

TDEMI[®] TECHNOLOGY

advanced EMC test solutions



**BOOSTING your EMC testings
by patented TDEMI[®] TECHNOLOGY**



Special Features

TDEMI[®]
ULTRA Series

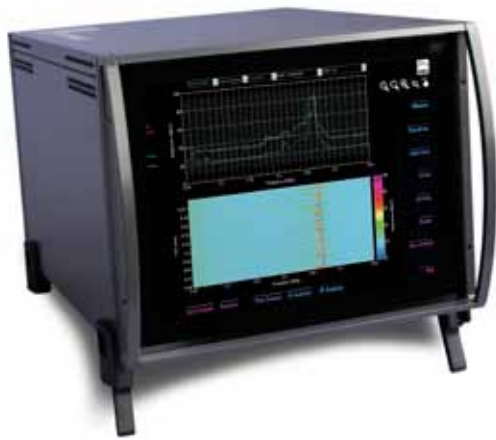
TDEMI[®]
X Series

TDEMI[®]
G Series

TDEMI[®]
M Series

TDEMI[®]
M+ Series

EMI 64k
Automation Software



TDEMI® ULTRA Series

TDEMI® ULTRA. Best RF performance. Lowest noise floor. The new benchmark.

Fully compliant. The fastest receiver. Worldwide.
Highest performance for your measurements.

- › Frequency range DC up to 6, 18, 26.5 or 40 GHz
- › 64000 times faster than conventional test receivers
- › 685 MHz gapless Real-time analysis bandwidth
- › 100 dB dynamic range (@0dB Att. & Preselection off)
- › Testing according to CISPR, ANSI, MIL, DO, VG, ETSI, ... Standards
- › Easy and intuitive operation via 10" touch display
- › Multi GHz real-time scanning spectrum analyzer
- › Ultrafast Spectrum Analyzer Scanning
- › Ultrafast Receiver Scanning
- › Ultrafast Superhet Mode
- › Compact design, +12 V power supply and battery pack for outdoor operations or on-board testing



TDEMI® X Series

TDEMI® X. Unrivaled technology. Ultra high performance. EMC measurements in real-time.

Fully compliant. The fastest receiver. Worldwide.
Excellent performance for your measurements.

- › Frequency range DC up to 1, 3, 6, 18, 26.5 or 40 GHz
- › 64000 times faster than conventional test receivers
- › 645 MHz gapless Real-time analysis bandwidth
- › 100 dB dynamic range (@0dB Att. & Preselection off)
- › Testing according to CISPR, ANSI, MIL, DO, VG, ETSI, ... Standards
- › 3 dB bandwidths in 145 steps
- › Intuitive and easy to operate
- › Multi GHz real-time scanning spectrum analyzer



new TDEMI® G Series

The full compliance measurement system for all your EMC testings and requirements.

Fully compliant. 16000 times faster than conventional test receivers.

- › Frequency range 1 Hz up to 1, 3, 6, 9, 18, 26.5, 40 or 44 GHz
- › 16000 times faster than conventional test receivers
- › 225 MHz gapless Real-time analysis bandwidth
- › Spurious free dynamic range of about 70 dB
- › Testing according to CISPR, ANSI, MIL, DO, VG, ETSI, ... Standards
- › Weighted real-time spectrogram
- › Preselection
- › Spectrum analyzer
- › Real-time spectrum analyzer
- › Intuitive and easy to operate

new TDEMI® M & M+ Series

TDEMI® M & M+. The mobile EMI receiver - Emission measurements everytime, everywhere.

Pre-certification 16000 times faster than with conventional test receivers.

- › Frequency range 10 Hz – 1, 3, 6, or 7 GHz
- › 16000 times faster and safer pre-certification
- › 225 MHz gapless Real-time analysis bandwidth
- › Weighted real-time spectrogram
- › Spectrum analyzer
- › Real-time spectrum analyzer
- › Intuitive and easy to operate
- › Compact design, +12 V power supply and battery pack for outdoor operations or on-board testing
- › Upgradeable to full compliance
- › Integrated touchscreen and embedded PC (only M+ Series)

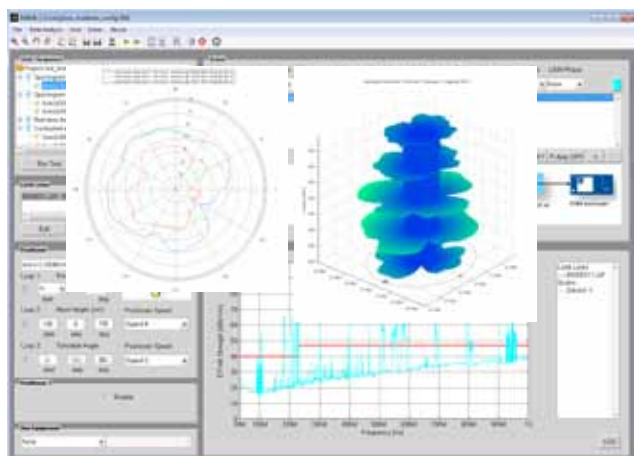


Fig. 1 – Screenshot EMI 64k Software Suite - Rad Module presentation in 2D and 3D

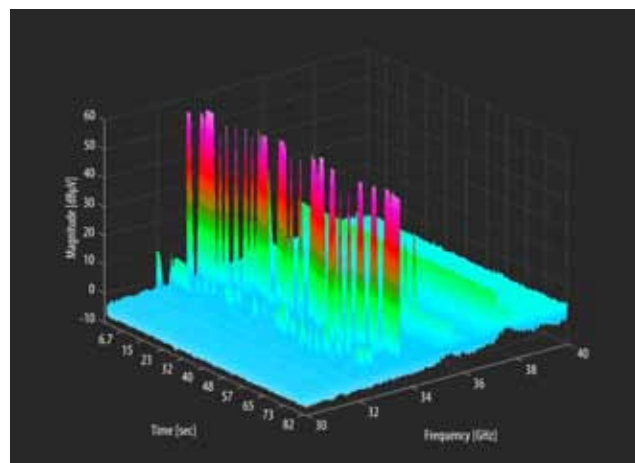


Fig. 2 – Real-time measurement of a GHz frequency hopping signal

EMI64k Automation Software

The novel Automation Software Suite EMI64k of GAUSS INSTRUMENTS, allows to embed your TDEMI receivers into a fully automated test environment.

A full automation of your emission testings according to all commercial and military standards is provided with this software. Fully supporting the unique capabilities of the TDEMI® X and TDEMI® ULTRA the EMI 64k is the only software that provides a full automation even under conditions of sporadic interferences or drifting emissions.

This unique technology avoids manual searching of peaks and improves the overall test quality. The EMI64k is a bundle of modules that can be configured according to your requirements and can be upgraded anytime later with additional features which might be needed by future requirements.

Whether for conducted or radiated emission testings, for measurements with a GTEM cell, or your disturbance power measurements - we provide an optimum and cost effective software solution tailored to your requirements.

Multi GHz Real-time Scanning

GAUSS INSTRUMENTS introduces a novel Multi-GHz real-time scanning feature for the TDEMI eXtreme and ULTRA receiver series providing a several Gigahertz real-time bandwidth.

By the newly designed very powerful hardware module, measurements across several Gigahertz can be performed in the real-time spectrum analyzer mode. E.g. in the frequency range from 1 GHz to 40 GHz all frequency points can be directly measured with a very high resolution in time and the result can be maximized instantaneously.

Over the entire frequency range the results are displayed in real-time. Thus the final maximization can be performed at all frequencies in just one step. The detectors peak, average, and RMS are available in this mode. Further the video bandwidths, which are required according to the standards, can be applied.

Of course all the measurements according to CISPR 16-1-1, ANSI C63.2, MIL 461, DO 160, FCC as well as many other national and international standards are fully covered.

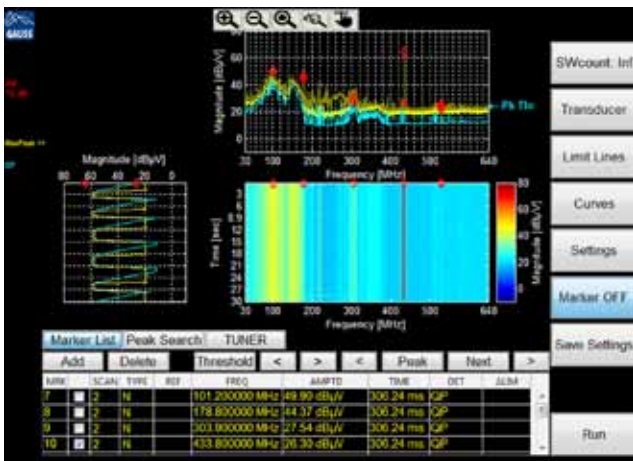


Fig. 3 – Screenshot 645 MHz Real-time Measurement (Peak und Quasipeak parallel)

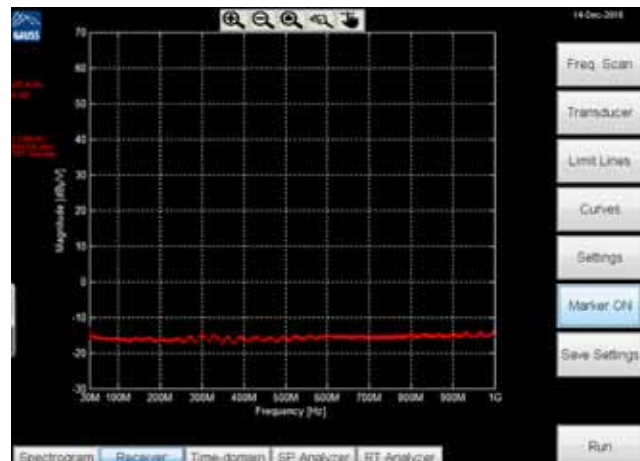


Fig. 4 – Noise floor up to 1 GHz of the TDEMI X with option ULNA-UG1G

645 MHz Real-time Bandwidth

Measurements of radiated emissions in the frequency range up to 1 GHz are very time consuming as according to CISPR and FCC Standards the measurements have to be performed at several antenna heights and all angular positions of the device under test.

Using the TDEMI X of GAUSS INSTRUMENTS with a real-time analysis bandwidth of 645 MHz and fully gapless evaluation and visualizing (Option QC DSP-UG, 645M-UG) the final maximization can be performed at all frequencies simultaneously.

The worldwide unique feature of the fully gapless real-time spectrogram mode combines all advantages of the single frequency mode of a traditional receiver with the possibility to carry out the measurement at all frequencies simultaneously. Two detectors are applied simultaneously, thus CISPR-Average and Quasi-peak detectors can be measured simultaneously in real-time and stored and visualized in real-time. Fully gapless processing and evaluation of all frequencies is given, which is a mandatory requirement of CISPR 16-1-1 Ed. 3.

Lowest noise floor

The world's fastest EMI receivers –the TDEMI eXtreme series (TDEMI X) of GAUSS INSTRUMENTS covering the frequency range from DC – 40 GHz and providing unique features as 645 MHz CISPR compliant real-time bandwidth, Multi-GHz Real-time Scanning and the lowest displayed average noise level at 40 GHz can now be equipped with an additional ultra-low noise pre-amplifier for the frequency range 30 MHz – 1 GHz.

This novel preamp provides lowest noise figure and highest dynamic range - both at the same time.

High linearity and lowest displayed inherent noise is achieved by a patented technology using pre-amps with low noise figure, pre-selectors and a special circuit monitoring the linearity reserve of the pre-amp.

FULL & PRE COMPLIANCE

GAUSS INSTRUMENTS®
TDEMI® TECHNOLOGY



FULL COMPLIANCE
TDEMI® EMI Receiver

ULTRA Series

12V Power Supply & Battery Pack

SPECIAL FEATURES

- › Multi GHz Real-time Spectrum Analyzer
- › Ultrafast Spectrum Analyzer Scanning
- › Ultrafast Receiver Scanning
- › Ultrafast Superhet Mode

Multi^{GHz}

685 / 342.5^{MHz}

Real-Time Scanning

[ULTRA Series]

Real-Time Bandwidth

[ULTRA Series]

DC - 6/18/26.5/40^{GHz}

Frequency Ranges

[ULTRA Series]

INFO

[ULTRA]

FULL COMPLIANCE
TDEMI® EMI Receiver

X & G Series

SPECIAL FEATURES

- › Real-time Spectrum Analyzer
- › Oscilloscope
- › Signal Analyzer

Multi^{GHz}

645^{MHz}

Real-Time Scanning

[X Series]

Real-Time Bandwidth

[X Series]

325 / 162.5^{GHz}

225 / 112^{MHz}

Real-Time Bandwidth

[X Series]

Real-Time Bandwidth

[G Series]

DC - 1/3/6/18/26.5/40^{GHz}

Frequency Ranges

[X Series]

INFO

[X] eXtreme

INFO

[G] Standard

1^{Hz} - 1/3/6/9/18/26.5/40/44^{GHz}

Frequency Ranges

[G Series]

PRE COMPLIANCE
TDEMI® EMI Receiver

M & M+ Series

Upgradeable to Full Compliance

SPECIAL FEATURES

- › Real-time Spectrum Analyzer
- › 12V Power Supply & Battery Pack

225 / 112^{MHz}

Real-Time Bandwidth

[M & M+ Series]

10^{Hz} - 1/3/6/7^{GHz}

Frequency Ranges

[M & M+ Series]

INFO

[M] Mobile

[M+] Mobile Plus

ABOUT

GAUSS INSTRUMENTS® TDEMI® TECHNOLOGY

Established in the year 2007, the company GAUSS INSTRUMENTS is manufacturer of highest performance EMC test equipment and provides advanced EMI test solutions pushing your product development and testing capabilities ahead, and speeding up your time to market cycles. With GAUSS putting the turbo in EMC since 2007, product certifications as well as pre-certification tasks have become as simple as they had never been before. Across all over the world we provide our unrivaled products, advanced test solutions, and services – together with a local service partner of our worldwide network of highly qualified and dedicated team and partners.

GAUSS INSTRUMENTS traces its technical roots to basic research on short time Fourier analysis and synthesis begun in the 70's. In the early 2000's the founders of GAUSS INSTRUMENTS invented a measurement technology combining time-domain and FFT based techniques and superheterodyne technology in a massively parallel topology - the so called TDEMI® Technology which has become the new state-of-the-art in the world of EMI testing in the meanwhile. TDEMI® Technology is a registered brand and patented technology of GAUSS INSTRUMENTS. It is provided to you only by GAUSS or its' official certified local partners. Joint research projects were performed in the field of time-domain measurements of electromagnetic interferences (EMI) together with well-respected research institutes and universities. Official metrology labs, testing and certification institutes, as well as leading automotive OEMs and many other blue chip companies selected GAUSS as innovative cooperation partner and reliable solution provider for their demanding test requirements during market certification as well as product development but also research investigations. Over the past two decades about 100 publications, transaction papers, white papers and journal articles were published on selected topics of time-domain EMI measurements and EMC testing as well as intelligent methods for automated testing. As inventor of the TDEMI® Measurement Systems which use ultra high-speed analog-to-digital converters and pretty much advanced real-time digital signal processing methods we enable ultra fast tests and measurements for electromagnetic compliance that fulfill the increasing demands for measurements of today's ever increasing density and complexity of electronic equipment and systems.

And our innovation continues - combining our deep knowledge of real-time

digital signal processing, millimeter, and microwave technologies to develop receiver and analyzer solutions combining and blurring the lines between previously discrete test instruments while delivering speeds and analysis capabilities several orders of magnitude greater than any other measurement equipment available. Combining both the advantages of the 'old' analog and the 'new' digital world we keep your testing up-to-date and beyond - pushing it to the next level and ready prepared for the future coming.

Today GAUSS offers a wide range of solutions from DC to 40 GHz for all kind of test requirements in the world of emission testing - full compliance solutions as well as pre-certification solution or even customized solution perfectly fitting to your specific requirements pushing your testing capabilities ahead. We provide customized signal processing solutions based on our well-proven hardware and DSP platforms, as well as unique software solutions. With a strong knowledge in real-time and digital technology, millimeterwave and microwave technology we develop systems that are absolutely outstanding in the field of test and measurement. E. g. the fastest real-time FFT based measuring instruments on the planet with a full compliance real-time analysis bandwidth of 645 MHz as well as classical superheterodyne technology to name a few only of our outstanding and outperforming features for full compliance testing and signal analysis.

It is our true passion to develop and to produce highest quality and highest performance instruments made in Germany. With leading-edge technology we're fulfilling all the today's requirements of complex measurement tasks and beyond. Our dedicated goal and ultimate passion is to provide our customers with all the additional benefits and full competitive advantages of accelerated testing, the optimum measurement procedures, unrivaled measurement speed and accuracy - all together at the same time. Empowered by our leading test solutions and patented TDEMI® Technology, we're boosting the capabilities of today's product development and significantly speeding up the time to market of your products. Thus, your product certification as well as pre-certification challenges become just a walk-over now!

Feel the experience and make your life easy!

Driven by our ultimate mission: **Smarter testing for a smarter world.**



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