



Instruction Manual CS800 Mobile Radio



(This is a revised Version of the CSI Manual. The Information contained was created by Independent Radio Operator. Connect Systems does not have any responsibility for its content. Document created as an aid to other radio operators. User assumes complete responsibility for using this document.)

Contents

MOBILE INSTALLATION	6
DC POWER CABLE CONNECTION.....	7
FIXED STATION OPERATION	8
REPLACING FUSES.....	9
ANTENNA CONNECTION	9
ACCESSORY CONNECTIONS.....	10
EXTERNAL SPEAKER	10
MICROPHONE.....	10
PC CONNECTION.....	10
YOUR FIRST QSO.....	11
GETTING ACQUANTED.....	11
FRONT PANEL.....	11
REAR PANEL.....	15
MICROPHONE	15
Basic Operations.....	16
Selecting a Radio Channel, Subscriber ID, or Group ID Procedure:	16
Receiving and Responding to a Radio Call	16
Receiving and Responding to a Group Call.....	16
Receiving and Responding to a Private Call.....	16
Receiving an All Call.....	17
Making a Radio Call.....	17
Making a Call with the Channel Selector Knob.....	17
Making a Group Call	17
Making a Private Call	18
Making a All Call	18
Making a Group or Private Call with the One Touch Call Button	18
Talkaround.....	19
Monitoring Features (Analog)	19
Monitoring a Channel.....	19
Advanced Features.....	19
Radio Check	19
Sending a Radio Check	19
Remote Monitor.....	20

Initiating Remote Monitor	20
Scan Lists	20
Scan	21
Starting and Stopping Scan	21
Responding to a Transmission During a Scan	21
Deleting a Nuisance Channel	22
Restoring a Nuisance Channel	22
Contacts Settings.....	22
Making a Group Call from Contacts.....	22
Making a Private Call from Contacts.....	22
Call Indicator Settings.....	23
Activating and Deactivating Call Ringers for Private Calls	23
Activating and Deactivating Call Ringers for Text Message	23
Assigning Ring Styles (Available after Version 2)	24
Escalating Alarm Tone Volume (Available after Version 2)	24
Call Log Features	24
Viewing Recent Calls	24
Missed Call Screen	25
Storing an Alias or ID from the Missed Call List	25
Deleting a Call from a Call List.....	25
Call Alert Operation	25
Emergency Operation.....	26
Receiving an Emergency Alarm.....	26
Responding to an Emergency Alarm.....	27
Sending an Emergency Alarm	27
Sending an Emergency Alarm with Call	27
Sending an Emergency Alarm with Voice to Follow	28
Exiting an Emergency Mode	28
Text Message Features	29
Sending a Quick Text Message	29
Managing Fail-to-Send Text Messages.....	30
Resending a Text Messages.....	30
Forwarding a Text Message.....	30
Managing Sent Text Messages.....	31

Sending a Sent Text Message	31
Deleting all Sent Text Messages from Sent Items.....	31
Receiving a Text Message	31
Reading a Text Message	32
Managing Received Text Messages	33
Viewing a Text Message from the Inbox	33
Viewing a Text Message from the Inbox	33
Deleting a Text Message from the Inbox.....	33
Deleting All Text Messages from the Inbox.....	34
Privacy.....	34
Dual Tone Multi Frequency (DTMF) (Analog)	34
Security.....	35
Radio Disable.....	35
Radio Enable.....	35
Utilities	35
Turning Keypad Tones On or Off	36
Setting the Squelch Level [Analog]	36
Setting the Power Level	36
Voice Operating Transmission[VOX] Feature On or Off.....	37
Controlling the Display Backlight.....	37
Turning the Radio Tones/Alerts On or Off.....	37
Turning the Talk Permit Tone On or Off	38
Turning the LED Indicator On or Off.....	38
Turning the Introduction Screen On or Off	38
Accessing General Radio Information	39
PROGRAMMING	39
Software	39
Firmware Updates	40
Determining Current Configuration.....	40
Firmware Update Files	44
Update Procedure.....	45
CPS Upgrade	45
Programming Cables.....	46
Separation Kit Instructions	47

Trouble Shooting.....	49
Radio Specifications.....	50

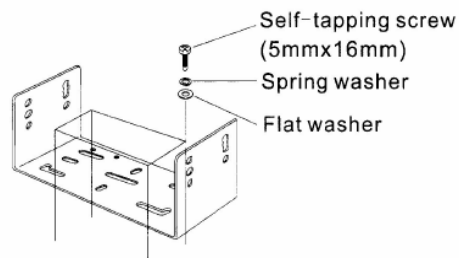
PREPARATION

MOBILE INSTALLATION

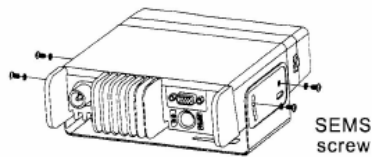
To install the transceiver, select a safe, convenient location inside your vehicle that minimizes danger to your passengers and yourself while the vehicle is in motion.

Consider installing the unit at an appropriate position so that knees or legs will not strike it during sudden braking of your vehicle. Try to pick a well ventilated location that is shielded from direct sunlight.

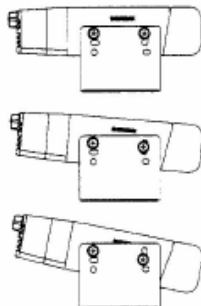
1. Install the mounting bracket in the vehicle using the supplied self-tapping screws (4), flat washers (4), and Spring washers (4). The bracket must be installed so that the 3 screw long hole positions on the side of the mounting bracket are towards the rear of the bracket.



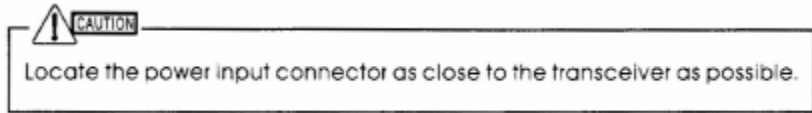
2. Position the transceiver, then insert and tighten the supplied hexagon SEMS screws (4) and flat washers (4). Double check that all hardware is tightened to prevent vehicle vibration from loosening.



Determine the appropriate angle of the transceiver, using the 3 screw hole positions on the side of the mounting bracket.

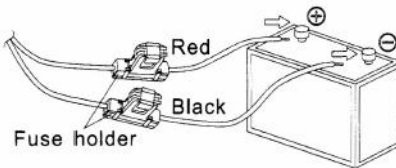


DC POWER CABLE CONNECTION

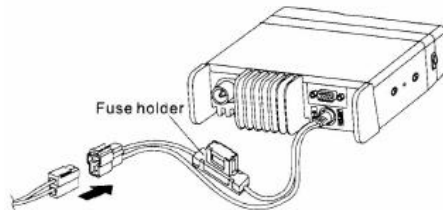


The vehicle battery must have a nominal rating of 12 V. Never connect the transceiver to a 24 V battery. Be sure to use a 12 V vehicle battery that has sufficient current capacity. If the current to the transceiver is insufficient, the display may darken during transmission, or transmit output power may drop excessively.

1. Route the DC power cable supplied with the transceiver directly to the vehicle's battery terminals using the shortest path from the transceiver. If using a noise filter, it should be installed with an insulator to prevent it from touching metal on the vehicle. We recommend you do not use the cigarette lighter socket as some cigarette lighter sockets introduce an unacceptable voltage drop. The entire length of the cable must be dressed so it is isolated from heat, moisture, and the engine secondary (high voltage) ignition system/ cables.
2. After the cable is in place, wrap heat-resistant tape around the fuse holder to protect it from moisture and tie down the full run of cable,
3. To prevent the risk of short circuits, disconnect other wiring from the negative (-) battery terminal before connecting the transceiver.
4. Confirm the correct polarity of the connections, then attach the power cable to the battery terminals; red connects to the positive (+) terminal and black connects to the negative (-) terminal. Use the full length of the cable without cutting off excess even if the cable is longer than required. In particular, never remove the fuse holders from the cable.



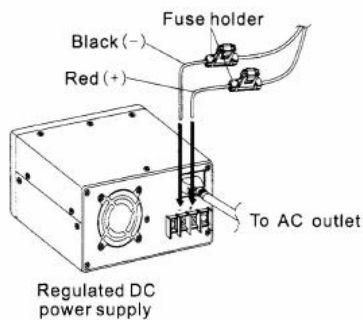
5. Reconnect any wiring removed from the negative terminal.
6. Connect the DC power cable to the transceiver's power supply connector. Press the connectors firmly together until the locking tab connectors firmly together until the locking tab clicks.



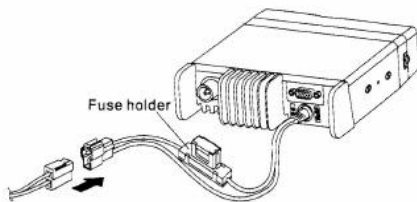
FIXED STATION OPERATION

In order to use this transceiver for fixed station operation, you will need a separate 13.8 V DC power supply (not included). The recommended current capacity of your power supply is 14 A or more.

1. Connect the DC power cable to the regulated DC power supply and ensure that the polarities are correct (Red: positive, Black: negative).
 - Do not directly connect the transceiver to an AC outlet .
 - Use the supplied DC power cable to connect the transceiver to a regulated power supply.
 - Do not substitute a cable with smaller gauge wires.



2. Connect the transceiver's DC power connector to the connector on the DC power cable. Press the connectors firmly together until the locking tab clicks.

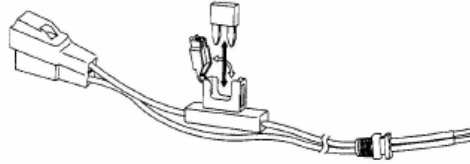


Note:


- For your transceiver to fully exhibit its performance capabilities, we recommend using a power supply capable of output power more than 23 A, 25% duty cycle.
- Before connecting the DC power supply to the transceiver, be sure to switch the transceiver and the DC power supply OFF.
- Do not plug the DC power supply into an AC outlet until you make all connections.

REPLACING FUSES

If the fuse blows, determine the cause, then correct the problem, After the problem is resolved, replace the fuse. If newly installed fuses continue to blow, disconnect the power cable and contact your authorized CSI Dealer or an authorized CSI service center for assistance.



Fuse Location	Fuse Current Rating
Transceiver	15 A
Supplied Accessory DC Power Cable	20 A

 **CAUTION**


Only use fuses of the specified type and rating; otherwise the transceiver could be damaged.

Note:

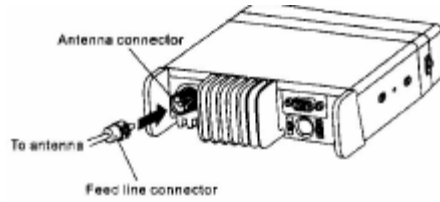
If you use the transceiver for a long period when the vehicle battery is not fully charged, or when the engine is OFF, the battery may become discharged, and will not have sufficient reserves to start the vehicle. Avoid using the transceiver under these conditions.

ANTENNA CONNECTION

Before operating, install an efficient, well-tuned antenna. The success of your installation will depend largely on the type of antenna and its correct installation. The transceiver can give excellent results if the antenna system and its installation are given careful attention. Use a 50 ohm impedance antenna and low-loss coaxial feed line that has a characteristic impedance of 50 ohm to match the transceiver input impedance. Coupling the antenna to the transceiver via feed lines having an impedance other than 50 ohm reduces the efficiency of the antenna system and can cause interference to nearby broadcast television receivers.

 **CAUTION**

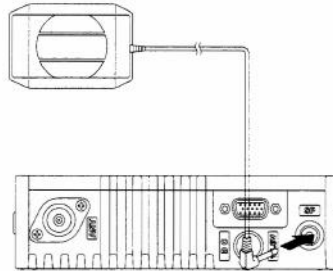
- ◆ Transmitting without first connecting an antenna or other matched load may damage the transceiver. Always connect the antenna to the transceiver before transmitting.
- ◆ All fixed stations should be equipped with a lightning arrester to reduce the risk of fire, electric shock, and transceiver damage.



ACCESSORY CONNECTIONS

EXTERNAL SPEAKER

If you plan to use an external speaker, choose a speaker with an impedance of 8 ohms. The external speaker jack accepts a 3.5 mm (1/8") mono (2-conductor) plug.

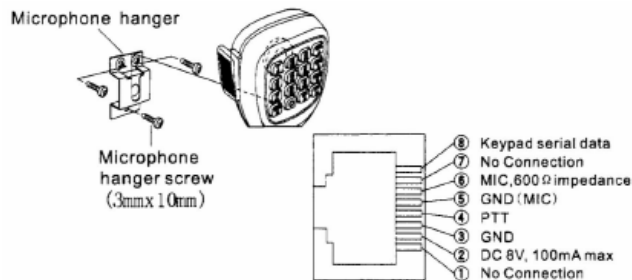


MICROPHONE

For voice communications, connect a 600 ohm microphone equipped with an 8-pin modular plug into the modular socket on the front of the main unit. Press firmly on the plug until the locking tab clicks.



Attach the supplied microphone hanger in an appropriate location using the screws included in the screw set.



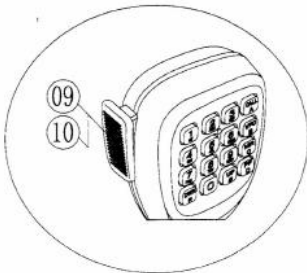
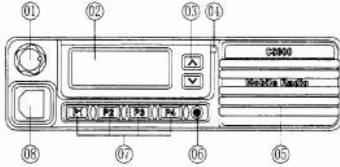
PC CONNECTION




To utilize the optional PC programming software, you must first connect the transceiver to your PC using an optional Programming Cable (via the rear DB15 connector).

Note: Ask your dealer about purchasing a Programming Cable.

YOUR FIRST QSO

Are you ready to give your transceiver a quick try? Reading this section should get your voice on the air right away. The instructions below are intended only as a quick guide. If you encounter problems or there is something you would like to know more, read the detailed explanations given later in this manual.

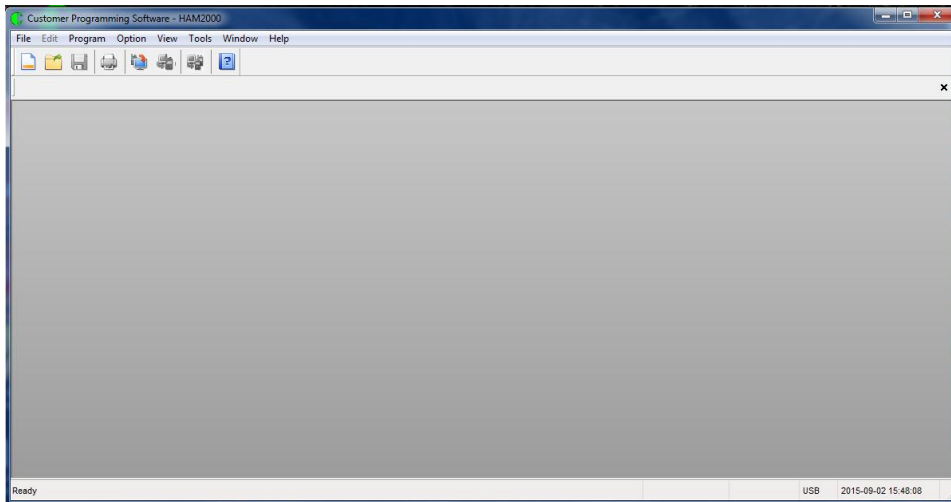


1. Press  (Power) briefly to switch the transceiver power ON.
A power on beep sounds and a Power-on message appears momentarily. The various indicators and the current operating channel alias appear on the LCD.
The transceiver stores the current parameters when it is turned OFF and automatically recalls those parameters the next time you turn the transceiver ON.
2. Turn the **Volume**  control clockwise to increase the volume or reverse.
The transceiver stores the current parameters when it is turned OFF and automatically recalls those parameters the next time you turn the transceiver ON.
3. Turn the **Up/Down**  control to select a reception channel.
You may further turn the Volume control to adjust the volume level of the signal.
4. To transmit, hold the microphone approximately 5 cm (2 inches) from your mouth.
5. Press and hold Mic [PTT], then speak in your normal tone of voice.
6. Release Mic [PTT] to receive.
7. Repeat steps 4,5 and 6 to continue communication.

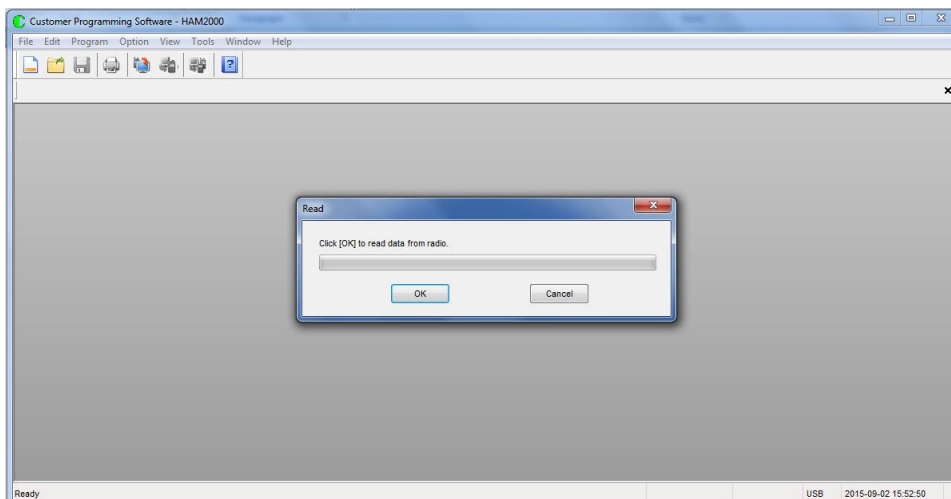
GETTING ACQUANTED

FRONT PANEL

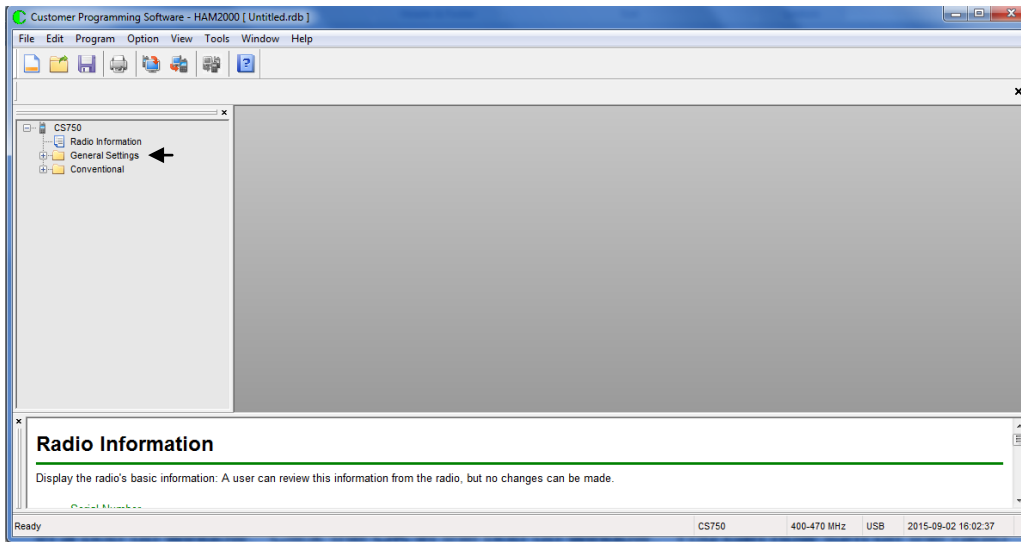
Note: This section describes only the main functions of the front panel controls. The following procedures assume the radio has the front panel buttons programmed to certain settings. To check if these buttons are set to operate correctly to perform the procedures. Launch the CPS programming software. You will see a screen like the one shown below.



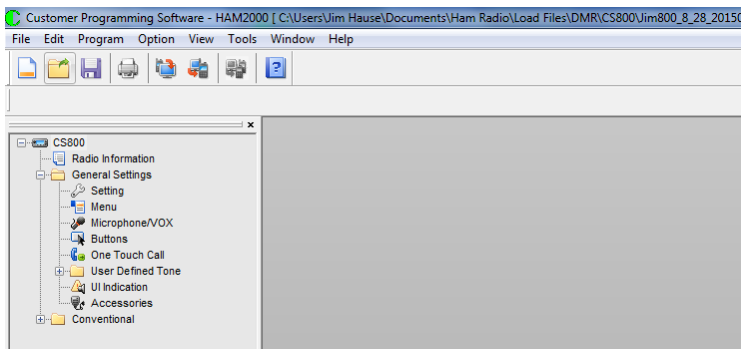
On the top menu ribbon, click on Program, a drop down menu will appear, click on the Read From Radio. You should see the following:



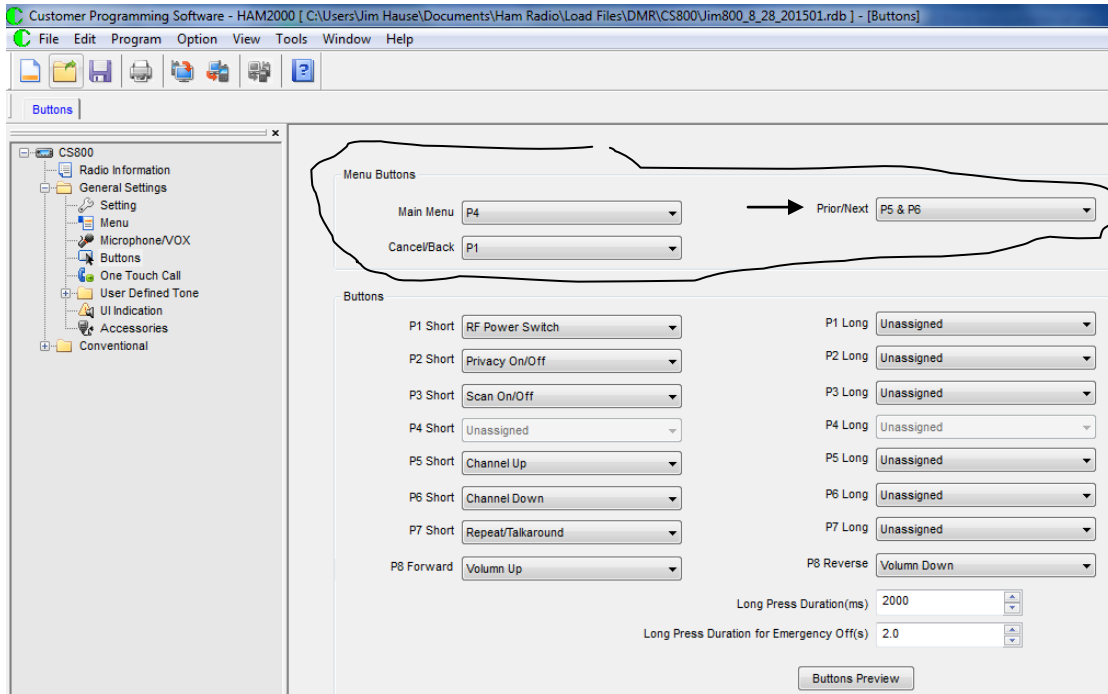
Connect your radio to your PC, and turn the radio on. Wait a couple of seconds for the radio to complete connection to PC. Click on the OK button in the pop up. The program will read in the contents of the radio. When completed it should say Read Successfully in a pop up window. Click the OK in the pop up window. You can now turn off the radio and disconnect from the PC. The CPS software screen should now show the following:



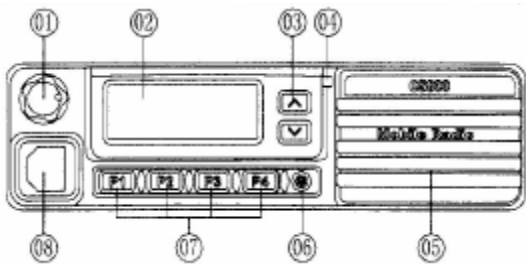
Double Click on the General Settings indicated by arrow shown above. Programming software will show the following:



Double Click on the Buttons, indicated by the arrow above. Programming software will show the following:



Check the settings shown above for the Menu Buttons and change if needed to match.



1. (Power) switch

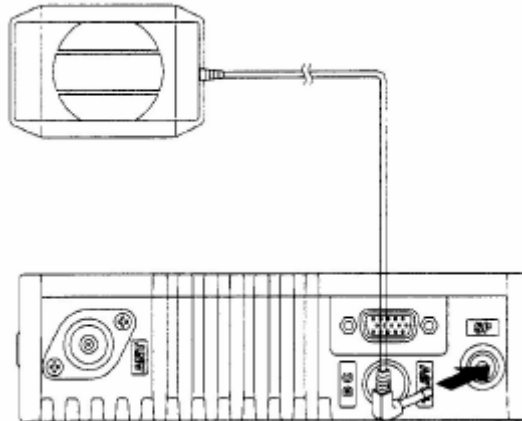
Press to switch the transceiver power ON or OFF.

2. This manual just uses as the MENU/OK and as the navigation key in menu later

4. Cancel Key should be programmed to press , if Menu key enabled.

5. Channel UP/DOWN or Zone UP/DOWN or volume UP/DOWN could be programmed to turn or press

REAR PANEL



1. Antenna connector

Connect an external antenna here. When making test transmissions, connect a dummy load in place of the antenna. The antenna system or load should have an impedance of 50 ohms.

2. Power Input 13.6 V DC cable

Connect a 13.6 V DC power source here. Use the supplied DC power cable.

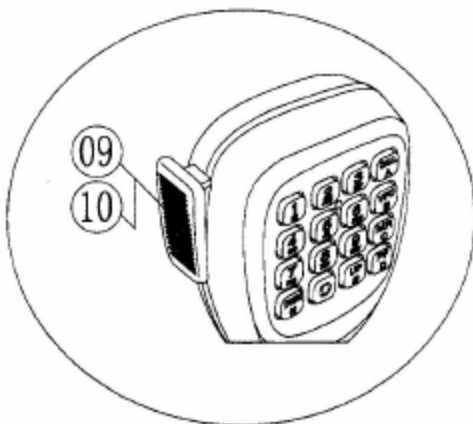
3. SP (speaker) jack

If desired, connect an optional external speaker for clearer audio. This jack accepts a 3.5 mm (1/8") mono (2-conductor) plug.

4. D815 Connector

This connector is used for an extension feature, such as GPS, control line etc.

MICROPHONE



1. PTT(Push-to-Talk) Switch

Press and hold to transmit. Release to receive.

2. Dkey (Menu/OK key)

3. A key(Cancel Key)

4. B,C(Navigation Key)

5. 1,2,3,4,5,6,7,8,9, *,0,#(Number Key)

Basic Operations

Make a Call (Selecting a Zone)

A zone is a group of channels. Your radio supports up to 250 zones, with a maximum of 16 channels per zone.

Use the following procedure to select a zone.

Procedure:

Press the programmed Zone button and proceed to step 2.

OR Follow the procedure below.

1. Press **P4** to enter menu, and press **▲▼** to Zone and press **P4** to select.
2. The current zone is displayed and indicated by a **√**.
3. Press **▲▼** to the required zone and press **P4** to select.
4. The display shows <Zone> Selected momentarily .

Selecting a Radio Channel, Subscriber ID, or Group ID Procedure:

Once the required zone is displayed, if you have multiple zones in your radio, turn the programmed channel Selector Knob to select the channel, subscriber alias or ID, or group alias or ID.

Receiving and Responding to a Radio Call

Once the channel, subscriber ID or group ID is displayed, you can proceed to receive and respond to calls.

To unscramble a privacy-enabled call, your radio must have the same Privacy Key, OR the same Key Value and Key ID (programmed by your dealer), as the transmitting radio (the radio you are receiving the call from).

Receiving and Responding to a Group Call

To receive a call from a group of users, your radio must be configured as part of that group.

Procedure:

When you receive a Group Call (while on the Home screen):

1. The green LED lights.
2. The first line of the display shows the caller alias and the RSSI icon. The second line displays the group alias and the Group Call icon (in Digital mode only).
3. Hold the radio vertically 1 to 2 inches (2.5 to 5.0 cm) from your mouth. If the Channel Free Indication feature is enabled, you will hear a short alert tone the moment the transmitting radio releases the PTT button, indicating the channel is free for you to respond.
4. Press the PTT button to respond to the call and the RED LED turns on.
5. Wait for the Talk Permit Tone to finish [if enabled and speak clearly into the microphone.
6. Release the PTT button to listen.
7. If there is no voice activity for a predetermined period of time, the call ends.

Receiving and Responding to a Private Call

A Private Call is a call from an individual radio to another individual radio.

There are two types of Private Calls. The first type is where a radio presence check is performed prior to setting up the call. The other type sets up the call immediately.

Procedure:

1. The green LED turns on.
2. The first line of the display shows the subscriber alias or ID, and the RSSI icon, The second line displays Private Call and the Private Call icon.
3. Hold the radio vertically 1 to 2 inches (2,5 to 5,0 cm) from your mouth. If the Channel Free Indication feature is enabled, you will hear a short alert tone the moment the transmitting radio releases the PTT button, indicating the channel is free for you to respond.
4. Press the PTT button to respond to the call. The RED LED turns on.
5. Wait for the Talk Permit Tone to finish (if enabled) and speak clearly into the microphone.
6. Release the PTT button to listen.
7. If there is no voice activity for a predetermined period of time, the call ends.
8. You hear a short tone. The display shows Call Ended.

Receiving an All Call

An All Call is a call from an individual radio to every radio on the channel. It is used to make important announcements requiring the user's full attention.

Procedure:

When you receive an All Call:

1. A Tone sounds and the Green LED turns on.
2. The first line of the display shows the caller alias and the RSSI icon. The second line displays All, Call and the All Call icon.
3. Once the All Call ends, the radio returns to the previous screen before receiving the call. If the Channel Free Indication feature is enabled, you will hear a short alert tone the moment the transmitting radio releases the PTT button, indicating the channel is now available for use. You cannot respond to an All Call.

NOTE: The radio stops receiving the All Call if you switch to a different channel while receiving the call. During an All Call, you will not be able to use any programmed button functions until the call ends.

Making a Radio Call

You can select a channel, subscriber ID, or group by using:

- The Channel Selector Knob
- A programmed One Touch Call button
- The Contacts list

Manual Dial (Via Contacts) -This method is for Private Calls only and is dialed using the keypad.

NOTE: Your radio must have the Privacy feature enabled on the channel to send a privacy-enabled transmission. Only target radios with the same Privacy Key OR the same Key Value and Key ID as your radio will be able to unscramble the transmission.

Making a Call with the Channel Selector Knob

Making a Group Call

To make a call to a group of users, your radio must be configured as part of that group.

Procedure:

1. Turn the Channel Selector Knob to select the channel with the active group alias or ID.
2. Hold the radio vertically 1 to 2 inches (2.5 to 5.0cm) from your mouth.
3. Press the PTT button to make the call. The RED LED turns on. The display shows the group alias or ID and the Group Call icon.
4. Wait for the Talk Permit Tone to finish (if enabled) and speak clearly into the microphone.

5. Release the PTT button to listen. When the target radio responds, the LED blinks green. You see the Group Call icon, the group alias or ID, and transmitting radio alias or ID on your display.
6. If the Channel Free Indication feature is enabled, you will hear a short alert tone the moment the target radio releases the PTT button, indicating the channel is free for you to respond. Press the PTT button to respond.

OR

If there is no voice activity for a predetermined period off time, the call ends.

7. Radio returns to the previous screen you were on prior to receiving the call. You can also make a Group Call via Contacts.

Making a Private Call

Procedure:

1. Turn the Channel Selector Knob to select the channel with the active subscriber alias or ID.
2. Hold the radio vertically 1 to 2 inches (2,5 to 5.0 cm) from your mouth.
3. Press the PTT button to make the call, The RED LED turns on. The first line displays the subscriber alias or ID, The second line displays Private Call and the Private Call icon.
4. Wait for the Talk Permit Tone to finish (if enabled) and speak clearly into the microphone.
5. Release the PTT button to listen. When the target radio responds, the Green LED turns on.
6. If the Channel Free Indication feature is enabled, you will hear a short alert tone the moment the target radio releases the PTT button, indicating the channel is free for you to respond. Press the PTT button to respond,

OR

If there is no voice activity for a predetermined period of time, the call ends.

7. You hear a short tone. The display shows Call Ended.

You can also make a Private Call via Contacts or perform a quick alphanumeric search for the required alias via a keypad entry.

Making a All Call

This feature allows you to transmit to all users on the channel. Your radio must be programmed to allow you to use this feature.

Procedure:

1. Turn the Channel Selector Knob to select the channel with the active All Call group alias or ID
2. Hold the radio vertically 1 to 2 inches [2,5 to 5,0 cm) from your mouth
3. Press the PTT button to make the call, The RED LED turns on, The display shows the All Call group alias or ID and the All Call icon
4. Wait for the Talk Permit Tone to finish (if enabled) and speak clearly into the microphone

NOTE: Users on the channel cannot respond to an All Call

Making a Group or Private Call with the One Touch Call Button

The One Touch Call feature allows you to make a Group or Private Call to a predefined alias or ID easily, This feature can be assigned to a short or long programmable button press

You can ONLY have one alias or **ID** assigned to a One Touch Call button, Your radio can have multiple One Touch Call buttons programmed.

Procedure:

1. Press the programmed One Touch Call button to make a Group or Private Call to the predefined alias or ID.
2. Hold the radio vertically 1 to 2 inches [2,5 to 5,0 cm) from your mouth
3. Press the PTT button to make the call, The RED LED turns on, The display show the group/subscriber alias or ID, and the Group/Private Call icon

4. Wait for the Talk Permit Tone to finish (if enabled) and speak clearly into the microphone
5. Release the PTT button to listen, When the target radio responds, the Green LED turns on
6. If the Channel Free Indication feature is enabled, you will hear a short alert tone the moment the target radio releases the PTT button, indicating the channel is free for you to respond, Press the PTT button to respond.

OR

If there is no voice activity for a predetermined period of time, the call ends

Talkaround

You can continue to communicate when your repeater is not operating, or when your radio is out of the repeater's range but within talking range of other radios, This is called "talkaround"

Procedure:

Press the programmed Repeater/Talkaround button to toggle between talkaround and repeater modes,

OR

Follow the procedure below,

1. Press **P4** to access the menu
 2. Press **▲▼** to Utilities and press **P4** to select
 3. Press **▲▼** to Radio Settings and press **P4** to select
 4. Press **▲▼** to Talkaround and press **P4** to confirm or press **▲▼** to cancel.
 5. After confirmation, the display shows "Talkaround On" OR "Talkaround Off"
 6. Press **P4** or wait the presetting time to exit the menu state.
- The Talkaround setting is retained even after powering down.

Monitoring Features (Analog)

Monitoring a Channel

Use the Monitor feature to make sure a channel is clear before transmitting by listening for activity on the channel.

Procedure:

1. Press the programmed Monitor button and listen for activity. The monitor icon appears on the display.
2. If you hear activity on the channel the channel is busy. If you hear "white noise" on the channel the channel is free.

Advanced Features

Radio Check

If enabled, this feature allows you to determine if another radio is active in a system without disturbing the user of that radio. No audible or visual notification is shown on the target radio. This feature is only applicable for subscriber aliases or Ids.

Sending a Radio Check

Procedure:

Use the menu.

1. Press **P4** access the menu.

2. Press **▲▼** to Contacts and press **P4** to select
 3. Press **▲▼** to the required subscriber alias or ID and press **P4** to select
- OR
- Press **▲▼** to Manual Dial and press **P4** select, Key in the subscriber alias or ID and Press.
4. Press **▲▼** to Radio Check and press **P4** to select.
 5. Wait for acknowledgement
 6. If the target radio is active in the system, a tone sounds and the display briefly shows Target Radio Available.
- OR
- If the target radio is not active in the system, a tone sounds to show Target Radio Not Available.
7. Radio returns to the subscriber alias or ID screen.

Remote Monitor

Use the Remote Monitor feature to turn on the microphone of a target radio (subscriber alias or IDs only), No audible or visual indication is given to the target radio. You can use this feature to monitor, remotely, any audible activity surrounding the target radio, Your radio must be programmed to allow you to use this feature

Initiating Remote Monitor

Procedure:

Use the programmed Remote Monitor button

Use the menu.

1. Press **P4** to access the menu,
 2. Press **▲▼** to Contacts and press: **P4** to select
 3. Press **▲▼** to the required subscriber alias or ID and press **P4** to select
- OR

Press **▲▼** to Manual Dial and press **P4** to select, Key in the subscriber alias or ID and Press **P4** select

4. Press **▲▼** Remote Mon. and press **P4** to select.
5. Wait for acknowledgement
6. The display shows Remote Monitor Successful.

OR

The display shows Remote Monitor Failed.

7. If successful:

The radio starts receiving audio from the monitored radio for a programmed duration.

Once the timer expires, the radio sounds an alert tone. The display shows Remote Monitor Ended.

OR

If unsuccessful:

The radio repeats the attempt until the programmed number of tries expires.

Scan Lists

Scan lists are created and assigned to individual channels/groups. Your radio scans for voice activity by cycling through the channel/group sequence specified in the scan list for the current

channel/group. Your radio can support up to 250 scan lists. A scan list can contain 31 channels in addition to the selected channel. Each scan list supports a mixture of both analog and digital entries.

You can add, delete, or prioritize channels by editing a scan list.

Procedure:

1. Press **P4** to access the menu.
2. Press **▲▼** to Scan and press **P4** to select
3. Press **▲▼** to View/Edit List and press **P4** to select
4. Press **▲▼** to view each member on the list.

Scan

When you start a scan, your radio cycles through the programmed scan list looking for voice activity. The LED blinks Orange while in scan mode. During a dual mode scan, if you are on a digital channel, and your radio locks onto an analog channel, it automatically switches from digital mode to analog mode for the duration of the call.

This is also true for the reverse.

There are two ways of initiating scan:

- Main Channel Scan (Manual): Your radio scans all the channels/groups in your scan list. On entering scan, your radio may, depending on the settings, automatically start on the last scanned "active" channel/group or on the channel where scan was initiated .
- Auto Scan(Automatic): Your radio automatically starts scanning when you select a channel/group that has Auto Scan enabled.

Starting and Stopping Scan

Procedure:

Press the programmed Scan button to start or stop Scan.

OR

Follow the procedure below.

1. Use the Channel Selector Knob to select a channel programmed with a scan list.
2. Press **P4** to access the menu.
3. Press **▲▼** to Scan and press **P4** to select
4. The display shows Turn On if scan is disabled.

OR

The display shows Turn Off if scan is enabled.

5. Press **P4** to select. The LED blinks orange when Scan is enabled. Or the LED turns off when Scan is disabled .

Responding to a Transmission During a Scan

During scanning, your radio stops on a channel/group where activity is detected, The radio stays on that channel for a programmed time period known as "hang time"

Procedure:

1. Hold the radio vertically 1 to 2 inches [2,5 to 5,0 cm) from your mouth. If digital channel and the Channel Free Indication feature is enabled, you will hear a short alert tone the moment the transmitting radio releases the PTT button, indicating the channel is free for you to respond.
2. Press the PTT button during hang time, The RED LED turns on
3. Wait for the Talk Permit Tone to finish if enabled and speak clearly into the microphone
4. Release the PTT button to listen

5. If you do not respond within the hang time, the radio returns to scanning other channels/groups.

Deleting a Nuisance Channel

If a channel continually generates unwanted calls or noise (termed a "nuisance" channel), you can temporarily remove the unwanted channel from the scan list. This capability does not apply to the channel designated as the Selected Channel.

Procedure:

1. When your radio locks on to an unwanted or nuisance channel, press the programmed Nuisance Channel Delete button until you hear a tone
2. Release the Nuisance Channel Delete button. The nuisance channel is deleted. Deleting a "nuisance" channel is only possible through the programmed Nuisance Channel Delete button. This feature is not accessible through the menu.

Restoring a Nuisance Channel

Procedure:

To restore the deleted nuisance channel, do ONE of the following:

- Turn the radio off and then powering it on again
- Stop and restart a scan via the programmed Scan button or menu
- Change the channel via the Channel Selector Knob

Contacts Settings

Contacts provides "address-book" capabilities on your radio. Each entry corresponds to an alias or ID that you use to initiate a call. Additionally, each entry, depending on context, associates with ONE of five types of calls: Group Call, Private Call, All Call, PC Call or Dispatch Call. PC Call and Dispatch Call are data-related. They are only available with the applications. Refer to the data applications documentation for more information.

NOTE: If the Privacy feature is enabled on a channel, you can make privacy-enabled Group Call, Private Call, and All Call on that channel. Only target radios with the same Privacy Key OR the same Key Value and Key 10 as your radio will be able to unscramble the transmission. Each entry within Contacts displays the following information:

- Call Type
- Call Alias
- Call ID

NOTE: You can add, delete, or edit subscriber IDs for the Digital Contacts list.

Making a Group Call from Contacts









Procedure:

1. Press **P4** to access the menu
2. Press **▲▼** to Contacts and press **P4** to select, The entries are alphabetically sorted
3. Press **▲▼** to the required group alias or ID
4. Press the PTT button to make the call

Making a Private Call from Contacts

Procedure:

1. Press **P4** to access the menu


















2. Press   to Contacts and press  to select, The entries are alphabetically sorted
 3. Press   to the required subscriber alias or ID
- OR
- Press   to Manual Dial and press  to select. Use the keypad to enter a new subscriber alias or ID
- Press the PTT button to make the call

Call Indicator Settings


Activating and Deactivating Call Ringers for Private Calls

You can turn on or off the ringing tones for a received Private Call.

Procedure:

1. Press  to access the menu,
2. Press   to Utilities and press  to select
3. Press   to Radio Settings and press  to select
4. Press   to Tone/Alerts and press  to select
5. Press   to Call Ringers and press  to select
6. Press   to Private Call and press  to select
7. The display shows Turn On, Press  to enable Call Ringers for Private Calls. The display shows Private Call Ringer On,























OR

The display shows Turn Off, Press  to disable Call Ringers for Private Calls, The display shows Private Call Ringer Off.

Activating and Deactivating Call Ringers for Text Message

You can turn on or off the ringing tones for a received Text Message

Procedure:

1. Press  to access the menu
 2. Press   to Utilities and press  to select
 3. Press   to Radio Settings and press  to select
 4. Press   to Tone/Alerts and press  to select
 5. Press   to Call Ringers and press  to select
 6. Press   to Text Message and press  to select
 7. The current tone is indicated by a ✓
 8. Press   to the preferred tone and press  to select.
- The display shows Tone < Number> Selected and a ✓ appears left of the selected tone,
- OR
- Press   to Turn Off and press  to select. The display shows Text Message Ringer Off and a ✓ appears left or Turn Off

Assigning Ring Styles (Available after Version 2)

You can program your radio to sound one of ten predefined ringing tones when receiving a Call Alert or a Text Message from a particular contact.

Procedure:

1. Press **P4** to access the menu.
2. Press **▲▼** to Contacts and press **P4** to select. The entries are alphabetically sorted.
3. Press **▲▼** to the required alias or ID and press **P4** to select.
4. Press **▲▼** to Ring Style and press **P4** to select.
5. A **√** indicates the current selected tone.
6. Press **▲▼** to the required tone and press **P4** to select.
7. The display shows Tone <Number> Selected and a **√** appears left of the selected tone.

OR

Press **▲▼** to Turn Off and press **P4** to select. The display shows Text Message Ringer Off and a **√** appears left of Turn Off.

Escalating Alarm Tone Volume (Available after Version 2)

You can program your radio to continually alert you when a radio call remains unanswered. This is done by automatically increasing the alarm tone volume over time. This feature is known as Escalert.

Procedure:

1. Press **P4** to access the menu.
2. Press **▲▼** to Utilities and press **P4** to select.
3. Press **▲▼** to Radio Settings and press **P4** to select.
4. Press **▲▼** to Tones/Alerts and press **P4** to select.
5. Press **▲▼** to Escalert and press **P4** to select,
6. The display shows Turn On. Press **P4** to enable Escalert. The display shows Escalert On.

OR

The display shows Turn Off. Press **P4** to disable Escalert. The display shows Escalert Off

Call Log Features

Your radio keeps track of all recent outgoing, answered, and missed Private Calls. Use the Call log feature to view and manage recent calls. You can perform the following tasks in each of your call lists:

- Store ID to Contacts
- Delete

Viewing Recent Calls

The lists are Missed, Answered, and Outgoing.

Procedure:



1. Press **P4** to access the menu.
2. Press **▲▼** to Call Log and press **P4** to select
3. Press **▲▼** to preferred list and press **P4** to select.
4. The display shows the most recent entry at the top of the list.

5. Press   to view the list.
Press the PTT button to start a Private Call with the current selected alias or ID.




Missed Call Screen

Whenever a call is missed, your radio displays a missed call message. Select View to view it immediately or View Later to view at a later time.

NOTE: The radio exits the Missed Call screen and sets up a Private Call if you press the PTT button while viewing a missed call number,














1. The display shows Missed Calls, along with the number of calls missed and View?
2. Press  to view the missed call ID, The missed call log list appears on display, Press  to store or delete the entry.

OR

Press   to view Later and press  to select. You return to the Home screen
















Storing an Alias or ID from the Missed Call List

Procedure:

1. Press  to access the menu,
2. Press   to Call Log and press  to select.
3. Press   to Missed and press  to select.
4. Press   to the required missed call alias or ID and press  to select.
5. Press   to Store and press  to select.
6. A blinking cursor appears, If needed, key in the alias for that ID and press
7. The display shows Contact Saved, You can also store an ID without an alias.

Deleting a Call from a Call List

Procedure:

1. Press  to access the menu,
2. Press   to Call Log and press  to select,
3. Press   to the required list and press  to select.
4. Press   to the required alias or ID and press  to select,
5. Press   to Delete Entry? And press  to select. The display show Entry Deleted,
OR
6. Press   to No to return to the previous screen. When you select a call list and it contains no entries, the display shows List Empty, and sounds a low tone if Keypad Tones are turned on

Call Alert Operation

Call Alert paging enables you to alert a specific radio user to call you back when they are able to do so. This feature is applicable for subscriber aliases or IDs only and is accessible through the menu via Contacts or manual dial.

Receiving and Acknowledging a Call Alert

Procedure:

1. You hear a repetitive tone,
 2. Press and release the PTT button to acknowledge the alert
- OR

Press **P4** to select Ignore and to exit the Call Alert

Making a Call Alert from the Contacts List

1. Press **P4** to access the menu.
2. Press **▲▼** to Contacts and press **P4** to select,
3. Press **▲▼** to the required subscriber alias or ID and press **P4** to select.

OR

Press **▲▼** to Manual Dial and press **P4** to select, A blinking cursor appears

Enter the subscriber ID you want to page and press

4. Press **▲▼** to Call Alert and press **P4** to select.
5. The display shows Call Alert: <Subscriber Alias or ID>, indicating that the Call Alert has been sent.
6. The RED LED turns on when your radio is sending the Call Alert.
7. If the Call Alert acknowledgement is received, a tone sounds and the display shows Call Alert Successful.

OR

If the Call Alert acknowledgement is not received, a tone sounds and the display shows Call Alert Failed.

Emergency Operation

An Emergency Alarm is used to indicate a critical situation. You are able to initiate an Emergency at any time on any screen display even when there is activity on the current channel.

Your radio supports 3 Emergency Alarms:

- Emergency Alarm
- Emergency Alarm with Call
- Emergency Alarm with Voice to Follow

In addition, each alarm has the following types:

- Regular -Radio transmits an alarm signal and shows audio and/or visual indicators.
- Silent - Radio transmits an alarm signal without any audio or visual indicators. There will be no response (call) from the target radio until you press the PTT button to initiate the call.
- Silent with Voice -Radio transmits an alarm signal and is able to receive an incoming call without any audio or visual indicators until you press the PTT button to initiate or respond to the call.

Only ONE of the Emergency Alarms above can be assigned to the programmed Emergency button.

Receiving an Emergency Alarm

Procedure:

1. When receiving an Emergency Alarm, the display shows the Emergency icon, the number of alarms received, and Alarm Rcvd, which alternates with alias ID of the sender.
2. A tone sounds.
3. If enabled, your radio automatically acknowledges the Emergency Alarm . When your radio receives an Emergency Alarm, it displays the Emergency Alarm received indications until acknowledgement is sent and you exit the Emergency mode.

You will not be able to receive any other indications or displays for any other calls until you exit the Emergency Alarm received screen.

NOTE: Short press, then long press the programmed Emergency button to clear the Emergency Alarm received indications and exit Emergency mode.

Responding to an Emergency Alarm

Procedure:

When receiving an Emergency Alarm:

1. Press any button to stop all Emergency Alarm received indications.
2. Hold the radio vertically 1 to 2 inches (2.5 to 5.0cm) from your mouth.
If the Channel Free Indication feature is enabled, you will hear a short alert tone the moment the transmitting radio releases the PTT button, indicating the channel is now available for use.
3. Press PTT button to initiate a call with the emergency initiating radio. The RED LED turns on. Your radio remains in the Emergency mode.
4. Wait for the Talk Permit Tone to finish (if enabled) and speak clearly into the microphone.
5. Release the PTT button to listen. When the emergency initiating radio responds, you see the Group Call icon, the group ID, and transmitting radio ID on your display.
6. Once your call ends, short press ,then long press the programmed Emergency button to clear the Emergency Call received indications and exit Emergency mode.
7. The radio returns to the Home screen.

Sending an Emergency Alarm

This feature allows you to send an Emergency Alarm, a non-voice signal, which triggers an alert indication on another radio.

Procedure:

1. Press the programmed Emergency button.
2. The display shows "Sending Alarm", which alternates with your radio ID. The RED LED turns on and the Emergency icon appears on the Home screen display.
3. When an Emergency Alarm acknowledgment is received, the Emergency tone sounds and the GREEN LED turns on. The display shows Emergency Alarm Successful.

OR

If your radio does not receive an Emergency Alarm acknowledgment, and after all retries have been exhausted, a tone sounds and the display shows Emergency Alarm Failed.

4. Radio exits the Emergency Alarm mode and returns to the Home screen. If your radio is set to Silent, it will not display any audio or visual indicators during Emergency mode.

Sending an Emergency Alarm with Call

This feature allows you to send an Emergency Alarm to another radio. Upon acknowledgment, both radios can communicate over a programmed Emergency channel.

Procedure:

1. Press the programmed Emergency button.
2. The display shows "Sending Alarm", which alternates with your radio ID. The RED LED turns on and the Emergency icon appears on the Home screen display.
3. When an Emergency Alarm acknowledgment is received, the Emergency tone sounds and the GREEN LED turns on. The display shows "Emergency Alarm Successful".
4. Hold the radio vertically 1 to 2 inches (2.5 to 5.0cm) from your mouth.
5. Press PTT button to make the call. The RED LED light turns on and the group icon appears on the display.

6. Wait for the Talk Permit Tone to finish if enabled and speak clearly into the microphone.
7. Release the PTT button to listen.
8. If the Channel Free Indication feature is enabled, you will hear a short alert tone the moment the target radio releases the PTT button, indicating the channel is free for you to respond
OR

Long press the programmed Emergency button to exit the Emergency mode.

9. The radio returns to the Home screen. If your radio is set to Silent, it will not display any audio or visual indicators during Emergency mode, or receive a response (Call) from the target radio until you press the PTT button to initiate the call.

If your radio is set to Silent with Voice, it will not display any audio or visual indicators during Emergency mode, or when you are receiving a call from the target radio. The indicators will only appear once you press the PTT button to initiate or respond to the call.

Sending an Emergency Alarm with Voice to Follow

This feature allows you to send an Emergency Alarm to another radio. Upon acknowledgment, your radio's microphone is automatically activated, allowing you to communicate with the other radio without pressing the PTT button.

This activated microphone state is also known as "hot mic".

If you press the PTT button during the programmed hot mic transmission period, the radio ignores the PTT press and remains in Emergency mode.

Procedure:

1. Press the programmed Emergency button.
2. The display shows Sending Alarm. The RED LED turns on and the Emergency icon is displayed.
3. Once the display shows Emergency Alarm successful, speak clearly into the microphone. When hot mic has been enabled, the radio automatically transmits without a PTT press until the hot mic duration expires.
4. While transmitting, the RED LED turns on and the Emergency icon appears on the display.
5. Once the hot mic duration expires, the radio automatically stops transmitting. To transmit again, press the PTT button.

If your radio is set to Silent, it will not display any audio or visual indicators during Emergency mode, or receive any response from the target radio until the programmed hot mic transmission period is over, and you press the PTT button.

If your radio is set to Silent with Voice, it will not display any audio or visual indicators during Emergency mode when you are making the call with hot mic or when the target radio responds after the programmed hot mic transmission period is over. The indicators will only appear when you press the PTT button.

NOTE: If the Emergency Alarm request fails, the radio returns to the Home screen.

Exiting an Emergency Mode

Your radio exits Emergency mode when one of the following occurs:

- Emergency Alarm acknowledgement is received. (for Emergency Alarm only), OR
- All retries to send the alarm have been exhausted, OR
- The programmed Emergency button is long pressed.

NOTE: If your radio is powered off, it exits the Emergency mode. The radio will not reinitiate the Emergency mode automatically when it is turned on again.

Text Message Features

Your radio is able to receive data, for example a text message, from another radio or an e-mail application.

The maximum length of characters for a text message, including the subject line is 138

NOTE: press **P4** at any time to return to the previous screen or long press **P4** to return to the Home screen.

Writing and Sending a Text Message

Procedure:

1. Press **P4** to access the menu.
2. Press **▲▼** to Messages and press to select.
3. Press **▲▼** to Write and press **P4** to select.
4. A blinking cursor appears. Use the keypad to type your message.
Press: **▲** to move one space to the left.
Press **▼** or the # key to move one space to the right.
Press the *DEL key to delete any unwanted characters.

5. Press **P4** once message is composed ..

6. Press **▲▼** to the required alias or ID and press **P4** to select.

OR

Press **▲▼** to Manual Dial and press **P4** to select.

Key in the subscriber ID and press **P4**

7. The display shows Text Message: < Subscriber/Group Alias or ID>, confirming your message is being sent.

8. If the message is sent a tone sounds and the display shows Message Sent.

OR

If the message is not sent, a low tone sounds and the display shows Message Send Failed.

If the message fails to send, the radio returns you to the Resend option screen.

Sending a Quick Text Message

Procedure:

Your radio supports a maximum of ten (10) Quick Text messages as programmed by your dealer.

While Quick Text messages are predefined, you can edit each message before sending it.

1. Press **P4** to access the menu.
2. Press **▲▼** to Messages and press **P4** to select.
3. Press **▲▼** to Quick Text and press **P4** to select.
4. Press **▲▼** to the required Quick Text and press **P4** to select.
5. A blinking cursor appears.

Use the keypad to edit the message, if required.

Press **▲** to move one space to the left.

Press **▼** or the # key to move one space to the right.

Press the *DEL key to delete any unwanted characters.

6. Press **P4** once message is composed.

7. Press **▲▼** to the required alias or ID and press **P4** to select.

OR

Press **▲▼** to Manual Dial and press **P4** to select.

Key in the subscriber ID and press **P4**.

8. The display shows Text Message: <Subscriber/Group Alias or ID>, confirming your message is being sent.

9. If the message is sent, a tone sounds and the display shows Message Sent.

OR

If the message is not sent, a low tone sounds and the display shows Message Send Failed.

If the message fails to send, the radio returns you to the Resend option screen.

Sending a Quick Text Message with the One Touch Call Button

Procedure:

1. Press the programmed One Touch Call button to send a predefined Quick Text message to a predefined alias or ID

2. The display shows Text Message: < Subscriber/Group Alias or 10>, confirming your message is being sent

3. If the message is sent, a tone sounds and the display shows Message Sent

OR

If the message is not sent, a low tone sounds and the display shows Message Send Failed

If the message fails to send, the radio returns you to the Resend option screen

Managing Fail-to-Send Text Messages

You can select one of the following options while at the Resend Option screen:

- Resend
- Forward
- Edit

Resending a Text Messages

Procedure:

1. Press **P4** to resend the same message to the same subscriber/group alias or ID,

2. If the message is sent, a tone sounds and the display shows Message Sent,

OR

If the message is not sent, a low tone sounds and the display shows Message Send Failed

Forwarding a Text Message

Select Forward to send the message to another subscriber/group alias or ID,

Procedure:

1. Press **P4** to access the menu

2. Press **▲▼** to Messages and press **P4** to select.

3. Press **▲▼** to Inbox and press **P4** to select

4. Press **▲▼** to the required Message and press **P4** to select

5. Press **P4** and press **▲▼** to Forward and press to select

6. Press **▲▼** to the required alias or ID and press **P4** to select

OR

Press **▲▼** to Manual Dial and press **P4** to select

Key in the subscriber ID and press

7. The display shows Text Message: <Subscriber/Group Alias or ID>, confirming your message is being sent

8. If the message is sent, a tone sounds and the display shows Message Sent
OR

If the message is not sent, a low tone sounds and the display shows Message Send Failed

Managing Sent Text Messages

Once a message is sent to another radio, it is saved in Sent Items, The most recent sent text message is always added to the top of the Sent Items list

The Sent Items folder is capable of storing a maximum of thirty last sent messages, When the folder is full, the next sent text message automatically replaces the oldest text message in the folder

Viewing a Sent Text Message

Procedure:

1. Press **P4** to access the menu
2. Press **▲ ▼** to Messages and press **P4** to select
3. Press **▲ ▼** to Sent Items and press **P4** to select
4. Press **▲ ▼** to the required Message and press **P4** to select

Sending a Sent Text Message

You can select one of the following options while viewing a sent text message:

- Resend
- Forward
- Edit
- Delete

Deleting all Sent Text Messages from Sent Items

Procedure:

1. Press **P4** to access the menu
2. Press **▲ ▼** to Messages and press **P4** to select
3. Press **▲ ▼** to Sent Items and press **P4** to select
4. Press **▲ ▼** to Delete All and press **P4** to select
5. At Delete Message?, press **P4** to select Yes, The display shows Sent Items Cleared.

OR

At Delete Message? , Press **▲ ▼** to No and press **P4** to return to the previous screen
When you select Sent Items and it contains no text messages, the display shows List Empty

Receiving a Text Message





When your radio receives a message, the display shows the alias or ID of the sender and the message icon at the far left of the screen



You can select one of the following options when receiving a text message:

- Read?
- Read Later
- Delete

Reading a Text Message

Procedure:

1. Press   to Read? And press  to select
2. Press  to Reply, forward, or delete the text message,
OR

Press   to access the Read Later or Delete option screen:

- Select Read Later to return to the screen you were on prior to receiving the text message
- Select Delete to delete the text message

Managing Received Text Messages

Use the Inbox to manage your text messages, The Inbox is capable of storing a maximum of 50 messages.

Your radio supports the following options for text messages:

- Reply
- Forward
- Delete
- Delete All

Text messages in the Inbox are sorted according to the most recently received.

NOTE:

Viewing a Text Message from the Inbox

Procedure:

1. Press **P4** to Messages and press **P4** to select.
2. Press **▲▼** to Inbox and press **P4** to select.
3. Press **▲▼** to view the messages.
4. Press **P4** to select the current message, and press **P4** again to reply, forward, or delete that message.

Unread messages are indicated with an exclamation mark(!).

Viewing a Text Message from the Inbox

Procedure:

1. Press **▲▼** to Messages and press **P4** to select.
2. Press **▲▼** to Inbox and press **P4** to select.
3. Press **▲▼** to the required message and press **P4** to select.
4. Press **P4** once more to access the sub-menu
5. Press **▲▼** to Reply and press **P4** to select.
6. Press **▲▼** to Write and press **P4** to select.

A blinking cursor appears. Use the keypad **P4** to write your message.

OR

Press **▲▼** to Quick Text and press **P4** to select.

A blinking cursor appears. Use the keypad to edit your message, if required.

7. Press **P4** once message is composed.
8. The display shows Text Message: <Subscriber/Group Alias or ID>, confirming your message is being sent.

Deleting a Text Message from the Inbox













Procedure:

1. Press **▲▼** to Messages and press **P4** to select.
2. Press **▲▼** to Inbox and press **P4** to select.
3. Press **▲▼** to the required message and press **P4** to select.
4. Press **P4** once more to access the sub-menu.

5. Press   to Delete and press to select.
6. At Delete Message?, Press   to Yes and press to select.
7. The Display shows message Deleted.
8. The screen returns to the Inbox

Deleting All Text Messages from the Inbox

Procedure:

1. Press   to Messages and press  to select.
2. Press   to Inbox and press  to select.
3. Press   to Delete All and press  to select.
4. At Delete Message?, Press   to Yes and press  to select.
5. The Display shows Inbox Cleared.

When you select the Inbox and it contains no text messages, the display shows List Empty.

Privacy

If enabled, this feature helps to prevent eavesdropping by unauthorized users on a channel by the use of a software based scrambling solution. The signaling and user identification portions of a transmission are not scrambled. Your radio must have privacy enabled on the channel to send a privacy-enabled transmission, although this is not a necessary requirement for receiving a transmission, While on a privacy-enabled channel, the radio is still able to receive clear (unscrambled] transmissions

Your radio supports two types of privacy:











- Basic Privacy
- Enhanced Privacy

Only ONE of the privacy types above can be assigned to the radio


To unscramble a privacy-enabled call or data transmission, your radio must be programmed to have the same Privacy Key (for Basic Privacy). OR the same Key Value and Key ID (for Enhanced Privacy) as the transmitting radio

If your radio receives a scrambled call that is of a different Privacy Key, OR a different Key Value and Key ID, you will either hear a garbled transmission (Basic Privacy) or nothing at all (Enhanced Privacy).

Procedure:

1. Press   to Utilities and press  to select.
2. Press   to Radio Settings and press  to select
3. Press   to Privacy and press  to select,
4. The display shows Privacy and Turn On. press  to enable privacy. The display shows the secure icon and Privacy On.

OR

The display shows Privacy and Turn Off, press  to disable privacy. The display shows the unsecure icon and Privacy Off.

Dual Tone Multi Frequency (DTMF) (Analog)

The Dual Tone Multi Frequency (DTMF) feature allows the radio to operate in a radio system with an interface totelphone systems.

Procedure:

To initiate a DTMFcall.

1. Press and hold PTT button.
2. Enter the desired number,







You can turn off the DTMF tone by disabling all radio tones and alerts

Security

You can enable or disable any radio in the system, For example, you might want to disable a stolen radio, to prevent the thief from using it and enable that radio, when it is recovered, NOTE: Performing Radio Disable and Enable is limited to radios with these functions enabled. Check with your dealer or system administrator for more information.

Radio Disable




Procedure:

1. Press   to Contacts and press  to select. The entries are alphabetically sorted.
2. Press   to the required alias or 10 and press  to select.

OR

Press   to Manual Dial and press  to select.

Key in the subscriber alias or ID and press,







3. Press   to Radio Disable and press  to select,
4. The display shows Radio Disable: <Subscriber Alias or ID> and the LED lights up RED,
5. Wait for acknowledgment,
6. If successful, a tone sounds and the display shows Radio Disable Successful.

OR

If not successful, a tone sounds and the display shows Radio Disable Failed.

Radio Enable




Procedure:

1. Press   to Contacts and press  to select. The entries are alphabetically sorted.
2. Press   to the required alias or ID and press  to select.

OR

Press   to Manual Dial and press  to select.

Key in the subscriber alias or ID and press.

3. Press   to Radio Enable and press  to select.
4. The display shows Radio Enable: <Subscriber Alias or ID> and the LED lights up RED.
5. Wait for acknowledgment.
6. If successful, a tone sounds and the display shows Radio Enable Successful.

OR

If not successful, a tone sounds and the display shows Radio Enable Failed.






Utilities

Locking and Unlocking the Keypad

You can lock your radio's keypad to avoid inadvertent key entry.

Procedure:














1. Press   to utilities and press  to select.

2. Press   to Radio Settings and press to select.
3. Press   to Keypad Lock and press  to select.
4. The display shows Keypad Locked and returns to the Home screen.
5. To unlock the keypad, press followed by *.
6. The display shows Keypad Unlocked and returns to the Home screen.


Turning Keypad Tones On or Off

You can enable and disable keypad tones if needed.

Procedure:

1. Press   to Utilities and press  to select.
2. Press   to Radio Settings and press  to select.
3. Press   to Tones/Alerts and press  to select.
4. Press   to Keypad Tones and press  to select.
5. The display shows Turn On. Press  to enable keypad tones. The display shows Keypad Tone On.

OR

The display shows Turn Off. Press  to disable keypad tones. The display shows Keypad Tone Off.

Setting the Squelch Level [Analog]

You can adjust your radio's squelch level to filter out unwanted calls with low signal strength or channels that have a higher than normal background noise.











Settings: Normal is the default. Tight filters out (unwanted) calls and/or background noise.

However, calls from remote locations may also be filtered out.

Procedure:

Press the programmed Squelch button to toggle squelch level between normal and tight.

OR

1. Press   to Utilities and press  to select.
2. Press   to Radio Settings and press  to select.
3. Press   to Squelch and press  to select.
4. Choose either Tight or Normal and press  to select. Screen returns to the previous menu.

Setting the Power Level

You can customize your radio's power setting to high or low for each channel.










Settings: High enables communication with radios located at a considerable distance from you.

Low enables communication with radios in closer proximity.

Procedure:

Press the programmed Power Level button to toggle transmit power level between high and low.

OR

1. Press   to Utilities and press  to select.
2. Press   to Radio Settings and press  to select.
3. Press   to Power and press  to select.
4. Change your current setting as prompted on the display.

5. Press **P4** to select a new power level.
Screen returns to the previous menu.

Voice Operating Transmission[VOX] Feature On or Off

This feature allows you to initiate a hands-free voice activated call on a programmed channel. The radio automatically transmits, for a programmed period, whenever the microphone on the VOX-capable accessory detects voice.

Pressing the PTT button during radio operation will disable VOX. To re-enable VOX, do one of the following:

- Turn the radio off and powering it on again, OR
- Change the channel via the Channel Selector Knob, OR
- Follow the procedure below.

NOTE: Turning this feature on or off is limited to radios with this function enabled, Check with your dealer or system administrator for more information

Procedure:

Press the programmed VOX button to toggle the feature on or off.

OR

1. Press **▲▼** to Utilities and press **P4** to select
2. Press **▲▼** to Radio Settings and press **P4** to select
3. Press **▲▼** to VOX and press **P4** to select.
4. The display shows VOX On, Press **P4** to disable VOX. The display shows VOX Off

OR

The display shows VOX Off, Press **P4** to enable VOX, The display shows VOX On.

Controlling the Display Backlight

You can enable or disable the radio's display backlight as needed. The setting also affects keypad backlighting accordingly

Procedure:

Press the programmed Backlight button to toggle the backlight settings.

OR

1. Press **▲▼** to Utilities and press **P4** to select
2. Press **▲▼** to Radio Settings and press **P4** to select
3. Press **▲▼** to Backlight and press **P4** to select
4. The display shows Auto On, Press **P4** to enable the display backlight, The display shows Backlight Auto On,

OR

The display shows Turn Off. Press **P4** to disable the display backlight. The display shows Backlight Turn Off.

The display backlight and keypad backlighting are automatically turned off if the LED indicator is disabled.














Turning the Radio Tones/Alerts On or Off

You can enable or disable the radio tones and alerts (except for the incoming Emergency alert tone) if needed.


Procedure:

Press the programmed All Tones/Alerts button to toggle all tones on or off.

OR

1. Press   to Utilities and press  to select.
2. Press   to Radio Settings and press  to select.
3. Press   to Tones/Alerts and press  to select.
4. Press   to All Tones and press  to select.
5. The display shows Turn On, Press  to enable all tones and alerts. The display shows All Tones On














OR

The display shows Turn Off, Press  to disable all tones and alerts, The display shows All Tones Off.

Turning the Talk Permit Tone On or Off

You can enable or disable the Talk Permit Tone if needed

Procedure:

1. Press   to Utilities and press  to select,
2. Press   to Radio Settings and press  to select.
3. Press   to Tones/Alerts and press  to select,
4. Press   to Talk Permit and press  to select.
5. The display shows Turn On. Press  to enable the Talk Permit Tone. The display shows Talk Permit Tone On.











OR

The display shows Turn Off, Press to disable the Talk Permit Tone, The display shows Talk Permit Tone Off


Turning the LED Indicator On or Off

You can enable or disable the LED Indicator if needed,

Procedure:

1. Press   to Utilities and press  to select
2. Press   to Radio Settings and press  to select.
3. Press   to LED Indicator and press  to select
4. The display shows Turn On, Press  to enable the LED Indicator, The display shows All LEDs On.

OR

The display shows Turn Off, Press  to disable the LED Indicator, The display shows All LEDs Off

The display backlight, buttons, and keypad backlighting are automatically turned off if the LED indicator is disabled




Turning the Introduction Screen On or Off


You can enable or disable the Introduction Screen if needed


Procedure:

1. Press   to Utilities and press  to select.

2. Press   to Radio Settings and press  to select

3. Press   to Intro Screen and press  to select.

4. The display shows Turn On, Press  to enable the Introduction Screen, The display shows Intro Screen On,
OR

The display shows Turn Off. Press  to disable the Introduction Screen. The display shows Intro Screen Off

The display backlight, buttons, and keypad backlighting are automatically turned off if the LED indicator is disabled




Accessing General Radio Information

Your radio contains information on the following:

- Radio ID
- Software Version
- Codeplug Version

Procedure:

1. Press   to Utilities and press  to select

2. Press   to Radio Info and press  to select.

3. Press   to My Number or Firmware Ver, Or CP Ver. and press  to select

4. The display shows the radio ID or the current firmware version or codeplug version

PROGRAMMING

Software

Programming software for the radio can be downloaded from the Connect Systems Site.

The link below will take you to the CSI site:

<http://www.connectsystems.com/>

This link will take you to the Connect Systems Software page. Note CSI has been making updates to their site, so this link might not work.

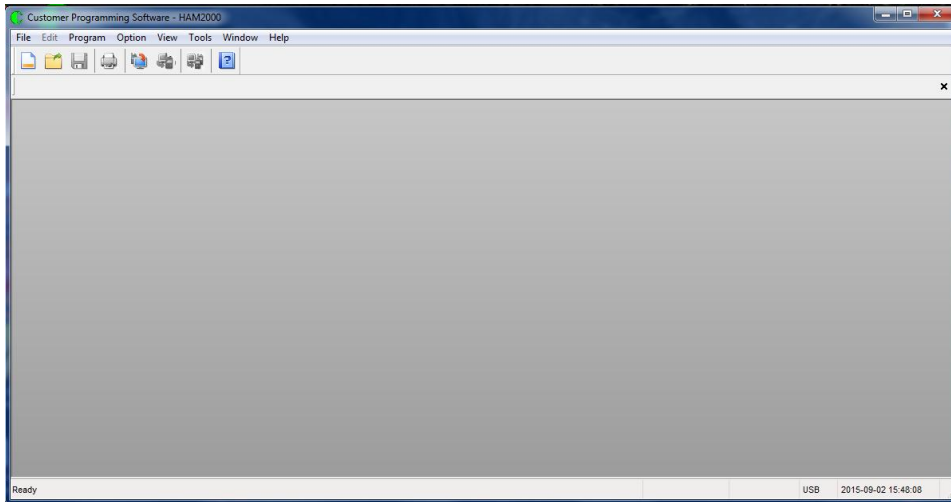
<http://www.connectsystems.com/software/software%20CS800.htm>

Be sure to download the “General Instruction and Information” document found there, and read first.

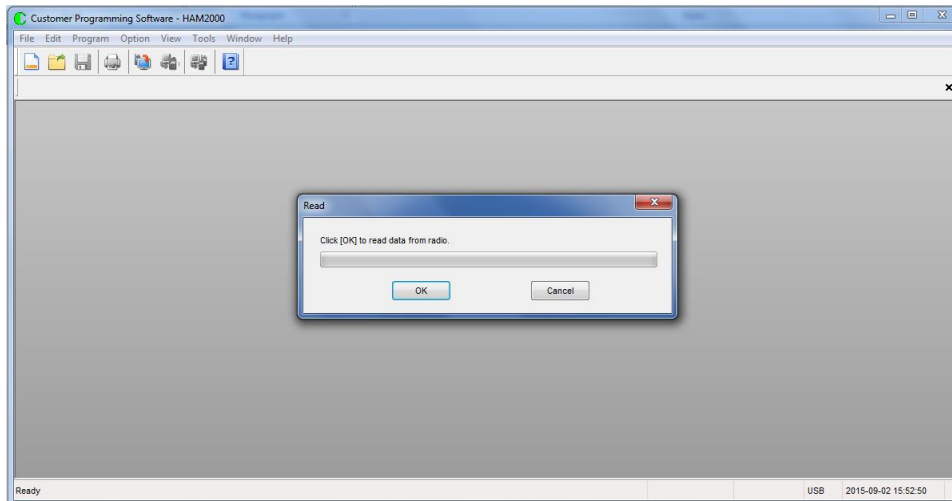
Firmware Updates

Determining Current Configuration

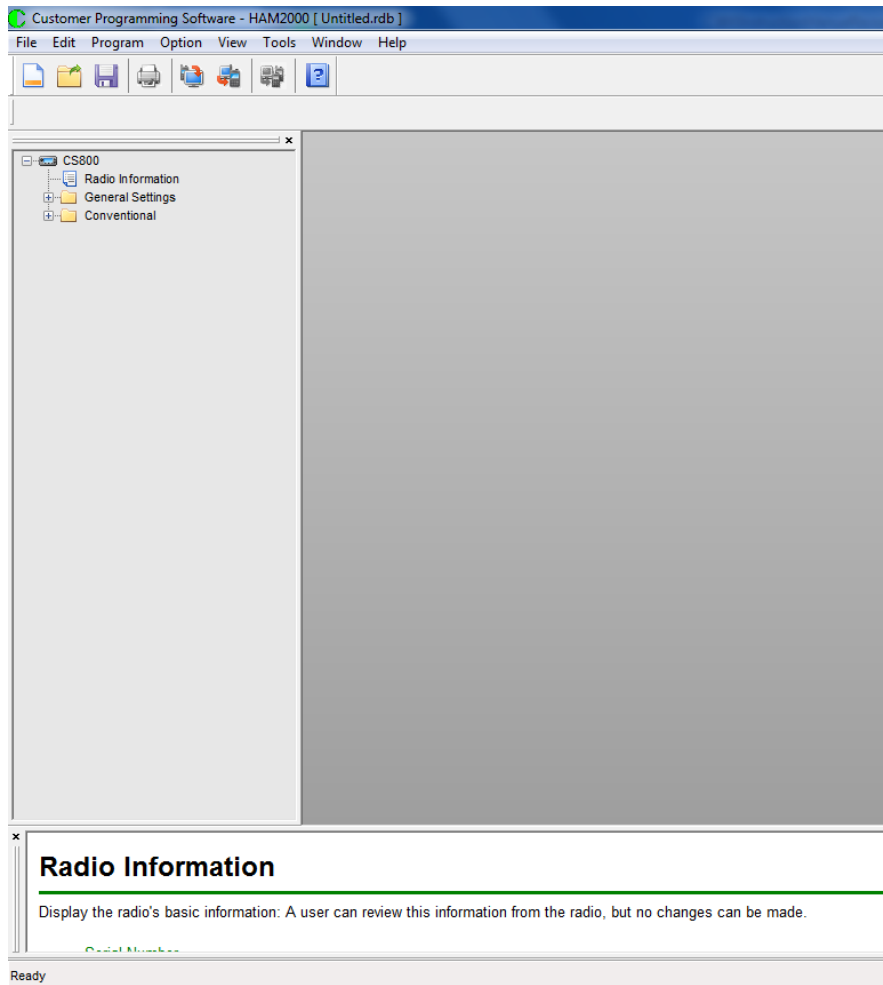
To determine if your radio requires an update, you can use the CPS programming software to read the radio's main body current configuration. Launch the CPS programming software. You will see a screen like the one shown below.



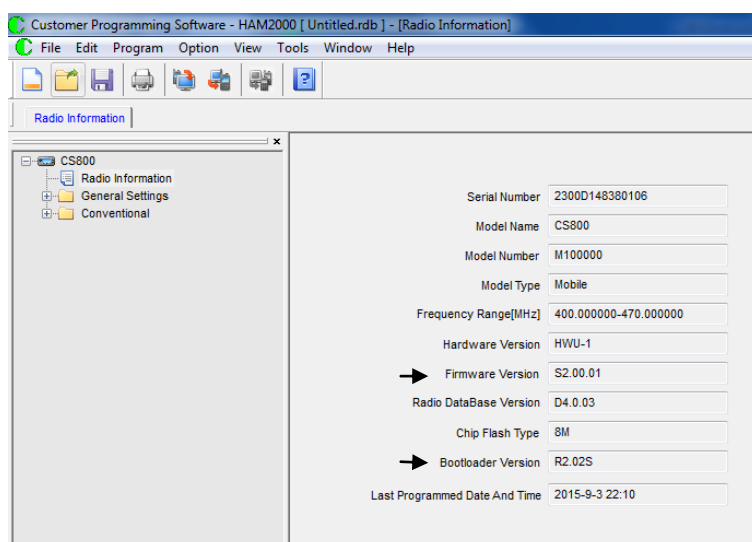
On the top menu ribbon, click on Program, a drop down menu will appear, click on the Read From Radio. You should see the following:



Connect your radio to your PC, and turn the radio on. Wait a couple of seconds for the radio to complete connection to PC. Click on the OK button in the pop up. The program will read in the contents of the radio. When completed it should say Read Successfully in a pop up window. Click the OK in the pop up window. You can now turn off the radio and disconnect from the PC. The CPS software screen should now show the following:



You can now access the current configuration of the radio by double clicking on the Radio information listed in the drop down menu on the left. Screen will show the configuration information similar to this:



The arrows point to the information you need to record.

To obtain the configuration of the front panel requires going to the Utilities menu on the radio. Turn on the radio and perform the following:

1. Press **P4** to access the menu
2. Press **▲ ▼** to Utilities and press **P4** to select
3. Press **▲ ▼** to Radio Information and press **P4** to select
4. Press **▲ ▼** to Front Panel Ver. and press **P4** to select
Record the version.

Firmware Update Files

When you go to the CSI site, and select software for the CS you will see a listing of firmware updates. Below is a screen shot of the site as an example of what you will see.

Update Details	General Instruction and Information
AUGUST 25, 2015 2000 Channels and 65536 Contacts MAIN RADIO CPS Version 4.00.10	AUGUST 22, 2015 GENERAL INSTRUCTION AND INFORMATION
AUGUST 22, 2015 2000 Channels and 65536 Contacts MAIN RADIO CPS Version 4.00.08 Firmware Version 2.00.01	AUGUST 22, 2015 GENERAL INSTRUCTION AND INFORMATION
AUGUST 12, 2015 1000 Channel and 1000 Contacts MAIN RADIO Firmware Version 1.01.05	AUGUST 12, 2015 GENERAL INSTRUCTION AND INFORMATION
AUGUST 12, 2015 1000 Channel and 1000 Contacts MAIN RADIO CPS Version 3.03.28 Flash Burn Version 1.10 Flash Burn Version 2.00 Firmware Version 1.01.04 Boot Loader Version 2.02 Prolific Driver Version 1.8.0 FRONT PANEL Firmware Loader Version 1.0 Firmware Version 1.00.02	AUGUST 12, 2015 GENERAL INSTRUCTION AND INFORMATION

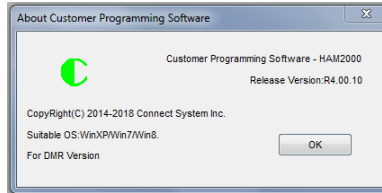
According to CSI, if your radio is more than one firmware version older than the latest version, you DO NOT have to do the intermediate firmware updates, however if the CPS version (the programming software) is at a newer version than what you have, you need to perform the CPS Upgrade. The instructions can be downloaded by clicking on the “GENERAL INSTRUCTION AND INFORMATION” indicated by arrow in above screen shot.

So for example, from the information shown at the CSI site, the latest configuration of a radio would be:

Firmware Version: 2.00.01
 Boot Loader Version: 2.02

So for this example, the information obtained from reading the information from the radio shows that the radio is at the current configuration, so no updates are required. If the radio had shown a firmware update listed in one of the earlier release dates, or a lower version of the Boot Loader, the radio requires an update.

To determine the version of the CPS software you have, launch the CPS software, click on the Help located on the top menu ribbon, then click the About, you should see a pop up like below showing the version you have.



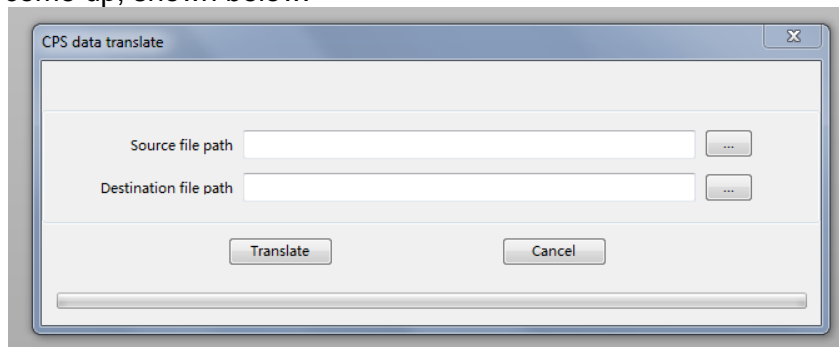
If the CPS upgrade is required, do the translate of your current code plug outlined in the CPS Upgrade section of this document, it will create a new code plug with a slightly different file name. DO NOT attempt to load the translated code plug into the radio until you have completed the actual firmware updates.

Update Procedure

Recommend printing out a copy of the “GENERAL INSTRUCTION AND INFORMATION” downloaded earlier. Follow the instructions to complete the updates.

CPS Upgrade

When upgrading to a new version of CPS be sure to translate your code plug from the previous version. To do this, open the new version of the CPS. Do NOT open your code plug file. Click on “Tools” in the top menu ribbon bar. Select “CPS data Translate”. Pop of menu will come up, shown below.



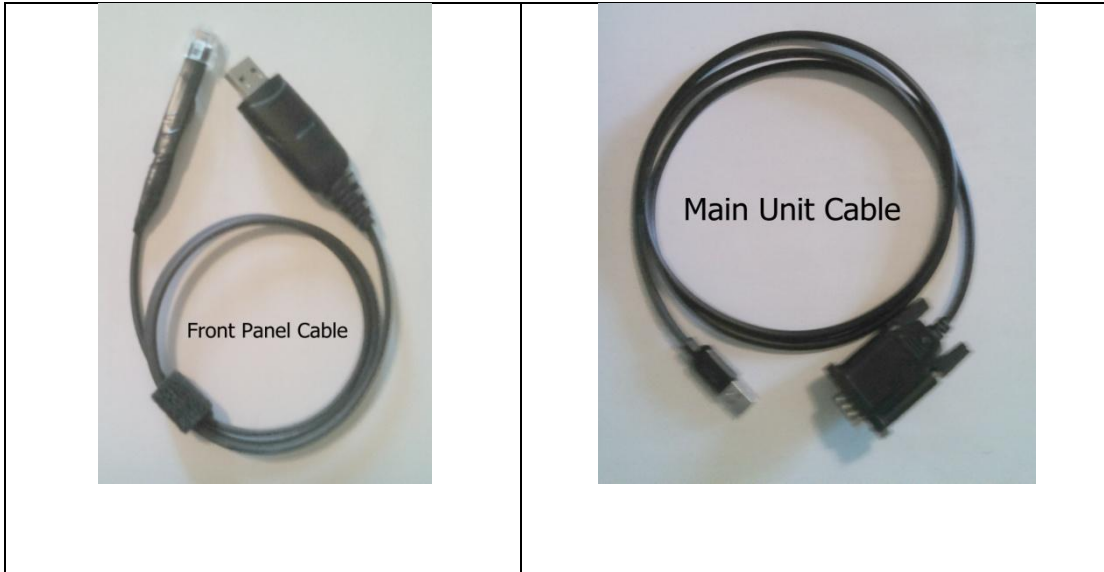
Click on the “...” button to the right of the Source file path box. Locate your code plug and open, it will show up then in the Source file path box. Do NOT type anything into the Destination file path box, instead just click on the Translate button, the file will be translated, and the new name will appear in the Destination file path. This will be the new code plug.

Programming Cables

The radio should come with 2 programming cables. One for the main unit, the other for the Front Panel. Most updates only require programming of the main unit.

Note: When programming the Front Panel is required, the programming cable for the front panel requires removal of the microphone, the programming cable plugs into that jack. To remove the microphone from the front panel, just slide back the rubber boot that is around the RJ 45 connector at the front of the radio.

The programming cable for the main unit plugs into the rear DB15 connector.



Separation Kit Instructions

The separation kit comes with 2 pads to place behind bezel for cushion if desired. Four mounting screws are supplied to mount the bezel and one cable to connect radio head to radio body.



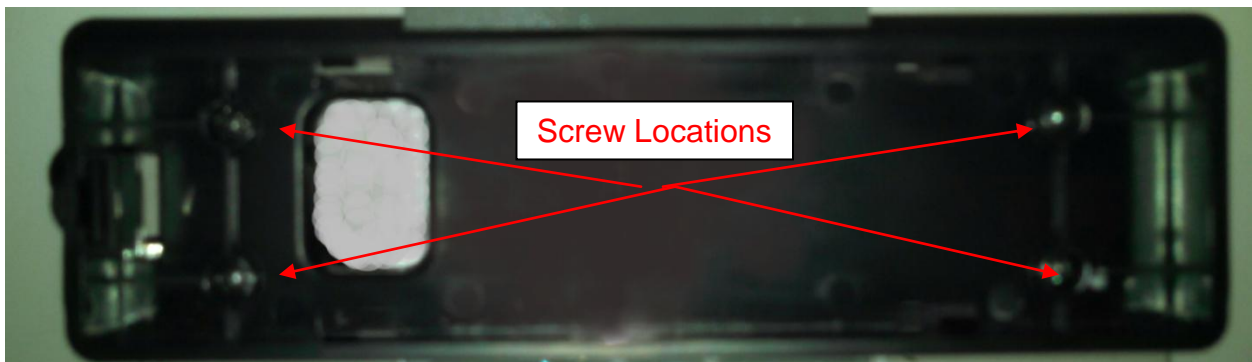
The head of the radio is removed from the body by pushing back on the release lever tab located on the left side of the radio, and then sliding the radio head out over the tab. Note, it takes a little bit of pull force to the side to get the head to slide off.



Once the radio head is removed, remove the small interconnect cable between the radio head and radio



. The bezel for remote mounting the head is still connected to the front of the radio by 4 screws, one in each corner. Remove these screws and front bezel will come off. Keep the 4 screws in a safe place to replace bezel later if needed. Could also put screws back into the radio body for safe keeping.



You can place the supplied pads to the back of the bezel to provide a cushion between it and the mounting surface. The Pads had small knock out holes for the screws to pass through.

Trouble Shooting

No	Problems	Solutions
1	The radio cannot be switched on or no display after switched on	Battery pack may not be installed properly. Reinstall the battery pack. Or Battery power may be insufficient. Recharge or replace battery pack.
2	The battery doesn't last long after charging	The battery life is finished. Replace with new battery pack.
3	Cannot talk to or hear other members in your group	Digital: Make sure the CC, ID Time Slot is correct Analog: Make sure the signaling is set correct Or Beyond the radio efficient communication range
4	Other voices from non-group members are heard on the channel	Analog: Change the CTCSS/DCS tone, and make sure change the tone on all radios in your group
5	Communication range is too small	1. Make sure the antenna is well connected 2. Make sure the antenna is the originally supplied one 3. Check if the battery power is in the normal state 4. Ask you local deler to adjust the squelch level
6	Unable to Transmit	1. Make sure the PTT button has been pressed completely 2. Battery power may be insufficient, recharge or replace battery pack 3. Transmitting frequency has not been set on the channel and the radio has been remote killed
7	Noise to Load	1. Battery power maybe insufficient, recharge or replace battery pack 2. Beyond the sufficient communication range.

Radio Specifications

Power Supply	13.6 VDC +/-20%
Frequencies – Full Bandsplit	400-470 MHz 136-174 Mhz
Number of Channels	1000 Channels
Maximum number of Zones	250 Zones
Maximum number of Channels per Zone	16
Channel Spacing	12.5/25kHz
Operating Temperature	-30°C to + 60°C
Dimensions with the remote head (HxWxD)mm	46x160x175
Weight (gm) not including installation holder	131.5g

Transmitter Specifications

Frequency Stability In operation temperature range, 25°C Reference	1.0 ppm
Power Output	5W(L), 25W(M), 45W(UHF)/50W(VHF)(H)
Modulation Limiting	±2.5kHz @ 12.5kHz ±5kHz @ 25kHz
FM Hum & Noise	-40dB
Conducted/Radiated Emission	-36dBm < 1GHz. -30dBm > 1GHz
Adjacent Channel Power	-60dB
Adjacent Transient Channel Power	-50dB
FM Modulation Mode	12.5kHz: 11KOF3E 25kHz: 16KOF3E
4FSK Digital Mode	12.5kHz (data only): 7K60FXD 12.5kHz (data + voice): 7K60FXE
4FSK Modulation Accuracy	5% @ 25°C, 10% @ extreme temperature
Nonactive Slot Power	-57dBm
Audio Response (300-3000Hz)	+1 ~ -3dB

Receiver Specifications

Analog Sensitivity	35µV/-116dBm (20 dB SINAD) 22µV/-120dBm (12dB SINAD)
Digital Sensitivity	3µV/-117.4dBm(BER 5%) 7µV/-110dBm (BER 1%)
Intermodulation	TIA603 70 dB; ETSI 65dB
Adjacent Channel Selectivity	TIA603C 65dB; TESI: 60dB
Spurious Rejection	TIA603C 75dB; TESI: 70dB
Blocking	84dB
Rated Audio	3W
Audio Distortion @ rated Audio	5%
Audio Response (300-3000Hz)	+1 ~ -3dB
Conducted Spurious Emission	-57 dBm , 1 GHz, -47 dBm > 1 GHz ETS 300 086