ICOM

OPERATING INSTRUCTIONS

VHF DIGITAL TRANSCEIVERS

IC-F5360D

UHF DIGITAL TRANSCEIVERS

IC-F6360D

INTRODUCTION

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Icom Inc.

FOREWORD

Thank you for purchasing this Icom transceiver.
The IDAS™ NXDN™ system operation is built into your IC-F5360D VHF DIGITAL TRANSCEIVERS and IC-F6360D UHF DIGITAL TRANSCEIVERS.

IMPORTANT

FIRST, CAREFULLY READ INSTRUCTIONS
① PRECAUTIONS and ② INSTRUCTIONS that are provided with the transceiver.

SAVE THIS OPERATING INSTRUCTIONS—
This operating instructions contain additional important operating instructions for the IC-F5360D VHF DIGITAL TRANSCEIVERS and IC-F6360D UHF DIGITAL TRANSCEIVERS.

NOTE

The display contents, and the hold down time period of some keys, may vary from the description in this manual, depending on the transceiver's presetting.

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Section 1 PANEL DESCRIPTION

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◇ Microphone 1-2
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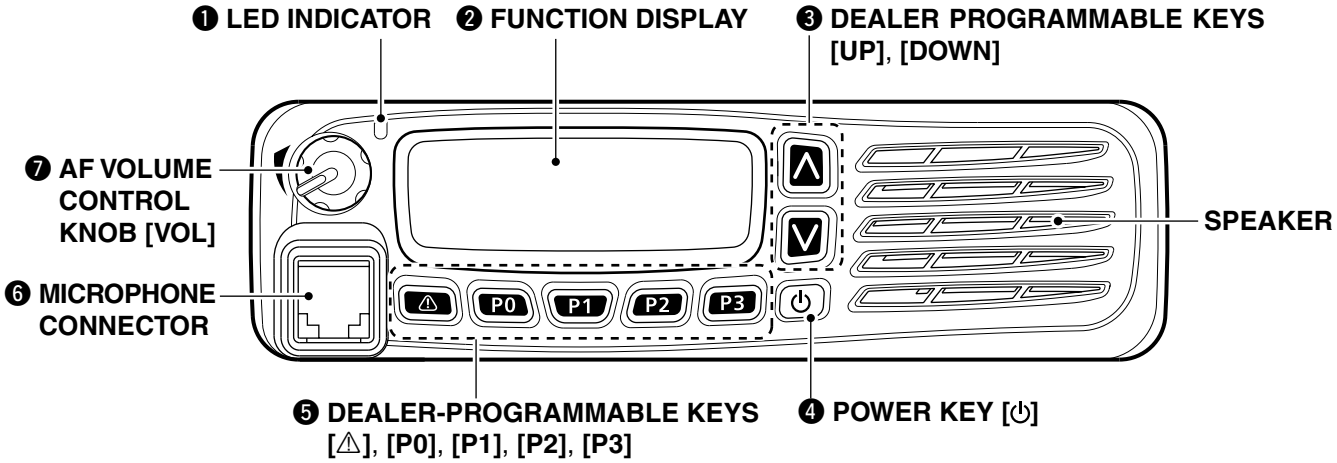
Front, top and side panels



❶ LED INDICATOR
- ➥ Lights red while transmitting.
- ➥ Lights green while receiving a signal, or when the squelch is open.

❷ FUNCTION DISPLAY (p. 1-3)
Displays a variety of information.

❸ DEALER-PROGRAMMABLE KEYS [UP] and [DOWN]
Desired functions can be preset.
(p. 1-5)

❹ POWER KEY [⏻]
Push and hold for 1 second to turn the power ON and OFF.

❺ DEALER-PROGRAMMABLE KEYS [⚠], [P0], [P1], [P2], [P3]
Desired functions can be preset.
(p. 1-5)

❻ MICROPHONE CONNECTOR
Connect the supplied or optional microphone.
NEVER connect non-specified microphones. The pin assignments may be different and the transceiver may be damaged.

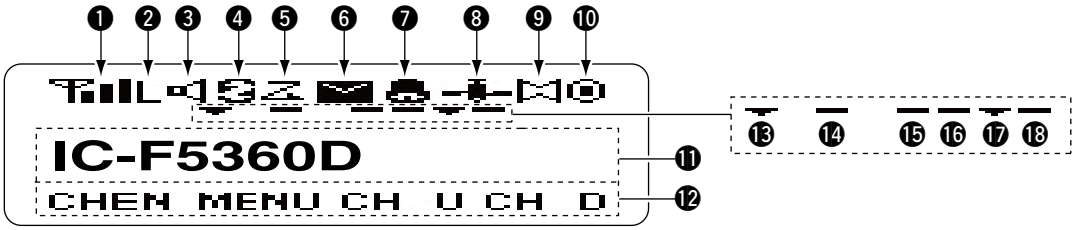
❼ AF VOLUME CONTROL KNOB [VOL]
Rotate to adjust the audio output level.

◇ Microphone

The supplied or optional microphone has a PTT switch and a hanger hook.

- The following functions are available when the microphone is on or off hook (depending on the presetting):
  - Pauses scan when it is off-hook.
  - Switches to the 'Inaudible' mode (mute mode) when it is on-hook.
  - Switches to the 'Audible' mode (unmute mode) when it is off-hook.

Function display



❶ SIGNAL STRENGTH INDICATOR
Displays the relative receive signal strength.

❷ LOW OUTPUT POWER ICON
Displayed when low output power is selected.

❸ AUDIBLE ICON
Displayed when the channel is in the 'audible' (unmute) mode.

❹ SCRAMBLER ICON
Displayed when the Voice Scrambler function is ON.

❺ SCAN ICON
Displayed while scanning.

❻ MESSAGE ICON
➥ Displayed when a received message (Short Data Message or Status Message) is stored in the memory stack.
➥ Blinks when an unread message is in the memory stack.

❼ BELL ICON
Blinks when a matched signal is received, depending on the presetting.

❽ GPS ICON
Displayed when position data is received.

❾ HORN ALERT ICON
Displayed when the Horn Alert function is ON.

❿ PUBLIC ADDRESS ICON
Displayed when the Public Address function is ON.

⓫ ALPHANUMERIC READOUT
Displays the operating channel number, channel name, menu contents, DTMF code, and so on.
• The display mode automatically switches between one line and two lines.

⓬ KEY ICONS
Display the assigned function of the [P0], [P1], [P2] and [P3] dealer assignable keys.

⓭ SCAN TARGET ZONE ICON
Displayed when the scan target zone is selected.

⓮ PA SPEAKER ICON
Displayed when the External speaker function is ON. When the External speaker function is ON, the PA speaker that is connected to the D-Sub 15-pin will activate.

⓯ AUX A ICON
Displayed when the AUX A port is activate.

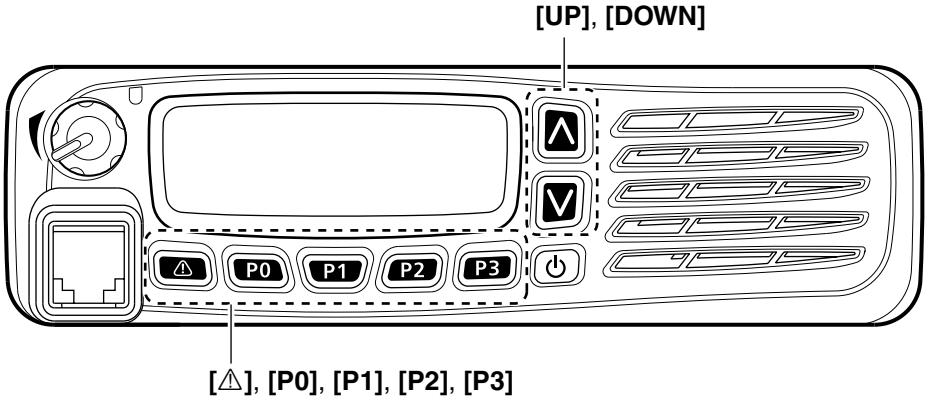
⓰ AUX B ICON
Displayed when the AUX B port is activate.

⓱ SCAN TARGET CHANNEL ICON
Displayed when the scan target channel is selected.

⓲ OPERATOR SELECTABLE TONE ICON
Displayed when the OST (Operator Selectable Tone) function is ON.

Programmable function keys

The programmable key functions can be assigned to the following keys:
[⚠], [P0], [P1], [P2], [P3], [UP], [DOWN] and to the keypad keys of the optional DTMF microphone.



Programmable function keys (Continued)

• For [⚠], [P0], [P1], [P2], [P3], [UP] and [DOWN]
The key names that are in quotation marks in the following explanations are displayed on the Function Display, and indicate the assigned function of [P0], [P1], [P2] and [P3].

None
No function

Autodial "ADAL" (p. 3-2)
Opens the DTMF Autodial code selection screen.

Autodial Programming "ADPG" (p. 3-3)
Enters the DTMF code programming mode.

AUX A "AUXA"
Turns the AUX A port ON or OFF.

AUX B "AUXB"
Turns the AUX B port ON or OFF.

Broadcast "BCST"
Toggles between Broadcast Call and Conference Call. This key can also be used to make a Broadcast Group Call.

Call 1 "CAL1"
Sends the NXDN Status, NXDN Individual or the DTMF code that is set to Call 1.

Call 2 "CAL2"
Sends the NXDN Status, NXDN Individual or the DTMF code that is set to Call 2.

Call 3 "CAL3"
Sends the NXDN Status, NXDN Individual or the DTMF code that is set to Call 3.

Call 4 "CAL4"
Sends the NXDN Status, NXDN Individual or the DTMF code that is set to Call 4.

Call 5 "CAL5"
Sends the NXDN Status, NXDN Individual or the DTMF code that is set to Call 5.

Call 6 "CAL6"
Sends the NXDN Status, NXDN Individual or the DTMF code that is set to Call 6.

CH/GID Down "CH D"
Selects the next or previous channel or GID number.

CH/GID Recall "CHRC"
❍ In the Analog mode or NXDN Conventional system
Selects the last used channel during a scan.

❍ In the NXDN Trunking system
Selects the last called GID during a scan.

CH/GID Up "CH U"
Selects the next or previous channel or GID number.

Channel Entry "CHEN" (p. 2-4)
Enters the Channel Entry mode.

CW Message "CWMS"
Sends a preset CW Message on a 'very narrow' channel.
You can use this function when a CW message is preset.

Direct CH/GID 1 "DR 1" (pp. 2-4, 7-3)
Selects the channel or GID that is set to Direct CH/GID 1.

Direct CH/GID 2 "DR 2" (pp. 2-4, 7-3)
Selects the channel or GID that is set to the Direct CH/GID 2.

Direct CH/GID 3 "DR 3" (pp. 2-4, 7-3)
Selects the channel or GID that is set to Direct CH/GID 3.

Direct CH/GID 4 "DR 4" (pp. 2-4, 7-3)
Selects the channel or GID that is set to Direct CH/GID 4.

Direct CH/GID 5 "DR 5" (pp. 2-4, 7-3)
Selects the channel or GID that is set to Direct CH/GID 5.

Direct CH/GID 1 Select
This function is for the hold down operation of [Direct CH/GID 1].
Sets the selected channel or GID to Direct CH/GID 1.

Programmable function keys

• For [⚠], [P0], [P1], [P2], [P3], [UP] and [DOWN] (Continued)

Direct CH/GID 2 Select
This function is for the hold down operation of [Direct CH/GID 2].
Sets the selected channel or GID to Direct CH/GID 2.

Direct CH/GID 3 Select
This function is for the hold down operation of [Direct CH/GID 3].
Sets the selected channel or GID to Direct CH/GID 3.

Direct CH/GID 4 Select
This function is for the hold down operation of [Direct CH/GID 4].
Sets the selected channel or GID to Direct CH/GID 4.

Direct CH/GID 5 Select
This function is for the hold down operation of [Direct CH/GID 5].
Sets the selected channel or GID to Direct CH/GID 5.

Display Format "DISP"
❍ **In the Analog mode or NXDN Conventional system**
Toggles the display format between the channel name and the zone and channel number.

❍ **In the NXDN Trunking system**
Toggles the display format between the GID name and the GID number.

Emergency (p. 3-5)
This function can be assigned only for [⚠].
Enters the Emergency mode.

External Speaker "EXSP"
Turns the External speaker function ON or OFF.
When the External speaker function is ON, the PA speaker that is connected to the D-Sub 15-pin will be activated.

Fixed Volume "FIXV"
Toggles the tone level between "High" and "Low," or turns OFF the tone.

Forced Search "FORS"
Displays the site number of the current site for 2 seconds.

Forced Search Function
This function is for the hold down operation of [Forced Search].
Activates a Control Channel Hunt.

Function "FUNC"
Activates a secondary function that is assigned to a key.
This function cannot be assigned as a secondary function.

GPS Position Display "GPSP"
Enters the GPS Position Display mode.
In the GPS Position Display mode, you can check your latitude and longitude position.

Group ID/Channel Entry "GIDE" (pp. 2-4, 7-3)
❍ **In the Analog mode or NXDN Conventional system**
Enters the Channel Entry mode.

❍ **In the NXDN Trunking system**
Enters the GID Entry mode.

Group (NXDN) "GRP" (pp. 7-4, 8-3)
❍ **In the NXDN Conventional system or the NXDN Trunking system**
Enters the Group Call mode.
In the NXDN Conventional system, this function is used for Group Call by recalling GID list.
In the NXDN Trunking system, the GID List is displayed, but the transceiver cannot make a call.

Group + SDM (NXDN) "GSMS"
❍ **In the NXDN Conventional system or the NXDN Trunking system**
Enters the Group Call mode.
If you push [P1](ENT) while in the Group Call mode, the transceiver enters the Short Data Message Entry mode. See page 7-4 or 8-3 for details.

Group + Status (NXDN) "GSTA"
❍ **In the NXDN Conventional system or the NXDN Trunking system**
Enters the Group Call mode.
If you push [P1](ENT) while in the Group Call mode, the transceiver enters the Status Message Entry mode. See page 7-4 or 8-3 for details.

High Transmit Power "HIPW"
❍ **In the NXDN Trunking system**
➥ Toggles the transmit power level between "High" and "Auto," if "Auto" is set as the default.
➥ Toggles the transmit power level between "High" and "Low," if "Low" is set as the default.

Programmable function keys

• For [⚠], [P0], [P1], [P2], [P3], [UP] and [DOWN] (Continued)

Home CH/GID "HOME" (pp. 2-4, 7-3)
❍ **In the Analog mode or NXDN Conventional system**
Selects the Home Channel.

❍ **In the NXDN Trunking system**
Selects the Home GID.

Home CH/GID Select (pp. 2-4, 7-3)
This function is for the hold down operation of [Home CH/GID].
❍ **In the Analog mode or NXDN Conventional system**
Sets the selected channel as the Home Channel.

❍ **In the NXDN Trunking system**
Sets the selected GID as the Home GID.

Horn Alert "HORN"
Turns the Horn Alert function ON or OFF.
When this function is ON, the horn alert port will be activated for a preset time period after receiving a call.

Individual (NXDN) "INDV" (pp. 7-5, 7-6, 8-4)
❍ **In the NXDN Conventional system or the NXDN Trunking system**
Enters the Individual Call mode.

Individual + SDM (NXDN) "ISMS"
❍ **In the NXDN Conventional system or the NXDN Trunking system**
Enters the Individual Call mode.
If you push [P1](ENT) while in the Individual Call mode, the transceiver enters the Short Data Message Entry mode. See page 7-5 or 8-4 for details.

Individual + Status (NXDN) "ISTA"
❍ **In the NXDN Conventional system or the NXDN Trunking system**
Enters the Individual Call mode.
If you push [P1](ENT) while in the Individual Call mode, the transceiver enters the Status Message Entry mode. See page 7-5 or 8-4 for details.

LCD Brightness "BRIT"
Selects the brightness of the function display and keys backlight. Select High, Low or OFF to meet your needs. The function display and keys can be backlit for better visibility under low light conditions.

Lone Worker "LONE" (p. 3-5)
Turns the Lone Worker function ON or OFF.

Low Transmit Power "LOPW"
❍ **In the Analog mode or NXDN Conventional system**
Toggles the transmit power between "High" and "Low," if "High" is set as the default.

❍ **In the NXDN Trunking system**
➥ Toggles the transmit power level between "Low" and "Auto," if "Auto" is set as the default.
➥ Toggles the transmit power level between "High" and "Low," if "High" is set as the default.

Maintenance "MANT"
Enters the Maintenance Display mode.

Menu "MENU" (p. 5-2)
Displays the Menu screen.

Monitor "MONI"
❍ **In the Analog mode**
Turns the Monitor ON or OFF.
When the Monitor is ON, the transceiver releases the CTCSS or DTCS mute.

❍ **In the NXDN Conventional system**
Turns the Monitor ON or OFF.
When the Monitor is ON, the transceiver releases the RAN code mute.

Monitor Momentary "MONI"
❍ **In the Analog mode**
While holding down, the transceiver releases the CTCSS mute.

❍ **In the NXDN Conventional system**
While holding down, the transceiver releases the RAN code mute.

Operator Selectable Tone "OST"
Turns the OST (Operator Selectable Tone) mode ON or OFF.
When the OST mode is ON, the selected tone in the OST list is enabled.

OST List
This function is for the hold down operation of [Operator Selectable Tone].
Displays the OST (Operator Selectable Tone) list.

Priority-channel Select "PRIO"
Enters the Priority channel Select mode for a Priority scan.

Programmable function keys

• For [⚠], [P0], [P1], [P2], [P3], [UP] and [DOWN] (Continued)

Public Address "PUBA"
Turns the Public Address function ON or OFF.
When this function is ON, you can make announcement through a PA speaker.
• Transmitting is disabled while in the PA mode.

Scan "SCAN"
Starts or stops a scan.

Scan Delete/Add "SCNE"
Sets or cancels the selected channel or GID as a scan target.

Scrambler/Encryption "SCRM"
❍ **In the Analog mode**
Turns the Scrambler function ON or OFF.

❍ **In the NXDN Conventional system or the NXDN Trunking system**
Turns the Encryption function ON or OFF.

Scrambler/Encryption Code
This function is for the hold down operation of [Scrambler/Encryption].
❍ **In the Analog mode**
Enters the Scrambler Code mode.

❍ **In the NXDN Conventional system or the NXDN Trunking system**
Enters the Encryption Code mode.

SDM (NXDN) "SMSG"
❍ **In the NXDN Conventional system or the NXDN Trunking system**
Directly enters the Short Message mode.
Push [PTT] to send a Short Message to a Base ID.

Send the GPS data "GPSD"
❍ **In the NXDN Conventional system or the NXDN Trunking system**
Sends the position data that is received from the GPS receiver to a Base station.

Site Down "SIDN"
❍ **In the NXDN Trunking system**
Selects the previous site number.
If the site name is not entered, [Site Down] does not function.

Site Lock "SILK"
❍ **In the NXDN Trunking system**
Turns the Site Lock function ON or OFF.

Site Select
This function is for the hold down operation of [Site Lock].
❍ **In the NXDN Trunking system**
Enters the Site Select mode.
If the site name is not entered, [Site Select] does not function.

Site Up "SITU"
❍ **In the NXDN Trunking system**
Selects the next site number.
If the site name is not entered, [Site Up] does not function.

Squelch Level "SQLL"
❍ **In the Analog mode**
Enters the Squelch Level Adjustment mode.

Squelch Off "SQLO"
❍ **In the Analog mode or NXDN Conventional system**
Opens the squelch, and releases the mute.

Squelch Off Momentary "SQLM"
❍ **In the Analog mode or NXDN Conventional system**
While holding down, opens the squelch, and releases the mute.

Stack "STAK" (p. 6-3)
Enters the Memory Stack mode.

Status (NXDN) "STAT"
Enters the Status Message mode.
Push [PTT] to send a Status to a Base ID.

Talk Around "TLKA"
Turns the Talk around function ON or OFF.
• The Talk around function equalizes the transmit frequency to the receive frequency for transceiver-to-transceiver communication.

Transceiver Password "PSWD" (p. 2-2)
Enters the password entry mode.
The transceiver cannot be used until you enter a correct password.

Zone Delete/Add "ZODE"
Sets or cancels the selected zone as a scan target.

Zone Down "ZNDN"
Selects the previous zone number.

Zone Up "ZNUP"
Selects the next zone number.

Programmable function keys (Continued)

• For Keypad Operation (Microphone)

Channel Entry (p. 2-4)
Enters the channel number.

Group ID/Channel Entry (pp. 2-4, 7-3)
❍ **In the Analog mode**
❍ **In the NXDN Conventional system**
Enters the channel number.

❍ **In the NXDN Trunking system**
Enters the GID.

OST (Operator Selectable Tone)
➥ Hold down [1] to [9] to select a tone that is preset in the OST list.
➥ Hold down [0] to turn OFF the OST tone.
➥ Hold down [∗] to turn OFF the OST mode.
• When the OST mode is OFF, the selected channel's preset tone is used.
➥ Hold down [#], and then push the [0] to [9] digit keys to enter the OST List number 1 to 40 to select a preset tone.

Autodial
Selects the DTMF Code that is preset in the Autodial List.
After selecting, push [PTT] to send.

Keypad Auto PTT
Transmits DTMF tones.
This function is enabled only when Manual Dialing is enabled.

Status (NXDN)
❍ **In the NXDN Conventional system**
❍ **In the NXDN Trunking system**
Enters the Status Message mode, and selects the Status number.

SDM (NXDN)
❍ **In the NXDN Conventional system**
❍ **In the NXDN Trunking system**
Enter an SDM message.

Individual (NXDN)
❍ **In the NXDN Conventional system**
❍ **In the NXDN Trunking system**
Enters the Individual Call mode, and selects the unit ID to send an Individual Call to.

Individual + Status (NXDN)
❍ **In the NXDN Conventional system**
❍ **In the NXDN Trunking system**
Enters the Individual Call mode, and selects the unit ID to transmit an Individual Call to.
If you push [P1](ENT) while in the Individual Call mode, the transceiver enters the Status Message mode.

Individual + SDM (NXDN)
❍ **In the NXDN Conventional system**
❍ **In the NXDN Trunking system**
Enters the Individual Call mode, and selects the unit ID to transmit an Individual Call to.
If you push [P1](ENT) while in the Individual Call mode, the transceiver enters the Short Data Message mode.

Group (NXDN)
❍ **In the NXDN Conventional system**
Enters the Group Call mode, and selects the GID to send a Group Call to.

❍ **In the NXDN Trunking system**
Displays the GID List, but the transceiver cannot make a call.

Group + Status (NXDN)
❍ **In the NXDN Conventional system**
❍ **In the NXDN Trunking system**
Enters the Group Call mode, and selects the GID to transmit a Group Call to.
If you push [P1](ENT) while in the Group Call mode, the transceiver enters the Status Message mode.

Group + SDM (NXDN)
❍ **In the NXDN Conventional system**
❍ **In the NXDN Trunking system**
Enters the Group Call mode, and selects the GID to transmit a Group Call to.
If you push [P1](ENT) while in the Group Call mode, the transceiver enters the Short Data Message mode.

Section 2 BASIC OPERATION

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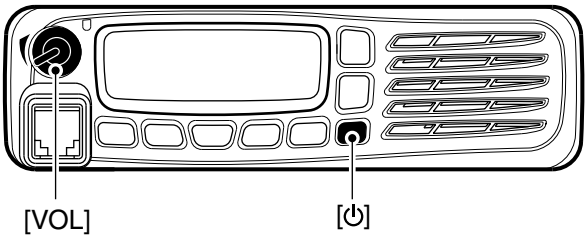
Turning power ON

➥ Hold down [⏻] for 1 second to turn ON the power.

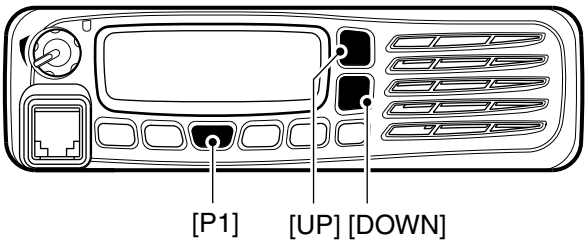


◇ Adjusting the audio level

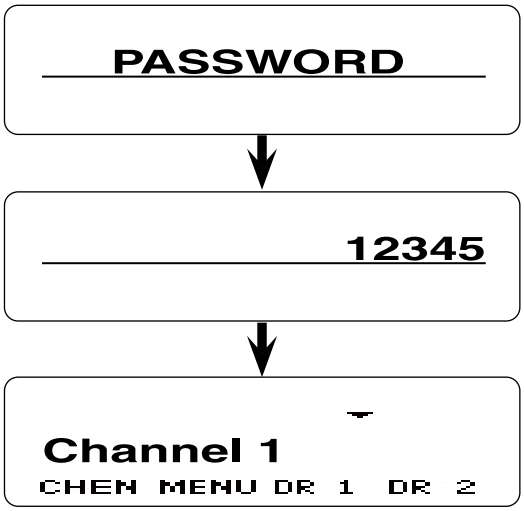
➥ When receiving a call, rotate [VOL] to adjust the audio output volume level.

◇ Inputting the password

If the transceiver is preset for a start up password, enter the digit codes.



① While in the Password Entry mode, “PASSWORD” is displayed.
② Push [UP] or [DOWN] to enter a digit code, and then push [P1] to set.
• Goes to the next digit entry position.
③ Repeat step ② until you enter the password, and then push [P1].



When using the DTMF microphone:
Push the [0] to [9] digit keys on the microphone to enter the password, and then push [#].

NOTE: If “PASSWORD” does not disappear after pushing [P1], the password code you entered may be incorrect. In this case, enter the correct password.

For your reference:
When [Transceiver Password] is assigned to any key, or the Transceiver Password item is preset in the Menu screen and [Menu] is assigned to any key, the start up password does not appear, even if the Transceiver Password is programmed.
In this case, push [Transceiver Password], or select “Transceiver Password” in the Menu screen to enter the Password Entry mode, then enter the password as described above.

Selecting a zone

◇ Selecting a zone

To select a desired zone (Conventional group or NXDN Trunking system).

➥ Push [Zone Up] or [Zone Down].

For your reference: What is “zone?”
Certain channels are grouped together and assigned to a zone according to their intended use.
For example, ‘Staff A’ and ‘Staff B’ are assigned to a “Business” zone, and ‘John’ and ‘Cindy’ are assigned to a “Private” zone.

NOTE:
When you select the Conventional group zone, see the page 2-4 for details of the channel selection.
When you select the NXDN Trunking system zone, see page 7-3 for details of the GID (Group ID) selection.

Selecting a channel

◇ Selecting a channel

To select a desired operating channel:

➥ Push [CH/GID Up] or [CH/GID Down].

➥ Push one of the direct channel select keys, [Direct CH/GID 1] to [Direct CH/GID 5].

- You can change the channel by pushing [Direct CH/GID 1] to [Direct CH/GID 5], as described below.

Changing the Direct channel setting:

① Select a desired channel.

② Hold down one of the [Direct CH/GID 1] to [Direct CH/GID 5] keys for 3 seconds to set the selected channel to the Direct channel 1 to 5.

◇ Selecting a Home channel

The Home channel is an often-used Memory channel you can preset in the transceiver.

➥ Push [Home CH/GID].

- To change the Home channel, see the description below.

Changing the Home channel setting:

① Select a desired channel.

② Hold down [Home CH/GID Select] for 3 seconds to set the selected channel as the Home channel.

◇ Directly entering a channel

You can select a channel by pushing [UP] or [DOWN] or the [0] to [9] digit keys on the microphone, after pushing [Channel Entry].

Or, when the Channel Entry function is assigned to the keypad, you can select a channel by pushing [0] to [9] digit keys on the microphone.

① Push [Channel Entry] to enter the Channel Entry mode.

② Push [UP] or [DOWN] to select the channel number, and then push [P1](SEL).

- Push [P0](BACK) to cancel the entry, and return to the screen that you selected before entering the Channel Entry mode.
- You can use the digit keys on the microphone.

When using the DTMF microphone:

① Push the [0] to [9] digit keys to enter the Channel Entry mode.

② Enter the channel number, and then push [#].

- Push [*] to delete the entered number.
- Push [*] again to cancel the entry, and return to the screen that you selected before entering the Channel Entry mode.

- When the channel name is not programmed, the selected zone and channel number are displayed. (example: “1- 1”)
- When the programmed channel is less than 10, you can select a channel without pushing [#].

For your reference:
You may be able to select a channel in the Menu screen, depending on the presetting.
See section 5 for details.

Receiving

① Select a channel. (p. 2-4)
- ➥ Push [CH/GID Up] or [CH/GID Down].
- ➥ Push one of the direct channel select keys, [Direct CH/GID 1] to [Direct CH/GID 5].
- ➥ Push the [0] to [9] digit keys of the optional DTMF microphone to enter the channel number when the Channel Entry function is assigned to the keypad, or after pushing [Channel Entry].

② When receiving a call, rotate [VOL] to adjust the audio output volume level.

◇ Setting the squelch level

The squelch circuit mutes the received audio, depending on the signal strength.

① Push [MENU].
- Opens the Menu screen.

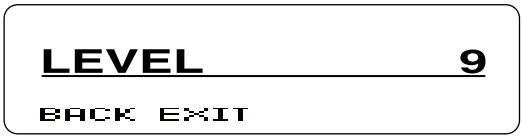
② Push [P2](◀) or [P3](▶) to select the category that has the “SQL LEVEL” item. (Default: “UTILITY”)

③ Push [P1](ENT).
- Enters the Menu Item Select mode.

④ Push [P2](◀) or [P3](▶) to select the “SQL LEVEL” item.

⑤ Push [P1](ENT).
- Enters the Squelch Level Adjustment mode.

⑥ Push [UP] to increase the squelch level up to 9 (tight squelch) or push [DOWN] to decrease the squelch level down to 0 (loose squelch).
- Push [P0](BACK) to return to the previous screen.



⑦ After setting, push [P1](EXIT).
- Closes the Menu screen.

Transmitting

Wait until the channel is clear to avoid interference.

① Take the microphone off-hook.
- While scanning, the scan stops.

② Wait for the channel to become clear.
- The channel is busy when the LED indicator lights green.

③ While holding down [PTT], speak at a normal voice level.

④ Release [PTT] to receive.

NOTE:
To maximize the readability of your signal:
1. After pushing [PTT], pause briefly before you start speaking.
2. Hold the microphone 5 to 10 cm (2 to 4 inches) from your mouth, then speak at your normal voice level.

◇ Transmitting notes

- **Transmit inhibit function**

  The transceiver has several inhibit functions which restrict transmission under the following conditions:
  - The channel is busy.
  - An unmatched CTCSS tone or DTCS code is received, depending on the presetting.
  - An unmatched or matched RAN code is received, depending on the presetting.
  - The selected channel is a 'receive only' channel.

- **Time-out timer (TOT)**

  After continuous transmission for a preset time period, the time-out timer causes the transceiver to stop transmitting.

- **TOT Rekey timer**

  Once transmission is cut OFF, it is further inhibited for a period determined by the TOT Rekey timer.

- **MDC 1200 system operation**

  The MDC 1200 signaling system enhances your transceiver's capabilities. It allows PTT ID signaling.
  When you push or release [PTT], the transceiver sends your unit ID, if preset.

When receiving a PTTID
from unit ID '0001.'

Section 3 ADVANCED OPERATION

DTMF Calls **3-2**
- ◇ Manual Dialing 3-2
- ◇ Autodial 3-2
- ◇ Stun function 3-2
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Emergency Calls **3-5**
- ◇ Emergency Calls 3-5
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Scrambler **3-6**

Radio Access Number (RAN) **3-7**

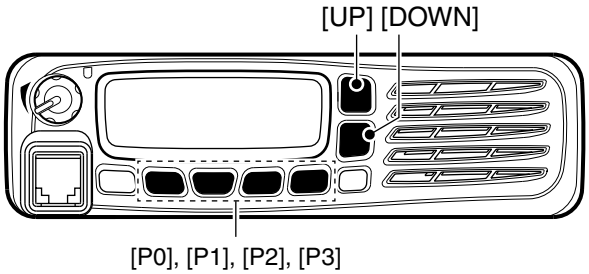
DTMF Calls

◇ Manual Dialing

➥ While holding down [PTT], push the keys on the 10-keypad to send the desired DTMF tones.
- When [Keypad Auto PTT] is assigned to the keypad, you can send the DTMF tones using the DTMF keypad without pushing [PTT].

◇ Autodial

Autodial allows you to quickly send DTMF tones that have been pre-entered onto your transceiver.



① Push [Autodial].
- The first entry in the Autodial list appears.

② Push [UP] or [DOWN] to select your desired number.

③ Push [P3](TX) or [PTT] to send.

For your reference:
When the Store & Send function is enabled, you can sequentially send up to 30 of DTMF tones at one time.

① Push [Autodial].
- "CODE?" appears.

② Push [UP] or [DOWN] to enter a digit, and then push [P1](SEL) to set.
- Goes to the next digit entry position.
- You can use the 10-keypad keys of the optional DTMF microphone to enter a digit.

③ Repeat step ② until you enter up to 30 digits.
- Push [P0](DEL) to delete the entered digit.
- Push [P1](EXIT) to exit the DTMF Code Entry mode.
- Push [P2](MODE) to toggle between the DTMF Code Entry mode and the DTMF Autodial code selection mode.

④ Push [P3](TX) or [PTT] to send.

◇ Stun function

When the transceiver receives a stun code over the air, the stun function is activated and the transceiver operation is inhibited. In this case, receiving a revive code is necessary to operate the transceiver again.
This function is used when a transceiver is stolen or lost.

DTMF Calls (Continued)

◇ Editing the Autodial list

① Push [Autodial Programming].

```
AUTDIAL PRGM
AUTODIAL 1
DEL   ENT
```

② Push [UP] or [DOWN] to select the number you want to edit.

③ Push [P1](ENT).
- Enters the Name Entry mode.

```
AUTODIAL 1
DEL   ENT   ◄   ►
```

④ Push [UP] or [DOWN] to enter a character, and then push [P1](SEL) to set.
- Goes to the next character entry position.
- You can use the 10-keypad keys of the optional DTMF microphone to enter a character.

⑤ Repeat step ④ until you enter a name of up to 12 characters.
- Push [P0](DEL) to delete a character.
- Push [P2](◄) or [P3](►) left or right to select a character.

```
AUTODIAL 2
DEL   ENT   ◄   ►
```

⑥ Push [P1](ENT) to save.
- Enters the DTMF Code Entry mode.

```
                11111
DEL   ENT
```

⑦ Push [UP] or [DOWN] to enter a digit, and then push [P1](SEL) to set.
- Goes to the next digit entry position.
- You can use the 10-keypad keys of the optional DTMF microphone to enter a digit.

⑧ Repeat step ⑦ until you enter a DTMF number of up to 16 digits.
- Push [P0](DEL) to delete a digit.

```
                11112
DEL   ENT
```

⑨ Push [P1](ENT) to set.
- "OVERWRITE?" appears.

```
OVERWRITE?
BACK   OK
```

⑩ Push [P1](OK) to overwrite.
- Push [P0](BACK) to return to the DTMF Code Entry mode.

```
AUTDIAL PRGM
AUTODIAL 2
DEL   ENT
```

DTMF Calls (Continued)

◇ Adding an entry to the Autodial list

① Push [Autodial Programming].

```
AUTDIAL PRGM
AUTODIAL 1
DEL   ENT
```

② Push [UP] or [DOWN] to select a blank number.

```
AUTDIAL PRGM
BLANK          04
DEL   ENT
```

③ Push [P1](ENT).
- Enters the Name Entry mode.
- "NAME?" appears.

```
NAME?
BACK  ENT  ◄   ►
```

④ Push [UP] or [DOWN] to enter a character, and then push [P1](SEL) to set.
- Goes to the next character entry position.
- You can use the 10-keypad keys of the optional DTMF microphone to enter a character.

⑤ Repeat step ④ until you enter a name of up to 12 characters.
- Push [P0](DEL) to delete a character.
- Push [P2](◄) or [P3](►) left or right to select a character.

```
AUTODIAL 4
DEL   ENT  ◄   ►
```

⑥ Push [P1](ENT) to set.
- Enters the DTMF Code Entry mode.
- "CODE?" appears.

```
CODE?
BACK  ENT
```

⑦ Push [UP] or [DOWN] to enter a digit, and then push [P1](SEL) to set.
- Goes to the next digit entry position.
- You can use the 10-keypad keys of the optional DTMF microphone to enter a digit.

⑧ Repeat step ⑦ until you enter a DTMF number of up to 16 digits.
- Push [P0](DEL) to delete a digit.

```
              12345
DEL   ENT
```

⑨ Push [P1](ENT) to set.
- "STORE?" appears.

```
STORE?
BACK  OK
```

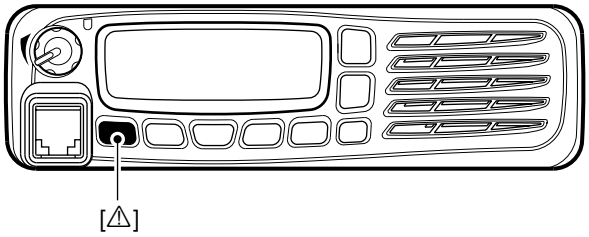
⑩ Push [P1](OK) to store.
- Push [P0](BACK) to return to the DTMF Code Entry mode.

```
AUTDIAL PRGM
AUTODIAL 4
DEL   ENT
```

Emergency Calls

◇ Emergency Calls

When [Emergency] is assigned to [⚠], you can manually make an Emergency call.



① Hold down [⚠] for 1 second.
- Enters the Emergency mode.
- When the transceiver enters the Emergency mode, it will change to the Emergency channel and begin transmitting, according to the presetting.

② To exit from the Emergency mode, hold down [⚠] again, or turn OFF the power.
- If the Emergency mode completes a preset number of call cycles, the transceiver will automatically exit the mode and return to the zone and channel that was in use before you entered the Emergency mode.

NOTE:
The Emergency Mode Type can be set to “Silent” or “Audible” by using the optional cloning software.
When “Audible” is set, the transceiver sounds a beep when transmitting in the Emergency mode.

◇ Lone Worker Emergency Call

When the Lone Worker function is activated, the Emergency function is automatically turned ON, after the preset time period has passed with no operation performed.

➥ Push [Lone Worker] to turn the function ON or OFF.

Scrambler

The Voice Scrambler function provides private communication between stations. All transceiver versions have a built-in scrambler.

➥ Push [Scrambler/Encryption] to turn the function ON or OFF.
- "" appears when the Scrambler function is ON.
- After turning ON the function, push [PTT] to make an encrypted call.

✓ ***Changing the Scrambler code setting:***

① Hold down [Scrambler/Encryption Code] to enter the Scrambler Code Setting mode.
- The length of time you hold down [Scrambler/Encryption Code] may differ, depending on the presetting.

② Push [UP] or [DOWN] to select a desired code.

③ Push [P1](EXIT) to save and exit.
- Even if the Scrambler function is OFF in step ①, it automatically turns ON after exiting the Scrambler Code setting mode.

Radio Access Number (RAN)

RAN is a signaling system designed for digital radio communications.
When a channel is set up with a RAN, the squelch will open only when a call containing a matching RAN is received.
If a call containing a different RAN is made on the same channel you are using, you will not hear the call.

Section 4 SCAN OPERATION

Scan operation.....4-2
Temporary channel lockout.....4-3
Priority scan.....4-4
◇ Setting a Priority channel 4-4
Scan Revert channel 4-5
Scan delete/add 4-6

Scan operation

A scan monitors for signals on the transceiver channels. While scanning, the transceiver checks for a signal on each channel and stops when a signal is received.

➥ Push [Scan] each time to start or stop a scan.
- "Z" appears while scanning.
- When the transceiver detects a signal, the scan pauses on the channel. The transceiver remains on the busy channel until the signal disappears, and then the scan resumes.

While scanning

NOTE: Two or more channels must be programmed to start a scan.

For your reference:
Before starting a scan, set the following items:
- Set 3 scan types in the transceiver: Single, Multi or List.
- Set the scan type in both the conventional and trunking zones.
- Set Priority channels, but only in conventional type zones.

When you select a conventional zone, trunking zones are not scanned.
When you select a trunking zone, conventional zones are not scanned.

Select the desired zone to start scanning.
- Single: The transceiver scans the preset target channels or GIDs in only the selected zone. For a Priority scan, all Priority channels will also be scanned, even if they are in other conventional type zones.
- Multi: The transceiver scans the preset target channels or GIDs in only the preset target zones. For a Priority scan, all Priority channels will also be scanned, even if they are in other conventional type zones.
- List: The transceiver scans the preset target channels or GIDs in only the zones that are preset on the Scan List. For a Priority scan, all Priority channels will also be scanned, even if they are in conventional type zones that are not on the List.

NOTE:
When the scan starts in the Conventional group zone, the NXDN Trunking system zone is not scanned.
When the scan starts in the NXDN Trunking system zone, the Conventional group zone is not scanned.

Temporary channel lockout

During a scan, you can temporarily delete a channel from a scanning sequence.
This function speeds up scanning by skipping unwanted channels.

① Start the scan. (p. 4-2)
- When a signal is received, the scan pauses.

② While the scan is paused, and if you want to skip the frequency, push [Scan Delete/Add].
- "▼" (scan target channel icon) disappears when the selected channel is deleted from the scanning sequence.
- The channel is no longer scanned. However, depending on the presetting, the deleted channel may be added to the scan group again after the scan is cancelled.

See also: "Scan delete/add" on page 4-6

Priority scan

The Priority scan scans all scan target channels or GIDs in the zone while also monitoring the Priority 1 and Priority 2 channels.
When the scan is paused on the Priority 1 channel, the other channels are not monitored.

◇ Setting a Priority channel

Depending on the presetting, you can manually set a Priority channel (Priority 1, Priority 2 or Priority 1 & 2).

① Select a channel that you want to set as a Priority channel.

```
Channel 1
DR 1  DR 2 SCAN PRIO
```

② Push [Priority-channel Select].
- Enters the Priority Channel Setting mode.

```
PRI CH SEL
        NORMAL
    OK
```

③ Push [UP] or [DOWN] to select “PRIORITY 1,” “PRIORITY 2” or “PRIORITY 1 & 2.”

```
PRI CH SEL
      PRIORITY 1
    OK    ◄    ►
```

④ Push [P1](OK).
- The selected channel is set as a Priority channel.

NOTE: When “PRIORITY 1 & 2” is selected, the same channel is set as both Priority 1 and Priority 2 channels.

Scan Revert channel

The Scan Revert channel is automatically selected when you push [PTT] to make a call during a scan.
The Scan Revert channel can be set to the transceiver using the optional cloning software.

- Last Called + Selected:
  The transceiver makes a call on the last channel or GID that you received a call on.
  However, if you push [PTT] while the scan is paused, the transceiver makes a call on the channel or to the GID that the scan is paused on.
  When you change the channel or GID before starting a scan, the transceiver makes a call on the selected channel or to the GID until the transceiver receives another call.
- Selected:
  The transceiver makes a call on the channel or to the GID selected before a scan.
- Selected + Talkback:
  The transceiver makes a call on the channel or to the GID selected before a scan.
  However, if you push [PTT] when the scan is paused, the transceiver makes a call on the channel or to the GID that the scan is paused on.
- Priority 1:
  The transceiver makes a call on the Priority 1 channel.
- Priority 1 + Talkback:
  The transceiver makes a call on the Priority 1 channel.
  However, if you push [PTT] when the scan is paused, the transceiver makes a call on the channel or to the GID that the scan is paused on.
- Priority 2:
  The transceiver makes a call on the Priority 2 channel.
- Priority 2 + Talkback:
  The transceiver makes a call on the Priority 2 channel.
  However, if you push [PTT] when the scan is paused, the transceiver makes a call on the channel or to the GID that the scan is paused on.

Scan delete/add

During scan, you can temporarily delete a channel or zone from the scanning sequence.

① Select a channel, GID or zone that you want to delete from the sequence.
② Push [Scan Delete/Add].
- "▼" disappears when the selected channel, GID or zone is deleted from the scanning sequence.

To manually add a channel, GID or zone to the scanning sequence, repeat steps ① and ②.
- "▼" appears when the selected channel is added to the sequence.

Section 5 MENU SCREEN

Menu screen description 5-2
◇ Entering the Menu screen 5-2
Menu functions 5-3

Menu screen description

When [Menu] is assigned, you can open the Menu screen.
In the Menu screen, the items are categorized.
Depending on the presetting, you can select various functions and adjust the transceiver settings in the Menu screen.

Menu screen (Sample)

◇ Entering the Menu screen

Example: Setting the squelch level

① Push [MENU].
- Opens the Menu screen.

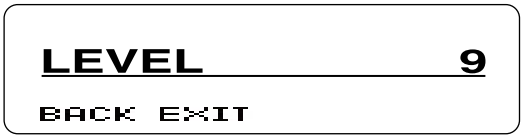
② Push [P2](◀) or [P3](▶) to select the category that has the “SQL LEVEL” item. (Default: “UTILITY”)

③ Push [P1](ENT).
- Enters the Menu Item Select mode.

④ Push [P2](◀) or [P3](▶) to select the “SQL LEVEL” item.

⑤ Push [P1](ENT).
- Enters the Squelch Level Adjustment mode.

⑥ Push [UP] to increase the squelch level up to 9 (tight squelch), or push [DOWN] to decrease the squelch level down to 0 (loose squelch).
- Push [P0](BACK) to return to the previous screen.



⑦ After setting, push [P1](EXIT).
- Closes the Menu screen.

For your reference:
You can close the Menu screen by pushing [⚠], even if an item is selected.

Menu functions

Autodial "AUTO DIAL"
Opens the DTMF Autodial code selection screen.

① When "AUTO DIAL" is displayed, push [P1](ENT).
- The first entry in the Autodial list appears.

② Push [UP] or [DOWN] to select a desired number.
③ Push [P3](TX) to send.

When the Store & Send function is enabled:
① When "AUTO DIAL" is displayed, push [P1](ENT).
- "CODE?" appears.

② Push [UP] or [DOWN] to enter a digit, and then push [P1](SEL) to set.
- Goes to the next digit entry position.
- You can use the 10-keypad keys on the optional DTMF microphone.

③ Repeat step ② until you enter up to 30 digits.
- Push [P0](DEL) to delete the entered digit.
- Push [P1](EXIT) to exit the DTMF Code Entry mode.
- Push [P2](MODE) to toggle between the DTMF Code Entry mode and the DTMF Autodial code selection mode.

④ Push [P3](TX) to send.

Autodial Programming "AUTDIAL PRGM"
Enters the DTMF Code Programming mode.

① When "AUTDIAL PRGM" is displayed, push [P1](ENT).
- The first entry in the Autodial list appears.

② Push [UP] or [DOWN] to select a desired number.
③ Push [P1](ENT).
- Enters the Name Entry mode. (p. 3-3)

AUX A "AUX A"
Turns the AUX A port ON or OFF.

① When "AUX A" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select ON or OFF.
- Push [P0](BACK) to return to the previous screen.

③ Push [P1](OK) to save.

AUX B "AUX B"
Turns the AUX B port ON or OFF.

① When "AUX B" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select ON or OFF.
- Push [P0](BACK) to return to the previous screen.

③ Push [P1](OK) to save.

Broadcast "BROADCAST"
❍ **In the NXDN Trunking system**
Turns the Broadcast Call ON or OFF.
This item can also be used to make a Broadcast Group Call.

① When "BROADCAST" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select ON or OFF.
- Push [P0](BACK) to return to the previous screen.

③ Push [P1](OK) to save.

When "ON" is selected in step ②, push [PTT] to send the Broadcast Group Call.

Direct CH/GID 1 Select to Direct CH/GID 5 Select
"DIRECT CHGD1" to "DIRECT CHGD5"
Sets the selected channel or GID to a Direct CH/GID between 1 and 5.

① Select a desired channel. (p. 2-4)
② Push [MENU].
- Opens the Menu screen.

③ When a channel between "DIRECT CHGD1" and "DIRECT CHGD5" is displayed, push [P1](ENT).
- Sets the selected channel to a Direct channel between 1 and 5.

Display Format "DISP FORMAT"
❍ **In the Analog mode or NXDN Conventional system**
Toggles the display format between the channel name and the zone and channel number.

❍ **In the NXDN Trunking system**
Toggles the display format between the GID name and the GID number.

① When "DISP FORMAT" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select "CH NAME" or "ZONE-CH No."
- Push [P0](BACK) to return to the previous screen.

③ Push [P1](OK) to save.

External Speaker "EXT SPEAKER"
Turns the External speaker function ON or OFF.
When the External speaker function is ON, the PA speaker that is connected to the D-Sub 15-pin will activate.

① When "EXT SPEAKER" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select ON or OFF.
- Push [P0](BACK) to return to the previous screen.

③ Push [P1](OK) to save.

Menu functions (Continued)

Fixed Volume "FIXED VOLUME"
Toggles the tone level between "High" and "Low," or turns OFF the tone.

① When "FIXED VOLUME" is displayed, push [P1] (ENT).
② Push [UP] or [DOWN] to select "LOW," "HIGH" or "OFF."
- Push [P0](BACK) to return to the previous screen.

③ Push [P1](OK) to save.

Forced Search "FORCE SEARCH"
❍ **In the NXDN Trunking system**
Starts to search for a site.

➥ When "FORCE SEARCH" is displayed, push [P1] (ENT).
- Displays "SEARCHING."

GPS Position Display "GPS POS DISP"
Enters the GPS Position Display mode.
In the GPS Position Display mode, you can check your latitude and longitude position.

① When "GPS POS DISP" is displayed, push [P1] (ENT).
- You can check your latitude and longitude position.

② Push [UP] or [DOWN] to toggle between the latitude and longitude position display.
- Push [P0](BACK) to return to the previous screen.
- Push [P1](EXIT) to the GPS Position Display mode.
- Push [P2](DISP) to automatically switch the latitude and longitude position display.

Group (NXDN) "GROUP MODE"
❍ **In the NXDN Conventional system or the NXDN Trunking system**
Enters the Group Call mode.
In the NXDN Conventional system, this function is used for Group Calls.
In the NXDN Trunking system, the Group ID List is displayed, but the transceiver cannot make Group calls.

① When "GROUP MODE" is displayed, push [P1] (ENT).
② Push [UP] or [DOWN] to select a desired GID.
③ Push [PTT] to call the selected GID.

Group + SDM (NXDN) "GROUP+SDM"
❍ **In the NXDN Conventional system or the NXDN Trunking system**
Enters the Group Call mode, and then the Short Data Message Entry mode.

① When "GROUP+SDM" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select a desired GID.
③ Push [P1](ENT).
- Enters the Short Data Message Entry mode.

④ Push [UP] or [DOWN] to enter a character, and then push [P1](SET) to set.
- Goes to the next character entry position.
- You can use the 10-keypad keys on the optional DTMF microphone.

⑤ Repeat step ④ until you enter a message of up to 100 characters.
- Push [P0](DEL) to delete a character.
- Push [P2](◀) or [P3](▶) left or right to select a character.

⑥ Push [PTT] to send the message to the selected GID.

Group + Status (NXDN) "GROUP+STATUS"
❍ **In the NXDN Conventional system or the NXDN Trunking system**
Enters the Group Call mode, and then the Status Message Entry mode.

① When "GROUP+STATUS" is displayed, push [P1] (ENT).
② Push [UP] or [DOWN] to select a desired GID, and then push [P1](ENT).
- Enters the Status Message Selection mode.

③ Push [UP] or [DOWN] to select the status message that you want to send.
- If you want to directly enter a status message, push [P2] (MODE) to select the Status Message Entry mode.
  You can enter a status message between 1 and 207.
- You can use the 10-keypad keys on the optional DTMF microphone.

④ Push [P3](TX) to send the message to the selected GID.

Menu functions (Continued)

High Transmit Power "HI TX POWER"

❍ **In the NXDN Trunking system**

Toggles the transmit power level.

When "Auto" is set as the default:

① When "HI TX POWER" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select ON (High) or OFF (Auto).
- Push [P0](BACK) to return to the previous screen.

③ Push [P1](OK) to save.

When "Low" is set as the default:

① When "HI TX POWER" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select ON (High) or OFF (Low).
- Push [P0](BACK) to return to the previous screen.

③ Push [P1](OK) to save.

See page 5-6 about [Low Transmit Power].

Home CH/GID Select "HOME CHANNEL"

Sets the selected channel or GID as the Home Channel.

① Select a desired channel. (p. 2-4)
② Push [MENU].
- Opens the Menu screen.

③ When "HOME CHANNEL" is displayed, push [P1](ENT).
- Sets the selected channel or GID as the Home Channel.

Horn Alert "HORN ALERT"

Turns the Horn Alert function ON or OFF.
When this function is ON, the horn alert port will be activated for a preset time period after receiving a call.

① When "HORN ALERT" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select ON or OFF.
- Push [P0](BACK) to return to the previous screen.

③ Push [P1](OK) to save.

Individual (NXDN) "INDIVIDUAL"

Enters the Individual Call mode.

① When "INDIVIDUAL" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select a desired unit ID.
- If you want to directly enter an unit ID, push [P2](MODE) to select the Unit ID Entry mode.
  You can enter an unit ID between 1 and 65519.

③ Push [P3](TX) to call to the selected unit ID.

Individual + SDM (NXDN) "INDIV+SDM"

Enters the Individual Call mode, and then the Short Data Message Entry mode.

① When "INDIV+SDM" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select a desired unit ID.
- If you want to directly enter an unit ID, push [P2](MODE) to select the Unit ID Entry mode.
  You can enter an unit ID between 1 and 65519.

③ Push [P1](ENT).
- Enters the Short Data Message Entry mode.

④ Push [UP] or [DOWN] to enter a character, and then push [P1](SET) to set.
- Goes to the next character entry position.
- You can use the 10-keypad keys on the optional DTMF microphone.

⑤ Repeat step ④ until you enter a message of up to 100 characters.
- Push [P0](DEL) to delete a character.
- Push [P2](◀) or [P3](▶) left or right to select a character.

⑥ Push [PTT] to send the message to the selected unit ID.

Individual + Status (NXDN) "INDIV+STATUS"

Enters the Individual Call mode, and then the Status Message Entry mode.

① When "INDIV+STATUS" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select a desired unit ID.
- If you want to directly enter an unit ID, push [P2](MODE) to select the Unit ID Entry mode.
  You can enter an unit ID between 1 and 65519.

③ Push [P1](ENT).
- Enters the Status Message Selection mode.

③ Push [UP] or [DOWN] to select a status message that you want to send.
- If you want to directly enter a status message, push [P2](MODE) to select the Status Message Entry mode.
  You can enter a status message between 1 and 207.
- You can use the 10-keypad keys on the optional DTMF microphone.

④ Push [P3](TX) to send the message to the selected unit ID.

LCD Brightness "LCD BRIGHT"

Selects the brightness of the function display and keys backlight.
Select High, Low or OFF to meet your needs.
The function display and keys can be backlit for better visibility under low light conditions.

① When "LCD BRIGHT" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select "LOW," "HIGH" or "OFF."
- Push [P0](BACK) to return to the previous screen.

③ Push [P1](OK) to save.

Menu functions (Continued)

Lone Worker "LONE WORKER"
Turns the Lone Worker function ON or OFF. (p. 3-5)

① When "LONE WORKER" is displayed, push [P1] (ENT).
② Push [UP] or [DOWN] to select ON or OFF.
• Push [P0](BACK) to return to the previous screen.
③ Push [P1](OK) to save.

Low Transmit Power "LOW TX POWER"
❍ **In the Analog mode or NXDN Conventional system**
Toggles the transmit power between "High" and "Low," if "High" is set as the default.

① When "LOW TX POWER" is displayed, push [P1] (ENT).
② Push [UP] or [DOWN] to select ON (Low) or OFF (High).
• Push [P0](BACK) to return to the previous screen.
③ Push [P1](OK) to save.

❍ **In the NXDN Trunking system**
Toggles the transmit power level.

When the transmit power level is set to "Auto" as the default:
① When "LOW TX POWER" is displayed, push [P1] (ENT).
② Push [UP] or [DOWN] to select ON (Low) or OFF (Auto).
• Push [P0](BACK) to return to the previous screen.
③ Push [P1](OK) to save.

When the transmit power level is set to "High" as the default:
① When "LOW TX POWER" is displayed, push [P1] (ENT).
② Push [UP] or [DOWN] to select ON (Low) or OFF (High).
• Push [P0](BACK) to return to the previous screen.
③ Push [P1](OK) to save.

See page 5-5 about [High Transmit Power].

Maintenance "MAINTENANCE"
Enters the Maintenance Display mode.
In the Maintenance Display mode, you can check the RSSI level of the selected channel for installation or maintenance of the system.

① When "MAINTENANCE" is displayed, push [P1](ENT).
• Displays the RSSI level.
• Push [P0](BACK) to return to the previous screen.
② Push [P1](EXIT) to exit.

Monitor "MONITOR"
❍ **In the Analog mode**
Turns the Monitor ON or OFF.
When the Monitor is ON, the transceiver releases the CTCSS mute.

❍ **In the NXDN Conventional system**
Turns the Monitor ON or OFF.
When the Monitor is ON, the transceiver releases the RAN code mute.

① When "MONITOR" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select ON or OFF.
• Push [P0](BACK) to return to the previous screen.
③ Push [P1](OK) to save.

Operator Selectable Tone "OST"
Turns the OST (Operator Selectable Tone) mode ON or OFF.
When the OST mode is ON, the selected tone in the OST list is enabled.

① When "OST" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select ON or OFF.
• Push [P0](BACK) to return to the previous screen.
③ Push [P1](OK) to save.

OST List "OST LIST"
Displays the OST (Operator Selectable Tone) list.

① When "OST LIST" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select a desired OST tone or turn OFF the OST tone.
• Push [P0](BACK) to return to the previous screen.
③ Push [P1](EXIT) to exit.

Priority-channel Select "PRI CH SEL"
Enters the Priority Channel Select mode for a Priority scan.

① Select a desired channel. (p. 2-4)
② Push [MENU].
• Opens the Menu screen.
③ When "PRI CH SEL" is displayed, push [P1](ENT).
④ Push [UP] or [DOWN] to select "PRIORITY 1," "PRIORITY 2," "PRIORITY 1 & 2" or "NORMAL."
• Push [P0](BACK) to return to the previous screen.
⑤ Push [P1](OK).
• Sets the selected channel to Priority 1, Priority 2, Priority 1 and 2 or a Normal channel.

NOTE: When "PRIORITY 1 & 2" is selected, the same channel is set as both Priority 1 and Priority 2 channels.

Menu functions (Continued)

Public Address "PUB ADDRESS"
Turns the Public Address function ON or OFF.
When this function is ON, you can make announcements through a PA speaker.
• Transmitting is disabled while in the PA mode.

① When "PUB ADDRESS" is displayed, push [P1] (ENT).
② Push [UP] or [DOWN] to select ON or OFF.
• Push [P0](BACK) to return to the previous screen.
③ Push [P1](OK) to save.

RX Audio Equalizer "RX AUDIO EQ"
This function sets the audio characteristics type to apply to the received audio.

① When "RX AUDIO EQ" is displayed, push [P1] (ENT).
② Push [UP] or [DOWN] to select the option.
• Push [P0](BACK) to return to the previous screen.

• FLAT:
Selects the standard audio characteristics.
• HIGH BOOST:
Emphasizes the treble range.
• LOW BOOST:
Suppresses the treble range and boosts the bass range.
③ Push [P1](EXIT) to save.

RX Auto Gain Control "RX AUTO GAIN"
This function automatically adjusts the received audio volume to an appropriate level so that you can clearly hear the audio.

① When "RX AUTO GAIN" is displayed, push [P1] (ENT).
② Push [UP] or [DOWN] to select the option.
• Push [P0](BACK) to return to the previous screen.

• OFF: Disables the Auto Gain Control. The received audio level is only adjusted by [VOL].
• HIGH: Enables the Auto Gain Control. The received audio level will be automatically adjusted to an appropriate constant level, according to the [VOL] setting. However, the background noise will be boosted, and howling may occur, depending on your operating environment.
• LOW: Enables the Auto Gain Control. The received audio level will be automatically adjusted to an appropriate constant level, according to the [VOL] setting. However, the adjustable gain is smaller than the "HIGH" setting. Therefore, background noise boosting will also be smaller, and howling may not occur.
③ Push [P1](EXIT) to save.

RX Low Cut "RX LOW CUT"
While receiving a digital signal, this function cuts the frequency components at 300 Hz or below.

① When "RX LOW CUT" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select ON or OFF.
• Push [P0](BACK) to return to the previous screen.
③ Push [P1](EXIT) to save.

Scan "SCAN"
Starts or stops a scan.

① When "SCAN" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select ON or OFF.
• Push [P0](BACK) to return to the previous screen.
③ Push [P1](OK).
• A scan starts when "ON" is selected in step ②.
• A scan stops when "OFF" is selected in step ②.

Scan Delete/Add "SCAN DEL/ADD"
Sets or cancels the selected channel or GID as the scan target.

① Select a desired channel. (p. 2-4)
② Push [MENU].
• Opens the Menu screen.
③ When "SCAN DEL/ADD" is displayed, push [P1] (ENT).
④ Push [UP] or [DOWN] to select "DELETE" or "ADD."
• Push [P0](BACK) to return to the previous screen.
⑤ Push [P1](OK).
• The selected channel is canceled as a scan target when "DELETE" is selected in step ④.
• The selected channel is set as a scan target when "ADD" is selected in step ④.

Scrambler/Encryption "SCRAM/ENCRYP"
❍ In the Analog mode
Turns the Scrambler function ON or OFF.

❍ In the NXDN Conventional system or the NXDN Trunking system
Turns the Encryption function ON or OFF.

① When "SCRAM/ENCRYP" is displayed, push [P1] (ENT).
② Push [UP] or [DOWN] to select ON or OFF.
• Push [P0](BACK) to return to the previous screen.
③ Push [P1](OK) to save.

Menu functions (Continued)

Scrambler/Encryption Code "SCRAM CODE"

❍ **In the Analog mode**

Enters the Scrambler Code Selection mode.

❍ **In the NXDN Conventional system or the NXDN Trunking system**

Enters the Encryption Key Selection mode.

① When "SCRAM CODE" is displayed, push [P1] (ENT).
- The Scrambler or the Encryption function automatically turns ON.

② Push [UP] or [DOWN] to select a desired Scrambler code or Encryption key.
- Push [P0](BACK) to return to the previous screen.

③ Push [P1](EXIT) to save.

SDM (NXDN) "SHRT MSG MOD"

❍ **In the NXDN Conventional system or the NXDN Trunking system**

Directly enters the Short Message mode.

① When "SHRT MSG MOD" is displayed, push [P1] (ENT).
- "MESSAGE?" appears.

② Push [UP] or [DOWN] to enter a character, and then push [P1](SEL) to set.
- Goes to the next character entry position.
- You can use the 10-keypad keys on the optional DTMF microphone.

③ Repeat step ② until you enter a message of up to 100 characters.
- Push [P0](DEL) to delete a character.
- Push [P2](◀) or [P3](▶) left or right to select a character.

④ Push [PTT] to send the message to the Base ID.

⑤ Push [P1](EXIT) to exit.

Send the GPS Data "SND GPS DATA"

❍ **In the NXDN Conventional system or the NXDN Trunking system**

Sends the position data that is received from the GPS receiver to a Base station.

① When "SND GPS DATA" is displayed, push [P1](ENT).

② Push [P1](ENT) to send.

Site Lock "SITE LOCK"

❍ **In the NXDN Trunking system**

Turns the Site Lock function ON or OFF.

① When "SITE LOCK" is displayed, push [P1](ENT).

② Push [UP] or [DOWN] to select ON or OFF.
- Push [P0](BACK) to return to the previous screen.

③ Push [P1](OK) to save.

Site Number "SITE No."

❍ **In the NXDN Trunking system**

Display the current Site number.

➥ When "SITE No." is displayed, push [P1](ENT).
- Displays the current Site number for 3 seconds, and then exits the Menu screen.

Site Select "SITE"

❍ **In the NXDN Trunking system**

Enters the Site Select mode.

① When "SITE" is displayed, push [P1](ENT).

② Push [UP] or [DOWN] to select a desired site.
- Push [P0](BACK) to return to the previous screen.

③ Push [P1](SEL) to save.

Squelch Level "SQL LEVEL"

❍ **In the Analog mode**

Enters the Squelch Level Adjustment mode.

① When "SQL LEVEL" is displayed, push [P1](ENT).

② Push [DOWN] to decrease the squelch level down to 0 (loose squelch), or push [UP] to increase the squelch level up to 9 (tight squelch).
- Push [P0](BACK) to return to the previous screen.

③ Push [P1](EXIT) to exit.

Squelch Off "SQL OFF"

❍ **In the Analog mode or the NXDN Conventional system**

Opens the squelch, and releases the mute.

① When "SQL OFF" is displayed, push [P1](ENT).

② Push [UP] or [DOWN] to select ON or OFF.
- Push [P0](BACK) to return to the previous screen.

③ Push [P1](OK) to exit.

Stack "STACK"

Enters the Memory Stack mode.

① When "STACK" is displayed, push [P1](ENT).
- Push [P0](BACK) to return to the previous screen.

② Push [UP] or [DOWN] to select a desired message.
- Push [P0](DEL) to delete the selected message.
- Push [P2](DISP) to change the display item between received ID, message contents and channel number.

③ Push [P1](EXIT) to exit.

Menu functions (Continued)

Status (NXDN) "STATUS"
Directly enters the Status Message mode.

① When "STATUS" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select a status message.
- If you want to directly enter a status message, push [P2] (MODE) to select the Status Message Entry mode. You can enter a status message between 1 and 207.
- You can use the 10-keypad keys on the optional DTMF microphone.

③ Push [P3](TX) to send the message to the Base ID.
④ Push [P1](EXIT) to exit.

Talk Around "TALK AROUND"
❍ **In the Analog mode**
Turns the talk around function ON or OFF.

① When "TALK AROUND" is displayed, push [P1] (ENT).
② Push [UP] or [DOWN] to select ON or OFF.
③ Push [P1](OK) to save.

Transceiver Password "PASSWORD"
Enters the Password Entry mode.
The transceiver cannot be used until you enter a correct password.

① When "PASSWORD" is displayed, push [P1](ENT).
- Enters the Password Entry mode.

② Push [UP] or [DOWN] to enter a digit code, and then push [P1] to set.
- Goes to the next digit entry position.

③ Repeat step ② until you enter the password, and then push [P1].

When using the DTMF microphone:
Push the [0] to [9] digit keys on the microphone to enter the password, and then push [#].

NOTE: If "PASSWORD" does not disappear after pushing [P1], the password code you entered may be incorrect. In this case, enter the correct password.

TX Audio Equalizer "TX AUDIO EQ"
This function sets the audio characteristics type to apply to the transmit audio.

① When "TX AUDIO EQ" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select the option.
- Push [P0](BACK) to return to the previous screen.

- FLAT:
  Selects the standard audio characteristics.
- HIGH BOOST:
  Selects the audio characteristics emphasizing the treble range.
- LOW BOOST:
  Suppresses the treble range and boosts the bass range.

③ Push [P1](EXIT) to save.

TX Auto Gain Control "TX AUTO GAIN"
This function automatically adjusts the transmit audio level to an appropriate constant level so that the called station can hear the audio clearly.

① When "TX AUTO GAIN" is displayed, push [P1](ENT).
② Push [UP] or [DOWN] to select ON or OFF.
- Push [P0](BACK) to return to the previous screen.

- ON: Enables the Auto Gain Control. The transmit audio level will be adjusted to an appropriate constant level.
- OFF: Disables the Auto Gain Control.

③ Push [P1](EXIT) to save.

TX Noise Suppressor "TX NOISE SUP"
This function enables transmitting while in the digital mode and reducing or eliminating the noise component in the background noise.

① When "TX NOISE SUP" is displayed, push [P1] (ENT).
② Push [UP] or [DOWN] to select ON or OFF.
- Push [P0](BACK) to return to the previous screen.

③ Push [P1](EXIT) to save.

Zone Delete/Add "ZONE DEL/ADD"
Sets or cancels the selected zone as a scan target.

① Select a desired zone. (p. 2-3)
② Push [MENU].
- Opens the Menu screen.

③ When "ZONE DEL/ADD" is displayed, push [P1] (ENT).
④ Push [UP] or [DOWN] to select "DELETE" or "ADD."
- Push [P0](BACK) to return to the previous screen.

⑤ Push [P1](OK).
- The selected zone is canceled as a scan target when "DELETE" is selected in step ④.
- The selected zone is set as a scan target when "ADD" is selected in step ④.

Section 6 NXDN OPERATION <COMMON>

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NXDN system operation

NXDN is a “Common Air Interface” (CAI), the name for over-the-air methods by which transceivers and repeaters communicate. NXDN defines the next-generation digital protocol.

The NXDN system has two operating modes, conventional and trunking.
In an NXDN conventional system, you should manually search for a clear channel.
In an NXDN trunking system, the repeater automatically searches for a clear channel, and sends the information to the transceivers.
In addition, Type-C requires a Control Channel repeater.

If you use an NXDN transceiver, you can transmit and receive Individual Calls, Group Calls, Status Messages, Short Messages, and so on.

Memory Stack

The transceiver has a Memory Stack. When the transceiver receives a Status Message or a Short Message, the received content is stored in the transceiver's Memory Stack.
If you turn OFF the transceiver's power, the contents will be cleared.

The stored messages are displayed using the following indication.

Information		Indication
Message type	Caller ID Stack	"ID"
	Status Message	"ST"
	Short Message	"SM"
Stored number	Stored number	"01" to "15"
Display items	Caller ID	"ID"
	Message contents	"MSG"
	Received channel or GID	"CH"

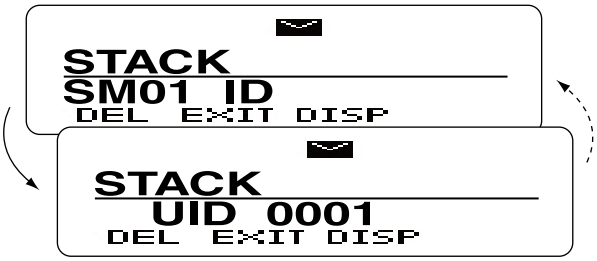
◇ Viewing a stored message

① When a transceiver receives data:
- Displays "DATA RCVD," "COMPLETE," the received message, the caller's unit ID and GID*.
  *Displays only when the received call is a Group call.
- "✉" blinks.

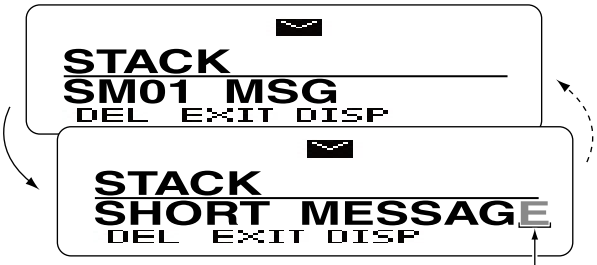
② Push [Stack].
- Enters the Memory Stack mode.
- Displays "STACK."

③ Push [UP] or [DOWN] to select a desired message.

④ Push [P2](DISP) to change the displayed item between received ID, message contents and channel number.

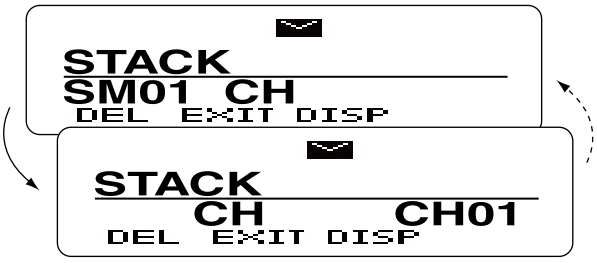


Received ID



Message contents

Scrolls



Channel number

⑤ Push [P1](EXIT).
- Exits the Memory Stack mode.

Memory Stack (Continued)

◇ Deleting a desired message

① Push [Stack].
- Enters the Memory Stack mode.
- Displays “STACK.”

② Push [UP] or [DOWN] to select a desired message.

③ Push [P0](DEL).
- Displays “DELETE?.”

④ Push [P1](OK).
- Deletes the selected message.
- Push [P0](BACK) to return to the previous screen.
- Push [⚠] to exit the Memory Stack mode.

◇ Deleting all stored messages

① Push [Stack].
- Enters the Memory Stack mode.
- Displays “STACK.”

② Hold down [P0](DEL) for 1 second.
- Displays “ALL DELETE?.”

③ Push [P1](OK).
- Deletes all messages.
- Push [P0](BACK) to return to the previous screen.
- Push [⚠] to exit the Memory Stack mode.

Section 7 NXDN OPERATION <TRUNKING MODE>

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NXDN trunking operation

When you select the NXDN Trunking system mode, your transceiver automatically searches for, and selects a clear channel.
To use the NXDN Trunking system mode, your transceiver must register to a Control Channel repeater.

Before operating in the NXDN Trunking system mode, select the NXDN Trunking System zone. (p. 2-3)

Selecting a GID (Group ID)

◇ Selecting a GID

To select a desired GID, do one of the following:

➥ Push [CH/GID Up] or [CH/GID Down].

➥ Push one of the direct GID select keys, [Direct CH/GID 1] to [Direct CH/GID 5].

- You can change the GID that is selected by pushing [Direct CH/GID 1] to [Direct CH/GID 5], as described below.

Changing the Direct GID setting:

① Select a desired GID.

② Hold down one of the [Direct CH/GID 1] to [Direct CH/GID 5] keys for 3 seconds to set the selected GID to the Direct GID 1 to 5.

◇ Selecting a Home GID

The Home GID is the most often-used ID, and you can preset it into the transceiver.

➥ Push [Home CH/GID].

- You can change the Home GID, as described below.

Changing the Home GID setting:

① Select a desired GID.

② Hold down [Home CH/GID Select] for 3 seconds to set the selected GID to the Home GID.

◇ Directly entering a GID

You can select a GID by pushing [UP] or [DOWN], or the [0] to [9] digit keys on the microphone, after pushing [Channel Entry].

Or, when the Channel Entry function is assigned to the keypad, you can select a GID by pushing the [0] to [9] digit keys.

① Push [Channel Entry] to enter the GID Entry mode.

② Push [UP] or [DOWN] to select the GID, and then push [P1](SEL).

- Push [P0](BACK) to cancel the entry, and return to the screen that you selected before entering the GID Entry mode.

When the GID name is not programmed, the selected zone and channel number are displayed. (example: “1- 1”)

When using the DTMF microphone:

① Push the [0] to [9] digit keys to enter the GID Entry mode.

② Enter the GID number, and then push [#].

- Push [*] to delete the entered number.
- Push [*] again to cancel the entry, and return to the screen that you selected before entering the GID Entry mode.

- When the GID name is not programmed, the selected zone and channel number are displayed. (example: “1- 1”)
- When less than 9 GIDs are programmed in the zone, you can select a GID without pushing [#] in step ②.

Transmitting a call

◇ Group call (Transmission Trunked)

When you select an NXDN Trunking System zone and a desired GID, you can transmit a Group call by simply pushing [PTT].
When you set GID to “ALL,” you can call all transceivers.

➥ Push [PTT] to make a Group call.

For your reference:
When [Group + SDM (NXDN)] or [Group + Status (NXDN)] is assigned, you can also send a message along with a Group call.

To send a Short Data Message along with a Group call.

① Push [Group + SDM (NXDN)] to enter the GID Select mode.
- Displays “SELCALL.”

② Push [UP] or [DOWN] to select a desired GID.

③ Push [P1](ENT).
- Enters the Short Data Message Entry mode.

④ Push [UP] or [DOWN] to enter a character, and then push [P1](SET) to set.
- Goes to the next character entry position.
- You can use the 10-keypad keys on the microphone.

⑤ Repeat step ④ until you enter a message of up to 100 characters.
- Push [P0](DEL) to delete a character.
- Push [P2](◀) or [P3](▶) left or right to select a character.

⑥ Push [PTT] to send the message to the selected GID.

⑦ Push [P1](EXIT) to exit.

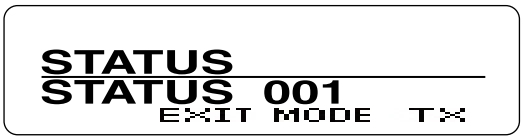
To send a Status Message with a Group call.

① Push [Group + Status (NXDN)] to enter the GID Select mode.
- Displays “SELCALL.”

② Push [UP] or [DOWN] to select a desired GID.

③ Push [P1](ENT).
- Enters the Status Message Entry mode.

④ Push [UP] or [DOWN] to select a desired status message.
- If you want to directly enter a status message, push [P2] (MODE) to select the Status Message Entry mode.
  You can enter a status message between 1 and 207.
- You can use the 10-keypad keys on the microphone.



⑤ Push [P3](TX) or [PTT] to send the message to the selected GID.

⑥ Push [P1](EXIT) to exit.

Transmitting a call (Continued)

◇ Individual call (Transmission Trunked)

You can call a specified station that is set to the same unit ID by using the Individual call function.

① Push [Individual (NXDN)] to enter the Unit ID Select mode.
- Displays "SELCALL."

② Push [UP] or [DOWN] to select a desired unit ID.
- If you want to directly enter an unit ID, push [P2](MODE) to select the Unit ID Entry mode.
  You can enter an unit ID between 1 and 65519.

③ Push [P3](TX) or [PTT] to make an Individual call.
④ Push [P1](EXIT) to exit.

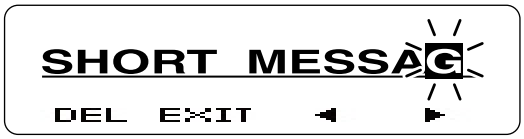
For your reference:
When [Individual + SDM (NXDN)] or [Individual + Status (NXDN)] is assigned, you can also send a message along with an Individual call.

To send a Short Data Message along with an Individual call.
① Push [Individual + SDM (NXDN)] to enter the unit ID Select mode.
- Displays "SELCALL."

② Push [UP] or [DOWN] to select a desired unit ID.
③ Push [P1](ENT).
- Enters the Short Data Message Entry mode.

④ Push [UP] or [DOWN] to enter a character, and then push [P1](SET) to set.
- Goes to the next character entry position.
- You can use the 10-keypad keys on the microphone.

⑤ Repeat step ④ until you enter a message of up to 100 characters.
- Push [P0](DEL) to delete a character.
- Push [P2](◀) or [P3](▶) left or right to select a character.



⑥ Push [PTT] to send the message to the selected unit ID.
⑦ Push [P1](EXIT) to exit.

To send a Status Message with an Individual call.
① Push [Individual + Status (NXDN)] to enter the unit ID Select mode.
- Displays "SELCALL."

② Push [UP] or [DOWN] to select a desired unit ID.
③ Push [P1](ENT).
- Enters the Status Message Entry mode.

④ Push [UP] or [DOWN] to select a desired status message.
- If you want to directly enter a status message, push [P2] (MODE) to select the Status Message Entry mode.
  You can enter a status message between 1 and 207.
- You can use the 10-keypad keys on the microphone.

⑤ Push [P3](TX) or [PTT] to send the message to the selected unit ID.
⑥ Push [P1](EXIT) to exit.

Transmitting a call (Continued)

◇ Group call (Message Trunked)

When the Trunking type is set to “Message Trunked,” and after making a Group call, the transceiver continues to be linked to the traffic channel for a preset time period.
While linked, the transceivers occupy the traffic channel, and you can call by simply pushing [PTT].

When you select the NXDN Trunking System zone and a desired GID, you can transmit a Group call by simply pushing [PTT].
When you set GID to “ALL,” you can call all transceivers.

➥ Push [PTT] to make a Group call.

For your reference:
When [Group + SDM (NXDN)] or [Group + Status (NXDN)] is assigned, you can send a message along with a Group call. See page 7-4 for details.

◇ Individual call (Message Trunked)

When the Trunking type is set to “Message Trunked,” and after making an Individual call, the transceiver continues to be linked to the traffic channel for a preset time period.
While linked, the transceivers occupy the traffic channel, and you can call by simply pushing [PTT].

① Push [Individual (NXDN)] to enter the Unit ID Select mode.
- Displays “SELCALL.”

② Push [UP] or [DOWN] to select the desired unit ID.
- If you want to directly enter an unit ID, push [P2](MODE) to select the Unit ID Entry mode.
  You can enter an unit ID between 1 and 65519.

③ Push [P3](TX) or [PTT] to make an Individual call.
④ Push [P1](EXIT).

For your reference:
When [Individual + SDM (NXDN)] or [Individual + Status (NXDN)] is assigned, you can send a message along with an Individual call. See page 7-5 for details.

Transmitting a call (Continued)

◇ Broadcast Group call

When you use the Broadcast Group call function, you can transmit a signal to transceivers that are set to the same Group ID.
When you set GID to “ALL,” you can make the Broadcast Group call to all transceivers.

① Select a desired GID. (p. 7-3)
② Push [Broadcast] once or twice to select “BRDCAST ON.”

```
BRDCAST ON
BCST MENU CHEN CAL1
```

③ Push [PTT] to make a Broadcast Group call.

◇ Status call

The Status call is a simple message function to transmit and receive a status message. A transceiver can display the status message quickly. You cannot transmit a voice signal at the same time.

① Push [Status (NXDN)] to enter the Status Message Select mode.
- Displays “STATUS.”

② Push [UP] or [DOWN] to select a desired status message.
- If you want to directly enter a status message, push [P2] (MODE) to select the Status Message Entry mode.
  You can enter a status message between 1 and 207.
- You can use the 10-keypad keys on the microphone.

```
STATUS
STATUS 001
EXIT MODE TX
```

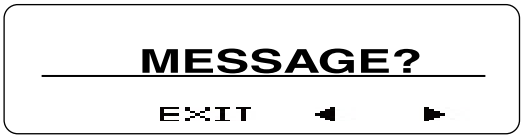
③ Push [P3](TX) or [PTT] to send the selected Status Message.
- Displays “SEND DATA” and then “COMPLETE.”

Transmitting a call (Continued)

◇ Short Data call

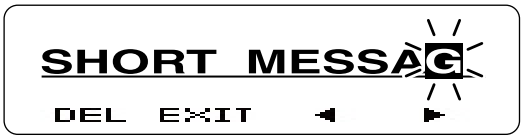
You can send a Short Data message of up to 100 characters.
If you turn OFF the transceiver's power, the message is cleared.

① Push [SDM (NXDN)] to enter the Short Data Message Entry mode.
- Displays "MESSAGE?".



② Push [UP] or [DOWN] to enter a character, and then push [P1](SET) to set.
- Goes to the next character entry position.
- You can use the 10-keypad keys on the microphone.

③ Repeat step ② until you enter a message of up to 100 characters.
- Push [P0](DEL) to delete a character.
- Push [P2](◄) or [P3](►) left or right to select a character.

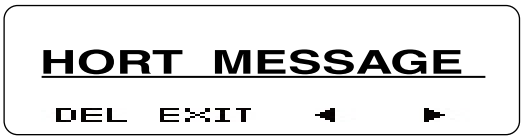


③ Push [PTT] to send.
- Displays "SEND DATA" and then "COMPLETE."

④ Push [P1](EXIT) to exit.

If you exit from the Short Data Message Entry mode, and then you want to send the message again, do the following steps.

① Push [SDM (NXDN)] to enter the Short Data Message Entry mode.
- Displays the entered message.
- Displays the last part of the message if the message is over 12 characters.



② Push [PTT] to send.
- Displays "SEND DATA" and then "COMPLETE."

③ Push [P1](EXIT) to exit.

◇ Long Data call

You can send a Long Data message of up to 4,096 characters only by using an external device, such as a PC. You cannot send a Long Data message by pushing [PTT].

Transmitting a call (Continued)

◇ Telephone call

If you use the Telephone Call function, you can communicate with a telephone through the telephone lines (PSTN, PABX, and so on).
You can call from a transceiver to a telephone, or call from a telephone to a transceiver.

① Push [Autodial].
- The first entry in the Autodial list appears.

② Push [UP] or [DOWN] to select your desired telephone number.

③ Push [P3](TX) or [PTT] to start a Telephone call
- Displays “CALLING.”
- Displays “PHONE CALL” when the transceiver connects to the telephone line.
  Displays “INVALID” when the transceiver cannot connect to the line.

④ Hold down [PTT] to talk.

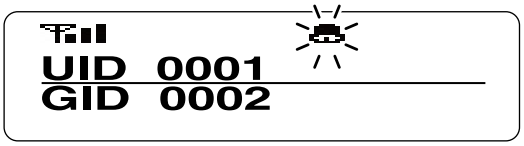
⑤ The telephone line will disconnect when you push [⚠] or microphone’s [∗], or when the microphone is on-hook (depending on the presetting).

Receiving a call

◇ Group call

When you receive a Group call that includes a matched GID, your transceiver informs you of the call by sounding beeps and blinking "" on the function display. In addition, you can easily call back to the calling station.

① When you receive a Group call that includes a matched GID:
- Beeps sound.
- Displays the caller's unit ID and GID.
- "" blinks for about 10 seconds.



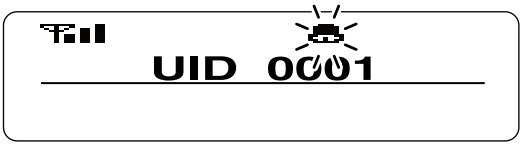
② To call back to the caller station, push [PTT] while "" is blinking.

◇ Individual call

When you receive an Individual call that includes your unit ID, your transceiver informs you of the call by sounding beeps and blinking "" on the function display. In addition, you can easily call back to the calling station.

① When you receive an Individual call that includes your unit ID:
- Beeps sound.
- Displays the caller's unit ID.*

*Alternately displays the caller's unit ID and "INCOMING," when you receive a "Message Trunked" type call, and the Automatic Response function is OFF.
- "" blinks for about 10 seconds.



② To call back to the caller station, push [PTT] while "" is blinking.

Receiving a call (Continued)

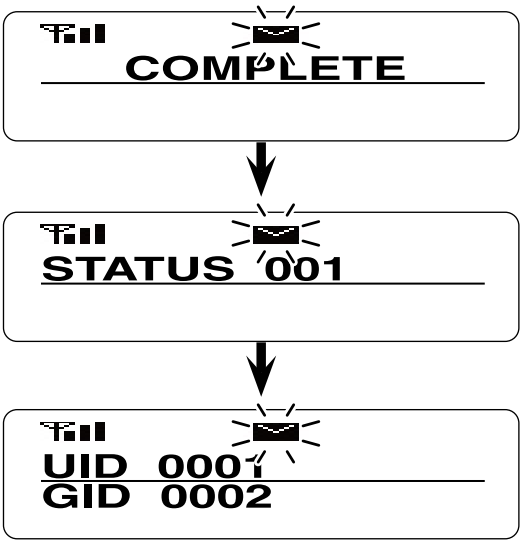
◇ Broadcast Group call

When a Broadcast Group Call is made, the transceivers with the same selected Group ID will receive the call.
You cannot transmit a reply to the calling transceiver.
When your transceiver receives a Broadcast Group Call, beeps sound.
While your transceiver is receiving the call, the musical tone icon blinks on the function display.

◇ Status call

When you receive a Status call, your transceiver displays a received status message on the function display. The received message is stored in the Memory Stack, and you can view the message contents in the memory. (p. 6-3)

➥ When you receive a Status call:
- Beeps sound.
- Displays “DATA RCVD,” “COMPLETE,” the received message, the caller’s unit ID and GID*.
  *Displayed only when the received call is a Group call.
- “✉” blinks on the function display.
  The message is stored in the Memory Stack.

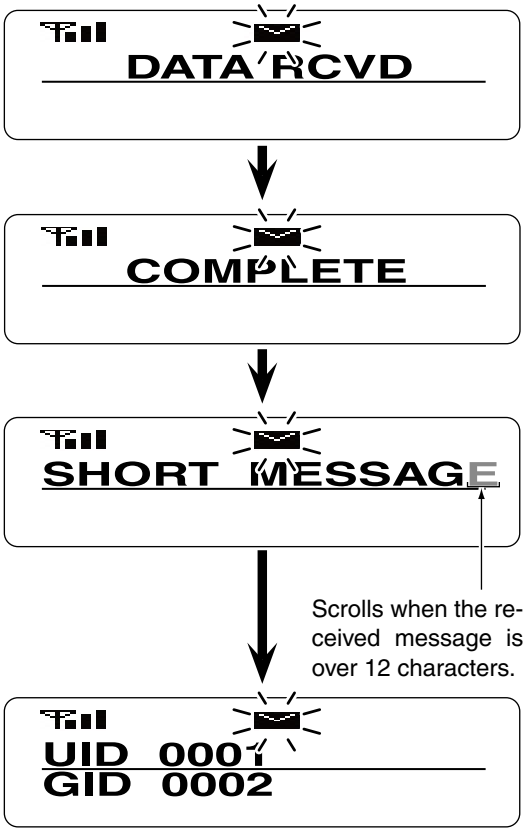


Receiving a call (Continued)

◇ Short Data call

When you receive a Short Data message, your transceiver displays the message on the function display. The message is stored in the Memory Stack, and you can view the message in the memory. (p. 6-3)

➥ When you receive a Short Data message:
- Beeps sound.
- Displays "DATA RCVD," "COMPLETE," the received message, the caller's unit ID and GID*.
  *Displayed only when the received call is the Group call.
- "✉" blinks on the function display.
  The message is stored in the Memory Stack.



◇ Long Data call

You can receive a Long Data message of up to 4,096 characters. The message can be output to a PC or external device from your transceiver.

Receiving a call (Continued)

◇ Telephone call

When you receive a call from a telephone, you can communicate with it through the telephone lines (PSTN, PABX, and so on).
When a telephone calls your transceiver, the transceiver sounds beeps, and then “PHONE” is displayed on the function display.
Hold down [PTT] to talk to the telephone.

Forced Search

If you use the Forced Search function, the transceiver searches for other Control channels using the following hunt sequences.

Hunt sequence	Explanation
Preferential Hunt Sequence	The transceiver searches for a Control channel that is set as the Preferential Hunt Control channel. The transceiver selects this Control channel with a high priority.
Normal Hunt Sequence	The transceiver searches for a Control channel that is set as the Normal Hunt Control channel.
System Add Channel Sequence	The transceiver searches for up to 8 Control channels that are added by the system.
Site Hunt Sequence	The transceiver searches for a Control channel that is set as the Site Hunt Control channel in each site.
Comprehensive Hunt Sequence	The transceiver searches for a Control channel that is set in the network frequency table.

① Hold down [Forced Search Function] for 2 seconds to turn ON the Forced Search Function.
- Displays the current site number.

② The transceiver starts to search for a Control channel signal.
- Displays “SEARCHING.”

③ When the transceiver finds and registers to a control channel, the normal screen is displayed on the function display.

Section 8 NXDN OPERATION <CONVENTIONAL MODE>

NXDN Conventional operation 8-2

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Mixed Mode 8-9

NXDN Conventional operation

When you select the NXDN Conventional system mode, you must manually search for and select a clear channel.
The system setup is easier than the Trunking mode.

Transmitting a call

◇ Group call

When you select the NXDN Conventional System zone, you can make a Group call by using the Group Call function.
Set GID to “ALL,” to call all transceivers.

① Push [Group (NXDN)] to enter the GID Select mode.
- Displays “SELCALL.”

② Push [P2](◀) or [P3](▶) to select the desired GID.
③ Push [PTT] to make a Group call.
④ Push [P1](EXIT).

For your reference:
When [Group + SDM (NXDN)] or [Group + Status (NXDN)] is assigned, you can send a message along with a Group call.

To send a Short Data Message with a Group call.
① Push [Group + SDM (NXDN)] to enter the GID Select mode.
- Displays “SELCALL.”

② Push [UP] or [DOWN] to select a desired GID.
③ Push [P1](ENT).
- Enters the Short Data Message Entry mode.

④ Push [UP] or [DOWN] to enter a character, and then push [P1](SET) to set.
- Goes to the next character entry position.
- You can use the 10-keypad keys on the microphone.

⑤ Repeat step ④ until you enter a message of up to 100 characters.
- Push [P0](DEL) to delete a character.
- Push [P2](◀) or [P3](▶) left or right to select a character.

⑥ Push [PTT] to send the message to the selected GID.
⑦ Push [P1](EXIT) to exit.

To send a Status Message with a Group call.
① Push [Group + Status (NXDN)] to enter the GID Select mode.
- Displays “SELCALL.”

② Push [UP] or [DOWN] to select a desired GID.
③ Push [P1](ENT).
- Enters the Status Message Entry mode.

④ Push [UP] or [DOWN] to select a desired status message.
- If you want to directly enter a status message, push [P2] (MODE) to select the Status Message Entry mode. You can enter a status message between 1 and 207.
- You can use the 10-keypad keys on the microphone.

⑤ Push [P3](TX) or [PTT] to send the message to the selected GID.
⑥ Push [P1](EXIT) to exit.

Transmitting a call (Continued)

◇ Individual call

You can call a specified station that is set to the same unit ID by using the Individual call function.

① Push [Individual (NXDN)] to enter the Unit ID Select mode.
- Displays "SELCALL."

② Push [UP] or [DOWN] to select a desired unit ID.
- If you want to directly enter an unit ID, push [P2](MODE) to select the Unit ID Entry mode.
  You can enter an unit ID between 1 and 65519.

③ Push [P3](TX) or [PTT] to make the Individual call.

④ Push [P1](EXIT).

◇ Individual Call Acknowledge Request call

When the Individual Call Acknowledge Request function is set, you can transmit an acknowledgement request signal with the Individual call.
Therefore, you can confirm whether the transceiver is located in the communication range or not.

① Push [Individual (NXDN)] to enter the Unit ID Select mode.
- Displays "SELCALL."

② Push [UP] or [DOWN] to select a desired unit ID.
- If you want to directly enter an unit ID, push [P2](MODE) to select the Unit ID Entry mode.
  You can enter an unit ID between 1 and 65519.

③ Push [P3](TX) or [PTT] to make the Individual call with an acknowledgement request signal.
- Displays "CALLING," and then after receiving an acknowledgement, displays "HOLDING."

④ When the called station calls back, the transceiver displays the called station's unit ID.
- Displays "NO REPLY" and sounds error beeps when your transceiver does not receive an acknowledgement within the preset time period.

For your reference:
When [Individual + SDM (NXDN)] or [Individual + Status (NXDN)] is assigned, you can send a message along with an Individual call.

To send a Short Data Message with an Individual call.

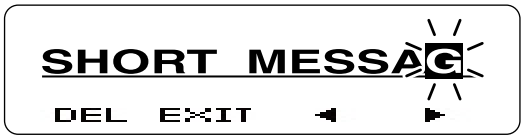
① Push [Individual + SDM (NXDN)] to enter the unit ID Select mode.
- Displays "SELCALL."

② Push [UP] or [DOWN] to select a desired unit ID.

③ Push [P1](ENT).
- Enters the Short Data Message Entry mode.

④ Push [UP] or [DOWN] to enter a character, and then push [P1](SET) to set.
- Goes to the next character entry position.
- You can use the 10-keypad keys on the microphone.

⑤ Repeat step ④ until you enter a message of up to 100 characters.
- Push [P0](DEL) to delete a character.
- Push [P2](◀) or [P3](▶) left or right to select a character.



⑥ Push [PTT] to send the message to the selected unit ID.

⑦ Push [P1](EXIT) to exit.

To send a Status Message with an Individual call.

① Push [Individual + Status (NXDN)] to enter the unit ID Select mode.
- Displays "SELCALL."

② Push [UP] or [DOWN] to select a desired unit ID.

③ Push [P1](ENT).
- Enters the Status Message Entry mode.

④ Push [UP] or [DOWN] to select a desired status message.
- If you want to directly enter a status message, push [P2](MODE) to select the Status Message Entry mode.
  You can enter a status message between 1 and 207.
- You can use the 10-keypad keys on the microphone.

⑤ Push [P3](TX) or [PTT] to send the message to the selected unit ID.

⑥ Push [P1](EXIT) to exit.

Transmitting a call (Continued)

◇ Status call

The status call is a simple message function to transmit and receive a status message. A transceiver can display the status message quickly. You cannot transmit a voice signal at the same time.

① Push [Status (NXDN)] to enter the Status Message Select mode.
- Displays "STATUS."

② Push [UP] or [DOWN] to select a desired status message.
- If you want to directly enter a status message, push [P2] (MODE) to select the Status Message Entry mode.
  You can enter a status message between 1 and 207.
- You can use the 10-keypad keys on the microphone.

③ Push [P3](TX) or [PTT] to send the selected Status Message.
- Displays "SEND DATA" and then "COMPLETE."

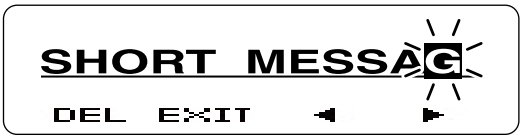
◇ Short Data call

You can send a Short Data message of up to 100 characters.
If you turn OFF the transceiver's power, the message is cleared.

① Push [SDM (NXDN)] to enter the Short Data Message Entry mode.
- Displays "MESSAGE?".

② Push [UP] or [DOWN] to enter a character, and then push [P1](SET) to set.
- Goes to the next character entry position.
- You can use the 10-keypad keys on the microphone.

③ Repeat step ② until you enter a message of up to 100 characters.
- Push [P0](DEL) to delete a character.
- Push [P2](◀) or [P3](▶) left or right to select a character.

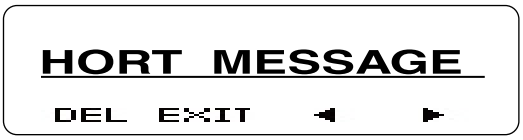


④ Push [PTT] to send.
- Displays "SEND DATA" and then "COMPLETE."

⑤ Push [P1](EXIT) to exit.

If you exit from the Short Data Message Entry mode, and then you want to transmit the message again, do the following steps.

① Push [SDM (NXDN)] to enter the Short Data Message Entry mode.
- Displays the entered message.
- Displays the last part of the message if the message is over 12 characters.



② Push [PTT] to send.
- Displays "SEND DATA" and then "COMPLETE."

③ Push [P1](EXIT) to exit.

◇ Long Data call

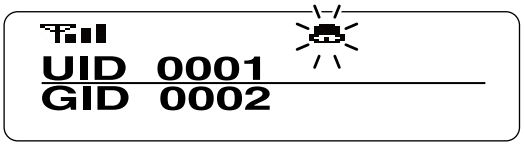
You can send a Long Data message of up to 4,096 characters only by using an external device, such as a PC. You cannot send a message by pushing [PTT].

Receiving a call

◇ Group call

When you receive a Group call that includes a matched GID, your transceiver informs you the calling by sounding beeps and blinking "" on the function display. In addition, you can easily call back to the calling station.

① When you receive a Group call that includes a matched GID:
- Beeps sound.
- Displays the caller's unit ID and GID.
- "" blinks for about 10 seconds.

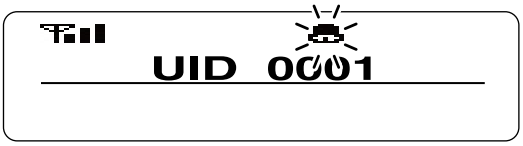


② To call back to the caller station, push [PTT] while "" is blinking.

◇ Individual call

When you receive an Individual call that includes your unit ID, your transceiver informs you the calling by sounding beeps and blinking "" on the function display. In addition, you can easily call back to the calling station.

① When you receive an Individual call that includes your unit ID:
- Beeps sound.
- Displays the caller's unit ID.
- "" blinks for about 10 seconds.



② To call back to the caller station, push [PTT] while "" is blinking.

Receiving a call (Continued)

◇ Individual Call Acknowledge Request call

When you receive an Individual Call with an acknowledgement request which includes your own Individual ID, your transceiver automatically transmits a acknowledgement signal, and informs you the calling by beep sounds and bell mark blinks on the function display. In addition, you can easily call back to the calling transceiver.

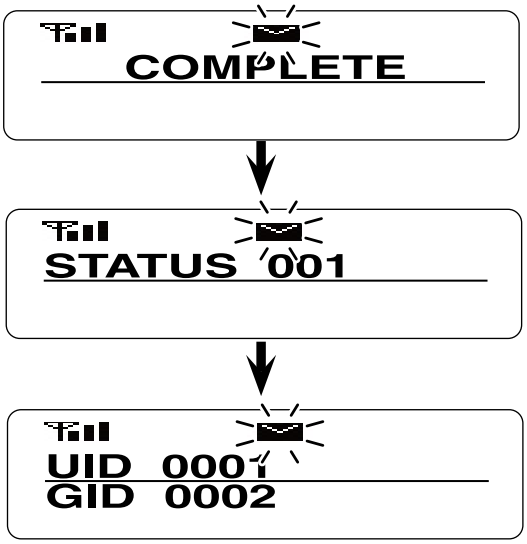
① When you receive an Individual call with an acknowledgement request signal that includes your unit ID:
- Beeps sound.
- Alternately displays the caller's unit ID and "INCOMING."
- "🔔" blinks for about 30 seconds.

② To call back to the caller station, push [PTT] while "🔔" is blinking.

◇ Status call

When you receive a Status call, your transceiver displays a received status message on the function display. The received message is stored in the Memory Stack, and you can view the message contents in the memory. (p. 6-3)

➥ When you receive a Status call:
- Beeps sound.
- Displays "DATA RCVD," "COMPLETE," the received message, the caller's unit ID and GID*.
  *Displayed only when the received call is the Group call.
- "✉" blinks on the function display.
  The message is stored in the Memory Stack.

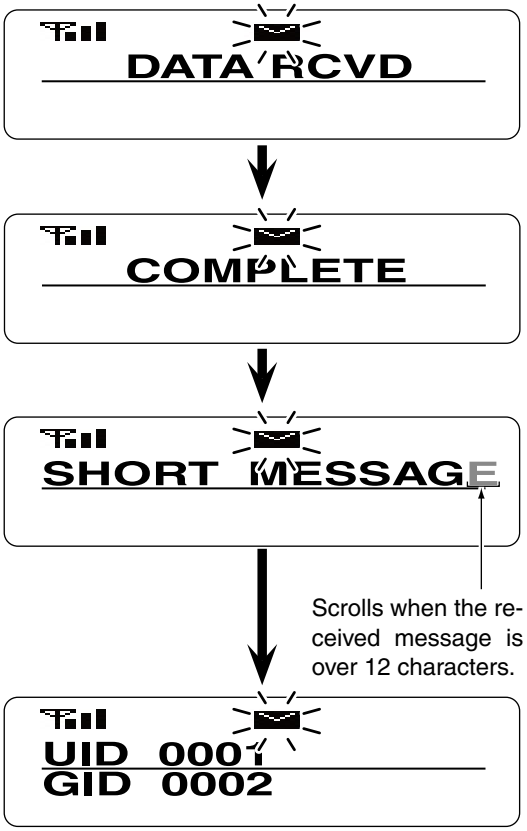


Receiving a call (Continued)

◇ Short Data call

When you receive a Short Data message, your transceiver displays the message on the function display. The message is also stored in the Memory Stack, and you can view the message in the memory. (p. 6-3)

➥ When you receive a Short Data message:
- Beeps sound.
- Displays "DATA RCVD," "COMPLETE," the received message, the caller's unit ID and GID*.
  *Displayed only when the received call is the Group call.
- "✉" blinks on the function display.
  The message is stored in the Memory Stack.



◇ Long Data Call

You can receive a Long Data message of up to 4,096 characters. The message can be output to a PC or external device from your transceiver.

Mixed Mode

If you set your transceiver to the Mixed mode, you can receive both digital and analog signals. You can use a digital transceiver on analog channels, therefore you can easy switch from an analog system to a digital system.

Count on us!

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Icom Inc.
1-1-32 Kamiminami, Hirano-ku, Osaka 547-0003, Japan