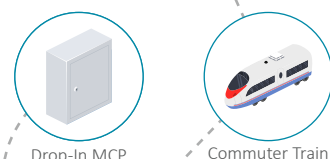# RELIABLE AND RUGGED RAILWAY COMMUNICATIONS

PTC Compliance for Railway Operations

While every rail service hopes to ensure riders enjoy the most pleasant travel experience possible, their foremost mission is providing the safest riding experience and environment possible. In recent years, tragic accidents call attention to the need to ensure that safety is the most fundamental principle winthin the transit industry. Nationwide, commuter rail services are establishing a safety-first culture for riders and employees alike.

Business Needs | Mobile Railcar and Locomotive Connectivity

One of the key initiatives to achieving the goal of a safety-first culture has been compliance with the congressional mandates for railways to implement Positive Train Control (PTC)- a sophisticated train-signaling system designed to prevent crashes, derailments and track worker injuries resulting from speed and signal violations. With PTC in place, connected equipment monitors and controls train movements and speeds, preventing the train from moving until on-board equipment receives a positive indication that it is safe to travel from a centralized dispatching authority. Transit authorities need the toughest and most reliable connectivity devices possible to ensure these vital communications never fail.
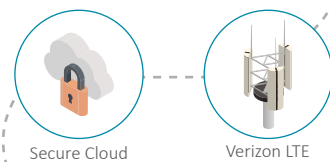
Solution Overview | Rugged Cellular Routers and Antennas

Many commuter rail systems in the US are achieving PTC compliance. And a key factor in this achievement is their decision to deploy Digi WR44-RR cellular routers. PTC message routing and wireless communications are made possible by using Mobile Communications Packages (MCP)- integrated drop-in assemblies that can house the WR44 RR, a 220 MHz TDMA radio, power supply, and RF filters. The Digi WR44 RR is becoming the choice communications hub for all locomotives, relaying PTC data messages to and from waysides via 220 MHz radio while enabling remote maintenance, configuration, and network management over a cellular link. And when connected to a Mobile Mark LTMG502 antenna, signal strength and reliability- both wired and wireless- are greatly enhanced.
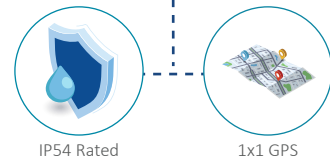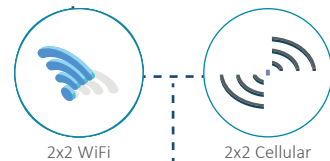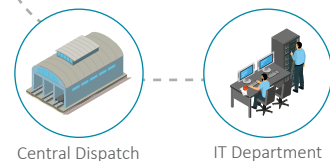
Benefits Observed | Improved Railway Management and Safety

With PTC systems and equipment in place transit authorities are seeing improvements in their railway traffic safety in several ways. These systems are regulating train separation, avoiding train-to-train collisions at crossovers, enforcing permanent and temporary speed restrictions, protecting rail worker safety zones, regulating out of service grade crossings, preventing trains from running over switches set in the wrong position and more. All made possible by fast, rugged, and reliable cellular communications.

Our Team | Device Provisioning, Activation, and Installation Services

For over 25 years USAT has provided expert M2M and IoT connectivity solutions to transit authorities nationwide. We provide top-tier support for all aspects of your mission-critical fixed and mobile communications projects. The solutions engineers we employ configure, provision, kit, and ship all your devices hot and ready for immediate use. And when you utilize our installation services, our technicians ensure each device is functioning securely, reliably, and at peak performance on ultra-fast network carriers like Verizon.

Rugged Router:	Cloud Software:	Rugged Antenna:	Carrier Network:
WR44 RR	**Digi RM®**	**LTMG502**	**Verizon**

Drop-In MCP

Commuter Train

Digi WR44 RR

LTMG502

Secure Cloud

Verizon LTE

Central Dispatch

IT Department

2x2 WiFi

2x2 Cellular

IP54 Rated

1x1 GPS

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