

Production of:  
EMI Chokes  
EMI Filters  
Storage Chokes

PFC Chokes  
Torodial Transformers  
CT's

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## Electromagnetic Interference and Compliance

NKL GmbH Birkichstraße 15 D-74549 Wolpertshausen

### Services of EMC Test Lab at NKL GmbH in D-74549 Wolpertshausen:

#### 1. Measuring stations

##### **Shielded room:**

8.0 x 8.0 x 3.25 m  
door: 1.20 x 2.45 m  
LISN: 4 x 32 A  
access: water and compressed air

##### **full anechoic RF chamber ("FAR") 3 m:**

7.30 x 3.10 x 3.10 m  
door: 1.19 x 2.00 m  
power line: 4 x 32 A  
access: water and compressed air

##### **open area test site:**

10 m distance

#### 2. EMI emission

Conducted emission:	9 kHz - 30 MHz	<b>EN 55011, EN 55014-1, EN 55015, EN 55032, EN 61000-6-3, EN 61000-6-4, ..</b> T-LISN, 2&4 conductor, probe 1.5 k $\Omega$ /250VAC
Disturbance power	9 kHz - 110 MHz	<b>EN 55025</b> (CISPR 25, VDE 0879, automotive)
Radiated emission (magnetic comp.)	30 MHz - 1 GHz	<b>EN 55014-1</b> (absorbing measuring clamp)
Radiated emission (electric comp.)	9 kHz - 30 MHz	<b>EN 55011, DNV</b> (loop antenna)
Radiated emission (electric comp.)	30 MHz - 30 GHz	<b>EN 55011, EN 55032, EN 55015, EN 61000-6-3, EN 61000-6-4,</b> in anechoic RF chamber with turntable (up to 300 kg) or OATS
Electric and magnetic field strength	5 Hz - 30 kHz	<b>VDE 0848</b> („EMVU“)
Harmonic and flicker		<b>EN 61000-3-2</b> u. <b>EN 61000-3-3</b> single phase up to 16A

#### 3. EMI immunity

Electrostatic discharge (ESD)	<b>EN 61000-4-2</b>	air or contact discharge up to 25 kV
Electromagnetic Field	<b>EN 61000-4-3</b>	80 MHz - 6 GHz at min. 10 V/m
Fast transients (burst)	<b>EN 61000-4-4</b>	4.8 kV for power or data line
Surge Voltages (surge)	<b>EN 61000-4-5</b>	single phase 16 A, three phase up to 32 A
Conducted RF disturbance	<b>EN 61000-4-6</b>	9 kHz - 230 MHz up to 20 V
RF with pulse modulation		simulation mobile phone network (GSM)
Magnetic field at power line frequency	<b>EN 61000-4-8</b>	50/60 Hz, up to 100 A/m
Voltage dips and drops	<b>EN 61000-4-11</b>	single phase up to 16 A

#### 4. Additional tests, equipment and Test Lab conditions:

Leakage currents; real/apparent power up to 4800 VA; AC-source 45 - 1200 Hz, 0 - 300 VAC, 16 A single phase; digital storage oscilloscope 2 GSa/s 500 MHz single shot bandwidth; insertion loss 50 Hz - 3.3 GHz; inductance (with DC bias up to 50 A); capacitance and impedance 20 Hz up to 3 MHz; AC current transformer up to 200 A.

##### Please notice:

On-site assistance within South-Germany is possible. We may visit our customers for advisory, measurements or in emergency situations. We have experiences in complex production plants like EMI filtering, electromagnetic shielding, ground loops, interconnection between power and data lines etc. On request we may hold up seminars focusing at individual requirements.

Due to our longtime experience and affiliated production of EMI components we usually find a solution even in complicated cases within a short time

Our service includes provision of equipment, advisory, measurement protocol and generally samples. Appointments are to be made in due time. Ask for our actual rate.

Based on our protocols customers are authorized to issue an EC declaration of conformity for their product and also to apply the **CE**-label to their appliance.

VER. 091222-1

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