

➤ **FEATURES AT A GLANCE**



- Future-proof SDR design
- Rugged smart handset with colour display and integrated GPS
- Multi-language user interface
- Optimised for mobile and base
- 150 W PEP
- Second Generation Digital Voice
- STANAG 4539/MIL-STD-188-110A/B data waveforms (up to 19k2 bps)
- AES-256 digital COMSEC
- Frequency Hopping
- Advanced ALE calling standards, including 3G ALE (STANAG 4538)
- Waterproof MIL-STD-810G construction
- IP/USB Connectivity
- Interoperable with Codan Patrol 2110M Manpack
- H-250 Accessories support
- Worldwide Codan service and support

Codan Sentry-H delivers a rugged and affordable radio solution for military organisations that demand uncompromised, secure long range voice and data communications. With 150 W RF power, it has been specifically designed to deliver the smallest and lightest form-factor for no-fuss integration into vehicle and base station configurations. In close consultation with military customers, Sentry-H has been optimised for ease-of-use and features an ergonomic smart handset with a colour, high-resolution multi-language interface and a host of other features.

PROVEN SOFTWARE DEFINED ARCHITECTURE

Codan Sentry-H uses the latest-generation high-performance Digital Signal Processor (DSP), Field-Programmable Gate Array (FPGA) and system on chip (SoC) technology. Built upon a proven SDR platform with thousands of hours of operation in the field, Sentry-H delivers market-leading performance and future upgradability through software updates. It enables organisations to install new capabilities, support evolving standards and ensure sustainability.

RUGGED AND EASY-TO-USE SMART HANDSET

In consultation with customers worldwide, The Sentry-H smart handset was designed to meet the unique operational and environmental challenges faced by military radio users.

The handset features a large colour display, and complete radio control and configuration via the easy to use keypad. With a loudspeaker mode, built-in GPS receiver/antenna, and USB programming port, the Sentry-H handset packs functionality and versatility into a rugged and ergonomic form factor.

HIGH POWER FOR BASE AND MOBILE CONFIGURATIONS

The Sentry-H is the military industry's first base and mobile radio system that delivers 150 W of RF power without the added cost, weight and complexity of an external amplifier. The Sentry-H has an in-built power amplifier that provides full-duty cycle performance across the complete HF band for all supported modes. Designed for maximum efficiency and a wide range of DC input voltages, the Sentry-H is the HF radio of choice for vehicle and other battery based systems.

The rugged RF unit is made out of a high-grade metal cast chassis and meets or exceeds MIL-STD-810G so you can be confident it will get the job done no matter where you operate.

INTUITIVE INTERFACE AND LOCALISED LANGUAGES

The Sentry-H handset user interface has been designed with ruggedness, and ease of configuration and operation as primary objectives. The intuitive icon-based menu system and easy to read layout, coupled with an ability to switch between multiple native languages (including data entry modes) ensures that you can focus more on your mission and less on complex radio operations and training.

A comprehensive range of ALE call types are supported including selective, message, phone, NET and GROUP calls so the radio can be adapted to specific communications scenarios. Calls can be made ad-hoc or via fully pre-programmed entries in the Contacts list.

Operator access to radio configuration parameters can be easily locked down or made available, depending on your unique circumstances.

SECURE DIGITAL VOICE FOR CLEARER COMMUNICATIONS

Codan's second generation Digital Voice technology provides a quantum leap in High Frequency (HF) voice communications. A full digital mode coupled with highly optimised vocoder technology provides voice quality similar to that experienced with cellular phones. With AES-256 encryption, Sentry-H delivers a fully secure, superior quality voice capability.

CHAT AND EMAIL DATA

The Sentry-H is hardware ready for data mode and is delivered with the Codan 2400 bit/s robust data modem as standard. This modem is supported with the Codan Chat application which provides peer-to-peer text chat, email, and file transfer with an easy to use GUI that also supports multiple languages.

With a simple software option, the Sentry-H may be upgraded to full MIL-STD/STANAG data capability with data rates up to 19k2 bps with Independent Sideband (ISB) using the Codan RC50-C HF email application.

COMSEC

A range of COMSEC options are available with the Sentry-H, from CES-128 grade voice encryption through to full AES-256 encryption of digital voice and STANAG/MIL-STD data. The AES-256 encryption supports 256 by 256bit keys with additional layers of protection possible by incorporating unique radio identifiers.

All voice encryption options for Sentry can be activated by a single hotkey, and are fully integrated with core radio functions like Selcall and ALE calling to ensure simplicity of operation. It is also possible to configure Sentry to automatically enable encryption on specified networks.

Codan Key Management is used to generate the key files, and Codan Key Fill software or a USB memory stick may be used to load the radio.

FREQUENCY HOPPING

The Sentry-H can be enabled with Frequency Hopping capability that can prevent third party monitoring of communications that may jeopardise an operation. The user can select between up to 31 user programmable hop plans, each comprising a hop name, rate, bandwidth and encryption key.

Additional information security can be achieved with the use of one time session PIN's, and also combining Frequency Hopping with CES-128 voice encryption.

ADVANCED ALE

The Sentry-H includes the latest generation 3G ALE technology providing the tactical user with fast linking and data capabilities. Mission critical messages are transferred securely by employing link protection and data encryption. Synchronised scanning provides more efficient use of existing bandwidth.

The Sentry-H is fully interoperable with military transceivers using JITC certified MIL-STD-188-141B ALE. You can initiate NET, GROUP, and WILDCARD selective calls, along with a number of advanced calls including, Phone, Message, GPS, and Status Calls. The Sentry-H is also interoperable with a number of commercial HF transceivers that are used by many non-government and humanitarian organisations.

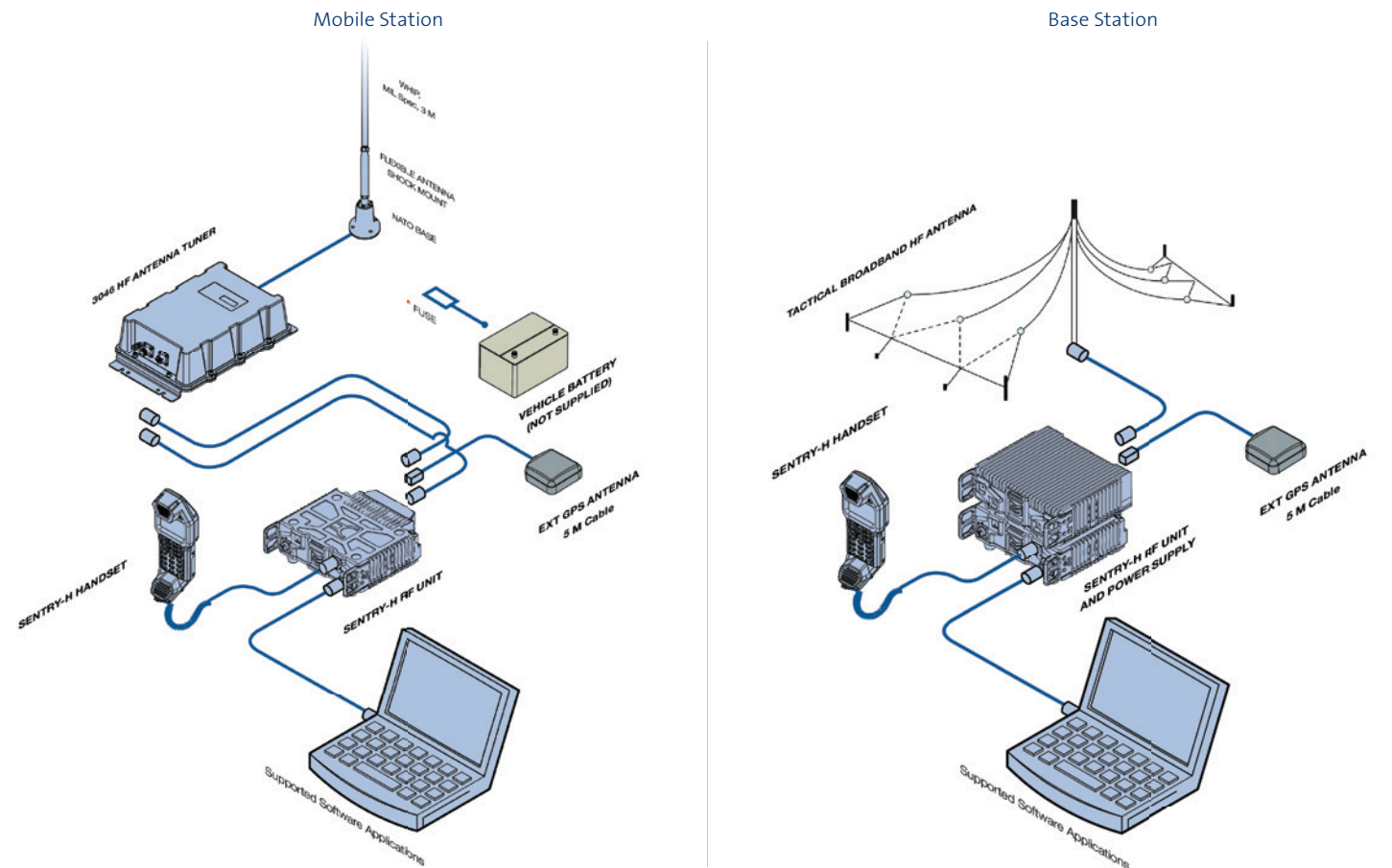
IP / ETHERNET / USB CONNECTIVITY

Sentry-H IP based design facilitates remote access and the Handset USB port provides a convenient point for connecting the Codan TPS-3250 transceiver programming application. Alternatively, a conventional USB memory stick can be connected for radio profiling, security key fill and firmware upgrades in the field.

GPS SUPPORT

Codan Sentry-H has embedded GPS receivers in the RF Unit and Handset with GPS, GLONASS and BEIDOU navigation systems supported. The Sentry-H RF Unit has a connection point for an external remote GPS antenna if needed.

Your distance and bearing from a remote HF station or waypoint can be displayed graphically via the handset user interface.



STANDARD CAPABILITIES

- 1.6 to 30 MHz frequency range
- 150 W RF power output
- 1000 channels
- 500 contacts
- Embedded GPS
- 2.4 kHz and wideband filters
- MIL-STD 188-141B ALE
- Robust ARQ data modem
- Codan Selcall

SOFTWARE APPLICATIONS

- TPS-3250 Radio Programming Software
- RC50-C HF Email (for STANAG/MIL modem)
- Codan Chat HF (for robust ARQ modem)
- Key Management Software
- Key Fill Software
- GPS tracking solution
- SprintChat and SprintNet

TRANSCEIVER BASED OPTIONS

- STANAG/MIL data & second generation Digital voice (2400 bps vocoder) bundle
- 3G ALE (STANAG 4538)
- AES-256 Encrypted STANAG/MIL data & second generation Digital Voice (2400/1200/600 bps vocoder) bundle
- CES-128 voice encryption
- Frequency hopping
- Languages (Dari, Farsi, Pashto, Arabic, French, Spanish, Russian, Chinese)
- Free tune transmit
- Independent Sideband (ISB)
- Software Developers Kit (SDK)

ACCESSORIES

- Tactical base antenna and mast solutions
- Vehicle / base antenna tuners
- Vehicle Shock Mounts
- General mounting accessories
- H-250 audio accessories
- H-250 remote speaker
- 3320 rugged power supply
- Morse key
- Crosspatch
- Telephone interconnect
- 500 W / 1kW booster amplifiers
- External GPS antennas

SPECIFICATIONS

GENERAL

Frequency Range	TX: 1.6 to 30 MHz; RX: 250 kHz to 30 MHz
Channels	1000
Programmable Contacts	500
Programmable Networks	20
Scan Rate	Up to 8 Channels per second
RF Input / Output Impedance	50 Ω (N-Type)
Input Voltage	10 V to 35 V DC
Supply Current	Rx: 650 mA (backlight min, audio muted); Tx: Two-tone 14 A typical, average speech 5 A (analogue), 12 A (DV)
Channel Filters	500 Hz, 2.4 kHz, 2.75 kHz, 3 kHz (software defined)
Frequency Stability	±0.3 ppm
Protection	Over-voltage/under-voltage/over-temperature/reverse polarity
GPS	RFU - external antenna, Handset - embedded receiver/antenna (GPS, GLONASS and Beidou)
Language Support	Multiple language user interface and documentation

TRANSMITTER

Power Output	150 W PEP — user programmable Hi, Med, Lo
Duty Cycle	100% voice and data
Spurious and Harmonic Suppression	>65 dB below PEP
Intermodulation	>31 dB below PEP
Carrier Suppression	>65 dB below PEP
Sideband Suppression	>65 dB below PEP

RECEIVER

Sensitivity	SSB: -125 dBm (0.12 uV)
Selectivity	>65 dB at -1 kHz at -1 kHz +4 kHz SCF (USB)
Image Rejections	>90 dB
Blocking	>95 dB
Audio Output	4.0 W into 4 Ω (external H-250 interface) 0.5 W into 8 Ω (handset)
Noise Reduction	DSP proprietary
Mute	Syllabic voice detection — user controlled

MECHANICAL

Dimensions (WxHxD)	RFU: 220 mm x 66.5 mm x 190 mm Handset: 67 mm x 210 mm x 72.5 mm
Weight	RFU: 2.82 kg; Handset: 280 g (no cable)

COMPLIANCE

Compliance	CE, FCC Part 90, AS/NZS 4770, AS/NZS 4355
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ENVIRONMENTAL

MIL-STD-810G	Shock, Vibration, Humidity, Blowing Dust, Leakage, Immersion, Fungus, Altitude
Immersion	IP67
Operating Temperature Range	-30 to +60 C
Relative Humidity	95%

DATA WAVEFORMS

Proprietary CHIRP/QPSK	Up to 6000 bps with compression
STANAG 4539 / MIL-STD-188-110A/B	75 to 9600 bps, up to 19,200 bps (ISB)

ECCM: FREQUENCY HOPPING

Hop Rates	6/12/25 hops per second (user selectable)
Hop Plans	31 user selectable (direct entry and programmable via Codan KMS/KFS & memory stick); 4-digit session PIN
Hop Sequence	Pre-defined and custom configurable
Hop Bandwidth	User configurable
Synchronisation	GPS based

DIGITAL VOICE

Vocoders	STANAG 4591 / MELPe (2400/1200 bps) TWELP (2400/1200/600 bps)
Features	Autobaud, automatic vocoder switching, full digital mode

ENCRYPTION

MIL/STANAG Data and Digital Voice	AES-256 (256 keys, direct entry and programmable via Codan KMS/KFS & memory stick)
Voice encryption	CES-128 (97 x 16-digit keys, direct entry and programmable via Codan KMS/KFS & memory stick, 4-digit session PIN)

LINKING

ALE	FED-STD-1045; MIL-STD-188-141B; STANAG 4538 3G ALE
Selcall	CCIR 493-4 proprietary and open standard

INTERFACES

ATU Control, General Purpose Interface, Handset Interface, DC supply	Fully sealed bayonet style MIL connectors
H-250	6-pin MIL supporting audio in/out, PTT, mic input, audio output, and fused 12 V DC out
GPS Antenna	SMB Socket
Antenna	N-type
Ignition Sense	Single wire input, part of DC battery cable

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CODAN RADIO COMMUNICATIONS

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