

User Guide – HX400 Series

v10/10

Professional compact handheld transceivers

Common Information
(all models)



HX402/412/422/482(U)
Entry



HX402S/412S/422S/482S(U)
Entry Selcall



HX403/413/423/483(U)
Entry Display



HX405/415/425/485(U)
Advanced Selcall, 8-key



HX406/416/426/486(U)
Advanced Selcall, Full Keypad

Introduction

This guide covers the 'basics' of your radio's operation. To meet your exact requirements the radio may have been customised by your Entel authorised dealer. These features will be explained in a separate guide issued by the dealer.

Table of Contents

Common Information (all models)

	Page
Certification	2
Radio / Battery Care	3
Battery Care / Information	4
Packing List	5
Optional Accessories	5 & 6
Preparing Your Radio For Use	6 & 7

HX402/412/422/482(U)

Feature List	8
Controls & Indicators	9

HX402S/412S/422S/482S(U)

Feature List	10
Controls & Indicators	11

HX403/413/423/483(U)

Feature List	12
Controls & Indicators	13
LCD Icons	14

HX405/415/425/485(U)

Feature List	16
Controls & Indicators	17
LCD Icons	18

HX406/416/426/486(U)

Feature List	20
Controls & Indicators	21
LCD Icons	22

Certification

Declaration of Conformity

We Entel UK Limited of:

320 Centennial Avenue
Centennial Park
Elstree
Borehamwood
Hertfordshire
WD6 3TJ
United Kingdom

Declares under our sole responsibility that the product range:

HX400 VHF/UHF Handheld Radio Transceiver

Conforms to the following standards or other nominative documents:

- EN 300 086-2 V1.2.1, EN 301 489-1 V1.8.1:2008-04, EN 301 489-5 V1.3.1:2002-08, EN 60950-1:2006, in accordance with Directive 99/5/EC.

Serial Number _____

M Austin



Quality Manager

Date: 1 October 2010 _____



Radio Care

Warranty

The HX4XX comes with a 24 month warranty, for details see our full terms & conditions.

Advice

- Do not use options or accessories not specified by Entel
- Ensure that the radio is used within the parameters for which it was designed
- Please switch the transceiver off before connecting optional accessories

Warning

Turn the transceiver off in the following locations:

- In explosive atmospheres (flammable gas, dust including metallic & grain powders etc)
- Whilst taking on fuel or while parked near a fuel station
- Near explosives or blasting sites

- In aircraft, medical institutions or near persons known to be wearing a pacemaker

Caution

- Do not disassemble or modify the transceiver for any reason
- Do not transmit while touching the antenna terminal or any exposed metallic parts of the aerial as this may result in a burn
- Please check and observe regulations in your country with regards to use whilst driving

End of Life Disposal

- When your Entel transceiver reaches the end of its useful life, please ensure that the unit is disposed of in an environmentally friendly way. For country specific information please see www.entel.co.uk/recycling

Battery Care

Introduction

Your Entel radio is supplied with a high performance Lithium-Ion (Li-Ion) battery.

These batteries:

- Extend talk time
- Reduce the batteries' size and weight
- Do not suffer from 'memory effect' that reduces the life of Ni-Cad and NiMH batteries
- Have a low toxicity, therefore reducing the impact on the environment

Battery Pack Precautions

- Switch the transceiver OFF before charging
- Charge the battery pack before use
- Do not recharge the battery pack if it is already fully charged as this will use one its charge cycles and may shorten its life
- Charge the battery in accordance with the instructions enclosed with your charger
- Do not charge the transceiver and/or battery pack if they are wet

Battery Care / Information

The battery pack includes potentially hazardous components. Please:

- Do not disassemble or reconstruct battery
- Do not short-circuit the battery
- Do not incinerate or apply heat to the battery
- Do not immerse the battery in water or get it wet by other means
- Do not charge the battery near fires or under direct sunlight
- Use only the specified charger and observe charging requirements
- Do not pierce the battery with any object or strike it with an instrument
- Do not use the battery pack if it is damaged in any way
- Do not reverse-charge or reverse-connect the battery
- Do not touch a ruptured or leaking battery

If liquids from the battery get on your skin or into your eyes, immediately:

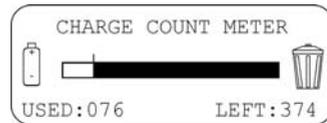
- Wash your eyes out with fresh water avoiding rubbing them.
- Seek medical treatment.

Battery Pack

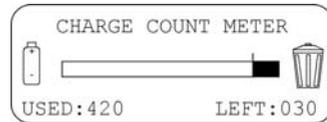
- If a battery is not to be used for an extended period of time (e.g. several months) remove the battery pack from the equipment and store in a cool and dry location (around 0°C) part charged. Do not fully discharge the battery before storage.
- Each charge cycle reduces the battery's life. Minimise the number of times you charge your battery especially in hotter environments which further shortens a battery's life.

Battery Communications

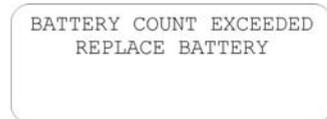
Each battery used with your radio has a microprocessor fitted, which logs the number of times your battery has been charged. On the advanced 8-key and 20-key display models, the number of times the battery has been charged, together with the remaining charge cycles available, will be shown during switch on. This information may also be accessed and displayed via the menu. (If not de-activated by your dealer)



The warranty on all batteries is 12 months or 450 charge cycles, whichever is the sooner. After 420 cycles, at switch on the radio will emit a series of short tones, and on LCD models a waste bin icon will flash to alert you to the need to buy a new battery.



After 450 cycles, at switch on the radio will emit a series of long beeps, and LCD models the message will change to CHARGE COUNT EXCEEDED REPLACE BATTERY. The radio will continue to operate but its operational time may be reduced, eventually failing all together



Note: only genuine Entel batteries should be used. Only genuine batteries offer the battery charge count feature informing you when the battery is reaching the end of its useful life. Genuine batteries ensure customer satisfaction delivering the expected capacity and endurance. This cannot be guaranteed with sub standard, potentially dangerous battery packs from 3rd party manufacturers.

Packing List

- HX4XX Radio
- CNB450E Rechargeable 1800mAh Li-Ion battery
- CBH450 Spring loaded belt clip
- CATXXX Antenna
- User guide CD
- CSAHX Intelligent rapid charger (only supplied with HX4X2, HX4X2S & HX4X3 models)

Optional Accessories

Battery & Charger Options

CNB450E	Spare 1800mAh Lithium-Ion battery pack with rear clip
CSAHX	1-way dual slot intelligent rapid charger, 100-240v
CSBHx	6-way dual slot intelligent, rapid charger, 100-240v

Carry Options

CFC450	Soft leatherette case with clear window finished in black with carry strap
CLC452	HX4X2 heavy duty black leather case with strap & belt loop
CLC455	HX4X3 / HX4X5 heavy duty black leather case with strap & belt loop
CLC456	HX4X6 heavy duty black leather case with strap & belt loop
CBH450	Spare spring loaded belt clip

Audio Accessory Options

CMP1/450	Compact medium duty speaker microphone with earpiece jack
CMP450	Heavy duty submersible speaker microphone
EHP9	D-shaped earpiece (plugs into CMP1/450 or CMP450 above)
EA12/450	D-shaped earpiece with in-line PTT/microphone & VOX*
EA15/450	Earpiece microphone with transparent acoustic tube & VOX*
EA19/450	D-shaped earpiece with boom microphone and in-line PTT & VOX*
EHP450	D-Shaped earpiece (connects directly to radio)
EPT40/450	Bone conductive earpiece microphone with PTT
CXR5/450	Bone conductive skull microphone with in-line PTT
CXR16/450	D-shaped earpiece and throat microphone with in-line PTT
CHP1/450	Light weight single earpiece headset with in-line PTT & VOX*
CHP450HS	Single earpiece ear defender headset with boom mic and in line PTT for hard hat & VOX*
CHP450HD	Double earpiece defender headset with boom mic and in line PTT for hard hat & VOX*
CHP450D	Double earpiece headband defender headset with boom mic and in line PTT & VOX*
CHP450BT	Bluetooth double earpiece headband defender headset with boom mic and ear cup PTT

* VOX = Voice Operated Transmit (hands free operation)

Bluetooth option board in radio is required to use Bluetooth audio accessories.

Optional Accessories cont...

Antenna Options

CXW400	Antenna adapter for external aerial connection
CAT420	Helical antenna VHF
CAT480	Whip antenna UHF
CAT480S	Stubby antenna UHF
CAT410S-78	78MHz compressed antenna
CAT410S-85	85MHz compressed antenna
CAT410S	66-88MHz uncut compressed antenna
CAT400-40	30-50MHz antenna

For complete up to date list of optional accessories visit www.entel.co.uk

Preparing Your Radio For Use

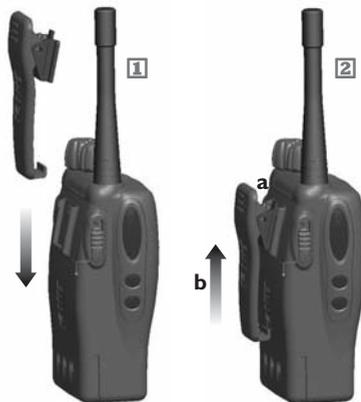
Attaching / Removing The Battery Pack

- 1** To attach, locate the pegs on the bottom of the battery and place into the slots on the radio. Then press the top of the battery against the radio until you hear a click.
- 2** To remove, slide the two latches on the side of the battery down and pull the battery away from the top of the radio.



Attaching / Removing The Belt Clip

- 1** To attach, press the clip into the slot on the back of the battery and slide down until you hear a "click".
- 2** To remove, pull the tab (a) towards the belt clip. Then slide the belt clip upwards (b).



Preparing Your Radio For Use cont...

Common

Attaching / Removing the Aerial

- 1 To attach, carefully align the aerial with the socket. Screw in the aerial clockwise (taking care not to cross the thread) until it is seated firmly against the top of the radio.
- 2 To remove, unscrew the aerial anti-clockwise.



Attaching / Removing Audio Accessories

- 1 To attach, remove the accessory cover by unscrewing the locking screw anti-clockwise (store the cover in a safe place). Connect the accessory plug into the radio's socket. Carefully tighten the locking screw clockwise until finger tight (do not tighten with a screwdriver etc).
- 2 To remove, unscrew the locking screw by hand in an anti-clockwise direction (carefully use a coin or screwdriver if too tight). Ensure you re-fit the accessory cover so as to protect the socket.

Charging Your Radio

Several charger options are available. Please refer to your charger user guide.



Turning your radio on

Turn your radio on using the on / off / volume control on the top of the radio. The radio will beep and the LED will briefly illuminate yellow. The beep may be disabled by the dealer.

HX402/412/422/482(U)

Standard Features:

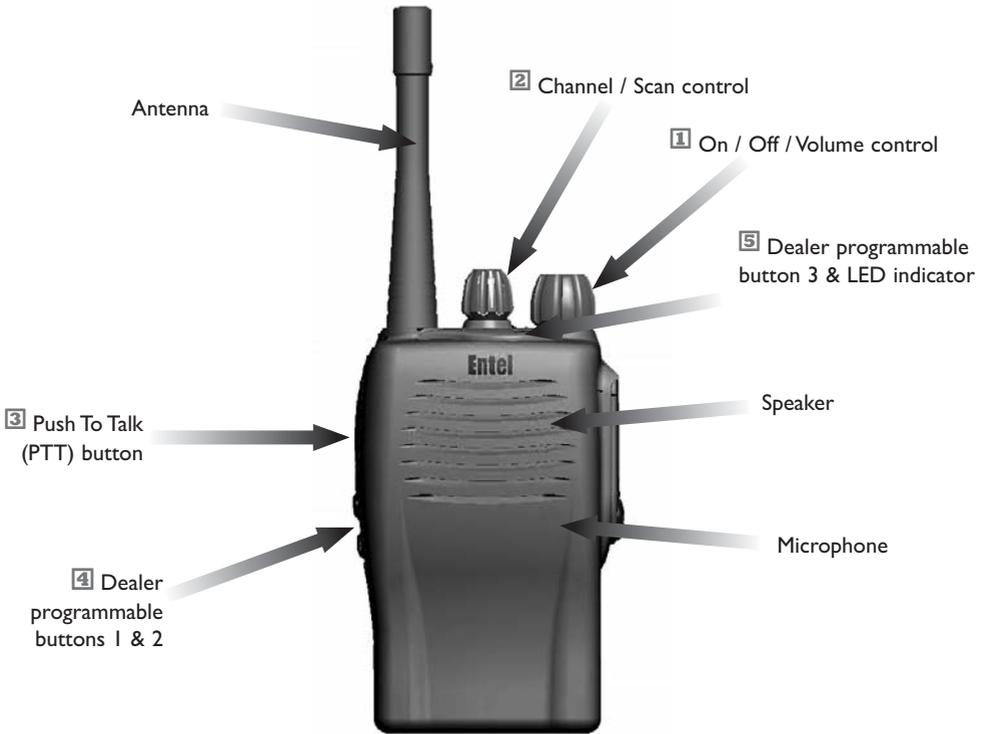
- 16 programmable channels
- Full transmit power output (5 Watts VHF, 4 Watts UHF)
- CTCSS & DCS (analogue & digital squelch) with squelch tail elimination (removes the 'shh' noise)
- Exceptionally loud and clear audio
- Robust design, exceeds MILSTD-810C/D/E/F
- Environmentally protected to IP55
- 1800mAH Lithium-Ion battery for superior operational time
- Full band switching allows access to all channels in each band
- Low battery alert indicates when the battery needs recharging via a warning bleep and a slowly flashing red LED

Dealer programmable features:

- VOX for hands free operation
- High/Low transmit power
- Normal & priority scan (programmable per channel position)
- Panic (personal attack) button causes high pitch, high volume, siren tone to be emitted from the radio's speaker
- Key lock button
- Prefixed minimum volume level and fixed bleep level
- Channel monitor (CTCSS/DCS Defeat)
- Talkaround (allows communication away from a base station)
- Transmit time out-timer (ensures channels are not blocked)
- Voice scrambler with 1 code per channel (option)
- Automatic power save to further increase operational time
- User adjustable squelch level



Controls & Indicators



- 1** On / Off / Volume control. Rotate clockwise to turn on and increase volume, anticlockwise to reduce volume and turn off.
- 2** Channel / Scan control. Rotate to select the desired channel or scan setting.
- 3** Push To Talk (PTT) button. Press to speak and release to listen.
- 4** Dealer programmable buttons 1 & 2 (ask your dealer for more information).
- 5** Dealer programmable button 3 (ask your dealer for more information) and LED indicator.
 - RED steady = Transmitting
 - RED flashing slowly = Battery needs re-charging
 - GREEN steady = Receiving
 - YELLOW steady = Non valid signal detected
 - YELLOW flashing rapidly = Scanning

HX402S/412S/422S/482S(U)

All the features of the HX402/412/422/482 (see page 8) plus the following features:

Standard Features:

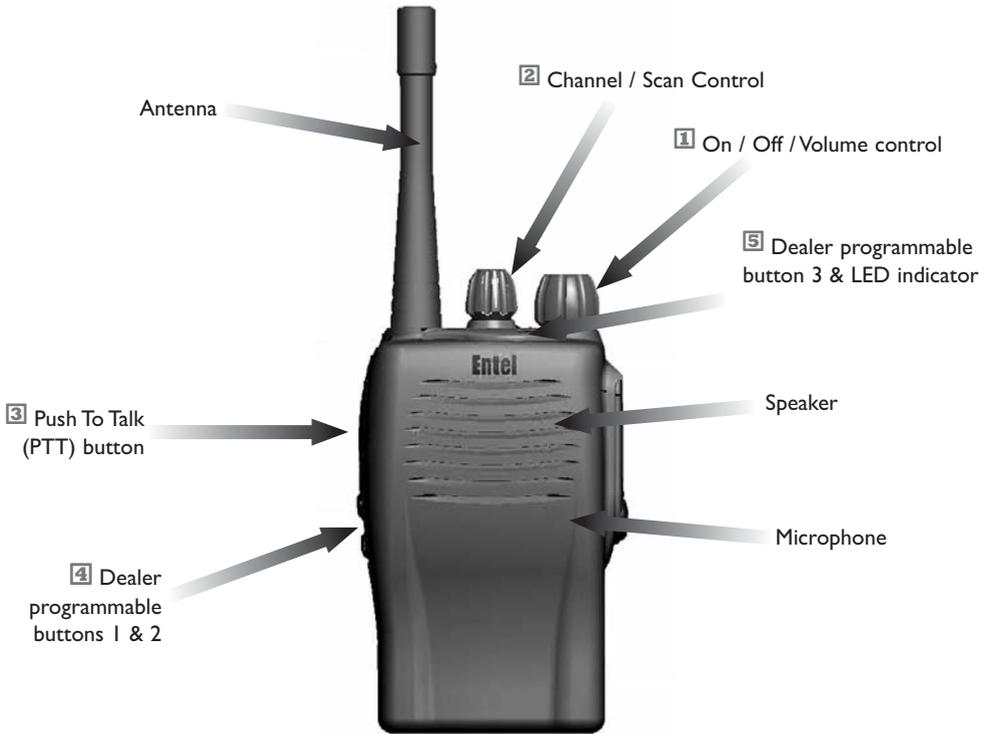
- Entry level selective calling

Dealer programmable features:

- Open or closed channel modes (allows private conversations)
- Call a group, individual or all radios at once
- Up to 16 pre-programmed contacts
- Multiple ringtones
- Voice scrambler with 4 codes per channel (option)
- Stun (disable) a lost or stolen radio
- Revive (enable) a recovered radio
- Panic button with remote alert
- Emergency microphone live
- Automatic Lone-Worker alarm mode
- Automatic Man-Down alarm mode (option)
- Silent alarm call mode
- Continue emergency alarm even if radio switched off



Controls & Indicators



- 1** On / Off / Volume control. Rotate clockwise to turn on and increase volume, anticlockwise to reduce volume and turn off.
- 2** Channel / Scan Control. Rotate to select the desired channel or scan setting.
- 3** Push To Talk (PTT) button. Press to speak and release to listen.
- 4** Dealer programmable buttons 1 & 2 (ask your dealer for more information).
- 5** Dealer programmable button 3 (ask your dealer for more information) and LED indicator.
- RED steady = Transmitting
 - RED flashing slowly = Battery needs re-charging
 - GREEN steady = Receiving
 - GREEN flashing slowly = Selcall received
 - YELLOW steady = Non valid signal detected
 - YELLOW flashing rapidly = Scanning

HX403/413/423/483(U)

Standard Features:

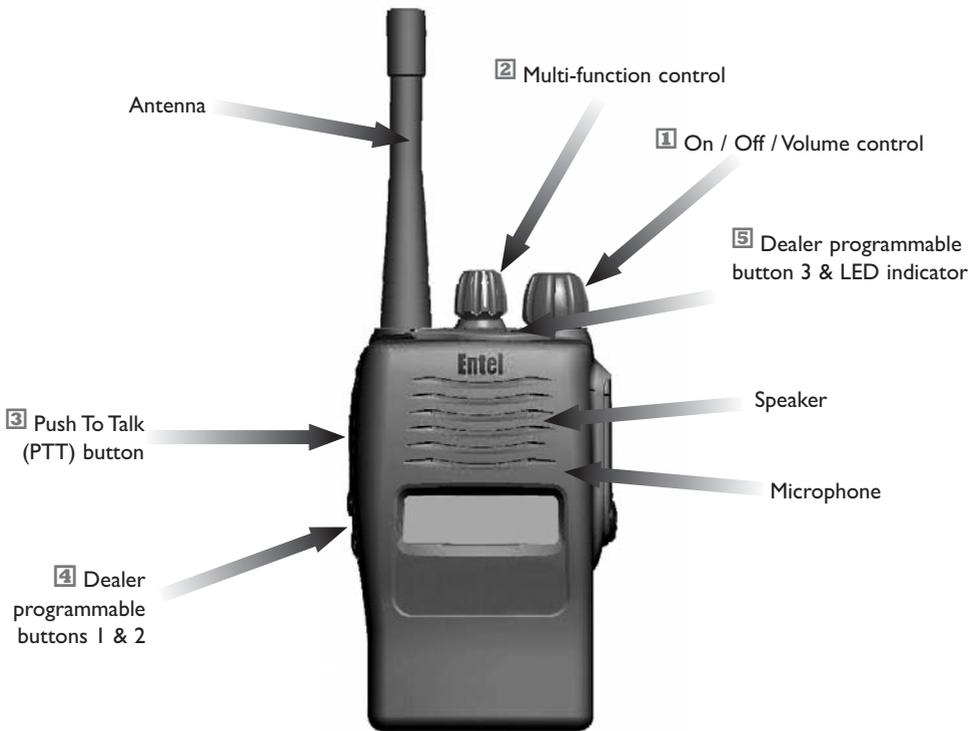
- LCD screen
- 255 channel capacity
- Full transmit power output (5 Watts VHF, 4 Watts UHF)
- CTCSS & DCS (analogue & digital squelch) with squelch tail elimination (removes the 'shh' noise)
- Exceptionally loud and clear audio
- Robust design, exceeds MILSTD-810C/D/E/F
- Environmentally protected to IP55
- 1800mAH Lithium-Ion battery for superior operational time
- Full band switching allows access to all channels in each band
- Low battery alert indicates when the battery needs recharging via a warning bleep and a slowly flashing red LED

Dealer programmable features:

- VOX for hands free operation
- High/Medium/Low transmit power
- Normal & priority scan (programmable per channel position)
- Panic (personal attack) button causes high pitch, high volume, siren tone to be emitted from the radio's speaker
- Key lock button
- Prefixed minimum volume level and fixed bleep level
- Channel monitor (CTCSS/DCS Defeat)
- Talkaround (allows communication away from a base station)
- Transmit time out-timer (ensures channels are not blocked)
- Voice scrambler with 4 codes per channel (option)
- Automatic power save to further increase operational time



Controls & Indicators



- 1** On / Off / Volume control. Rotate clockwise to turn on and increase volume, anticlockwise to reduce volume and turn off.
- 2** Multi-function dealer programmable control. (ask your dealer for more information).
- 3** Push To Talk button (PTT), press to speak and release to listen.
- 4** Dealer programmable buttons 1 & 2 (ask your dealer for more information).
- 5** Dealer programmable button 3 (ask your dealer for more information) and LED indicator.
 - RED steady = Transmitting
 - RED flashing slowly = Battery needs re-charging
 - GREEN steady = Receiving
 - GREEN flashing slowly = Selcall / message received
 - YELLOW steady = Non valid signal detected
 - YELLOW flashing rapidly = Scanning

LCD Indicators

- Missed Call 
- Keypad Locked 
- Bluetooth Device Connected 
- Accessory Connected 
- VOX Enabled 
- Scramble Enabled 
- Whisper Mode 
- Battery State 
- Receive Strength / TX Output Low / Mid / High 
- Speaker Muted 
- Speaker Unmuted 
- Talkaround Enabled 
- Channel Scanning 

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HX405/415/425/485(U)

All the features of the HX402S/412S/422S/482S (see page 10) plus the following features:

Standard Features:

- LCD screen
- 255 channel capacity
- Intuitive menus (like a mobile phone)
- Info button (user guide built-in to radio)

Dealer programmable features:

- Speed dial
- Who's calling (caller ID)
- 255 user contact list (just like a mobile phone)
- Missed, received & dialled numbers lists
- Multiple ring / alert tones
- Power on password option
- Manual location information sent with emergency call
- Fully automatic indoor location (option)
- Send / Receive status, text and email messages
- Voice scrambler with up to 4 codes per channel (option)



Controls & Indicators



- 1** On / Off / Volume control. Rotate clockwise to turn on and increase volume, anticlockwise to reduce volume and turn off.
- 2** Multi-function dealer programmable control. (ask your dealer for more information).
- 3** Push To Talk button (PTT), press to speak and release to listen.
- 4** Dealer programmable buttons 1 & 2 (ask your dealer for more information).
- 5** Dealer programmable button 3 (ask your dealer for more information) and LED indicator.

- RED steady = Transmitting
- RED flashing slowly = Battery needs re-charging
- GREEN steady = Receiving
- GREEN flashing slowly = Selcall / message received
- YELLOW steady = Non valid signal detected
- YELLOW flashing rapidly = Scanning

LCD Indicators

- Message Received



- Missed Call



- Key Bleeps Off



- Silent Profile



- Keypad Locked



- Man Down



- Lone Worker



- Bluetooth Device Connected



- Accessory Connected



- VOX Enabled



- Scramble Enabled



- Do Not Disturb



- Whisper Mode



- Battery State



- Receive Strength / TX Output Low / Mid / High



RX / L / M / H

- Call Diverted



- Speaker Muted



- Speaker Unmuted



- Talkaround Enabled



- Channel Scanning



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HX406/416/426/486(U)

All the features of the HX405/415/425/485 (see page 12) plus the following features:

Standard Features:

- Keypad

Dealer programmable features:

- Edit contact list
- Free dial radio contacts
- Free dial telephone numbers
- Free dial DTMF numbers



Controls & Indicators



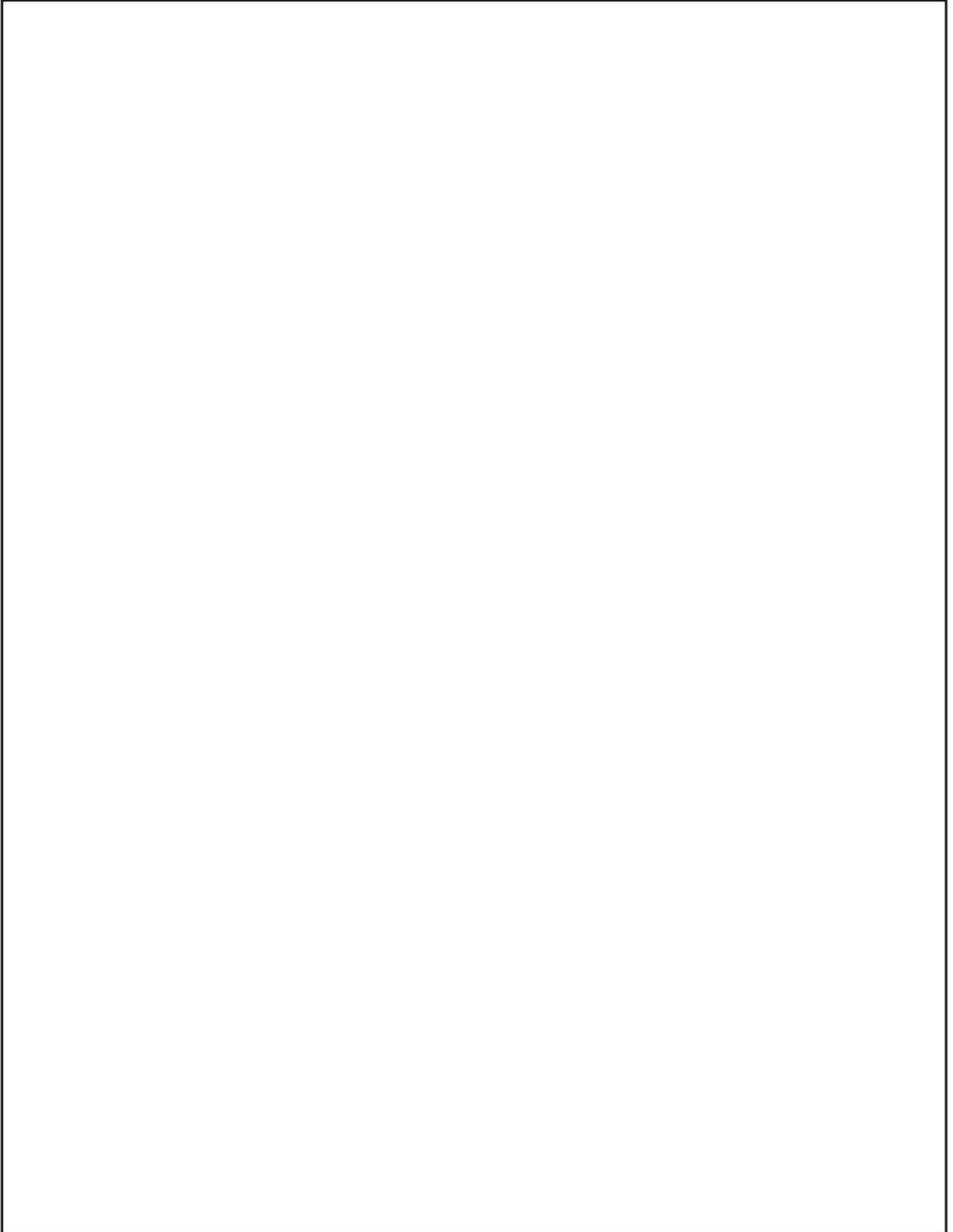
- 1** On / Off / Volume control. Rotate clockwise to turn on and increase volume, anticlockwise to reduce volume and turn off.
- 2** Multi-function dealer programmable control. (ask your dealer for more information).
- 3** Push To Talk (PTT) button, press to speak and release to listen.
- 4** Dealer programmable buttons 1 & 2 (ask your dealer for more information).
- 5** Dealer programmable button 3 (ask your dealer for more information) and LED indicator.
- 6** Dealer programmable buttons (ask your dealer for more information).
 - RED steady = Transmitting
 - RED flashing slowly = Battery needs re-charging
 - GREEN steady = Receiving
 - GREEN flashing slowly = Selcall received
 - YELLOW steady = Non valid signal detected
 - YELLOW flashing rapidly = Scanning

LCD Indicators

• Message Received	
• Missed Call	
• Key Bleeps Off	
• Silent Profile	
• Keypad Locked	
• Man Down	
• Lone Worker	
• Bluetooth Device Connected	
• Accessory Connected	
• VOX Enabled	
• Scramble Enabled	
• Do Not Disturb	
• Whisper Mode	
• Battery State	
• Receive Strength / TX Output Low / Mid / High	
• Call Diverted	
• Speaker Muted	
• Speaker Unmuted	
• Talkaround Enabled	
• Channel Scanning	

Notes

Use this page to record important information, such as the serial number of your radio and any private channels programmed by your dealer etc.



Notes

A large, empty rectangular box with a thin black border, occupying most of the page. It is intended for the user to write their notes.

'the
professional's
choice'

<Intended Country Of Use>

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CE 0891 !

Registered Community Design Application 000810890

U.S. Design Patent Pending No. 23/182,829

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