

V4800IP



Highlights

- ❖ **Linux based Call Control API**
 - ❖ **SIP and MGCP (Megaco)**
- ❖ **V5.2/1 AN or LE – 16 x E1 ports**
 - ❖ PSTN, BCC, CC, LC
 - ❖ V5.2/1 Link Redundancy
 - ❖ V5.2 ISDN & FR cross channel connect
 - ❖ CAS/MF-R1/R2
 - ❖ DTMF & call progress tones
 - ❖ Caller ID
 - ❖ 10K BHCA @ 99.999% call completion reliability
- ❖ **VoIP 100Ethernet - 480 Channels**
 - ❖ G.711 & lbr Codecs
 - ❖ G.168-2002 upto 128 msec echo cancellation
 - ❖ T.38 fax & Tone relay
- ❖ **Compact PCI – 6U & RTB**
 - ❖ Hot swap
 - ❖ H.110 backplane switch
 - ❖ cPSB 2.16 compliant
 - ❖ CLI port, alarms & status
 - ❖ Patch panel
- ❖ **SNMP Management API**

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Powerful Blade Solutions for Packetizing the PSTN Edge

ETSI V5.2 Access Network & Local Exchange Migration to VoIP

Overview

EdgeBlade™ V4800IP is a powerful PSTN to Voice-over-IP conversion blade fully ready for integration in the CompactPCI form-factor based network nodes. Supporting 16 x E1 V5.2/1/CAS/MF interfaces to PSTN and a 100 Mb/sec VoIP Ethernet interface to IP networks, V4800IP is a complete, fully integrated module ready for building carrier solutions to implement VoIP centric networks at both at the access layer and at the central office switch point.

Integrating VoIP Access Networks

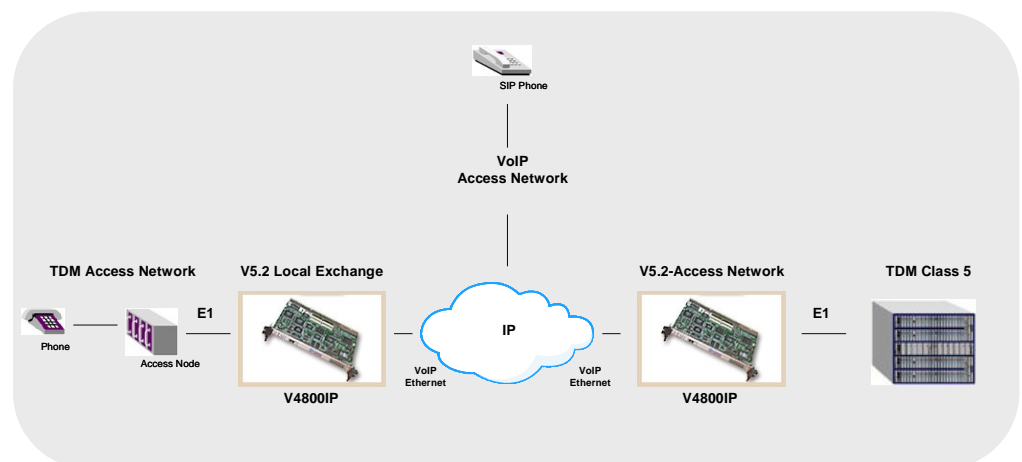
Network elements built with V4800IP can terminate new access networks such as WiMAX, WiFi, Cable, Satellite and broadband Fiber/DSL with VoIP/Ethernet and connect into an existing ETSI Class 5 switch over V5.2/1. In this mode, V4800IP translates VoIP calls and tones to TDM for connection to Class 5 switch.

Building an VoIP NGN Central Office Switch

An NGN VoIP centric switch can integrate V4800IP to support legacy TDM access networks and loop carriers. V4800IP can be programmed to convert incoming TDM calls to either VoIP or maintain outgoing TDM trunking format. In this mode, V4800IP provides pcm voice, dial-tone, DTMF, call progress tones, CallerID and other functions required of a Class 5 switch.

Traffic Engineering Solutions

To create powerful traffic engineering solutions, a single V4800IP can be partitioned partially as an Access Network and as a Local Exchange. Such a node can be programmed to selectively divert PSTN calls into a VoIP network. As an example, dialtone can be distributed from an underutilized V5.2 switch over an IP network to an overloaded Central Office switch thus avoiding a costly switch upgrade. Many combinations are possible for optimizing traffic/cost parameters at intersection points between the legacy TDM PSTN networks and the emerging VoIP based architectures.



Technology

V4800IP is complete with all on-board firmware required to terminate a PSTN interface as Access Network or as Local Exchange and a fully featured, state-of-the-art VoIP engine which converts 480 channels of TDM voice into G.711 and various LBR codecs with upto 128 msec of echo cancellation. V4800IP incorporates the widely deployed CoSystems ETSI V5.2 protocol stack as the basis for a solid, reliable and scaleable product. Fully qualified at 10,000 BHCA with 99.999% call completion reliability, it supports all necessary PSTN signaling and tones with a dedicated on-board DSP engine. V4800IP supports comprehensive APIs for configuration, monitoring, management and call control applications which need to be customer developed to derive target solutions. Linux based sample call control and management code are included in the source code format.

Selected Technical Specifications

PSTN – ETSI V.52, V5.1, CAS/MF

Channel Capacity	Upto 480 Channels on 16 x E1 links allowing for link redundancy and management. (Optionally available in 4, 8 and 12 x E1 link versions upon request)
Call Control	On-board call control proxy interfaces with host based API to place/terminate calls Call control is maintained by customer developed applications which link with supplied call control API. Supplied in source code form fully tested on Linux hosts. Also available on Solaris 10.
Management	On-board management proxy interfaces with host based API to manage V4800IP. Configuration, protection, alarms, monitoring and performance management functions are available. Supplied in source code form fully tested on Linux hosts. Also available on Solaris 10. (CoSystems proprietary).
ETSI V5.2/1 Standards	Full ETSI compliance to specifications: <ul style="list-style-type: none"> • ETS 300 324 • ETS 300 347 • ETS 300 795
V5.2/1 Layer 3	PSTN, CC, BCC, LC, Protection Switching ISDN-PRI, ISDN-BRI. Semi-permanent leased line, Permanent Line.
V5.2/1 Layer 2	LAPV5-DL, LAPV5-EF, LAPV5-FR
PSTN Signaling	CAS-R2/R1 CCS- ETSI V5.2/1
Tone Detection	DTMF, MF-R1/R2/Telephony tones on upto 480 channels
Tone Generation	Dial-tone, CallerID, Call Waiting
Clock	E1 BITS Clock
Performance	10,000 BHCA @ 99.999% call completion reliability

VoIP

Channel Capacity	Upto 1008 (max) channels. 1 x 100 Mb/sec Fast Ethernet Interface
IETF Standards	RFC791(IP), RFC768(UDP), RFC1889 (RTP/RTCP), RFC 2833 (tone relay)
Codec Support	Total channel mix: 1008 G.711 - 1008 max channels (supports A-law to u-law conversion for G.711) G.726 - 864 max channels G.723.1 – 160 max channels G.729A, G.729B – 240 max channels T.38 Fax – 200 max channels
Echo Cancellation	Compliant with G.168-2002 with upto 128 msec echo tail
DTMF	DTMF detection and generation. Support for R1 and R2 signaling.
Tones	<ul style="list-style-type: none"> • DTMF/MF-R1/R2 Telephony tones detection and generation upto 480 channels • Collect DTMF digits: 0 to 9, *, #, A,B,C,D per ITU-T Q.23 and Q.24 • 2100 Hz fax/modem detection
Voice Quality Enhancement	Adaptive noise reduction, ITU G.169 - automatic level control, silence suppression, spectral comfort noise (G.711), Packet loss concealment, Audio conferencing
Fax	T.38 compliant fax relay
Management Support	SNMP V1: Standard MIB-2, RTP-MIB, CoSystems proprietary MIBs

Hardware

Form factor	Single slot 6U PICMG 2.0/2.1 (CompactPCI) - requires RTB for external connections Supports full hot-swap 3.3 volts and 5 volts
Ethernet	1 port @ 10/100 on cPSB or RJ45 on RTB 1 port @ 10 on cPSB or RJ45 on RTB
PSTN	16 E1/J1 ports on high density 68 pin connector Optional: cable and patch-panel available to terminate on RJ45 or AMP/CHAMP connector
Front panel	Alarm, Power, Active LEDs 8 digit HEX alpha-numeric display for status RS-232-C CLI port
RTB panel	High density 68 pin connector for PSTN (Cable and patch panel optional) 4 x RJ45 for Ethernet 1 x RJ45 for BITS clock 1 x RJ45 for hardware redundancy
Internal bus support	H.110 – full switching (can switch H.110 TDM slots to VoIP engine for packetization) PCIMG 2.16 – cPSB Ethernet connections to switch card PCI Bus for selected functions
Power	50 Watts
Temperature	Operating: Commercial 0c – 50c, Storage: -20c – 80c
Humidity	10-90% relative humidity, non-condensing



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