

# COMREX

BlueBox

## High-performance, low-cost POTS codec

### About BlueBox

BlueBox is your best choice for uncompromised POTS codec quality when you have a tight budget or require a very small hardware package. It combines a basic feature set with Comrex technology advancements—and, at a pound and a half, it won't weigh you down.

Designed to withstand the rigors of the road, BlueBox provides up to 15 kHz bandwidth, full duplex audio over standard dialup POTS. Audio quality scales automatically to compensate for poor phone lines, keeping you connected and on the air.

Program and cueback can be sent over the same phone line. This is a real advantage when off-air monitoring is delayed from real-time, such as with HD Radio or when using a profanity delay.

The included cellular jack allows operation with the hands-free ports of many mobile phones, but does not provide greater frequency response. Call quality for a standard wireless call is enhanced by the use of professional microphones, rather than the telephone set, for the audio feed.

When you purchase BlueBox, you can be confident that you are using the most compact and cost-effective remote broadcast equipment available.

Doing a remote? Put Comrex on the line.



# Features & Benefits

## Audio quality

Comrex audio coding algorithms are uniquely suited to the task of moving high-quality audio along narrow data channels. Hardware is designed to exceed broadcast audio quality expectations.

- Full duplex FM quality (15 kHz) audio bandwidth at connect rates of 24 kbps and above.
- Full duplex audio scales from 12 kHz to 5 kHz at connect rates of 21.6 kbps to 9.6 kbps.
- Selectable "Voice Mode" allows 7 kHz audio with a 300 bps ancillary data channel and extra forward error correction.
- Short coding delay (100 mS) allows seamless two-way conversation.

## Line connection reliability

The dialup telephone network can be unpredictable. Comrex combines our years of experience and the latest technologies to keep you in control of your remotes.

- Automatic modem negotiation connects at optimal rate supported by telephone connection.
- Phone line quality is monitored continuously and modem renegotiates if the line degrades during the call. Renegotiation may be disabled to prevent dropouts at inconvenient times.
- Maximum data rate can be preset manually to provide a guardband against line errors.
- A brief two-second renegotiation can be forced manually by pressing a single button on either end of the call.

## Easy to use dialing and configuration interface

Useful features that nontechnical personnel can readily understand save you time and money on training, preparation and configuration.

- Quick-dial stores 20 phone numbers in nonvolatile memory.
- One-touch redial.
- Auto-answer (on first or sixth ring) and manual answer.
- POTS connection works with external phones, for PABXs and operator-assisted calls.
- Accepts dialing strings of up to 44 digits with pauses.
- Menu-selectable dialing parameters of analog telephone protocols for 20 countries.
- Backlit LCD displays modem connection speed.
- Front-panel LED status indicators:
  - Ring/carrier detection LED flashes when an incoming call is ringing and is steadily on when the internal modem is connected with a compatible codec on the far end.
  - Ready indicator illuminates when decoder locks with any compatible far-end codec.



## Built for the real world

Comrex has addressed all the details to make operation and maintenance of your codec hassle-free.

- Compatible with all Comrex POTS codec models, including Matrix Studio Rack, Matrix Portable, Vector, HotLine and other BlueBox units. (A corresponding unit is required at the other end of phone line.)
- Field-proven, rugged design for years of trouble-free use.
- Software updates are easily accomplished using BlueBox's multipurpose data port and files downloaded from Comrex website or obtained via e-mail. All software updates are free.
- Switching power supply works everywhere.
- Built-in peak limiter.
- Backlit LCD display.
- A "CC" key on the BlueBox triggers a contact closure on the far-end Comrex codec.

## Audio and other connections

- One XLR mic/line input—adjustable level
- Auxiliary mini-jack line tape input—fixed level
- Headphone output—adjustable mix of send and receive audio
- Balanced XLR line level audio output—adjustable mix of send and receive audio.
- Telephone line and telephone set: RJ-11 6-pin modular jacks (two).
- Two contact closures for remote control:
  - One latching, enabled upon the decoder syncing with far-end codec.
  - One momentary, activated by a button press on the far-end codec.
- Auxiliary data port: DB-9.
- Power: 5 pin mini-DIN.

## Custom road cases

### Small Road Case

This high-impact, ridged plastic case with sturdy fasteners is rugged enough for the cargo hold of an airplane, yet small enough for most overhead compartments. Provided with custom foam insert for Matrix Portable and many other Comrex products. Inside dimensions: 18" W x 13" D x 8" H (45.7 cm x 33 cm x 20 cm); weight 12 lbs (5.4 kg)



# Specifications

## BlueBox

### Audio connections

- One XLR mic/line input—adjustable level, assignable to main program
- Auxiliary mini-jack line tape input—fixed level
- One headphone output—adjustable mix of send and receive audio
- Balanced XLR line level audio out—adjustable mix of send and receive audio

### Other connections

- Telephone line and telephone set: RJ-11 6-pin modular jacks (2)
- Contact closures: 2-conductor mini jacks (2)
  - Ready: Latching dry contact closure when BlueBox Portable encoder is synchronized to far-end Comrex decoder
  - Enter: Momentary dry contact closure activated by button push on far-end Comrex codec
- Auxiliary data port: DB-9
- Accessory connection: 25-pin D
- Connection to select hands-free mobile phone inputs: mini-jack
- Power: 5 pin mini-DIN

### Audio input levels

- Mic inputs: -70 to -40 dBu @ 2 K $\Omega$
- Line inputs: -10 to +10 dBu @ 20 K $\Omega$
- Tape input: -10 dBu (fixed) @ 10 K $\Omega$

### Audio output levels

- Line level out: +12 dBu maximum @ 100 $\Omega$
- Headphone outs: .5 watt @ 100 $\Omega$

### Audio performance

*Audio performance varies with phone circuit conditions*

- Full duplex FM quality (15 kHz) audio bandwidth at connect rates of 24 kbps and above
- Full duplex audio scales from 12 kHz to 5 kHz at connect rates of 21.6 kbps to 9.6 kbps
- Selectable "Voice Mode" allows 7 kHz audio with a 300 bps ancillary data channel and extra forward error correction

### Coding delay

- 100 mS

### Power and physical

- External power supply: 24 V for 120/240 VAC 60/50 Hz operation
- Size: 9.5" W x 6.5" D x 2.75" H (24 cm x 16.5 cm x 7cm)
- Weight: 1.5 lbs (0.7 kg)

## About Comrex

Comrex, an innovator in communications and telephony technologies for more than 40 years, provides reliable solutions to meet the demands of live broadcast. Thousands of radio and TV stations trust the quality of our products every day for news, sports and entertainment audio. The company is headquartered near Boston, Massachusetts, and Comrex products are offered and supported by a worldwide network of dealers.

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