

RADIO TELEPHONE INTERFACE

DI 530

INSTRUCTION MANUAL

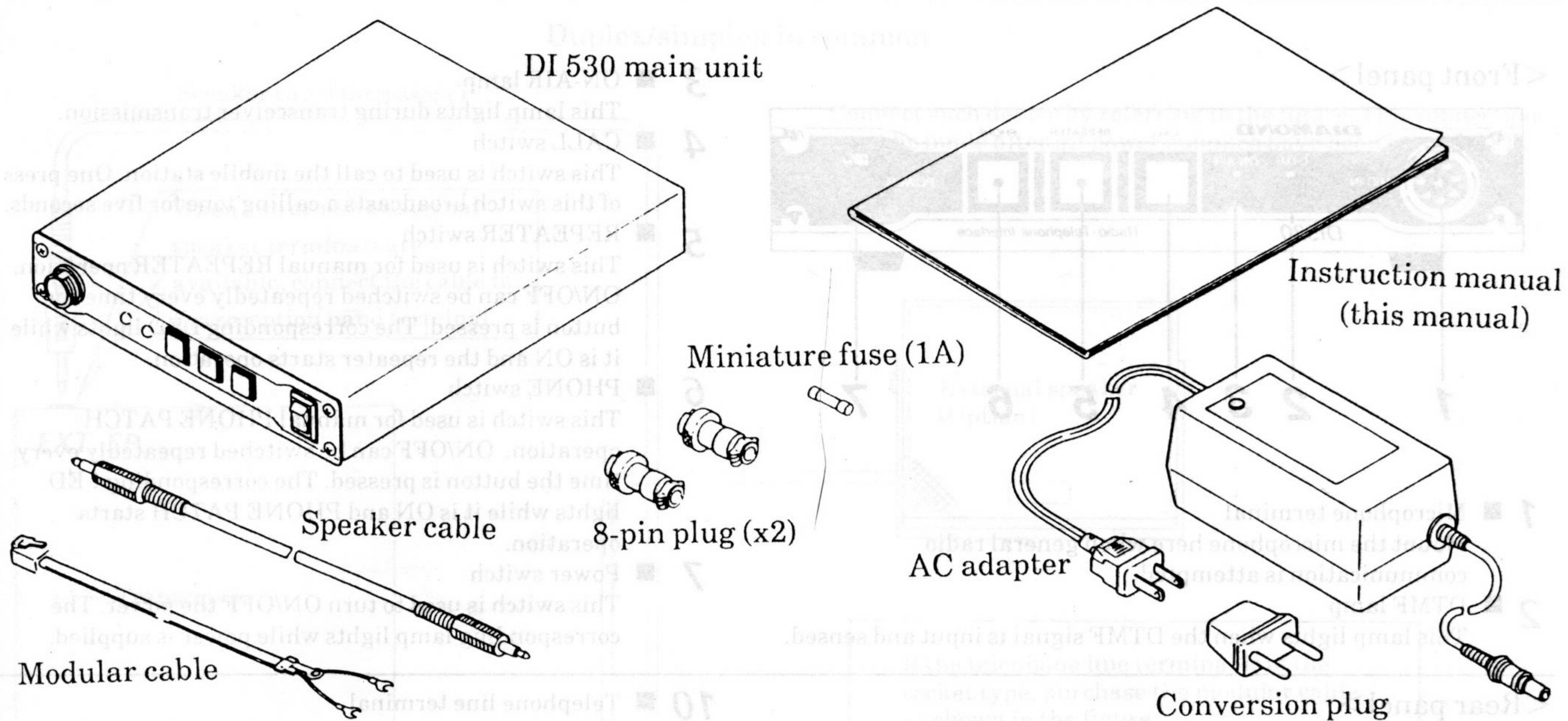
DIAMOND
ANTENNA

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<Features>

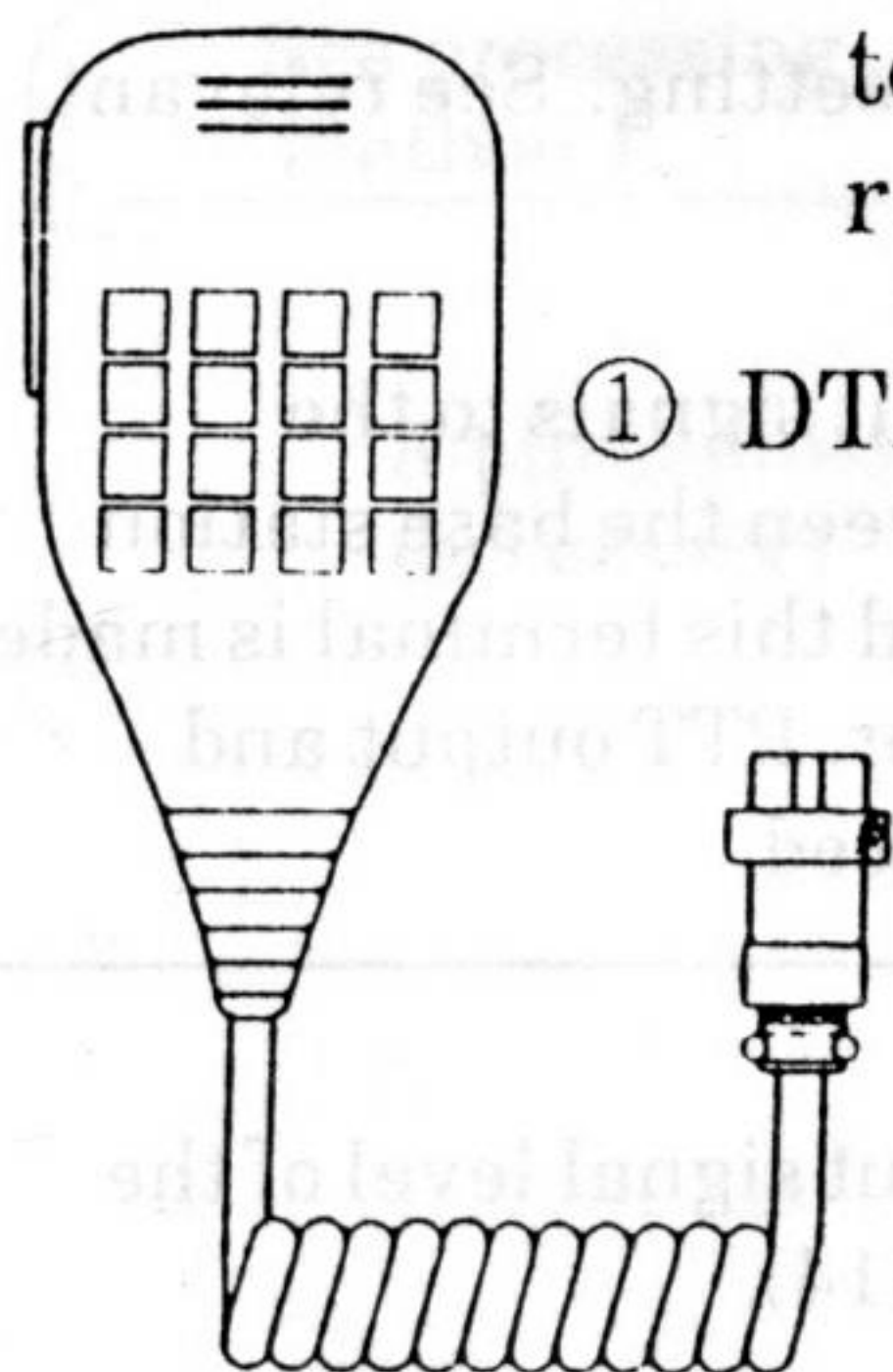
- ◎ Incorporates two functions, “PHONE PATCH” plus “SIMPLE REPEATER”.
- ◎ Complete microcomputer control.
- ◎ Adoption of the unique “AUTOMATIC LINE TONE DETECTION” function.
- ◎ “ACCESS CODES” up to four digits can be registered.
- ◎ ABBREVIATED DIAL FUNCTION (up to five subscribers can be registered.)
- ◎ REDIAL FUNCTION
- ◎ STANDBY BEEP FUNCTION



<MISCELLANEOUS>

The following items may be required depending on the purpose of use. Use them according to the system configuration.

<Mobile station> DTMF microphone or DTMF transceiver
(These items are required to dial ACCESS CODES or telephone numbers. They are not required when the operator performs operation at the base station.)
The DTMF microphone can send intermittent touch-tone telephone dial tones. It is required for making a phone call from the mobile station or remote control operation. Select one of items ① to ③ listed below.



① DTMF hand microphone



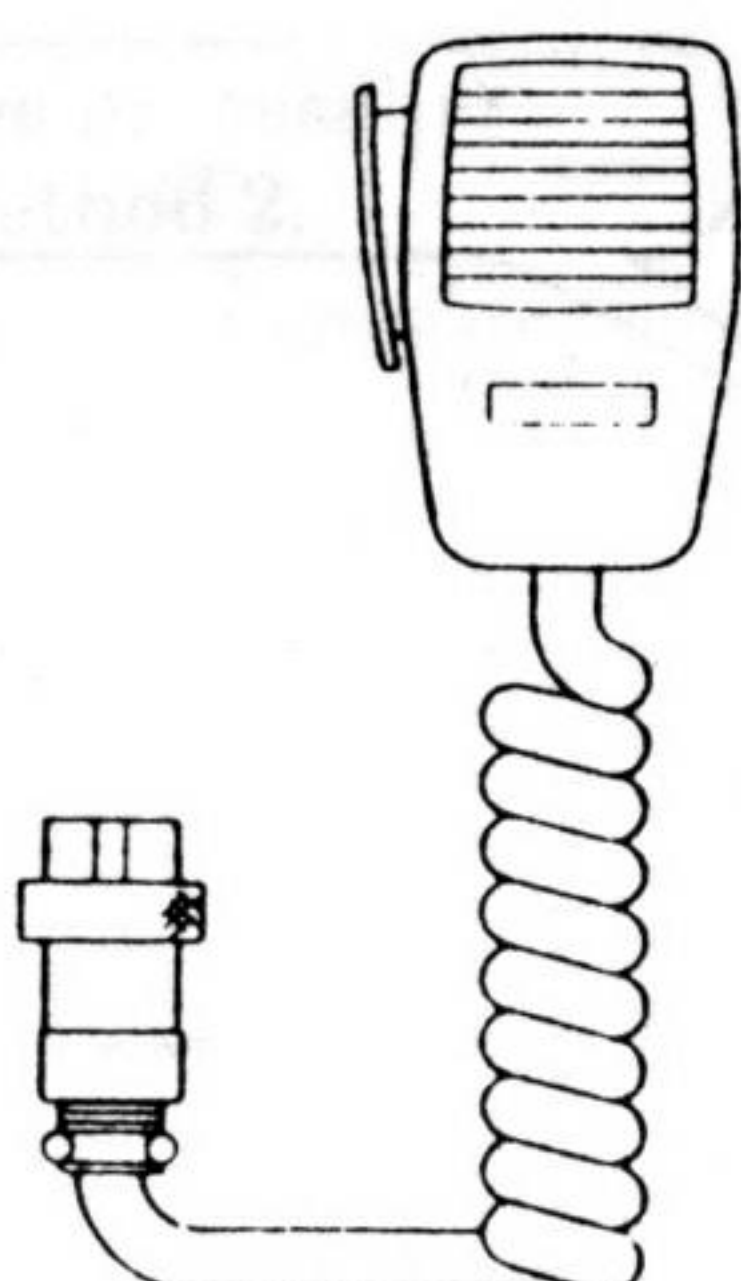
② DTMF handset

③ DTMF hand-held transceiver



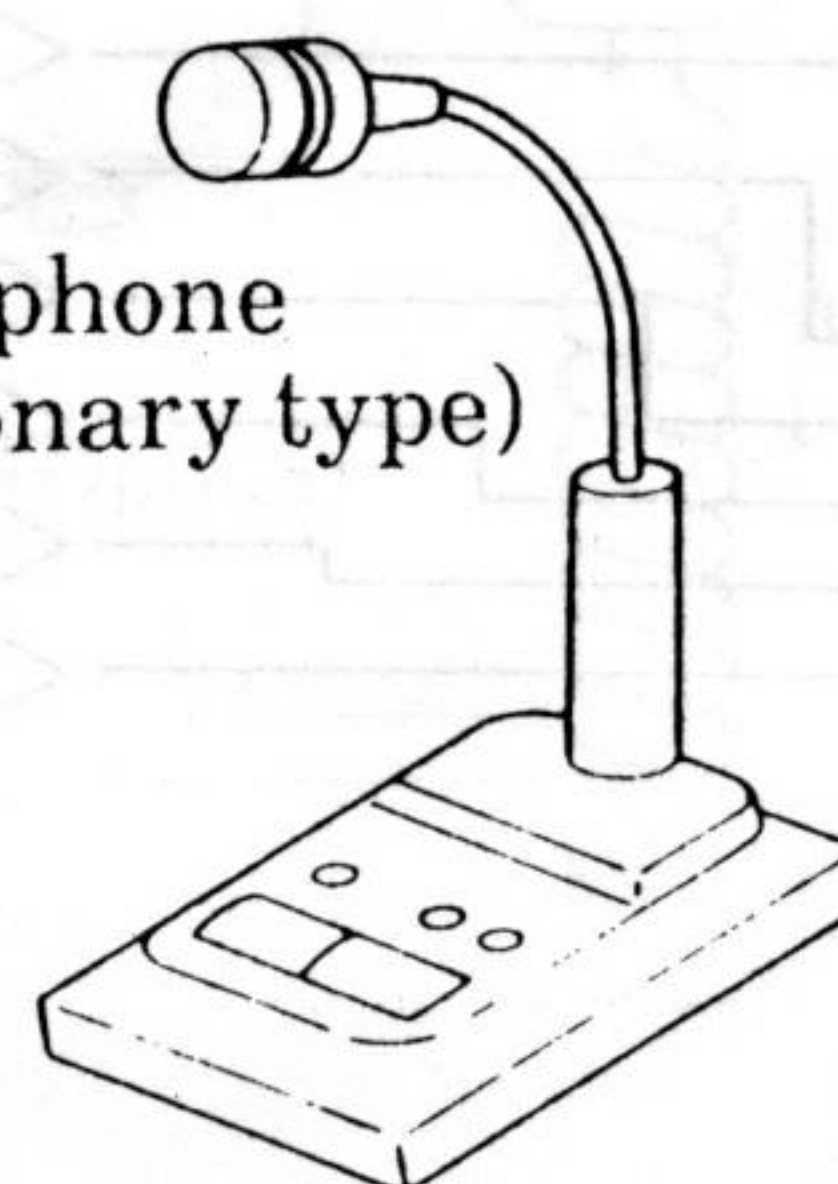
* Microphones incorporating 16 keys (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ✕, #, A, B, C and D) and the DTMF encoder (DTMF signal generating circuit) shown in the figure are commercially available. Note, however, that some types of microphones incorporate these 16 keys, but do not incorporate the DTMF encoder, which is to be mounted separately.

<Base station> Microphone (① or ②) and external speaker
These items are required to maintain the conventional radio equipment. They are not required if no general radio communication is used.

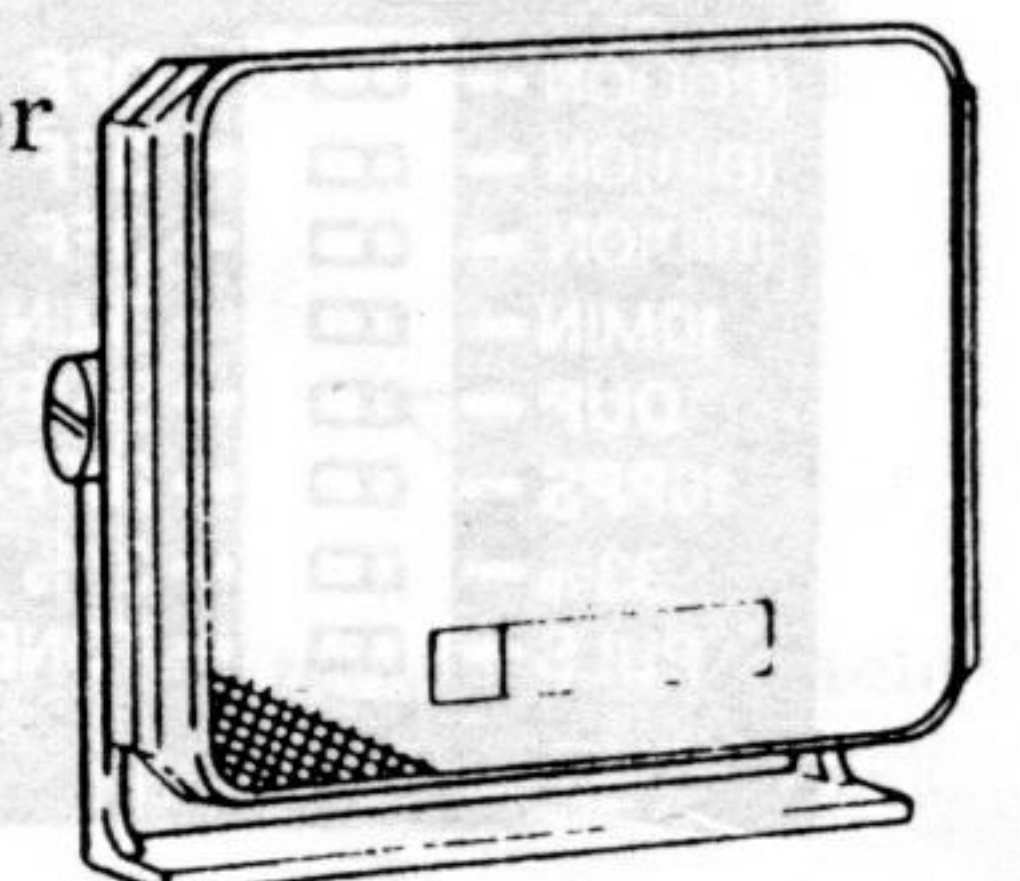


① Microphone (hand-held type)

② Microphone (stationary type)

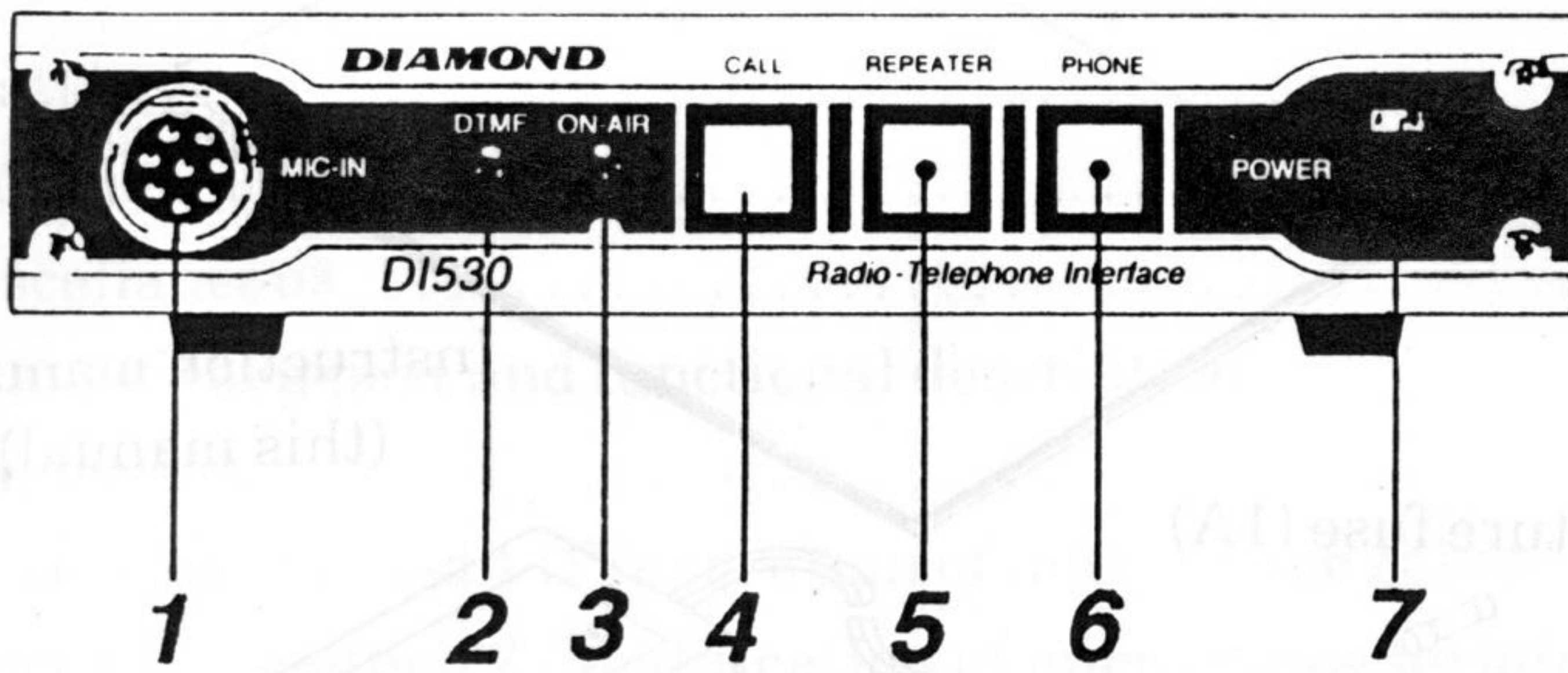


External speaker



<NAME OF EACH PART AND FUNCTIONAL DESCRIPTION>

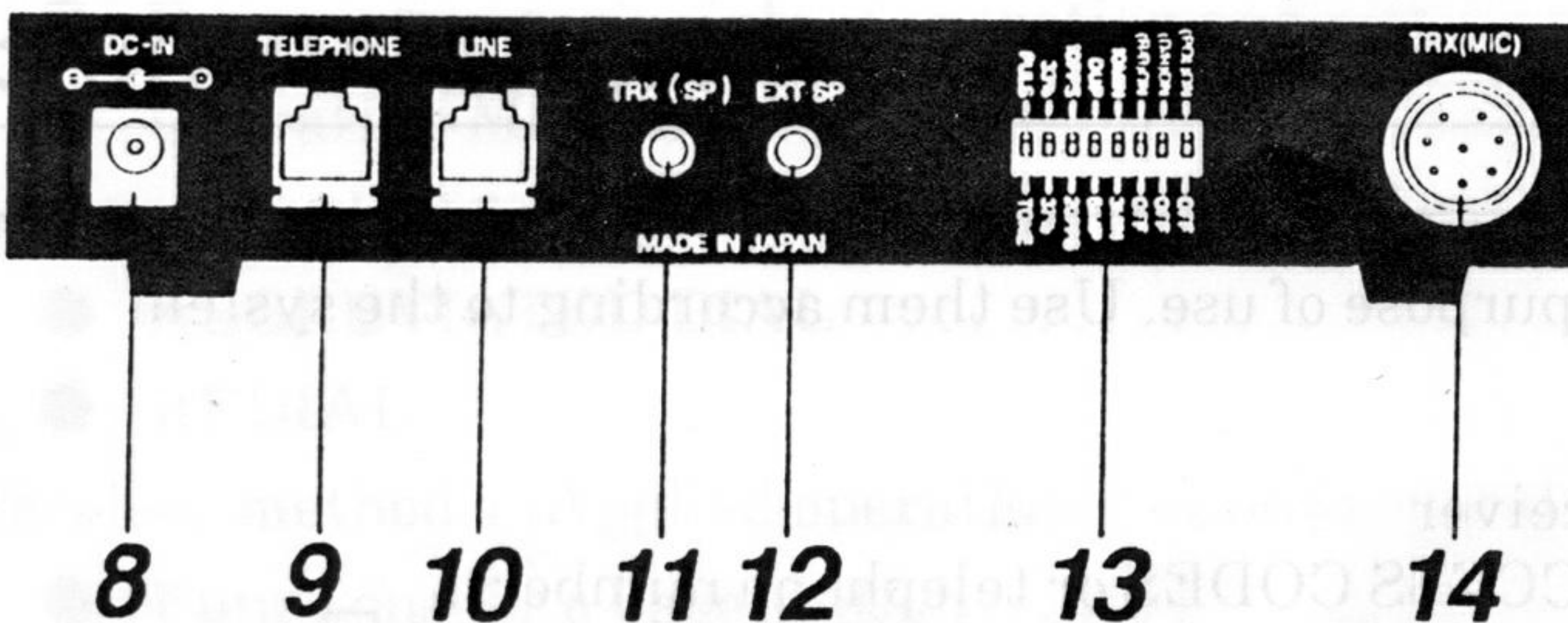
<Front panel>



- 1** ■ Microphone terminal
Mount the microphone here when general radio communication is attempted.
- 2** ■ DTMF lamp
This lamp lights when the DTMF signal is input and sensed.

- 3** ■ ON-AIR lamp
This lamp lights during transceiver transmission.
- 4** ■ CALL switch
This switch is used to call the mobile station. One press of this switch broadcasts a calling tone for five seconds.
- 5** ■ REPEATER switch
This switch is used for manual REPEATER operation. ON/OFF can be switched repeatedly every time the button is pressed. The corresponding LED lights while it is ON and the repeater starts operation.
- 6** ■ PHONE switch
This switch is used for manual PHONE PATCH operation. ON/OFF can be switched repeatedly every time the button is pressed. The corresponding LED lights while it is ON and PHONE PATCH starts operation.
- 7** ■ Power switch
This switch is used to turn ON/OFF the power. The corresponding lamp lights while power is supplied.

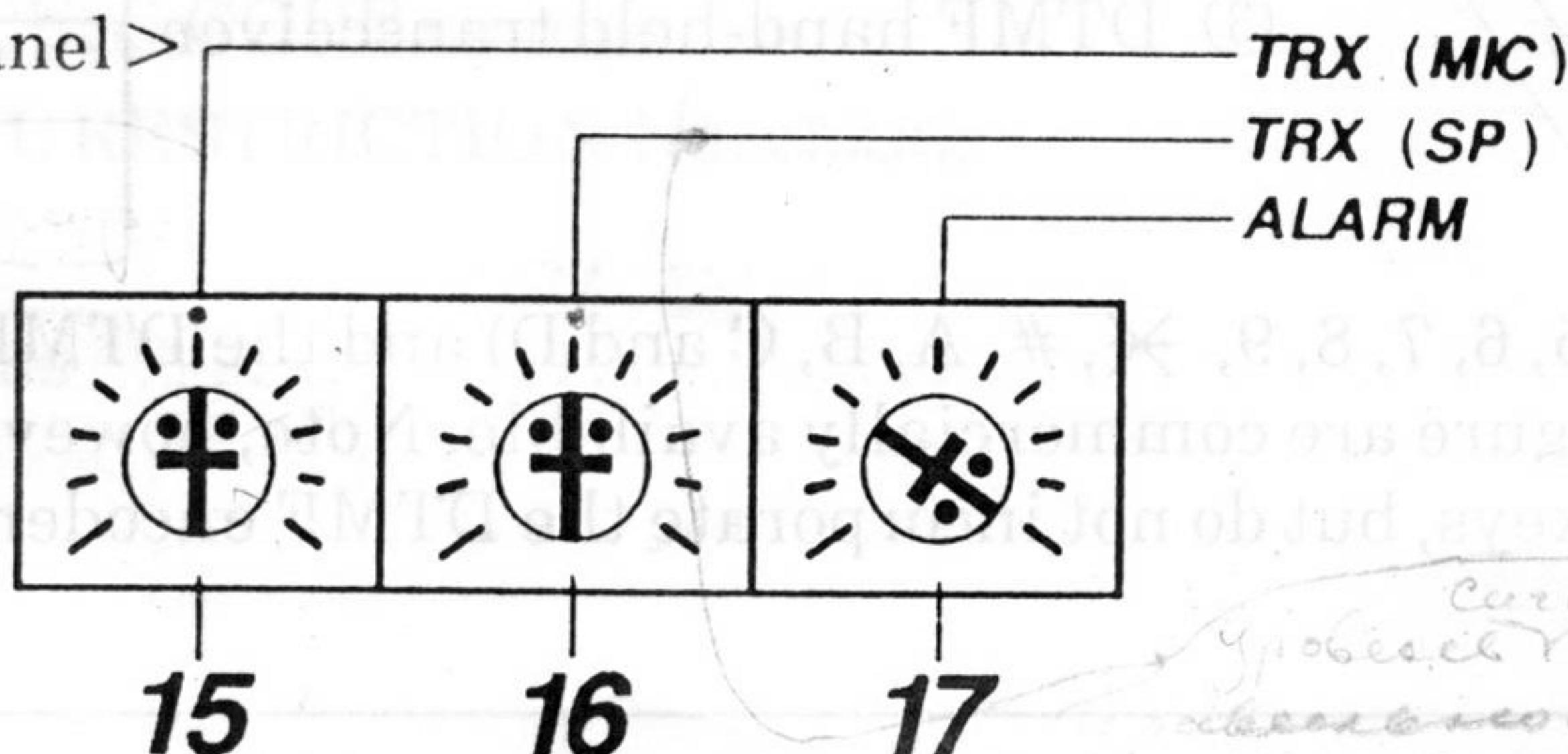
<Rear panel>



- 8** ■ Power input terminal
For connecting the AC adapter provided as an accessory.
- 9** ■ Telephone set terminal
This terminal is mounted on your telephone set. Every telephone set can maintain its functionality even by directly connecting the terminal to the DI 530 or telephone line. Select desired one according to the mounting place.

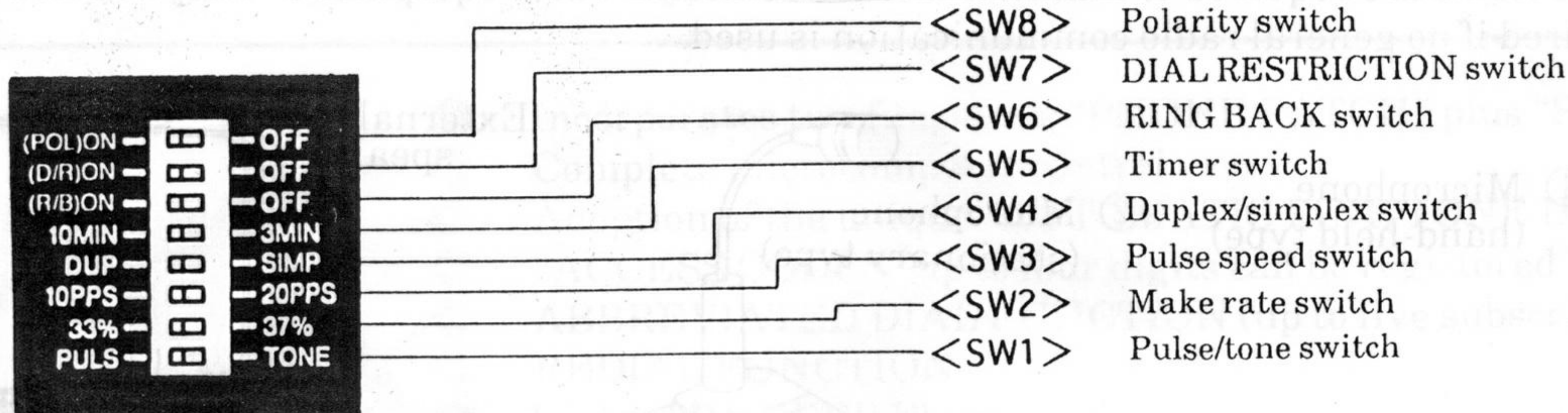
- 10** ■ Telephone line terminal
This terminal is used to connect the modular cable provided as an accessory between the telephone line and this terminal.
- 11** ■ Transceiver input terminal
This terminal is used to input signals from the transceiver. Connection between the external speaker terminal of the base station transceiver and this terminal is made via the speaker cable provided as an accessory.
- 12** ■ External speaker terminal
This terminal is used for attaching the external speaker (option) when general radio communication is attempted.
- 13** ■ DIP switch
This switch is used for initial setting. See relevant section for details.
- 14** ■ Transceiver output terminal
This terminal is used to output signals to the transceiver. Connection between the base station transceiver MIC terminal and this terminal is made by processing the 8-pin connector. PTT output and microphone output are produced.

<Lower panel>



- 15** ■ Transceiver output volume
This volume adjusts the output signal level of the transceiver output terminal (14).
- 16** ■ Transceiver input volume
This volume adjusts the input signal level of the transceiver input terminal (11).
- 17** ■ Alarm volume
This volume adjusts the warning tone level.

<DIP switch> (Under panel : 13)



Duplex/simplex in common

Connect each device by referring to the figure. This connection must be made after all power supplies have been turned OFF.

Speaker cable (accessory)

When two or more external speaker terminals are available, connect the cable to the reception band terminal.

External speaker (Option)

If the telephone line terminal is of the socket type, purchase the modular cable as shown in the figure.



Modular cable (accessory)

Terminal

Telephone line

Telephone receiver can be attached to either A or B.

Telephone receiver

AC adapter (accessory)

Conversion plug (accessory)

Adjust the switch according to your operating voltage.

To power receptacle

DI 530

EXT. SP.

Transceiver

MIC

8-pin connector (accessory)

Microphone cable (shielded cable of two or more cores is desirable.)

See processing method 1.

8-pin connector (accessory)

TRX (MIC)

EXT-SP

TRX (SP)

LINE

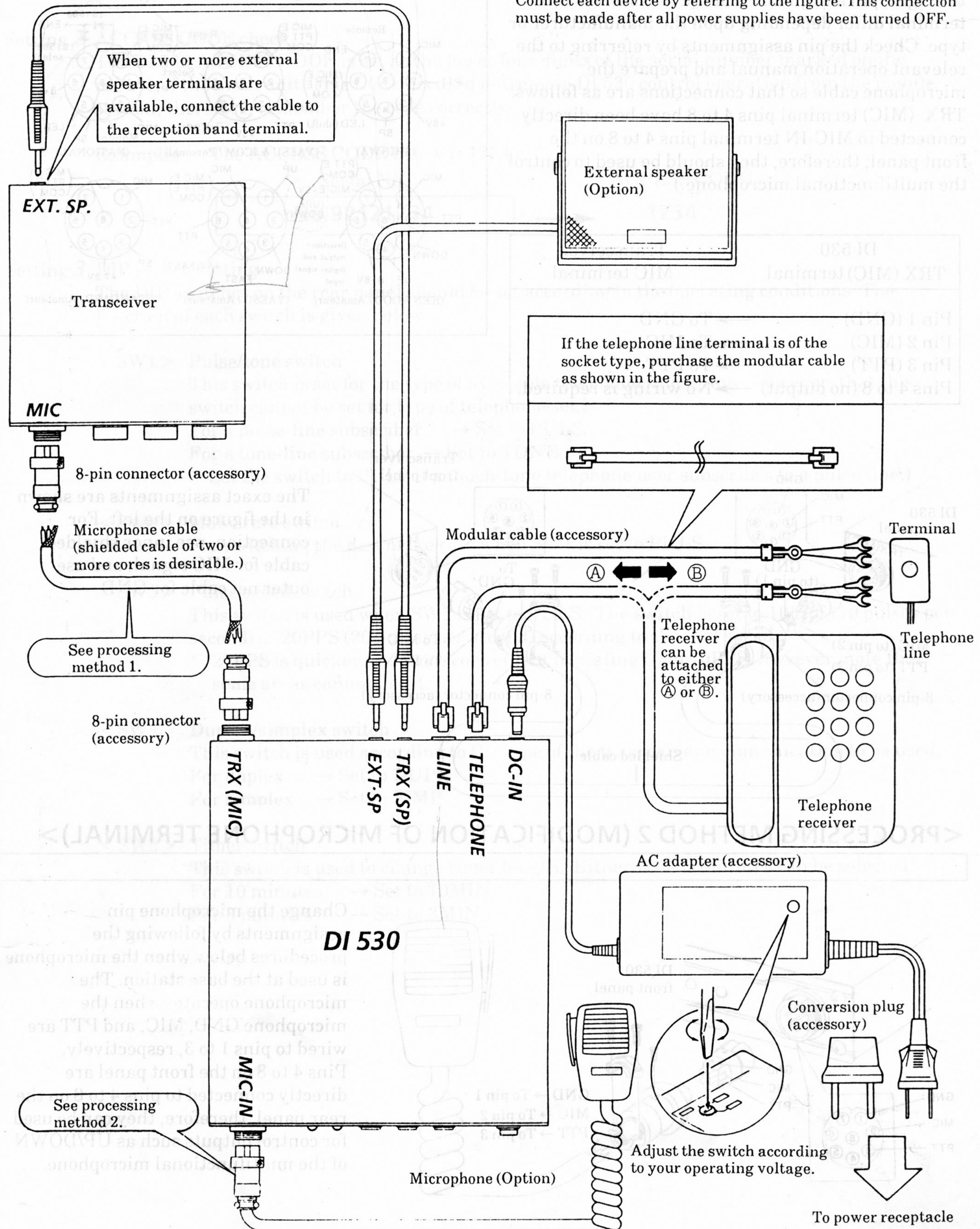
TELEPHONE

DC-IN

MIC-IN

See processing method 2.

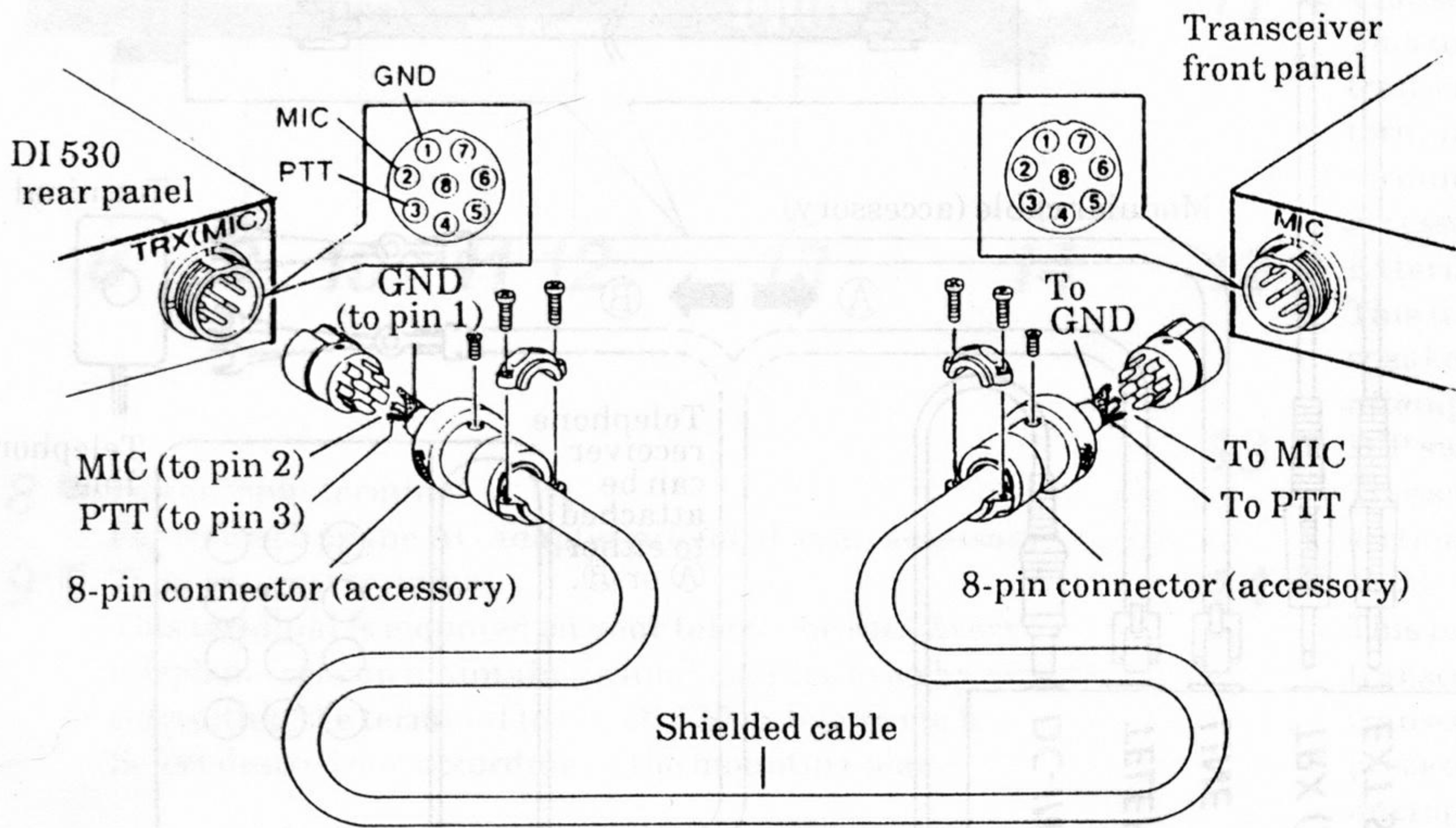
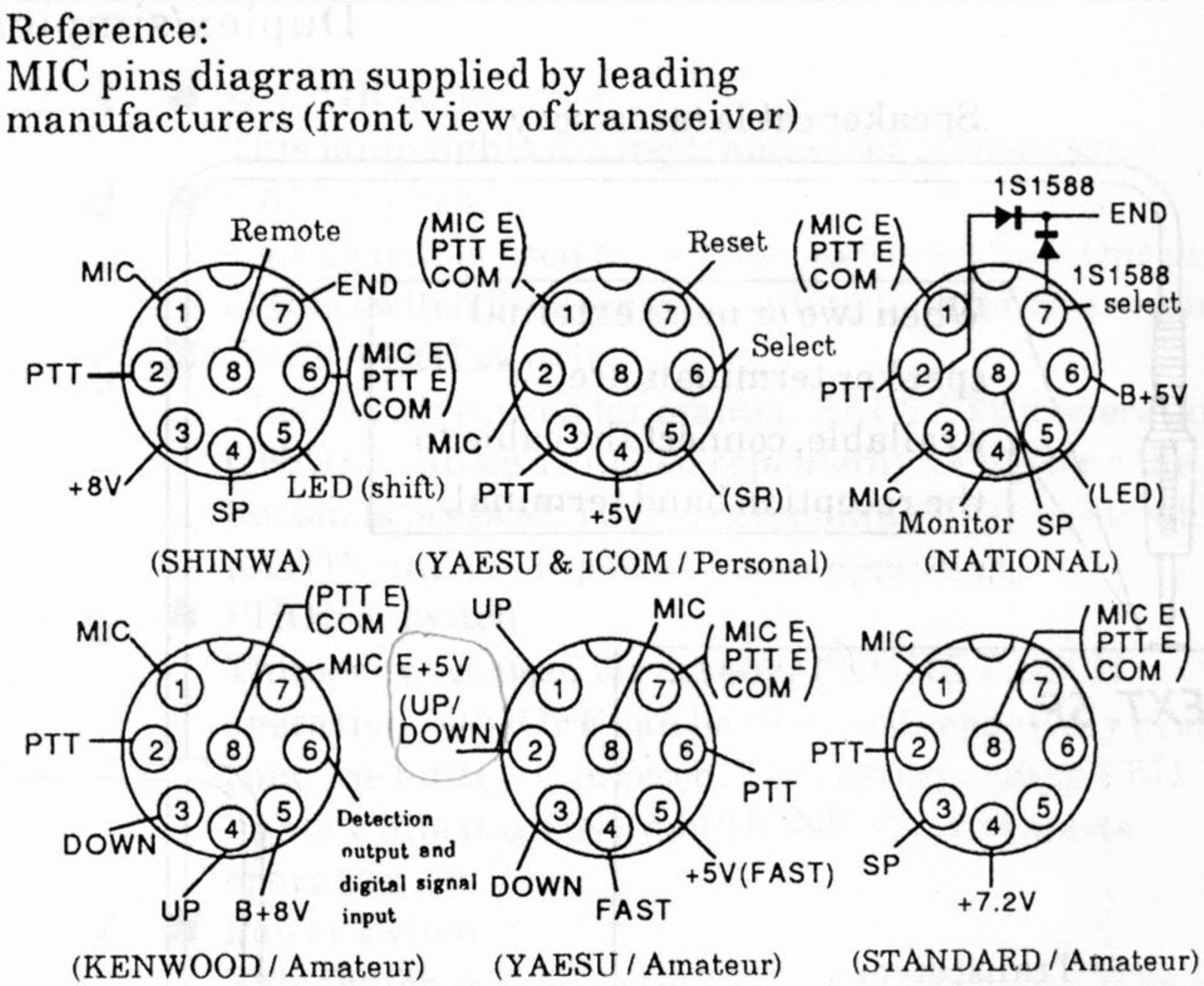
Microphone (Option)



<PROCESSING METHOD 1 (PREPARATION OF MICROPHONE CABLE)>

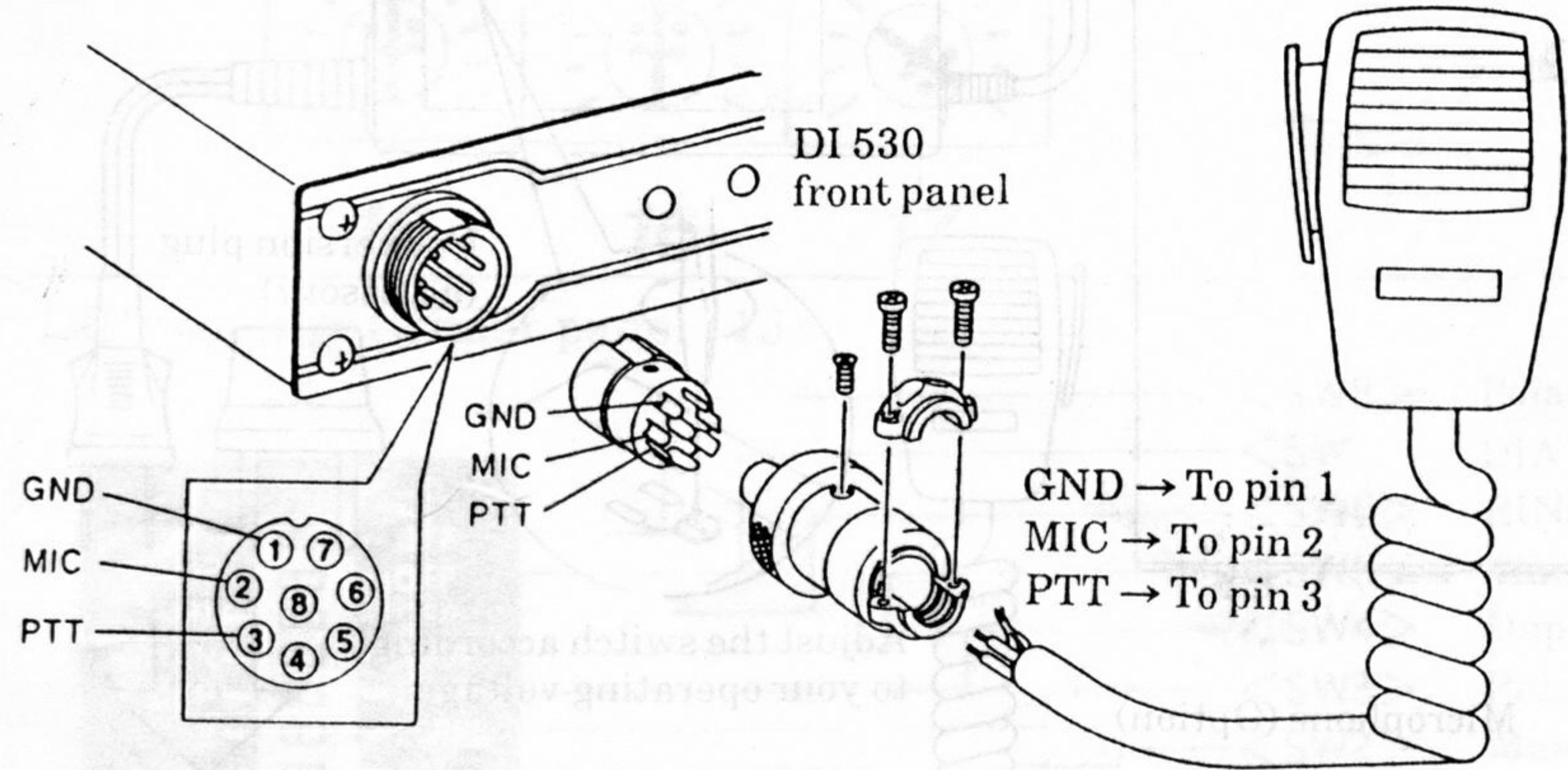
Prepare the cable for sending signals from the DI 530 to the transceiver. As shown in the figure on the right, pin assignments of the transceiver MIC terminal differ depending upon the manufacturer or type. Check the pin assignments by referring to the relevant operation manual and prepare the microphone cable so that connections are as follows: TRX (MIC) terminal pins 4 to 8 have been directly connected to MIC-IN terminal pins 4 to 8 on the front panel; therefore, they should be used to control the multifunctional microphone.)

DI 530 TRX (MIC) terminal	Transceiver MIC terminal
Pin 1 (GND)	→ To GND
Pin 2 (MIC)	→ To MIC
Pin 3 (PTT)	→ To PTT
Pins 4 to 8 (no output)	→ No wiring is required.



The exact assignments are shown in the figure on the left. For connection, use inner shielded cable for MIC signal, and use outer net cable for GND.

<PROCESSING METHOD 2 (MODIFICATION OF MICROPHONE TERMINAL)>



Change the microphone pin assignments by following the procedures below when the microphone is used at the base station. The microphone operates when the microphone GND, MIC, and PTT are wired to pins 1 to 3, respectively. Pins 4 to 8 on the front panel are directly connected to pins 4 to 8 on the rear panel; therefore, they can be used for control outputs such as UP/DOWN of the multifunctional microphone.

Setting 1 Set all power switches to OFF. Also adjust a switch on the AC adaptor according to your operative voltage.

Setting 2 ACCESS CODE check
The DI 530 ACCESS CODE is set as the lower four digits of the serial number marked on the bottom of the main unit. This CODE is used for remote DI 530 control operation from the mobile station; therefore, remember the code correctly.

Example) The ACCESS CODE below is 1234.

Serial No.	ACCESS CODE
No.92121234	1234

Setting 3 DIP switch setting
The DIP switches on the rear panel should be set according to the operating conditions. The function of each switch is given below.

- <SW1> Pulse/tone switch
This switch is set for the type of available telephone line. (Note, however, that this switch cannot be set for type of telephone set.)
For a pulse-line subscriber → Set to PULS.
For a tone-line subscriber → Set to TONE.
(* Set the switch to PULS if a touch-tone telephone user subscribes to a pulse line.)
- <SW2> Make rate switch
For switching the dial make rate when SW1 is set to PULS.
- <SW3> Pulse speed switch
This switch is used when SW1 is set to PULS. The switch is set to 10PPS (10 pulses per second) or 20PPS (20 pulses per second) according to the dial speed.
* 20PPS is quicker and more convenient in dialing than 10PPS; however, note that some areas cannot use it.
- <SW4> Duplex/simplex switch
This switch is used according to the type of the transceiver communication to be used.
For duplex → Set to DUP.
For simplex → Set to SIMP.
- <SW5> Timer switch
This switch is used to change timer length. Either 10 or 3 minutes can be selected.
For 10 minutes → Set to 10MIN.
For 3 minutes → Set to 3MIN.

<INITIAL SETTING>

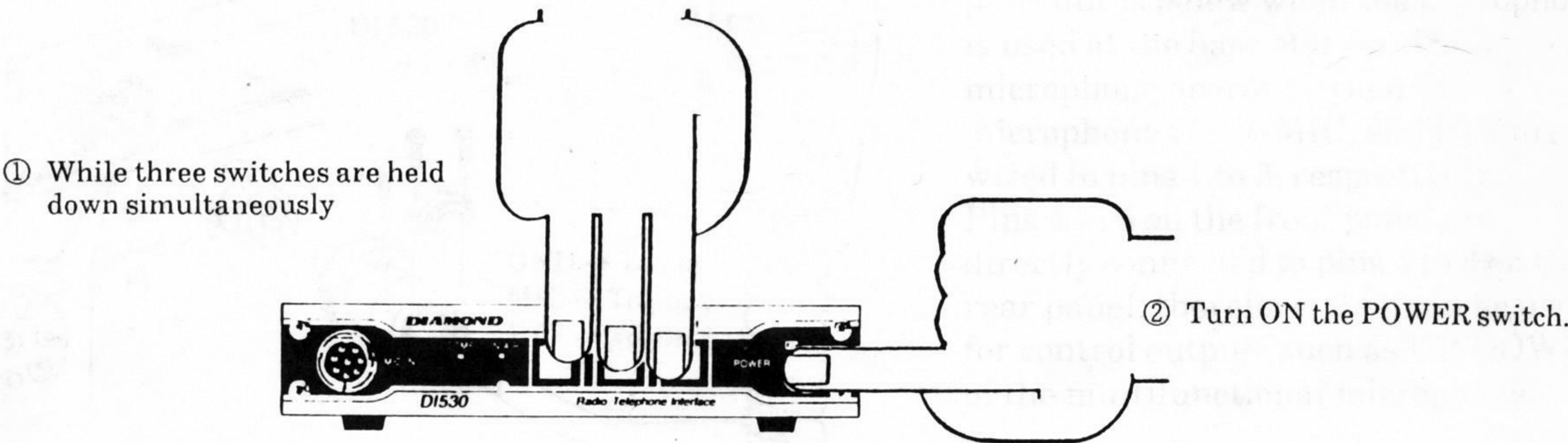
- <SW6> Ring back switch
- Setting this switch to ON sends a calling tone to the mobile station when a phone call comes from the outside. If calling is not required, set the switch to OFF.
- * This switch must always be set to OFF when the base station permits manual operation without using the DTMF microphone provided at the mobile station.
- <SW7> DIAL RESTRICTION switch
- Setting this switch to ON disables telephone numbers starting with 0 (free dial, area code, international call, etc.). When this switch is set to OFF, this restriction does not apply. D/R numbers from 1 to 9 other than 0 can be changed (by the main unit internal patterns → see page 20.)
- <SW8> Polarity switch
- Duplex → Set to ON.
- Simplex → Set to OFF.

	Function	ON (upper)	OFF (lower)
●SW1	Telephone line type (subscribed type)	Pulse line	Tone line
●SW2	Make rate	33% (U.S.A)	37% (Asia and Europe)
●SW3	Pulse speed	10PPS	20PPS
●SW4	Radio communication type	Duplex	Simplex
●SW5	Timer setting	10 minutes	3 minutes
●SW6	Ring back (for calling mobile station)	Yes	No. When the mobile station does not use the DTMF microphone.
●SW7	Dial restriction (0 dialing)	Yes	No
●SW8	Polarity	Duplex	Simplex

* Use something tapering to switch the DIP switches.

Setting 4 Internal memory deletion

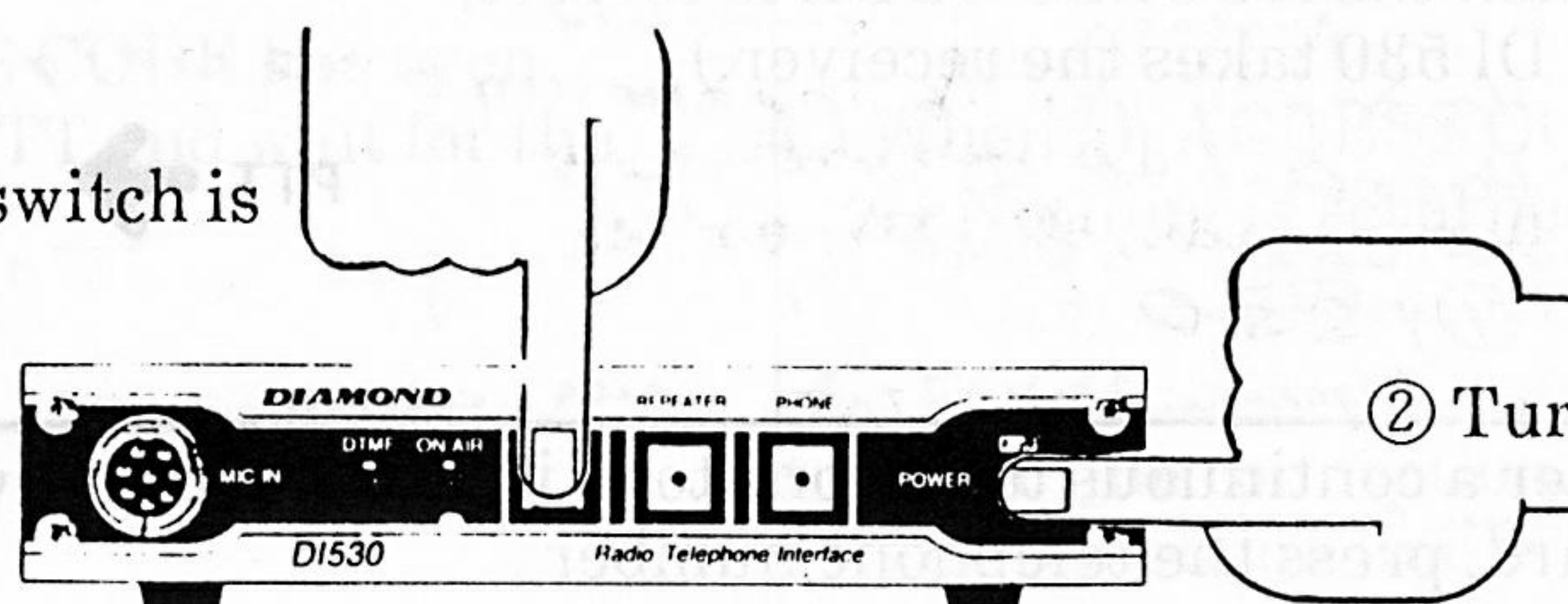
Turn ON the POWER switch while the CALL, REPEATER, and PHONE switches are simultaneously held down. This operation deletes all the CPU memory data. The delete operation is completed when the green DTMF lamp goes OFF. Turn OFF the POWER switch again.



Setting 5 Line tone detection

Next, turn ON the POWER switch while the CALL switch is held down. The CPU automatically detects the telephone line tone, and reads it in the internal memory data, and stores it. The read operation is completed after the ON-AIR lamp (red) goes OFF. Turn OFF the POWER switch again.

① While the CALL switch is held down

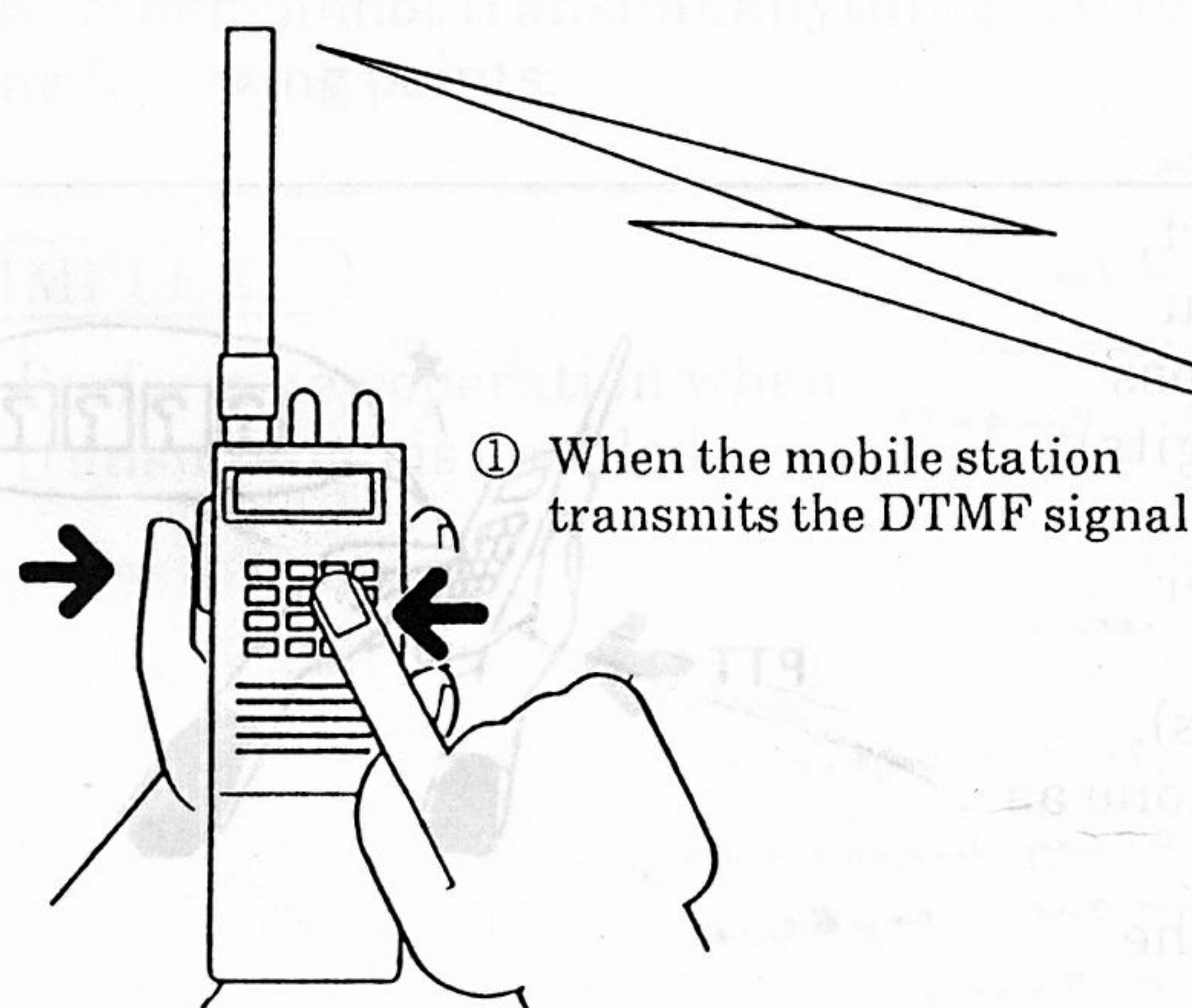
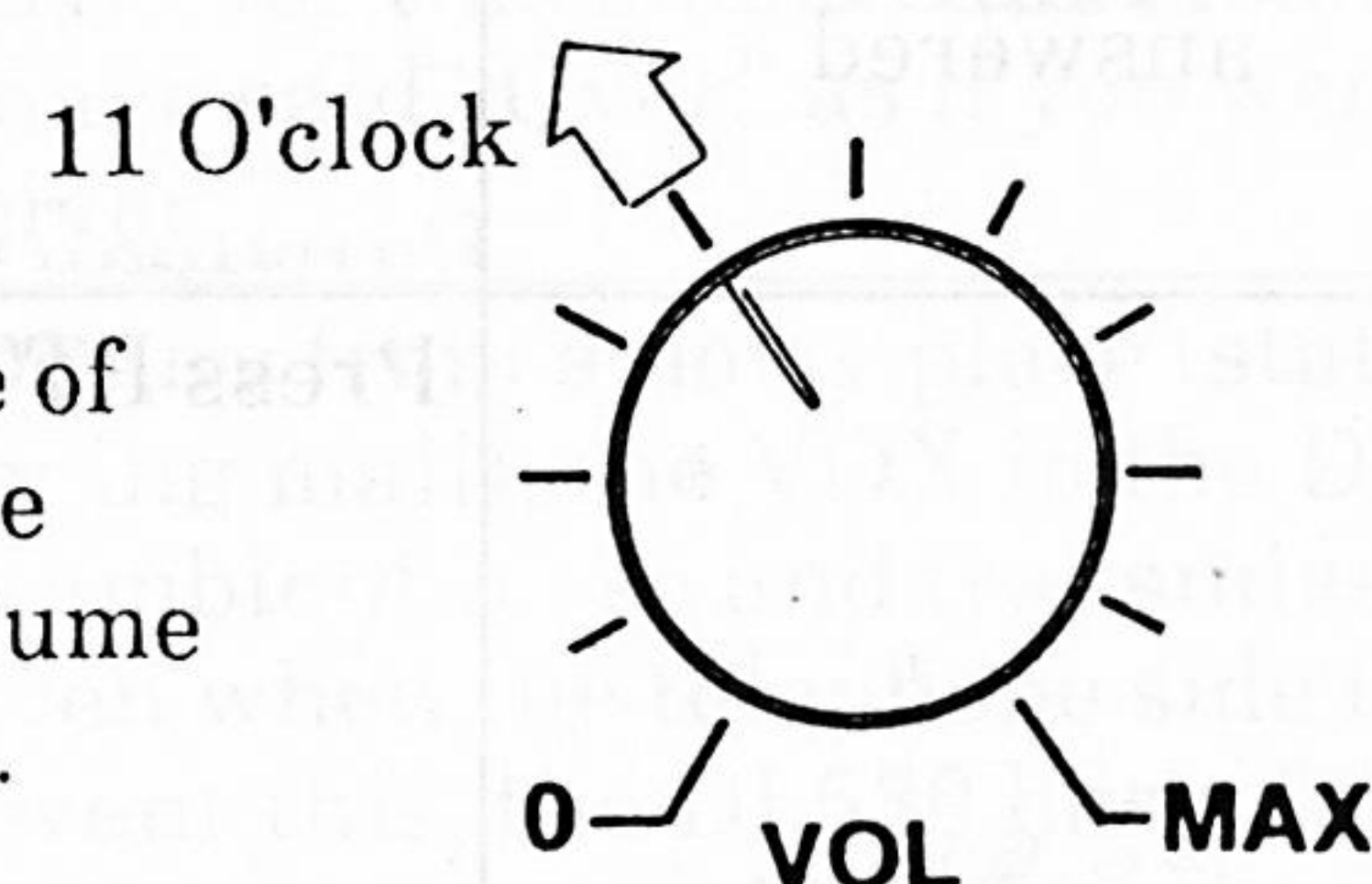


② Turn ON the POWER switch.

- * Note that line tone detection is not performed when the DI 530 cable is not connected to the telephone line.
- * Line tone may differ depending upon the area. If a telephone line is changed for any reason, for example, after moving a house or office, be sure to perform settings 4 and 5 and memorize a new line tone.
- * If this program is not done, operations such as AUTO CUTOFF are not effective. Be sure to initiate this program when mounting the DI 530. In addition, setting 4 deletes the stored line tone. Settings 4 and 5 should be done in combination.

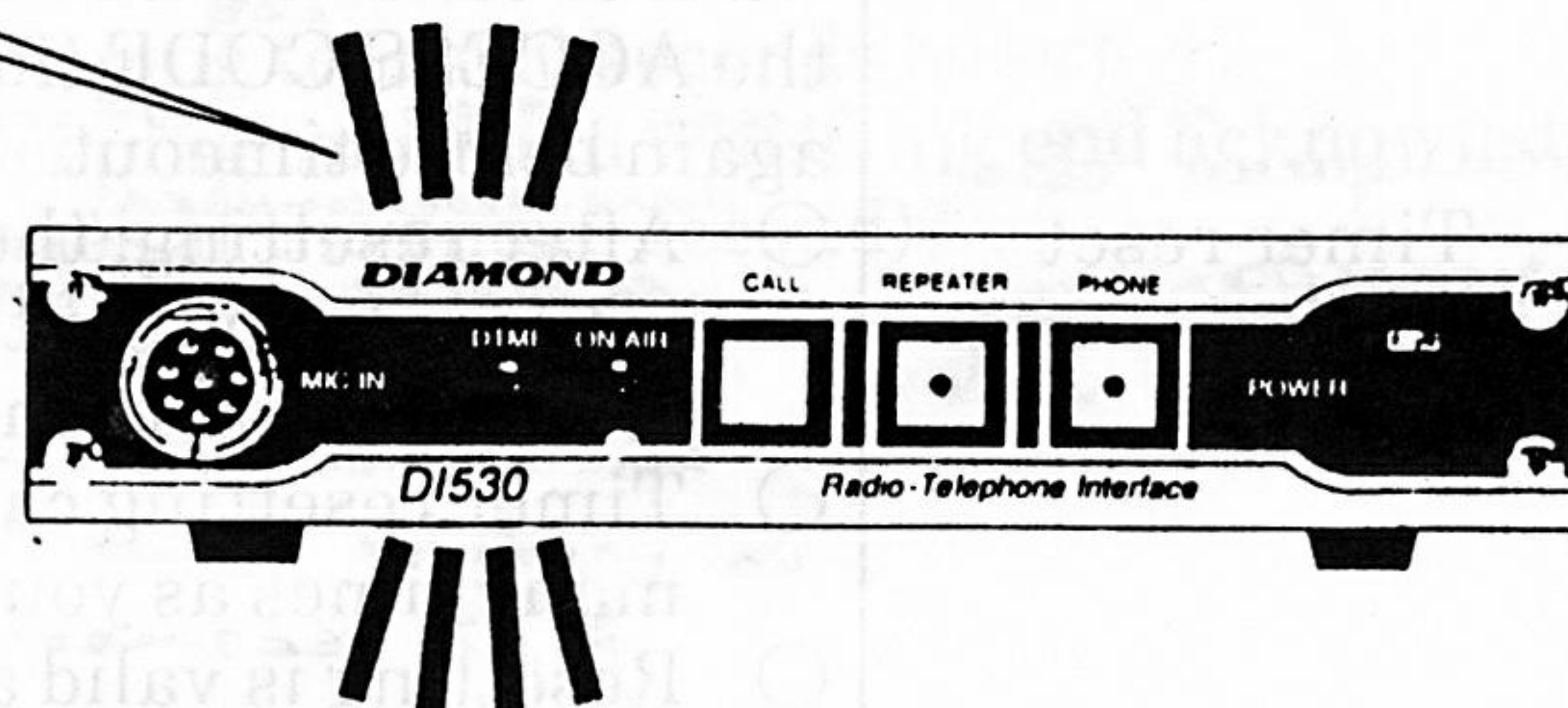
Setting 6 Transceiver volume adjustment

- 1 Roughly set the transceiver volume (receiver volume in case of duplex operation) to 11 o'clock. Approximately 1 hour may be earlier or slower depending upon the device type. Set the volume to a level at which the tone is audible without any distortion.
- 2 Check that the front panel DTMF lamp lights when the mobile station transceiver transmits the DTMF signal. Also, check that the DTMF lamp lights normally, by pressing any of the 16 keys, and that the signal tone is not distorted. (* For communication systems in which the operator performs manual operation in a base station, this adjustment is not required.)



① When the mobile station transmits the DTMF signal

② Check that the DTMF lamp lights normally at the base station.



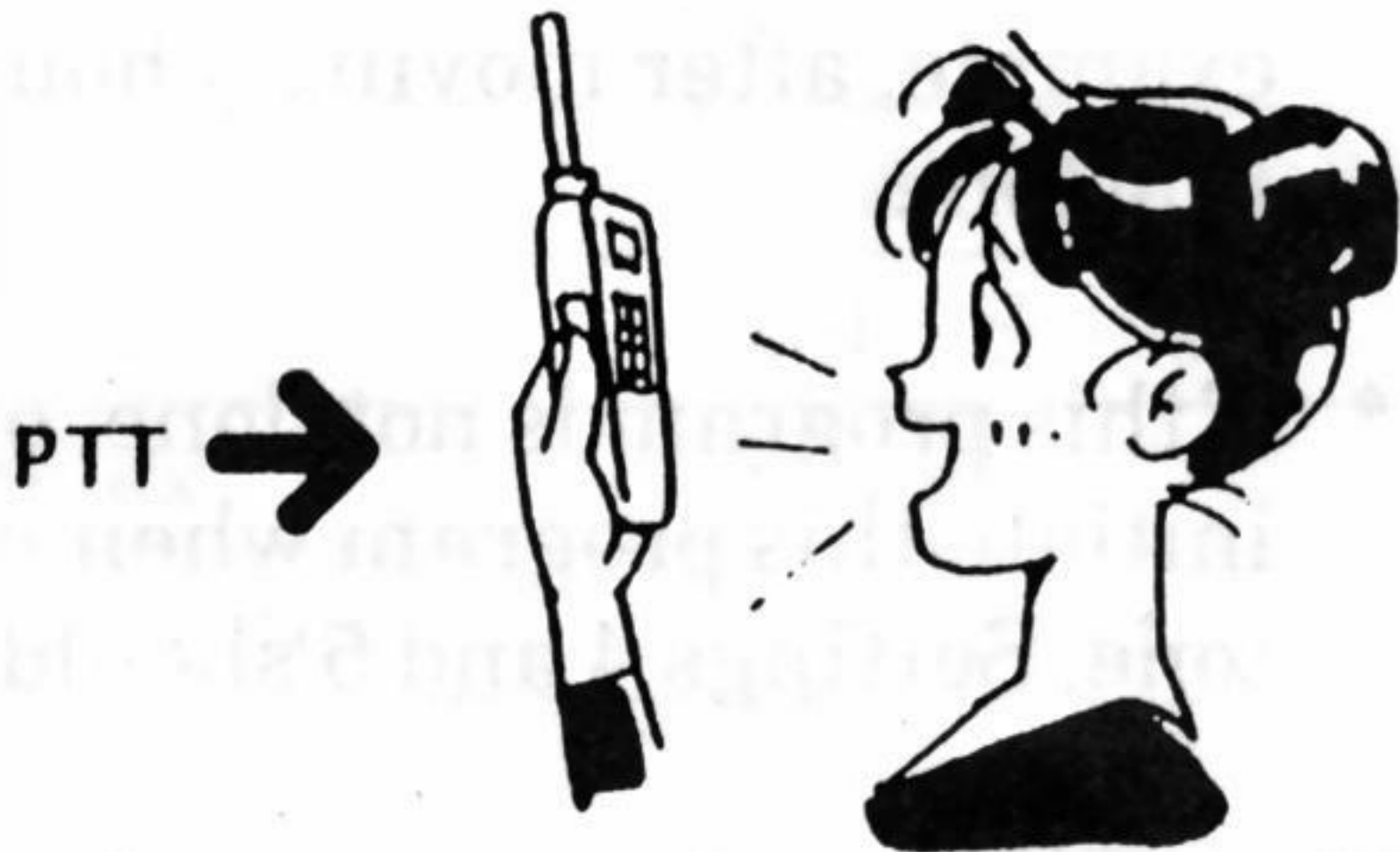







- * If the lamp does not light or if the signal tone is distorted, see the section "DTMF signal is distorted / DTMF lamp does not light (page 19: Additional adjustment)".

- 3 To maintain the signal from transceiver to the DI 530 at a constant level, the adjusted transceiver volume should be stable and should not be readjusted.

<OPERATION METHOD 1 (BASIC OPERATION: PHONE PATCH)>

● MAKING PHONE CALL

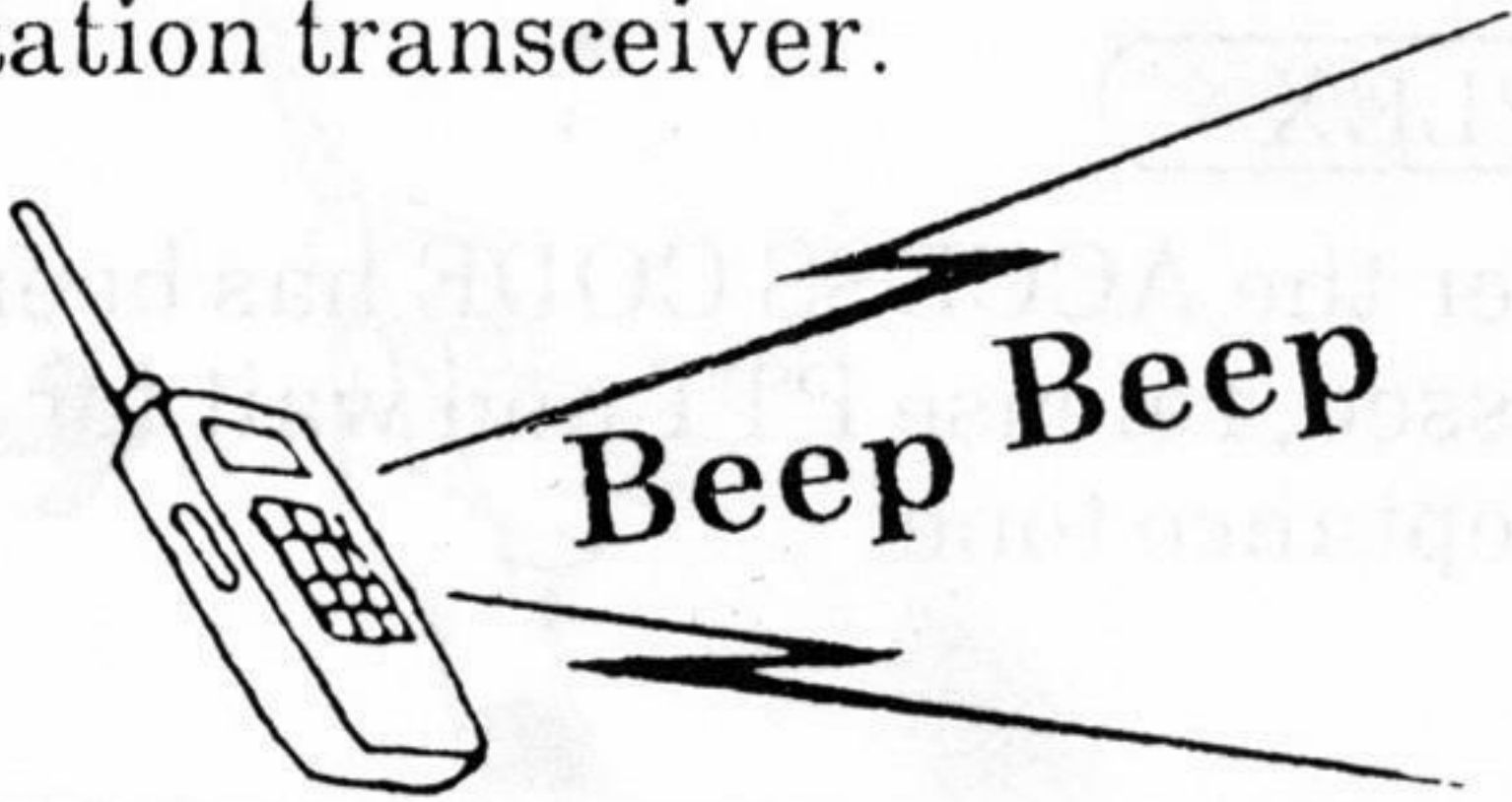
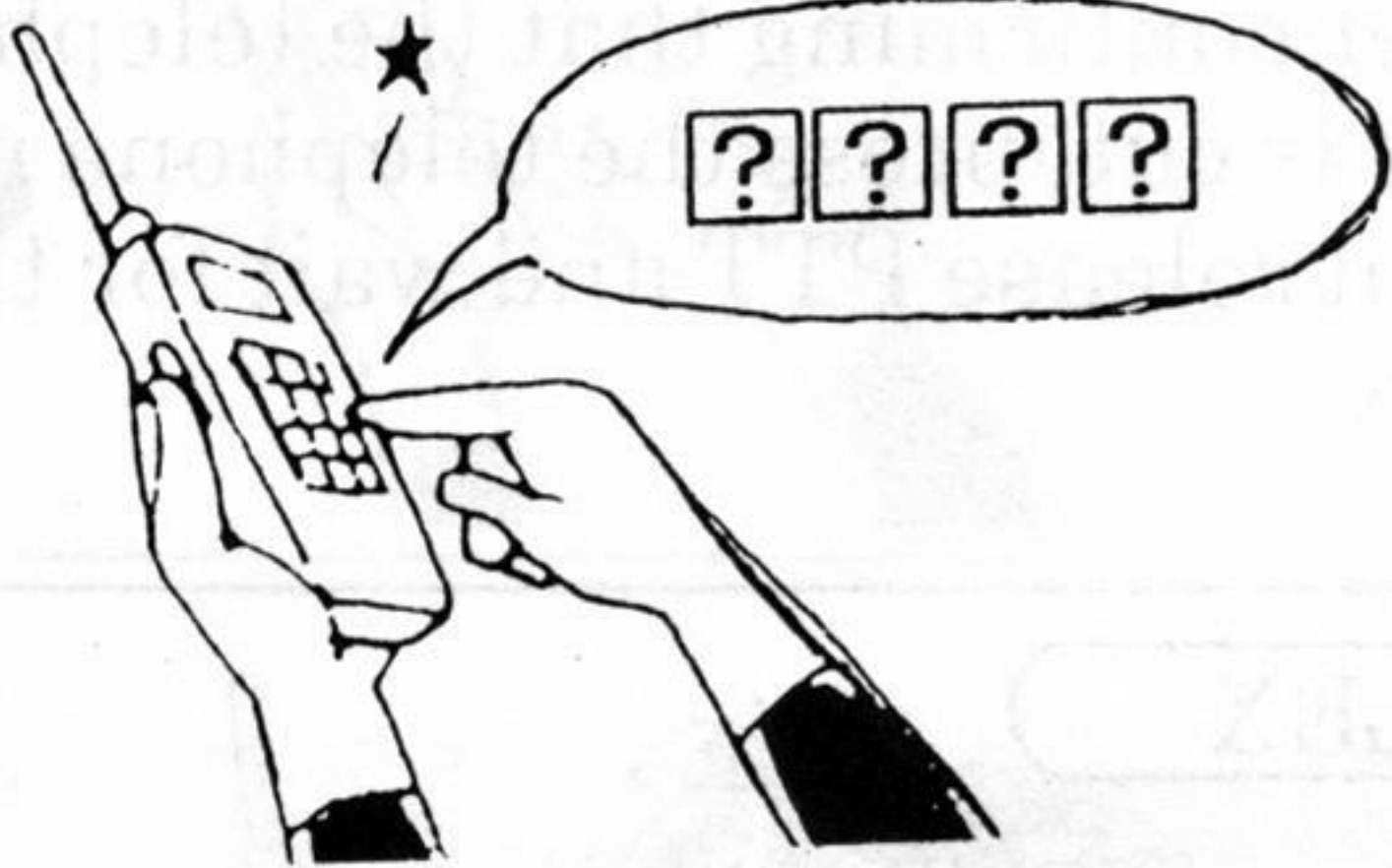
Operating procedure	Key operation
1 Take the telephone receiver.	Press the four-digit ACCESS CODE. (When the ACCESS CODE is correct, the DI 530 takes the receiver.) 
2 Dial a telephone number.	After a continuous telephone tone is heard, press the telephone number. (The DI 530 makes a call.) 
3 After the remote subscriber (external line side) has answered	Press PTT and start talking. 
4 During communication	Press PTT while you talk. 
5 Timer reset	If the remaining time is short, a warning tone sounds. If you want to continue talking, press the ACCESS CODE (four digits) again before timeout. <ul style="list-style-type: none">○ After resetting, the timer returns to the set time (3 minutes or 10 minutes).○ Timer resetting can be done as many times as you like.○ Resetting is valid after the first warning tone. 
6 End the telephone conversation.	Press end code ( # or # ). (The DI 530 returns the receiver to its original place.) If you forget to cut the telephone, the timer automatically cuts it after the specified period of time has passed. 

<OPERATION METHOD 1 (BASIC OPERATION: PHONE PATCH)>

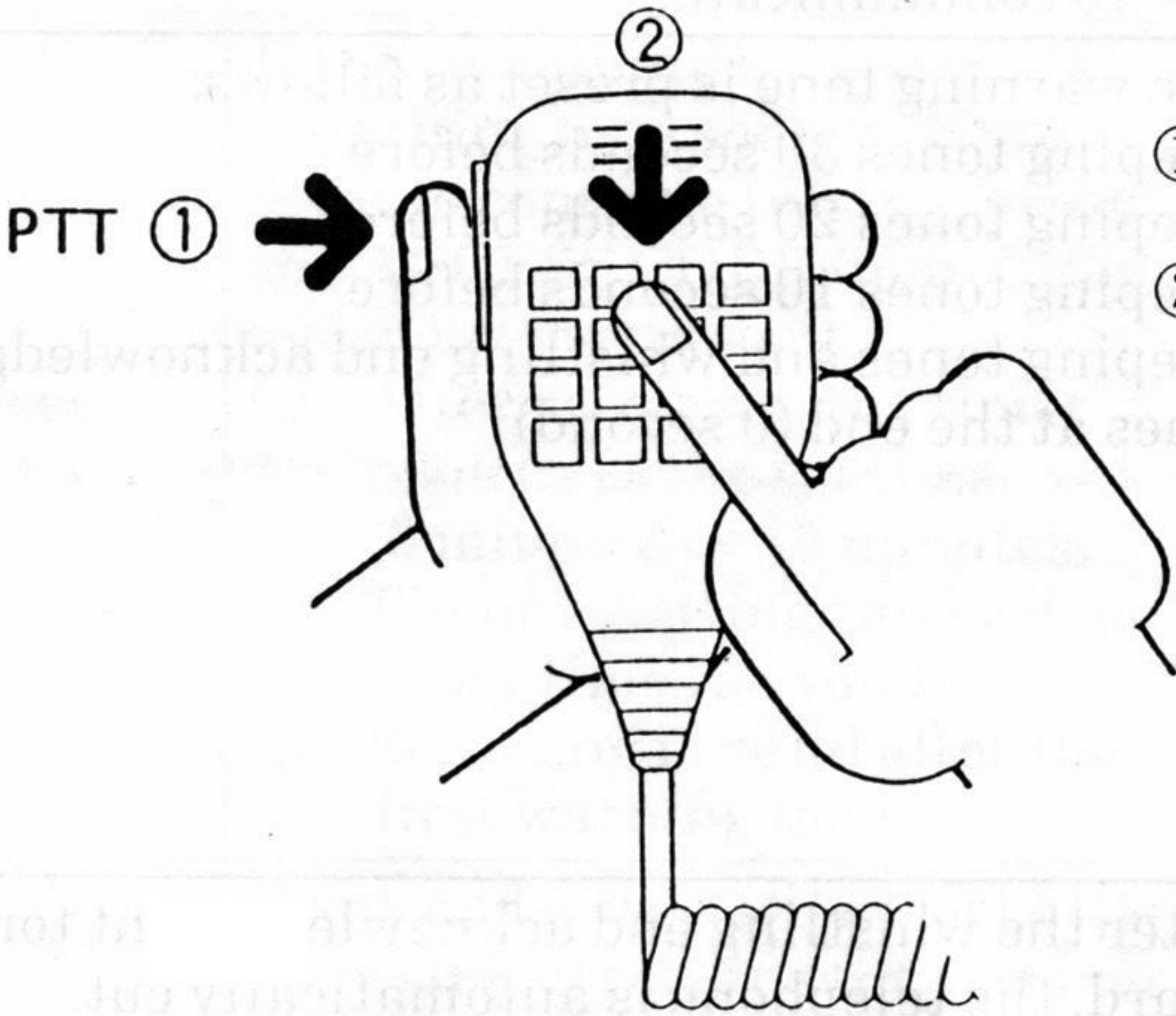
Operation	Acceptance tone, acknowledgment tone, warning tone
<div>SIMPLEX</div> <ul style="list-style-type: none">○ After the ACCESS CODE has been pressed, release PTT and wait for the acceptance tone.	<ul style="list-style-type: none">○ When the ACCESS CODE is correct. → A continuous telephone line tone is audible after acceptance tone.○ When an ACCESS CODE is incorrect. → Nothing is returned. Reenter the correct code.
<div>SIMPLEX</div> <ul style="list-style-type: none">○ After confirming that the telephone line tone is cut, press the telephone number.○ Then release PTT and wait for the dial tone.	<ul style="list-style-type: none">○ After line connection, the telephone rings.○ The telephone line is automatically disconnected after the warning tone in one of the cases listed below. Retry from ACCESS CODE entry.<ul style="list-style-type: none">· If a key is not pressed for 15 seconds or more· If the remote receiver is busy· If the telephone line is disconnected
<div>DUPLEX</div> <ul style="list-style-type: none">○ You can start talking as if in a telephone conversation. <div>SIMPLEX</div> <ul style="list-style-type: none">○ When the remote receiver takes the receiver, the first transmission authority is transferred to the mobile station (the	<p>telephone side cannot transmit anything). Press PTT and start talking.</p> <ul style="list-style-type: none">○ The telephone side is not familiar with simplex communication; therefore, he or she may regard it as a telephone fault. After the telephone is connected, you should say to him or her, "I am using a transceiver for this phone call. Please start talking after I have said "Over" as if you were using a transceiver."
<div>DUPLEX</div> <ul style="list-style-type: none">○ Simultaneous communication is possible in the same way as during a telephone conversation. <div>SIMPLEX</div> <ul style="list-style-type: none">○ By pressing PTT at mobile station and/or speaking at telephone side, transmission starts. If either of them is transmitting, the other cannot transmit anything. Note the following points.	<ul style="list-style-type: none">· If a phone call occurs from a noisy place (station, factory, or shopping mall), the VOX in the DI 530 operates due to ambient noise and transmission cannot be cut even when the telephone side finishes talking. To prevent this, the DI 530 has a function for forcibly stopping transmission from the telephone side. The transmission is interrupted once (3 seconds) per 20 seconds; therefore, perform transmission by pressing PTT.· On the telephone side, many receivers are expected to be unfamiliar with radio communication; therefore, the mobile station should tell him or her how to communicate.
<div>SIMPLEX</div> <ul style="list-style-type: none">○ Perform key operation when transmission is enabled.	<ul style="list-style-type: none">○ The warning tone is preset as follows: Beeping tones 30 seconds before Beeping tones 20 seconds before Beeping tones 10 seconds before Beeping tones and whistling end acknowledgment tones at the end (0 second)
<div>SIMPLEX</div> <ul style="list-style-type: none">○ Perform key operation when transmission is enabled.○ After key operation, release PTT and wait for the end acknowledgment tone.	<ul style="list-style-type: none">○ After the whistling end acknowledgment tone is heard, the telephone is automatically cut.

<OPERATION METHOD 1 (BASIC OPERATION: PHONE PATCH)>

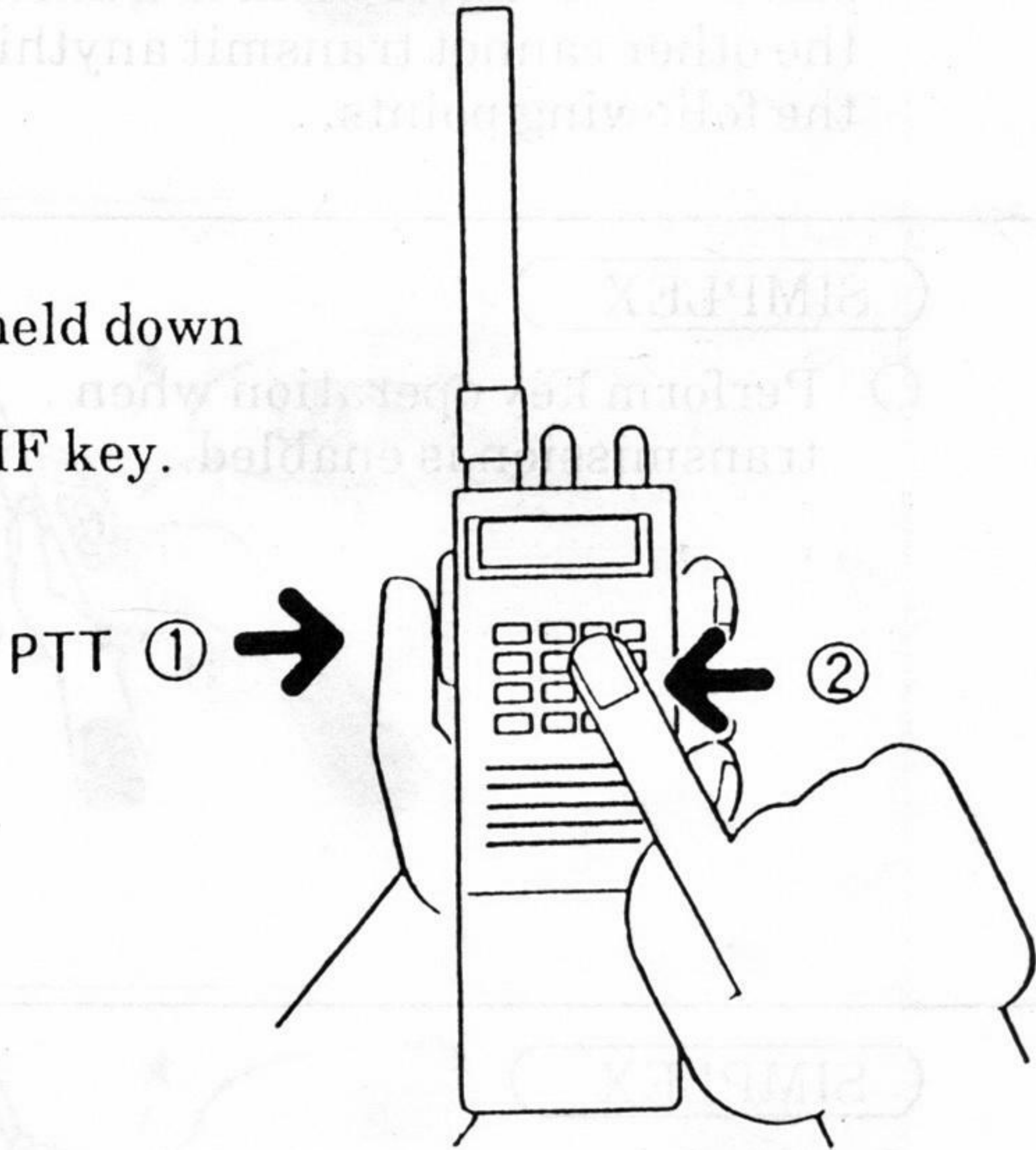
RECEIVING PHONE CALL

Operating procedure	Key operation
<div>1</div> <div>When an external call occurs</div>	<div>The telephone rings at the mobile station transceiver.</div> <div></div>
<div>2</div> <div>Take the receiver.</div>	<div>Press the four-digit ACCESS CODE. (If the ACCESS CODE is correct, the DI 530 takes the receiver.)</div> <div></div>
<div>3</div> <div>After the remote subscriber has answered</div> <div>4</div> <div>During communication</div> <div>5</div> <div>Timer reset</div> <div>6</div> <div>End the telephone conversation.</div>	<div>● Same as "MAKING PHONE CALL" (→ Pages 9-10)</div>

<REFERENCE (MOBILE STATION PTT OPERATION)>




- ① While PTT is held down
- ② Press the DTMF key.



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repeater. (The DI 530 sets the repeater to

3. End the repeater.
- If you forget to turn Off the repeater, the timer automatically stops it after 10 minutes (to OFF).
- (The DI 530 sets the repeater
- 10
- 
- Note: The timer function and the timer icon are not available on all models.

<OPERATION METHOD 2 (BASIC OPERATION: REPEATER)>

● Preparation (principle of operation and setting of transmission and reception bands)

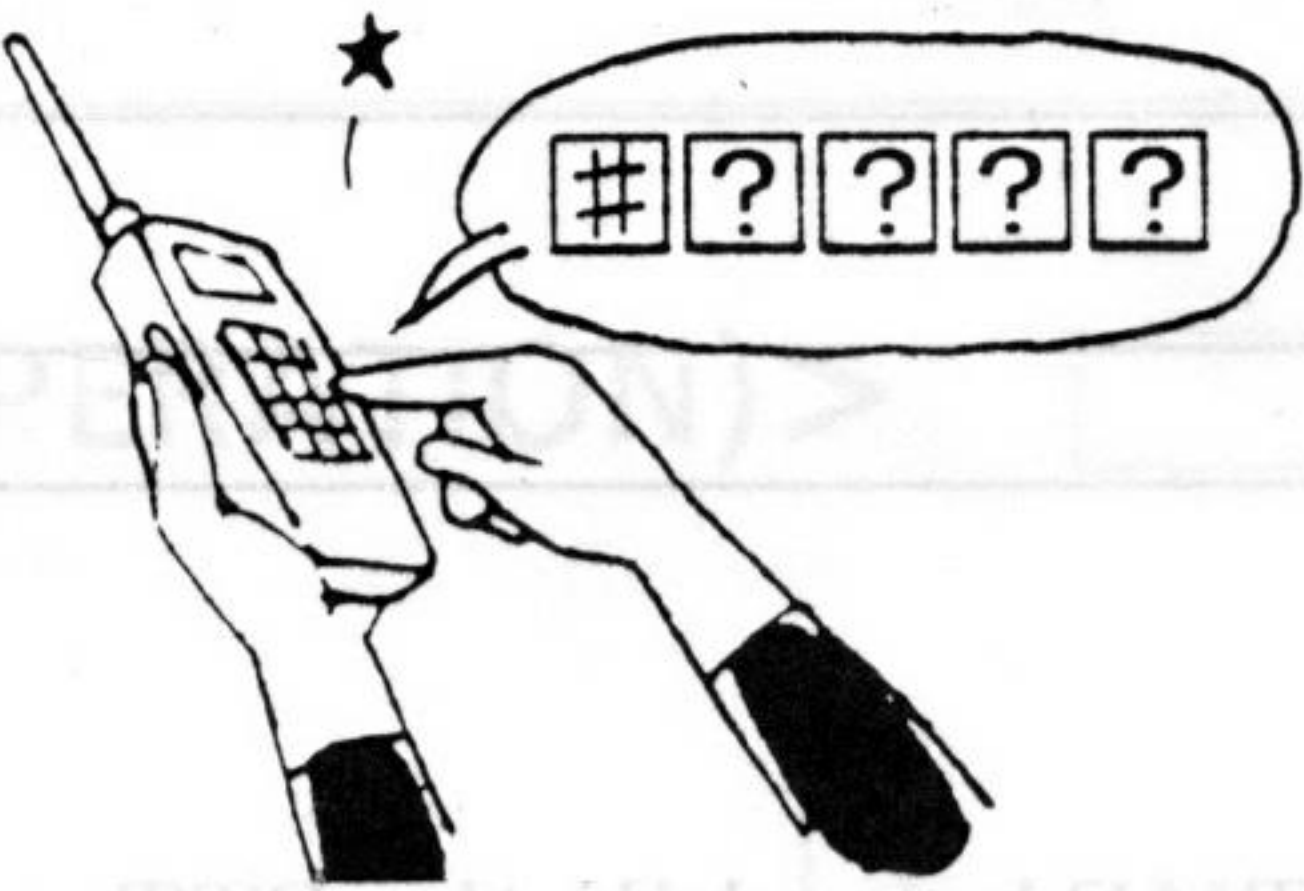
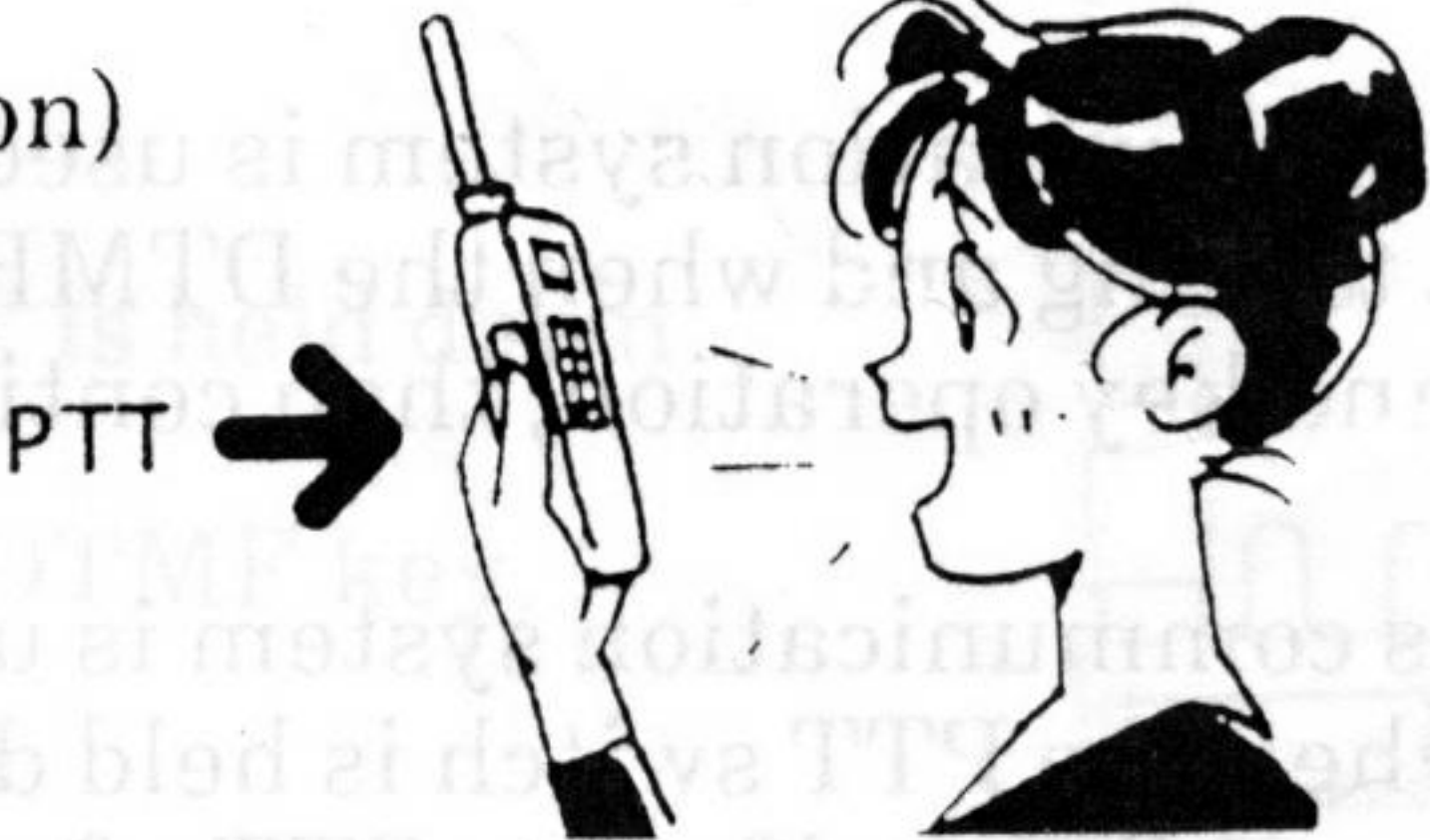
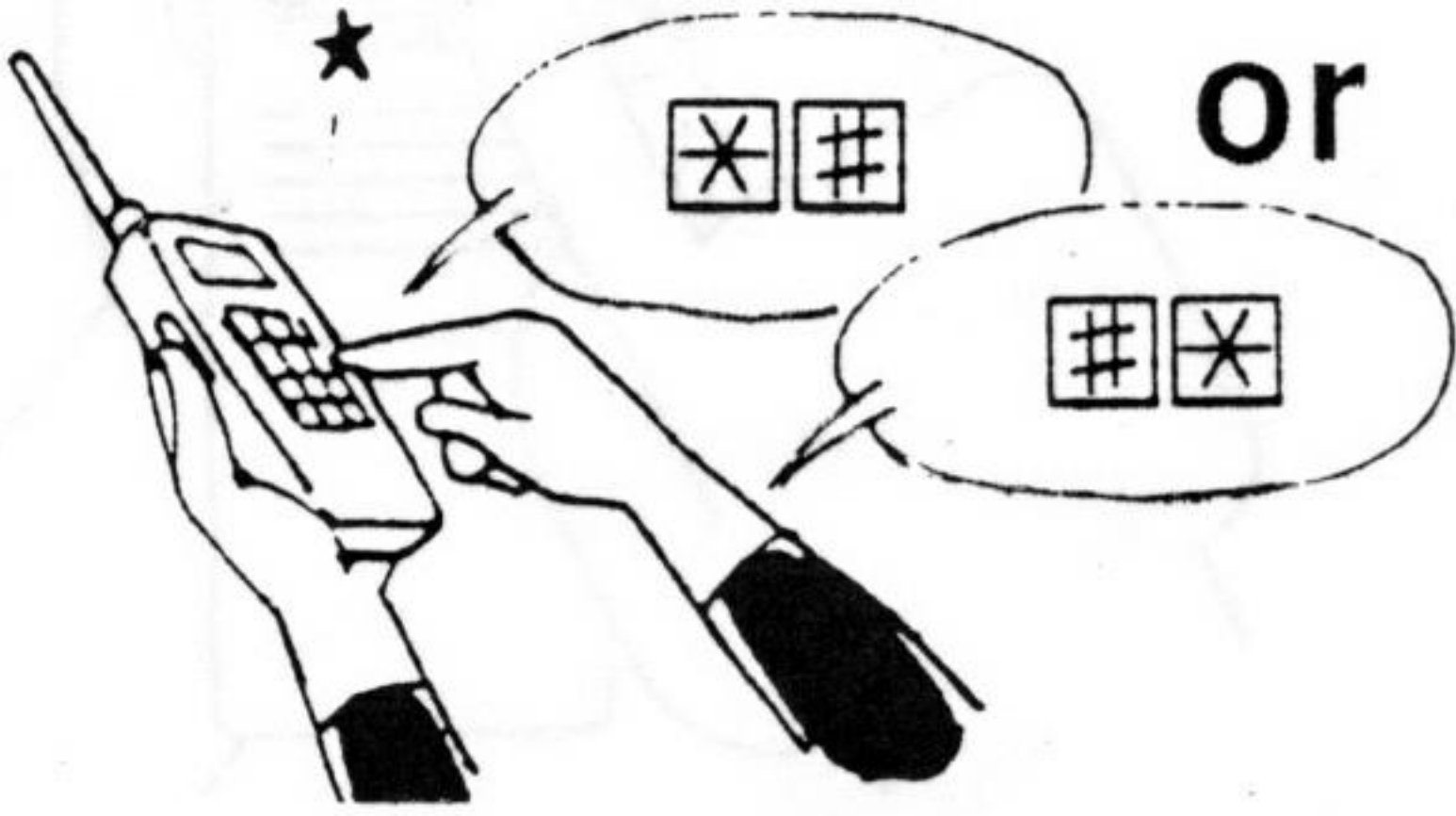
The repeater incorporated DI 530 is a simple type and is used in combination with the dual band transceiver.

The principle of operation is shown in the figure on the right. Voice signals from the reception band of the base station transceiver are sent again to the transmission band via the DI 530. Although duplex equipment is required, the type of communication is the simplex.

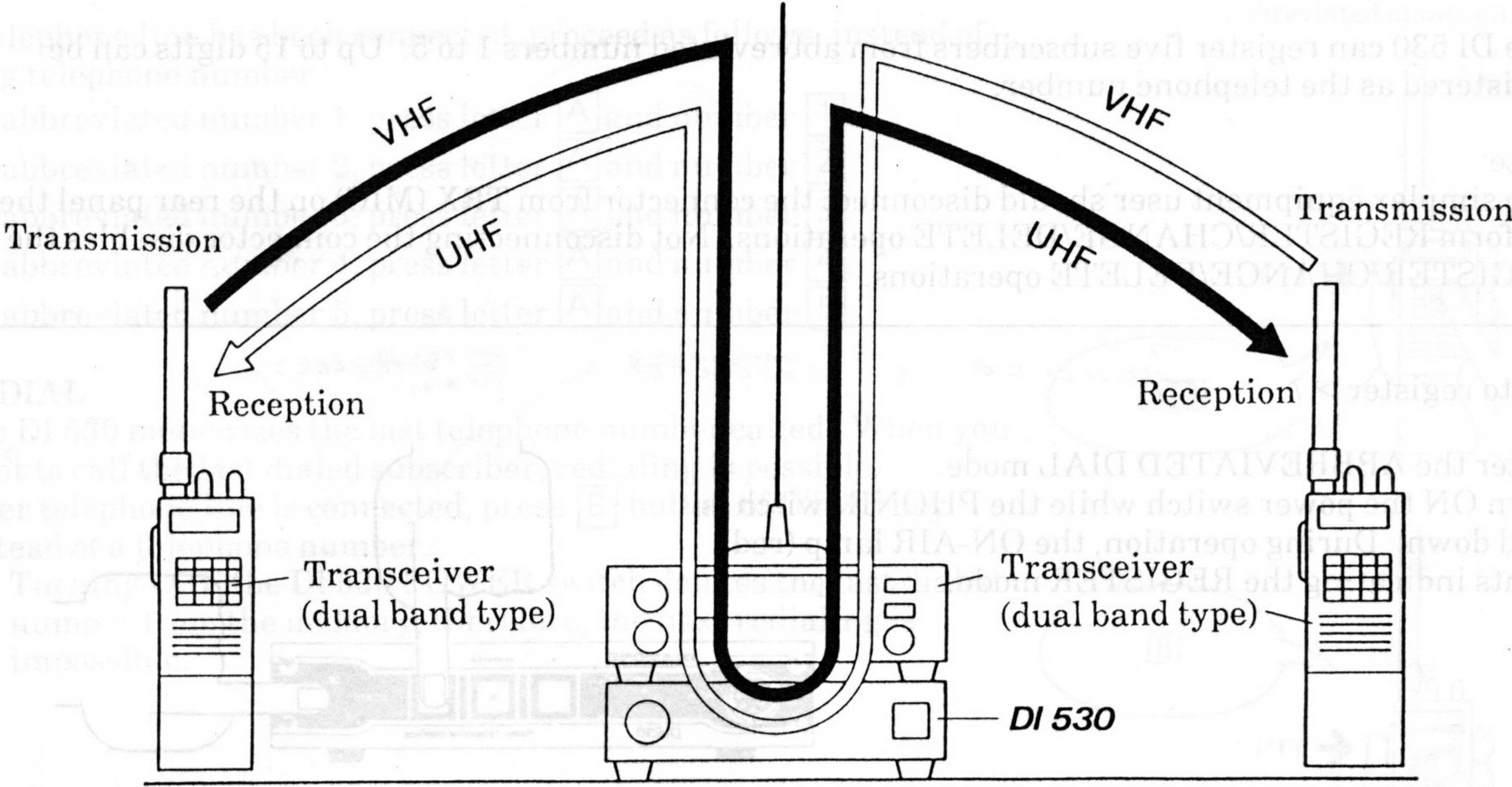
Set the transmission and reception band by reversing the base station and the mobile station as shown in the figure (The setting shown in the figure is only an example; therefore, the user should not adhere to it.)

Note: The repeater is to be used only with the duplex radio equipment (i.e., it cannot be used with the simplex radio equipment).

● Operation Method

Operating procedure	Key operation
<div>1</div> <div>Operate the repeater.</div>	<div>Press the start code “# → ACCESS CODE (four digits)”. (The DI 530 sets the repeater to ON.)</div> <div></div>
<div>2</div> <div>When the repeater operates</div>	<div>Press PTT and call the remote receiver (the other mobile station) and start talking.</div> <div></div>
<div>3</div> <div>End the repeater.</div>	<div>Press end code (✕ # or # ✕). (The DI 530 sets the repeater to OFF.) If you forget to turn OFF the repeater, the timer automatically stops it after 10 minutes.</div> <div></div>

< OPERATION METHOD 2 (BASIC OPERATION: REPEATER) >



Mobile station A
(Transmission = VHF)
(Reception = UHF)

Base station
(Transmission = UHF)
(Reception = VHF)

Mobile station B
(Transmission = VHF)
(Reception = UHF)

Operation	Acceptance tone, acknowledgment tone, warning tone
<ul style="list-style-type: none">○ After pressing the start code, release PTT and wait for the acceptance tone.	<ul style="list-style-type: none">○ If the start code is correct → The repeater operates after the acceptance tone is heard.○ If the start code is incorrect → Nothing is returned. Reenter the correct start code.
<ul style="list-style-type: none">○ Talk alternately as the system is simplex during communication.	
<ul style="list-style-type: none">○ After the end code has been pressed, release PTT and wait for the end acknowledgment tone.	<ul style="list-style-type: none">○ The repeater automatically ends after the whistling end acknowledgment tone is heard.

Note: “Timer length change function” and “timer reset function” are not incorporated in this repeater.

<OPERATION METHOD 3 (APPLIED OPERATION: ABBREVIATED DIAL & REDIAL)>

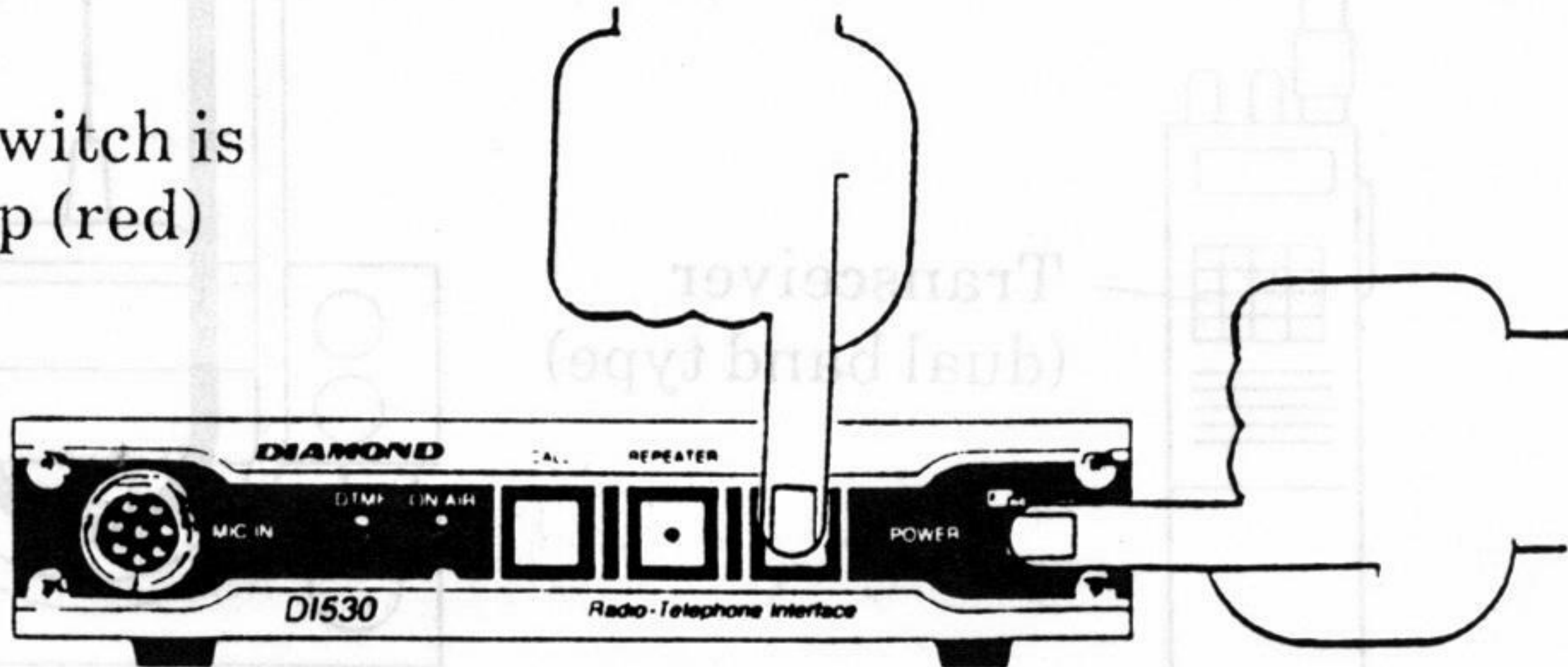
● ABBREVIATED DIAL

The DI 530 can register five subscribers from abbreviated numbers 1 to 5. Up to 15 digits can be registered as the telephone number.

Note:
The simplex equipment user should disconnect the connector from TRX (MIC) on the rear panel then perform REGISTER/CHANGE/DELETE operations. Not disconnecting the connector disables the REGISTER/CHANGE/DELETE operations.

<How to register>

1. Enter the ABBREVIATED DIAL mode.
Turn ON the power switch while the PHONE switch is held down. During operation, the ON-AIR lamp (red) lights indicating the REGISTER mode.



2. Transmit the DTMF signal from the mobile station transceiver as follows (Registration of only one subscriber can be made, and also in any order):

Key operation	Command description
[1] → (Telephone number a) → [A]	Register telephone number a in abbreviated number 1.
↓	
[2] → (Telephone number b) → [A]	Register telephone number b in abbreviated number 2.
↓	
[3] → (Telephone number c) → [A]	Register telephone number c in abbreviated number 3.
↓	
[4] → (Telephone number d) → [A]	Register telephone number d in abbreviated number 4.
↓	
[5] → (Telephone number e) → [A]	Register telephone number e in abbreviated number 5.

The PHONE lamp (green) lights during number entry and goes OFF every time a telephone number is registered. An incorrect number entry causes six discontinuous warning tones to sound; enter the correct number again (e.g., when 16 digits or more are entered, or when abbreviated number 6 is entered).

3. Turn OFF the POWER switch temporarily and then turn it ON to ensure normal operation.

<How to change>

The change procedure is identical to that for registration. If a new number is registered again, the old number is deleted and the new number is registered.

<How to delete>

1. Enter the ABBREVIATED DIAL mode.
Turn ON the POWER switch while the PHONE switch is held down. (The red ON-AIR lamp lights, indicating the REGISTER mode.)

2. Transmit the DTMF signal from the mobile station transceiver as follows:

(Example)	Key operation	Command description
	[1] → [D]	Delete the contents of abbreviated number 1.
	↓	
	[3] → [D]	Delete the contents of abbreviated number 3.

3. Turn OFF the POWER switch temporarily and then turn it ON to ensure normal operation.

< OPERATION METHOD 3 (APPLIED OPERATION: ABBREVIATED DIAL & REDIAL) >

<How to make an abbreviated dial call>

(Example) When you want to call abbreviated number 3

After telephone line has been connected, proceed as follows, instead of pressing telephone number.

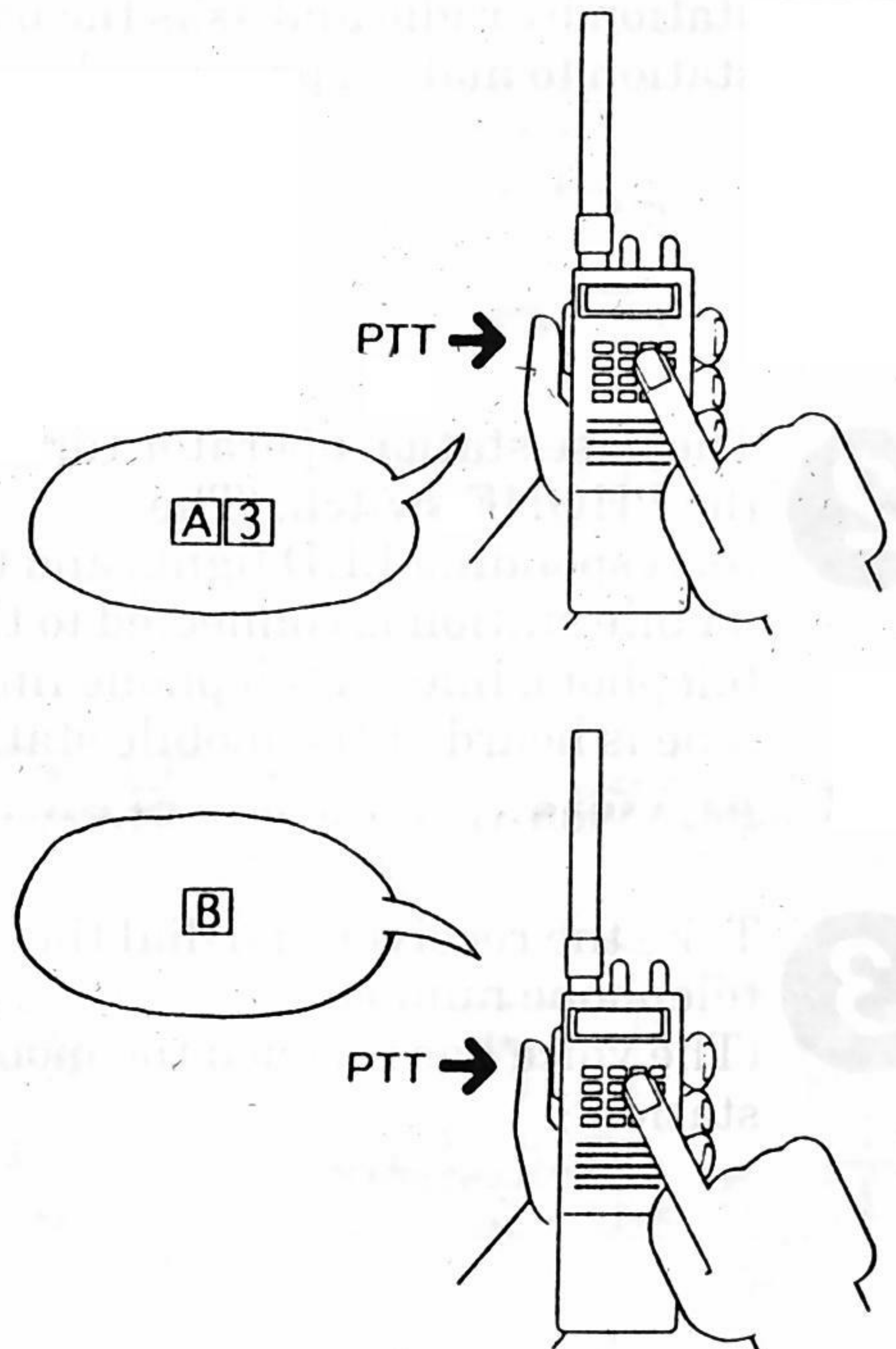
- To dial abbreviated number 1, press letter **A** and number **1**.
- To dial abbreviated number 2, press letter **A** and number **2**.
- To dial abbreviated number 3, press letter **A** and number **3**.
- To dial abbreviated number 4, press letter **A** and number **4**.
- To dial abbreviated number 5, press letter **A** and number **5**.

● REDIAL

The DI 530 memorizes the last telephone number called. When you want to call the last dialed subscriber, redialing is possible.

After telephone line is connected, press **B** button of DTMF key instead of a telephone number.

- * Turning OFF the DI 530 POWER switch deletes the last dialed number from the memory; therefore, the next redialing is impossible.



< OPERATION METHOD 4 (APPLIED OPERATION: MANUAL OPERATION AT BASE STATION) >

When the operator resides at the base station, the phone patch and repeater can be used by manual operation even if the DTMF equipment does not exist at the mobile station (A microphone and an external speaker should be used for the base station system).

● Functions for a base station

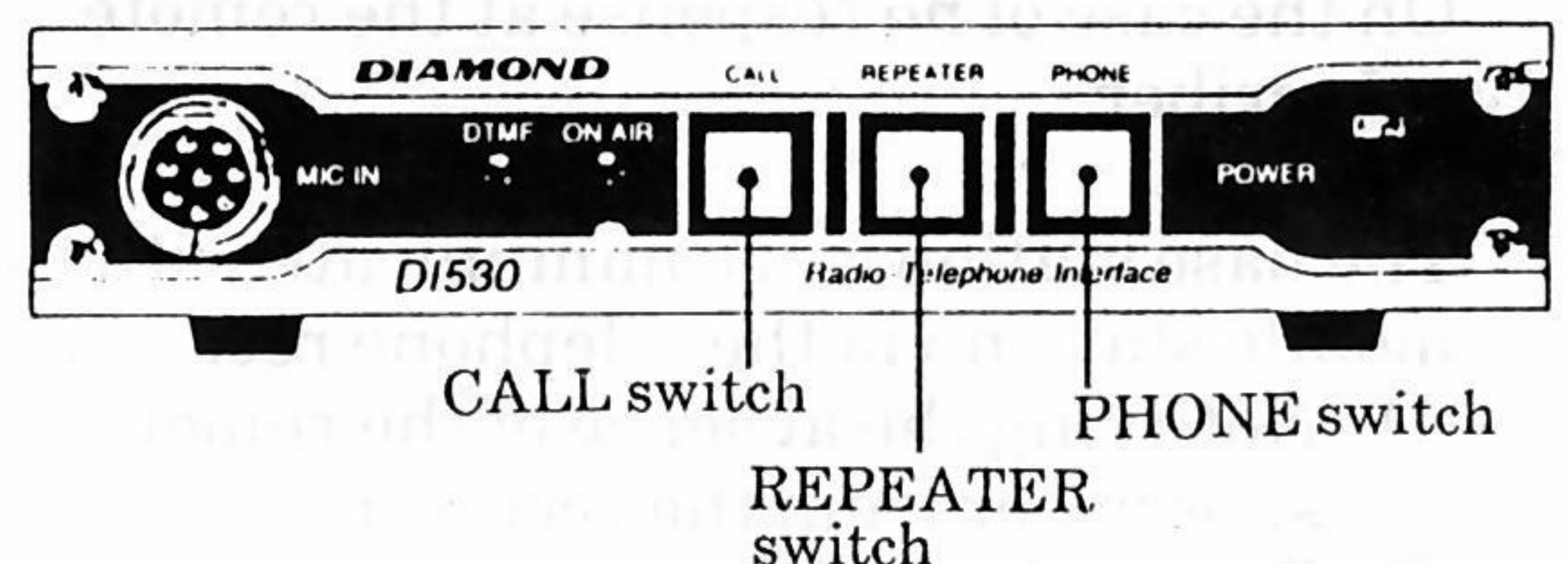
<Telephone> The telephone can be used in the same way as before.

<Radio communication> The radio equipment can also be used in the same way as before (by connecting the microphone and the speaker to the DI 530).

<CALL switch> Once the CALL switch is pressed, a melody is heard at the mobile station for 5 seconds. This tone is used for calling the mobile station.

<REPEATER switch> The REPEATER switch is used for manual operation of the repeater. Every time the button is pressed, the ON/OFF setting is repeated. During ON status, the corresponding LED lights and the repeater operates. During OFF status, the repeater stops operation. This button automatically switches back to OFF if it is left ON over 10 minutes. Although ON/OFF setting is also possible by remote control operation from the mobile station, it can be forcibly stopped by manual operation.

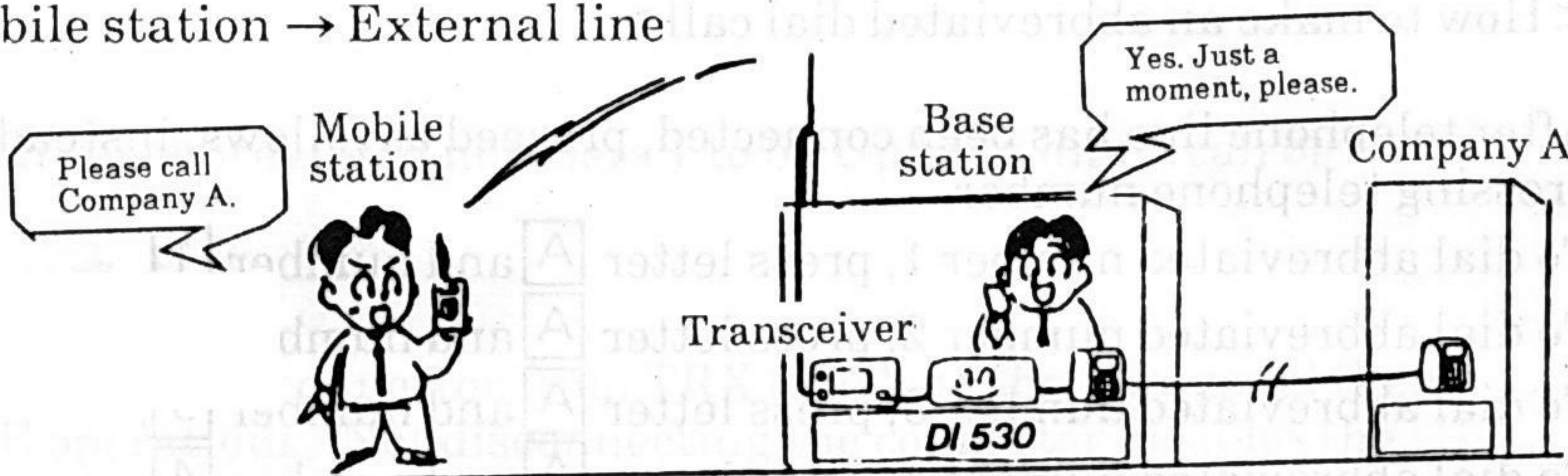
<PHONE switch> The PHONE switch is used for manual operation of the phone patch. Every time the button is pressed, the ON/OFF setting is repeated. During ON status, the corresponding LED lights and the phone patch operates. During OFF status, the phone patch stops operation. This button automatically switches back to OFF if it is left ON over 3 or 10 minutes (changeable by DIP switch 5). Although ON/OFF setting is also possible by remote control operation from the mobile station, it can be forcibly stopped by manual operation.



<OPERATION METHOD 4 (APPLIED OPERATION: MANUAL OPERATION AT BASE STATION)>

- Phone patch manual operation 1 = Mobile station → External line

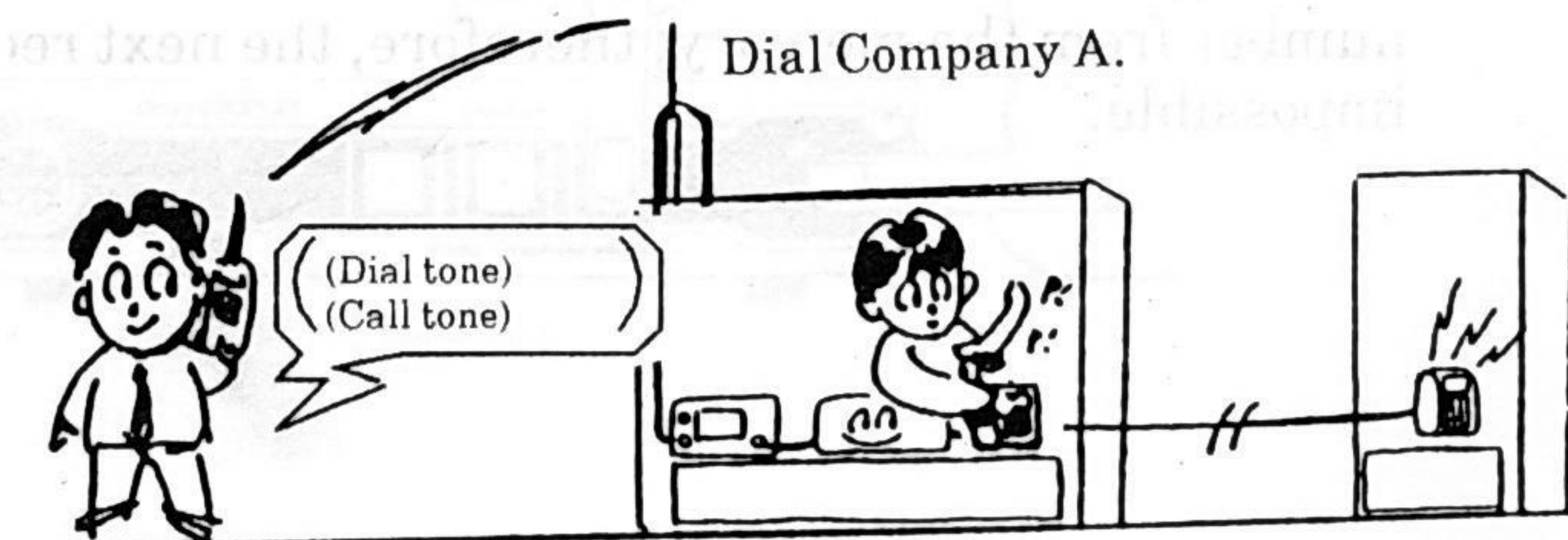
1 The mobile station calls the base station by radio and asks the base station to make a phone call.



2 The base station operator turns ON the PHONE switch. (The corresponding LED lights and the mobile station is connected to the telephone line. A telephone line tone is heard at the mobile station.)



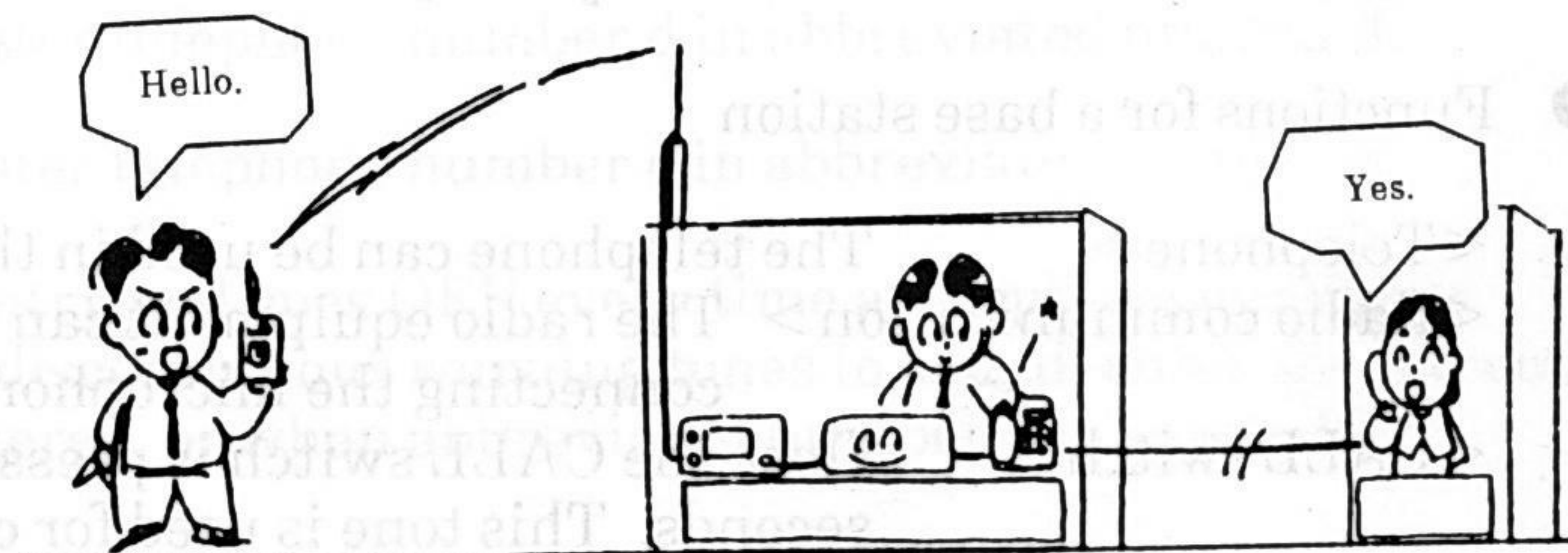
3 Take the receiver and dial the telephone number. (The voice has reached the mobile station.)



4 After the remote subscriber (external line side) has answered, please tell him or her that you are making an alternate call and using radio equipment, etc. (The voice has reached the mobile station.)

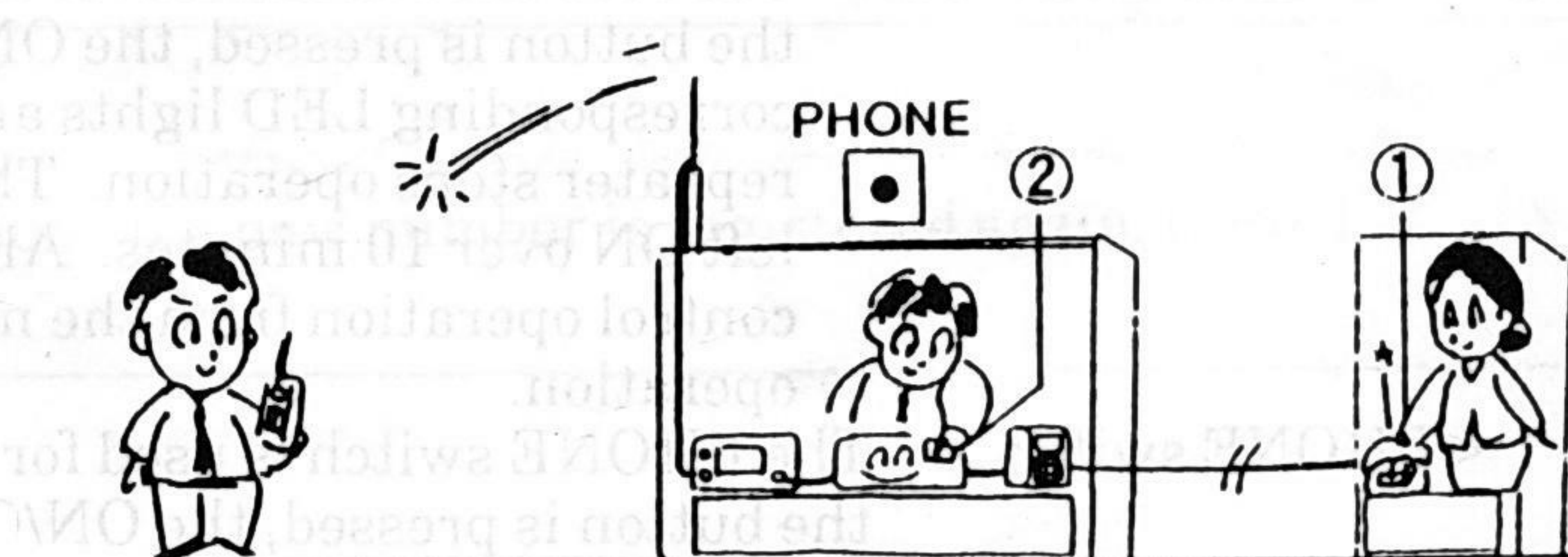


5 Return the receiver to its original place. Communication between the mobile station and the external line is possible.



6 Communication can be ended by one of the following:

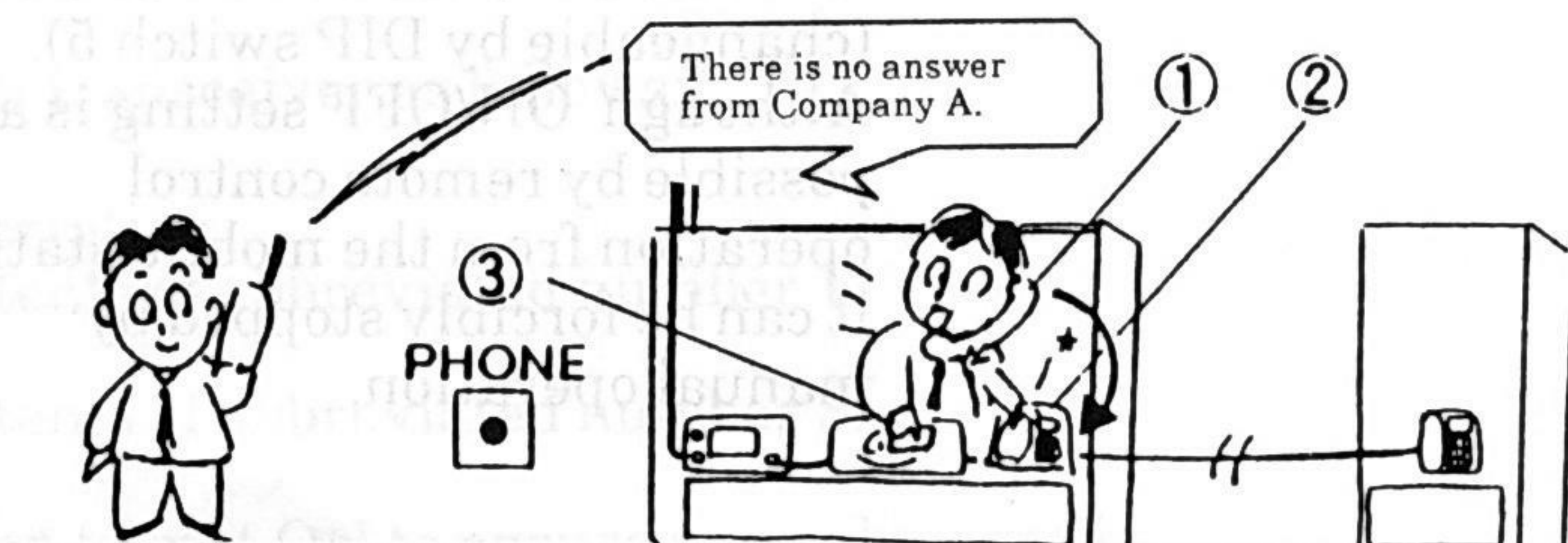
- ① Ask the external side to put back the receiver.
- ② Ask the base station to turn OFF the PHONE switch.
- ③ Communication automatically ends by the timer.



* On the case of no response at the remote subscriber

The base station can communicate with the mobile station via the telephone receiver.

- ① Notifying the absence of the remote subscriber from the receiver
- ② Putting back the receiver
- ③ Turning OFF the PHONE switch



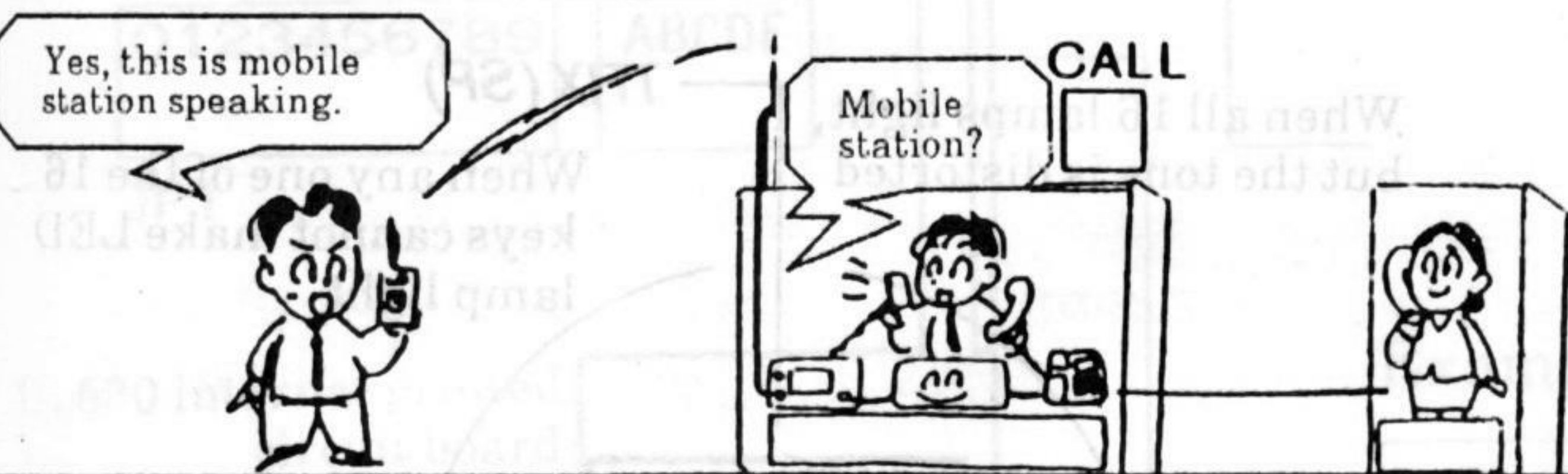
< OPERATION METHOD 4 (APPLIED OPERATION: MANUAL OPERATION AT BASE STATION) >

- Phone patch manual operation 2 = External line → Mobile station

1 When a phone call occurs from external line, answer it temporarily at the base station.



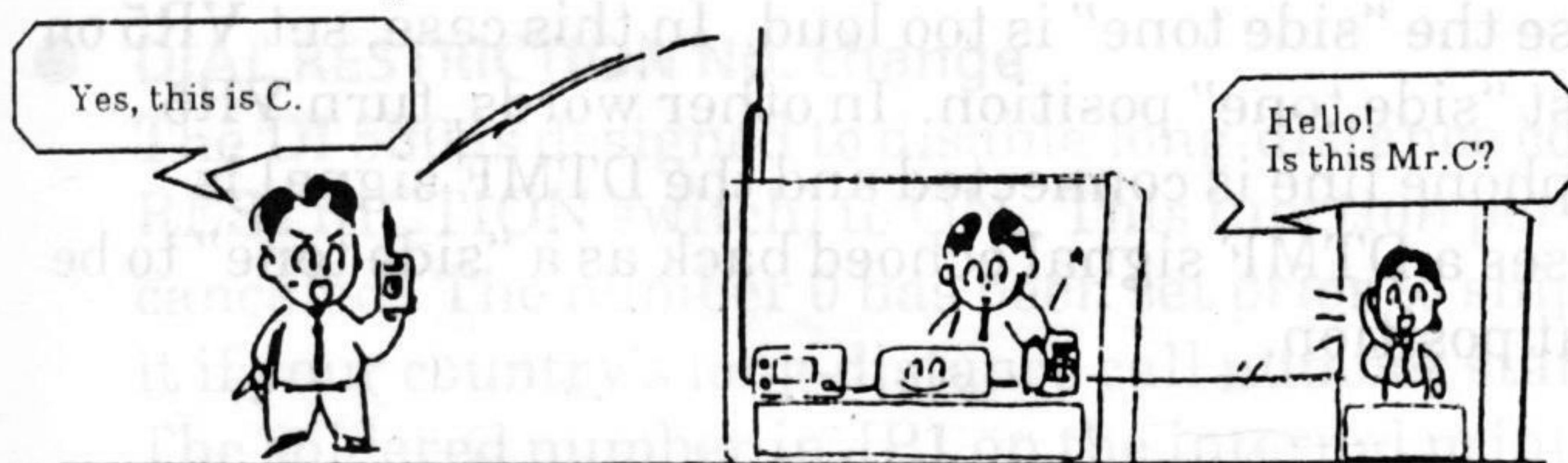
2 Call the mobile station using the radio equipment without putting back the receiver (or pressing the CALL switch causes the signal tone (melody) to be heard at the mobile station).



3 After the mobile station has answered, press the PHONE switch. The mobile station is then connected to the external line.



4 Put back the receiver. Communication between the mobile station and the external line is possible.



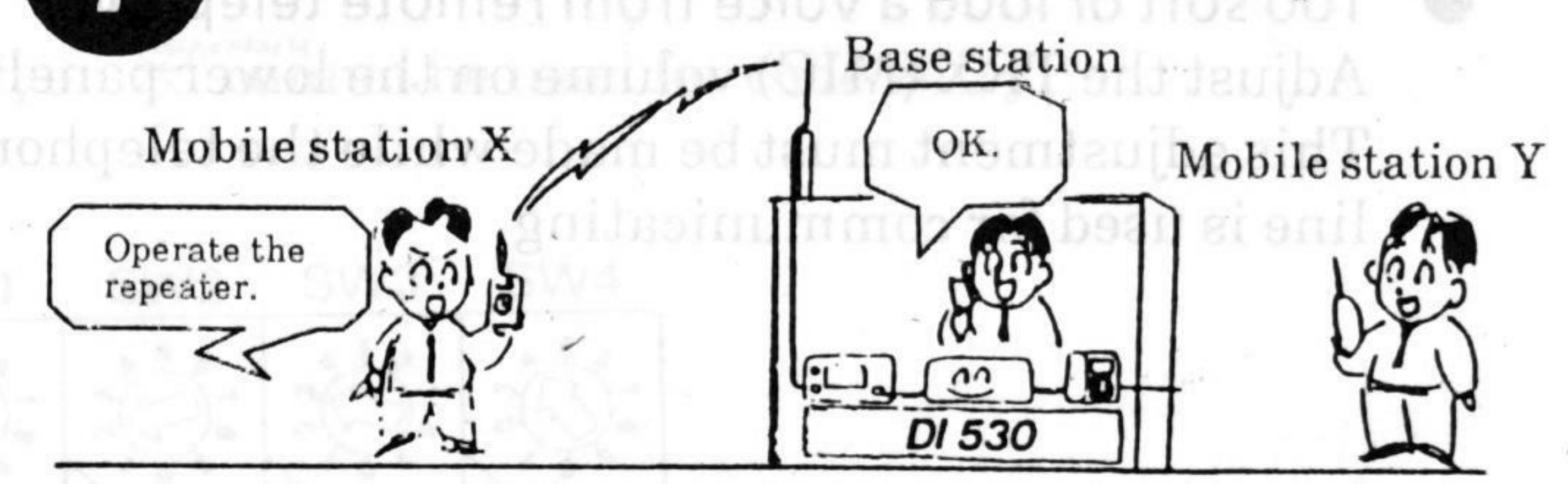
5 Communication can be ended by one of the following:

- ① Ask the external side to put back the receiver.
- ② Ask the base station to turn OFF the PHONE switch.
- ③ Communication automatically ends by the timer.

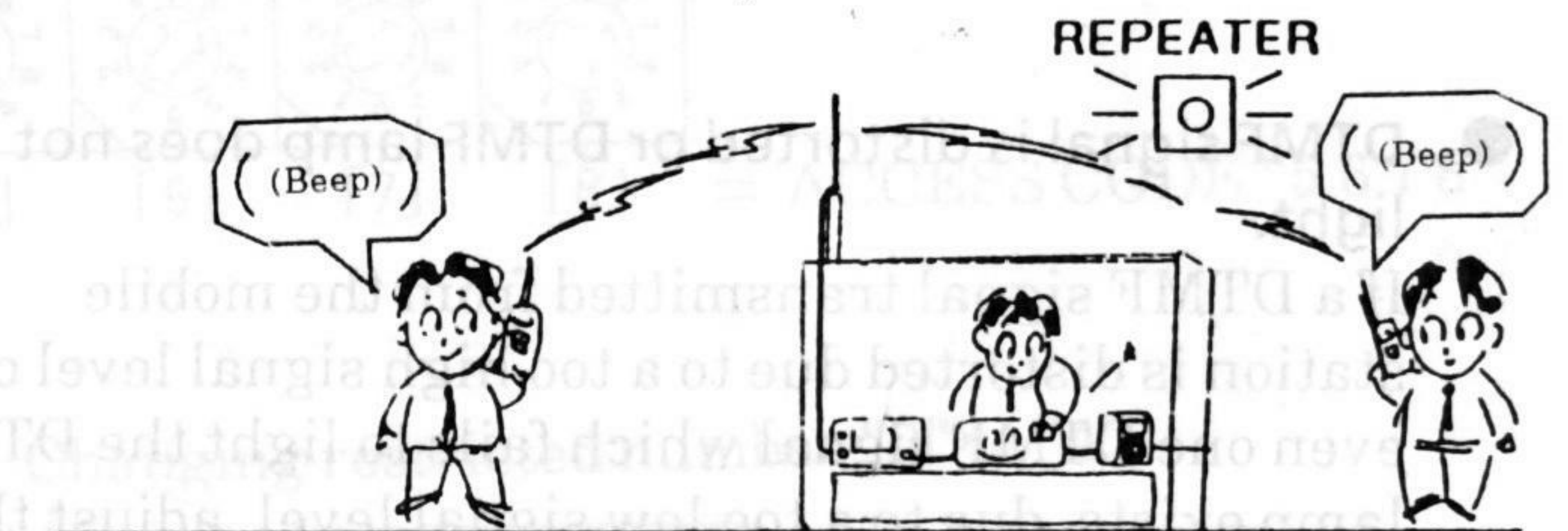


- Repeater manual operation

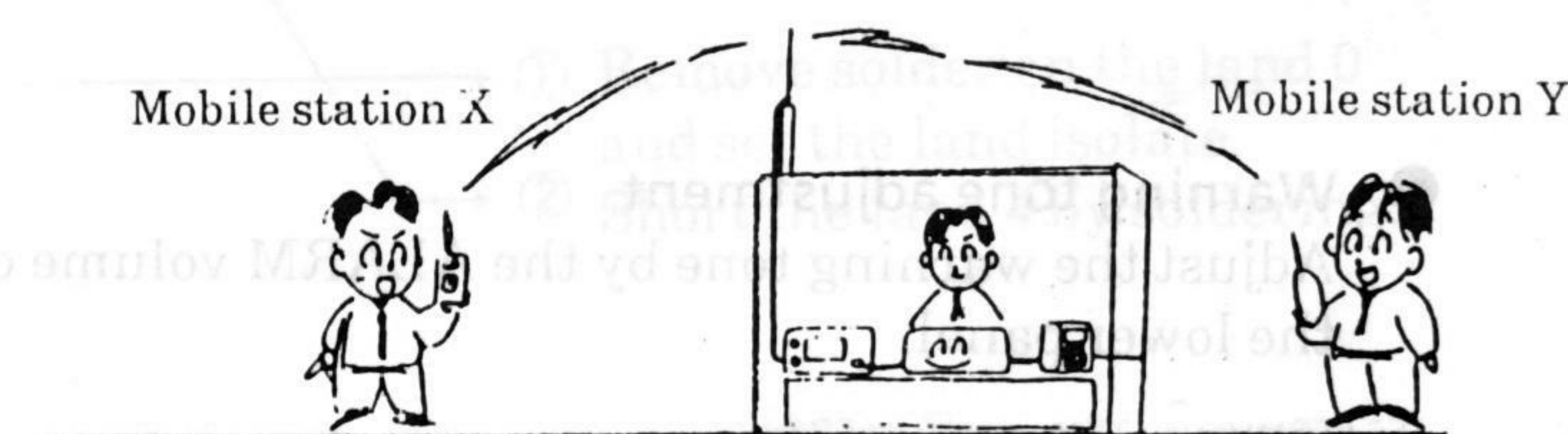
1 Mobile station X calls the base station and asks the base station to operate the repeater.



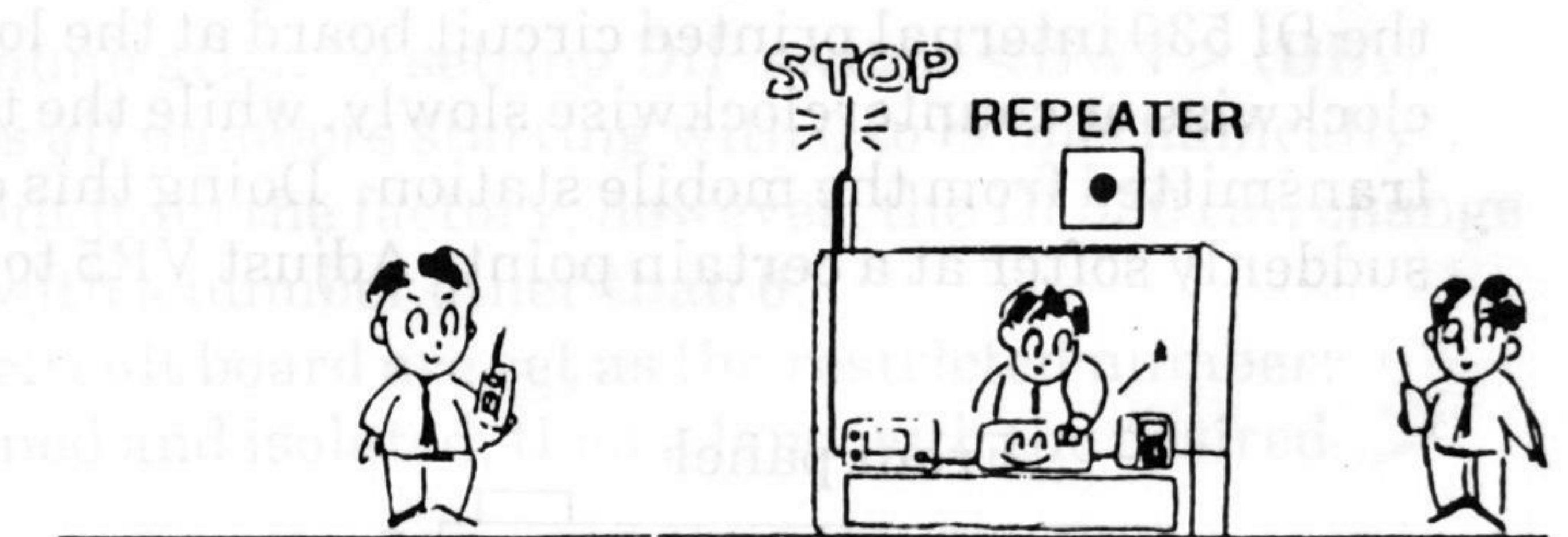
2 The base station presses the REPEATER switch. (The repeater operates, and the acknowledgment tone is heard at mobile stations X and Y.)



3 Communication between mobile stations X and Y is possible. (Communication can be monitored through the external speaker provided at the base station.)



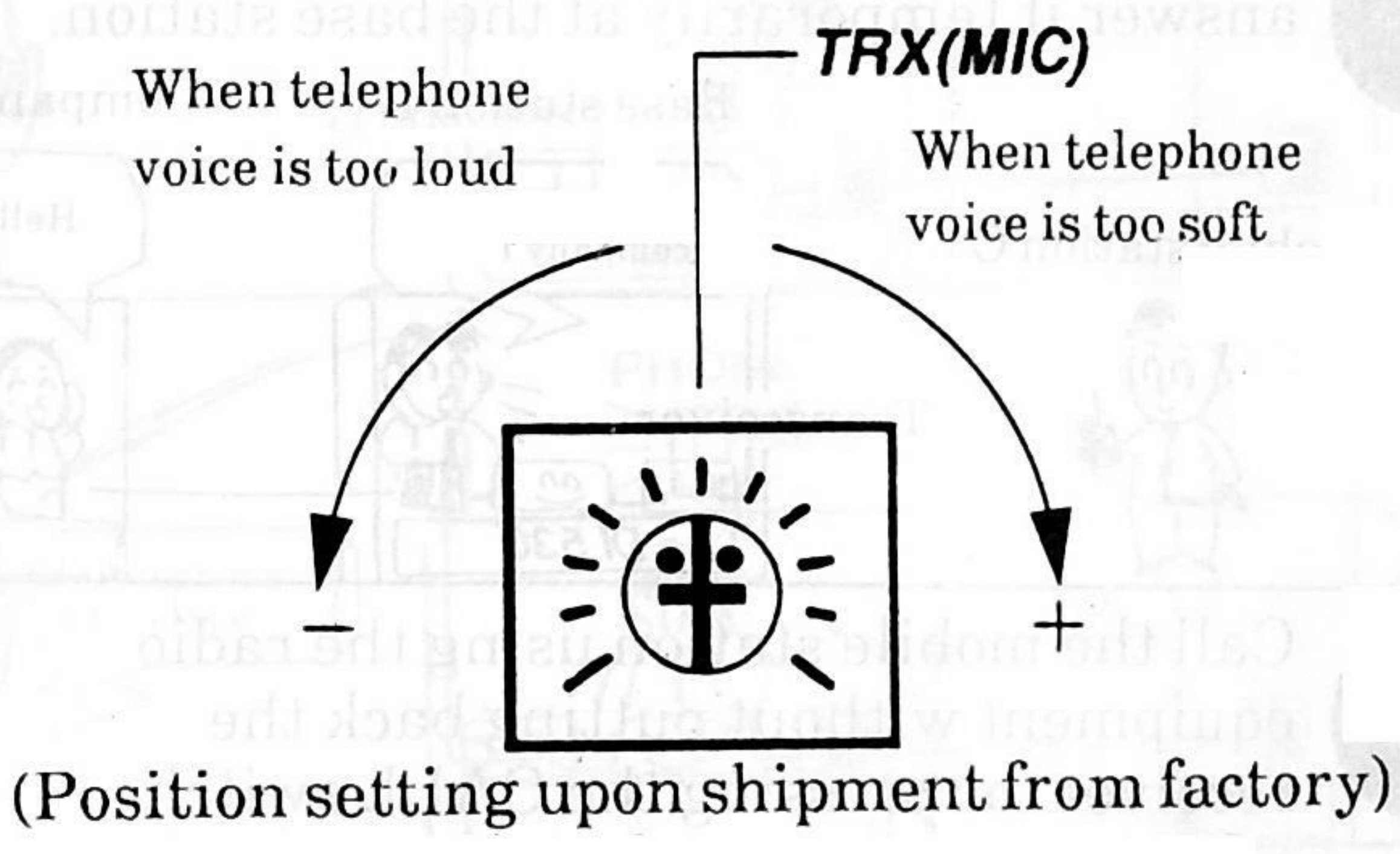
4 The repeater automatically stops after 10 minutes. It is also possible to stop manually in the midst of the communication by pressing the REPEATER switch.



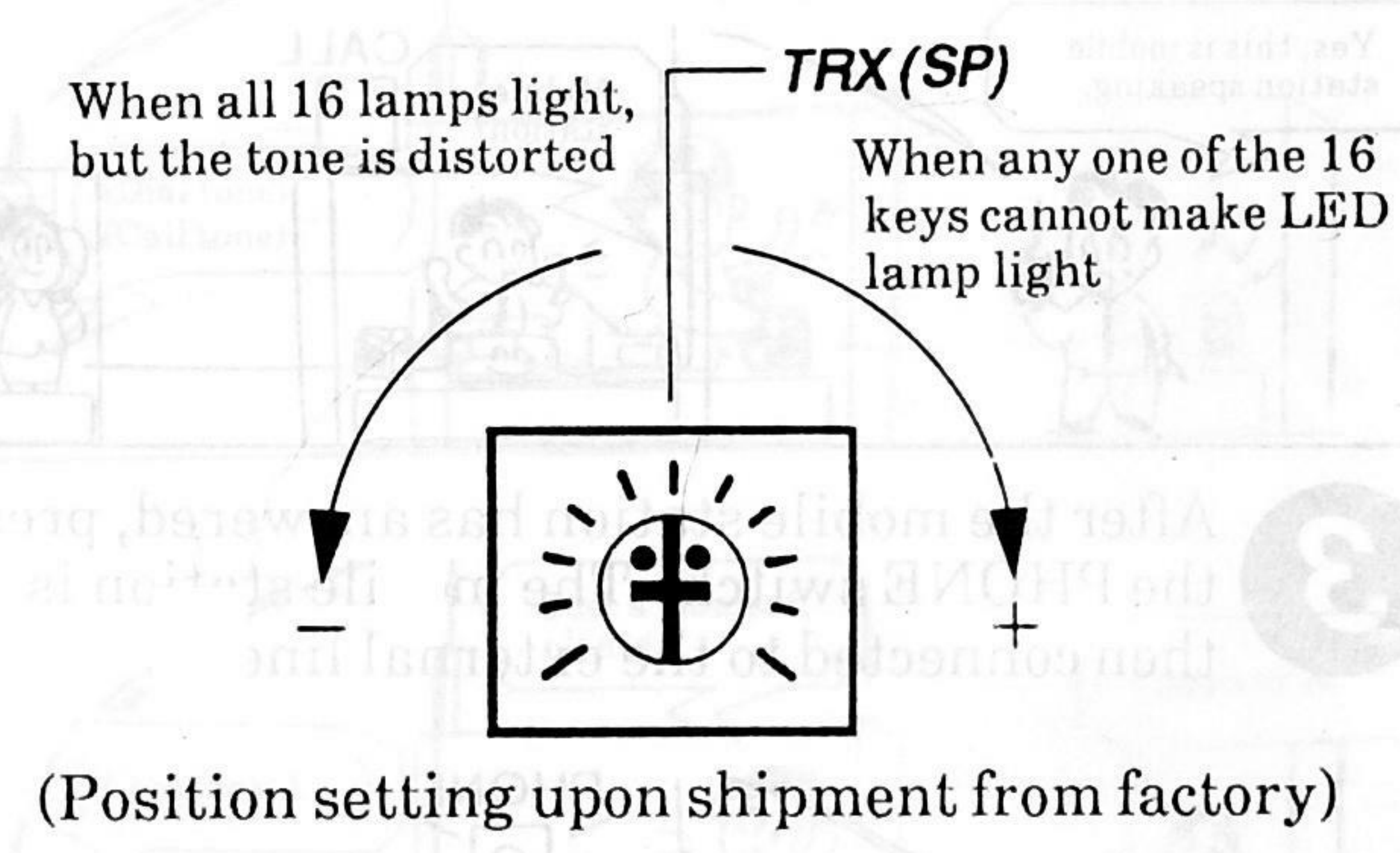
<ADDITIONAL ADJUSTMENT>

The DI 530 has been adjusted prior to shipment from the factory; however, slight adjustment may be required depending on the telephone line or transceiver type. If the tone quality is bad during operation, adjust the following:

- **Too soft or loud a voice from remote telephone**
Adjust the TRX (MIC) volume on the lower panel. This adjustment must be made while the telephone line is used for communicating.

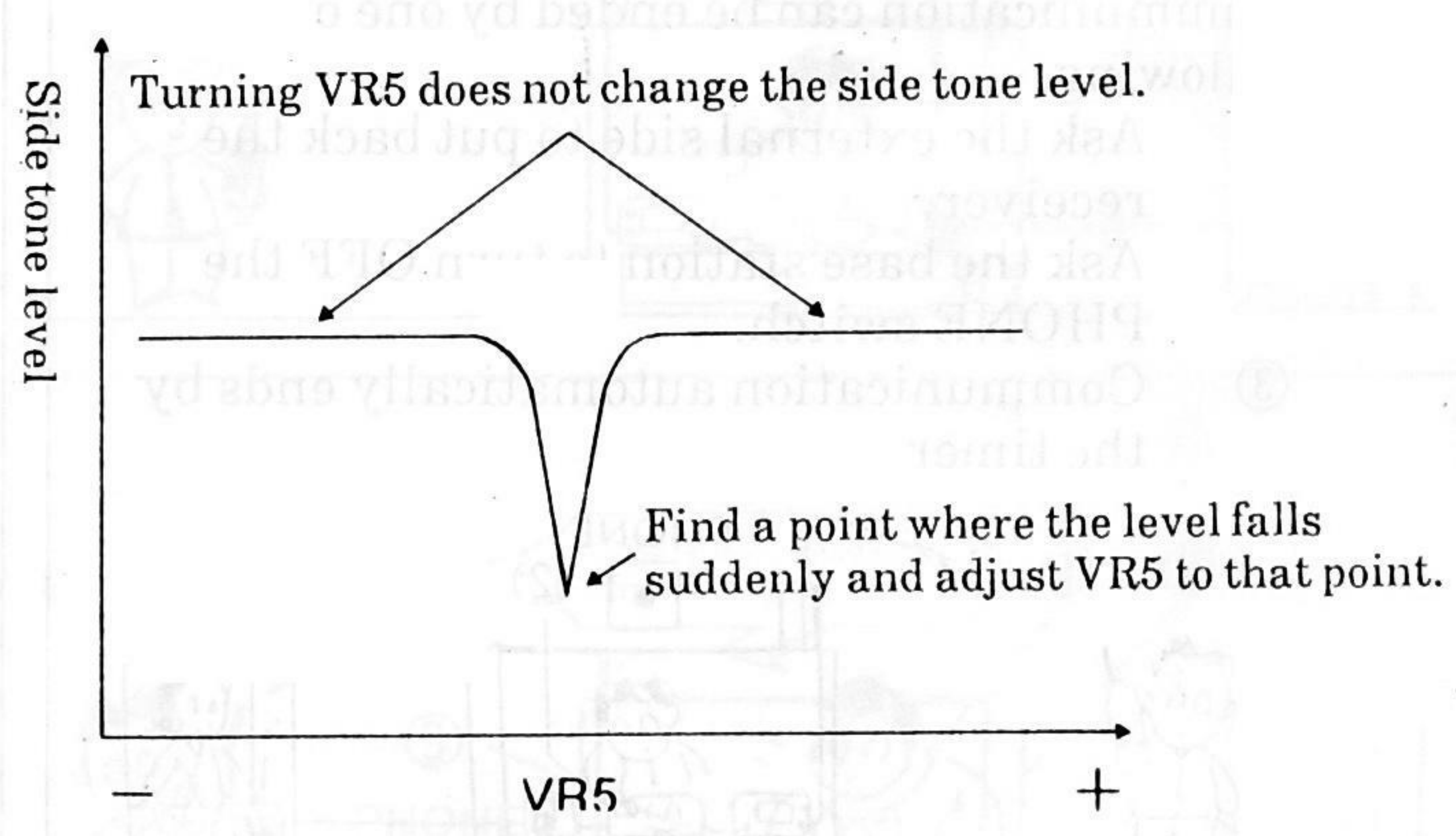
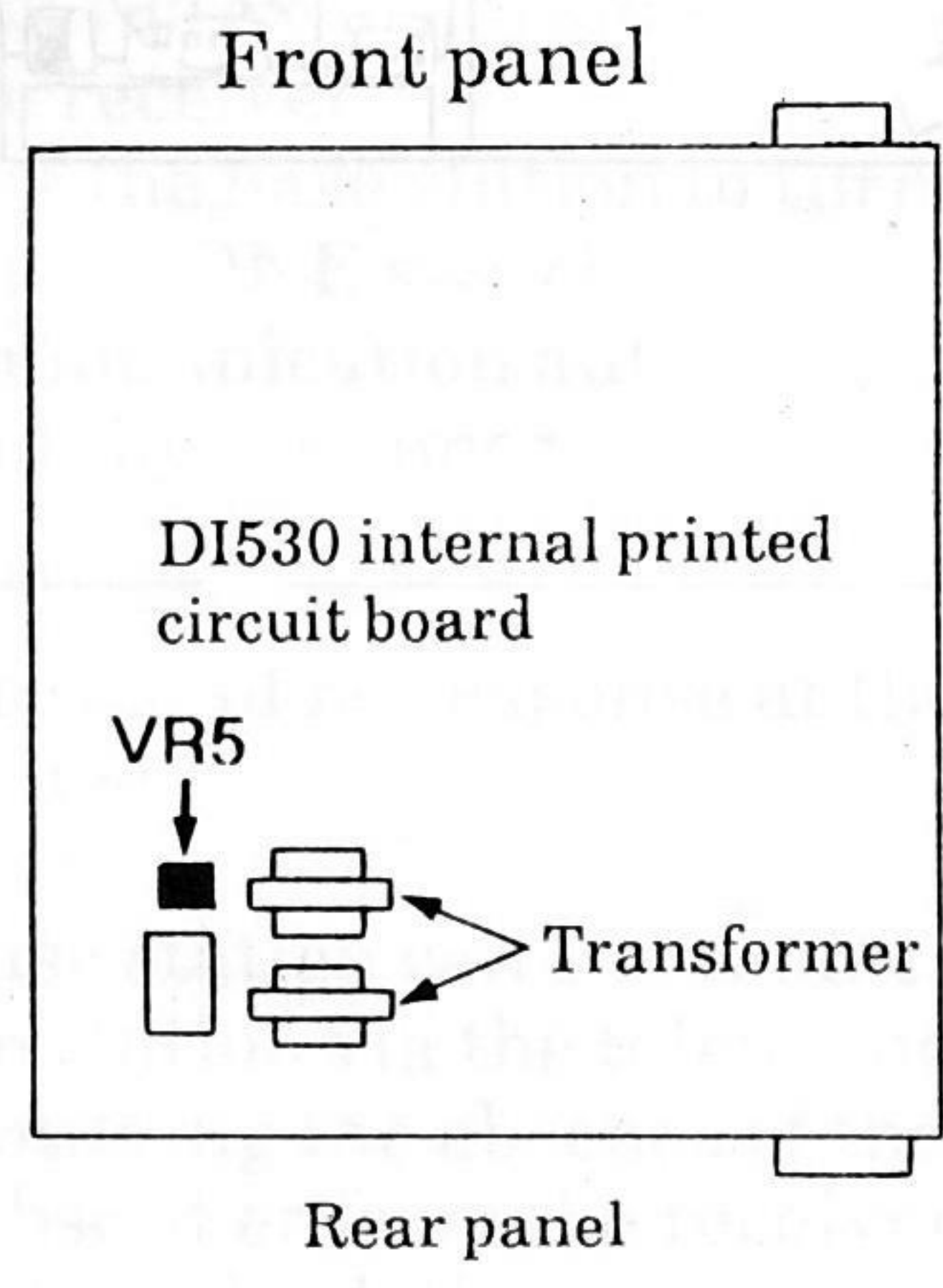


- **DTMF signal is distorted or DTMF lamp does not light.**
If a DTMF signal transmitted from the mobile station is distorted due to a too high signal level or, if even one DTMF signal which fails to light the DTMF lamp exists, due to a too low signal level, adjust the TRX (SP) volume on the lower panel. This adjustment must be made so that all 16 DTMF signal makes the DTMF lamp light and no signal distortion occurs.



- **Warning tone adjustment**
Adjust the warning tone by the ALARM volume on the lower panel.

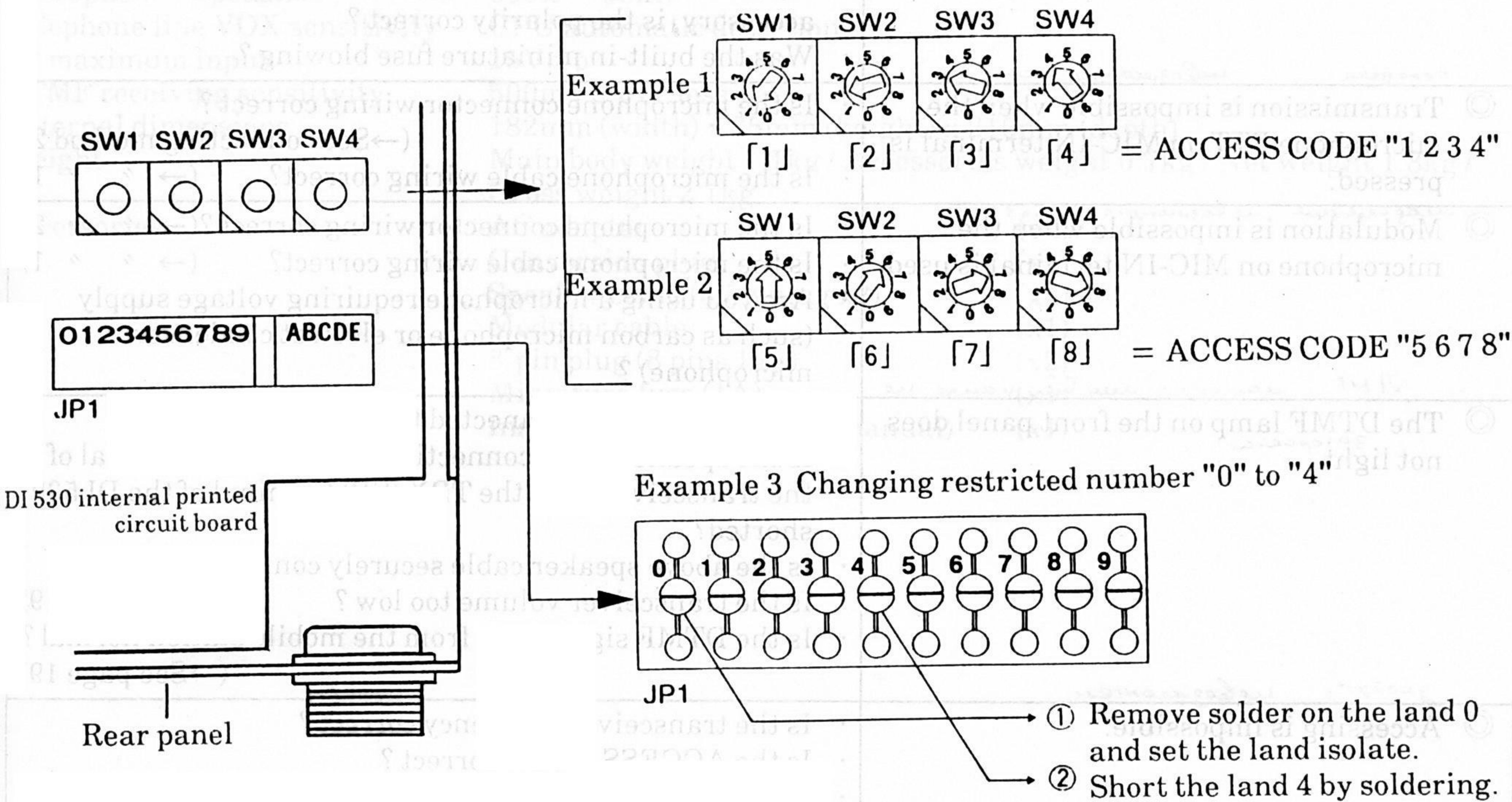
- **"Side tone" elimination (if voice echo is too loud)**
The voice from mobile station microphone returns slightly to the mobile station speaker like an echo, for structural reasons (this tone is called the "side tone"). However, some telephone lines may cause difficulty in hearing the voice at the mobile station side because the "side tone" is too loud. In this case, set VR5 on the DI 530 internal printed circuit board at the lowest "side tone" position. In other words, turn VR5 clockwise or counterclockwise slowly, while the telephone line is connected and the DTMF signal is transmitted from the mobile station. Doing this causes a DTMF signal echoed back as a "side tone" to be suddenly softer at a certain point. Adjust VR5 to that position.



● ACCESS CODE change

Set the rotary switches on the printed circuit board in the main unit to your desired number, using a bladed screwdriver. Examples 1 and 2 show that the ACCESS CODE are registered as “1234” and “5678”, respectively.

* Note that any letter or sign such as “A, B, C, D, #, or ✕” cannot be used for code entry.



● DIAL RESTRICTION No. change

The DI 530 is designed to disable long-distance communication by setting DIP switch <SW7> (DIAL RESTRICTION switch) to ON. This function permits all numbers starting with 0 to be mechanically canceled. The number 0 has been set prior to shipment from the factory; however, the DI 530 can change it if your country's long-distance call number starts with a number other than 0. The soldered number in JP1 on the internal printed circuit board are set as the restricted number; therefore, a land currently soldered as 0 must be opened and isolated, then a land with the desired number must be shorted as the Example 3.

<TROUBLESHOOTING>

◎ Power is not supplied.	<ul style="list-style-type: none">• Is the power plug securely inserted ?• Is the AC adapter switch adjusted to the operating power voltage ?• If you are using an AC adapter other than the standard accessory, is the polarity correct ?• Was the built-in miniature fuse blowing ?
◎ Transmission is impossible when the microphone PTT on MIC-IN terminal is pressed.	<ul style="list-style-type: none">• Is the microphone connector wiring correct ? (→See connecting method 2)• Is the microphone cable wiring correct? (→ " " 1)
◎ Modulation is impossible when the microphone on MIC-IN terminal is used.	<ul style="list-style-type: none">• Is the microphone connector wiring correct?(→ " " 2)• Is the microphone cable wiring correct? (→ " " 1)• Are you using a microphone requiring voltage supply (such as carbon microphone or electret condenser microphone) ?
◎ The DTMF lamp on the front panel does not light.	<ul style="list-style-type: none">• Is each connector connected to the correct position?• Is the speaker cable connecting the EXT.SP terminal of the transceiver with the TRX (SP) terminal of the DI 530 shorted?• Is the above speaker cable securely connected ?• Is the transceiver volume too low ? (→See page 19)• Is the DTMF signal sent from the mobile station normal ? (→See page 19)
◎ Accessing is impossible.	<ul style="list-style-type: none">• Is the transceiver frequency correct ?• Is the ACCESS CODE correct ?• Does the DTMF lamp on the main unit front panel light when the ACCESS CODE is transmitted ? (If it does not light, check above articles.)
◎ Dialing is impossible after accessing.	<ul style="list-style-type: none">• Does the PULSE/TONE switch (SW1) match your telephone line type?• Is the DTMF signal sent from the mobile station distorted or is the tone quality bad ? (→See page 19)
◎ Wrong number dialing	<ul style="list-style-type: none">• Is the signal intensity from the mobile station weak or is the noise level too high ?• Is the other signal mixed ?
◎ AUTO CUTOFF does not operate.	<ul style="list-style-type: none">• Was the initial setting performed properly ?
◎ Redialing is impossible.	<ul style="list-style-type: none">• The DI 530 forcibly cuts redialing if no dialing is performed after power has been supplied.
◎ The phone call is cut after an abbreviated number is called.	<ul style="list-style-type: none">• The DI 530 forcibly cuts any number which has not been registered as an abbreviated number.
◎ End operation is impossible in case of simplex operation.	<ul style="list-style-type: none">• Is the polarity switch (SW8) set to ON ? Set this switch to OFF for simplex operation.• Transmit the end code after checking the end of transmission from telephone side because of the alternate communication system.

Line	General-purpose telephone line (2 lines type), Tone/pulse switchable	
Communication system	Alternate communication (simplex) system/simultaneous communication (duplex) system switchable	
Access system	4-digit code access by the DTMF access code system	
Radio wave type	FM (F3) and AM (A3) with squelch	
Power voltage	12V DC ~ 16V DC (minus grounding and plus center)	
Current consumption	Below 300mA	
Operating temperature range	-10°C ~ +60°C	
Microphone impedance	600Ω ~ 50kΩ	
Telephone line VOX sensitivity	CPU automatic detection	
SP maximum input	15Vp-p	
DTMF receiving sensitivity	500mVp-p or less	
External dimensions	182mm (width) x 35mm (height) x 210mm (depth)	
Weight	Main body weight 1.1kg / Accessories weight 0.7kg / Net weight 1.8kg / Gross weight 2.1kg	
Accessories	AC adapter	(x1)
	Conversion plug	(x1)
	Speaker cable (3.5φ plug x2)	(x1)
	Modular cable	(x1)
	8-pin plug (8 pins 14φ)	(x2)
	Miniature fuse (1A)	(x1)
	Instruction manual (this manual)	(x1)

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