

Brightspeed Future-Proofs Broadband Rollout with Advanced Mesh Wi-Fi Testing

Introduction

Brightspeed, one of the largest telecom carve-outs in recent US history, was launched after the acquisition of ILEC assets across 20 states. The company began its journey with an ambitious goal: expand high-speed fiber and broadband access to underserved rural and suburban markets. To meet this goal, Brightspeed needed a future-ready lab environment that could validate Wi-Fi 6E and Wi-Fi 7 performance across a growing footprint of customer premises equipment (CPE).

To address this need, Brightspeed partnered with Keysight and their lab build-out partner World Wide Technology (WWT) to implement a modern testbed based on Keysight Octobox Stack-Mesh-Mid platform. The solution was designed to emulate real-world deployment scenarios and provide detailed validation of multivendor Wi-Fi performance. This investment not only supported Brightspeed's immediate network rollouts but also laid the foundation for scalable testing and long-term growth.

Highlights

- Implemented Keysight Octobox Stack-Mesh Mid testbed to validate performance across Wi-Fi 6E and upgraded to Wi-Fi 7 for future-proof testing
- Deployed ScriptMachine automation to streamline test execution, improve repeatability, and support scalable validation workflows
- Delivered a high-touch solution with multiple expert-led sessions, on-site setup guidance, and tailored technical support to accelerate adoption

Benefits

- Reduced deployment risk through independent validation of OEM devices
- Future-proofed lab operations to support Wi-Fi 6E and Wi-Fi 7 rollouts
- Accelerated service readiness with consistent multivendor testing

Challenge

Although Brightspeed operates at scale, the company faced the realities of a startup. With a newly formed lab team, evolving test requirements, and no legacy testing infrastructure to build on, they needed a solution that could be deployed quickly and evolve with their roadmap.

Brightspeed's network includes both residential and enterprise customers, with a focus on delivering Wi-Fi service through fiber-connected home gateways. Multiple equipment vendors were involved, and each claimed their devices were lab-tested and deployment-ready. However, Brightspeed's experienced team, many of whom previously worked at other network service providers, wanted independent validation.

The primary challenge was to establish a testing framework that could verify device performance and functionality across a variety of scenarios. Brightspeed required accurate, repeatable and automated testing for mesh systems and standalone gateways, while ensuring alignment with future Wi-Fi 7 standards.

Solution

Keysight delivered the Octobox Stack-Mesh-Mid 6E system and later upgraded it in the field to support Wi-Fi 7. The Octobox was selected not only for its technical capabilities but also because of the trust and familiarity several Brightspeed engineers already had with the platform.

Keysight initiated early contact during Brightspeed's formation. The relationship evolved through ongoing technical guidance and education. WWT played a key role as the systems integrator responsible for Brightspeed's overall lab buildout, confirming the Octobox aligned with their infrastructure.

The Keysight team worked closely with Brightspeed to shape the testing strategy, answer technical questions, and tailor the solution to their needs. Multiple systems engineering visits, remote sessions, and on-site walkthroughs were conducted. Keysight also provided automation via ScriptMachine to support repeatable testing workflows and long-term efficiency.

Brightspeed viewed Keysight as more than a vendor. The account team became trusted advisors, helping define and refine test approaches even before the purchase was finalized. The support did not end with deployment. Keysight continues to provide hands-on technical guidance as Brightspeed's test needs evolve.

Results

Brightspeed is now using the Octobox testbed to validate the performance and functionality of Wi-Fi 6E and Wi-Fi 7 gateways and mesh systems. This includes verifying the claims made by OEM vendors and ensuring the consistency of customer experience across device models.

Keysight's Octobox testbed is an active component in Brightspeed's network lab. It provides reliable, repeatable testing that helps ensure equipment meets internal performance expectations before reaching subscribers. The addition of ScriptMachine allows for automated testing cycles, improved and faster regression test coverage.

The Octobox testbed also supports Brightspeed's need to manage a multivendor equipment ecosystem. As the company continues expanding its network and onboarding new devices, the ability to test across diverse hardware configurations is critical. Brightspeed can do this with confidence.

Looking Ahead

Brightspeed's investment in Keysight's Octobox testbed is a strategic decision aimed at long term success. The solution supports both current needs and future expansion, with the flexibility to adapt as Wi-Fi standards and customer expectations evolve.

The relationship with Keysight continues to be highly collaborative. From technical consultations to on demand support, Keysight remains a key partner in Brightspeed's effort to deliver best in class broadband service. This trusted partnership reflects Keysight's ongoing commitment to helping providers navigate complex challenges with expertise, responsiveness, and innovation.

Brightspeed is now positioned to scale confidently, backed by a testing infrastructure that supports performance, reliability, and growth.



Keysight enables innovators to push the boundaries of engineering by quickly solving design, emulation, and test challenges to create the best product experiences. Start your innovation journey at www.keysight.com.

This information is subject to change without notice. © Keysight Technologies, 2026, Published in USA, June 1, 2026, 3126-1136