

## R&S®FSQ Signal Analyzer

# The signal analyzer with the largest memory for I/Q data

**Increasing signal bandwidths and sampling rates mean that greater amounts of memory are needed for recording measurement values, because there is just no room for compromise when it comes to recording time. With the R&S®FSQ-B100 and -B102 I/Q memory extensions, the R&S®FSQ signal analyzer now offers memory space for up to 705 Msamples.**

## Well prepared for long-term analysis

No matter if the quality of a modulator is to be measured in the baseband or if mixer and amplifier characteristics have to be measured at the RF: At some point, you will reach a state in transmitter and receiver system development where I/Q data has to be recorded and evaluated over a longer period of time. Developers are particularly interested in characteristic sections of a signal at the modulation level, e.g. transients or phase discontinuities but also in spurious signals resulting from switching processes or crosstalk.

To perform a successful analysis, you will definitely need enough I/Q data memory space to record data over a longer period of time even at wide bandwidths and the resulting high sampling rates.

The 16 Msamples of the I/Q memory included in the basic R&S®FSQ were designed to meet a wide variety of applications. At a channel bandwidth of 200 kHz, for example, the GSM standard specifies a sampling rate of 1 MHz. This means that, at a memory depth of 16 Msamples, a recording time of 16 s is possible, which corresponds to approx. 30 000 bursts. For broadband signals recorded at a sampling rate of 81.6 MHz, however, the maximum recording time available is approx. 200 ms. More memory space is therefore required for longer recording times.

With the R&S®FSQ-B100 and -B102 options, you can now expand the available I/Q memory in two configurations accommodating 235 Msamples or 705 Msamples. This is possible due to a newly developed memory extension which can be equipped or retrofitted with memory modules in two stages (FIG). The memory modules are linked to the digital downconverter of the base unit via a fast data interface and to the CPU via the PCI bus. Thus, the entire I/Q memory is directly accessible for firmware applications such as the R&S®FSQ-K70 vector signal analysis option, the R&S®FS-K72 3GPP BTS analysis option or the R&S®FS-K82 CDMA2000® analysis option. Of course, the data can also be read out via the 100 Mbit LAN interface for evaluation on an external control PC.

The I/Q memory depth of max. 705 Msamples has so far been unique for signal analyzers. The R&S®FSQ thus attains the recording times required for long-term analysis even at wide bandwidths (120 MHz with the R&S®FSQ-B72 option).

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**Connection of the R&S®FSQ-B100 and -B102 I/Q memory extensions to the signal processing unit in the R&S®FSQ.**

