Make ideas real



# R&S®SMCV100B VECTOR SIGNAL GENERATOR Maximum flexibility in applications and in production



# The perfect choice for

General purpose	Labs
EMC testing and validation	Manufacturing

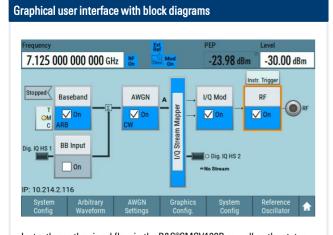
Key specifications	
Frequency	4 kHz to 3 / 6 / 7.125 GHz
RF output power	Up to +25 dBm
Phase noise	< -125 dBc (at 1 GHz, 10 kHz offset)
Display	5" touch display (800 $\times$ 480 pixel)

## **Product description**

- ► The R&S®SMCV100B features a new direct RF DAC concept for RF signal generation. This concept enables I/Q modulation and upconversion in the digital domain, eliminating the I and Q imbalance errors and LO leakage found in conventional analog I/Q modulators.
- ► The R&S®SMCV100B options concept is fully software defined. No additional hardware needs to be installed to maintain full device functionality. This also includes the upgrade of the RF frequency, memory, I/Q modulation bandwidth and all other R&S®SMCV100B options that can be used to cover different applications.

Your benefit	Features
First multi-standard platform for automotive, broadcast, navigation and wireless applications	<ul> <li>Modern RF signal generation concept with direct RF from 8 kHz up to 7.125 GHz         <ul> <li>4 kHz up to 7.125 GHz</li> <li>Direct RF upconversion up to 2.5 GHz</li> <li>Modulation bandwidth up to 240 MHz</li> </ul> </li> <li>Powerful internal baseband generator         <ul> <li>Real-time broadcast coder</li> <li>Custom digital modulation</li> <li>Internal baseband signal generation with ARB</li> </ul> </li> <li>I/Q streaming capabilities         <ul> <li>Playback of long I/Q sequences from solid state disk drive for EMC testing</li> </ul> </li> <li>Support of R&amp;S®WinIQSIM2™ waveform generation</li> <li>Wireless standards such as 5G NR, LTE, noncellular loT, Wi-Fi (IEEE 802.11)</li> <li>Navigation standards for functional Go/NoGo tests and predefined position fix tests</li> </ul>
Maximum flexibility in production	<ul> <li>▶ From functional end-of-line testing (EOLT) to application-specific device software testing</li> <li>▶ Temporary and transferable software licenses</li> <li>▶ Fully software defined signal generation for easy upgrading at customer site</li> <li>▶ Standardization of production lines with a single vector signal generator</li> <li>▶ Minimizes production line downtime</li> </ul>
User friendly in every detail	<ul> <li>▶ Half a rack size, great performance, leading operating concept with block diagrams</li> <li>▶ 5" touch display (800 × 480 pixel) in a 2 HU instrument</li> <li>▶ SCPI macro recorder</li> </ul>





Instantly see the signal flow in the R&S®SMCV100B as well as the status of instrument inputs and outputs. An integrated graphic function displays the generated signal in real time.

### R&S®WinIQSIM2™ waveform generation **OFDM Standards** Broadcast Standards **TDMA Standards** EUTRA/LTE/loT.. DVB. GSM/EDGE. 5G NR. DAB/T-DMB. Bluetooth. TETRA. V5GTF. Near Field Communication NFC/EMV. OFDM Signal Generation. **CDMA Standards** 3GPP FDD Custom Digital Mod.. Satellite Navigation CDMA2000 Multi Carrier CW... TD-SCDMA. GALILEO. Multi Carrier. 1xEV-DO... GLONASS.. Multi Segment **WLAN Standards** BeiDou IEEE 802.11 a/b/g. IEEE 802.11... IEEE 802.11 ad. UWB MB-OFDM Modulated signals for different standards can be generated with the R&S®WinIQSIM2™ simulation software. The software supports wireless standards such as 5G and LTE and the generation of noncellular signals such as Wi-Fi (IEEE 802.11xx) and many others.



The integrated SCPI macro recorder has a built-in code generator that allows users to automatically record all manual settings and create a directly executable MATLAB® script.

Digital standards	
Cellular standards	
GSM/EDGE	R&S®SMCVB-K240
EDGE Evolution	R&S®SMCVB-K241
3GPP FDD	R&S®SMCVB-K242
CDMA2000®	R&S®SMCVB-K246
1xEV-DO Rev. A	R&S®SMCVB-K247
TD-SCDMA	R&S®SMCVB-K250
TD-SCDMA enhanced BS/MS tests	R&S®SMCVB-K251
EUTRA/LTE	R&S®SMCVB-K255
3GPP FDD HSPA/HSPA+, enhanced BS/MS tests	R&S®SMCVB-K283
EUTRA/LTE Release 9 and enhanced features	R&S®SMCVB-K284
EUTRA/LTE Release 10 (LTE-Advanced)	R&S®SMCVB-K285
1xEV-DO Rev. B	R&S®SMCVB-K287
EUTRA/LTE Release 12	R&S®SMCVB-K413
Cellular IoT	R&S®SMCVB-K415
Verizon 5GTF signals	R&S®SMCVB-K418
LTE Release 13 and 14	R&S®SMCVB-K419
Cellular IoT enhancements	R&S®SMCVB-K443
5G NR	R&S®SMCVB-K444
Cellular IoT Release 15	R&S®SMCVB-K446

Order information and popular options	
Description	Item
Vector signal generator	R&S®SMCV100B
Frequency options	
8 kHz to 3 GHz	R&S®SMCV-B103
Frequency extension to 6 GHz	R&S®SMCVB-KB106
Frequency extension to 7.125 GHz	R&S®SMCVB-KB107
RF options	R&S®SMCV-B103
High output power	R&S®SMCVB-K31
Low phase noise	R&S®SMCVB-K709

Digital standards	
Wireless connectivity standards	
IEEE 802.11 (a/b/g/n/j/p)	R&S®SMCVB-K254
Rluetooth® FDR	R&S®SMCVB-K260
IFFF 802 11ac	R&S®SMCVB-K286
122 00211100	1.00 0.11012 1.200
Bluetooth® 5.0	R&S®SMCVB-K417
LORA	R&S®SMCVB-K431
IEEE 802.11ax	R&S®SMCVB-K442
Navigation standards	
GPS (1 satellite)	R&S®SMCVB-K244
Galileo (1 satellite)	R&S®SMCVB-K266
GLONASS (1 satellite)	R&S®SMCVB-K294
NavIC/IRNSS (1 satellite)	R&S®SMCVB-K297
Modernized GPS	R&S®SMCVB-K298
Beidou	R&S®SMCVB-K407
Modernized BeiDou (1 satellite)	R&S®SMCVB-K432
Broadcast standards	
DVB-H/DVB-T	R&S®SMCVB-K252
DAB/T-DMB	R&S®SMCVB-K253
DVB-S2/DVB-S2X	R&S®SMCVB-K416
Other standards and modulation systems	
Multicarrier CW signal generation	R&S®SMCVB-K261
Additive white Gaussian noise (AWGN)	R&S®SMCVB-K262
NFC A/B/F	R&S®SMCVB-K289
OFDM signal generation	R&S®SMCVB-K414

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