LISN 50/16 Mains AC EMC measurements

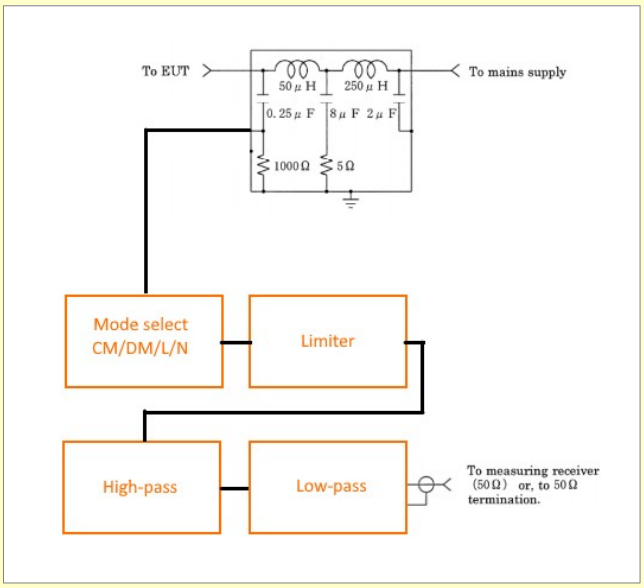
A comprehensive measurement and diagnostic tool for developers

Line Interface Stabilization Network

Using the built-in DM, CM and single line measurement, developers can easily locate the origin of a noise problem. The built-in limiter protects your spectrum analyzer against transients.

Measure for the EN61000-6-3/4 according to CISPR 16-1-2.

- 50µH / 250µH + 5Ω network
- Differential mode (DM)
- Common mode (CM)
- L or N
- Artificial hand grounding
- Low-pass filter 35MHz
- High-pass filter 9kHz
- Built-in limiter
- Measurement range 9kHz - 110MHz
- Attn 10dB
- 22 x 10 x 24 cm



Connections

- BNC to Spectrum analyzer
- 90 ~ 250V_{AC} 16A to DUT
- Artificial hand

The selectable low- and high-pass filters eliminate measurement errors due to clipping of the measurement receiver.

This measurement instrument is targeted at electronic engineers that deal with devices that are connected to the Mains like inverters, machines and power supplies.

The circuit used, conforms to the specifications of EN 55016-1-2, VDE 0876 and ANSI C63.4 for V-networks with a simulated impedance of (50µH / 250µH + 5 Ω) || 50 Ω in the frequency range 9 kHz to 30 MHz.

It is design to allow for peaks up to 30A without loss of linearity.

engineering spirit
Hardware / Software Design

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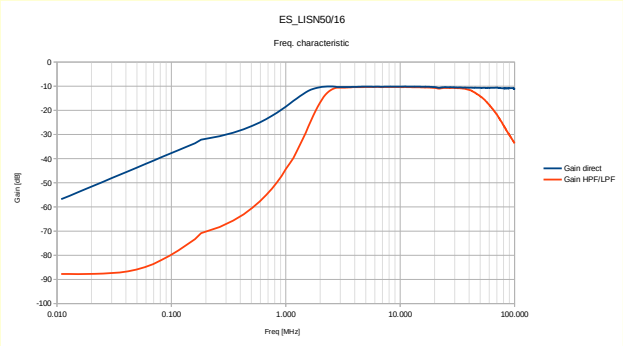
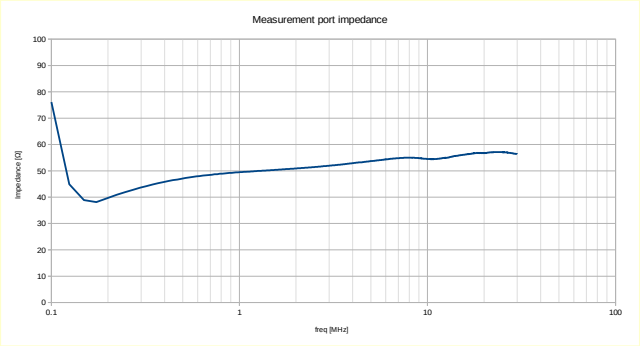
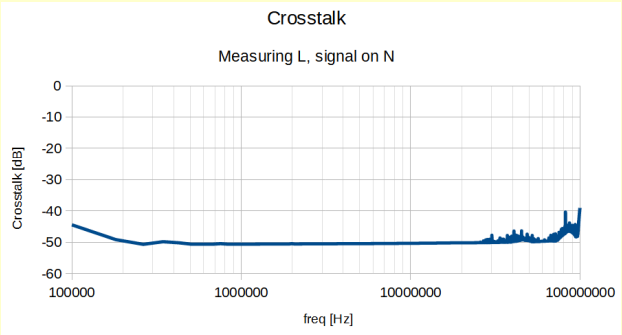
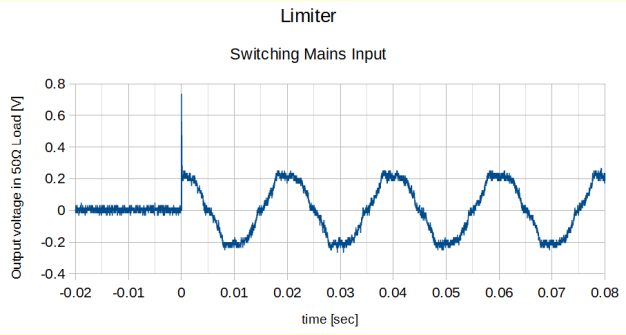
The unit has been designed using RF-techniques to provide a clean flat measurement band, ripple free filtering and very low cross-talk. The low-pass and high-pass filters help to prevent measurement errors due to out-of-band signals that may clip in the spectrum analyzer.









To protect your spectrum analyzer, the unit is equipped with a fixed limiter/attenuator.

Line/Neutral and combined
Conducted noise can be measured on the phase and on the neutral conductor. The Common Mode (CM) provides a combined signal (L + N) and Differential mode (DM) provides a difference signal (L – N).
Together with the switchable ground and artificial hand connection these modes are extremely useful for understanding the noise source so appropriate measures may be designed.

Note: Due to the large Y capacitors, an isolation transformer or floating power source is recommended/required.

Distributor