | CHIP R 1.0M J 1/16W | | R423 | | | RK73HB1J000JX | CHIP R 0.0 J 1/16W | |
| R258 | | | RK73FB2B000JX | CHIP R 0.0 J 1/8W | | R424,425 | | | RK73HB1J473J | CHIP R 47K J 1/16W | |
| R301 | | | RK73HB1J103J | CHIP R 10K J 1/16W | | R426 | | | RK73HB1J000JX | CHIP R 0.0 J 1/16W | |
| R304 | | | RK73HB1J273J | CHIP R 27K J 1/16W | | R435 | | | RK73HB1J473J | CHIP R 47K J 1/16W | |
| R305 | | | RK73HB1J104J | CHIP R 100K J 1/16W | | R436 | | | RK73GB2A000JX | CHIP R 0.0 J 1/10W | |
| R306 | | | RK73HB1J102J | CHIP R 1.0K J 1/16W | | R437,438 | | | RK73HB1J473J | CHIP R 47K J 1/16W | |
| R307,308 | | | RK73HB1J000JX | CHIP R 0.0 J 1/16W | | R445,446 | | | RK73GB2A000JX | CHIP R 0.0 J 1/10W | |
| R310 | | | RK73GB2A394J | CHIP R 390K J 1/10W | | R447 | | | RK73HB1J123J | CHIP R 12K J 1/16W | |
| R311 | | | RK73HB1J123J | CHIP R 12K J 1/16W | | R449,450 | | | RK73GB2A000JX | CHIP R 0.0 J 1/10W | BM3,AK3 |
| R312 | | | RK73GB2A334J | CHIP R 330K J 1/10W | | R452 | | | RK73HB1J103J | CHIP R 10K J 1/16W | |
| R313 | | | RK73GB2A104J | CHIP R 100K J 1/10W | | R453 | | | RK73HB1J223J | CHIP R 22K J 1/16W | |
| R314 | | | RK73GB2A103J | CHIP R 10K J 1/10W | | R454 | | | RK73GB2A000JX | CHIP R 0.0 J 1/10W | AK2,AM2 |
| R315 | | | RK73GB2A334J | CHIP R 330K J 1/10W | | R901,902 | | | RK73GB2A472J | CHIP R 4.7K J 1/10W | |
| R316 | | | RK73GB2A124J | CHIP R 120K J 1/10W | | VR1 | * | R32-0736-05 | | TRIMMING POT.(68K) | |
| R317 | | | RK73GB2A474J | CHIP R 470K J 1/10W | | S1-3 | | S70-0414-05 | | TACT SWITCH | |
| R318 | | | RK73GB2A122J | CHIP R 1.2K J 1/10W | | MIC301 | 2A | T91-0649-15 | | MIC ELEMENT | |
| R319 | | | RK73HB1J563J | CHIP R 56K J 1/16W | | D1 | | MA2S111 | | DIODE | |
| R320 | | | RK73HB1J332J | CHIP R 3.3K J 1/16W | | D2 -9 | | HVC376B | | VARIABLE CAPACITANCE DIODE | |
| R321 | | | RK73HB1J224J | CHIP R 220K J 1/16W | | D10 | | 1SV278F | | VARIABLE CAPACITANCE DIODE | |
| R322 | | | RK73HB1J184J | CHIP R 180K J 1/16W | | D11 | | MA2S111 | | DIODE | |
| R323 | | | RK73HB1J563J | CHIP R 56K J 1/16W | | D101 | | HSC277 | | DIODE | |
| R324,325 | | | RK73GB2A104J | CHIP R 100K J 1/10W | | D102 | | HZU5CLL | | ZENER DIODE | |
| R326 | | | RK73GB2A000JX | CHIP R 0.0 J 1/10W | | D103,104 | | HVC131 | | DIODE | |
| R327 | | | RK73GB2A184J | CHIP R 180K J 1/10W | | D106 | | HVC131 | | DIODE | |
| R328 | | | RK73GB2A103J | CHIP R 10K J 1/10W | | | | | | | |
| R329 | | | RK73GB2A823J | CHIP R 82K J 1/10W | | | | | | | |
| R330 | | | RK73HB1J332J | CHIP R 3.3K J 1/16W | | | | | | | |

AK : TK-3202 (K) AK2 : TK-3202 (K2) AK3 : TK-3202 (K3) AM : TK-3202 (M) AM2 : TK-3202 (M2)
 BM : TK-3206 (M) BM3 : TK-3206 (M3)

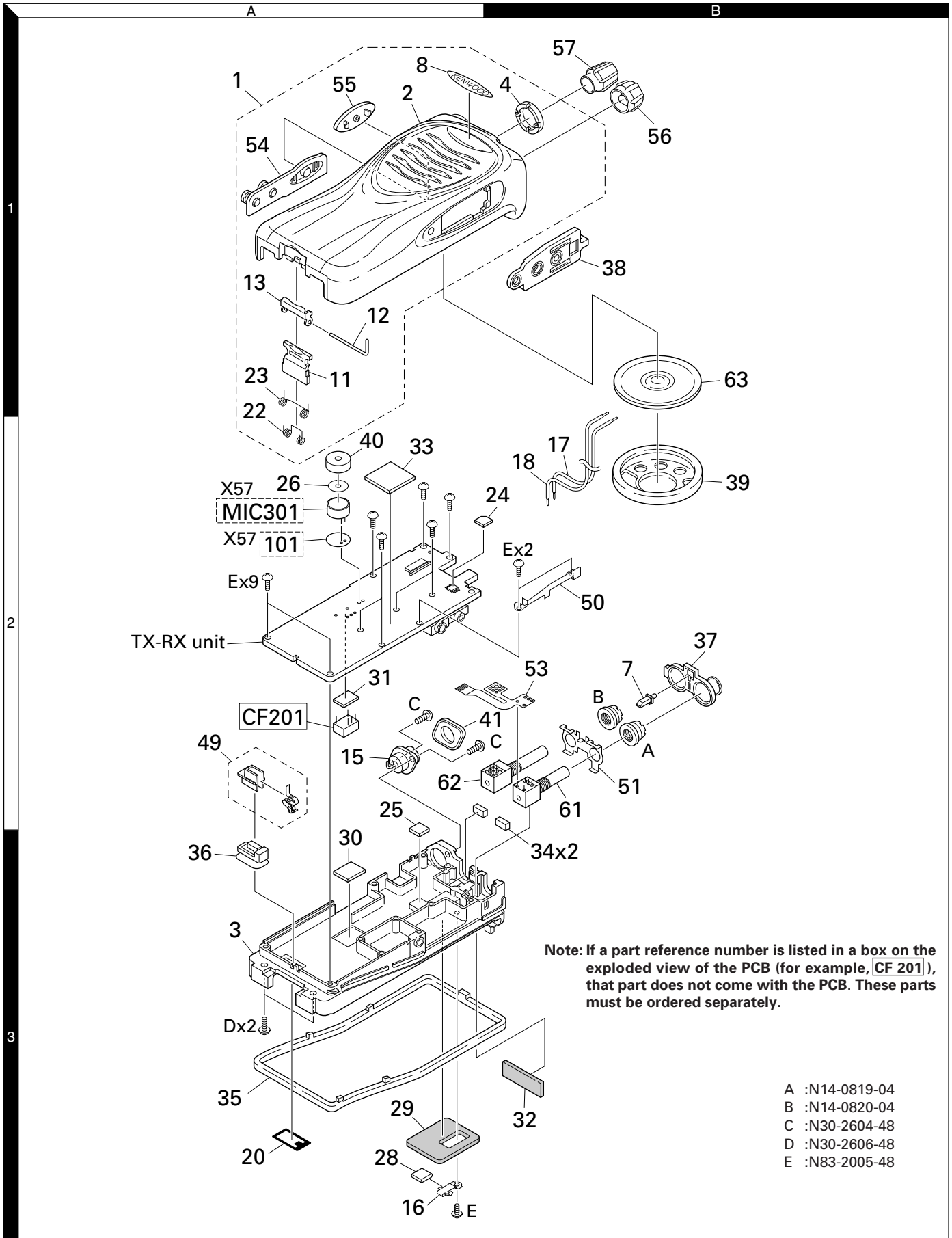
TK-3202/3206

PARTS LIST

TX-RX UNIT (X57-6890-XX)

| Ref. No. | Address | New parts | Parts No. | Description | Destination | Ref. No. | Address | New parts | Parts No. | Description | Destination |
|-----------|---------|-----------|----------------|----------------------------|-------------|----------|---------|-----------|-----------|-------------|-------------|
| D122 | | | HVC131 | DIODE | | | | | | | |
| D202 | | | HSC277 | DIODE | | | | | | | |
| D203-206 | | | HVC355B | VARIABLE CAPACITANCE DIODE | | | | | | | |
| D210 | | | HVC355B | VARIABLE CAPACITANCE DIODE | AK,AK2,AM | | | | | | |
| D210 | | | HVC355B | VARIABLE CAPACITANCE DIODE | AM2,BM | | | | | | |
| D301,302 | | | RB706F-40 | DIODE | | | | | | | |
| D303 | | | DAN222 | DIODE | | | | | | | |
| D401 | | | RB521S-30 | DIODE | | | | | | | |
| D402 | | | 1SR154-400 | DIODE | | | | | | | |
| IC1 | | | MB15A02 | MOS-IC | | | | | | | |
| IC101 | | | TA75W01FUJ | MOS-IC | | | | | | | |
| IC201 | | | TA31136FNG | MOS-IC | | | | | | | |
| IC301 | | | AQUA-L | MOS-IC | | | | | | | |
| IC302 | | | TA7368F | MOS-IC | | | | | | | |
| IC401,402 | | | XC6204B502MR | MOS-IC | | | | | | | |
| IC403 | | | BD4840FVE | MOS-IC | | | | | | | |
| IC404 | | | BD4845FVE | MOS-IC | | | | | | | |
| IC405 | | * | 30622MAA-B95GU | MICROPROCESSOR IC | | | | | | | |
| IC406 | | | BR24L08F-W | ROM IC | | | | | | | |
| Q1 | | | KTC4082 | TRANSISTOR | | | | | | | |
| Q2 | | | 2SC5108(Y)F | TRANSISTOR | | | | | | | |
| Q3 ,4 | | | 2SK508NV(K52) | FET | | | | | | | |
| Q5 | | | DTA143TE | DIGITAL TRANSISTOR | | | | | | | |
| Q6 | | | 2SC5108(Y)F | TRANSISTOR | | | | | | | |
| Q7 | | | DTA143TE | DIGITAL TRANSISTOR | | | | | | | |
| Q8 | | | 2SC4617(S) | TRANSISTOR | | | | | | | |
| Q9 | | | 2SC4619(P,Q) | TRANSISTOR | | | | | | | |
| Q100 | | | 2SC4619(P,Q) | TRANSISTOR | | | | | | | |
| Q101 | | | 2SK3077F | FET | | | | | | | |
| Q102 | | | 2SK2596 | FET | | | | | | | |
| Q103 | | | 2SK3476 | FET | | | | | | | |
| Q104 | | | DTC114EE | DIGITAL TRANSISTOR | | | | | | | |
| Q105 | | | 2SK879(Y)F | FET | | | | | | | |
| Q107 | | | DTC114EE | DIGITAL TRANSISTOR | | | | | | | |
| Q108 | | | 2SK1824 | FET | | | | | | | |
| Q109 | | | DTA144EE | DIGITAL TRANSISTOR | | | | | | | |
| Q202 | | | DTA144EE | DIGITAL TRANSISTOR | | | | | | | |
| Q203 | | | 2SC4649(N,P) | TRANSISTOR | | | | | | | |
| Q204,205 | | | 3SK318 | FET | | | | | | | |
| Q301 | | | DTA114EE | DIGITAL TRANSISTOR | | | | | | | |
| Q302 | | | 2SC4919 | TRANSISTOR | | | | | | | |
| Q303 | | | DTC144EE | DIGITAL TRANSISTOR | | | | | | | |
| Q304 | | * | 2SA1362(GR)-F | TRANSISTOR | | | | | | | |
| Q305 | | | DTC144EE | DIGITAL TRANSISTOR | | | | | | | |
| Q306 | | * | 2SK3577-A | FET | | | | | | | |
| Q316 | | * | 2SK3577-A | FET | | | | | | | |
| Q401,402 | | | DTC114EE | DIGITAL TRANSISTOR | | | | | | | |
| Q403,404 | | | CPH3317 | FET | | | | | | | |
| Q405 | | | DTA123JE | DIGITAL TRANSISTOR | | | | | | | |
| Q407,408 | | | 2SK1830F | FET | | | | | | | |
| Q901 | | | 2SK1824 | FET | | | | | | | |
| TH101 | | | 157-104-65001 | THERMISTOR | | | | | | | |
| TH203 | | | 157-104-65001 | THERMISTOR | | | | | | | |

EXPLODED VIEW

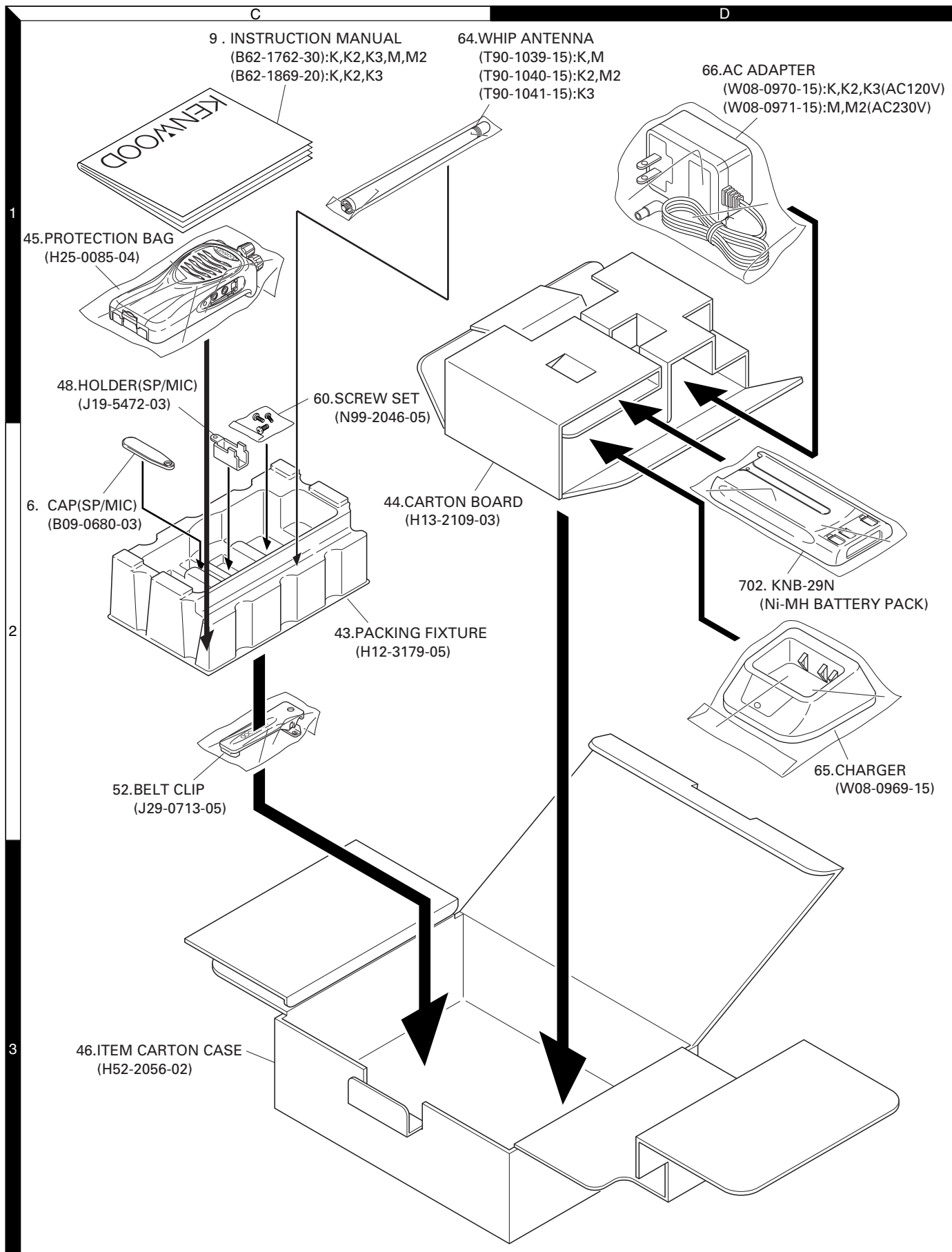


Note: If a part reference number is listed in a box on the exploded view of the PCB (for example, **CF 201**), that part does not come with the PCB. These parts must be ordered separately.

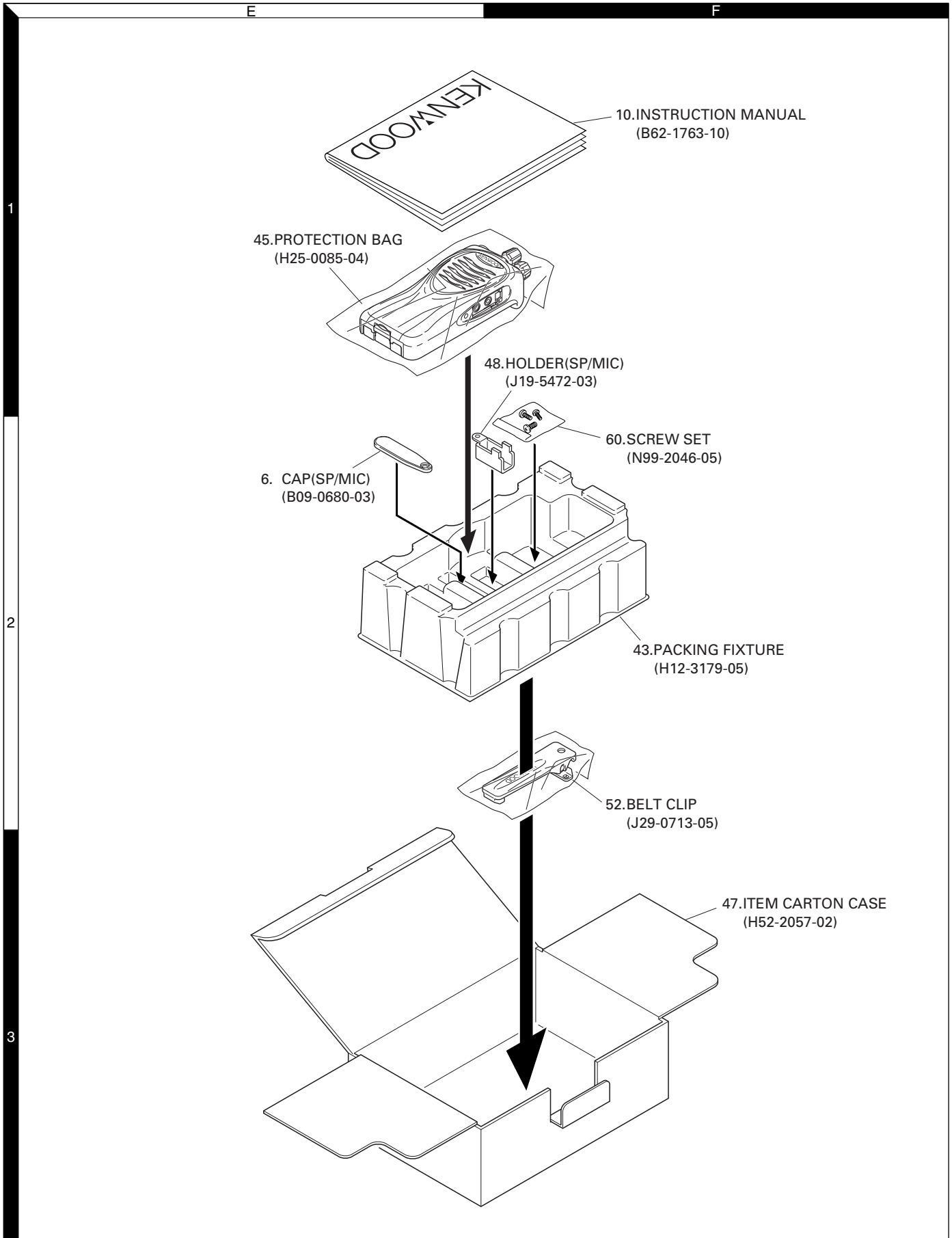
- A :N14-0819-04
- B :N14-0820-04
- C :N30-2604-48
- D :N30-2606-48
- E :N83-2005-48

TK-3202/3206

PACKING (TK-3202)



PACKING (TK-3206)



ADJUSTMENT

Test Equipment Required for Alignment

| Test Equipment | Major Specifications | |
|---------------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------|
| 1. Standard Signal Generator (SSG) | Frequency Range | 450 to 490MHz (TK-3202(K, M) TK-3206(M)) 470 to 512MHz (TK-3202(K2, M2)) 400 to 430MHz (TK-3202(K3) TK-3206(M3)) |
| | Modulation | Frequency modulation and external modulation |
| | Output | -127dBm/0.1μV to greater than -47dBm/1mV |
| 2. Power Meter | Input Impedance | 50Ω |
| | Operation Frequency | 450 to 490MHz (TK-3202(K, M) TK-3206(M)) 470 to 512MHz (TK-3202(K2, M2)) 400 to 430MHz (TK-3202(K3) TK-3206(M3)) |
| | Measurement Range | Vicinity of 10W |
| 3. Deviation Meter | Frequency Range | 450 to 490MHz (TK-3202(K, M) TK-3206(M)) 470 to 512MHz (TK-3202(K2, M2)) 400 to 430MHz (TK-3202(K3) TK-3206(M3)) |
| 4. Digital Volt Meter (DVM) | Measuring Range | 10mV to 10V DC |
| | Input Impedance | High input impedance for minimum circuit loading |
| 5. Oscilloscope | | DC through 30MHz |
| 6. High Sensitivity Frequency Counter | Frequency Range | 10Hz to 1000MHz |
| | Frequency Stability | 0.2ppm or less |
| 7. Ammeter | | 5A |
| 8. AF Volt Meter (AF VTVM) | Frequency Range | 50Hz to 10kHz |
| | Voltage Range | 1mV to 10V |
| 9. Audio Generator (AG) | Frequency Range | 50Hz to 5kHz or more |
| | Output | 0 to 1V |
| 10. Distortion Meter | Capability | 3% or less at 1kHz |
| | Input Level | 50mV to 10Vrms |
| 11. Spectrum Analyzer | Measuring Range | DC to 1GHz or more |
| 12. Tracking Generator | Center frequency | 50kHz to 600MHz |
| | Output Voltage | 100mV or more |
| 13. 8Ω Dummy Load | | Approx. 8Ω, 3W |
| 14. Regulated Power Supply | | 5V to 10V, approx. 3A Useful if ammeter equipped |

■ The following parts are required for adjustment

1. Antenna connector adapter

The antenna connector of this transceiver uses an SMA terminal.

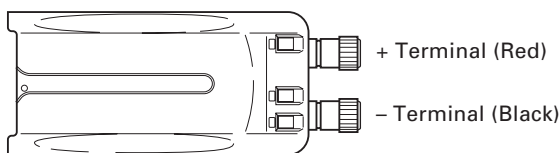
Use an antenna connector adapter [SMA(f) – BNC(f) or SMA(f) – N(f)] for adjustment. (The adapter is not provided as an option, so buy a commercially-available one.)

2. Repair Jig (Chassis)

Use jig (part No.: A10-4086-03) for repairing the TK-3202/3206. Place the TX-RX unit on the jig and fit it with screws.

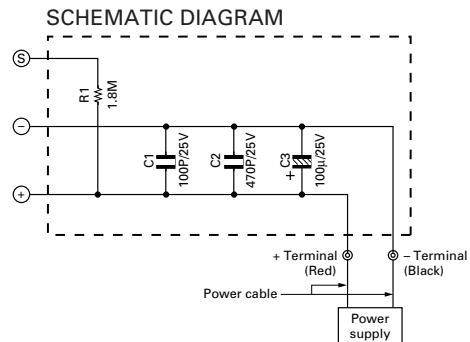
The jig facilitates the voltage check and protects the final amplifier FET when the voltage on the flow side of the TX-RX unit is checked during repairs.

3. Battery Jig (W05-1011-00)



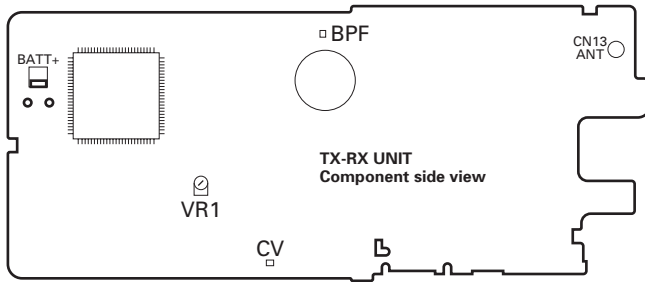
Connect the power cable properly between the battery jig installed in the transceiver and the power supply, and be sure output voltage and the power supply polarity prior to switching the power supply ON, otherwise over voltage and reverse connection may damage the transceiver, or the power supply or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

Note: When using the battery jig, you must measure the voltage at the terminals of the battery jig. Otherwise, a slight voltage drop may occur within the power cable, between the power supply and the battery jig, especially while the transceiver transmits.

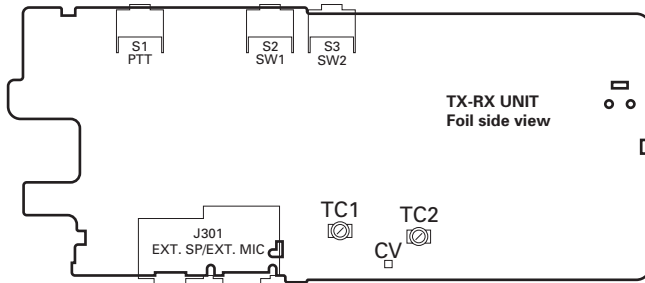


ADJUSTMENT

Adjustment points



VR1 : Frequency adjustment
 BPF : Band-pass wave form test point
 CV : Lock voltage adjustment terminal



TC1 : Transmit lock voltage adjustment
 TC2 : Receive lock voltage adjustment
 CV : Lock voltage adjustment terminal

■ Frequency and signaling

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

Frequency (MHz) K, M type (TK-3202) M type (TK-3206)

| Channel No. | RX Frequency | TX Frequency |
|-------------|--------------|--------------|
| 1 | 470.050 | 470.100 |
| 2 | 450.050 | 450.100 |
| 3 | 489.950 | 489.900 |
| 4 | 470.000 | 470.000 |
| 5 | 470.200 | 470.200 |
| 6 | 470.400 | 470.400 |
| 7~16 | — | — |

Frequency (MHz) K2, M2 type (TK-3202)

| Channel No. | RX Frequency | TX Frequency |
|-------------|--------------|--------------|
| 1 | 491.050 | 491.100 |
| 2 | 470.050 | 470.100 |
| 3 | 511.950 | 511.900 |
| 4 | 491.000 | 491.000 |
| 5 | 491.200 | 491.200 |
| 6 | 491.400 | 491.400 |
| 7~16 | — | — |

Frequency (MHz) K3 type (TK-3202) M3 type (TK-3206)

| Channel No. | RX Frequency | TX Frequency |
|-------------|--------------|--------------|
| 1 | 415.050 | 415.100 |
| 2 | 400.050 | 400.100 |
| 3 | 429.950 | 429.900 |
| 4 | 415.000 | 415.000 |
| 5 | 415.200 | 415.200 |
| 6 | 415.400 | 415.400 |
| 7~16 | — | — |

Signaling

| Signaling No. | RX | TX |
|---------------|------------|-------------------|
| 1 | None | None |
| 2 | None | 100Hz Square Wave |
| 3 | QT 67.0Hz | QT 67.0Hz |
| 4 | QT 151.4Hz | QT 151.4Hz |
| 5 | QT 250.3Hz | QT 250.3Hz |
| 6 | DQT D023N | DQT D023N |
| 7 | DQT D754I | DQT D754I |
| 8 | DTMF 159D | DTMF 159D |
| 9 | None | DTMF tone 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

| TEST CH | K, M type (TK-3202) M type (TK-3206) | |
|---------|--------------------------------------|--------------|
| | RX Frequency | TX Frequency |
| Center | 470.050MHz | 470.100MHz |
| Low | 450.050MHz | 450.100MHz |
| High | 489.950MHz | 489.900MHz |
| Low' | 460.050MHz | 460.100MHz |
| High' | 480.050MHz | 480.100MHz |

| TEST CH | K2, M2 type (TK-3202) | |
|---------|-----------------------|--------------|
| | RX Frequency | TX Frequency |
| Center | 491.050MHz | 491.100MHz |
| Low | 470.050MHz | 470.100MHz |
| High | 511.950MHz | 511.900MHz |
| Low' | 480.550MHz | 480.600MHz |
| High' | 501.550MHz | 501.600MHz |

| TEST CH | K3 type (TK-3202) M3 type (TK-3206) | |
|---------|-------------------------------------|--------------|
| | RX Frequency | TX Frequency |
| Center | 415.050MHz | 415.100MHz |
| Low | 400.050MHz | 400.100MHz |
| High | 429.950MHz | 429.900MHz |
| Low' | 407.550MHz | 407.600MHz |
| High' | 422.550MHz | 422.600MHz |

TK-3202/3206

ADJUSTMENT


Common Section

| Item | Condition | Measurement | | Adjustment | | Specifications/ Remark |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------|-----------|------------|-----------------------------------------------------------------------------------------------------------|---------------------------|
| | | Test equipment | Terminal | Parts | Method | |
| 1.Setting | 1) BATT terminal vorage:7.5V 2) SSG standard modulation [Wide] MOD:1kHz,DEV:3kHz [Narrow] MOD:1kHz,DEV:1.5kHz | | | | | |
| 2.VCO lock voltage RX | 1) CH:High | Power meter DVM | ANT CV | TC2 | 3.4V (TK-3202 (K,M), TK-3206 (M)) 3.2V (TK-3202 (K2,M2)) 3.0V (TK-3202 (K3), TK-3206 (M3)) | ±0.1V |
| | 2) CH:Low | | | | Check | 0.6V or more |
| 3.VCO lock voltage TX | 3) CH:High PTT:ON | | | TC1 | 3.1V (TK-3202 (K,M), TK-3206 (M)) 3.2V (TK-3202 (K2,M2)) 3.0V (TK-3202 (K3), TK-3206 (M3)) | ±0.1V |
| | 4) CH:Low PTT:ON | | | | Check | 0.6V or more |

Transmitter Section

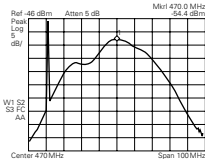
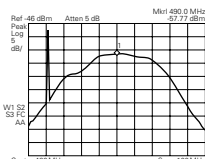
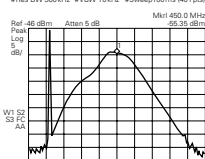
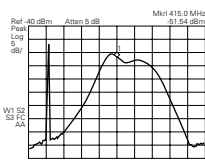
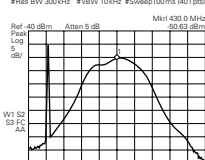
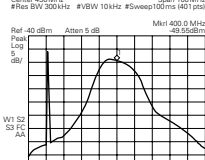
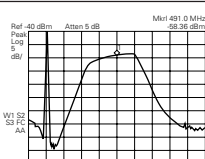
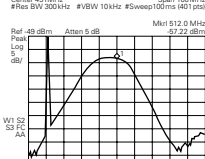
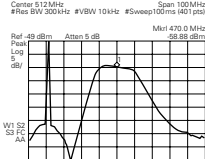
| Item | Condition | Measurement | | Adjustment | | Specifications/ Remark |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------|---------------------------------|-------------------------------------------|------------------------------------------------------------------|
| | | Test equipment | Terminal | Parts | Method | |
| 1.Frequency Adjust | 1) CH:High 2) PTT:ON | Frequency counter | ANT | VR1 | High frequency ±50Hz | Note: After replacing the TCXO(X1) align frequency. |
| 2.High power Adjust | TEST CH: Low Low' Center High' High (5 points) BATT terminal voltage:7.5V PTT:ON | Power meter Ammeter | | Programming Software:KPG-87D | 4.0W | ±0.1W 1.9 A or less |
| | | | | | 1.0W | ±0.1W 0.9 A or less |
| 3.Low power Adjust | TEST CH: Low Low' Center High' High (5 points) BATT terminal voltage:7.5V PTT:ON | | | | | |
| 4. Max deviation Adjust [Wide] | TEST CH: Center Low High (3 points) AG:1kHz/150mV Deviation meter filter LPF:15kHz HPF:OFF PTT:ON | Power meter Deviation meter Oscilloscope AG AF VTVM | ANT SP/MIC connector | | 4.2kHz (According to the lager +,-) | ±50Hz |
| | [Narrow] TEST CH: Center PTT:ON | | | | 2.2kHz (According to the lager +,-) | ±50Hz |

ADJUSTMENT

| Item | Condition | Measurement | | Adjustment | | Specifications/ Remark |
|---------------------------------------|-------------------------------------------------------------------------------|--------------------------------|-------------------------|---------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------|
| | | Test equipment | Terminal | Parts | Method | |
| 5.VOX 1 Writing | TEST CH:Center AG:1kHz/45mV | Power meter Deviation meter | ANT SP/MIC connector | Programming Software:KPG-87D | | |
| 6.VOX 10 Writing | TEST CH:Center AG:1kHz/3.0mV | Oscilloscope AG | | | | |
| 7.DQT Balance Adjust [Wide] | TEST CH:Center Low High (3 points) LPF:3kHz HPF:OFF PTT:ON | AF VTVM | ANT | Programming Software:KPG-87D | Make the demodulation wave into square waves |  |
| [Narrow] | TEST CH:Center PTT:ON | | | | | |
| 8.QT Deviation Adjust [Wide] | TEST CH:Center Low High (3 points) LPF:3kHz HPF:OFF PTT:ON | | | | 0.75kHz | ±40Hz |
| [Narrow] | TEST CH:Center PTT:ON | | | | 0.35kHz | ±40Hz |
| 9.DQT Deviation Adjust [Wide] | TEST CH:Center Low High (3 points) LPF:3kHz HPF:OFF PTT:ON | | | | 0.75kHz | ±40Hz |
| [Narrow] | TEST CH:Center PTT:ON | | | | 0.35kHz | ±40Hz |
| 10.DTMF Deviation Adjust [Wide] | TEST CH:Center LPF:15kHz HPF:OFF PTT:ON | | | | 3.0kHz | ±100Hz |
| [Narrow] | TEST CH:Center PTT:ON | | | | 1.5kHz | ±100Hz |
| 11.MSK Deviation Adjust [Wide] | TEST CH:Center Low High (3 points) LPF:15kHz HPF:OFF PTT:ON | | | | 3.0kHz | ±100Hz |
| [Narrow] | TEST CH:Center PTT:ON | | | | 1.5kHz | ±100Hz |

ADJUSTMENT

Receiver Section

| Item | Condition | Measurement | | Adjustment | | Specifications/ Remark |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------|-------------------------------------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | Test equipment | Terminal | Parts | Method | |
| 1. BPF Wave Adjust TK-3202 (K,M) TK-3206 (M) | (1)Center frequency Spectrum analyzer setting Center-f : 470MHz Span : 100MHz RBW : 300kHz VBW : 10kHz ATT : 5dB (2)High-edge frequency Spectrum analyzer setting Center-f : 490MHz (3)Low-edge frequency Spectrum analyzer setting Center-f : 450MHz | Spectrum analyzer | ANT BPF | Programming Software: KPG-87D | Adjust the waveform as shown to the right. |    |
| TK-3202 (K3) TK-3206 (M3) | (1)Center frequency Spectrum analyzer setting Center-f : 415MHz Span : 100MHz RBW : 300kHz VBW : 10kHz ATT : 5dB (2)High-edge frequency Spectrum analyzer setting Center-f : 430MHz (3)Low-edge frequency Spectrum analyzer setting Center-f : 400MHz | | | | |    |
| TK-3202 (K2,M2) | (1)Center frequency Spectrum analyzer setting Center-f : 491MHz Span : 100MHz RBW : 300kHz VBW : 10kHz ATT : 5dB (2)High-edge frequency Spectrum analyzer setting Center-f : 512MHz (3)Low-edge frequency Spectrum analyzer setting Center-f : 470MHz | | | | |    |

ADJUSTMENT

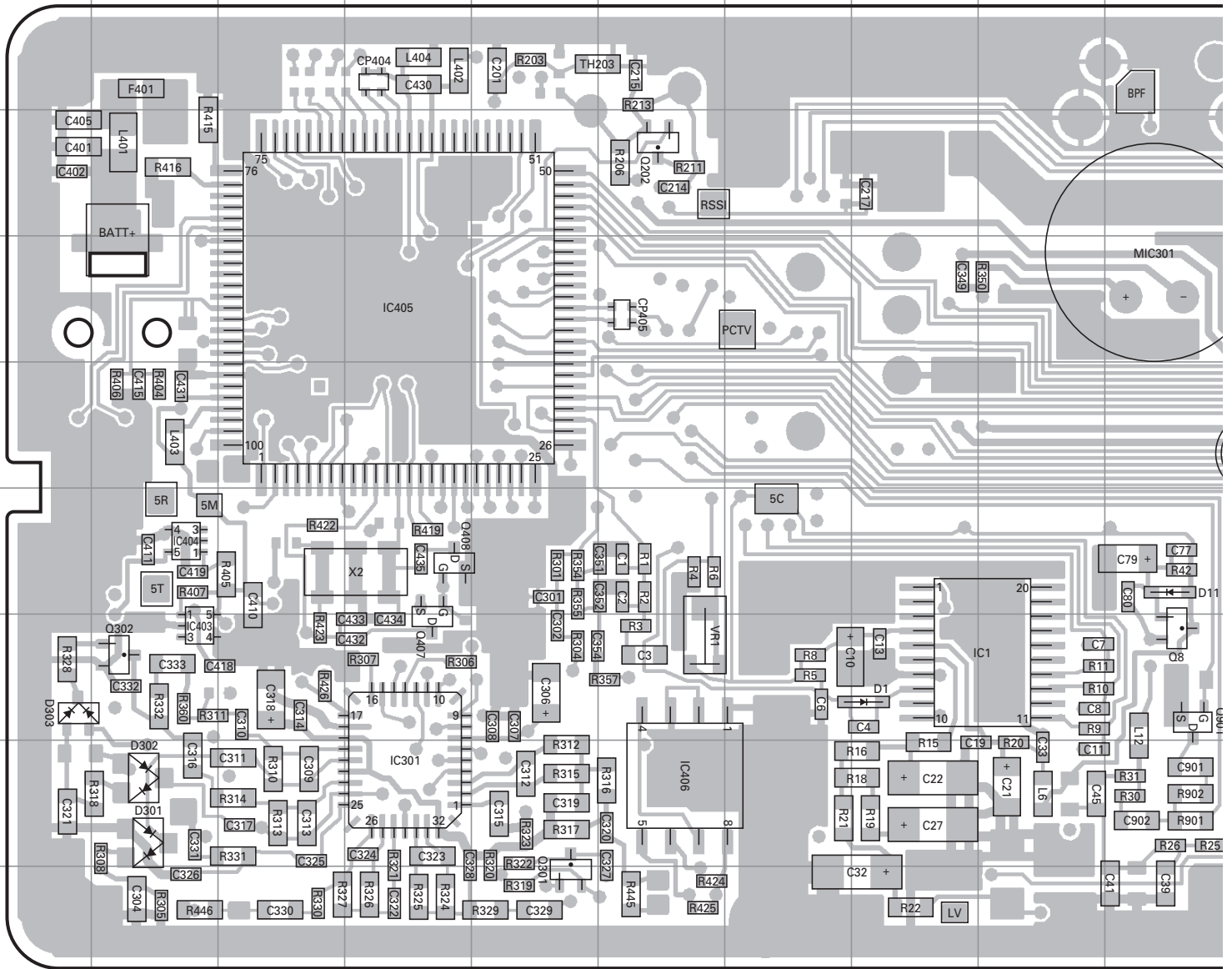
| Item | Condition | Measurement | | Adjustment | | Specifications/ Remark |
|--------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------|----------------------|-------------------------------------|--------|-------------------------------|
| | | Test equipment | Terminal | Parts | Method | |
| 2.Sensitivity check [Wide] | TEST CH: Low Center High SSG otuput:-117 dBm(0.3μV) SSG MOD:3.0kHz | SSG DVM Oscilloscope AF VTVM | ANT | | Check | 12dB SINAD or more |
| | [Narrow] | | | | | |
| 3.SQL1 (Threshold) writing [Wide] | TEST CH: Center Low High SSG otuput:-123 dBm(0.16μV) SSG MOD:3.0kHz | | | Programming Software: KPG-87D | Write | Squelch open |
| | [Narrow] | | | | | |
| 4.SQL9 (Tight) writing [Wide] | TEST CH: Center Low High SSG otuput:-117 dBm(0.3μV) SSG MOD:3.0kHz | | | | | |
| | [Narrow] | | | | | |
| 5.BATT Detection Writing | BATT terminal voltage:5.9V | DVM | ANT BATT terminal | | Write | BATT terminal voltage:5.9V |

TK-3202/3206 PC BOARD

TX-RX UNIT (X57-6890-XX) Component side view (J79-0045-09)

-20 : TK-3202 (K,M), TK-3206 (M)

-22 : TK-3202 (K3), TK-3206 (M3) -23 : TK-3202 (K2,M2)



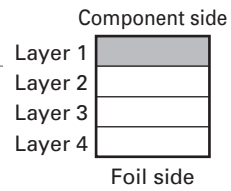
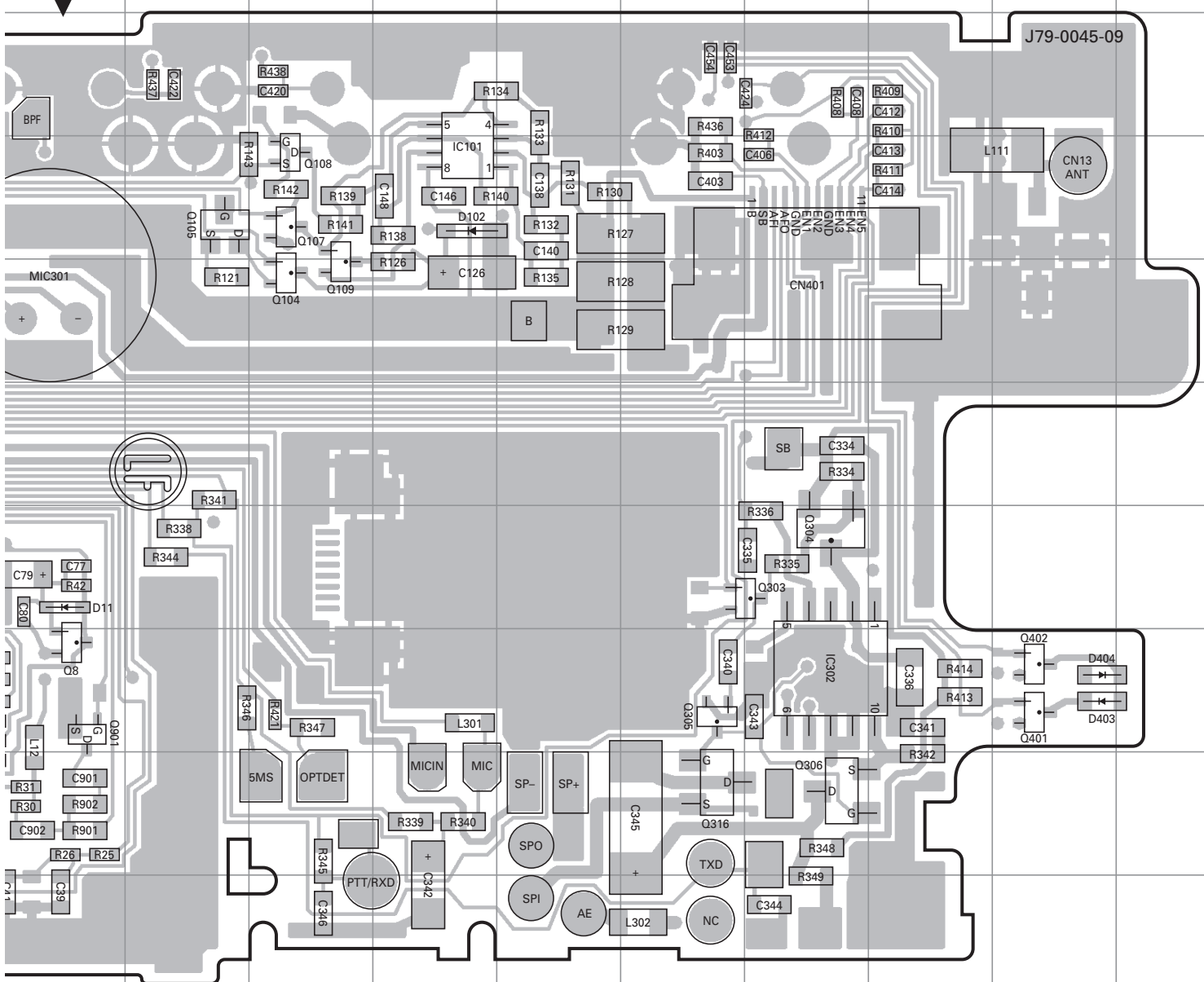
| Ref. No. | Address | Ref. No. | Address | Ref. No. | Address | Ref. No. | Address |
|----------|---------|----------|---------|----------|---------|----------|---------|
| IC1 | 8I | Q104 | 5L | Q304 | 7P | D1 | 8H |
| IC101 | 4M | Q105 | 4K | Q305 | 8O | D11 | 7J |
| IC301 | 9D | Q107 | 4L | Q306 | 9P | D102 | 4M |
| IC302 | 8P | Q108 | 4L | Q316 | 9O | D301 | 9B |
| IC403 | 8B | Q109 | 5L | Q401 | 8R | D302 | 9B |
| IC404 | 7B | Q202 | 4F | Q402 | 8R | D303 | 8A |
| IC405 | 5D | Q301 | 10E | Q407 | 8D | D403 | 8R |
| IC406 | 9F | Q302 | 8B | Q408 | 7D | D404 | 8R |
| Q8 | 8J | Q303 | 7P | Q901 | 8J | | |

PC BOARD TK-3202/3206

TX-RX UNIT (X57-6890-XX) Component side view (J79-0045-09)

-20 : TK-3202 (K,M), TK-3206 (M)

-22 : TK-3202 (K3), TK-3206 (M3) -23 : TK-3202 (K2,M2)

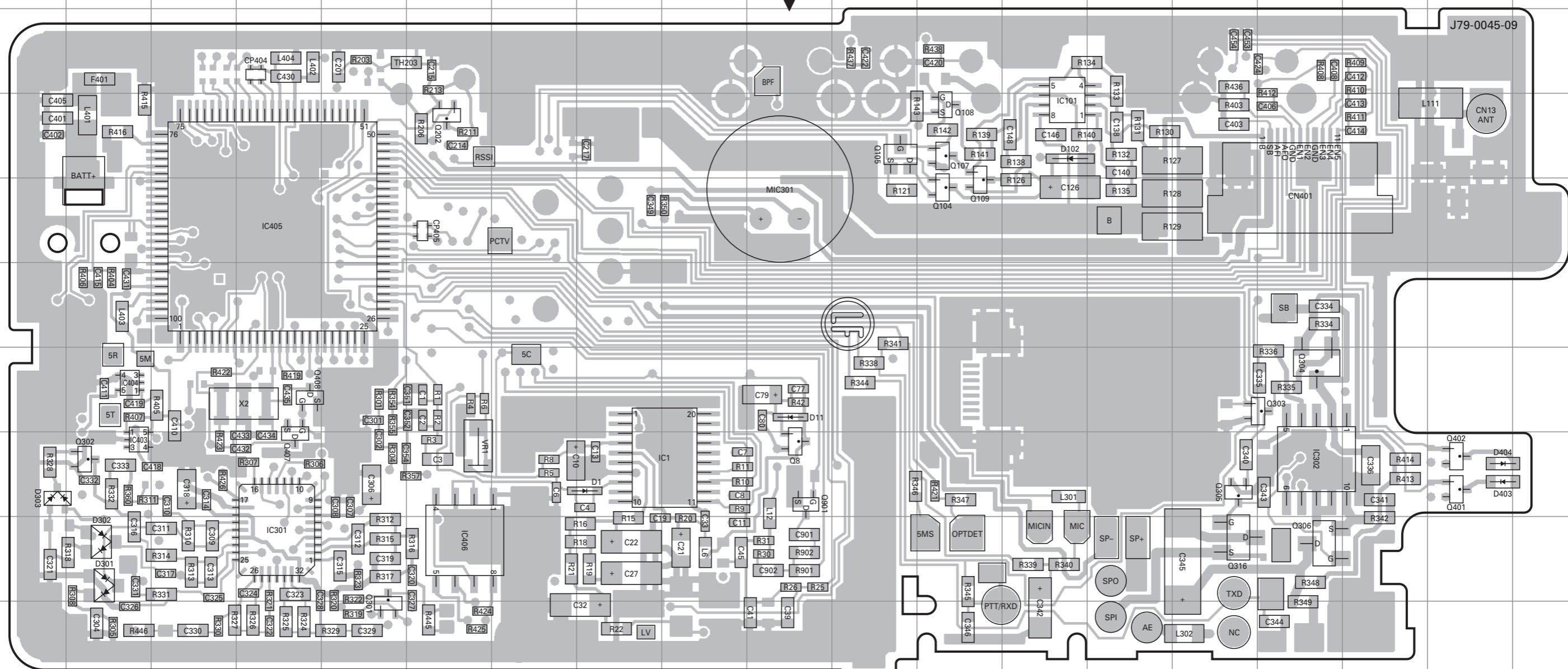


TK-3202/3206 PC BOARD

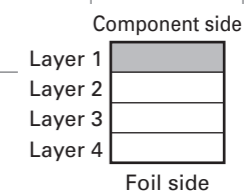
PC BOARD TK-3202/3206

TX-RX UNIT (X57-6890-XX) Component side view (J79-0045-09)
 -20 : TK-3202 (K,M), TK-3206 (M)
 -22 : TK-3202 (K3), TK-3206 (M3) -23 : TK-3202 (K2,M2)

TX-RX UNIT (X57-6890-XX) Component side view (J79-0045-09)
 -20 : TK-3202 (K,M), TK-3206 (M)
 -22 : TK-3202 (K3), TK-3206 (M3) -23 : TK-3202 (K2,M2)



| Ref. No. | Address | Ref. No. | Address | Ref. No. | Address | Ref. No. | Address |
|----------|---------|----------|---------|----------|---------|----------|---------|
| IC1 | 8I | Q104 | 5L | Q304 | 7P | D1 | 8H |
| IC101 | 4M | Q105 | 4K | Q305 | 8O | D11 | 7J |
| IC301 | 9D | Q107 | 4L | Q306 | 9P | D102 | 4M |
| IC302 | 8P | Q108 | 4L | Q316 | 9O | D301 | 9B |
| IC403 | 8B | Q109 | 5L | Q401 | 8R | D302 | 9B |
| IC404 | 7B | Q202 | 4F | Q402 | 8R | D303 | 8A |
| IC405 | 5D | Q301 | 10E | Q407 | 8D | D403 | 8R |
| IC406 | 9F | Q302 | 8B | Q408 | 7D | D404 | 8R |
| Q8 | 8J | Q303 | 7P | Q901 | 8J | | |

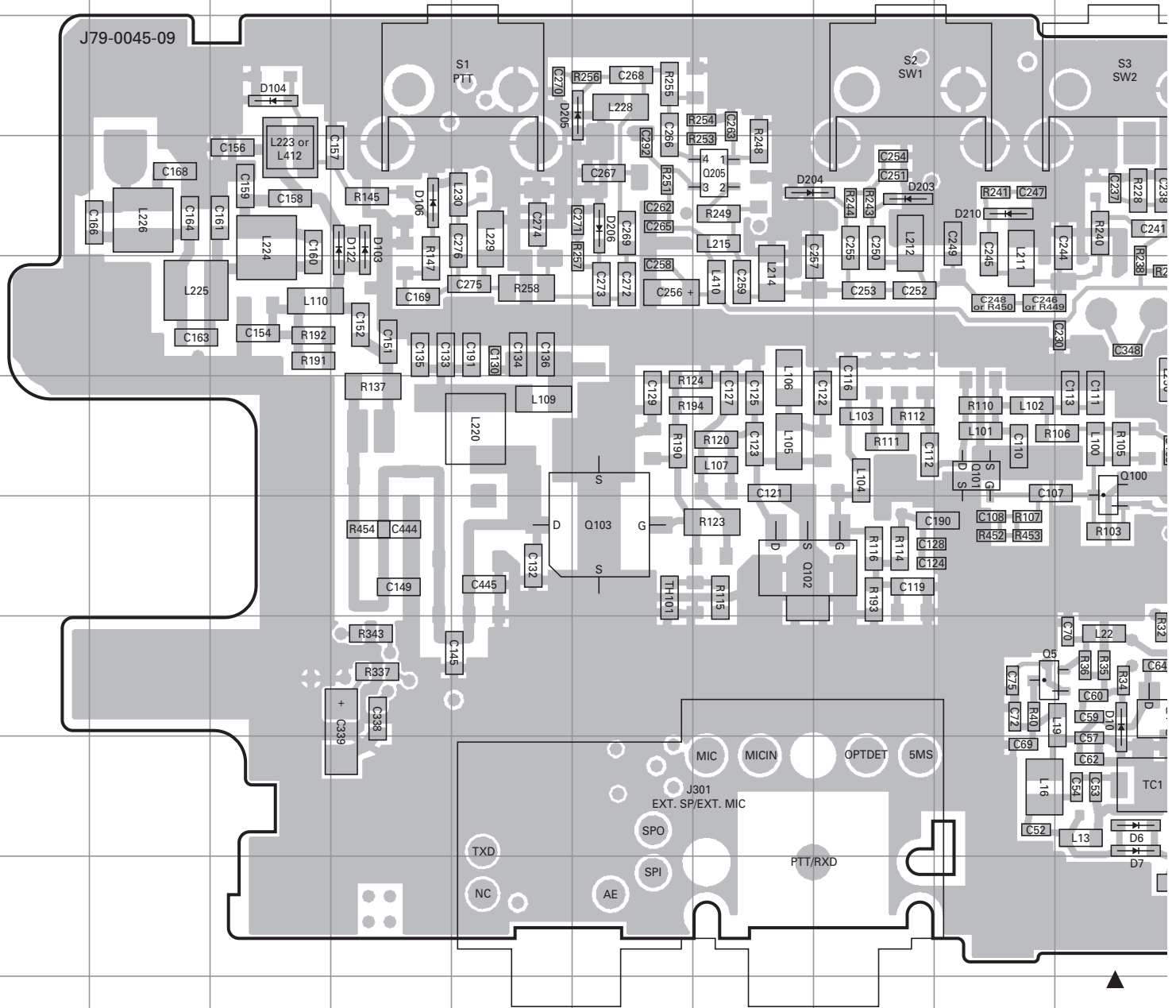


TK-3202/3206 PC BOARD

TX-RX UNIT (X57-6890-XX) Foil side view (J79-0045-09)

-20 : TK-3202 (K,M), TK-3206 (M)

-22 : TK-3202 (K3), TK-3206 (M3) -23 : TK-3202 (K2,M2)



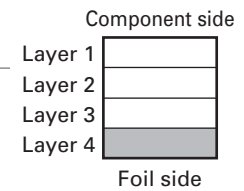
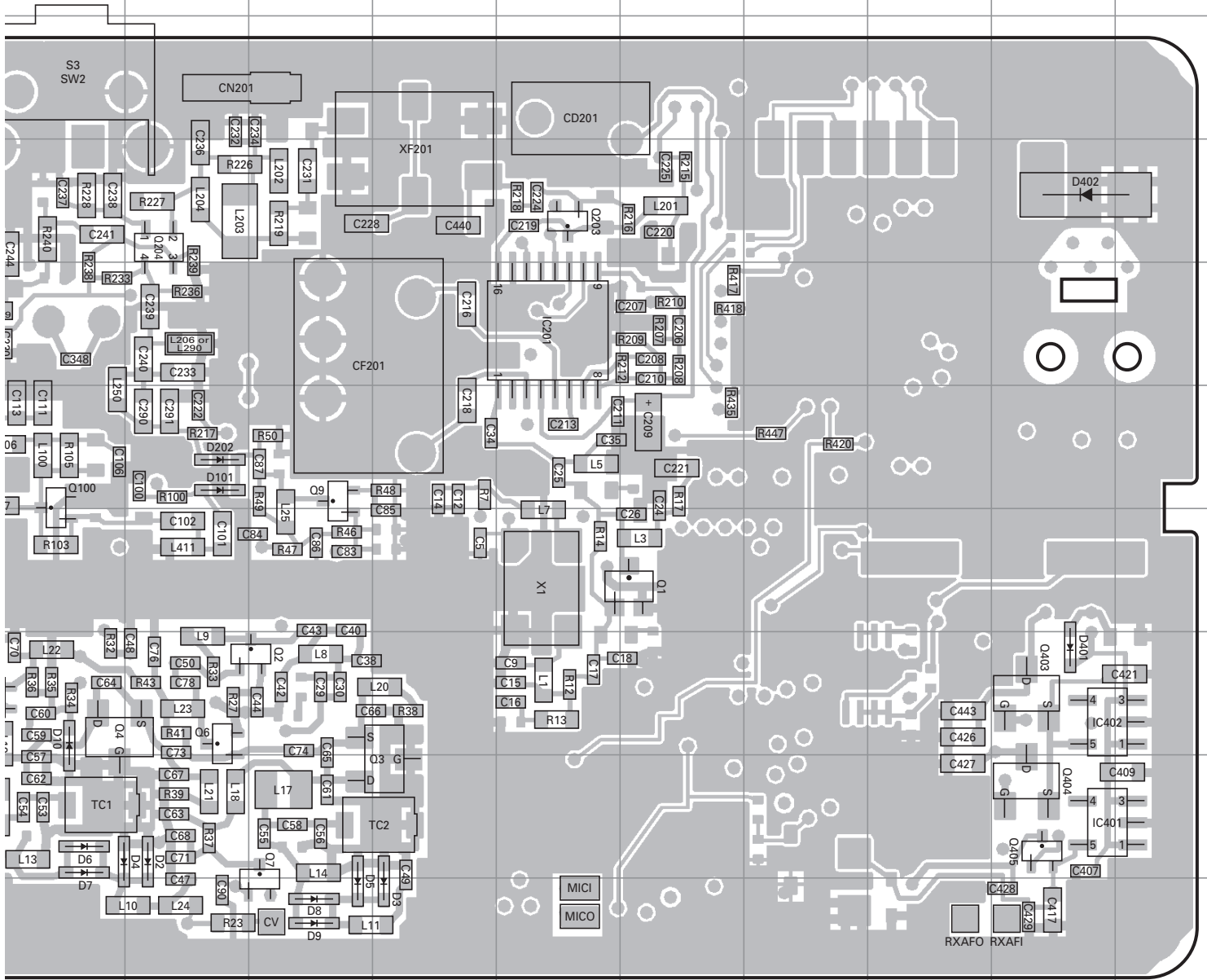
| Ref. No. | Address | Ref. No. | Address | Ref. No. | Address | Ref. No. | Address | Ref. No. | Address | Ref. No. | Address |
|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|
| IC201 | 5N | Q6 | 8K | Q204 | 4K | D5 | 10L | D104 | 3C | D210 | 4I |
| IC401 | 9R | Q7 | 9L | Q205 | 4G | D6 | 9J | D106 | 4D | D401 | 8R |
| IC402 | 8R | Q9 | 6L | Q403 | 8R | D7 | 9J | D122 | 4D | D402 | 4R |
| Q1 | 7O | Q100 | 6J | Q404 | 9R | D8 | 10L | D202 | 6K | | |
| Q2 | 8L | Q101 | 6I | Q405 | 9R | D9 | 10L | D203 | 4H | | |
| Q3 | 9M | Q102 | 7G | D2 | 9K | D10 | 8J | D204 | 4G | | |
| Q4 | 8J | Q103 | 7F | D3 | 10M | D101 | 6K | D205 | 3F | | |
| Q5 | 8I | Q203 | 4N | D4 | 9J | D103 | 4D | D206 | 4F | | |

PC BOARD TK-3202/3206

TX-RX UNIT (X57-6890-XX) Foil side view (J79-0045-09)

-20 : TK-3202 (K,M), TK-3206 (M)

-22 : TK-3202 (K3), TK-3206 (M3) -23 : TK-3202 (K2,M2)

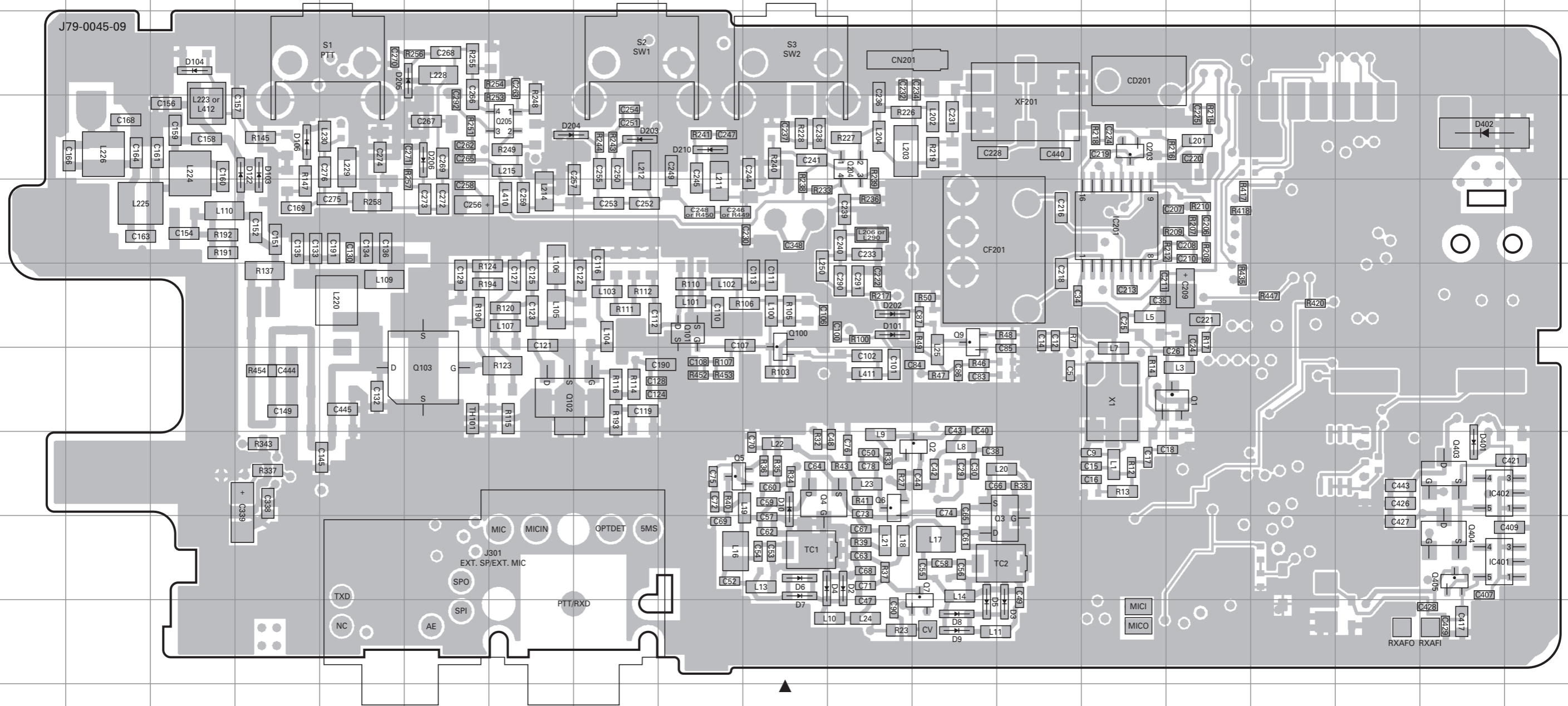


TK-3202/3206 PC BOARD

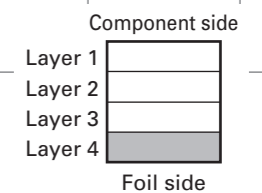
PC BOARD TK-3202/3206

TX-RX UNIT (X57-6890-XX) Foil side view (J79-0045-09)
-20 : TK-3202 (K,M), TK-3206 (M)
-22 : TK-3202 (K3), TK-3206 (M3) -23 : TK-3202 (K2,M2)

TX-RX UNIT (X57-6890-XX) Foil side view (J79-0045-09)
-20 : TK-3202 (K,M), TK-3206 (M)
-22 : TK-3202 (K3), TK-3206 (M3) -23 : TK-3202 (K2,M2)

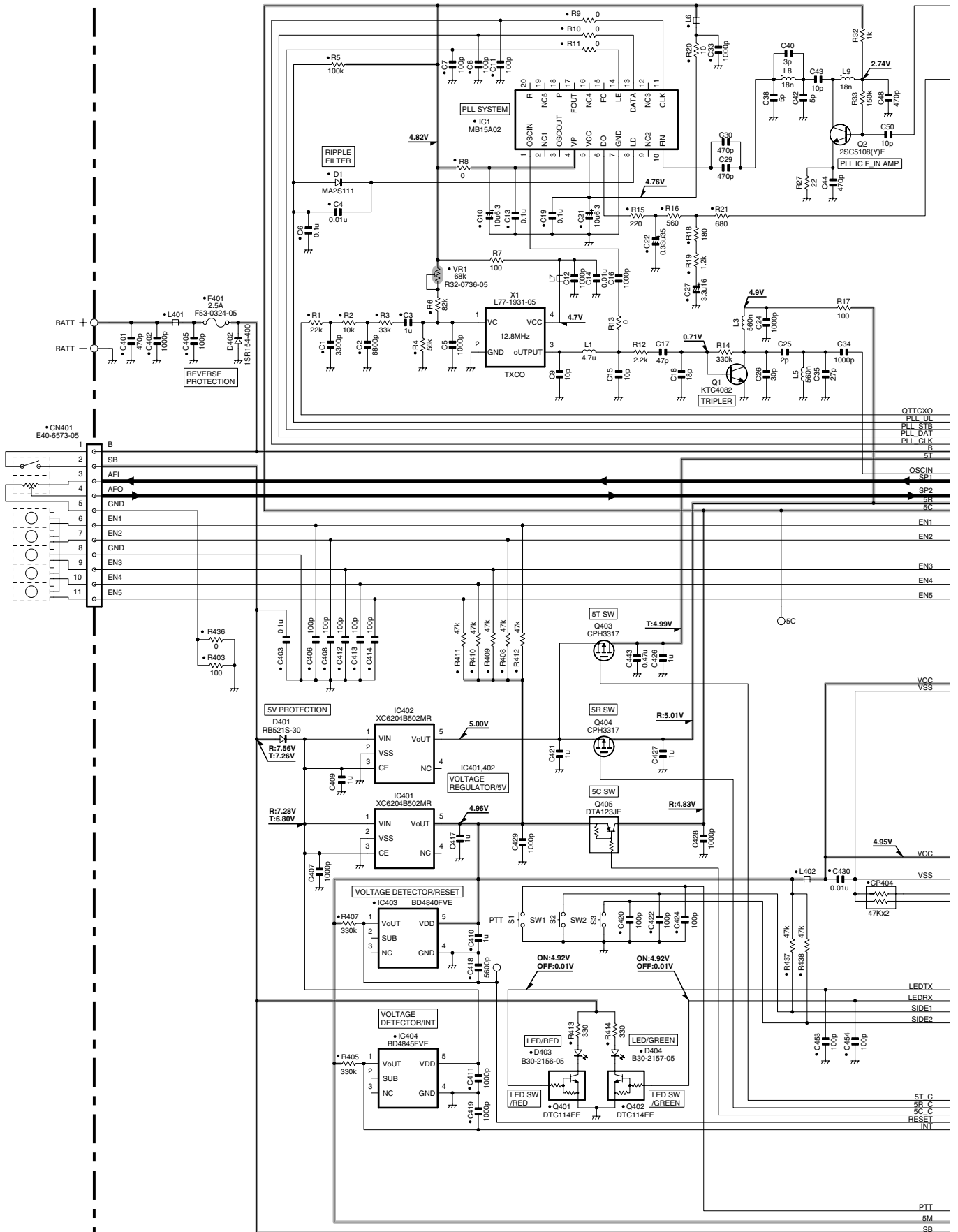


| Ref. No. | Address | Ref. No. | Address | Ref. No. | Address | Ref. No. | Address | Ref. No. | Address | Ref. No. | Address |
|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|
| IC201 | 5N | Q6 | 8K | Q204 | 4K | D5 | 10L | D104 | 3C | D210 | 4I |
| IC401 | 9R | Q7 | 9L | Q205 | 4G | D6 | 9J | D106 | 4D | D401 | 8R |
| IC402 | 8R | Q9 | 6L | Q403 | 8R | D7 | 9J | D122 | 4D | D402 | 4R |
| Q1 | 7O | Q100 | 6J | Q404 | 9R | D8 | 10L | D202 | 6K | | |
| Q2 | 8L | Q101 | 6I | Q405 | 9R | D9 | 10L | D203 | 4H | | |
| Q3 | 9M | Q102 | 7G | D2 | 9K | D10 | 8J | D204 | 4G | | |
| Q4 | 8J | Q103 | 7F | D3 | 10M | D101 | 6K | D205 | 3F | | |
| Q5 | 8I | Q203 | 4N | D4 | 9J | D103 | 4D | D206 | 4F | | |



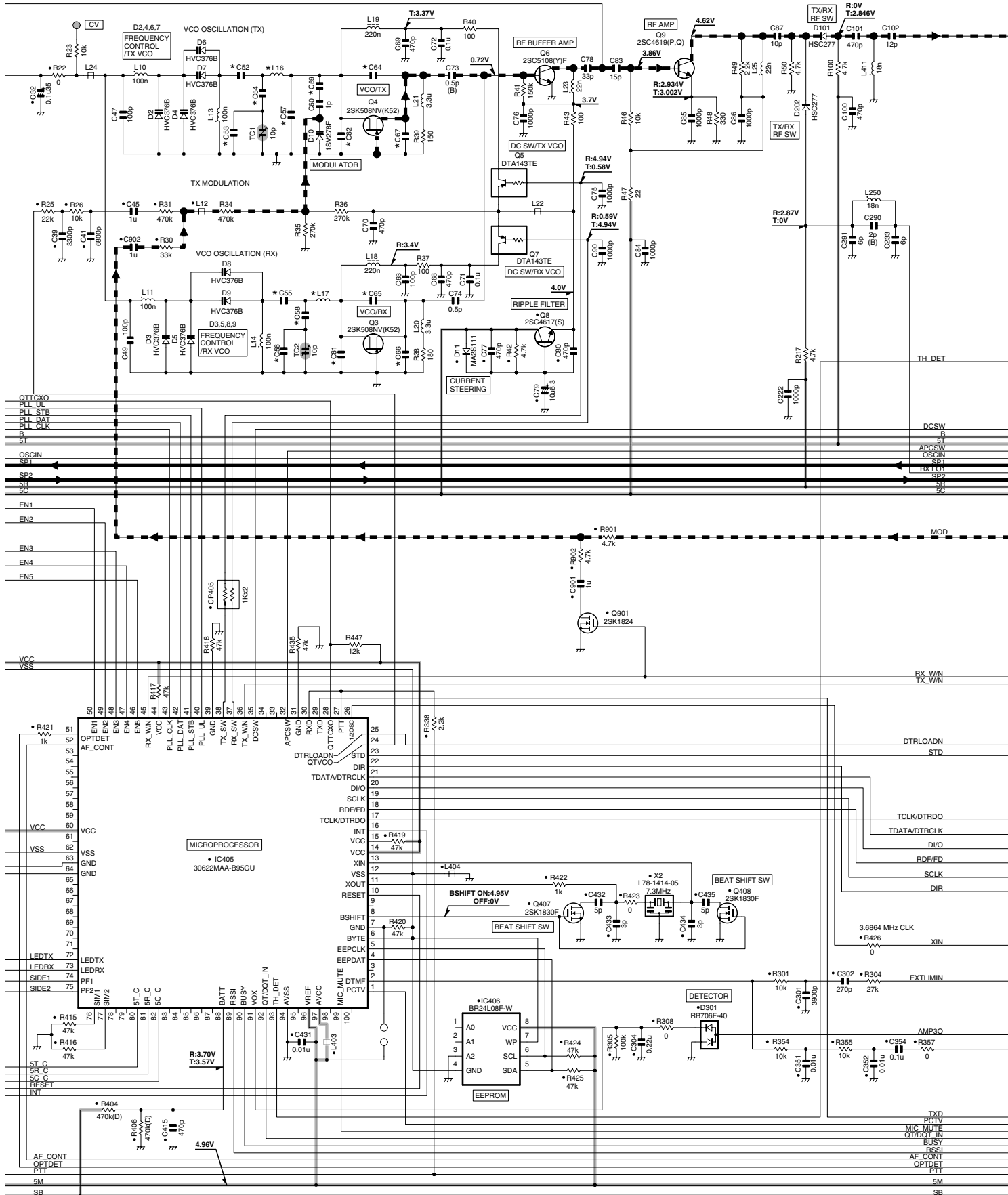
TK-3202/3206 SCHEMATIC DIAGRAM

TX-RX UNIT (X57-6890-XX)



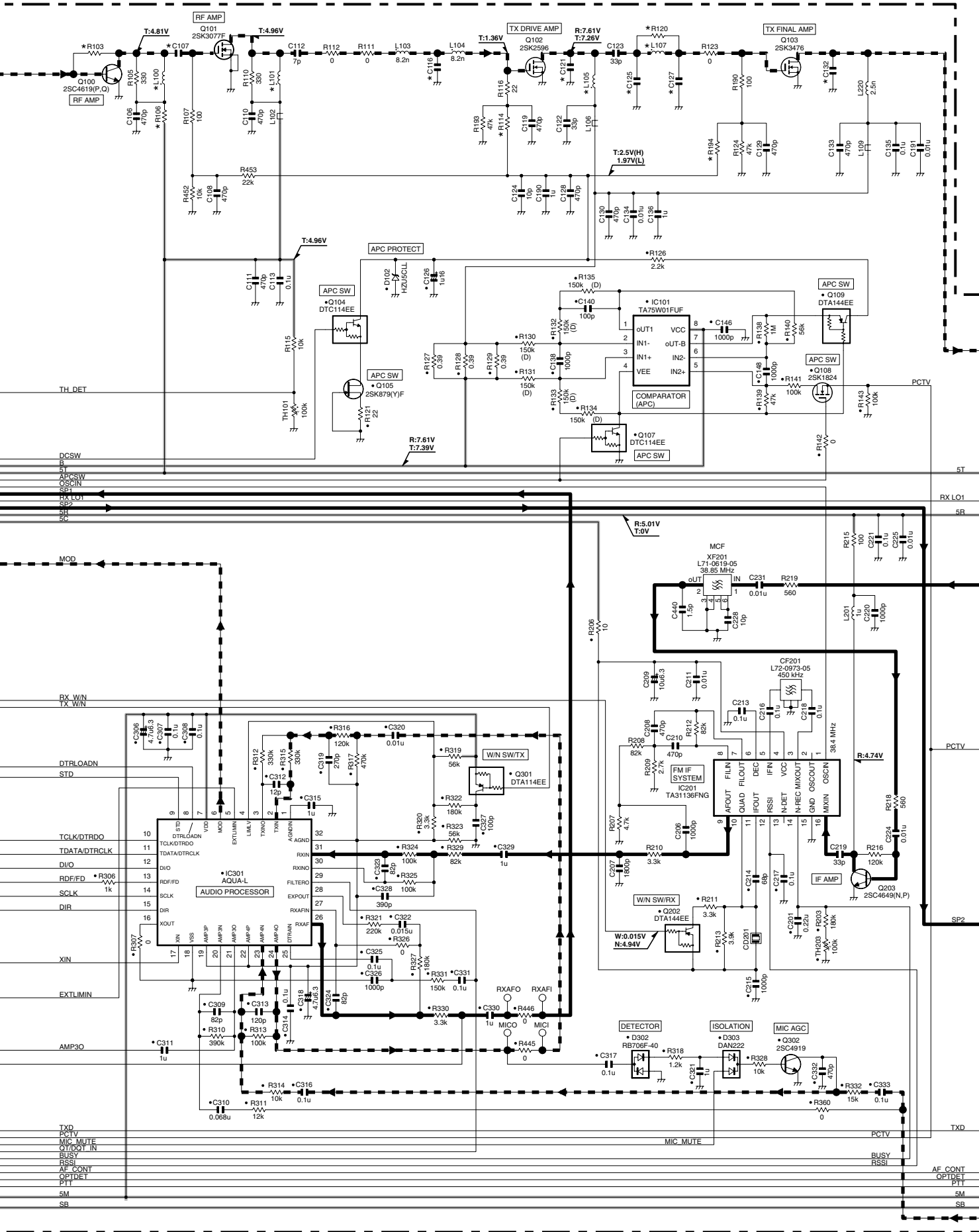
SCHEMATIC DIAGRAM TK-3202/3206

TX-RX UNIT (X57-6890-XX)



TK-3202/3206 SCHEMATIC DIAGRAM

TX-RX UNIT (X57-6890-XX)



SCHEMATIC DIAGRAM TK-3202/3206

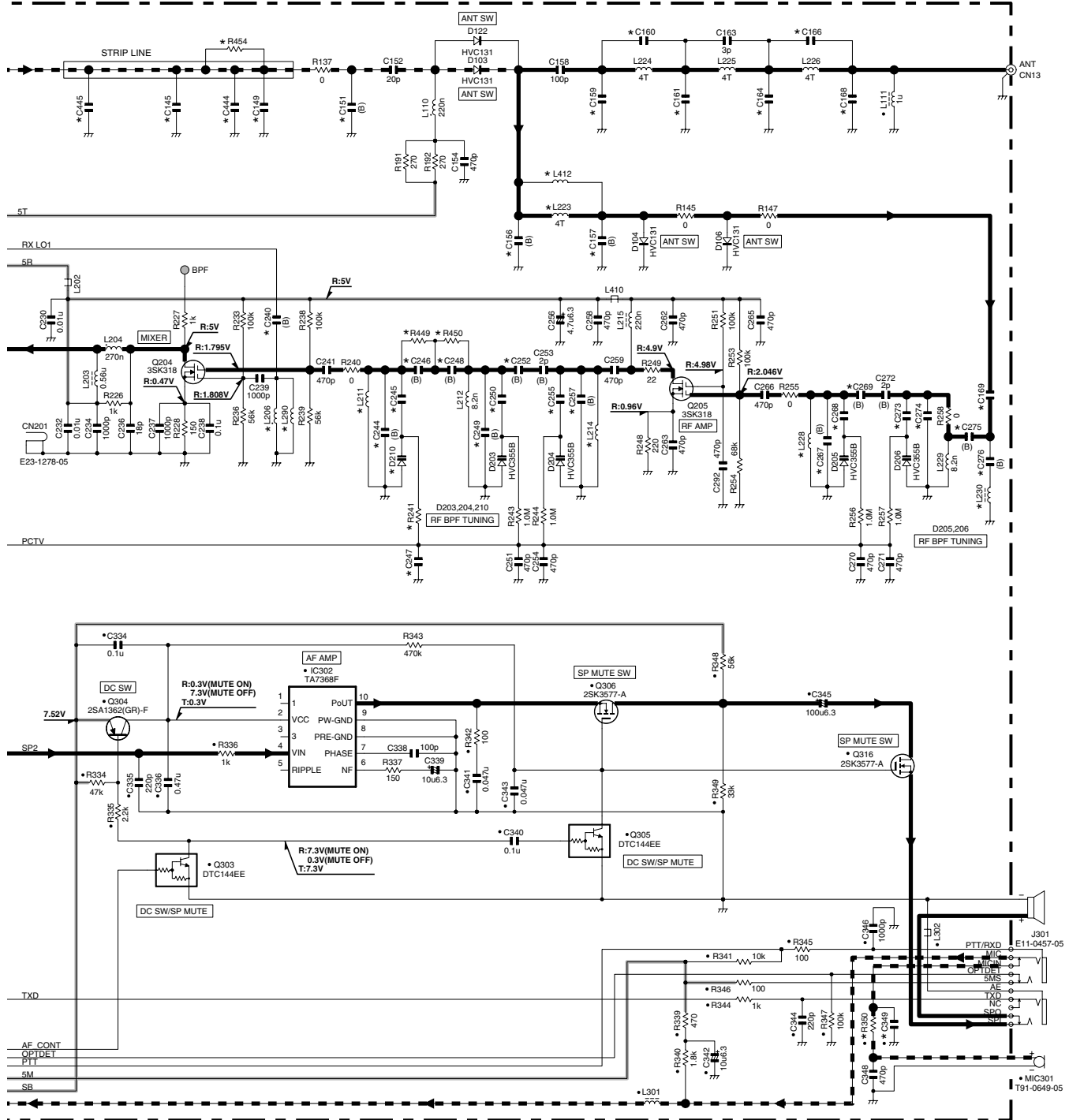
| X57-6890-XX | L16 | L17 | L100 | L101 | L105 | L107 | L206 | L211 | L214 | L223 | L228 | L230 | L290 | L412 | R103 | R106 | R114 | R120 | R194 | R241 | R350 | R449 | R450 | R454 | |
|---------------------|-------|-----|------|------|------|------|------|------|------|-------------|-------------|------|------|-------------|------|------|------|------|------|------|------|------|------|------|---|
| -20 TK-3202 TK-3206 | K/M | 22n | 27n | 15n | 15n | 1.2n | NO | 8.2n | 8.2n | L34-4572-05 | 8.2n | 47n | 30n | NO | 47k | 22 | 47k | NO | 47k | 1.0M | 0 | NO | NO | NO | |
| -22 TK-3202 TK-3206 | K3/M3 | 27n | 33n | 33n | 22n | 15n | NO | 39n | NO | NO | 8.2n | 56n | NO | L34-4564-05 | 33k | 120 | 68k | 0 | 68k | NO | 10k | 0 | 0 | NO | |
| -23 TK-3202 | K2,M2 | 18n | 22n | 15n | 15n | 22n | 1.2n | 27n | 8.2n | 6.8n | L34-4572-05 | 6.8n | 47n | NO | NO | 47k | 22 | 120k | NO | 47k | 1.0M | 0 | NO | NO | 0 |

| X57-6890-XX | C52 | C53 | C54 | C55 | C56 | C57 | C58 | C59 | C61 | C62 | C64 | C65 | C66 | C67 | C107 | C116 | C121 | C125 | C127 | C132 | C145 | C149 | C151 | C156 | C157 | C159 | C160 | C161 | C164 |
|---------------------|-------|-----|-----|-----|-----|-----|------|-----|------|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| -20 TK-3202 TK-3206 | K/M | 11p | 2p | 6p | 11p | 2p | NO | 6p | 1p | 3p | 2p | 4p | 6p | 5p | 6p | 11p | NO | 6p | 20p | 20p | 18p | 7p | NO | 4p | 2.5p | 2p | 2p | 5p | 5p |
| -22 TK-3202 TK-3206 | K3/M3 | 11p | 4p | 7p | 12p | 5p | 0.5p | 7p | 1.5p | 4p | 3p | 4p | 5p | 4p | 7p | 3p | 12p | 11p | NO | 39p | 30p | 7p | 7p | 3p | 4p | 2p | 2p | 5p | 5p |
| -23 TK-3202 | K2,M2 | 12p | 2p | 9p | 12p | NO | NO | 9p | 1p | 4p | 2p | 5p | 5p | 5p | 6p | 11p | NO | 6p | 20p | 27p | 18p | NO | 7p | 3.5p | 4p | 3p | 1.5p | 6p | 6p |

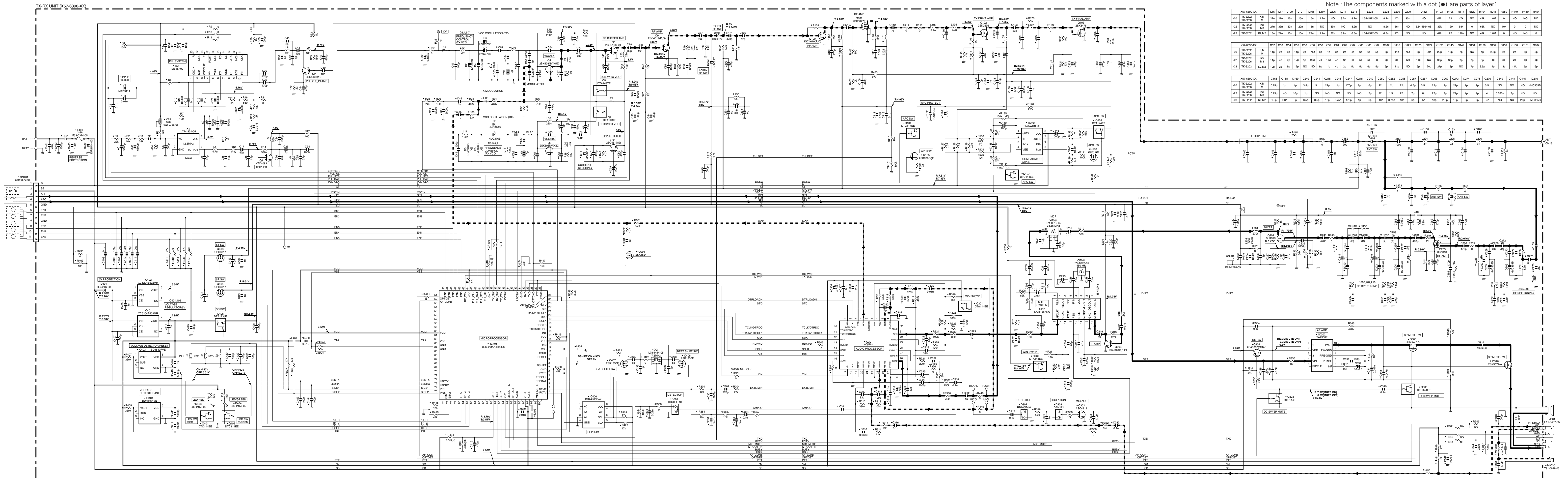
| X57-6890-XX | C166 | C168 | C169 | C240 | C244 | C245 | C246 | C247 | C248 | C249 | C250 | C252 | C255 | C257 | C267 | C268 | C269 | C273 | C274 | C275 | C276 | C349 | C444 | C445 | D210 | |
|---------------------|-------|-------|------|------|------|------|------|-------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|--------|------|------|---------|
| -20 TK-3202 TK-3206 | K/M | 0.75p | 1p | 4p | 3.5p | 3p | 22p | 1p | 470p | 2p | 6p | 22p | 2p | 22p | 4.5p | 3.5p | 22p | 2p | 22p | 1p | 2p | 3.5p | NO | NO | NO | HVC355B |
| -22 TK-3202 TK-3206 | K3/M3 | 0.75p | NO | 10p | 1p | NO | NO | NO | NO | NO | 5p | 22p | 1.5p | 22p | 7p | 6p | 22p | 2p | 22p | 4p | 2p | 4p | 0.033u | 2p | NO | NO |
| -23 TK-3202 | K2,M2 | 1.5p | 0.3p | 3p | 3.5p | 3.5p | 18p | 0.75p | 470p | 1p | 6p | 18p | 0.75p | 18p | 6p | 5p | 18p | 2.5p | 18p | 2p | 9p | 4p | NO | NO | 20p | HVC355B |

Note : The components marked with a dot (●) are parts of layer1.

TX-RX UNIT (X57-6890-XX)



TK-3202/3206 SCHEMATIC DIAGRAM



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

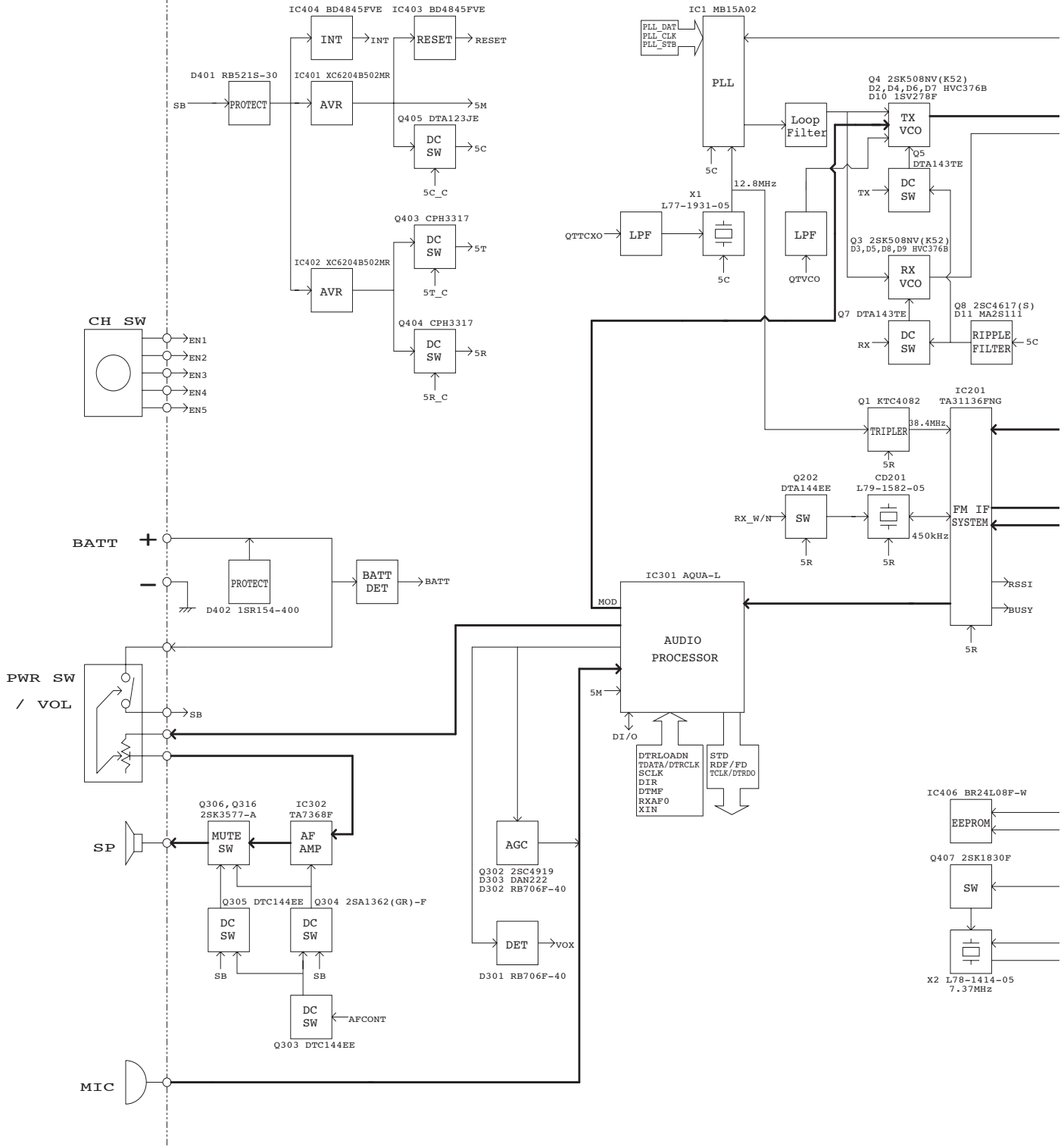
| X57-6890-XX | L16 | L17 | L100 | L101 | L105 | L107 | L206 | L211 | L214 | L223 | L228 | L230 | L412 | R108 | R114 | R120 | R194 | R241 | R300 | R440 | R450 | | | | |
|-------------------|-----|-----|------|------|------|------|------|------|------|-------------|------|------|------|-------------|------|------|------|------|------|------|------|----|----|----|---|
| -20 TK-3202 KM M | 27n | 15n | 15n | 15n | 1.2n | NO | NO | 8.2n | 8.2n | L34-4572-05 | 8.2n | 47n | 30n | NO | 47k | 22 | 47k | NO | 47k | 1.0M | 0 | NO | NO | NO | |
| -21 TK-3202 K3 M3 | 27n | 33n | 33n | 22n | 15n | NO | NO | 39n | NO | 8.2n | NO | 56n | NO | L34-4564-05 | 33k | 120 | 68k | 0 | 68k | NO | 10k | 0 | 0 | 0 | 0 |
| -22 TK-3202 K2.M2 | 18n | 22n | 15n | 15n | 22n | 1.2n | 27n | 8.2n | 6.8n | L34-4572-05 | 6.8n | 47n | NO | NO | 47k | 22 | 10k | 0 | 47k | 1.0M | 0 | NO | NO | NO | |

| X57-6890-XX | C52 | C53 | C54 | C55 | C56 | C57 | C58 | C59 | C61 | C62 | C64 | C66 | C67 | C107 | C116 | C121 | C125 | C127 | C132 | C145 | C149 | C151 | C156 | C157 | C159 | C160 | C161 | C164 | |
|-------------------|-----|-----|-----|-----|-----|------|-----|------|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|--------|------|------|------|---------|---------|
| -20 TK-3202 KM M | 11p | 2p | 6p | 11p | 2p | NO | 6p | 1p | 3p | 2p | 4p | 6p | 5p | 6p | NO | 6p | 20p | 20p | 20p | 18p | 7p | NO | 4p | 2.5p | 2p | 2p | 5p | 5p | |
| -21 TK-3202 K3 M3 | 11p | 4p | 7p | 12p | 5p | 0.5p | 7p | 1.5p | 4p | 3p | 4p | 5p | 5p | 4p | 7p | 3p | 11p | 11p | NO | 39p | 30p | 7p | 7p | 3p | 4p | 2p | 2p | 5p | |
| -22 TK-3202 K2.M2 | 12p | 2p | 9p | 12p | NO | NO | NO | NO | NO | NO | NO | 5p | 22p | 1.5p | 22p | 7p | 6p | 22p | 2p | 22p | 4p | 2p | 4p | 0.033u | 2p | NO | NO | HVC3558 | |
| -23 TK-3202 K2.M2 | 12p | 2p | 9p | 12p | NO | NO | NO | NO | NO | NO | NO | 5p | 22p | 1.5p | 22p | 7p | 6p | 22p | 2p | 22p | 2.5p | 18p | 2p | 9p | 4p | NO | NO | 25p | HVC3558 |

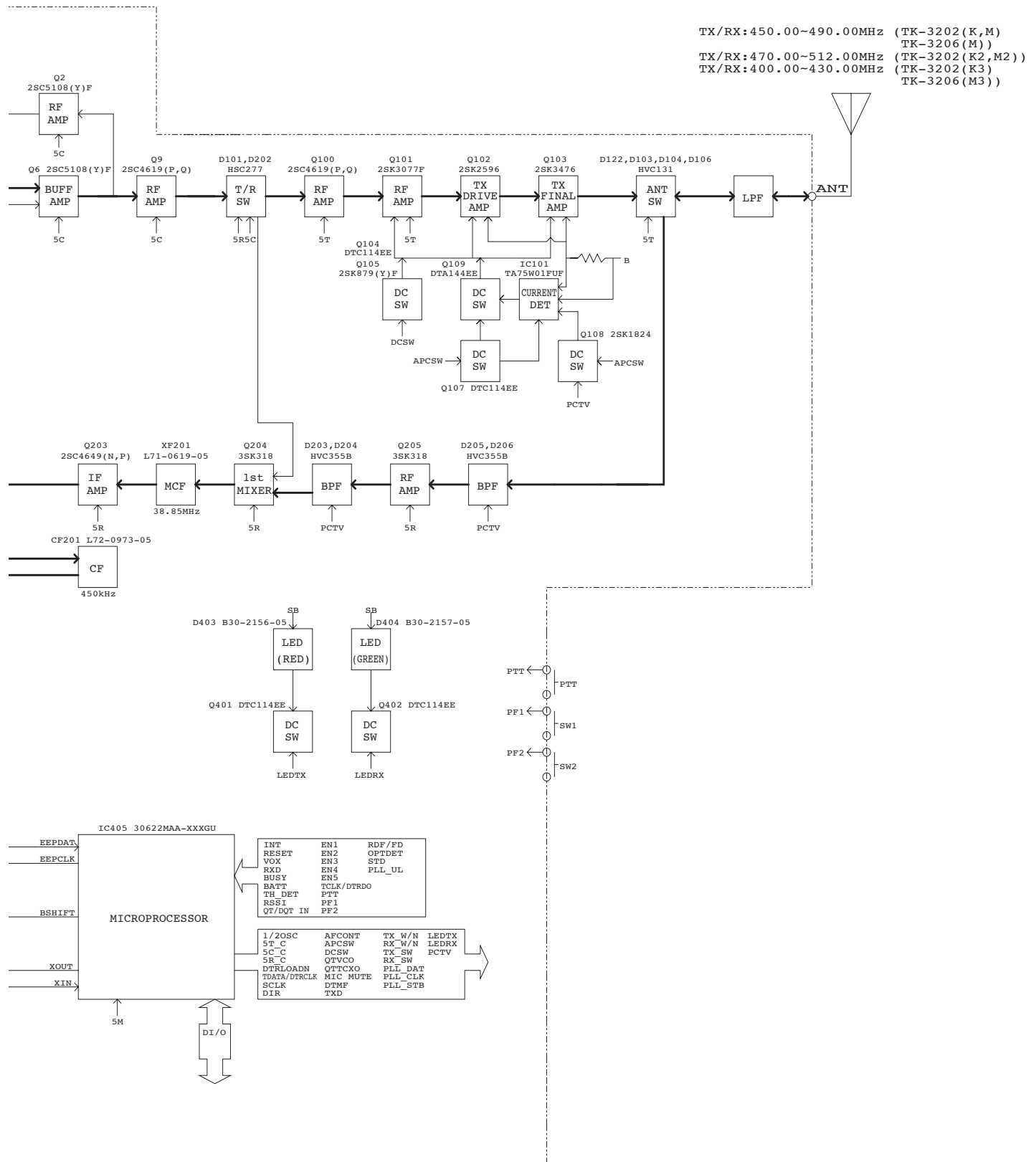
| X57-6890-XX | C166 | C168 | C169 | C240 | C244 | C245 | C246 | C247 | C248 | C249 | C250 | C252 | C255 | C257 | C267 | C268 | C269 | C273 | C274 | C275 | C276 | C349 | C444 | C445 | D210 |
|-------------------|-------|------|------|------|------|------|-------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|--------|------|------|---------|
| -20 TK-3202 KM M | 0.75p | 1p | 4p | 3.5p | 3p | 22p | 1p | 470p | 2p | 6p | 22p | 2p | 22p | 4.5p | 3.5p | 2p | 2p | 22p | 1p | 2p | 3.5p | NO | NO | NO | HVC3558 |
| -21 TK-3202 K3 M3 | 0.75p | NO | 10p | 1p | NO | NO | NO | NO | NO | 5p | 22p | 1.5p | 22p | 7p | 6p | 22p | 2p | 22p | 4p | 2p | 4p | 0.033u | 2p | NO | NO |
| -23 TK-3202 K2.M2 | 1.5p | 0.3p | 3p | 3.5p | 3.5p | 18p | 0.75p | 470p | 1p | 6p | 18p | 0.75p | 18p | 6p | 5p | 18p | 2.5p | 18p | 2p | 9p | 4p | NO | NO | 25p | HVC3558 |

BLOCK DIAGRAM

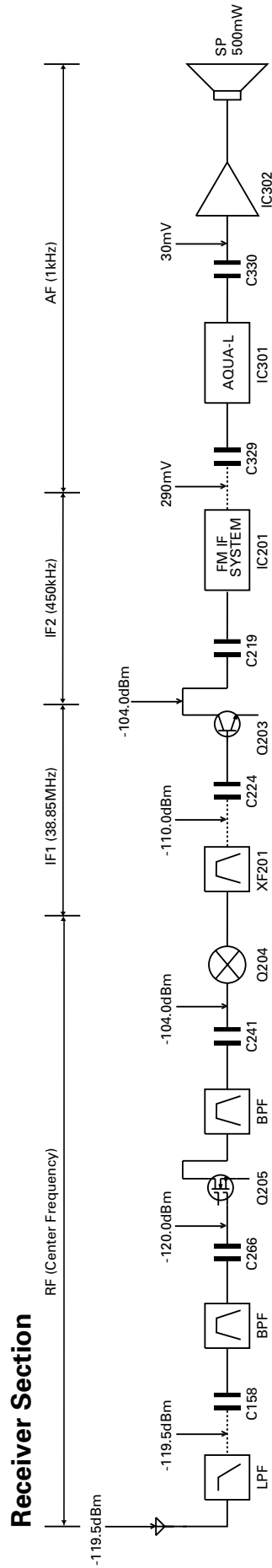
X57-689



BLOCK DIAGRAM

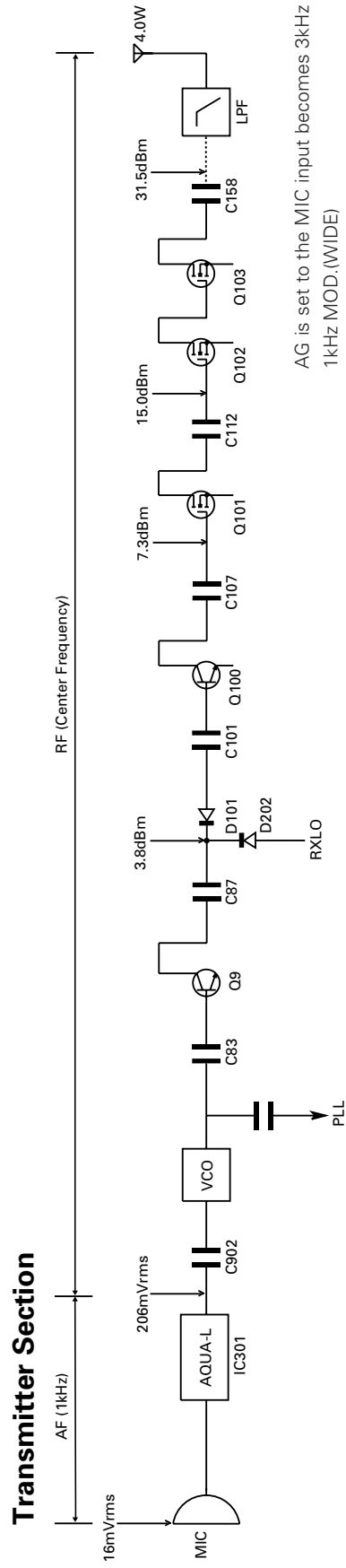


LEVEL DIAGRAM



To make measurements in the AF section, connect the AC level meter. (ANT input: -53dBm , 1kHz FM , 3kHz DEV (WIDE) .)

In the RF section, use 1000pF coupling capacitor. (The display shows the SSG input value required to obtain 12dB SINAD without local level.)



AG is set to the MIC input becomes 3kHz DEV at 1kHz MOD. (WIDE)

To make measurements in the AF section, connect the AC level meter.

In the RF section, use 1000pF coupling capacitor.

TK-3202/3206

KSC-31 / KNB-29N / KNB-30A / KBH-10

KSC-31 (RAPID CHARGER)

■ External View



■ Specifications

Charging current..... 850mA \pm 5%
 Charging time KNB-29N : Approx.180 minutes
 KNB-30A : Approx.120 minutes
 Dimensions (Charger only) ... 86.3W x 46.2H x 100.0D (mm)
 3-3/8W x 1-7/8H x 4D (inches)
 Weight (Charger only) Approx.100g / 0.22 lbs

KNB-30A (Ni-Cd BATTERY PACK)

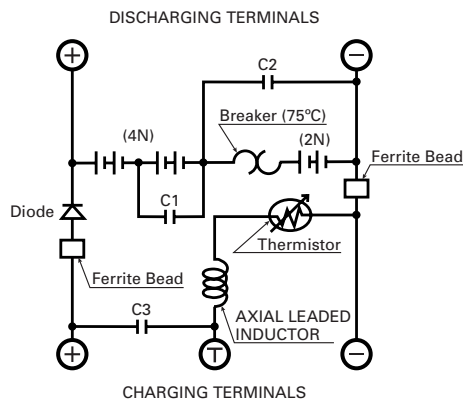
■ External View



■ Specifications

Voltage 7.2V (1.2V x 6)
 Battery capacity... 1100mAh

■ Schematic Diagram



KNB-29N (Ni-MH BATTERY PACK)

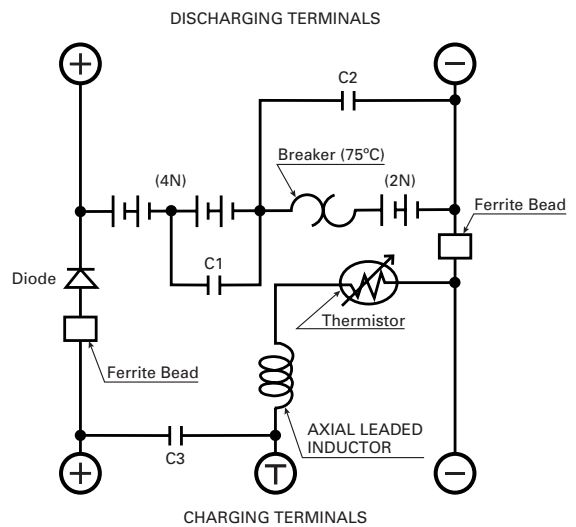
■ External View



Voltage 7.2V (1.2V x 6)
 Battery capacity... 1500mAh

■ Specifications

■ Schematic Diagram



KBH-10 (BELT CLIP)

■ External View



TK-3202/3206

SPECIFICATIONS

General

| | |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency Range | 450~490MHz (TK-3202(K,M) TK-3206(M)) 470~512MHz (TK-3202(K2,M2)) 400~430MHz (TK-3202(K3) TK-3206(M3)) |
| Number of Channels | Max. 8 (TK-3202) Max. 16 (TK-3206) |
| Channel Spacing | 25kHz (Wide) 12.5kHz (Narrow) |
| PLL Channel Stepping | 5kHz, 6.25kHz |
| Operating Voltage | 7.5 V DC \pm 20% |
| Battery Life | More than 14 hours at 4 watts (5-5-90 duty cycle with KNB-29N battery) More than 9 hours at 4 watts (5-5-90 duty cycle with KNB-30A battery) |
| Operating Temperature Range | -30°C to +60°C (-22 °F to +140 °F) |
| Frequency Stability | \pm 2.5ppm (-30°C to +60°C) |
| Channel Frequency Spread | 40MHz (TK-3202(K,M) TK-3206(M)) 42MHz (TK-3202(K2,M2)) 30MHz (TK-3202(K3) TK-3206(M3)) |
| Dimensions and Weight (Dimensions not including protrusions) | |
| Radio Only | 54 (2-1/8) W x 122 (4-13/16) H x 21.1 (13/16) D mm (inches) 160g (0.35lbs) |
| With KNB-29N (1500mAh battery) | 54 (2-1/8) W x 122 (4-13/16) H x 33 (1-5/16) D mm (inches) 360g (0.79lbs) |
| With KNB-30A (1100mAh battery) | 54 (2-1/8) W x 122 (4-13/16) H x 33 (1-5/16) D mm (inches) 340g (0.75lbs) |

Receiver (Measurements made per TIA/EIA-603)

| | |
|--------------------------|----------------------------------------------|
| Sensitivity | |
| EIA 12dB SINAD | 0.25 μ V (Wide)/0.28 μ V (Narrow) |
| Selectivity | 70dB (Wide)/60dB (Narrow) |
| Intermodulation | 65dB (Wide)/60dB (Narrow) |
| Spurious Response | 60dB |
| Audio Power Output | 500mW at 8 Ω less than 10% distortion |

Transmitter (Measurements made per TIA/EIA-603)

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

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