

# **BroadSim Product Line Overview**

Software-defined GNSS simulator to support advanced jamming, spoofing and Navigation Warfare (NAVWAR) testing for battlefield readiness. Today's military forces rely on GPS for critical positioning, navigation and timing (PNT) data in defense systems at the tactical edge. From Intelligence, Surveillance and Reconnaissance (ISR) to communications and tracking, GPS receivers feed data to numerous downstream systems for situational awareness and command and control. When lives and mission success are at stake, warfighters need the assurance that GPS systems are tested and battlefield ready for continuous operations in contested environments.

## Advanced Testing With Software-Defined Simulation

Orolia Defense & Security's BroadSim product line was developed to simplify the creation of advanced jamming and spoofing scenarios with Navigation Warfare (NAVWAR) testing in mind. BroadSim supports high dynamics, jamming, spoofing, and encrypted military codes. Powered by Orolia's Skydel simulation engine, BroadSim is able to simultaneously simulate multiple constellations including: GPS, GLONASS, Galileo, Beidou, and QZSS. With high performing hardware, a robust and innovative software engine, and an intuitive user interface, BroadSim is driving innovation in GNSS simulation, with technology that outperforms and exceeds typical features.

# **Revolutionary Performance at a Fraction of the Cost**

BroadSim is revolutionizing the GNSS testing and simulation industry with its extraordinary flexibility, low cost, upgradability, and rapid development cycles. Leveraging the Skydel simulation engine and commercial-off-the-shelf (COTS) Software-Defined Radios (SDRs), simulation of GNSS signals can be achieved at a fraction of the cost of today's industry standards. The ability to generate military and multi-constellation signals on COTS hardware maximizes scalability, value, and time to market.





# Simulate in the Lab to Perform with Confidence in the Field

Orolia's simulation solutions deliver the confidence of knowing how your critical systems will perform across a wide variety of GPS/GNSS signal and PNT data limitations, outages, interference and environmental factors. The more you know, the better you can plan for continuous operations.

## **Advanced Simulation Applications**

#### BroadSim

BroadSim is designed for laboratory and field testing of GPS/ GNSS receivers with a single RF antenna input, including advanced jamming and spoofing capabilities.



#### **BroadSim Anechoic**

Designed to test GNSS systems in an anechoic chamber, BroadSim Anechoic is used to test CRPA/multi-element antennas, antenna electronics, applications with low dynamics, and entire PNT systems.



## **BroadSim Wavefront**



BroadSim Wavefront tests the jamming/spoofing resiliency of CRPA and multi-element antenna electronic systems. Your go-to simulator when testing applications with high dynamics.







# **Key Simulation Capabilities**

## **ENCRYPTED SIGNALS**

L1/L2 P(Y)-Code, L1/L2 AES M-Code, L1/L2 MNSA

### ADVANCED PNT SENSOR

IMU, wheel-tick, barometer, more to come

#### ADVANCED JAMMING

Advanced jamming simulation capabilities with no additional hardware required:

- Unlimited number of interference signals can be generated with 1 RF output (within 80MHz bandwidth)
- Jamming can be turned on and off through the SDX GUI and API
- Users can specify the location, power, antenna pattern, and modulation of jamming transmitters
- BroadSim will calculate the power received at the UUT based on the location and distance to the transmitter
- Enables users to create real-world threat scenarios to better support the warfighter.

## **ADVANCED SPOOFING**

Advanced spoofing simulation capabilities with no additional hardware required:

- Simulate multiple spoofers simultaneously.
- Each spoofer can generate any GNSS signal.
- Each spoofer has an independent trajectory and antenna pattern.
- Skydel software automatically determines signal dynamics between each spoofer and receiver antenna.

# **Proven Performance**

The world's most PNT-reliant systems trust Orolia.



# About Orolia

Orolia is the world leader in Resilient Positioning, Navigation and Timing (PNT) solutions, even in GPS denied environments. Orolia Defense & Security provides Resilient PNT solutions and custom engineering services to U.S. government agencies, U.S. defense organizations, and their contractors. Orolia is approved to work on the full spectrum of U.S. government classified and unclassified projects and supports strategic partnerships in the development of key PNT technologies for the defense market.

# For more information

sales@OroliaDS.com www.oroliads.com



11 February, 2021. BroadSim Product Line Overview Subject to change or improvement without notice. © 2021 Orolia Defense & Security