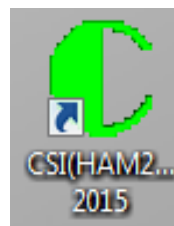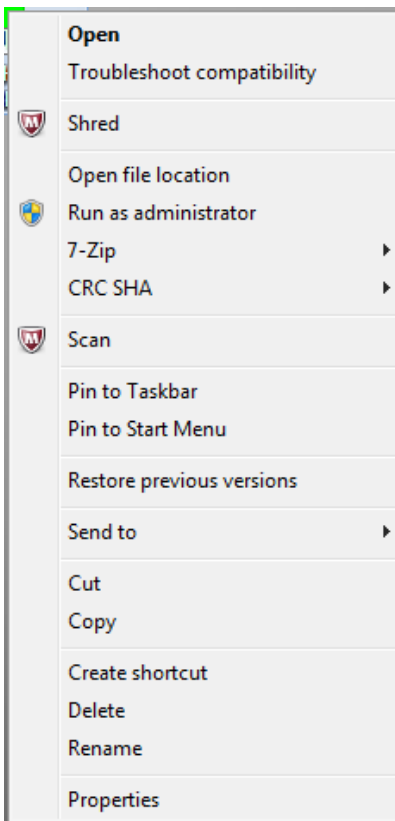# STARTING THE CPS FOR THE CS750/CS751 OR THE CS800/CS801

The next few pages was done on Windows 7 computer. A similar sequence would work on Windows XP, Windows Vista, Windows 8 and Windows 10. Some people have even been known to get it working on an Apple computer using "Parallels" and Linux using "Wine".
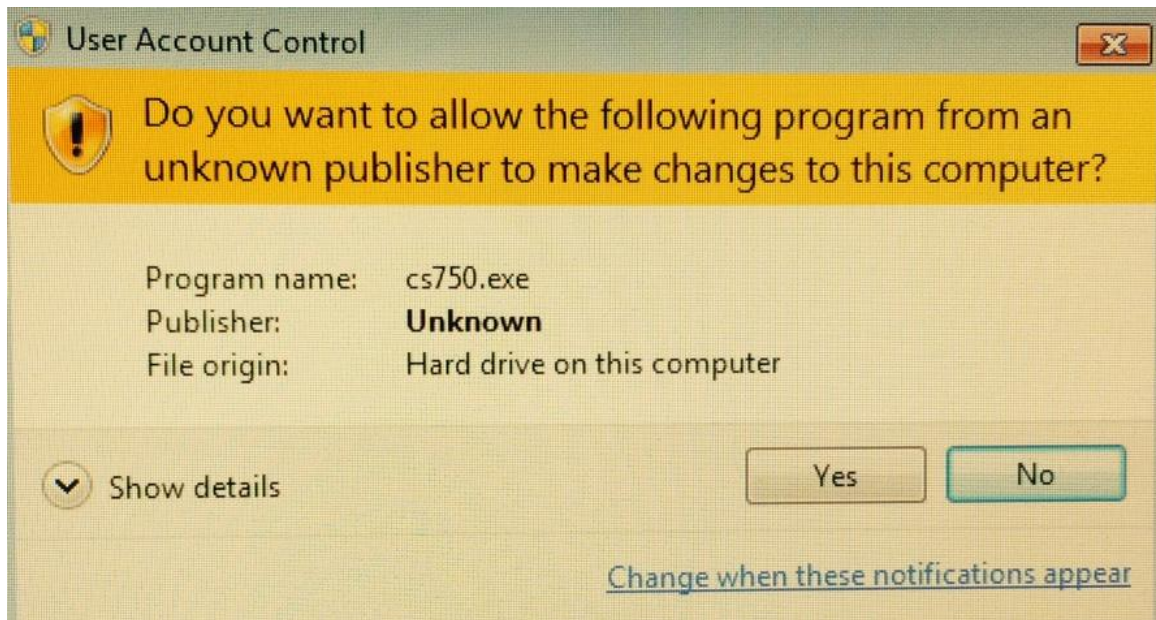
Connect Systems will not support CPS running on a MAC or using Linux!

On desk top of computer move mouse pointer over ICON shown below and right click a single time and you should get the following as show on the next page.

CSI(HAM2...
2015

Left click on "Run as administrator" and you should get the following:

User Account Control

Do you want to allow the following program from an unknown publisher to make changes to this computer?

Program name: cs750.exe
Publisher: **Unknown**
File origin: Hard drive on this computer

Show details

Yes   No

Change when these notifications appear

Left click on the "Yes" button and the program should start and you should get the following as shown on the next page.
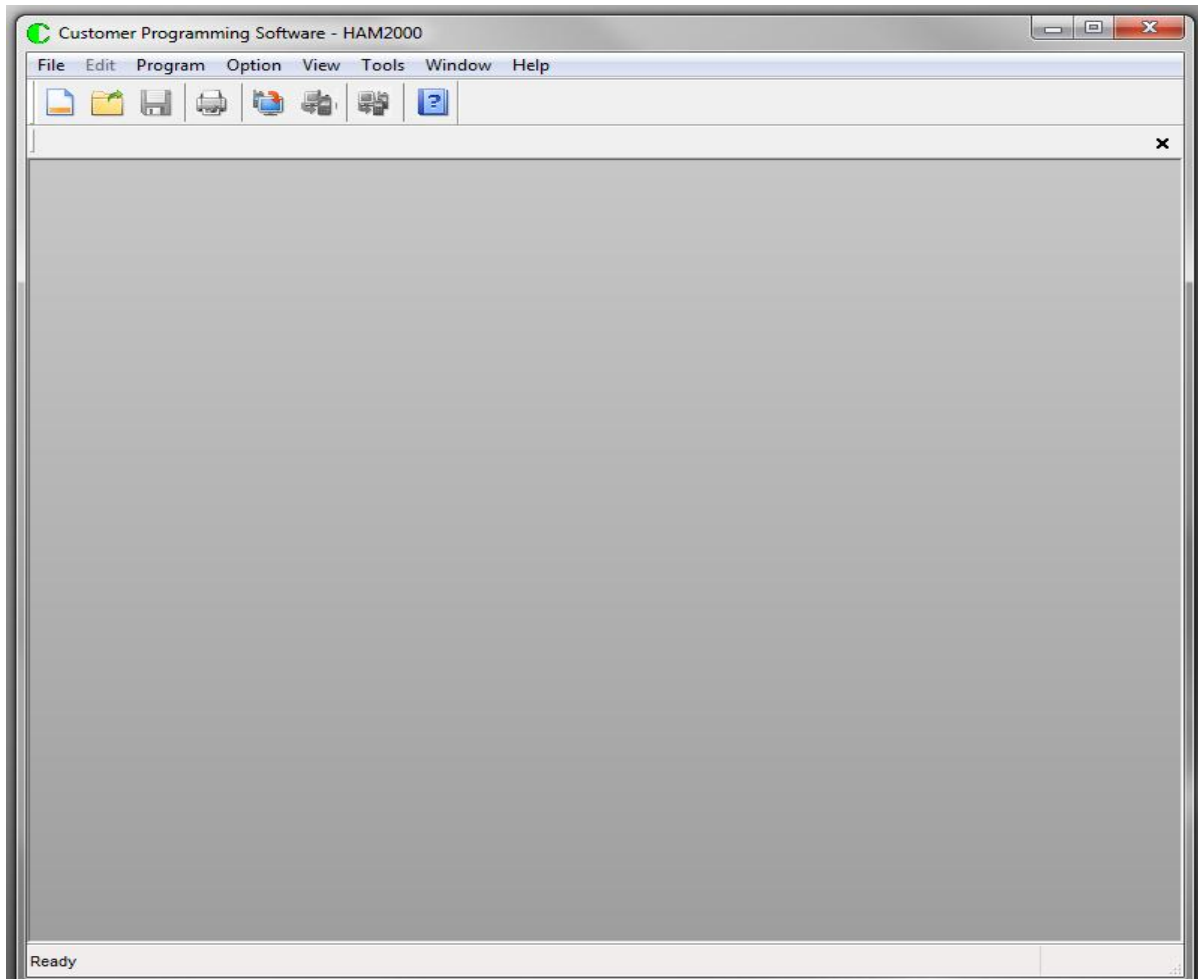
USING THE CPS IF YOU ARE VISUALLY IMPAIRED

This program is comptaible with most screen readers and is controlled mostly by the keyboard. The tab and shift tab keys is used to move the cursor to different parts of the screen in the order that makes most sense. The up and down keys are used for changing non numeric values in a field. If you are visally impaired and have a suggestion to make the program better, please do not hesitate to contact us.

USING THE CPS

The first thing you need to do is decide which radio you are trying to use. Your choices is the CS750 (400-470 MHz), CS751 (136-174 MHz), CS800 (400-470 MHz), or CS801 (136-174 MHz). Click on the file pull down menu followed by the "New" command and select one of the choices shown above.
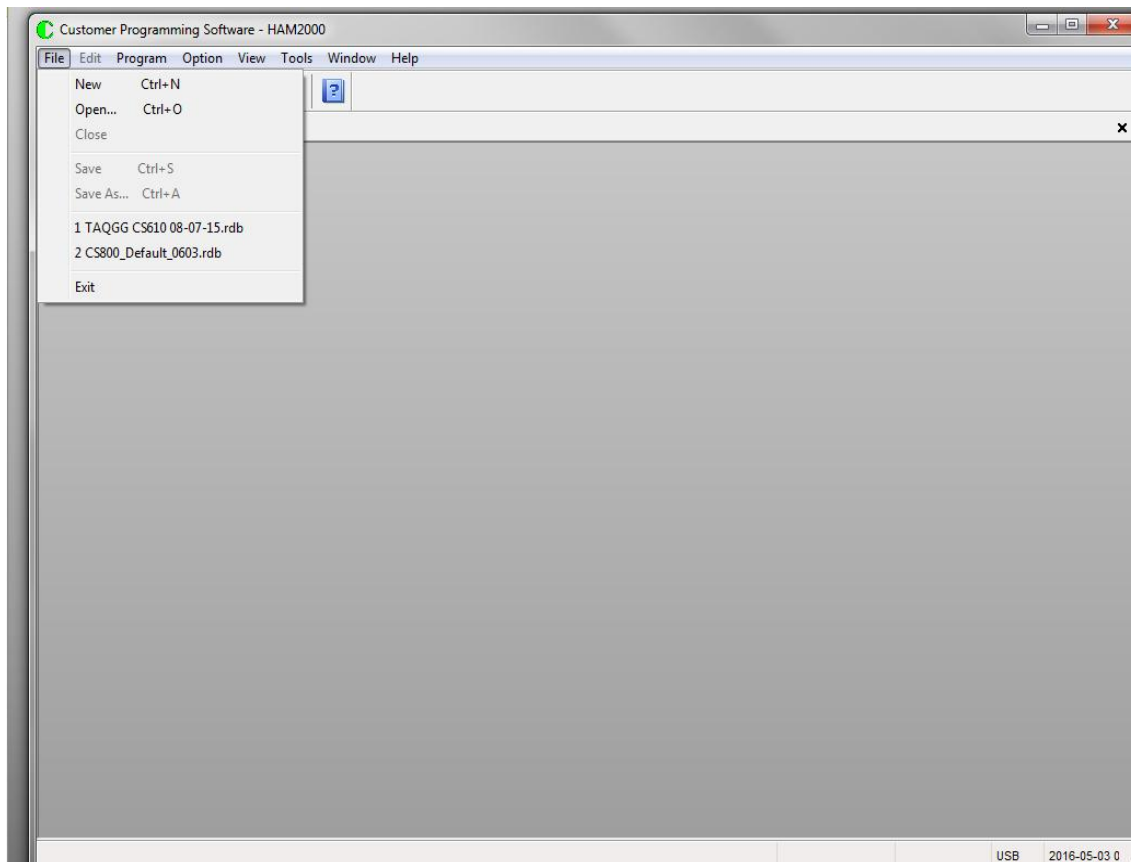
You will them get the screen as shown below. Press the OK button and you are now ready to do something useful.
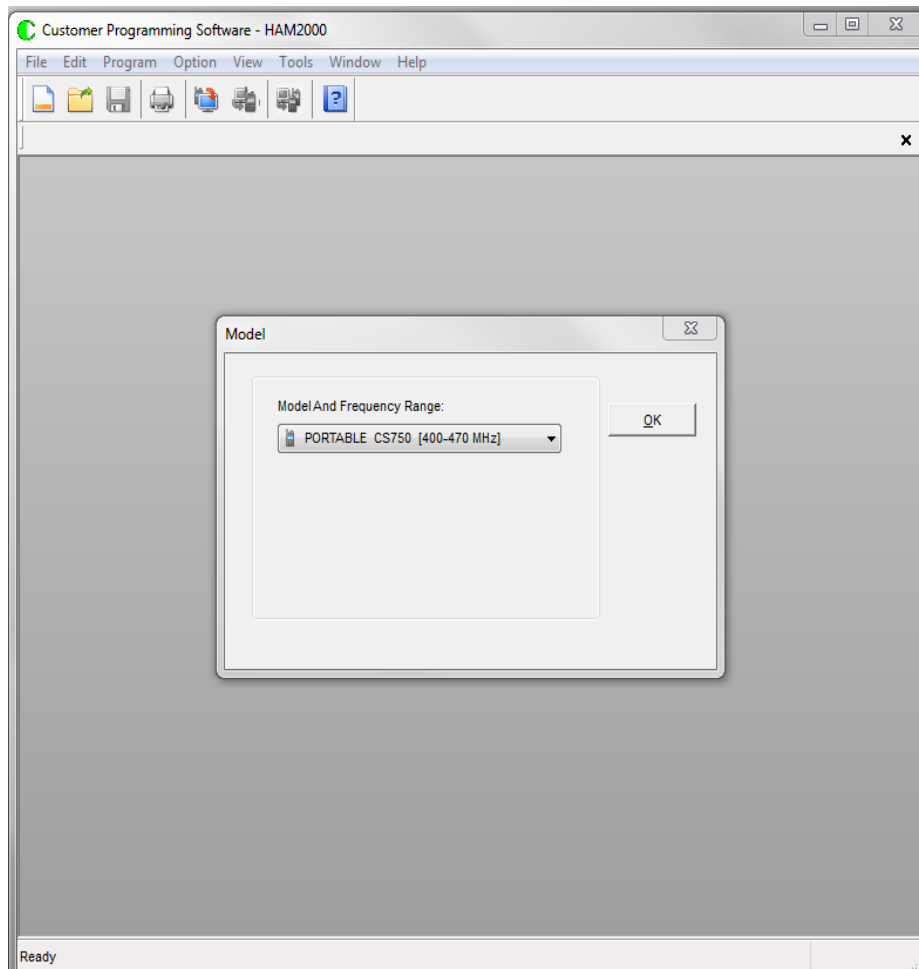
PULL DOWN MENUS

File Pulldown Menu
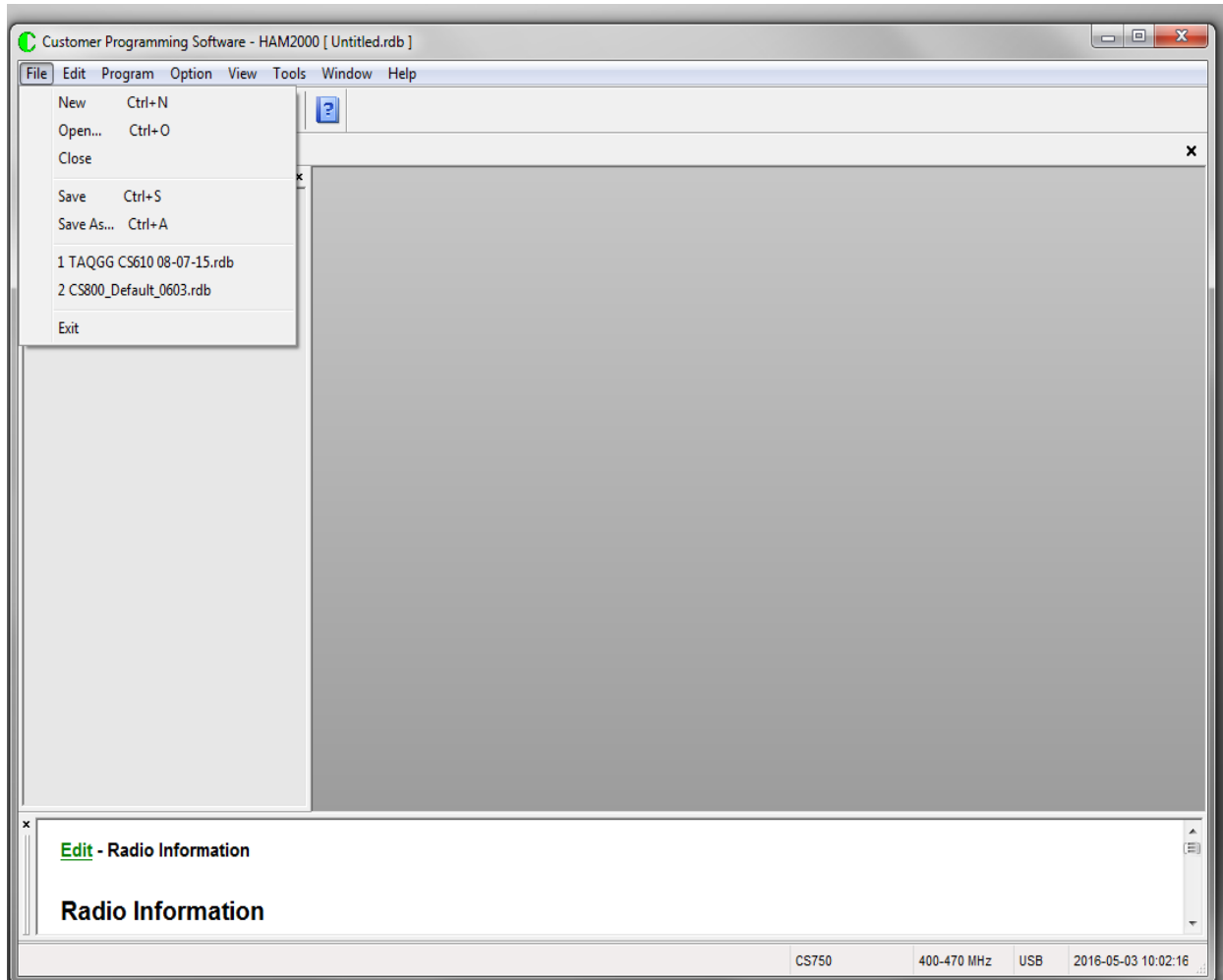
New

Create a configuration file for the radio.

After you click New from the File menu, the programming software will pop up a dialog box "All data will be initialized! Do you want to continue?".

After you click Yes, all data are reset to default value, but can be modified.

You may also click No to exit.

Open

Open a data file saved on any disk or media.

- The CPS displays a dialog window to alert user "To open a new file now, do you want to save changes to file?"
- • The CPS displays a new dialog window asking user to select target file if user clicks Yes .

The operation is cancelled if user clicks no.

Close

Close the opened data file.

Save

Save the data file. The CPS displays a dialog window asking user to select a path for the file.

Save As

Save the file to a designated path and rename.

Exit

Selecting **Exit** displays a dialog box to select whether to exit the program and save changes. Click **OK** to exit the program without saving changes.

Edit Pulldown Menu
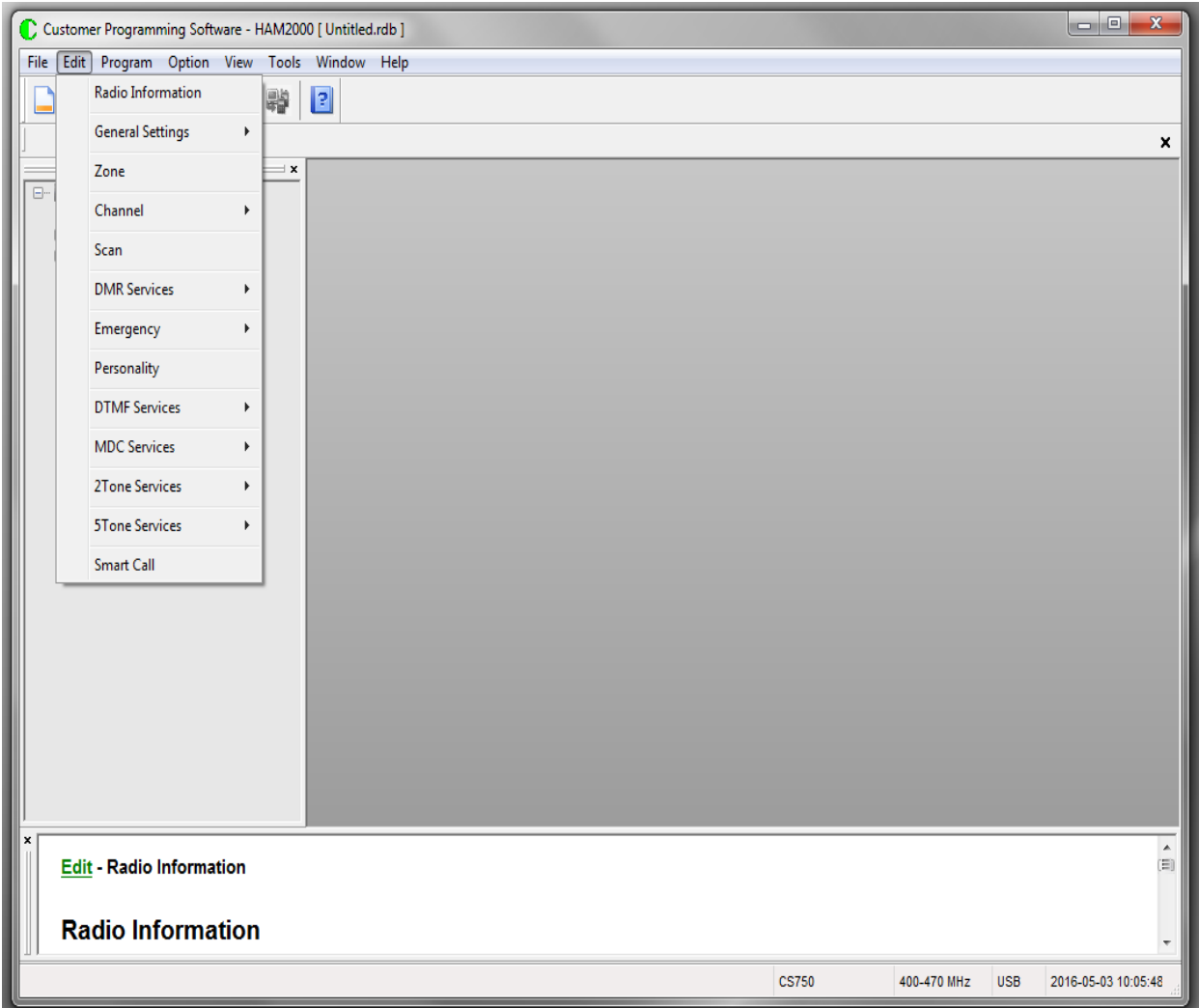
See programming section for this pull down menu.

Program Pulldown Menu
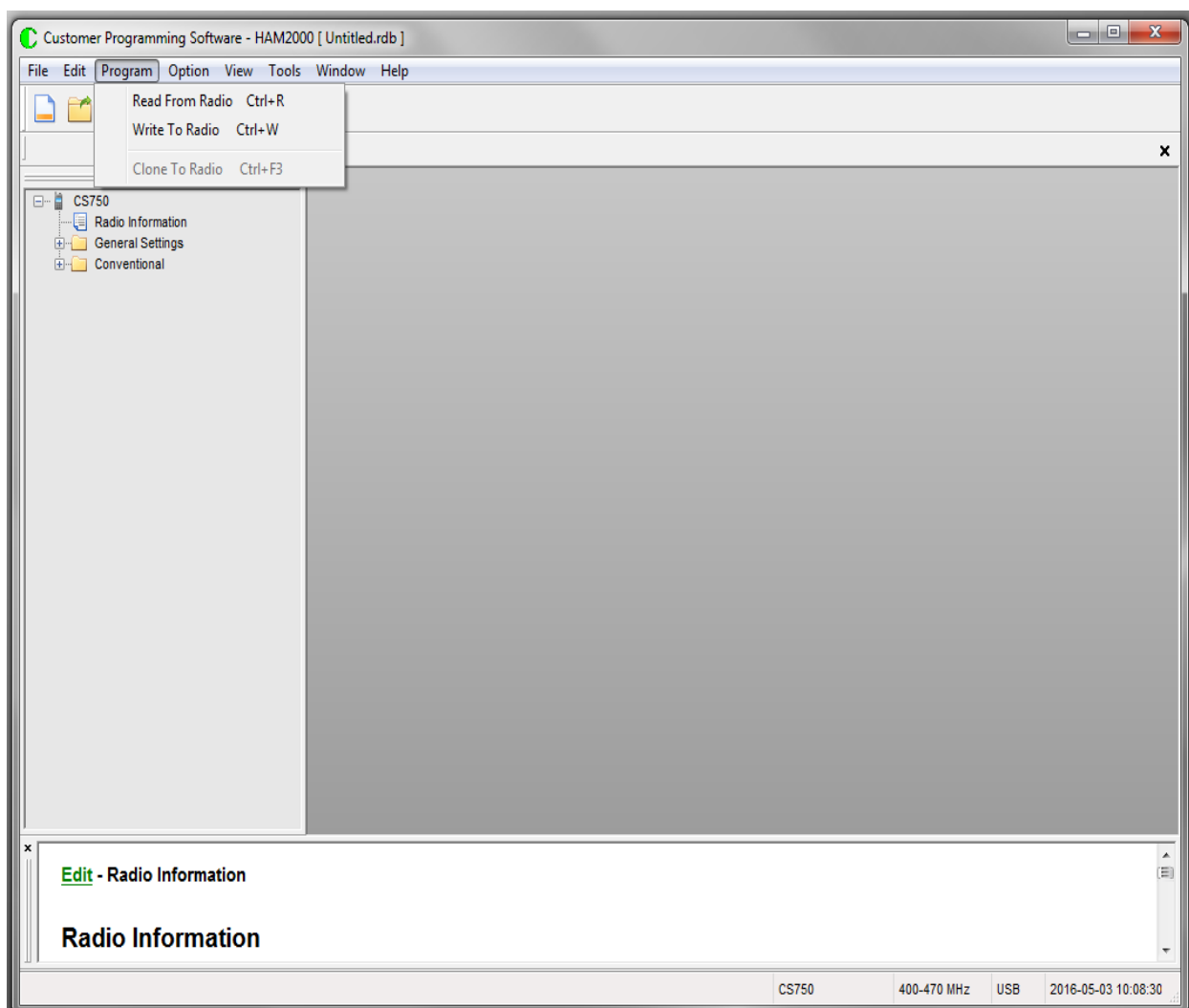
Read From Radio
This option instructs the PC to read data from radio.

Power on the radio and connect it to the PC, select the menu Program-> Read From Radio, and then a "Read" window displays. Click **"OK"** to begin reading.

During reading, a progress bar shows the reading process. When this process is finished, a "Read Successfully" window appears.

- The PC displays a message "Found New Hardware Wizard" when the radio is connected to PC for the first time, and you will be required to install the DMR USB driver.
- If the message: "Cannot open USB device. Please check all connections!" appears, please wait for seconds and then retry. If operation still fails, check whether the radio is powered on and connected to PC successfully.
- If the message: "Data error detected, please restart the radio." appears, please restart the radio and try again.
- If the message: "Please update CPS software!" appears, please contact your dealer to update the CPS software.
- If the message: "The CPS software cannot read or write the radio software version" appears, please check whether the CPS software matches the radio.
- If an incorrect password was given, please enter the correct one. Contact the dealer if you forget the password.
- Read operation can only be performed on one radio at a time.

Write To Radio
This option instructs the PC to write data to the radio.

Power on the radio and connect it to the PC, go to the menu bar->Program-> Write To Radio, and then a "Write" window displays. Click "OK" to begin writing. During writing, a progress bar works to indicate th" appears, please restart the radio and try again.

- If the message: "Please update CPS software!" appears, please contact your dealer to update the CPS software.
- If the message: "The CPS software cannot read or write the radio software version" appears, please check whether the CPS software matches the radio.
- If an incorrect password was given, please give the correct one. Contact the dealer if you forget the password.
- The correct frequency band is required for the radio before programming. To check the frequency band, go to "Radio Information -> frequency Range".
- Write operation can only be performed on one radio at a time.

Clone To Radio

This feature is not currently supported.

Option Pulldown Menu
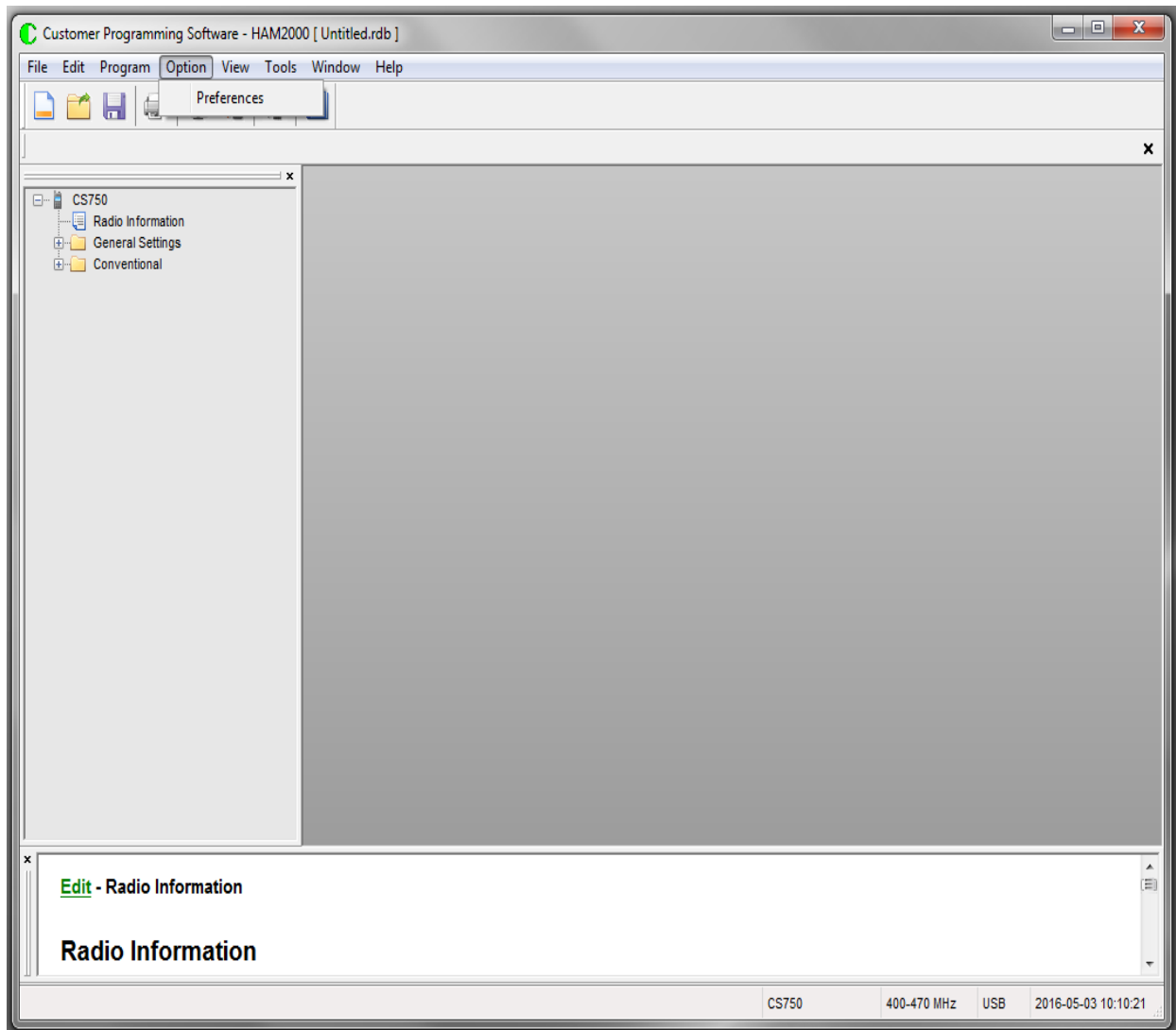
Preferences

Selects the language used. Only English is available at this time.
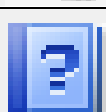
View Pulldown Menu
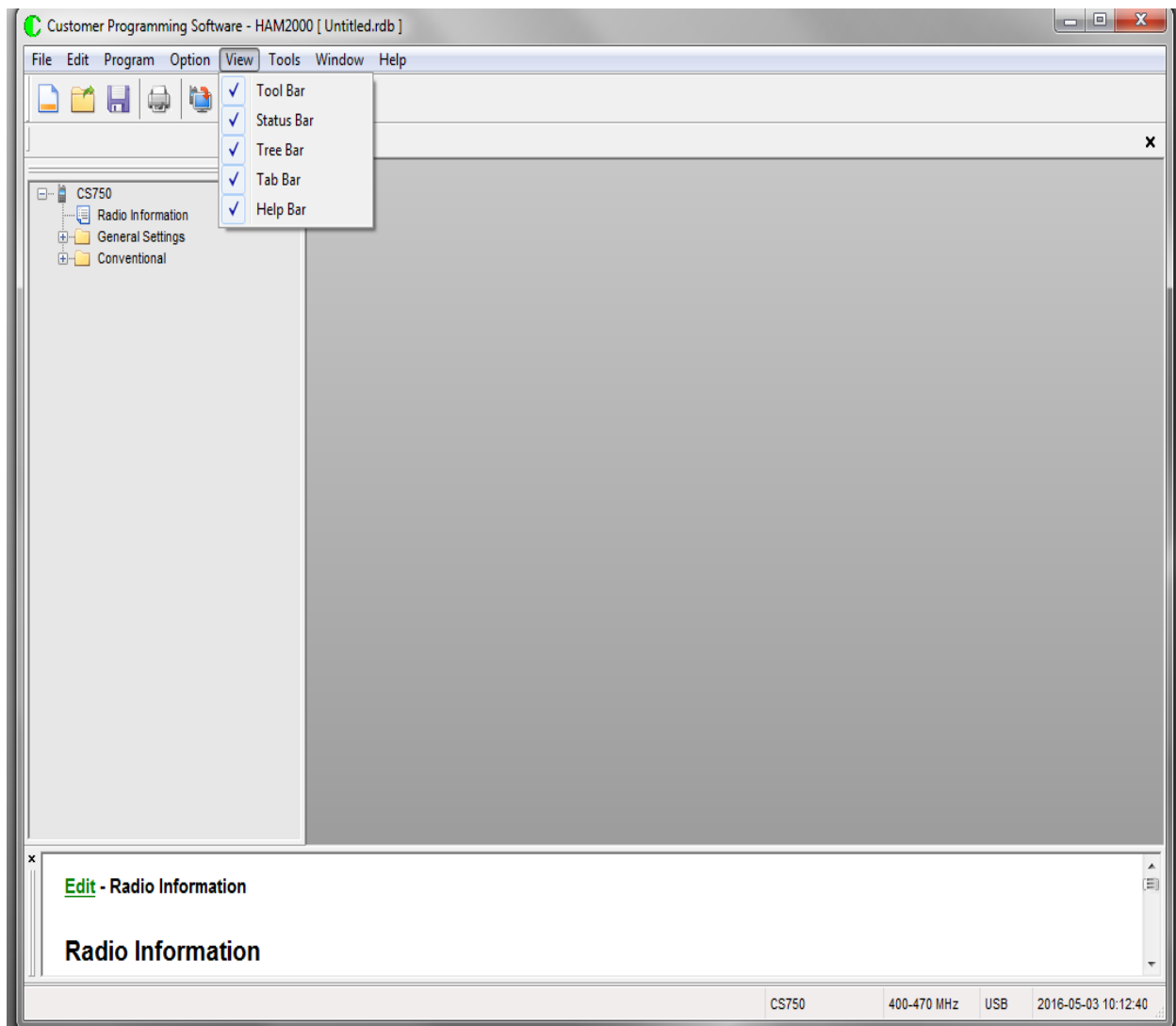
Tool Bar

The Tool Bar is located the below the menu bar. It arranges the frequently used operations by icon. The user select the icon to implement your desired operation quickly. The available Icons is shown below.

New	
Open	

Save	
Print	
Read	
Write	
Clone	
Help	

Status Bar
The Status Bar is located at the bottom of the screen. It displays the model, frequency, communication port, date and time.

Tree Bar
The Tree View is located below the menu bar. It arranges the programmable modules in a tree view. The user program the radio either from the menu "Edit" or directly from the tree view. For ease of operation, the tree view is recommended.

Tab Bar
The Tab bar is located below the tool bar. It lists the windows users have visited recently in order.

Help Bar
The Help Bar is located below the programming area. It shows what the selected parameter means, how to configure it and related notes (if any).

Tools Pulldown Menu
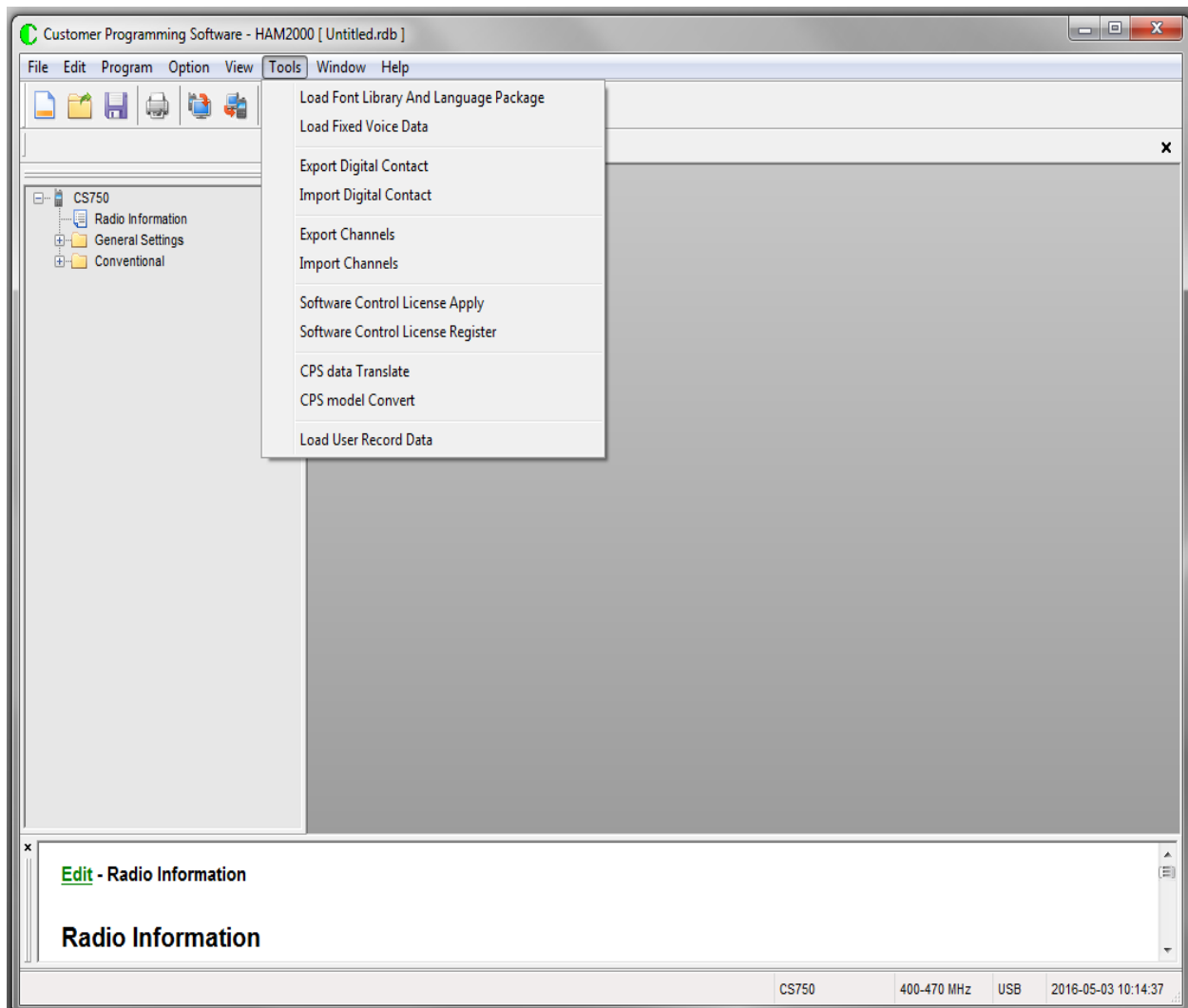
Load Font Library And Language Package
We provide the language package in .bin format, and you can select the correct file and then click "OK" to download the target language package to your model.

We provide the font library in .bin format, and you can select the correct file and then click "OK" to download the target font library to your model.

Load Fixed Voice Data
We provide the language package in .fv format. You can select the correct file and then click "OK" to download the target language package to your model.

Export Digital Contact

Exports the DMR contacts from the radio to the computer in .xls format.

Import Digital Contact

Imports the DMR contacts from the computer in .xls format to the radio

Export Channels

Import Channels

Software Control License Apply

Software Control License Register

CPS Data Translate

CPS Model Convert

Load User Record Data

Window Pulldown Menu
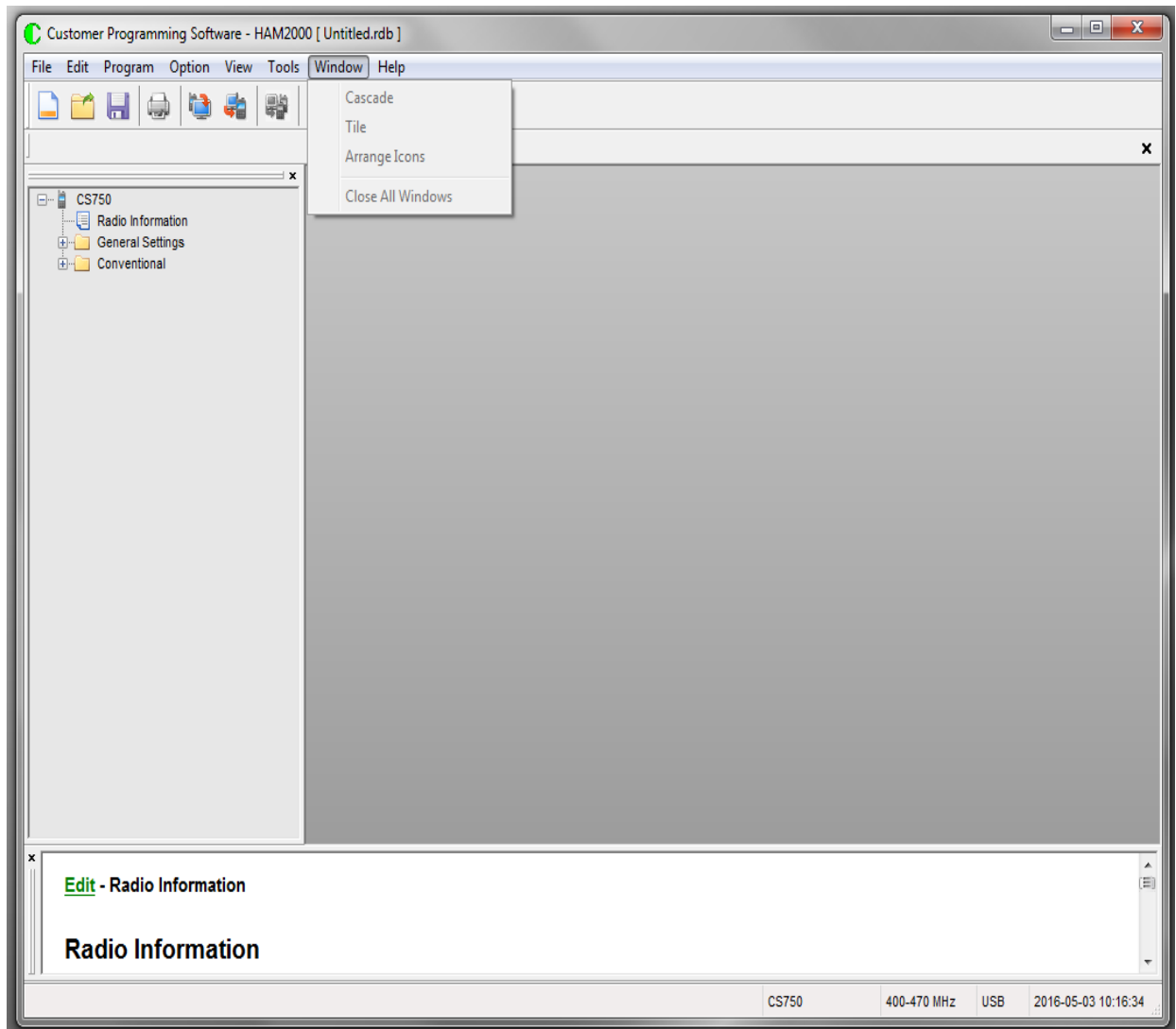
Cascade
This option allows the user to arrange multiple open windows in an overlapped fashion. The current window is highlighted and on the top.

Tile
This option allows the user to arrange multiple open windows in non-overlapped horizontal format. The current window is highlighted.

Arrange Icons
This option allows the user to arrange multiple open windows in icon style, the current window is highlighted.

Close All Windows

This option allows the user to close all the open windows using one click.

Help Pulldown Menu
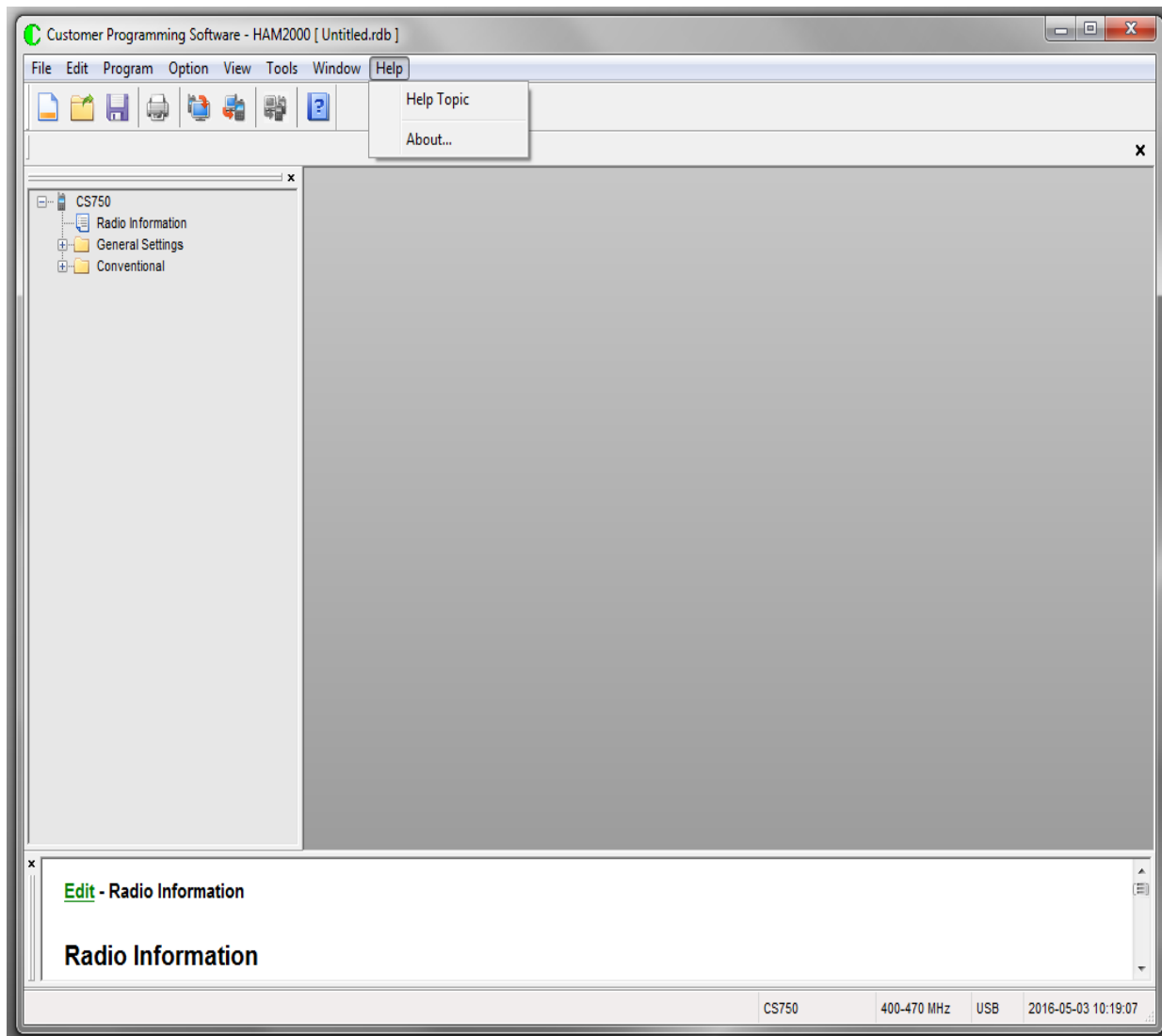
Help Topic

Gives an overview for the various Help topics in the CPS

About

Shows the Release Version for the program

KEYBOARD SHORTCUTS

The following table provides keyboard shortcuts for common operations to aid in using the CPS software.

Shortcut	Action
Space Bar	Used to toggle an option on or off when a check box is highlighted.
Ctrl+N	New
Ctrl+O	Open
Ctrl+S	Save
Ctrl+A	Save As
Ctrl+P	Print
Ctrl+R	Read
Ctrl+W	Write
Ctrl+F2	Add Zone
Shift+F5	Add Analog Channel
Shift+F6	Add Digital Channel
Alt+Up/Down	Used to unfold a drop-down list.
Ctrl+L	Add Scan List
Ctrl+M	Add Digital Emergency System
Ctrl+G	Add Rx Group List

Radio Information Screen

This screen is used to display the radio's basic information. A user can review this information from the radio, but no changes can be made.

Serial Number

This option displays a string of 16 alphanumeric characters that identifies the radio. Via the Serial Number, other radio information is available such as model, production data, etc.

Model Name

This option displays a string of alphanumeric characters and numbers to represent the model information of the radio.

Model Number

This option displays a string of alphanumeric characters and numbers to represent the radio model information. As an Examples, M100000 is the Display Model

Model Type

This option differentiates radios that with same Model Name with different application fields, such as: Portable, Mobile, Repeater, etc..

Frequency Range

This option indicates the radio's frequency range. The range is defined as being between, or equal to, the minimum and maximum frequencies, at which the radio is allowed to operate.

Hardware Version

This option displays the Hardware version programmed in the radio.

Firmware Version

This option displays the firmware version programmed in the radio.

Radio Data Version

This option indicates the configuration database that radio is using. Different data structures require special radio data version to match.

Chip Flash Type

This option indicates the chip flash type that radio is using. Different type require special radio programming software to match such as 1M, 4M, 8M, etc..

Bootloader Version

This option displays the bootloader version programmed in the radio.

Last Programmed data

This option indicates the last date on which the radio was programmed.

General Settings - Settings Screen

Basic

Radio Alias
The radio show the message on line 1 when powering on. The maximum length is 16 characters consisting of digits, symbols and English letters.

Power on Message
The radio show the message on line 2 when powering on. The maximum length is 16 characters consisting of digits, symbols and English letters.

Unique Radio ID
If enabled, the radio will have the same unique ID no matter on what channel.

Radio ID
Sets an individual ID that uniquely identifies the radio. This ID is used by other calling radios when addressing the radio, for instance, when making a private call or sending a text message. For Amateur use, this number is normally obtained from the DMR MARC Group.

Squelch Normal Level
This option allows users to set squelch normal level. This feature adjusts the squelch normal threshold of an incoming transmission.

Squelch Tight Level
This option allows users to set the squelch tight level. This feature adjusts the squelch tight threshold of an incoming transmission.

Radio Language
Users can select a display language from the languages available in the radio. Each radio or repeater can support one more languages as per application regions.

Monitor Type
Sets the Monitor mode to either Open Squelch or Silent. The user can access the Monitor feature by assigning a short or long programmable button press to its active level. This is a radio-wide feature.

Tx Preamble Duration (ms)
Preamble is a string of bits added in front of a data message or control message (Text Messaging, Location Messaging, Registration, Radio Check, Private Call, etc...) before transmission. This preamble prolongs the message in order to reduce the chances of the message being missed by the receiving radio.

Digital Rx Voice Gain Level
This option allows users to set the receving voice gain level for the digital channel. A large gain level may cause voice distortion on the digital channel.

TalkAround

Group Call hang Time (ms)
Sets the duration during which a radio will talk back to a received call or continue a transmitted Talkaround Group Call using the previously received or previously transmitted digital group ID. After expiration of the Talkaround Group Call hang timer, the radio will transmit using the TX Contact Name (digital group) specified for this channel in CPS.

Private Call Hang Time (ms)
Sets the duration the radio keeps the Talkaround Private Call setup after the user releases the Push-to-Talk (PTT) button. This is to avoid setting up the call again each time the user presses the PTT to transmit. During this time, other radios can still transmit since the channel is essentially idle. After the hang timer expires, the radio transmits using the TX Contact Name specified for this channel in CPS.

Repeater

Group Call Hang Time (ms)
Sets the duration during which a radio will talk back to a received call or continue a transmitted Repeater Group Call using the previously received or previously transmitted digital group ID. After expiration of the Repeater Group Call hang timer, the radio will transmit using the TX Contact Name (digital group) specified for this channel in CPS.

Private Call Hang Time (ms)
Sets the duration the radio keeps the Repeater Private Call setup after the user

releases the Push-to-Talk (PTT) button. This is to avoid setting up the call again each time the user presses the PTT to transmit. During this time, other radios can still transmit since the channel is essentially idle. After the hang timer expires, the radio transmits using the TX Contact Name specified for this channel in CPS.

Password Manager

Radio Lock (Power Up Lock)

When this option is enabled, users have to input the correct Radio Password to operate the radio normally.

Radio Password (Power Up Password)

This option allows users to create a password required for powering up a radio.

CPS Write Lock

This option allows users to configure the password to manage CPS write admission. When this option is checked, users can edit the CPS Write Password. Once configured, this password is required every time users write data to the radio.

CPS Write Password

This option allows users to edit the password for CPS Write Lock. A maximum of eight(8) digits can be configured for the password.

CPS Read Lock

This option allows users to configure the password to manage CPS read admission. When this option is checked, users can edit the CPS Read Password. Once configured, the password is required every time when users read data from the radio.

CPS Read Password

This option allows users to edit the password for CPS Read Lock. A maximum of eight (8) digits can be configured for the password.

Codeplug Lock

This option allows users to configure the password to manage codeplug admission. When this option is checked, users can edit the Codeplug Password. Once configured, this password is required every time users open the data from the local driver .

Codeplug Password
This option allows users to edit the password for Codeplug Lock. A maximum of eight(6) digits can be configured for the password.

Scan

Analog Hang Time (ms)
Sets the time the radio will remain on a digital scan list member following the end of the channel activity. The hang time prevents the radio from resuming scanning until the conclusion of the response to the initial call. The timer starts at the end of a transmission and resets whenever a valid activity is detected on the digital channel during the hang time.

Digital Hang Time (ms)
Sets the time the radio will remain on an analog scan list member following the end of the channel activity. The hang time prevents the radio from resuming scanning until the conclusion of the response to the initial call. The timer starts at the end of a transmission and resets whenever a valid activity is detected on the analog channel during the hang time.

Channel Display Mode

Auto Lock Keypad
This option allows users to enable/disable the Keypad Auto Lock feature.

Auto Lock Delay Time (s)
This option allows users to choose the Keypad Auto Lock Delay Time. The radio will lock the keypad automatically if no operation or carrier receiving is made within this time period.

Battery Save

Save Preamble
This feature enables or disables the battery saver preamble. The radio sends a preamble before each transmission to enhance the ability of receiving radios in battery saver mode to synchronize in preparation for transmissions; reducing the occurrence of late-entry. To avoid interoperability issues, it is recommended that all radios in a system share the same setting for this field. The value of this field does not affect Capacity Plus channels. This is a radio-wide feature.

Save Mode Receive
Enabling this feature causes an idle radio to automatically enter battery saver mode where it places certain radio functions on standby. After a certain duration or when there is any user button action, the radio returns to normal operation and checks the channel for incoming calls. If no calls are detected, it returns to the battery saver mode. While results vary across battery chemistry and user conditions, battery saver can deliver about a 10% improvement in battery life, but also causes a delay in response time.   When this feature is enabled, it is important to note that for the transmitting radios, there will be a slight delay in call setup (in the range of milliseconds) when pressing the Push-to-Talk (PTT) button. For the receiving radios, there may be an increase in late entry due to radios in battery saver mode having less opportunity to properly synchronize. This may cause the radios to miss the initial second of some audio transmissions in poor radio frequency (RF) conditions. This, however, will not be experienced in good RF coverage. Although they are important to note, these delays are considered minor versus the 10% improved battery life, therefore it is recommended to enable battery saver mode for all radios. This is a radio-wide feature.

Power-On Screen

Channel Display Mode
This option allows users to set the channel display mode.

Power Up Designated Zone
The option allow users to set the current zone when powering on.

Designated Home Zone
The option allow users to design the home Zone when press the programmed button.

Designated Home Channel
The option allow users to design the home channel when press the programmed button.

Miscellaneous

Tx Contact Strip Rx Group
This option allow users to enables or disables the tx contact strip from rx group list feature.

Channel Knob/Switch Disable
For portables, this option allow users to enables or disables the Channel Knob Disable feature, If checked, users can not switch channels through knob.

For mobiles, this option allow users to enables or disables the Channel Switch Disable feature, If checked, users can not switch channels through programmable buttons.

Power Up Designated Zone
If the Channel Knob is disabled, users must to set the current zone when powering on.

Power Up Designated Channel
If the Channel Knob is disabled, users must to designed a channel when powering on.

Enhanced Channel Access
Allows the radio to talk back to itself. Used when you want to do parrot testing. When Checked, the radio will receive the call except its own radio id. If unchecked, the radio will receive the call including its own radio id.

General Settings – Menu

Menu is the tool used to sort the functions available in the terminal. Users can use it to operate and manage their desired functions. The first-level menu entries are shown below:

Supplement

Call Alert

This option allows users to send an Alert Call to a private contact using the menu.

Radio Check

This option allows users to check a radio by menu operations ,e.g. enter the corresponding menu and send out a private contact.

Radio Disable

This option allows users to disable a radio by menu operations ,e.g. enter the corresponding menu and send out a private contact.

Radio Enable

This option allows users to enable a radio by menu operations ,e.g. enter the corresponding menu and send out a private contact.

Remote Monitor

This option allows users to remotely monitor a private contact using the menu.

Contact

Contact

This parameter decides whether to include Contact on the menu. The radio user can access Contact List or make a call via the menu.

New Contact

Allows the user to enable or disable new contact of the radio menu

Manual Dial

Allows the user to enable or disable manual dial of the radio menu.

Phone Manual Dial

Allows the user to enable or disable phone manual dial of the radio menu.

Edit Contact

Allows the user to enable or disable phone manual dial of the radio menu.

Delete Contact

This option allows the user to include the Delete Contact menu in the radio. The radio user can delete the contact using the menu.

Program Key

Allows the user to enable or disable the Program Key menu in the radio. The Program Key feature allows the user to associate a call to the number buttons on the radio keypad (1-9 and 0). When the user long presses these buttons in the home screen, the associated call entry will be prompted. The supported call types are Group, Private, or All Call calls in Digital or Capacity Plus mode. This is a radio-wide feature.

Scan

Scan

This parameter decides whether to include Scan on the menu. The radio user can set related parameters via the menu, such as TSCC Scan and Background Scan

Scan on/off

This option allows users to toggle Scan feature between On and Off using the radio menu.

Edit List

This option allows users to edit the Scan List using the radio's menu. Under this option, users can perform these operations:

- to view a scan list
- to change scan priority
- to add or delete a member

Message

Inbox

This parameter decides whether to include Message on the menu. Users can configure the following basic parameters:

- Sent Items
- Drafts
- Quick Text
- Write
- Forward
- Reply

Sent items

This parameter decides whether to include Outbox on the menu. The Outbox can automatically save up to 50 last sent messages. In addition, the radio user can re-send or forward these messages in the Outbox via the menu

Draft Box

This parameter decides whether to include Drafts on the menu. The radio user can save the current editing message in the Drafts, or re-edit and send these messages.

Quick Text

This option allows users to access the Quick Text feature where the predefined text templates are saved (maximum of 25 items). Users can choose to insert any of the templates when creating a new message.

Write

This option allows users to create a new message using the radio's menu. Each message contains up to 256 characters. For the created messages, users can to send it or save it to the radio's memory.

Forward

This option allows the user to forward a message to others.

Reply

This option allows users to reply directly to the message sender.

Menu

Menu Hang Time

This parameter allows users to define the amount of time that the radio remains in the menu mode. The counter will be activated after the radio enters the menu.

In the event of no operation (e.g. key press) within the preset time, the radio will exit the menu automatically.

Call Log

Missed
Allows the user to track the last ten incoming private calls that the user missed or failed to respond. The user accesses the call log via the menu. This log also provides a quick way for the user to initiate a private call.

Answered
Allows the user to track the last ten incoming private calls that the user answered. The user accesses the call log via the menu. This log also provides a quick way for user to initiate a private call.

Outgoing
Allows the user to track the last ten phone call numbers that the user initiated and provides easy redial access. The user accesses the call log via the menu. This log also provides a quick way for the user to initiate a phone call.

Utilities

Radio Setting
This parameter decides whether to include Settings on the menu. The radio user can make basic settings or view device information via the menu.

Talkaround
Allows the user to set the radio in Talkaround mode via the menu. Talkaround mode is required in the absence of a repeater.

Tones/Alerts
Allows the user to toggle all the tones and alerts on or off via the menu.

Power
This option allows users to toggle the transmit power between High and Low from the radio's menu.

Backlight
This option allows users to control the backlight using the menu.

Intro Screen

Allows the user to enable or disable the Introduction Screen upon radio power up via the menu. When enabled via the menu, the Radio Name shows as the welcome text when the radio powers up.

Keypad Lock

Allows the user to toggle the keypad lock on or off via the menu.

Led Indicator

This parameter decides whether to include LED on the menu. The radio user can control LED via the menu.

Squelch

Allows the user to access the Squelch feature to select between Normal or Tight Squelch via the menu.

VOX

Allows the user to toggle the VOX (Voice Activated Transmit) feature between on and off for the current channel via the menu. VOX enables the radio to automatically transmit whenever its microphone on the VOX-capable accessory detects voice. This is a channel-wide feature.

Lone Worker

The Lone Worker feature, when enabled, causes the radio to automatically transmit an alarm if the radio user/operator does not react to reminder beeps which the radio periodically generates. Before this feature will function, it must be programmed by your radio dealer and it must be enabled.
Radio user/operator reaction is accomplished by simply pressing any radio key or by rotating a radio knob before a programmed reminder timer expires. Either reaction will reset the programmed reminder and response timers, thus starting a new response period of time. The response timer is typically programmed for many minutes or hours (255 minutes maximum), and the reminder timer is typically programmed for several seconds to a minute (255 seconds maximum).
If no reaction is taken when the radio begins beeping and the response timer is allowed to expire, the radio automatically enters the programmed emergency mode and if the selected channel is programmed for Alarm or Alarm with Call emergency mode operations, it immediately begins alarm transmissions on the selected channel, or on a channel pre-assign for emergency communications.

However, the radio does not transmit if the selected channel is not programmed for Alarm or Alarm with Call emergency mode operations.

Man Down
Users can enable or disable the Man Down feature using the menu.

Password and Lock
To set whether to allow the users to configure the power-up password via the menu.

Encrypt
This option allows users to enable or disable the Encrypt feature using the menu.

Channel Display Mode
This option allows users to choose a channel display mode (alias or frequency)of home screen.

Language
This option allows users to choose a language from the menu.

Zone

Zone
This option allows users to organize channels conveniently. Each zone can support up to 16 channels. If more than one zone is programmed into the terminal , the user can change the zone via the programmable keys or menu (if the zone menu option is checked and zone programmable buttons is set in CPS). Available options under Zone are:

- Zone Alias (Zone)
- Allow add same channel to zone members
- Available
- Members

General Settings – Microphone/VOX

Microphone

Internal Mic Gain Level
This option allows users to set the internal microphone Gain Level,A large microphone gain may cause voice distortion.

External Mic Gain Level
This option allows users to set the external microphone Gain.

VOX

VOX Sensitivity
This feature adjusts the VOX sensitivity level. Of the six available levels, Level 1 is the most sensitive level, while level 6 is the least sensitive level. VOX sensitivity should be configured properly to avoid situations where VOX is frequently triggered unintentionally or where it is difficult to trigger VOX. Several factors should be considered when configuring this feature, such as the type of accessory used, the environment in which the radio performs, the radio user's regular speech volume, etc.

VOX Hold Time (ms)
After the VOX function is enabled and the user ceases to speak, the radio will remain in TX mode for the period of time defined here.

General Settings – Buttons

This part allows users to assign your desired features as shortcut to some keys of the radio. The programmable buttons vary with different radios. Every key corresponds to two kinds of operations: long press or short press. They can be associated to different features or the same feature.

Buttons

TK Short
This option allows users to set which function to access by pressing the top orange key for a time defined by less than the Long Press Duration.

SK1 Short
This option allows users to set which function to access by pressing the top side key for a time defined by less than the Long Press Duration.

SK2 Short
This option allows users to set which function to access by pressing the bottom side key for a time defined by less than the Long Press Duration.

TK Long
This option allows users to set which function to access by pressing the top orange key for a time defined by greater than the Long Press Duration.

SK1 Long
This option allows users to set which function to access by pressing the top side key for a time defined by greater than the Long Press Duration.

SK2 Long
This option allows users to set which function to access by pressing the bottom side key for a time defined by greater than the Long Press Duration.

Navigation Buttons

OK Key Assigned
This option allows you to assign the "O" key as a main menu key or programmable button.

NAV OK Short

This option allows users to set which function to access by pressing the "O" key for a time defined by less than the Long Press Duration. To use this feature the OK Key Assigned parameter must be set to programmable button.

NAV Cancel Short

This option allows users to set which function to access by pressing the "C" key for a time defined by less than the Long Press Duration.

Nav Up Short

This option allows users to set which function to access by pressing the "<" key for a time defined by less than the Long Press Duration.

Nav Down Short

This option allows users to set which function to access by pressing the ">" key for a time defined by less than the Long Press Duration.

NAV OK Long

This option allows users to set which function to access by pressing the "O" key for a time defined by greater than the Long Press Duration. To use this feature the OK Key Assigned parameter must be set to programmable button.

NAV Cancel Long

This option allows users to set which function to access by pressing the "C" key for a time defined by greater than the Long Press Duration.

NAV Up Long

This option allows users to set which function to access by pressing the "<" key for a time defined by greater than the Long Press Duration.

NAV Down Long

This option allows users to set which function to access by pressing the ">" key for a time defined by greater than the Long Press Duration.

Durations

Long Press Duration (ms)
Sets the duration a button is required to be pressed (and held down), for it to be interpreted as a long press. This duration also controls the long press operation of the button assigned to the Emergency feature. This is a radio-wide feature.

Long Press Duration for Emergency Off (s)
This option allows users to set how long the Emergency key should be pressed and held down to exit from Emergency mode.

General Settings - One Touch Call

This is a shortcut way for the radio user to make calls or send messages. By pressing a programmed One Touch Call key, the radio user can make a call or send a message to the predefined contact.

One Touch Call

Type
This parameter allows you to make a call to the predefined contact or access the predefined menu directly by pressing the programmed One Touch Call/Menu key.

Call Mode
Allows the user to select the operation mode for the call member selected in the Call column

Call List
Allows the user to select the operation mode for the call member selected in the Call column.

Call Type
This feature allows the user to select a call type for the call member that was selected in the Call column.

Text Message
Allows the user to select a Quick Text. The selection for these messages comes from Text Messages. This option is available only when the Call Type is set to Message.

Number Key Quick Access

Type
This parameter allows you to make a call to the predefined contact or access the predefined menu directly by pressing the programmed One Touch Call/Menu key.

Call Mode
Allows the user to select the operation mode for the call member selected in the Call column.

Call List

Allows the user to select the operation mode for the call member selected in the Call column.

Call Type

This feature allows the user to select a call type for the call member that was selected in the Call column.

Text Message

Allows the user to select a Quick Text. The selection for these messages comes from Text Messages. This option is available only when the Call Type is set to Message.

Definitions of Keys

Advanced Features
Allow user to access Keyboard Programming and other features

All Alert Tone On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Channel Knob Disable
Allows user to toggle the Channel Encoder between enable and disable.

Designated Home Zone
Allows the user to switch the current zone to designated home zone.

Emergency Alarm Ack
Allows the user to enable the *Emergency Alarm Ack* feature permanently.

Emergency Off
To end an emergency call. This is the recommended option for the TK Long. Only long press supports this feature and short press must be set as *Emergency On* .

Emergency On
To initiate an emergency call. This is the recommended option for the TK Short. Only short press supports this feature and long press must be set as *Emergency Off*.

Encrypt On/Off
Allows the user to toggle the encryption feature between on or off.

Keypad Lock
Allows the user to lock or unlock the radio keypad.

Lone Worker On/Off
Allows the user to toggle the Lone Worker feature between on and off.

Man Down On/Off
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts.

Monitor

Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel.

Monitor Momentary

To monitor the activities on the current channel. This feature will exit when the programmed key is released. Please note that this function must be assigned with short press and long press of a key.

Nuisance Delete

To temporarily remove an unwanted nuisance channel from the scan list in hang time. The removed channel   will not be scanned in subsequent scanning, but it will be restored into the scan list when radio is restarted.

One Touch Call 1

Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Call 2

Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Call 3

Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Call 4

Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Call 5

Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Call 6

Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

Record Delete

Deletes what you are currently listening to.

Record Play/Play Next/Play Stop

Allows the user to toggle the record feature between Play, next and stop.

Repeater/Talkaround

Allows the user to toggle between Repeater and Talkaround mode.

RF Power Switch

Allows the user to toggle between high and low power.

Scan On/Off

Allows the user to toggle the Scan feature between on or off.

Squelch Level

Allows the user to change the squelch level. Three levels available: Open, Normal and Tight.

Squelch Switch

Allows the user to enable the Squelch feature permanently.

Surveillance/Covert Mode

Allows the user to toggle the Covert Mode feature between on and off. With this feature enabled, the radio will disable all alert indications such as LED indications, vibrations and tones which can be set in Covert Mode menu.

Tight/Normal Squelch

Allows the user to toggle between tight or normal squelch.

Unassigned

Switch does nothing.

VOX On/Off

Allows the user to toggle the VOX feature between on and off for the channel.

Zone Down

Allows the user to switch to next zone.

Zone Up

Allows the user to switch to previous zone.

General Settings - User Defined Tone

This option allows users to set the frequency and duration of each alert tone. After setting is done, users can click Play to listen to the tone. Please note that users can set 8 alert tones at most.

User Defined Tone

This option allows users to set the frequency and duration of each alert tone. After setting is done, users can click Play to listen to the tone. Please note that users can set 8 alert tones at most.

Frequency (Hz)

This option allows users to set the frequency of each alert tone.

Duration (ms)

This option allows users to set the duration of alert tone.

Cycles

To set the how many cycles the alert tone will sound.

Interval Time (s)

When user defined tone is selected, this option allows users to define the interval of sounding the alert tone.

General Settings - User Interface Indication

Alert Tones

All Alert Tones
This option allows users to decide whether the radio shall operate in silent/non-silent mode. If user chooses *Silent On*, the radio will remain silent with no alert tones throughout radio operation.

Talk Permit Tone
This option allows users to configure whether to emit an alert tone upon a PTT press on current channel. The following options are available for this parameter:

- Disable: There will be no tone alert when PTT is pressed.
- Digital Only: There will be a tone alert when PTT is pressed on digital channel.
- Analog Only: There will be a tone alert when PTT is pressed on analog channel.
- Digital &Analog: There will be a tone alert when PTT is pressed on both analog and digital channel.

Talk Permit Tone List
This option allows users to select a defined tone list for the Talk Permit Tone

Emergency Tone Duration (s)
This option allows users to set the duration of emergency tone.

Tone Volume
This parameter allows you to set the tone volume of the radio in the Conventional mode. You can adjust it from 1 to 8.

Text Message Tone Duration (s)
This option allows users to set the duration the alert tone is played when the Text Message Alert Tone is set to Repetitive.

Call Alert Tone Duration (s)
This option allows users to Configures the call alert tone sound duration for the radio decoding of the digital/MDC selective call alert.

Low Battery Tone Duration (s)

This option allows users to Configures the Low Battery tone sound duration for the radio when the radio's low battery threshold is reached while a call is being received, or while the radio is in idle mode.

Channel Voice Annunciation

This option determines whether to play the channel number during channel switch via the Channel Selector Knob. If the channel is changed due to zone switch or revert channel, the radio will not play the channel number.

Channel Free Indication Tone

This feature sounds an alert tone when a voice call ends. It also sounds when the voice call is interrupted on the current channel, for example, by interruptions caused by a third radio making an impolite call or sending an emergency alarm. However, this tone does not sound if the interruption is caused by a corrupted radio signal. Voice calls include Group Call, Private Call, All Call, and Emergency Call. A voice call ends when the user of the calling radio releases the Push-To-Talk (PTT) button, regardless of hang time. This feature alerts the receiving radio that the channel is available for him/her to respond producing a smoother flow of conversation. This alert tone does not sound at the end of a Remote Monitor transmission, or during Priority Scan when the voice call ends while the radio is sampling the priority channel(s). This is a radio-wide feature.

Keypad Tone

This option allows users to configure whether to emit an alert tone when pressing any keypads (includes topkey, sidekey and frontkey).

Power Up Tone

This option allows users t o set whether the radio will sound a tone when it is powered up.

Private Call Tone

This option allows users to configure whether to emit an alert tone when receiving a private call.

Group Call Tone

This option allows users to configure whether to emit an alert tone when receiving a group call.

Text Message Tone

This option allows users to configure whether to emit an alert tone when receiving a text message.

Call Alert Tone

This option allows users to set whether the radio will sound a tone when an alert call is received.

Lone Worker Pre- Alert

If enabled this alert is sounded at a pre-defined time before the user must 'call in'; failure to call would cause the radio to enter emergency modes.

Tx Forbidden Tone

If this feature is enabled, then if the repeater is not successfully accessed a tone is generated.

TOT Pre-Alert

This option allows users to configure whether to emit an alert tone in the TOT Pre-Alert prior to the expiry of the time out timer.

Low Battery Tone

This option allows users to configure whether to emit a warning tone when the radio's low battery threshold is reached.

Scan/Hunt Tone

This parameter decides whether the radio will sound when the scan start.

LED

The options allow users to set LED status and Backlight for radio. This is a radio-wide feature.

All Radio LEDs

This option allows users to enable/disable all LED indications.

Low Battery LED

This option decides whether the LED lights in Scan mode or Roam mode.

Tx LED

This option decides whether the LED lights during transmitting signals.

Rx LED

This option determines whether the LED lights during receiving signals.

Scan Led

This option decides whether the LED lights in Scan mode or Roam mode.

Backlight

Backlight Mode

This option allows users to enable/disable backlight. Backlight can bring convenience for operation in case of insufficient light. The following modes are allowed:

- Timed: The backlight will be off automatically upon expiration of the Backlight Time if there no over the air activities and any user initiated activities from radio (include PTT, channel/volume knob, programmable buttons and keypads press) .
- Enable: The backlight remains illuminating until the radio is powered off.
- Disable: The backlight is disabled. [This option is available only for portables and mobiles with display.]

Keypad Trigger Method

When the backlight is turned off upon the backlight time, whether to execute the function of the first keypad input.

Backlight Times (s)

The backlight will be off automatically upon expiration of the time set here.

Conventional – Zone

This option allows users to organize channels conveniently. Each zone can support up to 16 channels. If more than one zone is programmed into the terminal , the user can change the zone via the programmable keys or menu (if the zone menu option is checked and zone programmable buttons is set in CPS).

Zone Alias

The Zone alias allows the user to define a unique name for each Zone. The maximum length is 16 characters (digits, symbols, English letters or Chinese characters).

Allow adding same channel to Zone members

This parameter allows the user to add same channel to zone members.

Available

The table displays the available channels for a user to add channels to a zone. Available channels are related to the channels in the radio.

Members

The table displays existing channels in the current zone. These channels which may not be programmed come from the Available channel list on the left.

Conventional - Channel – Analog

Users can either add or delete digital or analog channels. For portable and mobile radios, a maximum of 2000 channels are supported. (Mixed Channels can be set on Repeater Mode and a maximum of 16 can be added.) There must be at least 1 digital channel, 1 analog channel.

Common

Channel Alias
The channel alias allows the user to define a unique name for each channel. The maximum length is 16 characters (digits, symbols, English letters or Chinese characters).

Squelch Level
Filters incoming signals that are not strong enough to produce a clear transmission, thereby eliminating unwanted noise. This feature adjusts the squelch threshold of an incoming transmission. This feature can be toggled between tight or normal squelch, via a short or long programmable button press (Tight/Normal Squelch) or Squelch (Utilities Menu). This is a channel-wide feature.

Channel Band
Sets the channel bandwidth for the Transmit and Receive frequencies to either 12.5,25. This is a channel-wide feature.

Personality List
The personality list allows the user to configure conventional functions including Signaling Type, PTT, Encode and Decode, etc. Each list allows the user to configure a group of specific parameters. The radio allows user to store and invoke up to 16 groups of customized parameters. Select a preset personality list to export the channel settings to the current channel. Please refer to the Personality section for details.

Scan List
Associates a Scan List to this conventional channel. All the members on this list will be scanned during a scan operation. Any available Scan List can be selected. Selecting the None option disables scanning (including Auto Scan) on this channel. This is a channel-wide feature.

Auto Scan Start

This option allows the radio to begin scanning automatically when user switches to current channel .

Rx Only

The option prohibits any transmitting operation on current channel, while the receiving operation remains as usual.

Talk Around

This option allows radio the ability to communicate when the repeater is:

▫ Not Available
▫ Out of Range
▫ Down for Service

When this is selected either using the programmable button or radio menu, the radio uses the current channels receive frequency as it's transmit frequency. This will allow other radios in repeater mode to receive transmissions from the Talk Around operated radio.

Lone Worker

This feature enables Lone Worker on the radio. The Lone Worker feature prompts an emergency to be raised if there has been no user activity for a predefined time. The Response Time resets with user activity. The Reminder Time begins when the Response Time expires. The Reminder Time determines how long it takes the radio waits before raising the emergency. User activity is defined as activation of any radio button or of the channel selector. This is a channel-wide feature.

VOX

This option allows users to set whether to enable the VOX function on the current channel. When enabled, this function allows users to speak into the radio directly without pressing PTT key.

Scrambler

This option allows the user to enable the Scrambler feature. This technology can invert the frequency spectrum at transmitting party to make the signal unintelligible to unwanted parties, so as to achieve communication privacy.

Emp De-Emp
This feature can enhance audio clarity. Pre-emphasis is applied to filter the TX signals and de-emphasis is applied to filter the RX signals.

Receive
The RX options allow users to set basic parameters for receiving, such as:

Frequency
Sets a frequency (in MHz) on which the signal is received for the current channel. This is a channel-wide feature.

CTCSS/DCS Type
This option allows users to configure the current channel with a specific RX CTCSS/CDCSS type. When the radio receives the signal, it will distinguish whether the received signal is CTCSS or CDCSS, and check out whether it matches the predefined CTCSS/CDCSS for the current channel before processing. The options are:

- None: Causes the radio to not transmit CTCSS/CDCSS codes while radio transmitting on the current channel.
- CTCSS: Causes the radio to transmit CTCSS codes while radio transmitting on the current channel.
- CDCSS: Causes the radio to transmit CDCSS codes while radio transmitting on the current channel.
- CDCSS Invert: Causes CDCSS signals to be inverted before they are transmitted from the radio, while operating on the current channel.

CTCSS
This option allows users to define RX CTCSS for the current channel. The CTCSS is a sub-audible tone transmitted along with the carrier for the current channel. The radio will unmute when the received signal's CTCSS matches the CTCSS value set here. User can select a certain value from the drop-down list or input a valid value.

CDCSS
This option allows users to define RX CDCSS for the current channel. The CDCSS is a sub-audible code transmitted at a rate of 134.4 bit/s along with the carrier for

the current channel. The radio will unmute when the received signal's CDCSS matches the CDCSS value set here. User can select a certain value from the drop-down list or input a valid value.

Ref Frequency (MHz)
Selects the Reference Frequency used when receiving on the current channel. The reference frequency can be shifted to allow the radio to operate on channel frequencies that would otherwise be blocked by internally generated spurious signals. Internally generated spurious signals would appear as silent carriers on certain channel frequencies. Shifting the reference frequency allows these permanent signal carrier to be shifted to unused frequencies so that the desired channel frequencies can still be used. This is a channel-wide feature.

Rx Squelch Mode
This option defines the decoding condition for receiving a call at current channel, it provides a privacy communication. This feature is valid for current channel only. Possible options:

- CTCSS/CDCSS and Audio: After an incoming call is successfully decoded, receiving carrier and the correct CTCSS/CDCSS conditions shall cause the radio speaker to unmute.
- Audio: After an incoming call is successfully decoded, receiving carrier shall cause the radio speaker to unmute.
- CTCSS/CDCSS: Both carrier and CTCSS/CDCSS conditions must be satisfied for the radio to unmute.
- Carrier: The radio will unmute when carrier is detected.

Monitor Squelch Mode
This option defines the condition for the radio to unmute when the programmed Monitor key is pressed. The possible options are:

 Carrier: The radio can unmute upon carrier match.
 CTCSS/CDCSS: The radio can unmute upon match of both CTCSS/CDCSS and carrier. The user may switch the mode from CTCSS/CDCSS to Carrier.

Channel Switch Squelch Mode

This option decides the squelch mode in presence of channel change. The possible options are:

▢ RX Squelch Mode: After the channel is changed, the radio switches to RX Squelch Mode.

▢ Monitor Squelch Mode: After channel is changed, the radio switches to Monitor Squelch Mode.

Transmit

Frequency (MHz)

Sets a frequency (in MHz) on which a signal is transmitted for the current channel. This is a channel-wide feature.

CTCSS/CDCSS Type

This option allows users to configure the current channel with a specific TX CTCSS/CDCSS type. The selected CTCSS/CDCSS will serve as a encoding criterion for the current channel.

- None: Causes the radio to not transmit CTCSS/CDCSS codes while radio transmitting on the current channel.
- CTCSS: Causes the radio to transmit CTCSS codes while radio transmitting on the current channel.
- CDCSS: Causes the radio to transmit CDCSS codes while radio transmitting on the current channel.
- CDCSS Invert: Causes CDCSS signals to be inverted before they are transmitted from the radio, while operating on the current channel.

CTCSS

This option allows users to define TX CTCSS that is transmitted along with the carrier for the current channel. The receiver can only receive calls upon CTCSS match. Users can select a certain value from the drop-down list or input a valid value.

CDCSS

This option allows users to define TX CDCSS that is transmitted along with the

carrier for the current channel. Users can select a certain value from the drop-down list or input a valid value.

Reverse Burst/Turn off Code

If enabled, when on a CTCSS channel, the radio will send CTCSS reverse burst before ending TX, or when on a DCS channel, the radio will send DCS turn off code before ending TX.The revert phase can be set in CTCSS Tail Revert Option.

CTCSS Tail Revert Option

This option allows users to eliminate the squelch tail at the end of transmission. The squelch tail is eliminated through a process of phase inversion at the end of reception of a CTCSS transmission. User can set the phase used to either 120 degrees or 180 degrees.

Ref Frequency (MHz)

Selects the Reference Frequency used when transmitting on the current channel. The reference frequency can be shifted to allow the radio to operate on channel frequencies that would otherwise be blocked by internally generated spurious signals. Internally generated spurious signals would appear as silent carriers on certain channel frequencies. Shifting the reference frequency allows these permanent signal carrier to be shifted to unused frequencies so that the desired channel frequencies can still be used.This is a channel-wide feature.

Emergency System

This option can associate a defined analog emergency system to the current channel.

Power Level

This option allows users to set the TX power level for current channel. User can toggle between high and low, via a short or long programmable key press or menu (if checked in menu).

Tx Admit

This option defines the response from the transmitter upon PTT press on the current channel, in order to prevent the user transmitting on channels that are already in use. Possible options:

- Never Allow:The user can not transmit all the time.

- Always Allow: The user can transmit all the time.
- Channel Free: The radio can transmit only if the channel is free.
- CTCSS/CDCSS matched:The radio allows transmission upon CTCSS/CDCSS match.
- Audio:After an incoming call is successfully decoded,The radio can transmit.

Tx Time-Out Time (s)

The Time-Out Timer (TOT) is the duration that the radio can continuously transmit before a transmission is automatically terminated. This feature is used to ensure the channel is not monopolized by any one radio. The user may set smaller time-outs for busier channels. This is a channel-wide feature.

TOT Re-key Time (s)

This option defines the amount of time that the radio waits on a channel after the Time-Out Timer (TOT) expires (which stops the radio transmission) and before the user is allowed to transmit again.

TOT Pre-Alert Time (s)

This option allows users to define a duration an alert will be given before terminating the transmission.

Conventional - Channel - Digital

A digital channel can serve users with digital communication by applying DMR signaling. Radios with display can support up to 2000 channels (digital and analog), A minimum of one (1) channel(digital and analog) shall be held in the channel list.

Common

Channel Alias

The channel alias allows the user to define a unique name for each channel. The maximum length is 16 characters (digits, symbols, English letters or Chinese characters).

Digital ID

This option allows users to define a unique digital id for each channel.

Color Code

Color code is used to identify a system. User who wish to communicate with each other are assigned with the same color code. A radio ignores the channel activity which does not match the preset color code in this field, as it is assuming the activity belongs to other system. In a case where there are multiple systems (with different color codes set between the multiple digital channels), the user can turn on the Scan operation, that allows the radio to listen to activities across multiple systems.

Repeater/Time Slot

TDMA scheme is applied to divide the 12.5KHz channel into two consecutive slots. Either slot can be used for communication or data transfer.

Scan List

Associates a Scan List to this conventional channel. All the members on this list will be scanned during a scan operation. Any available Scan List can be selected. Selecting the None option disables scanning (including Auto Scan) on this channel. This is a channel-wide feature

Auto Scan Start

This option allows the radio to begin scanning automatically when user switches to current channel.

Rx Only

Configures the channel to receive only without any transmission capability. All Transmit features for the channel will also be disabled. This is a channel-wide feature.

Talk Around

This option allows radio to communicate when there is no repeater available when the repeater is out of range or when the repeater is down. When this is selected either via the programmable button or the radio menu, the radio uses a receive frequency to transmit but it still allow radio in repeater mode to receive signal from the Talk Around operated radio.

Lone Worker

This feature enables Lone Worker on the radio. The Lone Worker feature prompts an emergency to be raised if there has been no user activity for a predefined time. The Response Time resets with user activity. The Reminder Time begins when the Response Time expires. The Reminder Time determines how long it takes the radio waits before raising the emergency. User activity is defined as activation of any radio button or of the channel selector. This is a channel-wide feature.

VOX

This option allows users to set whether to enable the VOX function on the current channel. When enabled, this function allows users to speak into the radio directly without pressing PTT key.

Receiver

Frequency (MHz)

Sets a frequency (in MHz) on which the signal is received for the current channel. This is a channel-wide feature.

Ref Frequency (MHz)

Selects the Reference Frequency used when receiving on the current channel. The reference frequency can be shifted to allow the radio to operate on channel frequencies that would otherwise be blocked by internally generated spurious signals. Internally generated spurious signals would appear as silent carriers on certain channel frequencies. Shifting the reference frequency allows these

permanent signal carrier to be shifted to unused frequencies so that the desired channel frequencies can still be used. This is a channel-wide feature.

Rx Group List
This option associates an available RX Group List to the current channel. In presence of any activity that match the talkgroup ID in the RX Group List , the radio unmutes and allows radio user to respond and talkback within the defined Group Call Hang Time. The possible options are:

- None: The radio will only decode the talkgroup ID if it is as identical to what is set in the TX Contact Name. The radio cannot be able to decode any group call when the TX Contact Name is set to None.
- RX Group Lists 1 - 250

Emergency Alarm Indication
This option allows users to set whether audio and visual indication is given by the radio when an emergency alarm is received. The setting is available for the current channel only.

Emergency Alarm Ack
This option determines whether to acknowledge an emergency alarm automatically when an emergency alarm request is decoded.

Emergency Call Indication
This option determines whether to give an audio and visual indication when an emergency call is received.

Transmit

Frequency (MHz)
Sets a frequency (in MHz) on which a signal is transmitted for the current channel. This is a channel-wide feature.

Ref Frequency (MHz)
Selects the Reference Frequency used when transmitting on the current channel. The reference frequency can be shifted to allow the radio to operate on channel frequencies that would otherwise be blocked by internally generated spurious signals. Internally generated spurious signals would appear as silent carriers on certain channel frequencies. Shifting the reference frequency allows these

permanent signal carrier to be shifted to unused frequencies so that the desired channel frequencies can still be used. This is a channel-wide feature.

Tx Contact
Selects the Reference Frequency used when transmitting on the current channel. The reference frequency can be shifted to allow the radio to operate on channel frequencies that would otherwise be blocked by internally generated spurious signals. Internally generated spurious signals would appear as silent carriers on certain channel frequencies. Shifting the reference frequency allows these permanent signal carrier to be shifted to unused frequencies so that the desired channel frequencies can still be used. This is a channel-wide feature. Possible options are:

- Private Call contact
- Group Call contact
- All Call
- None: The user is prevented from initiating a call with PTT in standby mode on the channel.

Emergency System
This option associates a defined digital emergency system to the current channel.

Power Level
This option allows users to set the TX power level for current channel. User can toggle between high and low, via a short or long programmable key press or menu (if checked in menu).

Tx Admit
This option prevents the user from transmitting on channels that are already in use. Possible options:

- Always Allow: The user can transmit all the time.
- Channel Free: The radio can transmit only if the channel is free.
- Color Code Free: The radio can transmit only when the channel is free or the color code is not matched.

Tx Time-Out Time (s)
The Time-Out Timer (TOT) sets the duration that the radio can continuously

transmit before transmission is automatically terminated. This allows the dispatcher some control to prevent a radio user from using a channel for too long.

TOT Re-key Time (s)
This option defines the length of time that the radio waits on a channel after the Time-Out Timer (TOT) expires (which stops the radio transmission) and before the user is allowed to transmit again.

TOT Pre-Alert Time (s)
This option allows users to set when the radio will alert the user before terminating the transmission.

Private Call Confirmed
This option configures whether the radio sends a confirmed private call request when user is trying to initiate a private call.

Data Call Confirmed
This feature enables individual packets in data calls (e.g. Text Message) on the current digital channel to be confirmed on the Data Link level.
This feature also enables personality to be confirmed (i.e. acknowledged) on the current digital channel to be confirmed on the Data Link Level.
In other words.

Encrypt

Encrypt
If the check box is enabled, then encryption will be allowed on this channel

Encrypt Type
Selects either Basic or Enhanced encryption.

Encrypt Key List
This option allows users to associate an available key to the current channel. This is the encrypting key for transmission. This is also the key that will be used in receive mode. The caller and receiver can communicate only with same key.

Conventional – Scan

The Scan feature allows the radio user to listen to the communication activities on other channels. Scan List is a group of channels under monitoring. Users can add or delete the list according to your actual requirements. A maximum of 250 scan lists can be created and there must be at least one list. Each scan list can contain a maximum of 32 members.

Available

The Available Channels list shows all available channels that can be added into the Scan list. All channels configured in Digital channel [portable and mobile radios only] and Analog channel list will appear in the Available Channels list.

Members

The list shows the scan list members. Users can add a channel (analog or digital) from the Available channels list into the scan list. Each scan list can contain a maximum of 32 members. During scanning, the radio detects activities on these channels.

Scan List Alias

This option allows users to set the alias for the scan list. User may enter up to a maximum of 16 English or Chinese unicode characters.

Priority Channel 1

This option allows users to select a channel in the scan list as Priority Channel 1. If only Priority Channel 1 is set, 50% of a radio's scans are on Priority Channel 1 during scanning. If Priority Channel 2 is set to *None*, scans for Priority Channel 1 are reduced from 50% to 25%. The available options are:

- None: No channel is set as Priority Channel 1. If Priority Channel 2 is available, scans for Priority Channel 2 increased to 50%.
- Selected: Select the channel on which the radio enters Scan mode as Priority Channel 1.
- CH XX: Select a channel in the scan list as Priority Channel 1.

Priority Channel 2

This option allows users to select a channel as Priority Channel 2. During scanning, 25% of a radio's scans are on Priority Channel 2 if user has defined also a Priority

Channel 1. But if Priority Channel 1 is set to *None* , scans for Priority Channel 2 will be increased to 50% . The available options are:

- None: No channel is set as Priority Channel 2.
- Selected: Select the channel on which the radio enters Scan mode as Priority Channel 2.
- CH XX: Select a channel in the scan list as Priority Channel 2.

Tx Designated Channel
This option allows users to select a channel as the scan Designated Tx Channel. The radio transmits on this channel if user presses the PTT key during scanning, with the scan talkback options disabled. However, if the scan talkback is enabled, radio will talkback during scan landed, and transmit on scan Designated Tx Channel when in idle scan (not landed).

Nuisance Delete
To temporarily remove an unwanted nuisance channel from the scan list in hang time. The removed channel will not be scanned in subsequent scanning, but it will be restored into the scan list when radio is restarted.

Nuisance Reset
This option is used to re-instate a channel, temporarily deleted using the nuisance channel delete option. Channels will automatically be re-instated when the radio power is cycled.

Signaling Hold Time (ms)
Sets the amount of time that the radio waits on an analog scan list channel when a carrier signal of sufficient amplitude is detected on the channel. This pause allows the radio time to decode the analog system signaling data. If the decoded information is incorrect, the radio reverts to scan.

Look Back Time A (s)
When a Priority channel is set, if the channel from which a call is received during Single scan or Multi scan is not a Priority channel, the radio still checks for calls from the Priority channel at the pre-set intervals while scanning is paused. This operation is called Look Back. Look Back Time A is the interval at which Look Back operates while no carrier is being received on the Priority channel.

Look Back Time B (s)

When a Priority channel is set, if the channel from which a call is received during Single scan or Multi scan is not a Priority channel, the radio still checks for calls from the Priority channel at the pre-set intervals while scanning is paused. This operation is called Look Back. Look Back Time B is the interval at which Look Back operates while a carrier is being received on the Priority channel but Signaling is unmatched.

Talk Back

This option allows users to determine whether the radio is able to talkback on the landed channel activity. If this feature is disabled, the radio transmits on the channel selected in Scan TX Mode.

Channel Marking

This feature is used to mark channels that have mismatching CTCSS/CDCSS (for analog channels), or mismatching CC or ID (for digital channels). The radio only detects whether a carrier is present on the marked channel during next scan process. If a carrier is present on the marked channel, the counter increases a step, and the radio will go to the next channel for detecting. Otherwise, the counter resets and the radio will check all conditions to see whether CTCSS/CDCSS (for analog channels), or CC and ID (for digital channels) is correct next time. If the counter counts up to ten (10), the radio will clear this mark and check all conditions.

Conventional – DMR Services – Text Message

Message service include quick text and status message, This option allows users to define some frequently used texts as Quick Text, which can be used to create a short text message quickly. A maximum of 50 messages may be added to the Quick Text message list. For a Display model radio, the user can send access the Text Message feature via the Text Messages menu or a short or long programmable button press assigned to Text Message.

Input Text Message

A user may enter up to a certain amount of characters, i.e. 70 or more depending on the radio models. Valid characters are alphanumeric, spaces and special characters. The user can send the text message by assigning a short or long programmable button press (Text Message) or access the Text Messages feature via the Text Messages Menu feature.

Add

This option allows users to add a new messages. The maximum of 50 messages can be added.

Delete

Click the Delete button to delete the current message from the Quick Text list.

Conventional – DMR Services – Contact

Contact list shows contact information saved in the radio, users can select target radio or a group of radios depending on the call type and call ID. The user may access this list via a short or long programmable key press or via the Contacts Menu. From the list, the user can make a call or other functions if supported. Users can add or delete contact members from the list. The list may include up to 65280 contacts, and must include at least one contact. Users can add or delete contact members from the list. Deleting a contact already associated to a digital channel will cause TX Contacts Name of the channel to be *None* .

Contact Name

Users can set alias for each contact. Users may enter up to 16 English or Chinese Unicode characters at maximum.

Call Type

To list the call types for selection. Available options are:

- All Call: A call from an individual radio to all radios in the system. All Calls do not communicate through special timeslots or channels within the system. All Call will only be authorized to the users who play supervisory roles. This feature is very useful when a supervisor needs to communicate with all the users on a logical channel, rather than just a particular group or individual.
- Private Call: A call between two individual radios.
- Group Call: A call from an individual radio to a group of radios.

Call ID

This allows users to set an ID for each digital call member. This ID is used to identify and communicate with a target radio or group of radios depending on the call type. There are three call types (Group Call, Private Call, All Call). The meaning of the call type's ID is explained as follows:

- Group Call ID-This ID is used to identify a particular group.

- Private Call ID-This ID is the Radio ID of the target radio [portable and mobile radios only].
- All Call ID-This has a fixed ID of 16777215 (value is not editable).

Receive Tone

This alert tone sounds on the receiving radio prior to unmuting during a Private Call, Group Call, or All System Call. This is to notify the user that the radio is unmuting. This feature is set on a per-call basis.

Conventional – DMR Services – Rx Group List

RX Group List is helpful to receive more than one group call on a digital channel. Users may create up to 250 Rx Group Lists, each with up to 32 groups. Users can also delete these Rx Group Lists, but keep 1 Rx Group List at least. A RX Group List can be associated to a digital channel.

Available

The Available list shows all the *Group Call* that are set in the Contact. Users can add any members in the Available list to the Rx Group List on the right with the Add button.

Members

The Members list shows all members of the current RX Group List. If this RX Group List is associated with a channel, the radio can receive any call that is included in the Members list. Each RX Group List may contain up to 16 members. In other words, users can add a maximum of 16 contacts to the Members list.

Rx Group List Alias

Users can set alias for each Rx Group List. Users may enter up to 16 English or Chinese unicode characters at maximum.

Conventional – DMR Services – Encrypt

This option allows the user to enable the Encrypt feature. This technology can facilitate secret communication using a key to make the audio signal or data inaccessible to anyone except those possessing the same key, so as to achieve communication privacy.

Key Alias

Each key can be accompanied with an alias, composed of digits, symbols, English letters or Chinese characters.

Key Value

This option decides the exact value of key. Its length is subject to the Encrypt Key Length.

Conventional – Emergency – Signaling Configuration

Remote Monitor Duration (s)
Sets the duration that the target radio can be remotely monitored. This is a radio-wide feature.

Tx Sync Wakeup TOT (ms)
This feature adjusts the value of the timer that begins immediately after a message is sent to wake up the repeater. The timer is stopped when the radio receives a repeater sync signal. If the timer expires before receiving a repeater sync signal, the radio sends another message to wake up the repeater. The number of messages is determined by the TX Wakeup Message Limit, after which the repeater is assumed to be out of range. This is a radio-wide feature.

Tx Wakeup Message Limit
This feature sets the number of messages sent to wake up the repeater. Setting a higher number improves the success rate of waking up the repeater. This is a radio-wide feature.

Emergency Remote Monitor Decode
After an emergency alarm is initiated, this feature allows the radio to receive and process Remote Monitor commands sent from another radio for the duration specified in Remote Monitor Duration. This is an exceptional case of Remote Monitor Decode whereby the radio is able to decode Remote Monitor command even if the Remote Monitor Decode feature is disabled but only for the duration as specified in Remote Monitor Duration. This is a radio-wide feature.

Radio Disable Decode
Allows the radio to receive and process a Radio Disable command sent from another radio to remotely disable it. This feature helps to block usage of stolen or lost radios. This is a radio-wide feature.

Remote Monitor Decode
Allows the radio to receive and process Remote Monitor command sent from another radio. This command instructs the receiving radio to activate its microphone and transmitter for the duration specified in Remote Monitor Duration. A call is silently set up on this radio and its transmission controlled

remotely without any indication given to the receiving radio user. This is a radio-wide feature.

Conventional – Emergency – Lone Worker

Response Action
The Emergency mode will be triggered off when the user fails to make any of the following operations during the Lone Worker Response Time.

- Key Pad: Press any button of radio.
- Voice Tx: Use the radio to transmit any voice.

Lone Worker Response Time (min)
This timer is part of the Lone Worker feature. It determines how long the radio waits since the Response Time has expired before raising the emergency. User activity is defined as activation of any radio button, or activation of the channel selector. This is a radio-wide feature.

Lone Worker Reminder Time (s)
This timer is part of the Lone Worker feature. It determines how long the radio waits since the last user activity before it begins sending reminders. User activity is defined as activation of any radio button, or activation of the channel selector. This is a radio-wide feature.

Conventional – Emergency – Man Down

Man Down feature is set in portable radios. Once the feature is activated, if the portable radio tilts to a specified gradient and is not placed upright within "Trig Entry Delay Time", or stays motionless within "Trig Entry Delay Time", it will enter Emergency mode. This is a hardware option.

Man Down

This option allows the radio to enable the Man Down feature. When this feature is enabled, the radio automatically sends an alarm for help in the radio horizontally or keep motionless long time.

Trig Entry Delay Time (s)

This option defines the time period before which the emergency mode is exited.

Trig Exit Delay Time (s)

This option defines the time period before which the emergency mode is exited.

Man Down Pre-Alert Time (s)

After you Man Down the radio and within Trig Entry Delay Time before the emergency mode is activated, the radio will pre-alert you to the situation. This parameter is to set the alert time.

Conventional – Emergency – Digital Emergency

Emergency System Alias
Users can set alias for each emergency system. English or Chinese characters are valid, in the list in Emergency System in Digital Channel.

Alarm Type
An alarm is a non-voice signal that triggers an alert indication on another radio. This feature specifies the behavior of the initiating radio's alarm when the emergency button is pressed. Possible options are:

- Disabled: The radio is unable to transmit an alarm signal.
- Regular: The radio transmits an alarm signal and provides audio and visual indication that it is in Emergency mode.
- Silent: The radio transmits an alarm signal but gives no audio or visual indication that it is in Emergency mode. In addition, it will not unmute to any received audio.
- Silent w/ Voice: The radio transmits an alarm signal but gives no audio or visual indication that it is in Emergency mode. The radio then unmutes to qualified channel activity.

Alarm Mode
Defines the radio's behavior when the radio's emergency button is pressed. Possible options are:

- Emergency Alarm: The radio sends an emergency alarm and exits the emergency mode. This alarm is a non-voice signal that triggers an alert indication on another radio.
- Emergency Alarm w/ Call: An emergency alarm is sent, after which an emergency call can be transmitted by pressing the Push-To-Talk (PTT) button.
- Emergency Alarm w/ Voice to Follow: This option enables the Hot Mic feature, allowing for the programming of the Hot Mic related features, i.e. Hot Mic Duration. An emergency alarm is sent and the microphone is activated for an emergency call. Voice is transmitted without the need to press the Push-To-Talk (PTT) button.

Revert Channel

This is the channel used for digital emergency alarm or voice. Any single site digital channel may be set as the Revert Channel, including the channel indicated by the radio's channel selector.

- Selected: The current channel where the emergency is activated. [This option is available only when user hasn't check RX Only and the channel's TX Contact Name is *Group Call* .]
- Available channel: All channels in the Digital Channel list with TX Contacts Name set as *Group Call* are available (RX Only channels are excluded for revert channel selection.) User can choose a channel as Revert Channel from a maximum of 1000 available channels.
- This option is not available if the Emergency Type is set to Disable.
- ⬜ When an emergency revert channel is set to *Rx Only*, the CPS will automatically change the revert channel to next available channel in the channel list. If there is no longer any channels in the channel list or all available channels in the channel list are set to *Rx Only*, then this option will be set to *None* automatically.
- ⬜ When the user checks *Selected* here and modifies any channel as *RX Only* or the channel's TX Contact Name is not *Group Call*, the first channel in this list will be the default Revert Channel. If no channel can match its requirement, *None* will be its default value.

Alarm Tone List

This option allows users to select a defined tone list for the radio that will sound when an alarm is received. This option is not available if the Alarm Type is set to Disable/ Silent / Silent w/ Voice .

Impolite Retries

An impolite transmission is a transmission that occurs even when there is activity on the current channel. The radio tries a number of impolite transmissions to get an acknowledgement and then goes on to try a number of polite transmissions. This feature sets the number of attempts to transmit an emergency alarm impolitely.

Polite Retries

A polite transmission is a transmission that occurs only when the current channel is free of activity. The radio tries a number of impolite transmissions to get an

acknowledgement before trying a number of polite transmissions. This feature sets the number of attempts to transmit an emergency alarm politely.

Hot Mic Duration (s)
This option defines the length of time for each emergency call transmission during emergency process (hands free transmission).

Conventional – Emergency – Analog Emergency

System Alias
Users can set alias for each emergency system. English or Chinese characters are valid, in the list in Emergency System in Digital Channel.

Emergency Cycle Mode
This feature is Disabled/Forever/Limited Number of Cycles/Local Emergency by clicking the cursor on the associated combo box.

Squelch Mode
This drop down combo box is used to select the required signaling squelch mode needed to unmute the receiver when the radio is in the emergency mode of operation. The options are the available radio squelch modes.

Encode Signaling Type
This option defines the available signaling system in Transmit status. Options are:

- None.
- DTMF
- 5Tone
- MDC

DTMF Call /5 Tone Telegram
This option box is used to select DTMF Call or 5Tone available telegrams will be sent when the radio transmits in emergency mode.

Alarm Cycles
This option defines the number of cycles that emergency alarm will sound.

Tx Cycle Time (s)
This option defines the duration of cycle for each emergency call transmission during emergency process.

Rx Cycle Time (s)
This option defines the duration of cycle for when receive a emergency call during emergency process.

Tone Duration During Tx (ms)

This option box is used to select if the emergency tone will be sent or not during the emergency transmit duration. When enabled, the called radio will hear the emergency tone.

Emergency Side Tone

If enabled, in emergency state, while the radio sending the emergency tone for remote radio to receive, this emergency could be heard in local radio.

Mic Gain Offset

The emergency mic gain option is enabled/disabled by clicking the cursor on this check box. This feature is intended to increase the microphone sensitivity and allow it to pick up conversation (etc.), over a larger area. Using the drop down combo box, the gain can be set from 1 to 4, in steps of 1.

Revert Channel

This option box is used to define a specific channel as the emergency channel. If the emergency button is activated, the radio will revert to the emergency channel and remain on it, until the emergency is cancelled.

MDC System Primary ID

This option box is used to select which signaling will be sent when the radio transmits in emergency mode when TX Signal System of the emergency channel is set to MDC. When selected, the MDC will be transmitted in emergency mode, or the one of DTMF telegram will be sent.

Ignore MDC Ack

This option ignore or not the mdc ack when the radio transmits MDC in emergency mode.

Acknowledge Alert

This option box is used to select if the Ack Alert will be heard or not when receiving the ack from the called radio.

Emergency Secret

Selecting this will cause that all radio alerts, LED, and side tones will be disabled,

when the emergency button is pressed and the radio enters emergency operating mode.

Emergency Exit Once PTT Key
If checked, emergency mode will exit when the user press the ptt key.

Conventional – Personality

Tx Signaling System

This option defines the available signaling system in Transmit status. Possible options are:

- None
- DTMF 1 - 4
- 2 Tone 1 - 4
- MDC 1 - 4
- 5 Tone

Rx Signaling System

This option defines the available signaling system in Receive status. Possible options are:

- None
- DTMF 1 - 4
- 2 Tone 1 - 4
- MDC 1 - 4
- 5 Tone

Auto Reset Type (5-Tone)

Allows one of the following options in reset mode:

- None
- Carrier Override
- Non Carrier Override
- Manual Reset

Decode Option

Select one or several Decoder Definitions that the radio is to decode.

Decode Type

This option decides decode condition in presence of channel change. Possible options are:

- Carrier: The radio can decode success upon carrier match.
- CTCSS/CDCSS: The radio can decode success upon match of both CTCSS/CDCSS and carrier.

PTT Key-up Mode

This drop-down list box defines when, if at all, a telegram will be sent when the PTT is pressed.

- Once Only: A telegram will be sent on the first activation of the PTT button when a call is instigated. This is dependent on the radio not being in Auto Reset Mode, or if it is in auto-reset mode, no telegram is transmitted when PTT is pressed (this caters for the situation whereby auto-reset mode is entered via the Forced Monitor mode).
- Every PTT: If this option is selected, then a defined telegram is sent every time the PTT button is pressed.
- Forbid: If disabled no telegram will be transmitted when PTT is pressed.

PTT Key-up Encode Telegram

Available when PTT Key-up Encode Type is set to Telegram. Select the required telegram, which is sent upon press of the PTT.

PTT De-key Encode Telegram

Enabling this option will result in a defined telegram being sent on radio PTT de-key.

Side Tone

If enabled, you could hear the tone of the telegram being sent out.

Conventional – DTMF Services – System

The DTMF (Dual-Tone Multi-Frequency) encoding technology uses two specific tones (high and low) to represent a number, so as to realize some features. After accessing the phone system, the radio can send or receive phone calls, which are based on the DTMF signaling. For portable and mobile radios, a maximum of 4 systems are supported.

Tone Duration (ms)
This option allows users to selects the amount of time that a DTMF tone is transmitted for a single digit

Tone Interval (ms)
This option allows users to selects the amount of time that the radio waits between DTMF digits.

First Digit Time More (ms)
This option allows the user to extends the sending time of first digit DTMF tone.

First Digit Delay (ms)
This option allows users to select the amount of time between PTT pressed and first digit of signaling system data packet transmission. This time allows the receiving radio to stabilize before receiving data.

DTMF Hold Time (s)
This option allows the user to set up by hand keyboard launch DTMF number keys duration.

D Code
D code assignment allows the "D" symbol to be used as a pause period in the Autodial, BOT ID, EOT ID. "D" Code assignment means it is a DTMF "D".

* and # Digit More (ms)
This option allows the user to extends the sending time of * and # digit DTMF tone.

Next Sequence Decode Time
This option allows users to select the amount of time between PTT pressed and first digit of signaling system data packet transmission. This time allows the receiving radio to stabilize before receiving data.

PTT ID Type

This option allows the user to select when the PTT ID is sent during a transmission for the current DTMF signaling system. Possible options are.

- None: PTT ID is not transmitted. If this option is selected, then KeyUp Encode and KeyDown Encode is disabled.
- Pre Only: PTT ID is transmitted upon press of the PTT button.
- Post Only: PTT ID is transmitted upon release of the PTT button.
- Pre & Post: PTT ID is transmitted upon both press and release of the PTT button.

Key Up Encode

It is used to define DTMF encode used for Pre PTT ID. 0-9, A-D,* and # can be used.

Key Down Encode

It is used to define DTMF encode used for the post PTT ID. 0-9, A-D,* and # can be used.

Auto Reset Timer Type

This is a feature that is typically associated with signaling squelch operation but is also applied to coded squelch. On receipt of a selective call or upon de-keying, the radio will enter auto-reset mode in which certain squelch requirements are defeated. The available options in this drop down combo box are None, With carrier override, Without carrier override, Manual.

Auto Reset Time (s)

For with/without carrier override auto reset type, after this preset time, the DTMF signaling will be reset.

Call ID Intermediate Code

A Caller ID Intermediate Code wild card character can be programmed with DTMF codes A, B, C, D, * or #.

Group Code

A Group Code can be programmed with DTMF codes A, B, C, D,* or #. If the transceiver receive a valid ID code with one to all of its digits substituted with this Group Code wild card, it will decode.

Message Intermediate Code

A Message Intermediate Code wild card character can be programmed with DTMF codes A, B, C, D, * or #. If the transceiver receives this Message Intermediate Code wild card character, the codes after it and before other wild code will be recognize as Status Codes. When decode, the radio will show the status ID or status alias.

End Code

A End Code wild card character can be programmed with DTMF codes A, B, C, D, * or #.

Short Side Tone

This option allows the user to enable or disable the the beep tone after the DTMF data was transmitted.

Side Tone

This option allows users to enable or disable the tone alert during the DTMF data packet transmitted.

Roll Screen Show

This option allows the user to enable or disable the rolling screen show during the DTMF data packet transmitted, This option is only available for radios with display.

Conventional – DTMF Services – Decode Def

Decode Type
The features allows the radio to respond different status when receiving the dtmf decode. When the radio user is leave, the call alert led will persist until reset by the user. Options are:

- None: Neither of the listed options can be performed on the current system.
- Call Alert : Allows a transmitting radio to notify another user, requesting that they call back the user (call initiator) when they (recipient) become available.
- Sel Call: The Selective Call reduces the number of calls not of interest from being heard. Typically, the Selective Call is used when the majority of transmissions are between a dispatcher with either a single radio or a group of radio users, where other users would not be interested in the call.
- Call Alert&Sel Call : Combination of Call Alert and Selective Call. This allows the receiving radio to receive voice calls besides Call Alert.

DTMF Number
It is used to define decode ID for current decode template. A decoder sequence may consist of up to 12 tones. 0-9 can be used.

Auto Transpond
This option specifies which predefined telegram from the telegram list is used for Auto Acknowledge.

Ack Delay Time (ms)
This option will cause the radio to transmit the reply when the acknowledge delay timer expires, regardless of the state of carrier detect on the channel. If the acknowledge delay timer is programmed as zero then the radio will reply to the call as fast as possible but obviously not instantly.

Clr to Transpond
When this option is selected the radio will transmit the reply as soon as there is no RF carrier detected on the channel, or when the acknowledge delay timer expires, which ever occurs first.

Response Type
Determines the type of action taken by the radio on receiving a valid telegram.
They are used to enable features of the radio, from lifting the squelch and
opening the radios audio circuits for an individual call sequence, to instigating an
emergency and they can also be used to display information if the radio has a
display or give alerts. Possible options are:

⬚ General: This is used for decoding own (individual/group) ID' s. Upon successful
decoding the appropriate alert may be sounded.
⬚ Stun: Enabling this feature means that if a stun decoder is received, any
attempts used to transmit will be inhibited except emergency. When the radio
has been stunned, forbid TX Alert will be heard when the PTT is pressed.
⬚ Kill: If a radio has a decoder set up for kill then on decoding the sequence the
radio will be 'killed'. All attempts at user activity, except powering on/off, will be
ignored. The only received signal action by the radio will be the revive decode
sequence.
⬚ Unstun: If a decoder is programmed with Revive and the radio has been killed
or stunned, then on receiving this sequence the radio will be active.

⬚ Security Inquire: Enabling this feature means that if a security inquire decode is
received, an security inquire alert will be sounded. During the security inquire
time, if no key pressed, the radio will enter emergency mode as soon as the
security inquire time expire. Security inquire time is set in emergency feature.

⬚ Active: If a stunned radio has a decoder programmed for active, then on
reception of this tone sequence the radio will revert to normal operation.The
radio may also be active by reprogramming the radio.

Alert Tone
Select the alert type that will sound when a call is received.

Alert Auto Reset
If enabled, the radio will sound only one sequence alert when receiving call alert
or call alert with voice decode. If disabled, the radio will sound alert circularly. The
interval between two sequence is 5 second.

Decode Led
If enabled, the orange LED will flash when received a call alert or sel cal.

Auto Record

This feature enable or disable the auto record.

Conventional – DTMF Services – Contact

Strip CTCSS/CDCSS
If enabled, the CTCSS/CDCSS will be not transmitted for the current DTMF Call List even if the revert channel have the CTCSS/CDCSS encode.

DTMF system
This drop down box is used to select which DTMF System will be used for the current DTMF Call List.

Revert Channel
This is used to select the analog channel used for the current DTMF Call List. The options are All the available channels or current channel.

Call ID
Allows the ability to add call information entry to the DTMF List.Possible Selection: 0 thru 9, the pound sign # , the asterisk *

Call Alias
This allows the radio users to easily recognize and select to the current DTMF Call List. Characters, Numbers, Spaces can be used for Alias.

Conventional – MDC Services – System

This option allows the user to configure the parameters of the MDC signaling system.MDC is used by two-way radios to communicate data when in Analog Mode. A maximum of 4 MDC systems can be created.

Primary ID (HEX)

Selects the unique one to four digit ID that identifies the radio while operating (transmitting or receiving MDC calls) on the current MDC - Signaling System.

Group ID (HEX)

Selects the unique three digit ID that identifies the radio as belonging to a unique group while operating (receiving MDC calls) on the current MDC - Signaling System.

PTT ID Type

Selects when the PTT ID is sent during a Normal Dispatch transmission for the current MDC - Signaling System. Possible options are:

- None
- Pre Only: Sent previous to a Normal Dispatch transmission.
- Post Only: Sent after a Normal Dispatch transmission.
- Pre & Post: Sent both prior to and after a Normal Dispatch transmission.

Call Alert

Selects the type of Call Alerts that can be received for the current MDC - Signaling System. A Call Alert allows a transmitting radio to notify (with an alert tone) and leave evidence of (by lighting the LED) a call on a receiving radio, when the radio-user is away. The Call Alert LED persists until reset by the user. A Call Alert w/Voice is a combination of a Sel Cal and a Call Alert.

Auto Reset Time (s)

Selects the maximum period of time that the radio is allowed to transmit voice communications once the Request to Talk (RTT) permission (from the dispatcher) has been received. This feature applies for the current MDC - Signaling System. Time is in seconds.

PreTime (ms)

Selects the amount of time between PTT button press and the first digit of the

Signaling System data packet transmission. This time allows the receiving radio to stabilize before receiving data. This applies for the current MDC Signaling System. Time is in milliseconds.

Preamble Bit Sync

Selects the number of synchronizing packets sent during MDC Pretime, for the current MDC Signaling System. Synchronizing packets allow transmitting and receiving radios to synchronize prior to Signaling System data packet transmission.

Fixed Retry Wait Time (s)

This duration is added to the CPS-calculated retry-wait-duration for Polite and Impolite transmissions. This has the effect of randomly staggering retry attempts, in an effort to have unsynchronized retry attempts from competing radios. This applies for the current MDC - Signaling System. Time is in seconds.

Ack PreTime (ms)

Selects the amount of time between automatic transmitter key-up and the first sent digit of a Signaling System data packet, for a transmission acknowledgement. This time allows the receiving radio to stabilize before receiving data. This applies for the current MDC Signaling System. Time is in milliseconds.

Remote Monitor

Selects Remote Monitor functionality for the current MDC - Signaling System. Possible Option

- Disable
- Per Command:MDC Call Remote Monitor Type selection takes precedence.
- Silent:When the walkie talkie receives a remote monitoring command, no sound or visual indication to the user the walkie talkie
- Non Silent:When the walkie talkie receives a remote monitoring command, display a sound or visual indication to the user of the walkie talkie

Remote Monitor Time (s)

Selects the amount of time between automatic transmitter key-up and the first sent digit of a Signaling System data packet, for a transmission acknowledgement. This time allows the receiving radio to stabilize before receiving data. This applies for the current MDC Signaling System. Time is in milliseconds.

Auto Mute Duration (ms)
Sets the duration that the radio remains muted when the radio is receiving Data Communication (MDC) signaling data to reduce noise from the data reception. The user has to know the size of the data to select a suitable duration. If the duration is too short then some unwanted noise will still be heard, and if the duration is too long, it might clip some voice audio. This is normally used on radios that support both voice and data on the same channel.

Fixed Pre Mute Duration (ms)
Sets the fixed pre mute duration that the radio remains muted when the radio is receiving a carrier at the beginning on a MDC channel. The user has to know the MDC transmission duration of the TX radio, including its pre-time to select a suitable duration.

PTT Short Side Tone
When selected, Causes the radio to sound one short alert tone, after the PTT button is pressed, and immediately following the Signaling System data packet being transmitted. The purpose is to indicate to the radio-user when voice may be initiated. This feature applies for the current MDC Signaling System.

CTCSS/DCS Transmit
When selected, Causes the radio to transmit CTCSS/DCS signals for the current MDC Signaling System. CTCSS/DCS is only transmitted if the Conventional Personality that uses this MDC system has CTCSS/DCS selected in its Tx Squelch Type field.

Display Decode ID
When selected,Causes the transmitting radio's Primary ID to appear in this radio's display upon receipt of certain MDC transmissions. This feature applies for the current MDC Signaling System.These MDC call types include; PTT ID's, Call Alerts, and Sel Cal's.

Radio Check Decode
When selected, Causes the radio to acknowledge receipt of a Radio Check from a dispatcher or another radio by sending back a reply. This feature applies for the current MDC - Signaling System.

Emergency Decode

Enables the radio to receive Emergency Mode signaling for the current MDC - Signaling System.

MDC Emergency Ack

If enabled, after receiving an emergency code from a remote radio, the radio will acknowledge a signaling to the remote radio in emergency state.

Call Alert Led

Causes the receiving radio to blinks its LED when it has received a Call Alert, for the MDC - Signaling System. The radio's LED double-flashes yellow for an individual call, and single-flashes yellow for a group call.

Alert Tone Auto Reset

Causes the radio to generate only one sequence of the Call Alert or Call Alert w/Voice alert tone, for the current MDC - Signaling System. Normally the Call Alert Tone Tag is a repeating alert tone.

Sel Call Decode

Allows the radio to receive a Sel Cal (Select Call) for the current MDC Signaling System. A Select Call is typically used when the majority of transmissions are between a dispatcher and a radio-user, or a group of radio-users, and when other users need not be bothered. This is accomplished by addressing based on Radio ID's.

Sel Call Led

xxxxxxxxxxxxxxxxxxxxxxxx

PTT Side Tone

Causes the radio to sound a continuous alert tone, from the time the PTT button is pressed, until the time that the Signaling System data packet is transmitted. The purpose is to indicate to the radio-user when voice may be initiated. This feature applies for the current MDC Signaling System.

Msg Decode

Allows the radio to receive MDC Messages for the current MDC - Signaling System.

Message Alert Tone Audible Reset
Causes the radio to generate only one sequence of an MDC Message alert tone. Normally an MDC Message Alert Tone Tag is a repeating alert tone. This feature applies for the current MDC - Signaling System.

Msg Led
Causes the receiving radio to blinks its LED (yellow) immediately upon receiving an MDC Message. The LED continues to flash until there is radio-user interaction with the radio, such as a button press. This feature applies for the current MDC - Signaling System.

Conventional – MDC Services – Message

MDC System
Selects the MDC Signaling System to be used by the current MDC Message.

Name Tone Tag
Selects the tone that sounds when receiving the current MDC Message. This allows the radio-user to identify the message by a distinctive tone. This setting takes precedence over the Message Tone Tag setting. However, when this field is set to Standard, the Message Tone Tag setting then takes precedence. There are several ring tones to choose from.

Revert Channel
Selects a channel for causing the current MDC Message to transmit on that channel.

Strip CTCSS/DCS
Causes the radio to not transmit CTCSS/DCS codes for the current MDC Message. CTCSS/DCS codes are stripped when the current Revert Personality, or current (Channel Selector) position Conventional Personality has Transmit CTCSS/DCS enabled.

Ack Expected
When Enabled, Causes the radio to expect a reply from the radio being called, for the current MDC Message. Upon a successful transmission, the receiving radio then transmits back an Acknowledge packet as a confirmation. Acknowledge" then momentarily appears in the radio's display. The radio will retry up to 5 times or until an Acknowledge is received. Else causes the radio to transmit this MDC Message only one time, with no expectation of an acknowledgement. The benefit is to reduce channel traffic by eliminating mandatory acknowledges and possible retries for this MDC Message.

Call Alias
Allows the ability to add a radio-user recognizable description to be associated with the current MDC Message. Hence, when selecting an MDC Message to be transmitted, the Message Alias represents (in the radio-user's display) the Message that will be sent. Additionally, this same message will be displayed if the

radio receives the message from the dispatcher. It is not possible to send messages directly from radio to radio.

Conventional – MDC Services – Status

MDC System
Selects the MDC Signaling System to be used by the current MDC Message.

Revert Channel
Selects a Analog channel for causing the current MDC status to transmit on that channel.

Strip CTCSS/DCS
Causes the radio to not transmit CTCSS/DCS codes for the current MDC Status. CTCSS/DCS codes are stripped when the current Revert Personality, or current (Channel Selector) position Conventional Personality has Transmit CTCSS/DCS enabled.

Ack Expected
When Enabled, Causes the radio to expect a reply from the radio being called, for the current MDC Status. Upon a successful transmission, the receiving radio then transmits back an Acknowledge packet as a confirmation. Acknowledge" then momentarily appears in the radio's display. The radio will retry up to 5 times or until an Acknowledge is received. Else causes the radio to transmit this MDC Status only one time, with no expectation of an acknowledgement. The benefit is to reduce channel traffic by eliminating mandatory acknowledges and possible retries for this MDC Status.

Call Alias
Allows the ability to add a radio-user recognizable description to be associated with the current MDC Status. Hence, when selecting an MDC Status to be transmitted, the Status Alias represents (in the radio-user's display) the Status that will be sent.

Conventional – MDC Services – Contact List

This section creates a contact list for the MDC signaling system, which supports a maximum of 250 MDC call lists.

Call Alias

This parameter defines the alias of a MDC call list for easy identification. Each alias can contain up to 8 alphanumeric characters.

MDC System

This parameter defines the alias of a MDC call list for easy identification. Each alias can contain up to 8 alphanumeric characters.

Revert Channel

This is the channel used for MDC call. Any analog channel may be set as the Revert Channel, including the channel indicated by the radio's channel selector.

Remote Monitor

Selects the Remote Monitor functionality on the receiving radio for the current MDC- Call List Member. The MDC System Remote Monitor Type selections on the radio being monitored take precedence over these settings. However, when MDC System Remote Monitor Type is set to "Per Command" then this setting is the rule.

Rx Multiplier

Selects a value that is multiplied by the receiving radio's selected MDC System Remote Monitor Time .This total amount of time then determines how long (in seconds) that the radio commanded into Remote Monitor mode is then able to receive calls. This setting applies for the current MDC- Call List Member. This receive audio can not be remotely monitored. Only transmitting audio is able to be remotely monitored; see Tx Multiplier. This Rx Multiplier value is transmitted with the initiating Remote Monitor command data packet. The Rx Multiplier value can be doubled by enabling the Global Multiplier field.

Tx Multiplier

Selects a value that is multiplied by the receiving radio's selected MDC System Remote Monitor Time. This total amount in time then determines how long (in seconds) that the radio commanded into Remote Monitor mode automatically keys-up allowing the initiating radio to listen-in on all surrounding audio. This

setting applies for the current MDC- Call List Member. This Tx Multiplier value is transmitted with the initiating Remote Monitor command data packet. Only this Tx Multiplier time allows for Remote Monitoring, Rx Multiplier audio can not be remotely monitored. The Tx Multiplier value can be doubled by enabling the Global Multiplier field.

Name Tone Tag
Select the identification tone, when receiving a call from the current list of MDC-members to the calling prompt or selective call issued the identification tone. This makes the walkie talkie users can through the logo sound particularly to identify a caller. Selectivity of these settings override the signaling configuration in the call and prompt identification tone. However, when this is set to the standard, signaling configuration identifying the tone setting has higher priority. There are several ring tone for choice.

Global Multiplier
Causes the Rx Multiplier and the Tx Multiplier values to double for the current MDC- Call List Member. This effectively doubles receive and transmit times for Remote Monitor.

ID Type
Selects the transmit Call ID format for the current MDC - Call List Member.

Individual ID
Selects the unique four digit ID to be transmitted for the current MDC - Call List Member. The transmitted ID can target one or more receiving radios. This allows MDC calls to be made to a specific radio (or radios) without disturbing other radios operating on the same channel.

Fleet ID
Selects the unique one digit ID to be transmitted for the current MDC - Call List Member. The transmitted Fleet ID can include many receiving radios. This allows MDC transmissions to be made to a specific Fleet of radios without disturbing other radios operating on the same channel. The Fleet can include more than one Call Group ID. The Fleet ID can define the first digit of the three digit Call Group ID. However, for a Fleet ID Type call, the second and third digits of the targeted Groups are sent using the "F" wildcard character (an all-inclusive digit).The Fleet

ID must be equal to the first digit of the receiving radio's current (three digit) Group ID for the call to be successfully received.

Group ID
Selects the unique two digit ID to be transmitted for the current MDC - Call List Member. The Fleet ID must also be defined. The transmitted Call Group ID can target several receiving radios. This allows MDC transmissions to be made to a specific Group of radios without disturbing other radios operating on the same channel.

Strip CTCSS/CDCSS
Causes the radio to not transmit CTCSS/DCS codes for the current MDC- Call List Member. CTCSS/DCS codes are stripped when a current Revert Personality, or current (Channel Selector) Conventional Personality, has Transmit CTCSS/DCS enabled.

ACK Expected
Causes the radio to expect a reply from the radio being called, for the current MDC - Call List Member. Replies are generally expected from call types such as, Call Alerts and Radio Checks. The radio continues to transmit these call types until an acknowledge is received. The maximum number of transmission retries is five.

Conventional – Two Tone Services – System

Duration of 1st Tone (ms)
This parameter defines the transmission duration of the first tone in the 2-Tone signaling.

Duration of 2nd Tone (ms)
This parameter defines the transmission duration of the second tone in the 2-Tone signaling.

Duration of Long Tone (ms)
This parameter defines the transmission duration of a long tone in the 2-Tone signaling.

Pre Time (ms)
This parameter defines the time between transmitting a carrier and transmitting the first tone, which ensures a more accurate and stable receiving.

Gap Time (ms)
This parameter defines the gap time between the first tone and the second tone during 2-Tone signal transmission. This parameter will be valid in case of a long tone.

Auto Reset Type
This is a feature that is typically associated with signaling squelch operation but is also applied to coded squelch.

Auto Reset Time (s)
On entering into auto-reset mode the auto-reset timer will be started. The radio will reset to the previous Squelch Mode on expiry of the auto-reset timer.

Side Tone
When checked, the tone will be sounded when the tones are being transmitted.

Short Side Tone
When checked, the beep tone will be heard after the tones have been transmitted.

Conventional – Two Tone Services – Decode Def

Decode Type
Selects the type of call that can be received on the current 2-Tone Signaling System.The features allows the radio to respond different status when receiving the 2Tone decode. Options available are:

- None: Neither of the listed options can be performed on the current system.
- Call Alert: Allows a transmitting radio to notify another user, requesting that they call back the user (call initiator) when they (recipient) become available.
- Sel Call: The Selective Call reduces the number of calls not of interest from being heard. Typically, the Selective Call is used when the majority of transmissions are between a dispatcher with either a single radio or a group of radio users, where other users would not be interested in the call.
- Call Alert&Sel Call: Combination of Call Alert and Selective Call. This allows the receiving radio to receive voice calls besides Call Alert.

User Tone List
This parameter decides whether to Enable User Tone List when a call is received.

Alert Tone
This parameter decides whether to Enable User Tone List when a call is received.

Call Format
This parameter defines the decode format of the current 2-Tone signaling system.

1st Frequency (Hz)
This parameter defines the first tone frequency of the 2-Tone signals.

2nd Frequency (Hz)
This parameter defines the first tone frequency of the 2-Tone signals.

**Auto Trans
pond**
This option specifies which predefined telegram from the telegram list is used for Auto Acknowledge.

Ack Delay Time (ms)
This option will cause the radio to transmit the reply when the acknowledge delay timer expires, regardless of the state of carrier detect on the channel. If the acknowledge delay timer is programmed as zero then the radio will reply to the call as fast as possible but obviously not instantly.

Clr to Transpond
This option will cause the radio to transmit the reply when the acknowledge delay timer expires, regardless of the state of carrier detect on the channel. If the acknowledge delay timer is programmed as zero then the radio will reply to the call as fast as possible but obviously not instantly.

Side Tone
When checked, the tone will be sounded when the tones are being transmitted.

Continues Recording When Break
If enabled, the radio will keep recording after the break of carrier until the record time out of timer.

Auto Record
When this option is selected the radio will transmit the reply as soon as there is no RF carrier detected on the channel, or when the acknowledge delay timer expires, which ever occurs first.

Alert Auto Reset
Causes the radio to generate only one sequence of the Call Alert or Call Alert w/Voice alert tone, for the current 2-Tone - Signaling System. Normally the Call Alert Tone Tag is a repeating alert tone.

Decode Led
If enabled, the orange LED will flash when received a call alert or sel cal.

Conventional – Two Tone Services – Contact

Strip CTCSS/CDCSS
If enabled, the CTCSS/CDCSS will be not transmitted for the current 2-Tone Call List even if the revert channel have the CTCSS/CDCSS encode.2Tone System

Call Format
This parameter defines the decode format of the current 2-Tone signaling system.

1st Frequency (Hz)
This parameter defines the first tone frequency of the 2-Tone signals.

2nd Frequency (Hz)
This parameter defines the first tone frequency of the 2-Tone signals.

Revert Channel
Allows the user to transmit a call on an alternative channel as indicated by the Revert Channel, instead of the channel indicated by the radio's channel selector. Once the call completes, the radio reverts back to the channel indicated by the radio's channel selector. The Selected option is used when this call member is expected to be transmitted on the channel indicated by the radio's channel selector.

Call Alias
This allows the radio users to easily recognize and select to the current 2-Tone Call List. Characters, Numbers, Spaces can be used for Alias.

Conventional – Five Tone Services – Signaling Configuration

Sequence Time Out (ms)
Specify the maximum delay time between two successfully decoded sequences.

Ack Expected Duration (s)
Sets the time period when the radio expects for an acknowledgement. The range is from 1 to 255 seconds, in increments of 1 second. Upon the telegram of Ack Expected type is transmitted, the call is successful if the expected acknowledgement is received within the Acknowledge Expected Duration. If the transmitted telegram is of Ack Expected With Answer type, carrier is required to be received within the Call Answer Time after acknowledgement is received. The call is failed if the expected acknowledgement is not received before the Acknowledge Expected Duration expires.

Carrier Gone Time (s)
The timer activates once carrier is off.

Telegram Repeat Time (s)
Specify the repeat times for telegram transmission.

Auto Reset Time (s)
Auto reset time is the time period which the radio will wait before closing its squelch and returning to its receive squelch state. The time can be set from 1 to 60 seconds.

Authorization Buttons
Authorization enabled prevents users from monitoring or talking on the channel until the radio is authorized by the infrastructure. To enable users to request authorization, the radio must be programmed to send an authorization request telegram using the designated authorization request call button. A button is designated as authorization request by programming authorization request to one of the following button functions: Call 1, 2,3,4, PTT, Address Send.

Single Status List
Selects a single Encode/Decode Status List. If enabled the Encode Status List screen is not available and the Decode Status List is used for Encode and Decode Status.

Miss Call List

Enables / Disables the missed call list per radio. Following operating modes are offered:(1)Don't stack call if list is full.(2)Overwrite oldest entry in the list.

Conventional – Five Tone Services – System

Common

Standard
User must specify a signaling standard for each 5-Tone system. While encoding, user may select a standard for each frame. While decoding, user may select a standard for each decode telegram definition, standard of all selected decode telegram definition on a channel must be the same.

Signaling standard includes the following:

Tone characteristics: frequency, length.

Repeat tone, group tone.

Tolerance: frequency tolerance, tone length tolerance.

Radio supports the following 8 signaling standards. 5-Tone defines 16 tones corresponding to the 16 characters of 0 ? 9, A ? F, with each character corresponding to a certain tone frequency and length.

Signaling standards: ZVEI1, ZVEI2, ZVEI3, CCIR1, CCIR2, EEA, EIA

In the user defined signaling standard, user may set the tone frequency and tone length in encoding and decoding.

All tones in a signaling standard will be transmitted in the same length.

Group Tone
Allow the user the ability to set any tone of the standard tones 0-9, A-F as the group tone for any signaling system.

Group tone decoding shall comply with the following rules:

No matter one or several group tones are set on the decoding party, if a group tone is received, and the corresponding digit in the decode definition is set as group call digit, it will be judged as group call after successful decoding.

Repeat Tone

Allow the user the ability to set any tone of the standard tones 0-9, A-F as the repeat tone or any signaling system. Detecting starts from the second tone in a sequence, if the second tone is the same as the former, it will be replaced with the repeat tone. After replacement the next digit will be compared with the former digit until all tones in the sequence are processed from beginning to end.

Encode

Single Tone Frequency (Hz)

For each Signaling System it is possible to define two Encode Single Tones. Encode Single Tones are referenced from Encode Sequences in the same way as standard tones. The Frequency and Duration of the Encode Single Tones is programmable using the parameters and the CPS user must be careful not to overlap a single tone frequency with that of a standard tone. You can set the frequency of Tone1 or Tone2.

Single Tone Duration (ms)

This parameter is used to define the length of time the tone will be transmitted. It can be set from 10ms to 6000ms in 10ms step.

Decode

Single Tone Frequency

For each Signaling System it is possible to define two Decode Single Tones. Decode Single tones are referenced from Decode Sequences in the same way as standard tones. The decoder single tone frequency is programmable using the parameters; the CPS user must be careful not to overlap a single tone frequency with that of a standard tone.

Min Single Tone Duration (ms)

The minimum duration of decoder single tone is programmable using this parameter.

Max Single Tone Duration (ms)

The maximum duration of decoder single tone is programmable using this parameter and can be set from 40ms to 6000ms in 10ms steps.

Conventional – Five Tone Services – Encoder – Sequences

Signaling Type

Sets the signaling type used when transmitting digital signaling sequence. 5-Tone are available. If signaling type is set to 5-Tone, the predefined No. of the 5-Tone Code System are available for select.

5-Tone Code System

When Signaling Type is set to 5-Tone, this parameter specifies the No. of the predefined 5-Tone Code System.

PreTime (ms)

Select the amount of time between transmitter key-up and the first digit of signaling transmission. This time allows the receiving radio to stabilize before receiving data.

Extended First Tone Duration (ms)

User may extend the length of the first tone of each frame to 0 – 2550ms, in steps of 10ms. Sets the extended first tone duration as 0ms causes this parameter invalid.

Sequence

Sets characters contained in Sequence. When the signaling type is set to 5-Tone, a sequence may contain up to 16 characters.

Conventional – Five Tone Services – Encoder – Telegrams

First Sequence

Select the No. composing Telegram sequence. The user can set the No. of the first, second and third sequences composing the Telegram. The No. of First Sequence must be selected, while the No. of Second Sequence and Third Sequence may not be selected.
Predefined Sequence can be selected for each Sequence.

Second Sequence

Select the No. composing Telegram sequence. The user can set the No. of the first, second and third sequences composing the Telegram. The No. of First Sequence must be selected, while the No. of Second Sequence and Third Sequence may not be selected.
Predefined Sequence can be selected for each Sequence.

Third Sequence

Select the No. composing Telegram sequence. The user can set the No. of the first, second and third sequences composing the Telegram. The No. of First Sequence must be selected, while the No. of Second Sequence and Third Sequence may not be selected.
Predefined Sequence can be selected for each Sequence.

Acknowledge Expected

Set the type of transmitted signaling. The following are the choices:

- No Acknowledge Expected: The transmitting party does not expect Acknowledgement. A transmission is deemed successful after signaling is transmitted, no matter whether the other party receives it or not.
- Only ACK Expected: The transmitting party will expect the ACK from the other party after Telegram is transmitted (ACK type is ACK/Authorization). The call is deemed failed if no ACK is received from the other party before the ACK Expected Duration expires. If Telegram Repeat feature is enabled, the telegram will be transmitted repeatedly.
- Both ACK and Answer Expected: The transmitting party expects the ACK (Decode Type: ACK/Ringing) and voice. If the transmitting party receives the ACK/Ringing code during the Acknowledge Expected Duration time, as

well as the carrier within the Call Answer Time, it means the call is successfully established.

DTMF
This drop down box is used to select which DTMF System will be used for the current Encoder Telegrams.

Conventional – Five Tone Services – Encoder – Status List

Status Alias

In the status list, each item includes a status and the corresponding customized alias which is up to 8 alphanumeric characters.

Encode

xxxxxxxxxxxxxxxxxxxxxxxxxxxxx

Conventional – Five Tone Services – Decoder – Decoder Def

Sequences
A decoder telegram consists of 1 to 3 decoder sequence(s) concatenated together.

5-Tone Code System
Use this option to select the decoding system, and the 5-Tone standard in each system, group tone and repeat tone setting. User may set 1-8 signaling systems.

Each signaling system must define a signaling standard.

Radio supports 7 selectable 5-Tone standards: ZVEI1, ZVEI2, ZVEI3, CCIR1, CCIR 70ms/100ms, EEA, EIA, each standard with 16 tones.

In addition, user may define the standard. Radio supports 2 user defined standards, in which user may define the tone frequency and length in 5-Tone encode and decode. Tone length of the all standards are the same.

In each signaling system, user may define any of the standard tones (0-9, A-F) as group tone. The group tone default is Tone A.

User may define any of the standard tones (0-9, A-F) as repeat tone. The repeat tone default is Tone E.

Group Bits
This option displays 12 check boxes, with 12 group digits that may be used in tone sequence. Designate one character digit of the received 5-Tone signaling as group digit for each decode sequence, this means the group tone is to be received at this digit, the radio will identify and decode the call. If it is a group call, the radio will sound group call alert.

Sequence 1, 2, 3
In 5-Tone signaling system, each decode telegram consists of 1 to 3 sequences, each with maximum 16 tones.

Each sequence may include:

1. Any tone of the standard signaling tones (0-9, A, B, C, D, E, F)
2. The corresponding group digit must be checked, for any of the 16 tones to achieve group call. See Group Sequence 1-3 for details. If the transmitting party is set with repeat tone, the decoding party does not need to replace the corresponding digit with repeat tone.

   For example: Group Call: The transmitting party is set to 12G45, and the decoding party is set to 12 () 45 (G is group tone). Then any tone other than the group tone could be included in the () of the decoding party, for the call to be decoded as group call.

   Repeat Tone: The transmitting party is set to 12445 (E is repeat tone), while the transmitting party is set to 124E5 actually. The decoding party is set to 12445.
3. Address ID of radio A is programmable from 1 to 8 digits, corresponding to variable address digit of the transmitting party.
4. Radio A may be set with a 1 to 3 digit Address ID, which is corresponding to the variable address digit of the encoding party.

Decode Options

Decode Type

Set the response after a valid message is received. Receive a call sequence activates monitor and the auto reset mode, or emits warning tone, or display information.

When RX Squelch is set as Carrier squelch or CTCSS/CDCSS squelch, i.e., the squelch condition may be satisfied without signaling, thus receive call without priority discrimination.

If RX Squelch is set as Optional Signaling squelch or CTCSS/CDCSS & Optional Signaling squelch, within a certain time period, different Decode Type may have different priority level.

Private Call Tone List
An Auto-Ack telegram is sent if the radio user has enabled call forward to indicated that the radio is unattended.If a user has enabled Call Forward, any calls forwarded will not be placed in the forwarding radios missed calls list.The CF telegram will only be sent if the user enables the Call Forward feature.

Group Call Tone List
When this option is selected, this call alert sounds when receiving a group call sequence.

Call Reminder Tone List
This check box is used to enable/disable the Call Reminder alert. If enabled it will be sounded selected alert every 15 seconds until the call is acted.

Auto Acknowledge List
When the feature enabled, radio will automatically transpond a telegram after an individual call is received and successfully decoded.

Call Forwarding Ack List
An Auto-Ack telegram is sent if the radio user has enabled call forward to indicated that the radio is unattended.If a user has enabled Call Forward, any calls forwarded will not be placed in the forwarding radios missed calls list.The CF telegram will only be sent if the user enables the Call Forward feature.

Call Reminder Led
If enabled, after receiving a selective call, if not pressing any key to response, there will be a LED indication.

Auto Reset Start
If enabled, for the 5-tone decoder needing reset by time or key, it will start the 5-tone selective call .

Decode Led
If enabled, the orange LED will flash when received a call alert or sel cal.

Call Answer Time
This option allows users to decide whether call answer timer is activated after decoding. Decoding will join into call log when call answer timer is activated.

Auto Record

If enabled, the radio will start recording automatically after receiveing a 5-tone signaling .

Conventional – Five Tone Services – Decoder – Auto Ack

Acknowledge Telegram
Use this parameter to designate a telegram as the auto Acknowledge message, which is predefined in the message list.

Acknowledge Delay (ms)
When this option is checked, radio will transmit Ack telegram forcibly when the Ack delay expires, no matter carrier is detected or not on the current channel, i.e., regardless the channel free parameter. If channel free is selected, radio will transmit Ack telegram before the Ack delay expires while no carrier is detected on the current channel. If the Ack delay is set as 0, radio will Ack soon but not promptly.

Acknowledge Revert Channel
This parameter define the channel frequency for the Ack telegram encoding, while CTC/DCS will accompany the set revert channel. Each Ack telegram can be set to transmit on a revert channel. Signaling standard, Tx power, Tx frequency, channel setting, CTC/DCS setting are in accordance with the revert channel.

Channel Free
Set the rule when Radio automatically acknowledges a telegram. Choices are:

- Checked: Radio will automatically acknowledge a telegram before Ack delay expires while no carrier is detected on the current channel. If the revert channel is checked, radio will check the revert channel for carrier presence.
- Unchecked: Radio will automatically acknowledge a telegram before Ack delay expires in despite of carrier is detected or not.

Side Tone
For each defined acknowledgement block it is possible to disable side tones indications that are normally given when the radio performs auto acknowledgement or call forward.

Tx LED
For each defined acknowledgement block it is possible to disable TX LED indications that are normally given when the radio performs auto acknowledgement or call forward.

Conventional – Five Tone Services – Decoder – Status List

Status Alias
In the status list, each item includes a status and the corresponding customized alias which is up to 8 alphanumeric characters.

Decode
This entry can only be up to a maximum of 3 digits. Edit the Telegram using variable alphanumeric characters (S1NS3) (seeN), S1NS3 will be replaced with status when transmitting.

Conventional – Five Tone Services – User Define Code System

Tone 0 – Tone F
This screen is used to define the each tone frequency. The tones 0 to 9 & A-F can be set between 300 and 3000 Hz using the parameters. The searching signal or the FARO signal be possible to be selected via software, and the maximum range of the each tone frequency will be 3900 Hz.

Encoder Tone Duration (ms)
This parameter is used to define the length of time the tone will be transmitted. It can be set from 40ms to 6000ms in 10ms steps.

Decoder Min Tone Duration (ms)
The decoder minimum tone duration is programmable using this parameter and can be set from 10ms to 6000ms in 10ms steps.

Decoder Max Tone Duration (ms)
The decoder maximum tone duration is programmable using this parameter and can be set from 40ms to 6000ms in 10ms steps.

Conventional – Five Tone Services – Contact List

Call Alias

In the Address list, each item includes a address and a corresponding customized alias which is up to 8 alphanumeric characters. After successful decoding, radio will search the match address and telegram in the Address List, to display the corresponding alias to identify the caller.

Address

This entry can only be up to a maximum of 8 digits. Edit the Telegram using variable alphanumeric characters (A1......A8), A1......A8 will be replaced with address when transmitting.

Encode Telegram

Advanced user designates a Telegram in the address list as the call telegram.

Conventional – Smart Call

Signaling Type

This parameter defines the signaling type of shortcut call. Possibilities are None, 2-Tone, DTMF, MDC, and 5-Tone.

Call List

This parameter defines the desired call list.

Signaling Type

This parameter defines the signaling type of shortcut call. Possibilities are None, 2-Tone, DTMF, MDC, and 5-Tone.

Call List

This parameter defines the desired call list.

Signaling Type

This parameter defines the signaling type of shortcut call. Possibilities are None, 2-Tone, DTMF, MDC, and 5-Tone.

Call List

This parameter defines the desired call list.

Signaling Type

This parameter defines the signaling type of shortcut call. Possibilities are None, 2-Tone, DTMF, MDC, and 5-Tone.

Call List

This parameter defines the desired call list.

STANDARD KEYBOARD ENTRY

Contacts

      Contact 1

            Call Alert

            View Number

      Manual Dial

            Radio Number

      Cha Contact

            Group ID

Scan

ZONE

Messages

      In Box

      Write

      Quick Text

      Sent Items

      Drafts

      Digital Voice Play

      Digital Voice Rec

Call Log

      Missed

      Answered

      Outgoing

Utilities

    Radio Settings

        Tone/Alerts

            All Tones

            CharFreeInd

            Keypad Tones

            Power Up

            Private C all

            Group Call

            Text Message

            Call Alert

            Talk Permit

            LoneWorkerPre

            TxForbidden

            TOT- Pre

            Low Battery

            Scan

            ChaAnnunciate

            Voice Prompt

            GrpCallAlert

        Power

        Back Light

        Intro Screen

        Language

English

Sim Chinese

Trad Chinese

Russian

Led Indicator

Encrypt

Passwd Lock

Radio Info

Radio Alias

My Radio ID

Model Name

Model Number

Firmware Ver

Hardware Ver

Bootloader Ver

Database Ver

Serial Number

ExtDevice ID

Freq Range

Last Prog Time

Radio Program

        Ch Program

                List

                Ch Prog New

        Contact Prog

                List

                Cont Prog New

Different types of fields are entered into the radio slightly different. This section defines the field and shows how it works

ASCII Fields
ASCII Fields is used whenever you need to enter alpha numeric data such as names in alias fields.

The numeric keys are used for entering the data two characters at a time. To calculate the numeric data to the ASCII equivalent, add 32 to the two digit decimal number just entered. That means 00 = 32 which is space and 95 translates to 127.

To enter the data, the user presses two numeric keys in a row. After the second character is entered, the program stores the data in the buffer and then moves the cursor to the right unless it is already at the far end of the field. The user then presses the orange button anytime to accept the field.

Anytime the user presses the left or right arrow keys, the cursor will move left or right and start the sequence to enter another two characters. The keys will not change the value of what is already in the field.

Anytime the user presses the top side button, the program will abort from the field. If the user is not waiting for the second character of the field, then pressing the orange button will exit from the field and process the field.

Numeric Fields
Numeric fields are used for entering fields that consist entirely of numbers.

After each key is pressed the data appears on the display and the cursor moves one character to the right.

The following keys are active:

> is used to move the cursor on the screen to the right
< is used to move the cursor on the screen to the left
orange button is used to accept the entire field
top side button is used to abort from field without any entry
numeric keys for entry of the data

CTCSS Fields
CTCSS fields are used for entering CTCSS data.

The numeric keys are used for entering the data three characters at a time corresponding to the three digit CTCSS code. For two digit codes such as 67 Hz enter 670. For four digit codes such as 103.5 Hz enter just the 103.

The following keys are active:

> is used to move the cursor on the screen to the right
< is used to move the cursor on the screen to the left
orange button is used to accept the entire field
top side button is used to abort from field without any entry
numeric keys for entry of the data

DCS Fields
DCS fields are used for entering DCS data.

The numeric keys are used for entering the data three characters at a time corresponding to the three digit DCS code.

The following keys are active:

> is used to move the cursor on the screen to the right
< is used to move the cursor on the screen to the left
orange button is used to accept the entire field
top side button is used to abort from field without any entry
numeric keys for entry of the data

DTMF Fields
DTMF fields are used for entering DTMF data. All the normal DTMF keys are used (0-9, * and #) as is and the top four keys starting from left to right corresponds to DTMF A, B, C, and D.

The following keys are active:

orange button is used to accept the entire field
top side button is used to abort from field without any entry
numeric keys for entry of the data

Flag Fields

Flag fields us what is used in check boxes. It is either enabled or disabled. For Flag data, we use 1 for the box being checked and 0 for the box being unchecked.

The following keys are active:

   1 key to indicate box checked
   0 key to indicate box unchecked
   orange button is used to accept the entry
   top side button is used to abort from field without any entry

Compressed ASCII Fields

Compressed ASCII Fields are used for entering 6 bit ASCII data. The numeric keys are used for entering the data two characters at a time. The number which is between 0 and 63 corresponds to all the upper case letters, all the lower case letters, numbers, space, and period.

 After the two digit number is selected, then the following keys are active:

   > is used to increment the character with a wraparound at 63
   < is used to decrement the character with a wraparound at 0
   orange button is used to accept the character and increment one position
   top side button is used to abort from field without any entry

 If the program just starts up or after the orange button is used to accept the character, then the following keys are active:

   > is used to move the cursor on the screen to the right
   < is used to move the cursor on the screen to the left
   orange button is used to accept the entire field
   top side button is used to abort from field without any entry
   numeric keys for entry of the two digit data

Frequency Fields

Frequency Fields are used for entering Rx and Tx frequency data. What makes this unique is that after the first three digits, the program has a fixed decimal point followed by more digits. If the user enter one or more numbers and they press the enter key, then the remaining characters fill with zero's.

The following keys and buttons are active

\> is used to move the cursor on the screen to the right
\< is used to move the cursor on the screen to the left
orange button is used to accept the entire field
top side button is used to abort from field without any entry
numeric keys for entry of the frequency data

Step Fields
Step fields is used to enter Numeric data within a certain range and step size.

 The numeric keys are used for entering the data. After each key is pressed the data appears on the display and the cursor moves one character to the right.

 The following keys are active:

 \> is used to move the cursor on the screen to the right
 \< is used to move the cursor on the screen to the left
 orange button is used to accept the entire field
 top side button is used to abort from field without any entry
 numeric keys for entry of the data

After the orange button is pressed, the data is presented as a value closest to the allowable value for the field and the following keys are active:

 \> is used to decrement the value a step size
 \< is used to increment the value a step size
 orange button is used to accept the entire field
 top side button is used to abort from field without any entry

Scrolling Fields
Scrolling fields are used to enter scrolling data.

The numeric keys are used for entering the data at the same time the data is scrolling. If the value of the scrolling data is between 2 and 9, then a single digit is expected. If the number of scrolling entries is greater than 9 then two digits are expected.

 Once the one are two digits are entered, the following keys are now active:

 \> is used to increment the value with the new prompt on the display
 \< is used to decrement the value with the new prompt on the display

orange button is used to accept the data
top side button is used to abort from field without any entry

===
Keypad Programming
INITIAL SCREEN

===

The user now presses the 1 key and you get the following scrolling menu:

KEYBOARD PROGRA
0 Exit
1 General Setting
2 Zones
3 Channel
4 Scan
5 DMR Services
6 Emergency
7 Personality
8 Paging

==

Keypad Programming -> General Settings
GENERAL SETTINGS SELECTION SCREEN

==

GENERAL SETTIN

0 Exit

1 Setting

2 Menu

3 Mic and Vox

4 Buttons

5 One Touch Call

6 User Tones

7 UI Indication

===

SETTING SCREEN

===

SETTINGS
0 Exit
1 Basic Settings
2 Talk Around
3 Password Mang
4 Scan
5 Keyboard Lock (Channel Display Mode)
6 Save

```
================================================================
```
Keypad Programming -> General Settings -> Settings -> Basic Settings

1111
```
================================================================
```

BASIC SETTINGS

0 Exit

1 Radio Alias

2 Power On Msg

3 Unique Radio ID

4 Radio ID

5 Squelch Normal

6 Squelch Tight

7 Dig Voice Gain

8 Monitor Tight

9 Preamble Durat

```
================================================================
```
Keypad Programming -> General Settings -> Settings -> Talk Around

1112
```
================================================================
```

TALK AROUND

0 Exit

1 Group Hang

2 Private Hang

```
================================================================
```
Keypad Programming -> General Settings -> Settings -> Password Mang

1113
```
================================================================
```

PASSWORD MANA

0 Exit

1 Radio Lock

2 Radio Password

3 CPS Write Lock

4 CPS W Password

5 CPS Read Lock
6 CPS R Password
7 Codeplug Lock
8 Codeplug Pwr

==

Keypad Programming -> General Settings -> Settings -> Scan
1114

==

SCAN
0 Exit
1 Digital Hang
2 Analog Hang

==

Keypad Programming -> General Settings -> Settings -> Keypad Lock
1115

==

KEYPAD LOCK
0 Exit
1 Auto Lock
2 Lock Delay

==

Keypad Programming -> General Settings -> Settings -> Save

1116

==

SAVE

0 Exit

1 Save Preamble

2 Save Mode Rec

Which will then have the following sub submenu if you press 2

==

Keypad Programming -> General Settings -> Menu
MENU SCREEN

==

MENU

0 Exit

1 Supplement

2 Contact

3 Scan

4 Message

5 Menu

6 Call Log

7 Utilities 1

8 Utilities 2

9 Zone

==

Keypad Programming -> General Settings -> Menu -> Supplement

1121

==

SUPPLEMENT

0 Exit

1 Call Alert

2 Radio Check

3 Radio Disable

4 Radio Enable

5 Remote Monitor

==

Keypad Programming -> General Settings -> Menu -> Contact

1122

==

CONTACT

0 Exit

1 Contact

2 New Contact

3 Manual Dial

4 Phone Man Dial

5 Edit Contact

6 Delete Contact

7 Program Key

===

Keypad Programming -> General Settings -> Menu -> Scan

1123

===

SCAN
0 Exit
1 Scan
2 Scan On/Off
3 Edit List

===

Keypad Programming -> General Settings -> Menu -> Message

1124

===

MESSAGES
0 Exit
1 In Box
2 Sent Items
3 Draft Box
4 Quick Text
5 Write
6 Forward
7 Reply

```
==================================================================
```

Keypad Programming -> General Settings -> Menu -> MENU

1125

```
==================================================================
```

Menu

0 Exit

1 Menu Hang Time

```
==================================================================
```

Keypad Programming -> General Settings -> Menu -> Call Log

1126

```
==================================================================
```

CALL LOG

0 Exit

1 Missed

2 Answered

3 Outgoing

```
==================================================================
```

Keypad Programming -> General Settings -> Menu -> Utility 1

1127

```
==================================================================
```

UTILITY 1

0 Exit

1 Radio Setting

2 Talk Around

3 Tones/Alert

4 Power

5 Back Light

6 Intro Screen

7 Keypad Lock

==

Keypad Programming -> General Settings -> Menu -> Utility 2

1128

==

UTILITY 2
0 Exit
1 Led Indicator
2 Squelch
3 VOX
4 Lone Worker
5 ManDown
6 Password/Lock
7 Privacy
8 Language
9 Disp Mode

==

Keypad Programming -> General Settings -> Menu -> Zone

1129

==

Zone

Which will then have the following sub submenu if you press 3

==

Keypad Programming -> General Settings -> Microphone/VOX
MICROPHONE/VOX SCREEN

==

==

Keypad Programming -> General Settings -> Menu -> Zone
113

==

MICROPHONE/VOX
0 Exit
1 Mic Gain Level
2 VOX Sensitivity
3 VOX Hold Time
4 Ext Mic Gain

Which will then have the following Data Entry if you press 4

==

==

==

Keypad Programming -> General Settings -> Menu -> Zone
114

==

BUTTONS
0 Exit
1 Top Short
2 Top Long
3 Side 1 Short
4 Side 1 Long
5 Side 2 Short
6 Side 2 Long
7 Long Duration
8 Emerg Duration

NAVIGATION BUTTONS NOT PROGRAMMED FROM KEYPAD AT THIS TIME

Which will then have the following sub submenu if you press 5

==

==

ONE TOUCH CAL
0 Exit
1 Touch Access
2 Number Access

Which will then have the following Data Entry if you press 6

==

Keypad Programming -> General Settings -> One Touch Call -> One Touch Call
1151

==

ONE TOUCH ACC
0 Exit
1 Select Index
2 Type
3 Mode
4 Call
5 Call Type
6 Text Message

===
Keypad Programming -> General Settings -> One Touch Call -> One Touch Call
1152

===

KEY QUICK ACCE
0 Exit
1 Select Index
2 Type
3 Mode
4 Call
5 Call Type
6 Text Message

==

Keypad Programming -> General Settings -> User Defined Tone
116

==

USR DEFINED TO
0 Exit
1 Select Index
2 Select Tone #
3 Frequency
4 Duration
5 Cycle Times
6 Interval

Which will then have the following sub submenu if you press 7

```
====================================================================
        Keypad Programming -> General Settings -> User Defined Tone
                      USER DEFINED TONE SCREEN
====================================================================
```

UI INDICATIONS
0 Exit
1 LED
2 Tone/Alert 1
3 Tone/Alert 2
4 Tone/Alert 3
5 Backlight

```
==================================================================
```
Keypad Programming -> General Settings -> UI Indication -> LED
1171
```
==================================================================
```

LEDS
0 Exit
1 All Radio LEDs
2 Tx LED
3 Rx LED
4 Scan LED
5 Low Battery LED

```
===================================================================
```

Keypad Programming -> General Settings -> UI Indication -> Tone Alerts 1

1172

```
===================================================================
```

TONE/ALERTS 1

0 Exit

1 Radio Silent

2 Channel Free

3 Keypad Tone

4 Power Up Tone

5 Private Call T

6 Group Call Ton

7 Text Message

8 Message Durati

```
===================================================================
```

Keypad Programming -> General Settings -> UI Indication -> Tone Alerts 2

1173

```
===================================================================
```

TONE/ALERTS 2

0 Exit

1 Call Alert

2 Call Duration

3 Lone Worker

4 Tx Forbidden

5 TOT Pre-Alert

6 Battery Tone

7 Battery Dura

===

Keypad Programming -> General Settings -> UI Indication -> Tone Alerts 3

1174

===

TONE/ALERTS 3

0 Exit

1 Scan Tone

2 Channel Voice

3 Talk Permit

4 Emergency Dur

===

Keypad Programming -> General Settings -> UI Indication -> Backlights

1175

===

BACKLIGHTS

0 Exit

1 Mode

2 Keypad Trigger

3 Backlight Time

Pressing 2 will get the following:

```
================================================================
                    Keypad Programming -> Zones
                         ZONES SCREEN
================================================================
```

```
================================================================
Keypad Programming -> Zones
12
================================================================
```

ZONES

0 Exit

Due to the complexity of implementing zones on the keypad, this feature will only be setup from the CPS

Pressing 3 will get the following if you are already on an Analog Channel when you started the Keypad Programming

CHANNELS
0 Exit
1 Modify ACH

Or will get you the following if you are already on a Digital Channel when you started the Keypad Programming

CHANNELS
0 Exit
1 Modify DCH

==
Keypad Programming -> Channel -> Analog Channel
ANALOG CHANNEL SCREEN
==

Which will then have the following submenu if you press 1:

ANALOG CHANNE
0 Exit
1 Analog 1
2 Analog 2
3 Rx
4 Tx 1
5 Tx 2

==
Keypad Programming -> Channel -> Analog Channel ->Analog 1
1311
==

ANALOG 1
0 Exit
1 Channel Alias
2 Squelch Level
3 Channel Band
4 Personality
5 Scan List
6 Scan Start

==
Keypad Programming -> Channel -> Analog Channel ->Analog 2
1312
==

ANALOG 2
0 Exit
1 Rx Only
2 Talk Around
3 Lone Worker
4 VOX
5 Scrambler
6 Empasis/De-Em

```
================================================================
```

Keypad Programming -> Channel -> Analog Channel ->Rx

1313

```
================================================================
```

RECEIVER

0 Exit
1 Frequency
2 CTCSS/DCS Ty
3 CTCSS
4 DCS
5 Ref Frequency
6 Rx Squelch
7 Monitor Squelch
8 Switch Squlech

```
================================================================
```

Keypad Programming -> Channel -> Analog Channel ->Tx 1

1314

```
================================================================
```

TRANSMITTER 1

0 Exit
1 Frequency
2 CTCSS/DCS Ty
3 CTCSS
4 DCS
5 Reverse Burst
6 Revert Options
7 Ref Frequency
8 Power Level

==

Keypad Programming -> Channel -> Analog Channel ->Tx 2

1315

==

TRANSMITTER 2

0 Exit
1 Tx Admit
2 Tx Time-Out
3 TOT Re-Key
4 TOT Pre alert

==

==

Which will then have the following submenu if you press 1:

DIGITAL CHANNEL
0 Exit
1 Digital 1
2 Digital 2
3 Rx
4 Tx 1
5 Tx 2
6 Encrypt

==
Keypad Programming -> Channel -> Digital Channel ->Digital 1
1311
==

DIGITAL 1
0 Exit
1 Channel Alias
2 Color Code
3 Time Slot
4 Scan List
5 Scan Start

```
================================================================
```

Keypad Programming -> Channel -> Digital Channel ->Digital 2

1312

```
================================================================
```

DIGITAL 2

0 Exit

1 Rx Only

2 Talk Around

3 Lone Worker

4 VOX

```
================================================================
```

Keypad Programming -> Channel -> Digital Channel -> Rx

1313

```
================================================================
```

RECEIVER

0 Exit

1 Frequency

2 Ref Frequency

3 Rx Group List

4 Emergency Alarm

5 Emergency Ack

6 Emergency Call

===
Keypad Programming -> Channel -> Digital Channel -> Tx 1
1314
===

TRANSMITTER 1
0 Exit
1 Frequency
2 Ref Frequency
3 Tx Contact
4 Emergency Syste
5 Power Level
6 Tx Admit
7 Tx Contact Tp

===
Keypad Programming -> Channel -> Digital Channel -> Tx 2
1315
===

TRANSMITTER 2
0 Exit
1 Time-Out Time
2 TOT ReKey Tim
3 TOT Pre-Alert
4 Private Call
5 Data Call

==

Keypad Programming -> Channel -> Digital Channel -> Encrypt

1316

==

ENCRYPTION
0 Exit
1 Encrypt
2 Encrypt Type
3 Key List

==

==

Pressing 4 will get the following:

SCANNING
0 Exit
1 Select Scan #
2 Scan 1
3 Scan 2

==
Keypad Programming -> Scan -> Scan 1
142
==

SCAN 1
0 Exit
1 Scan Alias
2 Nuisance Del
3 Nuisance

===

Keypad Programming -> Scan -> Scan 2

143

===

SCAN 2
0 Exit
1 Sig Hold Time
2 Look Back A
3 Look Back B
4 Talkback
5 Channel Mark

Pressing 5 will get the following:

DMR SERVICES
0 Exit
1 Text Message
2 Encrypt

CONTACTS AND Rx GROUP LIST IS MISSING

==
Keypad Programming -> DMR Services -> Text Messages
TEXT MESSAGE SCREEN
==

==
Keypad Programming -> DMR Services -> Text Messages
151
==

TEXT MESSAGES
0 Exit
1 Select Message
2 Add Message
3 Delete Message

===

Keypad Programming -> DMR Services -> Encrypt

152

===

ENCRYPTION
0 Exit
1 Select Encrypt
2 Add Key Alias
3 Add Key Value
4 Delete Key

Pressing 6 will get the following:

EMERGENCY

0 Exit

1 Signaling

2 Lone Worker

3 Man Down

4 Dig Emergency

MISSING ANALOG EMERGENCY

===

Keypad Programming -> Emergency ->Signaling Configuration
SIGNALING CONFIGURATION SCREEN

===

===

Keypad Programming -> Signaling -> Signaling

161

===

SIGNALING

0 Exit

1 Remote Monitor

2 Tx Sync TOT

3 TX Limit

4 Emergen Decod

5 Disable Decode

6 Monitor Decode

==

Keypad Programming -> Signaling -> Lone Worker

162

==

LONE WORKER
0 Exit
1 Response Act
2 Response Time
3 Reminder Time

==

==

==

Keypad Programming -> Signaling -> Man Down

163

==

MAN DOWN
0 Exit
1 Man Down
2 Trig Entry
3 Trig Exit
4 Pre-Alert Time

==

Keypad Programming -> Signaling -> Digital Emergency

164

==

DIGITAL EMERGN

0 Exit

1 Emergency

2 Emerg Alias

3 Alarm Type

4 Alarm Mode

5 Revert Channel

6 Impolite

7 Polite

Pressing 7 will get the following:

PERSONALITY
0 Exit
1 Personality #
2 Personality

```
================================================================
```

```
================================================================
```

```
================================================================
```
Keypad Programming -> Personality -> Personality
172
```
================================================================
```

PERSONALITY 1
0 Exit
1 Tx Signaling
2 Rx Signaling
3 Auto Rst Type
4 Decode Options
5 Decode Type
6 KeyUp Mode
7 KeyUp Telegra
8 KeyDn Telegra
9 Side Tone

Pressing 8 will get the following:

PAGING

0 Exit

1 DTMF Services

2 MDC Services

3 2 Tone Services

4 5 Tone Services

5 Smart Call

Which will then have the following submenu if you press 1

DTMF SERVICES

0 Exit

1 System

2 Decode Definit

3 Contacts

If you press 1 you will get

SYSTEMS

0 Exit

1 Basic Settings

2 Adv Settings 1

3 Adv Settings 2

4 Supplement

==

Keypad Programming -> Paging -> DTMF Services -> System -> Basic Settings

18111

==

BASIC SETTINGS

0 Exit

1 Tone Duration

2 Tone Interval

3 Digit More

4 Digit Delay

5 Hold Time

6 D Code

7 * & # More

8 Next Seq Time

==

Keypad Programming -> Paging -> DTMF Services -> System -> Adv Settings 1

18112

==

ADVANCED 1

0 Exit

1 PTT ID Type

2 KeyUp Encode

3 KeyDwn Encode

4 Auto Rst Type

5 Auto Rst Time

```
================================================================
```

Keypad Programming -> Paging -> DTMF Services -> System -> Adv Settings 2

18113

```
================================================================
```

ADVANCED 2

0 Exit

1 Caller ID

2 Primary ID

3 Group Code

4 Message Code

5 End Code

```
================================================================
```

Keypad Programming -> Paging -> DTMF Services -> System -> Supplement

18114

```
================================================================
```

SUPPLEMENT

0 Exit

1 Short Side Ton

2 Side Tone

3 Dial ID

4 Roll Scrn Show

==

Keypad Programming -> Paging -> DTMF Services-> Decode Def
DTMF DECODE DEFINITION SCREEN

==

==

Keypad Programming -> Paging -> DTMF Services -> Decode Def -> Basic Settings
18121

==

BASIC SETTINGS
0 Exit
1 Decode Type
2 DTMF Number
3 Auto Transpon
4 Ack Delay Time
5 Clr to Transpd

==

Keypad Programming -> Paging -> DTMF Services -> Decode Def -> Adv Settings
18122

==

ADVANCED SETT
0 Exit
1 Response Type
2 User Tone List
3 Alert Tone
4 Alert Reset
5 Decode LED
6 Auto Record

CONTACT
0 Exit
1 Add
2 Delete

===
Keypad Programming -> Paging -> DTMF -> Contacts -> Add
18131
===

ADD CONTACTS
0 Exit
1 Strip CTCSS/DC
2 DTMF System
3 Revert Channel
4 Call ID
5 Call Alias

===
Keypad Programming -> Paging -> DTMF -> Contacts -> Delete
18132
===

2 Delete

MISSING SIGNALING CONFIGURATION SCREEN

Which will then have the following submenu if you press 2

MDC SERVICES
0 Exit
1 System
2 Messages
3 Status
4 Contact List

SYSTEM
0 Exit
1 Basic Set 1
2 Basic Set 2
3 Advanced Set 1
4 Advanced Set 2

==

Keypad Programming -> Paging -> MDC -> System -> Basic Set 1

18211

==

BASIC SETTINGS

0 Exit

1 Primary ID

2 Group ID

3 PTT ID Type

4 Call Alert

5 Auto Rst Timer

6 Auto Rst Time

7 PTT Sh Side Tn

8 CTCSS/DCS XM

==

Keypad Programming -> Paging -> MDC -> System -> Basic Set 2

18212

==

BASIC SETTINGS

0 Exit

1 Display Decode

2 Check Decode

3 Emerg Decode

4 Emergency Ack

5 Call Alert Led

6 Alrt Tone Rst

7 Sel Call Decod

8 Sel Call Led

==

Keypad Programming -> Paging -> MDC -> System -> Advanced Settings 1

18213

==

ADV SETTINGS 1

0 Exit

1 Pre Time

2 Preamble Sync

3 Ack Pre Time

4 Fix Wait Time

5 Remote Monitor

6 Monitor Time

==

Keypad Programming -> Paging -> MDC -> System -> Advanced Settings 2

18214

==

ADV SETTINGS 2

0 Exit

1 PTT Side Tone

2 Message Decod

3 Message Led

4 Alert Auto Rst

==

Keypad Programming -> Paging -> MDC -> Messages
1822

==

MESSAGES
0 Exit
1 MDC System
2 Name Tone Tag
3 Revert Channel
4 Strip CTCS/DC
5 ACK Expected
6 Call Alias

===

Keypad Programming -> Paging -> MDC -> Status

1823

===

STATUS

0 Exit

1 MDC System

2 Revert Channel

3 Strip CTCS/DC

4 ACK Expected

5 Call Alias

==

==

CONTACT LIST
0 Exit
1 Contact List 1
2 Contact List 2

==

Keypad Programming -> Paging -> MDC -> Contact List 1
18241

==

CONTACT LIST 1
0 Exit
1Call Alias
2 MDC System
3 Revert Channel
4 Strip CTCS/DC
5 ACK Expected
6 Remote Monitor
7 Rx Multiplier
8 Tx Multiplier

CONTACT LIST 2
0 Exit
1 Name Tone Tag
2 Global Multipl
3 ID Type
4 Individual ID
5 Fleet ID
6 Group ID

Which will then have the following submenu if you press 3

==
Keypad Programming -> Paging -> Two Tone Services-> System
SYSTEM SCREEN
==

TWO TONE SERVI

0 Exit

1 System

2 Decode Definit

3 Contacts

==

Keypad Programming -> Paging -> Two Tone -> System

1831

==

SYSTEM

0 Exit

1 Durat 1st Tone

2 Durat 2nd Tone

3 Durat Lng Tone

4 Pre Time

5 Gap Time

6 Auto Rst Type

7 Auto Rst Time

8 Side Tone

9 Short Side Ton

===

Keypad Programming -> Paging -> Two Tone Services-> Decode Definit
DECODE DEFINITION SCREEN

===

DECODE
0 Exit
1 Decode 1
2 Decode 2

===

Keypad Programming -> Paging -> Two Tone -> Decode Definit -> Decode 1
18321

===

DECODE 1
0 Exit
1 Decode Type
2 Alert Tone
3 User Tone List
4 Alert Auto Rst
5 Decode LED
6 Auto Transpon
7 Side Tone

==
Keypad Programming -> Paging -> Two Tone -> Decode Definit -> Decode 2
18322
==

DECODE 2
0 Exit
1 Auto Record
2 Ack Delay Time
3 Clear To Trans
4 Call Format
5 1st Frequency
6 2nd Frequency

==

Keypad Programming -> Paging -> Two Tone -> Contacts
18323

==

CONTACTS
0 Exit
1 Strip CTCS/DC
2 2 Tone System
3 Call Format
4 1st Frequency
5 2nd Frequency
6 Revert Channel
7 Call Alias

Which will then have the following submenu if you press 4

FIVE TONE SERVI

0 Exit

1 Configuration

2 System

3 Encoder

4 Decoder

5 User Defined

6 Contact List

Which will then have the following sub submenu if you press 1

SIGNALING CONFI

0 Exit

1 Signal Confg 1

2 Signal Confg 2

==

Keypad Programming -> Paging -> Five Tone -> Signaling Config -> Signal Config 1

18411

==

SIGNAL CONFIG 1

0 Exit

1 Seq Time Out

2 ACK Duration

3 Carr Gone Time

4 Repeat Time

5 Auto Rst Time

==

Keypad Programming -> Paging -> Five Tone -> Signaling Config -> Signal Config 2

18412

==

SIGNAL CONFIG 2

0 Exit

1 Auth Request

2 Miss Call List

3 Miss List Mode

4 Auth Buttons

5 Status List

Which will then have the following sub submenu if you press 2

FIVE TONE SYSTE
0 Exit
1 Basic
2 Encode
3 Decode

==
Keypad Programming -> Paging -> Five Tone -> System -> Basic
18421
==

BASIC
0 Exit
1 Standard
2 Group Tone
3 Repeat Tone

```
================================================================
```
Keypad Programming -> Paging -> Five Tone -> System -> Encode

18422
```
================================================================
```

ENCODE

0 Exit

1 Frequency 1

2 Frequency 2

3 Duration 1

4 Duration 2

```
================================================================
```
Keypad Programming -> Paging -> Five Tone -> System -> Decode

18423
```
================================================================
```

DECODE

0 Exit

1 Frequency 1

2 Frequency 2

3 Duration 1

4 Duration 2

Which will then have the following sub submenu if you press 3

ENCODER
0 Exit
1 Sequences
2 Telegrams
3 Status List

==
Keypad Programming -> Paging -> Five Tone -> Encoder -> Sequences
18431
==

SEQUENCES
0 Exit
1 Signaling Type
2 Code System
3 Pre Time
4 Extended Tone
5 Sequence

==

Keypad Programming -> Paging -> Five Tone -> Encoder -> Telegrams

18432

==

TELEGRAMS

0 Exit

1 First Sequence

2 Secnd Sequenc

3 Third Sequence

4 ACK Expected

5 DTMF

==

Keypad Programming -> Paging -> Five Tone -> Encoder -> Status List

18433

==

STATUS LIST

0 Exit

1 Status Alias

2 Encode

Which will then have the following sub submenu if you press 4

DECODER
0 Exit
1 Decoder Def
2 Auto Ack
3 Status List

DECODE DEF
0 Exit
1 Decode Sequen
2 Decode Opt 1
3 Decode Opt 2
4 Decode Opt 3

```
================================================================
```
Keypad Programming -> Paging -> Five Tone -> Decoder -> Decode Def -> Seq
184411
```
================================================================
```

DECODE SEQUE
0 Exit
1 Sequences
2 Code Systems
3 Grp Bits Seq 1
4 Sequence 1
5 Grp Bits Seq 2
6 Sequence 2
7 Grp Bits Seq 3
8 Sequence 3

```
================================================================
```
Keypad Programming -> Paging -> Five Tone -> Decoder -> Decode Def -> Opt 1
184412
```
================================================================
```

DECODE OPTIO
0 Exit
1 Decode Type
2 Private List
3 Tone List
4 Group List
5 Tone List
6 Reminder List
7 Tone List

==

Keypad Programming -> Paging -> Five Tone -> Decoder -> Decode Def -> Opt 2
184413

==

DECODE OPTIO
0 Exit
1 Auto Ack List
2 Ack List
3 Frwd Ack List
4 Ack List
5 1st Duration
6 Grup Call Type

==

Keypad Programming -> Paging -> Five Tone -> Decoder -> Decode Def -> Opt 3
184414

==

DECODE OPTIO
0 Exit
1 Reminder Led
2 Decode Led
3 Auto Rst Start
4 Call Ans Time
5 Call Back
6 Auto Record

===

Keypad Programming -> Paging -> Five Tone -> Decoder -> Auto Acknowledge
18442

===

AUTO ACKNOWLE
0 Exit
1 Ack Telegram
2 Ack Delay
3 Ack Revert
4 Channel Free
5 Side Tone
6 Tx LED

==

Keypad Programming -> Paging -> Five Tone -> Decoder -> Status List
18443

==

STATUS LIST
0 Exit
1 Status Alias
2 Decode

Which will then have the following sub submenu if you press 5

USER DEFINED CO
0 Exit
1 Tone Set 1
2 Tone Set 2
3 Timing

==

Keypad Programming -> Paging -> Five Tone -> User Defined Code -> Tone Set 1
18451
==

TONE SET 1
0 Exit
1 Tone 0
2 Tone 1
3 Tone 2
4 Tone 3
5 Tone 4
6 Tone 5
7 Tone 6
8 Tone 7

```
================================================================
```

Keypad Programming -> Paging -> Five Tone -> User Defined Code -> Tone Set 2
18452

```
================================================================
```

TONE SET 1
0 Exit
1 Tone 8
2 Tone 9
3 Tone A
4 Tone B
5 Tone C
6 Tone D
7 Tone E
8 Tone F

```
================================================================
```

Keypad Programming -> Paging -> Five Tone -> User Defined Code -> Timing
18453

```
================================================================
```

TIMING
0 Exit
1 Encoder Dur
2 Decode Min Dur
3 Decode Max Du

==

==

Which will then have the following sub submenu if you press 6

==

Keypad Programming -> Paging -> Five Tone -> Contact List
1846

==

CONTACT LIST
0 Exit
1 Call Alias
2 Address
3 Encode Telegr

===

Keypad Programming -> Smart Call

185

===

SMART CALL
0 Exit
1 Select Call
2 None
3 Two Tone
4 DTMF
5 MDC1200
6 Five Tone