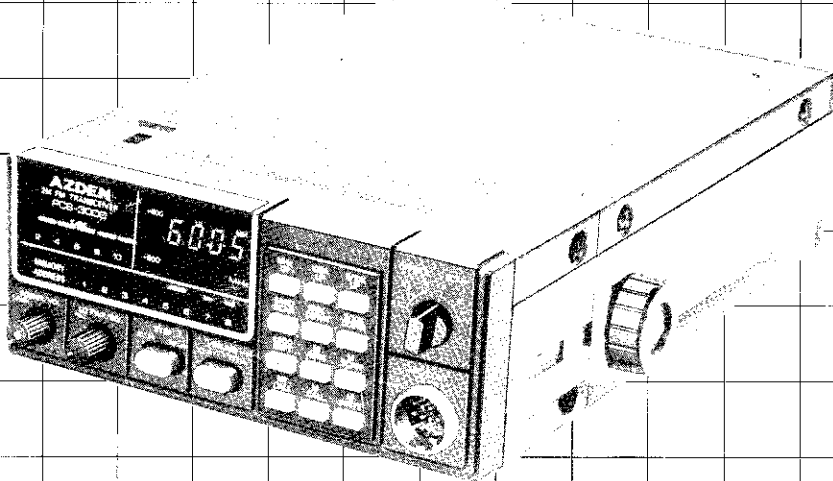


2m FM TRANSCEIVER

PCS-3000

INSTRUCTION MANUAL



814-898-0814

JAPAN PIEZO CO., LTD.

CONTENTS

○ Major Features	1
○ Cautions Before Use.....	2
○ • Names of Component Parts, Operations and Usage (control unit)	3
• Details of Keyboard.....	6
• Names of Component Parts, Operations and Usage (main unit)	10
○ How to Backup Microcomputer Memory and How to Charge Battery.....	12
○ Microphone PCM-369 (standard accessory)	13
○ How to Operate	14
○ How to Make Your Own Control Box.....	17
○ Optional Parts.....	20
○ Block Diagram.....	21
○ Specifications and List of Accessories.....	22

※This manual was prepared mainly for U. S. A. model.

MAJOR FEATURES

★ Control unit is detachable from transceiver unit

This makes it possible to use the control unit on the dashboard for mobile operation, so that the unit may be manipulated more easily while driving. The main unit may then be removed to a more convenient place.

★ C-MOS microcomputer control

The built-in microcomputer makes scanning for Busy and Vacant channels possible. Channel operations are all computer-controlled. Once stored in memory, a frequency is retained even when power is turned off. The battery used is of a chargeable type.

★ Actual frequency is always displayed

While transmitting, the shifted frequency as determined by the microcomputer is displayed. A microphone having six different functions is provided as a standard accessory. An easy-to-handle palm-control microphone performs the functions of Volume Control, Channel Lock, Memory Channel 1 Call, Push-to-Talk, Frequency UP and Frequency DOWN.

★ Eight memory channels

Up to 8 channels from among 1600 channels can be stored, offering advantage for club use. Erasing and rewriting are easily performed.

★ Illuminated dial

Frequency display uses green LEDs for optimum visibility under variable ambient light conditions.

★ All digital display

The Digital Display prevents reading errors. The S/RF meter is also digital. LEDs indicate the memory channel being used and repeater offset status.

★ Programmable band scan

The lower and upper limits of the band scan range can be set as desired; the full band or any unbroken segment can thus be scanned.

★ Keyboard actuation is accompanied by audible tone

An electronically synthesized tone indicates data entry into the microcomputer.

★ Selectable 5 or 10 kHz increments

Frequency steps of 5 or 10 kHz may be selected via a front-panel switch.

CAUTIONS BEFORE USE

Before connecting to a power supply, check that the antenna is securely connected. Check the outside antenna circuit for short-circuiting using an ohmmeter. Ensure that it is not short-circuited, and then firmly screw it into the connector on the rear side of the unit. (See page 11)

★ **Check that the cable used is of 50-ohm impedance**

We recommend RG-58/U or RG-8/U or equivalent cable for the antenna circuit.

★ **Rated voltage of the unit is 13.8V**

Be careful not to connect the unit to an improper power source, as this may cause damage. For mobile use connect the power cable directly to the battery, being careful to observe the proper polarity.

★ **Check that power supply voltage is 12 to 14V and each lead wire is connected to correct polarity**

The red lead is for positive + and the black lead for negative -, with maximum rating of $13.8V \pm 15\%$. The unit is designed for negative ground circuits only.

★ **Be sure the unit is properly located**

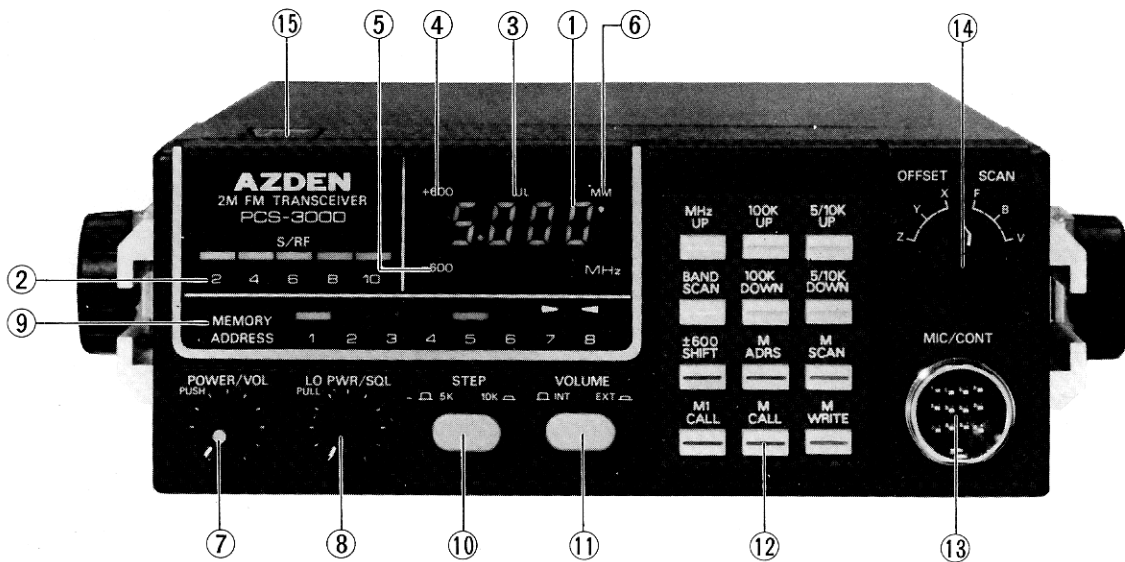
When using this transceiver as a fixed station, it should not be located in a place directly exposed to sunlight or with excessively high humidity.

When using this unit as a mobile station, avoid locating it where it comes in direct contact with the air flow from the vehicle heater. If a vehicle is parked for a long period under the hot sun, the inside temperature becomes very high. Do not start transmitting until the temperature lowers. Since this unit is to be grounded with the negative terminal, it must not be used in a vehicle that is grounded with the positive terminal without taking proper measures for insulation.

★ **When detaching or connecting the control head from/to the main unit, be sure to disconnect power**

Otherwise the microcomputer may temporarily malfunction. If this happens, see "How to Back Up Memory and Prevent Malfunction." (See page 12.)

NAMES OF COMPONENT PARTS, OPERATION AND USE



(1) Frequency Indicator

This indicator displays the lower four digits of the transmitting or receiving frequency on large LEDs. The example shows 5,000 which are the lower four digits of 145,000 MHz.

(2) Signal Indicator S/R/F

This indicator displays the input signal strength during reception and relative output power during transmission using five LEDs. The indicating level will be affected by the SWR of the antenna system. Therefore, 25 watts output does not necessarily mean that all five LEDs must be illuminated.

(3) Unlock Indicator (UL)

If the PLL malfunctions, a colon (:) will light up. The transmitter and receiver will be disabled.

The UL indicator may light up for a short time immediately after power is applied or after a channel change, because the PLL requires a brief instant to lock in. Trouble is indicated only when the UL indicator remains lit for an extended length of time.

(4) + 600 kHz Indicator

When transmitting while this indicator is lit, the transmitting frequency is 600 kHz higher than the receiving frequency. Under these conditions, the Frequency Display will show a frequency 600 kHz higher than the receiving frequency while transmitting.

(5) - 600 kHz Indicator

When transmitting while this indicator is lit, the transmitting frequency is 600 kHz lower than the receiving frequency. Under these conditions, the Frequency Display will show a frequency 600 kHz lower than the receiving frequency while transmitting.

(6) Memory Mode Indicator

This serves to indicate that the unit is operating under Memory Mode (with M CALL, M1 CALL or M SCAN key depressed). For further details, see the section entitled "Details of Keyboard."

(7) Power Switch/Volume Control

Pushing this switch will turn the power ON and OFF. Rotating it clockwise with the power switch in the ON position will turn up the volume.

(8) Squelch Control/Power Level Switch

The Squelch is used to eliminate background noise under no signal conditions. With this knob turned fully counter-clockwise, the receiver hiss may be offensive. In this case, turn this knob gradually clockwise, and the noise will disappear at a certain point. By setting the knob just beyond this point, the receiver will be silent unless a signal is being received. Rotating the knob further clockwise will reduce the sensitivity of the receiver. Weak signals will then fail to open the Squelch. Pulling this knob toward you will reduce the transmitting output power from 25 watts to 5 watts.

(9) Memory Address Indicator

This unit has eight memory channels. The memory address indicator shows which channel is being used in the memory mode. The content of memory channel 1 can be instantly called (except while transmitting). When memory channel 1 is called, memory address 1 lights up in addition to the memory address of the channel previously used. When transmitting in memory channel 1, only memory address 1 is lit. To return to other channels, push a return key. For further details, refer to "Details of Keyboard" (page 6).

(10) How to Change Scan Step

This unit is capable of scanning from 142,000 to 149,995 MHz in steps of 5 or 10 kHz. Pushing this switch will change the step from 5 to 10 kHz or vice-versa.

(11) Volume Internal/External Select

With this switch, the operator can elect to control the volume either via the front panel or via the microphone.

(12) Keyboard

The keyboard is used to select the operating frequency, memory mode, and scan. The keys are illuminated for easy location in darkness. See "Details of Keyboard" (Page 6).

(13) Control Microphone Connector

This is a 12-pin connector used for connecting the control microphone (standard accessory). For arrangement of pins and their corresponding functions, see page 17. For details of the control microphone PCM-369, refer to page 13.

(14) Offset/Scan Switch

In the three Offset positions (X, Y, Z), scanning is accomplished in the "busy" mode (see below) and the non-standard offsets, as determined by optional crystals, are activated. The U.S. Version is supplied with crystals X = -1,305 MHz and Y = -4,250 MHz. The accessory offset as determined by the offset/scan switch will occur in addition to +600 or -600 kHz offsets, if the latter are activated.

(Free Scan)

Scanning is carried out at a speed of 4 channels per second according to squelch control. When an input signal over the squelch level is received, scanning automatically stops for 5 seconds at a channel receiving a signal.

If a stop key is not pushed within 5 seconds, scanning is automatically resumed.

For information about the stop key, refer to "Details of Keyboard."

Note: With SQL knob rotated fully counter-clockwise, scanning continues at a speed of 4 channels per second.

(Scanning for a Busy Channel)

Scanning is carried out at a speed of 4 channels per second in accordance with squelch control.

When an input signal over the squelch level is received, scanning automatically stops at a channel receiving the input signal until this signal disappears. The frequency stays at this channel for two or three seconds after the signal has disappeared, allowing break-in operation. (If a stop key is not pushed within the break-in time, scanning resumes.) To release scanning, push stop key.

Note: Under no squelching state (with the SQL knob rotated fully counter-clockwise), scanning does not occur regardless of channel status.

(Scanning for a Vacant Channel)

When scanning is carried out in this position under squelching state, it skips over channels that are busy and will automatically stop at the first vacant channel encountered.

Once a signal enters a vacant channel, scanning is resumed until the next vacant channel is encountered.

Note: Under no squelching state (with the SQL knob rotated fully counter-clockwise), scanning will occur regardless of channel status.

Even with this SQL knob turned fully counter-clockwise, however, noise may very rarely enable SQL to activate but this is not malfunction or breakdown of SQL function.

(15) Tone Switch

When this switch is set to TONE, the PL tone oscillator is activated.



DETAILS OF KEYBOARD

(Details of Keyboard)

The keyboard is designed to keep proper brightness in the light during the daytime and sufficient brightness in the inside of a car at night. Temperature in the control head will rise slightly due to the illuminating lamp, but this will not cause trouble.

● Electronics sound

This transceiver produces an electronic sound with key operation to inform the operator of data entry in the microcomputer.

★ Channel changing (UP-DOWN MODE). . . . Tuning

- When the 5/10K UP key or the 5/10K DOWN key is pushed once, the operating frequency is moved up or down by 5 or 10 kHz. However, this key will not affect the upper MHz figure.
- For European version, 5/10 UP and 5/10 DOWN key are replaced with 25 UP and 25 DOWN keys respectively.
- When pushing the 100K UP key or the 100K DOWN key once, the operating frequency is moved up or down by 100 KHz. However, this key will not affect the upper MHz figure. Example: Pushing the 100K UP key three times while the unit is operating at 145.800 MHz will change the frequency to 145.100 (5.100 is displayed).
- When pushing the MHz key each time, the topmost figure of the frequency indicator becomes 2, 3, . . . , 9, thus changing the channel being used from 142 MHz band to 149 MHz band. However, the 100 kHz and 5 or 10 kHz figures are not changed.

★ Rapid channel change

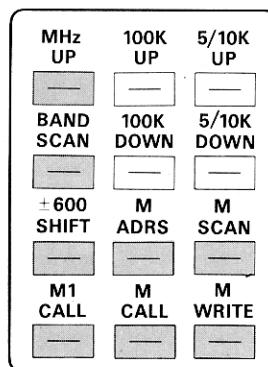
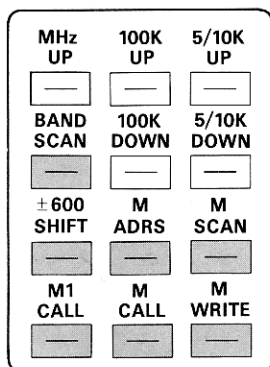
By holding down the 5/10K UP or the 5/10K DOWN key for more than a half-second, the frequency will automatically be moved up or down at a rate of eight channels per second. As the desired frequency is approached, release this key. This key may then be actuated two or three times as necessary to reach the desired frequency.

★ How to stop scanning

The 5/10K UP, 5/10K DOWN, 100K UP and 100K DOWN keys are provided with the following functions: Autoscanning, Memory scan stop, and Return from Memory mode.

When scanning is carried out in a specified mode, it will be stopped by pushing one of the above four keys. Actuating the key again will perform the function indicated on its face.

When you push another function key such as M1CALL (used to call the content of M1) while scanning, scanning stops immediately and the frequency indicator displays the content of M1. Thus, you are ready to communicate immediately using this channel.



★ **How to write in memory**

This unit is provided with eight memories M1 to M8.

The MWRITE key is used to store memory. By pushing this key, the upper four figures displayed on the frequency indicator (1) can be stored in the memory channel displayed on the memory address indicator. The offset being used at that time will also be stored, so it is not necessary to manually select the offset when the channel is recalled.

The memory address is changed by pushing the M ADRS key.

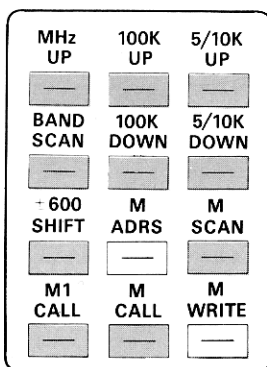
Example: Store 145.560 MHz in M3.

First, obtain 5,560 on the frequency indicator in accordance with procedure for "Frequency Change". Second, light up M3 on the memory address indicator by means of the M ADRS key. Then, depress the M WRITE key.

As a result, 145.560 MHz is stored in M3, with an indication of 5.560.

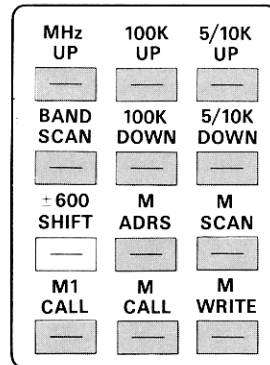
Note: M7 and M8 can be used as a memory similarly to M1 to M6, but they are provided with the following function:

In case of BAND SCAN (automatic scanning), scanning is carried out within the range of frequencies stored in M7 (lower limit frequency) and M8 (upper limit frequency). (See page 9.)



★ **±600 kHz shift**

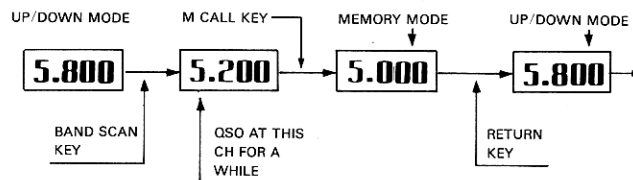
This key is used to determine the transmitting frequency offset. Pushing this key will change the offset to +600 kHz, -600 kHz, and simplex, in this order. For +600 kHz offset, indicator (4) lights up. For -600 kHz offset, indicator (5) lights up. For simplex operation, neither indicator lights up.



★ **How to return to frequency which has been used just prior to shifting to memory mode or scanning mode.**

Example: First, the unit is operated in the UP/DOWN MODE (e.g. 5.800). Second, memory scanning is undertaken to find an occupied frequency, say 5.200. Then, when a return key is pushed, the frequency returns to 5.800. Return keys include 5/10K UP, 5/10K DOWN, 100K UP and 100K DOWN.

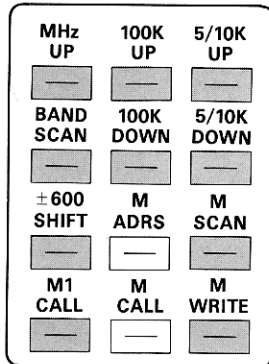
To return to 5.200, press the M CALL key.



★ Calling memory (A) . . . M ADRS and M CALL

The Memory address key is used to select one frequency from among the eight memory channels stored.

Pushing this key will advance the memory address from 1 to 8 one at a time, lighting the LED of the memory address indicator (9) corresponding to the memory address. Then, by pushing the M CALL key, the channel stored in the memory is called and displayed on the frequency indicator (1).

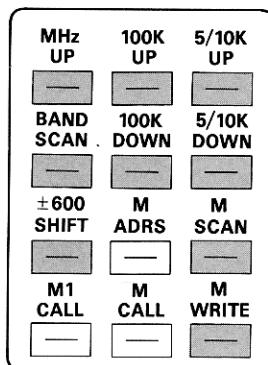


★ Calling memory (B) . . . M CALL, M1 CALL and M ADRS

Once the M CALL or M1 CALL key has been depressed, pushing the memory address key will advance the memory address one at a time, with an indication of the content of each memory. That is, merely pushing the memory address key until the desired memory is reached will call the contents of that memory.

Such state continues until a return key is depressed.

Of course, you may also follow the procedure of "Calling memory (A)."



★ Return from memory mode (see "How to stop scanning"),

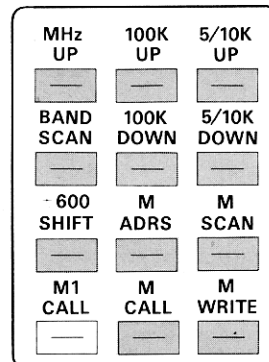
To return to the UP-DOWN mode, push a return key twice. After the key is depressed twice, the channel can be changed by the UP-DOWN operation.

★ Instant memory-1 call . . . M1 CALL

By pushing this key, the content of Memory Channel 1 can be called and indicated at once, independently of the frequency being used at the time or the memory address and scanning.

It is, therefore, very convenient to store a priority frequency in Memory Channel 1. Pushing the M CALL key will immediately call the content of whatever memory address is displayed by the memory address indicator.

Example: When calling the content of Memory Channel 1 while M3 on the memory address indicator is lit, M1 will also light up. In this case, after one transmission has been made using memory channel 1, address indicator M1 alone is lit.

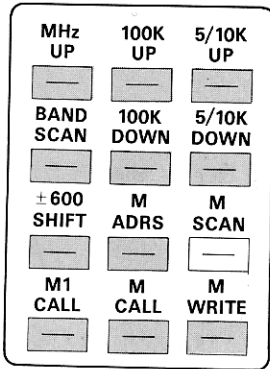


★ Memory scanning M SCAN

Pushing this key will start scanning of the memory address. Scanning starts directly after the address which is displayed on the memory address indicator.

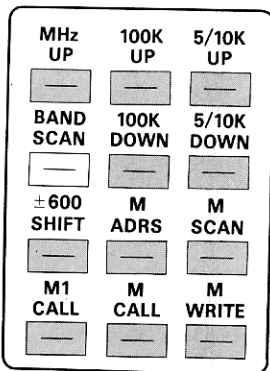
For example: When M2 is lit, scanning is carried out from M3, M4, M5, M6, M7, M8, M1, M2, . . . in the sequence under a specified mode until a return key (see "How to stop scanning") is pushed.

To start UP-DOWN operation, it is necessary to push the return key twice more. The frequency given by these key operations is the frequency which has been used just prior to shifting to the memory mode.



★ Programmable band scanning . . . BAND SCAN

When pushing this key, scanning begins at the frequency stored in memory 7 (the lower limit frequency of scanning range) in the specified scanning mode (F, B, or V).



When scanning is carried out up to the upper limit frequency (stored in memory address 8), it returns to the frequency stored in memory address 7, repeating until a return key is pushed. For band scan, the frequency stored in memory address 8 should be greater than that in memory address 7, or scanning will not occur.

UP-DOWN operation can be immediately started from the frequency at which scanning has stopped.

★ BAND SCAN – offset

Band scanning can be carried out even in repeater offset mode by storing + or -600KHz in memory address M7 and M8.

Example:

Store 146.100 and +600KHz in M7

Store 146.200 and -600KHz in M8.

Scanning Step = 5KHz

When scanning begins at the frequency stored in M7, frequency indicator displays 6.100 and also +600KHz indicator (4) will light up. Then, it keeps on displaying 6.105, 6.110, 6.115 . . . up to 6.200 while -600KHz indicator (5) remains lit up, then back to 6.100 with +600KHz indicator lit up, resuming the same scanning as above.

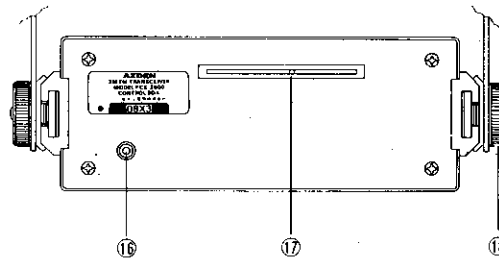
In memory address 7 (M7), 6.100 of simplex mode can be stored and + or -600KHz along with upper limit frequency can be stored in M8.

In short, channels (frequencies) just after that stored in M7 always carry offset memory information stored in M8.

★ REAR SIDE OF CONTROL UNIT

(16) External Speaker Jack

An external speaker to be located in any desired position can be connected with this 3.5mm jack. The speaker is activated by setting the speaker output select switch located at the rear of the main unit to the EXT position. This feature is especially convenient when the main unit is located in an out-of-the-way place.



(17) Connecting Board

This edge connector fits into the Control Connector of the main unit. When separating the control unit from the main unit, a remote-control cable (option) must be used.

(18) Bracket Support and Screws for Mounting the Control Unit for Mobile Use

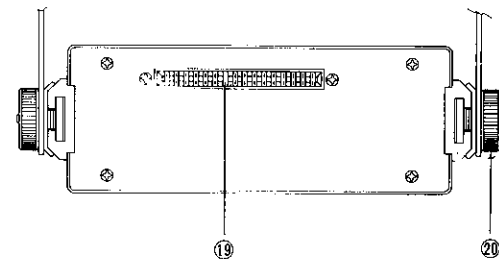
★ FRONT SIDE OF MAIN UNIT

(19) Control Connector

This part connects with the edge connector of the control unit.

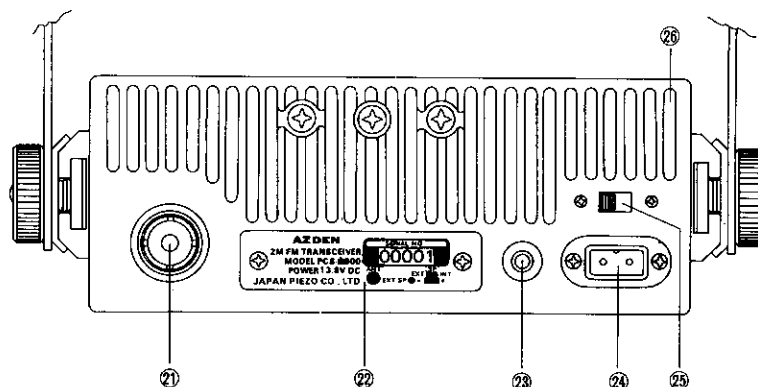
When separating the control unit from the main unit, the optional remote cable must be used.

Note: DO NOT REMOVE THE CONTROL HEAD FROM THE MAIN UNIT WHILE THE POWER IS ON.



(20) Hanging Bracket for Mobile Unit

★ REAR SIDE OF MAIN UNIT



(21) Antenna Connector

The antenna connector is an SO239 type designed to mate with a PL259 connector. The impedance of the antenna and cable used should be 50 ohms. Some degree of mismatch is tolerable, but a severe mismatch will reduce the power output of the PCS 3000. The feedline length should be kept as short as possible to minimize power dissipation.

(22) Name Plate

(23) External Speaker Jack

An external speaker (option with 3.5mm plug) is connected with this jack. With the speaker output select switch in the INT position the internal speaker is activated. When it is set to the EXT position, speaker output is supplied to the speaker jack (16) on the rear side of the control unit.

By inserting the speaker cable plug into this jack with the select switch to INT, the internal speaker is automatically disconnected.

(24) Power Connector

The PCS-3000 is to be supplied with $13.8V \pm 15\%$ at 5A or more. The red lead of the power cord is positive and the black is negative (ground).

When connecting the power cord to the power supply, be careful not to reverse the polarity.

Should the polarity be connected incorrectly, a 10A fuse will blow to protect the main unit. Never use a fuse other than the specified one.

(25) Speaker Output Select Switch

See (16) and (23).

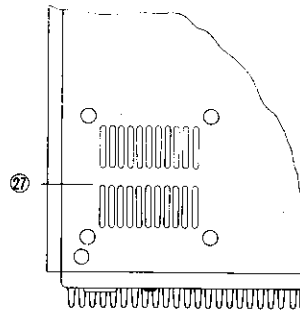
(26) Heat Sink

The heat sink is made of die-cast aluminum for sufficient capacity for prolonged transmission at 25W output.

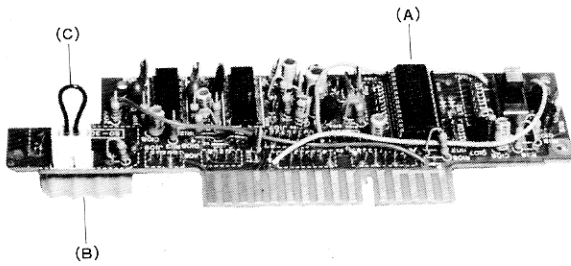
★ BOTTOM OF MAIN UNIT

(27) Internal Speaker

Since the sound holes face downward, the main unit should be located so as not to block these holes. The speaker is 8 ohms impedance.



★ HOW TO BACK UP MICROCOMPUTER MEMORY AND HOW TO CHARGE BATTERY



A C-MOS microcomputer (A) is employed in this unit. To take advantage of the power-saving characteristics of C-MOS, this unit is provided with a nickel-cadmium battery (B). It serves to back up the memory by the user.

The nickel-cadmium battery has been fully charged before it leaves our factory, so that no recharging is required for six months. However, after this unit has been stocked or displayed in the shop for a long period of time, the battery must be recharged.

After once charged, it is automatically charged each time the unit is operated. The battery is serviceable for more than three years in usual operating conditions.

● Method of initial charge (Generally, the battery will not require initial charge):

Remove the top cover of control unit and carefully detach the 4P connector equipped with loop lead (C).

Insert the 4P connector (supplied) equipped with red and black leads (1m) in place of the detached connector, and connect the red lead with the plus terminal of 13.8V power supply or a battery (12V) and black lead with the minus terminal, thereby starting to charge the battery.

Desirable charging time is 12 to 15 hours.

However, the battery can be used for backing up the microcomputer memory by quick charge (5 to 6 hours).

After charging the battery, remove the charging connector in reverse order from above.

Turn on the power switch and insert the 4P connector with loop lead while checking that "5.000" is displayed.

If charged with the polarity reversed, the nickel-cadmium battery will be damaged. While the unit is operated, the battery is automatically supplied with a current (1/15 of usual charging current) for recharging.

Note: Be sure to turn OFF the power switch of the control head in case of charging.

● How to back up memory and how to prevent malfunction:

The content of memory stored by the user is backed up by the nickel-cadmium battery. However, if the transceiver unit and the control unit are detached or combined with the power applied by mistake, the microcomputer or memory may sometimes malfunction.

Note: When the transceiver unit and the control unit are detached or combined, be sure to turn OFF the power switch of the control unit.

If the microcomputer or memory malfunctions due to the abovementioned cause, take the following steps:

- (1) Turn off the power supply.
- (2) Remove the top cover of the control unit.
- (3) Remove the 4P connector (C) with loop lead.
- (4) Turn on the power supply.
- (5) Check that the content of every memory is 5.000, with a display of "5.000".

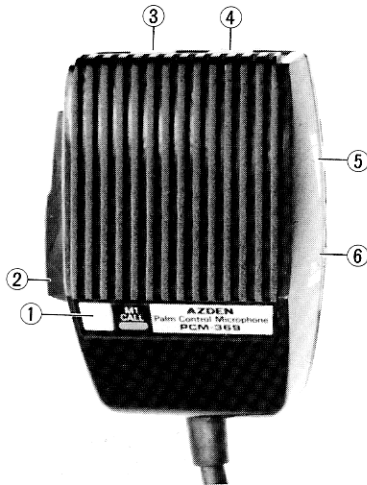
After checking this state, insert the 4P connector with loop lead, with the power applied (where "5.000" is displayed).

Then, store your desired frequency in the memory.

MICROPHONE PCM-369

A multifunctional microphone is provided as a standard accessory. Your own radio microphone can be used for this transceiver using an optional microphone connector.

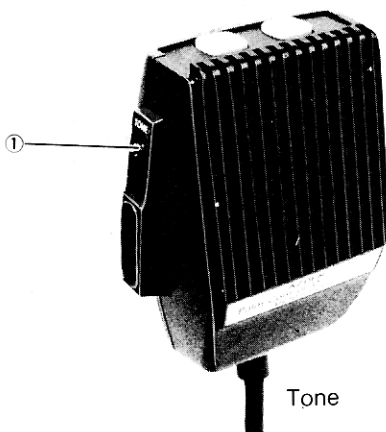
(1) M1 CALL (USA version)



The M1 CALL button has the same function as the M1 CALL key of the control unit. Refer to "Details of Keyboard."

This facilitates quick and easy recall of the contents of memory channel 1.

(1) Tone CALL Key (European version)



The unit incorporates the 1750 Hz oscillation circuit. You can activate the circuit by pressing (1) button and this enables the unit to transmit the carrier frequency modulated by 1750 Hz for repeater operation. Thus, you can start QSOing by pressing the PTT lever in a specified period of time.

(2) Push to Talk Switch Lever

Pushing this lever puts the unit in the transmit mode. Speak at a normal level while bringing the microphone near your mouth. Releasing the lever will return unit to the receive mode.

(3) 5/10K UP Key and (4) 5/10K DOWN Key

These keys have the same function as the 5/10K UP key and the 5/10K DOWN keys of the control unit. By holding these keys down, each MHz range can be scanned, just as is the case with the front panel control keys.

(5) VOL VOLUME

(Refer to control unit (11)).

When the Volume Internal/External Select Switch is set to EXT Position, speaker sound volume can be controlled with this knob.

(6) Channel Lock Switch

Moving this slide switch down will immobilize the keyboard of the control unit and the UP and DOWN keys of the microphone, thus stopping all key operations.

The channel being used is secured even if you touch a key by accident in mobile use. Moving this switch upward will release the locked condition.

When any operating frequency is locked in a ± 600 kHz offset mode, transmitting and receiving frequency remain offset. This allows monitoring of repeater input frequency.

OPERATION

● Reception

● Before activating the unit with the power switch, set the knobs and switches of the control unit as follows, and check that the antenna is connected correctly:

VOL	Turned fully counter-clockwise
SQL	Truned fully counter-clockwise
HIGH/LOW	HIGH
VOL INT/EXT	Internal/external to internal ('UP position')
SCANMODE	F

● Firmly plug the microphone connector into the microphone jack on the unit.

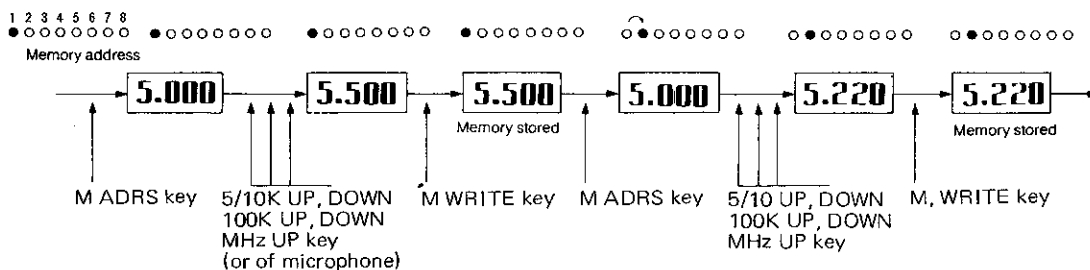
● Set the speaker output select on the rear side of the main unit to INT position.

● Turn on the power switch. With no power connected to the radio, it is impossible to tell whether the power switch is on or off; however, the power connector may be attached without harm to the unit if the power switch is on.

● How to program the memory

Suppose you want to write the following frequencies in the memory: M1, 5.500; M2, 5.220; M3, 5.330; M4, 5.440; M5, 5.550; M6, 5.660, M7, 5.700; M8, 5.990.

- (1) Assume that 5.000 is stored in all memories.
- (2) Push Memory Address key.
- (3) Push Memory Address key until memory address LED indicates memory Channel 1.
- (4) Dial 5.500 by means of the keyboard.
- (5) Push Memory WRITE. Thus, 145.500 MHz has been written into memory No. 1.
- (6) Push Memory Address to Advance Memory Address to Channel 2.
- (7) Dial up 5.220 by means of the front panel keyboard.
- (8) Push Memory WRITE key. This enters the frequency 145.220 into Memory Channel 2.
- (9) Repeat the process for the appropriate frequencies for Channels 3 through 8.

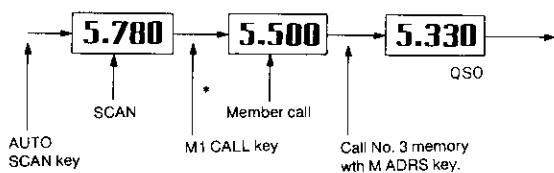


● How to use M1 CALL, M ADRS and M CALL keys

Pushing M1 CALL key while operating the unit will immediately call the contents of Memory Channel 1 independently of reception mode.

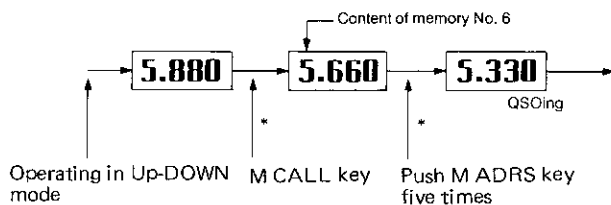
Example 1: Assume that 5.500 is stored in Memory Channel 1 and 5.330 is stored in Memory Channel 3.

Call them according to the procedure illustrated below. These memories can be alternately called by pushing the M1 CALL key and M CALL key, when M3 is lit in advance by means of the Memory Address key.



Example 2: Call Memory Channel 3 from among ordinary channels.

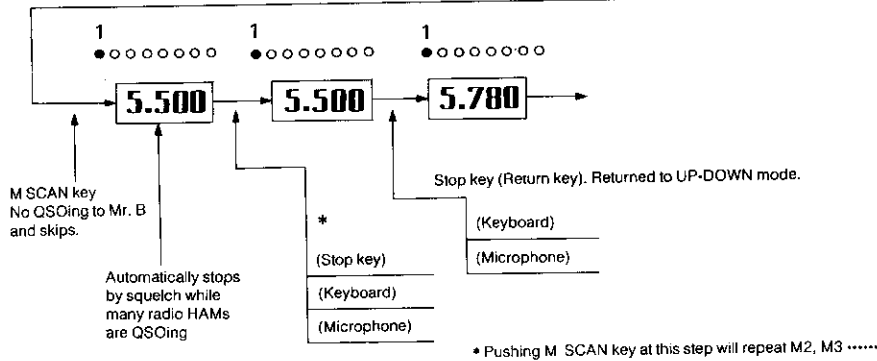
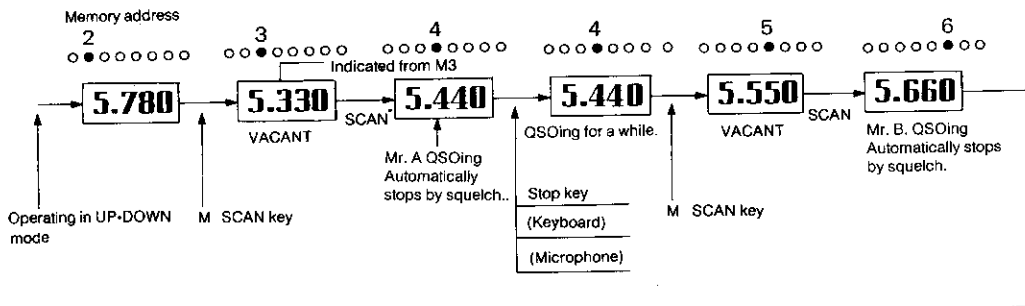
Assume that 5.660 is displayed and Memory Address indicator shows Memory No.6. The procedure is illustrated below.



● How to use MEMORY SCAN key

Example:

- (1) Rotate SQL knob clockwise to set at squelching state.
- (2) Set SCAN knob at B (BUSY).
- (3) M4 is being used by Mr. A and M6 is being used by Mr. B.
- (4) Suppose that the memory channels are programmed as follows: M1, 5.500; M2, 5.220; M3, 5.330; M4, 5.440; M5, 5.550; M6, 5.660; M7, 5.700; M8, 5.990. Suppose that M2 address indicator is lit. The procedure is illustrated below.



● How to use BAND SCAN key

Example 1: Set the OFFSET/SCAN switch to B (Busy). Scanning will begin when the BAND SCAN key is pushed. Be sure the squelch is closed. Assume 5.700 is stored in memory channel 7 and 5.990 is stored in memory channel 8. Also, assume that the frequency increment has been set to 10 kHz. The unit will begin scanning at 5.700, then move to 5.710, 5.720, and so on until it reaches 5.990. Then it will return to 5.700 and continue until a signal is encountered or until the squelch is opened. (See page 9.)

★ HOW TO MAKE YOUR OWN CONTROL BOX

The connector of control microphone for this unit is supplied with a portion of the input-output matrix circuit of the microcomputer. The circuit diagram for the available signals is shown below. You can make a variety of your own control boxes using these signals in combination with optional control microphone connector plug (with cord).

Lead wires corresponding to signals:

- | | |
|------------------|---------------------|
| 1. Green (K2) | 7. Black (R0) |
| 2. Red GROUND | 8. White (13.8V) |
| 3. Blue AF VOL | 9. Brown PTT |
| 4. Yellow (K1) | 10. Orange (R2) |
| 5. Purple (K8) | 11. Knit MIC GROUND |
| 6. Grey KEY LOCK | 12. Pink MIC OUTPUT |

Signal 5K UP by contacting R0 to K1

Signal 5K DOWN by contacting R0 to K2

Signal M1 CALL by contacting R2 to K8

Signal MHz UP by contacting R2 to K1

Signal BAND SCAN by contacting R2 to K2

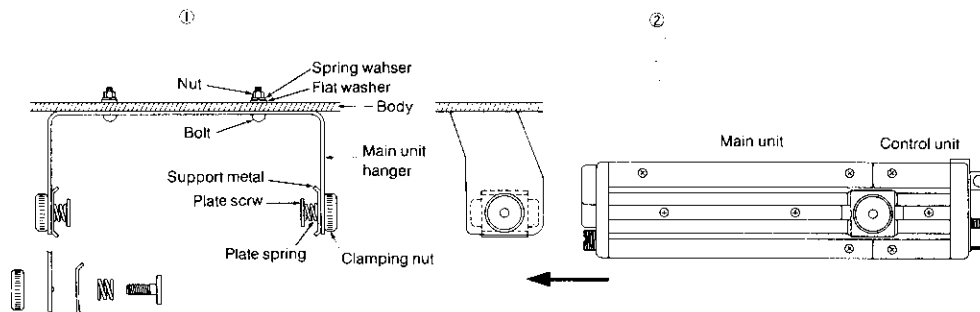
Signal M WRITE by contacting R0 to K8

PTT and VOL can be added to the above.

★ HOW TO MOUNT HANGER BRACKET OF MAIN UNIT AND CONTROL UNIT

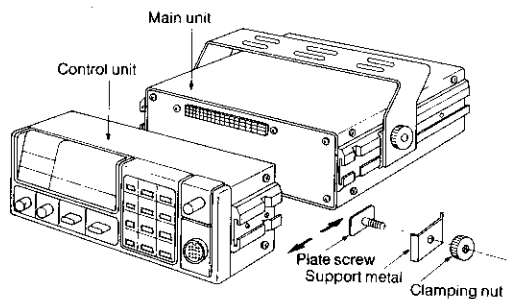
How to mount main unit

Fit plate screw, plate spring and support metal to hanger vertically or horizontally, and tighten them temporarily with a clamping nut. Push the main unit in direction of the arrow and fix it at a proper position. Then, firmly tighten the clamping nut.



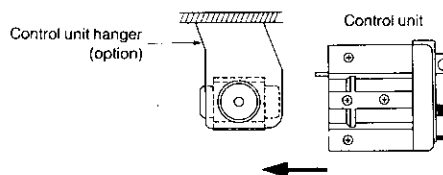
How to remove the control unit

Loosen the clamping nut, remove the plate screw, plate spring and support metal connecting the main unit with the control unit. Then, separate the two units.



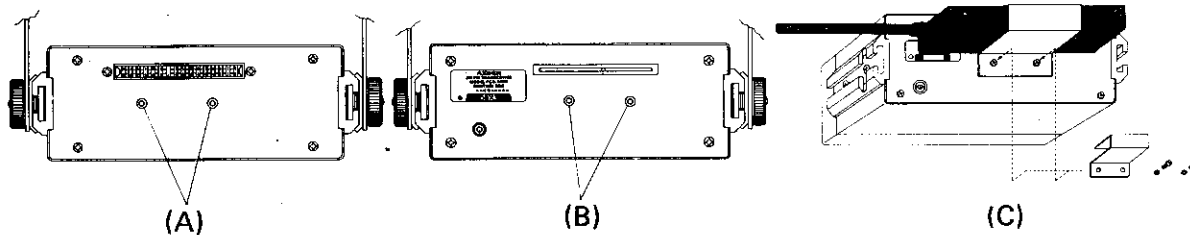
How to mount the control unit

Mount the control unit on the hanger bracket in the same way as with the main unit.



How to install cable connector

The optional parts ECK-90 kit contains a remote cable, hanger, connector holder and screws. Fix the connector holder to two screw holes (A) on the front of the main unit and to two screw holes (B) on the rear of the control unit using a screw M3 x 5 (standard accessory) and a spring washer for M3 illustrated in (C).



OPTIONAL PARTS

Control microphone connector plug with cord: EC-80

This unit is supplied with a multifunctional microphone as a standard accessory. Additional Connectors are available.

Remote cable kit: ECK-91

Using the remote cable kit, the control unit can be located by itself in the desired place. For instance, if it is inconvenient to stretch your arm to the lower part of the dashboard, you can place the control unit in a visible location and the main unit under the rider's seat. The cable length is 15 feet (5m).

External speaker kit AS-006

This accessory is ideal when you wish to get more audible output. It is also useful if you wish to change the location of the speaker. The speaker is provided with a 6 foot (2m) cord with 3.5mm plug.

Base station microphone DX-2000

This is our highest quality dynamic microphone for use with fixed stations. It features a built-in amplifier, UP-DOWN function, memory 1 call, PTT lever, and locking mechanism.

★ SPECIFICATIONS

(General specifications)

- Semiconductors IC 18 pcs. (including MICON 1)
FET 7 pcs.
Tr 36 pcs.
Di 61 pcs.
 - Frequency band 142,000 to 149,995 MHz (USA)
144,000 to 145,9875 MHz (Europe)
 - Operating ambient temperature range -10°C to $+50^{\circ}\text{C}$
 - Power supply voltage 13.8V $\pm 15\%$
 - Grounding polarity Minus
 - Current consumption 0.7A max. for reception
5.0A max. for transmission
- (Transmitter)
- Transmitting output 25W (HIGH)
5W (LOW)
 - Modulation method Variable reactance frequency modulation
 - Maximum frequency deviation ± 5 KHz
 - Spurious Better than -60 dB with respect to fundamental
 - Antenna impedance 50Ω
 - Type of emission F3

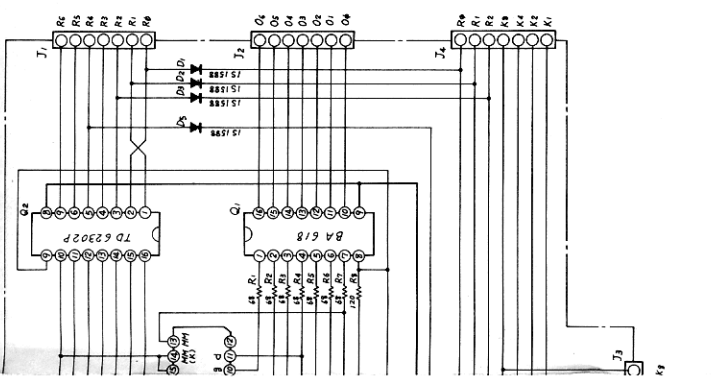
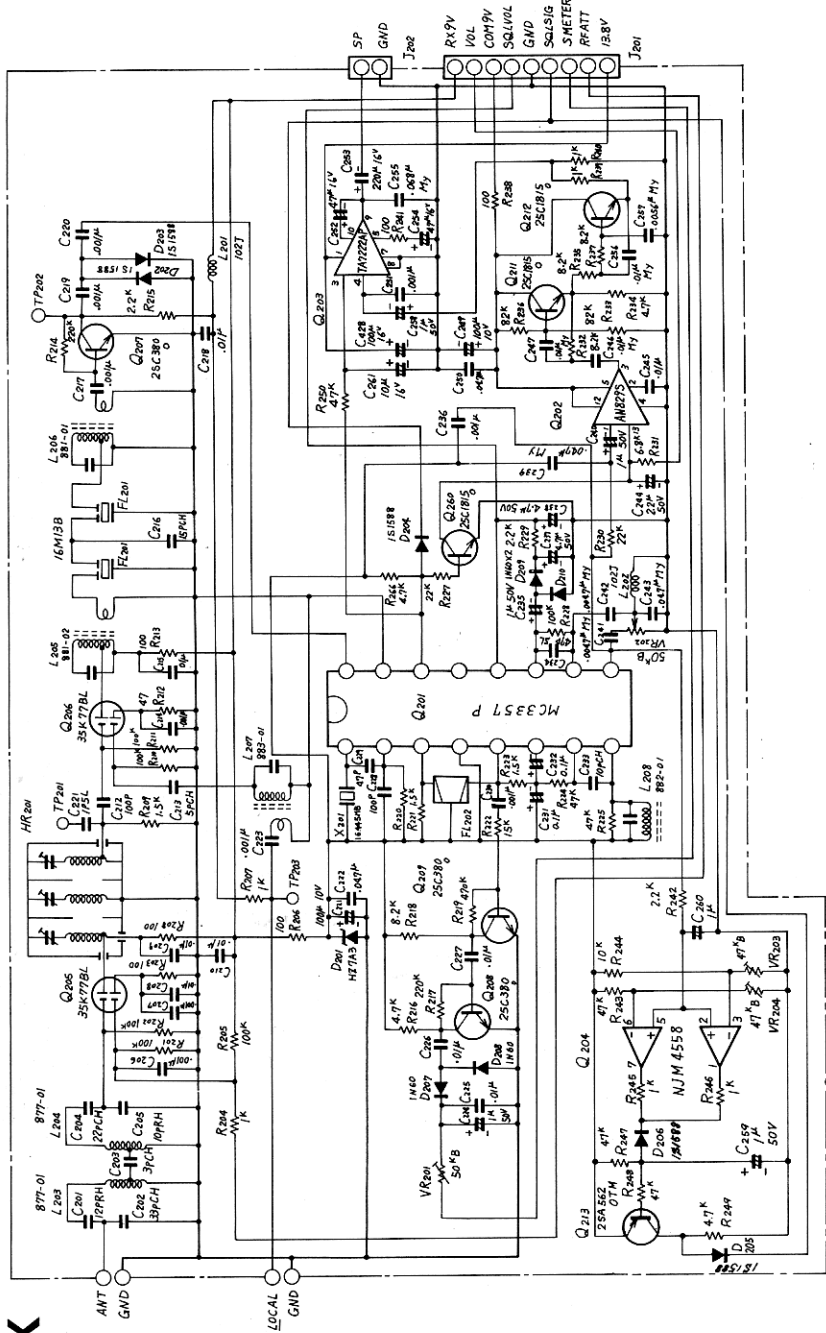
- Microphone used 500Ω dynamic type
 - Tone frequency USA: 100 Hz, ± 0.5 KHz deviation variable
Europe: 1750 Hz, ± 5 KHz deviation
- (Receiver)
- Receiving system Double superheterodyne system
 - Intermediate frequency First: 16.90MHz
Second: 455kHz
 - Receiving sensitivity $0.19\mu\text{V}$ (144~148MHz) (12dB SINAD)
RF input: $1\mu\text{V}$ or less for 30dB S/N
 - Selectivity ± 6 kHz or more at 6dB down
 ± 15 kHz or less at 60dB down
 - Audio output 2W or more (8Ω load and 10% distortion)
- (Dimensions and Weight)
- Dimensions 62(H)x158(W)x246(D) mm (except projections)
 - Weight Approx. 2.5kg

*Notice: Specifications are subject to change without notice for further technical improvement.

★ LIST OF ACCESSORIES

- (1) Microphone PCM-369 1
- (2) Microphone hanger 1
 - Set screw 2
 - Flat washer for above 2
- (3) DC power cord (with fuse) 1.5m 1
- (4) Spare fuse (10A) 2
- (5) Hanger and fixtures 1 set
 - Hanger 1
 - Clamping nut 2
 - Plate screw 2
 - Spring for above 2
 - Support metal with hole
2 (without hole)
 - Set screw 4
 - Flat washer for above 4

RX



My : Mylar
Ta : Tantalum

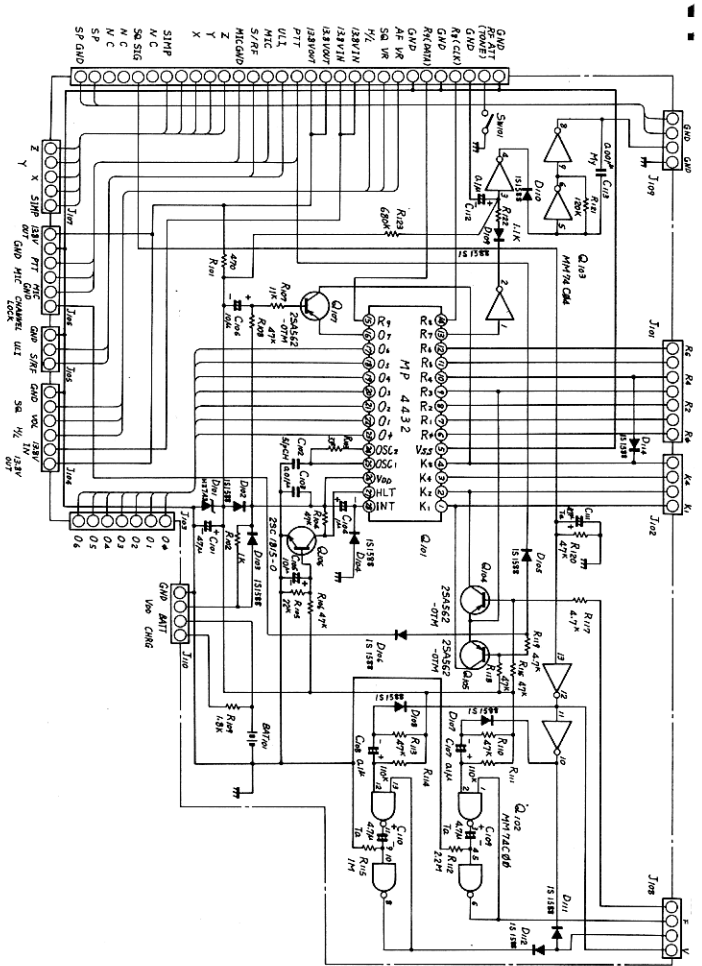
UNIT Ω μF

Some components subject to change
for an improvement without notice.

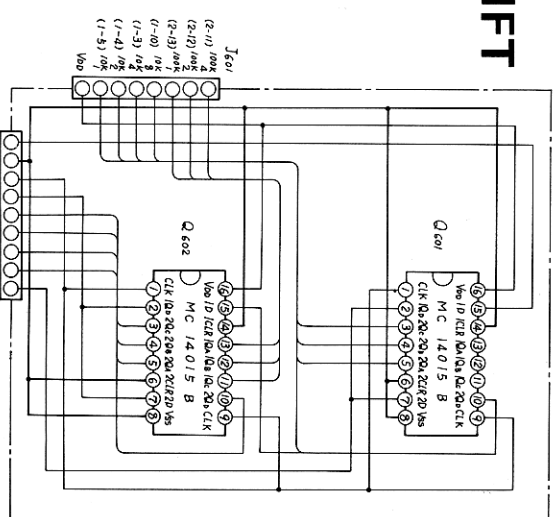
PROCESSING MOBILE TRANSCEIVER

PCS-3000 SCHEMATIC DIAGRAM

A



SHIFT



PA

