



WIN

P25 Upgrades Demand 4.9GHz Broadband

The Department of Homeland Security (DHS) has invested greatly in improving interoperable communications between first responders through the adoption of Project 25 LMR (Land Mobile radio) systems. This investment has increased pressure on local Government and Public Safety agencies to fulfill the DHS goal of creating a radio communications system that enables first responders, from different disciplines and jurisdictions, to effectively respond to emergency situations.

In parallel, The Federal Communications Commission (FCC) mandated that all public safety business licensees need to increase radio spectrum efficiency by 2013 (This FCC initiation is referred to as "Narrowbanding"). These market influencers have inspired many Public Safety agencies to upgrade conventional analog systems to P25 IP based solutions.

RADWIN offers wireless broadband solutions that support the 4.9GHz public safety band. These solutions ultimately facilitate P25 system connectivity for delivery of high bandwidth demanding applications to enhance first responder's performance. RADWIN's Hybrid TDM and IP solution enables seamless and cost effective migration from old 2-Way radio systems to all IP P25 and data security applications.

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Public Safety Broadband Applications

To meet public safety demands for maximal situational awareness, faster response and better command, agencies are utilizing technology based broadband applications.

Such applications include:

- » **Intra and Inter-Agency Connectivity** – 24/7 data, voice and video between the various agencies to ensure full situational awareness and better decision making for a fast and more effective response to a crisis or incident.
- » **Real-Time Database Access** – First responders require real time access to various information sources to quickly and safely respond to incidents. Information examples include:
 - Incident location and responding forces
 - Building blueprints
 - Medical data
 - Suspects pictures (mug shots), Missing-person images
- » **Video Surveillance** – High resolution cameras to monitor sensitive areas and provide real time video feeds to dispatch patrol officers and other emergency forces in the event of violent crimes, vandalism etc.
- » **Sensor Transmission** – to transmit valuable information from the site to the emergency command center. Sensors can include panic buttons, fire shot spotters and more.

The traditional public safety agency communication infrastructure is designed to support voice traffic and can be limited when handling the information levels and services required today. Knowing this, agencies are now looking for a broadband solution that better meets their needs.

Delivering Broadband Applications with 4.9GHz

The cost to accommodate necessary capacity for vital applications has become a real challenge. The use of leased T1 lines involves high monthly costs, especially when extra lines are required to meet bandwidth demand. Licensed Microwave radios are expensive and require purchasing of a frequency band license (not dedicated for Public Safety). Line of sight is also necessary, making the installation process difficult and costly.

The 4.9GHz Public Safety band offers 50MHz of spectrum allocated by the FCC for public safety usage. The 4.9GHz Point-to-Point (PtP) solution ensures high capacity communications in dense urban areas where line of sight is often obstructed and in remote areas where long range is required. The 4.9GHz PtP solution provides a cost-effective alternative for a variety of mission critical applications including backhauling LMR systems.

Agencies are looking for a future proof broadband communications system that provides hybrid TDM and high capacity IP to continue supporting installed LMR systems. These agencies want to ensure smooth migration to a full IP-based network while providing the necessary capacity to deliver a range of mission critical applications.

Designed for the Public Safety arena, RADWIN 2000 offers robust and reliable solutions that support the 4.9GHz FCC Public Safety band and address the needs for high bandwidth and simultaneous TDM and IP.

**RADWIN 2000 -
Cost Effective, High Capacity Wireless Broadband for Public Safety**

Securing successful carrier network installations, and proven deployments in the public safety, utility and transportation arenas, RADWIN 2000 portfolio provides carrier class, wireless broadband, Point-to-Point connectivity for licensed and license-exempt frequencies. RADWIN 2000 delivers up to 200 Mbps aggregate throughput with best price performance for fast ROI.

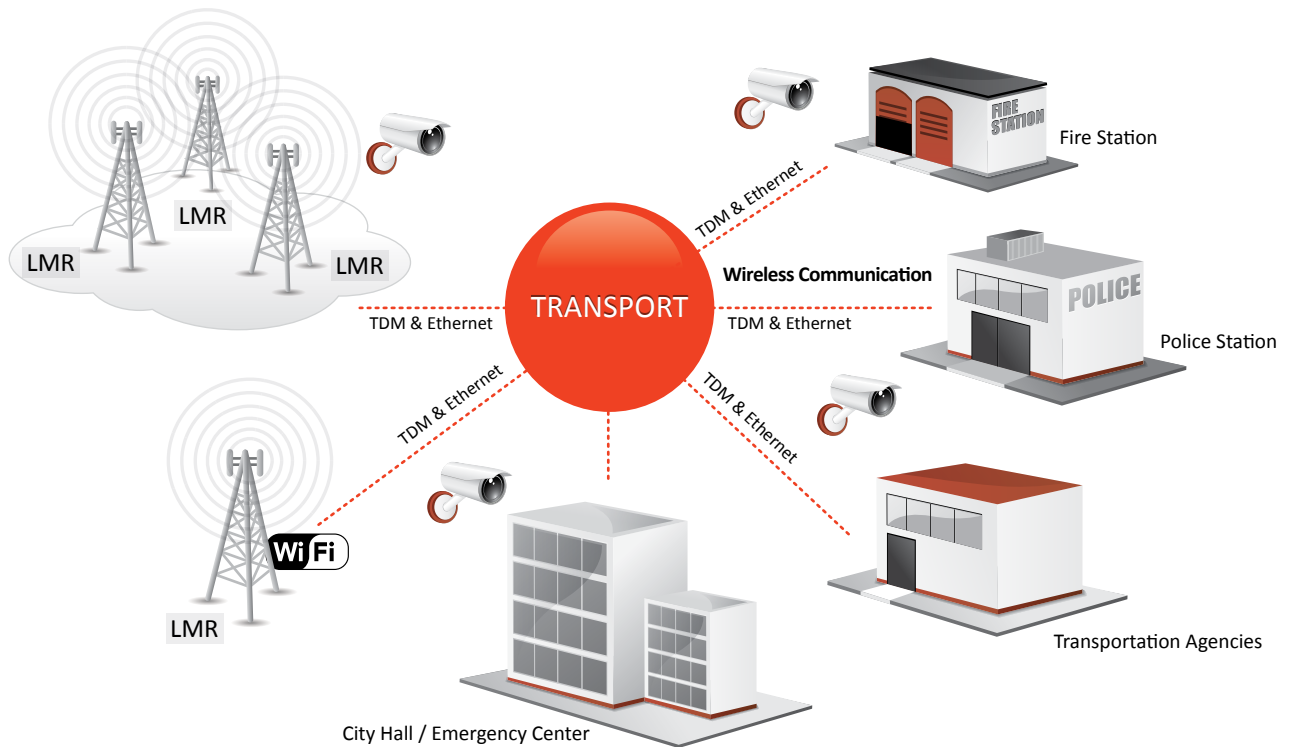
As well as FCC public safety 4.9GHz band, RADWIN 2000 radios support multiple bands on the same platform including 2.4GHz and 4.8 - 6.0GHz. The RADWIN 2000 portfolio also supports 2.3GHz, 2.5GHz and 3.65GHz frequency bands. This provides the flexibility to select the optimal transmission band with no need for additional investment.

RADWIN 2000 offers compact and robust products that provide native TDM (up to 16 T1s) + Ethernet, preparing public safety agencies for seamless migration from TDM to all-IP networks. It also offers the flexibility to gradually migrate from current TDM based systems to full IP based networks using the same infrastructure.

RADWIN 2000 series incorporates state-of-the-art technology including OFDM, MIMO and diversity for outstanding link performance in near Line of Sight (nLOS) and Non Line of Sight (NLOS). It also supports advanced networking capabilities such as QoS and VLAN/QinQ Tagging for best transmission of time sensitive VoIP and video applications while seamlessly integrating with other transport networks.

To ensure maximum service availability in mission critical applications 1+1 protection is supported for TDM and IP traffic. In addition, RADWIN 2000 also offers built-in functionality to establish highly cost effective RING topology networks between agency sites.

RADWIN 2000 radios can be deployed in Point-to-Point and Multiple Point-to-Point topologies. Long coverage and highest capacity is ensured through inter site and intra site TDD synchronization that reduces self interference levels within the network.



RADWIN 2000 Highlights

- » Up to 200 Mbps net aggregate throughput
- » Native TDM (up to 16 T1s) + Ethernet
- » Multi-band radio supports 2.4GHz and 4.8 - 6.0GHz.
- » RADWIN 2000 portfolio also supports 2.3GHz, 2.5GHz and 3.65GHz
- » Long range - up to 120 Km/75 miles
- » Telco-grade, incorporating advanced MIMO & OFDM technologies
- » Extremely robust - systems operate in nLOS/NLOS, high interference and harsh weather
- » Extremely simple to install and maintain
- » TDM service protection through 1+1 Hot Monitored Standby
- » Ethernet service protection through 1+1 and Ring topology

"We have used the RADWIN links to connect repeaters to other systems as well as the associated voters with 100% success."

Ronny Johnston, Wireless Dynamics, System Integrator, DETCOG P25 Communications Project

"We were previously leasing T1 lines and paying tens of thousands of dollars per year. Today, following the deployment of RADWIN's license free radios, we couldn't be happier with their high capacity and performance."

Scott Winberg, IT specialist, Arvada Fire Department



Delivering best of breed wireless connectivity solutions, RADWIN is committed to providing a complete offering for the Sub-6GHz domain.

Recognized as the market leader, RADWIN provides competitively priced products that achieve unmatched reliability, flexibility and installation simplicity.

RADWIN provides innovative carrier-class solutions that are deployed in over 130 countries around the world. Company success is due to swift delivery of high quality wireless connectivity products that secure unrivalled performance for broadband access, backhaul connectivity, private networks and specialized broadband mobility

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