R&S®SMBV100A with R&S®SMBV-P101
GNSS production tester

The GNSS production tester was designed especially for GNSS chipset testing and speed-optimized production testing of GNSS receivers. It supports GPS, Glonass, BeiDou and Galileo. The GNSS production tester also supports additional measurements for characterizing GNSS chipsets. It provides flexibly customizable navigation data and movement profiles for verifying the maximum movement dynamics of a GNSS receiver.

ROHDE & SCHWARZ

Tailored for production testing

The R&S®SMBV100A with the R&S®SMBV-P101 option is tailored to meet the demands placed on a GNSS tester.

During production testing of GNSS modules and receivers, the basic GNSS signal reception and the connection between the antenna and GNSS chipset need to be checked. The GNSS production tester, based on the R&S®SMBV100A, simulates separate satellites for the GPS, Glonass, BeiDou and Galileo navigation standards in the L1/E1 bands. The four satellites can be activated individually, each with a dynamic range of 34 dB. Level changes can be made on the fly without interrupting the signal, enabling users to simultaneously perform independent sensitivity tests for each system. The large dynamic range provides sufficient margin to accommodate the variance in the chipsets. The 1 pps and 10 pps GNSS markers allow fast synchronization between the tester and DUT, enabling high throughput.

In addition to GNSS signals, the GNSS production tester can produce pure, level-stable CW signals for very basic tests to calibrate the setup with significantly higher levels or simply as an interferer.

Enhanced functions for characterization

Functions beyond the production test features are necessary to efficiently characterize GNSS chipsets. The required user data can be selected from data patterns, data lists or even real navigation data that is automatically generated from the almanac files in the GNSS tester. Zero navigation data is also provided – with the ephemeris data set to zero – in order to verify the different stages in the receiver. Full coding is used and the synchronization fields are set accordingly. Since the four satellite signals are generated in realtime, the navigation data can be transmitted with a realtime GNSS clock. The 1 pps or 10 pps marker is used to verify the exact time synchronization in the GNSS receiver.

To quickly, cost-effectively and efficiently verify the receiver's ability to handle high movement dynamics, both predefined and user-defined movement profiles can be run. Maximum values can be set for acceleration and jerk. The production tester in the R&S®SMBV100A automatically generates the corresponding satellite signal with the required Doppler profile.
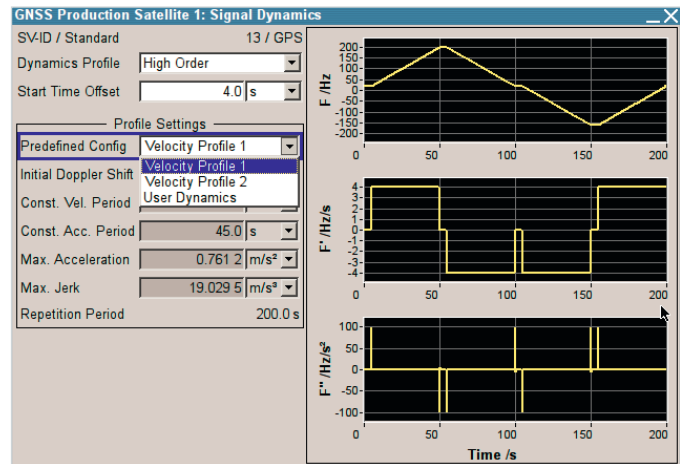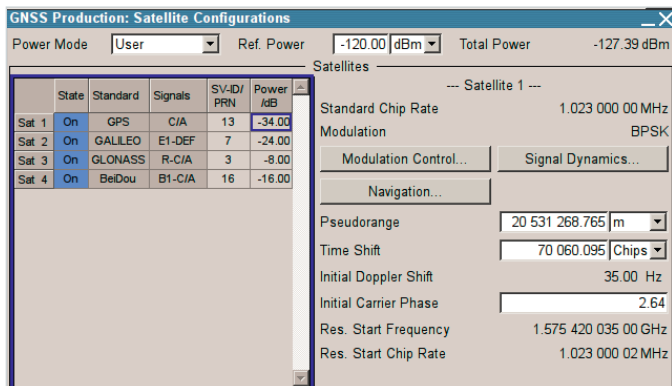
Ordering information

Designation	Type	Order No.
Vector Signal Generator	R&S®SMBV100A	1407.6004.02
GNSS Production Tester	R&S®SMBV-P101	1419.2844.02

3607126532