ISN T2A
IMPEDANCE STABILIZATION NETWORK (ISN) FOR UNSCREENED BALANCED PAIRS

- **For use with one unscreened balanced pairs**
- **Refers schematic circuit example in CISPR 22/32 Figure D.1/G.1**
- **Intended for connection to cable category 3 and 5**
- **Changeable pin-arrangements with RJ11 and RJ45**
- **Can be used as CDN for IEC/EN 61000-4-6 immunity tests**

Standards:

- **CISPR 16-1-2**
- **CISPR 22**
- **CISPR 32**
- **IEC/EN 61000-4-6**
- **And others**

Impedance stabilization networks (ISN, or with CISPR 16-1-2 called AAN: asymmetric artificial network) are defined for measuring of conducted common mode disturbances at information technology equipment (ITE) as required in CISPR 22 and CISPR 32. 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 and emulates the unsymmetrical contribution (longitudinal conversion loss, LCL) of the connected line. Different ISNs are available in relation to the line category, line numbers and pin-arrangement.

The ISN T2A is designed for measurements on one unscreened balanced pair and consists of one basic network (ISN T200A) with D sub 25 connectors and special adapter sets. A set of adapters consists of LCL adapters to realize the longitudinal conversion loss (LCL)- requirements for the EUT-side in relation to the used cable category (cat. 3, cat. 5) and a connection adapter for the AE-side.

Technical specifications

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.:	600 mA (line)
Test voltage:	200 VDC, 2 sec
Common mode impedance (EUT port)	
150 kHz to 30 MHz:	150 Ω ±20 Ω
30 MHz to 80 MHz:	150 Ω ±40 Ω
Phase angle (EUT port) 150 kHz to 30 MHz:	0° ±20°
Coupling path (In/Out port/EUT)	
Connection:	BNC 50 Ω
RF voltage:	<15 V
Frequency range:	150 kHz to 80 MHz
Voltage division factor (RF input to EUT port)	
150 kHz to 30 MHz:	10 dB ±1 dB
30 MHz to 80 MHz:	10 dB ±2 dB
Transmission bandwidth* (wanted signal) EUT/AE B3 dB:	> 100 MHz sin.
LCL (EUT) *)	
Cat. 3 150 kHz to 30 MHz (corner frequency 2 MHz):	55 dB to 39.3 dB ±3 dB
Cat. 5 150 kHz to 2 MHz:	65 dB ±3 dB
Cat. 5 2 MHz to 30 MHz:	65 dB to 49.3 dB +4.5/-3 dB
Decoupling of common mode disturbances (EUT/AE)	
150 kHz to 1.5 MHz/30 MHz:	≥35 dB to ≥55 dB/≥55 dB

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

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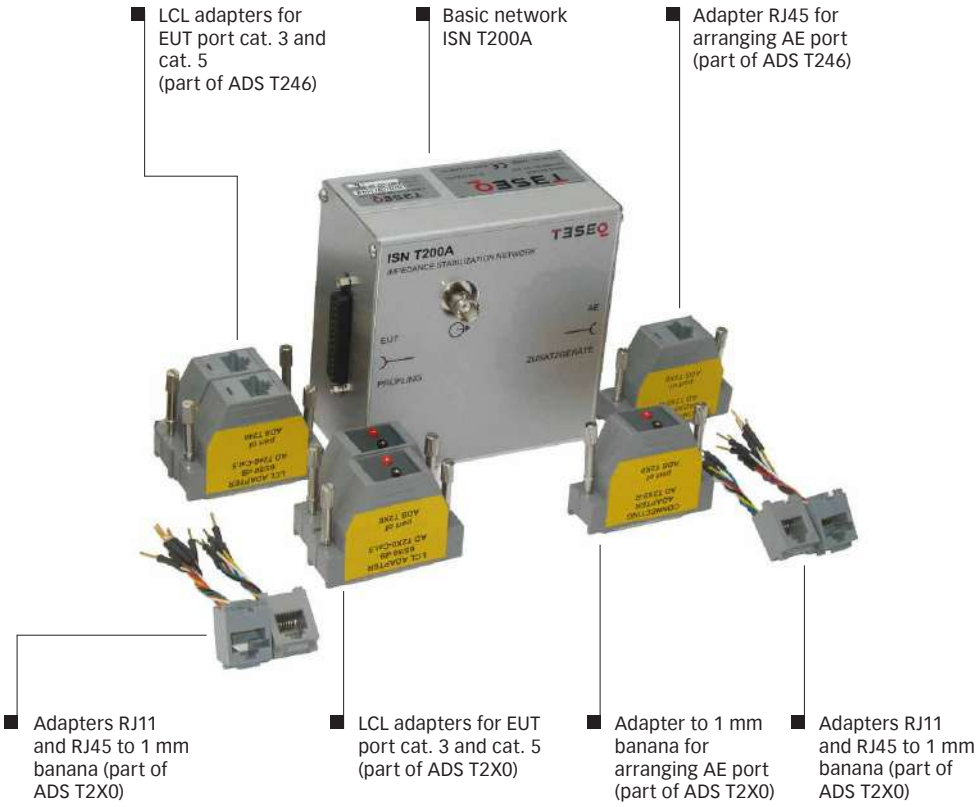
Mechanical specifications

Dimensions in mm (W x H x D) (basic network):	105 x 65 x 110
Dimensions in mm (W x H x D) (basic network with adaptors):	105 x 65 x 190
Dimensions in mm (W x H x D) (storage case):	400 x 300 x 110
Weight:	approx. 550 g
Weight (storage case with ISN):	approx. 1800 g

Adapter sets for ISN T2A



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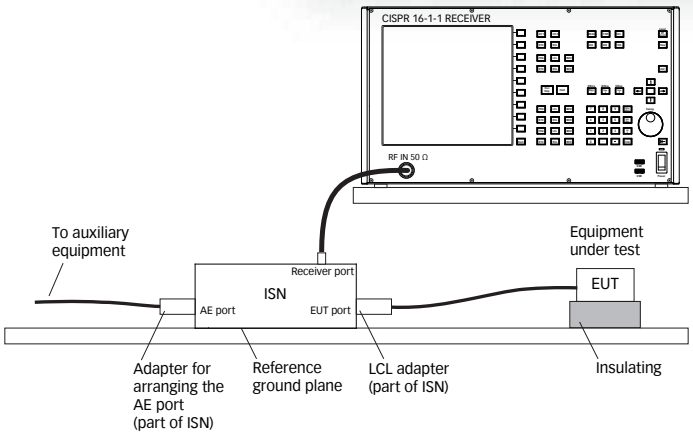
Application

Pin-arrangement					
	Connector	a1	b1	a2	b2
ADS T246 (UP0 with RJ45)	RJ45	3,4	5,6	-	-
ADS T2X0 Changeable adaptor wiring	RJ11-6, RJ45 and 1 mm				

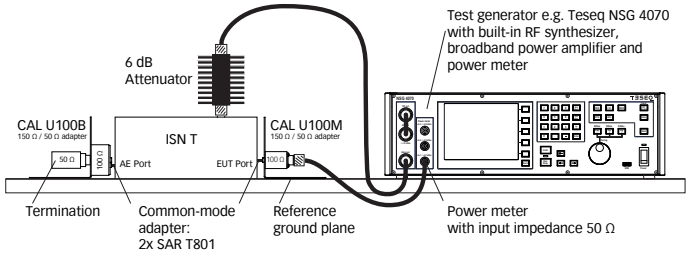
Typical measuring setup



Application for immunity testing

The described ISN T2A is appropriate for immunity tests of IEC / EN 61000-4-6. Optional available are the parts for the level setting (test setup calibration) CAL U100B (150 Ω / 50 Ω adapter), CAL U100M (150 Ω / 50 Ω adapter), 2 x SAR T801 (common mode adapter for D sub 25 pin) and A 50-N (50 Ω termination, N type).

Typical setup for stress level setting according IEC / EN 61000-4-6



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Model No. and options

Part number	Description
248714	ISN T2A ISN with adapter sets ADS T246 and ADS T2X0 in storage case, cable cat. 3 and 5
97-248714	ISN T2A-TC Traceable calibration (ISO17025), order only with ISN T2A
248711	ISN T246A ISN with RJ45 adapter set ADS T246 in storage case, cable cat. 3 and 5
248712	ISN T2X0A ISN with 1 mm banana adapter set ADS T2X0 in storage case, cable cat. 3 and 5
97-248713	ISN T2xxA-TC Traceable calibration (ISO17025), order only with ISN T246A or ISN T2X0A
98-248714	ISN T2-ACC Accredited calibration (ISO17025), common mode impedance, VDF, decoupling factor, crosstalk, LCL
248580	CAS ISN Calibration kit for ISN T8 and ISN T2A, measuring parameters: CM impedance, phase angle, voltage division factor and LCL, traceable calibration and certificate included
248632	CAS ISN-EXT-T2 Adapter parts for calibration of ISN T2A with RJ11 and RJ45, requires CAS ISN
247825	CAL U100B Universal calibration unit (150 Ω / 50 Ω adapter)
257138	CAL U100M Universal calibration unit (150 Ω / 50 Ω adapter)
242430	SAR T801 Common mode adapter for Sub-D
257520	A 50-BNC Termination 50 Ohms, BNC type, male
257521	A 50-N Termination 50 Ω, N type, male, 1 Watt, 2.5 GHz

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