- 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**).

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 that you want to use for this channel (in kHz, with up to three decimal points or 1 Hz resolution).

- ❑ Press ▼ to move to the **Rx** entry.

  The **Rx** entry is automatically filled with the transmit frequency.

- ❑ Enter the receive frequency (in kHz, with up to three decimal points or 1 Hz resolution), 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**.

    When the check box is selected, the item is enabled. When the check box is clear, the item is disabled.
  - 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 allocated to a scan table. A scan table enables you to manage how these channels are scanned using one set of properties.

- 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 16.
- 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 16.
  - 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 16.

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 16.

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, or you may leave the self address blank if a peripheral device has its own self address set.

  NOTE: Addresses ending in one or more 9 or 0 digits 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.

- Do *one* of the following:
  - If you want to add a contact, press (**Yes**), then continue from *Adding a contact* on page 17.
  - If you do not want to add a contact, press (**No**), then continue from *Selecting an antenna* on page 22.

Adding a contact

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

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.

- 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 18
  - a Message call, continue from *Adding a Message call* on page 19
  - a Phone call, continue from *Adding a Phone call* on page 21

Related links:

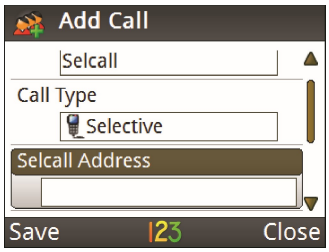
Contacts on page 119

Adding a simple call

A simple call is a call that requires only an address 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 **Address** | **Selcall Address** | **ALE Address** entry.



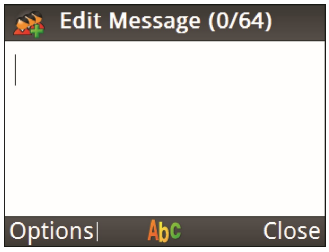
- Enter the address of the station that you want to call.
- Continue from *Completing the contact* on page 21.

Adding a Message call

To continue with adding a Message call:

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

NOTE: If you want to be prompted to enter a message at the time of the call, leave the value for the **Message** entry as **<Empty>**.

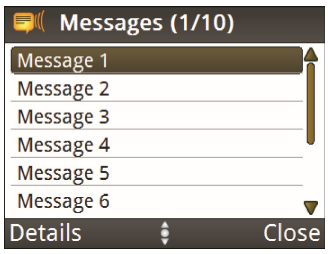


- If you want to enter a message:
  - *Hold* **#** to select a different input language, if required. If you are using a USB keyboard, press **Ctrl**+**Shift** to select a different input language.
  - Start typing the message.

    NOTE: Press **OK** to start a new line, if required.

  - Press ⌐ (**Options**), scroll to **Save**, then press ⌐ (**Select**) to add the message to the call.

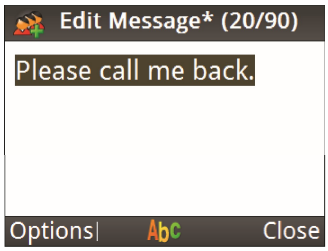
- If you want to select a message from a list of stored messages:
  - Press (**Options**), scroll to **Stored**, then press (**Select**).



  - 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 **Save**, then press (**Select**).

- Continue from *Completing the contact* on page 21.

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 21.

Completing the contact

To finish entering the information required for the contact:

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

  The call type is entered automatically as the call description.
- Enter a new description for this call, if required.
- 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 22.
  - If you do not want to select an antenna, press (**Close**), then continue from *Selecting a peripheral device* on page 22.

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:

- Press ▲ or ▼ to scroll to the antenna type that you want to use, then press **OK**.
- Press [Save] (**Save**) to save the information.
- Do *one* of the following:
  - If you want to connect an accessory to the GP port connector of the RFU, press [Yes] (**Yes**), then continue from *Selecting a peripheral device* on page 22.
  - If you do not want to connect an accessory, press [No] (**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. The default settings should be adequate for most situations, however, if you have special requirements, please see the Reference Manual (Codan part number 15-04188-EN Issue 1) for more detailed information.

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 customise 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 the value of an entry for a peripheral device has been changed 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, and a prompt to restart the transceiver is displayed, accept it to activate the new settings.

This page has been left blank intentionally.

3 Operating the transceiver

This section contains the following topics:

- *Switching the transceiver on and off* on page 26
- *The channel screen* on page 27
- *Selecting a channel* on page 31
- *Selecting a channel from a channel group* on page 32
- *Scanning channels* on page 35
- *Muting the transceiver* on page 38
- *Using the microphone* on page 39
- *Setting the basics* on page 40
- *Calling* on page 42
- *Using digital voice* on page 59
- *Using GPS* on page 68
- *Data options* on page 78
- *Using encryption* on page 89
- *Using frequency hopping* on page 99
- *Using a crosspatch* on page 105
- *Using Codan Convoy* on page 108
- *Using an external power amplifier* on page 109
- *Upgrading the transceiver via a USB stick* on page 113
- *Using GPS Plotter* on page 116
- *Using VCOM services* on page 117

Switching the transceiver on and off

Switching on the transceiver

To switch on the transceiver:

- Press .

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

Switching off the transceiver

To switch off the transceiver:

- Do *one* of the following:
  - *Hold* for 2 sec, then release.
  - Press , then press **OK**.

  The transceiver is switched off.

The channel screen

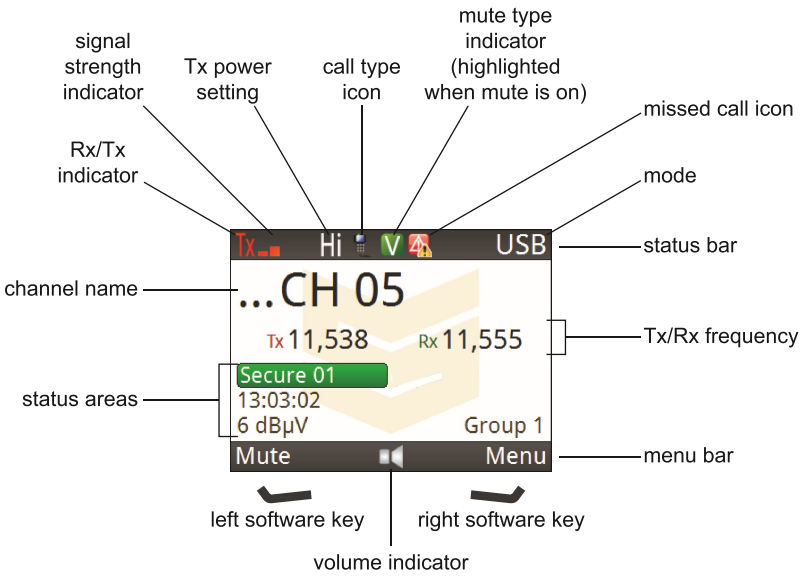
The channel screen shows the following information:

- the name of the currently selected channel

  NOTE: If **"..."** is shown before the channel name, then this channel is contained within a channel group.

- the transmit and receive frequencies, if applicable
- the status areas that show specific information about the transceiver
- 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, see Figure 7)
- the mute type indicator
- a missed call icon, if applicable
- the mode
- the crosspatch indicator, if connected
- the clarifier indicator, if set
- calling and system locks when the RFU is being used by a connected data application or another control point (see Figure 6).

Figure 5: Channel screen



NOTE: If you cannot transmit on the channel, **Inhibit** is shown as the Tx frequency.

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.

The status area of the screen provides six separate areas in which you can show information that is relevant for your operations. Your system administrator can choose the information that is shown in each status area. If encryptor/scrambler options are enabled, this information is shown in the top line of the status area (status areas 1 and 2). Any selections that have been made are discarded.

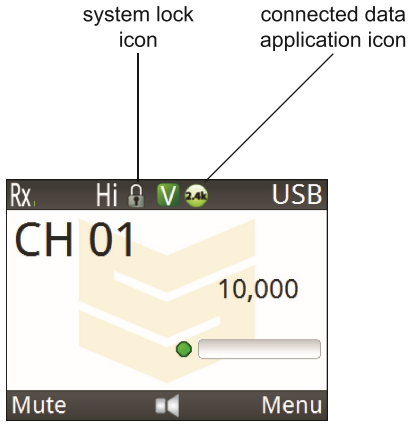
NOTE: For information on how to set up what is shown in the status areas, please see the Reference Manual (Codan part number 15-04188-EN Issue 1).

Your transceiver may have the option of selecting high, medium, or low power, as set in **Settings** > **Configuration** > **Tx Power**. By default, you can toggle between the Tx power settings by pressing the **6** key. **Hi**, **Med**, or **Lo** is shown respectively to the right of the signal strength indicator. If an external power amplifier is connected, **PA** may also be selected.

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.

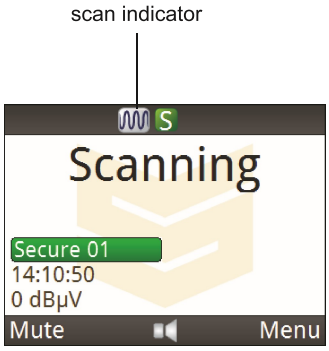
NOTE: For detailed information on call types, please see the Reference Manual (Codan part number15-04188-EN Issue 1).

Figure 6: System lock and connected data application icons



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

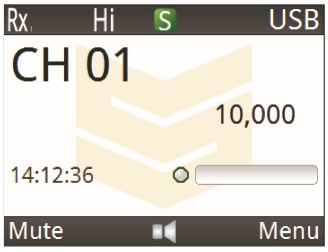
Figure 7: Scanning screen



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 transceiver's modulation method, 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.

Selecting a channel from a channel group

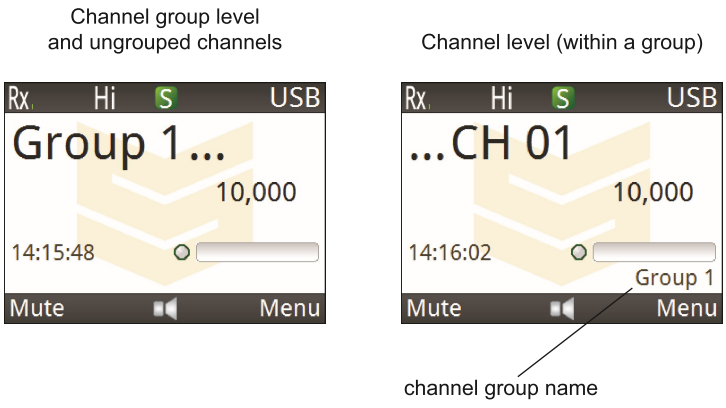
If channel grouping is enabled in **Settings** > **Control Point** > **Channel Grouping** and you have allocated channels to groups, indicated by **...** after a channel group name or in front of the channel name, you may have to switch to another channel group to find the channel that you want to select.

NOTE: Any channels that are not assigned to a channel group appear at the top level with the channel group names. These channels are selected by scrolling to the channel.

NOTE: You can set the name of the current channel group to show in a status area of the channel screen.

To select a channel from a channel group:

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

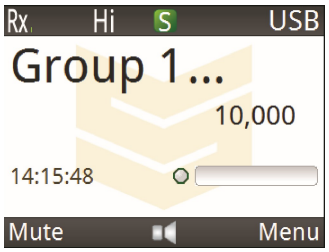


- If you are at the channel group level, which may include ungrouped channels, press ▲ or ▼ to scroll to the channel

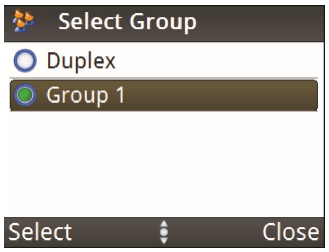
group that you want, then press **#** to view the channels within that group.

- If you are within a channel group but the channel that you want is not visible, do *one* of the following:

  - Press **#** to move to the channel group level, press ▲ or ▼ to scroll to the channel group that you want, then press **#**.



  - *Hold* **#** to see a list of channel groups, press ▲ or ▼ to scroll to the channel group that you want, then press ⌐ (**Select**).



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

  The channel is selected.

  NOTE: If you want to change the transceiver's modulation method, 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.

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 channels are scanned in a continuous cycle. By default, mute is switched on automatically when scanning is switched on.

NOTE: Only those scan tables that are set to be scanned have the channels scanned. Up to 100 channels may be scanned.

By default, 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 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 a signal, 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. Voice mute also detects calls that are addressed to any station on the scanned frequency, and any other channel disturbances. If your transceiver is set to selcall mute (**S**), it only pauses scanning when it detects a call addressed to your station, regardless of the call system used.

Your choice of voice or selcall mute depends on whether or not you have to detect voice signals, and how much noise and traffic you want to hear.

It is recommended that scanning is switched on when you are not using the transceiver to communicate so that you are able to receive calls on any frequency in the scanned scan tables.

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.

  If a call from a modem (or any other peripheral device) is in progress, you are prompted to break the system lock to resume 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, by default.

- While scanning is paused, do *one* of the following:
  - To speak on the selected channel, *hold down* PTT.
  - To resume scanning immediately, press **OK**.
  - To stop scanning completely, press **SCAN**.

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 on mute.

You can set the mute to switch off when a voice signal or any other calling activity is detected (voice mute **V**), or only when a call addressed to your station is received (selcall mute **S**). Your choice of voice or selcall mute depends on whether or not you have to detect voice signals, and how much noise and traffic you want to hear. When digital voice is active and scanning is switched off or paused, you can also set the mute to switch off only when a secure or clear digital voice signal is detected (digital voice mute **D**). The voice signal is output to the speaker of the 2320 handset and the H-250 speaker connected to the RF Unit, if available.

Switching mute on or off

To switch mute on or off:

- On the 2320 Handset, press ▬ (**Mute**) on the channel screen, scanning screen, or free-tune screen.

Selecting the mute type

To select the mute type:

- On the 2320 Handset, press **7**|**V/S** to toggle the mute type between selcall mute (**S**) and voice mute (**V**).

NOTE: When digital voice is active and scanning is switched off or paused, an additional digital voice mute (**D**) is available.