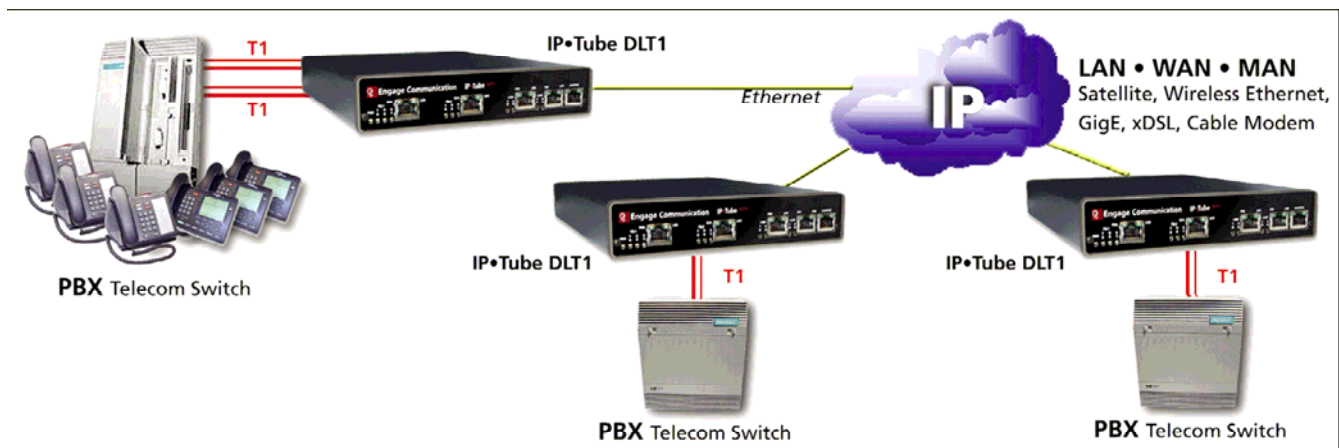


BHUMIKA APPLICATION NOTE

IP-PBX (PBX over IP Solutions) – Protecting your legacy PBX investment

Enterprises are already invested heavily in PBX voice systems. These organizations recognize the potential value of VoIP and IP Telephony, but are JUST NOT READY to forklift their PBX investments to move to an IP Telephony system. Engage Communication offers a transparent solution of networking existing PBXs over IP/Ethernet...The IP•Tube T1! The IP•Tube T1 carries point-to-point PBX voice traffic over IP/Ethernet. End users save thousands of dollars every month by eliminating costly T1 leased line circuits.

Bhumika International Inc offers Engage Communications' IP•Tube T1 that encapsulates the T1 bit stream (both channelized and unchannelized) for transport over IP. The IP•Tube T1 ensures that the PBX-to-PBX signaling used on the point-to-point lines will get reproduced exactly on the other side of the IP pipe as originally transmitted. Just connect the PBX's T1 cable into the IP•Tube T1, and you're done. **It's a GREAT deal!**



The Engage IP•Tube T1 provides a proven, economical solution for PBX communication over IP connections. There is no need to forklift upgrades to VoIP or IP Telephony.

The IP•Tube T1 provides enterprises 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 dramatically reduced or eliminated by transporting voice traffic across IP and Ethernet LANs and MANs that are becoming more and more ubiquitous:

Local Area Networks (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 Gigabit Ethernet, provides organizations with high performance and high quality bandwidth that is especially well suited for the interconnection of PBXs.

Wireless Ethernet:

Connecting phone systems across a wireless Ethernet connection has a return on investment that is measured in weeks.

Wide Area Networks (WANs):

Wide Area Networks with sufficient bandwidth and Quality of Service provisioning offer a compelling alternative to T1-based terrestrial networks. Let's explore some WAN options:

- **Competitive IP / Ethernet Service Providers:** The list of Service Providers offering IP/Ethernet access networks is growing. The types of technologies that support reliable broadband IP/Ethernet are diverse.

BHUMIKA APPLICATION NOTE

- **Cable Operators:** Cable operators deliver traditional Ethernet private line services over their hybrid fiber coax (HFC) cable modem termination systems (CMTS).
- **Metropolitan Area Networks:** Metropolitan carriers have built fiber-optic based Gigabit Ethernet networks to support a menu of flexible Ethernet services.
- **Utilities:** Utilities continue to build state-of-the-art IP/Ethernet networks over their vast power system Rights-of-Way to offer broadband services over fiber optics or power line carrier (PLC) networks.

The IP•Tube T1 transparent operation maintains the proprietary signaling required to support PBX voice communications. Voice quality is not compromised. The IP•Tube T1 is available with one to four T1 interfaces and with one to two 10/100 BaseT Ethernet interface(s). The T1 interfaces have configurations that provide independent protocol, compression, packet sizing, buffering, clocking, framing, coding and channel settings. The protocols supported are IPTube and CESoIP.

The IP•Tube T1•C adds the power of lossless data compression. This optional functionality continuously detects idle/redundant data within each DS0 resulting in as much as a 56 to 1 bandwidth savings. TDM over IP bandwidth is not consumed by silent or redundant circuits. The IP•Tube T1•C lossless data compression option is ideal for environments where network bandwidth is limited such as point-to-point and point-to-multipoint wireless, HFC cable modems, xDSL, Power Line Ethernet or the Internet.

IP-Tube T1 Features

- 1 and 4 port T1 models available
- 1 and 2 port 10/100T models available
- Optional Lossless Data Compression
- Optional Load Sharing & Redundant Ethernet
- AC and DC Power Options
- Supports Full and Fractional T1
- Straightforward Configuration

Additional IP•Tube Applications

- Cellular Backhaul over IP/Ethernet
- T1 Leased Lines over IP/Ethernet
- SS7 Signaling/Monitoring over IP/Ethernet
- Serial Data (RS530, V.35, RS232, X.21) over IP/Ethernet
- Toll Bypass over IP/Ethernet
- Encrypted Data over IP/Ethernet



T1 Over IP for Voice and Data

T1 Circuit Extension Over IP

- ROI Measured in Weeks
- Exploits Efficiency of IP/Ethernet
- Supports Legacy Switches/PBX
- Straightforward Configuration

To get more information about this solution or to obtain a Data Sheet, Technical Specifications and a Quotation, Please contact Bhumika International Inc. at info@bhumika.ca or at +1 416 930-2931