of the antenna, then secure the locking ring tightly into position.

Connecting the control cable to an automatic tuning antenna

To connect the control cable to an antenna:

❑ Connect the socket at the end of the ⅄ cable (Codan part number 08-07388-0xx) into the plug at the base of the antenna, then secure the locking ring tightly into position.

❑ Fit the plug at the opposite end of the ⅄ cable (Codan part number 08-07388-0xx) into the socket at the end of the ⅄ lead from the RFU.

Connecting the power supply

To connect the transceiver to the battery power supply:

❑ Connect the power supply cable (Codan part number 08-07407-00x)) to the plug at the end of the **12 V** cable connector from the RFU.

❑ Route the power supply cable according to the instructions supplied with the Vehicle Installation Kit (Codan part number 15-60041).

❑ Insert the 32 A fuse and holder in the power supply cable at a convenient location, as close as possible to the battery terminals.

❑ Connect the power supply cable to the battery terminals, black to negative, red to positive.

Earthing the transceiver

For information on earthing a mobile station, see the Installation section in the Reference Manual (Codan part number 15-04188-EN Issue 1).
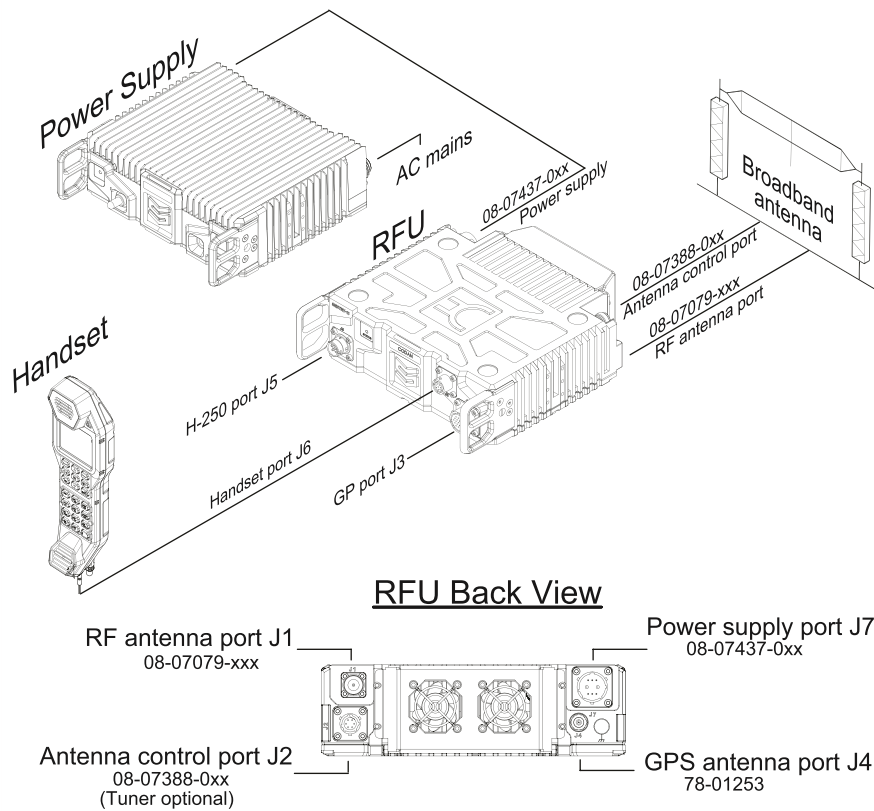
Earthing the antenna

For information on earthing a mobile antenna, see the documentation provided with the antenna.

Overview of fixed stations

A fixed station typically consists of an RFU, an AC transceiver supply connected directly to the mains, an antenna, control and accessory devices, ancillary equipment, and appropriate connecting cables. The transceiver is connected to the DC output lead of the transceiver supply. The antenna is connected to the transceiver by coaxial cable.

NOTE: A fixed station may also be powered via a battery system or solar power system.

Figure 42: Typical fixed station

Power Supply

AC mains

08-07437-0xx
Power supply

RFU

Broadband
antenna

08-07388-0xx
Antenna control port

08-07079-xxx
RF antenna port

Handset

H-250 port J5

Handset port J6

GP port J3

RFU Back View

RF antenna port J1
08-07079-xxx

Power supply port J7
08-07437-0xx

Antenna control port J2
08-07388-0xx
(Tuner optional)

GPS antenna port J4
78-01253

NOTE: A range of ancillary equipment may be connected to
the Sentry-H transceiver using the H-250 port and,
GP port connectors at the front of the RFU.

Cables in a fixed station

Table 9:   Cables for a typical fixed Sentry-H station

Cable	Symbol	Part number
Coaxial cable between RFU and antenna	Υ	08-07079-0xx

NOTE: Cable 08-07079-0xx is available in a number
             of shorter and longer lengths.

Mounting a fixed Sentry-H station

For general guidance on suitable locations for equipment and
installing the fixed station see the reference material on the
enclosed CD.

RFU and transceiver supply

The RFU and the transceiver supply are self-contained and are
usually stacked loosely. If you want to mount the RFU and/or the
transceiver supply, contact your Codan representative to obtain a
rack-mounting unit or the appropriate mounting cradles.

CAUTION: If you are mounting an RFU in a cradle, do not fit
           rubber feet to the bottom of the RFU.

NOTE: If you are transferring a mobile station to a fixed
             station, and you are not mounting the RFU in a
             cradle, rubber feet can be fitted to the bottom of the
             RFU. The rubber feet are available from Codan
             (Codan part number 15-60042).

Connecting a fixed Sentry-H station

NOTE: A typical fixed station is shown in

To connect a fixed station:

❑ Connect the handset cable to the handset connector located on the front panel of the RFU.

❑ Connect the plug at the end of the Ɏ cable to the socket at the end of the Ɏ cable lead from the RFU, then secure the locking ring tightly into position.

❑ Connect the plug at the opposite end of the Ɏ cable to the socket located at the base of the antenna, then secure the locking ring tightly into position.

Connecting an automatic tuner to the RFU and antenna (optional)

Typically, fixed stations are installed with a broadband antenna, which does not require a tuner. Some fixed stations may not have sufficient room to install a broadband antenna, so a smaller antenna with an automatic tuner may be used.

NOTE: The tuner used in most applications has connectors at the end of the cables attached to the tuner, as described below, however, you may have a tuner that has sockets on the connector panel of the tuner.

To connect the tuner to the RFU:

❑ Connect the plug at the end of the coaxial cable from the tuner to the socket at the end of the Ɏ cable lead from the RFU, then secure the locking ring tightly into position.

❑ Connect the plug at the end of the control cable from the tuner to the socket at the end of the Ɏ cable lead from the RFU, then secure the locking ring tightly into position.

❑ Connect the antenna to the antenna connector on the tuner, then secure it tightly into position.

Connecting the transceiver supply

To connect the transceiver to the transceiver supply:

❑ Connect the DC output from the transceiver supply to the plug at the end of the **12 V** cable lead from the RFU.

❑ Connect the transceiver supply to the AC mains supply.

Earthing the transceiver

For information on earthing a fixed station, see the Installation section in the Reference Manual (Codan part number 15-04188-EN Issue 1).

Earthing the antenna

For information on earthing a fixed antenna, see the Installation section in the Reference Manual (Codan part number 15-04188-EN Issue 1).

D Specifications

Table 10: Specifications

Item	Specification
Frequency range	Transmit: 1.6 MHz to 30 MHz Receive: 0.25 MHz to 30 MHz
Channel capacity (single or two-frequency simplex channels)	Sentry-H: 1 000
Operating modes	Single sideband (J3E) USB and LSB or switched USB/LSB, AM (A3E Rx, H3E Tx), CW/LMCW/UMCW (J1A, A1A)
Environment	Ambient temperature: −30°C to +60°C (–22°F to 140°F) MIL-STD-810G: Shock, Vibration, Humidity, Blowing Dust, Leakage, Immersion, Fungus, Altitude Immersion: IP67 Relative humidity: 95% Derate upper ambient temperature by 1°C (1.8°F) per 330 m (360 yd) above sea level
Cooling	Convection or fan (Option F)

Table 10: Specifications (cont.)

Item	Specification	
Size	2310 RFU:	221.6 mm W × 234.5 mm D × 66.5 mm H
		(8.7" W × 9.2" D × 2.6" H)
	2320 Handset:	67 mm W × 72.5 mm D × 210 mm H
		(2.6" W × 2.85" D × 8.2" H)
Weight	2310 RFU:	3.25 kg
		(7.2 lb)
	2320 Handset:	680 g with cable
		(1.5 lb)
Sealing	All units:	IP67

E   About this issue

This is the first issue of the Sentry-H transceiver Operator Guide. It relates to firmware V2.01, or later.

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F Compliance

This section contains the following topics:

Overview

This section describes how to ensure the Sentry-H transceiver complies with the European Radio Equipment Directive (RED) 2014/53/EU.

This section also contains the requirements for FCC and RCM.

European Radio Equipment Directive 2014/53/EU

The Sentry-H transceiver has been tested and complies with the following standards and requirements (articles of the Radio Equipment Directive 2014/53/EU):

- Article 3.1b: ETSI EN 301 489-1 V1.9.2

- Article 3.1b: ETSI EN 301 489-15 V1.2.1

- Article 3.2: Australian type approval according to AS/NZS 4770:2000 + transmitter RSE tests to the limits specified in Annex 6, section 6.1.2 of CEPT/ERC/Recommendation 74-01E

- Article 3.2: ETSI EN 300 440-1 V1.6.1/EN 300 440-2 V1.4.1

- Article 3.1a: assessed against ICNIRP and FCC requirements

- Article 3.1a: (LVD) EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011+ A2:2013

- Article 3.1a: (MPE) EN 62311:2008

Product marking and labelling

Any equipment supplied by Codan that satisfies these requirements is identified by the $C \epsilon$ marking displayed on the product.

Radiation safety (EU installations only)

To ensure optimal transceiver performance and to avoid exposure to excessive electromagnetic fields, the antenna system must be installed according to the instructions provided.

WARNING: High voltages exist on the antenna during transmission and tuning. Do not touch the antenna during these activities. RF burns may result.

WARNING: Install the earthing system or counterpoise as directed to prevent RF burns from any metal part of the transceiver.

WARNING: You should not transmit from your transceiver or tune the antenna unless people are beyond the safe working distance for the installation.

The following safe working distances apply:

- anywhere within the vehicle cabin with an externally mounted mobile antenna

- 3 m unobstructed, of any part of a mobile antenna

- 2 m of any part of a fixed antenna

Safe working distance is based on continuous exposure to CW-type transmissions, as set out in the Human Exposure Restrictions standard EN 62311:2008.

Declaration of Conformity

Hereby, Codan Limited declares that the radio equipment type 2310 HF Radio System, also known as Sentry-H transceiver, is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address:
https://www.codanradio.com/library/compliance-documents/

Protection of the radio spectrum

CAUTION: EU member states, EFTA countries and Switzerland restrict the use of HF radio communications equipment to certain frequencies and bandwidths and/or require such equipment to be licensed. It is the user's responsibility to check the specific requirements with the appropriate communications authorities in EU member states, EFTA countries and Switzerland. This equipment is subject to national or user licensing conditions before it can be brought into service.

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.

EMC and safety notices

Radiation safety (non-EU installations)

To ensure optimal transceiver performance and to avoid exposure to excessive electromagnetic fields, the antenna system must be installed according to the instructions provided.

WARNING: High voltages exist on the antenna during transmission and tuning. Do not touch the antenna during these activities. RF burns may result.

WARNING: Install the grounding system or counterpoise as directed to prevent RF burns from any metal part of the transceiver.

WARNING: You should not transmit from your transceiver or tune the antenna unless people are beyond the safe working distance for the installation.

The following safe working distances apply:

*   anywhere within the vehicle cabin with an externally mounted mobile antenna

*   1.8 m (6 ft) unobstructed, of any part of a mobile antenna

*   2 m (7 ft) of any part of a fixed antenna in a data installation of up to 150 W output

*   5 m (17 ft) of any part of a fixed antenna in a data installation of up to 1 kW output

Safe working distance is based on continuous exposure to CW-type transmissions, as set out in the ICNIRP Exposure Guidelines (1998) for occupational exposure. Safe working distance can be reduced with normal voice communication.

EMC

CAUTION: If it is necessary to remove the covers at any stage, they must be refitted correctly before using the equipment.

To ensure that compliance with the EMC Directive is maintained.

❑ Use standard shielded cables supplied from Codan (where applicable).

❑ Ensure the covers for the equipment are fitted correctly.

Electrical safety

To ensure compliance with the European Low Voltage Directive is maintained, you must install and use the Sentry-H transceiver in accordance with the instructions in the Sentry-H Operator Guide and the Sentry-H transceiver Reference Manual.

When using equipment that is connected directly to the AC mains these precautions must be followed and checked before applying an AC mains supply to the unit.

To ensure electrical safety:

❑ Use the standard AC mains cable supplied.

❑ Ensure the covers for the equipment are fitted correctly.

CAUTION: If it is necessary for a qualified electronics technician to remove the covers during servicing, they must be refitted correctly before using the equipment.

WARNING: The protective cover must always be fitted when the 3320 Power Supply is connected to the AC mains.

Earth symbols

RF earth connection points are provided on the Sentry-H transceiver andthe 3320 Power Supply.

Table 11:   Earth symbol

Symbol	Meaning
	Chassis earth

FCC compliance

FCC Part 90 certification

The Sentry-H transceiver has been tested and certified to FCC Part 90 (FCC identifier code DYY2310).

FCC Part 15 compliance

Any modifications made to the Sentry-H transceiver and the 3320 Power Supply that are not approved by Codan Limited for compliance could void the user's authority to operate the equipment.

The Sentry-H transceiver and the 3320 Power Supply have been tested and found to comply with the limits for a Class B device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by switching the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient or relocate the receiving antenna

- increase the separation between the equipment and receiver

- connect the equipment into an outlet on a circuit different from that to which the receiver is connected

- consult the dealer or an experienced radio/TV technician for help

RCM approval

The Sentry-H transceiver meets the requirements of the Australian Communications and Media Authority: Radiocommunications (MF and HF equipment—Land Mobile Service) Standard 2003 (AS/NZS 4770) and Radiocommunications (HF CB and Handphone Equipment) Standard 2008 (AS/NZ 4355).

Index

INDEX

U

USB Keyboard support 4
USB stick
    selecting tasks 113
user information
    structure 156

V

value
    finding 138
VCOM services
    use 117
view
    advanced 136
    basic 136
    overview 136
    switching between 137

W

waypoint
    adding 72
    finding 74
    selecting 68
    updating
        from a contact 70
        from Call History 69
    viewing 75
weight
    handset 172
    RFU 172
wizard
    adding channels to a scan table 16
    overview 10
    starting 12
word
    finding 138

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