



ISN T8-Cat6 IMPEDANCE STABILIZATION NETWORK (ISN) FOR UNSHIELDED BALANCED PAIRS



- For use with one, two, three, or four unshielded balanced pairs
- CISPR 22, Ed.5.2, 2006 and EN 55022 Sept. 2006 (IEC/CISPR 22: 2005 modified) for Cat.6
- 1000BaseT and PoE application
- Can be used as CDN for IEC 61000-4-6 immunity tests

Impedance stabilization networks (ISN) are coupling/decoupling networks according to CISPR 22 (EN 55022) for measurement of conducted common mode disturbances of information technology equipment (ITE). The ISN is placed between the equipment under test (EUT) and the auxiliary equipment (AE) or load which is necessary for the operation of the EUT. The ISN establishes the common mode termination impedance seen by the telecommunication port during measurement.

The ISN T8-Cat6 is designed for measurements on up to four unshielded single balanced pairs shown at D.3 (ISN with high longitudinal conversion loss (LCL) for use with one, two, three, or four unshielded balanced pairs) in CISPR 22, Ed.5.2, 2006 and EN 55022 Sept. 2006 (IEC/CISPR 22: 2005 modified). The longitudinal conversion loss (LCL)- requirements for the EUT-side is realized in relation to the cable category cat.6. No additional adapters are required. For other cable categories Teseq offers a different ISN with LCL adapters for cat.3 and cat.5 which is called ISN T8.

Technical specifications

Frequency range:	150 kHz to 80 MHz
Line parameters:	1 up to 4 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 30 MHz:	150 Ω ±20 Ω
30 MHz to 80 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:	<15 V
Frequency range:	150 kHz to 80 MHz
Voltage division factor (RF input to EUT port)	
150 kHz to 30 MHz:	9.5 dB ±1 dB
30 MHz to 80 MHz:	9.5 dB ±2 dB
Transmission bandwidth* (wanted signal) EUT/AE: B3 dB	250 MHz sin. typical
LCL* (EUT)	
Cat. 6 150 kHz to 2 MHz:	75 dB to 74.4 dB ±3 dB
Cat. 6 2 MHz to 30 MHz:	74.4 dB to 59.3 dB +6/-3 dB
Decoupling of common mode disturbances (EUT / AE)	
150 kHz to 1.5 MHz:	≥35 dB to ≥55 dB
1.5 MHz to 30 MHz:	≥55 dB
Crosstalk* (PSELFEXT) (EUT / AE) 1 MHz to 250 MHz:	≥61 dB to ≥15 dB
*) all balanced parameters are in relation to a symmetrical load of 100 Ω	

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Mechanical specifications

Size (W x H x D):	105 x 65 x 110 mm ³
Weight:	approx. 550 g



ISN T8-Cat6 with view to the EUT connection RJ45

Application

Pin-arrangement for EIA/TIA T568B		Pair 1/ Pin 4,5	Pair 2/ Pin 1,2	Pair 3/ Pin 3,6	Pair 4/ Pin 7,8
Token ring, ISDN basic rate access / S0	RJ45	X		X	
ISDN primary rate access (2Mbps)	RJ45	X	X		
10BaseT, 100BaseTX	RJ45		X	X	
100BaseT4, 100Base VG-AnyLan, 1000BaseT	RJ45	X	X	X	X
ATM, FDDI, TP-PMD	RJ45		X		X
IBM 3270	RJ45		X		

Additional application

The described ISN T8-Cat6 is appropriate for immunity tests of IEC 61000-4-6. Optional available are the parts for the level setting (test set-up calibration) CAL U100 (150 Ω / 50 Ω adapter), 2 x SAR T802 (common mode adapter for RJ45) and TRA U150 (150 Ω termination).

Delivery information

Part number	Description
248715	ISN T8-Cat6 ISN for up to eight unshielded balanced lines for cable cat.6
97-248550	ISN T8-TC Traceable calibration (ISO17025), order only with ISN T8/T8-Cat6
248580	CAS ISN Calibration kit for ISN T8 and ISN T4
248631	CAS ISN extension for cat.6 Adapter parts for calibration of ISN T8-Cat6, required CAS ISN
239901	CAL U100 Universal calibration unit (150 Ω / 50 Ω adapter)
242428	SAR T802 Calibration adapter part for ISN T8-Cat6 with RJ45 connector (common mode adapter)
239903	TRA U150 Universal termination resistor 150Ohm AE side
*) The IEC/EN 61000-4-6 test set-up required 2x SAR T802.	

