R&S®SMBV-P101
GNSS Production Tester

Specifications

Systems and signals		
GNSS System frequencies		1575.42 MHz (GPS L1, Galileo E1), 1602.00 MHz (Glonass L1), 1561.098 MHz (BeiDou L1)
Supported GNSS		GPS, Glonass, Galileo, BeiDou
Supported signals	1575.42 MHz (L1)	single GPS, C/A code modulation, compliant to IS-GPS-200F (Sept. 2011), PRN 1-32
	1602.00 MHz (L1)	single Glonass, C/A code modulation, compliant to Glonass ICD version 5.1 (2008), frequency channel numbers -7 to +6
	1575.42 MHz (E1)	single Galileo, E1-B and E1-C signal, compliant to Galileo ICD (Sept. 2010), PRN 1-50
	1561.098 MHz (L1)	single BeiDou, BeiDou B1 signal, compliant to BeiDou ICD version 2.0 (Dec. 2013), PRN 1-37
Max. number of simulated signals	1 channel per simulated GNSS	4
Signal and data configuration		
Satellite relative power	configurable in user power mode	–34 dB to 0 dB, updated in realtime without restarting the simulation
Ranging code per satellite		on/off
Navigation data per satellite		on/off
Navigation data source	identical for each satellite	All 0
		All 1
		pattern (up to 64 bit)
		PN 9 to PN 23
		data lists
		real navigation data: almanac file as source for ephemeris and almanac subframes; ephemeris subframes are projected from the almanac subframes
		zero navigation data: navigation payload is set to zero; channel coding and synchronization fields are applied
Meander code for Glonass		on/off
Time mark for Glonass		on/off
Secondary code for BeiDou		on/off
Secondary code for Galileo		on/off
System time basis		GPS, UTC default: GPS

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Simulation time		flexible date and time or GPS time configuration with a resolution of 1 ms
Marker		1 PPS
		1 PP2S
		10 PPS
		pulse
		pattern
		on/off ratio
		trigger
Doppler settings		
Constant Doppler (configurable per satellite)		
Doppler setting unit		m/s or Hz
Doppler setting range	Hz	±100 kHz
Doppler resolution	Hz	0.01 Hz
	m/s	0.01
Velocity/Doppler profiles		
Configurable profiles per satellite		defined by the following configurable parameters: • max. jerk • max. acceleration • duration of constant acceleration • duration of constant velocity (Doppler)

For non-GNSS-related specifications please refer to the R&S®SMBV100A vector signal generator data sheet (PD 5214.1114.22).

The following sections of the data sheet (PD 5214.1114.22) apply when the R&S®SMBV-P101 GNSS production tester option is installed:

- "RF performance" for the frequency ranges from 9 kHz to 3.2 GHz (CW mode) and from 1 MHz to 3.2 GHz (I/Q mode)
- "Analog modulation" except for the subsection "Pulse modulation"
- "Modulation sources" except for the subsection "Pulse generator"
- Subsections "I/Q modulator", "I/Q inputs" and "I/Q outputs" of the section "I/Q modulation"
- "Remote control"
- "Connectors"
- "General data"

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

No additional options can be installed on the R&S®SMBV100A when choosing the "Production Test" configuration (R&S®SMBV-P101).

Certified Quality Management
ISO 9001

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ISO 14001