

# Complete mobile studio for POTS remote broadcasts

## About Vector

Vector provides complete audio mixing and monitoring facilities with advanced Comrex technologies to serve as a convenient portable solution for remote broadcasts over standard dialup POTS phone lines.

A total of four pro-level inputs, three headphone outputs and a line-level output can be quickly routed to meet both the preferences of your remote talent and their producers. Vector's universal features make it ready for remotes from across town or across the globe. Users will be up and running in minutes, thanks to Vector's logical front panel control surface, large LCD screen and wealth of practical features.

Vector is housed in a compact, three-pound package, built to withstand the rigors of the road. It 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. It also includes a coupler mode to allow you to place standard phone calls.

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.

When you purchase Vector, you can be confident that you are using the most feature-packed and reliable 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 40 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 Rack, Matrix Portable, BlueBox, HotLine and other Vector units. (A corresponding unit is required at the other end of the phone line.)
- Field-proven, rugged design for years of trouble-free use.
- Coupler mode allows Vector to be used as a basic field mixer, connecting to studios without codecs. Or you can simply place ordinary phone calls, for example, to order lunch. Call quality is as it would be for a standard landline call, enhanced somewhat by the use of professional microphones, rather than the telephone set, for the audio feed.
- Built-in peak limiter.
- Switching power supply works everywhere.
- Backlit LCD display.
- A "CC" key on the Vector triggers a contact closure on the far-end Comrex codec.

## Comprehensive audio mixing and monitoring

- Four-channel mixer
  - Two XLR mic inputs—adjustable level.
  - One XLR mic/line input—adjustable level.
  - One XLR mic/line input—adjustable level may be used as fourth program input or switched to feed headphones. Great for a local producer.
- Three 1/4" headphone outputs—adjustable mix of send and receive audio.
- Balanced XLR line-level audio out—adjustable mix of send and receive audio.

## Other connections and indicators

- Telephone line and telephone set: RJ-11 six-pin modular jacks (two).
- Two contact closures for remote control:
  - One latching, enabled upon the decoder synching with far-end codec.
  - One momentary, activated by a button press on the far-end codec.
- Auxiliary data port: DB-9.
- Power: Two conductor barrel.

## 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)



### Large Road Case

Retractable handle, recessed wheels and larger size accommodate your codec as well as headphones, microphones, cables, etc. High-impact, ridged plastic with custom foam insert compartments designed to accommodate your Matrix. Inside dimensions: 24" W x 17.5" D x 12" H (60.9 cm x 44.5 cm x 30.5 cm); weight 27 lbs–12.25 kg)



# Specifications

## Vector

### Audio connections

- Two XLR mic inputs—adjustable level, assignable to main program
- One XLR mic/line input—adjustable level, assignable to main program
- One XLR mic/line input—adjustable level, assignable to main program or headphones
- Three headphone outputs—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 Matrix Portable encoder is synchronized to far-end Comrex decoder
  - Enter: Momentary dry contact closure activated by button push on the far-end Comrex codec
- Auxiliary data port: DB-9
- 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 $\Omega$

### Audio output levels

- Line level out: +12 dBu maximum @ 100 $\Omega$
- Headphone outs: .5 watt @ 100 $\Omega$
- Telephone line out: -9 dBu @ 600 $\Omega$

## 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: 5 V for 120/240 VAC 60/50 Hz operation
- Size: 13" W x 9" D x 3.5" H (33 cm x 22.8 cm x 8.9 cm)
- Weight: 3 lbs (1.3 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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## Vector Block Diagram

