



# Citadel

## IP Radio Gateway

### ANALOG TO IP CONVERSION GATEWAY

The Citadel IP Radio Gateway is optimized for operation at remote sites with IP connectivity, and can also handle wireline and microwave bearer circuits, including the ability to mix different types of circuits. The Citadel interfaces 2/4 wire radios to your IP network for audio communication and/or remote control. With the right configuration, the Citadel can remotely control gates, doors, lighting, generators, or anything else connected to your network. Input sensors can read digital I/O, analog-to-digital inputs are available to sense things like fuel levels or temperature.

The Citadel supports all types of signaling, including:

- Tone Remote Control
- CTCSS/DCS
- MDC1200
- PTT/COR
- DTMF In/Out
- Analog paging tones
- QPSK
- FFSK/GMSK
- E&M, Types I-V
- Selcall

The Citadel can connect to and control base stations using local PTT/COR connections or EIA standard tone remote control. Other control mechanisms can be supported, with additional ports available to control radio units using RS-232/422/485, USB or Ethernet. The Citadel can control up to four (4) base stations per controller using a single IP connection with TCP/IP for control, and RTP/UDP/IP for voice streaming.

Where no IP backhaul facilities exist, the Citadel can be configured for analog trunk operation by using one of the analog ports as a bearer circuit, including drop-and-insert style trunk connections.

The Citadel also enables an extended network of conventional repeaters to work together over a wide area. While analog trunks can be used, IP connections between the sites allows for advanced features such as peer-to-peer receiver voting, transmitter steering, and unit identification. With the addition of an InterTalk Integrated Dispatch and Control Console, a small and very functional radio network with advanced features can be built economically.

The Citadel's DSP technology coupled with its embedded Linux operating system make it easily modifiable for any job you can imagine for your site. Coupled with a best-in-class input and output offerings, a wide temperature range tolerance (-40°C to +65°C / -40°F to 149°F), and a significantly lower DC power requirement (3W nominal), our Citadel IP Radio Gateway is the smartest, most economical choice for your remote operations and/or battery/solar-powered radio site requirements.

### DATA SECURITY

We recognize the growing importance of protecting your organization's sensitive data, as evidenced by InterTalk's ISO 27001 certification for Information Security Management Systems. Combined with our ISO 9001 certification for Quality Management Systems, you can be assured that InterTalk is a global industry leader in product quality and information security.



# Citadel IP Radio Gateway Specifications



## FEATURES

- DTMF Tone Call-In
- RSSI Indicator
- Auxiliary Input
- Temperature Sensor
- COR Input
- Relay Control
- Local Radio Control
- MDC1200 Protocol Support

## LINE TYPES

- Two-wire
- Four-wire
- PTT/COR or E&M

## INPUTS/OUTPUTS

- LAN
- USB (slave only)
- E&M Signaling Types I-V
- FXO
- Switched Inputs
- Dry Relay Outputs
- Wet Outputs, 12-18/5/3, 50mA [200mA total]
- RS-485

## LAN SPEED

10/100 mbps, RJ45 connection

## SIGNALING

- DTMF In/Out
- E&M Lead
- Voltage/Current Inputs: Sensed 48V, 12V, 5V or 3.3V, or 4-20mA
- Voltage/Current Outputs: Highside Drivers at 12V, 5V or 3.3V; current 50mA
- Complete toneset specified by EIA
- Loop Start

## ENVIRONMENT

Temperature Range [-40°F to 149°F (-40°C to 65°C)]

## POWER

12-18 Vdc @ 250mA maximum

## TECHNICAL

- Total Harmonic Distortion plus Noise > 50dB
- Frequency Response < +1/-3dB from 300Hz-3000Hz
- Output Levels: Programmable up to +10 dBm

## DTMF DECODE

- Dynamic range (in dB) Configurable
- Twist (in dB) Configurable
- Acceptable signal-to-noise ratio (in dB) Configurable
- Tone encode resolution (in Hz) < +/- 0.1Hz

## DIMENSIONS

Rack 1U

## TELECOM AGENCY APPROVALS

Industry Canada CS-03 Certification (for optional POTS connection)