

Features

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

Flexibility

The CDN-T8SE could be referred to as a “dual-threat” network, as it can be used either as 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-T8SE is used during conducted emissions or immunity tests on devices with signal/telecom ports intended for connection to shielded (or screened) lines with up to four balanced pairs. The EUT and AE ports of the CDN-T8SE are equipped with shielded RJ45 receptacles. The RF input/output port is located on the top side of the network, and is fitted with a female BNC-type connector.

The outer surface of the network’s metallic enclosure is powder coated for durability, and is mounted onto 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.

Any individual Com-Power CDN may be purchased separately, or as part of a CIS series conducted immunity test system. Test systems also include an ACS series power amplifier, as well as the required accessories.

Calibration

The CDN-T8SE 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-T8SE is suitable for conducted emissions and immunity tests on signal/telecom ports (such as ethernet) intended for connection to shielded (Cat. 3 or Cat. 5) lines containing up to four balanced pairs.

During emissions testing, an ISN provides:

- » a means to measure spurious common-mode noise from the EUT, present on the line under test
- » 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
- » 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 must be established, which is typically done via software control. At each test frequency, the RF voltage applied to the CDN is adjusted incrementally until the appropriate voltage (U_{mr}) is measured at the output of the 50Ω to 150Ω adapter (ADA-515-2), which is connected to the common mode (shorting) adapter attached to the EUT port. It is important to note that test levels given in the IEC 61000-4-6 standard correspond to the equivalent open circuit voltage (U_o), and should not to be confused with the actual voltage level measured during the above process (U_{mr}). The relationship between U_o and U_{mr} is:

$$U_{mr}(V_{rms}) = U_o(V_{rms})/6 \quad \& \quad U_{mr}(dB\mu V) = U_o(dB\mu V) - 15.6 \text{ dB}$$

The ADA-515-2 and other accessories typically needed to establish drive levels are also available from Com-Power.

Specifications

Product Name	Coupling Decoupling Network (CDN)	
Compliant Test Standards	IEC-61000-4-6, CISPR 16-1-2, CISPR 22	
Frequency Range	150 kHz to 30 MHz (as ISN) 150 kHz to 230 MHz (as CDN)	
Max Input Voltage	40 Vrms	
Application	Screened lines w/up to 4 balanced pairs	
Current rating	1.5 Amps (max)	
Voltage rating	125 V _{AC} (line to GND)	
RF Input Connector	50 Ω BNC (female)	
EUT/AE Port Connections	Shielded RJ45	
Common mode impedance	150 kHz to 30 MHz:	150 Ω $\pm$ 20 Ω
	30 MHz to 80 MHz:	150 Ω +60 Ω / -45 Ω
	80 MHz to 230 MHz:	150 Ω $\pm$ 60 Ω
Voltage Division Factor	150 kHz to 30 MHz:	10 dB $\pm$ 1 dB
	30 MHz to 230 MHz:	10 dB +2 dB / -1 dB
Decoupling Attenuation (Isolation)	150 kHz to 5 MHz:	>70 dB
	5 MHz to 30 MHz:	>60 dB
	30 MHz to 80 MHz:	>50 dB
	80 MHz to 230 MHz:	>40 dB
Dimensions	8.5" x 4.5" x 3.5" (21.5 x 11.4 x 8.8 cm)	

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

Accessories available from Com-Power:



ADA-T8SE (Common Mode Adapter Set)



ADA-515-2 (50 Ω to 150 Ω Adapter Set)

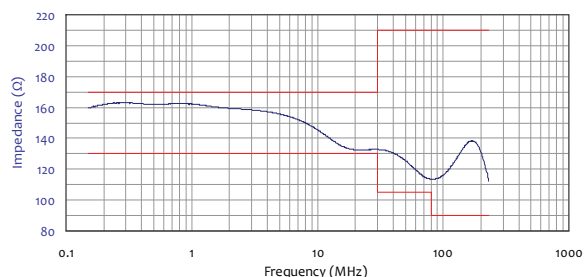


ACS-series Power Amplifiers

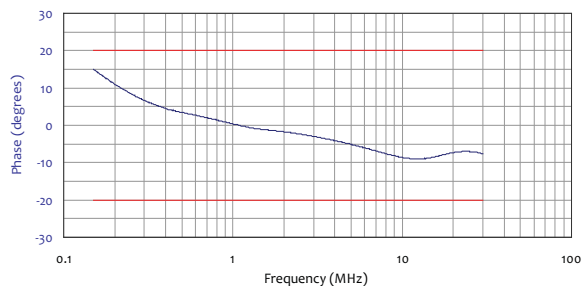
Also Available:

TEP-050 (50 Ω Termination)
DCx-series Directional Couplers
ATTN-series Power Attenuators

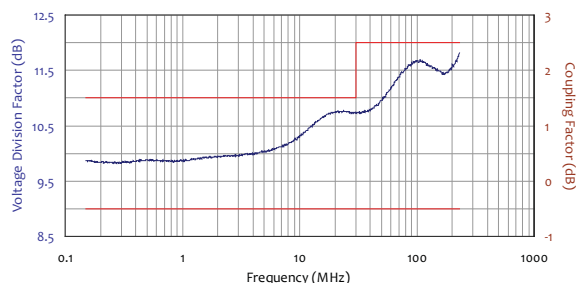
Typical Impedance Data



Typical Phase Data



Typical Voltage Division Factor Data



Typical Isolation Data

