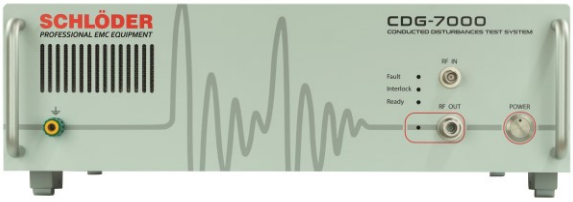
CDG 7000

Conducted Disturbances Test System

IEC / EN 61000-4-6

ISO 11452-4, Namur

- The compact device consists of a RF signal generator, a RF-power amplifier, a 3-channel RF voltmeter and a **directional coupler**
- Frequency range (signal generator) **4 kHz-1200 MHz**
- The RF power amplifier is available in three different models.



Turn Key Solution for Conducted Immunity Tests

Overview

New test generator for all interference immunity standards against conducted Interference induced by high frequency fields including BCI tests (ISO 11452-4). One of the very few combined IEC 61000 4-6 test systems that include the RF signal generator, a RF power amplifier, a 3-channel RF voltmeter and a directional coupler for a competitive price. The CDG 7000 generates interferences as defined in IEC EN 61000-4-6 immunity to conducted disturbances induced by radio frequency fields.

The standard describes a test setup in which these high frequency interferences can be influenced on a EUT without a complicated structure with antennas, field instrumentation and shielded rooms. By using coupling networks and coupling clamp's sine waves are induced directly into power and signal lines. We offer an extensive range of accessories for this purpose. The test object retains its original place in the device structure, so that the system can be tested in its overall function.

Key Facts

- The included application software (HELIA 7-Basic) enables extensive reporting functions and EUT monitoring (HELIA 7 BCI requires for BCI testing)
- Simple expansion with external amplifier via 2nd generator output
- SCPI command set enables easy integration into own software systems
- Interfaces: USB, LAN, GPIB (option)
- Temperature measuring input, e.g. for monitoring and displaying the BCI clamp temperature
- Input for external pulse modulation
- Configurable, digital 8-channel user port
- Warranty 3 years

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Models	
CDG 7000-25	Conducted RF generator, acc. IEC 61000-4-6 100 kHz – 250 MHz, amplifier 25W Maximum test level: 10 V (15 V) with 80% AM (without 6 dB) Built-in directional coupler, with software HELIA 7 - Basic USB, LAN
CDG 7000-75	Conducted RF generator, acc. IEC 61000-4-6 100 kHz – 400 MHz, amplifier 75W Maximum test level: 30 V (40 V) with 80% AM (without 6 dB) Built-in directional coupler with software HELIA 7 - Basic USB, LAN
CDG 7000-75-10	Conducted RF generator, acc. IEC 61000-4-6 10kHz – 250 MHz, amplifier 75W Maximum test level: 30 V (40 V) with 80% AM (without 6 dB) Built-in directional coupler with software HELIA 7 - Basic USB, LAN

Technical Data I

RF-Power Amplifier

	25 W	**75 W**	**75 W / 10k**
Frequency range	100 kHz-250 MHz	100 kHz-400 MHz	10 kHz-250 MHz
Output Power:			
Nominal	25 W	75 W	75 W
Linear @ 1dB compression	20 W	50 W	50 W
Gain	46 dB nominal	51 dB nominal	51 dB nominal
Flatness	± 1.5 dB maximum	± 1.5 dB maximum	± 1.5 dB maximum
Input power for rated output	1 mW / 0 dBm	1 mW / 0 dBm	1 mW / 0 dBm
Input / output impedance	50 Ω	50 Ω	50 Ω
Input VSWR	1.5 : 1 max.	1.5 : 1 max.	1.5 : 1 max.
Harmonic distortion	< -20 dBc @ 20 W	< -20 dBc @ 50 W	< -20 dBc @ 50 W
Noise figure	typ. 5 dB	typ. 7 dB	typ. 7 dB
Spurious output	< -75 dBc at 10 W	< -75 dBc at 10 W	< -75 dBc at 10 W

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RF 发生器

两个可切换输出(只有一个可以同时使用)	2 x SMA
频率范围	9 kHz 至1.2 GHz (从 4 kHz可用)
频率分辨率	1 Hz
输出等级范围	0 至 -63 dBm
输出分辨率	0.1 dB
谐波	< 30 dBc
乱真	< 45 dBc
幅度调制 (内部)	0 至 100%, 分辨率1%
幅度调制 (外部)	0 至 100% , 最大. 幅度 1V = 100%, BNC
脉冲调制 (内部)	5 至 95%, 分辨率 1%
脉冲调制 (外部)	DC...1 MHz, 3,3/5V CMOS/TTL, BNC jack

LF 发生器 (调制)

接口	BNC
频率范围	1 Hz 至 100 kHz
频率分辨率	0.1 Hz
波形	正弦波/矩形波/三角波
振幅	0...1 V

RF 电压表 (测试等级)

接口	BNC
频率范围	9 kHz 至 1.2 GHz (从4 kHz可用)
测量范围	-40 至 +30 dBm

RF 电压表 2+3 (前向 / 反向)

接口	2 x SMA
频率范围	9 kHz 至 1.2 GHz (从4 kHz可用)
测量范围	-40 to + 33 dBm + 定向耦合 (typ. 40 dB)

Technical Data II

模块

EUT-输入监控	
输入电压	0 至 10 V DC
分辨率	2.5 mV
输入阻抗	100 kΩ
EUT-故障输入	
输入信号	3,3/5V CMOS/TTL level
检测方式	状态或边缘控制
温度测量	10 至100 °C (1039 至 1385 Ω) 分辨率 < 1 °C (PT 1000)
SCPI 端口	
USB 2.0	USB-B
LAN, 100 Mbit	RJ45
GPIB (可选)	并行接口

模块

数字 I/OS	
输出	4 Bit 数字输出, 5 V CMOS/TTL
输入	4 Bit 数字输入, 5 V CMOS/TTL
连锁装置	
锁定	R < 1 kΩ

基本参数

温度范围	0 至 40 °C
外壳 / 重量	19“ 机箱 (84 TE; 3 HE) / 大约 11 kg
宽 / 高/ 深	大约 450 / 135 / 504 mm
AC 输入	100 - 240 VAC; 50/60 Hz

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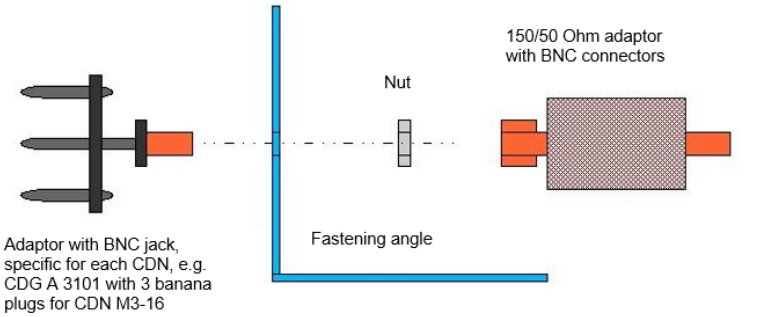
Accessories for the calibration adapter set



| < --- CDG A 31xx ----> | < ---------- CDG A 3100 ---------- > | or

| < --- CDG A 31xx ----> | < ---------- CDG A 3190 + CDG 3110 ---------- > |

To calibrate a CDN the following items are required*:
2 x CDG A 31xx (appropriate connection CDN Adapter for AE-side and EUT-side required)
2 x CDG A 3100 (mounting plate + 50/150 Ω passage + 50 Ω termination for AE-side)

For the first CDN following is required*:
2 x CDG A 31xx +
2 x CDG A 3100 or 2x (CDG A 3190 + CDG 3110)

For each additional CDN, only 2 corresponding connection adapters need to be ordered*:
2 x CDG A 31xx, optional for each connection adapter also one mounting plate CDG A 3190

**Dependent of the signal, termination can be omitted on the AE side. Let us advise you on the details.*

Accessories

Coupling Networks (special CDNs upon request)

▪ CDN M1	▪ CDN M4-32/63/100-HV	▪ CDN RJ45S
▪ CDN L1-16	▪ CDN M5-16/32	▪ CDN USB 3.0
▪ CDN M2-16/32	▪ CDN M5-32/63/100-HV	▪ CDN USB-C / USB-P
▪ CDN M2-32/63/100-HV	▪ CDN CAN-BUS	▪ CDN HDMI
▪ CDN M2+3-16/32	▪ CDN AF2/ AF3/ AF4 / AF5/ AF8/ AF12	▪ CDN Firewire
▪ CDN M3-16/32	▪ CDN T2/T4/T8	▪ CDN D 100
▪ CDN M3-32/63/100-HV	▪ CDN RJ11/RJ45	
▪ CDN M4-16/32	▪ CDN S1/ S2/ S3/ S4/ S8/ S9/ S15/ S25	

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CDN Facts

CDN EMCL-20

- EM-Coupling clamp for cables up to Ø 20mm
- Included calibration set and factory calibration
- Option: With matching network **CDN-EMCLNW_10** starting from 10 kHz

CDN EMCL-35

- EM-Coupling clamp for cables up to Ø 35mm
- Included calibration set and factory calibration

CDN ABCL-20 (Absorbing clamp)

- For cables up to Ø 20mm
- For additional decoupling at immunity testing according to IEC / EN 61000-4-6

CDN BCI-P1

- Injection probe for Bulk Current Injection (BCI)
- Frequency range 1- 400 MHz
- For cables up to Ø 40mm
- Included calibration set

CDG CMP-45

- Current monitoring probe 10 kHz - 400 MHz, foldable
- For cables up to Ø 45mm
- Option: Calibration set **CDG A CMP-45**

CDG CMP-46

- Current monitoring probe 10 kHz - 400 MHz, not foldable
- For cables up to Ø 46mm
- Option: Calibration set **CDG A CMP-46**

CDN Calibration set

- Mounting angle: **CDG A 3100** (Mounting angle, 50 / 150 Ω adapter, 50 Ω Termination)
- Calibration adapter: **CDG A 31xx**

Attenuators

CDG 7050	6dB Attenuator, 20W
CDG 7050-100W	6dB Attenuator, 100W
CDG 7050-50W	30 dB Attenuator, 50W

Termination

CDG A 50	BNC Termination, 50Ω, 1W
CDG A 50-10W	BNC Termination, 50Ω, 10W
CDG A 50-50W	BNC Termination, 50Ω, 50W