RP-6500

500 MHz Wideband

• RF Record and Playback   • Multi GNSS Simulator

The **Averna RP-6500** is an all-in-one wideband
RF Record & Playback Solution with **Real-Time
GNSS Simulator** and **SATCOM signal generator** designed
to support advanced Satellite Navigation applications.

Averna

RP-6500

500 MHz Wideband RF Record and Playback

RP-6500

Key Features

Easy to use **RF Studio** user interface

500 MHz wide instantaneous bandwidth

Covers most common wireless protocols from 9 kHz to 6 GHz

Multi-constellation and multi-frequency GNSS Simulator

Supports SATCOM protocols for Satellite Set-Top Box testing

High dynamic range (14 bits, > 80 dB)

Form factor allows for rack mounting or portability

Easily monitor up to 4 channels of simultaneous playback.

→ Overview

Advance your satellite Navigation projects with the Averna RP-6500 Wideband Record and Playback platform. The RP-6500 can record and playback up to 500 MHz of RF spectrum from 9 kHz to 6 GHz, as well as simulate all common GNSS signals (BeiDou, Galileo, GLONASS, GPS, and QZSS). The system can also generate satellite communications signals (DVB-S and DVB-S2), making the RP-6500 the ideal platform to cover all your needs, present and future.

→ Multi-Constellation GNSS Simulation, Record & Playback

Modern GNSS systems often utilize multiple frequencies in a single constellation. The RP-6500 enables wide bandwidth recording, covering all GNSS bands, and allowing multiple constellations to be captured at one time. The unbeatable combination of a real-world RF record & playback and a real-time GNSS Simulator covers all your design validation needs fast and cost-effectively.

RF Studio User Interface

→ The RP-6500 is pre-loaded with **RF Studio**, a powerful RF record/playback software for capturing the real-world GNSS RF spectrum. A state-of-the-art workflow tool, the RP-6500 series lets you quickly set up your recordings, add contextual data, visualize weak signals, and analyze your collected RF environments to validate and fine-tune your designs and products. Additionally, RF Studio allows you to remotely control the RP-6500 to share the unit within your team. This allows you to Increase your return on investment and streamline your automated processes using the robust extended API.
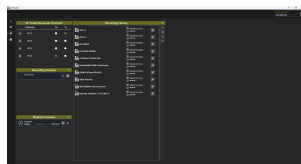
Example of the simplified dashboard for record & playback.

Clear visual representation of each recording.

Compare signal recordings Power vs Time.

Real-Time Multi-Constellation and Multifrequency GNSS Simulator

- Optional Simulation Features Available for an All-in-One Solution
- Simulate Past and Future Events to Control Receiver Motion, Environment, and each Satellite
- HIL Simulation Available
- Satellite-Based Augmentation System Supported (WAAS, EGNOS)
- Fully Customizable & Highly Realistic Scenarios (Tunnels, Atmospheric Models, Antenna Patterns, Masking, etc.)
- Advanced Options Available (Multipath, RTK, IMU sync, Spoofing, Jamming)
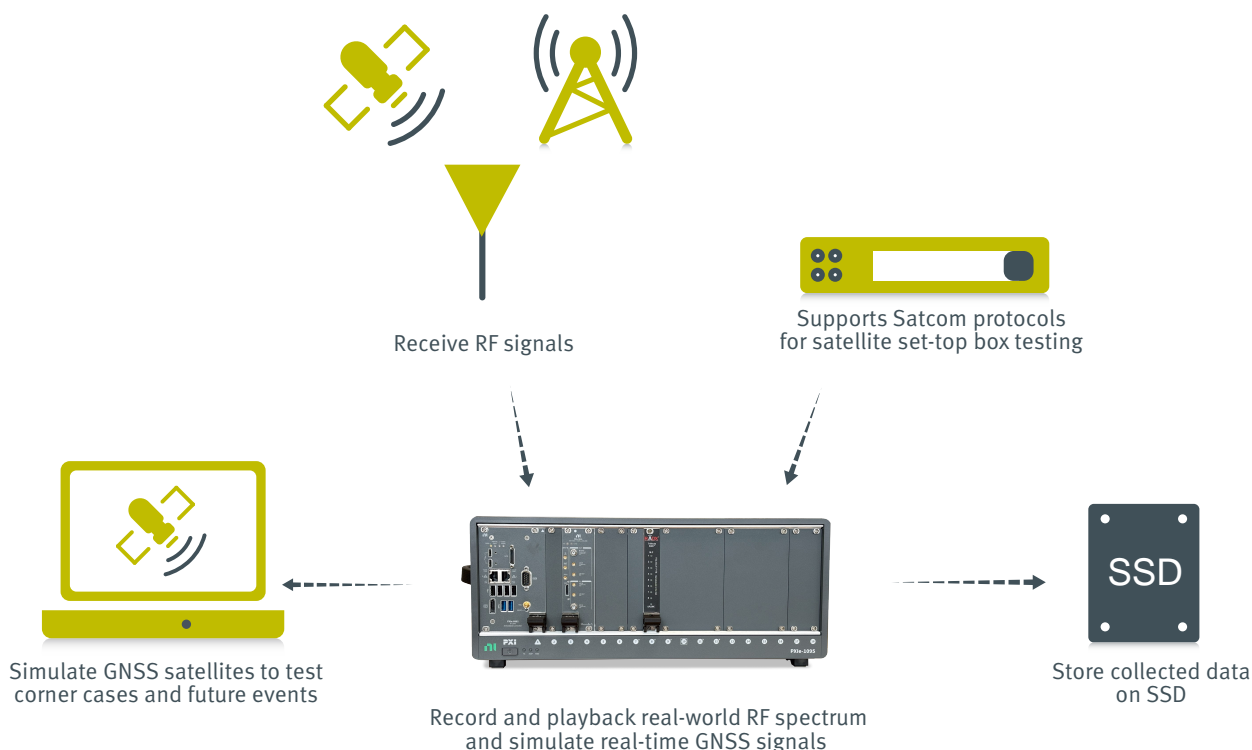
→ Need an All-In-One Solution to Simulate, Record & Play Back RF Signals?

Today's RF experts, engineers and scientists need a comprehensive RF Record-and-Playback solution to accelerate their product design, validation and research projects (an example: analysis and validation against spoofing/jamming).

→ The GNSS Spectrum

Galileo E5a	Galileo E5b				Galileo E6		Galileo E1		
QZSS L5	GLONASS L3	QZSS L2			QZSS LEX		QZSS L1		
			GLONASS L2						GLONASS L1
GPS L5	BeiDou B2	GPS L2			BeiDou B3		B1	GPS L1	B1-2

1164 MHz · 1188 MHz · 1214 MHz · 1217 MHz · 1237 MHz · 1239 MHz · 1260 MHz · 1261 MHz · 1300 MHz · 1559 MHz · 1563 MHz · 1587 MHz · 1591 MHz · 1593 MHz · 1610 MHz

→ Recording Setup Example

Receive RF signals

Supports Satcom protocols for satellite set-top box testing

Simulate GNSS satellites to test corner cases and future events

Record and playback real-world RF spectrum and simulate real-time GNSS signals

SSD

Store collected data on SSD

RP-6500

500 MHz Wideband RF Record and Playback

RP-6500 Series Technical Specifications

Center Frequency	Bandwidth	Approx. Storage Time @ 32 TB, SSD
› 410 MHz - 650 MHz	100 MHz	~17.8 hr
› 650 MHz - 1.3 GHz	200 MHz	~8.9 hr
› 1.3 GHz - 5.75 GHz	500 MHz	~3.6 hr

Averna Record & Playback Comparison Chart

Feature	RP-6500	AST-1000
Record & Playback	√	Optional
Control Generation & Simulation	GNSS, SATCOM	Radio, GNSS, Video, Connectivity
Frequency Range	9 kHz – 6 GHz	9 kHz – 6 GHz
Channels/Bandwidth	1 @ 500 MHz / up to 4 @ 200 MHz	Up to 4 @ 200 MHz
Storage	Includes 32 TB SSD	Optional
Portable	Customizable	Customizable
Applications	Satellite Navigation	Infotainment

All characteristics described in this document are based on the manufacturing design.
This equipment information is only for product description and is not covered by warranty.

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