

SystemBase

Digital Audio Codecs

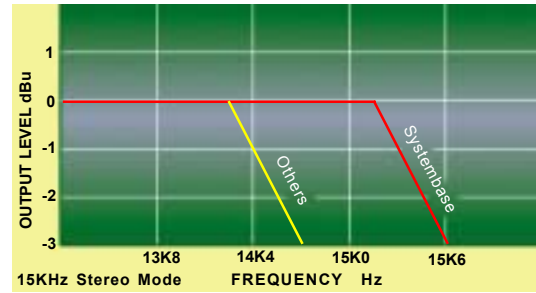


C310xr
C400xr
C450xr

PROFESSIONAL QUALITY AUDIO

The Systembase range of digital audio codecs, have been designed and manufactured to deliver unparalleled performance for professional, real-time audio applications. All models incorporate the fast apt-X Sub Band ADPCM compression system with a coding delay of only 2.8ms at data rates of 384Kbps (48KHz sampling rate).

Additional design enhancements based upon the use of a 20 bit conversion process, have extended the audio bandwidth by almost 900Hz, resulting in a much richer natural sound.



REAL-TIME BI-DIRECTIONAL OPERATION

Systembase codecs incorporate both an encoder and a decoder, to provide a real-time, full duplex audio circuit. The short coding delay of 2.8ms makes them suitable for bi-directional applications such as outside broadcasts (OB's), studio to transmitter links (STL's) and remote voice-overs. In addition, the integral ISDN inverse multiplexer, used to synchronise up to four ISDN B Channels, introduces a delay of just 0.5ms.

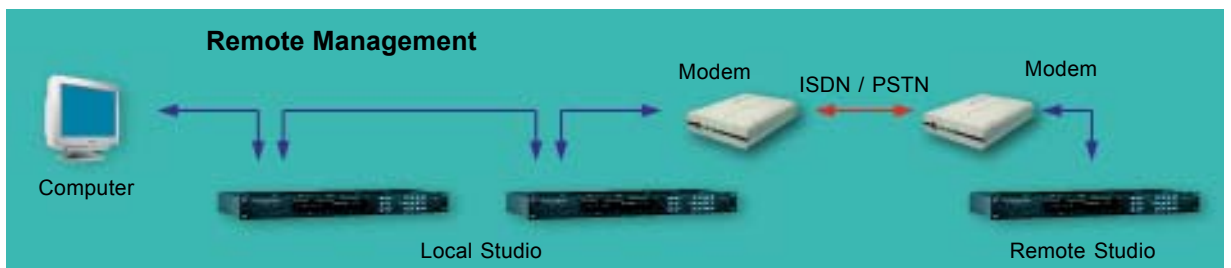


DAB CONTRIBUTION CASCADE AND TANDEM CODING

Systembase codecs allow cascade or tandem coding of audio with minimal degradation in quality. This feature is essential when contributing to Digital Audio Broadcast (DAB) radio or television stations using MPEG technology. In both cases, the use of psycho-acoustic compression, limits the number of times the audio signal can be encoded and decoded with a similar type of algorithm, before audible artefacts occur. This problem is overcome by Systembase codecs, which introduce a predictable 1.7dBm of quantisation noise following each encode/decode cycle.

INTELLIGENT FEATURES

In the event of an ISDN call failing, the codecs will automatically drop down to provide the next best available service with the remaining connected calls. The user can configure the codecs to prioritise between bandwidth or stereo image. When operating in Mono, they have the capability of monoising the left and right input audio channels, and provide a pseudo stereo service to both the left and right outputs. In Dial-on-Audio, Trigger Dial or ISDN Backup modes, the codecs will automatically re-dial the ISDN lines if a call fails or disconnects.



REMOTE MANAGEMENT

Remote management facility is provided as standard on all models enabling full remote control and re-configuration via a computer. Multiple units can easily be linked together using a simple daisy-chain topology, and controlled centrally from a single computer. There are no limitations on the number of units that may be connected together. A codec unit at a remote or unattended site can readily be controlled by using standard analogue / ISDN modems.

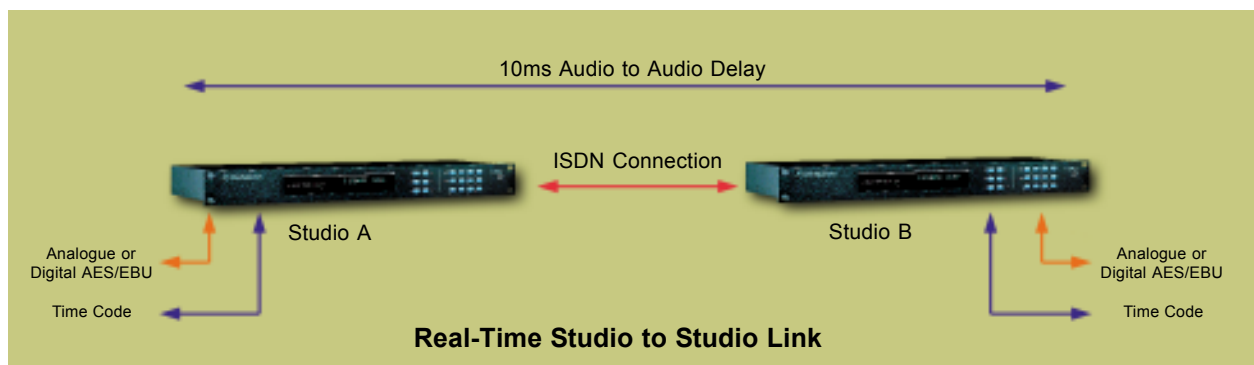
ISDN DIAGNOSTICS

ISDN call diagnostics information is displayed to alert the operator to potential problems associated with the ISDN connection. These conditions can relate to bad line termination and absent or intermittent line activation. This unique feature is particularly useful in quickly resolving ISDN installation problems on outside broadcast events.

ISDN CONNECTIVITY

Real-time broadcast quality music and voice circuits can be provided by direct connection to ISDN lines, or various other types of digital data services such as; fixed digital lines ($n \times 64\text{kbps}$), microwave links, spread spectrum links, optical fibre networks or satellite links. To dial an ISDN connection, simply enter the number using the numerical keypad located on the front panel. Alternatively, one of 26 pre-configured memory stores can be dialled.

For ease of operation, the Vacuum Fluorescent Display (VFD) provides clear visual indication of the status of the connection, and displays the relevant ISDN diagnostic information in the event that a call should fail to connect. To minimise ISDN call charges, the Dial on Audio facility enables the codec to automatically dial an ISDN line on detection of an audio signal, and then hang the call after a user selectable period of silence.

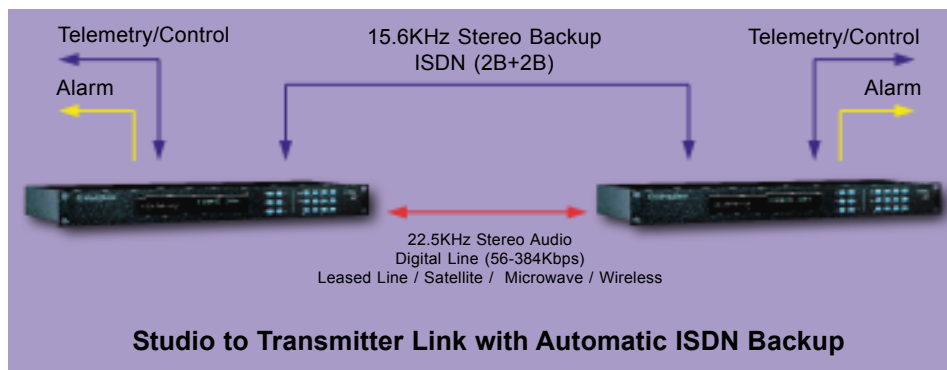


WORLD-WIDE OPERATION

Systembase codecs interface directly between audio equipment and the ISDN network, via standard ISDN RJ45 sockets. To facilitate world-wide operation, 12 international ISDN standards are supported, and can be selected by the user from the front panel.

DIGITAL AUDIO INTERFACE

AES/EBU digital audio interface is provided on all models, and is equipped with sample rate conversion to simplify the problems of connecting between the studio reference clock and the ISDN network clock. Different sample rates can be supported at either end of the codec link.



STUDIO TO TRANSMITTER LINK

Systembase codecs are well suited for implementing FM and DAB radio Studio-to-Transmitter Links (STL's), providing up to 22.5KHz Stereo audio over a 384Kbps digital line. To maintain program continuity, an automatic ISDN backup is initiated if there is a failure on the primary circuit. The restoration of the audio back to the digital line also occurs automatically once the fault condition has cleared. To reduce the ISDN lines required, the codecs can be configured to monoise the input audio during ISDN backup, and to deliver the audio to both left and right outputs. The bi-directional auxiliary data port facility can be used to simultaneously send RDS control signals to the transmitter, and receive telemetry information.

Technical Specifications

	<i>C310xr</i>	<i>C400xr</i>	<i>C450xr</i>
AUDIO PERFORMANCE			
Coding Standard	APT-X-100	APT-X-100	APT-X-100
Coding Delay	3.8ms @FS=32KHz	2.8ms @FS=48KHz	2.8ms @FS=48KHz
S/N Ratio	>80dB	>80dB	>80dB
Input Level	+12dBu Max.	+12dBu Max.	+12dBu Max.
Input Impedance	>10K ohms	>10K ohms	>10K ohms
Output Level	+12dBu Max.	+12dBu Max.	+12dBu Max.
Output Impedance	<100 ohms	<100 ohms	<100 ohms
DIGITAL AUDIO			
AES/EBU IN/OUT	●	●	●
Sample Rate conversion	●	●	●
ISDN AUDIO MODES			
3K7 Stereo (64Kbps)	●	●	●
7K5 Mono (64Kbps)	●	●	●
7K5 Stereo (128Kbps)	●	●	●
15K6 Mono (128Kbps)	●	●	●
12K Stereo (192Kbps)	●	●	●
15K Stereo (256Kbps)	●	●	●
22K Mono (192Kbps)	●	●	●
X.21 AUDIO MODES			
3K7 Stereo (64Kbps)	●	●	●
7K5 Mono (64Kbps)	●	●	●
7K5 Stereo (128Kbps)	●	●	●
15K6 Mono (128Kbps)	●	●	●
12K Stereo (192Kbps)	●	●	●
15K Stereo (256Kbps)	●	●	●
22K5 Mono (192Kbps)	●	●	●
19K Stereo (320Kbps)	●	●	●
22K5 Stereo (384Kbps)	●	●	●
ISDN FACILITY			
Multiple ISDN Standards	12 variations on board	12 variations on board	12 variations on board
Nailed up ISDN Support	●	●	●
Internal ISDN Multiplexer	2B (128Kbps)	2B + 2B (256Kbps)	2B + 2B (256Kbps)
Speed Dialling	●	●	●
CLI Security	●	●	●
SUB Addressing	●	●	●
ISDN Diagnostics	●	●	●
FEATURES			
Full Remote Management	●	●	●
Dial on Audio	●	●	●
Automatic Backup/Restore	●	●	●
External Contact Dial	●	●	●
Auxiliary Data Port	2K4bps, 4K8bps, 9K6bps	2K4bps, 4K8bps, 9K6bps	2K4bps, 4K8bps, 9K6bps
Auto Monoising Facility	●	●	●
20bit Digital VU Meters	●	●	●
Programmable Alarm Relay	●	●	●
POWER			
Voltage	80-260VAC 50/60Hz auto	80-260VAC 50/60Hz auto	80-260VAC 50/60Hz auto
Connector	IEC Mains Plug	IEC Mains Plug	IEC Mains Plug
Consumption	20W	20W	20W
PHYSICAL			
Weight	2.5Kg	2.5Kg	2.5Kg
Height	45mm (1U)	45mm (1U)	45mm (1U)
Width	480mm (19")	480mm (19")	480mm (19")
Depth	200mm	200mm	200mm

Systembase Limited
 PO Box 3572, Warminster, Wiltshire, BA12 6XQ, UK
 Telephone: +44 (0)1747 861123
 Fax: +44 (0)1747 861133
 Email: sales@systembase.com
 Website: http://www.systembase.com

Dealer