

## State Governments protect critical circuits at a fraction of the cost of traditional automatic protection switching

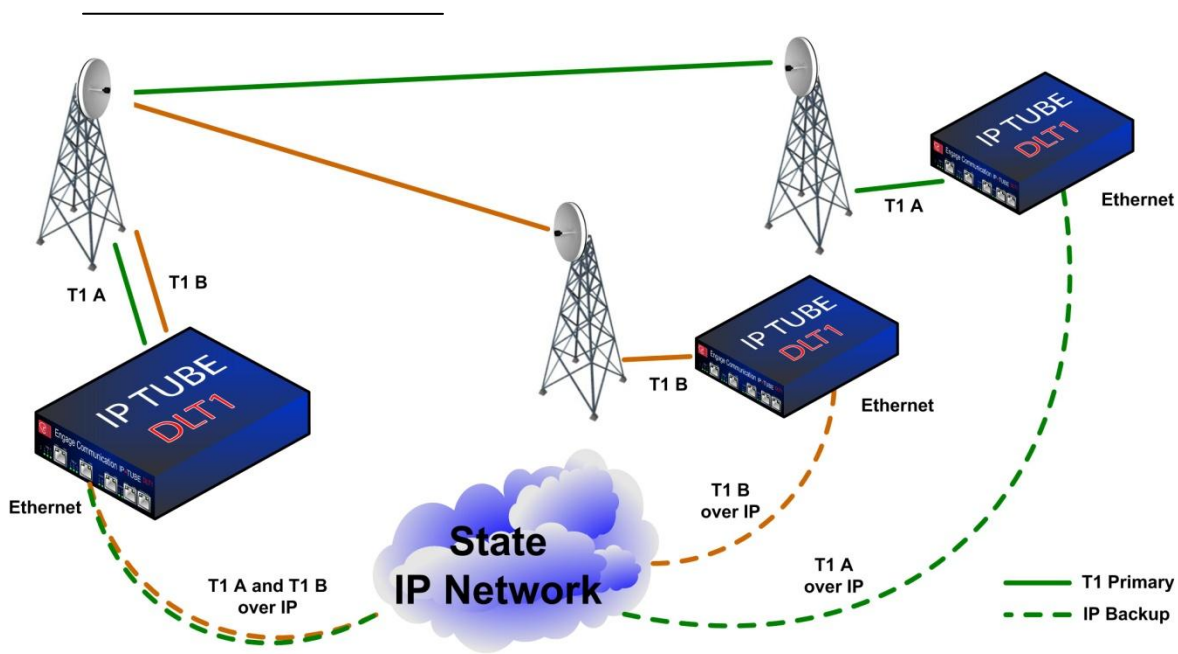
An increasing number of States are evaluating how to cost effectively protect their Public Safety and other critical network infrastructure. Often these networks consist of terrestrial or microwave T1 circuits with no backup path, and circuit failure can lead to disruption of important and sometimes life saving services. Weather, vandals, and hackers represent just some of the risks to these networks.

Deploying a second T1 overlay network for backup is often cost prohibitive in the economic environment currently faced by State governments. However, most States have internal IP networks that connect these same locations or known IP network service providers who can deliver reliable low cost access. With the right equipment, the existing T1 circuit can continue as the primary path, and upon failure,

traffic can be automatically switched to the IP network ensuring continued connectivity.

Working with State governments, Engage developed the Link Protector (LPT) feature for our IP-Tube family of circuit emulation products. It monitors the primary T1 path and if a failure condition is detected, converts the T1 to IP and directs the resulting IP packets to the backup IP path. The far end device detects the switch and also sends traffic over the IP circuit.

The IP-Tube with LPT is used to protect T1 circuits over a variety of IP network connections including Ethernet, DSL, microwave and satellite. Switchover and switchover thresholds and time intervals are user programmable to match IP network characteristics and avoid “ping ponging”.



The IP-Tube LPT feature is one of many key features offered by the Engage IP-Tube product line. The IP-Tube provides numerous other advanced features to ensure high quality transport of T1 circuits over IP, including:

- Echo Cancellation to improve voice quality when echo is encountered due to excessive delay in some IP networks;
- Data Compression to reduce Ethernet bandwidth consumed;
- Protection to automatically switch to an alternate IP path if the primary fails;

- Load Balancing to distribute IP traffic over multiple low speed IP circuits;
- Assured Packet Delivery for challenging network environments;
- Stand alone and Chassis configurations.

The IP-Tube product line also converts T3 and serial circuits (RS232, RS530, V.35, etc.) to packets for effective and efficient transport over IP networks.



Engage CHUB-E Chassis – 15 slots

Engage Stand-Alone Unit

*Engage Communication is a leading provider of specialized products that connect, protect, and secure networks. Our solutions include circuit to packet, protection switching, T1/E1 link encryptor, Ethernet encryptor, edge-office router, and GPS timing products.*

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