

User Manual



VHF Transceiver

DX-8100

DX-8200

UHF Transceiver

DX-8400

Version #1 (2018-07-03)

XRadio

YeonHwa M Tech Co., Ltd.

36, Jeonparo 44beongil, Manangu, Anyangsi, Gyeonggido, 14086 Korea

Tel: 82-31-444-7270

1. DX-8000 Series Features

DX-8000 Series was developed with the user in mind to provide a compact and solid design with features to fit multiple types of tasks such as military, firefighting, construction site, industrial site and small/ large retailers.

It works in dual (analog / digital) mode, compatible with existing analog radio and efficient in digital mode with clear sound quality, volume, call distance and usage time.

Features are as follows:

- 32 Channels in 16 Zones 32 (1zone = Max 32 Channels)
- 512 Channel Capacity
- 5/1 Watt RF Power Setting
- Text Messaging with inbox and outbox (within 40 letters), Max 10 sentences
- Encryption Mode (ARIA 128, 192, 256. LEA 128. 196. 256. AES128 256)
- TX Interrupt
- Lone Worker Mode
- Scan
- BCL / BCLO
- Time-Out Timer (TOT)
- Emergency / Siren
- Built in Flash Lamp
- Etiquette (Vibration)
- Voice recording and playback
- Mixed Channel Operation (Analog / Digital)
- GPS (Option)
- Five level VOX (Voice Operated Transmit)
- Five level S.Q (Analog)
- Remote Radio Stun / Kill / Revive
- Clear speaker volume of 1Watt
- UDC accessory connector for IP67
- 3Lines Mono LCD Display
- Aluminum metal Frame Body
- DC+7.4V Li-ion / 2,600mAH

2. Specification

DX-8000 Series

General

Frequency Range	DX-8100 : 136~174 MHz
Frequency Stability	±1.5ppm (-30 to +60°C)
Programmable Channels	16 Zones / 32 Channels
Channel Spacing	12.5KHz
Digital Vocoder	AMBE++
Dimensions	103mm(H) x 52mm(W) x 32mm(D)
Weight	280g
Power Source	DC +7.4V Li-ion 2,600mAH Battery
Current Drain (maximum)	Receive mode, rated audio out – 420 (Audio Max) Transmit mode – 1,200mA Standby mode – 110mA

Receiver

Sensitivity	0.25uV 12 dB SINAD
Squelch Sensitivity	0.22uV 10dB SINAD
Selectivity	65dB (12.5KHz)
Spurious and Harmonic Rejection	75dB
FM Hum and Noise	40dB (12.5KHz)
Audio Output Power	1 Watt across an 16-ohm load
Audio Distortion	Less than 3% at rated output
Audio Response	+1, -3 dB from 6dB per octave de-emphasis Characteristic from 300~3000Hz
Input Impedance	50 ohms

Transmitter

RF Power Output	5/1Watt
Spurious and Harmonic	70dB
FM Hum and Noise	40dB (12.5KHz)
Audio Distortion	3% maximum with 1KHz modulation
Audio Frequency Response	+1, -3dB from 6dB per octave pre-emphasis Characteristic from 300~3000Hz
Output Impedance	50ohms

3. DX-8000 Package Contents

* Components can be changed by the buyer requests.



Radio Unit



Battery



Single Slot Charger



Antenna



Belt Clip



Strap



User Manual

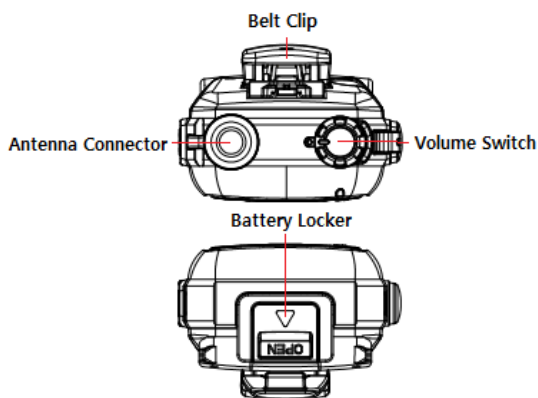
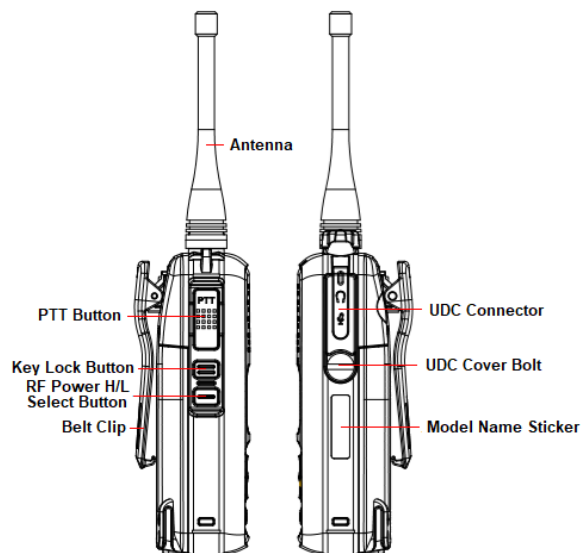
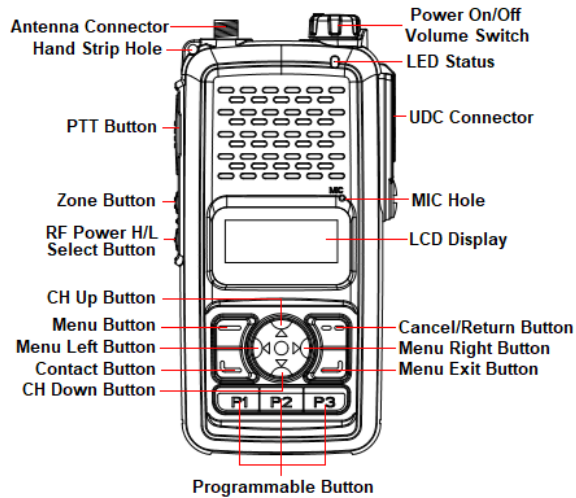
Figure 3-1) DX-8000 Series Main Package Contents

XB-2600 : 2,600mAH Li-ion Battery Pack

XC-100D : Single Slot Charger

XC-200D : Dual Slot Charger

4. Appearance of DX-8000 Series Radio



1. Power ON / 1. OFF Volume switch

Turn the volume switch to the right to turn on the power and increase the volume. Turn it to the left to decrease the volume and to turn off the power.

2. PTT button

Press the PTT button to transmit, release the PTT button to stop the transmission, and the receiver will enter standby mode.

3. Channel up / down button

Press the UP button to increase the channel and press the DOWN button to decrease the channel.

4. Press the MENU button

It is a button to enter the menu. When entering the menu, you can select each menu setting.

5. Cancel / Return button

When you are in the menu, use the Button to return to the previous menu. In the menu setting screen, it performs cancellation function.

6. Menu Right/Left button

This button moves the main menu items in the menu settings.

7. Key Lock button

Buttons except PTT button are not operated and fixed. (You can set other functions with the Programmable button.

8. RF output H/L select button

The RF output can be switched to high output or low output.

9. P1, P2, P3 Button

The P1, P2, and P3 buttons can be set as Short / Long buttons. The Short button is set within one second, and the Long button is pressed for at least two seconds.

The built-in Long Button action

- P1: Unlock function for button lock function.
- P2: Flash On / Off operation
- P3: Etiquette on / off action

10. UDC EAR/MIC

- 1) When connecting the external speaker microphone
- 2) When setting radio information by CPS program
- 3) When connecting to an external device. output.

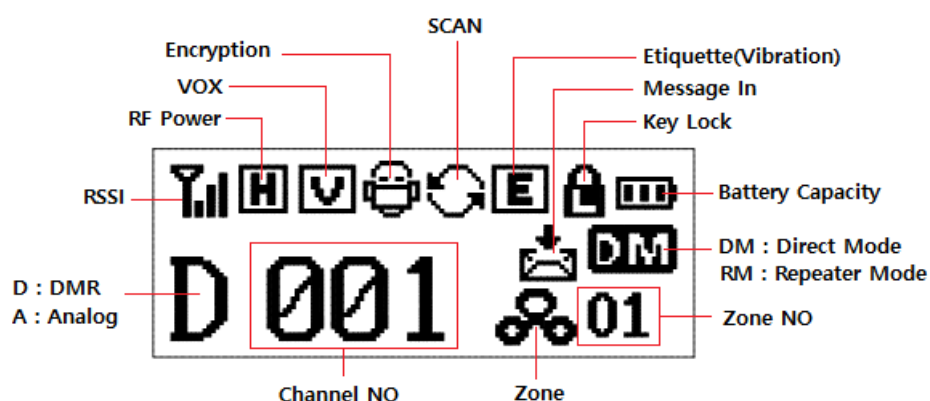


Figure 3-2) DX-8000 Series Appearance of LCD

4.1 Button & LED Operations

Button & LED	Operation Description
Power ON/OFF	Turning the volume knob clockwise to power ON, volume up and turning the knob counterclockwise to power OFF, volume down.
Volume/Menu +/- Button	Press +/- button to control the call audio. + button will volume up and – will volume down. In Menu status, it moves through list functions to choose from.
Up/Down Button	You can change the setting for the set channel. 32 channels can be input per zone. You can move to other list functions in the progress of menu.
Zone Button	You can proceed to change the calling area set by the user in order.
Menu/OK Button	Button for entering into Menu mode. When entered into Menu mode, you can choose each list functions.
Cancel/Return Button	Press the button to return to previous item in menu. In the menu setting screen, it functions as cancel button.
P1, P2, P3 Button	Short press is Programmable Key. Long Press of button more than 2 seconds is as follows: <ul style="list-style-type: none"> - P1 is to disable the keypad lock function - P2 is to turn Flash ON / OFF - P3 is to turn Etiquette (Vibration) ON / OFF
Contact List Button	Button directly for Contact List. You can enter Private Contact, Private Call, Group Call or All Call.

5. Basic Operations

Please fully read the instruction manual before use.

This manual provides convenient information related to radio operation.

1) Antenna Installation and Removal

To attached the antenna connector, fasten the antenna clockwise.

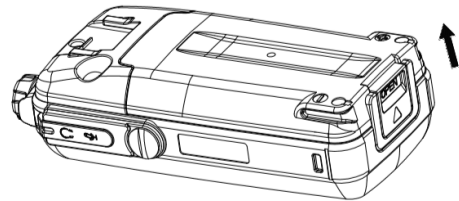
To remove the antenna, rotate it counter-clockwise.



2) Battery Removal and Installation

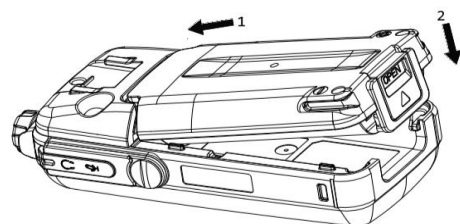
To remove the battery, push the locker and pull following the arrow direction.

Push the locker and pull as shown in figure 4-2



To install the battery, slide up the battery towards the top of the radio as number 1 and push down as number 2 until battery latch is locked.

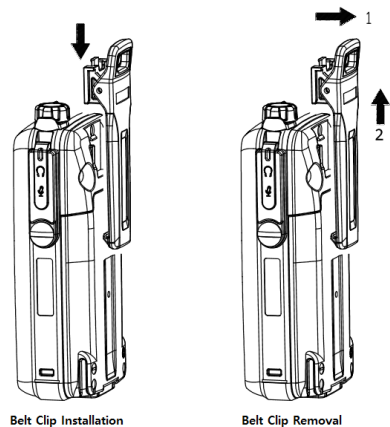
Slide up the battery towards the top of the radio as number 1 and push down as number 2



3) Belt Clip Installation and Removal

To attach belt clip to the radio, align its rails with the grooves in radio and slide the belt clip onto the mounting rails until it latches into place.

To remove belt clip from the radio, push up on tab of belt clip with flat bladed screw driver and at the same time, slide the belt clip towards the top of Radio.

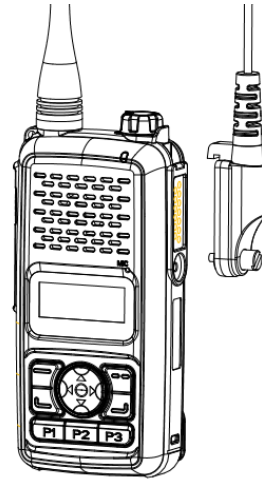


4) External Accessory Connector Jack

Connect the external accessory as shown in the picture.

Fix the main unit and the accessory by aligning them and tighten the screw.

To remove the accessory, loosen the fixed screw.



5). Charging the Battery

RED lamp indicates the radio is on the charger (XC-200D) that the unit is starting to charge and the LED will illuminate GREEN when the charging is completed.

Charger (XC-200D) is dual to charge both the main unit and the battery pack.

When both of them are connected to the charger, the front radio with the battery will be charged first and the batter pack later.

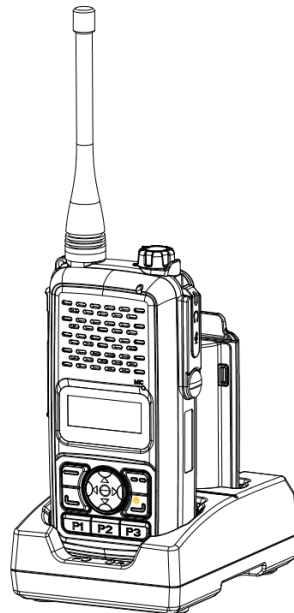


Figure 4-6) Charging the Battery

6. Operation of DX-8000 Series

Press Menu button on the front to enter menu mode. There are 8 main menus in menu mode. If you set it according to usage purpose and environment, you can use the radio more conveniently.

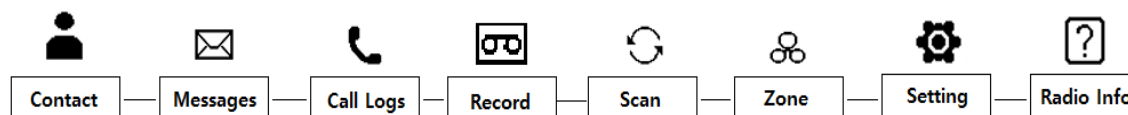


Figure 6-1) DX-8000 Series Menu

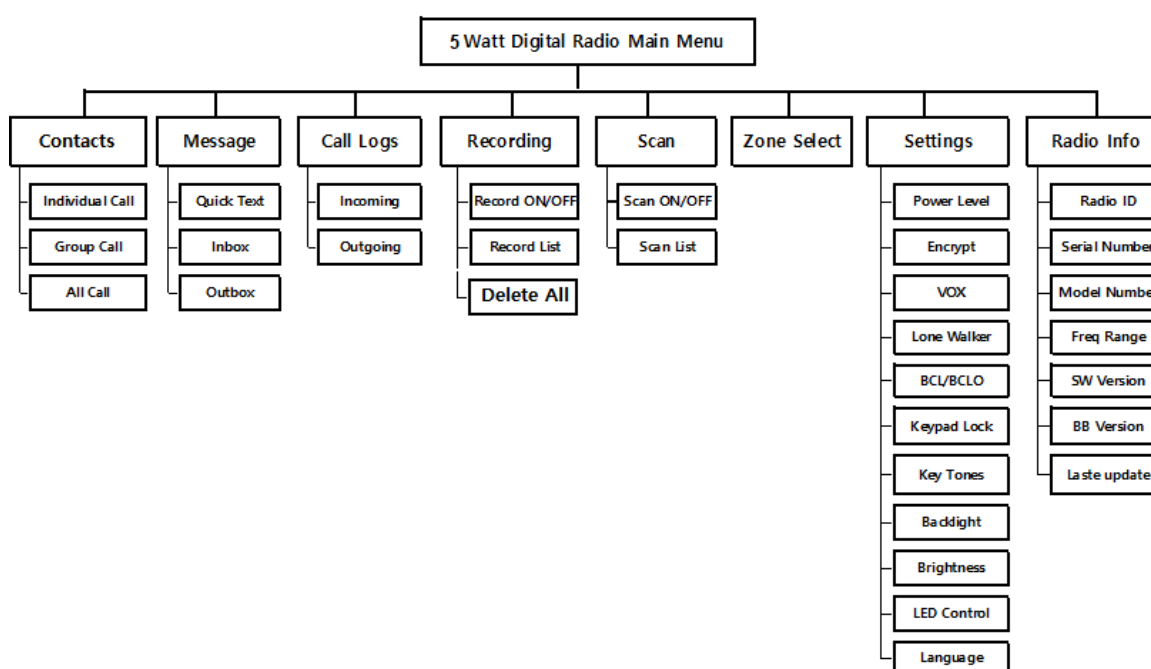


Figure 6-2) DX-8000 Series Menu Tree

⚠ Caution) If you do not operate for more than 25 seconds after entering the menu, the menu mode is automatically ended and it switches to receive mode.


1. Contact

Set the outgoing call contact (set by CPS program) set on the transceiver and press the PTT button to make a call. If you want to make a call with another registered contact, select the contact in the contact list and press the PTT button to make the call.



Contact lists in the menu can be registered / deleted using CPS (Customer Programming Software) program.

When you enter the contact menu, the list appears as separate, group, and All Call contacts.

ICON shown in contact list

- : Individual contact list (individual calls, individual messages can be sent)
 - If the radio enable / disable and check / monitor functions are enabled

You can run it from your contact list.

- : Group contact list (group call, group message can be sent)
- : All contact lists (terminals with the same channel and color code are available)

2. Messages

When a new message arrives in the receive mode, the message contents are displayed on the LCD and enter the menu mode. When a new message arrives at another operation, it will be displayed as ICON.

The Message menu provides three additional menu functions: Quick Message, Inbox, and Outbox.

1) Simple message

Register a total of 10 messages by using the CPS program and 1 message can edit up to 40 characters.

You can see the registered message by selecting the simple message menu, select the message you want to send, and press the menu button to view the message contents.

Press the Menu button again to send the selected message to the registered terminal.

2) Inbox.

You can receive a maximum of 10 messages in the inbox. You can view the received messages by selecting the contents stored in the list.

If the number of received messages is 10, the number of received messages is cleared and registered first.

If you want to delete the received message, you can delete the whole delete menu.

3) Outgoing.

The maximum number of messages in the Outbox can total 10. Once you have selected what's stored in the list,

You can view the outgoing messages.

The number of outgoing messages is 10, and the number of outgoing messages is cleared and registered first.

If you want to delete the outgoing message, you can delete the whole delete menu.

3. Call Logs

This menu stores only the history of individual call history. Group, All call Call history is not saved.

The call reception contents are managed in the inbox and the call transmission contents are managed in the outbox.

1) Inbox

You can store 10 calls in total. The contents stored in the list can see the ID of the receiving

party.

Inboxes are managed with a maximum of 10, and if more than 10 are received, the received history is cleared and registered first. If you want to delete the inbox history, you can delete the whole delete menu.

2) Outgoing.

A total of 10 call logs can be stored in the Outbox. The contents stored in the list can see the ID of the called party.

The number of outboxes is managed as 10, and if it is over 10, the outgoing history is cleared and registered first. If you want to delete the outbox history, you can delete the whole delete menu.

4. Record

Call recording is a function to save the contents of outgoing and incoming calls. If you do not need the recorded content, you can delete it all.

You can save up to 63 calls and your call history is limited to 2 minutes and 30 seconds.

If you want to use the call recording function, you can select from the setting.

※ Even if the callback function is selected, the call history will be recorded without any trouble.

5 Scan

When you turn on the scan operation in the scan menu, the scan starts in the order of the channels set in the scan list. If there is a used channel during scanning, it will stop on that channel and receive its contents.

If you want to make a call while scanning, use the CPS program.

1) Scan ON / OFF

Select Scan Settings, Unscanned from the menu, and then go to Depth Mode.

2) Scan List

The scan list can be set using the CPS program.

6 Call Area (ZONE)

Up to 16 zones can be created, and 32 channels can be registered per 1 zone.

ZONE designation method is available with CPS program.

Depending on the specific model, 1 zone can be managed, and up to 512 channels can be assigned to 1 zone.

7 Setting

It is a menu to set various status of the transceiver. Settings include transmission output, voice encryption, VOX, Ron Walker, BCL / BCLO, keypad lock, sound, rear, clarity, LED setting, language, screen and power saving mode.

1) Transmission output

This function sets high (5W) and low (1W) of the transceiver transmission output.

2) Voice encryption

This function encrypts the incoming and outgoing voice.

Voice Encryption function can be set for each channel on all digital channels.

The voice encryption code is set by the CPS program and provides 128/192/256 bit encryption.

3) VOX

The VOX function detects and transmits the voice level without using the PTT button.

There are 1 ~ 5 steps of VOX sensitivity level. You can set it according to user's preference using CPS program.

4) Ron Walker

This function informs the other party of the safety of the user within the time set in the menu.

The setting time is from 1 to 100 minutes.

5) BCL / BCLO

This is a function that restricts transmission when there is a user in the current channel so as not to disturb.

- Digital mode

When BCL is set to ON, transmission is restricted when the channel is in use.

- Analog mode

When BCL is ON and BCLO is OFF, transmission is restricted when the current channel is in use.

When BCL is ON and BCLO is ON, it is transmitted when it matches the received tone.

6) Button Lock

This function restricts the operation except the minimum required button in order to prevent unnecessary terminal operation by the user.

When the button lock is turned on, all keys except the PTT button, emergency button and power ON / OFF button are locked.

To temporarily unlock the button, you can use the button when you press the button (default is 2 seconds or more) and the button lock is restored after a certain time (user setting) after inputting the last button. .

7) Sound

This is the effect sound setting function of this unit. ON / OFF is only provided in the main menu.
Detailed sound effects can be enabled with the CPS program.

8) LCD BACKLIGHT

It is ON / OFF function of LCD backlight.

9) Sharpness (LCD Contrast)

It is a function to adjust the brightness of the LCD screen and can be set from 1 to 7 steps.

10) Status LED Setting

It is a function to set the status display LED, and you can make detailed settings using CPS program.

11) Language

This is the function to select the language for the menu of this unit.

12) Screen setting






The reception standby screen can be set and used according to the user's convenience during screen 1, screen 2, screen 3.

13) Power saving mode

If there is no signal at reception, it automatically operates in power saving mode and extends battery life. OFF, 1: 1, 1: 2, and 1: 4 can be set.


7. Safety Operation


7.1 Precautions


 경 고	Do not remove the antenna from the radio or do not transform the antenna or do not make any changes on the antenna. The strong electronic wave to be emitted from the radio can have an effect on the performance of the radio and can cause the radio to have a defect.
 주 의	Do not use accessories (such as rechargeable battery, adaptor, external speaker microphone and earphone etc.) from the other makers, which can cause defect on battery and malfunction or a defect on the radio.
 경 고	Do not disassemble or reorganize the radio. The disassembly or reorganization will cause a defect or malfunction on the radio. It will be impossible to repair afterwards. There will also be a punishment made by the Radio Waves Act.
 경 고	Do not use other frequency except for the permitted frequency in order not to be punished by the Radio Waves Act.
 주 의	<ul style="list-style-type: none">• Do not give an excessive shock to the radio.• Do not place the radio where the direct sunlight and/or the high temperature occurs..• If the radio is placed for a long time in a car in summer, the hot temperature in the car may cause explosion of battery.• Do not make a damage to the battery by a sharp substance and/or an excessive shock.

7.2 Influences on the Operations of Radio or Other Equipment

The radio emits a strong electronic wave, which may have an effect on the operation of other equipment and also can be influenced by the other devices.

 경 고	<p>Please turn off the radio before boarding on the airplane.</p> <p>When using the radio in the airplane, please follow the rules or the instructions of the flight attendants.</p>
--	--

 경 고	<p>In case of the area that medical equipment are being used, please use the radio after discussion with the equipment producer or the related doctor.</p>
--	--

 주 의	<p>Please do not use the radio at the place where computer or other electric/electronic devices are being used.</p> <p>The strong electronic wave from the radio can have an effect on the equipment.</p>
---	---

8. Safety Notes

Please make sure to read the followings above for safe and effective use of the radio.



- Please keep the radio away at least 1 inch from the body.
- If the outside surface of antenna gets stripped out, it can make a burn on the skin.
- If you contact a conductive metal to battery terminal, a heat can be made and it may cause fire, explosion and burn. Especially, please be careful when putting the battery in a pocket or a bag.
- When using an earphone, please do not listen to the sound at a high level. The high sound may have a bad effect on your ear.
- After setting the volume of the radio at a low level, please adjust the volume step by step to the level you want. A sudden high sound may bring a bad damage to the ear or the heart.
- Please do not remove, replace, charge or discharge the battery at a dangerous area since it may cause explosion or fire by an electrical spark.
- At the area where an electromagnetic force can be made, please make sure to turn off the power of the radio.

Warranty Statement

Thank you for purchasing DX-8000 Series.

1. This product has passed strict quality control and testing process by YeonHwa M Tech.
2. Warranty is one year from the day of release.
 - When there is malfunction of the product under normal operating conditions during the warranty period, your authorized dealer and the service center will repair it free of charge.
3. Service fees will be charged for the following cases:
 - When performance failed, malfunction or damaged after the warranty period.
 - When the product is damaged due to user's mishandling or improper operation.
 - When the product is damaged due to fire, pollution, earthquakes and any other natural or unnatural conditions, accidents etc.
 - Malfunction by not keeping the notices written in the user manual.
 - Malfunction by not using the appointed adaptor.
 - When the product is damaged due to user's modification, attempts of repairing rather than the appointed service center.
4. Product Check List

Model Name		DX-8100
Serial No.		
Purchase Date		
Purchaser	Name	
	Address	

※ Please fill out this check list when purchasing the product.

YeonHwa M Tech Co., Ltd.

36, Jeonparo 44beongil, Manan-gu, Anyang-si, Gyeonggi-do, Korea 14086

TEL: 82-31-444-7270

FAX: 82-31-444-7271

FCC statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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 radiate 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 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 into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

Hold the transmitter approximately 2 inches (25mm) from your face and speak in a normal voice, with the antenna pointed up and away.

IC statement

English Statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions: 1, This device may not cause interference. 2, This device must accept any interference, including interference that may cause undesired operation of the device.

Safety Information

This equipment complies with IC radiation exposure limits set forth for an controlled exposure environment. When the talk button is pushed, it sends out radio frequency (RF) signals. The device is authorized to operate at a duty cycle not to exceed 50%.

For body-worn operation, this radio has been tested and meets the IC RF exposure guidelines when used with manufacturer accessories supplied or designated for this product. Use of other accessories may not ensure compliance with FCC RF exposure guidelines. Use only the supplied antenna. Unauthorized antennas, modifications, or attachments could damage the transmitter and may violate FCC regulations.

Hold the transmitter approximately 2 inches (25mm) from your face and speak in a normal voice, with the antenna pointed up and away.

Canada Déclaration

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement."

l'information sur la sécurité

ce matériel est conforme aux limites de dose d'exposition aux rayonnements énoncés pour contrôlées l'exposition environnement. quand le bouton de parler est poussé, il envoie des signaux radio fréquence (RF). le dispositif est autorisé à exploiter, à une obligation de ne pas dépasser 50%. opération portés sur le corps, la radio a été testé et respecte les directives d'exposition aux IC RF utilisée avec le fabricant d'accessoires fournis ou désignés pour ce produit. utilisation d'autres accessoires ne peut s'assurer de la conformité avec les lignes directrices sur l'exposition aux radiofréquences. utiliser uniquement la fournie antenne. les modifications ou les antennes de non autorisée, pourrait nuire à l'émetteur et peuvent violer les règlements de la IC.

l'émetteur à environ 2 inches (25 mm) de votre visage et parlez normalement, avec l'antenne a signalé et loin.