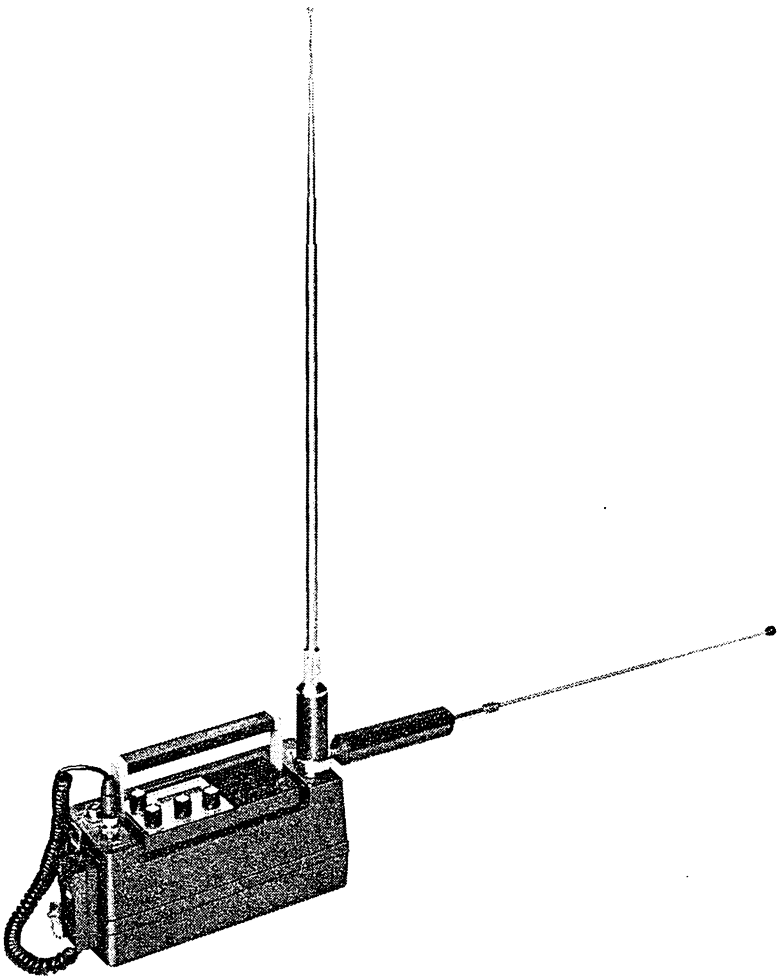
INSTRUCTION MANUAL
FOR
MODEL JST-10
HF HANDY TRANSCEIVER

JRC

Japan Radio Co., Ltd.

Forward

Thank you for the purchase of your new model JST-10 TRANSCEIVER.
Before operating it please read this manual thoroughly in order to assure satisfactory performance of the equipment and to prevent damage or failure.
This product has been produced under strict quality control. However should any trouble be found due to workmanship kindly contact the JRC office or a JRC dealer.



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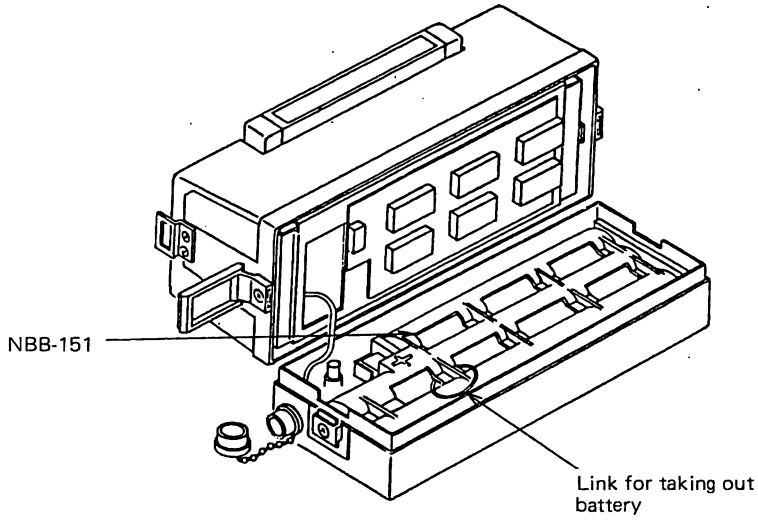


Figure 1.3.1 Mounting the NBB-151 Battery Pack

1.3.2 Alkaline Dry Cell, AM-2

Carefully mount eleven alkaline dry cells into the battery case, as shown in Figure 1.3.2. Do not take wrong polarity.

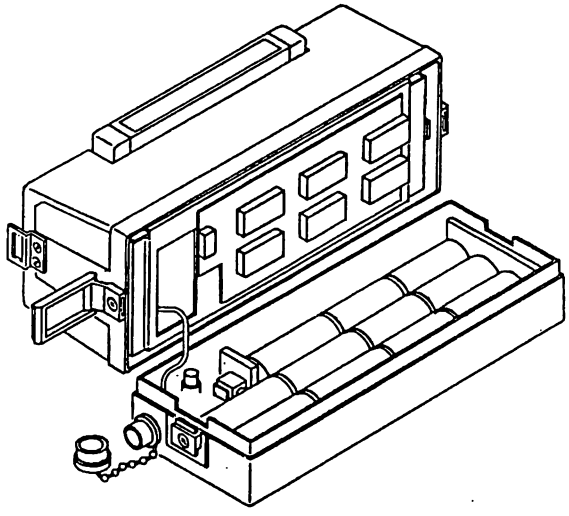


Figure 1.3.2 Mounting the Dry Cells

1.3.3 Dry Cell, UM-2

Mount dry cells in the same manner as the alkaline dry cells.

NOTE: Full power may not be displayed under the dry cell operation.

1.3.4 Power Supply/Charger, NBD-410J

NOTE: NBD-410J has been wired for operation from 100V, AC, 50/60Hz. When using other power lines such as 120V, 220V, 230V and 240V, AC, the power transformer tap of the unit must be changed, described in Instruction Manual for NBD-410J.

(1) Connect the Power Supply/Charger, as shown in Figure 1.3.3.

(2) Set the POWER switch to ON. Then the green POWER indicator will illuminate. As the result, the battery pack or dry cells mounted in the battery case is disconnected from the transceiver and the Power Supply/Charger feeds it instead. At this time, the red CHARGE indicator illuminates to indicate the charge start, provided that the battery pack has been mounted in the transceiver.

1.3.5 Power Supply/Charger, NBD-420

Connect the NBD-420 as shown in Figure 1.3.4. Plugging the Power Supply/Charger to the cigar lighter socket causes the transceiver to be disconnected from the battery pack or dry cells and the car battery feeds it instead. As a result, the red CHARGE indicator illuminates to indicate the charge start, provided that the battery pack is mounted in the transceiver.

When the battery pack need not to be charged, the car battery may be directly connected to the transceiver through the adapter, CFQ-1116, as shown in Figure 1.3.5.

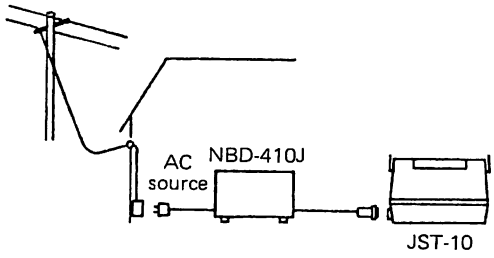


Figure 1.3.3 Connection of NBD-410J

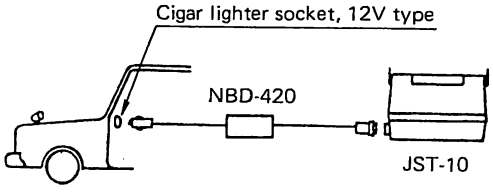


Figure 1.3.4 Connecting the NBD-420

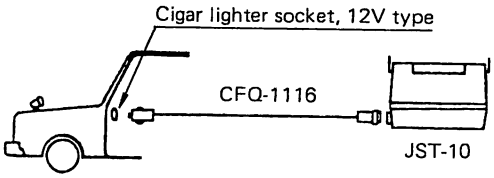


Figure 1.3.5 Connecting the CFQ-1116

1.3.6 Other External Power Source

An external connector is provided for an external power source of 12 to 15V DC, 3A, and a plug, RM12BPG-6P, is adaptable. Wire the (+) line to Terminal No. 5 and the (–) line to Terminal No. 1.

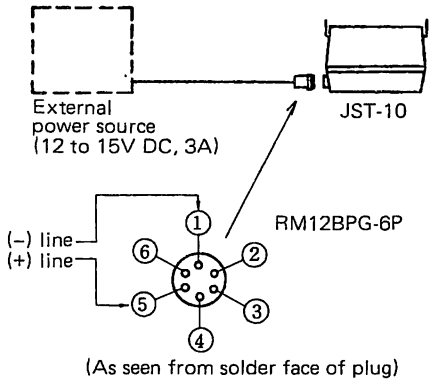


Figure 1.3.6 Connecting an External Power Source

1.4 Connection of Antenna

When operating as a mobile station, preferably use a compact and light-weight antenna directly mountable on the transceiver, such as NAW-210W whip antenna for 21MHz-band use or NAW-700W whip antenna for 7MHz-band use.

For half-fixed operation in the field, preferably use a doublet antenna or large size whip antenna. These antennas provide a high antenna efficiency, which ensures long distant communications.

When operating at your home station, you are recommended to use a large size fixed antenna.

1.4.1 21MHz-band Whip Antenna, NAW-210W

The NAW-210W is composed of three components, as shown in Figure 1.4.1. They are assembled in such manner as shown in the next page (Figure 1.4.2).

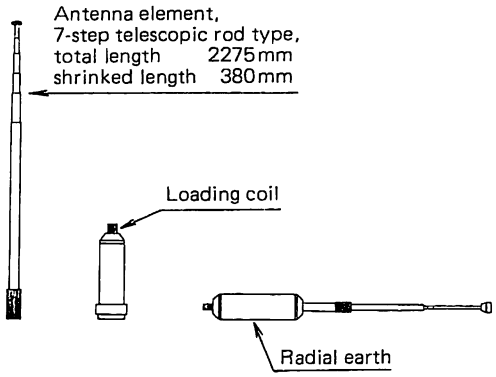


Figure 1.4.1 Whip Antenna Structure

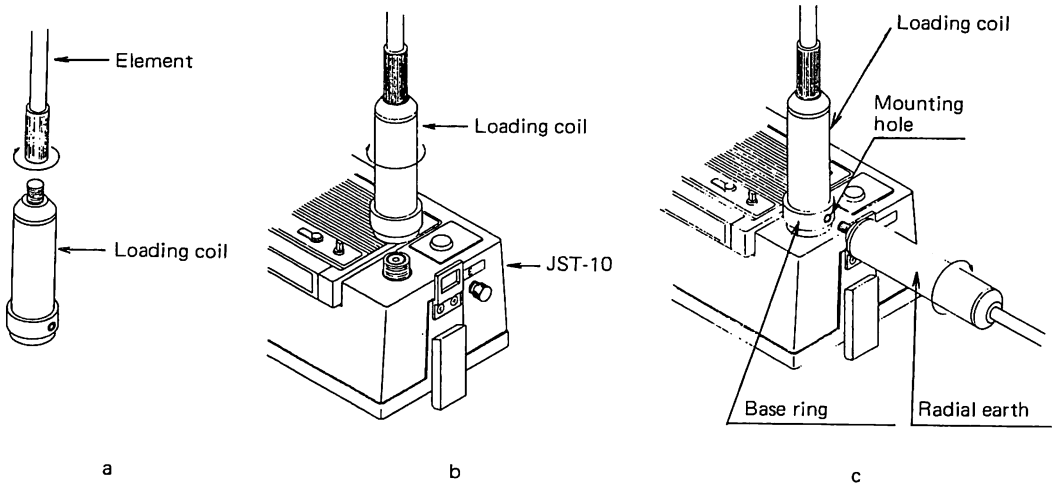


Figure 1.4.2 Assembling the Whip Antenna

Assembling procedure

(1) Screw the antenna element into the loading coil tube, until tight, as shown in Figure 1.4.2.a.
(2) Screw the loading coil tube into the antenna connector of the transceiver, until tight, as shown in Figure 1.4.2.b.
(3) Rotate the base ring, until coming to the mounting hole, as shown in Figure 1.4.2.c. Screw the radial earth*1) tightly until the ring can be no more rotated.
(4) The antenna element is of a seven-step telescopic rod type. When using, fully expand the element, starting from the top rod piece until its total length*2).

NOTE: *1) Effect of radial earth

The portable HF transceiver always poses, in general, a problem about its earthing. A smaller size transceiver will operate under a worse condition of earthing. When you hold the transceiver by hand or near your body, the antenna impedance will change. As a result, the communication distance may be reduced or the receiver sensitivity may be lowered.

The JST-10 is furnished with an exclusive radial earth, which ensures an efficient operation even at a place where no earth ground could be usually connected.

In addition, the radial earth is provided with an expandable element adjustable for tuning. For the adjusting method, read through Paragraph 3.2.

NOTE: *2) The seven-step telescopic antenna element is expandable in excess of 3 meters above the ground. Therefore, great care must be taken of its top during walking.

1.4.2 7MHz-band Whip Antenna

The NAW-700W has the same structure as the NAW-210W, except for the loading coil and radial earth section. When assembling, follow the same procedure as described in Paragraph 1.4.1.

1.4.3 Other Antenna

The JST-10 is impedance-matched to operate at the rating, when connected to an antenna of 50 ohms, pure resistive. If different from 50 ohms, insert an impedance matching unit such as the antenna tuner between the transceiver and antenna and adjust the matching unit. In addition, a balanced type antenna requires a balance-unbalance converter circuit, even when the load is of 50 ohms.

1.5 Grounding

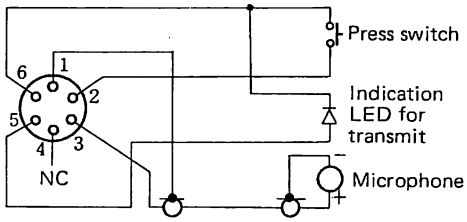
It is essential to lower the earth resistance, compared with the radiation resistance. A better grounding will provide a longer communication distance. This is also applicable to the case the transceiver is provided with an exclusive radial earth. Therefore, preferably to connect additional counterpoise or radial earth for getting better grounding. In addition, connect the Terminal E on the transceiver to the earth ground, even if using a balanced type antenna. This will suppress spurious radiation and ensure the safety.

Never connect the earth wire to any gas pipe or cable duct.

1.6 Connection of Microphone, CHG-70

On SSB, plug the furnished microphone to the front panel 6-pin connector. The microphone is wired as shown in Figure 1.6.1.

The microphone is of electrostatic type of 600 ohms, nominal with sensitivity of −65dB.



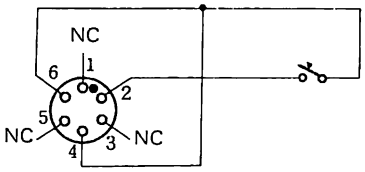
SR30-10PE-6P
(As seen from solder terminal)

Figure 1.6.1 Connection of Microphone

1.7 Connection of Key, CCK-410

On CW, plug the key to the front panel 6-pin connector. (If the microphone plug has been inserted, disconnect it.)

When plug the key to the connector, the transceiver automatically goes into the CW mode in the semibreak-in system.



SR30-10PE-6P
(As seen from solder terminal)

Figure 1.7.1 Connection of Key

1.8 Connection of Earphone

Plug the earphone plug to the front panel PHONE jack. Preferably to listen audio by the earphone from view of the power economy.

1.9 Carging the Battery

The JST-10 is provided with a rechargeable Ni-Cd battery pack, NBB-151.

The charging method of the NBB-151 is described below.

The charge time depends on the discharge amount in the battery pack.

- When the battery pack has been fully discharged, recharge it for a charge time as denoted on the charger.
- When the battery pack has not been completely discharged, touch the battery pack sometimes during charging. Its surface temperature higher 10 to 20°C than the ambient temperature suggests the end of charging.

CAUTION

Overcharging will reduce the life of the battery.

When the charging is completed, quickly disconnect the charger. If leaving the charger connected for long time, the battery pack will be overcharged to result in reduction of its life or cause some accident.

1.9.1 Charging with Battery Charger, NBB-410J

Mount the battery pack in the battery case as described in Paragraph 1.3.1. Set the POWER switch of the transceiver to OFF. Connect the charger to an AC power line as shown in Figure 1.9.1. Insert the connector of the charger into the POWER/CHARGE connector of the transceiver. The discharged battery pack requires a charging time of about 7 to 8 hours for full charge up.

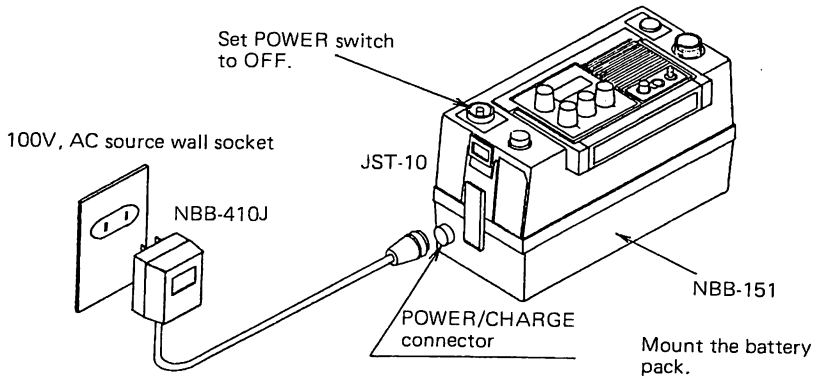


Figure 1.9.1 Charging with Use of NBB-410J

1.9.2 Charging with Power Supply/Charger, NBD-410J

NOTE: NBD-410J has been wired for operation from 100V, AC, 50/60Hz.
When using other power line such as 120V, 220V, 230V, and 240V, AC, the power transformer tap of the unit must be changed, as described in Instruction Manual for NBD-410J.

Mount the battery pack in the battery case as denoted in Paragraph 1.3.1. Connect the Power Supply/Charger to an AC power line socket, as denoted in Paragraph 1.3.4. Then, set the POWER switch of the Power Supply/Charger to ON. Plug the output of the Power Supply/Charger to the POWER/CHARGE connector of the transceiver. The red CHARGE indicator will illuminate to indicate the battery pack is being charged. The discharged battery pack requires a charge time of about 14 to 16 hours for full charge up.

1.9.3 Charging with Power Supply/Charger, NBD-420

Mount the battery pack in the battery case, as denoted in Paragraph 1.3.1. Insert the input adapter of the NBD-420 to the cigar lighter socket of car (12V type). Then plug the output of the Power Supply/Charger to the POWER/CHARGE connector of the transceiver. The red CHARGE indicator will illuminate to indicate the battery pack is being charged. The discharged battery pack requires a charge time of about 14 to 16 hours for full charge up.

1.9.4 Charging with Other External Charger

In the same manner, mount the battery pack in the battery case. For charging it, a power supply of a constant current of 300 to 350mA at 15 to 20V DC may be used. That power supply connect to the POWER/CHARGE connector of the transceiver as shown in Figure 1.9.2.

NOTE: Quick charging will not only reduce the life of the battery but also cause some accident.

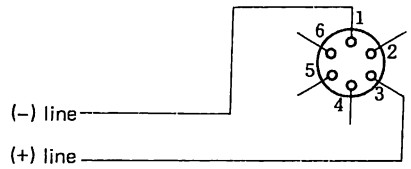


Figure 1.9.2 Connection of Power Supply for Charging

CHAPTER 2

OPERATING CONTROLS ON PANEL

2.1 Control Panel

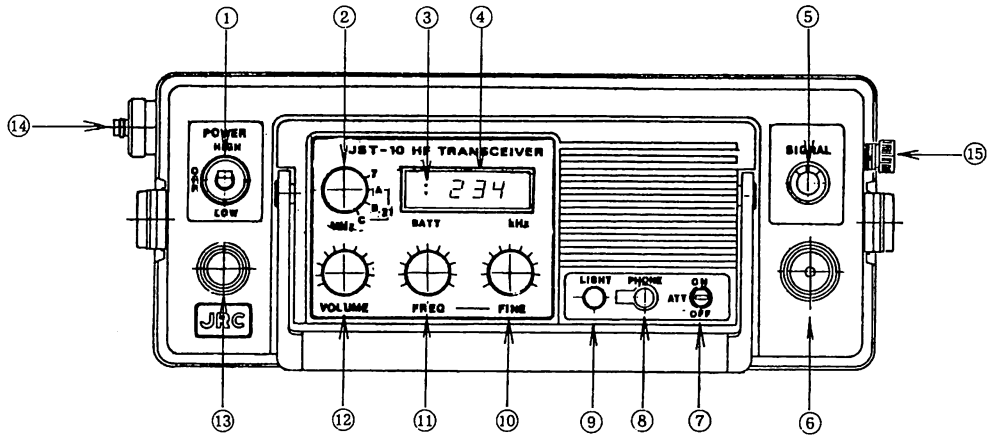


Figure 2.1.1 Control Panel

2.2 Operating Controls

① POWER switch

HIGH or LOW position for power on.

NOTE: When selecting the HIGH or LOW position, the transceiver provides an output power of 10 watts, PEP or 1 watt, PEP, respectively. Set to either HIGH or LOW position according to the communication range, type of battery mounted in the battery case, and battery capacity.

② MHz switch

The JST-10 is capable of operating in the amateur bands of 7MHz and 21MHz.

Switch positions	Frequency
7	7.0 – 7.1 MHz
21A	21.0 – 21.15MHz
21B	21.15 – 21.30MHz
21C	21.30 – 21.45MHz

③ Battery indicator

Provides a mark " : " on the panel indicator at the BATT marked area. The mark " : " illuminates to indicates the supply voltage is satisfactory. If this mark disappears, charge the battery pack or replace to other battery.

NOTE: The output power varies depending on the supply voltage, even when the battery mark " : " continues to appear.

④ Frequency display

Indicates the transmit and receive frequency at the 100kHz-, 10kHz- and 1kHz-digits on the panel. The indicated value depends on the operating mode, as described below.

SSB . . . 7MHz, LSB: Indicated frequency is lower 1.5kHz than the carrier frequency.
21MHz, USB: Indicated frequency is higher 1.5kHz than the carrier frequency.

CW . . . Indicated frequency is transmit carrier frequency.

⑤ SIGNAL indicator

Consists of a meter*1), which provides a reading proportional to the strength of receive signal during receive and to the antenna current during transmit.

NOTE: *1) The meter is available for adjusting the radial earth section of antenna during transmit. A maximum reading on the meter will not always indicate the tuned point in this adjustment.

⑥ Antenna connector

Consists of an M-type coaxial connector. Either the furnished whip antenna, NAW-210W, or optional whip antenna, NAW-700W is adaptable directly. An unbalanced type 50-ohm antenna may be also connected.

⑦ ATT switch

Switches on and off a 20dB-attenuator to the receive input. Set to ON when the wanted signal suffers from strong unwanted signals. Normally set to OFF.

⑧ PHONE jack with water-proof cap

Plug the earphone to the PHONE jack, causing the speaker output to be cut off.

⑨ LIGHT switch

Depress to illuminate the frequency display for reading the operating frequency at night.

⑩ FINE control (not RIT)

For finely adjusting the operating frequency. Clockwise rotation increases the frequency.

⑪ FREQ control

For coursely adjusting the operating frequency. Clockwise rotation increases the frequency.

⑫ VOLUME control

For adjusting sound volume.

⑬ MIC/KEY connector

Plug the microphone, CHG-70, in SSB. Plug the optional key, CCK-410, in CW.

⑭ POWER/CHARGE connector with water-proof cap

For connecting an external power source or charging the optional battery pack.

⑮ E terminal

CHAPTER 3

OPERATION

3.1 Preparation

(1) Set the POWER switch to OFF.
(2) Connect a power source according to Paragraph 1.3.
(3) Connect the antenna according to Paragraph 1.4.
(4) Connect the earth according to Paragraph 1.5.
(5) Connect a microphone for SSB or a key for CW.

How to Read the Frequency

The frequency display indicates the transmit and receive frequency at the 100kHz-, 10kHz- and 1kHz-digits.

The display circuit contains a frequency counter, which counts the frequency within an allowance of plus/minus one count. As the result, the indicated frequency may contain an error of one kilohertz at maximum unavoidably.

NOTE: In SSB, the frequency display does not indicate the carrier frequency, but the center frequency of the pass band.
On the 7MHz band in LSB, the indicated frequency is lower 1.5kHz than the carrier frequency.
On the 21MHz band in USB, the indicated frequency is higher 1.5kHz than the carrier frequency.
Refer to Figure 3.1.1.

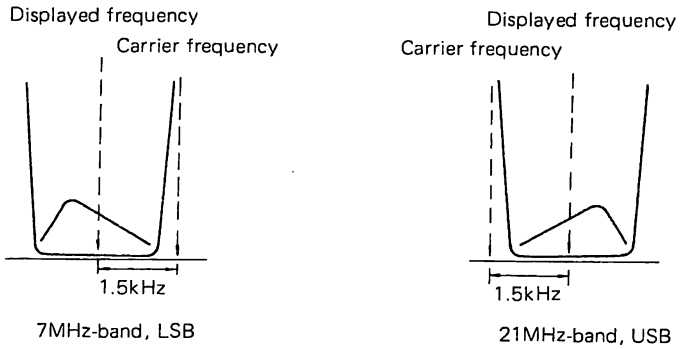


Figure 3.1.1 Carrier Frequency vs. Displayed Frequency in SSB

In CW, the frequency display indicates the transmit frequency.

3.2 Adjusting the Whip Antenna

Either the whip antenna, NAW-210W for the 21MHz-band or NAW-700W for the 7MHz-band can be tuned to desired frequency by only changing the length of the element in the radial earth, while leaving the antenna element fully expanded.

Practical adjustments are described in the following paragraphs.

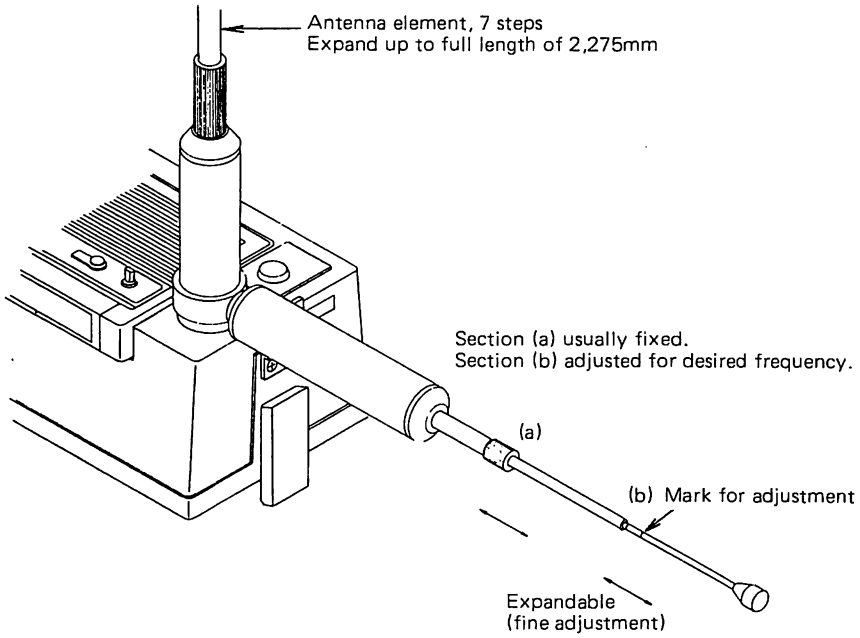


Figure 3.2 Radial Earth Element

3.2.1 Adjusting the NAW-210W Whip Antenna

(1) The radial earth has a notched mark at the adjustable element, which is approximately calibrated with respect to the tune frequency as shown in Figure 3.2.1, below.

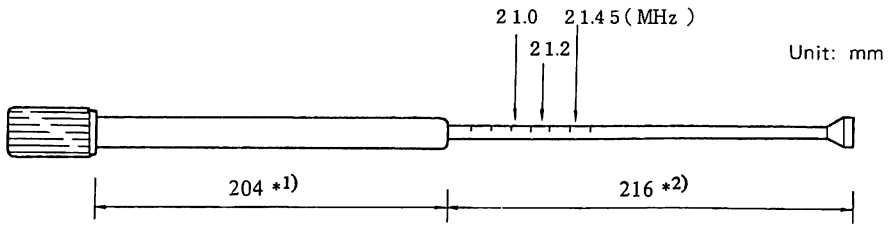


Figure 3.2.1 Radial Earth Element

NOTE: *1) Typical value measured at the adjustment before shipping and may somewhat differ from actual value.
Do not change the length unless a measuring instrument is available.
*2) The value represents the total length of the adjustable element.
Adjust the length for desired frequency.

(2) Examples of adjustment

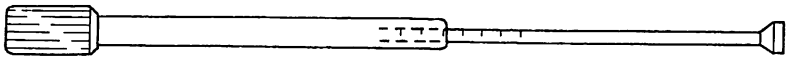


Figure 3.2.2. a Adjustment for 21.0MHz

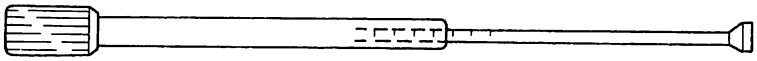


Figure 3.2.2. b Adjustment for 21.2MHz

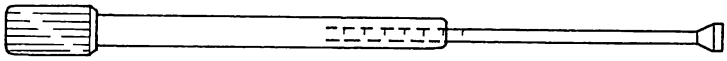


Figure 3.2.2. c Adjustment for 21.45MHz

As shown in Figure 3.2.2. a, b and c, adjust the adjustable element, utilizing the notched divisions. On the 21MHz band, the above three divisions well cover a band of 450kHz. Adjust the length for desired frequency. Each notched division has a tolerance of one division relative to the tune frequency.

3.2.2 Adjusting the NAW-700W Whip Antenna

(1) The radial earth has a notched mark at the adjustable element, which is approximately calibrated with respect to the tune frequency, as shown in Figure 3.2.3, below.

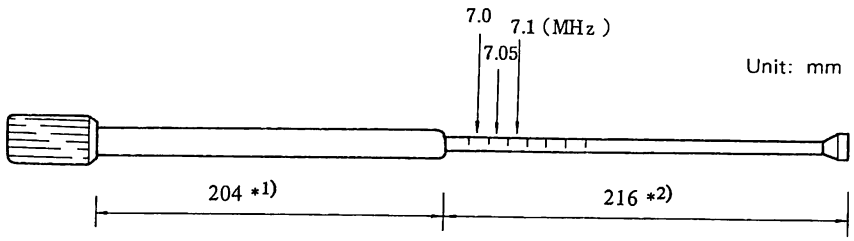


Figure 3.2.3 Radial Earth Element

NOTE: *1) Typical value measured at the adjustment before shipping and may somewhat differ from actual value. Do not change the length, unless a measuring instrument is available.

*2) The value represents the total length of the adjustable element. Adjust the length for desired frequency.

(2) Examples of adjustment

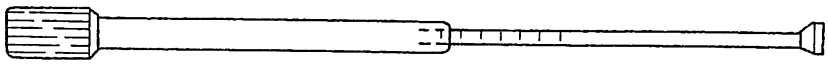


Figure 3.2.4. a Adjustment for 7.0MHz

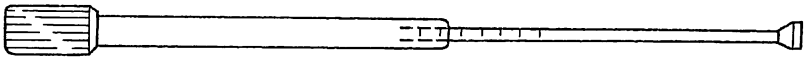


Figure 3.2.4. b Adjustment for 7.05MHz

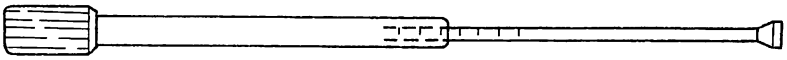


Figure 3.2.4.c Adjustment for 7.1MHz

As shown in Figure 3.2.4. a, b and c, adjust the adjustable element, utilizing the notched divisions. On the 7MHz-band, the two divisions well cover a band of 100kHz. Adjust the length for desired frequency. Each notched division has a tolerance of one division relative to the tune frequency.

3.2.3 Adjusting the Radial Earth with Small SWR Meter

For optimum operation of the JST-10, preferably calibrate the notched division with respect to the tune frequency previously upon adjustment of the NAW-210W and NAW-700W, using a commercially available small type SWR meter. Follow the procedure below.

(1) As shown in Figure 3.2.5, directly connect the SWR meter between the transceiver's antenna connector and whip antenna.

(2) Set the transceiver to the CW mode. If you has the key, CCK-410, plug the key to the MIC/KEY connector. Unless the key is available, insert a thin cupper wire of 2 to 3cm long, about 0.8mm in diameter, into holes of Pins No.

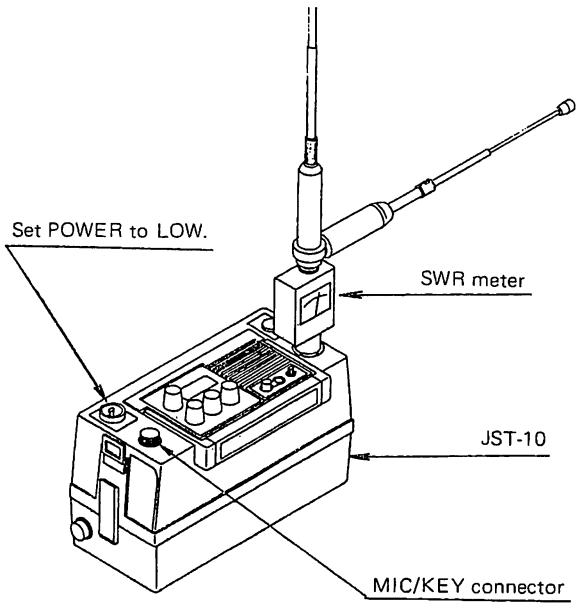


Figure 3.2.5 Adjustment with SWR Meter

4 and No. 6 of the same connector to short them.

(3) Set the radial earth adjustable element to a typical length corresponding to a mid frequency on the selected band, as shown in Figure 3.2.2.b for the NAW-210W and Figure 3.2.4.b for the NAW-700W.

(4) Loosen the clamper at Section (a) in Figure 3.2.

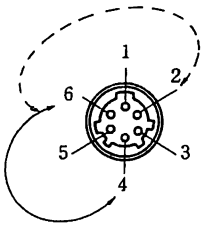


Figure 3.2.6 MIC/KEY Connector

(5) Set the POWER switch to LOW.

(6) Set both the MHz-switch and FREQ. control and FINE control to the frequency: 21,200kHz for the NAW-210W and 7,050kHz for the NAW-700W.

(7) Depress the key. If the key is not available, connect a cupper wire of 5cm long, about 0.8mm in diameter, as follows:

One end to the MIC/KEY connector, Pin No. 2 hole;

Other end to earth or cupper wire shorting No. 4 and No. 6

Now, the tranceiver transmits the signal of 1 watt, CW. Measure VSWR during transmit*1).

(8) Release the key.

(9) Increase or decrease the length of the element (a) by about 5mm.

(10) Repeat steps (7) through (9) until the best value (minimum) of VSWR is obtained. Finally tighten the clamper at Section (a).

NOTE: *1) If changing the radial earth portion relative to the earth ground or approaching your hand to the radial earth during measurement, the tuned frequency will vary. Preferably keep the radial earth distant 30cm or more away from the earth ground or neighbouring conductors.

3.3 Operation in SSB

(1) Set up as denoted in Paragraph 3.1. Use the microphone for SSB.

(2) Set the POWER switch to LOW.

(3) Adjust the VOLUME control for desired audio.

(4) Set the MHz-switch to the operating frequency band. Be sure an appropriate antenna for the band has been connected.

(5) Set both the FREQ. and FINE controls for desired frequency.

(6) Adjust the radial earth element. Refer to Paragraph 3.2.

(7) Select either HIGH or LOW position: HIGH position for transmit power of 10 watts, PEP. LOW position for transmit power of 1 watt, PEP.

(8) Depress the PTT button on the microphone to transmit. (PTT button located at the top of CHG-70). When talking, preferably keep your mouth away about 5cm from the microphone. Too loud talking to the microphone may cause some distortion. Excessively low voice may also provide a poor power.

(9) When the talking is over, release the PTT button. Now, the transceiver goes to receive.

3.4 Operation in CW

(1) Set up as denoted in Paragraph 3.1. Use the key for CW.

(2) Set to LOW.

(3) Adjust the VOLUME control for desired audio.

(4) Set the MHz-switch to the operating frequency band. Be sure appropriate antenna to the selected frequency has been connected.

(5) Set both the FREQ and FINE controls for desired frequency*1).
(6) Adjust the radial earth element. Refer to Paragraph 3.2.
(7) Select either HIGH or LOW position: HIGH position for transmit power of 10 watts, PEP. LOW position for transmit power of 1 watt, PEP.
(8) For transmit, depress the key*2). Then the transceiver will automatically go into transmit. If interrupting the keying, the transceiver will return to the receive about one second delay.

NOTE: *1) The selected frequency is indicated, to be transmitted. When receiving at the indicated frequency, you will hear a demodulated tone of about 800Hz.

*2) During the keying, the speaker or earphone will provide a side tone of about 800Hz for monitoring.

CHAPTER 4

MAINTENANCE AND CHECK

4.1 Precaution for Maintenance and Check

The JST-10 has been completely adjusted and inspected before shipping. Do not touch any variable resistors, trimmer capacitors, and transformer cores, mounted on the printed circuit boards, unreasonably when checking internal circuitry.

4.2 Removing the Battery Case

When mounting or replacing the battery cells, or replacing the fuse, remove the battery case according to the following procedure. Be sure to set the POWER switch to OFF. Remove two latch keepers, as shown in Figure 4.2.1. Carefully open the battery case.

NOTE: Take care of connection cable not to break.

Disconnect the connection cable.

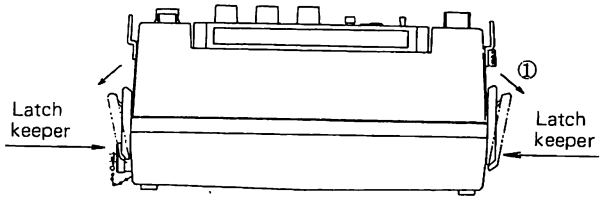


Figure 4.2.1 Removing the Battery Case

4.3 Replacing the Fuse

If the fuse is blown, open the battery case. See the bottom of the main frame shown in Figure 4.2.2. You will find a square hole for replacing the fuse. Hold the fuse puller and pull it just upward to remove the fuse. Replace with spare fuse.

NOTE: If attaching an insulation tape to the new fuse before replacing, it will be helpful for removing the fuse in future, as shown in Figure 4.2.3.

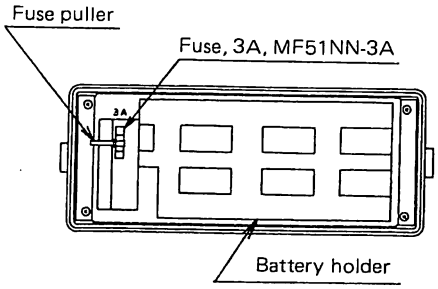


Figure 4.2.2 Bottom View of Main Frame

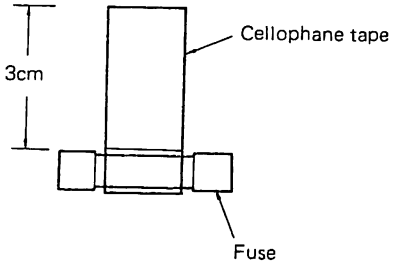


Figure 4.2.3 Preparing the Pulling Tape for Fuse

4.4 Disassembling the Main Frame

There is, usually, no need to disassemble the main frame. If, however, it should be disassembled, refer to Figure 4.2.4.

Disassemble the main frame in the ascending order of circled numbers.
Then, the main unit can be taken out from the case.

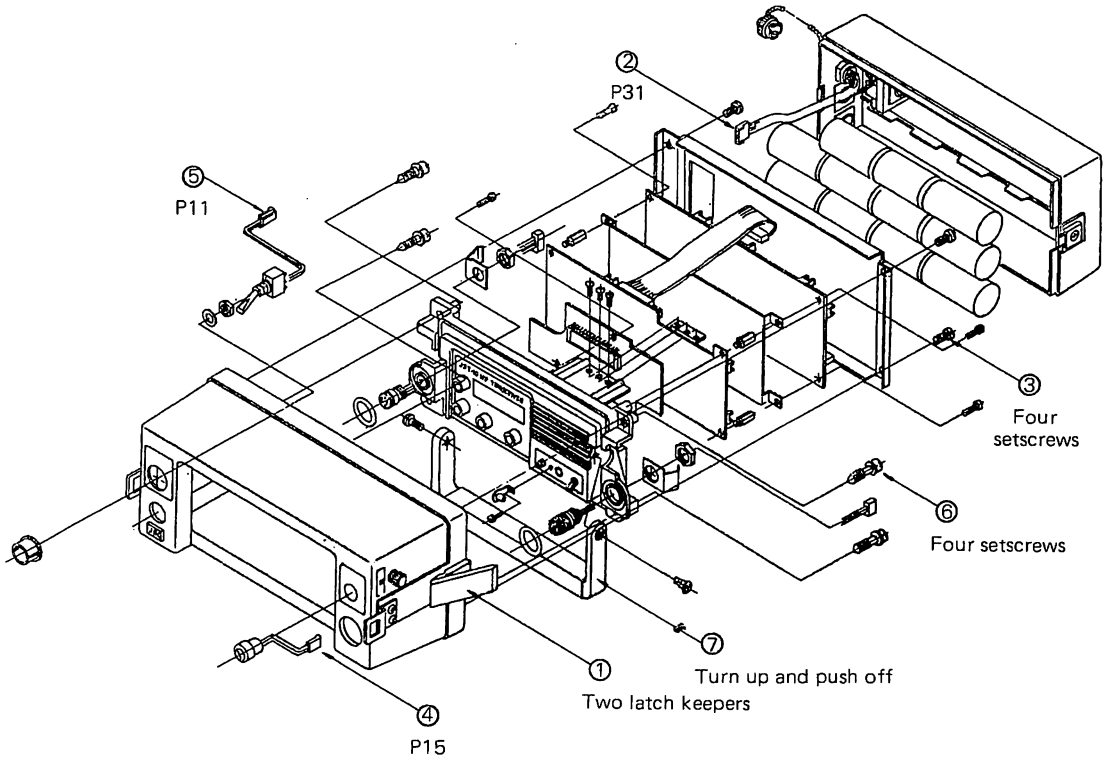


Figure 4.2.4 Disassembling the Main Frame

CHAPTER 5

OPTIONS

The following options are available for the JST-10.

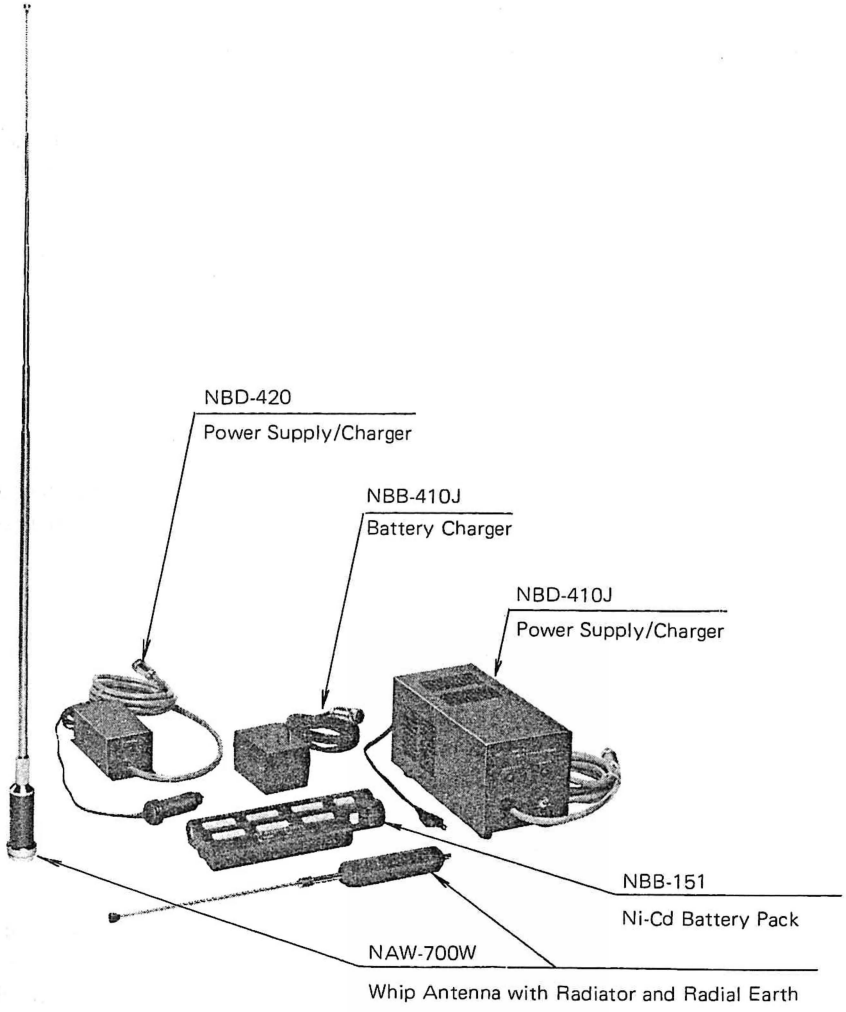


Figure 5.1 Options

5.1 NBB-151, Ni-Cd Battery Pack

This battery pack is of a rechargeable type for the JST-10's exclusive use. Once fully charged up, it is capable of energizing the JST-10 continuously for about seven hours under the following conditions: SSB mode with modulation by voice, output power of 10 watts, PEP, 1 to 3 watts, mean, one-minute transmit and three-minute receive.

Specifications:

(1)	Rated Voltage	13.2V, nominal (=1.2V x 11)
(2)	Capacity	1,650mA-H (5 hour-rate)
(3)	Dimensions	230 x 80 x 30mm
(4)	Weight	900g, approx.

5.2 NBB-410J, Battery Charger

This charger is intended to charge the Ni-Cd battery pack, NBB-151, mounted in the JST-10. It has been designed to provide suited output voltage and charge current to the NBB-151.

Specifications:

(1)	Input Voltage	100V AC ±10%, 50/60Hz
(2)	Charging Output	350mA, 13.2V DC at charging condition
(3)	Charging Time	7 to 8 hours
(4)	Dimensions	77.5 x 57 x 47.5mm with cable of about 2 meters long
(5)	Weight	480g, approx.

5.3 NBD-410J, Power Supply/Charger

This charger is capable of charging the Ni-Cd battery pack, NBB-151 while feeding the JST-10 with specified AC line voltage. It has an exclusive circuit for charging with a constant current. The charging can be made with the battery pack mounted in the JST-10.

Specifications:

(1)	Input Voltage	100V AC ±10%, 50/60Hz
(2)	DC Output Capacity	2.5A at maximum, 13.8V DC; negative grounded
(3)	Charging Output (at charging condition)	Voltage: 13.2V, approx. Current: 180mA, approx. Time: 15 hours, approx.
(4)	Dimensions	100 x 100 x 200mm, exclusive of projections
(5)	Weight	2.5kg, approx.

5.4 NBD-420, Power Supply/Charger

This charger is capable of charging the Ni-Cd battery pack, NBB-151, while feeding the JST-10 with a 12V type car battery. It has an exclusive circuit for providing a constant charging current for the battery pack. The circuit contains a DC-DC converter. The charging can be made with the battery pack mounted in the JST-10.

Specifications:

(1)	Input Voltage	13.8V DC, negative grounded, fed from car battery.
(2)	DC Output Voltage	Same voltage as the input, negative grounded.
(3)	Charging Output (at charging condition)	Voltage: 13.2V, approx. Current: 180mA, approx. Time: 15 hours, approx.
(4)	Dimensions	55 x 45 x 120mm, exclusive of projection.
(5)	Weight	320g, approx.

5.5 NAW-700W, 7MHz-Band Whip Antenna

This whip antenna is intended for the amateur band of 7MHz. It is capable of being tuned to desired frequency ranging from 7.0 to 7.1MHz by adjusting the radial earth only. It can be also tuned to desired frequency ranging from 7.1 to 7.3MHz by changing the radiator length in addition to the adjustment of the radial earth.

Specifications:

(1)	Frequency Range	7.0 to 7.1MHz with radiator full length of 2,275mm 7.1 to 7.2MHz with radiator length 2,077mm 7.2 to 7.3MHz with radiator length 1,957mm
(2)	Allowable Power	12 watts, PEP maximum
(3)	VSWR	1.2 to 1 or better at tuned point
(4)	Operating Temperature Range	−10 to +40°C, exclusive of direct sunlight condition
(5)	Dimensions	2,440mm, approx. in radiator direction 600mm, approx. radial earth direction 380mm, approx. disassembled
(6)	Weight	380g, approx.

5.6 CFQ-1116, Car Battery Adapter

This adapter is available for directly energizing the JST-10 with a car battery.

Specifications

(1)	Input Connector	Adaptable to cigar lighter socket to car battery.
(2)	Adaptive Voltage	12V DC line
(3)	Current Capacity	3A or less
(4)	Length	2 meters, approx.

5.7 CCK-410, Key

This key is a portable type manual key for JST-10's exclusive use.

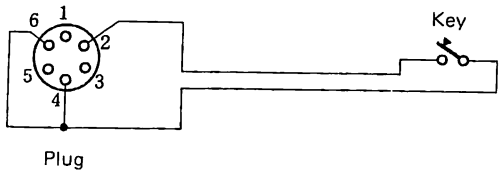


Figure 5.2 CCK-410 Circuit

CHAPTER 6

SPECIFICATIONS

6.1 General Specifications

(1) Frequency Range	7MHz band	7.0 to 7.1MHz
	21MHz band	A . . . . 21.0 to 21.15MHz
		B . . . . 21.15 to 21.30MHz
		C . . . . 21.30 to 21.45MHz
(2) Operating Modes	A1, CW	
	A3J, LSB	7MHz band
	USB	21MHz band
(3) Antenna Impedance	50 ohms, unbalanced	
(4) Power Requirements	External power source	
	12 to 15V DC, standard voltage	
	3A peak, 13.8V, negative grounded	
	Rechargeable battery	
	NBB-151, Ni-Cd battery pack	
	Dry cell	11 cells of alikaline, type AM-2
(5) Power Consumption, typical	During receive with no signal	
	160mA, approx.	
	During transmit	
	in SSB HIGH	800mA, approx., mean
	in SSB LOW	400mA, approx., mean
	in CW HIGH	950mA, approx., mean
	in CW LOW	450mA, approx., mean
(6) Dimensions	90 (L) x 220 (W) x 100 (H)mm,	
	90 (L) x 250 (W) x 115 (H)mm	
	including projections and microphone, but exclusive of antenna	
(7) Weight	1.3kg, approx., exclusive of microphone, battery and antenna	
	2.7kg, approx., including the microphone, CHG-70, battery, NBB-151, and antenna, NAW-210W	
(8) Operating Temperature Range	−10 to +40°C	

6.2 Transmitter

(1) Power Output, typical	HIGH . . . . . 10 watts with input of 13.8V DC
	LOW . . . . . 1 watt with input of 13.8V DC
(2) Carrier Suppression	40dB or more, modulation at 1,500Hz, rated output
(3) Undesired Sideband Suppression	40dB or more, modulation at 1,500Hz, rated output
(4) Spurious Radiation	−40dB or less
(5) Intermodulation Distortion	−30dB or less relative to peak power
(6) Occupied Frequency Bandwidth	A3J . . . . . 3kHz or less
	A1 . . . . . 0.5kHz or less at 25 bauds

(7) Audio Response	400 to 2,600Hz within 6dB, A3J
(8) Microphone Impedance	600 ohms, nominal
(9) Microphone Input Level	–35dBm, approx., at 1,500Hz, rated output

6.3 Reciever

(1) Circuitry	Single superheterodyne
(2) Intermediate Frequency	8.7MHz
(3) Sensitivity, Typical	–10dBμ (0.3μV) or less at S/N 10dB
(4) Selectivity, Typical	2.2kHz/–6dB 4.3kHz/–60dB
(5) Image Rejection	80dB or more
(6) IF Rejection	60dB or more
(7) Audio Output	0.3 watt or more, distortion 10%
(8) Input Attenuator	20dB, approx.
(9) AGC Characteristic	AF output level change less than 10dB against antenna input level change from 3μV to 1V

6.4 Accessories

6.4.1 CHG-70, Microphone

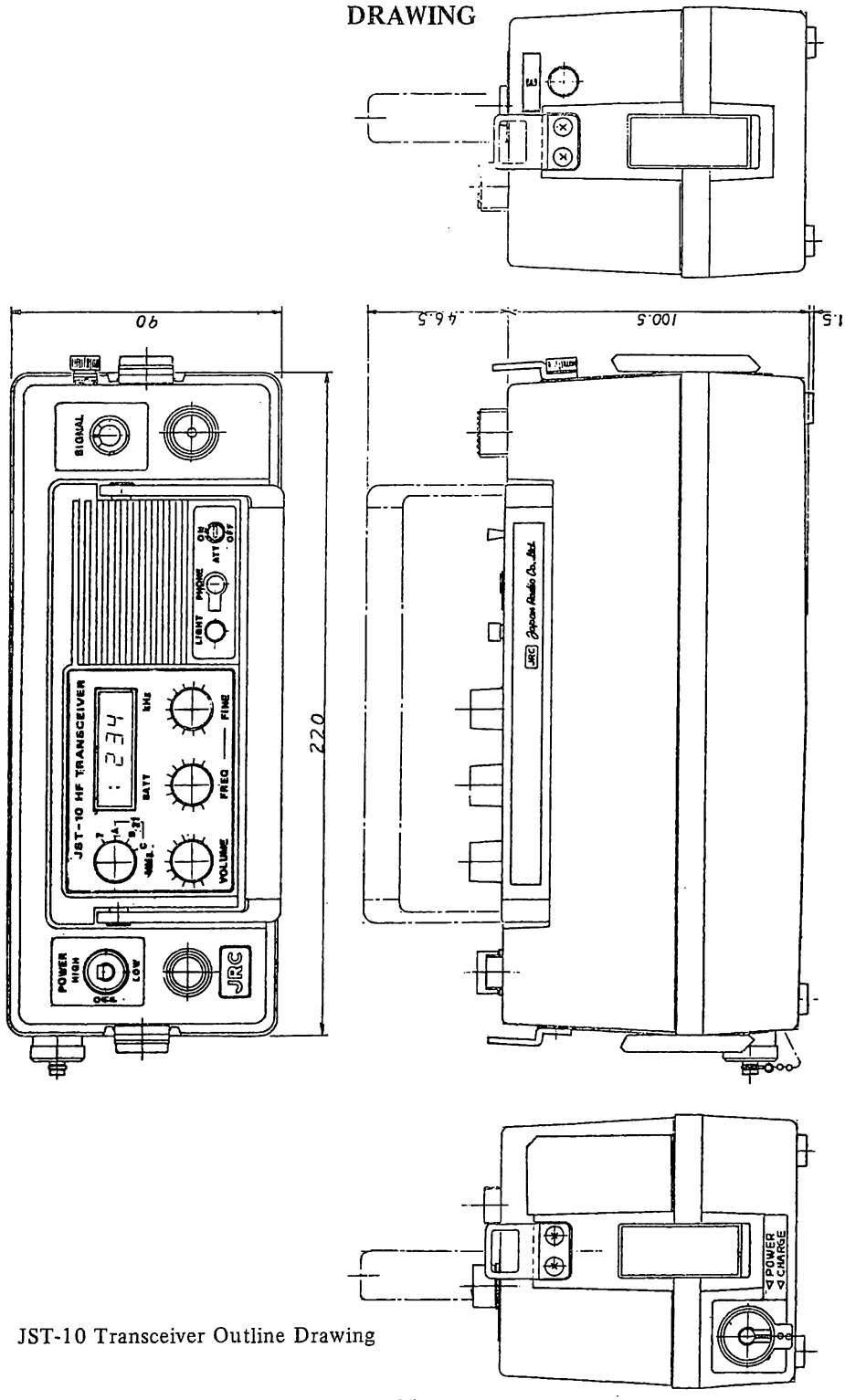
(1) Type	Electrostatic type
(2) Output Impedance	600 ohms, nominal
(3) Sensitivity	–65dB (0dB = 1V/μBar, 1kHz)
(4) Cable Length	350mm, approx. expandable up to 1.5 meters, approx.
(5) Dimensions	70 x 30 x 22mm, exclusive of cable
(6) Weight	100g, approx.

6.4.2 NAW-210, Whip Antenna

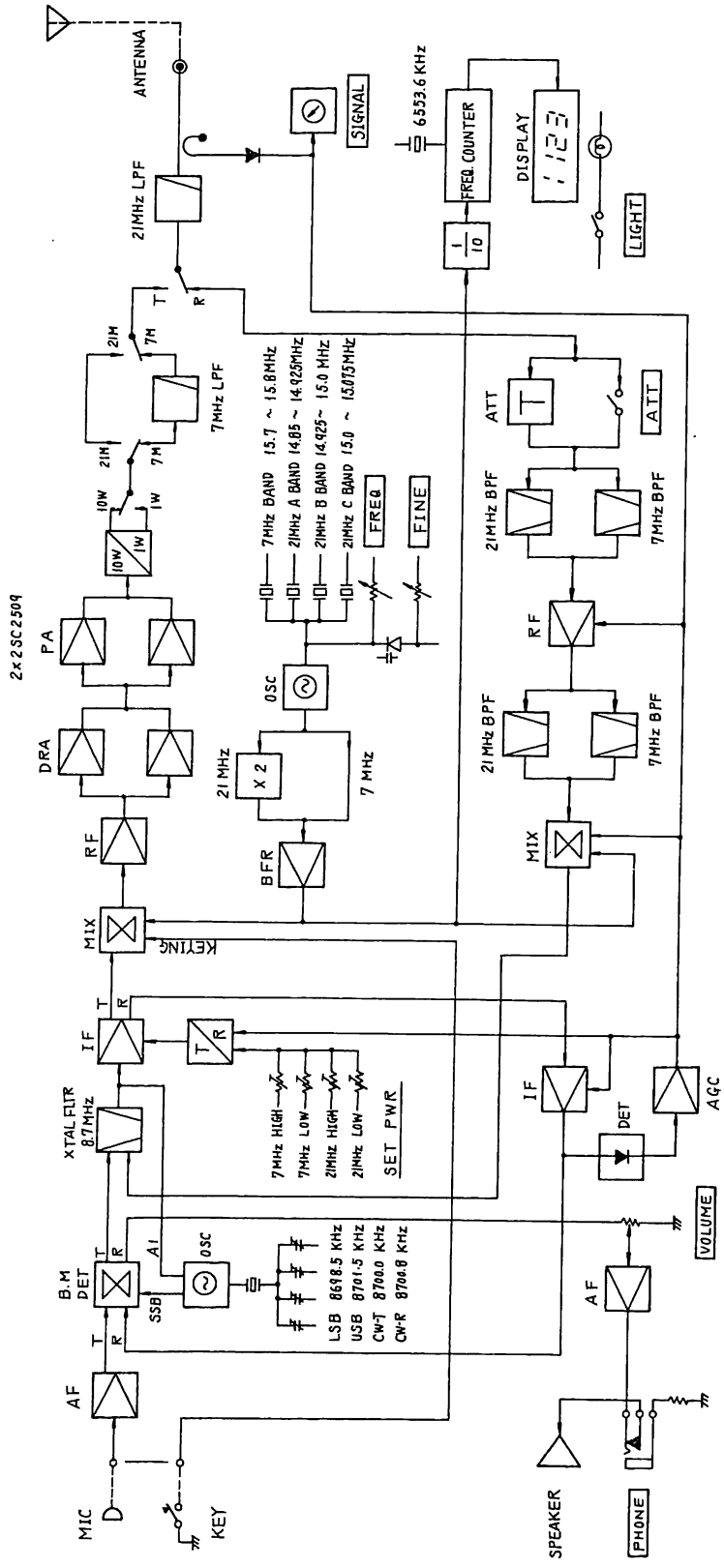
(1) Freuqency Range	21.0 to 21.45MHz
(2) Allowable Power	12 watts, PEP, maximum
(3) VSWR	1.2 to 1 or better at tuned point
(4) Operating Temperature Range	–10 to +40°C, exclusive of direct sunlight condition
(5) Dimensions	2,355mm, approx. in radiator direction 600mm, approx. in radial earth direction 380mm, approx. disassembled
(6) Weight	380g, approx.

CHAPTER 7

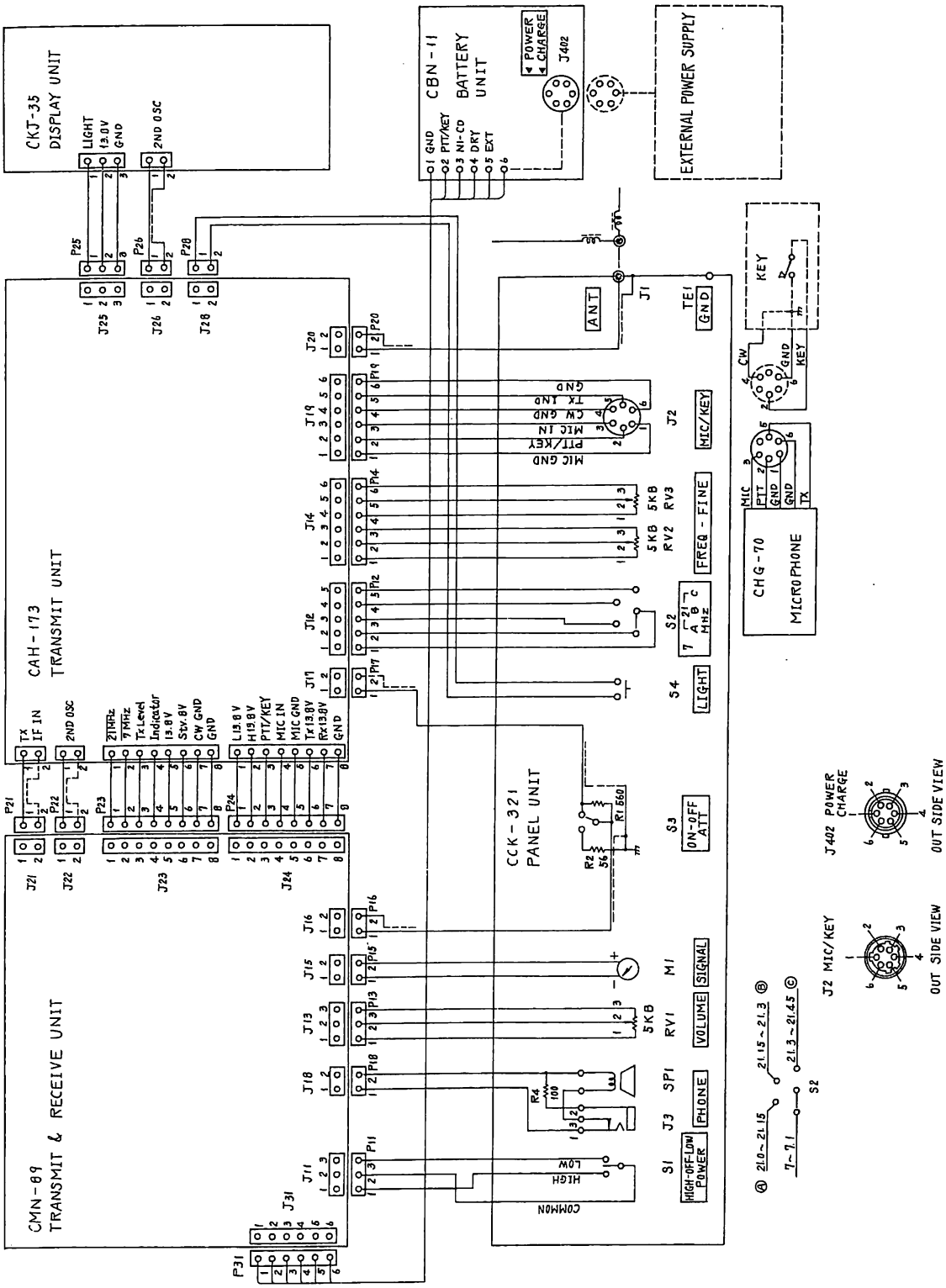
DRAWING



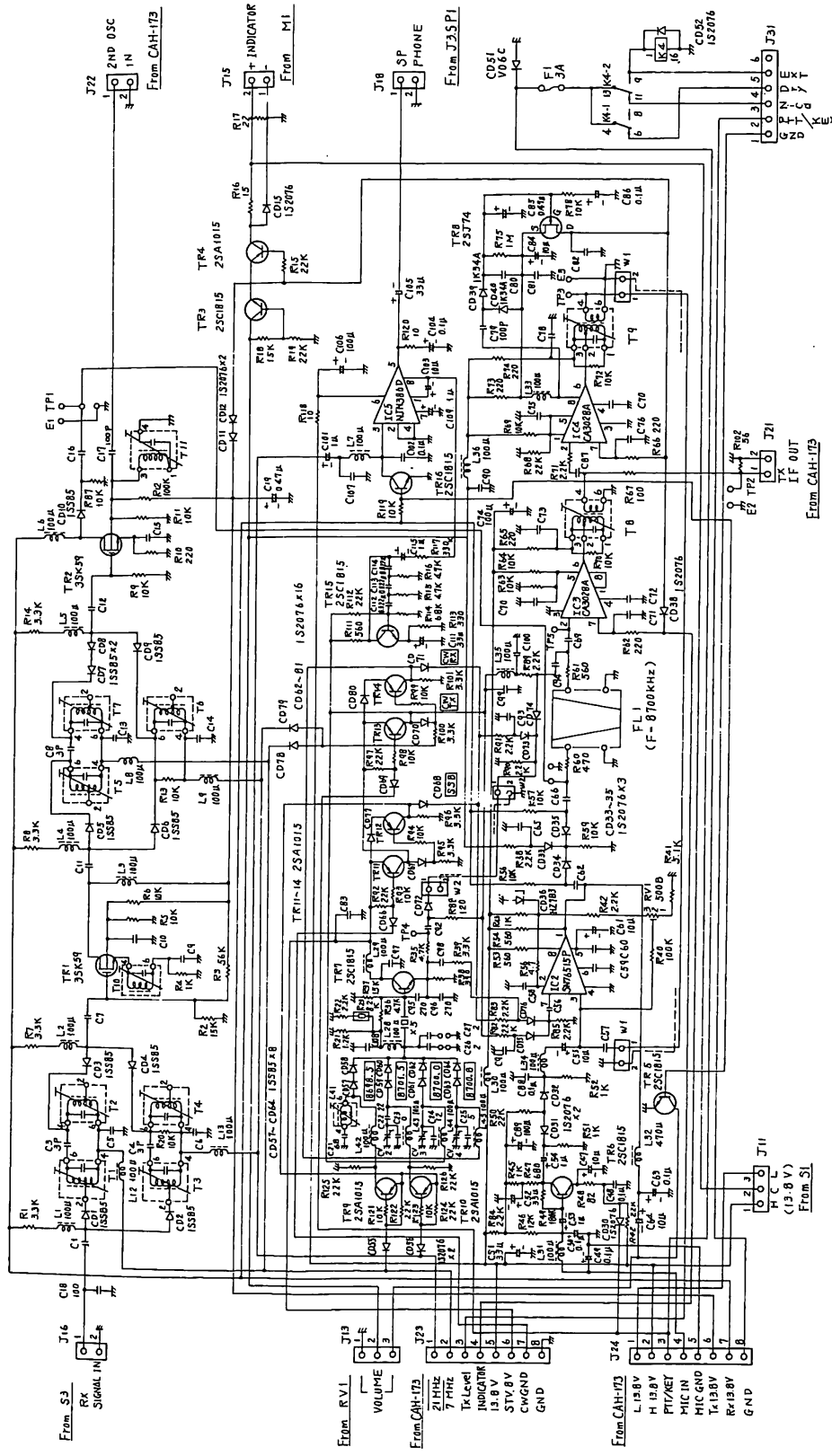
7.1 JST-10 Transceiver Outline Drawing



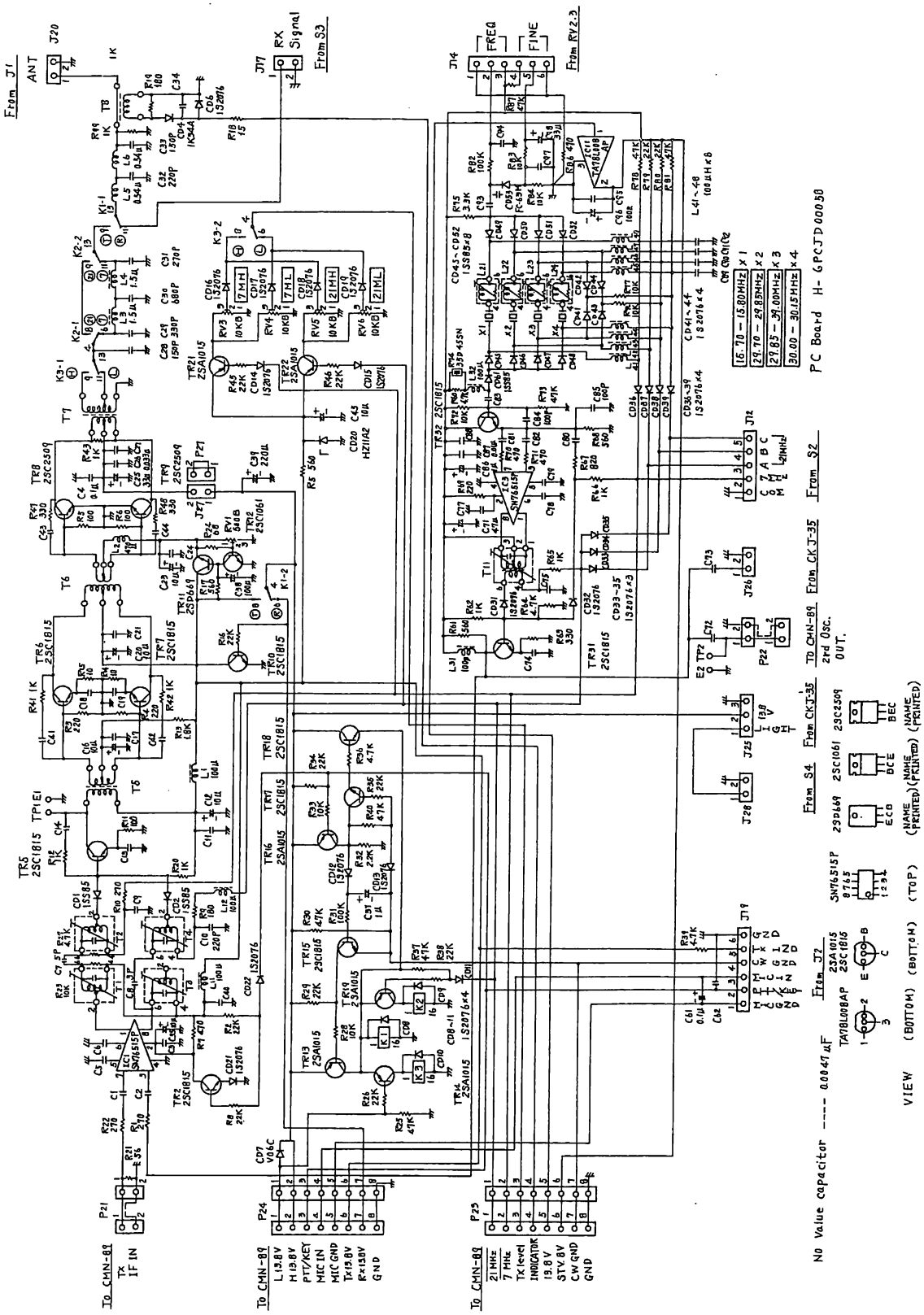
7.2 JST-10 Transceiver Block Diagram



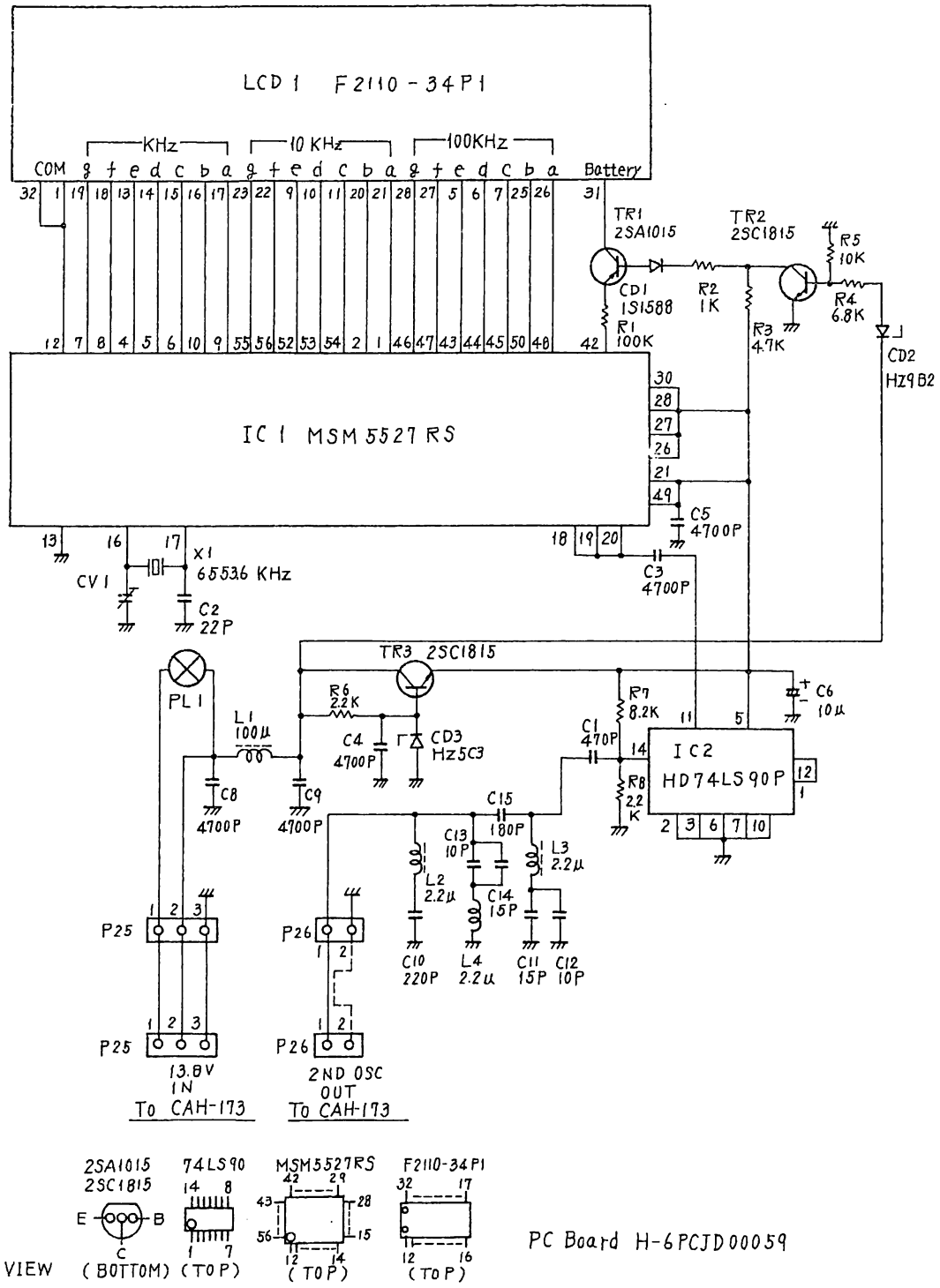
7.3 JST-10 Transceiver General Connection Diagram



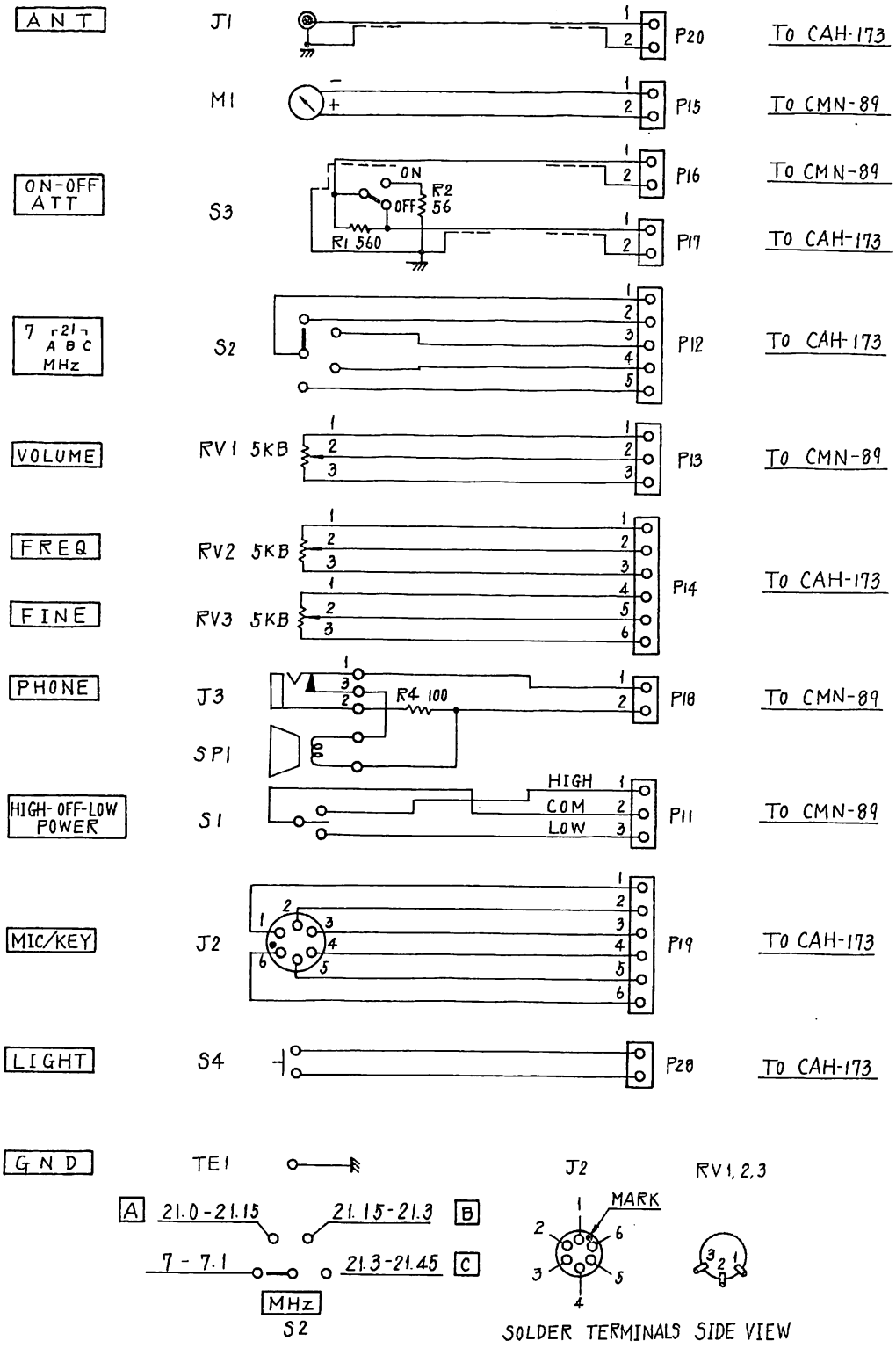
7.4 CMN-89 Transmit & Receive Unit Circuit Diagram



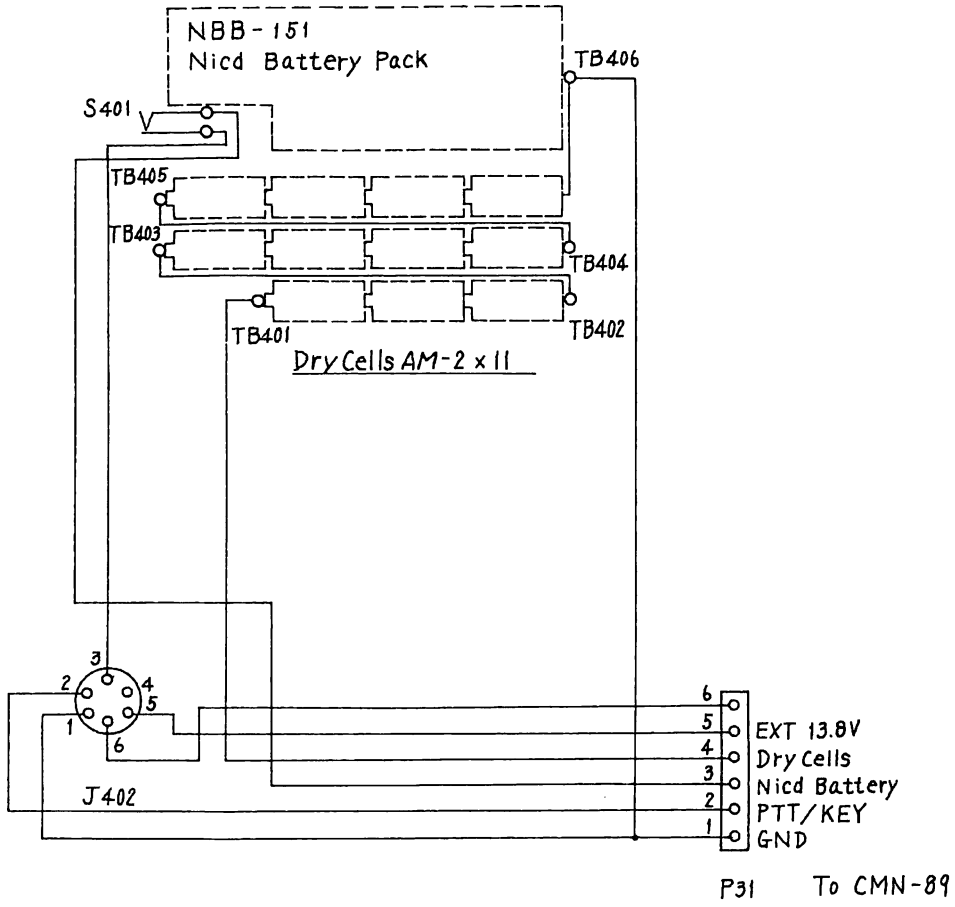
7.5 CAH-173 Transmit & VXO Unit Circuit Diagram



7.6 CKJ-35 Display Unit Circuit Diagram



7.7 CCK-321 Panel Unit Circuit Diagram



7.8 CBN-11 Battery Unit Circuit Diagram

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