



## What is TV WHITE SPACE?

Areas of unused spectrum space between UHF TV channels. The TVWS spectrum is reclaimed, unused spectrum that was reserved for UHF TV channels when UHF was. This unused area's has been name is TV White Space, or "buffer channels."

Researchers, regulators and innovators such as 6Harmonics created the spectrum availability and technology innovations needed to re-purpose and utilize this vacant spectrum for broadband connectivity. Using it in this way has no effect on surrounding TV channels, and empowers rural development and on-grid reach with reliable wireless broadband.

### **More Reliable at distance, than Wi-Fi**

TV white space operates in UHF band, with lower frequency than a traditional Wi-Fi router and outdoor Wi-Fi. The router's range is only approximately 100m, the outdoor Wi-Fi spectrum products can get greater ranges up to 2-7 km, but they only operate in very clear Line-of-sight. TVWS comes to the rescue with its UHF spectrum that offers up to 10x and 15x the range of outdoor wi-fi and does not need the same RF line-of-sight as Wi-Fi spectrum equipment do. TVWS solutions commonly can reach 20 KM, 40KM and some event reached 100KM.

Environmental obstacles such as walls, buildings, rough terrain, and others, are very challenging for outdoor Wireless systems in the 2.4Ghz and 5.8Ghz Wi-Fi bands. However, TVWS and its UHF band does not suffer from these environmental obstacles. TVWS's ability to overcome such barriers has led it to acquire the nickname of "Super Wi-Fi."

### **Traditional Wireless Connectivity vs TVWS**

Traditional wireless broadband connectivity in sub-urban environment Operated using Wi-Fi spectrum and microwave links. These Wi-Fi spectrum and microwave links used higher frequencies in and even the super high frequency (SHF) band that require a line of sight connection. Providing line of sight connectivity is expensive, as it requires a network of tall towers and high points.

TV white space operates on ultra-high frequency UHF signals, just like the old TV channels you could pick-up even far way in the woods or at the cottage with the old "rabbit-ears" antennas. Therefore, TVWS can overcome obstacles and distance that are out-of-reach for Wi-Fi spectrum wireless broadband.

TVWS broadband is less expensive to deploy and more reliable at distance then Wi-Fi spectrum based solutions, it is physic, and one cannot cheat physics.

## Applications:

- **Military**
- **Mining**
- **Oil & Gas**
- **Utilities**
- **Public Safety**
- **Agriculture**
- **Rural Broadband**

