

CIP-ALL

ANALOG INTERFACE CONVERSION OVER IP

Benefits

- Analog interface conversion over Ethernet - IP
 - ALL : Analog Leased Line voice circuit emulation
 - EM: E&M voice and signaling emulation
 - FXO / FXS : POTS line emulation
- 4x analog modules - ALL / E&M / FXO / FXS
- 1x E1/G.704 interface
- 1x RS232 serial interface, RS232 over IP conversion
- 2x optical Gigabit Ethernet interfaces with SFP sockets
- 4x 10/100 Mbps Ethernet interfaces
- Pseudo Wire Emulation over IP - Ethernet
- G.711 Codec, Zero distortion 64 kbps sampling
- Voice Frequency transport over IP, no deterioration of the analog signal
- CES over PSN and SAT over PSN
- QoS, 4 transmit queues per interface
- Per port Rate limiting
- Per port VLAN and 802.1Q
- Ethernet frame buffer : 1 MB
- MAC address memory : 8K
- Secured and intuitive management : ssh, http, https, snmp, ftp
- Graphical MIB for SNMP-C
- Robust metallic enclosure, 19", wall and DIN rail mounting kits
- Operating temperature: -10° C to +60° C, fan-less
- Dual power supply inputs : 12 -24 or 48 Vdc, and 110-230 Vac mains adapter

VOICE, E&M, LEASED LINE AND FXO / FXS EMULATION OVER IP - ETHERNET



The **CIP-ALL** emulates and transports up to four analog leased lines, E&M and FXO/FXS telephone interfaces over Ethernet - IP. The analog interfaces are 300 - 3,400 Hz voice frequency type as per ITU-T M.1020 standard for the leased line or E&M voice emulation, and classical FXO/FXS, 600 Ohms impedance, for the telephone interfaces.

The **CIP-ALL** carries the voice frequency channels through pseudo-circuits over Ethernet / IP (Bundles) in compliance with the established CES over Packet Switched Network (RFC 5086) standard. The Analog to Digital conversion is performed by a G.711 CODEC and a high performance processor that delivers a minimum transfer delay and distortion-free transport. Each interface may be encapsulated in a dedicated IP Bundle. This technology does not compare with VoIP as it delivers faster transfer delay, full G.711 quality, which is compatible with any modem application.

The **CIP-ALL** has four 10/100 BaseT Ethernet interfaces and two GigaBit Ethernet interfaces with optical SFP modules. Several products can be chained to deliver many more analog interfaces. Any user equipment can connect to the network through the copper or optical interface

thanks to the high density of accesses delivered by the CIP-ALL. One of the Ethernet interfaces can deliver a 12.5 W Power over Ethernet supply to an IP camera or VoIP set, for example.

The **CIP-ALL** provides an asynchronous RS232 interface to carry any data from an asynchronous application over the IP network. Data is transported through a connected TCP or a datagram UDP socket. An adaptation layer takes care of the asynchronous data consistency for specific applications.

As an option, the **CIP-ALL** receives a E1 add-on interface to connect a PBX-like terminal to the packet network through CES over PSN or SAT over PSN (RFC 4553) pseudo-circuits. Every 64 kbps timeslot can be transported over a dedicated pseudo-circuit over IP.

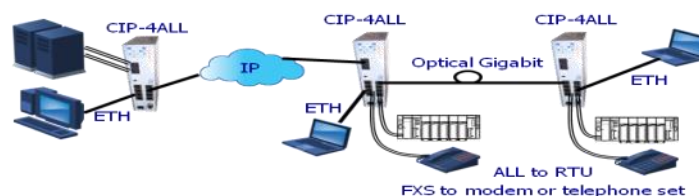
The **CIP-ALL** manages the Quality Of Service at all Ethernet access. It classifies all incoming traffic and directs them to four transmit priority queues at the outgoing interface. Several Ethernet and IP applications may then share the same network while the equipment takes care of prioritizing critical traffic.

The **CIP-ALL** comes in a robust metallic enclosure and different mounting options for DIN rail, wall or 19" bay integration. It is powered from one or two supply sources of 12 -24 or 48 Vdc.

The **CIP-ALL** is controlled from an intuitive and powerful management interface with secured ssh and https protocols. Clear user friendly menus make it easy to configure and run the product. A full set of IP, ftp, snmp protocols serve the integration into a global snmp network management system.

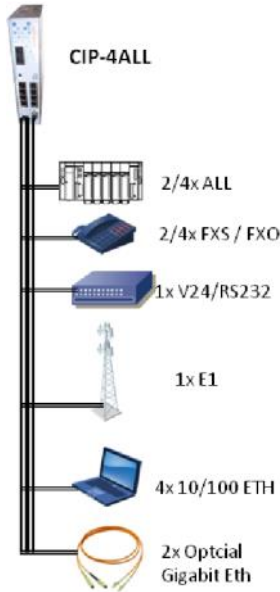
APPLICATIONS

Migration of audio services such as E&M, analog leased lines and POTS telephone lines for remote industrial equipment



The **CIP-ALL** connects classical analog, voice frequency equipment through an Ethernet - IP Packet Network. Such equipment may have Leased Line or FXO / FXS POTS telephone interfaces sometime with embedded modems. The Circuit Emulation over Packet processor delivers high performance, extremely low latency, and a perfect distortion-free transport of the analog signals. The CIP-ALL provides many emulation protocols and a dual 10/100 BaseT and optical Gigabit Ethernet connectivity to adapt to any network requirement.

TECHNICAL SPECIFICATIONS



E&M and Analog Leased Line Interfaces (ALL)

- 0, 2 or 4 ALL or E&M interfaces
- 2 and 4 wires modes
- Frequency response : ITU-T M.1020
- Bandwidth : 300 - 3400 Hz
- Impedance : 600 Ohms
- Level control : +/- 6 dB
- Max input level : -10 dBm
- Socket : RJ45
- 1 bundle per interface
- E&M: type 1-5 selection through jumpers

FXS Interfaces

- 0, 2 or 4 FXS interfaces
- Connects to a telephone set
- DTMF multi frequency dialing
- Line current : 10 mA / 48 Vdc
- Ring generator : > 40 Vrms / 20 - 25 Hz
- REN = 3
- PLAR mode, red line
- Bandwidth : 300 - 3400 Hz
- Impedance : 600 Ohms
- Level control : +/- 6 dB
- Max input level : -10 dBm
- Socket : RJ45
- 1 bundle per interface

FXO Interfaces

- 0, 2 or 4 FXO interfaces
- Connects to a PBX
- DTMF multi frequency dialing
- Ring detector : > 24 Vrms
- Bandwidth : 300 - 3400 Hz
- Impedance : 600 Ohms
- Level control : +/- 6 dB
- Max input level : -10 dBm
- Socket : RJ45
- 1 bundle per interface

E1 Interface

- 1x interface : E1
- E1 : 2.048 Mbps, HDB3 coding
- G.703 / clear channel or frame / multiframe mode Framing : G.704
- Impedance : 75 and 120 Ohms
- Sockets : BNC and RJ45
- Timeslot encapsulation into 1 to 30 bundles
- Clear channel mode : SAT over Packet
- Framed G704 mode : CES over Packet

Management

- Light indicators : Ethernet Link/act and 100 Mbps, SFP optical signal, TD and RD on RS232, AIS and LOS on E1, operation and test
- TCP-IP protocols: Telnet, http, ssh, https, and ftp for firmware upgrade and configuration management
- Clear intuitive HTML menus
- In-line commands : ssh and console port
- Snmp : v1/v2, and graphical MIB for SNMP-C
- Diagnostics and transmission statistics on each interface

- Syslog and logging of major events
- Alarm relay

Serial V.24 - RS232 interface

- 1x V24 - RS232 asynchronous interface
- Rate : 300 to 115,200 bps
- Format : 8 bits or 7 bits with parity
- Connection through IP address and TCP/UDP port
- Encapsulation over IP : UDP or TCP
- Adaptation layer : transparent, bloc, message
- V.24 Signals : TD, RD, RTS, CTS, DTR, CD, DSR
- Socket : RJ45, EIA 561

10/100 BaseT Ethernet interfaces

- 4x 10/100 BaseTX Ethernet interfaces, IEEE 802.3
- Speed : 10/100 Mbps automatic
- Automatic MDI/MDIX detection
- Socket : RJ45
- POE on Ethernet port #1 and 2 - on option
- Statistics : counters of sent and received frames, interface diagnostics

Optical Gigabit Ethernet interfaces

- 2x sockets for SFP optical modules
- Ethernet 1000-SX interfaces
- Speed : 1,000 Mbps
- Counters for sent and received frames, interface diagnostics
- SFP modules : single WDM or two fibers, multi-mode or single-mode, distances from 300 m to 80 km

Ethernet Switch features

- Per port VLAN and VLAN 802.1Q
- QoS : priority queuing on VLAN and DSCP, 4x transmit priority queues per Ethernet interface
- Ethernet address memory : 8 K
- Ethernet frame buffer : 1 MB
- Rate limiting per Ethernet port

Pseudo-Wire Packet Processor

- CES over Packet Switched Network : RFC 5086
- SAT over PSN : RFC 4553
- Process of 1 to 34 bundles
- Minimum transmit encapsulation delay : 125 µs
- Minimum receive jitter buffer : 1 mS
- High accuracy TCXO Oscillator
- Encapsulation at either Ethernet or IP layer

Other characteristics

- Enclosure : stainless steel, mounting kits for DIN rail, 19" frame and wall
- Size : 220 x 140 x 44 mm
- Weight : 0.8 kg
- Power supply :
 - -C1 : 48 Vdc, 36 to 72 Vdc
 - -C2 : 12/24 Vdc, 9 to 36 Vdc
- Max power consumption : 12 W max, no POE
- Operating temperature : -10 to +60 °C
- CE : EN60950, EN55022, EN55024
- MTBF : 180.000 hours

ORDERING INFORMATION

Accessories

- ACDC-48V-35W : AC adapter
- DIN-SWD-SWMD : DIN rail kit
- RACK-19-1CIP : 19" brackets
- WALL-1CIP : Wall mount kit

CIP [- 2/4ALL] [- 2/4EM] [- 2/4O] [- 2/4S] [- ET] [- P] [- C1 / C2]

Reference	ALL	EM	FXS	FXO	RS232	E1 Option	POE option	Power supply
CIP-4ALL	4	-	-	-	1	-ET	-P	-C1: 48 Vdc -C2: 12-24 Vdc Option 110-230 Vac to 48 Vdc mains adapter Ref. : ACDC-48V-35W
CIP-4EM	-	4	-	-	1	-ET	-P	
CIP-2ALL-2S	2	-	2	-	1	-ET	-P	
CIP-2ALL-2O	2	-	-	2	1	-ET	-P	
CIP-2EM-2S	-	2	2	-	1	-ET	-P	
CIP-2EM-2O	-	2	-	2	1	-ET	-P	
CIP-4S	-	-	4	-	1	-ET	-P	
CIP-4O	-	-	-	4	1	-ET	-P	
CIP-2O-2S	-	-	2	2	1	-ET	-P	

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