



EtherAudio

Professional audio routing unit with both IP and CobraNet

INFOMEDIA

EtherAudio is an innovative audio routing interface unit, comes with both IP and CobraNet protocol to make audio routing and monitoring reliable and very easy.

EtherAudio transmits and switches multi-channel high-quality audio signal over Ethernet. Up to 16 channels of audio input and output can be equipped on each EtherAudio unit. The modular audio In/Out interface can be either AES/EBU or analog XLR balanced.

EtherAudio is equipped with three network ports on the rear panel, two CobraNet ports backup to each other, and the other one is IP port.

CobraNet™ technology is widely used in multi-channel low latency audio transmission over Ethernet. CobraNet is a standard protocol developed by PeakAudio, a CirrusLogic company. CobraNet transfers data using link layer packets, which travel quickly through hubs, bridges and switches, and are not as susceptible to the latency and QoS problems commonly found in streaming protocols using a higher transport layer. 64 channels of uncompressed digital audio are carried through a single, inexpensive Cat-5 cable.

CobraNet transmits the same audio data to the two redundant network ports simultaneously, the audio stream will have no break in case of failure of any one of the two network paths, this high-availability design makes CobraNet an ideal solution for mission critical applications such as radio station MCR systems.

CobraNet protocol is more based on hardware which means higher reliability than IP streaming with which more software gets involved. And the reboot time of CobraNet is much shorter than IP-based routers because there is no TCP/IP stack to be launched.

CobraNet protocol is one of the best choices for audio transmission and routing because of being synchronous, fixed and very low latency, redundant network ports and QoS of network traffic, but it also has some disadvantages as following,

- CobraNet is based on IEEE802.3 but not TCP/IP, it's impossible to hear the audio and see the meter of one audio signal through Internet.
- Metering data can only be carried with the audio traffic on the network with CobraNet protocol, it's not as easy as Audio-over-IP technology to build up an audio monitoring system, because with IP only the meter data of the audio signal transmitted over network when user is not playing the audio stream.
- CobraNet protocol only supports uncompressed linear PCM audio data which is good in quality and latency, but it brings more traffic to the network than audio-over-IP which can use compressed audio.



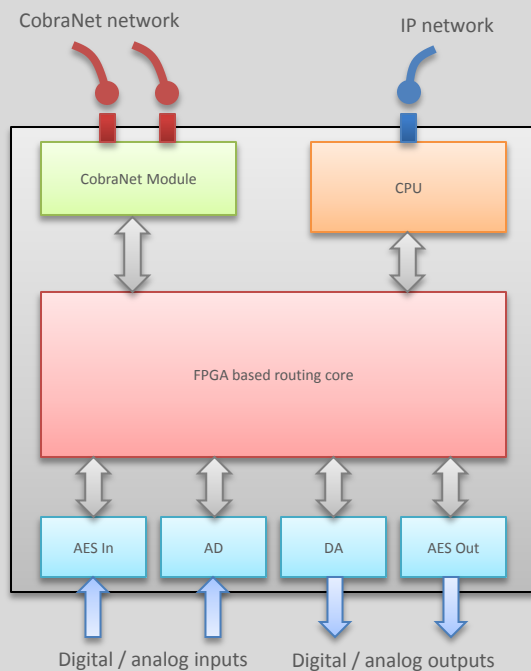
CobraNet		Audio-over-IP	
High-availability of network path	★	Two hot backup network path	★
Reliability of transmission and routing	★	No protocol stack software required	★
Latency of transmission	★	Fixed and very low	★
Metering data traffic alone	★	Metering data transmitted with audio data	★
Support of compressed audio data	★	Only linear PCM data supported	★
Short reboot time	★	<3 Sec, ASIC based architecture	★
Internet application	★	LAN based technology	★
Coexistence with other traffic	★	Not recommended	★
Qos on traffic	★	Fixed number of max channel of audio	★
No logic limitation on cross-point	★	Bundle allocation to guarantee traffic	★
Synchronization	★	All stream synchronized to the conductor	★
			More software involved, TCP/IP protocol stack
			Longer and fixed, depends on buffering
			Metering data can be transmitted alone
			Any audio software/hardware codec can be used
			>10 Sec, Protocol stack software need time to boot
			Can be used worldwide if bandwidth permits
			No logic limitation but has Qos problem
			No guarantee of stream smoothness
			No logic limitation on cross-point routing
			No synchronizaton

In summary shown above we can see that neither IP nor CobraNet can meet all the broadcaster's requirements. That's why Infomedia invented EtherAudio which combines IP and CobraNet together in one box.

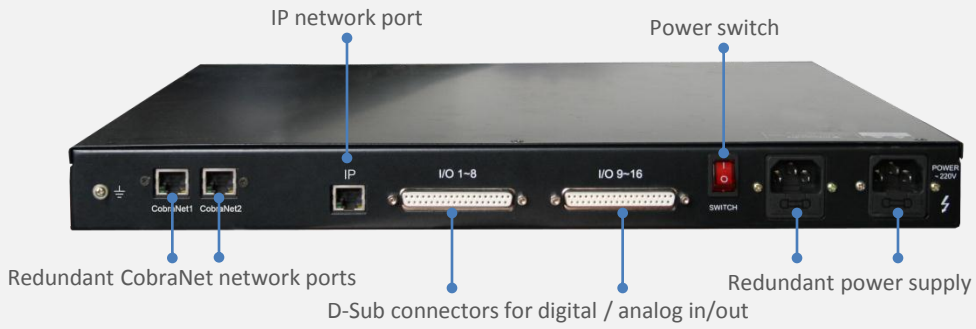
EtherAudio uses CobraNet for audio transmission and routing, uses IP for audio monitoring / metering and equipment management.

Standard CAT 5 cable can be used within 100 meters and optical fiber cable can be used for further than 100 meters, 2KM for multimode and 60KM for single mode fiber cable.

EtherAudio block diagram



Rear panel



Software

Control and monitoring software is delivered with EtherAudio. And EtherAudio can also work with ControlMaster™ software to build up a total solution MCR system.

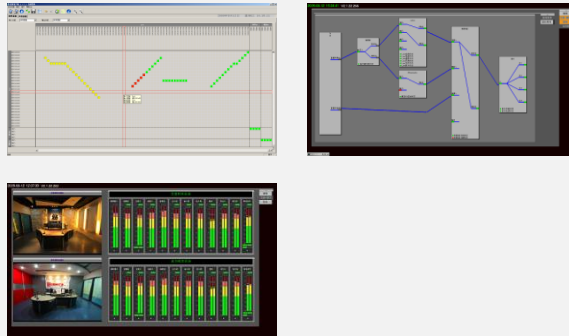
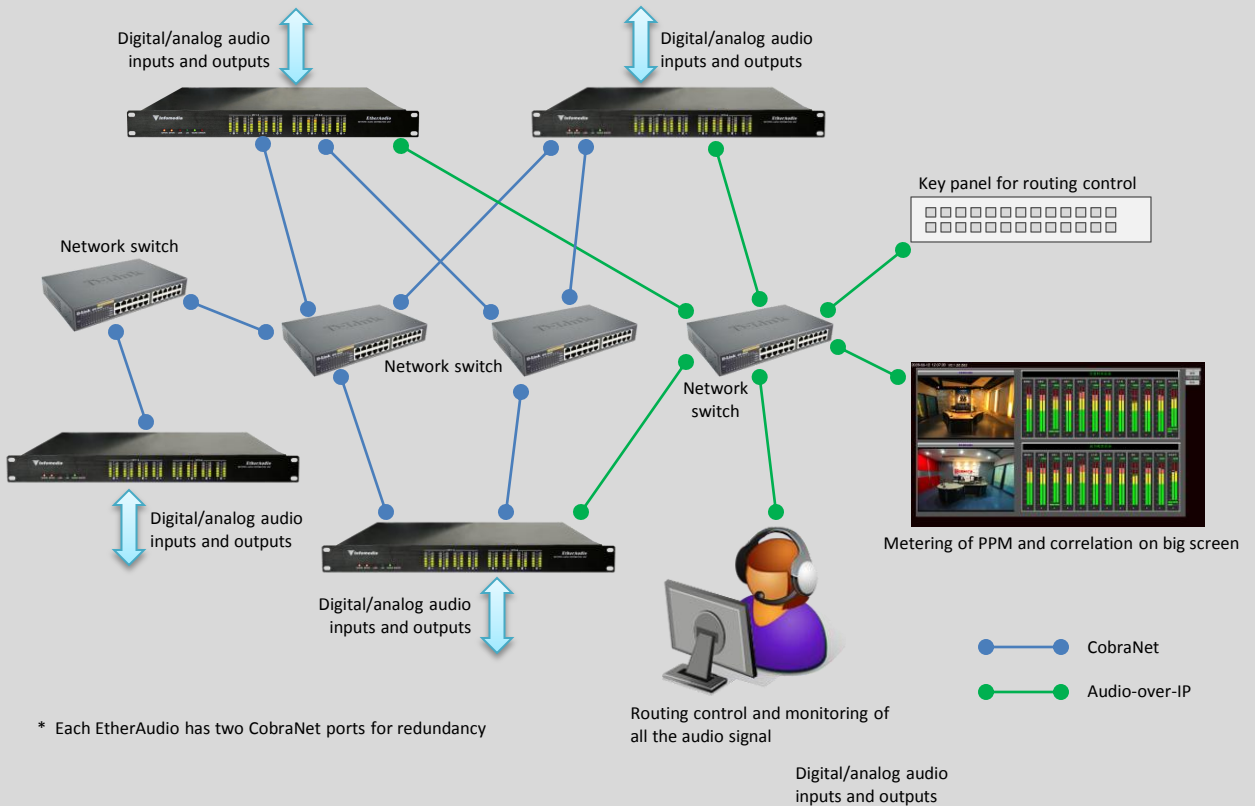


Diagram of an example audio routing system



Specifications

Analog in/out interface	Balanced XLR
Analog max in/out level	+24dBu
Analog input impedance	600Ω
Analog output impedance	50KΩ
Signal-to-noise ratio	>90dB
Frequency response	<±1dB, 20Hz – 20Khz, @4dBu
THD+N	<0.01%
A/D format	48KHz/24Bit
Power supply	110-240V AC, redundant
Max num of audio Ch. in one unit	16 inputs and 16 outputs

Digital in/out interface	AES/EBU
Digital in/out impedance	110Ω
AES minimum input Vpp	0.2Vpp
AES output Vpp	3.3Vpp
AES input sample rate	SRC *
Serial port	RS-232
Temperature sensor	On-board
GPIO	Optional
Size	1RU, 19"
Remote controller	1 or 2RU Key panel

* SRC - Sample Rate Conversion.

* Specification is subject to change without notice.

INFOMEDIA

Infomedia is a fast growing company specialized in development of professional audio / video equipment and software. Headquartered in Beijing we have 180+ employees in China and worldwide.

PAW120	Handheld professional recorder with on-board 1GB/2GB flash memory
PAW5	New generation handheld professional recorder with SD card and on-board memory
IBS200	Four channel automatic audio switcher with on-board player and network monitoring / control
Powercaster	Radio automation system
iScheduler	Intelligent song/link scheduling and segue editing software
PowerEditor	Sound editing system which is the 1 st native format sound editor in the world
ADA100	Analog/Digital audio distribution amplifier with network monitoring and metering.
Splitter	Audio splitter for AES or analog signal
Newsroom	Multimedia newsroom system processing news story with audio, video, picture and text.
M3	Media asset management system support audio, video, picture and text
IDR150	Professional audio recorder 1.5U rackmount
IKP100	Instant audio player with key matrix and network management of soundfile and rundown
AIP100	Professional audio IP codec
ISP100	Universal key panel for router control via IP

Dealer



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