



## ACU-T™

### Tactical Interoperability



With Raytheon's ACU-T Tactical Interconnect System, a radio gateway can be rapidly configured and deployed to meet almost any interoperability application involving radios and telephones and Radio over Internet Protocol (RoIP).

#### Benefits

- Modular tactical interoperability system employing proven ACU Technology.
- Small, rugged design suitable for tactical and rapid deployment applications.
- Sophisticated DSP algorithms provide adaptive hybrid, VOX, VMR (voice modulation recognition), and noise reduction.
- Deployable as an above or below ground repeater. Radios can be extended up to 1000' using optional extension cables.
- Interface cables for more than 175 popular radio models can be ordered from Raytheon.
- Top cover display provides visual indication of current system interconnection status.
- ACU controller software provides full system status and control from a PC, locally or remotely over an Ethernet network.
- Provides six (6) connections over three (3) independent nets.

#### ACU-T Overview

The ACU-T provides tactical packaging for the proven ACU-1000 modular interoperability system. The flexible control and status monitoring options of the system make the ACU products truly flexible and versatile. Interconnections between any of the system radios and telephones (and a local operator) can be initiated and terminated in a variety of ways:

- Local operator using the system keypad
- DTMF signaling from radios or consoles
- Using the ACU Controller software interfaced to the ACU-T's serial or Ethernet control ports

The six devices interfaced to the ACU-T (radios, telephones, and local operator) can be interconnected in any combination - from three nets of two users, to a single net with all six users connected together.

The ACU-T's keypad, handset, speaker, and LEDs allow full local control and monitoring of the interoperability system. The ACU controller and WAIS Controller software provide multipoint control and monitoring capability over a network. The control software and DSP algorithms allow the ACU-T to be optimized for best performance with connected radios or other equipment.

All of the interface features that made the 19' rackmount ACU-1000 the industry leader in interoperability solutions are available with the ACU-T, including: a choice of VOX, VMR, or Hardwired COR, Digital Audio Delay, and COR Sampling to ensure that a false key or noisy signal can't tie up a net.

The Raytheon ACU products offer a truly modularized approach to controlling and

interconnecting various types of communications systems. The basic system components are interface modules, each designed to connect a specific communications medium. The ACU-T's interface modules are the same as those used in the ACU-1000, and the internal and control software is likewise cross compatible between the two products.

The ACU-T provides all of these features in a small rugged unit suitable for tactical or vehicular use and rapid deployment. Weighing in at less than eight pounds, the ACU-T incorporates a drip-proof top cover, quick connect/disconnect CPC connectors for radio interfacing, and a keypad, speaker, and handset for local control and monitoring. The unit is DC powered, allowing easy battery or vehicular use. It may also be powered from AC using the adapter provided.

# ACU-T

## Capabilities

- Voice prompts and LEDs provide connection status for each port and help guide operation
- Can interconnect radios in any band including HF, VHF, UHF, P25, 800Mhz, and Nextel
- Radio templates for supported devices provided in ACU Controller software
- Connection to a Wide Area Interoperability System using the WAIS Controller Software
- External audio connectors for a variety of handset and headset support

## Applications

- Mobile
- Transportable Pelican case

## Mission Support

- Optional extended warranty with 24/7 support (additional charge)



Photo caption: Left: An ACU-T rear view showing connectors. Right: ACU-T in transportable Pelican case featuring power supply, battery, power cables, manual, and storage area for radio cables and accessories.

### DSP-2 RX Audio Input

<b>Input Impedance:</b>	Balanced & Unbalanced 600 ohms or 10k ohms
<b>Input Level:</b>	-26 dBm to + 10dBm, adjustable

### DSP-2 TX Audio Output

<b>Output Impedance:</b>	Balanced or unbalanced 600 ohms
<b>Output Level:</b>	-20dBm to +11dBm, adjustable
<b>Frequency Response:</b>	100 to 3200 Hz $\pm$ 2dB
<b>Distortion:</b>	Less than 0.2%

### DSP-2 COR Input

<b>Input Impedance:</b>	47k ohm pullup to +5V
<b>Polarity:</b>	Active low or high, selectable
<b>Protection up to:</b>	$\pm$ 100 VDC

### DSP-2 PTT Output

<b>Output Type:</b>	Open drain
<b>Polarity:</b>	Active low or high, selectable
<b>Maximum Sink Current:</b>	100 mA
<b>Max Open Circuit Voltage:</b>	+60 VDC

### PSTN-1 Telephone Interface

<b>Telephone Line Levels:</b>	Adjustable -24 dBm to 0 dBm in 3 dB steps
<b>Hybrid Type:</b>	DSP adaptive hybrid; -30 dB broadband balance
<b>Frequency Response:</b>	100 Hz to 3200 Hz $\pm$ 2 dB
<b>VOX Threshold:</b>	Selectable -19, -16, -13, and -10 dB relative to telephone line level
<b>VOX Hangtime:</b>	Selectable 0.5, 1.0, 1.5, and 2.0 seconds

### General/Environmental

<b>CPM Serial Port:</b>	RS-232 DCE connector (female DB9). Baud Rates:1200, 2400, 4800, or 600, 115,200 software selectable
<b>Chassis Mounted:</b>	Speaker on/off switch, Power on/off switch, charger switch, CPC connectors, 1/8"headphone jack, volume control, PTT LED, Fault LED, Handset jack, 3x4 keypad
<b>DC Input Power :</b>	+11 to +15 VDC @ 5A nominal
<b>Size:</b>	6.75" H x 6.75"W x 10.5"D (17.2 x 17.2 x 26.7cm)
<b>Temperature:</b>	Operating: -20 to +60 degrees C. Storage: -40 to +85 degrees C
<b>Humidity:</b>	Up to 95% @ 55 degrees C.
<b>Shock:</b>	MIL-STD-810D, method 516.3, procedure VI
<b>Vibration:</b>	MIL-STD-810D, method 514.3, category I

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