



## OUR DIVISIONS

### National Advanced Spectrum and Communications Test Network (NASCTN)

The National Advanced Spectrum and Communications Test Network (NASCTN) was established by the Department of Commerce (NIST and NTIA) and the U.S. Department of Defense (DOD) in 2015 in order to organize a national network of Federal, academic, and commercial test facilities that would provide testing, modeling and analysis necessary to develop and deploy spectrum-sharing technologies and inform future spectrum policy and regulations.

### Public Safety Communications Research Division (PSCR)

Through the use of advanced communication technologies, the public safety community can more effectively carry out their vital mission to protect lives and property – from day-to-day operations to large events and emergencies.

### RF Technology Division

The RF Technology Division provides metrology resources to facilitate development and commercialization of a broad range of radio-frequency electronic and electromagnetic technologies.

### Wireless Networks Division

The Wireless Networks Division works with the networking industry to research, develop, promote, measure, and deploy emerging networking technologies and standards that revolutionize how networks are operated and used.



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NIST's mission is to promote U.S. innovation by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life.

Printed in the USA 05/2019

[www.nist.gov/communications-technology-laboratory](http://www.nist.gov/communications-technology-laboratory)

# THIS IS CTL

## Communications Technology Laboratory



# COMMUNICATIONS TECHNOLOGY LABORATORY

The Communications Technology Laboratory (CTL) promotes the development and deployment of advanced communications technologies, through the measurements, data, and research on the metrology and understanding of physical phenomena, materials capabilities, communication components and systems.



## OUR PRIORITIES

### TRUSTED SPECTRUM TESTING

CTL provides a neutral forum for addressing spectrum-sharing challenges in an effort to accelerate the deployment of wireless technologies among commercial and federal users. For example, NIST is creating test procedures and tools to certify that commercial systems protect mission-critical federal systems in the Citizens Broadband Radio Service (CBRS) band.



**NIST's Communications Technology Laboratory (CTL) advances the measurement science underlying wireless technologies ranging from the microchips that generate and process signals to the antennas that send and receive them.**

Our work establishes the metrological foundations for higher speeds, better connections and more ubiquitous access amid rising wireless demand from governments, businesses, and you.

**What do smartphones, radar, military and public-safety radios, satellite phones, mobile video, wearable devices, the Internet of Things, and smart vehicles have in common?**

They all depend on wireless spectrum. With insatiable demand from these and countless other wireless applications, there's an unprecedented crowding of the airwaves. That's driving the development of increasingly sophisticated technologies and applications capable of transmitting and receiving signals at higher frequencies and in shared frequency bands.



## NEXT-GENERATION (5G AND BEYOND) WIRELESS

"5G and beyond" refers to future generations of mobile wireless communication systems. The vision for these next-generation systems are to enable groundbreaking mobile applications requiring high-quality low-latency visual, tactile and audio telepresence, in addition to massive capacity (upwards of 1,000 times) and connectivity (billions of users and machines).

## PUBLIC SAFETY COMMUNICATION

CTL works with a diverse innovation ecosystem to help solve public safety's most critical communication technology gaps and drive innovation forward.