

PRELIMINARY

AC491L Medium Density Voice over Packet Processor



- Feature rich DSP for SME gateways with high voice quality
- Field-proven VoIPerfect™ architecture
- Low per-channel cost, power and footprint
- No external memory required
- No density hit for vocoder or T.38 fax relay

The **AC491L** is part of the AC49x family of Voice over Packet Processors (VoPPs). It is an ideal solution for digital and analog SME Voice over IP Gateways. The AC491L features up to 32 compressed voice channels, low power consumption, and a small footprint of 16x16mm. With no external memory needed, the AC491L provides a premium building block for medium density gateways and IP-enabled PBXs. The AC491L is based on VoIPerfect™ architecture, AudioCodes' underlying, best-of-breed, and core media gateway technology for all of its products. Field-proven, feature rich software and reference design enables the rapid development and quick time-to-market of the complete solution.

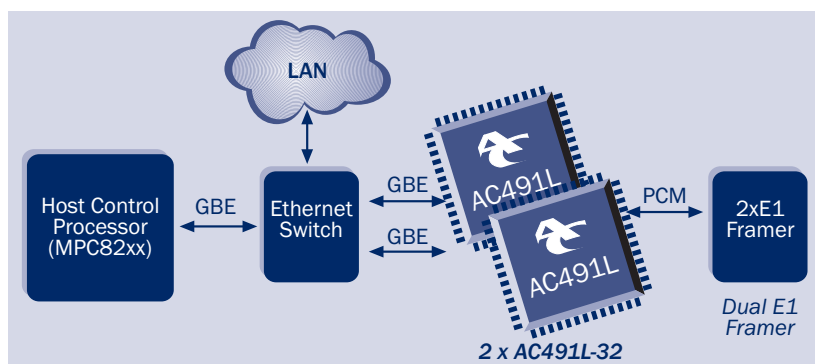
DELIVER FEATURE RICH TECHNOLOGIES

The AC491L VoPP combines up to 32 channels of toll quality low bit rate (LBR) voice compression which are processed with an improved G.168-2004 compliant echo canceller (configurable tail length of up to 128 msec). Additional voice quality enhancers include Adaptive Voice Activity Detection, Comfort Noise Generation and Adaptive Jitter Buffer. Field-proven G3 Fax Relay, compliant with the T.38 ASN.1 standard, is a major enhancement to the AC491L offering. The Fax Relay can withstand delays of up to 10 seconds in the network, has been successful in many interoperability tests with major global OEMs, and was tested with numerous fax machines. The Fax Relay functionality does not alter the channel density.

ENHANCED SYSTEM SOLUTIONS

In addition, the AC491L provides features such as RTP/RTCP Packetization and DTMF relay which offload the Packet Processor (CPU). RTP Packets may be optionally encrypted according to state-of-the-art encryption algorithm AES. The AC491L offers a new set of media processing technologies, such as automatic gain control, energy detector, and packet to packet Transcoding including LBR to/from PCM utilizing only one channel. These features enable developers of Media Server Platforms to leverage AudioCodes' vast experience in the Voice over Packet market by significantly shortening their time-to-market.

2xE1 Digital Gateway with AC491L



AC491L Features

- Wireline, wireless & cable low bit rate Voice Coders
- G.168-2004 compliant Echo Canceller
- T.38 compliant Fax Relay (does not reduce LBR density)
- In-Band Signaling, Caller ID support
- Adaptive Jitter Buffer
- RTP/RTCP Packetization
- Media encryption (AES)

AudioCodes Enabling Technology Products

AC491L

SOFTWARE SPECIFICATIONS¹

Channel Density

Uncompressed 64 kbps Voice	Up to 60+
Compressed Voice	Up to 32

Voice Functions

Voice Coders	<ul style="list-style-type: none"> G.711 (PCM μ/A-law) G.726/7 G.729EV (NB+WB: 8-32kbps, 20mSec) EVRC, EVRC-B (4GV) AMR (4.75-12.2 kbps) G.722 	<ul style="list-style-type: none"> G.723.1 G.729A/B, G.729E GSM-FR iLBC G.722.2 (WB-AMR) Linear 16 bit 16KHz
Echo Canceller	G.168-2004 compliant with up to 128 msec programmable echo tail length	
3 Way Conferencing	Conferencing of 3 participants from PSTN or IP (can be extended to N-way-conferencing)	
Quality Enhancement	<ul style="list-style-type: none"> Voice Activity Detection (VAD) Comfort Noise Generation (CNG) Packet Loss Concealment (PLC) Adaptive and Static Jitter Buffer (up to 300 msec) 	
IPmedia™ Features	<ul style="list-style-type: none"> Automatic Gain Control Energy and Answer detectors Packet to Packet Transcoding 	

Data Functions

Voice/Fax/Data	Automatic detection and switching
Fax Support	T.38 compliant G3 Fax Relay, 2.4-14.4 kbps or PCM bypass
Modem Support	Automatic switch to PCM for up to V.92 rates

Signaling

In-band Signaling	<ul style="list-style-type: none"> DTMF TIA 464B
Detection and Generation	<ul style="list-style-type: none"> MF R1, R2 User Defined and Call Progress tones
Out-of-band Signaling	CAS ABCD (From Standard Framers)
Caller ID	<ul style="list-style-type: none"> Telcordia On Hook & Off Hook Service (Type 1 & 2)
Detection and Generation	<ul style="list-style-type: none"> ETSI On Hook and Off Hook Service (Type 1 & 2) NTT Number Display (Type 1), Name Display

Packetization

RTP/RTCP	Per RFC 3550 (formerly 1889), 3551 (formerly 1890), 2198
DTMF Relay	Per RFC 2833

Encryption

S RTP (Secured RTP Payload)	Per RFC 3711, 128 bit AES, HMAC SHA1
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Software Functionalities

System Features	<ul style="list-style-type: none"> Selection of vocoders on the fly for each channel Dynamic packet size programming
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HARDWARE SPECIFICATIONS

PCM Interface	2.048 to 8.192 Mbps, A-Law / μ -Law
Host Port Interface (control and media)	16-bit, Multiplexed
Gigabit Media Independent Interface (control and media)	GMII: 10/100/1000 Mbit/s
Power Supply	+1.4 V (core), +3.3 V (I/O & PLL), +2.5 V (DDR)
Power Consumption	900 mW (25° C), 1100 mW (85° C)
Operating case temperature range	0° C to 85° C
Physical Package	16x16 mm, 285-pin MicroStar BGA (Pb-Free ZVC)

¹ Please contact an AudioCodes representative for specific software availability

APPLICATIONS

- PRI Gateways
- 32 channel Analog Gateways
- IP and IP-Enabled PBXs
- Wireless (UMTS, CDMA, GSM) Gateways

ABOUT AUDIOCODES

AudioCodes Ltd. (NASDAQ: AUDC) provides innovative, reliable and cost-effective Voice over IP (VoIP) technology, Voice Network Products, and Value Added Applications to Service Providers, Enterprises, OEMs, Network Equipment Providers and System Integrators worldwide. AudioCodes provides a diverse range of flexible, comprehensive media gateway, and media processing enabling technologies based on VolPerfect™ – AudioCodes' underlying, best-of-breed, core media architecture. The company is a market leader in VoIP equipment, focused on VoIP Media Gateway, Media Server, Session Border Controllers (SBC), Security Gateways and Value Added Application network products. AudioCodes has deployed tens of millions of media gateway and media server channels globally over the past ten years and is a key player in the emerging best-of-breed, IMS based, VoIP market. The Company is a VoIP technology leader focused on quality and interoperability, with a proven track record in product and network interoperability with industry leaders in the Service Provider and Enterprise space. AudioCodes Voice Network Products feature media gateway and media server platforms for packet-based applications in the converged, wireline, wireless, broadband access, cable, enhanced voice services, video, and Enterprise IP Telephony markets. AudioCodes' headquarters are located in Israel with R&D in the U.S. Other AudioCodes' offices are located in Europe, India, the Far East, and Latin America.

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