

CDG 6000 CDG 6000-75

Conducted disturbance test generator acc. to IEC / EN 61000-4-6:2014



The test generator generates interferences as defined in IEC / EN 61000-4-6 - Immunity to conducted disturbances, induced by radio-frequency fields. The standard described a test setup, in which can influence these high-frequency interferences without a complicated structure with antennas, field instrumentation and shielded rooms on a EUT. Via coupling networks and coupling clamp's sine waves are induced directly into power and signal lines. The EUT keeps its usual place in the installation; the complete unit can be tested in its function.

Overview:

- **Computer-based system (controlled by USB).**
- **Self-calibration of the test system (generator and CDN)**
- **RF-generator, amplifier and RF-voltmeter may as well be used as stand-alone devices**
- **Connections: EUT "Fail", EUT monitoring by external multimeter, e.g. DUT signal**
- **Calibration of coupling / decoupling devices and EM clamp is performed automatically**
- **Extensive additions like attenuators, calibration kits, etc. deliverable.**
- **Directional Coupler (DC)**

A directional coupler is used to measure and control the forward power of the amplifier – see the standard IEC / EN 61000-4-6, 2014. The quality of the built-in amplifier allows control of the level data through the system - see chapter 6.4 in the standard with respect of two methods. That means a built-in directional coupler is in our test system not (necessarily) required. It can also be retrofitted. Or an external directional coupler can connect - see also following selection table.

However, the control on the forward power during a test is the preferred method.

This means a generator with built-in directional couplers meets the requirements of the standard and the auditors. There are no discussions on the procedure.

Selection Test-Generator

Model	Power	Frequency range	Maximum Test Level 80% AM		Internal Direct Coupling (DC)	Connector for external Direct Coupling
			with 6 dB att.	w/t 6 dB att.		
CDG 6000	25 W	100 kHz - 250 MHz	10 V	15 V	no	yes
CDG 6000-DC	25 W	100 kHz - 250 MHz	10 V	15 V	yes	no
CDG 6000-75	75 W	100 kHz - 300 MHz	30 V	40 V	no	yes
CDG 6000-75-DC	75 W	100 kHz - 300 MHz	30 V	40 V	yes	no
CDG 6000-75_10	75 W	10 kHz - 250 MHz	30 V	40 V	no	yes
CDG 6000-75-DC_10	75 W	10 kHz - 250 MHz	30 V	40 V	yes	no

Technical data

RF Voltmeter (external input)	
Frequency range	10 kHz to 400 MHz
Measuring range	+30 dBm to – 40 dBm
Input	BNC, 50 Ohm

RF Generator	
Output	BNC, 50 Ohm
Frequency range	10 kHz to 400 MHz
Frequency resolution	1 Hz
Output level range	0 to -63 dBm (level resolution 0.1 dB)
Amplitude modulation	0 to 100%; resolution 1% (internal AF-Generator)
Amplitude modulation (ext.)	BNC jack 1 Hz to 100 kHz, 0 to 100% Input impedance > 100 kΩ
Pulse modulation	1 Hz to 100 kHz, Resolution 0,1 Hz variable duty cycle 5 - 95 %; resolution 1% (internal AF-Generator)

AF Generator	
Output jack	BNC
Frequency range	1 Hz to 100 kHz, resolution 0.1 Hz
Output voltage	0 to 1 V amplitude
Signal	Sine wave / rectangular / triangle

Power amplifier	CDG 6000-75	CDG 6000-75_10	CDG 6000/25
Frequency range	100 kHz to 300MHz	10 kHz to 250 MHz	100 kHz to 250 MHz
Gain	51 dB ±1.5 dB	51 dB ±1.5 dB	46 dB ±1.5 dB
Output power	75 W nom.	75 W nom.	25 W nom.
Distortion	< 20 dBc at 50 W	< 20 dBc at 50 W	< 20 dBc at 20 W
Input impedance Output impedance	50 Ohm, VSWR < 1.5 : 1, 50 Ohm nom.		
EUT-fail input	BNC socket		

EUT-Monitor input	
Input voltage	0 - 10 V (resolution 2.5 mV), impedance 100 kΩ

Amplifier Monitor	
Output	BNC, 50 Ω / -40 dB (amplifier output), ±3 dB

Interfaces	
USB-A	Multimeter (for EUT control) and Relays switching unit
USB-B	Connection to Computer

General data	
Temperature range	0 to 40 °C
Housing / weight	19" desktop case (84 TE; 3 HE) / aprox. 11 kg
Width / height / depth	app. 450 / 150 / 480 mm
AC Input	100 - 240 VAC; 50/60 Hz

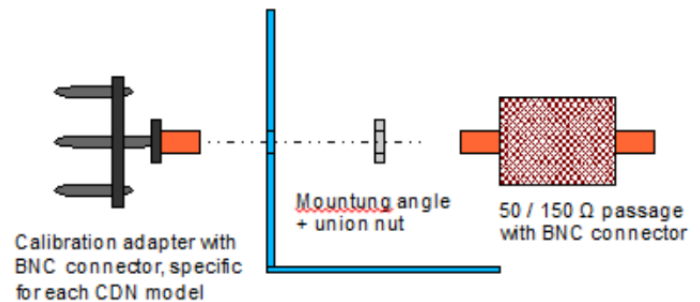
Accessories:

Coupling / decoupling networks (CDN´s)
 Standard 150 kHz – 80/ 230/ 300 MHz
 Special CDN's (10 kHz – 230 MHz) available
Special CDN's on request

CDN M1	Ground cable
CDN L1-16	Unscreened power lines AC / DC
CDN M2-16/32	
CDN M2-32/63/100-HV	
CDN M2+3-16/32	
CDN M3-16/32	
CDN M3-32/63/100-HV	
CDN M4-16/32	
CDN M4-32/63/100-HV	
CDN M5-16/32	
CDN M5-32/63/100-HV	
CDN M2-16-9K, M3-16_9K	
CDN CAN-BUS	Bus lines
CDN AF2/AF3	Unscreened, non balanced lines
CDN AF4/AF5/AF8	
CDN T2/T4/T8	Unscreened, balanced lines.
CDN RJ11/RJ45	
CDN S1/S2/S4/S8/S9	Screened lines
CDN S15/S25	
CDN RJ45S	
CDN USB 3.0	
CDN USB-C / USB-P	
CDN HDMI	
CDN Firewire	
CDN D 100	100 Ohm Resistor for direct coupling on the screen, with alligator clip

CDN Calibration-Set

- Monting plate: **CDG A 3100**
(includes 50 / 150 Ohm passage)
- Calibration-Adaptor: **CDG A 31xx**



CDN EMCL-20 and CDN EMCL-35

EM-Coupling clamp, cables $\varnothing < 20\text{mm}$ or $< 35\text{mm}$

- Includes calibration kit and factory calibration
- With matching network (Option) from 10 kHz at EMCL-20 (**CDN-EMCL-NW_10**)

CDN ABCL-20 (Decoupling clamp)

For cable $\varnothing < 20\text{mm}$

- for additional decoupling at immunity testing according to IEC / EN 61000-4-6

CDG 6050 / CDG 6050-100

- 6dB Attenuator, 20W, Test level max. 15V
- 6dB Attenuator, 100W, Test level max. 40V
- 30 dB Attenuator, 50W, N-Connector

CDG A 50 / CDG A 50-10W / CDG A 50-50W

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

CDN BCI-P1 / CDG CMP-45 and CDG CMP-46

- Clamp for Bulk Current Injection (BCI) test
- Current monitoring probe 10 kHz – 400 MHz, foldable and non-foldable