



## ACE-RIU

ACE-RIU is a digital-analog audio and control module that integrates with Target processing platforms to provide interfaces with user peripherals such as: headsets, speakers, PTTs, control panels and live communications equipment. ACE-RIUs incorporate ASTi's innovative ACENet protocol, which connects with Targets, to provide low-latency transport of high-sample-rate, uncompressed audio over standard, switched Ethernet equipment.

### Features

**Flexible Audio Interfaces:** Connects directly with a wide variety of MIL and commercial headsets, handsets, mics and speakers

**Radio-Over-IP:** Connect ACE-RIUs to live comms such as: radios, intercom systems, and E&M voice cards; Synapse (ASTi's ready-to-deploy Radio-over-IP solution) features ACE-RIUs.

**Discrete Control Interfaces:** Digital inputs sense external switches, and digital outputs switch external devices under software control. I/O integrates directly with ACE software.

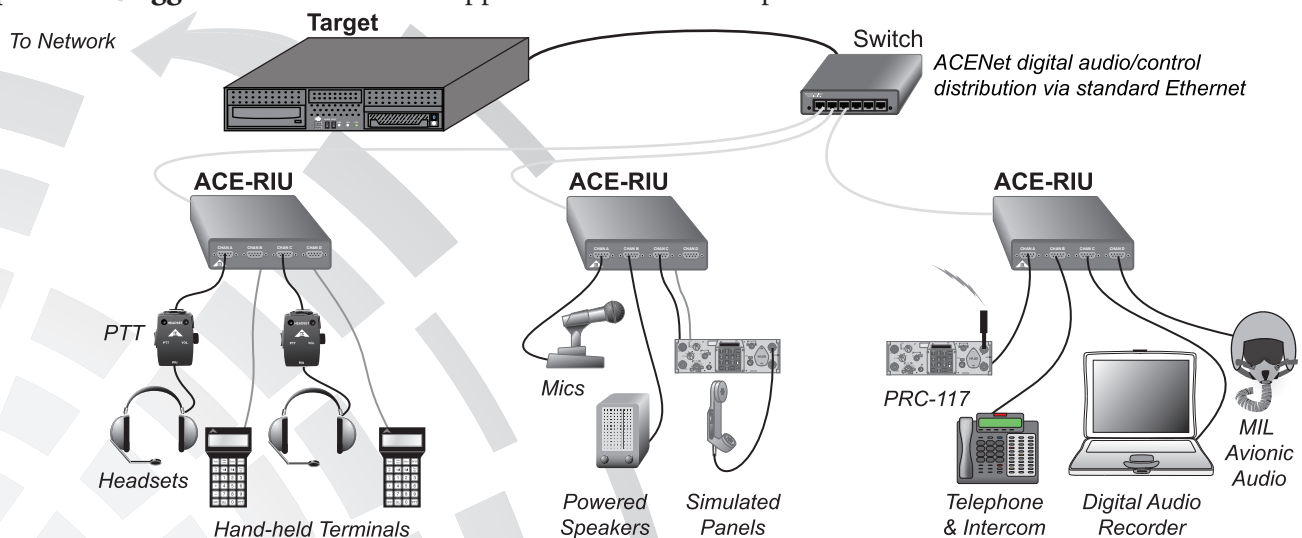
**ACENet – Pro Audio-Over-Ethernet:** The built-in ACENet processor samples audio at 48kHz rate, and applies no compression which produces lossless, studio-quality performance. Latency between ACE-RIUs and the Target is fewer than 6 milliseconds, eliminating the perception of audio delay.

**Leverage Ethernet Technology:** Connect ACE-RIUs to Targets using VLANs and fiber optic media; ACE-RIUs can be located thousands of feet from the Target.

**Serial I/O Ports:** Plug-and-Play interface for operator panels like HHT and SINGGARS, and the ASTi Distributed Digital Interface (DDI) general purpose I/O module

**Compatible with Legacy Gear:** ACE-RIU drops into installations that used the DACS RIU making it an ideal choice for facility updates. Re-use your DACS-era ancillaries, including: headsets, PTTs, HHTs and adapter cables.

**Compact and Rugged:** Small module fits applications from tabletop to "rack-and-stack."



## ACE-RIU Features

### Audio I/O

- Four audio inputs/outputs provide support for multiple operators and audio equipment at a single remote node.
- Balanced line-level inputs and outputs for increased noise immunity and ease of interfacing
- 16-bit delta/sigma converters for superior sound quality
- Ability to drive military headsets directly
- Capacitively-coupled or direct-coupled output
- Easily configurable input gains

### Digital I/O

- Digital input supplied with each audio channel for direct connection of PTT, reducing delays and voice cutoff
- Opto-isolated digital output supplied with each audio channel for sending PTT signals to real radio or comms equipment, or driving LEDs

### Serial I/O

- Two serial ports for interfacing to simulated communications panels, ASTi hand-held terminals, and general-purpose I/O modules
- Supports multi-dropped I/O modules

### ACENet / ACE-RIU Architecture

- ACENet protocol support embedded in ACE-RIU
- Connect multiple ACE-RIUs to central Target using standard Ethernet switch infrastructure
- ACE-RIU configuration is software re-configurable using port-based VLANs.
- Located up to thousands of feet away, ACE-RIUs connect to Target using fiber optic media.

### Packaging

- Small, self-contained, prepackaged unit fits easily on the desktop, or can be 19" rackmounted with available mounting kit.

### General

- Combined with the Target platform, the ACE-RIU is the distributed audio conversion building block for constructing stand-alone communications simulation and conferencing networks.

## ACE-RIU Specifications

### Audio Inputs (per channel)

- Input Impedance: > 1 k $\Omega$ , balanced
- Input Level:  $\pm$  2.25V peak max
- Input Gain: User configured 0-60 dB

### Audio Outputs (per channel)

- Output Impedance: Balanced
- Output Level: 10V<sub>pp</sub> max
- Output Power: 1W RMS into 8 $\Omega$  bridged load  
250mW into 8 $\Omega$  single ended

### Digital Inputs

- Quantity: One per audio channel
- Configuration: 2 pins each audio connector

### Digital Outputs

- Quantity: One per audio channel
- Configuration: Opto-isolated, 350mA  
2 pins on each audio connector

### Serial Ports

- Quantity: Two
- Type: RS-422
- Connection: Standard RJ-12 Jack (6 pin)

### ACENet Connectors

- Connection: Two ACENet ports  
RJ-45 Female connection

### Mechanical

- Approximate Size: 5.5"W x 1.5"H x 7.5"D
- Mounting: Desktop, 19" rackmount kit available

### General

- Power: +15VDC, 1.5A max, fuse protected (plug-in AC/DC converter supplied with each unit)
- Audio Connection: 9-pin female sub-min "D" (1 audio input/output and 1 digital input/output each connector)
- ACENet Cabling: Category 5e cable or better

