CODAN

NGT *SRx*
Transceiver

The NGT *SRx* Transceiver is specially designed to provide comprehensive and advanced High Frequency (HF) communication solutions. It is cost-effective and can serve all your remote communications needs from high quality voice transmission to email, fax, GPS tracking and telephone interconnection.

While incorporating the usual features of Codan's leading edge HF radio technology and renowned reliability, the NGT *SRx* has been built as a one radio solution to suit any conditions or configurations including solar powered systems.

Codan's user-friendly interface and self-test capabilities ensure the NGT *SRx* is easier to install, operate and manage than other transceivers. It is also fully interoperable with other HF networks to provide seamless HF communication. With a memory capacity to support future enhancements, Codan's NGT *SRx* is truly capable of being easily upgraded to suit your needs.

F L E X I B L E ,   R E L I A B L E   A N D   C L E A R   C O M M U N I C A T I O N S

Robust base, mobile and portable configurations

➢ Codan's NGT *SRx* is designed for quick deployment in base, mobile and portable configurations. The innovative mounting equipment and connectors enable the NGT *SRx* to be easily installed and quickly configured.

➢ All Codan transceivers undergo rigorous testing and comply with the highest industry standards, including AS/NZS 4770:2000, AS/NZS 4582:1999, FCC, CE, and NTIA.

➢ The 50 ohm antenna output is fully protected against any load conditions including short circuit, open circuit and high VSWR, which can destroy other transceivers. The transceiver's power input is also fully protected against overvoltage and reverse polarity.

➢ Excellent sensitivity and the high dynamic range of the NGT receiver ensures better reception in the most difficult conditions.

The NGT *SRx* includes a high stability frequency reference of 0.3 ppm as standard, which ensures improved data transmission accuracy and performance.

➢ Field experience reveals an exceptionally high Mean Time Before Failure (MTBF) of 360,000 hours (30 years), which provides reliable and continuous communications in challenging conditions.

➢ A three year warranty is available for the NGT *SRx* Transceiver and all other Codan manufactured products as a guarantee of product quality. This is backed by a worldwide service and support network, and 24x7 in-house customer service support.

Better communications with DSP technology

➢ Cleverly decodes multiple Selcall protocols and ALE signals simultaneously to enable maximum interoperability with other manufacturer's network systems.

➢ Compresses the dynamic range of voice signals prior to transmission, resulting in clearer and more intelligible signals at receiving stations.

➢ Provides renowned clarity with noise reduction, *Easitalk*, by minimising the effect of interference and reducing noise when listening to a channel. *Easitalk* operates at the press of a button and the result is a loud and clear signal at all times. Users have a choice of algorithms to suit personal preferences or specific interferences.

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Codan provides a range of communication solutions to cover all modern needs.

Data, email and internet

➢ With a HF data modem and appropriate software, the NGT *SRx* operates seamlessly with all popular email applications, including POP3 and SMTP based applications.

GPS location and tracking

➢ When used with a GPS receiver, emergency calls sent to other transceivers or base stations automatically include the current GPS positioning.

➢ When used with Codan tracking software, a computer equipped base station can track hundreds of mobile units on a single map. This provides affordable fleet management and coordination.

For added fleet security, warning messages can be issued if a mobile enters a no-go area.

➢ For extra protection, GPS data can be encrypted so positions are only seen by authorised users.

Telephone interconnect

➢ With Codan's telephone interconnect solution, users have a seamless ability to make and receive telephone calls on an HF transceiver. When an unattended transceiver is called, the telephone caller can log their phone number in the transceiver's memory.

➢ With optional MS Windows® software, users can locally or remotely create and configure features such as access control rules, pre-programmed quick dial numbers, self addresses, and call log information.

The NGT *SRx* provides fully automated Selcall, Phone calls, Message calls, calls with GPS position information, and calls with remote program capabilities. All incoming calls are time-stamped and stored in a call log to identify precisely when each call arrived.

Selcall

➢ The transceiver provides full interoperability with all Selcall systems including UN, Codan and other manufacturers' systems.

➢ Selcall gives users more flexibility. An operator can call a single transceiver and only that unit will respond—no more listening to noise while waiting for a call. The called transceiver will also signal that the message has been received.

Phone call

➢ Telephone calls can be made seamlessly via bases equipped with a telephone interconnect. This is done without the need of the operator's involvement to control the telephone interconnect.

Message call

➢ Text messages of up to 90 characters can be sent or received without the need for an external computer or device. Messages can be entered via a handset, selected from preset messages, or entered from a computer terminal. The data may be encrypted for added privacy.

GPS call (with a GPS receiver)

➢ Displays a live GPS position on the handset by latitude and longitude, and enables users to send their position to another transceiver or interrogate another transceiver for its position.

Get Status call

➢ Delivers remote capability where another station can test parameters such as signal strength, battery voltage levels, VSWR and RF power output. This allows a technician to remotely diagnose a station and determine if servicing or support is needed.

Over-The-Air (OTA) remote capabilities

➢ Configure and manage an NGT *SRx* transceiver or network from a central location by sending text messages from the control transceiver. The ability to configure other transceivers, such as adding new channels and changing the scan table, is convenient when distance is a factor.

➢ Remotely disable or stun an NGT *SRx* by sending a command message from the base transceiver to the remote transceiver. In the event of theft, this prevents users from transmitting or receiving. Even after the transceiver is disabled, it remains on-air. This means the transceiver, if attached to a GPS receiver, can be interrogated for its position using a base transceiver.

Codan NGT SRx handset

Innovative handset and user-friendly interface

➢ Integrated compact design, similar to a mobile phone, provides easy control of the transceiver. The handset comprises of a microphone, a large and clear LCD backlit display, and keypad.

➢ Adjustable backlighting is automatically activated by incoming calls, or at the press of a button, and provides the best viewing angle for users. When the transceiver is idle, an auto-dim capability activates for efficient power usage.

➢ A smart address book stores up to 100 addresses, including names, call locations and even pre-programmed text messages. These can be easily retrieved via the user-friendly menu.

➢ Menu driven access enables easy operation for untrained users and efficient configuration and management of equipment and networks. The NGT *SRx* can be tailored according to the needs of different users or even emulate other manufacturer's transceivers, through features such as:

➢ Configurable hot keys to provide easy access to one-touch calling and pre-programmed sequences.

➢ Direct calling at the press of a button, including simple voice operation to sophisticated ALE-reliant calling procedures.

Smart monitoring and scanning

➢ When an operator is absent, the NGT *SRx* generates an automatic log containing the caller's identity, time and channel number that can be displayed upon their return.

➢ With multiple net adaptive scanning, the NGT *SRx* automatically adjusts scan times for multiple networks according to the channels' preset scan times. This feature gives the most efficient scanning time possible for both Selcall and voice detection.

➢ The NGT *SRx* features flexible scanning networks, with up to 10 scan tables containing 100 channels each. As well as supporting 500 ms Selcall scan rates and being fully adjustable, the transceiver's DSP is designed to reliably detect and decode Selcall signals within 250 ms and ALE signals within 125 ms. When compared with other transceivers, this enables twice as many channels to be scanned.

➢ The transceiver can scan all the channels from one or more enabled scan tables. When a particular channel is included in multiple scan tables, the channel is scanned once with the slowest scan time to give the shortest possible total scanning time. Up to 100 channels can be scanned in total.

➢ Adjustable pre-amble time for Selcall and ALE calling enables network response times to be optimised.

➢ With the syllabic Voice Mute, the NGT *SRx* effectively detects voice patterns even in high noise environments. This ensures mute is only opened after it detects speech on any scanned or monitored channels.

➢ When selective calling is used, users are able to scan multiple channels or networks. The Selcall Mute is only opened when the transceiver receives a selective call, and the operator is notified by a tone.

➢ When the NGT *SRx* receives no key entries or push-to-talk commands, it automatically returns to Selcall scan after a selectable time to avoid missed calls.

Multilevel access and security

➢ Lock and hide sensitive information by configuring different access levels for users and administrators. This ensures information or radio configurations are protected and cannot be changed or displayed without permission.

FED-STD-1045 ALE (Optional)

➢ Fully FED-STD-1045 ALE compliant and interoperable with MIL-STD-188-141B

➢ Unique capabilities such as maintenance of channel quality information (LQA) on a 24-hour basis. This enables the transceiver to select a suitable channel at any time of the day, from the moment it is switched on.

➢ Faster channel selection than conventional ALE system with significantly less sounding activity required.

➢ Listen-Before-Transmit capability that detects voice and data traffic on the channel before initiating ALE. This prevents calling on channels that are engaged.

➢ Virtual service addressing that supports multiple services such as voice, data and email.

➢ Full support of all transceiver messaging capabilities, including Phone calls, GPS polling and sending, Emergency calls, and Remote Diagnostics. This is achieved using the messaging capabilities of ALE.

➢ Multiple network scanning capability enables multiple networks to be scanned at the same time. An ability to simultaneously decode Selcall and ALE protocols on the same channel enables maximum interoperability in mixed vendor network environments.

Computer control and programming

➢ Computer controllable for uses such as messaging, GPS tracking and logging, and other automated applications.

➢ Conveniently programmable, even when it is mounted in a vehicle, through the RS232 port on the handset.

➢ Configurable using Codan's NGT System Programmer (NSP)—user-friendly PC based software designed specifically for the NGT *SRx*.

Innovative design for easy installation and serviceability

➢ The handset can be mounted in any position for easy access and viewing; especially important in a vehicle where space is limited. With the comprehensive user-friendly interface and full control over the handset, a driver or passenger can operate the transceiver from any location within a vehicle.

➢ The small RF unit can be mounted in a convenient location, like under a seat of a vehicle or in the trunk. The flying lead connector enables transceivers to be mounted in extremely tight spaces to provide easy installation, access and serviceability when compared to other transceivers.

➢ Extensive Built-In-Test Equipment (BITE) capability makes it easy for users or network administrators to test and report on their transceiver's performance.

➢ Easily replaceable modules ensure easy, fast and cost-effective maintenance.

➢ The NGT *SRx* makes it easy to upgrade to future technology. Updated software can be downloaded from a computer via a programming port on the handset, without taking the transceiver out of service.

KITS / ACCESSORIES / OPTIONS

Kits

The NGT *SRx* can be easily configured using the following kits:

➢ **Mobile kit** for use in vehicles—includes mobile automatic tuning whip antenna, mounting cradles and brackets, and vehicle installation hardware

➢ **Base Station kit** for use as a base radio— includes mains transceiver power supply and a choice of base station antennas

Accessories

➢ GPS receiver with NMEA0183

➢ 19" rack mounting unit

➢ HF data modem

➢ Telephone interconnect

➢ GPS tracking software

➢ Morse key

➢ Mobile suppression kit

Options

➢ Fan for 100% continuous duty cycle used with data transmission

➢ 500 Hz filter for CW and AFSK modes

➢ FED-STD-1045 ALE

➢ Voice encryption

Codan NGT SRx with a base console accessory

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GENERAL

Frequency range	Transmit: 1.6 to 30 MHz Receive: 0.25 to 30 MHz
Channel capacity	400 channels (single or two-frequency simplex channels)
Frequency generation	All frequencies generated by synthesiser and DDS with 10 Hz resolution
Operating modes	Single sideband (J3E) USB, LSB, switched USB/LSB, (AM:H3E), J2A (CW), J2B (AFSK)
Frequency stability	±0.3 ppm (−30 to +60°C)
Programming	Frequencies and options are programmed via the handset RS232 socket using NSP software and a PC Channels may be entered from the handset by qualified personnel or (where authorised) by the operator
RF input/output impedance	50 Ω
Supply voltage	13.6 DC nominal, negative earth Nominal operating range: 10.8 to 15 V Functional range (no spec): 9 to 16 V Reverse polarity protected
Overvoltage protection	Shutdown at 16 V DC nominal for duration of overvoltage up to 60 V
Display	Graphic LCD with 3 levels of backlighting and auto-dim
Selcall system	4 and 6 digit protocol based on CCIR 493, including UN, Codan and other manufacturer's systems
ALE system	Compliant with FED-STD-1045 and interoperable with MIL-STD-188-141B
Scan types	Selcall, ALE and voice (syllabic)
Scan tables and channels	10 tables with up to 100 channels per table Up to 100 channels can be scanned at the same time
Scan rate	Fixed or variable from 250 ms to 9.9 sec
Supply current	
Transmit	Two-tone: 14 A typical Average speech: 8 A
Receive	650 mA
Computer interface	RS232, 300 to 38400 baud
GPS interface	NMEA-0183 (4800 baud, RS232)

RECEIVER

Sensitivity	0.12 μV, −125 dBm For 10 dB SINAD
Selectivity	Greater than 70 dB at −1 kHz and +4 kHz reference SCF USB
Image rejection	Better than 70 dB
Spurious responses	Better than 90 dB
Intermodulation	The unwanted signal must have a level greater than 92 dB above the wanted signal
Audio response	−6 dB 350 to 2850 Hz
Audio power and distortion	4 W into 4 Ω, 5% THD

TRANSMITTER

Power output	125 W PEP ±1 dB
Duty cycle	100% for all modes with Option F
Spurious and harmonic emissions	Better than 65 dB below PEP
Carrier suppression	Better than 60 dB below PEP
Unwanted sideband	70 dB below PEP
Intermodulation (Two-tone test)	33 dB below PEP

PHYSICAL

Environment	
Ambient temperature	−30 to +60°C
Relative humidity	95% non-condensing
Size	
2012 RF Unit	210 mm W x 270 mm D x 65 mm H
2020 handset	65 mm W x 35 mm D x 130 mm H
Handset and speaker connector	35 mm W x 60 mm D x 22 mm H
Weight	
2012 RF Unit	3.3 kg
2020 handset	0.3 kg

STANDARDS

Electrical	Exceeds or meets requirements of: AS/NZS 4770:2000 AS/NZS 4582:1999 CE, NTIA and FCC
Physical	MIL-STD-810F
	Dust: method 510.4
	Shock: method 514.5
	Vibration: method 516.5

Values noted are typical. Specifications are subject to change without notice or obligation.