

Option Text Message Calling – The Basics

This datasheet is intended to give an overview of the functions and features, of Codan® NGT & 9323 Text message facility (Selcall Based).

Message Calling is used to send text messages to other stations in a HF network that you wish to communicate to them instead of using your voice. This is done in conjunction with your selcall number and after contact with the receiving station has been established. Refer *Selective calling(basics)* sheet.

Text messages of up to 64 characters can be sent from your NGT but can only be received by radios® that also have the facility. The NZ 4WD Radio Network logs Text messages sent to it from radios® via its Greymouth base. This is a free service available to all members and is viewable by members® on their computer screens.

When a radio receives a text message, it transmits a message back to acknowledge receipt of the message. This message tells the caller that the text message transmission was successful.

The called radio then alerts the operator to the incoming message by making a series of 5 x Pip® and displaying the caller® Address (Selcall Number) and the picture of an envelope indicating that the message has been received. The received message will be displayed across the bottom of the display.

Option GPS – Function, and Features.

This datasheet is intended to give an overview of the functions, features, and operation of Codan® NGT & 9323 GPS facility (Selcall Based).

What is Option GPS?

Option GPS is a password enabled software option for Codan NGT (and 93xx) series HF transceivers.

This option enables a transceiver, *when connected to an external GPS receiver*, to:

- Send its GPS location to another suitably equipped station
- Request the GPS location of another suitably equipped station
- Respond to a GPS location request from another station
- Attach its GPS location to an Emergency Call

Option GPS is not fitted as standard to NGT series transceivers but can be ordered at the time of purchase or retrofitted at a later date. Passwords to enable option GPS can be purchased from your Codan Dealer.

How is Option GPS used?

Option GPS is a tool used extensively in government and commercial circles for Occupational Safety and Health (OSH) purposes. More recently, with the introduction of [advanced GPS functionality](#), the usefulness of this option has been extended to include navigation functions (waypoints, bearing and distance display), and the ability to position stamp, pre-formatted short text messages. These features are finding application among mining exploration, transport, and international aid agencies, just to name a few. When combined with conventional and Internet based mapping applications, option GPS has become a powerful resource management tool in the government and commercial sectors.

The use of Option GPS in the Recreational sector has been restricted, primarily due to the limited number of service providers supporting this feature and by a lack of awareness amongst equipment owners on how to apply option GPS features to their recreational pursuits. Currently the NZ 4WD Network is the only HF network that supports GPS calls on its network base and compatible 9323 & NGT radios®.

One of the purposes of this data sheet is to raise awareness and understanding of the applications of option GPS. We are keen to work with organisations interested in establishing or adding GPS features to their portfolio of HF services.

GPS Calls

NGT series transceivers use the *Get Position* and *Send Position* call types to exchange GPS information between radios.

The “Get Position” Call

To request the position of a remote radio, we use the *Get Position* call (*GPS Beacon* in 93xx series radios). A successful request results in the longitude and latitude of the target radio being displayed on the NGT handset.

Get Position calls to a specific addressee can be stored in the NGT Address Book. To simplify the position request process, the address book entry can be used in conjunction with a Handset macro.

The “Send Position” Call

To Send your current position to another station we use the *Send Position* call (*Send GPS position to* in 93xx series radios). If the position is received successfully, the remote station sends a 4 beep reverive, and your longitude and latitude is displayed on its handset.

Send Position calls to a specific addressee can be stored in the NGT Address Book. To simplify the position send process, the address book entry can be used in conjunction with a Handset macro.

Note: The Send Position and Get Position calling procedures may differ from those described depending on the programming of the transceiver.

GPS Compatibility with other Manufacturer’s HF Radios

In the past there has been little/no compatibility between HF radio manufacturers’ Selcall based Message and GPS protocols, and it was normally not possible to send Message or GPS calls between different manufacturers’ transceivers.

Only the Barrett 2050 HF transceiver now has a %Codan Compatible+mode, designed to enable Message and GPS calls to be exchanged between current model Codan and Barrett 2050 transceivers. The Barrett transceiver does not however support any of Codan’s advanced GPS functionality.

Advanced GPS Functionality

As a logical extension to the standard GPS functions, NGT series transceivers have a number of unique features which enhance the usefulness of option GPS.

Transceivers fitted with firmware version 4.76 and later have the following advanced GPS feature set available:

- Bearing and Distance
- Waypoints
- Special Address Book Entries
- Variable Substitution

Bearing and Distance (to the target)

When a transceiver polls or has a position sent from another station, the longitude, latitude, and altitude (where available) of the target station are displayed in a window on the NGT handset. By clearing this window (using the **X** key) and viewing the call details in the **Calls In** log (by pressing the **#** key once), the true bearing and distance from the requesting transceiver to the target station is displayed.

Waypoints

The NGT Transceiver has the capacity to save a GPS location as a Waypoint in the Address Book. These waypoints can be sent to other stations, or used as a reference for navigation purposes.

The Address Book will store up to a maximum of 100 entries in total (200 depending on the transceiver model/age).

Waypoint management can be simplified by preceding the waypoint name with a common key word e.g. Wpt River Crossing, Wpt Bridge, Wpt Drill site, etc. Where the Address Book has *Grouping* applied, all waypoints will be stored under a common sub heading of Wpt, making them easy to find amongst other non waypoint entries.

2 – Displaying the Bearing and Distance to a Waypoint

To display the true bearing and distance from the current location to a waypoint, simply view the waypoint entry in the Address Book.

The bearing and distance is continually updated, making it possible to navigate to a waypoint using the bearing and distance display.

3 - Displaying the Longitude and Latitude of a Waypoint

To display the longitude and latitude of a waypoint simply look in the address book:

4 - Sending a Waypoint to another station

Waypoints are sent to other stations as a Message Call.

A *Call Successful* message is displayed after acknowledgment from the remote radio is received.

5 - Saving a Waypoint sent from another station

A received waypoint from another can also be saved to the address bok making distance and bearing to that radio available.

6 – Entering a Waypoint into the Address Book Manually

Users can enter waypoints into the address book in a similar way to entering a new contact.

Special Address Book Entries (My GPS)

Where an NGT transceiver is used in a fixed location (i.e. as a base station), and needs to know its own location for bearing and distance calculations, this positional information can be provided by either:

An external GPS receiver connected to the radio

or

A special entry in the transceiver's Address Book named **My GPS**

The **My GPS** entry has the current longitude and latitude of the station stored in the message field. This location is used when bearing and distance calculations from the base radio or when the base radio's position is requested by another station.

Variable Substitution

When sending a Message, the current GPS co-ordinates can be automatically inserted into the message text using variable substitution.

If the string \$GPS is included in the message text, the current Longitude and Latitude will replace the variable when the message is sent.

Variable substitution can also be used to simplify position reporting when using pre-programmed messages.

e.g. Arrived at camp \$GPS, Stopped for Lunch \$GPS, Finished for the day \$GPS etc.

When these messages are sent, the current GPS co-ordinates (longitude and latitude) are included with the message text, enabling the recipient to identify the status and location of the sender.