

## Product Sheet

# Transceiver with Ethernet

## 20-90 Series

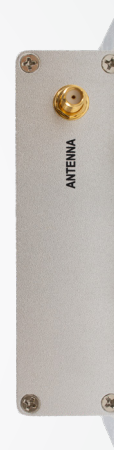
The 20-90 is a simple to configure POCSAG paging transceiver with a high sensitivity receiver combined with a 100mW transmitter. It operates over the frequency range of 140 - 176MHz (VHF variant) or 420 - 480MHz (UHF variant) decoding and encoding 512, 1200 or 2400 baud, alphanumeric or numeric messages. The 20-90 supports multiple message queuing and will queue up to four 73-character messages or more smaller messages.



Product code  
VHF: 20-90-0150



Product code  
UHF: 20-90-0450



### Key Features

- » Supports Salcom relay control protocol to control two on-board relay, plus several "virtual outputs".
- » Users can page a pager using over 2,000,000 codes, select from four priority levels, and include an alphanumeric message.
- » Supports batching of serially queued input messages.
- » TCP/IP connectivity.
- » Outputs can remotely activate input or send periodic messages, also allowing for acknowledgment of message receipt.
- » 5 user definable I/O configurable as input or outputs (two high current and three low current)
- » 2 clean-contact relay outputs.
- » Can transmit the received signal strength of the last received message allowing the receiver positioning and system health to be monitored.
- » FSK with NRZ Data.
- » VHF 140-176MHz and UHF 420-480MHz options
- » Can generate regular watchdog messages to check serial and radio link integrity

### Applications

- » Paging Transceiver: allowing both the encoding and decoding of paging messages.
- » Paging Receiver (only by configuration): allowing the decoding only of paging messages where desired.
- » Transmitter: With channel busy check function before transmissions.
- » Autonomous Store & Forward Paging Repeater with duplicate message reject.
- » Allows TCP/IP output for closed loop system monitoring of messages received.

### Operation

- » Can be controlled via an RS232 serial interface or TCP/IP to provide numeric, alphanumeric and tone only POCSAG encoding.
- » Can be configured to automatically respond with checksum information of the last received message.
- » Uses an intelligent self-adjusting channel busy check to prevent message collision or corruption.
- » The receiver has two clean contacts rated at 1A 24V DC operation. LEDs indicate receiver operation and status.

# Technical Specification

## VHF / UHF Transceiver 20-90-0150, 20-90-0450

Options	VHF: 20-90-0150 - UHF: 20-90-0450
Frequency Range	VHF: 140 - 176MHz - UHF: 420 - 480MHz
Frequency Selection	User configurable
Transmit Power	10mW, 20mW, 50mW or 100mW
Transmit Duty Cycle	100%
Channel Width	6.25 kHz, 12.5 kHz, or 25 kHz
Deviation	±1.0kHz, ±2.3kHz or ±4.5kHz
Modulation	GFSK with NRZ data (POCSAG)
Over-air Baud Rates	512, 1200, 2400
Receive sensitivity	-123 dBm at 512 baud -118 dBm at 2400 baud
Relays	Two Relays on RJ45 connector; one SPDT, one SPST
Definable I/O	Five I/O pins user configurable as input or output
Open drain outputs	Up to two 500mA open drain outputs with resettable fuses on RJ45 Up to three 5mA current limited open drain outputs on RJ12
Inputs	Up to five active low inputs on open drain output pins.
Serial Port	RS-232 on RJ12 connector. 9600 baud, no parity, 8-bits, 1-stopbit
Data interfaces	RS-232 (with adapter) and Ethernet
Serial Protocols	Salcom, Scope, TNPP v3.8
Configuration Software	Salcom Configuration Tool (Sacoto)
RF Connector	50Ω SMA
Power Connector	DC power pluggable terminal block (provided)
Power Supply	+13.8V typical (10 to 15 VDC range)
Power Consumption	Standby: 45mA Transmit: 90mA Ethernet: +35mA when connected to Ethernet Relays: +20mA per energized relay
Environmental Protection	Not suitable for unprotected outdoor use. Must be protected from adverse environmental conditions.
Operating Temperature	-10°C to +55°C (+14°F to +131°F)
Indicators	Power LED (Green) <ul style="list-style-type: none"> <li>• Slow Flashing = Normal Operation</li> <li>• Fast Flashing = low battery</li> </ul> TX/Busy LED (Red) <ul style="list-style-type: none"> <li>• Flashing fast = Transmitting</li> <li>• Solid on = Chanel busy</li> </ul>
Weight	190g
Enclosure Dimensions	130mm x 68mm x 31mm (W x D x H)
Enclosure Material	Extruded aluminium
Colour	Bright silver anodised aluminium
Approvals	20-90-0150: <ul style="list-style-type: none"> <li>» EN 301 489-2 V2.1.1 (2019-4) (Pending)</li> <li>» EN 300 224 V2.1.1, 2017-06 (Pending)</li> <li>» FCC CFR47 Part 15, subpart A and B</li> <li>» FCC CFR47 Part 90</li> </ul> 20-90-0450 <ul style="list-style-type: none"> <li>» EN 301 489-2 V2.1.1 (2019-4)</li> <li>» EN 300 224 V2.1.1, 2017-06</li> <li>» FCC CFR47 Part 15, subpart A and B</li> <li>» FCC CFR47 Part 90</li> <li>» AS/NZS 4769.1:2000 + Amendment 1:2002</li> </ul>

NB: All specifications and applications are indicative only and subject to change without prior notification.