

Installation and Maintenance of LTE Networks is now even easier with Handheld Analyzers



The R&S FSH4 and R&S FSH8 handheld analyzers from Rohde & Schwarz offer comprehensive new functions for detailed measurements in LTE networks. With these handheld spectrum analyzers, users can now perform modulation analysis in the LTE frequency division duplex (FDD) and time division duplex (TDD) modes.

The new options provide a more detailed view of LTE signals than is possible with other manufacturers' instruments. This is a significant advantage when troubleshooting. They are the only handheld analyzers on the market that can analyze the complete LTE frame with up to 10 subframes as called for by the standard. They are also the only ones that support extended cyclic prefix as defined in the standard. The extended cyclic code prefix reduces interference due to delay spread in large radio cells. In addition, the analyzer can be used to test parallel multi-antenna signal transmissions up to 4x4 MIMO.

Many network operators are upgrading their networks to support long term evolution (LTE), the next generation of mobile communications technology, and some LTE networks are already up and running. Installation and service technicians need handheld analyzers that can be used to set up and optimize LTE networks or to eliminate interference. Rohde & Schwarz is one of the first suppliers to provide the T&M equipment for these tasks. The standard models of the R&S FSH4 and R&S FSH8 handheld analyzers offer a demodulation bandwidth of 20 MHz, which covers all the signals defined in the LTE standard.

New software options for analyzing modulation in LTE networks are available for the handheld analyzers: The R&S FSH-K50 and R&S FSH-K51 options allow modulation analysis on LTE FDD and LTE TDD base stations respectively. Both options support all key LTE measurements - from single input single output (SISO)

to 4x4 multiple input multiple output (MIMO) transmissions.

Equipped with the new LTE analysis options, the R&S FSH4 and R&S FSH8 provide a more detailed view of LTE signals than is possible with competing instruments. The handheld analyzers support both normal cyclic prefix and extended cyclic prefix. The LTE standard specifies that each symbol within an LTE frame be preceded by a cyclic prefix to prevent overlapping of symbols and reduce inter-symbol interference. The normal cyclic prefix is designed for a distance of around 1.5 kilometers. For larger radio cells, the LTE standard specifies frames with fewer single pulses and longer prefix (extended cyclic prefix). The analyzers from Rohde & Schwarz are the only analyzers on the market that can process LTE signals with extended cyclic prefix.

They are also the only handheld analyzers that demodulate LTE frames with up to 10 subframes as defined in the standard. They display the power and modulation quality (EVM) of the data signal (PDSCH) and of other signal components. For the data signal, these parameters are broken down by modulation type. This level of detail, which is not available in other LTE analyzers, allows users to better localize errors.

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