

# THE 5.9 GHZ SAFETY BAND

## What Is the Safety Band?

The Safety Band is a band of wireless spectrum at 5.9 GHz reserved for transportation-related communications among the devices that support connected and automated vehicles. Interacting via the interference-free Safety Band, these high-precision devices enable communications between vehicles and traffic lights, generate real-time alerts or warnings, and adjust signals to give emergency vehicles priority in heavy traffic—dramatically improving our transportation safety and mobility. As the U.S. continues to invest in deployment of millions of connected and automated vehicles across our country, the Safety Band enables continued economic growth.

## What Makes the Safety Band Unique?

In 1999, the Federal Communications Commission (FCC) allocated the section of wireless spectrum at 5.850–5.925 GHz for intelligent transportation systems (ITS) services. Since then, the U.S. Department of Transportation has worked diligently and collaboratively with industry and the public sector to develop, evaluate, and deploy new cooperative technologies, equipment, and applications—known as connected vehicle technologies—on this dedicated band. Connected vehicle technologies now reliant on the Safety Band include vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I), and vehicle-to-everything (V2X) communications. These groups include all manner of devices or other points of connection between people, vehicles, and transportation environments.

Currently, no other radio spectrum is configured to provide all of the critical attributes needed to support V2V and V2I safety applications. While commercial wireless communications technologies continue to improve their latency and security, none match the performance capabilities of V2X technologies currently operating within the Safety Band or provide comparable user privacy and message authentication controls.

**The Safety Band is uniquely configured to support safety-critical applications through continuous, high-speed, trusted, and authenticable wireless data communications among vehicles and roadway infrastructure or mobile devices.**



Photo Source: USDOT