

Manpack Transceiver 2110M

➤ FEATURES AT A GLANCE

- Lightweight & rugged design
- Security & encryption
- Long battery life
- Advanced ALE (CALM)
- Intelligent battery system
- Interoperability with advanced calling facilities
- Smart, fast & fully automatic antenna tuner
- Clear communications with DSP noise reduction — *Easitalk*
- Innovative & user-friendly interface
- Internal Data Modem
- Integrated GPS receiver

Codan's 2110M Manpack Transceiver delivers uncompromising value to meet the most demanding mission requirements and conditions.

The 2110M features frequency hopping and voice encryption options that assures reliable and secure communications during critical operations. It also provides Interoperability with other military transceivers and advanced Automatic Link Establishment (ALE) options.

LIGHTWEIGHT AND RUGGED DESIGN

Codan's 2110M Manpack Transceiver is designed for harsh field conditions and to comply with the most demanding environmental standards including MIL-STD-810F.

The transceiver and battery compartments are made from lightweight alloys and high impact plastics. Both are capable of withstanding immersion to a depth of one metre. At 2.6 kg Codan's 2110M is amongst the lightest yet fully featured HF manpacks available today.

SECURITY AND ENCRYPTION

Codan's 2110M can be fitted with internal Frequency Hopping and/or *Voice Encryptor* options that can prevent third party monitoring of communications that may otherwise jeopardise an operation.

Codan's Frequency Hopping option is user configurable to enable selection of individual hop rates, either 6/12/25 hops per second, along with an unique 18 digit security hopping key. Frequency hopping can offer you additional protection to malicious jamming and signal interception. When combined with Codan's Voice Encryptor option, you can be assured sensitive information remains private and secure.

LONG BATTERY LIFE

Using state-of-the-art technology, Codan's 2110M has by far the lowest current consumption of any available manpack transceiver. This enables continuous operation for many days on a single battery charge, which can save some users from carrying spare batteries.

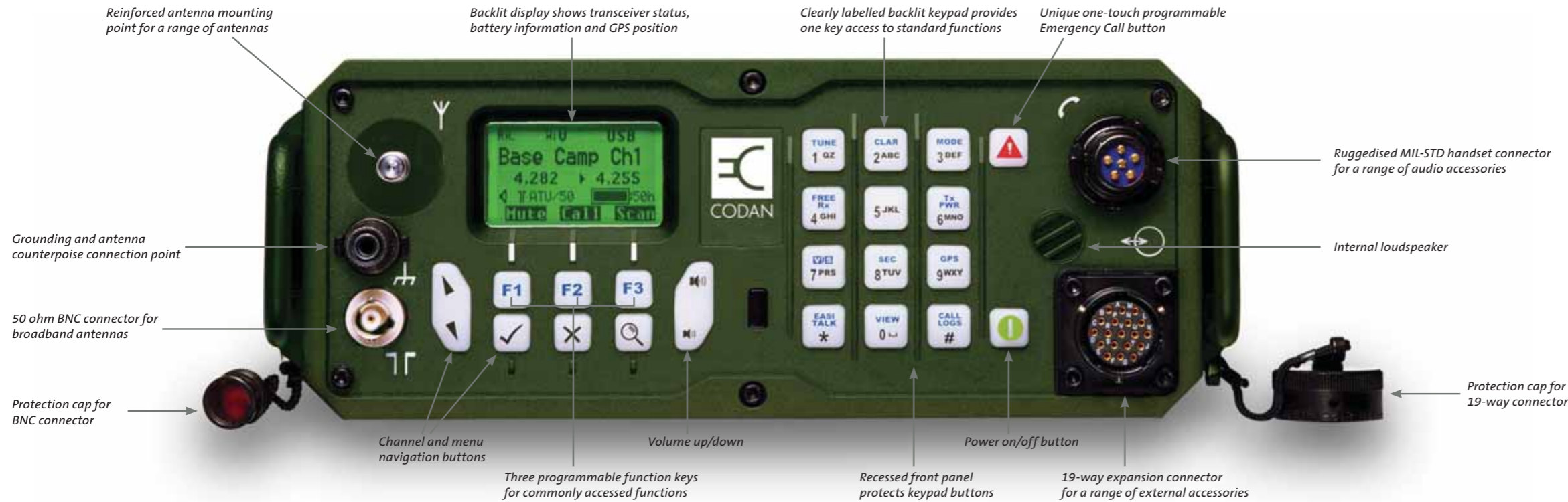
WORLDWIDE SUPPORT

Codan customers are supported with our worldwide network of Accredited Service Centres, agents and distributors—24 hours a day. Regular auditing and training by Codan technical staff ensure the best after sales service. The 2110M Manpack Transceiver is backed by a 3 year warranty.



2110M Manpack Transceiver

Manpack Transceiver 2110M



Please note that the picture shown (above) is not to scale

ADVANCED ALE (CALM)

The 2110M offers JITC certified MIL-STD-188-141B ALE as an option. With this option, the 2110M offers up to 600 channels and 20 networks.

Alternatively, the 2110M Manpack offers FED-STD-1045 ALE capability. It comes with Codan's advanced link management technology (CALM), which improves the performance of normal FED-STD ALE by maintaining channel quality information (LQA) on a 24 hour basis. This results in significantly less soundings and enables the transceiver to select the most suitable channel from the moment it is turned on.

With Codan's advanced ALE capabilities, the 2110M Transceiver is fully interoperable with other military and commercial equipment complying with these standards.

Other advanced ALE features supported include:

- Automated message processing capability including Remote Diagnostics, GPS polling and position sending, Phone and Emergency calls
- Listen-Before Transmit capability preventing ALE transmission on channels that are already occupied
- Simultaneous Multiple Network Scanning capability

INTELLIGENT BATTERY SYSTEM

Codan's unique battery management technology continuously monitors the battery condition and remaining capacity. The transceiver's front panel shows remaining operating hours, reassuring users of their ability to communicate in mission critical operations.

The intelligent monitoring system also monitors battery charging and prevents batteries from being overcharged.

This ensures maximum battery life and minimises operational costs.

You can charge the battery via the transceiver's front panel either while they are operating the manpack or separately.

The 2110M Manpack can be supplied with a range of battery charging solutions for either AC or DC sources.

INTEROPERABILITY WITH ADVANCED CALLING FACILITIES

The 2110M Manpack Transceiver 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 2110M is also interoperable with a number of commercial HF transceivers that are used by many non-government and humanitarian organisations.

SMART, FAST AND FULLY AUTOMATIC ANTENNA TUNER

The 2110M features an integrated antenna tuner that automatically detects the antenna and tunes it to the operating frequency. Initial tuning typically occurs within 2.5 seconds and takes only 50 milliseconds when tuning from memory.

The tuner is fully protected against unexpected antenna loads and mismatches, and overvoltage. A separate 50 ohm BNC connection is also available for broadband antennas.

The 2110M supports connection to a number of external antenna tuners including the Codan 9350M Automatic Tuning Whip Antenna.

CLEAR COMMUNICATIONS WITH DSP NOISE REDUCTION — EASITALK

Codan's Digital Signal Processing (DSP) techniques greatly reduce the effect of interference and channel noise to provide clearer communications. *Easitalk* operates at the press of a button and the result is a loud and clear signal even under harsh conditions.

INNOVATIVE USER-FRIENDLY INTERFACE

Codan's intuitive interface is easy to use right from the start and minimises training time and costs. The transceiver's menu driven interface includes a smart address book containing up to 200 names, call locations, and even pre-programmed text messages. It also features one key access to standard functions and pre-programmed sequences.

The front panel includes an internal speaker, a full alpha-numeric keypad and large display that are green backlit for covert night time operations. Backlighting may also be completely disabled.

The transceiver is highly configurable and supports both user and administrative access levels. This includes the ability to simplify the user interface by restricting a user to only those functions that are necessary to operate the transceiver and support the mission.

INTERNAL HIGH SPEED DATA MODEM

The 2110M can be optioned with a fully integrated internal high speed data modem. MIL-STD-188-110 A/B and STANAG 4539 waveforms are supported, with data rates of up to 9600 bps achieved. To ensure long operational use the internal modem auto-detects when a PC has been disconnected and switches to a power-save mode.

INTEGRATED GPS RECEIVER

The 2110M comes with an integrated GPS receiver option, which enables you to monitor your own location, and the distance and bearing from other transceivers within a HF network.

Emergency Calls sent through the unique one button emergency facility automatically include GPS position information.

Using Codan GPS and tracking software, a base station operator can track manpack units on a single map. Warning messages can be issued if the field operator enters a no-go area for added security. For extra protection, GPS data can be encrypted so positions are only seen by authorised users.

OPTIONS

- Frequency Hopping
 - Internal Data Modem
 - MIL-STD-188-141B ALE (JITC Certified)
 - Voice Encryption
 - Morse Key
 - GPS
 - 2700 Hz Bandwidth Filter*
- * Additional filters required for use with appropriate high speed data modems

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SPECIFICATIONS

GENERAL

Frequency range	1.6 to 30 MHz Tx, 250 kHz to 30 MHz Rx
Channel capacity	With MIL-STD-188-141B ALE option: 600 channels, 20 networks Without MIL-STD-188-141B ALE option: 400 channels, 10 networks Configurable up to 8 channels per second
Scanning	–30 to +60°C
Operating temperature range	±0.5 ppm
Frequency stability	12 V DC (10.8–15 V operational)
Power source	USB/LSB (J3E), AM (H3E), AFSK (J2A), CW (J1A)
Modes	Transceiver:
Size	245 mm W x 250 mm D x 92 mm H, with battery 245 mm W x 350 mm D x 92 mm H
Weight	Transceiver:
Environmental	2.6 kg (5.3 kg with 13 Ah NiMH battery)
Cooling	Per MIL-STD-810F including shock, vibration, humidity, immersion (1 hr at 1 m), altitude, fungus, salt fog, sand and dust, blowing dust, and rough handling
Transceiver conformance	Convection from case
Interfaces	Exceeds or meets requirements of AS/NZS 4770:2003, CE, NTIA and FCC
RF input/output impedance	Per MIL-STD-188-141B (required for ALE)
A/F power and A/F distortion	Serial RS232
Approximate battery life	Whip/long wire antenna via internal Automatic Antenna Tuner, or 50 Ω nominal Waterproof internal speaker; 0.5 W into 8 Ω, 10% THD External speaker on GPIO connector; 1 W into 4 Ω, 10% THD Approx. 50 hr (13 Ah NiMH), voice 10% duty cycle

TRANSMITTER

Power Output	25 W PEP (High)/5 W PEP (Low) selectable
Duty Cycle	50% with over temperature protection
Audio Bandwidth	300 to 2700 Hz (standard filter) 300 to 3000 Hz (optional 2.7 kHz BW Filter) 300 to 3300 Hz (optional 3.0 kHz BW Filter)

RECEIVER

Operating current	120 mA typical (speaker muted)
Sensitivity	0.14 µV for 10 dB SINAD
Mute	Syllabic Voice Detect
Audio Output	Handset: via 6-way connector Internal speaker: selectable on or off External speaker: via 19-way connector

FREQUENCY HOPPING

Hop rate	6/12/25 hops per second (user programmable)
Hopping plans	31 user selectable
Hopping keys	128-bit user programmable
Synchronisation	Internal Encryption Synchronisation Unit (ESU)

ANTENNA TUNER

Tuning	2.5 s typical first tune (fully automatic), 50 ms for memory recall Last tune stored for 100 frequencies
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INTERNAL MODEM (OPTIONAL)

Supported waveforms	Standard	Modulation	Data rates (bps)
	MIL-STD-188-110A	Coded PSK	75, 150, 300, 600, 1200, 2400
	MIL-STD-188-110B	Coded PSK/QAM	3200, 4800, 6400, 8000, 9600
	STANAG 4539	Coded PSK/QAM	3200, 4800, 6400, 8000, 9600
Data interfaces	USB (full opto-isolation) or RS232		



Values noted are typical. Equipment descriptions and specifications are subject to change without notice or obligation.



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