ISN ST08
IMPEDANCE STABILIZATION NETWORK FOR SCREENED BALANCED PAIRS

- **For use with screened RJ45 connections**
- **Up to 8 lines/4 pairs**
- **Meets the requirements of CISPR 22, CISPR 32, CISPR 16-1-2**
- **Design given in figure D.11 of CISPR 22 and G.11 of CISPR 32**
- **Can be used as CDN for IEC 61000-4-6 immunity tests**

Network applications

- **Screened balanced lines**
- **STP, FTP, SFTP**
- **Cat.3, cat.5, cat.5e, cat.6, cat.7**
- **Ethernet with 10 BaseT, 100 BaseT, 1000 BaseT, 10 GBaseT**
- **RJ45**
- **PoE**

Impedance stabilization networks (ISN, or with CISPR 16-1-2 called AAN: asymmetric artificial network or AN: artificial networks for coaxial and other screened cables) are defined for measuring of conducted common mode disturbances at information technology equipment (ITE) as required in CISPR 22.

The ISN is placed between the equipment under test (EUT) and auxiliary equipment (AE) or load which are necessary for the operation of the EUT. The ISN establishes the common-mode termination impedance for the EUT's telecommunications port during measurement. All internal parts fulfill the requirements of cat.6 or better and provide optimal transfer performance. The used internal cable has a symmetrical impedance of 100 Ω. The pin- arrangement of the RJ45 sockets meets the requirements of EIA/TIA 568B.

ISN ST08 meets the requirements of CISPR 22, EN 55022, CISPR 32, EN 55032, CISPR 16-1-2 and EN 55016-1-2. Unlike the ISN T types for unscreened balanced lines the ISN ST08 needs no additional adapters for LCL setting.

Technical specifications

Frequency range:	150 kHz to 230 MHz
Line parameters:	4 pairs, balanced, shielded, 100 Ω impedance
Power rating (EUT and AE port)	
AC max. voltage:	100 V
DC max. voltage:	150 V
Current max :	1.2 A (line)
Test voltage:	200 VDC, 2 sec
Common mode impedance (EUT port)	
150 kHz to 30 MHz:	150 Ω ±20 Ω
30 MHz to 230 MHz:	150 Ω +60 Ω/-45 Ω
Phase angle (EUT port) 150 kHz to 30 MHz:	0° ±20°
Coupling path (In/Out port/EUT)	
Connection:	BNC 50 Ω
RF voltage:	<20 V
Voltage division factor (RF input to EUT port)	
150 kHz to 30 MHz:	9.5 dB ±1 dB
30 MHz to 230 MHz:	9.5 dB +4 dB/-2 dB
Transmission bandwidth (wanted signal) EUT/AE B3 dB: *	> 250 MHz sin.
Decoupling of common mode disturbances (EUT/AE)	
150 kHz to 1.5 MHz:	≥60 dB
1.5 MHz to 30 MHz:	≥60 dB
230 MHz:	≥40 dB

*) all balanced parameters are in relation to a symmetrical load of 100 Ω

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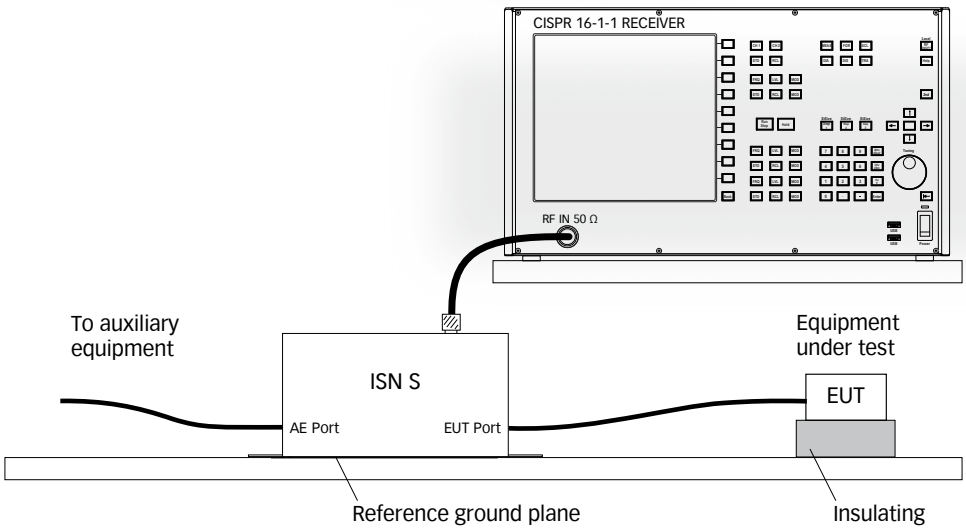
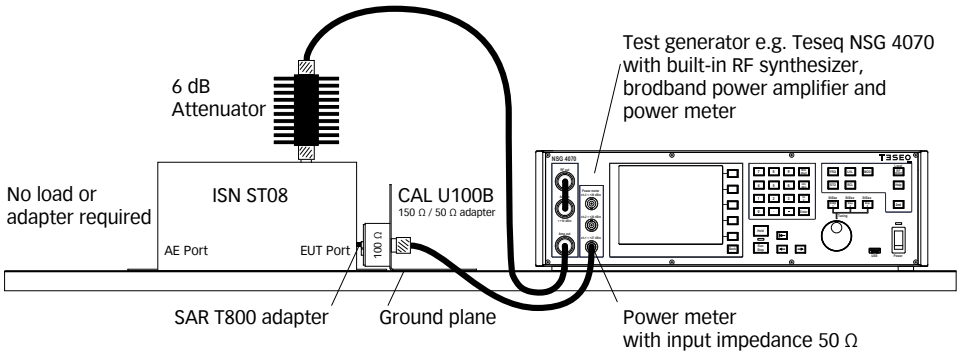
Test setup example for disturbance voltage measurements on screened balanced pairs



Example of the level setting setup (system calibration for immunity testing according IEC / EN 61000-4-6)



The ISN ST08 is appropriate for immunity tests of IEC / EN 61000-4-6. Optional available are the parts for the level setting setup CAL U100B (150 Ω / 50 Ω adapter) and SAR T800 (common mode adapter for RJ45).

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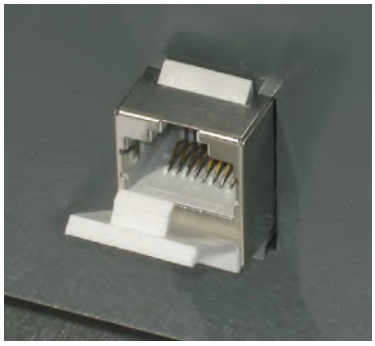
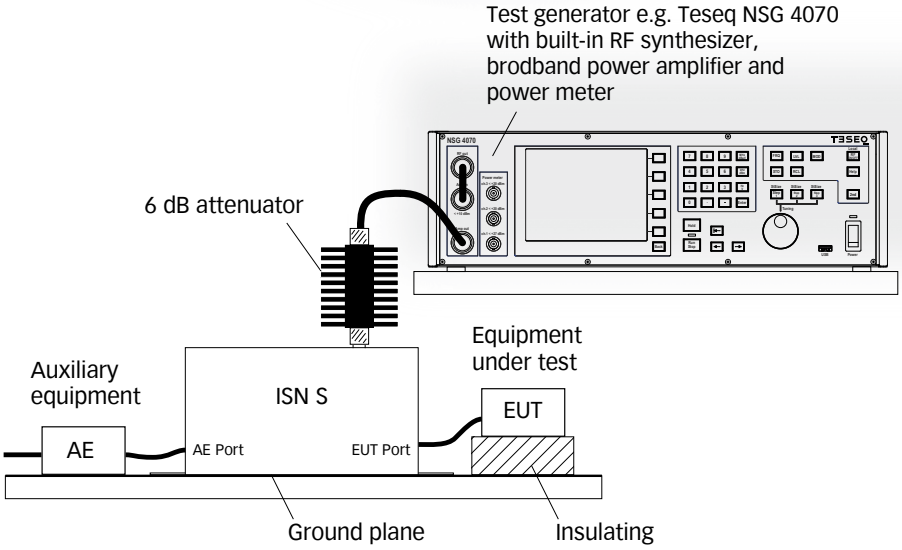


ISN ST08 view to RJ45 connection

Example of the EUT setup for immunity testing according IEC/EN 61000-4-6



Mechanical specifications

Size (W x H x D):	245 mm x 100 mm x 100 mm
Weight:	approx. 1.5 kg

Model No. and options

Part number	Description
248650	ISN ST08 ISN for screened eight lines with RJ45 connector
97-248650	ISN Sxxx-TC Traceable calibration (ISO17025), order only with ISN S, related to CISPR 22/32 and IEC/EN 61000-4-6
247825	CAL U100B Universal calibration unit (150 Ω/50 Ω adapter)
242439	SAR T800 Calibration adapter part for ISNs with RJ45 connector (common mode adapter)

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