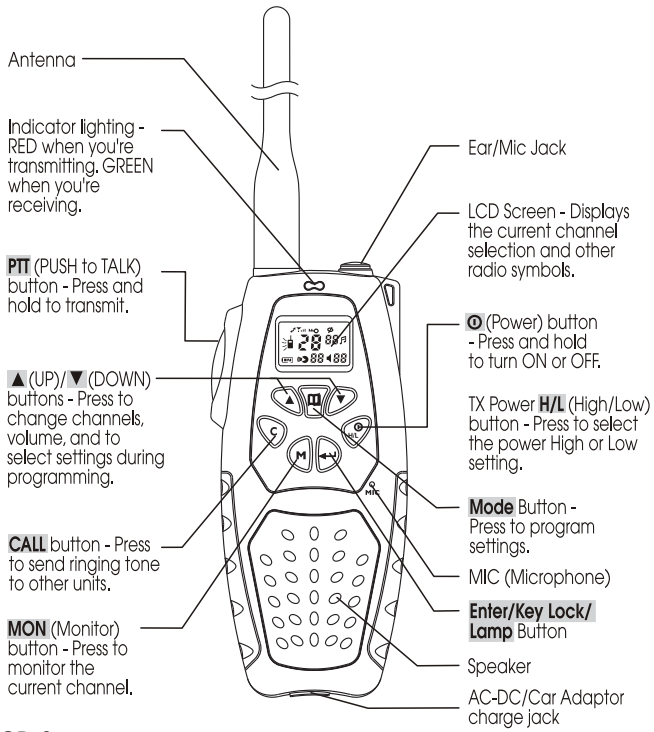
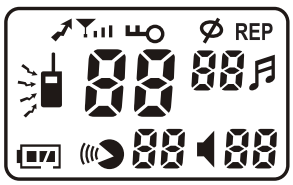
Digitalk

LONG RANGE COMMUNICATOR MODEL SP2302AA
OWNER'S MANUAL AND OPERATING INSTRUCTIONS

Communicator Controls



1. LCD Screen



Channel Number. Changes from 1 to 40 as selected by the user.

CTCSS Code. Changes from 1 to 38 as selected by the user.

Displays the current Battery charge level.

Displayed when the VOX feature is enabled.

Displayed when transmitting a signal.

Displayed when receiving a signal.

Displays the transmitting Power level (High/Low).

Blinks during Channel scan mode.

Displayed when the Dual Watch function is turned ON.

Displayed when the Key Lock feature is activated.

Displayed when sending Call-Ring tone to other units.

Displays during Monitor operation, and Speaker volume selection.

Displayed when the Scrambler function is turned ON.

Displayed when the Repeater function is activated.

2. Installation

2.1 Removing the Belt Clip
a. Pull the Belt Clip Latch away from the UNIT.
b. While pulling the Belt Clip Latch, push up the Belt Clip as shown in Figure 1.

2.2 Installing the Belt Clip
a. Slide the Belt Clip into the slot as shown in Figure 2.
b. A "click" indicates the Belt Clip is locked into position.

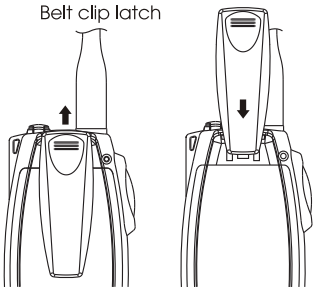


Figure 1 Figure 2

2.3 Installing the supplied NI-MH Rechargeable Battery Cover (Battery built-in to the battery cover).

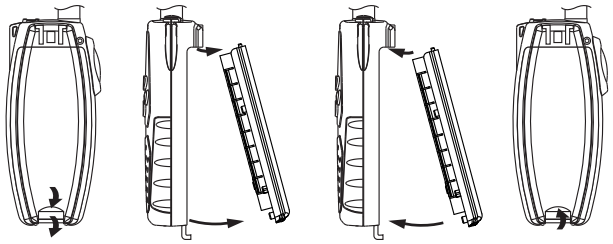


Figure 3 Figure 4 Figure 5 Figure 6

a. Unlock the Battery Cover (Figure 3) latch located on the bottom of the unit, then pull up the Battery Cover as shown in Figure 4.
b. Install the supplied Ni-MH (Nickel Metal Hydride) rechargeable battery as shown in Figure 5.
c. Replace the new built-in Battery Cover.
d. Lock the Battery Cover latch into position as shown in Figure 6.

2.4 Charging the Rechargeable Battery pack

Important: Turn OFF the unit before charging. Charge the Battery pack 10~14 hrs. prior to initial use.

Using the AC-DC Adaptor plug

a. Insert the small plug on the end of the AC-DC adaptor into the Charger jack (CHG) located at the bottom side of the unit (Figure 7).
b. Plug the AC adaptor into the AC wall outlet.

Using the Car Adaptor charger plug (Optional)

a. Insert the small plug on the end of the Car adaptor charger plug into the Charger jack (CHG) located at the bottom side of the unit (Fig. 8).
b. Plug the Car adaptor into the car cigarette socket.

When charging, the Battery level indicator icon will start scrolling on the LCD Screen. It takes about 12 hours to fully recharge the battery if they've become completely run down, new battery takes at least 12 hours (base on 1200 mAh) to fully charge.

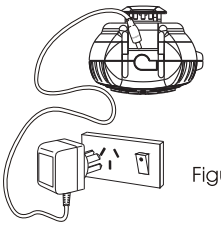


Figure 7

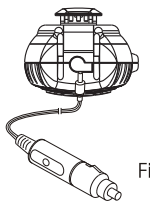


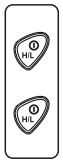
Figure 8

Notes:
- Do not charge the battery using both AC adaptor and Car Charger adaptor at the same time.
- For the Rechargeable battery replace only with same type and make of the battery pack that comes with the unit.
- To reduce the risk of electric shock, do not expose this appliance to rain and moisture.

3. Operation

a. Except in an emergency, the unit must not be operated on channels 5 and 35, including sub-channels.
b. No voice transmissions are permitted on channels 22 and 23.
c. Channel 11 is the customary calling channel for establishing communication.
d. Channel 40 is the customary road vehicle channel.
e. Before selecting a channel for transmitting, always listen on it and ensure it is not already being used. Always avoid selecting a busy channel. When the unit keeps on receiving signal from unknown party, the icon **RX** will be displayed.

3.1 Turning the Unit ON/OFF



a. To Turn ON;
Press and hold the ⏻ (Power) button. A Dual tone will be heard and the LCD Screen will display the current channel.
b. To switch OFF;
Press and hold the ⏻ (Power) button. A Single tone will be heard and the LCD Screen will turn blank.

3.2 Adjusting the Speaker Volume

There are 8 volume levels, 1-8.
To adjust the speaker volume level, press the ▲ (UP) button to increase, or press the ▼ (DOWN) button to decrease. During the adjustment, the speaker icon and the volume level will de displayed at the lower right corner on the LCD Screen.

3.3 Receiving a Call

The unit is continuously in the Receive mode when the unit is turned ON and not transmitting. When a signal is received on the current channel, the RX icon will be displayed on the LCD Screen and the green LED indicator lights.

3.4 Transmitting (sending)

a. Press and hold **PTT** (Push to Talk) button to transmit your voice. The TX icon will be displayed on the LCD Screen and the red LED indicator lights.
b. Hold the unit in a vertical position with the Mic (Microphone) 5 cm away from the mouth. While holding the **PTT** button, speak into the mic (microphone) in a normal tone of voice.
c. Release the **PTT** button when you have finished transmitting.

Important:
- Check the channel activity by pressing and holding the **M** (Monitor) button. You will hear static if the channel is unoccupied. Do not transmit if someone is talking on the current channel.
- In order for other people to receive your transmission, they must also be on the same channel and have set the CTCSS code that you are currently using. Refer to the **"Changing Channel"** section for more information.

4. Functions and Settings

4.1 Changing Channels

The unit has 38 available channels. To change channels, in normal mode;
a. Press the button once, the Channel number icon will start blinking on the LCD Screen.
b. Press the (UP) ▲ or ▼ (DOWN) button to select the desired channel. The channel changes from 1 to 40, or from 40 to 1. (Channels 22 & 23 being inhibited).
c. Press the ↵ (Enter) button to confirm your selection and return to the normal mode.

Note: Refer to the "Channel Table" section of this Owner detailed frequency listing.

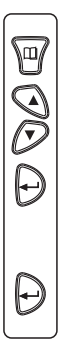
4.1.1 Monitor

You can use the Monitor feature to check for weak signals on the current channels.
a. Press the **M** button for 1 second to hear everything on the current channel for 15 seconds.
b. Press the **M** button again to turn off the Monitor operation.

4.2 Changing the CTCSS sub-channels

Each of the 38 available channels has 38 sub channels (CTCSS sub-channels). To change channels, in normal modes;
a. Press the button twice, the CTCSS number icon will start blinking on the LCD Screen.
b. Press the (UP) ▲ or ▼ (DOWN) button to select one of the 38 CTCSS sub-channels. (Set this option to transmit and receive a call using the main channels only.)
c. Press the ↵ (Enter) button to confirm your selection and return to the normal mode.

4.3 Setting the Channel Scan



Channel scan performs searches for active signals in an endless loop from channels 1 to 40 (Channels 22 & 23 being inhibited). To turn ON;
a. Press the button 3 times, the (SCAN), Channel number and the CTCSS number icons will start blinking on the LCD Screen.
b. Press the ▲ (UP) or ▼ (DOWN) button to activate the channel scan mode.
c. The channel number on the LCD Screen changes rapidly until an active signal is detected. (To deactivate the channel scan mode, press the ↵ (Enter) button. The LCD Screen will immediately return to the normal mode with the previous channel setting.)
d. When an active signal (one of the 38 available channels) is detected, channel scan pauses on the active channel.
e. Press the ↵ (Enter) button to communicate with the active signal channel and the channel scan will be deactivated.

Note: When the Channel Scan is activated, the VOX function will be temporarily disabled until the Channel Scan function is turned OFF.

4.4 Setting the Scrambler Mode

The Scrambler mode makes your transmission voice sounds garbled to anyone listening. It adds an extra layer of privacy but it does not guarantee secrecy. Both of the Transmitting and Receiving units must be set into the same Scrambler mode. To activate the Scrambler mode, in normal mode;
a. Press the button 4 times, the (Scrambler icon) will display and the OFF icon will start blinking on the LCD Screen.
b. Press the ▲ (UP) button or ▼ (DOWN) button to select the desired scrambler mode (off, 1~4 channels).
c. Press the ↵ (Enter) button to confirm your selection and return to the normal mode.

4.5 Changing the Call-Ring tone

You can use the Call-Ring tones to alert the other user/s or to identify yourself. The unit is equipped with 10 different types of Call-Ring tones. To change the Call-Ring tone setting, in normal modes;
a. Press the button 5 times, the (Call-Ring tone icon) will display and the current Call-Ring tone number will start blinking on the LCD Screen.
b. Press the ▲ (UP) or ▼ (DOWN) button to select the desired Call-Ring (1-10). A respective Call-Ring tone sound will be played when changing from one tone to another.
c. Press the ↵ (Enter) button to confirm your selection and return to the normal mode.

4.51 Sending a Call tone

With the unit in normal mode, press the **C** button. The microphone will be muted and the unit will transmit the current Call tone to other users with the same Channel and CTCSS code and the red LED indicator lights.
Call tone can only be transmitted once (not more than 3 sec) in any 60 sec period.

4.6 Setting the DW (Dual Watch)

This unit is capable of monitoring two channels (main channel, and the DW channel) in the standby mode. However, the unit can only transmit a call using main channel. The DW channel can only monitor/receive a call transmitted by other users with the same channel and CTCSS code setting as the DW channel. To activate the Dual watch mode in normal mode;
a. Press the button 6 times, the (DW) icon will start blinking on the LCD Screen.
b. Press the ▲ (UP) or ▼ (DOWN) button to select the DW (dual watch) channel (1-21 & 24-40, execpt the main channel).
c. The Main & DW channel numbers will alternately display on the LCD Screen.
d. When an activate channel is scanned, the unit will turn on the speaker.
e. Press the ↵ (Enter) button return to the normal mode.

Whereby the CTCSS code is applicable, the user must set first the CTCSS code number prior to setting the DW channel number.

Note: When the Dual Watch function is activated, the VOX function will be temporarily disabled until the Dual Watch mode is turned OFF.

4.7 Setting the VOX (Voice Activated) Sensitivity

In VOX mode, the unit will transmit a signal only when it is activated by your voice or other sounds around you. The unit will transmit for a further for 1 second even if you stop talking. To set the VOX sensitivity level;
a. Press the button 7 times, the (VOX) icon will display and the current VOX level (off, 1, 2, 3 or 4) will start blinking on the LCD Screen.
b. Press the ▲ (UP) or ▼ (DOWN) button to select the VOX level (off, 1, 2, 3, or 4) sensitivity. The highest sensitiving level is 4.
c. Press the ↵ (Enter) button to confirm your selection and return to the normal mode.

While the VOX mode is on, press the ↵ (Enter) button for 1 second can suspend the VOX transmission for 4 seconds. VOX operation is not recommended if the unit will be used in a noisy or windy environment.

4.8 Setting the Stop-Watch

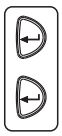
a. In normal mode, press the 🕮 button 8 times, the Stop-Watch numberical digits will display and the Channel number will start blinking on the LCD Screen.
b. Press the ▲ (UP) button, the timer start counting on the LCD Screen.
c. Press the ▼ (DOWN) button once to pause/stop the timer from counting. Press ▲ (UP) button again, the timer will contiouous counting. Press the ▼ (DOWN) button twice to reset the timer display back to zero.
d. Press the 🕮 button to return to the normal mode.

Note: The unit transmit and receive function will still operate even if the Stop-watch function is in operation. However, the Call-Ring tone function will be temporarily disabled

5. Auxiliary Features

5.1 Key Lock

The Key Lock feature allows the user to disable the ▲ (UP), ▼ (DOWN), **M** (MONITOR), and the 🕮 (MODE) buttons so that the unit settings could not be changed accidentally.



a. To activate the Key Lock feature, press and hold the ↵ button for 1 second. The 🔒 (Lock) icon will display on the LCD Screen.
b. To deactivate the Key Lock feature, press and hold the ↵ button again for 1 second. The 🔒 (Lock) icon will disappear on the LCD Screen.

The **PTT** , **H/L** , **C** , and ⏻ (POWER) button will remain functional even if the Key Lock feature is activated.

5.2 TX Power H(High)/L(Low) feature

This feature permits the selection of the transmitting power level to high or low. Before transmitting a speech to other units, press the **H/L** button to select the desired power output. If High is selected, the unit will transmit at maximum power and at a longer transmission range.

5.3 Busy Indicator

Anytime when the unit detects a valid signal on the current channel, the BUSY indicator will display on the LCD Screen and the green LED indicator lights. However, the speaker will only be enabled when the signal matches the current CTCSS code.

5.4 LCD Screen Back Light

Every time a button is pressed (except PTT & Call buttons), the LCD Screen back light will illuminate for 4 seconds.

5.5 Microphone/Earphone Jack

The unit is equipped with an auxiliary microphone and earphone jack (located at the upper side near the antenna). The headset may or maynot be included with the package.

5.6 Repeater Function

a. In Channels 1-8, press the 🕮 button for 1 second to activate / deactivate the Repeater function.
b. When activate the Repeater Function, Channels 1-8 will be switched to channel 31-38 and the REP (Repeater icon) will be displayed at the higher right corner on the LCD Screen.
c. Only use this repeater function when a long distance communication via the local repeater facility is specifically required. Unless it is necessary, to avoid operation on locally used repeater input channels (channels 31 to 38) or locally used repeater receiving channels (channels 1 to 8) is recommended.

5.7 Automatic Power Save Feature

The unit enters to the power saving mode automatically after 6 seconds for the last operation. The unit is still able to receive transmission in this mode.

5.8 Battery Level Indicator

The unit can indicate the battery charge in the following levels;

Battery charge at high level.

Battery charge at medium level.

Battery charge at low level.

At this level, the unit will emit a 15 seconds in normal mode.
Important: Charge the unit for 10~14 hours.

Battery charge at very low level. At this level, the other icons in the LCD Screen also turn OFF
Important: Charge the unit for 10~14 hours.

Specifications:

Channels Available	38 Channels
CTCSS Sub-channel	38 for each Channel
Output Power (TX)	3W ERP (High) / 0.5W ERP (Low)
Range	Up to 10 Km

CHANNEL TABLE			CHANNEL TABLE		
CHANNEL NUMBER	FREQUENCY (MHz)	ALLOCATION	CHANNEL NUMBER	FREQUENCY (MHz)	ALLOCATION
* 1	476.425	Repeater Output	21	476.925	General Use
* 2	476.450	Repeater Output	22+	inhibited	**Data Only - No Speech**
* 3	476.475	Repeater Output	23+	inhibited	**Data Only - No Speech**
* 4	476.500	Repeater Output	24	477.000	General Use
* 5	# 476.525	**Emergency Use Only**	25	477.025	General Use
* 6	476.550	Repeater Output	26	477.050	General Use
* 7	476.575	Repeater Output	27	477.075	General Use
* 8	476.600	Repeater Output	28	477.100	General Use
9	476.625	General Use	29	477.125	Pacific Hwy, Bruce Hwy
10	476.650	General Use	30	477.150	General Use
11	476.675	Calling Channel	*31	477.175	Repeater Input
12	476.700	General Use	*32	477.200	Repeater Input
13	476.725	General Use	*33	477.225	Repeater Input
14	476.750	General Use	*34	477.250	Repeater Input
15	476.775	General Use	*35	# 477.275	**Emergency Use Only**
16	476.800	General Use	*36	477.300	Repeater Input
17	476.825	General Use	*37	477.325	Repeater Input
18	476.850	Caravan & Camper Convoy	*38	477.350	Repeater Input
19	476.875	General Use	39	477.375	General Use
20	476.900	General Use	40	477.400	Road Channel

* These channels may also be in use as repeater channels using 750kHz offset. Channels 1 to 4, and 6 to 8 are used for mobile reception, and channels 31 to 34, and 36 to 38 are used for mobile transmission.

Channels 5 and 35 are for Emergency Use Only and must not be used for general communications.

+ The other restricted channels are 22 and 23, which are reserved for Data Transmission. According to Clause 6.1.2 of AS/NZS 4365:2002, the transmission of speech telephony signals on channels 22 and 23 shall be inhibited.

NOTE: The maximum transmission range will vary depending on terrain and environment.

CTCSS (Continuous Tone Coded Squelch System) Frequency Table.

Sub Channel	Frequency (Hz)	Sub Channel	Frequency (Hz)	Sub Channel	Frequency (Hz)
1	67.0	14	107.2	27	167.9
2	71.9	15	110.9	28	173.8
3	74.4	16	114.8	29	179.9
4	77.0	17	118.8	30	186.2
5	79.7	18	123.0	31	192.8
6	82.5	19	127.3	32	203.5
7	85.4	20	131.8	33	210.7
8	88.5	21	136.5	34	218.1
9	91.5	22	141.3	35	225.7
10	94.8	23	146.2	36	233.6
11	97.4	24	151.4	37	241.8
12	100.0	25	156.7	38	250.3
13	103.5	26	162.2	00	No Tone

NOTE: The maximum transmission range will vary depending on terrain and environment.

WARNING: Using batteries

1. The unit operate with the supplied Ni-MH (Nicked Metal Hydride) rechargeable battery.
2. Rechargerable Battery Cover should not be thrown with domestic rubbish. You may hand them in at your nearest collection point.

Troubleshooting Guide

SYMPTOM	SOLUTION
No power.	● Check the battery pack is installed properly. ● The batteries may be weak. ● Charge the supplied battery or replace the new one.
Reception is weak.	● Press the ▲ (UP) button to increase the receiver volume level. ● The receiving signal may be weak and/or out of range. ● If this happens press the **M** (Monitor) button.
Cannot change CTCSS sub-channels.	● Key lock mode must be deactivated if the Key lock icon is displayed on the LCD Screen. ● To change CTCSS sub-channels, press the MENU button twice, the CTCSS icon blinks on the LCD Screen. ● Press the ▲ (UP) or ▼ (DOWN) button to change the CTCSS sub-channels. ● Batteries may be weak.
Range is limited.	● Batteries may be weak. ● Charge the battery if the battery level indicator gets low. ● Check the **TX** Power **H/L** setting. See the "Effective Range" diagram. ● The maximum range will vary depending on terrain and environment. ● Open fields provide the maximum range, while steel/concrete structures, heavy foliage, and use in buildings and in vehicles may limit the range significantly. ● Wearing the radio close to the body, such as in a pocket or on a belt, will decrease range; change the location of the radio.
Sound distortion problems.	● If you are transmitting, speak in a normal tone of voice, 5 cm away from the **MIC** (microphone). ● If you are receiving, lower the volume to a comfortable level. ● Radios too close. Radios must be at least 2 meters apart; increase your distance. ● Radios too far apart. Obstacles interfere with transmission. Talk range is up to 10Km in clear unobstructed conditions.
No communication	● Check the Scrambler mode setting. Both the Transmitting and Receiving units should have the same Scrambler mode setting. ● Check the CTCSS code setting. Both the Transmitting and Receiving units should have the same CTCSS code setting.

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