

# Low-Cost, High-Speed LTE with Shared Spectrum: Fixed Wireless Solution for WISPs



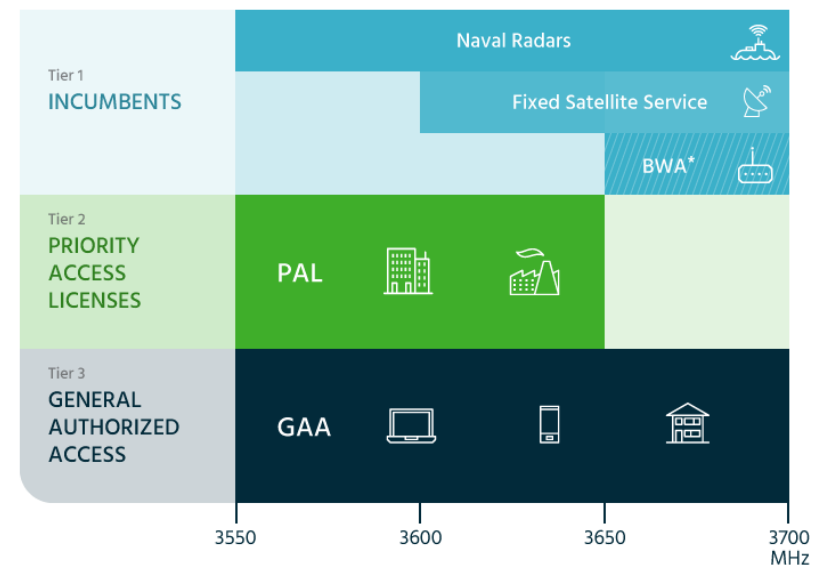
Wireless Internet Service Providers (WISPs) offer fixed wireless solutions to serve rural and suburban markets where fiber and cable solutions aren't cost-effective. They continue to search for low-cost options to deliver high-speed broadband services in communities that are underserved today.

Spectrum sharing in the Citizens Broadband Radio Service (CBRS) 3.5 GHz band offers a new opportunity for WISPs to invest in network upgrades that can expand the availability of reliable and affordable fixed broadband service. Many WISPs hold licenses in 3650-3700 MHz today, so that adding CBRS technology to their toolkit will be a natural expansion of existing infrastructure.

Due to the low-cost deployment model offered by spectrum sharing, WISPs using CBRS spectrum for fixed wireless broadband access can quickly receive an ROI and can then re-invest into continuing to improve broadband access for their customers.

## What is CBRS?

CBRS offers 150 MHz of spectrum in the 3.5 GHz band (3550-3700 MHz). Spectrum is shared with incumbents using a unique Spectrum Access System (SAS) mechanism. WISPs (BWAs in chart below) can buy a Priority Access License (PAL) for a specific geographic area at a cost expected to be far cheaper than exclusive licenses offered today or can operate freely in the 80 MHz of spectrum set aside for General Access (GAA), delivering high-quality LTE services.



\*Broadband Wireless Access Provider

Figure 1. CBRS Spectrum Sharing Model

“CBRS offers WISPs the opportunity to expand coverage and capacity, enter new markets, and provide higher-capacity service, using standards-based technologies for a wider choice among vendors.”

Monica Paolini, Senza Fili Consulting

The Total Cost of Ownership for Fixed Wireless in the 3.5 GHz CBRS Band

## The CBRS Advantage

The benefits are clear. The ability to use LTE-based equipment and to increase spectrum capacity from small channels in 3650-3700 MHz to wider channels in 3550-3700 MHz on either a PAL or GAA basis is driving substantial interest and investment. The CBRS rules include a provision for grandfathering interference protection for existing 3650-3700 MHz licensees for a set period of time, which provides an added advantage for WISPs as they transition to operations under the new rules. With its good propagation characteristics and the promise of high spectral re-use combined with SAS interference management, the CBRS band offers an immediate opportunity for WISPs to provide customers with affordable high-speed broadband services.

## The LTE Advantage

While the CBRS band is technology-agnostic, the vast majority of CBRS products being developed today are LTE small cells. LTE gives WISPs a high-speed, low-cost option that wasn't available before CBRS. Unlike expensive fiber, or interference prone Wi-Fi, or proprietary WiMAX, LTE is a high-capacity, high-performance, secure wireless service that is supported by a large standards-based global ecosystem. With LTE, customers can receive robust broadband service with average speeds of 100 Mbps up to 1 Gbps peak. When delivered in the 3.5 GHz CBRS band, spectrum is coordinated for interference protection. What's unique with CBRS is that LTE can be deployed at Wi-Fi price points because there is no need to purchase expensive spectrum licenses.

## What does this mean for a WISP?

In today's competitive environment where customers have choices and new entrants are encroaching with new service offerings like home automation bundled with broadband service, WISPs need to continue to serve their customers with the best service available. CBRS gives WISPs access to a wide swath of spectrum to deploy a fixed

wireless LTE solution that is under their control. With just a few outdoor CPEs deployed in a neighborhood or suburban downtown, high-speed LTE can be deployed for a host of new consumer and business service offerings including video surveillance, building access, energy management, and POS transactions. By ensuring reliable coverage indoors and out, customers won't have to risk losing money from dropped connections, outages or gaps in service. Ultimately, that secure and reliable connectivity will facilitate higher customer satisfaction and customer retention.

## Summary

- Reach your customers in their communities where wired solutions don't reach
- Have a big impact with a low-cost LTE solution that's easy to deploy in any neighborhood
- Keep existing customers and add new customers and services with a high-performance LTE solution that you control

## Why Federated Wireless?

The Federated Wireless Spectrum Controller delivers software-defined spectrum through a cloud-based Spectrum Access System (SAS), protects Federal incumbents with a redundant network of Environmental Sensing Capability (ESC) sensors, and provides a robust set of lifecycle management tools with real-time visibility for optimizing and monetizing CBRS services. The Federated Wireless Spectrum Controller allows businesses to leverage CBRS when and where they need it, significantly increasing spectrum efficiency and utilization while improving the economics of delivering spectrum-based services and applications. If you sell to WISPs, or you're a WISP thinking about offering CBRS services – partner with the industry leader. Ask for [Federated Wireless](#).