

Now also supports:
EN/IEC 61000-4-7:2002 + A1:2009 & EN/IEC 61000-3-2:2014

ZES ZIMMER

TELONIC
TEST INSTRUMENTS & POWER SUPPLIES



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LMG Test Suite

CE compliance test system by ZES ZIMMER

Standard: IEC 61000-4-7:2002 + A1:2008
Limits: IEC 61000-3-2:2014 (Table 3)
EUT: Demo Brand Computer Display (Class D)

Test name	% of Limit	State	Details
Supply Voltage Frequency Test (61...		OK	49.99 Hz (50.00 Hz ± 0.5%)
Supply peak voltage test (61000-4-...		Failed!	Positive peak voltage exceeds limits (306.06 V...
Positive peak test		Failed!	Negative peak voltage exceeds limits (-304.8...
Negative peak test		Failed!	Voltage peak (306.06V) not within allowed ph...
Supply peak position test (61000-4-...		OK	18.00 W < 19.55 W < 22.00 W
Supply Voltage Harmonic Distortio...		OK	
P within 10% Test (61000-3-2) [L1]		OK	
Table 3 Harmonic Current Test (610...		Failed!	
Harmonic Current Test 100%		Failed!	
100% Test H3	111%	Failed!	H3 > limit at Sample #50 (0.075 A > 0.068 A)
100% Test H5	159%	Failed!	H5 > limit at Sample #50 (0.060 A > 0.038 A)
100% Test H7	210%	Failed!	H7 > limit at Sample #50 (0.042 A > 0.020 A)
100% Test H9	243%	Failed!	H9 > limit at Sample #50 (0.024 A > 0.010 A)
100% Test H11	137%	Failed!	H11 > limit at Sample #50 (0.010 A > 0.007 A)
100% Test H13		OK	No test required (0.002 A ≤ 0.005 A)
100% Test H15	137%	Failed!	H15 > limit at Sample #50 (0.007 A > 0.005 A)
100% Test H17	137%	Failed!	H17 > limit at Sample #50 (0.008 A > 0.005 A)
100% Test H19	162%	Failed!	H19 > limit at Sample #50 (0.007 A > 0.004 A)
100% Test H21		OK	No test required (0.004 A ≤ 0.005 A)
100% Test H23	149%	Failed!	H23 > limit at Sample #95 (0.005 A > 0.003 A)
100% Test H25	163%	Failed!	H25 > limit at Sample #56 (0.005 A > 0.003 A)
100% Test H27		OK	No test required (0.004 A ≤ 0.005 A)
100% Test H29		OK	No test required (0.001 A ≤ 0.005 A)
100% Test H31		OK	No test required (0.002 A ≤ 0.005 A)
100% Test H33		OK	No test required (0.004 A ≤ 0.005 A)
100% Test H35		OK	No test required (0.004 A ≤ 0.005 A)
100% Test H37		OK	No test required (0.003 A ≤ 0.005 A)
100% Test H39		OK	No test required (0.001 A ≤ 0.005 A)
Harmonic Current Test 150%		Failed!	
150% Test H3	80%	OK	Limit met (0.082 A ≤ 0.102 A)
150% Test H5	115%	Failed!	H5 > limit at Sample #50 (0.065 A > 0.057 A)
150% Test H7	151%	Failed!	H7 > limit at Sample #50 (0.045 A > 0.030 A)
150% Test H9		Failed!	H9 > limit at Sample #50 (0.026 A > 0.015 A)
150% Test H11		Failed!	H11 > limit at Sample #129 (0.011 A > 0.010 A)
150% Test H13		OK	No test required (0.002 A ≤ 0.005 A)
150% Test H15		Failed!	H15 > limit at Sample #65 (0.008 A > 0.008 A)
150% Test H17		Failed!	H17 > limit at Sample #50 (0.009 A > 0.007 A)
150% Test H19		Failed!	H19 > limit at Sample #50 (0.006 A > 0.006 A)
150% Test H21		OK	No test required (0.003 A ≤ 0.005 A)
150% Test H23		Failed!	H23 > limit at Sample #50 (0.006 A > 0.005 A)
150% Test H25		Failed!	H25 > limit at Sample #50 (0.007 A > 0.005 A)
150% Test H27		OK	No test required (0.004 A ≤ 0.005 A)
150% Test H29		OK	No test required (0.001 A ≤ 0.005 A)

Test Report
Demo Brand
Computer Display
was tested according to IEC 61000-4-7:2002 + A1:2008
IEC 61000-3-2:2014 (Table 3)
Test result was **FAILED!**

Test Settings

Test	
Measuring Standard	IEC 61000-4-7:2002 + A1:2008
Limits	IEC 61000-3-2:2014 (Table 3)
Measurement Duration	00:01:00
EUT Classification	Class D
EUT / Measurement Setup	
Power L1	20W
Power Supply	230V
Frequency Voltage	

Harmonics and flicker test according to EN 61000-3

LMG series' proven precision power measurement technology

Detailed analysis for targeted diagnostics and optimization

Clear overview of all parameters and values

Comprehensive and customer-specific documentation

Manufacturer-independent use of AC power sources

Standards-compliant and meaningful

The ZES ZIMMER test system LMG Test Suite tests in accordance with the currently valid version of EN 61000-3-2/-12 or EN 61000-3-3/-11 and also supports measurements per ECE R-10.4 Annex 11 (e.g. electromagnetic compatibility of vehicles). As a manufacturer of precision power measurement technology, we are represented on the international standards committee. As a result, changes in standards are immediately incorporated into our test systems.

The measurement results and the limit values (either fixed or product-specific) defined in the standards are also graphically visualized. The analysis can be implemented either online, while directly linked with the measurement hardware, or offline, using stored data records.

Each measurement data record is furnished with the basic characteristic data of the test sample (RMS values of voltage and current, active power, reactive power and apparent power, power factor, harmonic distortion, etc.) to increase the significance of the information and to avoid incorrect allocations.

Proven precision power measurement technology

The system uses the LMG series' proven precision power measurement technology. ZES ZIMMER power analyzers measure with particularly great reliability and precision. A fast Ethernet interface (Gbit) guarantees smooth communication and data transfer with the test system.

Detailed analysis for rapid diagnostics and product improvement

The LMG Test Suite compliance test system allows quick identification of the cause of an inadequate test result. All measurements can be displayed and evaluated in time domain alongside the familiar presentation in frequency domain. All harmonic frequencies can be isolated throughout the test and investigated to assist with localizing the problem. In addition, all data can be passed on to third-party applications in full resolution using the clipboard or file export for additional analysis.

Flexible hardware use, independent of manufacturer

The LMG Test Suite supports all AC power sources available on the market, which fulfil the requirements of the CE standards to be tested. This provides maximum flexibility for the customers. In particular, they can continue to use the sources that are already available and thus avoid additional investments.

Calibration of the AC power source specifically for the CE tests is not necessary as the test system monitors compliance with the stipulated source parameters. For example, the system analyzes the voltage harmonics and presents them graphically. This ensures freedom from distortion and voltage stability of the source. Any problems from this side of the test structure are thus excluded reliably.

Comprehensive, customer-specific documentation

All results are documented in clear, comprehensive test reports in PDF format. Alongside the stipulated measurement values, all of the information regarding measurement equipment, test structure and settings is also integrated into the test reports – such as type designations, serial numbers and information on the calibration and traceability of the measurement instruments used. Of course, the reports can be supplemented with additional customer-specific information and design elements, in order to avoid unnecessary reworking of the reports outside the system.

System requirements:

- Operating system: Windows 7/8 (32/64 bit)
- Hard drive: software: min. 100 MB, data: approx. 20 MB per minute of measurement/phase
- RAM memory: min. 2 GB
- Processor: min. 2 GHz, dual-core
- Interfaces supported: Gbit-Ethernet

