

The screenshot displays the XPLORA Core software interface. On the left, a map shows the location of 'Jammer 1' (red dot) and 'Receiver 1' (green dot) in a suburban area. A legend indicates supported GNSS systems: GPS, Galileo, SBAS, GLONASS, and BeiDou. On the right, a circular signal strength plot shows the signal strength of various satellites across different azimuths. Below the map, a data table provides detailed information for the selected jammer.

Jammer		Spoofer	
Jammer 1		-	
Ellipsoidal Position	42.2105000	-83.2971500	
Cartesian Position	552270.809	-4699240.051	42
Velocity [m/s]	0.000		
Acceleration [m/s <sup>2</sup> ]	0.000		
Power [dBW]	-130.000		
Power at Rx [dBW]	-216.022		
Distance to Rx [m]	302.916		
Frequency Band	L1		

GNSS SIGNAL SIMULATION

# XPLORA Core

## The GNSS Signal Simulation Software

Create and modify a wide range of realistic GNSS environments for precise and effective testing

## XPLORA CORE

**XPLORA Core** is a modular and intuitive GNSS simulation software designed for precise testing and development. It supports real-time RF playback, digital IF signal generation, and GNSS receiver observables simulation. Users can create and modify realistic GNSS environments with extensive customization options, including satellite configurations, interference, spoofing, and multi-receiver scenarios. Whether for hardware validation, research, or complex satellite constellation testing, **XPLORA Core** provides flexible and detailed simulations to meet diverse user needs.

### Key features

Satellite constellation	Ephemeris input, orbit integration, Custom satellite orbit input, Satellite clock modelling
Ionospheric Delays	Nequick-Gal Model, Klobuchar Model, IONEX Tec Maps Grids
Tropospheric Delays	Hopfield-Model, Saastamoinen, GPT2w , Galileo Reference Model
Multipath	Statistical multipath modelling, Time-variable obstruction mask
User Receiver	Arbitrary receiver's path and dynamics, Antenna Gain Pattern
Operating System	Windows, Linux

### Supported signals

GPS	L1 C/A , L2 C, L5 I/Q
Galileo	E1 OS, E5a OS, E5b OS
GLONASS	G1 C/A, G2 C/A
BeiDou	B1 I, B2 I
QZSS	L1 C/A, L2 C, L5 I/Q
SBAS	L1 C/A; EGNOS, WAAS, SDCM, MSAS, GAGAN
NavIC	L5 SPS

### Additional features

Arbitrary Signal(s)	Simulation of user-defined constellations and navigation signal(s)
Jamming	Swept Continuous Wave (SCW), Frequency Modulation (FM), Amplitude Modulation (AM), White Gaussian Noise (WGN), Spectrum matched Jamming
Spoofing	Asynchronous, Synchronous, Pseudo-synchronous
Multiple Receivers	Simulation of multiple receivers within one simulation
High-dynamics	Receiver velocity of more than 600 m/s
Space Borne Receivers	Direct GNSS Signals, Earth-Reflected Signals, Sidelobe Signals

Get in touch with us for a free 7-days trial of our **XPLORA Core**!

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Kärntner Straße 7b/1  
A-8020 Graz, Austria

+43-316-890971-0  
www.ohb-austria.at  
office@ohb-austria.at