

Tokyo Hy Power HT-750 Transceiver
HF SSB Handheld for 40 meters / 15 meters / 6 meters
Tokyo Hy Power HL-710 Linear Amplifier
User Guides, Block Diagrams, Schematics
Scan by HFpack



I N S T R U C T I O N M A N U A L

7/21/50MHz SSB·CW TRANSCEIVER

HT-750



Thank you for selecting the HT-750 this time. For a prolonged life of the HT-750, please read this instruction manual carefully prior to the actual operation.

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1. Features

- 1) The HT-750 is a handheld transceiver designed to operate on three popular bands. On 7MHz, you can enjoy domestic QSO's. The 21MHz band offers you opportunities to WORK DX stations, while you can also enjoy QSO's with portable stations on 50MHz.
- 2) Utilizing a highly stable PLL-type VFO, the HT-750 can operate with the minimum tuning step of 20Hz. By the use of Frequency Tuning Step Change Switch, you can set the tuning step to one of the three, i.e. 20Hz, 100Hz and 1KHz. Also, RIT is included to correctly tune in on the station you are talking to. These functions make the HT-750 an ideal transceiver for SSB/CW operation.
- 3) As the result of the utilization of CPU, operationability has been improved with multifunctions supported. To change the band and mode, Function Key in combination with Frequency Tuning Knob is used. In the same manner, break-in time for CW operation can be changed in increments of 0.1 seconds with 10 steps.
- 4) The HT-750 is equipped with a noise blanker which is indispensable when to operate in the car with a lot of ignition noise present, or when to come up with heavy pulse noise.
- 5) You can operate the HT-750 with 8 pcs. of AA batteries (Ni-cd, hydronickel or alkaline batteries can be used.) The battery operation will enable you to enjoy QSO's from a portable location. The HT-750 is also equipped with an external DC power supply connector, so that the DC power can be either supplied from a DC power supply or cigarette light socket in the car.
- 6) A stylish antenna set is available as an option.

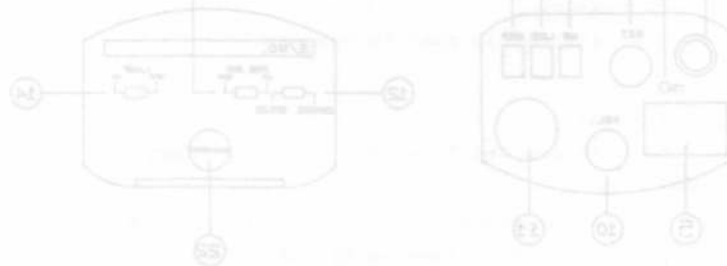
2. Preparation Before Use

Please read the following items carefully before you start to use the HT-750. You also need to set the operating frequency and mode.

- 1) Avoid to leave the HT-750 in places where:
 - a) it is quite hot,
 - b) it is quite humid, and/or
 - c) it is quite dusty.Especially, do not leave the HT-750 in a car exposed to direct sun light.
- 2) Do not attempt to disassemble the HT-750. The cores and trimmers of the HT-750 have been best tuned prior to shipment. There are cases where you may not obtain the guarantee from your local dealer once the case is opened up.
- 3) The working voltage range of the HT-750 is from 8.5VDC up to 15.0VDC. Absolutely, never try to connect it to the commercial AC line (117V/230V, etc.).
- 4) Do not transmit without an antenna or dummy load connected to the HT-750. Doing so will possibly result in malfunction.
- 5) Do not push hard LCD Display on the front panel. Too much pressure will possibly damage the display.
- 6) Use a soft cloth to wipe out dusts and dirt. Never try to use any solvents such as thinner, benzene and alcohol.

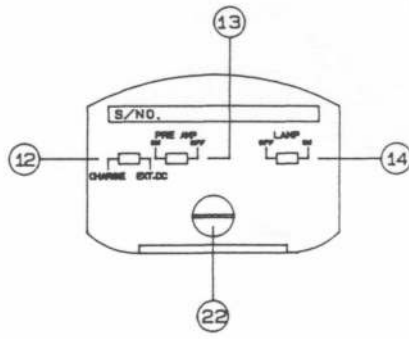
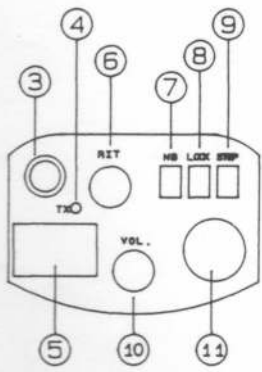
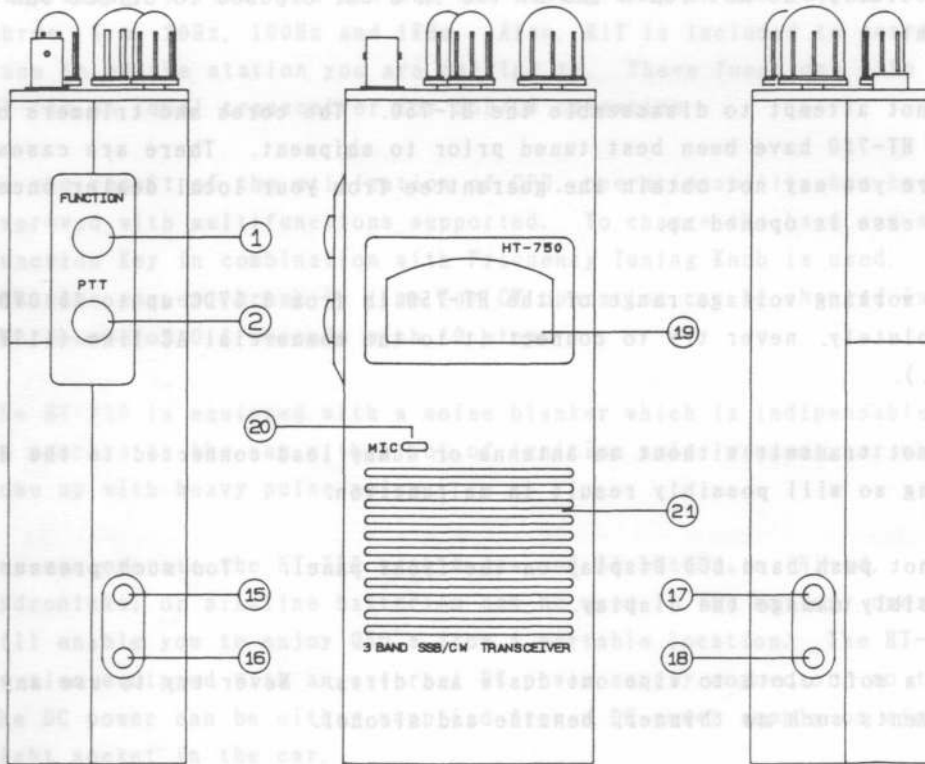
① Frequency Lock Switch:

The operating frequency will be locked by this switch. Once locked, the frequency will not change even if Frequency Tuning Knob is turned. Also, the parameter set by Function Switch will be locked.



3. Nouns & Functions of Respective Units

- 1) Please read the following instructions before you use the HT-750. The HT-750 is a 3-band SSB/CW transceiver with a 5W output power. It is designed for use in the 1.8 to 30 MHz range. It is a portable unit and can be used in a vehicle or at home. It is a dual band unit. It is a dual band unit. It is a dual band unit.
- 2) Do not touch the front panel of the HT-750 when it is powered on. The HT-750 has a hot surface when it is powered on. Do not touch the front panel of the HT-750 when it is powered on. Do not touch the front panel of the HT-750 when it is powered on.
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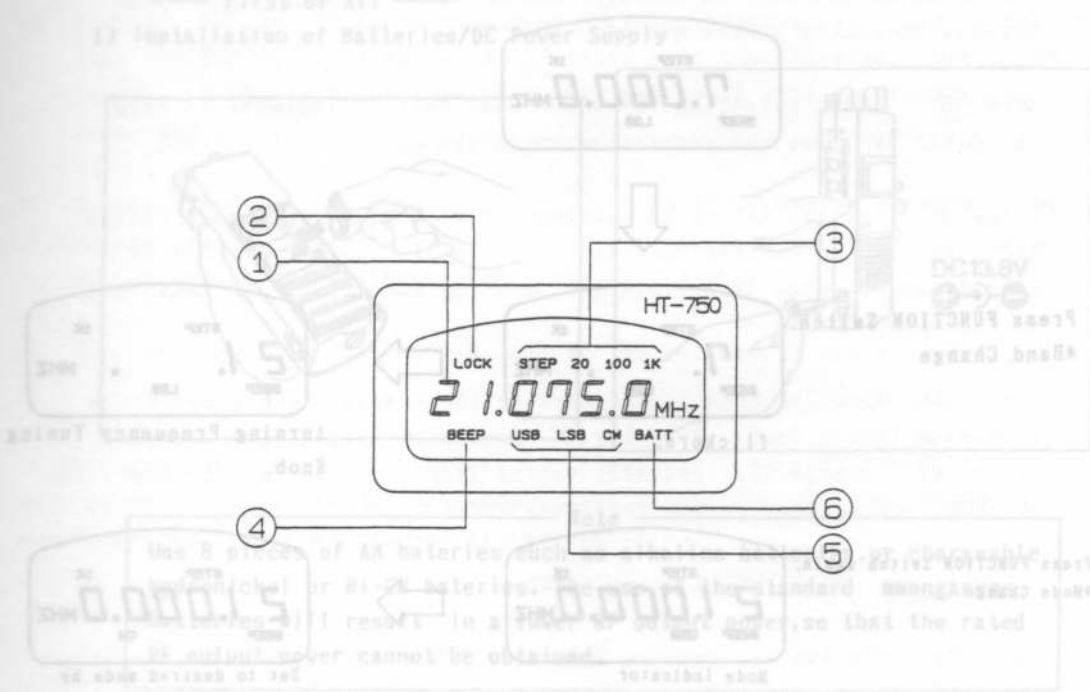


3 - 1. Nouns & Functions

- ① **Function Switch:**
Use when to set the operating frequency and mode.
- ② **PTT (Push-to-Talk) Switch:**
When this switch is pressed down, the HT-750 will be put into the TX state. When it is released, the HT-750 will return to the RX state. At the CW mode, the PTT can be used as a CW key.
- ③ **Antenna Connector:**
To be connected to the antenna connector from the antenna or a dummy load. A BNC-type connector is used.
- ④ **TX Indicator:**
When PTT Switch is pressed down, this indicator will light indicating the HT-750 being in the TX state.
- ⑤ **S-Meter/RF Output Meter:**
In the RX state, this meter will indicate the signal strength of the receiving signal. In the TX state, it will show an approx. output power level.
- ⑥ **RIT Knob:**
RX frequency only can be adjusted in the range of +/- 0.5KHz.
- ⑦ **Noise Blanker Switch:**
This switch will turn ON/OFF the noise blanker.
- ⑧ **Frequency Tuning Step Change Switch:**
With this switch, the frequency tuning can be done in three steps, i.e. 1KHz, 100Hz and 20Hz.
- ⑨ **Frequency Lock Switch:**
The operating frequency will be locked by this switch. Once locked, the frequency will not change even if Frequency Tuning Knob is turned. Also, the parameters set by Function Switch will be locked.

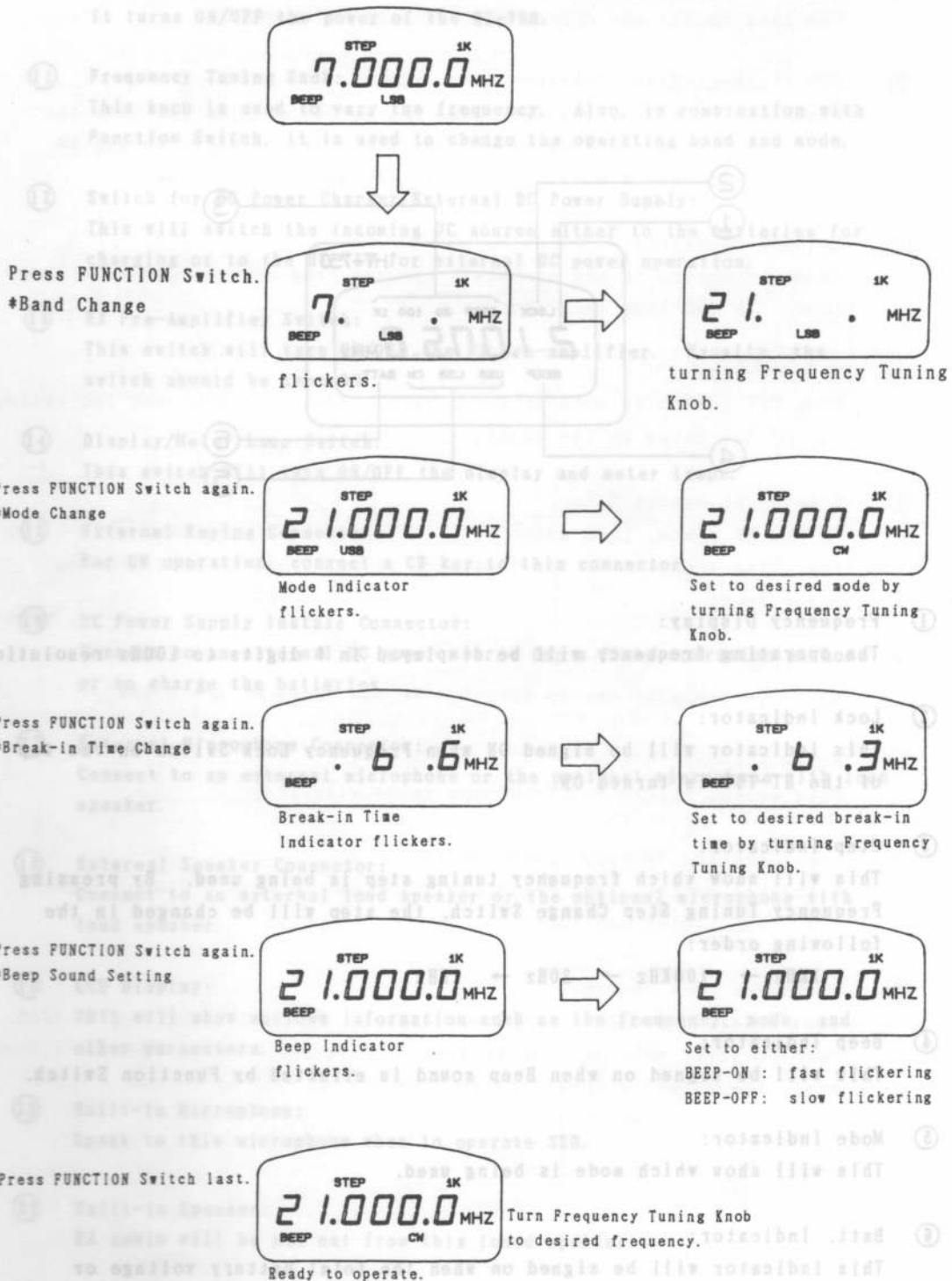
- ⑩ **Audio Potentiometer with Power Switch:**
Audio output level can be adjusted by this potentiometer. Also, it turns ON/OFF the power of the HT-750.
- ⑪ **Frequency Tuning Knob:**
This knob is used to vary the frequency. Also, in combination with Function Switch, it is used to change the operating band and mode.
- ⑫ **Switch for DC Power Charger/External DC Power Supply:**
This will switch the incoming DC source either to the batteries for charging or to the HT-750 for external DC power operation.
- ⑬ **RX Pre-Amplifier Switch:**
This switch will turn ON/OFF the RX pre-amplifier. Usually, the switch should be kept ON.
- ⑭ **Display/Meter Lamp Switch:**
This switch will turn ON/OFF the display and meter lamps.
- ⑮ **External Keying Connector:**
For CW operation, connect a CW key to this connector.
- ⑯ **DC Power Supply Instake Connector:**
Connect to an external DC power source for a fixed operation at home or to charge the batteries.
- ⑰ **External Microphone Connector:**
Connect to an external microphone or the optional microphone with loud speaker.
- ⑱ **External Speaker Connector:**
Connect to an external loud speaker or the optional microphone with loud speaker.
- ⑲ **LCD Display:**
This will show various information such as the frequency, mode, and other parameters.
- ⑳ **Built-in Microphone:**
Speak to this microphone when to operate SSB.
- ㉑ **Built-in Speaker:**
RX audio will be put out from this loud speaker.
- ㉒ **Lock Screw for Battery Cell:**
The battery cover can be removed by loosening the screw with a coin or the like.

3-2. Explanation of LCD Display



- ① **Frequency Display:**
The operating frequency will be displayed in 6 digits to 100Hz resolution.
- ② **Lock Indicator:**
This indicator will be signed ON when Frequency Lock Switch on the top of the HT-750 is turned ON.
- ③ **Step Indicator:**
This will show which frequency tuning step is being used. By pressing Frequency Tuning Step Change Switch, the step will be changed in the following order:
1KHz → 100KHz → 20Hz → 1KHz
- ④ **Beep Indicator;**
This will be signed on when Beep sound is effected by Function Switch.
- ⑤ **Mode Indicator:**
This will show which mode is being used.
- ⑥ **Batt. Indicator:**
This indicator will be signed on when the total battery voltage or the external DC power supply voltage becomes below 7.0VDC.

3-3. How to Use Function Switch

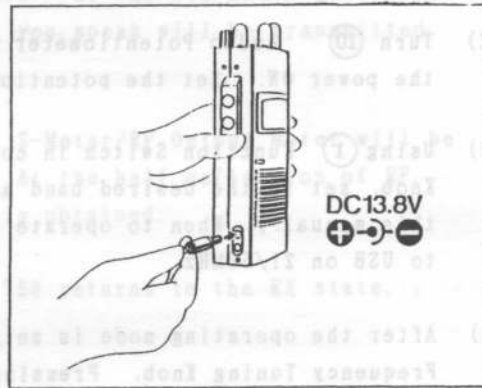
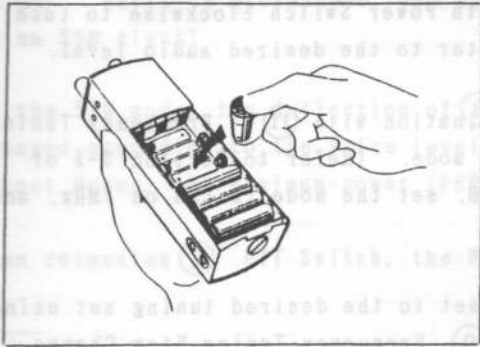


*Note: If you need to return to the previous operating frequency and mode during the above function settings, just push PTT Switch twice in succession. Then, the HT-750 will be returned to the previous frequency and mode.

4. Operation

First of All

1) Installation of Batteries/DC Power Supply



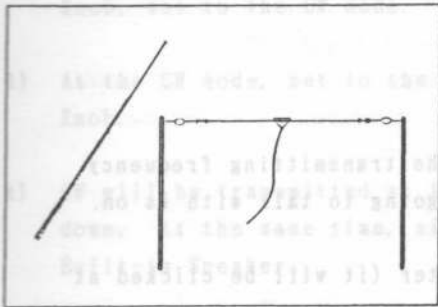
Note

Use 8 pieces of AA batteries such as alkaline batteries, or chargeable hydronickel or Ni-Cd batteries. The use of the standard manganese batteries will result in a lower RF output power, so that the rated RF output power cannot be obtained.

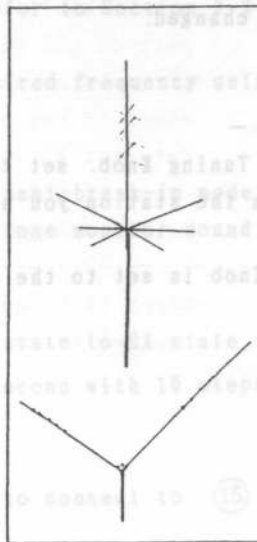
2) Preparation of Antenna

When to operate with the HT-750, prepare an antenna with a male BNC connector connected to it. The following show examples for your easier reference. Always use a 50Ω coaxial cable as feed line.

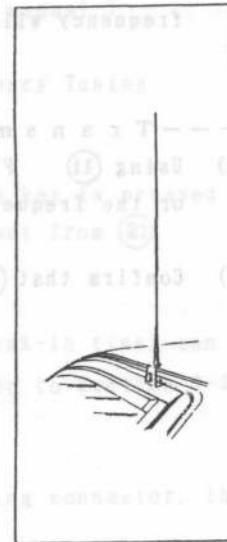
Outfield Operation



Fixed Operation



Mobile Operation



--- R e c e i v e ---

- 1) Depending on the mode to operate, connect a suitable antenna to ③ Antenna Connector of the HT-750.
- 2) Turn ⑩ Audio Potentiometer with Power Switch clockwise to turn the power ON. Set the potentiometer to the desired audio level.
- 3) Using ① Function Switch in combination with ⑪ Frequency Tuning Knob, set to the desired band and mode. (Refer to Section 3-3 of this manual.) When to operate SSB, set the mode to LSB on 7MHz, and to USB on 21/50MHz.
- 4) After the operating mode is set, set to the desired tuning set using Frequency Tuning Knob. Pressing ⑨ Frequency Tuning Step Change Switch will change the frequency tuning step indicator at the right top of ⑲ LCD Display in the following order:

1KHz → 100Hz → 20Hz → 1KHz

For a delicate tuning, use the 20Hz step. When to rapidly move within the band, use either 100Hz or 1KHz step for more convenient QSY.

- 5) When to operate in the car with a lot of ignition noise or under heavy pulse noise, turn ⑦ Noise Blanker ON. As a result, signals suppressed by the noise will become more readable.
- 6) When ⑧ Frequency Lock Switch is pressed, the frequency will be locked so that it will not change even if Frequency Tuning Knob is turned. This function will be convenient when to stand by for a specific station in the outfield or when to operate from the automobile. Once locked, the frequency will not be changed.

--- T r a n s m i t ---

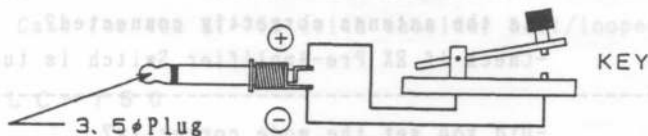
- 1) Using ⑪ Frequency Tuning Knob, set to the transmitting frequency or the frequency which the station you are going to talk with is on.
- 2) Confirm that ⑥ RIT Knob is set to the center (it will be clicked at

- the center)
- 3) When ② PTT Switch is pressed down, ④ TX Indicator will light, meaning that the HT-750 is being in the TX state. At the SSB mode, just speak to ⑳ Built-in Microphone, and what you speak will be transmitted as an SSB signal.
 - 4) At the SSB mode, the deflection of ⑤ S-Meter/RF Output Meter will be changed according to the voice level. At the half deflection of RF Output Meter, the maximum power (PEP) is obtained.

- 5) Upon releasing ② PTT Switch, the HT-750 returns to the RX state. ---RIT---
In case the station you are talking to is off the frequency you are on, tune zero in on him by using ⑥ RIT Knob. Usually, set the RIT to the center position. (RIT will be clicked at the center.)

--- CW Operation ---

- 1) Plug the keying plug connected to the key, into ⑮ CW Keying Connector.



- 2) Using ① Function Switch in combination with ⑪ Frequency Tuning Knob, set to the CW mode. (Refer to Section 3-3 of this manual.)
- 3) At the CW mode, set to the desired frequency using Frequency Tuning Knob.
- 4) CW will be transmitted at the semi-break-in mode when the key is pressed down. At the same time, side tone monitor sound is put out from ㉑ Built-in Speaker.
- 5) The recovery time from the TX state to RX state (i.e. break-in time) can be set from 0.1 seconds to 1 second with 10 steps. (Refer to Section 3-3 of this manual.)
- 6) If you do not have any CW key to connect to ⑮ CW Keying connector, the you can simply use ② PTT Switch as a key instead.

5. Trouble Shooting

The HT-750 is subject to fast and hard inspection prior to shipment.

The following symptoms are not malfunction. In referring to the "causes and countermeasures", check the HT-750 again.

Symptoms	Causes and Countermeasures to be taken
Power will not be turned ON.	<ul style="list-style-type: none">-Check if all batteries are installed in the correct directions.-In case of Ni-cd batteries, are they fully charged?-Is the DC power supply cable connected correctly? Check if the positive and negative poles are correctly connected and if the voltage is within the rated range.-Check if the fuse is blown.
No receive audio can be obtained.	<ul style="list-style-type: none">-Turn clockwise Audio Potentiometer to an appropriate audio level.-Is the antenna correctly connected?-Check if RX Pre-Amplifier Switch is turned OFF.
SSB signals cannot be demodulated.	<ul style="list-style-type: none">-Did you set the mode correctly? On 7MHz : Set to LSB On 21/50MHz: Set to USB
Transmission cannot be made.	<ul style="list-style-type: none">-Is the HT-750 under the function mode? (Is any part of LCD Display flickering?)-If an external microphone with PTT is used, check if the plug is correctly connected to External Microphone Connector.-Check if Switch for DC Power Charger/External DC Power Supply is set to the "Charge" end.
The frequency cannot be changed even if Frequency Tuning Knob is turned.	<ul style="list-style-type: none">-Check if Frequency Lock Switch is ON. Unlock the switch to change the frequency.

6. Optional Accessories

- Rod Antenna for the HT-750 (Common to three bands. Can be connected to HA-06LB, -15LB or -40LB.)

HA - 1 L T 

- Trap Coil for 7MHz HA - 4 0 L B 

- Trap Coil for 21MHz HA - 1 5 L B 

- Trap Coil for 50MHz HA - 0 6 L B 

- External Microphone with Loud Speaker

H S M - 7 5 0

- Leather Case for the HT-750 (with shoulder belt/looped band)

H L C - 7 5 0

8. Specifications

<General>

Frequency Coverage: Receive - 7.0000 to 7.2999MHz
21.0000 to 21.4999MHz
50.0000 to 50.4999MHz
Transmit - 7.0000 to 7.2999MHz
21.0000 to 21.4999MHz
50.0000 to 50.4999MHz

Emission Mode : A1 (CW)

J3E (SSB)

Antenna Impedance : 50 Ω unbalanced (BNC-type connector)

DC Power Supply : 13.8VDC (rated), from 8.5VDC to 15.0VDC

Ground : negative ground

Current Consumption: Receive (no incoming signal) - approx. 100mA
Transmit - max. 1.5Amp

Dimensions : 66mm(W) x 188mm(H) x 47mm(D) (excluding projected portions)
(equivalent to 2.6inches x 7.4inches x 1.8inches)

Weight : approx. 850grams or 1.8lbs (including 8 pcs. of AA batteries)

<TX Unit>

Rated RF Output Power: 3W on 7MHz and 21MHz
2W on 50MHz

Modulation Type : Single Side Band (balanced modulation)

Spurious Output : better than -40dB on 7MHz and 21MHz
better than -60dB on 50MHz

Carrier Suppression : 40dB or greater

Unwanted Sideband : 40dB or greater
Suppression

Microphone Impedance : 600Ω

<RX Unit>

RX Type : Super Heterodyne

I/F Frequencies : 9.000MHz

Sensitivity : 0.3μV for 10dB signal to noise ratio (at SSB/CW)
(when RX pre-amplifier is ON.)

Selectivity : 2.2KHz (-6dB) (at SSB/CW)
6.0KHz (-60dB) (at SSB/CW)

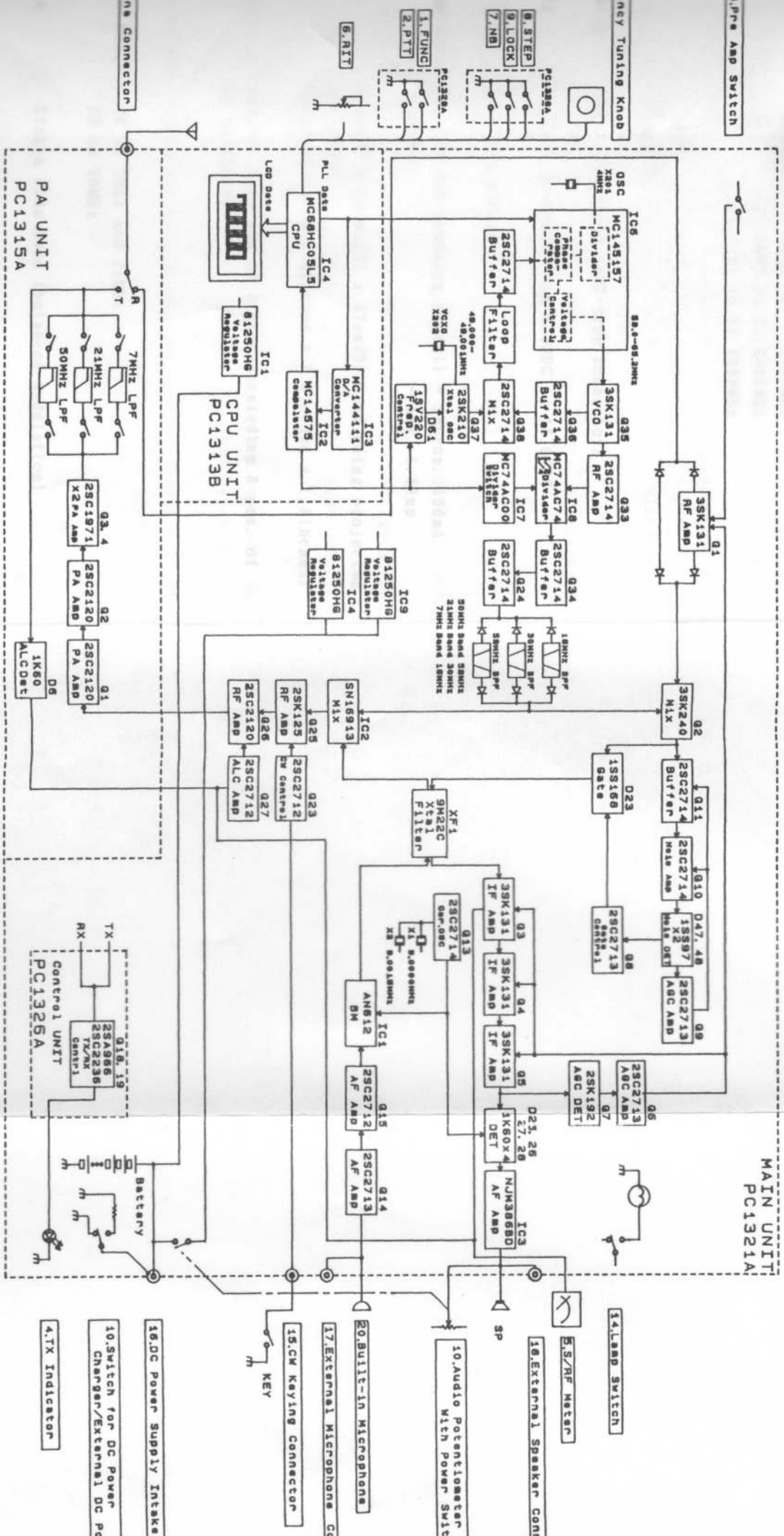
Audio Impedance : 8Ω

Audio Output : 800mW (at 8Ω with 10% distortion)

RIT Coverage : +/- 0.5KHz

■ The measurements were carried out pursuant to the standards set forth
by Japan Amateur Industrial Association.

■ The specifications and the external appearance may be subject to change
without prior notice.



MAIN UNIT
PC1321A

PA UNIT
PC1315A

CPU UNIT
PC1313B

Control UNIT
PC1326A

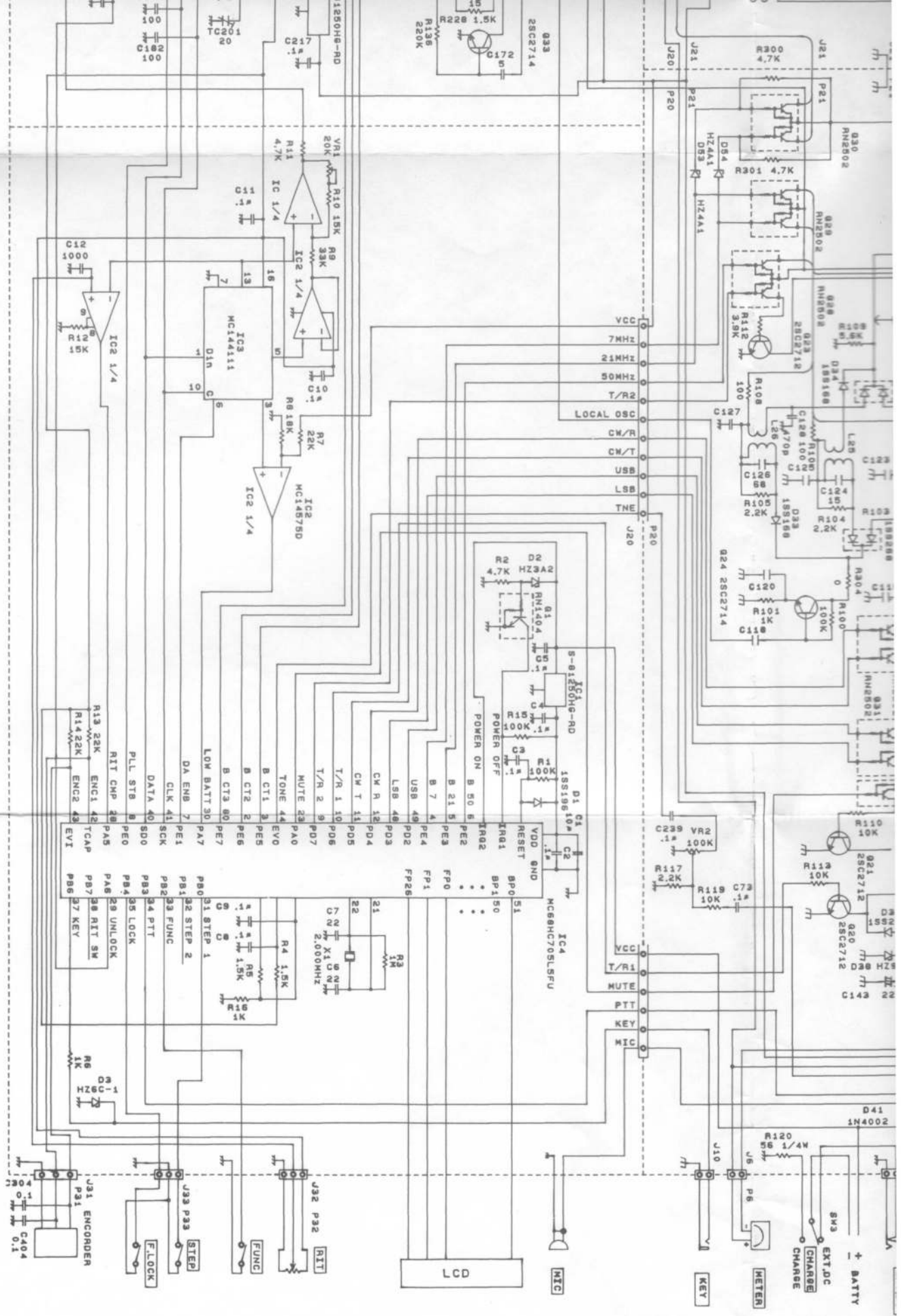
- 14. Lamp Switch
- 15. External Speaker Conn
- 16. External Speaker Conn
- 17. Audio Potentiometer With Power Switch
- 18. External Microphone Conn
- 19. Built-in Microphone
- 20. External Microphone Conn
- 21. External Keying Connector
- 22. CW Keying Connector
- 23. TX Indicator
- 24. Power Supply Intake
- 25. Switch for DC Power Charger/External DC Power
- 26. TX Indicator

CAUTION

After battery charging is complete, always return the [CHARGE/EXT.DC] switch at the bottom of the HT-750 to the [EXT.DC] position. With the switch at the bottom is set in the [CHARGE] position, there are cases where the HT-750 may cease functioning after activating ON/OFF of the HT-750 power switch. Whether operating with battery cells or external DC power supply, always set the bottom switch to the [EXT.DC] position.

When unstable function is observed, either remove the loaded battery cells and load them again, or turn OFF the external DC power supply unit itself and then turn it on again.

 **TOKYO HY-POWER**

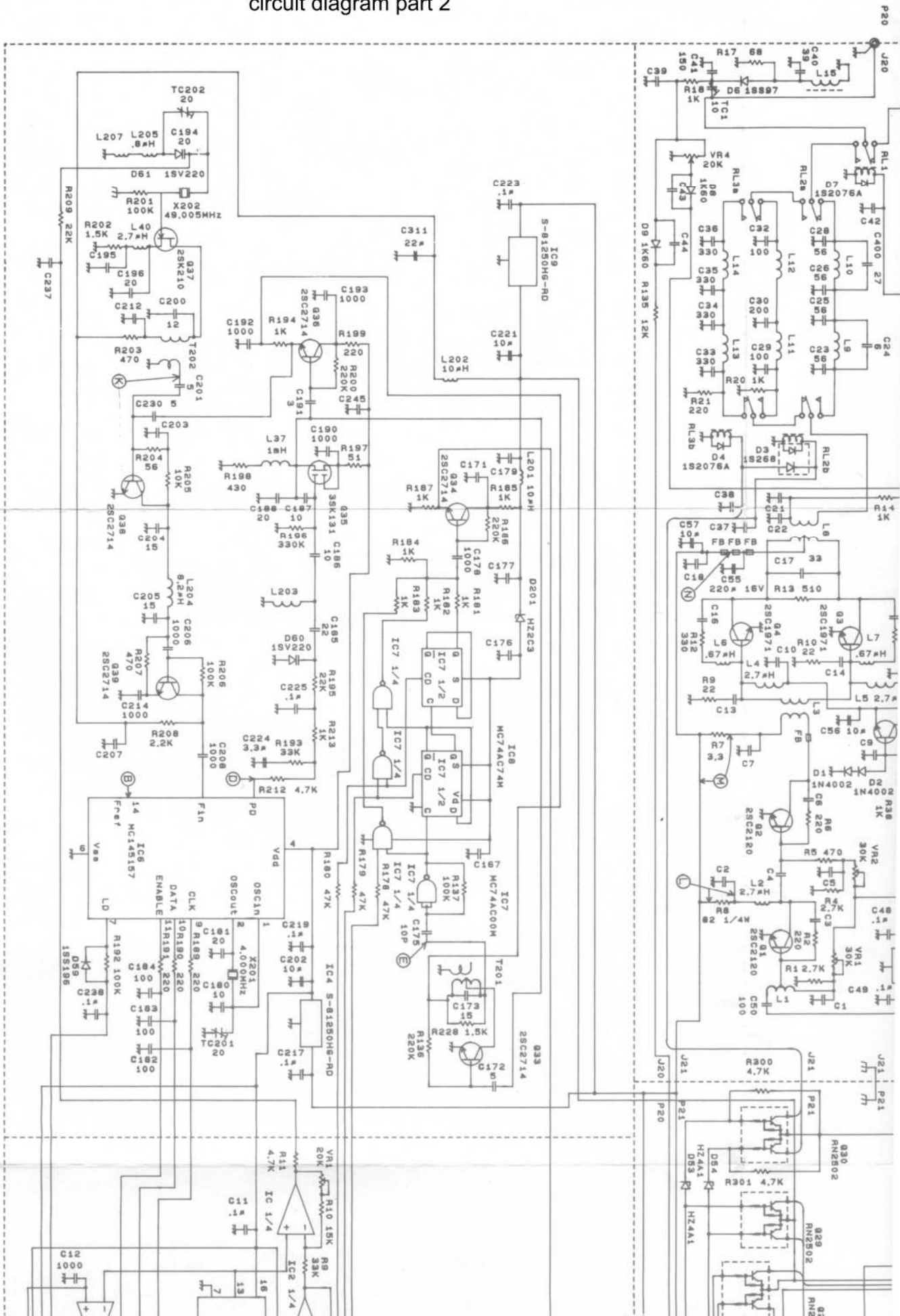


capacitors without note are 0.01μF/50V.
 program is subject to change without notice.

HT-750 CIRCUIT DIAGRAM
TOKYO HY-POWER

Tokyo Hy Power
HT-750 Transceiver

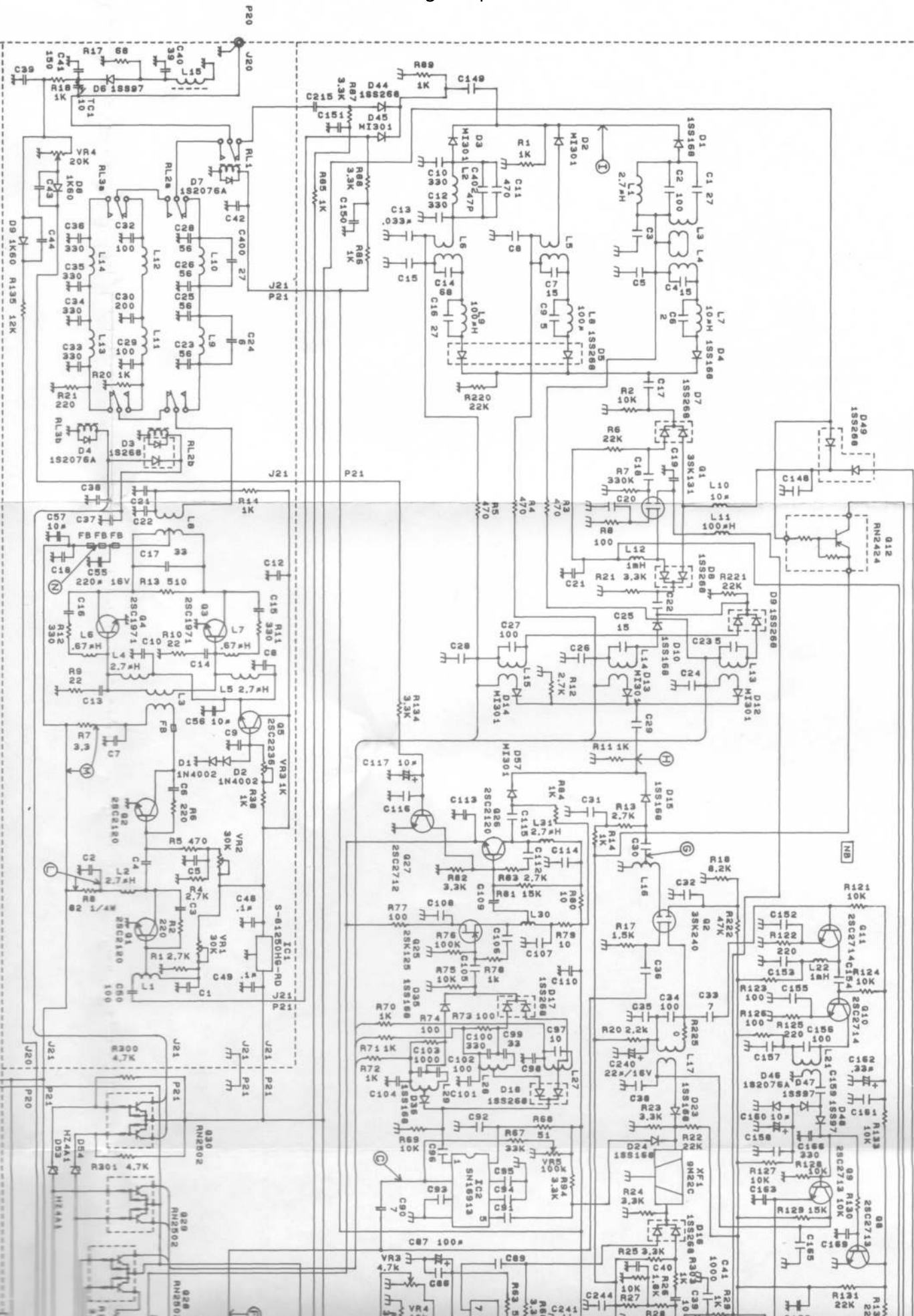
circuit diagram part 2

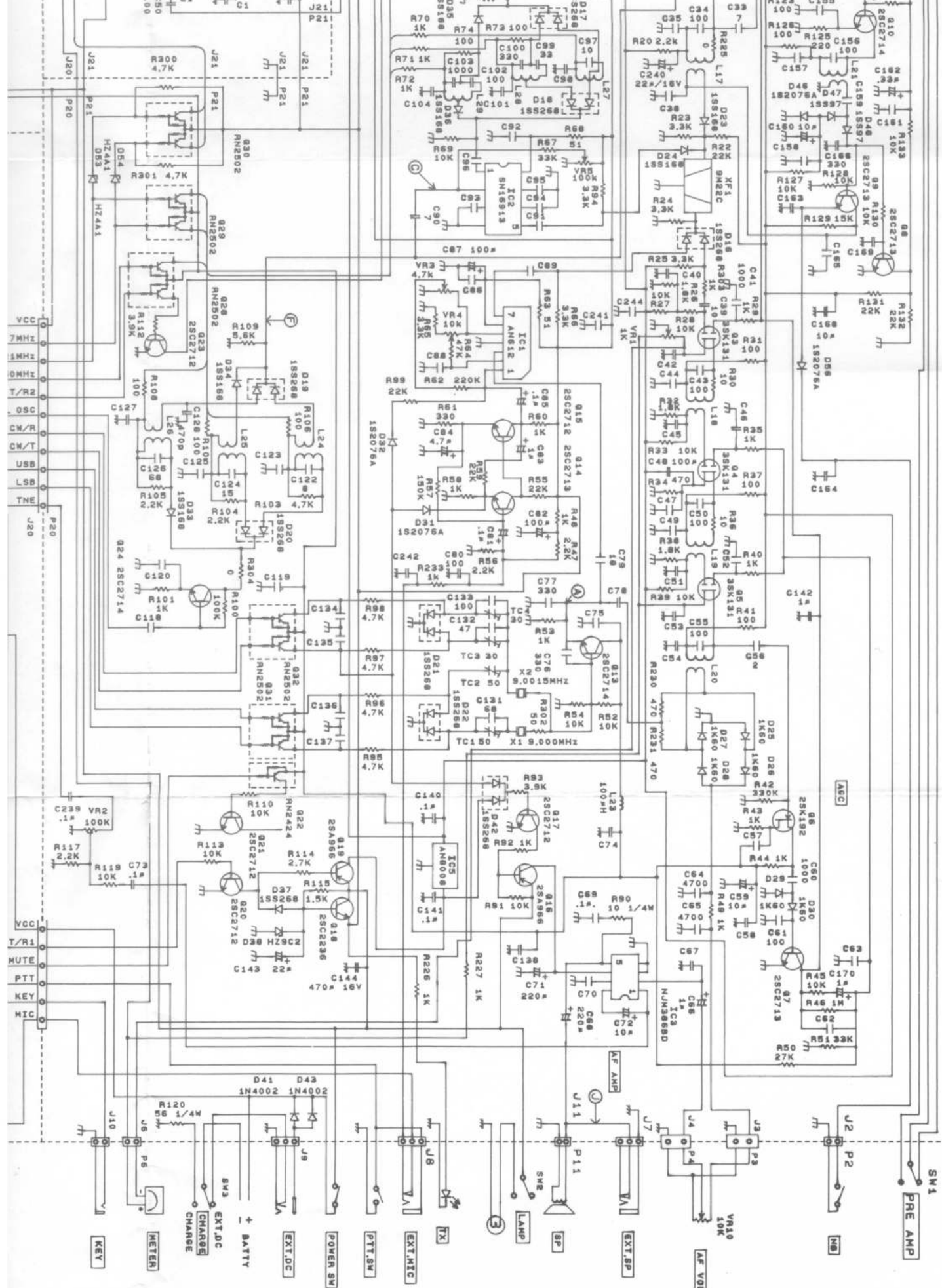


指定無きコンデンサーの定数は 0.01μF 50V
□ 本図は改良の爲予告なく変更することがあります。

All capacitors without note are 0.01μF 50V
This diagram is subject to change.

Tokyo Hy Power
HT-750 Transceiver
circuit diagram part 3





Tokyo Hy Power
 HT-750 Transceiver
 circuit diagram part 4

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TOKYO HY-POWER LABS., INC. 1-1 Hateneka 3chome, Niza, Seitama 352 JAPAN
Phone 81-48-481-1211 Fax 81-48-479-6949