

CIP-ALL

PSEUDO WIRE EMULATION OVER ETHERNET-IP

ANALOG INTERFACE CONVERSION OVER IP



Voice, E&M, Leased Line and FXO / FXS Emulation over IP - Ethernet

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 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

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.

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.

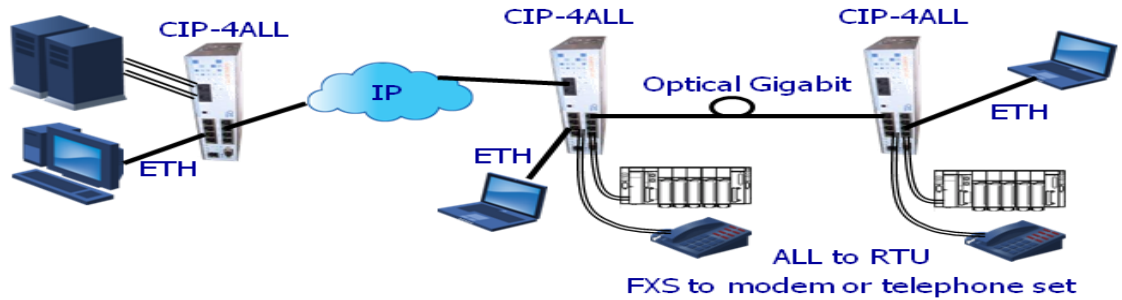
The CIP-ALL comes in a robust metallic enclosure and different mounting options for DIN rail, wall or 19" bay integration. It is powered from one or two 48 Vdc supply sources.

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.

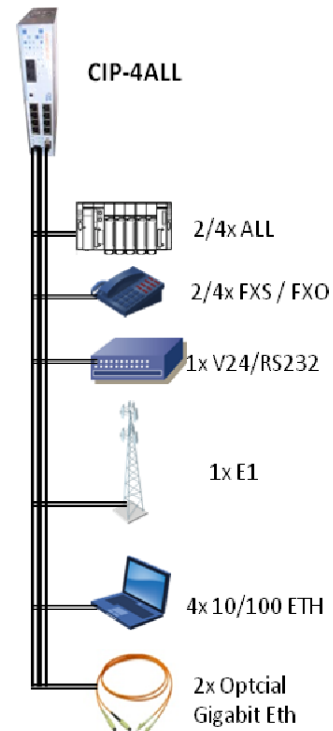
Technical Specifications

E&M AND ANALOG LEASED LINE INTERFACES (ALL)

0 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 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



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

FXO INTERFACES

0 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

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
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
Gratuitous ARP

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
Max power consumption : 12 W max, no POE
Operating temperature : -10 to +60 °C
CE : EN60950, EN55022, EN55024
MTBF : 180.000 hours

ORDERING INFORMATION

ACCESSOIRES

- ACDC-48V-50W : AC adapter
- DIN-SWD-SWMD : DIN rail kit
- RACK19-1CIP : 19" brackets
- WALL-1CIP : Wall mount kit

CIP [-4ALL / -4EM / -4O / -4S] [-C1]

Référence	ALL	EM	FXS	FXO	RS232	Alimentation
CIP-4ALL	4	-	-	-	1	-C1: 43-53 Vdc Option 110-230 Vac to 48 Vdc mains adapter Ref. : ACDC-48V-50W
CIP-4EM	-	4	-	-	1	
CIP-4S	-	-	4	-	1	
CIP-4O	-	-	-	4	1	