FRANKONIA
EMC Test-Systems GmbH

MTS-800
DATA SHEET

MAGNETIC FIELD GENERATOR – ANALYZER

- IEC / EN 61000-4-8, ISO 11452-8
- MIL-STD-461, AUTOMOTIVE, AND OTHERS

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OVERVIEW

The MTS-800 is a space-saving test system for generating and analyzing magnetic fields in the frequency range from DC to 250 kHz. Thanks to the integrated power amplifier, the high field strengths required by many military and automotive standards can be reliably achieved without additional effort.

The MTS-800 consists of three central components:

Signal generator (DC – 250 kHz)
Power amplifier with 800 W output power and a bandwidth of DC – 1 MHz
16-bit spectrum analyzer with a sampling rate of 1 MS/s

- Magnetic field measurements and tests from DC to 250 kHz
- Complies with all relevant EMC, automotive, and military standards
- Field strengths up to 1000 A/m up to 1000 Hz
- Fully automated testing with optional triaxial Helmholtz coil

KEY FEATURES

The system consists of the components signal generator (DC – 250 kHz), power amplifier with 800 W output power and a bandwidth of DC – 1 MHz, and a 16-bit spectrum analyzer with a sampling rate of 1 MS/s.

It is suitable for magnetic field testing according to standards such as ISO 11452-8, MIL-STD-461, SAE J1113-2, SAE J1113-22, Ford ES-XW7T-1A278-AC, PSA B217110, Renault 36-00-808, DC-11224, DC-10614, as well as comparable standards.

In addition, test and measurement procedures according to MIL-STD-461 (CE101, CS101, CS109) and IEC / EN 61543 are integrated into the software.

The application software for Microsoft Windows provides preconfigured parameters and limit values, while also allowing the integration of custom test sequences. Measurement data can also be imported via a serial interface from an external multimeter.

A comprehensive range of accessories is available, including various coils, adapters, coupling devices, and Hall sensors.

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TECHNICAL SPECIFICATIONS

Voltage Input (Analyzer)	
Frequency	DC – 250 kHz
Input impedance	1 MΩ / 50 Ω switchable
Input connector	XLR, unbalanced (1 ground, 2 +, 3 –)
Maximum input voltage	100 V continuous (overload-protected by automatic activation of an attenuator); 10 V at 50 Ω
Gain	-20 / 0 / 20 / 40 dB preamplifier 0 / 20 dB ADC amplifier Self-calibration with ultra-stable onboard reference
Current Input	
Frequency range	DC – 250 kHz
Shunts	10 mΩ / 1 Ω / 100 Ω
Maximum input current	20 A continuous (overload protected) 1 Ω and 100 Ω shunts are additionally protected by a 1.5 A fuse
Input connector	4 mm safety sockets (+, –)
Measurement ranges	20 A, 10 A, 1 A, 100 mA, 10 mA, 1 mA Automatic offset and gain calibration
A/D Converter	
Resolution	16 Bit
Sampling rate	1.0 MSPS
Aliasing filter (can be disabled)	0.01 dB Chebyshev filter, fg = 260 kHz;

Generator	
Frequency range	DC – 250 kHz
Output impedance	50 Ω
Output connector	BNC, unbalanced
Signal waveforms	Sine / triangular / square / DC
Amplitude	0 – 10 V AC, -10 V – +10 V DC
Resolution	12 Bit (2.5 mV) Switchable -20 dB attenuator Self-calibration using an ultra-stable onboard reference
Amplifier	
Frequency range	DC – 1 MHz
Output connectors	4 mm safety sockets (output) BNC, unbalanced (input)
Output current	16 Arms
Output voltage	50 Vrms / 75 Vdc
Total harmonic distortion (DC – 100 kHz, load ≥ 4 ohms)	< 0.10%
Voltage gain	10 ± 0.1 % (± 0.01 % / °C)

GENERAL DATA

EUT control / Input connector	9-pin Sub-D; RS-232
Connection to PC	USB
Ambient temperature	5 to 40 °C
Warm-up time	15 min
Mains voltage	115 / 230 VAC ± 10%, 50–60 Hz
Housing	19" desktop enclosure (rack mounting opt.)
Dimensions (WxHxD)	449 mm × 177 mm × 580 mm
Shipping weight	approx. 40 kg (net 34 kg)

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