



For users who need to run multiple IP codecs at once, Comrex has created ACCESS MultiRack. ACCESS MultiRack is equivalent to five codecs, contained within a sleek 1RU chassis.

ACCESS MultiRack is compatible with the entire family of Comrex IP audio codecs as well as the Comrex FieldTap smartphone app. ACCESS MultiRack features AES67-compatible I/O on all five codecs, along with AES3 and analog I/O on the first codec.

Applications

ACCESS MultiRack is perfect for users who need to run more than 1 IP codec at one time. With robust encoding algorithms and CrossLock, the most sophisticated network management technology on the market, ACCESS MultiRack provides solid and reliable connections over Ethernet, Wi-Fi, and 3G/4G networks.

ACCESS MultiRack is perfect for handling multiple connections to remote codecs in the field, or connections between studios. ACCESS MultiRack can also maintain 24/7 connections like STLs. With MultiRack, you don't have to choose - you can support a remote broadcast or a studio-to-studio broadcast at the same time, with the same box.

Switchboard

Comrex Switchboard Traversal Server was created to make it easy to make connections between Comrex IP codecs. This is especially important when broadcasting over networks that have firewalls and routers and other IT snags. Switchboard allows your codec to sync with a cloud-based server, making it possible to

connect without having to know the IP addresses on either end of the link.

Switchboard saves all the details of the codecs subscribed to the server. This means that when it's time to connect, you don't have to enter any information - you can simply choose the codec you want to connect to from a menu, and hit a button.

CrossLock

Quite simply the most advanced network management tool on the market today. When used in "bonding" mode, CrossLock gives users the ability to manage and bond multiple data connections together simultaneously. When a new network is introduced, CrossLock will immediately evaluate how much bandwidth is available, while factoring in latency and jitter information, and combine the two connections to take advantage of all available bandwidth. In Redundant mode, all data will be sent over all networks. CrossLock can also monitor each data connection individually and, when necessary, apply appropriate error correction, recovery, or concealment techniques.

Connections & Features

- 1U 19" rackmount chassis

Inputs

- Balanced XLR line-level audio inputs
0dBu nominal, +20dBu peak
- AES3 XLR Digital audio input
- Analog/AES3 switch
- AES67 audio input

Outputs

- Balanced XLR line-level audio outputs
0dBu nominal, +20dBu peak
- AES3 XLR Digital audio output
- AES67 audio output

Network

- 2 USB connections
- Primary Ethernet Port
- Secondary Ethernet Port

Communications

- Contact Closures: DB-9 male
- Serial Port: DB-9 female

Operation

- HDMI
- DisplayPort

Control

Make connections with ACCESS MultiRack via a new HTML5-based web user interface. No more Flash! Codec Commander is also an optional Windows-based user interface, while Fleet Commander lets you manage your fleet of codecs.



HotSwap

ACCESS MultiRack is equipped with HotSwap, a feature that allows users to back-up dedicated links with a wireless modem. With HotSwap, users can select a network that will only be engaged if the primary network fails. Fall-over to backup happens in a fraction of a second, and fallback is seamless.

Audio Coding

For users with a lot of bandwidth, ACCESS MultiRack includes Mono or Stereo Linear PCM mode, an audio coding format that does not compress audio. ACCESS MultiRack also includes FLAC, an encoder that compresses audio with a lossless algorithm.

For users with more limited bandwidth, ACCESS MutliRack includes AAC and HE-AAC encoding algorithms as standard. These algorithms preserve audio quality while reducing the data load significantly. For compatibility with mobile phone or web apps (like FieldTap), ACCESS MultiRack includes Opus along with G.722 (a standard for VoIP phones and codecs).

The chart to the right represents a sampling of the algorithms available as well as the corresponding encode rates, network rates, bandwidth, and delay.

For the Field: ACCESS NX

ACCESS NX is a portable IP audio codec that's made to go anywhere. Whether you want to go live from

the sidelines or do your talk show from the road, ACCESS NX is designed with the user in mind. Use CrossLock in bonding mode to take advantage of marginal networks like cellular and Wi-Fi.

Additional Compatibility

ACCESS MultiRack is compatible with all ACCESS codecs, including ACCESS NX, ACCESS Portable Classic, ACCESS 2USB, ACCESS NX Rack, and ACCESS Rackmount. ACCESS MultiRack is also compatible with BRIC-Link, BRIC-Link II as well as the free smartphone app FieldTap, available for Android and iOS.



ACCESS NX Portable & Mixer

ALGORITHM	ENCODE RATE	NETWORK RATE	BANDWIDTH	DELAY
Linear 48 kHz Mono	768Kb/s	818Kb/s	22 kHz	25mS
Linear 48 kHz Dual Mono	1.536Mb/s	1.586Mb/s	22 kHz	25mS
Linear 44.1 kHz Mono*	705.6Kb/s	751.6Kb/s	20 kHz	27mS
Linear 44.1 kHz Dual Mono*	1.4112Mb/s	1.4572Mb/s	20 kHz	27mS
Linear 32 kHz Mono*	512Kb/s	546Kb/s	15 kHz	31mS
Linear 32 kHz Dual Mono*	1.024Mb/s	1.058Mb/s	15 kHz	31mS
FLAC 48 kHz Mono	~540Kb/s	~572Kb/s	22 kHz	30mS
FLAC 48 kHz Dual Mono	~1.08Mb/s	~1.112Mb/s	22 kHz	30mS
FLAC 44.1 kHz Mono*	~500Kb/s	~530Kb/s	20 kHz	32mS
FLAC 44.1 kHz Dual Mono*	~1Mb/s	~1.03Mb/s	20 kHz	32mS
FLAC 32 kHz Mono*	~360Kb/s	~382Kb/s	15 kHz	36mS
FLAC 32 kHz Dual Mono*	~720Kb/s	~752Kb/s	15 kHz	36mS
AAC Mono	56-64Kb/s	72-80Kb/s	20 kHz	100mS
AAC Stereo	96-256Kb/s	112-272Kb/s	20 kHz	100mS
HE-AAC Mono	18-48Kb/s	26-56Kb/s	15-20 kHz	210mS
HE-AAC Stereo	64-96Kb/s	72-104Kb/s	20 kHz	210mS
HE-AAC Stereo v2	24-48Kb/s	32-56Kb/s	15 kHz	250mS
OPUS 48kbps Mono	48Kb/s	64Kb/s	20 kHz	46ms
OPUS 56kbps Mono	56Kb/s	72Kb/s	20 kHz	46ms
OPUS 64kbps Mono	64Kb/s	80Kb/s	20 kHz	46ms
OPUS 64kbps Stereo	64Kb/s	80Kb/s	20 kHz	46ms
OPUS 96kbps Stereo	96Kb/s	112Kb/s	20 kHz	46ms
OPUS 128kbps Stereo	128Kb/s	144Kb/s	20 kHz	46ms

*44.1 kHz and 32 kHz modes are only supported via AES3 digital audio I/O on both ends of link
 • FLAC bandwidth is variable and based on audio input