## ② Auto-Power Off

An Auto-Power Off feature is built in to conserve power. When the Transceiver is left unused with the power switch turned on for 30 minutes, the Transceiver will generate beeping alarm. After the alarm, the Transceiver will automatically extinguish the most of the display and reduce the power consumption to approximately 5mA.

Procedure

a) Press the 0/SET button while pressing the Function button A "M" will appear on the display to indicate the set mode.

b) Press the 5/SAVE button and the word "APO" will appear on the display to indicate Auto-Power Off.

c) When the operating buttons have not been operated or a signal has not been received for 30 minutes, the beeping alarm is generated.

d) The H/H Transceiver will extinguish the most of the display to reduce the power consumption. The frequency will disappear and be replaced by a word "OFF" (i.e. the Transceiver is in the sleep standby mode.)

e) Press the C/VSCAN button to release sleep standby. The power will be turned on and the Auto-Power Off timer will be\extended for another 30 minutes. i.e. the Transceiver returns to the condition of (b).

NOTE:

(1) **When the "OFF" replaces the frequency on the display, both the receiver and transmitter are disabled.**

(2) **Although the Auto-Power Off function enables to reduce the power consumption to a minimum, make sure that the power switch is turned off when you finish operation.**

(3) **Every operating button is disabled in the sleep standby mode except the C/VSCAN button.**

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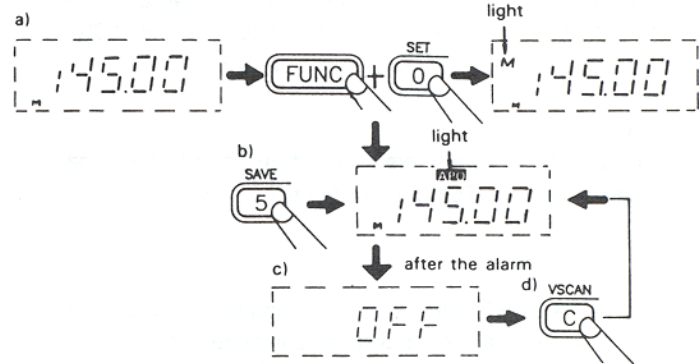
21 | Pager and Code Squelch [#/PAGE Button]

This feature enables you to page one specified station (individual paging) or all group stations (group paging) over the Transceiver with built-in circuit.

NOTE:

Individual code and group code, each with 3 figures, must be programmed before the operation. Pager and code squelch operation is only available when they are programmed.

Example:
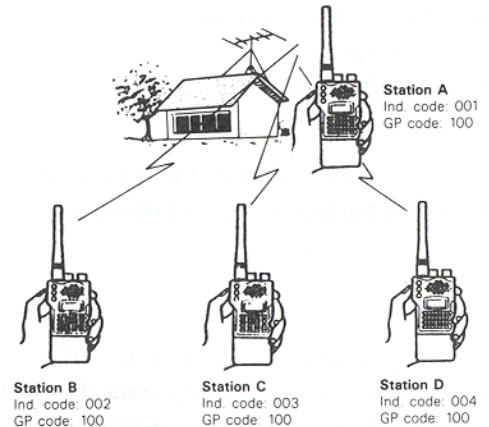
An individual code and group code have been respectively programmed for Station A through D.

● **To call stations from Station A.**

Recall a group code and press the PTT button. At the Station B through D, a beep sound will be generated and "M2 C100" will appear on the display to indicate that they have been paged.

● **To call Station B from Station A.**

Program an individual code of Station B for address number M1 and press the PTT button. At Station B, A beep sound will be generated and "M0 C001" will appear on the display to indicate that Station A is paging Station B.

① Preparation for paging
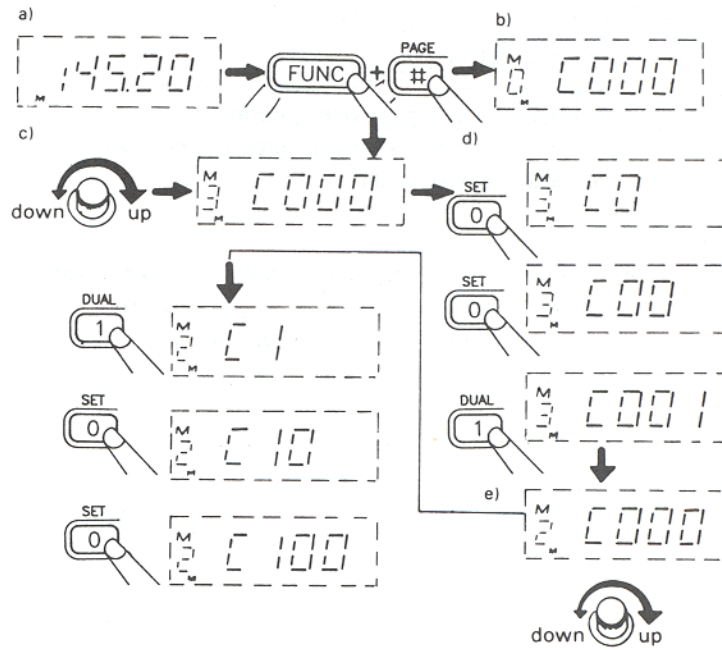
1) Program an individual code.
2) Program a group code.

NOTE:
A group code must be common for all members of the group. Both individual and group codes must be a number of 3 figures.

(Procedure)

Example: To program an individual code 001 for the code memory address M3 and a group code 100 for M2.

a) Press the #/PAGE button while pressing the Function button.
b) The frequency on the display will disappear and be replaced by "M0 C000".
c) Code memory address M0 through M3 are used for paging operation. They are indicated on the display successively by rotating the channel selector. (the initial display is M0 C000).
d) Rotate the channel selector for M3 and press numeral buttons 0,0 and 1. A long beep tone will be generated to inform you that programming of the individual code is somplete.
e) Rotate the channel selector for M2 and press numeral buttons 1,0 and 0. A long beep tone will be generated to inform you that programming of the group code is complete.
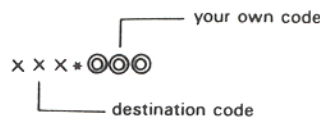

(Information)

A 3-figured individual and group code are composed of three DTMF signals.

② Operating
[Paging Station]

● Individual paging

The operating frequency should have been selected prior to usage.
a) Program your individual code and a group code.
b) Program an individual code of the station to be paged. Press the #/PAGE button while pressing the Function button. Rotate the channel selector for the code memory address M1 and set the desired individual code with numeral buttons.
c) Press the #/PAGE button for the dial-frequency mode. A word "PAG" will appear on the display.
d) Press the PTT button. DTMF signals, the destination code followed by your own code, will be automatically transmitted. (DTMF signal tone can be heard.)

● **Group paging**

The operating frequency should have been selected prior to usage. Program a group code to call member stations.

a) Press the #/PAGE button while pressing the Function button. Rotate the channel selector for the code memory address M2 and set the group code with numeral buttons.

b) Press the */MR /ENT button for the dial-frequency mode.

c) Press the #/PAGE button for the paging mode. A word "PAG" will appear on the display.

d) Press the PTT button. DTMF signals, the group code followed by your own code, will be automatically transmitted. (DTMF signal tone can be heard.)
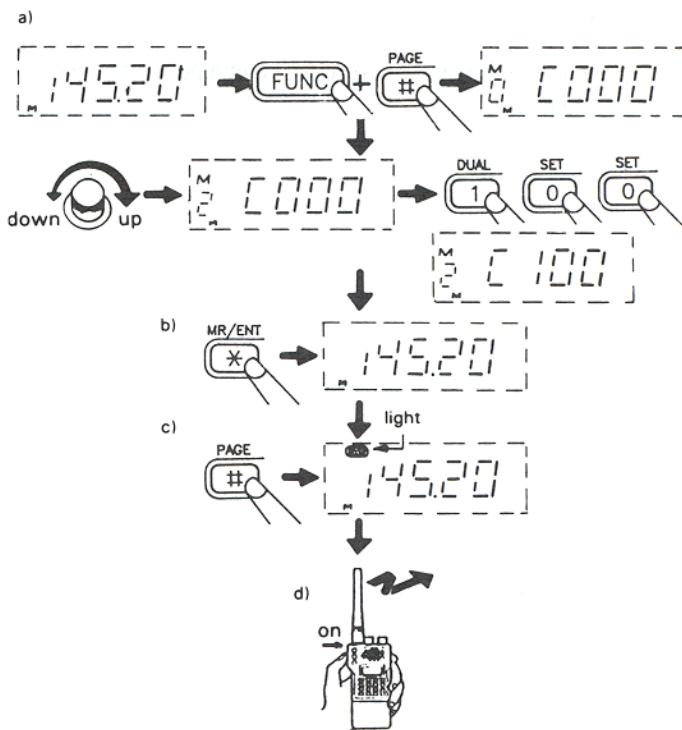

[Receiving Station]

● **Individual paging**

The operating frequency should have slelcted prior to usage.

a) Program your own individual code and a group code.

b) Press the #/PAGE button for the paging mode. A word "PAG" will appear on the display.

c) When the received individual code is identical to the stored your own code, beep sounds will be generated and a "PAG" will start flashing to indicate that you have been paged. A frequency on the display will disappear and be replaced by an individual code of the paging station, M0 CXXX.

d) Press the PTT button to respond. DTMF signals will be transmitted in turn.

e) Press the #/PAGE button and release the paging mode to communicate.

● **Group paging**

The operating frequency should have been selected prior to usage.

a) Program a group code.

b) Press the #/PAGE button for the paging mode. A word "PAG" will appear on the display.

c) When the received group code is identical to the stored group code, beep sounds will be generated and a "PAG" will start flashing to indicate that you have been paged. A frequency on the display will disappear and be replaced by the group code. M2 CXXX.

d) Press the PTT button to respond. DTMF signals will be transmitted in turn.

e) Press the #/PAGE button and release the paging mode to communicate.
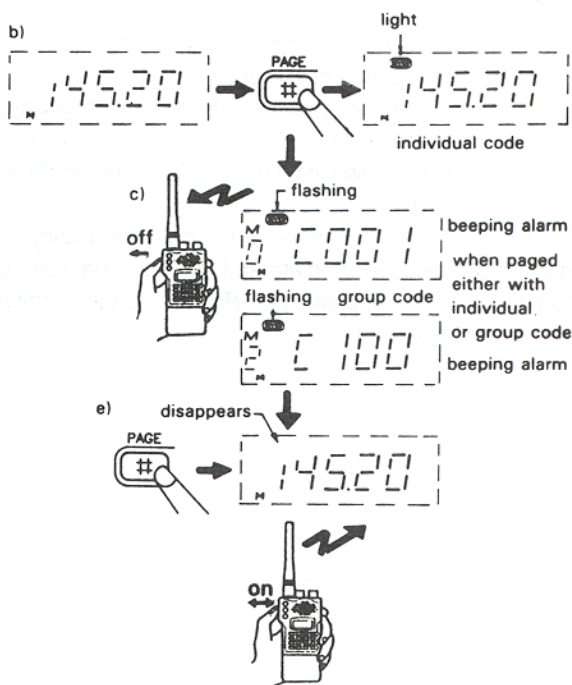
- A "PAG" on the display stops flashing and remains turned on when any operating button is pressed.
- Press the Function button to stop the beep sound halfway.
- A group code will be transmitted when the PTT button is pressed with M3 (your own individual code) selected (This is an improper operation).
- An unidentified code received will appear on the display when the reception is incomplete and the individual code of the paging station is not clear. Therefore, the paging station cannot be identified.

Examples of paging operation

- **Individual paging**

Station A
Individual Code M3 001
Group Code M2 100

a) Press the #/PAGE button for the paging mode.

b) Press the #/PAGE button while pressing the Function button. Program the individual code of Station B 002 for memory address M1.

c) Press the PTT button Individual code of Station B and of its own will be transmitted.

d) A pager beep sound will be generated and a "PAG" will start flashing "M0 C002" will appear on the display to indicate that Station B is cailing back.

e) Press the #/PAGE button to release the paging mode and start communication as usual.

Station B
Individual Code M3 002
Group Code M2 100

a) Press the #/PAGE button for the paging mode.

b) A pager beep sound will be generated and a "PAG" will start flashing. "M0 C001" will appear on the display to indicate that Station A is paging.

c) press the PTT button to call back Station A in return. Individual codes of Station A and of its own will be transmitted.

d) Press the #/PAGE button to release the paging mode and start communication as usual.

• Group paging

Station A	Station B	Station C
Individual Code M3 001	Individual Code M3 002	Individual Code M3 003
Group Code M2 100	Group Code M2 100	Group Code M2 100

Recall the stored group code in code memory address M2 and press the PTT button. Stations having the identical group code will be page

"M2 C100" will appear on the display to indicate that the Station is paged with the group code.

"M2 C100" will appear on the display to indicate that the Station is paged with the group code if the individual code of the paging station cannot be identified.

flashing

beeping alarm

flashing

beeping alarm
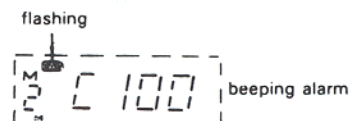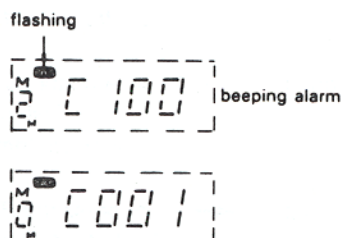
The unidentified code will be stored in M0.

Rotate the channel selector for memory address M0 to display the individual code of paging station.

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③ Code squelch operation

- Press the #/PAGE button for code squelch mode A "CSQ" will be indicated on the display.
- A group code will be transmitted enabling the code squelch operation. A noise can only be heard from the speaker when a signal from the station having the identical group code is received.
- A group code programmed in the code memory address M2 is used for the code squelch operation.
- Combined with an optional tone Squelch Unit CTS145, your radio will remain quiet unless certain stations using the same group code and the tone frequency call you.
- In the code squelch mode, the M2 code is always used regardless of the selected code memory channel.

NOTE:
The group code will be transmitted for approximately 0.3 second. Start communications after the code has been transmitted.

22 Repaeter Operation [7+/-/BS Button]

1. Repeater Operation
This function allows you to use your Transceiver with a repeater.

(Procedure)

a) Set your Transceiver to the output frequency of the repeater you wish to use.
b) Press the 7/+/-/BS button while pressing the Function button "-" will appear on the display to indicate that repeater operation is enabled.
c) Press the 7/+/-/BS button again while pressing the Function button "-" on the display will be replaced by "+".
d) Press the 7/+/-/BS button again while pressing the Function button to release the repeater operation "+" will disappear and the simplex operation will be returned.

(Information)

"-" and "+" on the display indicates that the shift direction of the transmit frequency is negative or positive respectively. The amount by which the transmit frequency is shifted is referred to as the shift frequency and is initially set to 0.60 MHz VHF, and 5.0 MHz for UHF.

NOTE:

Adding or subtracting the shift frequency from the receive frequency makes the transmit frequency. Be sure that the transmit frequency is within the operating frequency range. A "OFF" will appear on the display of the H/H Transceiver and transmission is disable if the transmit frequency happens to be out of the range.
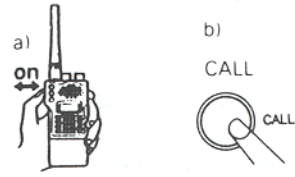
2. Paging Operation

For the PAGE or C.SQ operation by using the repeater, use the procedure described below.

1) Set your Transceiver ready for the repeater by using the procedure described with "1 Repeater Operation" above.
2) Press the CALL button while pressing the PTT button to start the repeater operation.
3) Set the PAGE or C.SQ mode and press the PTT button.

3. How to call the Repeater (Call Button)

You can generate 1750Hz tone by pressing the CALL button while the PTT button is held depressed. A tone will be generated as long as the CALL button is held.

Procedure

a) Press the PTT button to transmit.
b) Press the CALL button while the PTT button is held depressed.

● **Paging operation through a repeater**

When making the PAGE C.SQ operation by way of the repeater, perform the following procedure.

a) Perform the operation of item [21] (1) to enter the state that the repeater operation is feasible.
b) While pressing the PTT button, press the CALL button to operate the repeater.
c) Set the PAGE or C.SQ mode and press the PTT button.

NOTE:

● **The transceiver is capable to page other stations through a repeater. During simplex operation, DTMF signals for paging operation will be transmitted approximately 0.25 second after the PTT button is pressed. However, during repeater operation, the time lag is extended to approximately 0.45 second. Some repeater stations may not respond quick enough for pager operation. In such a case, turn on the Auto-Power Off function to extend the time lag to approximately 0.75 second.**

Automatic Repeater Offset:

1. Select VFO mode (No "M" in display).
2. Press [FUNC]+[2], a+-will be displayed. The proper repeater + or - offset will now be set by the radio, Repeat the process to toggle off the automatic repeater offset.
3. The offset frequencies for auto repeater:
   - 144.00 to 145.095 MHz : 0   (simplex)
   - 145.10 to 145.495 MHz : -0.6 KHz
   - 145.50 to 145.995 MHz : 0   (simplex)
   - 146.00 to 146.395 MHz : +0.6 KHz
   - 146.40 to 146.595 MHz : 0   (simplex)
   - 146.60 to 146.995 MHz : -0.6 KHz
   - 147.00 to 147.395 MHz : +0.6 KHz
   - 147.40 to 147.595 MHz : 0   (simplex)
   - 147.60 to 147.995 MHz : -0.6 KHz

23 Exchange the Transmit and Receive Frequency during Repeater Operation [8/REV/▼Button]

This feature allows you to exchange the transmit and receive frequencies during repeater operation. You can check if the other station is accessible.

(Procedure)

a) Set the Transceiver to the repeater mode.
b) Press the 8/REV/▼ button again while pressing the Function button "-" or "+" on the display will start flashing and the transmit and receive frequencies will start flashing and the transmit and receive or "+" on the display will start flashing and the transmit and receive frequencies will be reversed.
c) Press the 8/REV/▼ button again while pressing the Function button "-" or "+" on the display will stop flashing and remain turned on. The transmit and receive frequencies will be reversed again and the regular repeater-mode will be returned.

NOTE:

This feature is only available during repeater operation and when the transmit frequency is within the operating frequency range.

24 Setting a Shift Frequency [9/SHIFT/▲Button]

A shift frequency for repeater operation can be changed within the limits of 0.00MHz to 39.995MHz. An independent shift frequency can be programmed for each memory.

Procedure

a) Press the 9/SHIFT/▲ button while pressing the Function button. The current shift frequency in memory will be displayed. (The shift frequency is initially set to 0.60MHz)
b) Select the desired shift frequency with the rotary channel selector or numeral buttons.
c) Press the C/VSCAN button to return to the previous mode.

TROUBLESHOOTING

Q: The frequency display is weak.
A: The battery voitages are low. Replace the batteries.

Q: The unit does not receive.
A: Press the squelch button and see if any sound comes out of the speaker.

A: Isn't the squelch control rotated fully clockwise?
Rotate back the squelch control counterclockwise for the threshold setting.
A: Isn't your Transceiver set for tone squelch operation? (when CTS145 is installed.)
Release the tone squelch operation.
A: Isn't the volume control rotated fully counterclockwise?
Rotate back the volume control for comfortable listening level.
A: Isn't your Transceiver set for paging or code squelch operation? (when DTF145 is installed.)
Release the paging or code squelch operation.

Q: The Transceiver appears to receive only the strong signals.
A: Is your antenna installed properly?
Check it and install it properly.
A: Isn't the squelch control rotated fully clockwise?
Rotate back the squelch control for the threshold setting.

Q: The Transceiver does not transmit.
A: Doesn't the RF output indicator light dark when pressing the PTT button?
Replace batteries.
A: Isn't "P.L" indicated on the display?
Press the B/PWR/PL button while pressing the function button to release the PTT Lock function.

Q: The displayed frequency cannot be changed.
A: Isn't "F.L" indicated on the display?
Press the 6/LOCK button while pressing the Function button to release the Frequency Lock function.

Q: No beep sound is generated.
A: Isn't the buzzer disabled?
Press the 0/SET button while pressing the Function button and then press the 0/SET button to enable the buzzer.

SPECIFICATION

AT-201 GENERAL

- Frequency Range.............................144.00 to 145.995MHz
  Modulation Type...F3
  Microphone Input Impedance......................................600Ω
  Speaker Impedance...8Ω
  Operating Voltage Range.........................5.0 to 16.0V
  Nominal Input Voltage...7.2V
  Current Drain.............................During Transmission
  13.8V Hi. app.950mA (5W)
  Mid. app.650mA (2.5W)
  7.2V Hi. app.650mA (2W)
  Mid. app.650mA (2W)
  13.8V/7.2V Lo. app.350mA (0.35W)
  Standby   app.35mA
  Battery Save   app.13mA
  Auto Power Off   app.5mA
  Dimensions.............83.5 (height) 55 (width) 31 (depth)(mm)
  Without power pack
  & protrusion
  Weight..........................185g without power pack & antenna
  Operating Temperature.....................................−10°C~+55°C

*Applicable Frequency Range......(1) 144.00 to 145.995MHz
(2) 144.00 to 147.995MHz   (5) 138.00 to 173.995MHz
(3) 142.00 tO 154.995MHz   (6) 100.00 to 179.995MHz
(4) 130.00 to 169.995MHz

RECEIVER

Reception Type.............Double-Conversion Superheterodyne
Intermediate Frequency...................................first 1F 21.8MHz
Second 1F 455kHz
Sensitivity (12db SINAD)..-10dBµ
Sighal-to-Noise Ratio for 1 µV..........................30dB or better
Squelch Sensitivity...0.1°µV
Audio Output Power......... 250mW (at 10% distortion with 8°∞)

TRANSMITTER

RF Output Power.......................................HI: 1W with CBC145
2.5W with SBC145
2W with RBP072/RBP120
5W with RBP120
Mid: 2.5W with RBP072
Lo: 0.35W
Frequency Modulation Method...............................Reactance
Maximum Frequency Deviation.....................................±5kHz
Spurious Signal Ratio...................................better than -60dB
**The above listed specifications are guaranteed in
frequency ranged (1).(2). only.**

SPECIFICATION

AT-401

GENERAL

Frequency Range............................430.00 to 439.995MHz
Modulation Type...F3
Microphone Input Impedance......................................600Ω
Speaker Impedance...8Ω
Operating Voltage Range......................5.0 to 16.0V
Nominal Input Voltage...7.2V
Current Drain.. During Transmission
13.8V Hi. app. 1300mA (5W)
Mid. app.950mA (2.5W)
7.2V Hi. app.900mA (2W)
Mid. app.900mA (2W)
13.8V/7.2V Lo. app.480mA (0.35W)
Standby   app.38mA
Battery Save   app.14mA
Auto Power Off   app.5mA
Dimensions.................83.3 (height) 55 (width) 31 (depth)(mm)
Without power pack
& protrusion
Weight.............................185g without power pack & antenna
Operating Temperature.......................................−10°C~+55°C

RECEIVER

Reception Type..Double-Conversion
Superheterodyne
Intermediate Frequency..............................first 1F: 23.05MHz
Second 1F: 455kHz
Sensitivity (12db SINAD)..-10dBµ
Sighal-to-Noise Ratio for 1 µV..........................30dB or better
Squelch Sensitivity...0.1µV
Audio Output Power...........250mW (at 10% distortion with 8Ω)

TRANSMITTER

RF Output Power.....................................HI:0.8W with CBC145
2W with SBC145
2W with RBP072/RBP120
5W with RBP120
Mid: 2.5W with RBP072
Lo: 0.35W
Frequency Modulation Method...............................Reactance
Maximum Frequency Deviation.....................................±5kHz
Spurious Signal Ratio...................................better than -60dB

ADi Communications

ONE YEAR LIMITED WARRANTY

- ADI Communications Corp. warrants this product against defects in material and workmanship.
- In the unlikely event of any failure due to defect in material or workmanship, occuring within one year of purchase, this product will be repaired or replaced at our discretion at no charge.
- The defective product should be returned in its original packing and with proof of the date of the original retail purchase to your dealer for warranty service.
- The warranty does not cover accident, misuse, fire, flood and other Act of God, unauthorized repair or altered serial numbers.
- Some statutory regulations do not allow for the exclusion or limitation of incidental or consequential damages, nor allow limitations on how long an implied warranty lasts, therefore the above limitations may not apply to you,