CODAN
RADIO COMMUNICATIONS

RADIO COMMUNICATIONS

Envoy™ Transceiver

Reference Manual

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1 Introduction

This manual provides an overview of the Envoy™ Transceiver, how to install it in mobile and fixed stations, how to operate the transceiver, and how to perform advanced setup procedures. This manual is for system administrators who set up and maintain HF communication networks.

There may be a list of related links at the end of a section of text, if required. There is an index at the end of this manual as an aid to finding specific information.

This manual contains:

Using the wizard—describes the steps required to set up your transceiver in a basic configuration using the wizard

The Envoy™ Transceiver—provides an overview of the components that make up the transceiver system

Navigating the menu structure—describes the menu structure in the user interface of the control point and how to navigate it, basic and advanced views, user and admin levels, how to enter text, and how to select entries and values

Structure of information—describes the building blocks of information in the transceiver

Operating the transceiver—provides an overview of the channel screen and describes typical user-level functions such as selecting a channel and making a call

Channels—describes the entries for a channel and how to add a channel

Scan tables—describes the entries for a scan table and how to add a scan table

HF networks—describes the entries for an HF network and how to add an HF network

Contacts—describes the call information that you can set up for a contact and an emergency contact

Phone links—describes the entries for a phone link and how to add a phone link

NETs—describes the entries for a NET and how to add a NET

Messages—describes how to edit a message

Peripherals—describes how to select a peripheral on a connector, and the settings that you can change to suit your requirements

Settings—describes the contents of the Control Point, Configuration, Connectors, Scan, Calling, GPS, Audio, Security, and Connectivity submenus

Access rights—provides an overview of access rights that may be set via TPS, and how this affects access to entries in the user interface of the control point

Keys and macros—provides a summary of the standard hot keys on the control point, and describes how to add your own macro and assign this to a hot key

Modes—provides a summary of the modes that may be available in your transceiver

Free tune—describes how to tune to a specific receive frequency

Encryption—describes how to set up and use encryption with the transceiver

Data options—describes how to set up and use modems with the transceiver

Connectors—provides a summary of the pinouts of all connectors in the transceiver system

Specifications—provides specifications for the transceiver system

Installation—describes how to install the transceiver and antenna in a mobile or fixed situation, and how to test the installation

HF radio transmission—provides an overview of communication using the medium of HF radio

Antennas—provides a summary of the purpose, advantages, and limitations of each type of antenna that may be used with the transceiver system

Call types and features—describes each call type, the special ALE address syntaxes that can be used with these call types, and special features that may be included with a call

Definitions—explains the terms and abbreviations used in this manual

Compliance—provides information on the compliance standards that have been attained for the product

Licence information—references licence information for all open source components of the firmware

Standards and icons

The following standards and icons are used:

This typeface...	Means...
Italic	a cross-reference, text requiring emphasis, or variable information
Bold	a key on a computer keyboard
Bold	a menu, submenu, tab, entry, a value in the user interface of the control point, or key that you press on the control point
ACTION	a hot key for a factory macro
	the user interface of the control point must be at admin level and/or advanced view to perform the task
NOTE:	the text may be of interest to you
CAUTION:	proceed with caution as your actions may lead to loss of data, privacy or signal quality
WARNING:	your actions may cause harm to yourself or the equipment

Related links:

Definitions on page 423

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2 Using the wizard

This section contains the following topics:

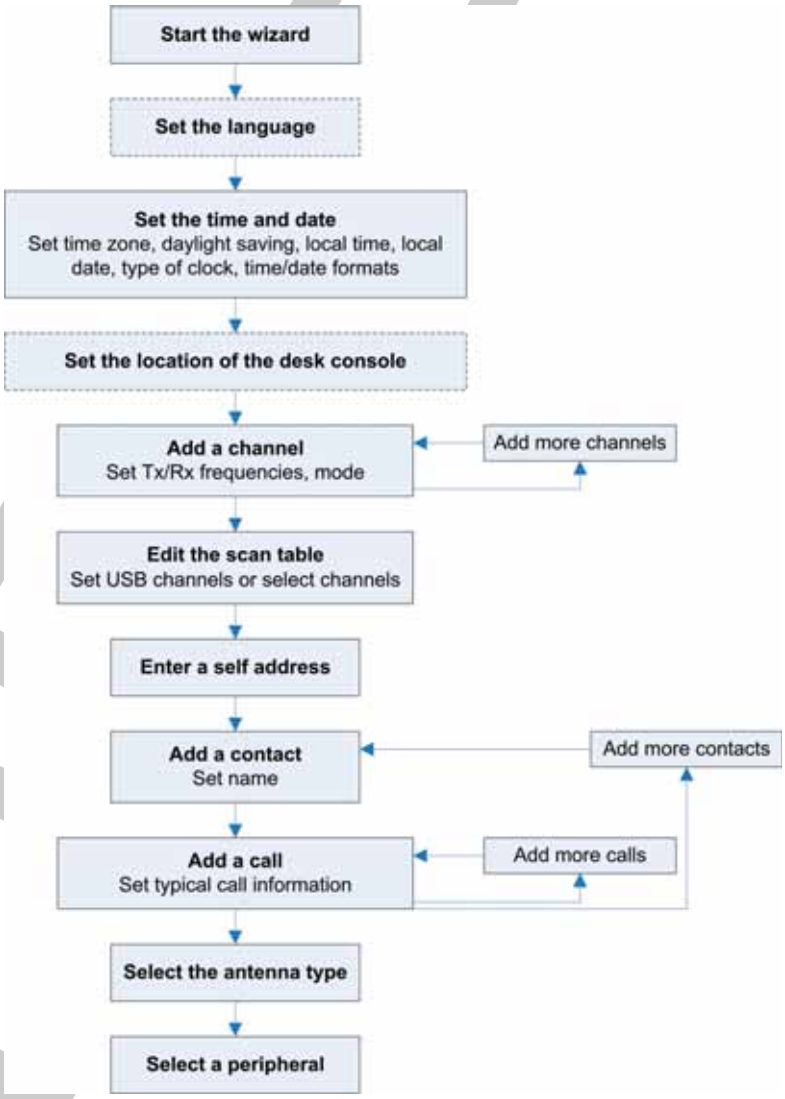
Overview of the wizard

The wizard is available if the transceiver:

- has not been programmed with a profile
- has a basic profile that has a common self address for the default HF networks Selcall and CALM, and has one scan table

The wizard steps you through setting up information in the transceiver so that it may be operated at a basic level.

Figure 1: Steps in the wizard



NOTE: If you require more detail on any of these tasks, see the related links below at the end of each topic.

Related links:

The Envoy™ Transceiver on page 19
Navigating the menu structure on page 27

Using the wizard

The wizard should start automatically when a new transceiver is powered up for the first time.

Figure 2: Wizard Startup screen

NOTE: If the wizard screen doesn't launch automatically, follow the instructions below. If your transceiver has been profiled using TPS, the wizard may not be available.

To use the wizard:

- Press PTT, then press (**Menu**) to return to the top level of the menu structure.

- Check that the icon for the wizard is highlighted (), then press (**OK**).
- Press (**Yes**) to confirm that you want to start the wizard.

  If you want to bypass the wizard, press (**No**).

Selecting a language

NOTE: This step in the wizard is shown if you have multiple languages available.

To select a language:

- Press ▲ or ▼ to scroll to the language that you want to use on the control point, then press **OK**.
- Press ⌐ (**Save**) to save the information.
- Press ⌐ (**Yes**) to confirm that you want to change the language.

Related links:

Selecting a language on page 67

Setting the time and date

To set the time and date:

- Press ◄ or ► to select the time zone that you want to use.
- Press ▼ to move to the **Daylight Saving** entry.
- Press ◄ or ► to select the time that you want to use.
- Press ▼ to move to the **Local Time** entry.
- Press ► to enter edit mode for the local time.
- Press ▲ or ▼ to scroll to the value that you want to set, then press ► to move to the next item.
- Repeat this for minutes, seconds and AM/PM values.
- Press ⌐ (**Save**) to save the local time.
- Press ▼ to move to the **Local Date** entry.
- Press ► to enter edit mode for the local date.
- Press ▲ or ▼ to scroll to the value that you want to set, then press ► to move to the next item.
- Repeat this for the day/month and year, as required.
- Press ⌐ (**Save**) to save the local date.
- Press ▼ to move to the **Clock** entry.
- Press ◄ or ► to select the type of clock that you want to use.
- Press ▼ to move to the **Time Format** entry.
- Press ◄ or ► to select the format that you want to use.
- Press ▼ to move to the **Date Format** entry.

- Press ◀ or ▶ to select the format that you want to use.
- If you want to review the information that you have entered, press ▲ or ▼ to move through the entries.
- Press (**Save**) to save the information.

  If you have not changed any of the time and date information, press (**Close**).

Related links:

Setting the date and time on page 68

Setting the location of the desk console

NOTE: This step in the wizard is shown if your control point is a desk console.

To set the location of the desk console:

- Press ◀ or ▶ to select the value that you want to use from the following:
  - If the desk console is connected to the transceiver using cable 08-07205-00x, select **Local**.
  - If the desk console is connected to the transceiver using an Ethernet cable (08-07215-001), select **Remote**.
- Press (**Save**) to save the information.

Related links:

Setting the location of the desk console on page 71

Adding a channel

NOTE: This step in the wizard is shown if you are permitted to add channels.

To add a channel:

- Press (**Yes**) to add a channel, if required.
- Enter the name that you want to use for the channel.
- Press ▼ to move to the **Tx** entry.
- Enter the transmit frequency (in kHz) that you want to use for this channel.
- Press ▼ to move to the **Rx** entry.

  The **Rx** entry is automatically filled with the transmit frequency.
- Enter the receive frequency (in kHz), if required to be different from the Tx frequency.

- Press ▼ to move to the **Mode** entry.
- To select a mode:
  - Press ▶ to view the list of available modes.
  - Press ▲ or ▼ to scroll to the mode that you want to use, then press **OK**.
    The check box contains a ✓ when the mode is selected.
  - Select other modes, as required.

    NOTE: The modes that you select become the allowed modes for this channel. In a scan table, you can duplicate a channel and select another of the allowed modes.
  - Press (**Save**).
- If you want to review the information that you have entered, press ▲ or ▼ to move through the entries.
- Press (**Save**) to save the information.
- Do *one* of the following:
  - If you want to add another channel, press (**Yes**), then repeat these steps.
  - If you do not want to add another channel, press (**No**).

  The channels that you enter may be notionally grouped into scan tables. A scan table enables you to manage how these channels are scanned using one set of properties. The same channel may be included in one or more scan tables. One or more scan tables may be allocated to an HF network. The same scan table may be allocated to different HF networks.
- Do *one* of the following:
  - If you want to add a scan table, press (**Yes**).
  - If you do not want to add a scan table, press (**No**), then continue from *Entering a self address* on page 12.
- Do *one* of the following:
  - If you want to scan all of the channels in the transceiver that have a USB mode, press (**Yes**), then continue from *Entering a self address* on page 12.
  - If you want to choose the channels and modes that you want to scan, press (**No**), then continue from *Adding channels to a scan table* on page 12.

Related links:

Overview of scan tables on page 120
Overview of HF networks on page 130
Adding a channel on page 115

Adding channels to a scan table

To add channels to a scan table:

- Press ▲ or ▼ to scroll to the channel that you want to add, then press **OK**.
- Press ◀ or ▶ to select the mode that you want to use.
- Select more channels, as required.
- Press ⌐ (**Save**) to add these channel selections.
- Continue from *Entering a self address* on page 12.

Entering a self address

A self address is used by other stations to call your station. For example, if the self address of your station is 1234, operators at other stations enter the address 1234 when they want to make a call to you.

To enter a self address:

- Enter the address that you want to use.

  You can enter up to six digits.

  NOTE: Addresses ending in 99 and 00 have a special function in Selcall HF networks.

- Press ⌐ (**Save**) to save the information.

  NOTE: The wizard automatically allocates this self address to the default HF networks: Selcall and CALM (if FED-STD-1045 ALE or MIL-STD-188-141B ALE option is installed).

- Do *one* of the following:
  - If you want to add a contact, press ⌐ (**Yes**), then continue from *Adding a contact* on page 13.
  - If you do not want to add a contact, press ⌐ (**No**), then continue from *Selecting an antenna* on page 17.

Adding a contact

A contact is a person who you want to call, and for whom you want to pre-define the method of calling them. You may be able to contact the same person via a number of different methods. When you set up the contact, you define each method as a separate call for the contact.

NOTE: If you require more detail on adding a contact, see *Contacts* on page 143.

To add a contact:

- Enter the name that you want to use for the contact, then press (**Add Call**).

  The **HF Network** entry is highlighted.

  The HF network defines the call system and self address that is used by your station when the call is made. For example, if you want to select a channel for the call, use a Selcall HF network. If you want the transceiver to automatically select a channel for the call, use a CALM HF network.

- Press ◀ or ▶ to select the HF network that you want to use.
- Press ▼ to move to the **Call Type** entry.
- Press ◀ or ▶ to select the call type that you want to use.

  NOTE: The call type that you select affects information that you can enter for the remainder of this call.

- If you are adding:
  - a Selective, Channel Test, Emergency, Get Position or Send Position call *Adding a simple call* on page 14
  - a Message call *Adding a Message call* on page 14
  - a Phone call *Adding a Phone call* on page 16
  - a Get Status call *Adding a Get Status call* on page 16

Related links:

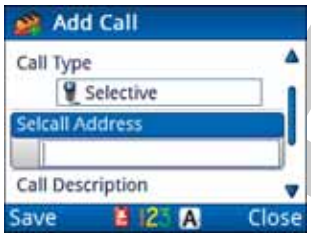
Call types on page 400

Adding a simple call

A simple call is a call that requires an address only at this stage of the definition process.

To continue with adding a Selective, Channel Test, Emergency, Get Position or Send Position call:

- Press ▼ to move to the **Selcall**|**ALE Address** entry.

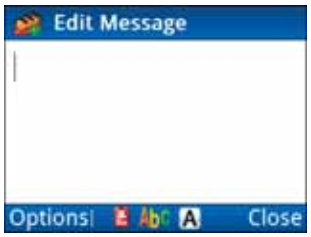


- Enter the address of the station that you want to call.
- Continue from *Completing the contact* on page 17.

Adding a Message call

To continue with adding a Message call:

- Press ▼ to move to the **Selcall**|**ALE Address** entry.
- Enter the address of the station that you want to call.
- Press ▼ to move to the **Message** entry, then press ▶.

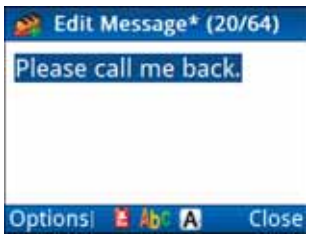


- If you want to enter a message:
  - Start typing the message.

    NOTE: Press **OK** to start a new line, if required.
  - Press (**Options**), scroll to **OK**, then press (**Select**) to add the message to the call.
- If you want to select a message from a list of stored messages:
  - Press (**Options**), scroll to **Stored**, then press (**Select**).

  - Press ▲ or ▼ to scroll to the message that you want to use.

    NOTE: If you want to view the message, press (**Details**) to view the message, then press (**Close**).
  - Press **OK** to select the message.
  - Edit the message, if required.



  - Press (**Options**), scroll to **OK**, then press (**Select**).
- Continue from *Completing the contact* on page 17.

Adding a Phone call

To continue with adding a Phone call:

- Press ▼ to move to the **Phone Number** entry.

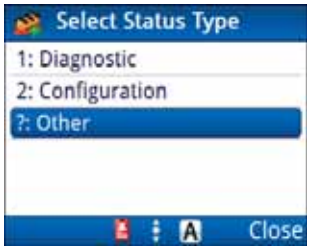
- Enter the phone number.
- Continue from *Completing the contact* on page 17.

Adding a Get Status call

To continue with adding a Get Status call:

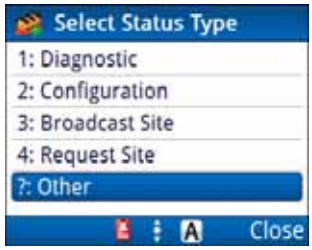
- Press ▼ to move to the **Selcall**|**ALE Address** entry.
- Enter the address of the station that you want to call.
- Press ▼ to move to the **Status Type** entry, then press ▶.

Selcall HF network



ALE/CALM HF network

ALE Site Manager:
Auto
Manual
Restricted



- Press ▲ or ▼ to scroll to the status type that you want to use, then press **OK**.
- If you selected **?: Other** as the status type, enter the text/command that you want to send, press ⌐ (**Options**), scroll to **Save**, then press ⌐ (**Select**).
- Continue from *Completing the contact* on page 17.

Completing the contact

To finish entering the information required for the contact:

- Press ▼ to move to the **Call Description** entry.

  By default, the call type is entered as the call description.
- Enter the description that you want to use for this call.
- Press (**Save**) to save the information.
- If you want to add another call for the contact, press (**Yes**), then repeat the steps for adding a call.

  If you do not want to add another call, press (**No**).
- If you want to add another contact, press (**Yes**), then repeat the steps for adding a contact.

  If you do not want to add another contact, press (**No**).
- Do *one* of the following:
  - If you want to select an antenna, continue from *Selecting an antenna* on page 17.
  - If you do not want to select an antenna, continue from *Selecting a peripheral device* on page 18.

Related links:

Adding a contact on page 13

Selecting an antenna

Each type of antenna has a specific requirement for tuning, and the transceiver uses a different protocol for each one. You must select the type of antenna that is used in your station so that the transceiver knows how to tune the antenna. Some antennas, such as broadband antennas, do not require tuning.

To select an antenna:

- Do *one* of the following:
  - Press ▲ or ▼ to scroll to the antenna type that you want to use, then press **OK**.
  - Press (**Close**), then continue from *Selecting a peripheral device* on page 18.
- Press (**Save**) to save the information.

- Do *one* of the following:
  - If you want to connect an accessory to the 15-way port of the RFU, press (**Yes**), then continue from *Selecting a peripheral device* on page 18.
  - If you do not want to connect an accessory, press (**No**), then press **OK** to close the wizard.

Selecting a peripheral device

When you select the peripheral device from the list, the transceiver automatically sets these properties.

NOTE: Codan peripheral devices are listed by their type number, for example, 3031 Crosspatch. The type number for a Codan device is located on the front or serial number escutcheon.

To select a peripheral device:

- Press ▲ or ▼ to scroll to the type of peripheral device that is attached to the connector, then press **OK**.

  If there are settings that you can change to optimise this peripheral for your requirements, ▶ is shown to the right of the peripheral name when it is selected.
- If you want to change settings for the peripheral, press ▶ to see the list of entries that you may change.

  If you change the value of an entry for a peripheral device from the default value, is shown next to the title of the entry.
- Press (**Save**) to automatically update settings for correct operation of the connected peripheral device.
- Press **OK** to close the wizard.
- If you added a peripheral device, restart your transceiver to activate the new settings.

3 The Envoy™ Transceiver

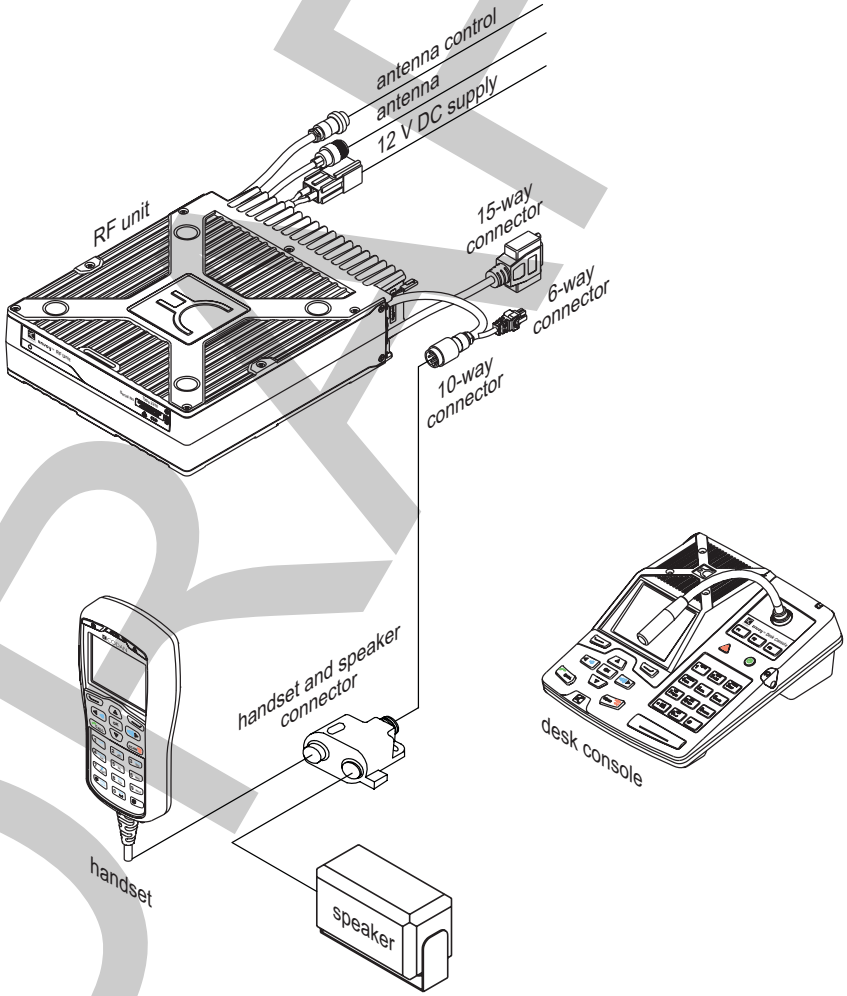
This section contains the following topics:

Overview of the Envoy™ Transceiver

A typical Envoy™ Transceiver system comprises:

- a control point (2220 Handset, 2221 Handset, or 2230 Desk Console)
- a 2210 RFU
- a 12 V DC power supply
- an antenna system

Figure 3: Typical transceiver system



The transceiver is most easily programmed using Codan's TPS system programmer, however, the transceiver may be set up using the control point.

A range of options and accessories is available for the Envoy™ Transceiver. For more information contact your Codan representative or refer to the product catalogue that is applicable to your transceiver.

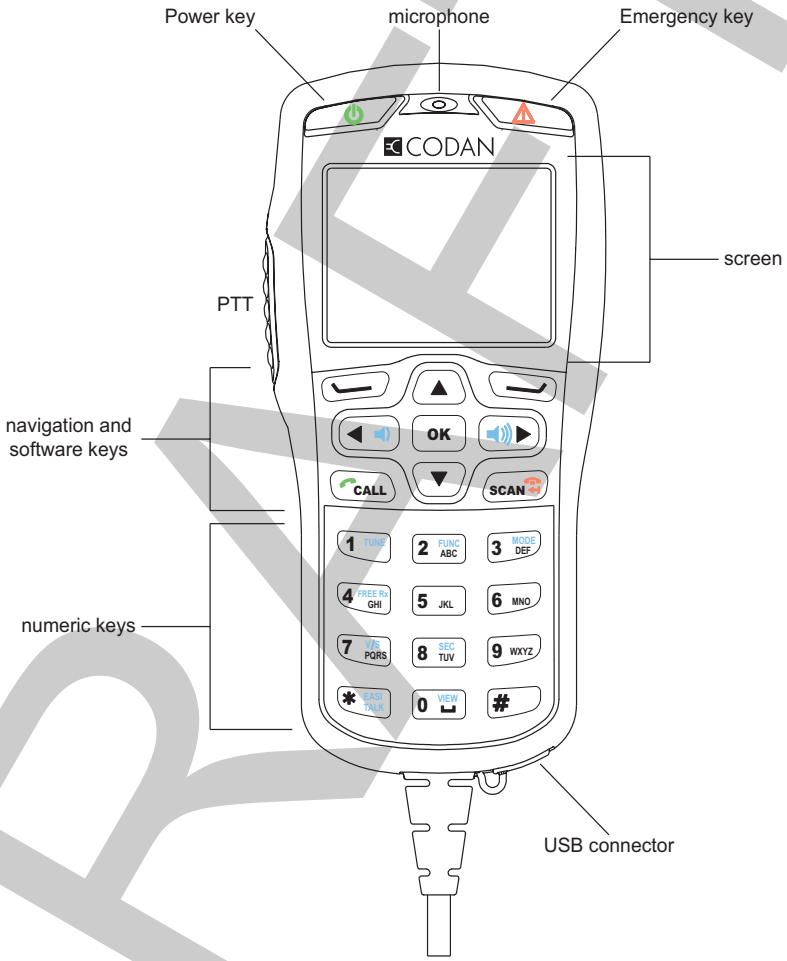
Related links:

Setting the location of the desk console on page 71

The 2220 Handset

The 2220 Handset is a control point for the Envoy™ Transceiver. The user interface provides an icon-based menu structure for easy setup and operation of the transceiver.

Figure 4: 2220 Handset



The 2220 Handset is a hand-held device that has a microphone, a PTT button, a screen, navigation keys, and numeric keys. The keypad enables you to control and configure the transceiver system via the user interface. The handset and an external speaker connect to the RFU via a special interface cable.

The 2220 Handset is shipped from the factory with standard functions pre-programmed to specific keys. The standard function is written on the key in blue text. New user-defined functions may be assigned to most of the keys.

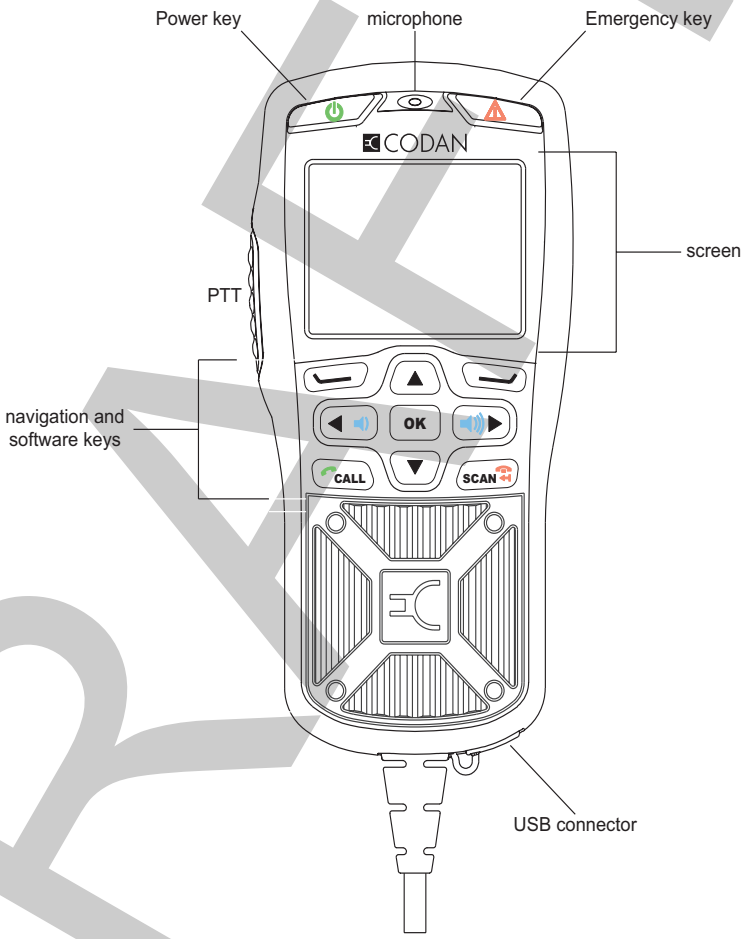
Related links:

Navigating the menu structure on page 27
Keypad on page 247

The 2221 Handset

The 2221 Handset is a control point for the Envoy™ Transceiver. The user interface provides an icon-based menu structure for easy operation of the transceiver. It has a condensed set of keys for use in simpler communication scenarios.

Figure 5: 2221 Handset



The 2221 Handset is a hand-held device that has a microphone, a PTT button, a screen, and navigation keys. The navigation keys enable you to operate the transceiver system via the user interface using pre-defined profile information. Typically, this profile is fully configured using the TPS system programmer. The handset and an external speaker connect to the RFU via a special interface cable.

The 2221 Handset is shipped from the factory with standard functions pre-programmed on the key, or in a list that is accessed via the **Functions** icon ( ). New user-defined functions may be assigned to this list.

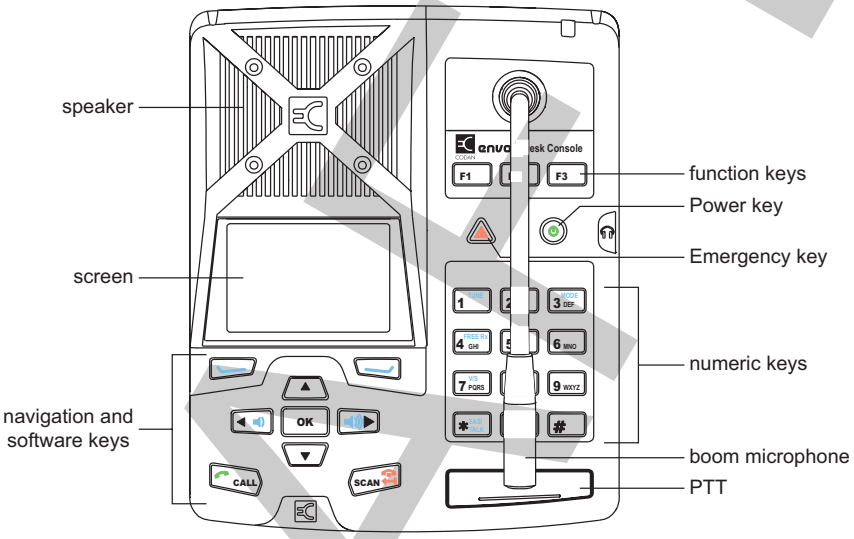
Related links:

Navigating the menu structure on page 27

The 2230 Desk Console

The 2230 Desk Console is a control point for the Envoy™ Transceiver. The user interface provides an icon-based menu structure for easy setup and operation of the transceiver. The desk console is standard for a fixed station.

Figure 6: 2230 Desk Console



The 2230 Desk Console has an optional boom microphone, a built-in speaker, a PTT button, a screen, navigation keys, function keys, and numeric keys. The console also supports the use of headphones, a foot-switched PTT device, and a separate hand microphone with PTT. The keypad enables you to control and configure the transceiver system via the user interface.

The 2230 Desk Console is shipped from the factory with standard hot keys programmed to the numeric keys. The function that each standard hot key performs is written on the numeric key in blue text.

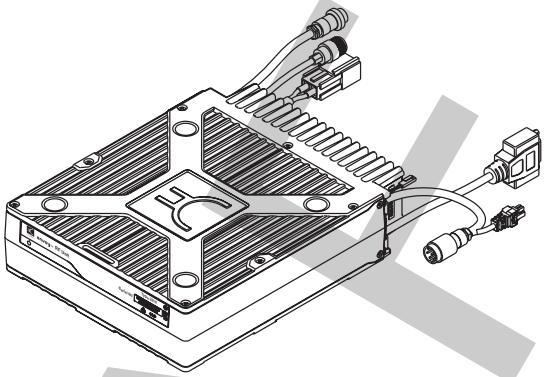
Related links:

Navigating the menu structure on page 27

The 2210 RFU

The RFU modulates audio signals onto radio frequencies that can be transmitted on air, and demodulates the radio frequencies it receives into audio signals. It also interprets the instructions that you enter through the control point.

Figure 7: 2210 RFU



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4 Navigating the menu structure

This section contains the following topics:

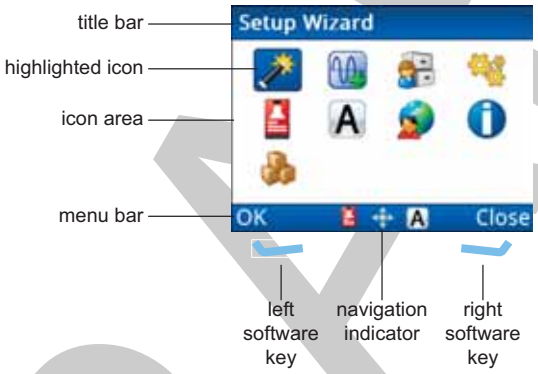
Menu structure

The menu structure comprises a main menu and a series of submenus that are accessed via the main menu. Each menu and submenu is represented by an icon. Some icons provide direct access to an input/view screen, while other icons provide a list of entries for the menu.

The number of icons that are visible on each screen depends on the access level into which you are logged, and the view that is being shown.

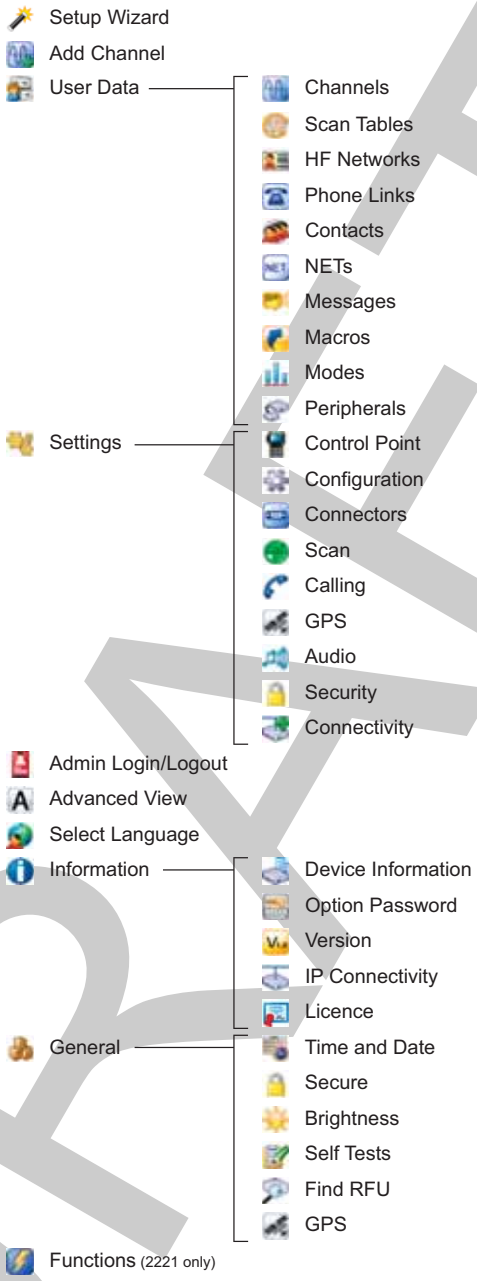
NOTE: Most descriptions in this manual assume that you are logged in to admin level, which automatically shows advanced view. Indicators in the menu bar show the level and view status.

Figure 8: Typical menu screen



When an icon is highlighted, the name of the icon is shown in the title bar of the screen. For example, when the icon is highlighted, **Setup Wizard** is shown in the title bar.

Figure 9: Menu structure (admin level)



The menu items may contain further submenus and lists of entries. Each entry either has specific values from which you may choose, or you may enter the information required.

Related links:

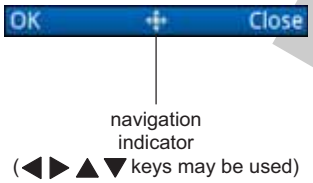
Overview of basic and advanced views on page 31
Switching between basic and advanced views on page 32
Overview of user and admin levels on page 33
Logging in to admin level on page 34
Navigating the menu structure on page 30

Navigating the menu structure

The menu structure comprises a main menu and a series of submenus that are accessed via the main menu. Navigation keys enable you to highlight an icon, then press **OK** to select that menu. You can continue drilling down through the menu structure in this way. At the lowest level of the menu structure there is either an input/view screen, or a list of entries.

Navigation is available when the navigation indicator is shown in the menu bar at the bottom of the screen.

Figure 10: Navigation indicator showing navigation keys that may be used



To navigate the menu structure:

- To move down through the menu structure:
  - Press ◀, ▶, ▲ or ▼ to highlight the icon that you want to select.
    The name of the icon appears in the title bar of the screen.
  - Press **OK**.
  - Continue moving down through the menu structure by highlighting the icon that you want, then pressing **OK**.
- To move through a list of entries at the lowest level of the menu structure, press ▲ or ▼.
- To go to the top level in the menu structure, do *one* of the following:
  - Press PTT to exit to the channel screen, then press (**Menu**) to enter the top level of the menu structure.
  - Press to return to the top level of the menu structure, one level at a time.

Related links:

Menu structure on page 28
Selecting an icon on page 38
Selecting a value from a list on page 44
Finding a word or value on page 36
Selecting/deselecting a check box on page 45

Overview of basic and advanced views

There are two views of information in the user interface of the control point: basic and advanced. The contents of basic and advanced views are pre-determined and cannot be changed.

Basic view

Basic view provides a condensed view of the user interface, and typically the view at which the control point is operated. When you power up the transceiver, the control point enters basic view. Basic view is indicated by the absence of an advanced view indicator in the menu bar.

Figure 11: Basic view (no advanced view indicator)

Basic view provides access to items that are likely to be changed on a regular basis, or the user may want to change to suit their preferences for the day-to-day operation of the transceiver. The user can switch to advanced view to access items that they may want to change occasionally. The user should switch back to basic view to simplify the view of information presented on the screen of the control point.

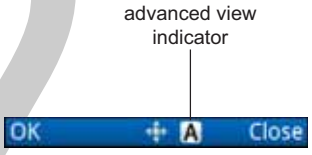
Related links:

Advanced view on page 31

Advanced view

Advanced view provides access to additional settings that may need to be changed occasionally, but are not required in the day-to-day operation of the transceiver. Generally, the control point of the transceiver is in basic view so you must switch to advanced view. Advanced view is indicated by the presence of the advanced view indicator in the menu bar.

Figure 12: Advanced view



Related links:

Switching between basic and advanced views on page 32

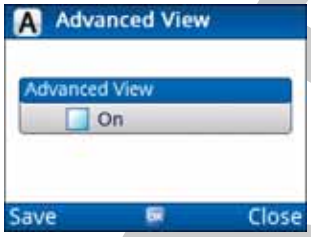
Switching between basic and advanced views

The user can switch between basic and advanced views to either:

- simplify the user interface of the control point (basic view), or
- access advanced settings that they are permitted to change (advanced view)

To switch between views:

- Press ⌣ until the main menu screen is shown.
- From the main menu, select A (**Advanced View**).



- Press **OK** to toggle advanced view on or off as required.
- Press ⌣ (**Save**).

NOTE: You can also use the ⏻ + **2** hot-key sequence to place the user interface into advanced view.

Overview of user and admin levels

There are two levels of access to information in the user interface of the control point: user and admin. You can change which entries the user can see and edit by applying access rights to the profile in TPS.

Related links:

Overview of access rights on page 244

User level

User level is the lowest access level, and typically the level at which the transceiver is operated. When you power up the transceiver, it enters user level. User level is indicated by the absence of an admin level indicator to the left of the navigation indicator in the menu bar.

Figure 13: User level (no admin level indicator)

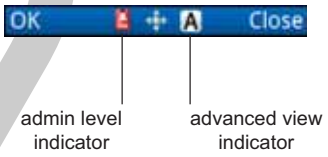
The user should be able to access all necessary information for the day-to-day operation of the transceiver at this level. Any channels, scan tables, HF networks, contacts, phone links, or NETs added at user level via the control point may be edited at user level via the control point. Any such items added at admin level may only be viewed at user level.

Admin level

Admin level is for use by system administrators and is indicated by the presence of the admin level indicator in the menu bar. To access this level, you must log in using the admin PIN set up by your system administrator.

NOTE: By default, logging in to admin level also shows the advanced view of the user interface at the control point.

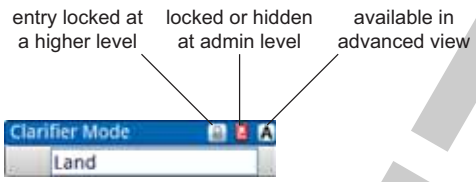
Figure 14: Admin level



Entries that have been locked and/or hidden at admin level have an admin level indicator at the right of the field and may only be edited at admin level.

NOTE: Setting the access rights on an entry, that is, whether it is admin locked and/or admin hidden, can only be performed via TPS.

Figure 15: Locked, hidden and advanced indicators



NOTE: If an entry is locked at admin level (or higher), it may only be viewed at user level. If an entry is hidden at admin level, it is not visible at user level. You must log in to admin level to see it.

If the system administrator recognises that there is an entry in one of the menus to which the user requires access, they can use TPS to change the access rights on the entry to make it accessible at user level, or set up a hot key to access the entry.

Related links:

Overview of access rights on page 244
Logging in to admin level on page 34
Adding a macro on page 252

Logging in to admin level

Admin level provides access to:

- all user-specific information, such as details of channels, scan tables, HF networks, phone links, NETs and contacts
- transceiver-specific information that affects how the transceiver performs

When you log in to admin level on the control point, the advanced view of the user interface in the control point is also shown.

To log in to admin level:

- Press until the main menu screen is shown.
- From the main menu, select (**Admin Login**).

- Enter the PIN provided by your system administrator, then press **OK**.

Logging out of admin level

Admin level is used for modifying settings that are not available at user level.

To log out of admin level:

- Press until the main menu screen is shown.
- From the main menu, select (**Admin Logout**).

- Press **OK**.
- Switch to basic or advanced view, as required.

Related links:

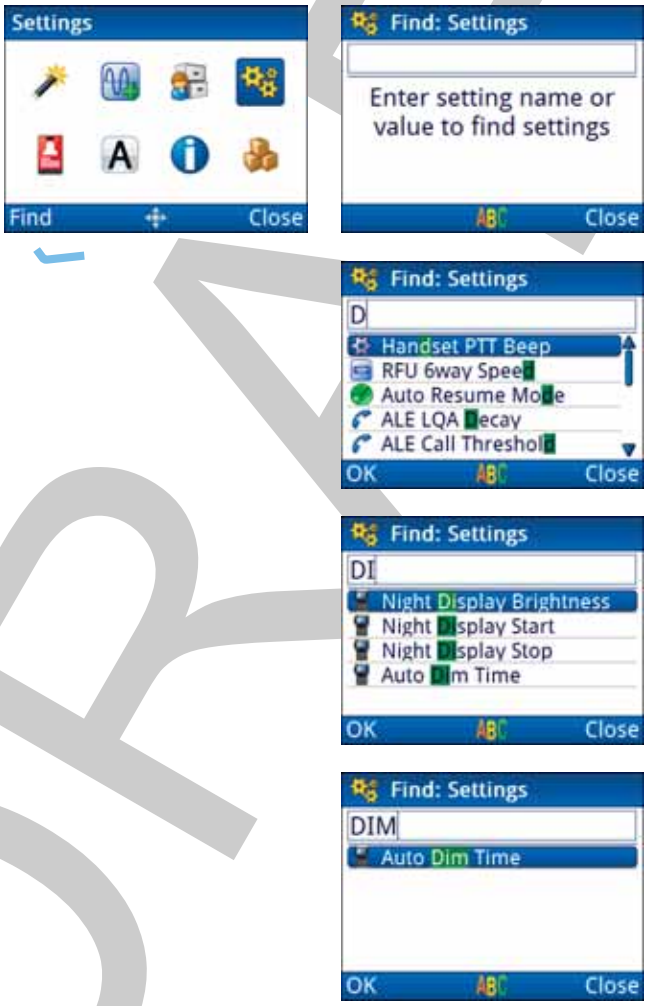
Switching between basic and advanced views on page 32

Finding a word or value

The quickest way to find an entry or a value in the user interface of the control point is to use the Find function, which is available via the key when the icon selected contains submenus or lists of entries. The feature searches for the sequence of characters (letter, numbers, or a combination of both) that you enter.

NOTE: The Find function only searches on words and values that are visible to the operator at the current view and level of access.

Figure 16: Find function



To find a word or value:

- *Highlight* the icon that represents the highest level in which you want to search, then press (**Find**).

NOTE: If you select the icon by pressing **OK**, you will enter that menu level. If you do not want to search at the lower level, press (**Close**) to return to the higher level, then press (**Find**) again.

- Enter the letter and/or number on which you want to search.

  Any entries or values that contain the character you have entered are shown in a list, with the character highlighted.

  NOTE: You may have to scroll through the list to view all of the results.

- Enter more characters to refine your search.

  The icon that is shown with each item in the list indicates the location of the information. For example, if appears next to the item, then it is located in **Channels**. If there is another item with next to it, then it is located in **HF Networks**.

- Scroll to the entry or value that you want to select.

- Press **OK**.

  You are taken to the entry, or the name level of the user data containing the character.

Related links:

Overview of basic and advanced views on page 31
Overview of user and admin levels on page 33
Navigating the menu structure on page 30
Entering text in a field on page 40

Selecting an icon

The top levels of the menu structure are represented by icons. In order to enter the menu represented by the icon, you need to select the icon.

Figure 17: Highlighted icon

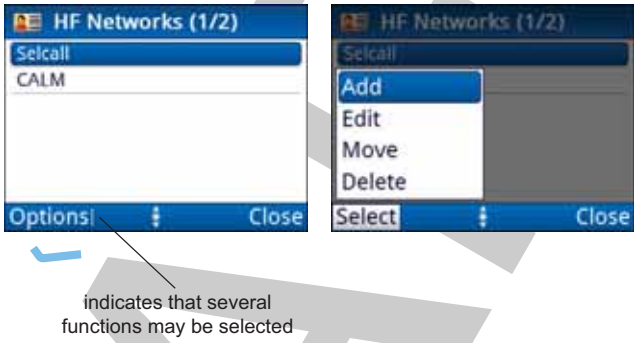
To select an icon:

- Use ◀, ▶, ▲ and ▼ to highlight the icon that you want to select.
- Press **OK** or (**OK**) to select the icon.

Selecting a function from the menu bar

The menu bar at the bottom of the screen provides varying functions, depending on the context. You can select a function directly, or activate a pop-up from the menu bar by pressing the corresponding key (or). A vertical line next to the text indicates that there are a number of choices from which to choose. Typically, you can add, edit, move, delete, save, duplicate, and clear items specific to your current location in the user interface.

Figure 18: Functions on the menu bar



To select a function from the menu bar:

- Press or , corresponding to the function that you want to select.

  If the function in the menu bar does not have a vertical line next to it, the function is performed immediately.

  If the function in the menu bar has a vertical line next to it, a pop-up is shown.

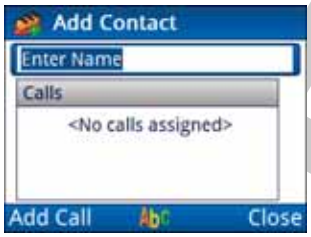
- If a pop-up of available functions is shown:
  - Press ▲ or ▼ to scroll to the function that you want to select.
  - Press (**Select**).

    The function is performed.

Entering text in a field

You may need to enter text into a field within an entry. This may be a name given to some user data, or it may be a specific value, such as a frequency. When you first enter an editable text field, either by selecting a menu or using the ▲ and ▼ navigation keys, any existing text that you can edit is highlighted. You can use this text, edit this text, or delete this text and enter new text.

Figure 19: Example of an editable text field



To enter text in a field:

- Navigate to a field in which you can edit text.
- Do *one* of the following:
  - To use this text, press ▼.
  - To delete this text, start entering new text.
  - To edit this text, press ▶ to place the cursor at the end of the text.
- Press **#** repeatedly to select the character-entry mode that you want to use.

  The indicator for the character-entry mode is shown in the centre of the menu bar.

Figure 20: Character-entry mode indicator

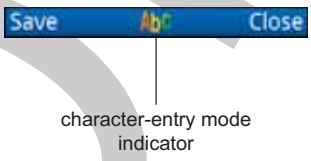


Table 1: Character-entry mode

Character-entry mode	Indicator
All upper-case letters	ABC
All lower-case letters	abc
Leading-capital letters	Abc
Numbers	123

- ❑ Do any of the following:
  - Press ◀ or ▶ to move the cursor to the point at which you want to enter text.
  - Press ↵ to delete text to the left of the cursor.
  - *Hold* ↵ to delete the whole entry.
  - Press the key on the keypad that corresponds to the letter that you want to enter.

    For example, if you want to enter the letter E, press **3** twice.

    After a brief pause, the cursor moves to the next space, ready to enter another character.

    NOTE: If you are in a letter-entry mode and want to enter a number, *hold* the key corresponding to the number that you want to enter.
- ❑ Press ▼ to move to the next entry.

Related links:

Selecting a value from a list on page 44
Saving your changes on page 48

Entering special characters

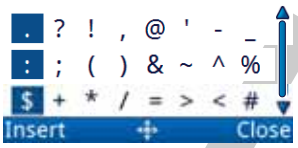
You can enter special characters in messages and names, and in addresses of stations that you call.

NOTE: If the FED-STD-1045 ALE/CALM option or MIL-STD-188-141B ALE option is installed in your transceiver, the ✱ key may be used to enter the global ALL address syntax (@?@) or special ALE addressing characters easily.

To enter a special character:

- Press ◀ or ▶ to move the cursor to the point where you want to insert a special character.
- Press ✱ to cycle through the available choices or *hold* ✱ to see the available special characters.

  Depending on the context, you can select from:



- Press ▲, ▼, ◀ or ▶ to highlight the character that you want to use, then press ⏎ (**Insert**).
- Repeat as required.

Entering text in the 2221 Handset

The 2221 Handset does not have alphanumeric keys, however, you can still enter text into fields within the user interface.

CAUTION: This process describes how to enter text into an entry field using the virtual keypad, then save the text back to the entry. At this point, the change to the entry itself has not been saved. Descriptions of processes in this document continue from the change to the entry.

To enter text:

- Navigate to an entry in which you can enter text, then press **OK** to see the virtual keypad.

- Press ◀, ▶, ▲ or ▼ to move the highlight to the character that you want to select, then press **OK**.

  If you want to change case, enter a number, or enter a special character, scroll to Abc, then press **OK**.

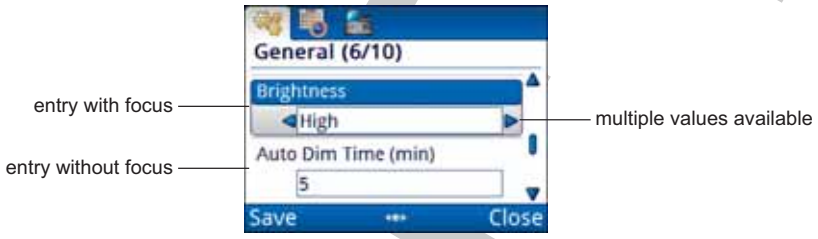
- Continue entering text in this manner.
- Press (**Save**) to save the information.

  You are returned to the entry.

Selecting a value from a list

When you select an entry that has a list of values, either by selecting an icon or using the ▲ and ▼ navigation keys, the field is highlighted to show that it can be edited, and ◀/▶ indicators appear on one or both sides of the field to show that multiple values are available.

Figure 21: List of entries, with and without focus



To select a value from a list:

- Navigate to an entry in which you can select a value.
- Press ◀ or ▶ to select the value that you want to use.
- Press ▼ to move to the next entry.

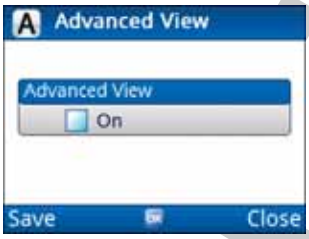
Related links:

Entering text in a field on page 40
Saving your changes on page 48

Selecting/deselecting a check box

There are some entries in the menu structure that require you to enable or disable a particular feature via a check box. When the check box contains a ☑, the feature is enabled. If the check box is clear, the feature is disabled.

Figure 22: Entry with a check box



To select or deselect a check box:

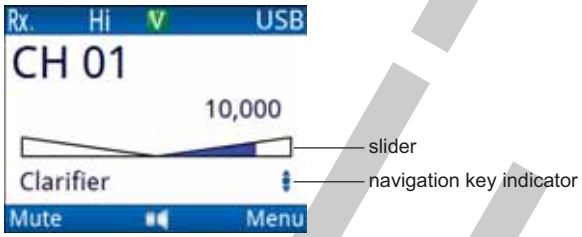
- Highlight the entry.
- Press **OK** to toggle the check box as selected or deselected.

  When the check box is selected, the item is enabled. When the check box is clear, the item is disabled.
- Press (**Save**) to save the information.

Moving a slider

Some values in the user interface of the control point are represented by a slider.

Figure 23: A slider value



To move a slider:

- Press any of the navigation keys suggested in the navigation key indicator to adjust the slider.

Changing the order of items in a list

In some areas of the control point, you are able to change the order in which the items appear, which impacts how the item is viewed, or when each item may be used. For example, you may change the order in which the channels, scan tables, HF networks, contacts, phone links, and NETs are listed so that you don't have to scroll to the item to select it. In areas where the order is important, such as NET members, you can move the items into the preferred response order.

To change the order of items in a list:

- Highlight the item that you want to move.
- Press ⌐ (**Options**), scroll to **Move**, then press ⌐ (**Select**).
- Press ▲ or ▼ to move the item to the new position in the list, then press ⌐ (**Place**).

Saving your changes

When information in an entry has been changed, either by editing existing text or selecting a different value from a list, an asterisk is added to the title of the screen.

Figure 24: Screen that has changes to be saved

To save changes:

- Do *one* of the following:
  - Press (**Save**).
  - Press (**Options**), scroll to **Save**, then press (**Select**).
  - Press (**Close**) to discard the changes.

5 Structure of information

This section contains the following topics:

Structure of user information

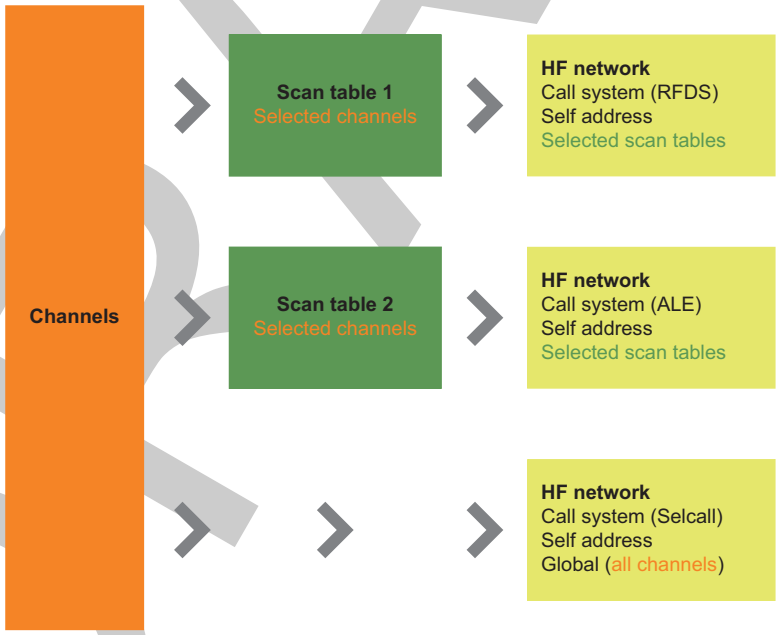
Information in the Envoy™ Transceiver is stored like blocks in a building. Basic blocks are populated with information first, then these blocks, along with different blocks, are assembled into larger blocks. Ultimately, one of the top-level blocks is used to make a call.

The most basic block is a frequency. A frequency is combined with a mode, say USB or LSB, and a name to become a channel. Channels may be grouped into scan tables. Scan tables may be allocated to HF networks. An HF network defines the call system by which a call is made.

Further blocks may be assembled for the convenience of the user. A contact stores information on the typical calls that can be made to a person. Each call is defined by the HF network and the call type.

How these blocks are assembled is up to the system administrator. There is, of course, finer detail that needs to be included, however, the basic structure of information in the transceiver is shown in Figure 25.

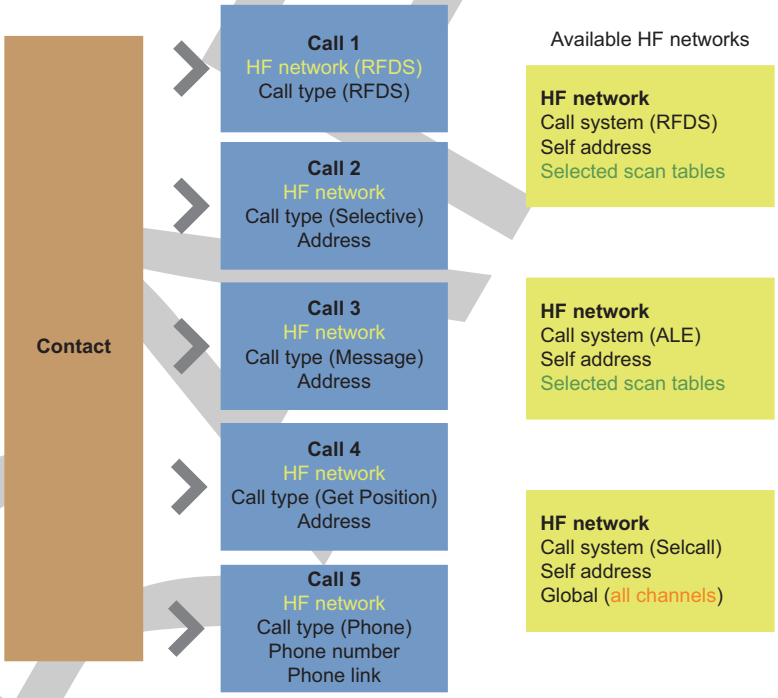
Figure 25: Basic structure of information in the Envoy™ Transceiver



Structure of contact and call information

A contact holds information on calls that you make to a particular person. You may have several methods of calling the same person. Each method that you use is bundled into a call for that contact. The basic building blocks that you require to define a call to a contact is the HF network that will be used, the type of call that you want to make, and the address or telephone number at which the person will answer the call. The basic structure of call information in a contact is shown in Figure 26.

Figure 26: Structure of call information for a contact in the Envoy™ Transceiver



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6 Operating the transceiver

This section contains the following topics:

Switching the transceiver on and off

Switching on the transceiver

To switch on the transceiver:

- Press ⏻.

  The template screen, then the welcome screen (if set) are shown briefly, followed by the channel screen.

Switching off the transceiver

To switch off the transceiver:

- *Hold* ⏻ for 2 sec, then release.

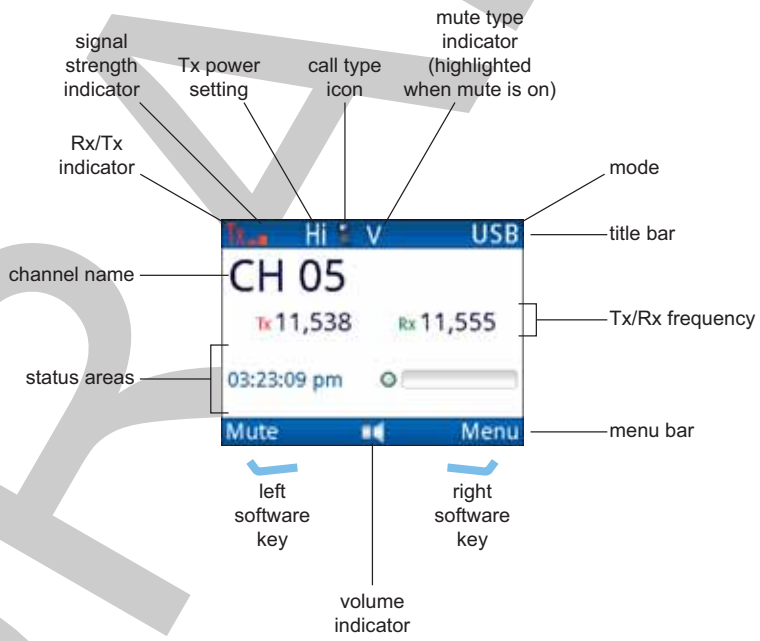
  The transceiver is switched off.

The channel screen

The channel screen shows the following information:

- the name of the currently selected channel
- the transmit and receive frequencies, if applicable
- a bar graph that indicates the signal strength on receive (green) and the output power on transmit (red)
- the transmit power level setting
- the call type icon (when calling) or the scan indicator (when scanning)
- the mute type indicator
- the mode

Figure 27: Channel screen



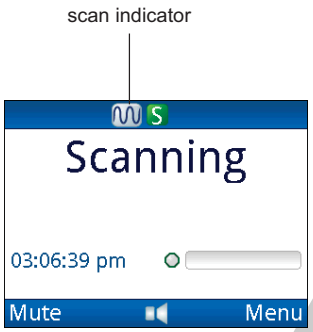
If the transmit and receive frequencies are the same, the frequency is only shown on the right side of the screen. The Rx/Tx indicator shows whether the transceiver is receiving (green) or transmitting (red). The more bars that are shown, the higher the signal strength.

Your transceiver may have the option of selecting high, medium, or low power. **Hi**, **Med**, or **Lo** is shown respectively to the right of the signal strength indicator.

While a call is being established, the transceiver shows that calling activity is in progress by flashing in place of the scan indicator. Once a call is established, these indicators are replaced with an icon that represents the type of call being sent or received.

When the transceiver is scanning, the channel screen is replaced by the scanning screen.

Figure 28: Scanning screen



Related links:

Call types on page 400
Selecting information to be shown in a status area on page 57

Selecting a channel

To select a channel:

- Press PTT to exit to the channel or scanning screen.
- If the transceiver is scanning, press **SCAN** to switch off scanning.

- Press ▲ or ▼ to scroll to the channel that you want to use.

  The channel is selected.

  NOTE: If you want to change the sideband, press **MODE**. If the mode does not change, there is only one mode for the channel.

  NOTE: If you have an automatic antenna tuner fitted, press PTT to tune the antenna to the currently selected channel.

- Do any of the following:
  - *Hold* **OK** to edit the channel, if permitted.
  - Press **OK** to search for a channel.
  - Press **CALL** to start a call.
  - *Hold* **CALL** to go to Contacts.

Related links:

Finding a word or value on page 36

Selecting information to be shown in a status area

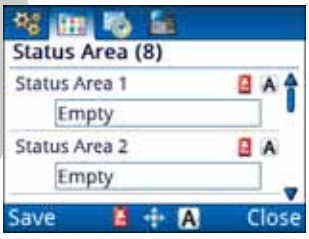
There are six status areas on the channel, scanning and free-tune screens that provide operational information directly to the user.

Figure 29: Status areas

NOTE: Information in status areas 1 and 2 is replaced by the secure status when a voice or data encryptor is used, respectively.

To select information to be shown in a status area:

- From the main menu, select (**Settings**), then (**Control Point**).
- Press ◀ or ▶ to select the **Status Area** tab.



- Press ▲ or ▼ to scroll to the status area in which you want to show status information.
- Press ◀ or ▶ to select the status information that you want to show.

Table 2: Information that may be shown in the status areas on the screen

Item	Description
Transceiver type	Read from the template in the transceiver, for example, X1 or X2
User-defined text 1/2	Any text that you want to show on the screen
Altitude, Latitude, Longitude, Speed	Derived from GPS signals from a GPS receiver
PA temperature	Temperature of the heatsink
Tx power	Monitored transmit power from the transceiver
Rx level	Strength of an incoming signal shown in dBµV
Voltage	Battery voltage
Last received call	Who and when details of the last call received
SWR	The ratio of forward to reflected power of the antenna during transmit (typical reading 1:1.6, which is only valid on the current channel)
Date, Time, Time Zone	Current date, time and time zone of the control point
Package version, Package build date	Details of the firmware in the transceiver (control point and RFU)
Profile name	Name of the TPS profile programmed into the transceiver
Primary self address	Self address of the first-listed HF network in your transceiver
Last received address	Contact name or address of the last call received
Last sent self address	Self address of your transceiver that was sent with the last call that you made
CP IP address, RFU IP address	IP address of the control point or RFU
Power down time	Time at which the transceiver will power down, in 24-hour format
Best LQA channel	Result of the most recent Channel Test call in an ALE/CALM HF network
Crosspatch state	Current crosspatch state may be **XP: Off|Active|Standby|Disconnected**
3012s throughput	Grey LED: modem is not in a link Green LED: modem is in a link and received the link Red LED: modem is in a link and started the link Green bar is indicative of the data throughput rate for the link

- Press (**Save**) to save the information.

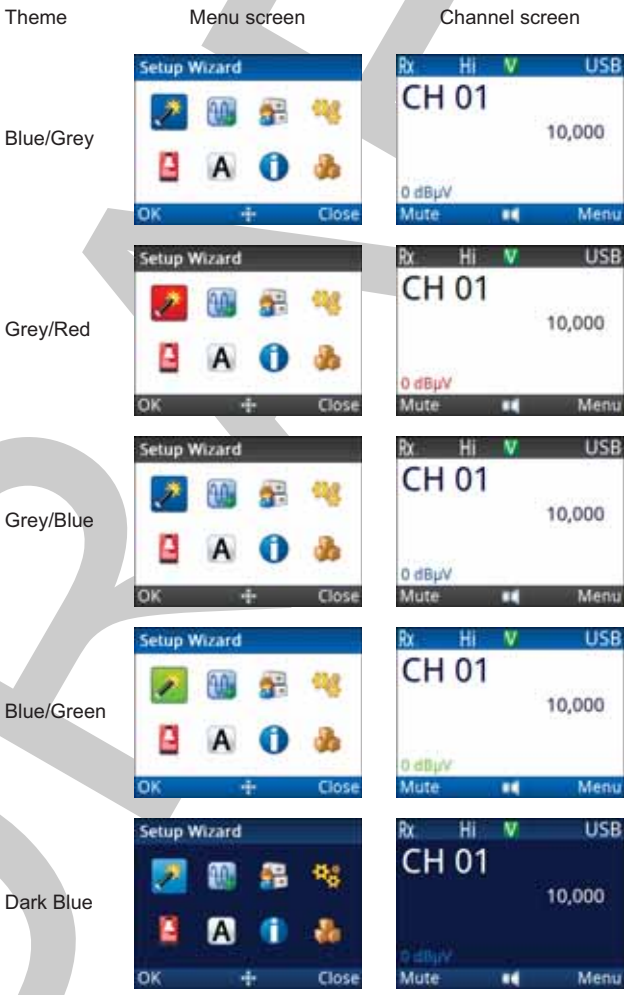
Related links:

Settings > Control Point > Status Area on page 198

Selecting a theme

You can select one of the following themes for the display on the control point. You can select one theme for use during the day, and another for use during the night.

Figure 30: Available themes for the display on the control point



To select a theme:

- From the main menu, select (**Settings**), then (**Control Point**).
- Press ▲ or ▼ to scroll to the **Theme** or **Night Theme** entry.
- Press ◀ or ▶ to select the theme that you want to use.

- Press (**Save**) to save the information.
- Switch the transceiver off then on again to activate the new theme.

Scanning channels

If you intend to receive calls on several channels, switch on scanning. When scanning is switched on, the transceiver sequentially selects each channel/mode in your scan tables to detect incoming calls. The channel are scanned in a continuous cycle. Mute is switched on automatically.

NOTE: Only those scan tables that are set to be scanned have the channels scanned.

When the transceiver detects a call addressed to your station, it stops scanning and notifies you according to the type of call received. When you press **SCAN** to end the call, scanning resumes. If you do not press this key to end the call, or any other key within a pre-determined timeout, the transceiver automatically ends the call and resumes scanning.

NOTE: The default standby state for the transceiver is to return to scanning so that it is ready to receive calls across a range of frequencies.

When the transceiver detects voice, it notifies you according to the mute setting selected. If your transceiver is set to notify you when voice is detected (**V**), you can pause scanning, select the channel/mode on which the voice was heard, then resume scanning when required. If your transceiver is set to Selcall mute (**S**), it only pauses scanning when it detects a call addressed to your station.

It is recommended that scanning is switched on when you are not using the transceiver to communicate.

Related links:

Adding a scan table on page 124
Call types on page 400
Muting the transceiver on page 63
Settings > Scan on page 211

Switching scanning on or off

To switch scanning on or off:

- Press **SCAN**.

  If a call is not in progress, scanning is toggled on or off.

  If a call is in progress, the call is ended and the transceiver begins scanning.

  NOTE: When scanning is switched on, mute is also switched on.

  NOTE: If you press PTT while the transceiver is scanning, the scan is stopped.

Pausing scanning

To pause scanning:

- Do *one* of the following:
  - To pause scanning on the last-selected channel, press **OK**.
  - To pause scanning and scroll to another channel, press ▲ or ▼.

  The channel/modes through which you can scroll are those in the scan tables that are being scanned. They are not listed alphabetically but in the order in which they are being scanned.

  If you do not press a key within 30 sec, the transceiver automatically resumes scanning.
- While scanning is paused, do *one* of the following:
  - To speak on the selected channel, *hold down* PTT.
  - To resume scanning immediately, press **OK**.

Muting the transceiver

When the transceiver is set to a channel or is scanning channels, and mute is switched off, you hear on-air signals on each channel. If you do not want to listen to this, you can silence the transceiver by switching mute on.

You can set the mute to open when a voice signal is detected (Voice mute **V**), or only when a call addressed to your station is received (Selcall mute **S**). If you have a digital voice encryptor fitted and active, you can also set the mute to open only when a digitally encrypted voice signal is detected (Digital Voice mute **D**).

Mute automatically comes on when the transceiver starts scanning. The transceiver listens for signals according to what is set in **Settings** > **Scan Mute**.

If the scan is paused due to voice being detected, the length of time that the transceiver holds the pause with mute off is set in **Settings** > **Scan Voice Max Pause** and **Scan Voice Extend**. Scanning only resumes automatically if the transceiver is set to start scanning after a timeout period.

Related links:

Scan Mute on page 212
Scan Voice Max Pause on page 212
Scan Voice Extend on page 212
Auto Resume Mode on page 211
Auto Resume Time on page 211

Switching mute on or off

To switch mute on or off:

- Press (**Mute**) on the channel, scanning or free-tune screen.

  On the 2221, press (**Options**), scroll to **Mute On**|**Off**, then press (**Select**).

  The **V** or **S** in the title bar of the channel screen is highlighted when mute is on.

Selecting the mute type

To select the mute type:

- Press V/S to toggle the mute type between Selcall mute (**S**) and Voice mute (**V**).

  NOTE: If you have the AES-256 digital voice encryptor fitted and active, an additional mute type of Digital Voice mute (**D**) is available.

Related links:

Digital Voice mute on page 306

Using the microphone

The microphone is located at the top centre of your handset. When you talk into the microphone:

- hold the microphone side-on and close to your mouth
- *hold down* PTT
- speak clearly at your normal volume and rate
- release PTT to return to receiving mode

NOTE: By default, the transceiver is set up to transmit a short beep when you release PTT. This removes the need for you to say 'over' at the end of your transmission.

CAUTION: Your conversation can be monitored by anyone tuned to your transmit frequency, unless you are using one of Codan's encryption options. Your signal can potentially travel very large distances.

If PTT is held continuously for a certain length of time, the system stops transmission, switches to receive and shows an error message on the control point. This ensures that, even if the PTT button is being held down accidentally, the battery will not be flattened, and your transceiver is ready to receive calls.

You can set the length of time the system waits before it cuts transmission (default is 10 min), or switch this feature off.

Related links:

Handset PTT Beep on page 205
PTT Timeout on page 206
Encryption on page 271

Manually tuning the antenna

WARNING: Before using the antenna system see the safety information provided.

NOTE: If the transceiver is connected to an automatic tuning antenna, it tunes the antenna automatically when required.

You may need to manually tune the antenna if you are receiving on a new channel, or if you want to check the SWR value for the antenna.

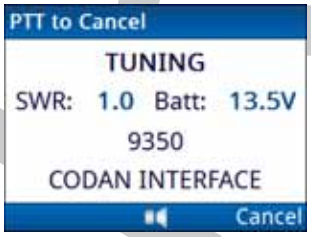
To manually tune the antenna:

- Press TUNE.

  The SWR, battery voltage, and type of antenna tuner are shown on the screen.

- *Hold down* PTT to start the tuning process.

  The transceiver makes a series of short beeps.



  An SWR of less than 2:1 is acceptable.

  NOTE: If PTT is *held* for more than 2 minutes, tuning is automatically aborted. The transceiver displays a message to inform you of this, makes an error beep, and returns you to the screen from which you began.

- Release PTT to stop tuning.

  The beeps cease and you are returned to the screen from which you began.

Related links:

Radiation safety (EU installations only) on page 437
Radiation safety (non-EU installations) on page 439

Selecting a language

The default language for the control point is English, however, you may have other language options available for the control point.

Figure 31: Select Language screen

To select a language:

- From the main menu, select (**Select Language**).
- Press ▲ or ▼ to scroll to the language that you want to use on the control point, then press **OK**.
- Press (**Save**) to save the information.
- Press (**Yes**) to confirm that you want to change the language.

Setting the date and time

The transceiver is set to UTC time in the factory. You set the local time and time zone offset for the location of the control point. This feature is useful if you have a communication network that spreads over several time zones, or you need to time stamp your transmissions according to the current time at longitude zero.

To set the time and date:

- From the main menu, select (**General**), then (**Time and Date**).
- Press (**Set**).
- Press ▼ to move to the **Time Zone** entry.
- Press ◀ or ▶ to select the time zone that you want to use.
- Press ▼ to move to the **Daylight Saving** entry.
- Press ◀ or ▶ to select the time that you want to use.
- Press ▼ to move to the **Local Time** entry.
- Press ▶ to enter edit mode for the local time.
- Press ▲ or ▼ to scroll to the value that you want to set, then press ▶ to move to the next item.
- Repeat this for minutes, seconds and AM/PM values.
- Press (**Save**) to save the local time.
- Press ▼ to move to the **Local Date** entry.
- Press ▶ to enter edit mode for the local date.
- Press ▲ or ▼ to scroll to the value that you want to set, then press ▶ to move to the next item.
- Repeat this for the day/month and year, as required.
- Press (**Save**) to save the local date.
- Press ▼ to move to the **Clock** entry.
- Press ◀ or ▶ to select the type of clock that you want to use.
- Press ▼ to move to the **Time Format** entry.
- Press ◀ or ▶ to select the format that you want to use.
- Press ▼ to move to the **Date Format** entry.
- Press ◀ or ▶ to select the format that you want to use.
- If you want to review the information that you have entered, press ▲ or ▼ to move through the entries.
- Press (**Save**) to save the information.

Setting the brightness of the display

To set the brightness:

- Do *one* of the following:
  - Press + **0**.
  - From the main menu, select (**General**), then (**Brightness**).

- Press or to scroll to the value that you want to set, then press **OK**.
- Press (**Save**) to save the information.

Setting the display timeout

You can set the length of time that the display and keypad backlight remains on after the last activity on the control point. After this time, the backlight value drops to **Low**. When a key is pressed, the backlighting returns to the value set in the **Brightness** entry.

To set the display timeout:

- From the main menu, select (**General**), then (**Brightness**).
- Press ▶ to move to the **Set Auto Dim Time** tab.

- Press ▲ or ▼ to scroll to the value that you want to set, then press **OK**.
- Press (**Save**) to save the information.

Related links:

Setting the brightness of the display on page 69

Setting the location of the desk console

The desk console may be connected directly to the transceiver, or it may be connected remotely.

Figure 32: Connection between RFU and desk console using 10-way to 8-way cable

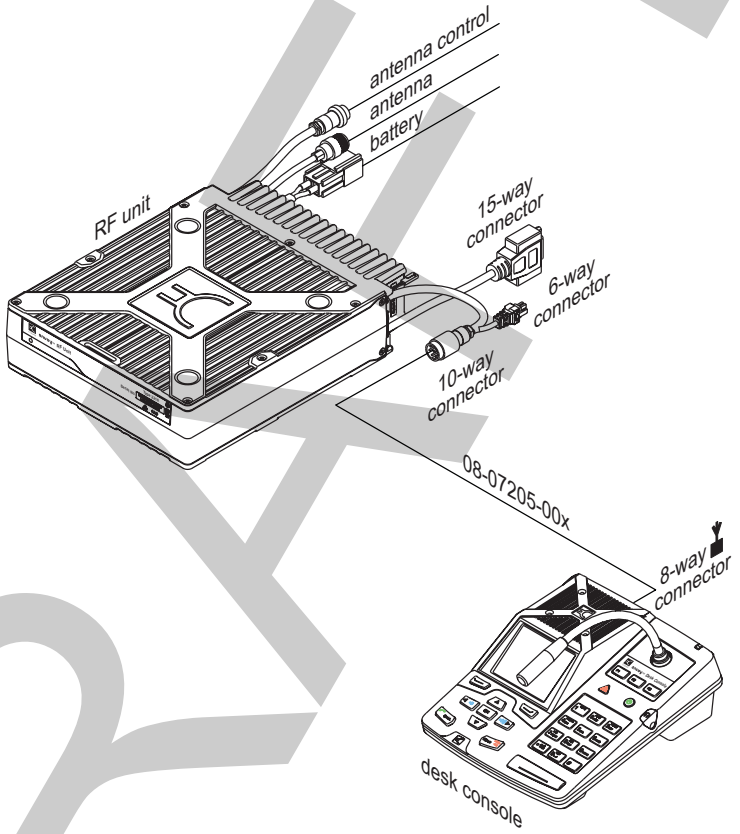
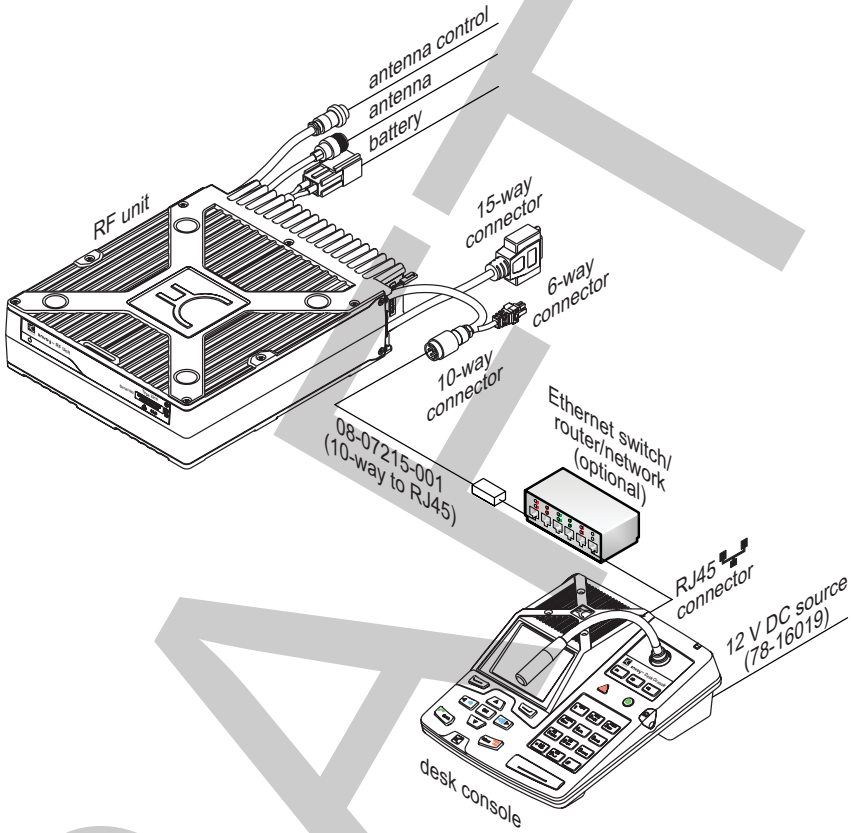


Figure 33: Connection between RFU and desk console using Ethernet cables and optional switch



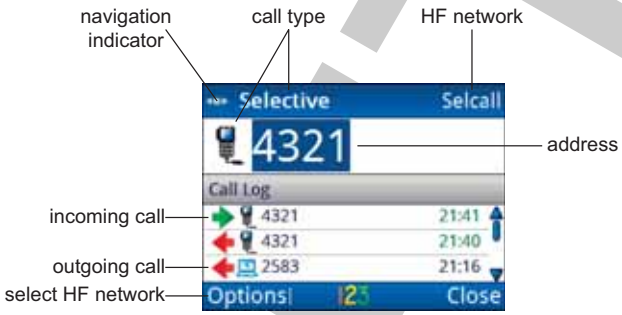
To set the location of the desk console:

- From the main menu, select (**Settings**), then (**Control Point**).
- Press ◀ or ▶ to select the **Console** tab.
- Press ▼ to move to the **Console Location** entry.
- Press ◀ or ▶ to select the value that you want to use from the following:
  - If the desk console is connected to the transceiver using cable 08-07205-00x, select **Local**.
  - If the desk console is connected to the transceiver using an Ethernet cable (08-07215-001), select **Remote**.
- Press (**Save**) to save the information.

Calling

This section describes how to make the various types of calls from the transceiver.

Figure 34: Call screen



Related links:

Making a Selective call on page 74
Making a Channel Test call on page 75
Making a Message call on page 78
Making a Phone call on page 80
Making a Send Position call on page 81
Making a Get Position call on page 83
Making a Get Status call on page 84
Making an Emergency call on page 86
Making an RFDS Emergency call on page 87

Making a Selective call

If you want to speak with the operator at a particular station, make a Selective call to the address of that station. When the station receives the call, the transceiver sounds an alert tone to notify the operator.

To make a selective call:

- Press **CALL**.

  The call type and address of the last call are shown at the top of the call screen.

- If you do not want to use the HF network shown at the top right of the screen:
  - Press (**Options**).
  - Scroll to **HF Networks**, then press (**Select**).
  - Scroll to the HF network that you want to use, then press **OK**.
- Press ◀ or ▶ to select the Selective call type if it is not selected.
- Do *one* of the following:
  - To repeat the call to the last address used, press **CALL**.
  - To call a different station, enter the address, then press **CALL**.
  - To repeat or return a call from the call log, press ▼ to scroll to the call, then press **CALL**.
- If prompted, press ▲ or ▼ to scroll to the channel that you want to use, then press **CALL**.

  A ✓ is shown next to the currently selected channel/mode.

  To abort the call before it is answered, press PTT or **SCAN**.

  There will be audible beeps or a pop-up message to indicate that the call has been successful.

Related links:

Selective call on page 407
Entering text in a field on page 40
Group calls in a Codan Selcall HF network on page 419

Making a Channel Test call

A Channel Test call enables you to test the quality of a channel/mode in a Codan Selcall HF network, and is sometimes referred to as a Beacon call. If you have the MIL-STD-188-144B ALE option installed, a Channel Test call may be made in an ALE/CALM HF network to replace information in the LQA database, and to perform a manual sounding operation.

There are two ways to test the quality of a channel/mode in a Codan Selcall HF network. You can test the channel before you make the call, or you can start to make the call and then test the channel prior to connecting.

Related links:

Channel Test call on page 401
Entering text in a field on page 40
Settings > Control Point > Status Area on page 198

Making a Channel Test call in a Selcall HF network

If you want to test the suitability of a channel/mode before you use it to transmit voice or data, make a Channel Test call to a specific station. The quality is determined by the strength and clarity of a revertive signal.

NOTE: If you set up one of the status areas to show the Rx level, you can view the strength of the revertive signal.

To make a Channel Test call in a Selcall HF network:

- Press **CALL**.

  The call type and address of the last call are shown at the top of the call screen.

- If you do not want to use the HF network shown at the top right of the screen:
  - Press (**Options**).
  - Scroll to **HF Networks**, then press (**Select**).
  - Scroll to the HF network that you want to use, then press **OK**.
- Press ◀ or ▶ to select the Channel Test call type if it is not selected.

- Do *one* of the following:
  - To repeat the call to the last address used, press **CALL**.
  - To call a different station, enter the address, then press **CALL**.
- If prompted, press ▲ or ▼ to scroll to the channel that you want to use, then press **CALL**.

  A ✓ is shown next to the currently selected channel/mode.
- Listen for the revertive signal from the other station.

  The volume and clarity of the signal indicates the quality of the channel/mode.

Making a Channel Test call as part of a call in a Selcall HF network

If you want to test the suitability of a channel/mode for transmitting voice or data during a call, you can make a Channel Test call within the call that you are making.

NOTE: If you set up one of the status areas to show the Rx level, you can view the strength of the revertive signal.

To test a channel as part of a call in a Selcall HF network:

- Start the call that you want to make to the other station.
- When you are prompted to select a channel for the call, scroll to the channel that you want to use, then *hold* **CALL** to perform the Channel Test call.

- Listen for the revertive signal from the other station.

  The volume and clarity of the signal indicates the quality of the channel/mode.
- Do *one* of the following:
  - If the channel is suitable, press **CALL**.
  - If you want to test another channel, scroll to the channel, then *hold* **CALL**.

Making a Channel Test call in an ALE/CALM HF network

If you want to update the information stored in the LQA database for the called address using the same HF network for the current time slot, make a Channel Test call to this station. The calling station sends a beacon on each channel in the scan tables associated with the HF network. Local and remote BER and SINAD information is recorded, and an LQA score is determined for each channel.

To make a Channel Test call in an ALE/CALM HF network:

- Press **CALL**.

  The call type and address of the last call are shown at the top of the call screen.

- If you do not want to use the HF network shown at the top right of the screen:
  - Press (**Options**).
  - Scroll to **HF Networks**, then press (**Select**).
  - Scroll to the HF network that you want to use, then press **OK**.
- Press ◀ or ▶ to select the Channel Test call type if it is not selected.
- Do *one* of the following:
  - To repeat the call to the last address used, press **CALL**.
  - To call a different station, enter the address, then press **CALL**.

  The LQA information gathered for each channel is shown.

  When all the channels have been tried, the best channel for a call to the particular station is shown.

- Do *one* of the following:
  - Press **CALL** to make a call to this station using the best channel.
  - Press (**Close**) to exit the LQA screen.
- Press **OK**.

Making a Message call

If you want to send a text message to another station, make a Message call.

You can:

- enter a message at the time that you make a call
- store up to 10 messages in **User Data** > **Messages** for later use
- store messages in a contact as part of a pre-programmed Message call

To make a Message call:

- Press **CALL**.

  The call type and address of the last call are shown at the top of the call screen.

- If you do not want to use the HF network shown at the top right of the screen:
  - Press (**Options**).
  - Scroll to **HF Networks**, then press (**Select**).
  - Scroll to the HF network that you want to use, then press **OK**.
- Press ◀ or ▶ to select the Message call type if it is not selected.

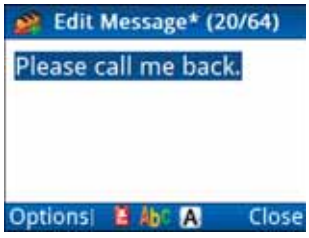
- ❑ Do *one* of the following:
  - To repeat the call to the last address used, press **CALL**.
  - To call a different station, enter the address, then press **CALL**.
  - To repeat or return a call from the call log, press ▼ to scroll to the call, then press **CALL**.

- ❑ If you want to enter a message:
  - Start typing the message.

    NOTE: Press **OK** to start a new line, if required.
  - Press ⎯ (**Options**), scroll to **OK**, then press ⎯ (**Select**) to add the message to the call.
- ❑ If you want to select a message from a list of stored messages:
  - Press ⎯ (**Options**), scroll to **Stored**, then press ⎯ (**Select**).

  - Press ▲ or ▼ to scroll to the message that you want to use.

    NOTE: If you want to view the message, press ⎯ (**Details**) to view the message, then press ⎯ (**Close**).
  - Press **OK** to select the message.
  - Edit the message, if required.



  - Press ⎯ (**Options**), scroll to **OK**, then press ⎯ (**Select**).

- If prompted, press ▲ or ▼ to scroll to the channel that you want to use, then press **CALL**.

  A ✓ is shown next to the currently selected channel/mode.

  To abort the call before it is answered, press PTT or **SCAN**.

  There will be audible beeps or a pop-up message to indicate that the call has been successful.

Related links:

Message call on page 405
Entering text in a field on page 40
Group calls in a Codan Selcall HF network on page 419

Making a Phone call

If you want to speak with an operator on a phone line, make a Phone call to that number. The transceiver makes an HF call to a telephone station (phone link), which connects through to the public telephone network.

To make a Phone call:

- Press **CALL**.

  The call type and address of the last call are shown at the top of the call screen.

- Press ◀ or ▶ to select the Phone call type if it is not selected.
- Do *one* of the following:
  - Enter the phone number that you want to call, then press **CALL**.
  - To repeat or return a call from the call log, press ▼ to scroll to the call, then press **CALL**.

- If you are prompted to add a phone link, do the following:
  - Enter the name that you want to use for the phone link.
  - Press ▼ to move to the **HF Network** entry.
  - Press ◀ or ▶ to select the HF network that you want to use.
  - Press ▼ to move to the **Selcall**|**ALE Address** entry.
  - Enter the address of the telephone station.
  - Press (**Save**).
- If you are prompted to select a phone link, scroll to the phone link that you want to use, then press **CALL**.
- If prompted, press ▲ or ▼ to scroll to the channel that you want to use, then press **CALL**.

  A ✓ is shown next to the currently selected channel/mode.

  To abort the call before it is answered, press PTT or **SCAN**.

  There will be audible beeps or a pop-up message to indicate that the call has been successful.

Related links:

Phone call on page 406
Entering text in a field on page 40
Group calls in a Codan Selcall HF network on page 419

Making a Send Position call

If you want to send your GPS information to another station, make a Send Position call.

NOTE: You can make a Send Position call if the GPS Call option is installed, and your GPS information is valid. The transceiver sends GPS information from either a connected and configured GPS receiver, or from valid content in **Settings** > **GPS** > **My Position**.

To make a Send Position call:

- Press **CALL**.

  The call type and address of the last call are shown at the top of the call screen.

- If you do not want to use the HF network shown at the top right of the screen:
  - Press (**Options**).
  - Scroll to **HF Networks**, then press (**Select**).
  - Scroll to the HF network that you want to use, then press **OK**.
- Press ◀ or ▶ to select the Send Position call type if it is not selected.
- Do *one* of the following:
  - To repeat the call to the last address used, press **CALL**.
  - To call a different station, enter the address, then press **CALL**.
  - To repeat or return a call from the call log, press ▼ to scroll to the call, then press **CALL**.
- If prompted, press ▲ or ▼ to scroll to the channel that you want to use, then press **CALL**.

  A ✓ is shown next to the currently selected channel/mode.

  To abort the call before it is answered, press PTT or **SCAN**.

  There will be audible beeps or a pop-up message to indicate that the call has been successful.

Related links:

Send Position call on page 407
Entering text in a field on page 40
My Position on page 233
Group calls in a Codan Selcall HF network on page 419

Making a Get Position call

If you want to obtain the GPS position of a specific station that has valid GPS information, make a Get Position call to that station. Get Position calls are automatically answered by the receiving station so an operator is not required to process the return call.

NOTE: You can make a Get Position call if the GPS Call option is installed in your transceiver and the transceiver that you are calling. The success of your Get Position call depends upon the value set in **Calling** > **General** > **Respond GPS** of the transceiver you are calling and the privacy mode of the HF network that you are using for the call.

To make a Get Position call:

- Press **CALL**.

  The call type and address of the last call are shown at the top of the call screen.

- If you do not want to use the HF network shown at the top right of the screen:
  - Press (**Options**).
  - Scroll to **HF Networks**, then press (**Select**).
  - Scroll to the HF network that you want to use, then press **OK**.
- Press ◀ or ▶ to select the Get Position call type if it is not selected.
- Do *one* of the following:
  - To repeat the call to the last address used, press **CALL**.
  - To call a different station, enter the address, then press **CALL**.
  - To repeat or return a call from the call log, press ▼ to scroll to the call, then press **CALL**.

- If prompted, press ▲ or ▼ to scroll to the channel that you want to use, then press **CALL**.

  A ✓ is shown next to the currently selected channel/mode.

  To abort the call before it is answered, press PTT or **SCAN**.

  There will be audible beeps or a pop-up message to indicate that the call has been successful.

NOTE: The format of GPS information in call pop-ups, Call Log and Call History is DDMM.SSSS S, DDDMM.SSSS E, for example, 3452.82 S, 13841.26 E.

Related links:

Get Position call on page 402
Entering text in a field on page 40
Respond GPS on page 218
Privacy mode on page 136

Making a Get Status call

If you want to obtain information on the status of a transceiver at a specific station, such as the power output of the transmitter or the firmware versions installed, make a Get Status call to that station. Get Status calls are automatically answered by the receiving station so an operator is not required to process the return call.

NOTE: The success of your Get Status call depends upon the value set in **Calling** > **General** > **Respond OTA** of the transceiver you are calling and the privacy mode of the HF network that you are using for the call.

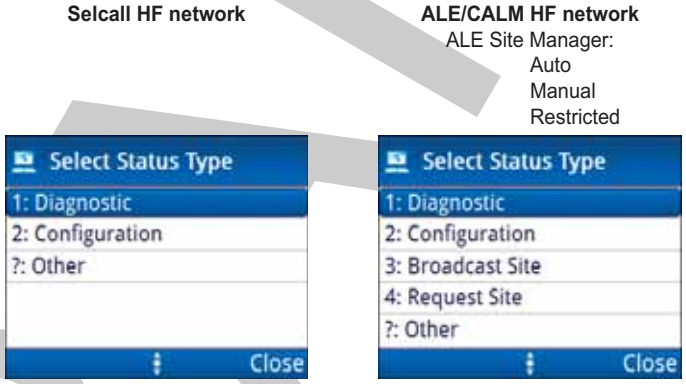
To make a Get Status call:

- Press **CALL**.

  The call type and address of the last call are shown at the top of the call screen.

- If you do not want to use the HF network shown at the top right of the screen:
  - Press (**Options**).
  - Scroll to **HF Networks**, then press (**Select**).
  - Scroll to the HF network that you want to use, then press **OK**.
- Press ◀ or ▶ to select the Get Status call type if it is not selected.
- Do *one* of the following:
  - To repeat the call to the last address used, press **CALL**.
  - To call a different station, enter the address, then press **CALL**.
  - To repeat or return a call from the call log, press ▼ to scroll to the call, then press **CALL**.

Figure 35: Available status types for a Get Status call in a Selcall or an ALE/CALM HF network



- Press ▲ or ▼ to scroll to the status type that you want to use, then press **OK**.
- If you selected **?: Other** as the status type, enter the text/command that you want to send, press (**Options**), scroll to **Save**, then press (**Select**).
- If prompted, press ▲ or ▼ to scroll to the channel that you want to use, then press **CALL**.

  A ✓ is shown next to the currently selected channel/mode.

  To abort the call before it is answered, press PTT or **SCAN**.

  There will be audible beeps or a pop-up message to indicate that the call has been successful.

Related links:

Get Status call on page 403
ALE Site Manager on page 222
MIL-STD-188-141B ALE on page 133
Entering text in a field on page 40
Respond OTA on page 219

Making an Emergency call

If you want to trigger an emergency alert tone at a particular station and speak with an operator, make an Emergency call. If the GPS Call option is installed in the transceiver (and you have connected and configured a GPS receiver, or GPS information stored in the **My Position** entry), your GPS position is automatically sent with the call. Emergency calls can be sent to several stations at once.

If you have the FED-STD-1045 ALE/CALM option installed, you can use the global ALL address syntax (@?@) with the Emergency call type to send a call to all stations using an ALE/CALM HF network and common channels. If you have the MIL-STD-188-141B ALE option installed, you can use the ALL, ANY, Group Selective, NET, or Wildcard address syntax with the Emergency call type to send a call to a group of stations using an ALE/CALM HF network.

To make an Emergency call:

- Press **CALL**.

  The call type and address of the last call are shown at the top of the call screen.

- If you do not want to use the HF network shown at the top right of the screen:
  - Press (**Options**).
  - Scroll to **HF Networks**, then press (**Select**).
  - Scroll to the HF network that you want to use, then press **OK**.
- Press ◀ or ▶ to select the Emergency call type if it is not selected.
- Do *one* of the following:
  - To repeat the call to the last address used, press **CALL**.
  - To call a different station, enter the address, then press **CALL**.
  - To repeat or return a call from the call log, press ▼ to scroll to the call, then press **CALL**.

- If prompted, press ▲ or ▼ to scroll to the channel that you want to use, then press **CALL**.

  A ✓ is shown next to the currently selected channel/mode.

  To abort the call before it is answered, press PTT or **SCAN**.

  There will be audible beeps or a pop-up message to indicate that the call has been successful.

Related links:

Emergency call on page 402
Entering text in a field on page 40
Group calls in a Codan Selcall HF network on page 419
My Position on page 233
Making a call from the Emergency key on page 90

Making an RFDS Emergency call

If you want to trigger an emergency alert tone at an RFDS station, make an RFDS Emergency call.

To make an RFDS Emergency call:

- Press **CALL**.

  The call type and address of the last call are shown at the top of the call screen.

- If you do not want to use the HF network shown at the top right of the screen:
  - Press (**Options**).
  - Scroll to **HF Networks**, then press (**Select**).
  - Scroll to the HF network that you want to use, then press **OK**.
- Press **CALL**.
- If prompted, press ▲ or ▼ to scroll to the channel that you want to use, then press **CALL**.

  A ✓ is shown next to the currently selected channel/mode.

Related links:

RFDS Emergency call on page 406

Making a call to a contact

To make a call to a contact:

- *Hold* **CALL**.

- Press ▲ or ▼ to scroll to the contact who you want to call.
- If required, press ◀ or ▶ to scroll to the call that you want to make.

  The call types that are available for the contact are set up in **User Data** > **Contacts**.

  NOTE: If only one call has been set up for the contact, you cannot select a different call type at the time of the call.

- Press **CALL**.
- If prompted, press ▲ or ▼ to scroll to the channel that you want to use, then press **CALL**.

  A ✓ is shown next to the currently selected channel/mode.

  To abort the call before it is answered, press PTT or **SCAN**.

  There will be audible beeps or a pop-up message to indicate that the call has been successful.

Related links:

Adding a contact on page 149

Making a call from the Call History

The Envoy™ Transceiver stores information on the calls that you send and receive. The detailed call history is accessed by *holding* **CALL**, then pressing ▶ to scroll to the **Call History** tab.

NOTE: A filtered call log is available in the call screen. This log contains only the latest instance of a call to a specific station.

To make a call from the Call History:

- *Hold* **CALL**.
- Press ◀ or ▶ to select the **Call History** tab.

- Press ▲ or ▼ to scroll to the call that you want to return or repeat, then press **CALL**.
- If you want to view the details of the call, press (**Options**), scroll to **Details**, then press (**Select**).

  Press (**Close**) to exit viewing the details.
- Press **CALL**.
- Press ◀ or ▶ to select the call type that you want to use.
- Continue from making your chosen call type.

Related links:

Call Key Options on page 194
Making a Selective call on page 74
Making a Channel Test call on page 75
Making a Message call on page 78
Making a Phone call on page 80
Making a Send Position call on page 81
Making a Get Position call on page 83
Making a Get Status call on page 84
Making an Emergency call on page 86
Making an RFDS Emergency call on page 87

Making a call from the Emergency key

You can set up emergency contacts with calls that are chained together when you *hold* the ⚠ key.

CAUTION: If you have more than one emergency contact, you will be prompted to select the emergency contact that you want to call at the time of the call.

To make a call from the ⚠ key:

- *Hold* ⚠ for 2 sec.
- If you have more than one emergency contact, scroll to the contact that you want to call, then press **CALL**.
- If prompted, press ▲ or ▼ to scroll to the channel that you want to use, then press **CALL**.

  A ✓ is shown next to the currently selected channel/mode.

  To abort the call before it is answered, press PTT or **SCAN**.

  There will be audible beeps or a pop-up message to indicate that the call has been successful.

Related links:

Overview of contacts on page 144
Adding a contact on page 149

Using the clarifier

The clarifier is a feature that enables you to adjust the receive frequency to compensate for any frequency offset between your transceiver and the remote transceiver, thus improving the quality of received voice.

To use the clarifier:

- ❑ Go to the channel screen and ensure that scanning is switched off.
- ❑ Do *one* of the following:
  - On a 2220 Handset, press FUNC.
  - On a 2221 Handset, press (**Menu**), select (**Functions**), scroll to **Clarifier**, then press (**OK**).

- ❑ Press ▲ or ▼ to increase or decrease the pitch of the received voice, then press **OK**.

If you select a positive clarifier offset from the frequency, the Rx indicator changes to an up arrow. If you select a negative clarifier offset from the frequency, the Rx indicator changes to a down arrow.

When you select another channel/mode the clarifier is reset to the centre point.

Reducing background noise with *Easitalk*™

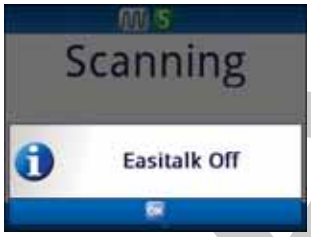
The *Easitalk*™ feature enables you to reduce the level of background noise that is present when you listen to a channel.

If *Easitalk*™ is active when the transceiver begins scanning, it is automatically switched off. It is switched on again when scanning pauses or stops.

NOTE: *Easitalk*™ uses one of three DSP algorithms to reduce the background noise. Depending on the conditions, you may need to change the algorithm in **Settings** > **Configuration** > **General**.

To switch *Easitalk*™ on or off:

- Press EASITALK.



The new status is shown in a pop-up, then you are returned to the screen that you were on previously.

Related links:

Easitalk Mode on page 203

Viewing information about your transceiver

Overview of information in the transceiver

The transceiver contains information on:

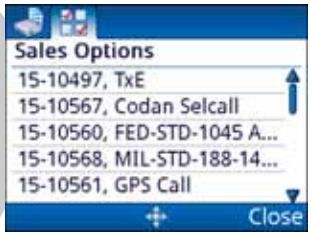
- hardware options that have been fitted
- sales options that have been enabled
- the electronic serial number of the RFU
- the version status of the current firmware
- IP information
- licence information

Viewing device information

To view information in the transceiver:

- From the main menu, select (**Information**), then (**Device Information**).

- If you want to view the sales options that are enabled in the transceiver, press ▶.



Viewing the ESN

To view the ESN:

- From the main menu, select (Information), then (**Option Password**).

  The ESN is shown on the Option Password screen.

Viewing the firmware version

To view the firmware version of the transceiver:

- From the main menu, select (**Information**), then (**Version**).

NOTE: If you want to view detailed version information, switch to advanced view.

NOTE: If you want to view the firmware package version on the channel screen, you can set it to be shown in one of the status areas.

Related links:

Logging in to admin level on page 34
Selecting information to be shown in a status area on page 57
Switching between basic and advanced views on page 32

Viewing IP information

To view the IP information:

- From the main menu, select (**Information**), then (**IP Connectivity**).

  You can view the following information for the RFU and control point:

  - IP address
  - MAC address
  - alias
  - network mask
  - DHCP client
  - default gateway

  You can view the following information for the USB interface on the control point:

  - IP address
  - network mask
  - DHCP server

  NOTE: If you want to change any of this information, log in to admin level, then go to **Settings** > **Connectivity**.

Related links:

Logging in to admin level on page 34
Settings > Connectivity on page 240

Viewing licence information

To view licence information:

- From the main menu, select (**Information**), then (**Licence**).

  Licence information is provided for the following components of the firmware:

  - alsa-lib
  - alsa-utils
  - base_libs
  - busy-box
  - dosfstools
  - Droid Font Family
  - iproute
  - iptables
  - libtermcap
  - libusb
  - libXML2
  - lzo
  - Linux Kernel
  - mtd-utils
  - ncurses
  - Qt Everywhere
  - skell
  - sysconfig
  - u-boot
  - Freescale Semiconductor Embedded Linux 2.6.28
  - GNU Lesser General Public License
  - GNU General Public License Version 2

Related links:

Licence information on page 445

Using GPS

Overview of GPS

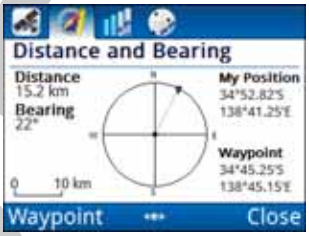
If you have the GPS Call Option enabled, and a GPS receiver connected and selected as a peripheral device, you can send and receive GPS information on your transceiver. GPS information is stored in the Call Log and Call History when it is included with a call, and your own GPS information can be viewed on the series of tabs on the GPS screen (Info, Distance and Bearing, Signal Strength, Satellites Constellation).

Figure 36: GPS screen

Distance and bearing

The Envoy™ Transceiver calculates distance and bearing information between your GPS information, and a waypoint that you enter from a Get Position call in the Call History or Contacts.

Figure 37: Distance and bearing



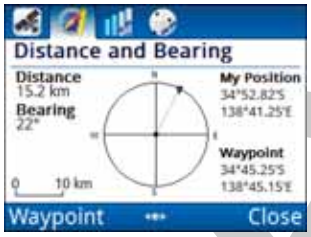
Setting a waypoint for distance and bearing

NOTE: You can set a waypoint if the GPS Call option is installed.

To set up a waypoint:

- From the main menu, select (**General**), then (**GPS**).
- Press ▶ to move to the **Distance and Bearing** tab.
- Press (**Waypoint**), then press ▶ to select the **Call History** or **Contacts** tab as required.

  The information available is filtered on Get Position and received Send Position calls.
- Press ▲ or ▼ to scroll to the call or contact containing the GPS information that you want to use for the waypoint, then press **OK**.



Viewing GPS information

NOTE: You can view GPS information if the GPS Call option is installed.

To view GPS information:

- From the main menu, select (**General**), then (**GPS**).
- Press ▶ to move to the tab that you want to view.

Table 3: GPS information

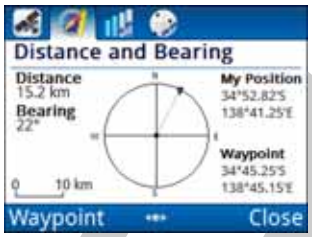
Tab	Description
	Latitude and longitude readings from a GPS receiver, or from **Settings** > **GPS** > **My Position**. Altitude and speed readings are hidden by default. The spinning circle shows that the GPS receiver is active, and the Last Fix reading shows the time lapse from the last receipt of valid GPS information.
	Distance and bearing from your location to a selected waypoint.
	Signal strength from each visible satellite. The number represents a particular satellite, and its location is shown on the Satellites Constellation tab. Satellites with a blue signal strength provide information for the GPS location.

Table 3: GPS information (cont.)

Tab	Description
	Map of visible satellites. The satellites that are coloured blue are providing the strongest signals and this information is being used to establish the position of the receiver. The other satellites are visible, but the signal is weaker and information is ignored.

- Press (**Close**).

Using encryption

Related links:
Encryption on page 271

Switching the encryptor on or off

The 2220 Handset and 2230 Desk Console have hot keys that access the secure feature directly. With the 2221 Handset, you access the secure feature via **Functions**.

If you want secure to remain on at all times, you set this in **Settings** > **Security** > **Secure Start State**.

To switch the encryptor on or off:

- If you are using a 2220 Handset or 2230 Desk Console, press SEC.
- If you are using a 2221 Handset:
  - Press (**Options**).
  - Press ▲ or ▼ to scroll to the **Secure On**|**Secure Off** option.
  - Press (**Select**).

  Secure is toggled on or off across all available encryptors.

  For CIVS voice scrambling you will see:

Secure

Clear

For CES-128 voice encryption you will see:

Secure

Clear

For AES-256 digital voice encryption you will see:

Secure

Clear

For AES-256 digital data encryption you will see:

Secure

Clear

- Change to the encryptor type that you want to use, if permitted.
- If you are using CES-128 voice encryption with a 2220 Handset or 2230 Desk Console, press ✱ to go to secure standby mode, if enabled and required.

Standby

- If you are using CES-128 voice encryption with a 2221 Handset, do the following to go to secure standby mode:
  - Press (**Options**).
  - Press ▲ or ▼ to scroll to the **Standby On** option.
  - Press (**Select**).

Related links:

Selecting an encryptor on page 277
CIVS voice scrambler on page 289
CES-128 voice encryption on page 292
AES-256 digital voice encryption on page 303
AES-256 digital data encryption on page 309
Secure Start State on page 238
Setting the secure state of all encryptors at power up on page 288
Standby mode on page 297
Entering a PIN for a secure session on page 296

Selecting a secure key

If an encryptor contains two or more keys, you have the option of selecting a different key for encryption, if permitted. When AES-256 digital voice and data encryptors are used together, the selected key is common to both.

To select a secure key:

- If you are using a 2220 Handset or 2230 Desk Console, do *one* of the following:
  - From the main menu, select (**General**), then (**Secure**).
  - *Hold* SEC.
- If you are using a 2221 Handset:
  - From the main menu, select (**Functions**).
  - Press ▲ or ▼ to scroll to the **Secure Info** function.
  - Press (**OK**).
- Press ▲ or ▼ to scroll to the **Select Key Index** entry.

- Press ◀ or ▶ to select the secure key index that you want to use.

  Hold the key to scroll rapidly through the secure key indexes.

- Press (**OK**).

  The transceiver goes secure on the selected key.

Related links:

Setting user access to encryptor features on page 284

Using a crosspatch

Overview of the 3031 Crosspatch

The 3031 Crosspatch is a device that connects an HF communication system with a VHF or UHF communication system.

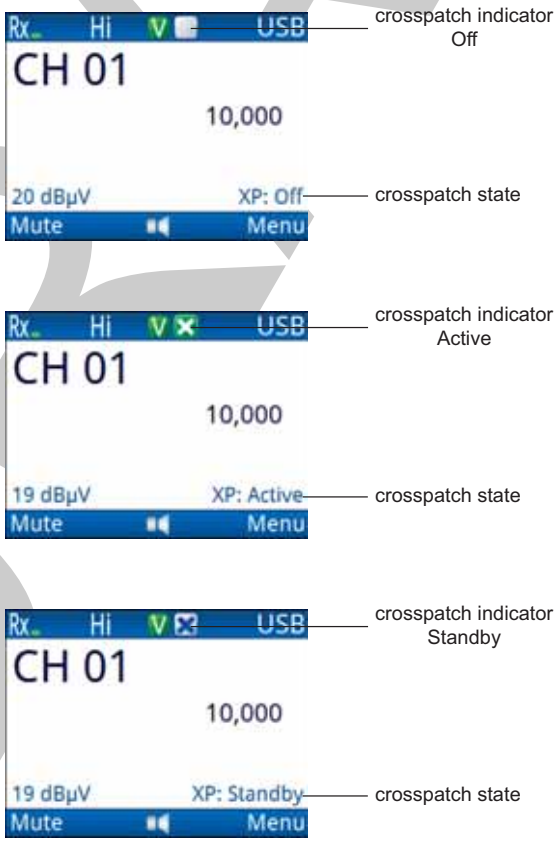
NOTE: For details on installing the crosspatch and its operation, see the documentation provided with the device.

NOTE: You must select the 3031 Crosspatch as the peripheral device for the 15-way connector.

The operating mode of the crosspatch may be controlled directly by the transceiver, or by using DTMF commands on a DTMF-capable VHF/UHF transceiver.

The crosspatch may be active, on standby, or switched off. The status of the crosspatch is shown in the title bar, and you can set the status to be shown in one of the status areas.

Figure 38: Crosspatch status



Related links:

Selecting a peripheral on page 183

Selecting information to be shown in a status area on page 57

Changing the operating mode of the crosspatch

To change the operating mode of the crosspatch:

- If you are using a 2220 Handset or 2230 Desk Console, press **5**.
- If you are using a 2221 Handset:
  - From the main menu, select (**Functions**).
  - Press ▲ or ▼ to scroll to the **Next Crosspatch State** function.
  - Press (**OK**).

  The crosspatch toggles between the following states:

  - Off
  - Active
  - Standby

  NOTE: If the status shows **XP: Disconnected**, the crosspatch may not be connected, or is connected but not selected as a peripheral device.

Upgrading the transceiver via a USB stick

Firmware packages, profiles from TPS, and secure keys may be loaded onto a USB stick, providing a portable method of upgrading transceivers in the field. You can also read a profile from a transceiver in the field. When the USB stick is connected to the control point, a selection menu is shown for various activities, depending on the values set in **Settings** > **General** > **USB User Access**.

To manage profiles, firmware, and secure keys:

- ❑ Connect your USB stick to the control point using a standard USB A (female) to micro USB cable.

  The USB stick is detected automatically.
- ❑ Press ▲ or ▼ to scroll to the activity that you want to perform from the following:
  - If you want to program a profile from the USB stick to the transceiver, select **Program Profile**.
  - If you want to read the profile from the transceiver to the USB stick, select **Read Profile**.
  - If you want to upgrade the transceiver with a firmware package from the USB stick, select **Upgrade Firmware**.
  - If you want to program secure keys to a transceiver that has an encryptor module enabled, select **Program Secure Keys**.
- ❑ Do *one* of the following:
  - Press ▲ or ▼ to scroll to the firmware package, profile, or key set file, press — (**Options**), scroll to **Open**, then press — (**Select**).
  - Press ▲ or ▼ to scroll to the folder in which you want to save the profile from the transceiver, then press — (**Save**).
- ❑ Press — (**Yes**) to confirm that you want to complete the selected action.
- ❑ Perform more tasks with the USB stick as required.
- ❑ Press — (**Eject**) when you have finished working with the USB stick.

Related links:

USB User Access on page 193

Entering a password for an option

You may purchase new options for your transceiver, as required. You will receive a 26-digit option code that must be entered to enable the option in the transceiver's firmware. If you forget your admin PIN, contact Codan, quote the ESN of your transceiver, and you will be given an option code for deleting the PIN.

To install an option in the transceiver:

- From the main menu, select (**Information**), then (**Option Password**).

- Enter the password.

  As you enter the last digit, the option to **Send** appears.

- Press (**Send**), then press (**Close**).
- Restart your transceiver.

Related links:

Viewing information about your transceiver on page 93

Performing a self-test

The Envoy™ Transceiver has a series of built-in tests that may be completed to assess a particular aspect of functionality.

To perform a self-test:

- From the main menu, select (**General**), then (**Self Tests**).

  By default, all self-tests are selected.
- If there is a test that you do not want to perform press ▲ or ▼ to scroll to the test, then press **OK**.
- Press (**Start**).
- Follow any on-screen prompts.

  At the end of the test a summary of outcomes is provided.

Related links:

Selecting/deselecting a check box on page 45

Finding an RFU

If your organisation has several Envoy™ Transceivers and control points connected to a LAN via an Ethernet switch, you have to identify on the control point the RFU to which you want to connect.

To find and connect to an RFU:

- From the main menu, select (**General**), then (**Find RFU**).

- Press ▲ or ▼ to scroll to the RFU to which you want to connect, then press (**Connect**).
- If the RFU to which you want to connect is on a different subnet, do the following:
  - Press ◀ or ▶ to select the **IP** tab.
  - Press ▼ to move to the **Enter RFU Address** entry.
  - Enter the segments of the IP address.
    You may need to press ▶ to move to the next segment.
  - Press (**Connect**).

7 Channels

This section contains the following topics:

Overview of channels

A channel is a frequency, or pair of frequencies, that is programmed in the transceiver and used to transmit and receive signals on air. A channel has a name, a receive frequency, an optional transmit frequency, a mode, the preferred mode, and a power level.

You must enter the details of at least one channel before you can make or receive a call.

Each channel has one or more modes associated with it. Each mode indicates a sideband that can be used with the channel, such as USB or LSB. When you make a call you must specify the channel and the mode that you want to use.

Figure 39: Information for a channel

Channels		
Ch 01	Tx (kHz):	10000.000
	Rx (kHz):	10000.000
	Modes:	USB, LSB, AM
	Preferred Mode:	<None>
	Power:	Leave as is
Ch 02	Tx (kHz):	12000.000
	Rx (kHz):	12000.000
	Modes:	USB, LSB, AM
	Preferred Mode:	USB
	Power:	Medium
Ch 03	Tx (kHz):	2525.000
	Rx (kHz):	2525.000
	Preferred Mode:	<None>
	Modes:	USB
	Power:	Leave as is
Ch 04	...	...
...	...	...

Related links:

Entries for a channel on page 113
Adding a channel on page 115
Available modes on page 263

Entries for a channel

Channel name

The channel name is a label that is given to a frequency, or pair of frequencies, that is used to receive and/or transmit HF radio signals.

A channel name can consist of letters, numbers or a combination of both. A channel has a name that uniquely identifies it, and makes it available for selection in other areas of the user interface of the control point.

CAUTION: You should be aware of any restrictions placed on channel names in your transceiver when it is used with a Codan HF data modem, radio/telephone interconnect, or InterNav© software. See the documentation provided with this equipment.

Frequency

The receive and transmit frequencies may be any frequencies within the HF range, however, the transmit frequencies can only be those allocated to you by the relevant government authority in your country.

Spectral regulations may require the TxD option to be installed in the transceiver. In this case, you cannot add channels with new transmit frequencies. You can, however, add receive-only channels, and channels with the same transmit frequency as an existing channel. If the TxP option is installed in the transceiver, you cannot add channels.

Related links:

General specifications on page 342

Transmit frequency

A transmit frequency carries modulated information that is sent to a remote transceiver. The frequency is entered in kHz.

Receive frequency

A receive frequency carries modulated information that is received from a remote transceiver. The frequency is entered in kHz.

Modes

Modes are available in the transceiver when a particular filter is enabled. When the standard IF filter is enabled, the available modes are USB and LSB. If a different filter is enabled, other modes are available. For example, if you have a wide IF filter enabled, USBW and LSBW are available. If you have a narrow Morse filter enabled, UMCW and LMCW are available.

You can select any or all of the available modes as the modes allowed for a particular channel.

Related links:

Modes on page 261

Preferred mode

The preferred mode is the mode that the transceiver uses by default when this channel is selected. The preferred mode is selected from the list of allowed modes for the channel.

Power

The **Power** entry sets the power level for transmission when this channel is selected. The actual value that may be selected for each range is set up in the **Low Power**, **Medium Power** and **High Power** entries in **Settings** > **Configuration**.

If you want the transceiver to transmit signals on this channel at:

- the power level set in the **Tx Power** entry, select **Leave as is**
- the value set for the low power range, select **Low**
- the value set for the medium power range, select **Medium**
- the value set for the high power range, select **High**

Related links:

Low Power on page 204
Medium Power on page 204
High Power on page 204

Working with channels

Related links:

Entries for a channel on page 113
Overview of scan tables on page 120
Available modes on page 263
Tx Power on page 204
Navigating the menu structure on page 30
Entering text in a field on page 40
Selecting a value from a list on page 44
Selecting/deselecting a check box on page 45
Saving your changes on page 48
Adding a channel in free tune on page 269

Adding a channel

Stations in an HF communication network use the information contained within a channel to transmit and receive signals. Common channel information must be programmed into transceivers that want to communicate. Typically, these channels are grouped into scan tables, which are allocated to an HF network.

NOTE: If you are operating the transceiver in a country that has stringent licensing regulations, you may not be permitted to add channels with transmit frequencies.

NOTE: If the TxD option is installed in the transceiver, there are restrictions on the frequencies that you can enter.

NOTE: If the TxP option is installed in the transceiver, you cannot add channels.

NOTE: You may be permitted to add a channel in free tune.

To add a channel:

- From the main menu, select (**User Data**), then (**Channels**).

  NOTE: You can also select (**Add Channel**) from the main menu to directly enter a channel. This channel will be placed in the list of channels in alphanumeric order.

- Do *one* of the following:
  - If there are no channels programmed in the transceiver, press (**Add**).
  - If there are some existing channels programmed in the transceiver, scroll to the channel after which you want to add the new channel, press (**Options**), scroll to **Add**, then press (**Select**) to add a channel.

- Enter the name that you want to use for the channel.

- Press ▼ to move to the **Tx** entry.
- Enter the transmit frequency (in kHz) that you want to use for this channel.
- Press ▼ to move to the **Rx** entry.

  The **Rx** entry is automatically filled with the transmit frequency.
- Enter the receive frequency (in kHz), if required to be different from the Tx frequency.
- Press ▼ to move to the **Mode** entry.
- To select a mode:
  - Press ▶ to view the list of available modes.
  - Press ▲ or ▼ to scroll to the mode that you want to use, then press **OK**.

    The check box contains a ✓ when the mode is selected.
  - Select other modes, as required.

    NOTE: The modes that you select become the allowed modes for this channel. In a scan table, you can duplicate a channel and select another of the allowed modes.
  - Press (**Save**).
- Press ▼ to move to the **Preferred Mode** entry.
- Press ◀ or ▶ to select the mode that you want to use.
- Press ▼ to move to the **Power** entry.
- Press ◀ or ▶ to select the value that you want to use from the following:
  - To transmit at the power level set in the Tx Power entry, select **Leave as is**.
  - To transmit signals at the value set for the low power range, select **Low**.
  - To transmit signals at the value set for the medium power range, select **Medium**.
  - To transmit signals at the value set for the high power range, select **High**.
- If you want to review the information that you have entered, press ▲ or ▼ to move through the entries.
- Press (**Save**) to save the information.

Editing a channel

Editing a channel is similar to adding a channel. If a channel is added at user level, it may be edited at user level and admin level.

To edit a channel:

- From the main menu, select (**User Data**), then (**Channels**).
- Press ▲ or ▼ to scroll to the channel that you want to edit, then press **OK**.
- Continue with the process for adding a channel.

Related links:

Adding a channel on page 115

Moving a channel

To move a channel:

- From the main menu, select (**User Data**), then (**Channels**).
- Press ▲ or ▼ to scroll to the channel that you want to move, press (**Options**), scroll to **Move**, then press (**Select**).
- Press ▲ or ▼ to scroll to the new location for the channel in the list, then press (**Place**).

Deleting a channel

If a channel is added at user level, it may be deleted at user level and admin level.

To delete a channel:

- From the main menu, select (**User Data**), then (**Channels**).
- Press ▲ or ▼ to scroll to the channel that you want to delete, press (**Options**), scroll to **Delete**, then press (**Select**) to delete the channel.
- Confirm that you want to delete the channel.

This page has been left blank intentionally.

8 Scan tables

This section contains the following topics:

Overview of scan tables

A scan table is a notional grouping of channels that are stored in a transceiver. You can add up to 20 scan tables in your transceiver, however, only 100 channels may be scanned at any one time.

A channel can be included in more than one scan table. Each scan table has a name, a scan on/off switch, a voice detect on/off switch, a channel dwell time, and a data detect on/off switch.

NOTE: The default channel dwell time for a Selcall HF network is 0.25 sec/channel. The default channel dwell time for an ALE/CALM HF network is 0.125 sec/channel.

NOTE: If the channels are scanned for voice, the channel dwell time defaults to 0.55 sec/channel regardless of the type of HF network. If the channels are scanned for data, the channel dwell time defaults to 0.6 sec/channel regardless of the type of HF network.

The grouping of the channels enables the transceiver to perform common operations on the included channels.

In order that a channel or group of channels is scanned, the following must occur:

- the channel must be included in a scan table
- the scan table must be set up to be scanned
- the transceiver must have scanning switched on

When a transceiver is scanning, it is listening for a voice and/or data signal, a preamble signal, or both. The transceiver listens for a pre-determined dwell time on each channel. If it detects a preamble signal, it waits to hear the address of the station to which the call is addressed. If the address sent matches the self address of the called station, the transceiver switches off scanning and opens the mute (if it is not already open).

It is recommended that scanning is switched on when you are not using the transceiver to communicate. This ensures that you can receive calls from stations using the channels that your transceiver is scanning.

Figure 40: Information for a scan table

Scan Tables		
Table 1	Scan:	Selected
	Scan Channels:	Ch 01/USB
		Ch 03/USB
		Ch 05/USB
		Ch 07/USB
		Ch 09/USB
		Ch 11/USB
	Voice Detect:	Not selected
	Channel Dwell Time:	Auto
	HF Networks*:	Selcall, CALM
	Data:	Selected
Table 2	Scan:	Selected
	Scan Channels:	Ch 02/USB
		Ch 04/USB
		Ch 06/USB
		Ch 08/USB
		Ch 10/USB
		Ch 12/USB
	Voice Detect:	Selected
	Channel Dwell Time:	Auto
	HF Networks*:	Selcall, CALM
	Data:	Not selected
All	Scan:	Not selected
	Scan Channels:	Ch 01/USB
		Ch 02/USB
		Ch 03/USB
		Ch 04/USB
		Ch 05/USB
		Ch 06/USB
		Ch 07/USB
		Ch 08/USB
		Ch 09/USB
		Ch 10/USB
		Ch 11/USB
		Ch 12/USB
	Voice Detect:	Not selected
	Channel Dwell Time:	Auto
	HF Networks*:	ALE
	Data:	Not selected

* read-only entry

Related links:

Overview of channels on page 112
Channel dwell time on page 122
Overview of HF networks on page 130
Adding a scan table on page 124
Scan Mute on page 212

Entries for a scan table

Scan table name

A scan table has a name that uniquely identifies it, and makes it available for selection in other areas of the user interface of the control point.

Scanning a scan table

You can include a group of channels in a scan table, and set up some common properties for how these channels are scanned. One of these properties is whether the defined group of channels is scanned or not.

You can enable or disable scanning for any scan table. If enabled, the scan table is scanned when scanning is switched on. You can also set the transceiver to scan the channels for voice and/or data, which increases the dwell time on each channel.

Related links:

Scan Mute on page 212
Voice detect on page 122
Data on page 123

Scan channels

The **Scan Channels** entry contains the channels that you want to group together under the same scanning conditions. The name, frequencies and the mode of each channel that you want to scan are stored in the **Scan Channels** entry.

Voice detect

The **Voice Detect** entry sets whether or not the channels in the scan table are scanned for voice. If you enable voice detection, the time that a transceiver dwells on a channel defaults to 550 msec.

Channel dwell time

The channel dwell time is the length of time during scanning that the transceiver pauses on each channel in order to detect an incoming call. This duration can be specified (in seconds) according to the requirements of your station and the stations with which you communicate, or you can set it to **Auto**. When it is set to **Auto**, the transceiver calculates the channel dwell time according to the HF networks in which the scan table is used. The maximum value of the channel dwell time, regardless of the call system, is 10 sec.

Table 4: Default channel dwell time for each type of HF network or detection requirement

HF network type	Detection requirement	Default channel dwell time (msec)
Codan Selcall	None selected	250
	Voice	550
	Data	600
Open Selcall	None selected	250
	Voice	550
	Data	600
ALE/CALM	None selected	125
	Voice	550
	Data	600

NOTE: If you change the channel dwell time or change the number of channels in the scan table, you must recalculate the duration of the preamble, that is, the channel dwell time multiplied by the number of channels in the HF network.

NOTE: You cannot set a channel dwell time that is lower than the default value.

Related links:

Preamble length on page 134

HF network

The HF Network entry in a scan table is read only. It shows the HF networks in which the scan table is used. This entry is populated when the scan tables are allocated to the HF network.

Data

The **Data** entry sets whether or not the channels in the scan table are scanned for data. If you have an HF data modem attached to the transceiver, set the scan table to scan for data. This provides the connected modems time to detect calling activity from other data stations. If you enable data detection, the time that a transceiver dwells on a channel defaults to 600 msec.

Working with scan tables

Related links:

Entries for a scan table on page 122
Overview of HF networks on page 130
Scan channels on page 122
Navigating the menu structure on page 30
Entering text in a field on page 40
Selecting a value from a list on page 44
Selecting/deselecting a check box on page 45
Saving your changes on page 48

Adding a scan table

A scan table contains a list of the channels and modes that you want to scan, and a set of conditions under which these channels are scanned.

To add a scan table:

- From the main menu, select (**User Data**), then (**Scan Tables**).
- Do *one* of the following:
  - If there are no scan tables programmed in the transceiver, press (**Add**).
  - If there are some existing scan tables programmed in the transceiver, scroll to the scan table after which you want to add the new scan table, press (**Options**), scroll to **Add**, then press (**Select**) to add a scan table.
- Enter the name that you want to use for the scan table.
- Press to move to the **Scan** entry.
- If you want the scan table to be scanned, press **OK** to select the **On** check box.
- Press to move to the **Scan Channels** entry.
- To add channels to the scan table:
  - Press ▶ to view the list of available channels.
  - Press ▲ or ▼ to scroll to the channel that you want to add, then press **OK**.
  - Press ◀ or ▶ to select the mode that you want to use.
  - Select other channels, as required.
  - Press (**Save**) to add these channels to the scan table.

  The amount of time that the transceiver spends scanning this table is shown in the title of the **Scan Channels** entry, for example, **Scan Channels (1 sec)**.
- Press to move to the **Voice Detect** entry.

- If you want the channels in the scan table to be scanned for voice signals regardless of the types of HF networks allocated to the scan table, press **OK** to select the **On** check box.
- Press ▼ to move to the **Channel Dwell Time** entry.
- To change the channel dwell time from the Auto value for the HF networks allocated to the scan table:
  - Press ▶ repeatedly to increment the dwell time per channel by 25 msec, up to a maximum of 10 sec per channel.
  - Press ◀ and ▶ to move the cursor to a specific digit, then enter a number via the keypad, if required.
- Press ▼ to move to the **HF Networks** entry.

  The HF Networks entry is read-only. It shows in which HF networks this scan table has been allocated.
- Press ▼ to move to the **Data** entry.
- If you want the channels in this scan table to be scanned for data signals regardless of the types of HF networks allocated to the scan table, press **OK** to select the **On** check box.
- If you want to review the information that you have entered, press ▲ or ▼ to move through the entries.
- Press (**Save**) to save the information.

Adding channels to a scan table

When you are adding or editing a scan table, you may want to add extra scan channels to those already in the scan table. When you use the **Add Chan** option, you view a list of the channels in the transceiver that have not yet been added to the scan table that you are currently viewing. You may also duplicate a channel. If the same mode is used for this duplicate, then the dwell time for this channel is doubled. Alternatively, you can select a different allowed mode for this channel.

To add channels to a scan table:

- From the main menu, select (**User Data**), then (**Scan Tables**).
- Press ▲ or ▼ to scroll to the scan table in which you want to add a channel, then press **OK**.
- Press ▼ to move to the **Scan Channels** entry.
- Press ▶ to view the list of channels that are already added to the scan table.
- Press (**Options**), scroll to **Add Chan**, then press (**Select**).
- Press ▲ or ▼ to scroll to the channel that you want to use, then press **OK**.
- Press ◀ or ▶ to select the mode that you want to use.

- Press (**Options**), scroll to **Save**, then press (**Select**).
- Press (**Save**) to save the information.

Related links:

Duplicating a channel in a scan table on page 126

Deleting a channel from a scan table

When you are adding or editing a scan table, you may want to delete channels that you have added to the scan table. When you use the **Delete** option, the channel is only removed from the scan table. It is not deleted from the transceiver. The channel that you remove from the scan table will be available for adding back into this scan table using the **Add Chan** option.

To delete a channel from a scan table:

- From the main menu, select (**User Data**), then (**Scan Tables**).
- Press ▲ or ▼ to scroll to the scan table from which you want to delete a channel, then press **OK**.
- Press ▼ to move to the **Scan Channels** entry.
- Press ▶ to view the list of channels in the scan table.
- Press ▲ or ▼ to scroll to the channel that you want to delete from the scan table.
- Press (**Options**), scroll to **Delete**, then press (**Select**).
- Press (**Options**), scroll to **Save**, then press (**Select**).
- Press (**Save**) to save the information.

Related links:

Adding channels to a scan table on page 125
Clearing the channels from a scan table on page 127

Duplicating a channel in a scan table

If a channel has more than one allowed mode, you can select the mode that is scanned when the channel is added to the scan table. If you want to have all allowed modes for the channel scanned, duplicate the channel and select a *different* allowed mode. Duplicating a channel and using the *same* mode doubles the length of time per scan cycle that the channel is scanned. The transceiver automatically scans these two instances of the same channel together.

To duplicate a channel:

- From the main menu, select (**User Data**), then (**Scan Tables**).
- Press ▲ or ▼ to scroll to the scan table in which you want to duplicate a channel, then press **OK**.
- Press ▼ to move to the **Scan Channels** entry.
- Press ▶ to view the list of channels in the scan table.
- Press ▲ or ▼ to scroll to the channel that you want to duplicate.
- Press (**Options**), scroll to **Duplicate**, then press (**Select**).

  The duplicate channel is highlighted. If there is more than one allowed mode for the channel, ◀/▶ indicators appear on both sides of the mode field.
- Press ◀ or ▶ to select a different mode for the channel, if required.
- Press (**Options**), scroll to **Save**, then press (**Select**).
- Press (**Save**) to save the information.

Related links:

Adding a channel on page 115

Clearing the channels from a scan table

Clearing channels from a scan table is a quick way of removing all channels from the list of scanned channels. It is the same as deleting channels from a scan table, except that all of the channels are removed in one action. The channels that are cleared from the scan table are not deleted from the transceiver. The channels that you clear from the scan table will be available for adding back into this scan table using the **Add Chan** option.

To clear the channels from a scan table:

- From the main menu, select (**User Data**), then (**Scan Tables**).
- Press ▼ to scroll to the scan table from which you want to clear all channels, then press **OK**.
- Press ▼ to move to the **Scan Channels** entry.
- Press ▶ to view the list of channels in the scan table.
- Press (**Options**), scroll to **Clear**, then press (**Select**).
- Press (**Options**), scroll to **Save**, then press (**Select**).
- Press (**Save**) to save the information.

Editing a scan table

Editing a scan table is similar to adding a scan table. If a scan table is added at user level, it may be edited at user level and admin level.

To edit a scan table:

- From the main menu, select (**User Data**), then (**Scan Tables**).
- Press ▲ or ▼ to scroll to the scan table that you want to edit, then press **OK**.
- Continue with the process for adding a scan table.

Related links:

Adding a scan table on page 124

Moving a scan table

To move a scan table:

- From the main menu, select (**User Data**), then (**Scan Tables**).
- Press ▲ or ▼ to scroll to the scan table that you want to move, press (**Options**), scroll to **Move**, then press (**Select**).
- Press ▲ or ▼ to scroll to the new location for the scan table in the list, then press (**Place**).

Deleting a scan table

If a scan table is added at user level, it may be deleted at user level and admin level.

To delete a scan table:

- From the main menu, select (**User Data**), then (**Scan Tables**).
- Press ▲ or ▼ to scroll to the scan table that you want to delete, press (**Options**), scroll to **Delete**, then press (**Select**) to delete the scan table.
- Confirm that you want to delete the scan table.

9 HF networks

This section contains the following topics:

Overview of HF networks

An HF network is two or more stations that use the same scan table and call system to communicate. This simplifies communication because each station knows the method with which they can make and scan for incoming calls, and the frequencies they can use. To access information about the HF networks programmed in the transceiver, navigate to **User Data** > **HF Networks**.

HF networks are based on call systems. A call system is a method of making and receiving calls. For example, if you are in an HF network that uses the Codan Selcall or Open Selcall call system, you make calls by entering the address of the station that you want to call, then selecting the channel/mode that you want to use. When your call is detected by the called station, that station rings to alert the operator. In an ALE/CALM HF network, you make calls by entering the address of the station that you want to call. The transceiver selects the best channel on which to make the call.

When you add an HF network, the transceiver prompts you to select a call system, then prompts you for further information based on your selection.

Figure 41 shows an example of the information required to add HF networks based on the Codan Selcall and ALE/CALM call systems.

NOTE: The call systems from which you can select depend on the options installed in the transceiver.

The transceiver can be set to scan the scan tables associated with your HF network to detect incoming calls. It is recommended that scanning is switched on when you are not using the transceiver to communicate. This ensures that you can receive calls from stations in your HF radio communication network.

Figure 41: Information for an HF network

HF Networks		
Selcall	Call System:	Codan Selcall
	Selcall Self Address:	1111
	Scan Tables:	Table 1
	Global:	Not selected
	Preamble Length:	Auto
	Send Preamble:	Always
	Privacy Mode:	None
	Privacy Password:	<Empty>
	Rx Only:	Not selected
CALM	Call System:	ALE/CALM
	ALE Self Address:	BASE1
	Scan Tables:	All
	Global:	Selected
	Preamble Length:	Auto
	Send Preamble:	Always
	Sounding Interval:	Disabled
	Privacy Mode:	Group
	Privacy Password:	*****
	Rx Only:	Not selected

Related links:

Entries for an HF network on page 132
Adding an HF network on page 138

Entries for an HF network

HF network name

An HF network has a name that uniquely identifies it so that it may be easily selected in other areas of the user interface of the control point.

Call system

A call system applies to all types of HF networks. It is the method used by the HF network to make and receive calls, for example, Codan Selcall, Open Selcall, or ALE/CALM. The call systems from which you can select depend on the options installed in the transceiver.

If your HF network uses the Codan Selcall or Open Selcall call system, you can make calls by selecting an appropriate channel/mode then entering the address of the station that you want to call as part of the calling process. When your call is detected by that station, that station rings to alert the operator. If your HF network uses the ALE/CALM call system, the transceiver can select the best channel/mode for you.

A Codan Selcall HF network can receive calls sent from a transceiver using the Open Selcall protocol. If you want to be able to make calls to transceivers that use the Open Selcall protocol, you must set up an Open Selcall HF network to use with these calls.

CAUTION: You should be aware of any restrictions placed on HF network names in your transceiver when it is used with a Codan HF data modem, a radio/telephone interconnect, UUPlus© software, or InterNav© software.

NOTE: The transceiver is able to scan a maximum of 100 channels at a time. If the total number of channels in all the scan tables that are associated with the HF network exceeds 100, only 100 of the channels are scanned.

CAUTION: Any station that is tuned to your frequency and has mute switched off can listen to your voice conversation, unless you are using one of Codan's encryption options.

FED-STD-1045 ALE/CALM

If you want to use the ALE/CALM call system to automate the selection of channels, you must install the FED-STD-1045 ALE/CALM option in the transceiver. CALM stands for Codan Automated Link Management.

The FED-STD-1045 ALE/CALM option enables the transceiver to test the signal propagation qualities of your channels using soundings, and build a profile of each channel's suitability for use at different times of the day and night. The BER and SINAD information collected during sounding activity is stored in the transceiver using a 24-hour period LQA database. With this information, the transceiver is able to select the most suitable channel/mode for you when you make a call.

You are able to make global ALE ALL calls with this option.

CALM is interoperable with FED-STD-1045 ALE.

MIL-STD-188-141B ALE

The MIL-STD-188-141B ALE option includes the FED-STD-1045 ALE/CALM option. It provides the capability to make ALE calls using ALL, ANY, Group Selective, NET, and Wildcard address syntaxes. These calls connect one station to many stations at the same time. The MIL-STD-188-141B ALE option also provides advanced LQA, advanced messaging, and access to a Heard List.

The MIL-STD-188-141B ALE option is interoperable with FED-STD-1045 ALE and MIL-STD-188-141B.

Self address

An address is the sequence of characters that an operator at one station uses to call another station. A self address is the sequence of characters that identifies your station. This self address is associated with an HF network. The HF network defines what call system is used to make and receive calls, and the self address and HF network together define if the transceiver reacts to signals that it detects on air. If a transceiver detects its address, but does not have the matching call system associated with that address, it ignores the call. If a transceiver detects its address and has the matching call system, it accepts the call. The self address may be flagged for receiving calls only.

Scan tables

An HF network must have an associated scan table of channels on which to make calls, or it can use any channel programmed into the transceiver if the **Global** entry is enabled for the HF network.

Global

An HF network typically has channel information associated with it in the form of scan tables. If you want the HF network and self address to be used to make and receive calls on any channel that is programmed in the transceiver, select the **On** check box for the **Global** entry.

Preamble

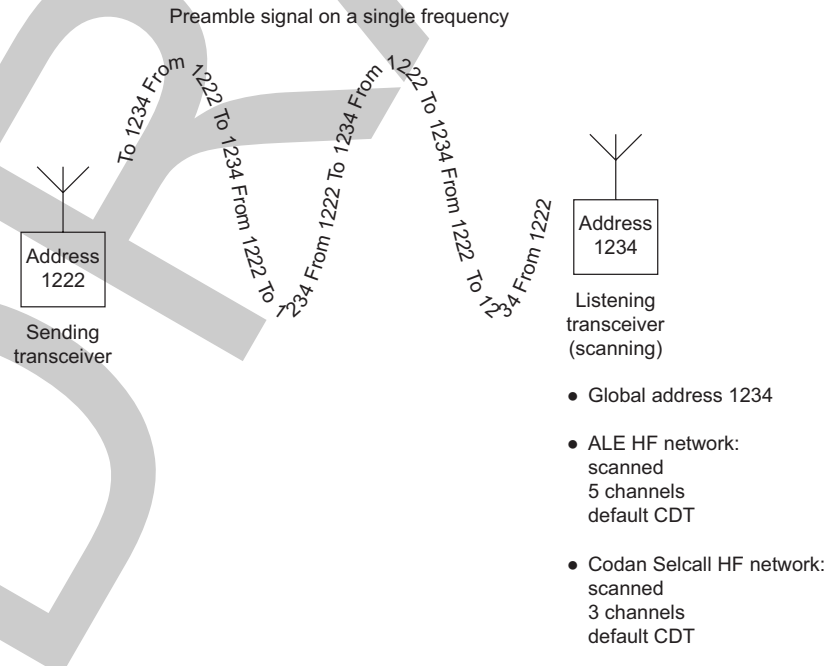
Preamble may be used in HF networks that use the Codan Selcall, Open Selcall, and ALE/CALM call systems only. When you make a call to a specific station or group of stations, the addresses of those stations are sent in a preamble signal before the call is established. Transceivers that are scanning listen for the nominated dwell time on each channel that is being scanned. If the transceiver detects a preamble signal, it pauses scanning and determines if its address is in the preamble. If an address in the preamble matches the self address of the listening station, and it has a matching call system, the station stops the scan and opens the mute ready to establish the call with the other station. If there is no matching address in the preamble, the listening station resumes scanning.

The preamble that is sent must be transmitted for a period of time greater than or equal to the channel dwell time multiplied by the number of channels being scanned in the transceiver that is being called.

Preamble length

The length of preamble that is sent with a call is dependent on the number of channels being scanned in the listening station, and the channel dwell time. If you select the Auto value for the preamble length, the transceiver calculates this value for you. Figure 42 shows how to calculate the minimum preamble to be sent so that listening stations can identify if the call is intended for the station.

Figure 42: Preamble example



This example assumes that the transceiver at each station is set up similarly. The length of preamble sent at the beginning of a call is calculated from the information from the scan tables associated with the HF network. If the communicating systems are set up identically for automatic channel dwell time and number of channels being scanned for each HF network, then this information provides the exact duration of preamble required.

In Figure 42 above, the time taken to cycle once through all of the scanned channels is:

(5 × 125) + (3 × 250) = 1375 msec (assuming that scanning for voice and data are not enabled)

20% of the raw time is added as a buffer, so the preamble time becomes 1.2 × 1375 = 1650 msec

In this example, the preamble sent from the calling transceiver must be 1650 msec. If you set the **Preamble Length** entry to **Auto**, the transceiver sums the total channel dwell time for each scan table associated with the HF network.

If you are calling a station that uses identical HF network information, the preamble of the calling station matches the detection requirements of the called station.

Related links:

Preamble on page 134
Channel dwell time on page 122

Send preamble

You can set up the HF network to always send preamble, or only when it is scanning. Therefore, if you are operating in an HF radio communication network that requires stations to not be scanning, you can reduce network traffic by selecting **Only when scanning**.

Related links:

Preamble on page 134

Sounding interval

The **Sounding Interval** entry applies to ALE/CALM HF networks only. The sounding interval is the time between automatic sounding signals that the transceiver sends to other stations to assess the quality of the channels in the HF network.

The recommended value is 5 hours. The longer the value, the longer the transceiver takes to update its channel quality information. If the value is set to 5 hours, the transceiver takes 5 days to completely update channel quality information. Longer sounding intervals decrease the interruptions on channels allocated to this HF network via a scan table.

NOTE: Link quality information is also updated each time a call is made or received.

Privacy mode

The **Privacy Mode** entry applies to Codan Selcall and ALE/CALM HF networks only. The privacy mode is the method used to encrypt the data content of calls between stations. If you select **Group**, you must enter an appropriate password into the **Privacy Password** entry.

Privacy mode...	Is used for...
Group	encrypting data in calls between two stations (you agree upon a password to enter into the **Privacy Password** entry)
None	calls made under a Codan protocol, which uses special formatting
Plain (lowest mode) (MIL-STD-188-141B ALE option)	AMD messages in ALE calls (basic 64 ASCII subset A to Z, 0 to 9, space ! " # $ % &' ( ) * + , - . / : ; <= >? @ [\ ] ^)

When you are setting up ALE/CALM HF networks, you should ensure that you set up HF networks with the same privacy mode for communication. If there is a mismatch in privacy modes, the called station uses the most suitable privacy mode from the HF networks through which the call may be received.

For example, if a calling station starts an ALE call containing data through an HF network that has its privacy mode set to **Plain**, and the called station determines that the address is valid in HF networks with the privacy mode set to **Group** or **Plain**, then it selects the HF network with the privacy mode set to **Plain** on which to establish the link. Any data communications within this link use the basic 64 ASCII subset of characters.

However, if the called station determines that the address is available in an HF network with the privacy mode set to **Group**, it selects this HF network on which to establish the link. Data communications within this link are only successful if the calling station uses the same password as the HF network with the privacy mode set to **Group** at the called station.

If a calling station starts an ALE call (without data), the called station determines in which HF networks the address is valid, selects an HF network with the lowest privacy mode available, then establishes the link. Data communications may proceed as per the privacy modes of the selected calling and called HF networks.

Privacy password

The **Privacy Password** entry applies to Codan Selcall and ALE/CALM HF networks where the privacy mode is set to **Group**. The privacy password is defined arbitrarily by the system administrator or user, and programmed into the transceiver. The password can be up to 15 characters long.

NOTE: Changing this password must be managed across all transceivers using this HF network.

Rx only

The **Rx Only** entry sets whether the address set for this HF network is used for receiving calls only, or can be used for sending calls also.

Working with HF networks

Related links:

Entries for an HF network on page 132
Overview of HF networks on page 130
Overview of scan tables on page 120
Navigating the menu structure on page 30
Entering text in a field on page 40
Selecting a value from a list on page 44
Selecting/deselecting a check box on page 45
Saving your changes on page 48
Group calls in a Codan Selcall HF network on page 419

Adding an HF network

An HF network provides a relationship between the call system, self address and scan tables.

To add an HF network:

- From the main menu, select (**User Data**), then (**HF Networks**).
- Do *one* of the following:
  - If there are no HF networks programmed in the transceiver, press (**Add**).
  - If there are some existing HF networks programmed in the transceiver, scroll to the HF network after which you want to add the new HF network, press (**Options**), scroll to **Add**, then press (**Select**) to add an HF network.
- Enter the name that you want to use for the HF network.
- Press to move to the **Call System** entry.
- Press or to select the call system that you want to use.
- Press to move to the **Selcall**|**ALE Address** entry.
- Enter the address that you want to use for calls made from and to this HF network.

  If you are entering a self address to be used in:
  - a Codan Selcall HF network, enter up to 10 digits
  - an ALE/CALM HF network, enter up to 15 upper-case/numeric characters, or a combination of both

  CAUTION: If you intend to send calls to a station that is compatible with 4-digit self addresses only, you must set up a 4-digit self address.

NOTE: Do not enter a self address that ends with one or more zeros. Zeros are used to indicate that calls are to be made to groups of stations in a Codan Selcall HF network.

- ❑ Press ▼ to move to the **Scan Tables** entry.
- ❑ To select a scan table:
  - Press ▶ to view the list of available scan tables.
  - Press ▲ or ▼ to scroll to the scan table that you want to use, then press **OK**.
  - Press ⌐ (**Save**).
- ❑ Press ▼ to move to the **Global** entry.
- ❑ If you want the information for this HF network to be used for all channels programmed in the transceiver, select the **On** check box.
- ❑ Press ▼ to move to the **Preamble Length** entry.
- ❑ If the **Auto** value is not suitable, press ▶ repeatedly to increment the preamble length by 1 sec, up to a maximum of 50 sec/HF network.
- ❑ Press ▼ to move to the **Send Preamble** entry.
- ❑ Press ◀ or ▶ to scroll through the following values:
  - To send preamble with every call made via this HF network, select **Always**.
  - To send preamble only when your transceiver is scanning when you start a call, select **Only when scanning**.
- ❑ If you are adding an HF network with an ALE/CALM call system:
  - Press ▼ to move to the **Sounding Interval** entry.
  - Press ◀ or ▶ to select the sounding interval that you want to use, or disable sounding.
- ❑ Press ▼ to move to the **Privacy Mode** entry.
- ❑ Press ◀ or ▶ to scroll through the following values:
  - To make calls between two stations using a Codan protocol with special formatting, select **None**.
  - To encrypt data in calls between two stations using an agreed privacy password, select **Group**.
  - To send AMD messages in ALE calls (MIL-STD-188-141B ALE only), select **Plain**.
- ❑ Press ▼ to move to the **Privacy Password** entry.
- ❑ To enter a privacy password:
  - Press ▶.
  - Enter the password that you want to use in the **New Password** field.
  - Press ⌐ (**Save**).
- ❑ Press ▼ to move to the **Rx Only** entry.

- If you want the HF network to be used for receiving calls only, press **OK** to select the **On** check box.
- If you want to review the information that you have entered, press ▲ or ▼ to move through the entries.
- Press (**Save**) to save the information.

Editing an HF network

Editing an HF network is similar to adding an HF network. If an HF network is added at user level, it may be edited at user level and admin level.

To edit an HF network:

- From the main menu, select (**User Data**), then (**HF Networks**).
- Press ▲ or ▼ to scroll to the HF network that you want to edit, then press **OK**.
- Continue with the process for adding an HF network.

Related links:

Adding an HF network on page 138

Moving an HF network

To move an HF network:

- From the main menu, select (**User Data**), then (**HF Networks**).
- Press ▲ or ▼ to scroll to the HF network that you want to move, press (**Options**), scroll to **Move**, then press (**Select**).
- Press ▲ or ▼ to scroll to the new location for the HF network in the list, then press (**Place**).

Deleting an HF network

If an HF network is added at user level, it may be deleted at user level and admin level.

To delete an HF network:

- From the main menu, select (**User Data**), then (**HF Networks**).
- Press ▲ or ▼ to scroll to the HF network that you want to delete, press (**Options**), scroll to **Delete**, then press (**Select**) to delete the HF network.
- Confirm that you want to delete the HF network.

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10 Contacts

This section contains the following topics:

Overview of contacts

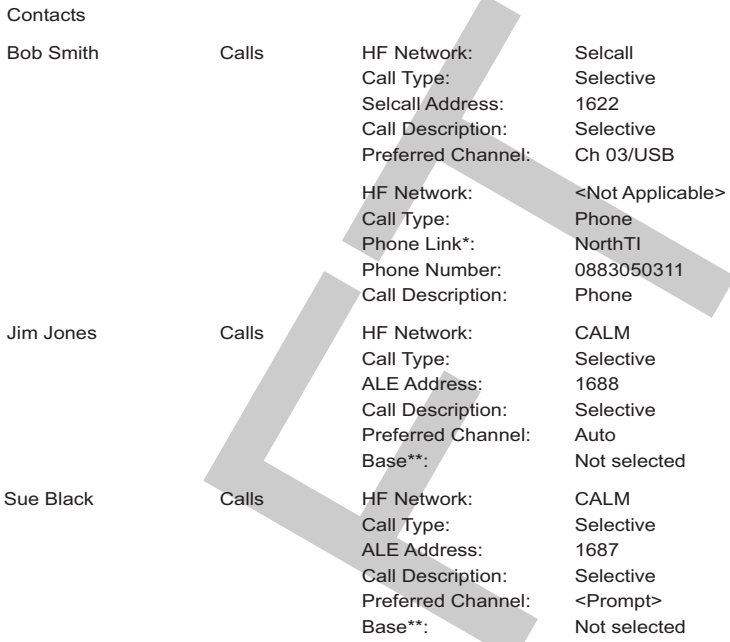
A contact is an operator who you want to call. You can define a number of potential calls that you may want to make to this contact, depending on their location and the type of interaction that is required. For example, you may want to call Bob. During the day, Bob oversees communications at the base station, and he has a transceiver at his desk. To communicate with him during the day, you could make a Selective, Message or Send Position call to his transceiver. After hours, Bob is at home, and no longer has access to his transceiver. To contact him via HF at this time of the day, you could make a Phone call to his home landline via a telephone station to which you have access.

Contacts has two tabs: **Contacts** and **Emergency Contacts**. The **Contacts** tab contains all of the information on people who you call, and the types of calls that you want to make to them. The **Emergency Contacts** tab contains a list of contacts who you may want to call in an emergency. You select the contact who you want to call, then the calls that are programmed for this contact are made in succession when you *hold* the ⚠ key for 2 sec. This type of call is called a chain call.

You should provide all of the information required to make the calls without the transceiver having to prompt for information, as this will slow down progress of the call. In an emergency situation, you may not have time, nor be able to, respond to prompts.

You should order the contacts in the **Emergency Contacts** tab with your most likely emergency contact at the top of the list. You should order the calls within this emergency contact to make those calls that do not require operator intervention at the called end first (for example, Message call, Send Position call), progressing through to calls that require an operator to answer. Once PTT is pressed, the chain call ends.

Figure 43: Information for a contact



Related links:

Adding a contact on page 149

Entries for a contact

Contact name

A contact is a person for whom you want to store pre-defined call information. One contact may have several different methods of being called. The name of the contact is the label identifying this bundle of information. Typically, it is the person's name. You can enter up to 32 characters to uniquely identify the person.

NOTE: The number of characters that you can enter varies with the language.

Calls for a contact

Each contact must have information for at least one call associated with it. A call for a contact bundles the information required by the transceiver to call that contact by a particular method. For example, you may want to call Bob (contact), and send the call to the transceiver in his vehicle, or, you may want to communicate with him via a Message call (call type). You can supply all of the information required to make the call, or you can be prompted for information at the time of making the call.

Related links:

Call types on page 400

HF network

The HF network that you select is used for this call made to this contact. It defines the call system, self address and scan tables used by your station to call this contact via this method. The HF networks from which you select must be pre-defined in **User Data** > **HF Networks**.

Related links:

HF networks on page 129

Call type

The call type is the particular type of call that you want to use to communicate with the contact. The call types from which you may select while adding a contact are defined in **Settings** > **Calling** > **Call Types For Contacts**.

Related links:

Call types on page 400
Call Types For Contacts on page 213

ALE|Selcall address

The address is used to identify the station that you want to call. This address is sent with the preamble when the call is made. A station that is scanning to detect calls made to its address responds according to the call system used by the associated HF network.

NOTE: The **ALE|Selcall Address** entry is not shown if the call system is RFDS, or if a valid phone link is selected.

Related links:

HF networks on page 129
ALE address syntax on page 409

Phone link

A phone link is pre-defined and you may select it when adding a Phone call to a contact. When you select this phone link, you automatically select all of the details defined in the phone link, such as its address and the HF network that you use to make calls to this telephone station.

Phone number

The phone number is the number of the telephone that you want to call via the radio/telephone interconnect at the telephone station.

Message|Status type

The **Message|Status Type** entry for the call information is available when you select the Message or Get Status call types respectively. If you want to always send the same message, for example, that you are shutting down for the day and include the time and your GPS location, you would enter **Shutting down, $TIME, $GPS**. If you want to send a different message every time, select **Prompt**, and you will be prompted to enter a message at the time of sending the call.

Related links:

Messages on page 175
Sending recognised keywords with a call on page 421

Preferred channel

The preferred channel is selected from the scan table(s) associated with the selected HF network.

NOTE: The **Preferred Channel** entry is not shown if a valid phone link is selected.

Related links:

Channels on page 111

Call description

The **Call Description** entry enables you to enter a meaningful name for a call to distinguish it from other calls for the same contact. By default, the **Call Description** entry is filled with the call type. When you go to Contacts during the call process to select a contact to call, you have to select the call that you want to make. The names that appear in this selection list are the call descriptions.

Base

The **Base** entry is used to identify if the station that you are calling is in a permanent location. This has an impact on how LQA information is adjusted for calls made using an ALE/CALM HF network. Base-to-base calls have relatively static LQA information over a 24-hour period. Information held for a base-to-mobile call tends to fluctuate over a 24-hour period due to distances travelled by the mobile station.

NOTE: The **Base** entry is shown for ALE/CALM HF networks only.

Working with contacts

Related links:

Entries for a contact on page 146
Call types on page 400
Navigating the menu structure on page 30
Entering text in a field on page 40
Selecting a value from a list on page 44
Selecting/deselecting a check box on page 45
Saving your changes on page 48
Group calls in a Codan Selcall HF network on page 419

Adding a contact

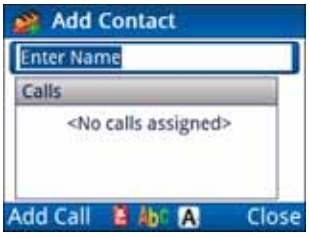
Contacts are used to pre-define the typical calls that you want to make to another person. For each contact you can define a number of calls. Each call contains information about:

- the call system that you want to use
- the type of call that you want to make to the contact
- the address or telephone number of the station at which this contact may be located

NOTE: You can select some of the call information to prompt you for a choice at the time that a call is made via the contact. The **Prompt** value is available in these instances.

To add a contact:

- From the main menu, select (**User Data**), then (**Contacts**).
- Select (**Contacts**) or (**Emergency Contacts**), as required.
- Press (**Add**).



- Enter the name that you want to use for the contact, then press (**Add Call**).

  The **HF Network** entry is highlighted.

  The HF network defines the call system and self address that is used by your station when the call is made. For example, if you want to select a channel for the call, use a Selcall HF network. If you want the transceiver to automatically select a channel for the call, use an ALE/CALM HF network.

- Press ◀ or ▶ to select the HF network that you want to use.
- Press ▼ to move to the **Call Type** entry.
- Press ◀ or ▶ to select the call type that you want to use.

  NOTE: The call type that you select affects information that you can enter for the remainder of this call.

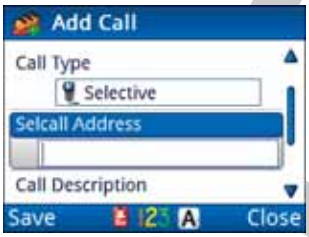
- If you are adding:
  - a Selective, Channel Test, Emergency, Get Position or Send Position call, continue from *Adding a simple call* on page 151
  - a Message call *Adding a Message call* on page 151
  - a Phone call *Adding a Phone call* on page 153
  - a Get Status call *Adding a Get Status call* on page 153
  - an RFDS Emergency call *Adding an RFDS Emergency call* on page 154

Adding a simple call

A simple call is a call that requires an address only at this stage of the definition process.

To continue with adding a Selective, Channel Test, Emergency, Get Position or Send Position call:

- Press ▼ to move to the **Selcall**|**ALE Address** entry.



- Enter the address of the station that you want to call.
- Continue from *Completing the contact* on page 154.

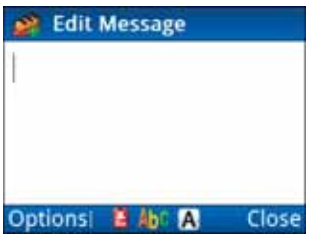
Related links:

Selective call on page 407
Channel Test call on page 401
Emergency call on page 402
Get Position call on page 402
Send Position call on page 407

Adding a Message call

To continue with adding a Message call:

- Press ▼ to move to the **Selcall**|**ALE Address** entry.
- Enter the address of the station that you want to call.
- Press ▼ to move to the **Message** entry, then press ▶.

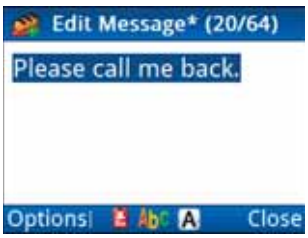


- If you want to enter a message:
  - Start typing the message.

    NOTE: Press **OK** to start a new line, if required.
  - Press (**Options**), scroll to **OK**, then press (**Select**) to add the message to the call.
- If you want to select a message from a list of stored messages:
  - Press (**Options**), scroll to **Stored**, then press (**Select**).

  - Press ▲ or ▼ to scroll to the message that you want to use.

    NOTE: If you want to view the message, press (**Details**) to view the message, then press (**Close**).
  - Press **OK** to select the message.
  - Edit the message, if required.



  - Press (**Options**), scroll to **OK**, then press (**Select**).
- Continue from *Completing the contact* on page 154.

Related links:

Message call on page 405

Adding a Phone call

To continue with adding a Phone call:

- Press ▼ to move to the **Phone Number** entry.

- Enter the phone number.
- Continue from *Completing the contact* on page 154.

Related links:

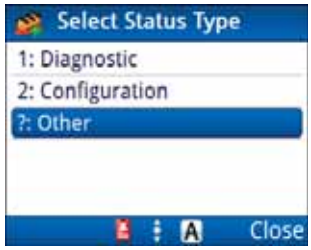
Phone call on page 406

Adding a Get Status call

To continue with adding a Get Status call:

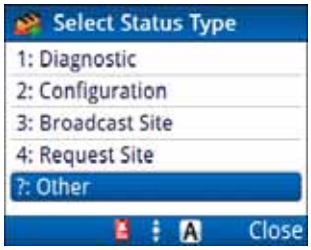
- Press ▼ to move to the **Selcall**|**ALE Address** entry.
- Enter the address of the station that you want to call.
- Press ▼ to move to the **Status Type** entry, then press ▶.

Selcall HF network



ALE/CALM HF network

ALE Site Manager:
Auto
Manual
Restricted



- Press ▲ or ▼ to scroll to the status type that you want to use, then press **OK**.
- If you selected **?: Other** as the status type, enter the text/command that you want to send, press ⌐ (**Options**), scroll to **Save**, then press ⌐ (**Select**).
- Continue from *Completing the contact* on page 154.

Related links:

Get Status call on page 403

Adding an RFDS Emergency call

NOTE: RFDS Emergency calls are only available when an RFDS HF network is selected or you set the **HF Network** entry to **Prompt**.

To continue with adding an RFDS Emergency call:

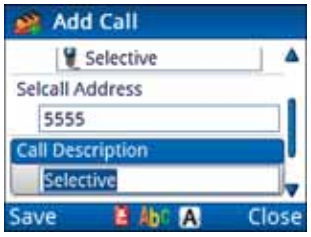
- Continue from *Completing the contact* on page 154.

Completing the contact

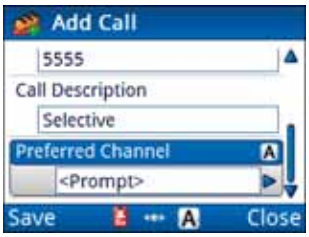
To finish entering the information required for the contact:

- Press ▼ to move to the **Call Description** entry.

  By default, the call type is entered as the call description.



- Enter the description that you want to use for this call.
- Press ▼ to move to the **Preferred Channel** entry.



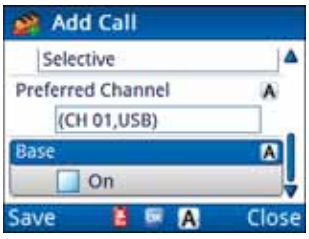
NOTE: This entry is not available for Phone calls.

- To select a channel:
  - Press ▶ to view the list of available channels.

  - Press ▲ or ▼ to scroll to the channel that you want to use, then press **OK**. A ✓ is shown next to the channel/mode.
  - Press ◀ or ▶ to change the mode, if required.

    NOTE: If you are not able to select a different mode, then only one mode is allowed for this channel. If you want to use a different mode, go to the relevant scan table, duplicate the channel, then select the new mode for this channel.

  - Press (**Save**).
- Press ▼ to move to the **Base** entry.



NOTE: This entry is available if you have selected an ALE/CALM HF network.

NOTE: This entry is not available for Phone calls.

- If the station that you want to call is a base station, press **OK** to select the **On** check box.

- If you want to add another call, press (**Options**), scroll to **Add Call**, press (**Select**), then repeat the steps for adding a call.
- Press (**Options**), scroll to **Save**, then press (**Select**).

Editing a contact

Editing a contact is similar to adding a contact. If a contact is added at user level, it may be edited at user level and admin level.

To edit a contact:

- From the main menu, select (**User Data**), then (**Contacts**).
- Press ▲ or ▼ to scroll to the contact that you want to edit, then press **OK**.
- Continue with the process for adding a contact.

Related links:

Adding a contact on page 149

Moving a contact

To move a contact:

- From the main menu, select (**User Data**), then (**Contacts**).
- Press ▲ or ▼ to scroll to the contact that you want to move, press (**Options**), scroll to **Move**, then press (**Select**).
- Press ▲ or ▼ to scroll to the new location for the contact in the list, then press (**Place**).

Moving a call for a contact

If you add a call to a contact, but want to move it to another place in the list of calls, you can rearrange the order.

NOTE: There must be at least two calls for a contact before you can move a call.

To move a call for a contact:

- From the main menu, select (**User Data**), then (**Contacts**).
- Press ▲ or ▼ to scroll to the contact in which you want to move the call, then press **OK**.
- Press ▼ to move to the **Calls** entry.
- Press ▲ or ▼ to scroll to the call that you want to move.
- Press (**Options**), scroll to **Move Call**, then press (**Select**).
- Press ▲ or ▼ to scroll to the location to which you want to move the call, then press (**Place**).
- Press (**Options**), scroll to **Save**, then press (**Select**).

Deleting a contact

If a contact is added at user level, it may be deleted at user level and admin level.

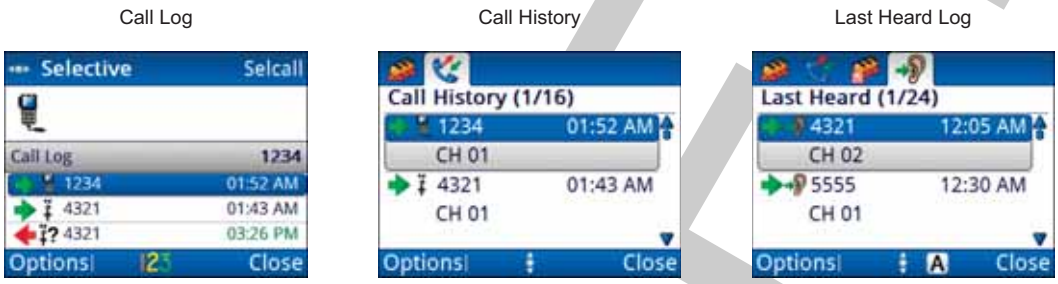
To delete a contact:

- From the main menu, select (**User Data**), then (**Contacts**).
- Press ▲ or ▼ to scroll to the contact that you want to delete, press (**Options**), scroll to **Delete**, then press (**Select**) to delete the contact.
- Confirm that you want to delete the contact.

Adding a contact from the Call Log, Call History, or Last Heard Log

You can save information from the Call Log, Call History, or Last Heard Log to Contacts. This can either be a new call type for an existing contact, or you can add a new contact to hold this call information. The Call Log and Call History are separate entities, however, the process for saving the call information to a contact is the same.

Figure 44: Call Log, Call History and Last Heard Log



To add a contact from the Call Log, Call History, or Last Heard Log:

- Do *one* of the following:
  - Press **CALL**, then press ▲ or ▼ to scroll to the entry in the Call Log.
  - *Hold* **CALL**, press ▶, then press ▲ or ▼ to scroll to the entry in the Call History.
- Press (**Options**), scroll to **Save**, then press (**Select**).

  You are informed if there is a matching contact for the address in the call, and whether or not you want to append this call to that contact. If there is no matching contact you can create a new contact.
- Do *one* of the following:
  - If there is a matching contact who you want to use, press (**Yes**), then edit the call as required.
  - If you do not want to use the matching contact, press (**No**), create a new contact, then edit the call as required.
  - If there is no matching contact, edit the call as required.
- Press (**Save**) to save the information.

  If the contact does not exist, enter a name for the contact, then press (**Save**).

Related links:

Call Log on page 416
Call History on page 417
Last Heard Log on page 418
Adding a contact on page 149

11 Phone links

This section contains the following topics:

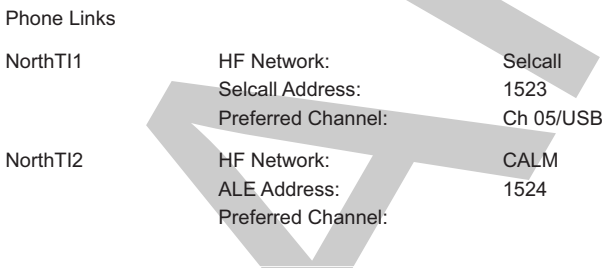
Overview of phone links

A phone link is a bundle of information that defines how your station communicates with a telephone station. A telephone station comprises a Codan HF transceiver that is connected to a radio/telephone interconnect unit that can route Phone calls from HF transceivers to the public telephone network.

The address of the phone link station that you use, and the HF network and channel/mode that you use to make a Phone call, are stored in the entries for a phone link.

When you make a Phone call, the transceiver uses the information stored in the phone link to make the connection to the telephone station, which then places the call to the telephone number provided.

Figure 45: Information for a phone link



Entries for a phone link

Phone link name

The phone link has a name that uniquely identifies the telephone station to which you want to connect, and enables it to be easily selected in other areas of the user interface of the control point.

HF network

The **HF Network** entry in a phone link identifies the HF network and associated scan table through which the call is made to the telephone station.

ALE|Selcall address

The **ALE|Selcall Address** entry in a phone link is the address of the transceiver connected to the radio/telephone interconnect, or the address of the radio/telephone interconnect.

Preferred channel

The **Preferred Channel** entry in a phone link identifies the channel/mode combination that is used to make a call to the telephone station.

CAUTION: If you change the HF network, the preferred channel is reset to **None** unless a preferred channel exists for the HF network that you have selected.

Working with phone links

Related links:

Entries for a phone link on page 161
Navigating the menu structure on page 30
Entering text in a field on page 40
Selecting a value from a list on page 44
Saving your changes on page 48

Adding a phone link

A phone link contains information about the how you want to communicate with the telephone station and the telephone number that you want to call.

To add a phone link:

- From the main menu, select (**User Data**), then (**Phone Links**).
- Do *one* of the following:
  - If there are no phone links programmed in the transceiver, press (**Add**).
  - If there are some existing phone links programmed in the transceiver, scroll to the phone link after which you want to add the new phone link, press (**Options**), scroll to **Add**, then press (**Select**) to add a phone link.
- Enter the name that you want to use for the phone link.
- Press to move to the **HF Network** entry.
- Press or to select the HF network that you want to use.
- Press to move to the **Selcall**|**ALE Address** entry.
- Enter the address of the transceiver or the radio/telephone interconnect at a telephone station that you are permitted to access.
- Press to move to the **Preferred Channel** entry.

- To select a preferred channel:
  - Press ▶ to see the list of available channels.
  - Press ▲ or ▼ to scroll to the channel that you want to use.
  - Press **OK** to select the channel.

    A ✓ is shown next to the channel.
  - Press (**Save**).
- If you want to review the information that you have entered, press ▲ or ▼ to move through the entries.
- Press (**Save**) to save the information.

Editing a phone link

Editing a phone link is similar to adding a phone link. If a phone link is added at user level, it may be edited at user level and admin level.

To edit a phone link:

- From the main menu, select (**User Data**), then (**Phone Links**).
- Press ▲ or ▼ to scroll to the phone link that you want to edit, then press **OK**.
- Continue with the process for adding a phone link.

Related links:

Adding a phone link on page 162

Moving a phone link

To move a phone link:

- From the main menu, select (**User Data**), then (**Phone Links**).
- Press ▲ or ▼ to scroll to the phone link that you want to move, press (**Options**), scroll to **Move**, then press (**Select**).
- Press ▲ or ▼ to scroll to the new location for the phone link in the list, then press (**Place**).

Deleting a phone link

If a phone link is added at user level, it may be deleted at user level and admin level.

To delete a phone link:

- From the main menu, select (**User Data**), then (**Phone Links**).
- Press ▲ or ▼ to scroll to the phone link that you want to delete, press (**Options**), scroll to **Delete**, then press (**Select**) to delete the phone link.
- Confirm that you want to delete the phone link.

12 NETs

This section contains the following topics:

Overview of NETs

NOTE: NET calling is available if the MIL-STD-188-141B ALE option is installed.

A NET is a special ALE addressing capability. With NET addressing, two or more stations are pre-configured to respond to the same NET address. When a station calls a NET, all stations with that NET address and their self addresses in the **NET Members** entry for the NET, respond in their designated response slot. In the Envoy™ Transceiver, a NET contains the configuration information required for making and receiving NET calls. This information defines the process for the handshake during link establishment.

The full 3-way handshake process involves a leading call from the calling station, a response from the called station, and an acknowledgement from the calling station. Following the acknowledgement, all stations that are able to, enter the link.

A station can have a NET programmed in its NET menu and either:

- be a member of the NET, that is, their self address is in the **NET Members** entry for the NET
- not be a member of the NET, that is, their self address *is not* in the **NET Members** entry for the NET

NETs are used with an ALE/CALM HF network, which is associated with a scan table that defines the channels that the NET may use when establishing an ALE link, and the privacy mode for messaging within a call.

You can make a call to a NET by selecting the NET, Emergency, Message, Phone, Selective, or Send Position call type and entering the NET address. You can set up a contact to make a NET call.

Figure 46 shows an example of the information required to add a NET.

Figure 46: Information for a NET

NETs

EastNET	Address:	2583
	HF Network:	ALE
	NET Members:	Bob
		Jim
		Sue
	Out Calls:	Enabled
	In Calls:	Enabled
	Link:	Only if response
	Response:	Send
	Tune Time:	5
	LQA Exchange:	Enabled
	Slot Width:	Variable

Related links:

Entries for a NET on page 167
Adding a NET on page 171

Entries for a NET

NET name

The NET name may be any meaningful name that you want to assign to the NET to uniquely identify it for selection in the user interface of the control point. The name may be up to 20 alphanumeric characters including spaces. The NET name is only used for reference within the transceiver. It is not part of the NET configuration data.

Address

CAUTION: The NET address must be the same for all members of the NET.

The **Address** entry contains the global address used by all stations that have the NET programmed in **User Data** > **NETs**. The address may be up to 15 alphanumeric characters, however, for efficiency of NET calls, it is preferable that the address be limited to 3 characters. You should choose an address that is not the same as any self addresses of members of the NET or wider communication audience.

HF network

CAUTION: The HF network must be the same for all members of the NET.

The **HF Network** entry defines the scan table(s) containing the channels to be used with the NET. It is selected from the pre-defined list in **HF Networks**. You can set up two NETs with the same address but with different HF networks, say one for Group privacy mode and one for Plain privacy mode. If the HF networks have the same channels, then the **NET Members** entry in each NET should be identical as calls may be received via either HF network.

Related links:

Overview of HF networks on page 130
Privacy mode on page 136

NET members

CAUTION: The list of NET members must be the same for all members of the NET.

The **NET Members** entry contains a sequential list of the self addresses of all members of the NET. The station uses this list to calculate the response slots, so each station in the NET can determine when an automatic response is required after the start of the call. A member's self address may be up to 15 alphanumeric characters, however, for efficiency of NET calls, it is preferable that each member self address be limited to 3 characters. To preserve an empty slot use the null address (@@@) in a NET member position.

NOTE: You can have the NET programmed in your transceiver, but you are only a member of the NET if your self address is included in the **NET Members** entry.

Out calls

The **Out Calls** entry enables you to set up your station to make calls to the NET, or disable calling to the NET. Unless you need to restrict calling to the NET, you should set the **Out Calls** entry to **Enabled** for all stations in the NET, regardless of their member status.

If you want to set up your NET so that only one station makes calls to the NET, set the **Out Calls** entry for the NET in that station to **Enabled**. Set the **Out Calls** entry for all other stations with this NET programmed to **Disabled**.

In calls

CAUTION: If the **Link** entry is set to **Only if response**, you must ensure that at least one member station is set to receive an incoming call from the NET *and* send a response to the link request.

The **In Calls** entry enables you to set up your station to receive all incoming calls from the NET, receive calls only if you are a member of the NET, or disable receiving calls from the NET.

If your station:

- has the NET programmed and you want to receive calls from the NET, select **Enabled**.
- has the NET programmed but you are not a member, and you do not want to receive any of the NET calls, select **Members only**.

  NOTE: As your station is not a member of the NET, it will not enter the link.
- is a member of the NET but you do not want to receive any calls from the NET, select **Disabled**.

Link

CAUTION: The method of linking must be the same for all members of the NET.

The **Link** entry determines how the calling station links with the called stations.

It can link:

- only if it receives a response from a member station
- even if it doesn't receive a response from a member station
- immediately

Stations with the NET programmed only send a response to a NET call if:

- their self address is included in the **NET Members** entry for the NET, that is, they are a member of the NET, and
- the **Response** entry for the station is set to **Send**

You can set the following:

- If you want to know with which member stations you have linked, select **Only if response**.

  The calling station makes the call to the NET using the best channel, on average, for all NET members. If there is no response to this channel, the calling station selects the next ranked channel and attempts the call again, and so on until at least one response is received. Any member station detecting the call responds, if they are enabled to do so, then the calling station completes the link. Non-member stations with this NET programmed also enter the link, but as they are not members, they do not send a response.

  NOTE: If you set the **Link** entry to **Only if response**, you must be sure that there are stations in your NET that are set to respond to a link request. If the calling station does not receive a response to the call after trying all channels for the NET, it terminates the link establishment process.

- If you want to send a NET call to all stations with the NET programmed, but you do not need to know which of the member stations enter the link, select **Even if no response**.

  The calling station makes the call to the NET using the best average channel for all NET members. All stations detecting the call enter the link, if enabled to do so.

- If you want to send a NET call to all stations with the NET programmed without the delay of the link establishment process, select **Immediately**.

  In this case, the calling station establishes an implicit link with any stations programmed with the NET that detected the call. There is no 3-way handshake.

Response

CAUTION: If the **Link** entry is set to **Only if response**, you must ensure that at least one member station is set to receive and respond to a call from the NET.

The **Response** entry sets whether or not called member stations respond to NET calls during link establishment. Generally, you would set the **Response** entry to **Send**, so that there is confirmation of the station entering the link. If you do not want the called station to transmit on air, set the **Response** entry to **Don't send**. If a station is set to not respond, it still enters the link when it receives the acknowledgement from the calling station.

NOTE: The **Response** entry is only applicable to NET calls. It does not affect a station's ability to respond to an ANY, Group Selective or Wildcard call.

Related links:

ALE address syntax on page 409

Tune time

CAUTION: The time set for tuning antennas must be the same for all members of the NET.

The **Tune Time** entry is the time that the members of the NET wait after the initial call before sending the automatic responses to the calling station. This time should be set to match the longest tuning time between all members in the NET.

LQA exchange

CAUTION: The exchange of LQA information during link establishment must be the same for all members of the NET.

The **LQA Exchange** entry determines whether or not the exchange of LQA information occurs during calls within the NET. If this is set to **Enabled**, each transceiver adds an appropriate amount of time to the slot widths so that LQA information can be exchanged.

Slot width

CAUTION: The slot width must be the same for all members of the NET.

The **Slot Width** entry determines the width of response slots for each member of the NET.

You can set the following:

- If you want all slot widths to match the width required for the largest self address for a member of the NET, select **Fixed**.

  A fixed slot width extends the time taken to complete the handshake considerably.

- If you want the transceiver to calculate the slot width required for the response from each station, select **Variable**.

  NOTE: Unless required for interoperability reasons, the recommended setting is **Variable**.

  A member station calculates exactly how long after the initial call it has to wait before sending its response given the slot width, whether LQA information is exchanged or not during each slot, and the tune time.

Working with NETs

Related links:

Entries for a NET on page 167
Overview of NETs on page 166
Navigating the menu structure on page 30
Entering text in a field on page 40
Selecting a value from a list on page 44
Saving your changes on page 48

Adding a NET

A NET provides the relationship between the members of a NET, the NET address, and the HF network used for communication.

To add a NET:

- From the main menu, select (**User Data**), then (**NETs**).
- Do *one* of the following:
  - If there are no NETs programmed in the transceiver, press (**Add**).
  - If there are some existing NETs programmed in the transceiver, scroll to the NET after which you want to add the new NET, press (**Options**), scroll to **Add**, then press (**Select**) to add a NET.
- Enter the name that you want to use for the NET.
- Press to move to the **Address** entry.
- Enter the address that you want to use for the NET.

  You can enter up to 15 upper-case/numeric characters, or a combination of both.
- Press to move to the **HF Network** entry.
- Press or to select the HF network that you want to use.
- Press to move to the **NET Members** entry.
- To add NET members:
  - Press ▶, press (**Options**), scroll to **Add**, then press (**Select**).
  - Enter the address of the NET member.
  - Continue adding members.
  - Press (**Options**), scroll to **Save**, then press (**Select**).
- Press to move to the **Out Calls** entry.

- Press ◀ or ▶ to select the value that you want to use from the following:
  - To make calls from this station to the NET, select **Enabled**.
  - To prevent calls being made from this station to the NET, select **Disabled**.
- Press ▼ to move to the **In Calls** entry.
- Press ◀ or ▶ to select the value that you want to use from the following:
  - If your station has the NET programmed and you want to receive calls from the NET, select **Enabled**.
  - If your station has the NET programmed but you are not a member, and you do not want to receive any of the NET calls, select **Members only**.
  - If your station is a member of the NET but you do not want to receive any calls from the NET, select **Disabled**.
- Press ▼ to move to the **Link** entry.
- Press ◀ or ▶ to select the value that you want to use from the following:
  - If you want to know with which member stations you have linked, select **Only if response**.
  - If you want to send a NET call to all stations with the NET programmed, but you do not need to know which of the member stations enter the link, select **Even if no response**.
  - If you want to send a NET call to all stations with the NET programmed without the delay of the link establishment process, select **Immediately**.
- Press ▼ to move to the **Response** entry.
- Press ◀ or ▶ to select the value that you want to use from the following:
  - If you want the station to confirm that it has entered the link, select **Send**.
  - If you want the station to remain silent but still enter the link, select **Do not send**.
- Press ▼ to move to the **Tune Time** entry.
- Press ◀ or ▶ to select the longest time required for tuning antennas within the NET.
- Press ▼ to move to the **LQA Exchange** entry.
- Press ◀ or ▶ to select the value that you want to use from the following:
  - If you want the station to add time to the slot for LQA exchange, select **Enabled**.
  - If you do not want the station to add extra time to the slot, select **Disabled**.
- Press ▼ to move to the **Slot Width** entry.

- Press ◀ or ▶ to select the value that you want to use from the following:
  - If you want all slot widths to match the width required for the largest self address for a member of the NET, select **Fixed**.
  - If you want the transceiver to calculate the slot width required for the response from each station, select **Variable**.
- If you want to review the information that you have entered, press ▲ or ▼ to move through the entries.
- Press (**Save**) to save the information.

Changing the order of NET members

Members of a NET have their self address included in the **NET Members** entry. The order of these addresses determines the slot in which each station responds to a NET call. To avoid conflicting responses in a slot, the order of the addresses in the list of NET members must be identical across all stations that are members of the NET. If required, you can change the order of the addresses in the list of NET members.

CAUTION: The list of NET members must be the same for all members of the NET.

To change the order of NET members:

- From the main menu, select (**User Data**), then (**NETs**).
- Press ▲ or ▼ to scroll to the NET in which you want to rearrange the NET members, then press **OK**.
- Press ▼ to move to the **NET Members** entry.
- Press ▶ to view the list of NET members.
- Press ▲ or ▼ to scroll to the NET member that you want to move.
- Press (**Options**), scroll to **Move**, then press (**Select**).
- Press ▲ or ▼ to scroll to the location to which you want to move the NET member, then press (**Place**).
- Press (**Options**), scroll to **Save**, then press (**Select**).

Editing a NET

Editing a NET is similar to adding a NET. If a NET is added at user level, it may be edited at user level and admin level.

To edit a NET:

- From the main menu, select (**User Data**), then (**NETs**).
- Press ▲ or ▼ to scroll to the NET that you want to edit, then press **OK**.
- Continue with the process for adding a NET.

Related links:

Adding a NET on page 171

Moving a NET

To move a NET:

- From the main menu, select (**User Data**), then (**NETs**).
- Press ▲ or ▼ to scroll to the NET that you want to move, press (**Options**), scroll to **Move**, then press (**Select**).
- Press ▲ or ▼ to scroll to the new location for the NET in the list, then press (**Place**).

Deleting a NET

If a NET is added at user level, it may be deleted at user level and admin level.

To delete a NET:

- From the main menu, select (**User Data**), then (**NETs**).
- Press ▲ or ▼ to scroll to the NET that you want to delete, press (**Options**), scroll to **Delete**, then press (**Select**) to delete the NET.
- Confirm that you want to delete the NET.

13 Messages

This section contains the following topics:

Overview of messages

If you want to re-use a message across a number of calls, or be able to select a message on-the-fly during a call, enter the text in one of the entries in **User Data** > **Messages**.

Related links:

Adding a contact on page 149
Making a Message call on page 78

Entering a message

To enter a message:

- From the main menu, select (**User Data**), then (**Messages**).
- Press ▲ or ▼ to scroll to the **Message** entry that you want to edit.
- Press (**Edit**).

- Enter the message.

- Press (**Save**) to save the information.
- Press (**Close**).

Related links:

Entering text in a field on page 40
Entering text in the 2221 Handset on page 43

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14 Peripherals

This section contains the following topics:

Overview of peripherals

Peripherals are devices that extend the capability of the transceiver system, for example, an external data modem, an automatic tuning antenna, or a GPS receiver. Each peripheral is attached to the transceiver via a compatible connector. In **User Data** > **Peripherals**, you select the connector, scroll through the list of devices that may be connected, select the device that you have connected, then restart the transceiver to activate the default settings for this device. The transceiver automatically picks the recommended values for the particular device.

NOTE: Peripheral devices in the table below that are marked with * have values that may be changed to suit your requirements.

CAUTION: Codan recommends that you do not change the values for your device unless absolutely necessary. Please contact your Codan representative if you need assistance with your particular requirements.

Table 5: Peripherals

Peripheral type	Peripheral connector	Peripheral device
Antenna Type	✗ (RFU)	Broadband antenna 9350 3040/3042/3046 9103 Low power SG-235 500 W 1 kW Tuner
RFU 15way	15-way connector (RFU)	None 3212 Modem RM50e Modem 3012 Modem Generic Modem 3033 Telephone Interconnect* 3031 Crosspatch* PC* GPS* VP-116 User-defined 1* User-defined 2*
RFU 6way	6-way connector (RFU)	None GPS* PC* User-defined*
Console 15way	15-way connector (console)	None

Table 5: Peripherals (cont.)

Peripheral type	Peripheral connector	Peripheral device
Power Amplifier	J (RFU)	None 3061 500 W 3062 1000 W

Selecting an antenna

To select an antenna:

- From the main menu, select (**User Data**), (**Peripherals**), then (**Antenna Type**).
- Press ▲ or ▼ to scroll to the antenna type that you want to use, then press **OK**.
- Press (**Save**) to save the information.
- Restart the transceiver to activate the new settings.

Selecting a peripheral

When you connect a peripheral device to the 15-way or 6-way connector, you can set up how the port operates automatically by selecting the peripheral device from the list of supported devices for the connector.

NOTE: Codan peripheral devices are listed by their type number, for example, 3031 Crosspatch. The type number for a Codan device is located on the front or serial number escutcheon.

To select a peripheral device:

- From the main menu, select (**User Data**), then (**Peripherals**).
- Press ◀ or ▶ to select the tab corresponding to the connector to which the peripheral device is attached.
- Press ▲ or ▼ to scroll to the type of peripheral device that is attached to the connector, then press **OK**.

  If there are settings that you can change to optimise this peripheral for your requirements, ▶ is shown to the right of the peripheral name when it is selected.
- If you want to change settings for the peripheral, press ▶ to see the list of entries that you may change.

  If you change the value of an entry for a peripheral device from the default value, is shown next to the title of the entry.
- Press (**Save**) to automatically update settings for correct operation of the connected peripheral device.
- If you added a peripheral device, restart your transceiver to activate the new settings.

Related links:

Overview of peripherals on page 180

Selecting a power amplifier

To select a power amplifier:

- From the main menu, select (**User Data**), (**Peripherals**), then (**Power Amplifier**).
- Press ▲ or ▼ to scroll to the power amplifier that you want to use, then press **OK**.
- Press (**Save**) to save the information.
- Restart the transceiver to activate the new settings.

Entries for a peripheral

Related links:

RFU 15way Mode

The **RFU 15way Mode** entry sets the mode in which the RS232 15-way serial port operates. This entry is only available if you are setting up the 15-way connector on the RFU for a user-defined peripheral device.

If the port is:

- not in use, select **None**
- receiving GPS information, select **GPS**
- controlling and monitoring the transceiver, select **CICS**
- connected to a modem, select **Data**
- connected to a radio/telephone interconnect unit, select **3033**

Default value: None

RFU 15way Speed

The **RFU 15way Speed** entry sets the data rate of the RS232 15-way serial port. If available, you should set this to the same speed that is set in the connected peripheral device.

Default value: 9600 bit/s

RFU 15way Startup

The **RFU 15way Startup** entry sets the serial commands that you want to have performed by the 15-way port following power up.

Typically, this is used for specific commands that are required in a system that uses CICS commands.

Default value: Empty

RFU Average ALC

The **RFU Average ALC** entry sets whether or not the transmit output power for the RFU is averaged. If it is set to **Disabled**, the peak output power is used.

Default value: Enabled

RFU ALC Rate

The **RFU ALC Rate** entry sets the ALC time constant.

If you want the transceiver to send:

- optimised voice signals, select **Voice (Fast)**
- optimised data signals, select **Data (Hold)**

Default value: Data (Hold)

RFU Audio Type

The **RFU Audio Type** entry sets the type of audio for the RFU.

If the transceiver is being used for:

- low distortion audio, select **Data**
- fast, compressed audio, select **Voice**

Default value: Data

RFU AGC

The **RFU AGC** entry sets the rate of action of AGC for the input signal to the RFU.

To optimise AGC for:

- voice and linear data signals, select **Hold**
- voice signals, select **Slow**
- special modes and morse code in a noisy environment, select **Fast**

Default value: Hold

RFU PTT Beep

The **RFU PTT Beep** entry sets whether or not astrotones are transmitted when PTT is released on the 15-way port. This saves you having to say ‘over’ each time you release PTT.

Default value: Disabled

RFU Rx Out Audio Level

The **RFU Rx Out Audio Level** entry sets the audio level of Rx output for the peripheral device attached to the 15-way connector.

Range: –31.0 to 0.5 dBm

Default value: –13 dBm (1 V p–p, no load)

RFU Mute Extend

The **RFU Mute Extend** entry sets the period of time that the mute is held open when voice is detected. The time is extended by this amount each time voice is detected on the channel, up to the maximum hold period set in the **Scan Voice Max Pause** entry.

Range: 1.0 to 10.0 sec

Default value: 3.8 sec

Related links:

Scan Voice Max Pause on page 212

RFU Mute Off After PTT

The **RFU Mute Off After PTT** entry sets the length of time that mute is held open after a PTT on the 15-way port.

Range: 1 to 5000 msec

Default value: 2000 msec

RFU Sidetone Volume

The **RFU Sidetone Volume** entry sets the volume of the call and ring tones heard at the 15-way port.

Range: –16 to 16

Default value: 0

RFU Mute Out Options

The **RFU Mute Out Options** entry mutes output on the 15-way port.

If you want:

- the mute signal to be output on pin 12 (low = mute open), select **Enable control line**
- the mute output command to be available on RS232, select **Enable serial**

Default value: Empty

RFU 6way Mode

The **RFU 6way Mode** entry sets the mode in which the RS232 6-way serial port operates. This entry is only available if you are setting up the 6-way connector on the RFU for a user-defined peripheral device.

If the port is:

- not in use, select **None**
- receiving GPS information, select **GPS**
- controlling and monitoring the transceiver, select **CICS**
- accessing information from a log of radio/telephone interconnect activity, select **Log output**

Default value: GPS

RFU 6way Speed

The **RFU 6way Speed** entry sets the data rate of the RS232 6-way serial port. If available, you should set this to the same speed that is set in the connected peripheral device.

Default value: 4800 bit/s

RFU 6way Startup

The **RFU 6way Startup** entry sets the serial commands that you want to have performed by the 6-way port following power up.

Typically, this is used for specific commands that are required in a system that uses CICS commands.

Default value: Empty

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15 Settings

This section contains the following topics:

Settings > Control Point > General

The general settings for a control point enable you to customise the behaviour of the particular control point that you are operating.

Related links:

Welcome Image on page 192
Welcome Text on page 193
USB User Access on page 193
Channel Scroll on page 193
Show Channel Frequency on page 194
Frequency Format on page 194
Call Key Options on page 194
Night Display Brightness on page 194
Night Display Start on page 195
Night Display Stop on page 195
Local Welcome Text on page 195
Brightness on page 195
Custom Brightness on page 196
Auto Dim Time on page 196
Key Beeps on page 196
Beeps and Tones on page 196
Theme on page 196
Night Theme on page 197
Show Background Image on page 197
Logging on page 197
Logging Level on page 197

Welcome Image

The **Welcome Image** entry sets the image that is shown on the screen during power up. The first image shown is the factory-set splashscreen, followed by the welcome image, if loaded. The image is added into a profile in TPS, then you select the portion of the image that you want to view at the control point in the preview window. You can also fit the image to the screen. The profile is programmed to the transceiver.

Once a welcome image is loaded into the transceiver, it cannot be disabled via the control point.

The Welcome Image may be .png or .jpg at a resolution of 320 × 240 pixels.

Default value: None

Welcome Text

The **Welcome Text** entry sets the text that is shown on the screen during power up. You can store up to three lines of text. Each line may have up to 20 characters of text.

If a welcome image is set, this image is shown first, followed by the welcome text. If text is entered in the **Local Welcome Text** entry, it overrides the text in the **Welcome Text** entry.

Default value: Empty

Related links:

Local Welcome Text on page 195

USB User Access

The **USB User Access** entry sets the actions that can be performed at user level when a memory stick is inserted in the USB connector on the control point.

NOTE: A profile is an electronic file that contains all the user-defined and operational settings that control a transceiver system.

If you want to enable the user to:

- load a profile into the transceiver, select **Program profile to transceiver**
- read a profile from the transceiver, select **Read profile from transceiver**
- upgrade the firmware in the transceiver, select **Firmware upgrade**
- program secure keys to the transceiver, select **Program secure keys to transceiver**

Default value: Empty

Channel Scroll

The **Channel Scroll** entry sets the direction in which the ▲ key scrolls through the channels, that is, to the next channel or the previous channel.

If you want a press of the ▲ key to:

- go to the next higher number/next alphabetically listed channel, that is, 1-2-3-4 or Chan A-Chan B-Chan C-Chan D, select **Go to next channel**
- go to the next lower number/previous alphabetically listed channel, that is 4-3-2-1 or Chan D-Chan C-Chan B-Chan A, select **Go to previous channel**

Default value: Go to next channel

Show Channel Frequency

The **Show Channel Frequency** entry sets whether or not frequencies are shown on the channel screen.

To show:

- both the transmit and receive frequencies, select **All**
- no frequencies, select **None**

Default value: All

Frequency Format

The **Frequency Format** entry sets the format in which frequencies are shown on the screen. These values change the number of decimal points that are shown.

If you want to show the frequency to:

- one decimal point, select **Show 100 Hz**
- two decimal points, select **Show 10 Hz**
- three decimal points, select **Show 1 Hz**

Default value: Show 100 Hz

CAUTION: If a frequency is entered to the nearest 1 Hz, but the frequency format is set to show the frequency on the screen to the nearest 100 Hz, rounding will occur.

NOTE: If you need to know the exact frequency of a channel, you can view this in **User Data** > **Channels**, then select the specific channel.

Call Key Options

The **Call Key Options** entry sets the default action that occurs when the **CALL** key is pressed on the control point. The screen that is not set as the default action is accessed using *hold* **CALL**.

If you want a press of the **CALL** key to:

- go to the Call screen, select **Show Call Screen**
- go to the Contacts screen, select **Show Contacts Screen**

Default value: Show Call Screen

Night Display Brightness

The **Night Display Brightness** entry sets the brightness of the LCD and keypad backlight during night-time activity.

Available values: Leave as is, Low, Medium, High

Default value: Low

Related links:

Night Display Start on page 195
Night Display Stop on page 195
Night Theme on page 197

Night Display Start

The **Night Display Start** entry sets the local time that you want the night-time brightness and night theme to start.

Range: 00.00 to 24.00 hour

Default value: 00.00

Night Display Stop

The **Night Display Stop** entry sets the local time that you want the night-time brightness and night theme to stop.

Range: 00.00 to 24.00 hour

Default value: 00.00

Local Welcome Text

The **Local Welcome Text** entry sets the welcome text for this control point only. This entry overwrites text entered into the **Welcome Text** entry. You can store up to three lines of text. Each line may have up to 20 characters of text.

Default value: Empty

Related links:

Welcome Text on page 193

Brightness

The **Brightness** entry sets the brightness of the LCD and keypad backlight.

To define a custom brightness level, select **Custom**, then enter the required brightness in the **Custom Brightness** entry.

Available values: Low, Medium, High, Custom

Default value: High

Related links:

Custom Brightness on page 196

Custom Brightness

The **Custom Brightness** entry sets the brightness of the LCD and keypad backlight if **Custom** is selected in the **Brightness** entry.

Range: 5 to 100

Default value: 50

Related links:

Brightness on page 195

Auto Dim Time

The **Auto Dim Time** entry sets the time the transceiver waits after a key is pressed before switching off the backlighting on the LCD and keypad of the control point. The backlighting is automatically switched on again when a key is pressed.

Available values: 5, 10, 20 min

Default value: 10 min

Key Beeps

The **Key Beeps** entry sets whether or not a beep is heard when a key is pressed.

When you press a key that is appropriate for the task you are performing, the transceiver makes a valid beep. When you press an inappropriate key, the transceiver makes an error beep.

Default value: Enabled

Beeps and Tones

The **Beeps and Tones** entry sets whether or not beeps and tones are heard at the transceiver for alerts and operational transitions.

If beeps and tones are switched off, the transceiver does not beep when it transitions between certain modes, for example, entering and exiting secure mode.

Default value: Enabled

NOTE: Alert tones on receipt of a call are set in **Settings** > **Calling** > **General** > **Alert Tones**.

Related links:

Alert Tones on page 216

Theme

The **Theme** entry sets the colour theme for the screen.

Available values: Blue/Grey, Grey/Red, Grey/Blue, Blue/Green, Dark Blue

Default value: Blue/Grey

Related links:

Selecting a theme on page 59

Night Theme

The **Night Theme** entry sets the colour theme for the screen during the night-time display times.

Available values: Blue/Grey, Grey/Red, Grey/Blue, Blue/Green, Dark Blue

Default value: Dark Blue

Related links:

Night Display Start on page 195
Night Display Stop on page 195
Night Display Brightness on page 194

Show Background Image

The **Show Background Image** entry sets whether or not the Envoy™ logo is shown in the background of menu and channel screens.

Default value: Enabled

Logging

The **Logging** entry sets whether or not event logging occurs on the control point.

Default value: Disabled

Logging Level

The **Logging Level** entry sets the level of event logging for debugging on the control point.

Range: 0 to 100

Default value: 50

Settings > Control Point > Status Area

The status area settings for a control point enable you to customise the information that is shown on the channel screen of the control point that you are operating. There are six areas that can show information ranging from call information, address information, functional information, and user-defined text.

Figure 47: Status areas

Related links:

Selecting information to be shown in a status area on page 57
Status Area 1 on page 198
Status Area 2 on page 198
Status Area 3 on page 199
Status Area 4 on page 199
Status Area 5 on page 199
Status Area 6 on page 199
User-defined Text 1 on page 199
User-defined Text 2 on page 199

Status Area 1

The **Status Area 1** entry sets the information that is shown at the middle left of the screen. If a voice encryptor is active, the secure status overwrites your selection for this status area.

Default value: Empty

Status Area 2

The **Status Area 2** entry sets the information that is shown at the middle right of the screen. If a data encryptor is active, the secure status overwrites your selection for this status area.

Default value: Empty

Status Area 3

The **Status Area 3** entry sets the information that is shown just below the middle left of the screen.

Default value: Time

Status Area 4

The **Status Area 4** entry sets the information that is shown just below the middle right of the screen.

Default value: 3012s throughput

NOTE: The throughput indicator is only shown if the Internal Data Modem option is enabled in the firmware.

Status Area 5

The **Status Area 5** entry sets the information that is shown at the bottom left of the screen.

Default value: Last received call

Status Area 6

The **Status Area 6** entry sets the information that is shown at the bottom right of the screen.

Default value: Empty

User-defined Text 1

The **User-defined Text 1** entry defines the text that you want to be shown on the screen. This text may be assigned to any of the status areas by selecting the User-defined Text 1 value for the status area. You may enter up to 16 alphanumeric characters.

Default value: Empty

User-defined Text 2

The **User-defined Text 2** entry defines the text that you want to be shown on the screen. This text may be assigned to any of the status areas by selecting the User-defined Text 2 value for the status area. You may enter up to 16 alphanumeric characters.

Default value: Empty

Settings > Control Point > Time and Date

The time and date settings for a control point enable you to set the time zone offset from UTC of the particular control point that you are operating, daylight saving differences, and time and date formats.

Related links:

Time Zone on page 200
Daylight Saving on page 200
Clock Type on page 200
Time Format on page 200
Date Format on page 200
Setting the date and time on page 68

Time Zone

The **Time Zone** entry sets the difference between the local time and UTC.

Default value: (+9:30) Adelaide

Daylight Saving

The **Daylight Saving** entry sets the changes from UTC due to daylight saving.

Default value: Winter time

Clock Type

The **Clock Type** entry sets the type of clock that is shown on the Time and Date screen to either analogue or digital.

Default value: Analogue

Time Format

The **Time Format** entry sets whether the transceiver uses a 12-hour or 24-hour format.

Default value: 12 hour

Date Format

The **Date Format** entry sets the format in which the date is shown.

Available values: 1 Dec 2000, Dec 1, 2000, 1-12-2000, 12-1-2000, 1/12/2000, 12/1/2000

Default value: 1 Dec 2000

Settings > Control Point > Console

The console settings for a control point enable you to customise the behaviour of the desk console that you are using as the control point.

Related links:

Console Location on page 201
Internal Speaker on page 201
Console PTT on page 201
Foot-switch PTT on page 201

Console Location

The **Console Location** entry sets whether the console is connected to the transceiver directly or via the Ethernet.

If the transceiver is connected:

- directly to the console, select **Local**
- to the console remotely, select **Remote**

Default value: Local

NOTE: A remote installation requires a separate PSU for the console.

Related links:

Setting the location of the desk console on page 71

Internal Speaker

The **Internal Speaker** entry sets whether or not the internal speaker in the console is active.

Default value: Enabled

Console PTT

The **Console PTT** entry sets the audio source for the PTT on the console to either an internal or external microphone.

Default value: Internal microphone

Foot-switch PTT

The **Foot-switch PTT** entry sets the audio source for the foot-switched PTT on the console to either an internal or external microphone.

Default value: Internal microphone

Settings > Configuration > General

The general configuration settings enable you to customise underlying operational items that affect the behaviour of the particular transceiver that you are operating. These include power levels, access, noise and detection sensitivities, and a number of general timeouts.

Related links:

Admin PIN on page 202
Noise Limiter on page 202
Voice Detect Sensitivity on page 203
Power Down Timeout on page 203
Power Down Time on page 203
Easitalk Mode on page 203
RF Pre-amp on page 203
Tx Power on page 204
Low Power on page 204
Medium Power on page 204
High Power on page 204
Easitalk Start State on page 205
Default Selcall on page 205
Handset AGC on page 205
Handset PTT Beep on page 205
System Lock Override on page 206
Morse Timeout on page 206
PTT Timeout on page 206
Units on page 206
Abandon Mode on page 207
Command Line on page 207

Admin PIN

The **Admin PIN** entry stores a numeric password (up to 8 digits) for access to admin level in the transceiver.

Default value: Empty

Noise Limiter

The **Noise Limiter** entry sets whether or not the noise limiter circuit is active.

The noise limiter reduces background impulse noise and ignition noise from cars.

Default value: Enabled

Voice Detect Sensitivity

The **Voice Detect Sensitivity** entry sets the sensitivity required for voice detection in the operating environment. In noisy operating environments you may want to decrease the sensitivity so that mute does not open on general noise.

Range: 1 to 55

Default value: 20

Power Down Timeout

The **Power Down Timeout** entry sets the length of inactivity after which the transceiver powers down.

Range: 1 to 10 hour

Default value: Disabled

Power Down Time

The **Power Down Time** entry sets the local time at which the transceiver powers down.

NOTE: You must switch the transceiver off then on again for this value to be activated.

Default value: Disabled

Easitalk Mode

The **Easitalk Mode** entry selects a noise-reduction algorithm.

Available values: None, Cepstral, Spectral, MMSE

Default value: Cepstral

RF Pre-amp

The **RF Pre-amp** entry switches the RF pre-amplifier on or off.

If you want to:

- increase the receive sensitivity of the RFU, select **Enabled**
- reduce the receive sensitivity of the RFU, select **Disabled**

Default value: Enabled

Tx Power

The **Tx Power** entry sets the power preference to suit the transmit power level for your station.

Available values: Low, Medium, High

Default value: High

NOTE: The **Low**, **Medium** and **High** power levels may be defined using the Low, Medium and High Power entries.

Related links:

Low Power on page 204
Medium Power on page 204
High Power on page 204

Low Power

The **Low Power** entry enables you to set the power level that is used when the **Tx Power** entry is set to **Low**.

Range: 1 to 30 watt

Default value: 10 watt

Related links:

Tx Power on page 204

Medium Power

The **Medium Power** entry enables you to set the power level that is used when the **Tx Power** entry is set to **Medium**.

Range: 31 to 60 watt

Default value: 50 watt

Related links:

Tx Power on page 204

High Power

The **High Power** entry enables you to set the power level that is used when the **Tx Power** entry is set to **High**.

Range: 61 to 125 watt

Default value: 125 watt

Related links:

Tx Power on page 204

Easitalk Start State

The **Easitalk Start State** entry sets the state of Easitalk at power up.

If you want the transceiver to:

- return to the state it was in prior to the transceiver being switched off then on again, select **Leave as is**
- never use *Easitalk*™ at power up, select **Disabled**
- always use *Easitalk*™ at power up, select **Enabled**

Default value: Leave as is

Default Selcall

The **Default Selcall** entry sets the default Selcall call system when adding HF networks.

Available values: Codan, Open

Default value: Codan

Handset AGC

The **Handset AGC** entry sets the rate of action of AGC for the input signal to the handset.

To optimise AGC for:

- voice signals, select **Slow**
- special modes and morse code in a noisy environment, select **Fast**
- voice and linear data signals, select **Hold**

Default value: Hold

Handset PTT Beep

The **Handset PTT Beep** entry sets whether or not astrotones are transmitted when the PTT button is released during a call. This saves you having to say ‘over’ each time you release PTT.

Default value: Enabled

System Lock Override

The **System Lock Override** entry sets how various actions at the control point interact with a system lock.

If you want the control point to:

- always override other PTT sources and system locks, select **Always**
- never override other PTT sources or system locks, select **Never**
- ask the user before overriding other PTT sources and system locks, select **Prompt**

Default value: Prompt

Morse Timeout

The **Morse Timeout** entry sets the length of time from the last morse activity after which PTT is released.

Range: 50 to 1000 msec

Default value: 250 msec

PTT Timeout

The **PTT Timeout** entry sets the length of time after PTT is held down for the transceiver to cease transmission and switch to receive. This ensures that, even if PTT is held down accidentally (because, for example, you are sitting on the handset), power consumption is minimised and the transceiver is ready to receive calls.

Range: 1 to 30 min

Default value: 10 min

Units

The **Units** entry sets the default system of units for temperature and distance measurements.

Available values: Metric, Imperial

Default value: Metric

Abandon Mode

The **Abandon Mode** entry sets how the transceiver shuts down following the + hot-key sequence.

If you want the transceiver to:

- not respond to the abandon hot-key sequence, select **Never**
- shut down and only be accessed by an administrator (if an admin PIN is set), select **Lock**
- erase all CES secure keys, AES secure keys, channels, HF networks, NETs, phone links, contacts, self addresses, call logs, messages, welcome text, site manager information, and LQA information, then admin lock, select **Erase**

Default value: Never

Command Line

The **Command Line** entry is for future use.

Settings > Configuration > Factory

These settings are read-only, however, you may be interested in viewing the various limits.

Settings > Connectors > RFU 15way

RFU Secure Audio

The **RFU Secure Audio** entry sets whether or not secure audio is present on the 15-way port.

Default value: Disabled

Settings > Connectors > RFU 6way

The connector settings for the transceiver are set automatically according to the requirements of the peripheral device connected.

Related links:

Peripherals on page 179

RFU 6way Speed

The **RFU 6way Speed** entry sets the data rate of the RS232 6-way serial port. If available, you should set this to the same speed that is set in the connected peripheral device.

Default value: 4800 bit/s

Settings > Scan

The scan settings enable you to set how the transceiver scans, what happens after a period of inactivity or the end of a call, and how the mute behaves when voice is detected.

Related links:

Auto Resume Mode on page 211
Auto Resume Time on page 211
Scan Mute on page 212
Scan Voice Extend on page 212
Scan Voice Max Pause on page 212

Auto Resume Mode

The **Auto Resume Mode** entry sets the action performed when the auto resume time ends.

The transceiver may be set to automatically begin a task when scanning is switched off and there has been no PTT, channel change, scan on/off, mute on/off, or call sending activity for a certain length of time. Use the **Auto Resume Mode** entry to specify the task that is performed after the time period.

If you want the transceiver to:

- remain on a channel, select **Disabled**
- close the link to end any call in progress and, if it was scanning prior to the call, resume scanning, select **Close link**
- start scanning, select **Start scan**

Default value: Start scan

Auto Resume Time

The **Auto Resume Time** entry sets the length of time after no activity that the transceiver performs the action set in the **Auto Resume Mode** entry.

Range: 1 to 20 min

Default value: 2 min

Scan Mute

The **Scan Mute** entry sets the scan method used when the **Auto Resume Mode** entry is set to **Start Scan**.

If you want the transceiver to:

- scan for voice and calls addressed to your station, select **Voice and calls**
- scan only for calls addressed to your station, select **Calls**
- scan according to the current mute state, select **Leave as is**

Default value: Calls

Scan Voice Extend

The **Scan Voice Extend** entry sets the period of time that the transceiver pauses scan when voice is detected. The transceiver continues to extend by this amount each time voice is detected on the channel, up to the maximum hold period set in the **Scan Voice Max Pause** entry.

If you do not want the transceiver to pause scan after voice is detected, set this entry to 0.

Range: 0 to 30 sec

Default value: 5 sec

Scan Voice Max Pause

The **Scan Voice Max Pause** entry sets the maximum length of time that the transceiver pauses on a channel after voice is detected.

Range: 0 to 120 sec

Default value: 5 sec

Settings > Calling > General

The general calling settings enable you to set up how the transceiver behaves when it receives certain calls, and how it performs an action when activity is detected on a channel that you want to use. The general calling settings also include a number of alarms and timeouts.

Related links:

Call Types For Contacts on page 213
Call Types For New Call on page 214
Show Phone Link Address on page 214
Emergency Call Alarm on page 214
Message Call Alarm on page 215
Selective Call Alarm on page 215
External Alarm on page 215
Alert Tones on page 216
Call Status Time on page 216
Chain Call Pause on page 216
In Call Timeout on page 216
LBT Mode on page 217
LBT Period on page 217
LBT Data Sensitivity on page 217
LBT Waveform on page 218
Respond GPS on page 218
Respond OTA on page 219

Call Types For Contacts

The Call Types For Contacts entry sets the call types that are available for selection when adding or editing call information for a contact.

Available values: Selective, Channel Test, Message, Get Position, Send Position, Phone, Get Status, Emergency, RFDS Emergency, ALE Sounding

NOTE: The call types available depend on the options installed in your transceiver.

Default value: all available call types selected

Related links:

Adding a contact on page 149
Call types on page 400

Call Types For New Call

The **Call Types For New Call** entry sets the call types that are available for selection when making a new call.

Available values: Selective, Channel Test, Message, Get Position, Send Position, Phone, Get Status, Emergency, RFDS Emergency, ALE Sounding

NOTE: The call types available depend on the options installed in your transceiver.

Default value: all available call types selected

Related links:

Call types on page 400

Show Phone Link Address

The **Show Phone Link Address** entry sets whether or not the address of a phone link is shown on the screen during a Phone call.

A phone link is the information defining the connection of a remote HF transceiver to a telephone station. A telephone station comprises a transceiver system and a radio/telephone interconnect unit that can route Phone calls from HF transceivers to the public telephone network. The address setting in a phone link is the address of the transceiver connected to the radio/telephone interconnect, or the address of the radio/telephone interconnect.

Default value: Disabled

Related links:

Adding a phone link on page 162

Emergency Call Alarm

The **Emergency Call Alarm** entry sets the delay between receiving an Emergency call and sounding the external alarm.

The external alarm is a relay that can be wired by a user to ring a bell or to sound a car horn. By default, the external alarm relay reacts immediately, continuing for five minutes.

Available values: Never, Immediate, 10 sec, 30 sec

Default value: Immediate

Related links:

15-way GPIO connector on page 330

Message Call Alarm

The **Message Call Alarm** entry sets the delay between receiving a Message call and sounding the external alarm.

The external alarm is a relay that can be wired by a user to ring a bell or to sound a car horn. If the external alarm is sounded for messages, it continues for two minutes.

By default, the external alarm is not activated for any Message calls or calls containing messages.

Available values: Never, Immediate, 10 sec, 30 sec

Default value: Never

NOTE: Urgent and emergency messages still sound if the **Alert Tones** entry is set to **Normal**.

Related links:

15-way GPIO connector on page 330
Alert Tones on page 216

Selective Call Alarm

The **Selective Call Alarm** entry sets the delay between receiving a voice call and sounding the external alarm.

The external alarm is a relay that can be wired by a user to ring a bell or to sound a car horn. By default, the alarm delays for 10 sec before sounding. This may be useful when the transceiver is not closely monitored, but an operator is able to respond to a local alert tone within 10 seconds. If the call is not answered after this time, the external alarm is sounded.

The external alarm is sounded continuously for two minutes.

Available values: Never, Immediate, 10 sec, 30 sec

Default value: 10 sec

Related links:

15-way GPIO connector on page 330

External Alarm

The **External Alarm** entry sets whether the alarm output on the 15-way port is enabled or disabled.

The external alarm is a relay that can be wired by a user to ring a bell or to sound a car horn.

Default value: Enabled

Related links:

15-way GPIO connector on page 330

Alert Tones

The **Alert Tones** entry sets whether or not the transceiver gives an alert tone (beep, or ring if an external alarm is connected) when it receives a message or a non-message call.

If you want the transceiver to:

- provide a local alert tone and external alarm when it receives any type of call, select **Normal**
- not provide a local alert tone or external alarm when it receives a message call, select **Messages do not ring**
- not provide a local alert tone or external alarm when it receives any type of call, select **Disabled**

Default value: Normal

Call Status Time

The **Call Status Time** entry sets the maximum length of time a called station has to respond to a Get Status call with the information requested.

Range: 0 to 255 sec

Default value: 10 sec

Chain Call Pause

The **Chain Call Pause** entry sets the length of time the transceiver pauses between chained calls.

A chain call is started when you *hold* the ⚠ key for 2 sec. The transceiver makes the first call defined in the emergency contact that you select, waits the pause time, then makes the next call defined in the same emergency contact, and so on, until it makes the last call defined for this emergency contact.

Range: 0 to 60 sec

Default value: 30 sec

Related links:

Call types on page 400
Calling on page 73

In Call Timeout

NOTE: The **In Call Timeout** entry is available if you have the MIL-STD-188-141B ALE option installed.

The **In Call Timeout** entry sets the length of time from the last key press on the control point after which an in-link message session is ended.

NOTE: The ALE link is not ended, just the in-link message session.

An in-link message session may be used during an ALL, ANY, Group Selective, NET, or Wildcard call, where you can send data within the established link by pressing **CALL** and following the prompts. If the link is closed automatically during these in-link messages, consider extending the **In Call Timeout** entry.

Range: 0 to 300 sec

Default value: 30 sec

Related links:

Call types on page 400
ALE address syntax on page 409

LBT Mode

The **LBT Mode** entry sets whether or not the transceiver listens for calls and traffic on a channel before starting a call.

The transceiver is capable of listening to a channel before initiating a call on the channel. If LBT Mode is enabled, the transceiver detects whether or not there is traffic on the selected channel. The transceiver listens on a channel for the length of time specified in the **LBT Period** entry. If there is traffic on the channel, the transceiver reports that the channel is occupied.

If you want the transceiver to:

- not test channels used for making calls, select **Disabled**
- test channels using LBT for every call, select **Enabled**
- test channels using LBT for every call, with the option to override, select **Override allowed**

Default value: Disabled

CAUTION: Calls using the Emergency call type or calls made through the ⚠ key override the LBT Mode if it is enabled at either level.

LBT Period

The **LBT Period** entry sets the length of time that the transceiver listens for calls and traffic on a channel before starting a call.

Range: 1 to 10 sec

Default value: 2.0 sec

LBT Data Sensitivity

The **LBT Data Sensitivity** entry sets the sensitivity level for detection of false or weak data signals when LBT is active. In noisy operating environments you may want to decrease the sensitivity so that LBT does not detect general noise.

Range: –0.500 to +0.500 sec

Default value: 0.002 sec

LBT Waveform

The **LBT Waveform** entry sets the type of waveform that LBT monitors.

If you want outgoing calls to monitor the channel for:

- voice calls, or any call to another station made using a Selcall or ALE/CALM HF network, select **Voice and calls**
- voice calls, any call to another station made using a Selcall or ALE/CALM HF network, or any calls made via a data modem, select **Voice, calls and data**

Default value: Voice and calls

Respond GPS

The **Respond GPS** entry sets the way in which the transceiver handles its response to a Get Position call sent through an ALE/CALM or Selcall HF network.

If you want to:

- respond to a Get Position call regardless of the privacy mode of the HF network through which the call was made, select **Always respond**
- respond in a proprietary Codan-encoded format to a Get Position call on an HF network with the privacy mode set to **Group** or **None**, select **To Codan requests**
- respond to a Get Position call from another Codan HF transceiver on an HF network with the privacy mode set to **Group** and a common privacy key, select **To encrypted requests**
- disable your response to any Get Position call, select **Never respond**

Default value: Always respond

NOTE: The **To Codan requests** value specifically excludes calls made using an Open Selcall HF network, and calls made using an ALE/CALM HF network with a privacy mode of **Plain** (MIL-STD-188-141B ALE option).

NOTE: You are still able to make Send Position calls if this entry is set to **Never respond**.

NOTE: To respond to Get Position calls made in an Open Selcall HF network, the **Respond GPS** entry must be set to **Always respond**.

Respond OTA

The **Respond OTA** entry sets the way in which the transceiver handles its response to an OTA command sent through an ALE/CALM or Selcall HF network.

If you want to:

- respond to an OTA command regardless of the privacy mode of the HF network through which the call was made, select **Always respond**
- respond in a proprietary Codan-encoded format to an OTA command on an HF network with the privacy mode set to **Group** or **None**, select **To Codan requests**
- respond to an OTA command from another Codan HF transceiver on an HF network with the privacy mode set to **Group** and a common privacy key, select **To encrypted requests**
- disable your response to any OTA command, select **Never respond**

Default value: To Codan requests

NOTE: The **To Codan requests** value specifically excludes calls made using an Open Selcall HF network, and calls made using an ALE/CALM HF network with a privacy mode of **Plain** (MIL-STD-188-141B ALE option).

NOTE: To respond to Get Status calls made in an Open Selcall HF network, the **Respond OTA** entry must be set to **Always respond**.

For more information on OTA commands contact your Codan representative.

Settings > Calling > ALE

The ALE calling settings enable you to set up how the transceiver behaves when it is making and receiving calls in an ALE/CALM HF network, and how link quality information is managed.

Related links:

ALE LQA Average on page 221
ALE LQA Decay on page 221
ALE Site Manager on page 222
ALE Accept ALL Call on page 223
ALE Accept ANY Call on page 224
ALE Accept Wildcard Call on page 224
ALE AMD Position on page 224
ALE BER on page 225
ALE Call Scan on page 226
ALE Scan Cycles on page 226
ALE Call Threshold on page 226
ALE Call Weighting on page 227
ALE Golay on page 227
ALE Hangup ALL Call on page 228
ALE Hangup Phone Call on page 228
ALE Hangup Voice Call on page 229
ALE LQA Exchange on page 229
ALE LQA Mapping on page 229
ALE Retries on page 230
ALE Selective Message on page 230
ALE Silent Mode on page 230
ALE Soundings on page 230

ALE LQA Average

The **ALE LQA Average** entry selects the way that LQA information is used when recording signal quality.

When the transceiver periodically tests the quality of the channels in an HF network, it stores the results for future use. The transceiver uses an averaging method to reduce the effect that the new reading may have on the current channel values. The **ALE LQA Average** entry enables you to select the averaging method used.

If you want to:

- disable the averaging feature and replace the old results with the new results, select **New**
- replace the old results with the average of the old and new results, select **Both**
- retain 75% of the old results and use 25% of the new, select **Mostly old**
- retain 87.5% of the old results and use 12.5% of the new, select **Old**

Default value: Both

CAUTION: LQA information gathered by the calling station during a Channel Test call in an ALE/CALM HF network (MIL-STD-188-141B ALE option) *replaces* any information stored for the channels and stations detected during the call.

ALE LQA Decay

The **ALE LQA Decay** entry sets the length of time it takes for LQA information to artificially decay, or switches off this feature.

When your transceiver periodically records the quality of the channels in an HF network, it stores the results for future use. Several factors can affect the accuracy of these results including:

- an insufficient number of ALE sounding transmissions being made in the HF network
- an insufficient number of ALE calls being made, which prevents the transceiver from exchanging channel quality information with other transceivers
- stations moving their location
- antenna loading, nearby physical structures, and local noise for stations mounted in vehicles

These factors can lead to the deterioration of good channels going unnoticed. To avoid this, the **ALE LQA Decay** entry artificially decays channel quality information over time. This forces the transceiver to continually work against the artificial decay to maintain an accurate picture of channel quality that does not overestimate actual conditions.

For mobile stations, the recommended decay period is 1 to 4 days. For base stations, the recommended decay period is 15 to 30 days.

Default value: 15 day

ALE Site Manager

The **ALE Site Manager** entry enables the transceiver to collect information on other transceivers with which it communicates. The following information may be gathered, depending on the value set for the ALE Site Manager:

- the ESN of the remote transceiver
- any other self addresses in the remote transceiver that are associated with ALE/CALM HF networks
- the tuning time of the remote transceiver's antenna

It requests this information up to three times when the **ALE Site Manager** entry is set to **Auto**, and only Codan HF transceivers in which the FED-STD-1045 ALE/CALM option is installed can respond.

NOTE: If the **ALE Silent Mode** entry is set to **Enabled**, the transceiver will not respond *automatically* to requests from other stations for site information.

If you want the transceiver to:

- only accept site information that is broadcast by other stations, select **Disabled**
- accept, respond to, and automatically initiate requests for site information, select **Auto**
- accept site information, respond to requests for site information, and allow manually initiated Broadcast Site and Request Site Get Status calls to other stations, select **Manual**
- accept site information and allow manually initiated Broadcast Site and Request Site Get Status calls to other stations, but not respond to requests for site information, select **Restricted**

Default value: Auto

The information collected:

- enables your transceiver to optimise calls to the other transceiver by adjusting the time taken to wait for the antenna to tune
- enables you to set a longer sounding interval

NOTE: Regardless of the value set, your transceiver always updates the site manager information that is broadcast from other stations.

Details of each value are provided in the table below.

Table 6: Values for the ALE Site Manager

Value	Description
Disabled	Your transceiver does not respond to requests for site manager information. You cannot broadcast your site manager information to other stations. You cannot request site manager information from other stations.

Table 6: Values for the ALE Site Manager (cont.)

Value	Description
Auto	Your transceiver *automatically* initiates requests for site manager information from unknown addresses with which it links. Your transceiver broadcasts its self addresses *automatically* in response to requests from other stations. Your transceiver broadcasts its self addresses when it receives a Request Site Get Status call from another station. Your transceiver broadcasts its self addresses when you make a Broadcast Site Get Status call. Your transceiver requests site information from other stations when you make a Request Site Get Status call.
Manual	Your transceiver broadcasts its self addresses *automatically* in response to requests from other stations. Your transceiver broadcasts its self addresses when it receives a Request Site Get Status call from another station. Your transceiver broadcasts its self addresses when you make a Broadcast Site Get Status call. Your transceiver requests site information from other stations when you make a Request Site Get Status call.
Restricted	Your transceiver broadcasts its self addresses when you make a Broadcast Site Get Status call. Your transceiver requests site information from other stations when you make a Request Site Get Status call.

NOTE: If your HF network consists of only a few Codan HF transceivers with the FED-STD-1045 ALE/CALM option installed and many other transceivers, you may want to set the **ALE Site Manager** entry to **Disabled** or **Manual** to reduce HF network traffic.

ALE Accept ALL Call

The **ALE Accept ALL Call** entry sets whether or not your transceiver accepts ALL calls that it detects.

ALL calls are not addressed to a specific station. If your station detects a call with a matching ALL address syntax, it enters the linked state and alerts the operator. If you do not want to receive either global or selective ALL calls, disable this feature.

Default value: Enabled

Related links:

ALE address syntax on page 409
ALL call on page 409

ALE Accept ANY Call

NOTE: The **ALE Accept ANY Call** entry is available if you have the MIL-STD-188-141B ALE option installed.

The **ALE Accept ANY Call** entry sets whether or not your transceiver accepts and responds to ANY calls that it detects.

ANY calls are not addressed to a specific station. If your station detects a call with a matching ANY address syntax, it sends a response in a random slot to the calling station. Your station enters a link when it receives an acknowledgement from the calling station. If you do not want to receive either global or selective ANY calls, disable this feature.

Default value: Enabled

Related links:

ALE address syntax on page 409
ANY call on page 410

ALE Accept Wildcard Call

NOTE: The **ALE Accept Wildcard Call** entry is available if you have the MIL-STD-188-141B ALE option installed.

The **ALE Accept Wildcard Call** entry sets whether or not your transceiver accepts and responds to Wildcard calls that it detects.

Wildcard calls are not addressed to a specific station. If your station detects a call with a matching Wildcard address syntax, it sends a response in a random slot to the calling station. Your station enters a link when it receives an acknowledgement from the calling station. If you do not want to receive Wildcard calls, disable this feature.

Default value: Enabled

Related links:

ALE address syntax on page 409
Wildcard call on page 413

ALE AMD Position

NOTE: The **ALE AMD Position** entry is available if you have the MIL-STD-188-141B ALE option installed.

The **ALE AMD Position** entry sets the position in which the transceiver transmits AMD information.

For:

- compatibility with other transceivers, select **Leading**
- the shortest possible call duration, select **Auto**

Default value: Auto

With ALE calling, the transceiver may cycle through several channels before a link is established. If you select **Leading**, the AMD information is always positioned in the leading part of the call. The data is transmitted prior to any response from the called station. If the transceiver abandons this channel and moves to the next best channel, it sends the AMD information again prior to any response being received.

NOTE: The leading position is required for interoperability with older Codan HF transceivers, and may be required for interoperability with transceivers from other vendors.

If you select **Auto**, the transceiver determines the best position for the AMD information in the call. It may move the AMD information from the leading part of the call, sending it after a response is received from the other station. **Auto** is the recommended value.

NOTE: When the **Auto** value is selected, the HF networks used to make the call must have the privacy mode set to **Plain**.

ALE BER

The **ALE BER** entry increases or decreases the value of the BER threshold used in BER testing.

ALE control information is sent and received in blocks of data called ALE words. Each word is sent three times to reduce the effects of fading, interference and noise. When the words are decoded, the transceiver records the number of errors that occurred in the transmission.

The number of errors indicates the quality of the channel used. A BER of 0 indicates perfect reception. A BER of 48 indicates that all bits of the ALE word were bad.

The **ALE BER** entry enables you to specify the number of errors that will be tolerated in this test, which indicates the quality of the channels on which you are prepared to accept calls.

Range: 0 to 48

Default value: 12

CAUTION: It is recommended that this entry is not altered from the default value.

Related links:

ALE Golay on page 227

ALE Call Scan

The **ALE Call Scan** entry sets whether or not your transceiver scans channels for incoming calls between a call attempt on each channel.

If you want the transceiver to:

- make outgoing calls without any scanning cycles between call attempts, select **Disabled**
- only scan the channels in the HF network through which the outgoing call is being made, select **Outgoing HF network**
- scan all the channels in the HF networks that are set to be scanned, select **Scanned HF networks**

Default value: Disabled

When this entry is set to **Disabled**, the normal ALE calling sequence is used, that is, the transceiver attempts a call on the first channel in accordance with its settings for LBT and number of retries, then tries the next channel, and so on until the call is successful. The transceiver may miss incoming calls during this outgoing call activity.

When this entry is set to **Outgoing HF networks** or **Scanned HF networks** the transceiver performs a scan cycle, then checks if the channel for the call attempt is unoccupied, and if so, attempts the call. If the call is not successful, the transceiver performs another scan cycle, then either retries the same channel (depending on the value set in ALE Retries), or moves to the next channel.

Related links:

ALE Retries on page 230

ALE Scan Cycles

The **ALE Scan Cycles** entry sets the number of scan cycles that the transceiver performs between call attempts when the **ALE Call Scan** entry is set to **Outgoing HF network** or **Scanned HF networks**.

Range: 1 to 5

Default value: 1

ALE Call Threshold

The **ALE Call Threshold** entry sets the minimum score for a channel to be tried in ALE calls.

When the quality of a channel is tested it is given an LQA score. This score is based on the results of local and remote measurements for BER and SINAD, and on the call weighting value set in the **ALE Call Weighting** entry.

NOTE: If the **ALE LQA Exchange** entry is set to **Disabled**, remote measurements are not used.

The **ALE Call Threshold** entry enables you to set:

- the minimum score a channel must achieve for it to be tried in ALE calls
- the minimum acceptable standard for the channel at the time when a link is being established

Generally, a score of 25% indicates the minimum acceptable standard for voice communication. A score of 50% or higher indicates a good channel.

The transceiver attempts to make calls on channels for which there is no score, but only after channels with a score above the threshold have been tried. If there are no channels that meet the ALE call threshold, the call is retried on the channels that provided the best response during the first attempt.

Range: 0 to 100

Default value: 25

Related links:

ALE Call Weighting on page 227
ALE LQA Exchange on page 229

ALE Call Weighting

The **ALE Call Weighting** entry weights the LQA score of ALE channels for data or voice.

When the quality of a channel is tested it is given an LQA score. The **ALE Call Weighting** entry enables you to weight the scoring process according to the use of the transceiver for voice and data communication. For example, if the transceiver is used to make voice calls, you would select **Mostly voice**.

When **Lowest acceptable** is selected, the transceiver attempts a call on the channel with the lowest frequency (with an LQA score above the set threshold), then attempts the channel with the next higher frequency and LQA score etc, until a link is established. In some situations where propagation distances may be less than a few hundred kilometres, weighting the LQA scores in this way increases their effectiveness.

Available values: Data only, Mostly data, Data and voice, Mostly voice, Voice only, Lowest acceptable

Default value: Mostly voice

ALE Golay

The **ALE Golay** entry sets the value of the Golay threshold used in Golay testing.

ALE control information is sent and received in blocks of data called ALE words. After a word is received, BER tested and accepted, the transceiver performs a Golay test to check it for errors, and correct it if necessary.

The number of error bits per word indicates the quality of the channel used to transmit the word. Golay testing can detect and correct up to three error bits per ALE word. It can also detect four error bits, but is not guaranteed to correct all four. Note that excessive errors can sometimes create false readings.

The **ALE Golay** entry enables you to specify the number of errors that will be tolerated and corrected in this test, which indicates the quality of the channels on which you are prepared to accept calls.

Range: 0 to 4

Default value: 2

CAUTION: It is recommended that this entry is not altered from the default setting.

ALE Hangup ALL Call

The **ALE Hangup ALL Call** entry sets whether or not the initiator of an ALL call can hang up the call to all linked stations.

During an ALL call, a link is established implicitly without the called stations responding to the calling station. When the **ALE Hangup ALL Call** entry is set to **Enabled**, the calling station sends a link termination sequence when **SCAN** is pressed. All stations that entered the link hang up the link and return to scanning when they receive this sequence.

Default value: Enabled

ALE Hangup Phone Call

The **ALE Hangup Phone Call** entry sets whether or not a member of an ALE link to an automated radio/telephone interconnect unit sends a link termination sequence when **SCAN** is pressed.

During any ALE Phone call, a link is established between the calling station and the station with an automated radio/telephone interconnect unit, for example, a Codan 3033 Telephone Interconnect. When the **ALE Hangup Phone Call** entry is set to **Enabled**, all stations receive a link termination sequence when **SCAN** is pressed at one of the stations. All stations that entered the link hang up the link and return to scanning when they receive this sequence. This value may be required in ALE/CALM HF networks with an automatic interconnect unit.

If the **ALE Hangup Phone Call** entry is set to **Disabled**, a link termination sequence is not sent when **SCAN** is pressed at any of the stations in the link. In this case, a hangup sequence must be sent separately to the radio/telephone interconnect unit to clear the telephone line, or it hangs up after a timeout period.

Default value: Enabled

ALE Hangup Voice Call

The **ALE Hangup Voice Call** entry sets whether or not a member of an ALE link sends a link termination sequence when **SCAN** is pressed.

During any ALE call, a link is established between the calling and called stations. When the **ALE Hangup Voice Call** entry is set to **Enabled**, all stations receive a link termination sequence when **SCAN** is pressed at one of the stations. All stations that entered the link hang up the link and return to scanning when they receive this sequence.

If the **ALE Hangup Voice Call** entry is set to **Disabled**, a link termination sequence is not sent when **SCAN** is pressed at any of the stations in the link. In this case, only this station ends its link.

Default value: Enabled

ALE LQA Exchange

The **ALE LQA Exchange** entry sets whether or not LQA information is exchanged between stations during each call so that the link quality can be assessed in both directions.

If you want the transceiver to:

- receive any LQA information sent from the other station, but not request this information, select **Disabled**
- send and receive LQA information to and from other stations during calls, select **Enabled**

Default value: Enabled

NOTE: When the **ALE LQA Exchange** entry is set to **Enabled**, it increases the length of time it takes to establish a call by approximately 4 seconds for every 10 channels on which the call is tried.

NOTE: LQA information is always exchanged during a Channel Test call in an ALE/CALM HF network (MIL-STD-188-141B ALE option), regardless of the setting in the **ALE LQA Exchange** entry.

NOTE: Exchange of LQA information may affect interoperability with non-Codan HF transceivers. If interoperability is affected, set the **ALE LQA Exchange** entry to **Disabled**.

ALE LQA Mapping

The **ALE LQA Mapping** entry determines the method by which the LQA information is stored within the transceiver, that is, according to frequency or channel number.

Available values: Frequency, Number

Default value: Frequency

ALE Retries

The **ALE Retries** entry sets the number of times the transceiver retries a channel when attempting to establish an ALE link before trying the next best channel in the HF network.

If you do not want the transceiver to retry channels, set the **ALE Retries** entry to zero.

Range: 0 to 5

Default value: 0

ALE Selective Message

NOTE: The **ALE Selective Message** entry is available if you have the MIL-STD-188-141B ALE option installed.

The **ALE Selective Message** entry sets whether or not you can send a message with a Selective call made in an ALE/CALM HF network.

If the **ALE Selective Message** entry is set to **Enabled**, you are prompted to include a message with a Selective call in an ALE/CALM HF network.

Default value: Disabled

ALE Silent Mode

The **ALE Silent Mode** entry prevents automatic ALE transmissions from the transceiver.

If you want the transceiver to:

- operate as a normal ALE station, select **Disabled**
- be able to make ALE calls but not receive them, and receive sounding signals but not transmit them, select **Enabled**

Default value: Disabled

ALE Soundings

NOTE: The **ALE Soundings** entry is available if you have the MIL-STD-188-141B ALE option installed.

The **ALE Soundings** entry sets the conclusion that the transceiver sends with a sounding.

If you want the transceiver to:

- switch off all sounding activity regardless of the **Sounding Interval** entry, select **Disabled**
- send a TWAS conclusion to the sounding, that is, not remain in a state that accepts a link, select **Default**
- send a TIS conclusion to the sounding, that is, pause at the end of the sounding ready to accept a link, select **Invite link**

Default value: Default

Related links:

Sounding interval on page 135

Settings > GPS

The GPS settings enable you to set up how the transceiver handles GPS information.

Related links:

GPS Detection Timeout on page 232
GPS Show Options on page 232
GPS Format Options on page 233
My Position on page 233

GPS Detection Timeout

The **GPS Detection Timeout** entry sets the time the transceiver waits to receive updated GPS information before it shows an error message. The **GPS Detection Timeout** entry is only active when the GPS Call option is installed.

NOTE: You cannot make Send Position calls until the transceiver receives valid GPS information. If you send an Emergency call before valid GPS information is received, the message **NO GPS UNIT CONNECTED** is sent with the call. If you receive a Get Position call, the same message is sent to the caller.

When valid GPS data is received, a message is shown on the screen to inform you of this.

If your transceiver is using static GPS information in the **My Position** entry, set the **GPS Detection Timeout** entry to **Disabled**.

Available values: Disabled, range specified below

Range: 5 to 30 min

Default value: 10 min

GPS Show Options

The **GPS Show Options** entry sets whether or not altitude and speed GPS information is shown on the GPS screen and user-status area. By default, altitude and speed data are hidden.

Available values: Show altitude, Show speed

Default value: Empty

GPS Format Options

The **GPS Format Options** entry sets how GPS information is formatted on the GPS screen and in the user-status areas.

Table 7: GPS formats

Format	Latitude	Longitude
Degrees and Minutes (MinDec)	S 34° 52.82	E 138° 41.26
Decimal Degrees (DegDec)	–34.8804	138.6877
Degrees, Minutes, Seconds (DMS)	S 34°52’49”	E 138°41’15”
Universal Transverse Mercator (UTM)	N: 6176km Zone: 54	E: 262km

If you want to show GPS information as:

- decimal degrees and minutes, select **Degrees and Minutes (MinDec)**
- decimal degrees, select **Decimal Degrees (DegDec)**
- degrees, minutes and seconds, select **Degrees, Minutes, Seconds (DMS)**
- a UTM grid reference, select **Universal Transverse Mercator (UTM)**

Default value: Degrees and Minutes (MinDec)

NOTE: The format of GPS information in the **My Position** entry, pop-ups, Call Log and Call History is DDMM.SSSS S, DDDMM.SSSS E, for example, 3452.82 S, 13841.26 E.

My Position

The **My Position** entry enables you to enter static GPS information for a fixed station, which typically does not have a GPS receiver attached. The transceiver uses this reference information to perform automatic distance and bearing calculations to a waypoint.

NOTE: Automatic distance and bearing calculations only occur when the GPS Call option is installed.

Table 8: Format of My Position information

Latitude	Longitude	Altitude, UTC, and type of reading
DDMM.SSS N/S 0 < D < 90 0 < M < 60 0 < S < 60	DDDMM.SSS E/W 0 < D < 180 0 < M < 60 0 < S < 60	
3452.810 S	13841.280 E	+12.5M 041725 (M)
3452.810S	13841.280E	

NOTE: The space between the latitude/longitude number and the direction indicator is optional.

Default value: Empty

Settings > Audio

The Audio settings enable you to set up how the transceiver handles sidetone volumes. Some audio settings are set automatically according to the requirements of the peripheral device connected.

Related links:

Peripherals on page 179
Ring Sidetone Volume on page 235
Call Sidetone Volume on page 235

Ring Sidetone Volume

The **Ring Sidetone Volume** entry sets the volume of the ring tones heard at the local speaker, relative to the volume setting for the speaker, as adjusted by the and keys.

Range: –16 to 16

Default value: 0

Call Sidetone Volume

The **Call Sidetone Volume** entry sets the volume of the calling tones heard at the local speaker, relative to the volume setting for the speaker, as adjusted by the and keys.

Range: –16 to 16

Default value: –4

Settings > Security

The security settings enable you to set up how the encryptor module in the transceiver behaves, and how you may select, edit or delete security keys.

Related links:

Encryptor Type on page 236
CES-128 Mode on page 236
Privacy Code on page 237
Standby After Selcall on page 237
Secure User Access on page 237
General Options on page 238
Secure Start State on page 238
CES Options on page 238
CES Key Prefix on page 238
Digital Key Prefix on page 239
Digital Voice Options on page 239
Digital Mute Start State on page 239

Encryptor Type

The **Encryptor Type** entry sets the type of encryptor used. The Envoy™ Transceiver may be used with a range of encryption modules, some of which use specific proprietary processes to encrypt the voice or data signal. Each value handles a specific process. The **Auto** value is used with all Codan proprietary encryption modules, such as CES-128 voice encryptors and AES-256 digital voice and data encryptors.

Available values: Auto, CIVS, VP-116

Default value: Auto

CES-128 Mode

The **CES-128 Mode** entry sets the default secure mode of the CES-128 voice encryptor. This mode is used each time you press SEC to go secure using the Global key, or the selected Corp-xx key.

NOTE: You can change the secure mode during a secure session. This does not change the value that you set for the **CES-128 Mode** entry.

If you want to:

- use a secure key for encryption that is common to all Codan CES-128 voice encryptors, select **Global**
- use a secure key for encryption that has been created for use in your organisation, select **Corporate**

Default value: Global

Privacy Code

The **Privacy Code** entry sets the level at which the CIVS scrambler operates when you press SEC.

NOTE: You can change the level during a secure session.

Range: 1 to 64

Default value: 1

Standby After Selcall

The **Standby After Selcall** entry sets the length of clear audio time after a secure call is made using a Codan Selcall HF network.

If your HF communication network operates with a Codan Selcall HF network, you will not hear revertives from the called station when secure mode is active. You can set a brief period following a call made in a Codan Selcall HF network during which the transceiver enters secure standby, listens for revertives, then returns to secure mode after any one of the following:

- the end of the period is reached
- you press PTT to begin transmission
- you receive encrypted audio from another station

The time required depends on the length of time the called station takes to tune the antenna, typically 12 to 15 seconds.

Range: 0 to 30 sec

Default value: 12 sec

Secure User Access

The **Secure User Access** entry sets the actions that can be performed at user level. You may select multiple actions.

If you want the user to be able to:

- change the secure index that is used for encryption, select **Select key**
- edit the key in a secure index, select **Edit key**
- erase the key in a secure index, select **Erase key**
- edit the first key only in the list, select **Edit first key**

Default value: Edit first key

General Options

The **General Options** entry sets options for all encryptors. You may select multiple actions.

To:

- enable the user to select the encryptor type via *hold* SEC, select **Allow user to select encryptor type**
- enable the user to erase CES secure keys and AES secure keys using the ⏻ + SEC hot-key sequence, select **Hot-key sequence to erase keys**
- prevent the user from exiting secure mode, select **Always secure**

Default value: Allow user to select encryptor type

Secure Start State

The **Secure Start State** entry sets the secure state of the transceiver at power up.

If you want the transceiver to:

- return to the secure state it was in prior to the transceiver being switched off then on again, select **Leave as is**
- go secure at power up, select **Secure on**
- remain clear at power up, select **Secure off**

Default value: Leave as is

CES Options

The **CES Options** entry sets the operational settings for the CES voice encryptor. You may select multiple actions.

If you want to:

- enable the use of a PIN for private communication within an organisation, select **Session PIN entry**
- hear all communications in clear mode, but switch to secure when an encrypted transmission is detected from another station that is in secure mode, or you press PTT, select **Secure standby**
- enable secure standby mode and allow transmissions in clear, select **Clear Tx during standby**

Default value: Empty

CES Key Prefix

The **CES Key Prefix** entry is used to set a common prefix for all CES secure keys. You may enter up to 4 alphanumeric characters.

Default value: Corp

Digital Key Prefix

The **Digital Key Prefix** entry is used to set a common prefix for secure keys used by digital encryptors. You may enter up to 4 alphanumeric characters.

Default value: TEK

Digital Voice Options

The **Digital Voice Options** entry sets whether the data rate and digital voice mute options are locked.

The data rate affects the speed with which digitally encrypted transmissions are sent. The data rate is shown in the centre of the screen as either 1k2 (1 200 bit/s) or 2k4 (2 400 bit/s). 1k2 is the preferred rate to use in the first instance, then if good HF propagation conditions exist, the 2k4 rate may be selected. Before choosing to lock the data rate, you must select the data rate that you want to use.

When the AES-256 digital voice encryptor is switched on, you have the option of selecting Voice mute (V), Selcall mute (S), or Digital Voice mute (D). Digital Voice mute enables digitally encrypted voice to be processed through to the user. Voice mute enables all clear and encrypted voice detected at your station to be processed, and Selcall mute enables clear and encrypted voice that is directed to your station to be processed. Before choosing to lock the digital voice mute, you must select the digital voice mute value that you want to use.

Available values: Lock data rate, Lock digital voice mute

Default value: Empty

Digital Mute Start State

The **Digital Mute Start State** entry sets the digital mute state of the transceiver at power up.

If you want the transceiver to:

- return to the mute state it was in prior to the transceiver being switched off then on again, select **Leave as is**
- use digital mute at power up, select **Mute on**
- remain unmuted at power up, select **Mute off**

Default value: Leave as is

Settings > Connectivity

The connectivity settings enable you to modify the network connectivity settings for non-standard Envoy™ installations.

Related links:

IP Address on page 240
Alias on page 240
Network Mask on page 241
DHCP Client on page 241
Default Gateway on page 241
USB IP Address on page 241
USB Network Mask on page 241
USB DHCP Server on page 241
RFU IP Address on page 242
RFU Alias on page 242
RFU Network Mask on page 242
RFU DHCP Client on page 242
RFU Default Gateway on page 242

IP Address

The **IP Address** entry sets the IPv4 address for the control point. If you have multiple control points for an RFU, you must set a different IP address for each control point, or enable the DHCP clients in the control point and RFU. If you have set the **DHCP Client** entry to **Enabled**, this entry is ignored.

Default value: 192.168.0.249 (handset), 192.168.0.247 (desk console)

Related links:

DHCP Client on page 241
RFU DHCP Client on page 242

Alias

The **Alias** entry sets the network alias for this control point. If you have multiple control points connected to an RFU, you can identify them with a meaningful name.

Default value: CP

Network Mask

The **Network Mask** entry sets the network mask for the control point. If you have set the **DHCP Client** entry to **Enabled**, this entry is ignored.

Default value: 255.255.255.0

Related links:

DHCP Client on page 241

DHCP Client

The **DHCP Client** entry sets whether or not there is a DHCP client active on this control point. Typically, the DHCP client is enabled if the control point is connected to a computer network that has a DHCP server enabled. If the DHCP client is enabled, it overrides any IP, network mask or gateway value that may have been entered manually.

Default value: Disabled

Default Gateway

The **Default Gateway** entry sets the IPv4 address of the default gateway for the control point. If you have set the **DHCP Client** entry to **Enabled**, this entry is ignored.

Default value: 192.168.0.1

USB IP Address

The **USB IP Address** entry sets the IPv4 address for the USB interface on the control point. The USB interface on the control point can also act as a DHCP server.

CAUTION: It is recommended that this setting is not changed.

Default value: 192.168.234.1

USB Network Mask

The **USB Network Mask** entry sets the network mask for the USB interface on the control point.

Default value: 255.255.255.0

USB DHCP Server

The **USB DHCP Server** entry sets whether or not there is a DHCP server active on the USB interface for this control point. The server provides IP addresses to any IP-based USB devices that have a DHCP client enabled.

Default value: Enabled

RFU IP Address

The **RFU IP Address** entry sets the IPv4 address for the RFU. If you have multiple RFUs on a computer network, you must set a different IP address for each RFU, or enable the DHCP client in the RFU. If the **RFU DHCP Client** entry is set to **Enabled**, this entry is ignored.

Default value: 192.168.0.248

RFU Alias

The **RFU Alias** entry sets the network alias for the RFU. If you have multiple RFUs connected to a computer network, you can identify them with a meaningful name.

Default value: RFU

RFU Network Mask

The **RFU Network Mask** entry sets the network mask for the RFU. If you have set the **RFU DHCP Client** entry to **Enabled**, this entry is ignored.

Default value: 255.255.255.0

RFU DHCP Client

The **RFU DHCP Client** entry sets whether or not there is a DHCP client active on the RFU. Typically, the DHCP client is enabled if the RFU is connected to a computer network that has a DHCP server enabled. If the DHCP client in the RFU is enabled, it overrides any IP, network mask or gateway value that may have been entered manually.

Default value: Disabled

RFU Default Gateway

The **RFU Default Gateway** entry sets the IPv4 address of the default gateway for the RFU. If you have set the **RFU DHCP Client** entry to **Enabled**, this entry is ignored.

Default value: 192.168.0.1

16 Access rights

This section contains the following topics:

Overview of access rights

Access to information in the transceiver can be restricted in two ways: locked and/or hidden. Using TPS, you can lock entries to prevent them from being edited, and you can hide them to prevent them from being shown, and therefore edited, at user level. This information is saved in the profile, and the profile is programmed to the transceiver.

NOTE: You cannot change these access rights from the control point of the transceiver.

The access rights that are set at admin level affect how an item is viewed and edited at user level. Access rights may also be applied at the factory level. You do not have access to factory level.

Access right	Description
AL	Items locked at admin level may be viewed at user level, but not edited. These items may be viewed and edited at admin level.
AH	Items hidden at admin level cannot be viewed at user level, and although not locked, cannot be edited. These items may be viewed and edited at admin level.
FL	Items locked at factory level may be viewed at admin and user levels, but not edited.

NOTE: Items that are locked from editing at the current level have a padlock indicator ( ).

Related links:

Menu structure on page 28
Logging in to admin level on page 34
Overview of basic and advanced views on page 31