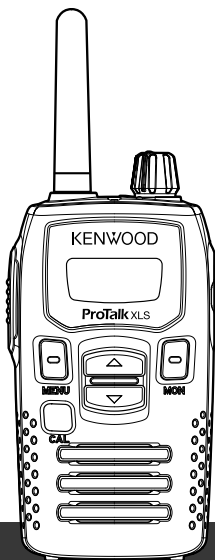


KENWOOD

TK-3230DX

INSTRUCTION MANUAL



ProTalk XLS

JVCKENWOOD Corporation

B5A-1297-00 (K)



THANK YOU

We are grateful for your purchase of this **KENWOOD** product and welcome you to the Business Radio Service (BRS).

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FEATURES

- Lightweight and compact design using a lithium-ion battery pack, with a sturdy, polycarbonate body and a spring-loaded belt clip.
- 219 tone/code settings for each channel, allowing you to ignore unwanted calls.
- Privacy Talk scrambles all your voice messages, giving you complete privacy for your conversations.
- FleetSync operation, allowing a variety of call types.
- Automatic battery power saver, providing you with longer battery usage.
- Battery power level indicator with low battery power warning.
- Key lock and Super Lock prevent you from accidentally changing your transceiver settings.
- Ten different calling alert tones allows you to identify yourself to your group before you begin speaking.
- Hands free operation when using an optional headset.
- Selectable Power ON Tone.

OPERATING CONDITIONS

Open locations (no obstructions)	Up to 5 miles (8 km)
Residential areas (near buildings)	Up to 1.5 miles (2.4 km)
In steel/ concrete reinforced buildings	Up to 225,000 ft ² (20,900 m ²)
In high rises	Up to 17 floors

Note:

- ◆ The listed ranges are based on field testing and may vary with your operating conditions.
-

Firmware Copyrights

The title to and ownership of copyrights for firmware embedded in KENWOOD product memories are reserved for JVC KENWOOD Corporation.

NOTICES TO THE USER

- ◆ Refer service to qualified technicians only.

Safety: It is important that the operator is aware of, and understands, hazards common to the operation of any transceiver.

One or more of the following statements may be applicable:

FCC WARNING

This equipment generates or uses radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved by the party responsible/JVC KENWOOD. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

INFORMATION TO THE DIGITAL DEVICE USER REQUIRED BY THE FCC

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can generate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer for technical assistance.

FCC LICENSE INFORMATION

Your **KENWOOD** transceiver operates on communications frequencies which are subject to FCC (Federal Communications Commission) Rules & Regulations. FCC Rules require that all operators using Private Land Mobile radio frequencies obtain a radio license before operating their equipment. Application for license must be made on FCC form 601, schedules D and H, and Remittance form 159.

FAX: Forms can be obtained by fax from the FCC Fax-On-Demand system. Call 1-202-418-0177 from your fax machine and request document number 000601 for the form, schedules, and instructions.

MAIL: Forms can be ordered by telephone, and will be sent to you by first class mail. Call the FCC Forms Hotline at 1-800-418-FORM (1-800-418-3676).

INTERNET: Form 601 and instructions can be downloaded from the FCC Forms website at <http://www.fcc.gov/formpage.html>

Before filling out your Form 601 application Technical Data section, you must decide on which frequencies you will operate. See the frequency charts on page 26.

QUESTIONS? Call the FCC for license application questions at 1-888-CALL-FCC (1-888-225-5322).



ATTENTION:

The RBRC Recycle seal found on **KENWOOD** lithium-ion (Li-ion) battery packs indicates **KENWOOD's** voluntary participation in an industry program to collect and recycle Li-ion batteries after their operating life has expired. The RBRC program is an alternative to disposing Li-ion batteries with your regular refuse or in municipal waste streams, which is illegal in some areas.

For information on Li-ion battery recycling in your area, call (toll free) 1-800-8-BATTERY (1-800-822-8837).

KENWOOD's involvement in this program is part of our commitment to preserve our environment and conserve our natural resources.

PRECAUTIONS

- Do not charge the transceiver and battery pack when they are wet.
- Ensure that there are no metallic items located between the transceiver and the battery pack.
- Do not use options not specified by **KENWOOD**.
- If the die-cast chassis or other transceiver part is damaged, do not touch the damaged parts.
- If a headset or headphone is connected to the transceiver, reduce the transceiver volume. Pay attention to the volume level when turning the squelch off.
- Do not place the microphone cable around your neck while near machinery that may catch the cable.
- Do not place the transceiver on unstable surfaces.
- Ensure that the end of the antenna does not touch your eyes.
- When the transceiver is used for long transmissions, the radiator and chassis will become hot. Do not touch these locations when replacing the battery pack.
- Do not immerse the transceiver in water.
- Always switch the transceiver power off before installing optional accessories.
- To dispose of batteries, be sure to comply with the laws and regulations in your country or region.



WARNING

Turn the transceiver power off in the following locations:

- In explosive atmospheres (flammable gas, dust particles, metallic powders, grain powders, etc.).
- While taking on fuel or while parked at gasoline service stations.
- Near explosives or blasting sites.
- In aircraft. (Any use of the transceiver must follow the instructions and regulations provided by the airline crew.)
- Where restrictions or warnings are posted regarding the use of radio devices, including but not limited to medical facilities.
- Near persons using pacemakers.



CAUTION

- Do not disassemble or modify the transceiver for any reason.
- Do not place the transceiver on or near airbag equipment while the vehicle is running. When the airbag inflates, the transceiver may be ejected and strike the driver or passengers.
- If an abnormal odor or smoke is detected coming from the transceiver, switch the transceiver power off immediately, remove the battery pack from the transceiver, and contact your **KENWOOD** dealer.
- Use of the transceiver while you are driving may be against traffic laws. Please check and observe the vehicle regulations in your area.
- Do not expose the transceiver to extremely hot or cold conditions.
- Do not carry the battery pack with metal objects, as they may short the battery terminals.
- Danger of explosion if the battery is incorrectly replaced; replace only with the same type.
- When attaching a commercial strap to the transceiver, ensure that the strap is durable. In addition, do not swing the transceiver around by the strap; you may inadvertently strike and injure another person with the transceiver.
- If a commercially available neck strap is used, take care not to let the strap get caught on nearby machine.
- When operating the transceiver in areas where the air is dry, it is easy to build up an electric charge (static electricity). When using an earphone accessory in such conditions, it is possible for the transceiver to send an electric shock through the earphone and to your ear. We recommend you use only a speaker/microphone in these conditions, to avoid electric shocks.
- Do not expose the transceiver to long periods of direct sunlight, nor place it near heating appliances.

Information concerning the battery pack:

The battery pack includes flammable objects such as organic solvent. Mishandling may cause the battery to rupture producing flames or extreme heat, deteriorate, or cause other forms of damage to the battery. Please observe the following prohibitive matters.



DANGER

- **Do not disassemble or reconstruct battery!**

The battery pack has a safety function and protection circuit to avoid danger. If they suffer serious damage, the battery may generate heat or smoke, rupture, or burst into flame.

- **Do not short-circuit the battery!**

Do not join the + and – terminals using any form of metal (such as a paper clip or wire). Do not carry or store the battery pack in containers holding metal objects (such as wires, chain-necklaces or hairpins). If the battery pack is short-circuited, excessive current will flow and the battery may generate heat or smoke, rupture, or burst into flame. It will also cause metal objects to heat up.

- **Do not incinerate or apply heat to the battery!**

If the insulator is melted, the gas release vent or safety function is damaged, or the electrolyte is ignited, the battery may generate heat or smoke, rupture, or burst into flame.

- **Do not leave the battery near fire, stoves, or other heat generators (areas reaching over 80°C/ 176°F)!**

If the polymer separator is melted due to high temperature, an internal short-circuit may occur in the individual cells and the battery may generate heat or smoke, rupture, or burst into flame.

- **Do not immerse the battery in water or get it wet by other means!**

If the battery's protection circuit is damaged, the battery may charge at extreme current (or voltage) and an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not charge the battery near fire or under direct sunlight!**

If the battery's protection circuit is damaged, the battery may charge at extreme current (or voltage) and an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.



DANGER

- **Use only the specified charger and observe charging requirements!**

If the battery is charged in unspecified conditions (under high temperature over the regulated value, excessive high voltage or current over regulated value, or with a remodeled charger), it may overcharge or an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not pierce the battery with any object, strike it with an instrument, or step on it!**

This may break or deform the battery, causing a short-circuit. The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not jar or throw the battery!**

An impact may cause the battery to leak, generate heat or smoke, rupture, and/or burst into flame. If the battery's protection circuit is damaged, the battery may charge at an abnormal current (or voltage), and an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not use the battery pack if it is damaged in any way!**

The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not solder directly onto the battery!**

If the insulator is melted or the gas release vent or safety function is damaged, the battery may generate heat or smoke, rupture, or burst into flame.

- **Do not reverse the battery polarity (and terminals)!**

When charging a reversed battery, an abnormal chemical reaction may occur. In some cases, an unexpected large amount of current may flow upon discharging. The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not reverse-charge or reverse-connect the battery!**

The battery pack has positive and negative poles. If the battery pack does not smoothly connect with a charger or operating equipment, do not force it; check the polarity of the battery. If the battery pack is reverse-connected to the charger, it will be reverse-charged and an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.



DANGER

- **Do not touch a ruptured and leaking battery!**

If the electrolyte liquid from the battery gets into your eyes, wash your eyes with fresh water as soon as possible, without rubbing your eyes. Go to the hospital immediately. If left untreated, it may cause eye-problems.



WARNING

- **Do not charge the battery for longer than the specified time!**

If the battery pack has not finished charging even after the regulated time has passed, stop it. The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not place the battery pack into a microwave or high pressure container!**

The battery may generate heat or smoke, rupture, or burst into flame.

- **Keep ruptured and leaking battery packs away from fire!**

If the battery pack is leaking (or the battery emits a bad odor), immediately remove it from flammable areas. Electrolyte leaking from battery can easily catch on fire and may cause the battery to generate smoke or burst into flame.

- **Do not use an abnormal battery!**

If the battery pack emits a bad odor, appears to have different coloring, is deformed, or seems abnormal for any other reason, remove it from the charger or operating equipment and do not use it. The battery may generate heat or smoke, rupture, or burst into flame.

UNPACKING AND CHECKING EQUIPMENT

Carefully unpack the transceiver. If any of the items listed below are missing or damaged, file a claim with the carrier immediately.

SUPPLIED ACCESSORIES

- Battery charger/ AC adapter (KSC-37S) 1
- Li-ion Battery pack (KNB-46L)..... 1
- Belt clip (KBH-14) 1
- Screw (M3 x 8 mm) 2
- Warranty card 1
- Instruction manual 1

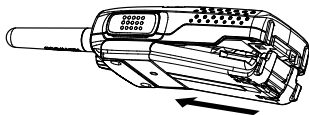
PREPARATION

INSTALLING/ REMOVING THE BATTERY PACK

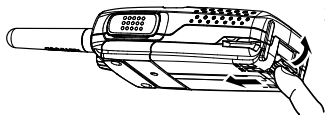


CAUTION

- ◆ Do not short the battery terminals or dispose of the battery by fire.
- ◆ Never attempt to remove the casing from the battery pack.



- 1 Match the guides of the battery pack with the corresponding grooves on the upper rear of the transceiver, then firmly press the battery pack to lock it in place.



- 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.

CHARGING THE BATTERY PACK

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

Average battery pack life:

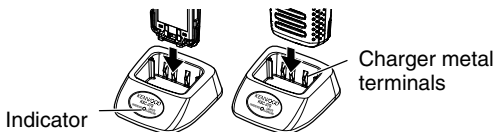
Battery Saver on: 18 hours/ Battery Saver off: 14 hours

- Average times are calculated using 5% transmit time, 5% receive time, and 90% standby time.

ATTENTION:

- ◆ Always switch OFF a transceiver equipped with a battery pack before inserting the transceiver into the charger.

- 1 Plug the AC adapter cable into the jack located on the rear of the charger.
- 2 Plug the AC adapter into an AC outlet.
- 3 Slide a battery pack or a transceiver equipped with a battery pack into the charging slot of the charger.
 - Make sure the metal contacts of the battery pack mate securely with the charger metal terminals.
 - The indicator lights red and charging begins.



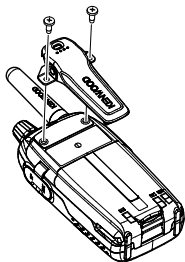
- 4 When charging is completed, the indicator flashing green. Remove the battery pack or the transceiver from the charging slot of the charger.
 - It takes approximately 2.5 hours to charge the battery pack.
 - When the charger will not be used for a long time, unplug the AC adapter from the AC outlet.

Note:

- ◆ When the indicator blinks red, the battery pack is either defective or the battery pack contacts are not properly mated with those of the charger.

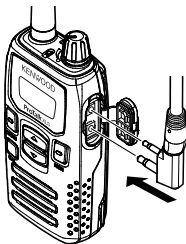
- ◆ The ambient temperature should be between 41°F and 104°F (5°C and 40°C) while charging is in progress. Charging outside this range may not fully charge the battery.
 - ◆ The battery pack life is over when its operating time decreases even though it is fully and correctly charged. Replace the battery pack.
-

INSTALLING THE BELT CLIP



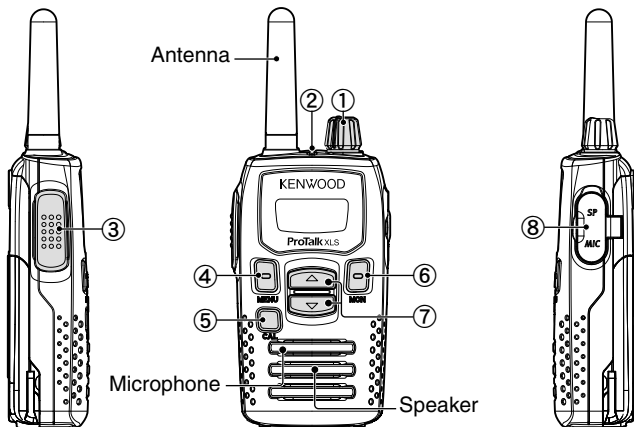
If necessary, attach the belt clip using the two supplied M3 x 8 mm screws.

INSTALLING THE OPTIONAL SPEAKER/ MICROPHONE (OR HEADSET)



- 1 Open the **SP/MIC** tabs on the side of the transceiver.
- 2 Insert the accessory's plugs into the **SP/MIC** jacks.
- 3 When you remove the accessory from the transceiver, be sure to cover the **SP/MIC** jacks with the attached tabs, in order to keep dust and dirt away from the contacts.

ORIENTATION



① **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.

② **LED indicator**

Indicates the transceiver status.

③ **PTT (Push to Talk) switch**

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

④ **MENU key**

Press to perform various functions. Press and hold while switching the power ON to enter Setting Mode.

⑤ **CAL key**

Press before making a call to alert the other party members, or press to select a unit ID to make a call.

⑥ **MON key**

Press to monitor the current channel for activity.

⑦ ▲ / ▼ keys

Press to change the operating channel, to select a menu in Setting Mode, and to perform other functions.

⑧ **Speaker/ microphone jacks**

Insert the Speaker/ microphone or Headset plug into this jack.

DISPLAY



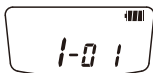
Icon	Description
VOX	Appears when VOX is activated.
LOW	Appears when using low transmit power.
DQT	Appears when the channel is set up with a DQT code.
SEL	Appears when making or receiving a selcall.
	Displays the approximate battery power remaining. Blinks when the battery power is low, while transmitting.
	Appears when Privacy Talk is activated.
	Appears when the Caller's ID is displayed.
	Displays the channel number along with its QT/DQT setting (if any). Also displays various menus and menu settings.
.	Appears when compander is activated.
	Appears while monitoring a channel.
	Appears when the transceiver keys have been locked.

BASIC OPERATION

Switch the Power ON

Switch the transceiver power ON by turning the **Power** switch/ **Volume** control clockwise.

- A confirmation tone sounds, the LCD lights up momentarily, then the current channel number is displayed.



To switch the transceiver power OFF, turn the **Power** switch/ **Volume** control fully counterclockwise, until a click sounds.

Adjust the Volume

Set your desired volume level by rotating the **Power** switch/ **Volume** control.

- Clockwise increases the volume and counterclockwise decreases the volume.



Note:

- ◆ To adjust the volume using background noise as a reference, use the Monitor function {page 22}.
-

Select a Channel

Select a channel by pressing the ▲ or ▼ key.



- A confirmation tone sounds each time you press the ▲ or ▼ key.
- When you receive a call on your selected channel, you will hear audio from the speaker and the LED will light green.
- To use a signaling code, refer to “QUIET TALK/ DIGITAL QUIET TALK” {page 18}.

Make a Call

1 Press the **MON** key to make sure the channel is not in use {page 22}.



2 Press and release the **CAL** key to alert the other parties that you are beginning a call.

- A call alert tone will sound on the other party's transceiver.



3 Press and hold the **PTT** switch, then speak into the speaker area to transmit.

- The LED lights red while transmitting.
- For best sound quality, speak into the speaker area in your normal speaking voice while holding the transceiver approximately 1.5 inches (3 to 4 cm) from your mouth.



4 Release the **PTT** switch when you have finished speaking.

QUIET TALK/ DIGITAL QUIET TALK

QT (Quiet Talk) and DQT (Digital Quiet Talk) are functions that reject signals from undesired parties that are using the same channel as you. You will hear audio from the speaker only when you receive a signal that contains a tone or code matching the one set up on the channel you are using. Likewise, when you transmit on a channel set up with QT or DQT, the receiving station must have a matching tone or code in order to hear your signal.

You can select a tone or code for each channel. There are 45 QT tones and 174 DQT codes. After changing the QT/ DQT setting, confirm that the other members in your group have selected the same tone or code.

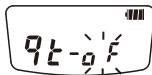
QT No.	QT Frq.	QT No.	QT Frq.	QT No.	QT Frq.	QT No.	QT Frq.
1	67.0 Hz	13	103.5 Hz	25	156.7 Hz	37	241.8 Hz
2	71.9 Hz	14	107.2 Hz	26	162.2 Hz	38	250.3 Hz
3	74.4 Hz	15	110.9 Hz	27	167.9 Hz	39	69.3 Hz
4	77.0 Hz	16	114.8 Hz	28	173.8 Hz	40	67.0 Hz
5	79.7 Hz	17	118.8 Hz	29	179.9 Hz	41	67.0 Hz
6	82.5 Hz	18	123.0 Hz	30	186.2 Hz	42	67.0 Hz
7	85.4 Hz	19	127.3 Hz	31	192.8 Hz	43	67.0 Hz
8	88.5 Hz	20	131.8 Hz	32	203.5 Hz	44	67.0 Hz
9	91.5 Hz	21	136.5 Hz	33	210.7 Hz	45	67.0 Hz
10	94.8 Hz	22	141.3 Hz	34	218.1 Hz	oF	OFF
11	97.4 Hz	23	146.2 Hz	35	225.7 Hz		
12	100.0 Hz	24	151.4 Hz	36	233.6 Hz		

DQT No.	DQT Code	DQT No.	DQT Code	DQT No.	DQT Code	DQT No.	DQT Code	DQT No.	DQT Code
1	D023N	21	D134N	41	D306N	61	D503N	81	D734N
2	D025N	22	D143N	42	D311N	62	D506N	82	D743N
3	D026N	23	D152N	43	D315N	63	D516N	83	D754N
4	D031N	24	D155N	44	D331N	64	D532N	84	D645N
5	D032N	25	D156N	45	D343N	65	D546N	85	D023I
6	D043N	26	D162N	46	D346N	66	D565N	86	D025I
7	D047N	27	D165N	47	D351N	67	D606N	87	D026I
8	D051N	28	D172N	48	D364N	68	D612N	88	D031I
9	D054N	29	D174N	49	D365N	69	D624N	89	D032I
10	D065N	30	D205N	50	D371N	70	D627N	90	D043I
11	D071N	31	D223N	51	D411N	71	D631N	91	D047I
12	D072N	32	D226N	52	D412N	02	D632N	92	D051I
13	D073N	33	D243N	53	D413N	73	D654N	93	D054I
14	D074N	34	D244N	54	D423N	74	D662N	94	D065I
15	D114N	35	D245N	55	D431N	75	D664N	95	D071I
16	D115N	36	D251N	56	D432N	76	D703N	96	D072I
17	D116N	37	D261N	57	D445N	77	D712N	97	D073I
18	D125N	38	D263N	58	D464N	78	D723N	98	D074I
19	D131N	39	D265N	59	D465N	79	D731N	99	D114I
20	D132N	40	D271N	60	D466N	80	D732N	100 (A0)	D115I

DQT No.	DQT Code	DQT No.	DQT Code	DQT No.	DQT Code	DQT No.	DQT Code	DQT No.	DQT Code
101 (A1)	D116I	116 (B6)	D226I	131 (D1)	D351I	146 (E6)	D506I	161 (G1)	D712I
102 (A2)	D125I	117 (B7)	D243I	132 (D2)	D364I	147 (E7)	D516I	162 (G2)	D723I
103 (A3)	D131I	118 (B8)	D244I	133 (D3)	D365I	148 (E8)	D532I	163 (G3)	D731I
104 (A4)	D132I	119 (B9)	D245I	134 (D4)	D371I	149 (E9)	D546I	164 (G4)	D732I
105 (A5)	D134I	120 (C0)	D251I	135 (D5)	D411I	150 (F0)	D565I	165 (G5)	D734I
106 (A6)	D143I	121 (C1)	D261I	136 (D6)	D412I	151 (F1)	D606I	166 (G6)	D743I
107 (A7)	D152I	122 (C2)	D263I	137 (D7)	D413I	152 (F2)	D612I	167 (G7)	D754I
108 (A8)	D155I	123 (C3)	D265I	138 (D8)	D423I	153 (F3)	D624I	168 (G8)	D645I
109 (A9)	D156I	124 (C4)	D271I	139 (D9)	D431I	154 (F4)	D627I	169 (G9)	D023N
110 (B0)	D162I	125 (C5)	D306I	140 (E0)	D432I	155 (F5)	D631I	170 (H0)	D023N
111 (B1)	D165I	126 (C6)	D311I	141 (E1)	D445I	156 (F6)	D632I	171 (H1)	D023N
112 (B2)	D172I	127 (C7)	D315I	142 (E2)	D464I	157 (F7)	D654I	172 (H2)	D023N
113 (B3)	D174I	128 (C8)	D331I	143 (E3)	D465I	158 (F8)	D662I	173 (H3)	D023N
114 (B4)	D205I	129 (C9)	D343I	144 (E4)	D466I	159 (F9)	D664I	174 (H4)	D023N
115 (B5)	D223I	130 (D0)	D346I	145 (E5)	D503I	160 (G0)	D703I	oF	OFF

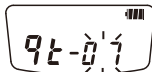
1 Press the **MENU** key.

- The current setting blinks.



2 Press the ▲ or ▼ key to select your desired value.

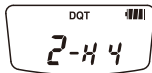
- The values range from 01 to 45 for QT tones, then proceed to 01 to 174 for DQT codes. When selecting a DQT code, the **DQT** icon appears on the display.



- Select "oF" to turn off both QT and DQT.

3 Press the **MENU** key 4 times, or press the **PTT**, **MON**, or **CAL** key or after mode reset timer has elapsed {page 45} to confirm the selection and return to operating mode.

- In Channel display, If DQT No. is 100 or more, the second digit is displayed by alphabet.



PRIVACY TALK

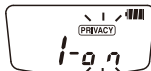
Whereas the QT and DQT functions allow you to ignore unwanted calls, Privacy Talk allows you to hold a conversation in complete privacy. When this function is activated, any other party that is listening to your channel will be unable to understand your conversation.

1 Press the **MENU** key 2 times.

- The **PRIVACY** icon appears on the display and blinks.



2 Press the **▲** or **▼** key to select “**o n**” (privacy on) or “**o f**” (privacy off).



3 Press the **MENU** key 3 times, or press the **PTT, MON**, or **CAL** key or after mode reset timer has elapsed {page 45} to confirm the selection and return to operating mode.

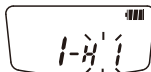
TRANSMIT POWER

You can adjust the transmit power on all channels. Selecting low power will allow longer use of the battery pack. Selecting high power will allow you to transmit further, in case the other party is too far away for low power usage.

To change the transmit power:

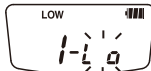
1 Press the **MENU** key 3 times.

- The current setting blinks.



2 Press the **▲** or **▼** key to select “**l o**” (low power) or “**h i**” (high power).

- The **LOW** icon appears on the display when low power is selected.



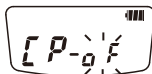
3 Press the **MENU** key 2 times, or press the **PTT, MON**, or **CAL** key or after mode reset timer has elapsed {page 45} to confirm the selection and return to operating mode.

COMPANDER

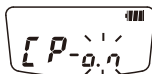
The compander (compressor/expander) allows higher clarity of signals, avoiding excessive noise and interference. When activated, transmitted signals are compressed before being sent and received signals are expanded when they arrive.

1 Press the **MENU** key 4 times.

- The current setting blinks.



2 Press the ▲ or ▼ key to select “P-0.F” (compander off) or “P-0.0” (compander on).



3 Press the **MENU** key 1 time, or press the **PTT**, **MON**, or **CAL** key or after mode reset timer has elapsed {page 45} to confirm the selection and return to operating mode.

MONITOR

When no signals are present, the squelch on the transceiver automatically mutes the speaker so you will not hear background noise. Using the **MON** key, you can open the squelch to unmute the speaker. This allows you to:

- confirm the channel activity so you don't make a call while another party is using the same channel
- adjust the volume level without having to wait for a call
- listen to an intermittent call (due to a weak signal) without it continuously cutting out

To manually open the squelch, press and hold the **MON** key.

- When squelch is open, the  icon appears on the display and the LED lights green.

To return to normal operation, release the **MON** key.


LOCK FUNCTION

KEY LOCK

You can lock the **MENU**, **▲**, and **▼** keys to prevent accidentally changing the operating mode and channel settings. The **Power** switch/ **Volume** control and **PTT**, **CAL***, and **MON** still function normally.

* The **CAL** key functions normally only if it has been set up as Call Alert {page 33}.

Press and hold the **MENU** key for 3 seconds to lock or unlock the transceiver keys.

- The  icon appears on the display when the transceiver keys are locked. No icon appears when they are unlocked.



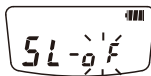
SUPER LOCK

You can lock the **MENU**, **CAL***, **▲**, and/or **▼** keys, and disable the Setting Mode. The **Power** switch/ **Volume** control, **PTT** and **MON** still function normally.

* The **CAL** key will not be locked only if it has been set up as Selcall {page 34}.

To select the super lock setting:


- 1 With the transceiver power OFF, press and hold the **PTT** switch and the **CAL** key while turning the transceiver power ON (for 1 second).



- 2 Press the **▲** or **▼** key to select "5L- P" (**MENU**, **CAL**, **▲**, and **▼** keys locked), "5L- L" (**MENU** and **CAL** keys locked), or "5L-0 F" (super lock off).


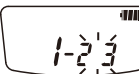


- 3 Press the **MENU**, **PTT**, **MON**, or **CAL** key to exit Super Lock Setting Mode.

- The  icon appears on the display when the transceiver keys are locked. No icon appears when they are unlocked.

SETTING MODE

Many functions on this transceiver are selected or configured through the Menu instead of physical controls.

- 1 With the transceiver power OFF, press and hold the **MENU** key while turning the transceiver power ON (for 1 second).
- 2 Press the ▲ or ▼ key to select your desired Setting menu. 
- 3 Press the **MENU** key then press ▲ or ▼ to select your desired value for the Setting menu. 
- 4 Press the **MENU** key to exit the selection.
- 5 Press the **PTT**, **MON**, or **CAL** key to exit Setting Mode.

Setting Menu

Display	Name	Settings	Default	Ref. Pg
1	Channel 1 Frequency Setting	01 ~ 99	02	26
2	Channel 2 Frequency Setting	01 ~ 99	08	26
3	Channel 3 Frequency Setting	01 ~ 99	09	26
4	Channel 4 Frequency Setting	01 ~ 99	10	26
5	Channel 5 Frequency Setting	01 ~ 99	11	26
6	Channel 6 Frequency Setting	01 ~ 99	12	26
OP	Optional Signaling	OFF/ FS (FleetSync)	OFF	34
IR ¹	Individual Selcall Alert	OFF/ 1 ~ 10	9	37
GR ¹	Group Selcall Alert	OFF/ 1 ~ 10	10	37
ET ²	Incoming Call Notification	OFF/ ON (Tone)	OFF	44
EL	Call Key	CA (Call Alert)/ SC (Selcall)/ OFF	CA	32
ER ³	Call Alert Tone	Type 1 ~ 10	1	33

Display	Name	Settings	Default	Ref. Pg
Ⓛ 5	Call Alert Side Tone	OFF/ ON	ON	33
ρ Ⓛ	PTT ID	OFF/ bo (BOT)/ 01~32 (List 1 ~ 32)	OFF	38
5 Ⓛ	PTT ID Side Tone	OFF/ ON	ON	39
d Ⓛ	Data Transmit Modulation Delay Time	0/ 5 (500)/ 10 (1000)/ 15 (1500)/ 20 (2000 ms)	500 ms	38
H d	Mute Hold Time	OFF/ 5 (500)/ 10 (1000)/ 15 (1500)/ 20 (2000)/ 25 (2500 ms)	OFF	39
Ⓛ 1	Caller ID Display	OFF/ ON	OFF	40
r Ⓛ	Mode Reset Timer	OFF/ 10/ 30 sec	10 sec	45
Ⓛ ⓐ	Time-out Timer	3/ 10 min	3 min	41
b Ⓛ	Busy Channel Lockout	OFF/ ON	OFF	44
Ⓛ Ⓛ	Backlight	OFF/ ON/ A (Auto)	Auto	40
b Ⓛ	Battery Level Indicator	OFF/ ON	ON	43
b 5	Battery Saver	OFF/ ON	OFF	42
b ρ	Beep Tone	OFF/ ON	ON	45
5 Ⓛ	Scan Function	OFF/ ON	OFF	27
5 ρ	Squelch Level	0/ 1/ 2	1	28
5 E	Mic Sense	no (Normal)/ HI (High)	Normal	41
Ⓛ Ⓛ	VOX Gain Level	OFF/ 1 ~ 5	OFF	30
d Y ⁴	VOX Delay Time	0.1/ 0.3/ 0.5/ 1.0/ 1.5/ 3.0 sec	1.0 sec	30
Ⓛ 1 ⁴	Transmit Inhibit while Receiving	OFF/ ON	OFF	31
ρ d ⁴	VOX Proceed Tone	OFF/ ON	OFF	31
ρ ⓐ	Selectable Power ON Tone	Type 1 ~ 3	Type 1	46

¹ Menus 1R and ⓁR are not available if the ⓐρ menu is set to OFF.

² Menu Ⓛ Ⓛ is not available if the ⓐρ menu is set to FleetSync.

³ Menu Ⓛ R is not available if the Ⓛ Ⓛ menu is set to OFF or Selcall.

⁴ Menus d Y, Ⓛ 1, and ρ d are not available if the Ⓛ Ⓛ menu is set to OFF.

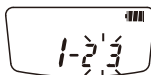
CHANNEL FREQUENCY SETUP

You can change the default frequency of each channel.

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select a channel.
 - The current frequency table number appears beside the channel number.



- 3 Press the **MENU** key then press ▲ or ▼ to select the frequency table number for the channel.



- 4 Press the **MENU** key to exit the selection, then repeat steps 2 and 3 to set additional channels.

Table No.	Frq. (MHz)	Table No.	Frq. (MHz)	Table No.	Frq. (MHz)	Table No.	Frq. (MHz)
1	464.5000	26	462.8375	51	467.8875	76	452.7625
2 (CH 1)	464.5500	27	462.8625	52	467.9125	77	452.8625
3	467.7625	28	462.8875	53	469.4875	78	456.1875
4	467.8125	29	462.9125	54	469.5125	79	456.2375
5	467.8500	30	464.4875	55	469.5375	80	456.2875
6	467.8750	31	464.5125	56	469.5625	81	468.2125
7	467.9000	32	464.5375	57	462.1875	82	468.2625
8 (CH 2)	467.9250	33	464.5625	58	462.4625	83	468.3125
9 (CH 3)	461.0375	34	466.0375	59	462.4875	84	468.3625
10 (CH 4)	461.0625	35	466.0625	60	462.5125	85	468.4125
11 (CH 5)	461.0875	36	466.0875	61	467.1875	86	468.4625
12 (CH 6)	461.1125	37	466.1125	62	467.4625	87	468.5125
13	461.1375	38	466.1375	63	467.4875	88	468.5625
14	461.1625	39	466.1625	64	467.5125	89	468.6125
15	461.1875	40	466.1875	65	451.1875	90	468.6625
16	461.2125	41	466.2125	66	451.2375	91	456.3375
17	461.2375	42	466.2375	67	451.2875	92	456.4375
18	461.2625	43	466.2625	68	451.3375	93	456.5375
19	461.2875	44	466.2875	69	451.4375	94	456.6375
20	461.3125	45	466.3125	70	451.5375	95	457.3125
21	461.3375	46	466.3375	71	451.6375	96	457.4125
22	461.3625	47	466.3625	72	452.3125	97	457.5125
23	462.7625	48	467.7875	73	452.5375	98	457.7625
24	462.7875	49	467.8375	74	452.4125	99	457.8625
25	462.8125	50	467.8625	75	452.5125		

- The marked CH numbers are the default channel settings.

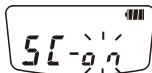
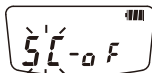
SCAN

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

If the QT/DQT matches, the transceiver stops at the channel and opens the squelch so you can listen to the call. If the QT/DQT does not match, the call is ignored and scanning continues.

Before you can use the scan function, ensure that it is activated. You can turn the scan function (the ability to perform scan) ON or OFF in Setting Mode.

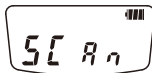
- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “5ℓ”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “5ℓ-σ F” (scan function disabled) or “5ℓ-σ η” (scan function enabled).



- If you select “5ℓ-σ F”, you will no longer be able to perform scan by pressing and holding the ▲ key {page 28}.

To begin scanning:

- 1 Press and hold the ▲ key for 1 second.
 - “5ℓ η η” appears on the display.
- 2 When a signal is detected and the QT/ DQT matches, the channel number appears on the display and blinks.
- 3 When the signal is no longer present, the transceiver waits for 5 seconds before scanning continues.
 - If a new signal appears before the 5 seconds elapse, the transceiver will remain on the channel until the new signal is no longer present, at which time it will again wait for 5 seconds before continuing.



- To end the scan at any time, press and hold the ▲ key for 1 second.
 - The transceiver returns to the channel you were using before you started scanning.

REVERT CHANNEL

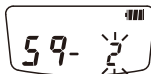
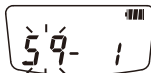
The revert channel is the channel from which you start scanning. So, for example, if you are on channel 1 when you begin to scan, your revert channel is channel 1.

During scan, pressing the **PTT** switch will automatically select the transceiver's revert channel (in the above example, channel 1) and you will begin transmitting. However, if you are currently paused on another channel after having received a signal (for example, channel 2), pressing the **PTT** switch will allow you to transmit on that channel, rather than returning to the revert channel. Scanning will resume after 5 seconds, unless a signal is present on the channel.

SQUELCH LEVEL

You can adjust the default squelch level of the transceiver.

- Enter the Setting Mode {page 24}.
- Press the ▲ or ▼ key to select “59”.
- Press the **MENU** key then press ▲ or ▼ to select “59- 0” (open), “59- 1” (default setting), or “59- 2” (tight).



VOICE OPERATED TRANSMISSION (VOX)

Using the VOX feature, you can operate the transceiver hands-free. In order to use this feature, however, you must use an optional headset; VOX will not function with the built-in microphone. For best operation conditions, we recommend you use an optional headset with both an ear piece and a microphone on a boom that rests in front of your mouth.

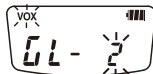
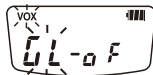
VOX OPERATION

- 1 Set up a VOX gain level from 1 to 5 {page 30}.
- 2 To transmit, speak into the headset microphone.
 - You do not need to press the **PTT** switch; the transceiver automatically detects your voice and begins transmitting. The LED lights red.
- 3 To stop transmitting, stop speaking.
 - Transmission will continue momentarily after you stop speaking. You can select the delay time as described on page 30.
- 4 To exit VOX mode, set the VOX gain level {below} to “ $\overline{0}L-0F$ ” (VOX function off).

VOX Gain Level

With VOX activated, your voice level will determine when you transmit. Due to the automatic switching between transmission and reception, we recommend you set the VOX gain level such that it will not activate when in an area with excessive ambient noise.

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “ $\overline{0}L$ ”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “ $\overline{0}L-0F$ ” (VOX function off) or “ $\overline{0}L-1$ ” (VOX gain level 1) to “ $\overline{0}L-5$ ” (VOX gain level 5).

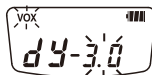
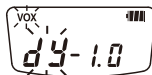


- While adjusting the VOX Gain level, speak into the microphone. When an appropriate level is reached, the LED lights orange.
- Setting the VOX gain level to OFF deactivates VOX. In order to transmit with VOX turned off, you must use the **PTT** switch.

VOX Delay Time

If the transceiver returns to receive mode too quickly after you stop speaking, the end of your message may not be transmitted. To avoid this, select an appropriate delay time that allows your entire message to be transmitted. However, do not make the delay overly long.

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “dY”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “dY-0.1” (0.1 sec.), “dY-0.3” (0.3 sec.), “dY-0.5” (0.5 sec.), “dY-1.0” (1 sec.), “dY-1.5” (1.5 sec.), or “dY-3.0” (3 sec.).

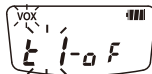


- While adjusting the VOX Delay Time, speak into the microphone to simulate transmitting. The LED lights orange while speaking, but no signal is transmitted at this time.

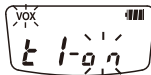
Transmit Inhibit While Receiving

While using VOX, you can set the transceiver to detect when the channel is in use (in place of using the Monitor function). With this function turned on, VOX will not allow you to transmit while the channel is being used. You can transmit only when the channel is free. Setting up the proceed tone function will notify you when the channel is free {below}.

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “t 1”.



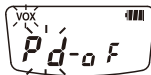
- 3 Press the **MENU** key then press ▲ or ▼ to select “*t l-o n*” (transmit inhibit while receiving on) or “*t l-o f*” (transmit inhibit while receiving off).



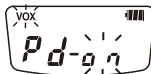
VOX Proceed Tone

You can set the transceiver to sound an alert tone when you are able to transmit (transmission is no longer inhibited).

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “*P d*”.



- 3 Press the **MENU** key then press ▲ or ▼ to select “*P d-o n*” (VOX proceed tone on) or “*P d-o f*” (VOX proceed tone off).



- You can speak into the microphone at this time to simulate transmitting. The LED lights orange while speaking if your voice is at an appropriate level, but no signal is transmitted at this time.

FleetSync: ALPHANUMERIC 2-WAY PAGING FUNCTION

FleetSync is an Alphanumeric 2-way Paging Function, and is a protocol owned by JVC KENWOOD Corporation. Each transceiver has a unique ID which is used to decode signals from other callers.

CALL KEY SETUP

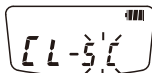
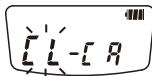
You can set up the transceiver **CAL** key to perform 1 of 2 functions, or you can turn the **CAL** key off (unused):

Call Alert: Press the **CAL** key before making a call will send your call alert tone to your party members, identifying yourself before speaking.

Selcall: Press the **CAL** key then select from a list of IDs to make calls to specific transceivers.

To set up the **CAL** key:

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “[L”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “[L-[R” (call alert), “[L-[S” (selcall), or “[L-[F” (off).

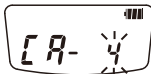
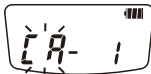


CALL ALERT TONE

Call alert tones are used to identify yourself to your party members. You can set up a call alert tone to one of 10 types. If each party member uses a different call alert tone, it is easy to know who is making the call. Pressing the CAL key before making a call will send your call alert tone to your party members.

To set up your own call alert tone:

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “[R”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “[R- 1” (call alert tone 1) to “[R- 10” (call alert tone 10).
 - Each time you press ▲ or ▼ to select a call alert tone, the new tone sounds.

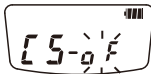
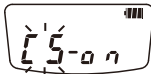


Call Alert Side Tone

When the **CAL** key is pressed, the call alert tone will sound through your own speaker as well.

To turn the Call Alert Side Tone on or off, on your own transceiver:

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “[5”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “[5-0 n” (Call Alert Side Tone is on) or “[5-0 F” (Call Alert Side Tone is off).



SELCALL (SELECTIVE CALLING)

A Selcall is a voice call to a particular station or group of stations. Each transceiver is set up with an individual ID number for use with selcalls.

There are several types of Selcalls available: Individual, Group, and Broadcast.

- Individual Calls are calls made to individual parties.
- Group Calls are calls made to all parties within a group.
- Broadcast Calls are calls made to all parties in all groups.

The default status of the transceiver does not allow you to make a Selcall. Use the following procedures to set up your transceiver to allow Selcalls:

Step 1: Activate the FleetSync Optional Signaling

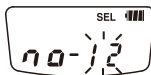
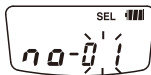
- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “**OP**” (Optional Signaling).
- 3 Press the **MENU** key then press ▲ or ▼ to select “**F5**” (FleetSync).
 - After setting the Optional Signaling to FleetSync, you will no longer be able to receive calls except selcalls.

Step 2: Set up the **CAL** key

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “**LL**”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “**LL-5L**” (selcall).

Step 3: Set up your own ID (ID List Setting Mode for Selcall)

- 1 With the transceiver power OFF, press and hold the **CAL** key while turning the transceiver power ON (for 1 second).
 - A beep will sound and the transceiver will enter ID List Setting Mode.
- 2 Press the ▲ or ▼ key to select a list ID number.



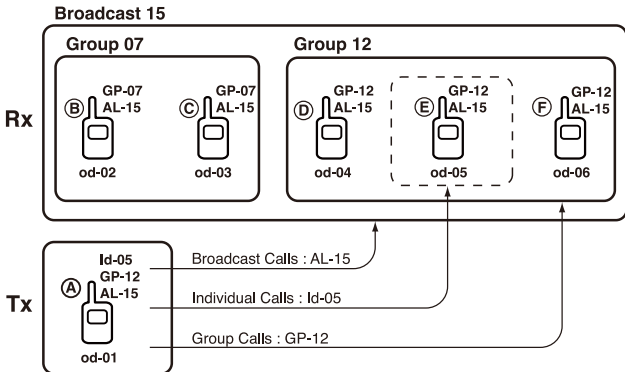
- 3 Press the **MENU** key then press ▲ or ▼ to select “*o d*” (own ID).



- The default own ID setting is 01.
 - When setting up your own ID, make sure that each member within your group sets up a unique ID number for their own ID. If an own ID number is duplicated, that transceiver cannot perform selcalls.
 - “*i d*” represents an Individual Call ID.
 - “*g P*” represents a Group Call ID.
 - “*R L*” represents a Broadcast Call ID.
 - “*o d*” represents your own ID number.
 - “ - - ” clears the selected ID data.
- 4 Press the **MENU** key to confirm the selection.
- 5 Press the **PTT**, **MON**, or **CAL** key to return to normal operation.
- 6 Set up your group ID number by repeating steps 1 to 5, above. In step 3, select “*g P*” (group ID) instead of “*o d*”.
- Ensure that all of your group members set up the same group ID.
- 7 You can also set up a broadcast ID number (“*R L*”) which is used to make calls to all members of several groups.
- Ensure that all members of all groups set up the same broadcast ID.

Making a Selcall

Following are details on how to make individual, group, and broadcast calls. Refer to the diagram below for the examples provided herein.



Note:

- ◆ When QT/DQT is set to the receiving side, the call side QT/DQT settings must be set up the same as the receiving side settings.
- ◆ During Scan the **CAL** key does not operate.

Individual Calls:

For example, transceiver A is calling transceiver E.

- 1 Press the **CAL** key.
- 2 Press the ▲ or ▼ key to select an individual ID number (Id-05 in this example).
 - "Id" (individual call) represents a single station.
- 3 Press the **PTT** switch to transmit the selected ID.
 - When a call is received, "Id" appears on the display, along with the caller's ID number.

Group Calls:

For example, transceiver A is calling transceivers D, E, and F.

- 1 Press the **CAL** key.
- 2 Press the ▲ or ▼ key to select a group ID number (GP-12 in this example).
 - “GP” (group call) represents a group of stations.
- 3 Press the **PTT** switch to transmit the selected group ID.
 - When a call is received, “GP” appears on the display, along with the caller’s ID number.

Broadcast Calls:

For example, transceiver A is calling transceivers B ~ F.

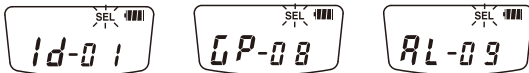
- 1 Press the **CAL** key.
- 2 Press the ▲ or ▼ key to select a broadcast ID number (AL-15 in this example).
 - “AL” (broadcast call) represents all stations.
- 3 Press the **PTT** switch to transmit the selected broadcast ID.
 - When a call is received, “AL” appears on the display, along with the caller’s ID number.

Note:

- ◆ If Optional Signaling (menu “OP”) has been set to “F5” (FleetSync), you can also set up an Individual Selcall Alert type (menu “IR”) and Group Selcall Alert type (menu “GR”). Individual and Group Selcall Alert types range from “OF” (off) and “I” (type 1) to “IO” (type 10).
-

Receiving a Selcall

When a selcall is received, the **SEL** icon and “ID”, “GP” or “AL” appears on the display along with the caller's ID number.



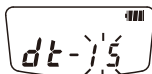
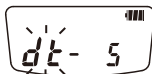
Press the **PTT** switch and speak into the speaker area to respond to the call, then continue the call as normal. When the call is finished, press the **CAL** key to return to operating mode.

Data Transmit Modulation Delay Time

This function normally operates fine using the default setting, so it is not necessary to adjust the value. However, there are certain operating environments that will not allow the use of FleetSync (Selcall) functions, such as Scan mode. When you encounter such an environment, readjust the delay time to a longer time by following the procedures.

To set up a data transmit modulation delay time:

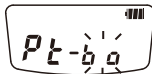
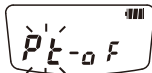
- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “dt”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “dt-0” (0 ms), “dt-5” (500 ms), “dt-10” (1000 ms), “dt-15” (1500 ms), or “dt-20” (2000 ms).



PTT ID

The transceiver can send a PTT ID signal when pressing the **PTT** switch (beginning of transmission) or when pressing and releasing (beginning of transmission and end of transmission) the **PTT** switch.

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “pt”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “pt-off” (PTT ID is off), “pt-b0” (send your own PTT ID at the beginning of transmission), or “pt-01” to “pt-32” (send selected list ID number PTT ID at the beginning and end of transmission).



Note:

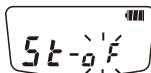
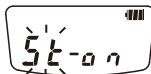
- ◆ Transceiver's individual ID number is not available for selection as PTT ID.

PTT ID Side Tone

When the **PTT** switch is pressed and/or released, a tone will sound through your own speaker when the PTT ID is transmitted.

To turn the PTT ID Side Tone on or off:

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “5t”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “5t-on” (PTT ID Side Tone is on) or “5t-off” (PTT ID Side Tone is off).

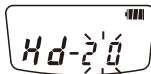
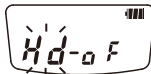


Mute Hold Time

Mute Hold Time keeps the speaker muted for a brief moment, after a signal has been received. This prevents interference with the PTT ID signal.

To set the hold time:

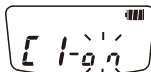
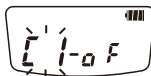
- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “Hd”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “Hd-off” (hold time is off), “Hd-5” (500 ms), “Hd-10” (1000 ms), “Hd-15” (1500 ms), “Hd-20” (2000 ms), or “Hd-25” (2500 ms).



Caller ID Display

When the transceiver receives a PTT ID signal, the caller ID of that signal appears on the display, along with the **[CID]** icon, so you know who is making the call.

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “**[I]**”.
- 3 Press the **MENU** key then press ▲ or ▼ to select
“**[I-o n]**” (Caller ID Display is on) or “**[I-o F]**”
(Caller ID Display is off).



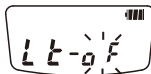
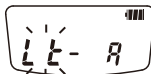
BACKGROUND OPERATIONS

DISPLAY BACKLIGHT

You can set the display backlight to remain off, remain on, or turn on when you press any key other than the **PTT** switch (auto). When set to auto, the backlight remains on for 5 seconds after pressing a key, before turning off again.

To select the backlight setting:

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “**[L]**”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “**[L-o F]**” (backlight off), “**[L-o n]**” (backlight on), or “**[L-o A]**” (backlight auto).

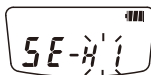
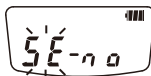


MIC SENSE

You can adjust the sensitivity level of the transceiver microphone.

To select the mic sense:

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “5E”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “5E-n a” (normal) or “5E-H i” (high).



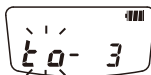
TIME-OUT TIMER

The Time-out Timer prevents you from using a channel for a extended durations. This function is useful, for example, when you accidentally keep the **PTT** switch pressed. Additionally, by limiting the amount of time you can continuously transmit, this feature helps you save on battery power consumption.

If you continuously transmit for 3 minutes (default value), the transceiver will stop transmitting and a tone will sound. To stop the tone, release the **PTT** switch. You can press the **PTT** switch again to resume transmitting.

To change the default value of 3 minutes:

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “t a”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “t a- 3” (3 minutes) or “t a-10” (10 minutes).



This transceiver is also equipped with a pre-alert tone which sounds 10 seconds before the Time-out Timer expires. This will allow you time to finish your message before the transceiver automatically stops transmitting.

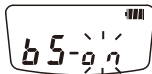
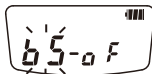
BATTERY SAVER

This transceiver has been designed to give you the most out of your battery power. The battery saver function decreases the amount of power used when a signal is not being received and no operations are being performed.

While using the transceiver, battery saver will automatically switch ON after 5 seconds have elapsed with no operations or received calls. Operating the transceiver or receiving a call will switch this feature OFF until 5 seconds of non-operation occurs again.

To turn this function on or off:

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “b5”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “b5-on” (battery saver on) or “b5-off” (battery saver off).







Note:

- ◆ While the Battery Saver is operating, the LED may flash green when receiving a QT/DQT signal which does not match the QT/DQT tone/code set up in your transceiver.
-

BATTERY LEVEL INDICATOR

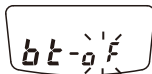
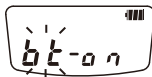
When turned ON, the battery level indicator on the display lets you know approximately how much battery life is remaining. When turned OFF, the battery level indicator will appear and blink only when the battery voltage level is low.

When the battery voltage becomes too low while transmitting, the transceiver stops transmitting, a tone sounds, and the LED blinks red until you release the **PTT** switch. Recharge or replace the battery pack at this time.

-  High battery power
-  Medium battery power
-  Low battery power
-  Recharge the battery pack

To turn this function on or off:

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “bt”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “bt-on” (battery level indicator on) or “bt-off” (battery level indicator off).



INCOMING CALL NOTIFICATION

Note:

- ◆ To use Incoming Call Notification, you must set up a QT tone or a DQT code {page 18}.
-

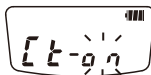
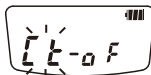
Incoming Call Notification is used to inform you of when a call is being received. When activated, a tone is emitted when a busy signal is received and the QT/ DQT signaling matches.

- The tone will sound for 15 seconds before turning off.
- While the tone sounds, you will not hear any audio from the speaker. Press any key to turn the tone off and listen to the received call.

After the call is finished, the transceiver will wait for 10 seconds before resetting. If you receive a new call within those 10 seconds, the tone will not sound. If no call is received within 10 seconds, Incoming Call Notification will reset so that the next time a call is received, the tone will sound again.

To turn Incoming Call Notification on or off:

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “[t-”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “[t-o F” (incoming call notification off), or “[t-o n” (incoming call notification on).

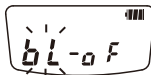


BUSY CHANNEL LOCKOUT (BCL)

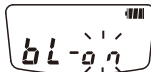
This function is used in order to prevent transmitting on a channel that somebody else is currently using. When turned ON, a beep sounds when you press the **PTT** switch while another party is using the channel, and you cannot transmit.

To turn BCL on or off:

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “bL”.



- 3 Press the **MENU** key then press ▲ or ▼ to select “*bL-on*” (BCL on) or “*bL-off*” (BCL off).

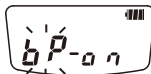


BEEP TONE

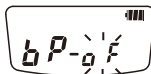
When you press a key, a beep will emit from the transceiver.

To turn the beep tone on or off:

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “*bP*”.



- 3 Press the **MENU** key then press ▲ or ▼ to select “*bP-on*” (beep tone on) or “*bP-off*” (beep tone off).

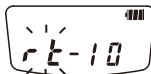


MODE RESET TIMER

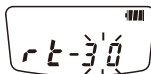
This function returns the transceiver to the channel display after a preset timer expires while in Setting mode or ID List mode.

To set the mode reset timer:

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “*rT*”.



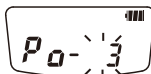
- 3 Press the **MENU** key then press ▲ or ▼ to select “*rT-off*” (timer off), “*rT-10*” (10 seconds), “*rT-30*” (30 seconds).



SELECTABLE POWER ON TONE

You can set up a tone sound during power on to one of 3 types.
To set the power on tone type:

- 1 Enter the Setting Mode {page 24}.
- 2 Press the ▲ or ▼ key to select “P_a”.
- 3 Press the **MENU** key then press ▲ or ▼ to select “P_a- 1” (type 1), “P_a- 2” (type 2), “P_a- 3” (type 3).

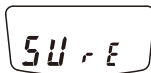
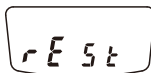


RESETTING THE TRANSCEIVER

At some point in time, you may desire to reset the transceiver settings to their default values. (Default values are listed on pages 24 ~ 25.)

To reset the transceiver:

- 1 With the transceiver power OFF, press and hold the ▲, ▼, and **MON** keys while turning the transceiver power ON.
 - “r E 5 t” (reset) will appear on the display.
- 2 Release the ▲, ▼, and **MON** keys.
 - The confirmation message “S U r E” (sure) will appear on the display.
- 3 Press the **PTT** switch to reset the transceiver.
 - Press any other key to cancel the reset.



Note:

- ◆ Reset will function even if Super Lock has been activated.
-

TROUBLESHOOTING GUIDE

Problem	Solution
Cannot turn the transceiver power ON.	<ul style="list-style-type: none">• The battery pack may be dead. Recharge or replace the battery pack.• The battery pack may not be installed correctly. Remove the battery pack and install it again.
Battery power dies shortly after charging.	<ul style="list-style-type: none">• The battery pack life is finished. Replace the battery pack with a new one.
Cannot talk to or hear other members in your group.	<ul style="list-style-type: none">• Make sure you are using the same frequency and QT/DQT setting as the other group members.• Other group members may be using Privacy Talk. Turn on your transceiver's Privacy Talk.• Other group members may be too far away. Make sure you are within range of the other transceivers.
Other voices (besides group members) are present on the channel.	<ul style="list-style-type: none">• Change the QT/DQT settings. Make sure all group members change the settings on their transceivers to match the new QT/DQT setting.
You cannot make a selcall.	<ul style="list-style-type: none">• Verify and set your transceiver ID (Own, Group, All).
You cannot receive calls except selcalls. You cannot transmit even by pressing the PTT switch.	<ul style="list-style-type: none">• Optional Signaling is set to "FS (FleetSync)". Change the setting to "oF (OFF)".
The transceiver is malfunctioning for no apparent reason.	<ul style="list-style-type: none">• Reset the transceiver as described on page 46.

SPECIFICATIONS

RF output power	High	1.5 W
	Low	500 mW
Audio output power		100 mW
Frequency stability		±2.5 ppm
Operating voltage		3.7 V
Dimensions (W x D x H) (projections not included)		52 x 29.6 x 103.5 mm (2.05 x 1.17 x 4.07 in)
Weight (with KNB-46L)		155 g (5.5 oz)