

## Features

- **Frequency Range**  
150 kHz to 30 MHz (for emissions - as ISN)  
150 kHz to 230 MHz (for immunity - as CDN)
- **Coaxial Lines - 50Ω Impedance**
- **Meets CISPR 16-1-2, CISPR 22/32 (EN 55022/32) and IEC 61000-4-6**
- **Individual Calibration Included**

## Flexibility (CDN or ISN)

The CDN C50E is intended for use as either a **CDN** for conducted immunity testing per IEC 61000-4-6, or as an **ISN** for conducted emissions testing per CISPR 22/32. It meets all applicable requirements of these standards for each test, as well as those contained within CISPR 16-1-2.

## Description

The CDN C50E is used on coaxial lines with a nominal transmission line impedance of 50 ohms. The EUT and AE Ports are fitted with female, 50Ω BNC-type coaxial connectors. The RF Port is also fitted with a female, 50Ω BNC-type coaxial connector.

The outer surface of the network's metallic enclosure is powder coated for durability, and is mounted onto, and internally bonded to, an untreated (conductive) stainless steel base plate. The base plate extends beyond the footprint of the network enclosure at the front and back, providing convenient access to effectively ground the network, which is essential for proper operation.

## Conducted Immunity Systems

Any individual Com-Power CDN may be purchased separately, or as part of a [CIS series Test System](#). Test systems also include an [ACS series power amplifier](#) (25W, 50W or 100W), directional coupler, power attenuators, two 150Ω to 50Ω adapters, 50Ω termination, common-mode adapters, cables and automation software.

## Calibration

The CDN C50E is individually calibrated for all necessary performance parameters with NIST traceability. The calibration data and certificate is shipped with each network. Recognized ISO 17025 accredited calibration is also available upon request.



## Application

The CDN C50E is suitable for conducted emissions and immunity tests on signal/telecommunication ports intended for connection to coaxial lines with a nominal transmission line impedance of 50 ohms.

During emissions testing, an ISN provides:

- » a means by which to measure spurious common-mode noise from the EUT, present on the line under test; and,
- » common-mode isolation between the EUT and AE, minimizing the affects that any spurious noise generated by the AE may have on the measurement.

Conversely, CDNs provide what are essentially the same functions during immunity testing, but from the opposite perspective:

- » a means of coupling RF common mode signals on to the line(s) under test of the EUT; and,
- » common mode isolation between the EUT and AE, minimizing AE exposure to the injected RF test signal.

Prior to the immunity test, CDN drive levels are established at each test frequency by adjusting the power level being applied to the RF Port until the appropriate voltage ( $U_{mr}$ ) is measured at the output of the 50Ω to 150Ω adapter connected to the EUT port. It is important to note that the test levels in IEC 61000-4-6 are open circuit voltage levels ( $U_o$ ). The test level ( $U_o$ ) has been achieved when the corresponding  $U_{mr}$  value is measured; *not the  $U_o$  value*. The relationship between  $U_o$  and  $U_{mr}$  is:

$$U_{mr} (V_{rms}) = U_o (V_{rms}) / 6; \text{ or,}$$

$$U_{mr} (dB\mu V) = U_o (dB\mu V) - 15.6 \text{ dB}$$

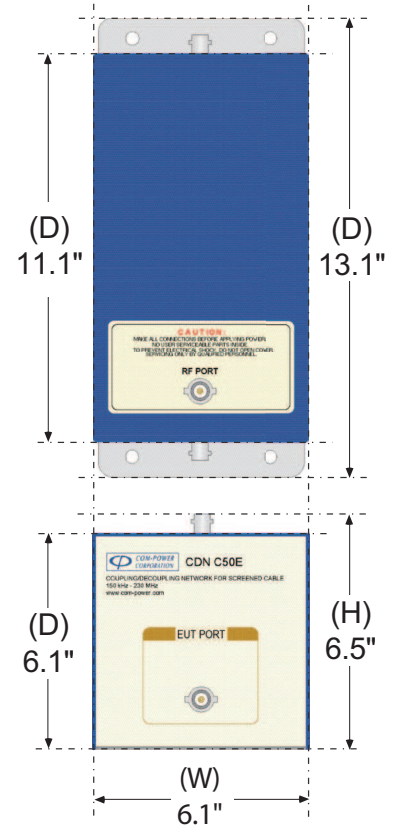
So, for Level 3, where:  $U_o = 10 V_{rms}$  (140 dBμV),

$$U_{mr} = 1.67 V_{rms} (124.4 \text{ dB}\mu V)$$

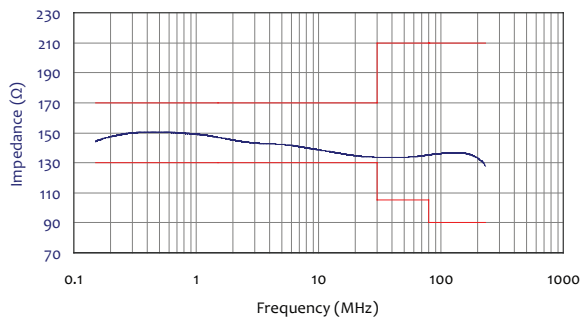
## Specifications

Standards	<b>IEC 61000-4-6, CISPR 16-1-2, CISPR 22, CISPR 32</b>	
Frequency Range	<b>150 kHz to 30 MHz</b> (as ISN - for emissions) <b>150 kHz to 230 MHz</b> (as CDN - for immunity)	
Application	<b>Coaxial Lines - 50Ω Transmission Line Impedance</b>	
Max. Current rating	<b>1 Amp</b>	
Voltage rating	<b>310 VAC, 440 VDC</b> (Line to Ground)	
Maximum RF Input	<b>40 Volts</b> (152 dBuV)	
RF Port Connector	<b>50Ω BNC (female)</b>	
EUT/AE Port Connections	<b>50Ω BNC (female)</b>	
Common mode impedance	150 kHz to 30 MHz:	<b>150Ω ±20Ω</b>
	30 MHz to 80 MHz:	<b>150Ω +60Ω / -45Ω</b>
	80 MHz to 230 MHz:	<b>150Ω ±60Ω</b>
Phase	150 kHz to 30 MHz:	<b>0° ±20°</b>
Voltage Division Factor	150 kHz to 80 MHz:	<b>9.5 dB ±1 dB</b>
	80 MHz to 230 MHz:	<b>9.5 dB +2.5 / -1 dB</b>
Decoupling Attenuation (minimum Isolation)	150 kHz to 80 MHz:	<b>&gt;60 dB</b>
	80 MHz to 150 MHz:	<b>&gt;40 dB</b>
	150 MHz to 230 MHz:	<b>&gt;30 dB</b>
Asymmetric Insertion Loss	<b>Max: 3 dB</b>	
Transmission Bandwidth	<b>&gt;1 GHz</b>	
Weight	<b>6.3 lbs. (2.8 kg)</b>	

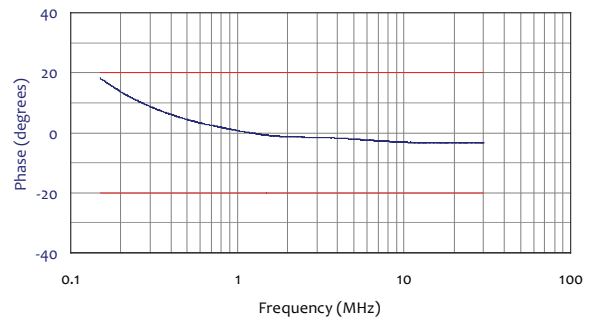
All specifications are subject to change without notice.  
All values are typical, unless specified.



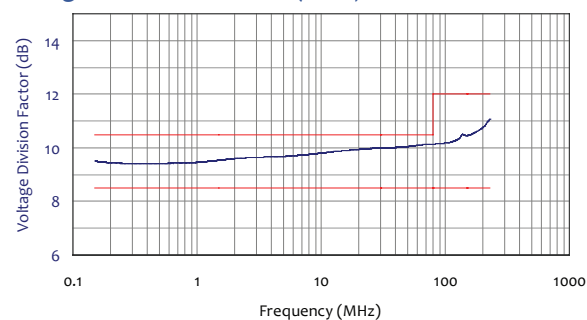
### Impedance



### Phase



### Voltage Division Factor (VDF)



### Decoupling Attenuation (Isolation)

