

Public Safety Network Minimizes Communications Disruptions by Upgrading to T1

Case Study

The Challenge:

Avoiding Service Disruptions

A town in New England needed to upgrade its aging emergency communications system – which had old and faded analog lines throughout the network – to keep residents safe. These lines caused unwanted signals and cross talks. Police and fire departments were monitoring more than 8,500 people across the town's 24 square miles, as well as a busy Interstate that linked the town to New England, Boston, New York, and Maine. Keeping first responders and emergency personnel informed was a top priority.

Critical communications were facing critical disruptions when the town's leased lines provider was nearing discontinuation of its FDDA 4-wire analog lines. The provider also offered T1 or Ethernet services to keep emergency services in operation, so the town began looking for an economical solution to carry their network into the future.

A trial network was then set up with TC Communications, who offered products for 4-wire Analog conversion: the TC8614 for T1 lines and TC3846-6 for Ethernet.

Solution:

Leveraging the Advantages of T1

After careful consideration, the town chose T1 lines, which allowed for a faster and more economical installation. A TC8614 with 600 ohm Analog over T1 was the first product sent for testing. The equipment could leverage 4 channels with a single unit, just like the previously used FDDA analog lines.

Cross talk was also an issue for the FDDA system. Once TC products were installed, voice communications stabilized and disruptions within the network were eliminated. The new system also supported Dry Contact.

Integration

Most public safety networks require new equipment to integrate with existing infrastructure. The town had both JPS voters and Motorola receivers it was not prepared to retire. TC equipment was able to integrate with what had been put in place years before. Without that ability, the town could have faced more costly upgrades and potential downtime.

Objective

- Upgrade the Network's aging emergency communications system
- Address critical communications disruptions due to FDDA phase out

Products Used

- [Mini Channel Bank](#)
- [TC8614: Analog & Dry Contact over T1/E1](#)

Key Benefits

- Eliminated cross talk from aging lines
- Integrated existing JPS voters and Motorola receivers
- Improved audio quality
- Entailed minimal changes to the network, reducing disruptions

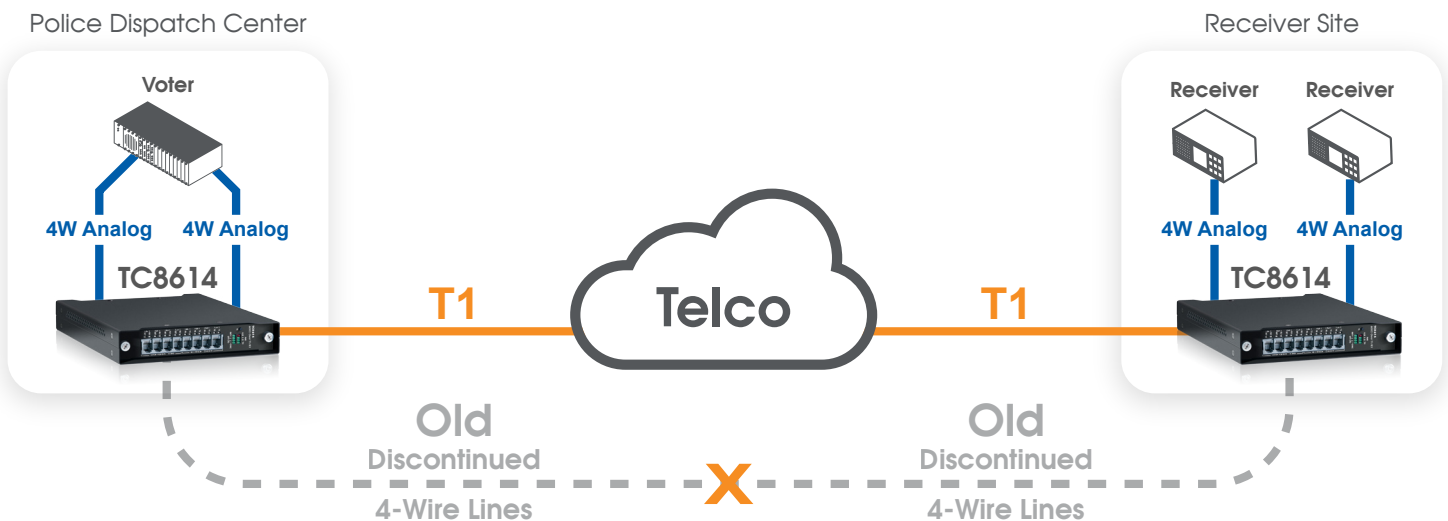
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Results: Error-free Operation & Upgraded Quality

Since installing the new system, the town has kept the network running error-free. They also experienced higher audio quality, thanks to TC Communications.

During a heavy rain storm, most of the 4-wire circuits experienced interference and cross talks. It was thought that the newly installed devices may have caused the issue. Upon closer inspection, the circuits connected to the TC Communications boxes received no disruptions.

The town was also able to ensure a longer life for its equipment at a lower cost than Ethernet with zero downtime. New operating costs were comparable to their previous charges for 4-wire leased lines. Without these improvements, emergency services would have faced network disruptions. Today, with better equipment and minimal changes, the town can focus on keeping residents safe.



Above: The town replaced discontinued 4-wire leased lines with T1 lines from the Telco. Plug-and-play TC8614 devices convert 4-wire analog to T1. Dispatch equipment for the town remains the same.

About TC Communications

TC Communications specializes in TDM over IP network solutions including Analog Radio, Voice, Serial and T1 products. Applications include Leased Line Replacement, Voter Comparator over IP and Multi-Service communication networks. Focused on mission-critical applications, TC products are designed to help Public Safety networks transition to IP/Ethernet without replacing existing analog equipment. All services including engineering, manufacturing, and support located in Irvine, California, USA since 1991.



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