KENWOOD

NX-1000 series

USER MANUAL

JVCKENWOOD Corporation

B5A-3233-00/03_K_EN

CONTENTS

MODELS COVERED BY THIS MANUAL

The models listed below are covered by this manual:

NXDN/ Analog Transceiver

NX-1200NV : VHF TRANSCEIVER
NX-1200N : VHF TRANSCEIVER
NX-1300NU : UHF TRANSCEIVER
NX-1300N : UHF TRANSCEIVER

DMR/ Analog Transceiver

NX-1200DV : VHF TRANSCEIVER
NX-1200D : VHF TRANSCEIVER
NX-1300DU : UHF TRANSCEIVER
NX-1300D : UHF TRANSCEIVER

Analog Transceiver

NX-1200AV : VHF TRANSCEIVER
NX-1200A : VHF TRANSCEIVER
NX-1202AV : VHF TRANSCEIVER
NX-1300AU : UHF TRANSCEIVER
NX-1300A : UHF TRANSCEIVER
NX-1302AU : UHF TRANSCEIVER

NOTIFICATION OF IP67 WATER-RESISTANT MODEL (Full Button Model)

Water Resistance and Maintenance

IP67 Water-Resistant Model transceiver conforms to the following standards.

IP67: The IP standard is the protection level specified by the international standard IEC 60529. The first numeral indicates the “dust-resistant level” and the second numeral indicates the “water-resistant” level.

Note:

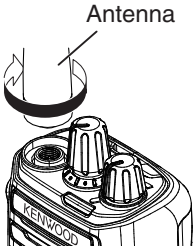
- ◆ Initial water-resistant tests and procedures are performed products upon being ordered from JVCKENWOOD.

PRECAUTIONS

- The applicable standards listed above do not assure that the transceiver can be used in water. The transceiver may be damaged in a situation in which the maximum depth is over 1 meter or the maximum submersion time exceeds 30 minutes.
- Observe the following precautions to maintain the transceiver’s water resistant performance:
  a) Do not drop or apply strong physical shocks to the transceiver.
  b) Do not disassemble or attempt to modify the transceiver. (If it is disassembled or modified, its performance is not guaranteed.)
  c) Do not soak the transceiver in water that contains a solvent or surfactant, such as detergent or alcohol.
- If it is soaked in muddy water or salt water (including sea water), it may become corroded. Immediately flush with fresh water and then wipe dry with a soft cloth.
- If water is splashed onto the microphone, the battery, or the antenna terminal, clean and dry them with a soft cloth before reconnecting to the transceiver.
- Use of any option on the transceiver not specified by JVCKENWOOD, may reduce or void the water resistant and dust resistant performance.

INSTALLING THE ANTENNA

Screw the antenna into the connector on the top of the transceiver by holding the antenna at its base and turning it clockwise until secure.

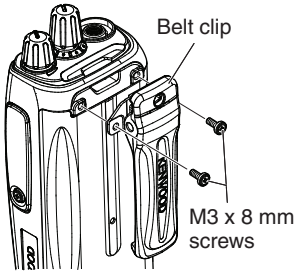


INSTALLING THE BELT CLIP

If necessary, attach the belt clip using the two supplied M3 x 8 mm binding screws.

Note:

- If the belt clip is not installed, its mounting location may get hot during continuous transmission or when left sitting in a hot environment.
- Use the Phillips #2 screwdriver.



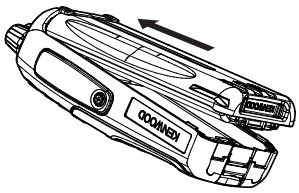
CAUTION

- Do not use glue which is designed to prevent screw loosening when installing the belt clip, as it may cause damage to the transceiver. Acrylic ester, which is contained in these glues, may crack the transceiver's back panel.

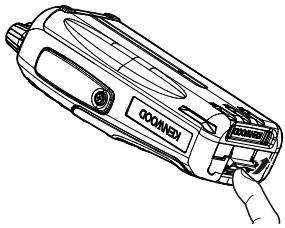
INSTALLING/ REMOVING THE BATTERY PACK

The battery pack is not charged at the factory; charge it before use.

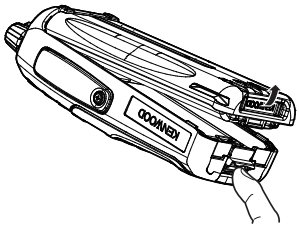
1 Align the battery pack with the back of the transceiver, then press the battery pack and transceiver firmly together until the release latch on the base of the transceiver locks.



2 To remove the battery pack, lift the safety catch on the base of the transceiver, then press the release latch underneath the safety catch.

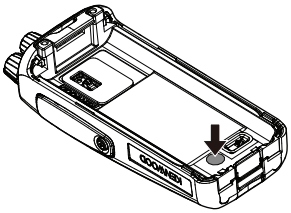


3 While pressing the release latch, pull the battery pack away from the transceiver.



CAUTION

- Do not short the battery terminals or dispose of the battery by fire.
- Never attempt to remove the casing from the battery pack.
- Do not remove the black sheet from the reverse side of the transceiver (refer to the illustration below). Removal of this sheet decreases the waterproof efficiency of the transceiver and may cause malfunctions if water seeps into the transceiver. (Full Button Model)



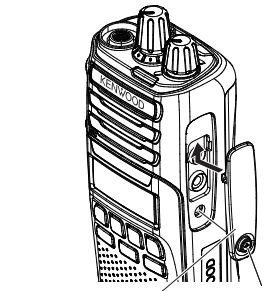
- Use KNB-84L battery pack to maintain IP67 waterproof efficiency. (Full Button Model)

INSTALLING THE CAP OVER THE SPEAKER/ MICROPHONE JACKS

Note:

- For the speaker/ microphone jack, waterproof performance is guaranteed by securing the supplied cap. Waterproof performance will not be guaranteed by connecting an optional speaker/ microphone, etc.
- Use the Phillips #1 screwdriver.

1. If you are not using an optional speaker/ microphone or headset, install the cap over the speaker/ microphone jacks.
2. Secure the cap in place using the attached screw.

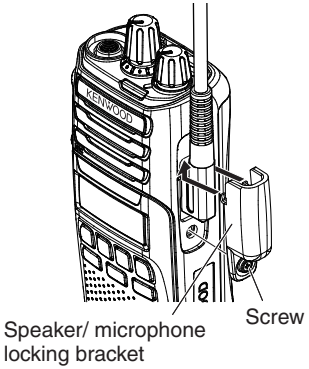


INSTALLING THE SPEAKER/ MICROPHONE OR HEADSET

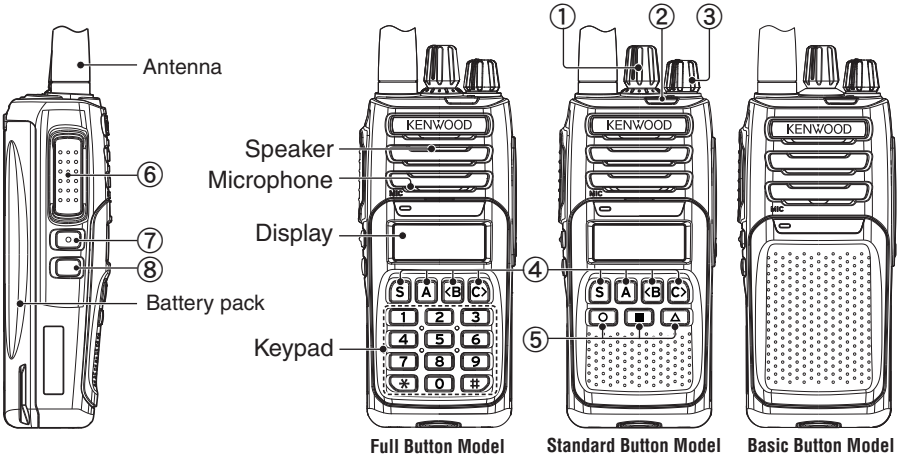
Note:

- The transceiver is not fully water resistant when using a speaker/ microphone or headset.
- Use the Phillips #1 screwdriver.

1. Insert the speaker/ microphone plugs into the speaker/ microphone jacks of the transceiver.
2. Place the locking bracket over the speaker/ microphone plugs so that the locking tabs insert into the transceiver grooves.
3. Secure the locking bracket in place using the attached screw.



Buttons and Controls



① Selector

Rotate to change the operating channel or zone.

② Status indicator

Lights during a specified mode, based on dealer programming.

(Red, Purple, Blue, Light Blue, Green, Yellow, White)

③ Power switch/ Volume control

Turn clockwise to switch ON the transceiver. To switch OFF the transceiver, turn counterclockwise until a click sounds. Rotate to adjust the volume level.

④ [S], [A], [<B], and [C>] buttons

- Used for each setting operation.
- Press to activate its programmable function.

⑤ [○], [■], and [△] buttons

Press to activate its programmable function.

⑥ PTT (Push to Talk) switch

Press and hold, then speak into the microphone to transmit.

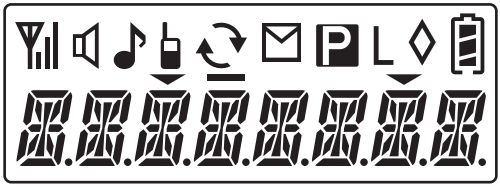
⑦ Side 1 button

Press to activate its programmable function.

⑧ Side 2 button

Press to activate its programmable function.

Display



Indicator	Description
	Displays the signal strength.
	The Monitor or Squelch Off function is activated.
	Blinks when an incoming call matches your Optional Signaling.
	The Talk Around function is activated.
	Scan, Priority Scan, or Site Roaming is in progress. Blinks when the scan is paused.
	A message is stored in the memory. Blinks when a new message is received.
P	Indicates Priority Channel.
L	The channel is using low transmit power.
	The Scrambler/Encryption function is activated. Blinks when receiving an encrypted carrier.
	Displays the battery power.
	Left side: The current zone is added to the Multi-Zone scanning sequence. Right side: The current channel is added to the scanning sequence.
	The VOX function is activated.

SWITCHING POWER ON/ OFF

Turn the **Power** switch/ **Volume** control clockwise to switch the transceiver power ON.

- The Power on text appears if the Power on text has been set.

Turn the **Power** switch/ **Volume** control counterclockwise to switch the transceiver power OFF.

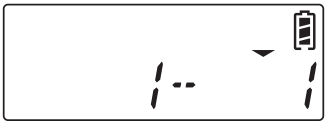
ADJUSTING THE VOLUME

Rotate the **Power** switch/ **Volume** control to adjust the volume.

Rotate clockwise to increase the volume and counterclockwise to decrease the volume.

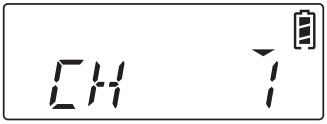
SELECTING A ZONE AND CHANNEL

1 Select the desired zone using the **Selector** (programmed as **[Zone Up/Down]** or **[Zone Select]**) or buttons programmed as **[Zone Up]**/ **[Zone Down]**.



- Each zone contains a group of channels.

2 Select the desired channel using the **Selector** (programmed as **[Channel Up/Down]** or **[Channel Select]**) or buttons programmed as **[Channel Up]**/ **[Channel Down]**.



- Each channel is programmed with settings for transmitting and receiving.
- The transceiver may have names programmed for zones and channels. The zone name and channel name can contain up to 8 characters respectively. While selecting a zone, the zone name appears for 2 seconds (if Zone Name Display is set), then channel name appears.

TRANSMITTING

1 Select the desired zone and channel.

2 Press the button programmed as **[Monitor]** or **[Squelch Off]** to check whether or not the channel is free.
- If the channel is busy, wait until it becomes free.

3 Press the **PTT** switch and speak to the microphone. Release the **PTT** switch to receive.
- The LED indicator lights red while transmitting and green while receiving a signal. This indicator can also be disabled by your dealer.
- For best sound quality, hold the transceiver approximately 3 ~ 4 cm (1.5 inches) from your mouth.
- In Site Roaming zones, the transceiver will search for the strongest signal repeater and transmit using that repeater's frequency.

Making Group Calls (NXDN/ DMR)

You can select a group ID from the list to make a call to those parties on a channel.

1 Press the button programmed as **[Group]**, **[Group + Short Message]** or **[Group + Status]** to enter Group Call Mode.
- Alternatively, press the button programmed as **[Menu]** to enter Group Call Mode using the Menu Mode.
- The group ID list appears on the display.

2 Press the **[<B]** and **[C>]** buttons to select a Group ID/ name from the list that has been programmed into your transceiver.

3 Press and hold the **PTT** switch to make the call.
- The " ♪ " indicator blinks. The Group name of the target transceiver are displayed.

- Speak to the microphone as you would during a normal call.

Making Individual Calls (NXDN/ DMR)

You can select a Unit ID/ name from the list to make a call to those parties on a channel.

1 Press the button programmed as **[Individual]**, **[Individual + Short Message]** or **[Individual + Status]** to enter Individual Call Mode.
- Alternatively, press the button programmed as **[Menu]** to enter Individual Call Mode using the Menu Mode.
- The ID list appears on the display.

2 Press the **[<B]** and **[C>]** buttons to select a Unit ID/ name from the list that has been programmed into your transceiver.

3 Press and hold the **PTT** switch to make the call.
- The " ♪ " indicator blinks. The ID name of the target transceiver are displayed.

- Speak to the microphone as you would during a normal call.

RECEIVING

1 Select the desired zone and channel. (If the Scan function has been programmed, you can switch it On or Off as desired.)

2 When you hear the caller's voice, readjust the volume as necessary.
- If signaling has been programmed on the selected channel, you will hear a call only if the signaling matches the signaling set up on your transceiver. Refer to "OPTIONAL SIGNALING" {p. 75} for details.
- In Site Roaming zones, the transceiver will automatically search for the strongest signal and receive on that frequency.

Note:

◆ A ringing tone will sound when receiving a call if the alert tone has been enabled in the Alert Tone setting. For details, consult your dealer.

Receiving Group Calls (NXDN/ DMR)

When you receive a group call on a channel and the received group ID matches the ID set up on your transceiver, you can hear the caller's voice.

Receiving Individual Calls (NXDN/ DMR)

When you receive an individual call on a channel, a ringing tone will sound and the display will show the caller's ID.

Note:

- When water gets into the microphone opening or the speaker grill, the voice level of the transmission and reception may become low or distorted. Lightly shake the transceiver to remove the water from the speaker and/or microphone before operating the transceiver.

FUNCTION MODE

Your transceiver operations vary according to the functions that your dealer has programmed to the transceiver buttons and selector. Refer to “FUNCTIONS LIST” {p. 18} for the available programmable functions.

MENU MODE (LCD Model)

Many functions on this transceiver are selected or configured through the Menu instead of physical controls. Once you become familiar with the Menu system, you will appreciate the versatility it offers.

Some transceiver buttons may already be programmed with functions listed in the Menu. Those functions can be accessed directly by pressing the button. All other functions can still be accessed using the transceiver Menu. Refer to “FUNCTIONS LIST” for the available Menu items.

- Menu Mode can register functions by category (Up to 12 categories). Example:

Category	Function
CALL	Individual, Group, Status, Stack
SCAN	Scan, Scan Delete/Add
AUD/TONE	Squelch Off, Squelch Level

- The category does not appear in Menu Mode when only one category is configured. When the transceiver enters Menu Mode, the functions registered in Menu Mode appear.

Menu Access

1 Press the button programmed as **[Menu]**.
   - The category list is shown.

   - When there is only one category, the function list is shown (proceed to step 4).

2 Press **[<B]** and **[C>]** buttons to select a category item.

3 Press the **[S]** button to view the function list for the selected category.

4 Press **[<B]** and **[C>]** to select a function item.

- Press the **[A]** button to return to the category list.

5 Press the **[S]** button. The selected function functions.

- Options for a function, such as Microphone type, can be selected by pressing the **[<B]** and **[C>]** buttons and then can be confirmed by pressing the **[S]** button.

- Press the **Side 1** button at any time to exit Menu Mode.

FUNCTIONS LIST

PF Button : Functions that can be programmed to the transceiver buttons

Menu : Functions that can be accessed using the transceiver Menu

Non-LCD : Non-LCD Model

Analog : Channels set up for Analog

NXDN : Channels set up for NXDN

DMR : Channels set up for DMR

✔ : Available

N/A : Not Available

Function	Menu Display	PF Button	Menu	Non-LCD	Analog	NXDN	DMR
None	–	✔	N/A	✔	✔	✔	✔
2-tone	2-TONE	✔	✔	N/A	✔	N/A	N/A
Autodial	AUTODIAL	✔	✔	N/A	✔	N/A	N/A
Backlight	–	✔	N/A	N/A	✔	✔	✔
Battery Status	BAT STAT	✔	✔	✔	✔	✔	✔
Broadcast	BCST	✔	✔	✔	N/A	N/A	✔
Button Lock	–	✔	N/A	✔	✔	✔	✔
Call 1 ~ 6	–	✔	N/A	✔	✔	✔	✔
Calling Alert	–	✔	N/A	✔	✔	N/A	N/A
Call Interruption	–	✔	N/A	✔	N/A	N/A	✔
Call Response	–	✔	N/A	✔	N/A	✔	✔
Channel Down	–	✔	N/A	✔	✔	✔	✔
Channel Down (Continuous)	–	✔	N/A	✔	✔	✔	✔
Channel Entry	–	✔	N/A	N/A	✔	✔	✔
Channel Recall	–	✔	N/A	✔	✔	✔	✔
Channel Select *1	–	N/A	N/A	✔	✔	✔	✔
Channel Up/ Down *2	–	N/A	N/A	N/A	✔	✔	✔
Channel Up	–	✔	N/A	✔	✔	✔	✔
Channel Up (Continuous)	–	✔	N/A	✔	✔	✔	✔

Function	Menu Display	PF Button	Menu	Non-LCD	Analog	NXDN	DMR
Clear	–	✔	N/A	✔	✔	✔	✔
CW Message	–	✔	N/A	✔	N/A	✔	N/A
Direct Channel 1 ~ 5	–	✔	N/A	✔	✔	✔	✔
Direct Channel 1 ~ 5 Select	DR 1 SEL ~ DR 5 SEL	✔	✔	✔	✔	✔	✔
Display Format	DISP FMT	✔	✔	N/A	✔	✔	✔
Emergency	–	✔	N/A	✔	✔	✔	✔
External Microphone Sense	EX MIC S	N/A	✔	N/A	✔	✔	✔
External Speaker	SPEAKER	✔	✔	✔	✔	✔	✔
Fixed Volume	FIXED V	✔	✔	✔	✔	✔	✔
Function	–	✔	N/A	✔	✔	✔	✔
Group	GRP MODE	✔	✔	N/A	✔	✔	✔
Group + Short Message	GRP SDM	✔	✔	N/A	✔	✔	✔
Group + Status	GRP STAT	✔	✔	N/A	✔	✔	✔
High Transmit Power	HIGH PWR	✔	✔	✔	✔	✔	✔
Home Channel	–	✔	N/A	✔	✔	✔	✔
Home Channel Select	HOME SEL	✔	✔	✔	✔	✔	✔
Individual	IND MODE	✔	✔	N/A	✔	✔	✔
Individual + Short Message	IND SDM	✔	✔	N/A	✔	✔	✔
Individual + Status	IND STAT	✔	✔	N/A	✔	✔	✔
Lone Worker	L-WK	✔	✔	✔	✔	✔	✔

Function	Menu Display	PF Button	Menu	Non-LCD	Analog	NXDN	DMR
Low Transmit Power	LOW PWR	✔	✔	✔	✔	✔	✔
Maintenance	MAINT	✔	✔	N/A	✔	✔	✔
Manual Site Hunt	M SITE H	✔	✔	✔	N/A	N/A	✔
Medium Transmit Power	MED PWR	N/A	✔	N/A	✔	✔	✔
Menu	–	✔	N/A	N/A	✔	✔	✔
Microphone Sense	MIC SENS	N/A	✔	N/A	✔	✔	✔
Microphone Type	MIC TYPE	N/A	✔	N/A	N/A	✔	✔
Monitor	MONITOR	✔	✔	✔	✔	✔	✔
Monitor Momentary	–	✔	N/A	✔	✔	✔	✔
Operator Selectable Tone	OST	✔	✔	N/A	✔	N/A	N/A
OST List	OST LIST	✔	✔	N/A	✔	N/A	N/A
OVCM	OVCM	✔	✔	✔	N/A	N/A	✔
Priority-channel Select	PRIORITY	✔	✔	N/A	✔	✔	✔
Radio Check (MDC-1200)	RD CHK	N/A	✔	N/A	✔	N/A	N/A
Radio Inhibit (MDC-1200)	INHIBIT	N/A	✔	N/A	✔	N/A	N/A
Radio Uninhibit (MDC-1200)	UNINHIB	N/A	✔	N/A	✔	N/A	N/A
Remote Control	RMT CTRL	✔	✔	N/A	N/A	✔	✔
RX Audio Equalizer	RX EQ	N/A	✔	N/A	N/A	✔	✔
RX Auto Gain Control	RX AGC	N/A	✔	N/A	N/A	✔	✔
Save Log Data	SAVE LOG	✔	✔	✔	✔	✔	✔

Function	Menu Display	PF Button	Menu	Non-LCD	Analog	NXDN	DMR
Scan	SCAN	✔	✔	✔	✔	✔	✔
Scan Delete/Add	SCN D/A	✔	✔	✔	✔	✔	✔
Scrambler/ Encryption	SCRENC	✔	✔	✔	✔	✔	✔
Scrambler/ Encryption Code	SCRENC C	✔	✔	N/A	✔	✔	✔
Send the GPS Data	SEND GPS	✔	✔	✔	✔	✔	✔
Short Message	SDM MODE	✔	✔	N/A	✔	✔	✔
Speaker Attenuation	–	✔	N/A	✔	✔	✔	✔
Speaker Type	SPK TYPE	N/A	✔	N/A	N/A	✔	✔
Squelch Level	SQL LVL	✔	✔	N/A	✔	N/A	N/A
Squelch Off	SQL OFF	✔	✔	✔	✔	✔	✔
Squelch Off Momentary	–	✔	N/A	✔	✔	✔	✔
Stack	STACK	✔	✔	N/A	✔	✔	✔
Status	STATUS	✔	✔	N/A	✔	✔	✔
Surveillance	SURVEIL	✔	✔	N/A	✔	✔	✔
Talk Around	TALK ARD	✔	✔	✔	✔	✔	✔
Transceiver Password	TRNS PWD	✔	✔	N/A	✔	✔	✔
TX Audio Equalizer	TX EQ	N/A	✔	N/A	N/A	✔	✔
TX Auto Gain Control	TX AGC	N/A	✔	N/A	N/A	✔	✔
VOX	VOX LVL	✔	✔	N/A	✔	✔	✔
VOX Function	VOX	✔	✔	✔	✔	✔	✔
Zone Delete/Add	ZONE D/A	✔	✔	✔	✔	✔	✔
Zone Down	–	✔	N/A	✔	✔	✔	✔

Function	Menu Display	PF Button	Menu	Non-LCD	Analog	NXDN	DMR
Zone Down (Continuous)	–	✔	N/A	✔	✔	✔	✔
Zone Select *3	–	N/A	N/A	✔	✔	✔	✔
Zone Up/Down *4	–	N/A	N/A	N/A	✔	✔	✔
Zone Up	–	✔	N/A	✔	✔	✔	✔
Zone Up (Continuous)	–	✔	N/A	✔	✔	✔	✔

*1: **[Channel Select]** can be programmed only on the Selector of the Non-LCD model. Cannot be set with **[Channel Up]** and/or **[Channel Down]** together.

*2: **[Channel Up/Down]** can be programmed only on the Selector of the LCD model.

*3: **[Zone Select]** can be programmed only on the Selector of the Non-LCD model. Cannot be set with **[Zone Up]** and/or **[Zone Down]** together.

*4: **[Zone Up/Down]** can be programmed only on the Selector of the LCD model.

FUNCTIONS OVERVIEW

Following is a brief overview of the functions available on the transceiver accessible using the Menu and/or programmable to the transceiver buttons.

- For details on functions that are not included in “FUNCTIONS OVERVIEW” and “FUNCTION DESCRIPTIONS” {p. 66}, please consult your dealer.

None [Analog/ NXDN/ DMR]

No function has been programmed.

2-tone [Analog]

2-tone Signaling opens the squelch only when your transceiver receives a call containing a matching 2-tone signal.

1 **PF Button:** Press the programmed button to enter 2-tone Mode.

Menu Mode: Select “2-TONE” and press the **[S]** button to enter 2-tone Mode.

2 Press the **[<B]** and **[C>]** buttons to select your desired list of 2-tone codes.

3 Press the **PTT** switch or **Side 2** button to make the call.

- If 2-tone is sent by pressing **Side 2** button, the transceiver immediately returns to Receive mode after transmitting 2-tone.

Autodial [Analog]

Allows you to quickly send DTMF codes from the Autodial List.

1 **PF Button:** Press the programmed button to enter Autodial Mode.

Menu Mode: Select “AUTODIAL” and press the **[S]** button to enter Autodial Mode.

2 Press the **[<B]** and **[C>]** buttons to select your desired list of Autodial.

3 Press the **PTT** switch to make the call.

Backlight [Analog/ NXDN/ DMR]

Allows you can turn the LCD display backlight on/off.

PF Button:

Press the programmed button to turn the display backlight On or Off.

- If Auto backlight is activated by your dealer, the backlight can be set to activate by button operations or when receiving a call/ message.

Battery Status [Analog/ NXDN/ DMR]

Allows you to check the battery power status.

PF Button:

Press the programmed button, the Battery Status function operates.

Menu Mode:

Select “BAT STAT” and press the **[S]** button, the Battery Status function operates.

Battery status is represented by the number of times the LED indicator flashes red. Four flashes represents full power, three represents medium power, two represents low power, and one represents very low power. If the LED flashes red only one time, recharge or replace your battery pack immediately.

Battery remaining	LED	Beep tone	Indicator (LCD-Model)
Full	Blink 4 times	Sounds 4 times	
Sufficient	Blink 3 times	Sounds 3 times	
Low	Blink 2 times	Sounds 2 times	
Very Low	Blink 1 time	Sounds 1 time	

- When the Low Battery Warning function is active {p. 81} and the battery power is low or less, this button will not operate.
- If the Battery Level Tone has been enabled, a beep tone will sound according to the number of flashes from the LED.

Broadcast [DMR]

Allows you to make a Broadcast Group Call. Broadcast Group Call can be used to engage in one-way informative group voice calls by initiating a call to a group.

PF Button:

Press the programmed button, to switch to Broadcast Call.

Menu Mode:

Select “BCST” and press the **[S]** button to switch to Broadcast Call.

- “BCST ON” is displayed for 1 second and Broadcast Group Call will be On.

Button Lock [Analog/ NXDN/ DMR]

Locking the transceiver button operation. This function prevents the incorrect operation of the transceiver by physical contact while carrying the transceiver, such as around the waist.

PF Button:

Press the programmed button to lock the transceiver buttons.

- Beep A (1 beep) sounds.

Press the button again to unlock.

- Beep B (2 beeps) sounds.
- While Button Lock is on, operate a button that has been locked. “LOCKED” is displayed for 1 second.

- Even if a button on the transceiver is pressed while the Button Lock is enabled, a Button-entry Error Tone (1 beep) sounds.
- Whether each button operation is targeted for the Button Lock can be configured by your dealer. The following buttons are targeted for the Button Lock when each configuration is enabled:
  - Selector, Front Buttons, Side Buttons, Volume Control, and PTT Switch.
- The following will still function and can be operated as per normal.
  - Backlight, Battery Status, Button Lock, Call Response, Clear, Emergency, Function, Monitor, Monitor Momentary, Lone Worker, Squelch Off, and Squelch Off Momentary.

Call 1 ~ 6 [Analog/ NXDN/ DMR]

Allows you to send assigned signaling from Call 1 to Call 6.

PF Button:

Press the programmed button to send a message or initiate a call.

Calling Alert [Analog]

Allows you to send a calling alert to the other party. Calling alert tones help identify yourself to party members and inform them that you are calling.

PF Button:

Press the programmed button to send an Alert tone to a receiver.

Call Interruption [DMR]

Allows a transceiver other than the transmitting transceiver to terminate voice communications by sending a Call Interruption request message. If a transceiver receives a Call Interruption request message on the channel where the transceiver is performing voice communications, the transceiver terminates the voice communications.

PF Button:

Press the programmed button to send Call Interruption Request message.

Call Response [NXDN/ DMR]

Allows you to send an acknowledge call, upon receipt of the acknowledgment request message from an individual call.

PF Button:

Press the programmed button to respond to an Individual Call.

Channel Entry [Analog/ NXDN/ DMR]

In Channel Entry Mode, channel can be selected by the same operation as List selection.

PF Button:

1 Press the programmed button to enter Channel Entry Mode.

2 Press the **[<B]** and **[C>]** buttons to select your desired channel.

3 Press the **[S]** button to confirm the entry.

To enter 2-digit channel number (example: Channel 12):

1 Press the programmed button to enter Channel Entry Mode.

2 Press the **[<B]** and **[C>]** buttons to select “1”

3 Press the **[S]** button.

4 Press the **[<B]** and **[C>]** buttons to select “2”.

- Press the **[A]** button to delete 1 digit number. Press and hold the **[A]** button to delete all numbers.

5 Press the **[S]** button to confirm the entry.

To enter 3-digit channel number (example: Channel 123):

1 Press the programmed button to enter Channel Entry Mode.

2 Press the **[<B]** and **[C>]** buttons to select “1”

3 Press the **[S]** button.

4 Press the **[<B]** and **[C>]** buttons to select “2”.

5 Press the **[S]** button.

6 Press the **[<B]** and **[C>]** buttons to select “3”.

- Press the **[A]** button to delete 1 digit number. Press and hold the **[A]** button to delete all numbers.

7 Press the **[S]** button to confirm the entry.

Channel Recall [Analog/ NXDN/ DMR]

PF Button:

Press the programmed button during Scan to return to the last called zone and channel and Scan pauses (Scan Stop Tone will sound every 30 seconds).

- Beep A (1 beep) sounds.

Channel Select [Analog/ NXDN/ DMR]

Selector:

Turn the **Selector** to select the channel number.

Channel Up/Down [Analog/ NXDN/ DMR]

Selector:

Turn the **Selector** to increase/ decrease the channel number.

Channel Up/ Channel Down [Analog/ NXDN/ DMR]

PF Button:

Press the programmed button to increase/ decrease the channel number.

Channel Up (Continuous)/ Channel Down (Continuous) [Analog/ NXDN/ DMR]

PF Button:

Hold down the programmed button to continuously increase/ decrease the channel number.

Clear [Analog/ NXDN/ DMR]

Allows you to cancel the data (Status Message, Short Message, Remote Control Message, Call Alert, etc.) transmission, reject an incoming call, or disconnect the call.

PF Button:

Press the programmed button to end a call or cancel a status message transmission.

- Beep A (1 beep) sounds.
- “CANCEL” is displayed for 1 second.

CW Message [NXDN]

Sending CW Message.

PF Button:

Press the programmed button to send the set Morse code.

Direct Channel 1 ~ 5 [Analog/ NXDN/ DMR]

Allows you to go directly to Direct Channel 1 ~ 5.

PF Button:

Press the programmed button to jump to a frequently used zone and channel.

- Beep A (1 beep) sounds.

Press this button again to return to the formerly selected channel.

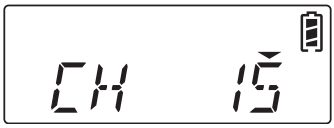
- Beep B (2 beeps) sounds.

If activated by your dealer, you can set your own Direct Channels by selecting your desired zone and channel using Direct Channel 1 ~ 5.

Direct Channel 1 ~ 5 Select [Analog/ NXDN/ DMR]

Allows you to set the currently selected channel as the Direct Channel 1 ~ 5.

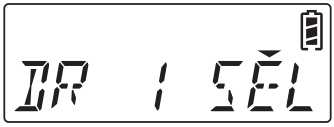
1 Select the channel to be set as Direct Channel.



2 **PF Button:** Press and hold the programmed button to set the currently selected channel as Direct Channel 1 ~ 5.

- Beep C (3 beeps) sounds.

Menu Mode: Select “DR 1 SEL” ~ “DR 5 SEL” and press the **[S]** button to set the currently selected channel as Direct Channel 1 ~ 5.

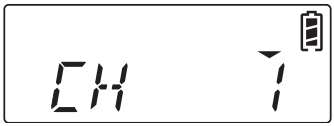


Display Format [Analog/ NXDN/ DMR]

Allows you to switch the display between the zone-channel number and the channel name.

Zone-channel number

Channel name



PF Button:

Press the programmed button to switch the display between the zone-channel number and the channel name.

Menu Mode:

Select “DISP FMT” and press the **[S]** button to change the Display Format setting.

Emergency [Analog/ NXDN/ DMR]

This is for entering Emergency Mode if the transceiver is in standby mode. If the transceiver is in Emergency mode, it exits the emergency mode. In Emergency Mode, the transceiver repeats transmission and reception at regular intervals.

PF Button:

Press and hold the programmed button for the time set in hold delay to enter Emergency Mode.

- If transceiver is in Emergency Mode, press and hold this button for the time set in Hold Delay to exit Emergency Mode.

Refer to “EMERGENCY CALLS” {p. 71}.

External Microphone Sense [Analog/ NXDN/ DMR]

Allow you to set the microphone sensitivity of the external microphone.

Menu Mode:

1 Select “EX MIC S” and press the **[S]** button.

2 Press the **[<B]** and **[C>]** buttons to select the microphone sensitivity.

- You can select from +6 dB (High sensitivity) to -20 dB (Low sensitivity) by 2 steps.

3 Press the **[S]** button to confirm and exit mode.

External Speaker [Analog/ NXDN/ DMR]

If external speaker connected to the transceiver, select the output of the speaker to the external speaker or internal speaker.

PF Button:

Press the programmed button to switch the external speaker or internal speaker.

Menu Mode:

1 Select “SPEAKER” and press the **[S]** button.

2 Press the **[<B]** and **[C>]** buttons to switch the external speaker or internal speaker.

External speaker

Internal speaker

3 Press the **[S]** button to confirm and exit mode.

Fixed Volume [Analog/ NXDN/ DMR]

Allows you to change the volume level of the tone.

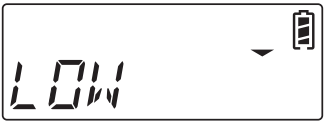
PF Button:

Press the programmed button to change Low, High, or Off (Tone Off).

Menu Mode:

1 Select “FIXED V” and press the **[S]** button.

2 Press the **[<B]** and **[C>]** buttons to select Low, High, or Off (Tone Off).



3 Press the **[S]** button to confirm and exit mode.

Function [Analog/ NXDN/ DMR]

Allows you to access the 2nd function programmed to a button. Programmable buttons can be assigned Main function and 2nd function.

PF Button:

1 Press the programmed button to enter 2nd function input wait state.

- Beep A (1 beep) sounds.
- “FNC” is displayed.

2 Press the button which has been programmed a 2nd function to perform the 2nd Function.

Group [Analog/ NXDN/ DMR]

Activates Group Call Mode.

1 **PF Button:** Press the programmed button to enter Group Call Mode (NXDN/ DMR) or Selcall Mode (FleetSync/ MDC-1200).

Menu Mode: Select “GRP MODE” and press the **[S]** button to enter Group Call Mode (NXDN/ DMR) or Selcall Mode (FleetSync/ MDC-1200).

2 Press the **[<B]** and **[C>]** buttons to select a Group ID/ name from the list that has been programmed to your transceiver.

3 Press and hold the **PTT** switch to make the call.

NXDN/ DMR:

Refer to “Making Group Calls (NXDN/ DMR)” {p. 13}.

FleetSync:

Refer to “FleetSync: ALPHANUMERIC 2-WAY PAGING FUNCTION” {p. 76}

Group + Short Message [Analog/ NXDN/ DMR]

Allows you to specify a Group ID to send short messages.

1 **PF Button:** Press the programmed button to enter Group Call Mode (NXDN/ DMR) or Selcall Mode (FleetSync/ MDC-1200).

Menu Mode: Select “GRP SDM” and press the **[S]** button to enter Group Call Mode (NXDN/ DMR) or Selcall Mode (FleetSync/ MDC-1200).

2 Press the **[<B]** and **[C>]** buttons to select a Group ID/ name from the list.

3 Press the **[S]** button to enter Short Message Mode.

4 Press the **[<B]** and **[C>]** buttons to select a Short Message from the list (NXDN/ DMR).

5 Press the **PTT** switch or **Side 2** button to send short messages.

Group + Status [Analog/ NXDN/ DMR]

Allows you to specify a Group ID to send status messages.

1 **PF Button:** Press the programmed button to enter Group Call Mode (NXDN/ DMR) or Selcall Mode (FleetSync/ MDC-1200).

Menu Mode: Select “GRP STAT” and press the **[S]** button to enter Group Call Mode (NXDN/ DMR) or Selcall Mode (FleetSync/ MDC-1200).

2 Press the **[<B]** and **[C>]** buttons to select a Group ID/ name from the list.

3 Press the **[S]** button to enter Status Mode.

4 Press the **[<B]** and **[C>]** buttons to select the status messages you want to transmit.

5 Press the **PTT** switch or **Side 2** button to send status messages.

High Transmit Power [Analog/ NXDN/ DMR]

Turns High Transmit Power On or Off. When using a channel programmed with low or medium power, this allows you to change the output power to high.

PF Button:

Press the programmed button to change the output power to high.

- Beep A (1 beep) sounds.

Press this button again to change the transmit power to the original setting.

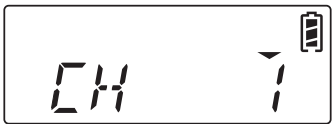
- Beep B (2 beeps) sounds.

Menu Mode:

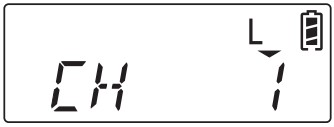
Select “HIGH PWR” and press the **[S]** button to change the High Transmit Power On or Off.

- The “ L ” indicator appears while using Low transmit power.
- The “ L ” indicator disappears while using High or Medium transmit power.

High or Medium Transmit Power



Low Transmit Power



Home Channel [Analog/ NXDN/ DMR]

Allows you to jump to home channel (programmed by your dealer). If activated by your dealer, you can set your own Home Channel by selecting your desired channel using Home Channel Select.

PF Button:

Press the programmed button to jump to home channel.

- Beep A (1 beep) sounds.
- “HOME” is displayed for 1 second.

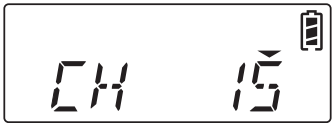
Press this button again to return to the formerly selected channel.

- Beep B (2 beeps) sounds.

Home Channel Select [Analog/ NXDN/ DMR]

Allows you to set the currently selected channel to Home Channel.

1 Select the channel to be set as Home Channel.



2 **PF Button:** Press and hold the programmed button to set the currently selected channel as the Home Channel.

- Beep C (3 beeps) sounds.

Menu Mode: Select “HOME SEL” and press the **[S]** button to set the currently selected channel as the Home Channel.

Individual [Analog/ NXDN/ DMR]

Activates Individual Call Mode.

1 **PF Button:** Press the programmed button to enter Individual Call Mode (NXDN/ DMR) or Selcall Mode (FleetSync/ MDC-1200).

Menu Mode: Select “IND MODE” and press the **[S]** button to enter Individual Call Mode (NXDN/ DMR) or Selcall Mode (FleetSync/ MDC-1200).

2 Press the **[<B]** and **[C>]** buttons to select a Unit ID/ name from the list that has been programmed to your transceiver.

3 Press and hold the **PTT** switch to make the call.

NXDN/ DMR:

Refer to “Making Individual Calls (NXDN/ DMR)” {p. 14}.

FleetSync:

Refer to “FleetSync: ALPHANUMERIC 2-WAY PAGING FUNCTION” {p. 76}.

Individual + Short Message [Analog/ NXDN/ DMR]

Allows you to specify a Unit ID to send short messages.

1 **PF Button:** Press the programmed button to enter Individual Call Mode (NXDN/ DMR) or Selcall Mode (FleetSync/ MDC-1200).

Menu Mode: Select “IND SDM” and press the **[S]** button to enter Individual Call Mode (NXDN/ DMR) or Selcall Mode (FleetSync/ MDC-1200).

2 Press the **[<B]** and **[C>]** buttons to select a Unit ID/ name from the list.

3 Press the **[S]** button to enter Short Message Mode.

4 Press the **[<B]** and **[C>]** buttons to select a Short Message from the list (NXDN/ DMR).

5 Press the **PTT** switch or **Side 2** button to send short messages.

Individual + Status [Analog/ NXDN/ DMR]

Allows you to specify a Unit ID to send status messages.

1 **PF Button:** Press the programmed button to enter Individual Call Mode (NXDN/ DMR) or Selcall Mode (FleetSync/ MDC-1200).

Menu Mode: Select “IND STAT” and press the **[S]** button to enter Individual Call Mode (NXDN/ DMR) or Selcall Mode (FleetSync/ MDC-1200).

2 Press the **[<B]** and **[C>]** buttons to select a Unit ID/ name from the list.

3 Press the **[S]** button to enter Status Mode.

4 Press the **[<B]** and **[C>]** buttons to select the status messages you want to transmit.

5 Press the **PTT** switch or **Side 2** button to send status messages.

Lone Worker [Analog/ NXDN/ DMR]

Using Lone Worker function, the transceiver can automatically enter Emergency Mode and notify the base station of the emergency status when the transceiver becomes disabled from operating due to an accident.

PF Button:

Press the programmed button to change the Lone Worker On.

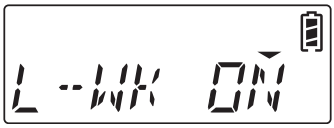
- Beep A (1 beep) sounds.

Press this button again to change the Lone Worker Off.

- Beep B (2 beeps) sounds.

Menu Mode:

Select “L-WK” and press the **[S]** button to change the Lone Worker On or Off.



- Lone Worker is turn On, “L-WK ON” is displayed for 1 second.
- If transceiver is on the Lone Worker mode, Lone Worker is turn Off, “L-WK OFF” is displayed for 1 second.

On the Lone Worker mode, Lone Worker Interval time(r) will be counting down. When you press any button to indicate that you are safe and the timer will be restarted.

The transceiver automatically enters Emergency Mode if you do not operate the transceiver during the Lone Worker Interval time.

Low Transmit Power [Analog/ NXDN/ DMR]

Turns Low Transmit Power On or Off. When using a channel programmed with medium or high power, this allows you to change the output power to low.

PF Button:

Press the programmed button to change the output power to Low.

- Beep A (1 beep) sounds.

Press this button again to change the transmit power to the original setting.

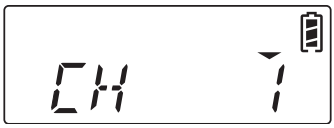
- Beep B (2 beeps) sounds.

Menu Mode:

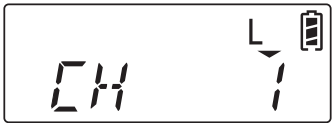
Select “LOW PWR” and press the **[S]** button to change the Low Transmit Power On or Off.

- The “ L ” indicator appears while using Low transmit power.
- The “ L ” indicator disappears while using High or Medium transmit power.

High or Medium Transmit Power



Low Transmit Power



Maintenance [Analog/ NXDN/ DMR]

Allows you to display the signal strength and Bit Error Rate (BER) on the LCD when constructing the system or during maintenance.

1 **PF Button:** Press the programmed button to enter Maintenance Display Mode.

Menu Mode: Select “MAINT” and press the **[S]** button to enter Maintenance Display Mode.

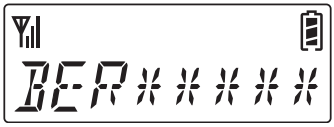
2 Press the **[<B]** and **[C>]** buttons to select Signal strength (RSSI Level) or BER.

Signal strength (RSSI Level: dBm)

Bit Error Rate

- BER display is available on NXDN/ DMR channel.
- When the signal strength is less than -120 dBm, “# # # #” is displayed.

- When BER measurement is impossible, “# # # # #” is displayed.



3 Press the **[S]** button to confirm and exit mode.

Manual Site Hunt [DMR]

Allows you can manually move the Revert Channel to another Channel without waiting for Site Roaming to resume.

PF Button:

On the Channel of DMR Site Roaming, press the programmed button, the Manual Site Hunt function operates.

- Beep A (1 beep) sounds.

Menu Mode:

Select “M SITE H” and press the **[S]** button, the Manual Site Hunt function operates.

- Search Mode Tone sounds and send a Wakeup message once to other Channels registered in the same System set in DMR Site Roaming and go to search for repeaters that can detect the synchronization signal.
- "SEARCH" is displayed during Manual Site Hunt operation.

Medium Transmit Power [Analog/ NXDN/ DMR]

Turns Medium Transmit Power On or Off. When using a channel programmed with low or high power, this allows you to change the output power to medium.

Menu Mode:

Select “MED PWR” and press the **[S]** button to change the Medium Transmit Power On or Off.

Menu [Analog/ NXDN/ DMR]

PF Button:

Press the programmed button to select and perform functions using the transceiver Menu.

Microphone Sense [Analog/ NXDN/ DMR]

Allows you to change the internal microphone sensitivity.

Menu Mode:

1 Select “MIC SENS” and press the **[S]** button.

2 Press the **[<B]** and **[C>]** buttons to select the microphone sensitivity.

- You can select from +6 dB (High sensitivity) to -20 dB (Low sensitivity) by 2 steps.

3 Press the **[S]** button to confirm and exit mode.

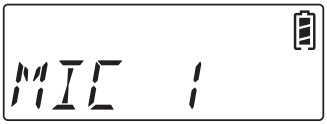
Microphone Type [NXDN/ DMR]

Allows you to configure the type of the external microphone to be connected to the transceiver and enables the optimal conditions of the audio quality.

Menu Mode:

1 Select “MIC TYPE” and press the **[S]** button.

2 Press the **[<B]** and **[C>]** buttons to select the microphone type.



- You can select from None (without adjusting the audio characteristics), MIC 1 to MIC 11.

3 Press the **[S]** button to confirm and exit mode.

Type	Model
MIC 1	KMC-45*, KMC-45D
MIC 2	KMC-48GPS*
MIC 3	KMC-21
MIC 4	KHS-7, KHS-7A*, KHS-8BL, KHS-8BE, KHS-9BL, KHS-9BE, KHS-21*, KHS-22, KHS-22A, KHS-25, KHS-26, KHS-27, KHS-27A, KHS-31, KHS-31C
MIC 5	KHS-23, KHS-35F
MIC 6	KHS-10-BH*, KHS-10-OH*, KHS-10D-BH, KHS-10D-OH
MIC 7	EMC-11, EMC-12
MIC 8	KHS-1*
MIC 9	KHS-29F
MIC 10	KEP-2
MIC 11	KHS-8NC

* : Not support for DMR.

Monitor [Analog/ NXDN/ DMR]

Allows you to turn the transceiver signaling off, to listen to all calls that are received on the channel.

PF Button:

Press the programmed button to change the Monitor On.

- Beep A (1 beep) sounds.

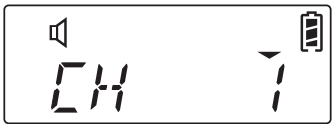
Press this button again to change the Monitor Off.

- Beep B (2 beeps) sounds.

Menu Mode:

Select “MONITOR” and press the **[S]** button to change the Monitor On or Off.

- The “ 🔊 ” indicator appears while Monitor is On.



Monitor Momentary [Analog/ NXDN/ DMR]

PF Button:

Press and hold the programmed button to momentarily turn the transceiver signaling off. Releasing this button turns the transceiver signaling back on. While signaling is off, you can listen to all calls that are received on the channel.

Operator Selectable Tone [Analog]

Switches the preset QT/DQT Decode/Encode pair to an OST (Operator Selectable Tone) pair.

PF Button:

Press the programmed button to change the OST On or Off.

Menu Mode:

Select “OST” and press the **[S]** button to change the OST On or Off.

Refer to “Operator Selectable Tone (OST)” {p. 74}.

OST List [Analog]

Allows you to enter OST List mode.

1 **PF Button:** Press and hold the programmed button to enter OST List Mode.

Menu Mode: Select “OST LIST” and press the **[S]** button to enter OST List Mode.

2 Press the **[<B]** and **[C>]** buttons to select the OST List.

3 Press the **[S]** button to confirm and exit mode.

Refer to “Operator Selectable Tone (OST)” {p. 74}.

OVCM (Open Voice Channel Mode) [DMR]

Allows you to hear various voice calls (Individual Call, Group Call, Broadcast Call) even if the received ID does not match.

PF Button:

Press the programmed button to change the OVCM On.

- Beep A (1 beep) sounds.

Press this button again to change the OVCM Off.

- Beep B (2 beeps) sounds.

Menu Mode:

Select “OVCM” in Menu Mode and press the **[S]** button to change the OVCM On or Off.

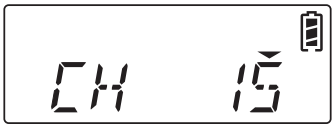
Priority-channel Select [Analog/ NXDN/ DMR]

A Priority channel must be programmed in order for Priority Scan to function.

When using a single Priority channel, the transceiver will automatically change to the Priority channel when a call is received on it, even if a call is being received on a normal channel.

When using dual Priority channels, Priority channel 1 is given precedence over Priority channel 2. So, if a call is received on Priority channel 1 while a call is already on Priority channel 2, the transceiver will automatically change to Priority channel 1.

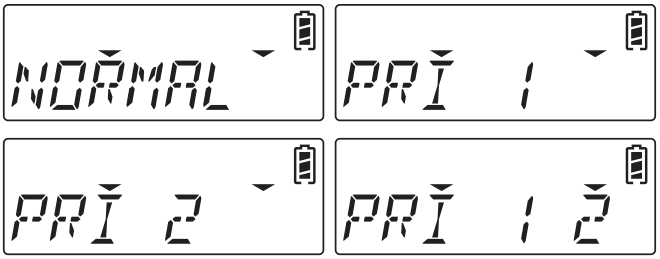
1 Select the channel to be set as Priority channel.



2 **PF Button:** Press the programmed button to set the current channel as the Priority Zone-Channel.

Menu Mode: Select “PRIORITY” and press the **[S]** button to enter Priority-channel Select Mode.

3 Press the **[<B]** and **[C>]** buttons to select “NORMAL” (scan off), “PRI 1” (priority 1), “PRI 2” (priority 2), or “PRI 1 2” (priority 1/2).



4 Press the **[S]** button to confirm and exit mode.

- The “ P ” indicator appears on the display when the channel is Priority channel.

Radio Check (MDC-1200) [Analog]

This function is for MDC-1200 Radio Check. Radio Check is a function for checking whether a transceiver is available for calling, such as whether the transceiver is on or whether it is within the communication range.

Menu Mode:

1 Select “RD CHK” and press the **[S]** button to enter Radio Check Mode.

2 Press the **[<B]** and **[C>]** buttons to select the destination ID from the ID List.

3 Press the **PTT** switch to start Radio check.

4 When ACK (Acknowledgement) is received, “COMPLETE” is displayed for 1 second.

Radio Inhibit (MDC-1200) [Analog]

This function is for MDC-1200 Radio Inhibit. Radio Inhibit is a function for stunning a transceiver.

Menu Mode:

1 Select “INHIBIT” and press the **[S]** button to enter Radio Inhibit Mode.

2 Press the **[<B]** and **[C>]** buttons to select the destination ID from the ID List.

3 Press the **PTT** switch to send Radio Inhibit command.

4 When ACK (Acknowledgement) is received, “COMPLETE” is displayed for 1 second.

Radio Uninhibit (MDC-1200) [Analog]

This is for MDC-1200 Radio Uninhibit. Radio Uninhibit is a function for reviving a transceiver which has been stunned.

Menu Mode:

1 Select “UNINHIB” and press the **[S]** button to enter Radio Uninhibit Mode.

2 Press the **[<B]** and **[C>]** buttons to select the destination ID from the ID List.

3 Press the **PTT** switch to send Radio Uninhibit command.

4 When ACK (Acknowledgement) is received, “COMPLETE” is displayed for 1 second.

Remote Control [NXDN/ DMR]

Allows you to remotely control a specified transceiver from the transceiver.

In the NXDN and DMR systems, it allows you to operate the transceiver directly, send a remote control message and control the target transceiver.

Note:

- The Remote Control is a software option.

In Remote Control Mode, the following remote control message can be sent.

Remote Stun: Send a Remote Stun Message to the designated Transceiver and make the Transceiver unusable.

Remote Revive: Send a Remote Revive Message to the designated Transceiver and release the Stun state of the Transceiver.

Remote Kill: Send a Remote Kill Message to the designated Transceiver and make Transceiver inoperable and prevent any operation.

Remote Monitor: Send a Remote send request message to the specified Transceiver, Individual Call from the Transceiver to the requester, cancel Mic Mute and send it continuously.

Radio Check: Send a Radio Check Message to the specified Transceiver and let the Transceiver send an ACK.

Menu Mode:

1 Select “RMT CTRL” and press the **[S]** button to enter Remote Control Mode.

2 Press the **[<B]** and **[C>]** buttons to select Unit ID List.

3 Press the **[S]** button to enter Remote Control Message Selection.

4 Press the **[<B]** and **[C>]** buttons to select Remote Control Message.

5 Press the **PTT** switch to send selected Remote Control Message.

RX Audio Equalizer [NXDN/ DMR]

Allows you to set the receiving audio characteristic (Flat, High boost, or Low boost).

Menu Mode:

1 Select “RX EQ” and press the **[S]** button.

2 Press the **[<B]** and **[C>]** buttons to select the audio characteristic.

3 Press the **[S]** button to confirm and exit mode.

Flat	Standard RX audio characteristic.
High boost	Treble range is emphasized. Audio sounds clearer and becomes more understandable.
Low boost	Treble range is suppressed and bass range is boosted that makes the audio quality more natural.

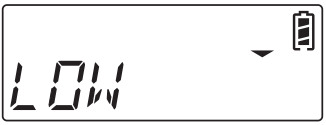
RX Auto Gain Control [NXDN/ DMR]

Allows you to set the transceiver to automatically adjust the volume of the receiving sound to a specific level for easy listening.

Menu Mode:

1 Select “RX AGC” and press the **[S]** button.

2 Press the **[<B]** and **[C>]** buttons to select Off, Low, or High.



3 Press the **[S]** button to confirm and exit mode.

Save Log Data [Analog/ NXDN/ DMR]

This function saves the operation and communication logs of this transceiver.

- This function is for field support use such for your dealer.

Scan [Analog/ NXDN/ DMR]

Allows you starting or stopping scan.

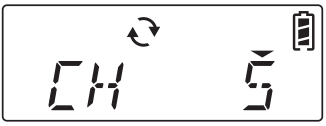
PF Button:

Press the programmed button to start scanning. To stop scanning, press this button.

Menu Mode:

Select “SCAN” and press the **[S]** button to activate/ deactivate the Scan.

- The “ ” indicator appears on the display.



- The “ ” indicator blinks while paused.

Refer to “SCAN” {p. 68}.

Scan Delete/Add [Analog/ NXDN/ DMR]

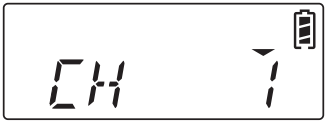
Allows you to include or omit each channel in the scan sequence.

1 Select your desired channel.

2 **PF Button:** Press the programmed button to change the Scan Delete/Add status of the channel.

Menu Mode: Select “SCN D/A” and press the **[S]** button to activate/ deactivate the Scan of the channel.

- When a channel is added to scan, Beep A (1 beep) sounds and the “ ▼ ” (right side) indicator appears on the display.



- When a channel is deleted (not include in scan), Beep B (2 beeps) sounds and the “ ▼ ” (right side) indicator disappears on the display.

Scrambler/Encryption [Analog/ NXDN/ DMR]

Enables or disables Scrambler (analog) or Encryption (NXDN/ DMR) function.

- Voice Scrambler is the function to scramble the audio signal so that the contents of communications can be prevented from being intercepted.
- Encryption is the function that enhances secrecy in communications on the digital channels by encrypting voice data.

PF Button:

Press the programmed button to activate the Scrambler/Encryption.

- Beep A (1 beep) sounds.

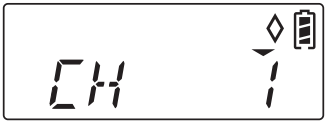
Press this button again to deactivate Scrambler/Encryption.

- Beep B (2 beeps) sounds.

Menu Mode:

Select “SCRENC” and press the **[S]** button to activate/ deactivate the Scrambler/ Encryption.

- The “ ◊ ” indicator appears while Scrambler/Encryption is activated.



Refer to “SCRAMBLER (ANALOG)/ ENCRYPTION (NXDN/ DMR)” {p. 72}.

Scrambler/Encryption Code [Analog/ NXDN/ DMR]

Allows you to change the Scrambler Code/ Encryption Key used in the transmission.

1 **PF Button:** Press and hold the programmed button to enter Scrambler/ Encryption Code Mode.

Menu Mode: Select “SCRENC C” and press the **[S]** button to enter Scrambler/Encryption Code Mode.

2 Press the **[<B]** and **[C>]** buttons to select the Scrambler Code or Encryption Key.

- Must be set to the same code/key for transmission and reception.

Scrambler Code

Encryption Key

3 Press the **[S]** button to confirm and exit mode.

Refer to “SCRAMBLER (ANALOG)/ ENCRYPTION (NXDN/ DMR)” {p. 72}.

Send the GPS Data [Analog/ NXDN/ DMR]

Allows you to send your positioning data to the base station when a GPS speaker/ microphone has been installed.

- When the power is turned ON and/or the reception condition of the GPS satellite is poor, positioning may take longer to complete.

PF Button:

Press the programmed button to send GPS data.

- Beep A (1 beep) sounds.

Menu Mode:

Select “SEND GPS” and press the **[S]** button to send GPS data.

- When GPS data transmission is completed and "COMPLETE" is displayed for 1 second.

Short Message [NXDN/ DMR]

Allows you to send short messages such as an address, telephone number, etc.

1 **PF Button:** Press the programmed button to enter Short Message Mode.

Menu Mode: Select “SDM MODE” and press the **[S]** button to enter Short Message Mode.

2 Press the **[<B]** and **[C>]** buttons to select a Short Message from the list (NXDN/ DMR).

3 Press the **PTT** switch or **Side 2** button to send short messages.

Speaker Attenuation [Analog/ NXDN/ DMR]

Temporarily reduce the volume level of the speaker of the transceiver and speaker/ microphone.

PF Button:

Press the programmed button to change the Speaker Attenuation On or Off.

Speaker Type [NXDN/ DMR]

Allows you to configure the type of the external speaker and speaker/ microphone to be connected to the transceiver and enables the optimal conditions of the audio quality.

Menu Mode:

1 Select “SPK TYPE” and press the **[S]** button.

2 Press the **[<B]** and **[C>]** buttons to select the speaker type.

- You can select from None (without adjusting the audio characteristics), SPK 1 to SPK 11.

3 Press the **[S]** button to confirm and exit mode.

Type	Model
SPK 1	KMC-45*, KMC-45D
SPK 2	KMC-48GPS*
SPK 3	KMC-21
SPK 4	KHS-7, KHS-7A*, KHS-8BL, KHS-8BE, KHS-9BL, KHS-9BE, KHS-21*, KHS-22, KHS-22A, KHS-25, KHS-26, KHS-27, KHS-27A, KHS-31, KHS-31C
SPK 5	KHS-23, KHS-35F
SPK 6	KHS-10-BH*, KHS-10-OH*, KHS-10D-BH, KHS-10D-OH
SPK 7	EMC-11, EMC-12
SPK 8	KHS-1*
SPK 9	KHS-29F
SPK 10	KEP-2
SPK 11	KHS-8NC

* : Not support for DMR.

Squelch Level [Analog]

Allows you to adjust the transceiver squelch level.

1 **PF Button:** Press the programmed button to enter Squelch Level Adjustment Mode.

Menu Mode: Select “SQL LVL” and press the **[S]** button enter Squelch Level Adjustment Mode.

2 Press the **[<B]** and **[C>]** buttons to increase and decrease the squelch level from 0 (open) to 9 (tight).

3 Press the **[S]** button to confirm and exit mode.

Squelch Off [Analog/ NXDN/ DMR]

Allows you to turn the transceiver squelch off, to better hear weak signals on the channel.

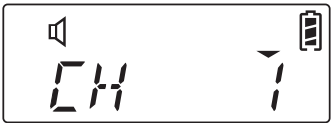
PF Button:

Press the programmed button to activate/ deactivate the Squelch Off.

Menu Mode:

Select “SQL OFF” and press the **[S]** button to activate/ deactivate the Squelch Off.

- The “ 🔇 ” indicator appears while Squelch Off is activated.



Squelch Off Momentary [Analog/ NXDN/ DMR]

PF Button:

Press and hold the programmed button to momentarily turn the transceiver squelch off. Releasing this button turns the transceiver squelch back on. While squelch is off, you can better hear weak signals on the channel.

Stack [Analog/ NXDN/ DMR]

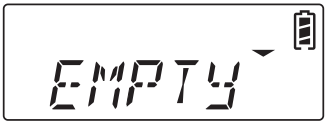
Allows you to check the records of received calls and messages received.

- The " ✉ " indicator lights up when all stacked data is already read.
- When there is unread data, The " ✉ " indicator blinks.

1 **PF Button:** Press the programmed button to enter Stack Mode.

Menu Mode: Select "STACK" and press the **[S]** button to enter Stack Mode.

- If the stack is empty, "EMPTY" is displayed for 1 second and Stack Mode is not entered.



2 Press the **[<B]** and **[C>]** buttons to change the category display Caller ID List or Message List.

Caller ID

Message List

- Select "CALL ID" and press the **[S]** button. The stacked Caller ID data is displayed.

- Select "MESSAGE" and press the **[S]** button. The stacked Status Message data is displayed.

3 Press the **[<B]** and **[C>]** buttons to select the List.

- Each time press the **[S]** button to change display type (Message → Caller ID → Channel No.→ Message→).
- Press the **[A]** button, delete confirmation is displayed, press the **[S]** button to delete displayed Caller ID and Message.

- Press and hold the **[A]** button, delete confirmation is displayed, press the **[S]** button to delete all Caller IDs and Messages.

4 Press the **Side 1** button to exit Stack Mode.

Status [Analog/ NXDN/ DMR]

Allows you to send status messages selected from the Status List.

1 **PF Button:** Press the programmed button to enter Status Mode.
Menu Mode: Select “STATUS” and press the **[S]** button to enter Status Mode.

2 Press the **[<B]** and **[C>]** buttons to select the status messages you want to transmit.

3 Press the **PTT** switch or **Side 2** button to send status messages.

Surveillance [Analog/ NXDN/ DMR]

Allows you to disable the alert tone, backlight and LED functions. The Surveillance function is used when the change of the transceiver status needs to be kept unnoticed, such as while on a Public Safety operation.

PF Button:

Press the programmed button to activate the Surveillance Mode.

- Beep A (1 beep) sounds.
- "SUR ON" is displayed for 1 second.

Press this button again to deactivate the Surveillance Mode.

- Beep B (2 beeps) sounds.
- "SUR OFF" is displayed for 1 second.

Menu Mode:

Select "SURVEIL" and press the **[S]** button to activate/ deactivate the Surveillance Mode.

Talk Around [Analog/ NXDN/ DMR]

Talk Around redirects the transceiver signals directly to other party members rather than relaying the signals through a repeater.

PF Button:

Press the programmed button to activate the Talk Around.

- Beep A (1 beep) sounds.

Press this button again to deactivate the Talk Around.

- Beep B (2 beeps) sounds.

Menu Mode:

Select "TALK ARD" and press the **[S]** button to activate/ deactivate the Talk Around.

- The "  " indicator appears while Talk Around is activated.

Transceiver Password [Analog/ NXDN/ DMR]

Allows you to enter Transceiver Password Input Mode.

Refer to "TRANSCEIVER PASSWORD" {p. 66}.

TX Audio Equalizer [NXDN/ DMR]

Allows you to set the transmission audio characteristic (Flat, High boost, or Low boost).

Menu Mode:

1 Select “TX EQ” and press the **[S]** button.

2 Press the **[<B]** and **[C>]** buttons to select the audio characteristic.

3 Press the **[S]** button to confirm and exit mode.

Flat	Standard TX audio characteristic.
High boost	Treble range is emphasized. Audio sounds clearer and becomes more understandable.
Low boost	Treble range is suppressed and bass range is boosted that makes the audio quality more natural.

TX Auto Gain Control [NXDN/ DMR]

Allows you to set the transceiver to automatically adjust the internal and external microphone sensitivity for easy listening.

Menu Mode:

Select “TX AGC” and press the **[S]** button to change the TX Auto Gain Control On or Off.

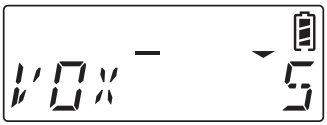
VOX [Analog/ NXDN/ DMR]

Allows you to adjust the VOX Gain level.

1 **PF Button:** Press the programmed button to enter VOX Gain Level Adjustment Mode.

Menu Mode: Select “VOX LVL” and press the **[S]** button to enter VOX Gain Level Adjustment Mode.

2 Press the **[<B]** and **[C>]** buttons to increase and decrease the VOX Gain level from 1 (low) to 10 (high).



3 Press the **[S]** button to confirm and exit mode.

Refer to “VOICE OPERATED TRANSMISSION (VOX)” {p. 79}.

VOX Function [Analog/ NXDN/ DMR]

VOX (VOX/ Semi-VOX) operation allows you to transmit hands-free. This feature can be activated or deactivated by your dealer. To operate VOX, you must use an optional headset.

PF Button:

Press and hold the programmed button to switch the VOX operation On.

- Beep A (1 beep) sounds.

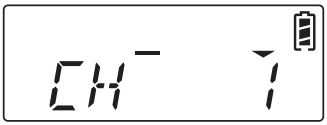
Press this button again to switch the VOX operation Off.

- Beep B (2 beeps) sounds.

Menu Mode:

Select “VOX” and press the **[S]** button to switch the VOX operation On or Off.

- When VOX is On, the “ — ” indicator appears on the display.



- When VOX is Off, the “ — ” indicator disappears on the display.

Refer to “VOICE OPERATED TRANSMISSION (VOX)” {p. 79}.

Zone Delete/Add [Analog/ NXDN/ DMR]

Allows you to include or omit each Zone in the Multi-Zone scan sequence.

1 Select your desired zone.

2 **PF Button:** Press the programmed button to switch the Zone Delete/Add status of the channel.

Menu Mode: Select “ZONE D/A” and press the **[S]** button to switch the Zone Delete/Add status of the channel.

- When a zone is added to scan, Beep A (1 beep) sounds and the “ ▼ ” (left side) indicator appears on the display.

- When a zone is deleted (not include in scan), Beep B (2 beeps) sounds and the “ ▼ ” (left side) indicator disappears on the display.

Zone Select [Analog/ NXDN/ DMR]

Selector:

Turn the **Selector** to select the zone number.

Zone Up/Down [Analog/ NXDN/ DMR]

Selector:

Turn the **Selector** to increase/ decrease the zone number.

Zone Up/ Zone Down [Analog/ NXDN/ DMR]

PF Button:

Press the programmed button to increase/ decrease the zone number.

Zone Up (Continuous)/ Zone Down (Continuous) [Analog/ NXDN/ DMR]

PF Button:

Hold down the programmed button to continuously increase/ decrease the zone number.

KEYPAD OPERATION

The keypad operating method can be selected according to the purpose.

None	Even pressing the **[0]** ~ **[9]**, **[✳]**, **[#]** button, and button-entry Error Tone will sound and no operation will be performed.
Channel Entry	Press the **[0]** ~ **[9]** button to enter Channel Entry Mode and keypad input state. The following are examples for entering a channel number by using the keypad. • If the maximum channel number has 1 digit: - To make a call on channel 7, press the **[7]** button. • If the maximum channel number has 2 digits: - To make a call on channel 90, press the **[9]** and **[0]** buttons in this order. - To make a call on channel 7, press the **[0]** and **[7]** buttons in this order. • If the maximum channel number has 3 digits: - To make a call on channel 250, press the **[2]**, **[5]** and **[0]** buttons in this order. - To make a call on channel 90, press the **[0]**, **[9]** and **[0]** buttons in this order. - To make a call on channel 7, press the **[0]**, **[0]** and **[7]** buttons in this order. If the maximum number of digits is entered, the transceiver exits Channel Entry Mode and then migrates to the channel of the entered channel number.
OST	Press and hold the **[1]** ~ **[9]** button for 1 second, and OST will be On and OST List number 1 to 9 are selected. • Press and hold the **[0]** button for 1 second, and OST will be On and OST List number 1 to 9 are selected. • Press and hold the **[✳]** button for 1 second, and Shortcut input of OST List will be appeared.
Autodial	Press the **[0]** ~ **[9]** button to enter Autodial Mode. • If Store and Send is Disabled, Keypad is entered with Autodial Mode (List Selection). • If Store and Send is Enabled, press **[0]** ~ **[9]**, **[✳]**, **[#]** button is input with Autodial Mode (Manual input).

Keypad Auto PTT	This function allows you to send DTMF by pressing Keypad without **PTT** switch. • If DTMF Manual Dialing is Enabled, the DTMF Code is sent by pressing the **[0]** ~ **[9]**, **[✳]**, **[#]** button. • Press the **[0]** ~ **[9]**, **[✳]**, **[#]** button, send the DTMF Code of the pressed button. • When the button is release, the modulation of DTMF Code will stop, but unmodulated transmission will continue for the time set by DTMF Hold Time.
Status	Press the **[0]** ~ **[9]** button to enter the Status Mode and keypad input state.
Short Message	Press the **[0]** ~ **[9]** button to enter the Short Message Mode and keypad input state.
Individual	Press the **[0]** ~ **[9]** button to enter the Individual Call Mode or Selcall Mode and keypad input state.
Individual + Status	Press the **[0]** ~ **[9]** button to enter the Individual Call Mode or Selcall Mode and keypad input state. • Similar to pressing the **PF** button for **[Individual + Status]**, press the **[S]** button in Individual Call Mode to enter the Status Mode.
Individual + Short Message	Press the **[0]** ~ **[9]** button to enter the Individual Call Mode or Selcall Mode and keypad input state. • Similar to pressing the **PF** button for **[Individual + Short Message]**, press the **[S]** button in Individual Call Mode to enter the Short Message Mode.
Group	Press the **[0]** ~ **[9]** button to enter the Group Call Mode or Selcall Mode and keypad input state.
Group + Status	Press the **[0]** ~ **[9]** button to enter the Group Call Mode or Selcall Mode and keypad input state. • Similar to pressing the **PF** button for **[Group + Status]**, press the **[S]** button in Group Call Mode to enter the Status Mode.
Group + Short Message	Press the **[0]** ~ **[9]** button to enter the Group Call Mode or Selcall Mode and keypad input state. • Similar to pressing the **PF** button for **[Group + Short Message]**, press the **[S]** button in Group Call Mode to enter the Short Message Mode.

FUNCTION DESCRIPTIONS

For details on functions that are not included in “FUNCTIONS OVERVIEW” {p. 23} and “FUNCTION DESCRIPTIONS”, please consult your dealer.

TRANSCEIVER PASSWORD

LCD Model

If the transceiver is password protected, “PASSWORD” will appear on the display when the power is turned on. To unlock the transceiver, enter the correct password.

1 Press the button programmed as **[Transceiver Password]** to enter Transceiver Password Mode.
- Alternatively, press the button programmed as **[Menu]** to enter Transceiver Password Mode using the Menu Mode.
- If a password has been registered and the **[Transceiver Password]** function has not been programmed to a button or configured to the menu, the transceiver enters Transceiver Password Mode when the power is turned on.

2 Enter a number using the **[<B]** and **[C>]** buttons.
- On full button model, you can enter the password directly by pressing the keypad.

3 Press the **[S]** or **[⚹]** button to accept the number.

4 Repeat steps 2 and 3 to enter the entire password.
- Press the **[A]** or **[#]** button to delete an incorrectly entered number. Press and hold the **[A]** or **[#]** button to delete all numbers.

5 Press the **[S]** or **[⚹]** button to confirm the entry.
- If you enter an incorrect password, an error tone sounds and the transceiver remains locked, the transceiver will return to "PASSWORD" display.
- The password can contain a maximum of 6 digits.

Non-LCD Model

If your transceiver is password protected, the LED will light blue when you turn the transceiver ON. Enter the password (up to 6 digits) using the following procedure.

1 Set the **Selector** to position “1”.

2 Press the **Side 1** or **Side 2** button to enter the first digit.
- The **Side 1** button increases the digit value and the **Side 2** button decreases it. The transceiver announces the digit number as it changes.

3 Repeat step 2 for Selector positions 2 ~ 6.
- If there are less than 6 password digits, repeat for only the number of digits the password contains.

4 Press the **PTT** switch to confirm the password.
- When the correct password is entered, the Blue LED turns off.

SCAN

Scan is useful for monitoring signals on the transceiver channels. While scanning, the transceiver checks for a signal on each channel and only stops on a channel if a signal is present.

To begin scanning, press the button programmed as **[Scan]**.

- The " " indicator appears on the display.
- If programmed by your dealer, the LED indicator blinks during scanning.
- The channels are scanned.
- When a signal is detected on a channel, Scan pauses on that channel. The transceiver will remain on the busy channel until the signal is no longer present. When the signal "drops out", the transceiver will remain on the channel momentarily before Scan resumes. This delay time is programmed by your dealer. If a signal is received during the delay time, the transceiver will remain on the same channel.

To stop scanning, press the **[Scan]** button again.

Note:

◆ In order for Scan to operate, there must be at least 2 channels added to the scanning sequence. If there are less channels than this, Scan will not operate.

TEMPORARY CHANNEL LOCKOUT

During scan, you can temporarily remove specific channels from the scanning sequence by selecting them and pressing the button programmed as **[Scan Delete/Add]**.

- The " " (right side) indicator no longer appears on the display for that channel.
- The channel is no longer scanned. However, when scanning is ended and restarted, the channels will reset and the channel will again be in the scanning sequence.

PRIORITY SCAN

A Priority channel must be programmed in order for Priority Scan to function.
When using a single Priority channel, the transceiver will automatically change to the Priority channel when a call is received on it, even if a call is being received on a normal channel.
When using dual Priority channels, Priority channel 1 is given precedence over Priority channel 2. So, if a call is received on Priority channel 1 while a call is already on Priority channel 2, the transceiver will automatically change to Priority channel 1.

- The " P " indicator appears on the display when the channel is Priority channel.

SCAN REVERT

The Scan Revert channel is the channel selected when you press the **PTT** switch to transmit during scan. Your dealer can program one of the following Scan Revert channels:

- **Selected:** The last channel selected is assigned as the new revert channel.
- **Selected + Talkback:** If the channel has been changed, the newly selected channel is assigned as the new revert channel. The transceiver “talks back” on the current channel.
- **Priority 1/ Priority 2:** If your dealer has programmed a Priority channel (either Priority 1 or Priority 2), this channel is the revert zone-channel.
- **Priority 1 + Talkback/ Priority 2 + Talkback:** If your dealer has programmed a Priority channel (either Priority 1 or Priority 2), this channel is the revert zone-channel. The transceiver “talks back” on the current receive channel.
- **Last Called + Selected:** The last channel on which you received a call is assigned as the new revert channel. The transceiver “talks back” on the current channel. If the channel has been changed, the newly selected channel is assigned as the new revert channel.

DTMF (DUAL TONE MULTI FREQUENCY) CALLS

Note:

◆ Manual Dialing and Keypad Auto PTT are available only on full button model.

MAKING A DTMF CALL

Manual Dialing

1 Press and hold the **PTT** switch.

2 Enter the desired digits using the keypad.

- The corresponding DTMF tones sound each time you press a button.
- If you release the **PTT** switch, transmit mode will end even if the complete number has not been sent.

Keypad Auto PTT

If your dealer has activated the Keypad Auto PTT function, simply press the buttons on the keypad or microphone to make the call.

- The DTMF code will be sent automatically when you press a button.

Store & Send

1 Enter the desired digits using the keypad.

- The digits appear on the display as you enter them.
- You can enter up to 34 digits before transmitting.

2 After entering the complete number, press the **PTT** switch to transmit.

Note:

◆ If you switch the power OFF before transmitting the number, the number will be cleared.

Stun Code

This function is used when a transceiver is stolen or lost.

When the transceiver receives a call containing a stun code, either the transmit mode or both the receive and transmit mode will be disabled. The stun code is canceled when the transceiver receives a call with a revive code.

EMERGENCY CALLS

If your transceiver has been programmed with the Emergency function, you can make emergency calls.

1 Press and hold the button programmed as **[Emergency]**.

- Depending on the delay time programmed into your transceiver, the length of time you must hold the Emergency button will vary.
- When the transceiver enters Emergency mode, the transceiver will change to the Emergency channel and begin transmitting based on how the transceiver is set up by your dealer. Transmit periods are also set by your dealer.

2 To exit Emergency mode, press and hold the **[Emergency]** button again.

- If the Emergency mode completes a preset number of cycles, Emergency mode will automatically end and the transceiver will return to the zone and channel that was in use before Emergency mode was entered.

Note:

- Your dealer can set the transceiver to emit a tone when Emergency mode starts and stops.
- Your dealer can set the transceiver to emit tones and received signals as normal or mute the speaker during Emergency operation.

SCRAMBLER (ANALOG)/ ENCRYPTION (NXDN/ DMR)

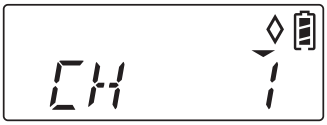
Note:

- The following types of encryption are available depending on the protocol used.
  NXDN : Bit scrambling (built-in encryption function)
  DMR : Bit scrambling (built-in encryption function) and Enhanced Encryption
- The Enhanced Encryption is a software option. Ask your dealer for details concerning the Enhanced Encryption settings.

SECURE (ENCRYPTED) TRANSMISSION

Press the button programmed as **[Scrambler/Encryption]** to switch the transceiver to secure (encrypted) transmission.

- Alternatively, press the button programmed as **[Menu]** to enter Scrambler/ Encryption Mode using the Menu Mode.
- The Scrambler/Encryption indicator " ◊ " appears when the function is turned ON.



- Pressing the **PTT** switch after the Scrambler or Encryption function has been turned ON encrypts the transmitted signal.

SELECTING THE SCRAMBLER CODE

1 Press the button programmed as **[Scrambler/Encryption Code]** to enter Scrambler/Encryption Code Mode.
   - Alternatively, press the button programmed as **[Menu]** to enter Scrambler/ Encryption Code Mode using the Menu Mode.

2 Press the **[<B]** and **[C>]** buttons to increase or decrease the Scrambler code.
   - Up to 16 Scrambler codes can be used.

3 Press the **[S]** button to set the new Scrambler code.

SELECTING THE ENCRYPTION KEY

1 Press the button programmed as **[Scrambler/Encryption Code]** to enter Scrambler/Encryption Code Mode.

- Alternatively, press the button programmed as **[Menu]** to enter Scrambler/Encryption Code Mode using the Menu Mode.

2 Select the new Encryption key using the **[<B]** and **[C>]** buttons.

- Up to 16 Encryption keys can be used. One of these keys will be used during transmission.

3 Press the **[S]** button to set the new Encryption key.

QUIET TALK (QT)/ DIGITAL QUIET TALK (DQT) [ANALOG]

Your dealer may have programmed QT or DQT signaling on your transceiver channels. A QT tone/ DQT code is a sub-audible tone/ code which allows you to ignore (not hear) calls from other parties who are using the same channel.

When a channel is set up with a QT tone or DQT code, squelch will only open when a call containing a matching tone or code is received. Likewise, signals that you transmit will only be heard by parties whose QT/ DQT signaling matches your transceiver.

If a call containing a different tone or code is made on the same channel you are using, squelch will not open and you will not hear the call. This allows you to ignore (not hear) these calls. Although it may seem like you have your own private channel while using QT/ DQT, other parties can still hear your calls if they set up their transceiver with the same tone or code.

Operator Selectable Tone (OST) [Analog]

If a button has been programmed with **[Operator Selectable Tone]**, you can reprogram the QT tone or DQT code on each of your channels by OST List.

1 Select your desired channel.

2 Press and hold the button programmed as **[Operator Selectable Tone]**.
- Alternatively, you can press the button programmed as **[Menu]** to enter OST Mode using the Menu Mode.

3 Press the **[<B]** and **[C>]** buttons to select your desired tone or code from 1 to 40.

4 Press the **[S]** button to save your new setting.
- After selecting and setting up your desired tone or code, press the **[Operator Selectable Tone]** button to activate the OST function. Press this button again to turn the OST function off.

RADIO ACCESS NUMBER (RAN) [NXDN]

RAN is a signaling system designed for NXDN digital radio communications.

When a channel is set up with a RAN, squelch will only open 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. This allows you to ignore (not hear) calls from other parties who are using the same channel.

COLOR CODE (CC) [DMR]

Color Code is a digital signaling for DMR protocol to enable smooth communication among groups using the same channel.

OPTIONAL SIGNALING

Your dealer may also program several types of optional signaling for your transceiver channels.

2-tone Signaling [Analog]

2-tone Signaling opens the squelch only when your transceiver receives a call containing a matching 2-tone signal.

DTMF Signaling [Analog]

DTMF Signaling opens the squelch only when the transceiver receives a call containing a matching DTMF code.

MDC-1200 Signaling [Analog]

MDC-1200 is a data system using Audio Frequency Shift Keying (AFSK).

FleetSync Signaling [Analog]

FleetSync Signaling opens the squelch only when the transceiver receives a call that matches the FleetSync ID in FleetSync Signaling. Refer to “FleetSync: ALPHANUMERIC 2-WAY PAGING FUNCTION” {p. 76}.

NXDN ID Signaling [NXDN]

NXDN ID is an optional signaling system available only for digital communications.

FleetSync: ALPHANUMERIC 2-WAY PAGING FUNCTION

FleetSync is an Alphanumeric 2-way Paging Function, and is a protocol owned by JVCKENWOOD Corporation. FleetSync enables a variety of paging functions on your transceiver, some of which depend on dealer programming.

Note:

◆ This function is available only in analog operation.

SELCALL (SELECTIVE CALLING)

A Selcall is a voice call to a station or group of stations.

Transmitting

1 Select your desired zone and channel.

2 Press the button programmed as **[Individual]**/ **[Individual + Status]**/ **[Individual + Short Message]**/ **[Group]/ [Group + Status]**/ **[Group + Short Message]** to enter Selcall Mode.

- Alternatively, press the button programmed as **[Menu]** to enter Selcall Mode using Individual/ Individual + Status/ Individual + Short Message/ Group/ Group + Status/ Group + Short Message in the Menu Mode.

3 Press the **[<B]** and **[C>]** buttons to select the station you want to call.

4 Press the **PTT** switch and begin your conversation.

Receiving

An alert tone will sound and the transceiver will enter Selcall mode. The calling station's ID will appear when a Selcall is received. You can respond to the call by pressing the **PTT** switch and speaking into the microphone.

Identification Codes

An ID code is a combination of a 3-digit Fleet number and a 4-digit ID number. Each transceiver has its own ID.

- Enter a Fleet number (100 ~ 349) to make a fleet call.
- Enter an ID number (1000 ~ 4999) to make an individual call in your fleet.
- Enter a Group ID (which is programmed in the FPU) to make a group call.
- Enter a Fleet number followed by an ID number to make an individual call in your desired fleet (Inter-fleet call).
- Select “ALL” Fleet and “ALL” ID to make a call to all units (Broadcast call).
- Select “ALL” Fleet and enter an ID number to make a call to the selected ID in all fleets (Supervisor call).

STATUS MESSAGE

You can send and receive 2-digit Status messages which may be decided in your talk group. Messages can contain up to 8 alphanumeric characters. Status messages range from 10 to 99 (80 ~ 99 are reserved for special messages).

A maximum of 32 received messages can be stored in the stack memory of your transceiver. These saved messages can be reviewed after reception. Depending on your dealer settings, when the stack memory is full, either the oldest message will be erased when a new message is received or the new message will not be stored in the stack memory. The “ ✉ ” indicator appears when a message is stored in the stack memory.

Transmitting

1. Select your desired zone and channel.
2. Press the button programmed as **[Status]** to enter Status Mode (proceed to step 5), or **[Individual + Status]/ [Group + Status]** to enter Selcall Mode (proceed to step 3).
3. Press the **[<B]** and **[C>]** buttons to select the station you want to call.
4. Press the **[S]** button to enter Status Mode.
5. Press the **[<B]** and **[C>]** buttons to select the status you want to transmit.
6. Press the **PTT** switch or **Side 2** button to send Status messages.
   - “COMPLETE” appears on the display when the status has been successfully transmitted.

Receiving

The “ ✉ ” indicator will flash and a calling ID or text message will appear when a Status call is received. Press any button to return to normal operation.

SHORT MESSAGES

This transceiver can receive short data messages which contain a maximum of 48 characters.

GPS REPORT

GPS data can be manually transmitted by pressing the button programmed as **[Send the GPS Data],** or by accessing the Menu. If set up by your dealer, GPS data may be automatically transmitted at a preset time interval.

- When using the GPS function, you must first connect the GPS speaker/ microphone.
- When the power is turned ON and/or the reception condition of the GPS satellite is poor, positioning may take longer to complete.

VOICE OPERATED TRANSMISSION (VOX)

VOX (VOX/ Semi-VOX) operation allows you to transmit hands-free. This feature can be activated or deactivated by your dealer. To operate VOX, you must use an optional headset.

VOX Type

VOX: When the voice level to the microphone is higher than the reference level (VOX Gain Level), the transceiver automatically starts transmission.

Semi-VOX: Transmission is started by pressing the **PTT** switch and transmission continues while speaking, even after the **PTT** switch is released.

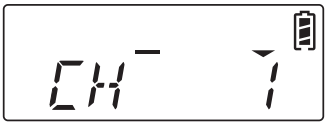
The Semi-VOX function is effective in the following cases.

- Incorrect transmission due to noise.
- Voice at the start of transmission is interrupted.

VOX Operation

1 Connect a headset to the transceiver.
   - The VOX function does not activate when a headset is not connected to the accessory terminal of the transceiver.

2 Press the button programmed as **[VOX Function]**.
   - Alternatively, you can press the button programmed as **[Menu]** to enter VOX Mode using the Menu Mode.
   - Beep A (1 beep) sounds and the " — " indicator appears on the display.



3 To transmit, simply speak to the microphone.

4 When you finish speaking, transmission ends.

To turn the VOX function OFF, press the button programmed as **[VOX Function]** button again.

- Beep B (2 beeps) sounds and the " — " indicator will disappear from the display.

Note:

◆ The VOX Gain Level is set to a sensitive level, signal received with loud volume may cause the transceiver to transmit.

Semi-VOX Operation

1 Connect a headset to the transceiver.
- The VOX function does not activate when a headset is not connected to the accessory terminal of the transceiver.

2 Press the button programmed as **[VOX Function]**.
- Alternatively, you can press the button programmed as **[Menu]** to enter VOX Mode using the Menu Mode.
- Beep A (1 beep) sounds and the " — " indicator appears on the display.

3 To transmit, press the **PTT** switch.

4 Release the **PTT** switch.

5 Transmission continues while speaking.

6 When you finish speaking, transmission ends.

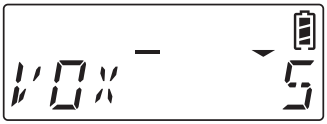
To turn the Semi-VOX function OFF, press the button programmed as **[VOX Function]** button again.
- Beep B (2 beeps) sounds and the " — " indicator will disappear from the display.

VOX Gain Level

Sets the Microphone input sensitivity of the VOX operation.

1 Connect a headset to the transceiver.

2 Press the button programmed as **[VOX]**.
- The current VOX Gain level appears on the display.



3 Press the **[<B]** or **[C>]** button to increase or decrease the VOX Gain level.
- The VOX Gain can be adjusted from levels 1 to 10.

4 While adjusting the level, speak into the headset microphone to test the sensitivity level. (Your voice is not transmitted during this test procedure.)
- When sound is recognized, the LED lights yellow.

5 Press the **[S]** button to save your new setting.

BACKGROUND OPERATIONS

TIME-OUT TIMER (TOT)

The Time-out Timer is used to prevent any caller from using a channel for an extended period of time.

If you continuously transmit for a period of time that exceeds the programmed time, the transceiver will stop transmitting and an alert tone will sound. To stop the tone, release the **PTT** switch. Your dealer can program the TOT time in the range of 15 seconds to 20 minutes.

If programmed by your dealer, a pre-alert tone will sound before the timer expires. Also, if programmed by your dealer, you may have to wait for a short duration before you can continue to transmit. If you press the **PTT** switch before the timer has been reset, an alert tone will sound and the transceiver will not enter transmit mode.

BATTERY SAVER

The Battery Saver extends the battery life by reducing the battery consumption through intermittent monitoring of the presence of signals while on standby.

LOW BATTERY WARNING

Low Battery Warning alerts you when the battery needs to be recharged. Your dealer can set an alert tone to sound and the LED indicator to blink red when the battery power is low.

When the battery power is very low, recharge or replace the battery pack.

SIGNAL STRENGTH INDICATOR

The signal strength indicator displays the strength of received calls.

: Strong signal

: Sufficient signal

: Weak signal

: Very weak signal

VOICE ANNOUNCEMENT

An audio voice will be announced as below by dealer setting.

- When changing the zone and/or channel, the new zone and channel number are announced.
- When changing the function setting, the new setting is announced.
  - Scrambler/Encryption
  - VOX Function
  - Home Channel
  - Button Lock
  - Low Transmit Power
  - Scan
  - Send the GPS Data
  - Speaker Attenuation
  - Talk Around

BUSY CHANNEL LOCKOUT (BCL)

If BCL is set up by your dealer, you will be unable to transmit on the channel if it is already in use. Under these circumstances, use a different channel or wait until the channel becomes free. However, if BCL Override has also been programmed, you can transmit over the current signal:

1 Press and hold the **PTT** switch.
   - If the channel is already in use, a warning tone will sound.

2 Release the **PTT** switch, then press and hold the **PTT** switch again within half a second.

3 Speak to the microphone as you would during a normal call.

The transceiver transmits according to the configuration in Busy Channel Lockout by dealer.

In Analog System

Carrier Only	The transceiver cannot transmit when carrier is received.
Incorrect Tone	The transceiver cannot transmit when the selected channel is busy and QT/DQT is unmatched.
Optional Signaling	The transceiver cannot transmit when the selected channel is busy before valid Optional Signaling matches or when the selected channel is busy and the programmed QT/DQT is not detected before valid Optional Signaling matches.

In NXDN System

Carrier Only	The transceiver cannot transmit when carrier is received.
Incorrect RAN	The transceiver cannot transmit when the received RAN and the RAN set in the channel is unmatched.
Correct RAN	The transceiver cannot transmit when the received RAN and the RAN set in the channel are matched.
Any RAN	The transceiver cannot transmit while receiving RAN regardless of whether or not it matches with the RAN set in the channel.

In DMR System

Carrier Only	The transceiver cannot transmit when carrier is received.
Correct CC	The transceiver cannot transmit when the received Color Code and the Color Code set in the channel are matched.

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