Compact Immunity Test System CIT-10
Coupling / Decoupling Networks (CDNs)

Description

Immunity tests according to IEC/EN require coupling of RF disturbance voltages into any conducting cable of an EUT. Furthermore these disturbances should not be coupled into any further equipment so that a decoupling path to any auxiliary equipment is provided. We offer a wide range of CDNs for different types of interconnected lines which are fully calibrated for the frequency range from 150kHz to 230MHz. The following CDNs are available: M-, AF-, S-, T-, RJ, USB-types. Almost any network can be assembled on customer´s requests. Guidance for selecting the appropriate CDN is given in the following table:

Type	Interconnected lines
M1, M2, M3, M4, M5, M2+M3	Unscreened supply (mains)
AF2, AF4, AF5, AF6, AF8	Unscreened nonbalanced lines
S1, S2,S4, S8, S9, S15, S25, S36	Screened lines
T2, T4, T8	Unscreened balanced lines
RJ11, RJ45	Unscreened data lines
RJ11/S, RJ45/S, USB	Screened data lines

Test procedure with Coupling/Decoupling (CDNs) Networks acc. to IEC/EN 61000-4-6:

- The EUT shall be placed on an isolating support, 0.1 m above the ground reference plane. For table-top equipment, the ground reference plane may be placed on a table.
- On all cables to be tested, coupling and decoupling devices shall be inserted.
- The coupling and decoupling devices shall be placed on the ground reference plane, making direct contact with it at about 0.1 – 0.3 m from the EUT.
- The cables between the coupling and decoupling devices and the EUT shall be as short as possible and shall never be bundled or wrapped.
- The height above the ground reference plane shall be between 30 and 50mm (where possible).
- The 6dB attenuator shall be placed to the coupling and decoupling device as near as possible.
- The test shall be performed with the test generator connected to each of the CDNs in turn while the other non-exited RF-input ports of the CDNs are terminated by a 50 Ω load resistor.

Set-up for level setting at the EUT-port of coupling and decoupling devices:

1. The test generator (RF-out) shall be connected to the RF-input port of the coupling device via the 6 dB-attenuator.
2. The EUT port of the coupling device shall be connected in common-mode through the 150 Ω to 50 Ω adaptor to the RF-Voltmeters (calibration).
3. The AE-port shall be loaded in common-mode with a 150 Ω to 50 Ω adaptor, terminated with 50 Ω.

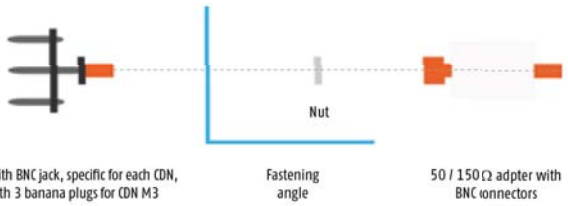
With direct injection to screened cable (CDN S-types), the 150 Ω load at the AE-port is not required as the screen will be connected to the ground reference plane at the AE-port side.

Although the 150 Ω load at the AE-port is mandatory with CDN T-, AF- and M-types calibration data are identical with the AE-port open or short. This is because a capacitor is connected to ground at the AE-port side, which leads to a RF-short-circuit similar to the CDN S-types. This means that even with CDN M-, AF- and T-types the 150 Ω load at the AE-port is not required.

To calibrate a CDN the following items are required:

• adaptor • fastening angle • 50 Ω / 150 Ω adaptor

Fastening angle and 50 Ω / 150 Ω adaptor should be ordered for the first CDN. For each following CDN only the specific adaptor has to be ordered.



Direct Injection: Any shielded connection to an EUT can also be connected to the RF disturbance voltage via a direct injection adapter.