

GAUSS INSTRUMENTS presents a new series of ultra-fast EMI receivers with the brand name TDEMI eXtreme (short: TDEMI X). The new TDEMI X series provides in addition to the classical EMI receiver mode a huge variety of measurement and analysis functions. Using the leading-edge FPGA technology the measurement times can be reduced by a factor of 64 000. High-resolution giga-samples analog-to-digital converters increase the dynamic range by more than 25 dB in comparison to the previous standard product series TDEMI.

Using Multisampling in the frequency range from 30 MHz to 1 GHz a spurious free dynamic range of 100 dB is achieved. In addition to the fast FFT-based measurement mode the TDEMI X instruments also provide a classical superheterodyne mode. The new product line consists of 1G, 3G, 6G, 18G, 26G and 40G TDEMI X Measurement Systems. The instruments can be used for measurements according to CISPR 16-1-1, MIL461, DO160. The basic unit starts with 9 kHz frequency range. The starting frequency range can be extended down to 10 Hz. In addition to the EMI Receiver mode the TDEMI X Series provides a real-time spectrum analyzer as well as a 2-channel, 1 GHz, 12 Bit oscilloscope.

The TDEMI X producte series provides 5 operation modes:

- EMI Receiver
- Real-time EMI Receiver (Weighted Spectrogram with 162,5 MHz Analysis Bandwidth)
- Spectrum Analyzer
- Real-time Spectrum Analyzer (Spectrogramm with 325 MHz Analysis Bandwidth)
- 1-Channel, 16 Bit or 2-Channel, 12 Bit, 1GHz Oscilloscope

The basic unit provides a realtime spectrum analyzer mode up to 162,5 MHz. The real-time analysis bandwidth can be extended up to 325 MHz. All settings like IF bandwidth, video bandwidth and various detectors can be easily controlled by pull down menus on the touchscreen display during the operation. A huge number of up to 64000 frequency points allow to analyse signals ultra-fast with highest sensitivity over large frequency bands. Providing the dynamic range according CISPR 16-1-1 during spectrum analyzer mode and real-time spectrum analyzer mode the TDEMI X is an excellent tool for overview and final measurements. The EMI receiver mode provides in addition to the classical superheterodyne receiver mode an FFT-based measurement mode that allows to perform ultra-fast measurements according to the newest standard CISPR 16-1-1 Ed. 3.1. By this way the measurement time can be reduced, e.g. for Quasipeak in the frequency range from 30 MHz to 1 GHz down to 10 seconds. The EMI receiver mode provides additional automation routines to control auxiliary test equipement, e.g. a LISN. In addition to the full compliant EMI receiver mode the instruments provide also a full CISPR compliant real-time analyis bandwidth of 162,5 MHz. Evaluation and export routines provide allow to analyze and record the various operation modes and behaviour of a device under test.

The oscilloscope mode (base unit) provides single channel with 16 Bit resolution and 1 GHz real-time bandwidth. The setting of the trigger level as well as post- and pre-trigger allow to trigger on picosecond pulses. By an optional enhancement the instruments can be updated to a two channel 12 Bit Oscillscope with 12 Bit resolution and 1 GHz real-time bandwidth.

The TDEMI X is presented the at the EMV 2013 in Stuttgart at Booth C2-114.

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