

In brief

GNSS simulator supports a series of realistic scenarios

Starting in the lab, developers must perform extensive tests on the receivers and components used in satellite-based navigation systems, such as location based services on smartphones, car navigation devices and aircraft control systems. The R&S®SMBV100A vector signal generator from Rohde & Schwarz now offers valuable support. New options expand the functional range of its GNSS simulator by adding a series of realistic scenarios.

The new R&S®SMBV-K101 option allows developers in the automotive and wireless communications industries, for example, to test GNSS receivers for specific effects such as obscuration and multipath propagation. Buildings, tunnels and bridges as well as reflections from concrete and glass surfaces affect the global navigation satellite system (GNSS) signal. This option makes it easy to configure such scenarios, for both stationary and moving receivers.

If the GNSS receiver of a navigation device or smartphone is located inside a vehicle, testing must also take into account the obscuring effect of the vehicle's metal body. The R&S®SMBV-K102 option makes it possible to simulate such obscuring effects and to individually configure receive antenna patterns.

In addition to test scenarios for A-GPS, smartphone developers also have the Assisted Galileo (R&S®SMBV-K67) and

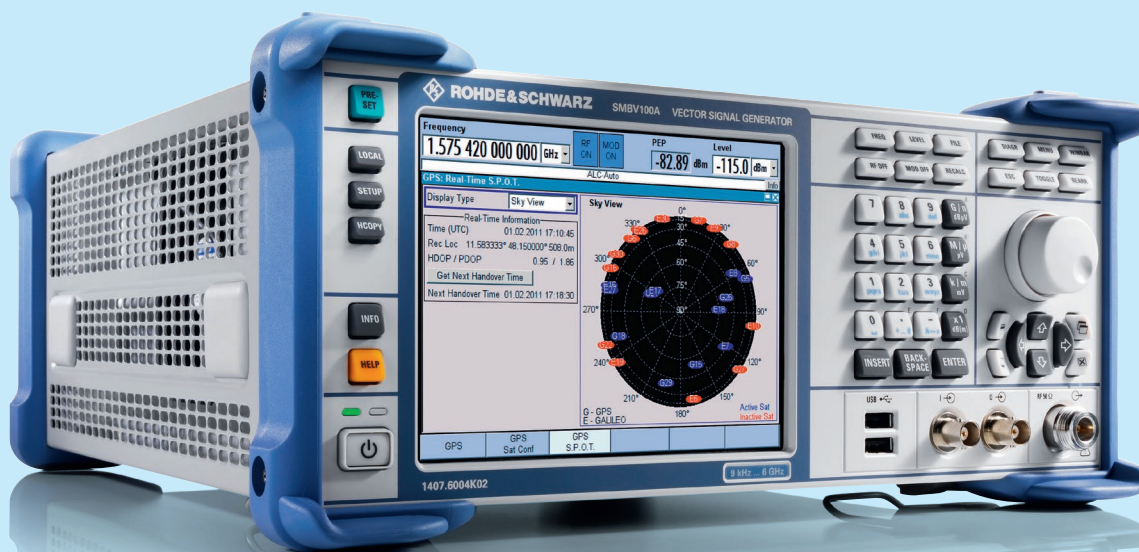
Assisted Glonass (R&S®SMBV-K95) options at their disposal. Mobile radio networks transmit location-specific information to user equipment via A-GNSS so that it can determine the current position faster.

In many cases, navigation devices receive signals of digital communications standards in addition to GNSS signals. The R&S®SMBV100A is the only GNSS simulator on the market that supports mobile radio, wireless communications and radio standards in addition to comprehensive and realistic GNSS scenario simulations. Now, manufacturers of mobile phones and car radios with integrated GNSS receivers need just one signal generator to test multiple functionalities. The R&S®SMBV100A can also be used to perform interference tests on the DUT.

Users in the aerospace and defense industry can use the R&S®SMBV-K92 and -K103 options to simulate the relative attitude of a

flying object as well as its rotation at a rotation rate of up to 400 Hz. This allows developers to perform lab tests to determine how a flying object's different attitude angles and rotary movements affect reception quality. Ground reflections can also be simulated, but not with the R&S®SMBV-K103 option.

The GNSS simulator in the R&S®SMBV100A vector signal generator uses up to 24 satellites to generate signals in realtime for GPS with civilian C/A code and military P code as well as for Glonass and Galileo in different constellations. Users can quickly and easily define their own scenarios to test GNSS receivers under a variety of conditions. They can also call up predefined scenarios. The R&S®SMBV100A is the only GNSS simulator in this market segment that does not require an external PC. As a result, it is easier to automate, and test setup is simple.



The GNSS simulator in the R&S®SMBV100A vector signal generator supports developers of navigation devices by allowing them to simulate realistic scenarios.