

# High Power RF & Microwave Signal Generation

## High power without compromise

### Generating high power test signals

Many test cases require high power test signals from signal generators. Either the DUT requires a high power signal or there could be attenuation from cables and accessories that has to be compensated (particularly common at microwave frequencies). Sometimes both of these apply. No matter what the reason, the challenges are the same. Can the generator produce enough output power or is an external amplifier required? External amplifiers add complexity and measurement uncertainty because they are usually uncalibrated devices. How good is the high power signal coming from the generator? Often, producing high power signals results in the degradation of key parameters such as accuracy, harmonics suppression, repeatability, etc. which impact test results. Neither of these are ideal.

### Solution

The R&S®SMA100B signal generator is the leading solution for analog RF and microwave signals with high output power. Not only does it produce signals at  $\geq +35$  dBm (measured over the entire frequency range of a 6 GHz instrument with the R&S®SMAB-B32 ultra high power option), it does so while maintaining the signal quality. The level accuracy and repeatability of the signals are exceptional, meaning it produces the signals at the desired power level, time after time. The harmonics are exceptionally low, which minimizes any unwanted spectral components. With this performance, the R&S®SMA100B eliminates the need for external amplifiers and filters and delivers accurate, repeatable signals. This directly translates into more accurate, repeatable and trustworthy test results.

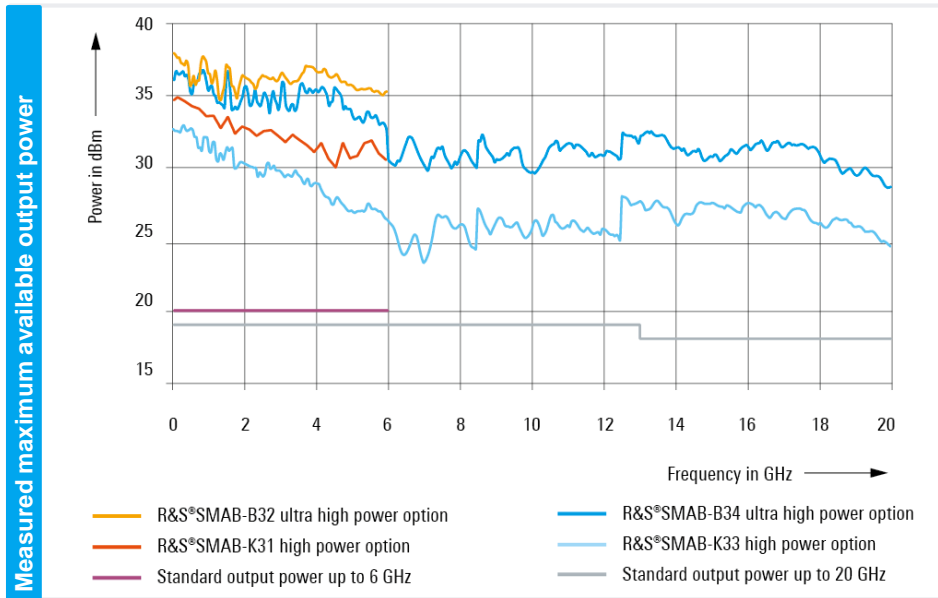


R&S®SMA100B signal generator

Your benefit	Features
No external amplifier required	High output power
No filters required	Low harmonics
More accurate results	High level accuracy
Same results, time after time	Outstanding repeatability

## Performance that eliminates external components


By producing signals at ultra high output power levels that have highest signal purity, the R&S®SMA100B eliminates the need for external amplifiers and filters. This simplifies the test setup and improves repeatability.



## When accuracy matters

Accurate test signals are the secret to accurate test results. The absolute level accuracy of the generator's output is key when characterizing the DUT. The R&S®SMA100B excels with outstanding absolute level accuracy, even at high power levels. The ideal choice when accuracy matters.

Output frequency	
R&S®SMAB-B103	8 kHz to 3 GHz
R&S®SMAB-B106	8 kHz to 6 GHz
R&S®SMAB-B112	8 kHz to 12.75 GHz
R&S®SMAB-B120	8 kHz to 20 GHz

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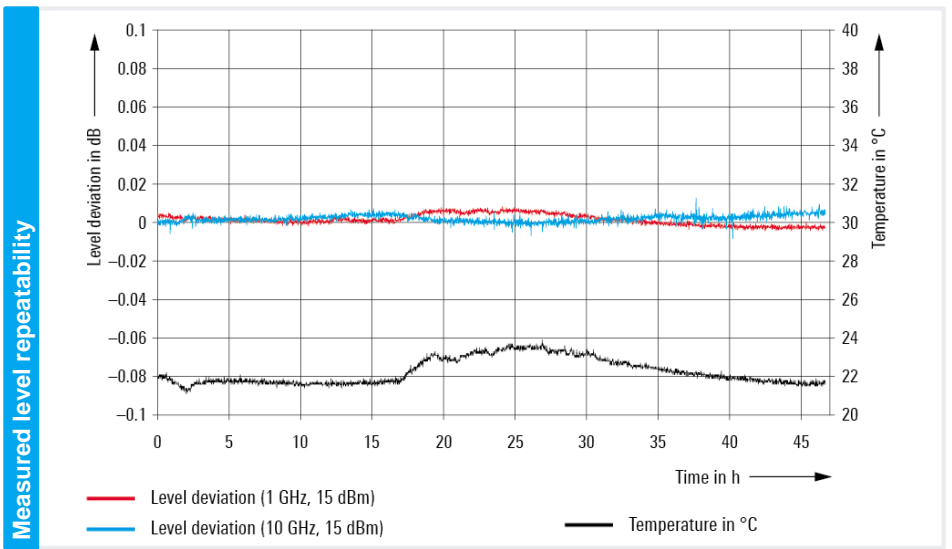
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## Same signal, time after time

Repeatability is an extremely important parameter when developing a test setup. It is a measure of how well the generator reproduces the same signal. With unmatched repeatability performance, the R&S®SMA100B ensures you get the same output each and every time. Performance you can count on.



## Complete solution

The R&S®SMA100B offers more than outstanding RF performance and accuracy. It has unique capabilities that ensure easy integration into any existing test setup – on the bench or in an ATE rack. From the 20 GHz electronic attenuator that delivers fast settling times to wear-and-tear free operation to the GUI with a high quality touchscreen, the R&S®SMA100B seamlessly bring its high performance to any test setup.

Key high power options	
R&S®SMAB-K31	High output power, 3/6 GHz
R&S®SMAB-B32	Ultra high output power, 3/6 GHz
R&S®SMAB-K33	High output power, 12.75/20 GHz
R&S®SMAB-B34	Ultra high output power, 12.75/20 GHz



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