

# Patrol 2110 Manpack Radio

## Patrol 2110 Manpack Radio



The CODAN™ Patrol 2110 Manpack is the next generation of manpacks in the 2110 series. Building on the quality and reliability of Codan Manpacks, Patrol has a new rugged handset that offers extended capability and flexibility to users for their tactical requirements.

The Patrol smart handset enables remote operation of the Manpack, with the capability of the front panel now available in the palm of your hand. The handset's built-in speaker automatically switches to a loud mode when hung

in its custom designed cradle meaning calls can be heard when the handset is not being held.

With second-generation Digital Voice and 3G ALE, you have the confidence to communicate quickly and reliably without the need for existing infrastructure. The Patrol Manpack is extremely light and has the lowest power consumption of any available HF manpack, meaning you can operate continuously on a single charge for up to 65 hours. Comfortable to carry and packed with easy-to-use features via the rugged smart handset or front panel, the Patrol 2110 is ideal for all types of terrain and weather conditions, complying with the toughest environmental standards including MIL-STD-810F. The Patrol transceiver, handset and battery compartment are made from lightweight alloys and high-impact plastics, both capable of withstanding immersion to a depth of 1m.

The Patrol AES-256 or CES-128 encryption options ensure sensitive information can be communicated with confidence. Codan's 3G ALE option for Patrol enables robust and efficient on-air linking, providing capabilities for quick and reliable voice and data communications, as well as enhanced GPS tracking.

### Rugged Smart Handset

Custom designed to suit operational scenarios, the Patrol smart handset is manufactured from high-grade plastic polymer to meet users requirements for functionality and aesthetics. Built for the world's toughest environments, the handset meets MIL-STD-810G environmental standards for shock, vibration, dust, humidity and IP67 for water and immersion. With an internal microphone and speaker, custom-built cradle, storage bag, tamper resistant fasteners and extension accessories the Patrol smart handset is designed to give the user the best performance from their Manpack.

### Designed For The User



The Patrol smart handset was designed in consultation with customers worldwide to ensure we meet their operational needs. The handset features a high contrast clear LCD which is readable in all light conditions. The keypad has been designed for reliable activation and use by a gloved hand and is resistant to contaminants such as sweat, dirt and grease; the keypad labels are resilient to heavy use, and the earpiece is ergonomically designed for comfort during extended periods of use.

### Internal High Speed Data Modem

The Patrol 2110 can be optioned with a fully integrated internal high speed data modem with AES-256 bit encryption. MIL-STD-188-110 A/B and STANAG 4539 waveforms are supported, with auto adaptive 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.

[AT Communication ©](#)

### Integrated GPS Receiver

To enable the user to know their location, Patrol comes with an integrated GPS receiver which shows current coordinates and with the GPS Tracking option, enables monitoring of distance and bearing from other HF radios in the network. All GPS data can be encrypted so positions are only seen by authorised users.

### Features

- Rugged smart handset with an internal display, microphone and speaker
- Custom designed handset accessories for flexible configurations
- Tough and lightweight HF radio
- Digital Voice for clear communications
- Secure voice and data communications (AES-256)
- Advanced ALE calling standards, including 3G ALE (STANAG 4538)
- Over 60 hours of battery life
- Interoperability with other military transceivers
- Smart, fast and fully automatic antenna tuner
- GPS location and tracking
- 3 year warranty
- Worldwide training and support

SPECIFICATIONS	
GENERAL	
Channel capacity	With MIL-STD-188-141B ALE (JITC waveform) option: 600 channels, 20 networks Without MIL-STD-188-141B ALE option: 400 channels, 10 networks
Scanning	Configurable up to 8 channels per second
Linking and data	3G ALE (STANAG 4538) including FLSU, HDL, LDL, CAST (Codan Adaptive Signalling Technology) MIL-STD-188-141B ALE, MIL-STD-188-110A/B, STANAG 4539, 75 to 9600 bit/s
Vocoder	MELPe (1200/2400 bit/s); TWELP (600/1200/2400 bit/s)
Operating temperature range	-40 to +70°C, full spec -30 to +60°C
Frequency stability	±0.5 ppm
Clarifier	10 Hz
Power source	12 V DC (10.8 to 15 V operational)
Size	Transceiver: 245 mm W x 250 mm D x 92 mm H, with battery 245 mm W x 350 mm D x 92 mm H Smart handset: 70 mm W x 210 mm L x 72 mm H
Weight	Transceiver: 2.9 kg (5.0 kg with 8 Ah NiMH battery)

	Smart handset: 0.3 kg	
Environmental	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	
EMC	Complies with MIL-STD-461	
Cooling	Convection from case	
Transceiver conformance	Exceeds or meets requirements of AS/NZS 4770:2003, CE, NTIA and FCC	
Interfaces	USB (full opto-isolation) or RS232	
Approximate battery life	Approx. 50 hr (13 Ah NiMH), 1:9 Tx:Rx; Approx. 65 hr (17 Ah Li-FePO4), 1:9 Tx:Rx	
<b>RF</b>		
Frequency range	Transmit: Receive: Frequency Stability:	1.6 to 30 MHz, 10 Hz steps 250 kHz to 30 MHz, 10 Hz steps ±0.5 ppm from -30°C to +60°C
Modes	USB/LSB (J3E), AM (H3E), AFSK (J2A), CW (J1A)	
RF input/output impedance	Whip/long wire antenna via internal Automatic Antenna Tuner, or 50 Ω nominal	
Antenna tuner	Tuning:	2.5 s typical first tune (fully automatic), 50 ms for memory recall Last tune stored for 100 frequencies
Transmitter specifications	Power output: Duty cycle: Audio bandwidth:	25 W PEP (High)/5 W PEP (Low) selectable 50% with over temperature protection 300 to 2700 Hz (standard filter) 300 to 3000 Hz (optional 2.7 kHz BW filter)
Receiver specifications	Operating current: Sensitivity: Image & IF rejection: Spurious response: Mute: Audio output:	120 mA typical (speaker muted) 0.14 uV for 10 dB SINAD 85 dB ≥70 dB Syllabic Voice Detect Waterproof internal speaker; 0.5 W into 8 Ω, 10% THD External speaker on GPIO connector; 1 W into 4 Ω, 10% THD
<b>ENCRYPTION</b>	CES-128, 97 x programmable 16-digit keys, 4-digit PIN AES-256, 256 x programmable 256-bit keys	

**CODAN Patrol - 2110 Manpack Radio - Digital Voice - HF Transceiver**