

# AN400 CROSSBAND REPEATER



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COMMUNICATIONS

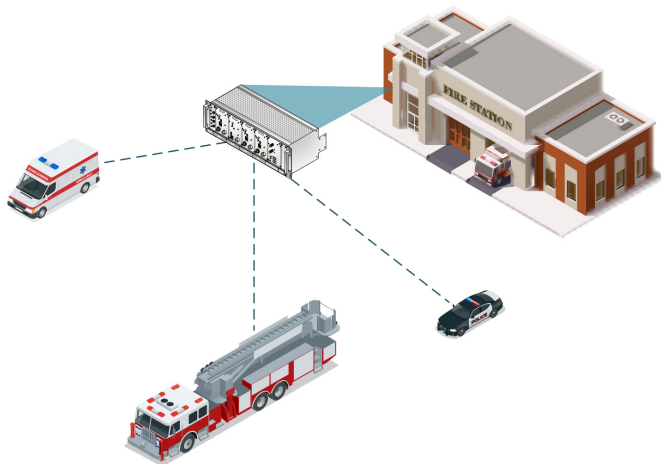
## THE BENEFITS

A typical crossband repeater system offers robust construction, low current consumption and extreme temperature tolerance ( $-30^{\circ}$  to  $+60^{\circ}\text{C}$ ) enabling them to be deployed in some of the world's harshest environments such as Alaska and Siberia. Redundancy switching is available as an option.

## KEY FEATURES OF THE SOLUTION

- Capable of receiving and transmitting on any combination of frequency bands, including VHF, UHF, 700 MHz and 800 MHz
- Robust construction, low current consumption and extreme temperature tolerance ( $-30^{\circ}$  to  $+60^{\circ}\text{C}$ )
- Redundancy switching is available as an option

## CROSSBAND LINK REPEATER SYSTEM INTEROPERABILITY



## THE CUSTOMER

A crossband repeater has the ability to transmit and receive on different bands. For example, if the crossband repeater received a VHF signal, it could retransmit the signal on UHF, and if the crossband repeater received a UHF signal, it could retransmit the signal on VHF. The system can also be configured to retransmit on UHF to its own users at the same time it retransmits on VHF and vice versa. This system does not need to use different frequency bands, only different frequencies within that band (see diagram). Codan crossband repeaters are capable of receiving and transmitting on any combination of frequency bands, including VHF, UHF, 700 MHz and 800 MHz.

An elaborate example of crossbanding is shown in the photo to the right. This system is being used by an emergency response organization that had a need to be able to communicate with multiple agencies in an emergency. In the event of a regional emergency this multi cross band system can be quickly deployed to enable all agencies to talk to each other as they jointly respond to the regional emergency. Other examples of cross band radios include emergency response organizations:

- **Search and Rescue** – Similarly in a search and rescue operation a cross band repeater allows the ground commander to coordinate search operations between the various agencies assisting in the search.
- **Fire Departments** – Fire departments can benefit from a cross band repeater in two ways. First they can cross band between their fire fighters (using UHF radios) and supporting helicopters (using VHF radios) that are being used in rescues from the tops of buildings. Secondly, it is possible to create tri-band cross banding to also allow the fire department to communicate with the police department (VHF radios).
- **Military** – the military will use crossbanded radios for non-combatant applications such as coordinating movement of equipment in the field or for firing range communications.

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## SPECIFICATIONS

### REQUIRED EQUIPMENT

<b>xT-4Exxx-00-x00</b>	Two VHF/UHF Transmitter Modules
<b>xR-4Exxx-x0-000</b>	Two VHF/UHF Transmitter Modules
<b>SR-39-1</b>	Subrack
<b>SM-3-H0-014-00</b>	System regulator
<b>A-MIC-01</b>	Microphone
<b>IMxx-xxxxxxx</b>	Instruction manuals
<b>CI-RC-4L-00</b>	Audio control card

### OPTIONAL EQUIPMENT

<b>AMP-4-xxx-30-00</b>	30 Watt Power Amplifier
<b>SM-3-H0-R1N-00</b>	System Regulator with Single Antenna Relay
<b>CI-RC-4M-G2</b>	Multiple Link Controller
<b>AC-SCS-xRS</b>	16 Channel Frequency Select Rotary Switch
<b>PSA-4P-01</b>	AC Power Supply
<b>PSD-15/08-P0-xx</b>	DC to DC Power Supply

## FREQUENCY BANDS/RF POWER OUTPUT

- 136-174 MHz / 8, 30, 100 Watts
- 380 – 406 / 406 – 430 / 430 – 450 / 470 – 520 MHz / 8, 30, 100 Watts

## RELATED APPLICATIONS

- AN300 Multiple Linked Repeater System

## AVAILABLE OPTIONS/FEATURES

- CTCSS, DTMF, DCS or NAC Control of Links

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

**APPLICATION NOTE:** Codan Crossband Repeater System, 12-20281-EN, Issue 6, © 2018

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