



CDN S SERIES COUPLING / DECOUPLING NETWORK (CDN) FOR SCREENED OR COAXIAL CABLES







CDN ST08A

- Coupling networks designed for IEC / EN 61000-4-6
- S series for screened or coaxial cables
- CDN ST08A for twisted pairs with RJ45 socket
- Versions for USB, HDMI, RS232 and other specific applications

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).





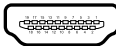

Product range 10 kHz to 80 MHz

CDN type	Product name	Line type	Application	Connector EUT port	Connector AE port
S1	CDN S501-10	coaxial line	50 Ω coaxial line	BNC 50 Ω	BNC 50 Ω
USB	CDN USB/c-10	USB, screened	USB for central devices, USB up to 2.0	USB "B" type 	USB "A" type 
USB	CDN USB/p-10	USB, screened	USB for peripheral devices, USB up to 2.0	USB "A" type 	USB "B" type 
S8	CDN ST08-10	Telecommunication line, screened, up to 8 balanced lines (4 pairs)	up to 8 lines, e.g. Ethernet	RJ45	RJ45
S9	CDN S900-10	9 wires, screened	Data line up to 9 wires, RS232	D-Sub 9 pins	D-Sub 9 pins
S25	CDN S250-10	25 wires, screened	Data line up to 25 wires	D-Sub 25 pins	D-Sub 25 pins

CDN S SERIES

COUPLING / DECOUPLING NETWORK (CDN) FOR SCREENED OR COAXIAL CABLES

Product range 150 kHz to 230 MHz

CDN type	Product name	Line type	Application	Connector EUT port	Connector AE port
S1	CDN S501A	coaxial line	50 Ω coaxial line	BNC 50 Ω	BNC 50 Ω
S1	CDN S502A	coaxial line, double screened	50 Ω coaxial line	N 50 Ω	N 50 Ω
S1	CDN S751A	coaxial line	75 Ω coaxial line	BNC 75 Ω	BNC 75 Ω
S1	CDN S752A	coaxial line, double screened	75 Ω coaxial line	N 75 Ω	N 75 Ω
S2	CDN S200	2 wires, screened	XLR-Audio, pin 3 to ground	XLR, 3 pins	XLR, 3 pins
S4	CDN S400	4 wires, screened	DIN-Audio, 5 pins, pin 2 to ground	DIN, 5 pins	DIN, 5 pins
USB	CDN USB/c	USB, screened	USB for central devices, USB up to 2.0	USB "B" type 	USB "A" type 
USB	CDN USB/p	USB, screened	USB for peripheral devices, USB up to 2.0	USB "A" type 	USB "B" type 
S8	CDN ST08A	Telecommunication line, screened, up to 8 balanced lines (4 pairs)	up to 8 lines, e.g. Ethernet	RJ45	RJ45
USB	CDN USB3.0	USB, screened, 9 lines	USB up to 3.0	USB "A" type 	USB "A" type 
S9	CDN S900	9 wires, screened	Data line up to 9 wires, RS232	D-Sub 9 pins	D-Sub 9 pins
S15	CDN S150	15 wires, screened	Data line up to 15 wires	D-Sub 15 pins	D-Sub 15 pins
HDMI	CDN HDMI	HDMI, screened, 19 lines	High speed HDMI with HDCP, HEC (Ethernet), ARC and DSC		
S25	CDN S250	25 wires, screened	Data line up to 25 wires	D-Sub 25 pins	D-Sub 25 pins

CDN S SERIES

COUPLING / DECOUPLING NETWORK (CDN) FOR SCREENED OR COAXIAL CABLES

Electrical specification CDN S501-10

Frequency range:	10 kHz to 80 MHz
Power rating (EUT- and AE port)	
AC max. voltage (line to ground):	250 V
DC max. voltage (line to ground):	400 V
Current max :	1000 mA
Test voltage:	750 V DC, 2 sec
Common mode impedance (EUT port)	
10 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:	<20 V
Voltage division factor (RF input to EUT port)	
10 kHz to 80 MHz:	10 dB \pm 1 dB
Transmission bandwidth (wanted signal) EUT / AE B3 dB:	> 2 GHz sin.
Decoupling of CM disturbance (RF port / AE)	
10 kHz to 80 MHz:	>60 dB

Electrical specification CDN USB/c-10 and CDN USB/p-10

Frequency range:	10 kHz to 80 MHz
Power rating (EUT- and AE port)	
AC max. voltage (line to ground):	100 V
DC max. voltage (line to ground):	100 V
Current max :	1 A
Test voltage:	200 V DC, 2 sec
Common mode impedance (EUT port)	
10 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:	<20 V
Voltage division factor (RF input to EUT port)	
10 kHz to 80 MHz:	10 dB \pm 1 dB
Transmission bandwidth (wanted signal) EUT / AE B3 dB:	> 100 MHz sin. (data pair balanced)
Decoupling of CM disturbance (RF port / AE)	
10 kHz to 80 MHz:	>60 dB

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Electrical specification CDN ST08-10

Frequency range:	10 kHz to 80 MHz
Line parameters:	4 pairs, balanced, shielded, 100 Ω
Power rating (EUT- and AE port)	
AC max. voltage (line to ground):	100 V
DC max. voltage (line to ground):	150 V
Current max :	1.2 A (per single line)
Test voltage:	200 V DC, 2 sec
Common mode impedance (EUT port)	
10 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:	<20 V
Voltage division factor (RF input to EUT port)	
10 kHz to 80 MHz:	10 dB \pm 1 dB
Transmission bandwidth (wanted signal) EUT/AE B3 dB:*	> 250 MHz sin.
Decoupling of CM disturbance (RF port/AE)	
10 kHz to 80 MHz:	>60 dB

Electrical specification CDN S250-10 and S900-10

Frequency range:	10 kHz to 80 MHz
Power rating (EUT- and AE port)	
AC max. voltage (line to ground):	150 V
DC max. voltage (line to ground):	150 V
Current max :	250 mA
Test voltage:	500 V DC, 2 sec
Common mode impedance (EUT port)	
10 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:	<20 V
Voltage division factor (RF input to EUT port)	
10 kHz to 80 MHz:	10 dB \pm 1 dB
Transmission bandwidth (wanted signal) EUT/AE B3 dB:	> 20 kHz sin.
Decoupling of CM disturbance (RF port/AE)	
10 kHz to 80 MHz:	>60 dB

CDN S SERIES

COUPLING / DECOUPLING NETWORK (CDN) FOR SCREENED OR COAXIAL CABLES

Electrical specification CDN S501A, S502A, S751A and S752A

Frequency range:	150 kHz to 230 MHz
Power rating (EUT- and AE port)	
AC max. voltage (line to ground):	250 V
DC max. voltage (line to ground):	400 V
Current max :	1000 mA
Test voltage:	750 V DC, 2 sec
Common mode impedance (EUT port)	
150 kHz to 26 MHz:	150 Ω \pm 20 Ω
26 MHz to 230 MHz:	150 Ω +60 Ω / -45 Ω
Phase angle (EUT Port) 150 kHz to 30 MHz:	0° \pm 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 80 MHz:	10 dB \pm 1 dB
80 MHz to 230 MHz:	10 dB +3 dB / -2 dB
Transmission bandwidth (wanted signal) EUT/AE B3 dB:	> 2 GHz sin.
Decoupling of CM disturbance (RF port/AE)	
150 kHz:	>60 dB
1.5 MHz:	>60 dB
30 MHz:	>50 dB
230 MHz:	>40 dB

Cable specification CDN S502A

Screen:	double screen
Impedance:	50 Ω \pm 2
Min. screening effectiveness:	> 85 dB (up to 1 GHz)
Max. operating frequency:	6 GHz
Max. operating voltage:	2.5 kVrms (at sea level)
Test voltage:	5 kVrms (50 Hz / 1 min)

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Cable specification CDN S752A

Screen:	double screen
Impedance:	75 Ω \pm 1.5
Min. screening effectiveness:	> 78 dB (up to 3 GHz)
Max. operating frequency:	2 GHz
Max. operating voltage:	3 kVrms (at sea level)
Test voltage:	6 kVrms (50 Hz / 1 min)

Electrical specification CDN S150, S200, S250, S400 and S900

Frequency range:	150 kHz to 230 MHz
Power rating (EUT- and AE port)	
AC max. voltage (line to ground):	150 V (CDN S400: 34 V)
DC max. voltage (line to ground):	150 V (CDN S400: 34 V)
Current max :	250 mA
Test voltage:	500 V DC, 2 sec
Common mode impedance (EUT port)	
150 kHz to 26 MHz:	150 Ω \pm 20 Ω
26 MHz to 230 MHz:	150 Ω +60 Ω / -45 Ω
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 80 MHz:	9.5 dB \pm 1 dB
80 MHz to 230 MHz:	9.5 dB +3 dB / -2 dB
Transmission bandwidth (wanted signal) EUT/AE B3 dB:	> 20 kHz sin.
Decoupling of CM disturbance (RF port/AE)	
150 kHz:	>60 dB
1.5 MHz:	>60 dB
30 MHz:	>50 dB
230 MHz:	>40 dB

CDN S SERIES

COUPLING / DECOUPLING NETWORK (CDN) FOR SCREENED OR COAXIAL CABLES

Electrical specification CDN ST08A

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 (per single line)
Test voltage:	200 VDC, 2 sec
Common mode impedance (EUT Port)	
150 kHz to 30 MHz:	150 Ω \pm 20 Ω
30 MHz to 230 MHz:	150 Ω +60 Ω / -45 Ω
Phase angle (EUT Port) 150 kHz to 30 MHz:	0° \pm 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 \pm 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:	\geq 60 dB
1.5 MHz to 30 MHz:	\geq 60 dB
230 MHz:	>40 dB

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

CDN S SERIES

COUPLING / DECOUPLING NETWORK (CDN) FOR SCREENED OR COAXIAL CABLES

Electrical specification CDN USB/c and USB/p

Frequency range:	150 kHz to 230 MHz
Power rating (EUT- and AE port)	
AC max. voltage (line to ground):	100 V
DC max. voltage (line to ground):	100 V
Current max :	1 A
Test voltage:	200 V DC, 2 sec
Common mode impedance (EUT port)	
150 kHz to 26 MHz:	150 Ω \pm 20 Ω
26 MHz to 230 MHz:	150 Ω +60 Ω / -45 Ω
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 80 MHz:	10 dB \pm 1 dB
80 MHz to 230 MHz:	10 dB +3 dB / -2 dB
Transmission bandwidth (wanted signal) EUT/AE B3 dB:	> 80 MHz sin. (data pair balanced)
Decoupling of CM disturbance (RF port/AE)	
150 kHz:	>60 dB
1.5 MHz:	>60 dB
30 MHz:	>50 dB
230 MHz:	>40 dB

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COUPLING / DECOUPLING NETWORK (CDN) FOR SCREENED OR COAXIAL CABLES

Electrical specification CDN USB3.0

Frequency range:	150 kHz to 230 MHz
Line parameters:	according USB 3.0 specification, screened 9 lines
Power rating (EUT- and AE Port)	
AC max. voltage:	100 V
DC max. voltage:	100 V
Current max :	1 A
Common mode impedance (EUT Port)	
150 kHz to 30 MHz:	150 Ω \pm 20 Ω
30 MHz to 230 MHz:	150 Ω +60 Ω / -45 Ω
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:	10 dB \pm 1 dB
30 MHz to 230 MHz:	10 dB +3 dB / -2 dB
Decoupling of common mode disturbances (EUT / AE)	
150 kHz:	>60 dB
1.5 MHz:	>60 dB
30 MHz:	>50 dB
230 MHz:	>40 dB

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COUPLING / DECOUPLING NETWORK (CDN) FOR SCREENED OR COAXIAL CABLES

Electrical specification CDN HDMI

Frequency range:	150 kHz to 230 MHz
Line parameters:	according HDMI specification, screened 19 lines
Power rating (EUT- and AE Port)	
AC max. voltage:	100 V
DC max. voltage:	150 V
Current max :	according HDMI specification
Common mode impedance (EUT Port)	
150 kHz to 30 MHz:	150 Ω \pm 20 Ω
30 MHz to 230 MHz:	150 Ω +60 Ω / -45 Ω
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:	10 dB \pm 1 dB
30 MHz to 230 MHz:	10 dB +3 dB / -2 dB
Decoupling of common mode disturbances (EUT / AE)	
150 kHz:	>60 dB
1.5 MHz:	>60 dB
30 MHz:	>50 dB
230 MHz:	>40 dB

Mechanical specifications

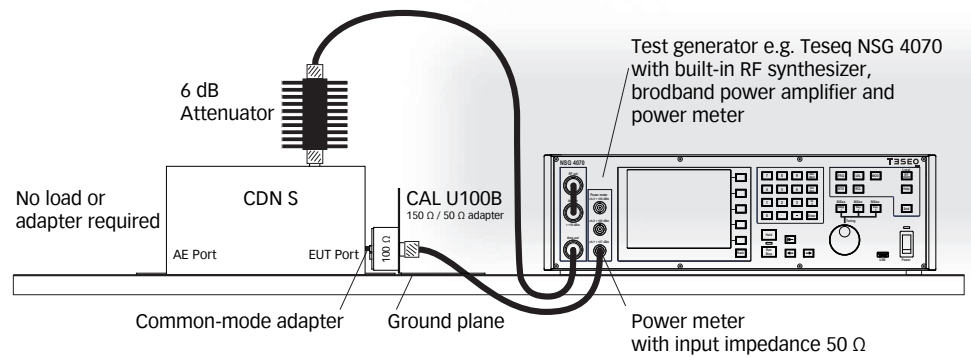
Size (W x H x D):	100 mm x 100 mm x 240 mm (CDN HDMI and CDN S752A: 288 mm)
Weight:	approx. 1.5 kg

Environmental conditions

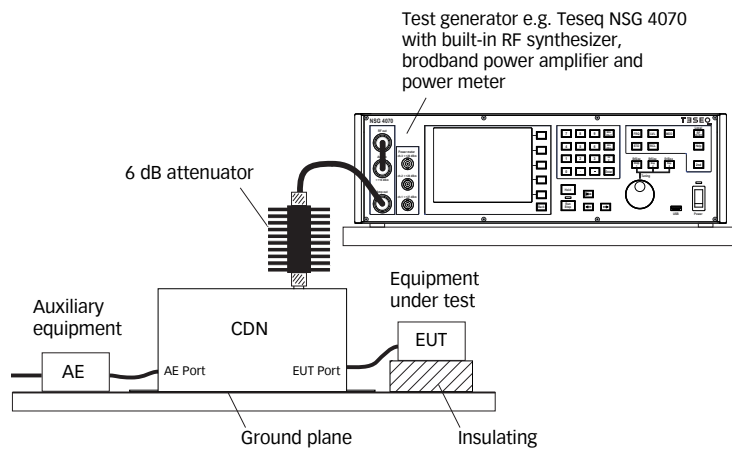
Classification:	Indoor use only
Operating temperature:	+5°C to +40°C
Relative humidity:	up to 80%

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Example of test set-up calibration



Example of EUT test set-up



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Model No. and options

Product	Description	Order code
CDN S150	Coupling Decoupling Network for IEC 61000-4-6, type S15, 230 MHz (D-sub)	231008
CDN S150S	Coupling Decoupling Network for IEC 61000-4-6, type S15, 230 MHz (D-sub) with calibration adapter in storage case, includes CAL U100B, SAR SUB15	244147
CDN S200	Coupling Decoupling Network for IEC 61000-4-6, type S2, 230 MHz (audio)	231005
CDN S200S	Coupling Decoupling Network for IEC 61000-4-6, type S2, 230 MHz (audio) with calibration adapter in storage case, includes CAL U100B, SAR S200	244144
CDN S250	Coupling Decoupling Network for IEC 61000-4-6, type S25, 230 MHz (D-sub)	231009
CDN S250S	Coupling Decoupling Network for IEC 61000-4-6, type S25, 230 MHz (D-sub) with calibration adapter in storage case, includes CAL U100B, SAR SUB25	244148
CDN S250-10	Coupling Decoupling Network for IEC 61000-4-6, type S25, 10 kHz to 80 MHz (D-sub)	242480
CDN S250-10S	Coupling Decoupling Network for IEC 61000-4-6, type S25, 10 kHz to 80 MHz (D-sub) with calibration adapter in storage case, includes CAL U100B, SAR SUB25	242488
CDN S400	Coupling Decoupling Network for IEC 61000-4-6, type S4, 230 MHz (DIN)	231006
CDN S400S	Coupling Decoupling Network for IEC 61000-4-6, type S4, 230 MHz (DIN) with calibration adapter in storage case, includes CAL U100B, SAR S400	244145
CDN S501A	Coupling Decoupling Network for IEC 61000-4-6, type S1, 230 MHz (BNC 50 Ω)	248664
CDN S501AS	Coupling Decoupling Network for IEC 61000-4-6, type S1, 230 MHz (BNC 50 Ω) with calibration adapter in storage case, includes CAL U100B, SAR S500	248656
CDN S501-10	Coupling Decoupling Network for IEC 61000-4-6, type S1 (BNC 50 Ω), 10 kHz to 80 MHz	242471
CDN S501-10S	Coupling Decoupling Network for IEC 61000-4-6, type S1 (BNC 50 Ω), 10 kHz to 80 MHz with calibration adapter set in storage case, includes CAL U100B, SAR S500	242472
CDN S502A	Coupling Decoupling Network for IEC 61000-4-6, type S1, 230 MHz (N 50 Ω), double screened	248662
CDN S502AS	Coupling Decoupling Network for IEC 61000-4-6, type S1, 230 MHz (N 50 Ω), double screened with calibration adapter in storage case, includes CAL U100B, SAR S500	248657
CDN S751A	Coupling Decoupling Network for IEC 61000-4-6, type S1, 230 MHz (BNC 75 Ω)	248668
CDN S751AS	Coupling Decoupling Network for IEC 61000-4-6, type S1, 230 MHz (BNC 75 Ω) with calibration adapter in storage case, includes CAL U100B, SAR S500	248658
CDN S752A	Coupling Decoupling Network for IEC 61000-4-6, type S1, 230 MHz (N 75 Ω), double screened	248666
CDN S752AS	Coupling Decoupling Network for IEC 61000-4-6, type S1, 230 MHz (N 75 Ω), double screened with calibration adapter in storage case, includes CAL U100B, SAR S500	248659
CDN S900	Coupling Decoupling Network for IEC 61000-4-6, type S9, 230 MHz (D-sub)	231007
CDN S900S	Coupling Decoupling Network for IEC 61000-4-6, type S9, 230 MHz (D-sub) with calibration adapter in storage case, includes CAL U100B, SAR SUB9	244146

CDN S SERIES

COUPLING / DECOUPLING NETWORK (CDN) FOR SCREENED OR COAXIAL CABLES

Model No. and options (continued)

Product	Description	Order code
CDN S900-10	Coupling Decoupling Network for IEC 61000-4-6, type S9 10 kHz to 80 MHz (D-Sub)	242478
CDN S900-10S	Coupling Decoupling Network for IEC 61000-4-6, type S9 10 kHz to 80 MHz (D-Sub) with calibration adapter set in storage case, includes CAL U100B, SAR SUB9	242485
CDN ST08A	Coupling Decoupling Network for IEC 61000-4-6, type for screened eight lines with RJ45 connector	242109
CDN ST08AS	Coupling Decoupling Network for IEC 61000-4-6, type for screened eight lines with RJ45 connector with calibration adapter in storage case, includes CAL U100B, SAR T800	242116
CDN ST08-10	Coupling Decoupling Network for IEC 61000-4-6, type for screened eight lines with RJ45 connector, 10 kHz to 80 MHz	242479
CDN ST08-10S	Coupling Decoupling Network for IEC 61000-4-6, type for screened eight lines with RJ45 connector, 10 kHz to 80 MHz with calibration adapter set in storage case, includes CAL U100B, SAR T800	242486
CDN USB3.0	Coupling Decoupling Network for IEC 61000-4-6, type S9 with USB connector type "A"	242546
CDN USB3.0S	Coupling Decoupling Network for IEC 61000-4-6, type S9 with USB connector type "A" and calibration adapter in storage case, includes CAL U100B, SAR USB-A	242559
CDN USB/C	Coupling Decoupling Network for IEC 61000-4-6, type with USB connector (EUT-central device)	237501
CDN USB/CS	Coupling Decoupling Network for IEC 61000-4-6, type with USB connector (EUT-central device) with calibration adapter in storage case, includes CAL U100B, SAR USB-B	244150
CDN USB/C-10	Coupling Decoupling Network for IEC 61000-4-6, type with USB connector (EUT-central device), 10 kHz to 80 MHz	247777
CDN USB/C-10S	Coupling Decoupling Network for IEC 61000-4-6, type with USB connector (EUT-central device), 10 kHz to 80 MHz, with calibration adapter in storage case, includes CAL U100B, SAR USB-B	247778
CDN USB/P	Coupling Decoupling Network for IEC 61000-4-6, type with USB connector (EUT-peripheral devices)	237503
CDN USB/PS	Coupling Decoupling Network for IEC 61000-4-6, type with USB connector (EUT-peripheral devices) with calibration adapter in storage case, includes CAL U100B, SAR USB-A	244151
CDN USB/P-10	Coupling Decoupling Network for IEC 61000-4-6, type with USB connector (EUT-peripheral devices), 10 kHz to 80 MHz	247779
CDN USB/P-10S	Coupling Decoupling Network for IEC 61000-4-6, type with USB connector (EUT-peripheral devices), 10 kHz to 80 MHz, with calibration adapter in storage case, includes CAL U100B, SAR USB-A	247780
CDN HDMI	Coupling Decoupling Network for IEC 61000-4-6, type S19 for HDMI	242545
CDN HDMIS	Coupling Decoupling Network for IEC 61000-4-6, type S19 for HDMI and calibration adapter in storage case, includes CAL U100B, SAR HDMI	242558
CDN-TC	Traceable calibration (ISO17025) for IEC 61000-4-6 requirements, order only with device CDN M, AF or S type	97-231024
CAL U100B	Universal calibration unit (150 Ω / 50 Ω adapter)	247825
IMA U100	Universal impedance measuring adapter (0 Ω)	239902

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COUPLING / DECOUPLING NETWORK (CDN) FOR SCREENED OR COAXIAL CABLES

Model No. and options (continued)

Product	Description	Order code
SAR M116	Adapter 4 mm banana	239915
SAR S200	Common mode adapter for XLR	247837
SAR S400	Common mode adapter for DIN	247838
SAR S500	Calibration adapter part for BNC and N	242440
SAR SUB9	Common mode adapter for D-Sub 9 pins (screened)	247839
SAR SUB15	Common mode adapter for D-Sub 15 pins (screened)	247840
SAR SUB25	Common mode adapter for D-Sub 25 pins (screened)	247841
SAR USB-A	Common-mode adapter for USB connector type "A"	247835
SAR USB-B	Common-mode adapter for USB connector type "B"	247836
A 50-BNC	Termination 50 Ohms, BNC type, male	AX-006042
A 50-N	Termination 50 Ohms, N type, male, 1 Watt, 2.5 GHz	AX-000452

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