

Highlights

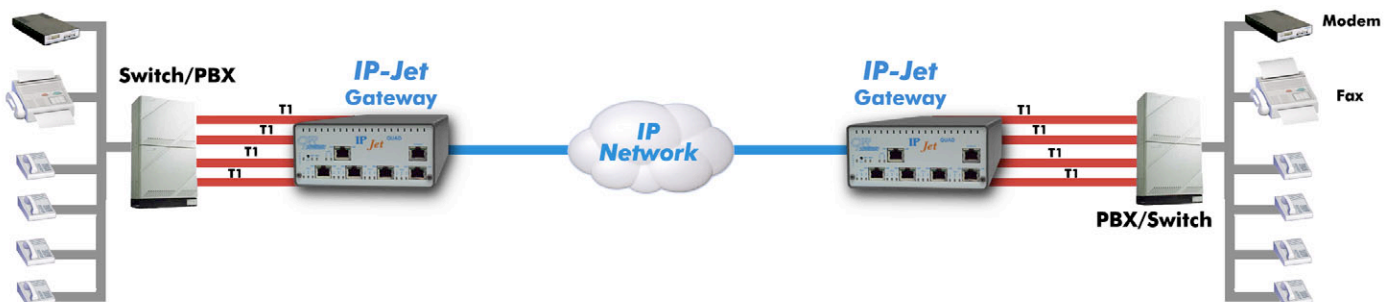
- Connect up to 4 T1 PBX/Switch facilities over a transparent IP link
- Supports services such as Conference Call, Caller ID and Call Transfer
- Encapsulates full and fractional T1/TDM circuits, along with their signaling and framing bits
- T1 with or without compression versions
- Administer QOS in routers with DiffServ through IP Type of Service (TOS) bits on 10/100Base-T link
- Transport T1 in encapsulated UDP, IANA port 3175
- Configure the number of frames per packet and buffer
- Manageable either in-band or out-of-band (through console port)
- Telnet, SNMP or Console port
- Maintain the benefits of existing equipment and features
- Easy to install and setup
- Minimum external connections

The **CXR-Anderson Jacobson IP-Jet™** gateways deliver enhanced techniques for transporting and delivering conventional TDM channelized and unchannelized circuits over an Ethernet/IP network. The IP-Jet is an ideal solution for interconnecting PBXs, telco switches or T1 channel banks or cell towers to the central office.

The IP-Jet gateway encapsulates both full and fractional T1 and TDM circuits including the framing and signalling bits into IP packets. These packets are then transported across the enterprise intranet, Local Area Network (LAN), Metropolitan Area Network (MAN) or Wide Area Network (WAN).

Service providers benefit from deploying the IP-Jet gateways because it supports legacy equipment currently installed and the providers do not have to deploy additional circuits as the demand for more subscribers

Applications



increases. End users benefit because they have an alternative application to control changing and rising costs. They simply piggyback their voice traffic onto their data networks. In either case return on investment is measured in weeks rather than years.

Local Exchange Carriers gain the benefit of providing a back haul method for carrying the customer DSOs from their phone system over their Internet connection to the LECs telephone switch connected to the PSTN.

T1 Circuit Extension Over IP

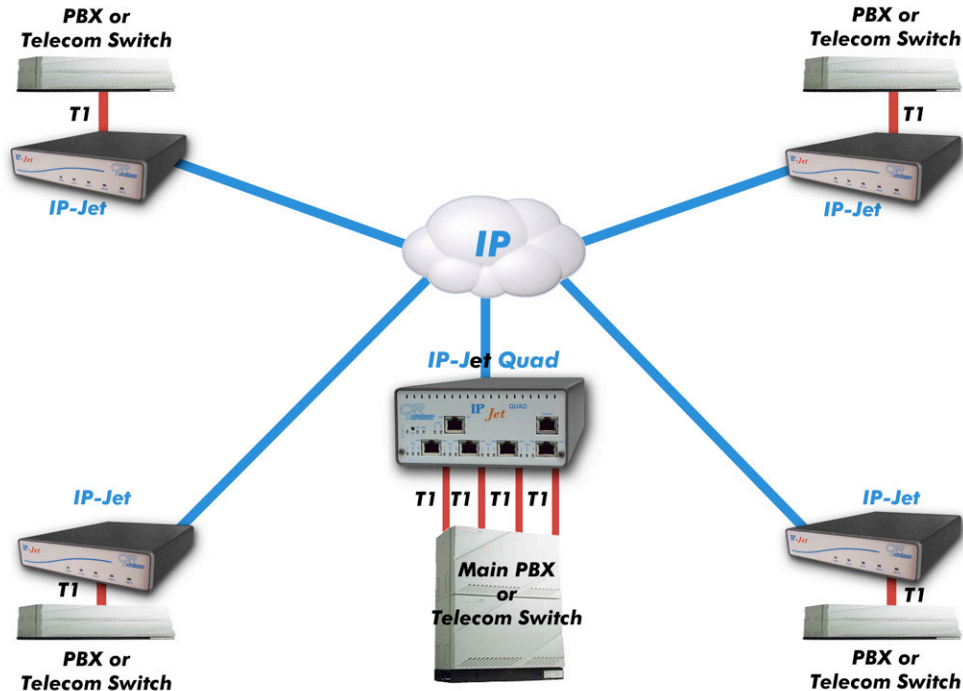
- LANs, WANs, MANs
- Wireless Ethernet
- Gigabit Ethernet
- Hybrid Fiber Coax
- Cable Networks
- Satellite Networks

Voice Quality without Compromise

The IP-Jet allows the migration of conventional voice traffic T1 CAS, or ISDN PRI, on high speed Ethernet circuits, Gigabit Ethernet copper or fiber.

Anderson Jacobson IP-Jet

Distributed Architecture



The IP-Jet series of gateways differs significantly from VoIP gateways. Maintaining all of your existing IP-Jet T1/E1 (TDMoverIP) gateways take a much straighter approach than traditional voice over IP (VoIP systems) by taking the incoming TDM data stream and slicing it into IP packets, then adds the IP header, and lastly sends it on to its destination. The receiving end then simply reassembles the original bit stream, puts the packets back into order and regenerates the clock. Traditional VoIP has the added functions of having to interpret all of the DTMF digits along with analog voice signals and converts them into IP packets. Then it has to reverse the process at the far end. When bandwidth is abundant, the IP-Jet gateways are the ideal solution for transporting the highest voice quality with lowest latency. This method requires a constant stream of high priority packets.

T1 Private Line Service Over IP Ethernet

Businesses, Education Districts, Universities, National, State and Local Government, incur significant recurring monthly costs for rigid-bandwidth leased lines used only for the interconnection of PBXs and Telecom switches. The IP-Jet Series provides communications managers with the ability to interconnect their existing phone systems over flexible bandwidth lines that are used to carry data, voice, and video. The Voice Only Leased Line Toll charges assessed by long distance and local carriers are eliminated or dramatically reduced by transporting voice traffic across LANs, WANs and Wireless Ethernets:

LANs

The most compelling option for the interconnection of T1 based systems is when it can be accomplished over a

Local Area Network. The deployment of Fiber based LANs such as FDDI and Gigabit Ethernet, provides organizations with high performance and high quality bandwidth that is especially well suited for the interconnection of PBXs and Telecom Switches.

WANs

Wide Area Networks that have sufficient bandwidth and Quality of Service provisioning result in very significant cost savings especially for multinational corporations. The IP-Jet Series adds lossless data compression, detects idle and redundant data within each voice circuit resulting in a 56 to 1 bandwidth savings. WAN bandwidth is not consumed by silence or redundant samples.

Wireless Ethernet

Connecting phone systems across a wireless Ethernet connection has a return on investment that is measured in weeks. Eliminating the wired connection for the T1 based communication equipment is made possible with the IP-Jet's T1 Over Ethernet capability.

Anderson Jacobson IP-Jet

Competitive IP Ethernet Service Providers

Companies, that are able to provide IP Ethernet access networks generate new revenue by offering traditional T1 leased line and private line services, such as:

Cable Operators

Cable operators connect traditional T1 leased line and private line services over their hybrid fiber coax (HFC) cable networks.

Metropolitan Area Networks

Metropolitan carriers with IP or Ethernet access networks deliver traditional leased line and private line services.

Utilities

Utilities generate new revenue by offering traditional T1 leased line and private line services over their fiber or power line networks.

CLEC PBX Back Haul

The IP-Jet provides CLECs with a way to back haul T1 DS0s from a customer's phone systems over their Internet connection. The back hauled DS0s are connected to the CLECs phone switch for connection to the Public Switched Telephone Networks. Competitive Local Exchange Carriers are able to provide customers with a very economical alternative to the local Phone Company since the Local Loop charges for each phone line are consolidated.

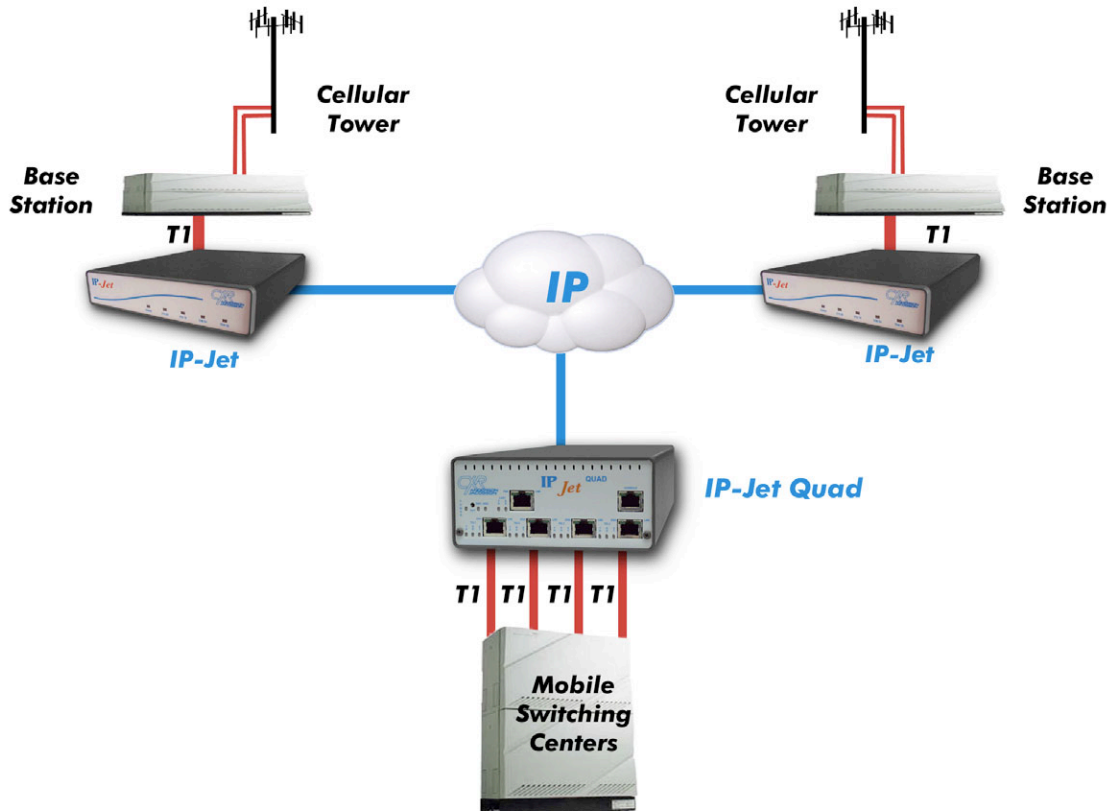
International Toll Bypass

The IP-Jet Series' most dramatic cost savings is when it is used for the international interconnections of TDM based telecommunication equipment. The IP-Jet E1 is interoperable with the European TDM standard E1.

Incumbent Carriers

Telcos reduce costs by delivering profitable leased and private line services over their flexible Ethernet infrastructures.

IP Cellular Back Haul



Anderson Jacobson IP-Jet

Specifications

LAN PARAMETERS

- LAN Port: 10/100Base-T: RJ-45; Full or Half Duplex Ethernet Auto-Negotiate or manually configured Speed and Duplex mode
- LAN Protocols: IP, TCP, UDP, ICMP
- Quality of Service Support: IP TOS (Type of Service) bits , CLI configurable
- Duplicate Packet Transmission: 1 to 4 Duplicates - provides for robust performance across poor or unstable interconnects
- T1 over IP Protocol: TDMoverIP (Time Division Multiplexing over Internet Protocol) CESoIP (Circuit Extension Services over Internet Protocol) HDLCoIP (HDLC over IP) Frames per Packet: User defined 8 to 56
Low Latency Mode: 1 millisecond 8 T1 frames
Maximum Payload Mode: 5 milliseconds 56 T1 frames

LOSSLESS DATA COMPRESSION

- Data handling: Detects idle and redundant data within each DS0
- Interconnect bandwidth: Not consumed by silent or redundant data within the voice circuits
- Low Latency: 16 to 1 Compression
- Maximum Compression: Setting of 56 to 1

T1/FT1 PARAMETERS

- # of Ports: 1 to 4 port models
- Interface: RJ-48, 100 Ohms, G.703, 1.544Mbps; Connects directly to T1 line, or DS1 interface, with a CrossOver cable
- Coding: AMI or B8ZS
- Framing: SF (D4) or ESF
- DS0 Assignments: Supports DS0 assignments from 1 to 24; Contiguous or non-contiguous
- Transport: T1 CAS channelized or clear channel Voice, Fax, Data and modems
- Transport of PBX Services: Conference Call, Caller ID, Call Transfer, and so forth
- Frame Buffering: 8 T1 frames = 1 ms
56 T1 frames = 5ms

MANAGEMENT

- Console port: Out of Band Management
- Telnet: In Band Management, Edit and Paste Templates
- SNMP: MIB I and MIB II support
- Remote: Configuration, Monitoring and Reset
- TFTP: Online Upgrade (through Flash memory - uninterrupted service during upgrade)

PHYSICAL

- Power: 115 VAC (10 W Max)
Hot Standby with second power module
48 VDC (optional)
- Dimensions
Single: 9 in x 7.3 in x 1.5 in (L x W x H)
Quad: 14 in x 5.5 in x 2.5 in (L x W x H)
(Standard 19 inch rack mount kit available)

PHYSICAL (Continued)

- Weight: 2 lbs.

COMPLIANCE/REGULATORY

- FCC: Part 15, Class A
- CE:
- EMC: CFR 47 Part 15 sub Part B:2002
EN55022:1994+A1 & A2
EN55024, IECS-003 1997
CISPR 22 Level A

Ordering Configurations

SINGLE

- **IP-Jet T1**
Single Port T1, Single Ethernet Port
- **IP-Jet T1-C**
Single Port T1 with Compression, Single Ethernet Port

QUAD

- **IP-Jet QT1-1**
IP-Jet Quad T1 - 1 Ethernet port, 1 T1 port
- **IP-Jet QT1-2**
IP-Jet Quad T1 - 1 Ethernet port, 2 T1 ports
- **IP-Jet QT1-3**
IP-Jet Quad T1 - 1 Ethernet port, 3 T1 ports
- **IP-Jet QT1-4**
IP-Jet Quad T1 - 1 Ethernet port, 4 T1 ports
- **IP-Jet QT1C-1**
IP-Jet Quad T1 - 1 Ethernet port, 1 T1 port with Compression
- **IP-Jet QT1C-2**
IP-Jet Quad T1 - 1 Ethernet port, 2 T1 ports with Compression
- **IP-Jet QT1C-3**
IP-Jet Quad T1 - 1 Ethernet port, 3 T1 ports with Compression
- **IP-Jet QT1C-4**
IP-Jet Quad T1 - 1 Ethernet port, 4 T1 ports with Compression

OPTIONS

- 48 VDC power
- 19 in Rack Mount Kit