



CDN T210A...T246AS, CDN T411A...T4AS COUPLING / DECOUPLING NETWORK (CDN) FOR UNSHIELDED BALANCED PAIRS



IEC/EN 61000-4-6 specifies the design and performance of a range of coupling/decoupling networks (CDNs). Each CDN is specific to the type of cable and the intended signal carried on the cable. Teseq offers an extensive range of CDNs which fully comply with the requirements of the standard and provide a simple and reliable method of injecting RF energy into the equipment under test (EUT). Each CDN T2xxA and CDN T4xxA consist of one basic network (CDN T200A and CDN T400A) with D-Sub-25- connectors. The connections to a different pin configurations of the modular connectors (RJ11/RJ45) in use is performed in adapters. An adapter set (ADR Txxx) consists of two same connecting adapters for the EUT- and AE- port and at least one set is part of each CDN. Additional adapter sets are available. Teseq offers different kinds of CDN, prepared for the most important fixed pin- arrangements of RJ11/RJ45- connectors and also versions for customer's specific configuration.



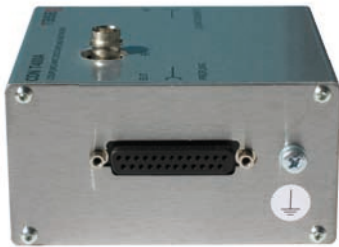
CDN T400A basic network and ADR T444

- CDN T2xxA for one unshielded balanced pair
- CDN T4xxA for two unshielded balanced pairs
- Designed for IEC/EN 61000-4-6
- RJ11 and RJ45 sockets with different pin-arrangements as required by the application

Technical specifications of CDN T210A, CDN T240A and CDN T246A

| | |
|---------------------------------------------------------------------------|---------------------|
| Frequency range: | 150 kHz to 80 MHz |
| Line parameters: | 1 pair |
| Power rating (EUT- and AE Port) | |
| AC max. voltage (line to ground): | 63 V |
| DC max. voltage (line to ground): | 100 V |
| Current max : | 400 mA (line) |
| Test voltage: | 200 VDC, 2 sec |
| Common mode impedance (EUT port) | |
| 150 kHz to 26 MHz: | 150 Ω ±20 Ω |
| 26 MHz to 80 MHz: | 150 Ω +60 Ω / -45 Ω |
| Coupling path (In/Out port/EUT) | |
| Connection: | BNC 50 Ω |
| RF voltage: | <15 V |
| Voltage division factor (RF input to EUT port) | |
| 150 kHz to 80 MHz: | 9.5 dB ±1 dB |
| Transmission bandwidth (wanted signal) EUT/AE B3 dB:* | > 100 MHz sin. |
| Longitudinal conversion loss (LCL), (EUT port) | |
| 150 kHz: | >75 dB |
| 1.5 MHz: | >75 dB |
| 30 MHz: | >50 dB |
| Decoupling of CM disturbance (RF port / AE) | |
| 150 kHz: | >35 dB |
| 1.5 MHz: | >55 dB |
| 30 MHz: | >55 dB |
| 80 MHz: | >40 dB |
| *) all balanced parameters are in relation to a symmetrical load of 100 Ω | |

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CDN T400A basic network



CDN T411A



CDN T4AS in suitcase

Technical specifications of CDN T410A, T411A, T440A, T442A, T443A, T444A, T445A and CDN T4A

| | |
|----------------------------------------------------------------------------------|------------------------------------------|
| Frequency range: | 150 kHz to 80 MHz |
| Line parameters: | 1 up to 2 pair(s) |
| Power rating (EUT- and AE Port) | |
| AC max. voltage (line to ground): | 63 V |
| DC max. voltage (line to ground): | 100 V |
| Current max : | 400 mA (line), 800 mA (pair) |
| Test voltage: | 200 VDC, 2 sec |
| Common mode impedance (EUT port) | |
| 150 kHz to 26 MHz: | 150 Ω \pm 20 Ω |
| 26 MHz to 80 MHz: | 150 Ω +60 Ω / -45 Ω |
| Coupling path (In/Out port/EUT) | |
| Connection: | BNC 50 Ω |
| RF voltage: | <15 V |
| Voltage division factor (RF input to EUT port) | |
| 150 kHz to 80 MHz: | 9.5 dB \pm 1 dB |
| Transmission bandwidth (wanted signal) EUT/AE B3 dB:* | > 100 MHz sin. |
| Crosstalk (EUT / AE) 1 MHz to 100 MHz: | \geq 61 dB to \geq 21 dB |
| Longitudinal conversion loss (LCL), (EUT port) | |
| 150 kHz: | >75 dB |
| 1.5 MHz: | >75 dB |
| 30 MHz: | >50 dB |
| Decoupling of CM disturbance (RF port / AE) | |
| 150 kHz: | >35 dB |
| 1.5 MHz: | >55 dB |
| 30 MHz: | >55 dB |
| 80 MHz: | >40 dB |
| *) all balanced parameters are in relation to a symmetrical load of 100 Ω | |

Mechanical specifications

| | |
|-------------------------------------------------|-------------------------|
| Size (W x H x D) (basic network): | 105 mm x 65 mm x 110 mm |
| Size (W x H x D) (basic network with adapters): | 105 mm x 65 mm x 190 mm |
| Weight: | approx. 550 g |



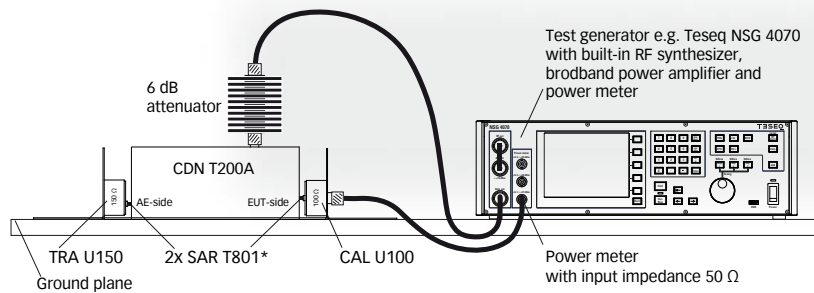
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Product range

| CDN type | Product name | Line type | Application | Adapter name | Connector EUT port | Connector AE port |
|----------|--------------|---------------|-----------------------------------|--------------------------------------------------|----------------------------------------------|----------------------------------------------|
| T2 | CDN T210A | 1 pair | pin arrangement customer specific | ADR T210 | D-Sub 25 pins with adapter to RJ 11 | D-Sub 25 pins with adapter to RJ 11 |
| T2 | CDN T240A | 1 pair | pin arrangement customer specific | ADR T240 | D-Sub 25 pins with adapter to RJ 45 | D-Sub 25 pins with adapter to RJ 45 |
| T2 | CDN T246A | 1 pair | German Telecom, Siemens, UPO | ADR T246 | D-Sub 25 pins with adapter to RJ 45 | D-Sub 25 pins with adapter to RJ 45 |
| T4 | CDN T410A | up to 2 pairs | pin arrangement customer specific | ADR T410 | D-Sub 25 pins with adapter to RJ 11 | D-Sub 25 pins with adapter to RJ 11 |
| T4 | CDN T411A | up to 2 pairs | German Telecom, US standard | ADR T411 | D-Sub 25 pins with adapter to RJ 11 | D-Sub 25 pins with adapter to RJ 11 |
| T4 | CDN T440A | up to 2 pairs | pin arrangement customer specific | ADR T440 | D-Sub 25 pins with adapter to RJ 45 | D-Sub 25 pins with adapter to RJ 45 |
| T4 | CDN T442A | up to 2 pairs | ISDN basic rate access S0 | ADR T442 | D-Sub 25 pins with adapter to RJ 45 | D-Sub 25 pins with adapter to RJ 45 |
| T4 | CDN T443A | up to 2 pairs | ISDN primary rate access (2Mbps) | ADR T443 | D-Sub 25 pins with adapter to RJ 45 | D-Sub 25 pins with adapter to RJ 45 |
| T4 | CDN T444A | up to 2 pairs | 10BaseT, 100BaseT | ADR T444 | D-Sub 25 pins with adapter to RJ 45 | D-Sub 25 pins with adapter to RJ 45 |
| T4 | CDN T445A | up to 2 pairs | ATM, FDDI | ADR T445 | D-Sub 25 pins with adapter to RJ 45 | D-Sub 25 pins with adapter to RJ 45 |
| T4 | CDN T4A | up to 2 pairs | with 5 adapter sets | ADR T411, ADR T442, ADR T443, ADR T444, ADR T445 | D-Sub 25 pins with adapter to RJ 11 and RJ45 | D-Sub 25 pins with adapter to RJ 11 and RJ45 |

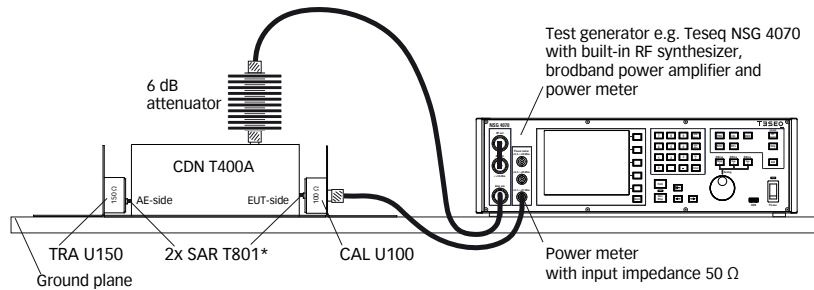
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Test set-up calibration with CDN T200A



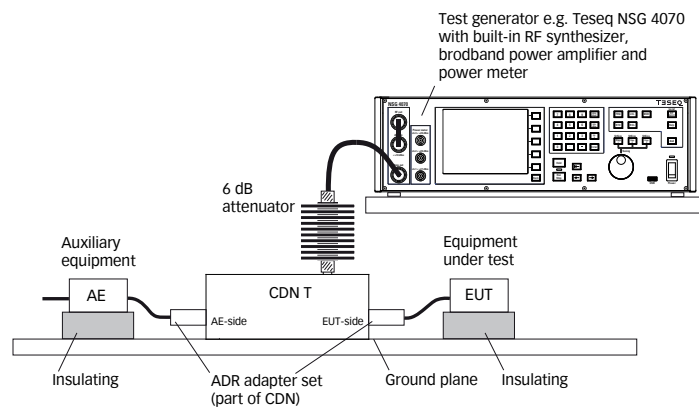
*) Note: 2x SAR T000 for alternative use

Test set-up calibration with CDN T400A



*) Note: 2x SAR T000 for alternative use

EUT test set-up



CDN T210A...T246AS, CDN T411A...T4AS

COUPLING / DECOUPLING NETWORK (CDN)

FOR UNSHIELDED BALANCED PAIRS

Delivery information

| Part number | Description |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 254622 | CDN T210A CDN T200A with adapter set RJ11 customer specific in suitcase |
| 254623 | CDN T240A CDN T200A with adapter set RJ45 customer specific in suitcase |
| 254624 | CDN T246A CDN T200A with RJ45 adapter set (ADR T246) in suitcase |
| 254625 | CDN T246AS CDN T200A with RJ45 adapter set (ADR T246) and calibration adapter (CAL U100, TRA U150 and 2x SAR T801) in suitcase |
| 254628 | CDN T411A CDN T400A with RJ11 (ADR T411) adapter set in suitcase |
| 254629 | CDN T440A CDN T400A with adapter set RJ45 customer specific in suitcase |
| 254630 | CDN T442A CDN T400A with RJ45 (ADR T442) adapter set in suitcase |
| 254631 | CDN T443A CDN T400A with RJ45 (ADR T443) adapter set in suitcase |
| 254632 | CDN T444A CDN T400A with RJ45 (ADR T444) adapter set in suitcase |
| 254633 | CDN T445A CDN T400A with RJ45 (ADR T445) adapter set in suitcase |
| 254626 | CDN T4A CDN T400A with with 5 different adapter sets (ADR T411, T442, T443, T444 and T445) in suitcase |
| 254627 | CDN T4AS CDN T400A with 5 different adapter sets (ADR T411, T442, T443, T444 and T445) and calibration adapter (CAL U100, TRA U150 and 2x SAR T801) in suitcase |
| 97-241924 | CDN Txxx-TC Traceable calibration (ISO17025) for IEC 61000-4-6 requirements, order only with device CDN T2, T2xx, T4, T4xx and T8 type |
| 239901 | CAL U100 Universal calibration unit (150 Ω /50 Ω adapter) |
| 242430 | SAR T801* Common mode adapter for Sub-D |
| 239903 | TRA U150 Universal termination resistor 150 Ω AE side |
| *) The test set-up required 2x SAR T801 | |