

## Technical Specifications: CT-NET & CTD-NET

### 1 Mechanical characteristics

Number of mating cycles:  $n \geq 10'000$

### 2 Electrical values

Description	Symbol	Value	Comments
<b>Transmission resistance</b>	$R_{\text{contact}}$	1.8 m $\Omega$	The transmission resistance relates to a single contact.
<b>Current-carrying capacity</b>	$I_{\text{contact}}$	1 A	The current-carrying capacity relates to a single contact with cable cross section area of 0.14mm <sup>2</sup> /AWG26.
<b>Insulation resistance</b>	$R_{\text{insulation}}$	$\geq 500 \text{ M}\Omega$	The insulation resistance was measured from contact to contact and from contact to shield.
<b>Rated voltage</b>	$U_R$	50 V	Maximum permitted nominal voltage of the connected transmission system.

### 3 Transmission quality

#### 3.1 Measurement setup:

The measurement equipment in Table 1 was used to determine the transmission quality. For the measurement, a 2-meter cable with two RJ45 connectors was created, then the CT-NET/CTD-NET was connected in between (see Figure 1).

Measuring instrument	Measurement adapter	Cable type	Plug type
Manufacturer: <i>Softing</i> Type: <i>WireXpert WX500</i>	Channel	Manufacturer: <i>Dätwyler</i> Type: <i>CU 7702 4P FLEX AWG26 S/FTP CAT 7</i>	Manufacturer: <i>Telegärtner</i> Type: <i>RJ45 Plug MFP8 T568 B Cat 6A</i>

Table 1: Measuring equipment

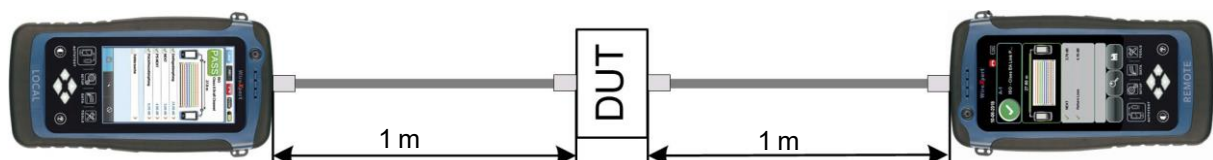
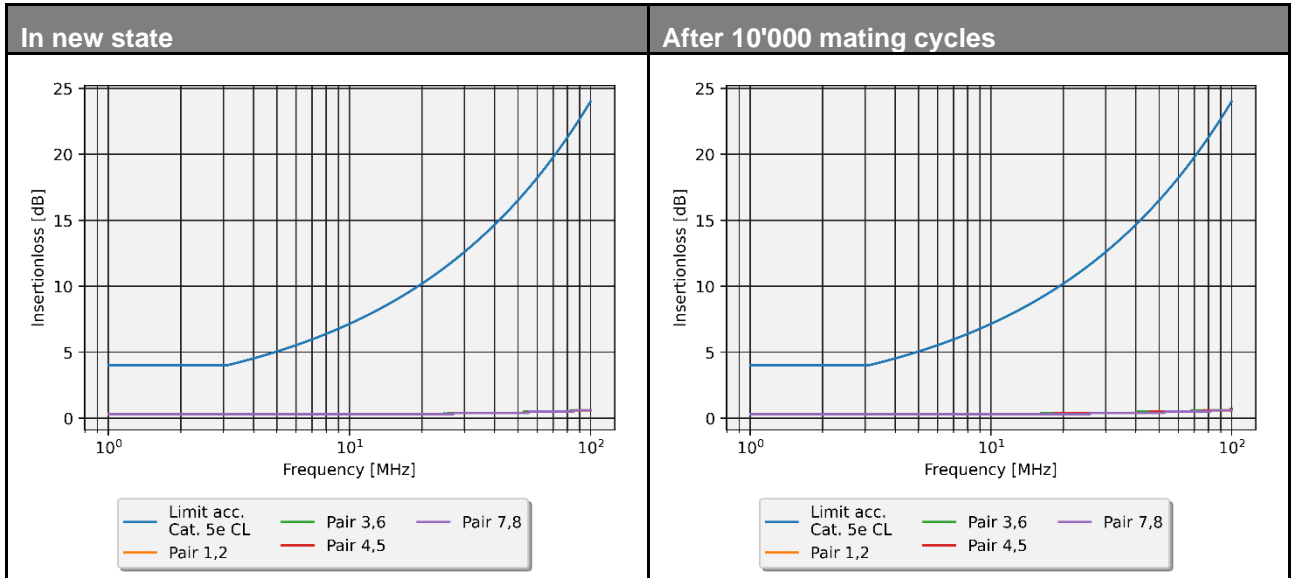


Figure 1: Measurement setup for the device under test (DUT) in this case the CT-NET/CTD-NET

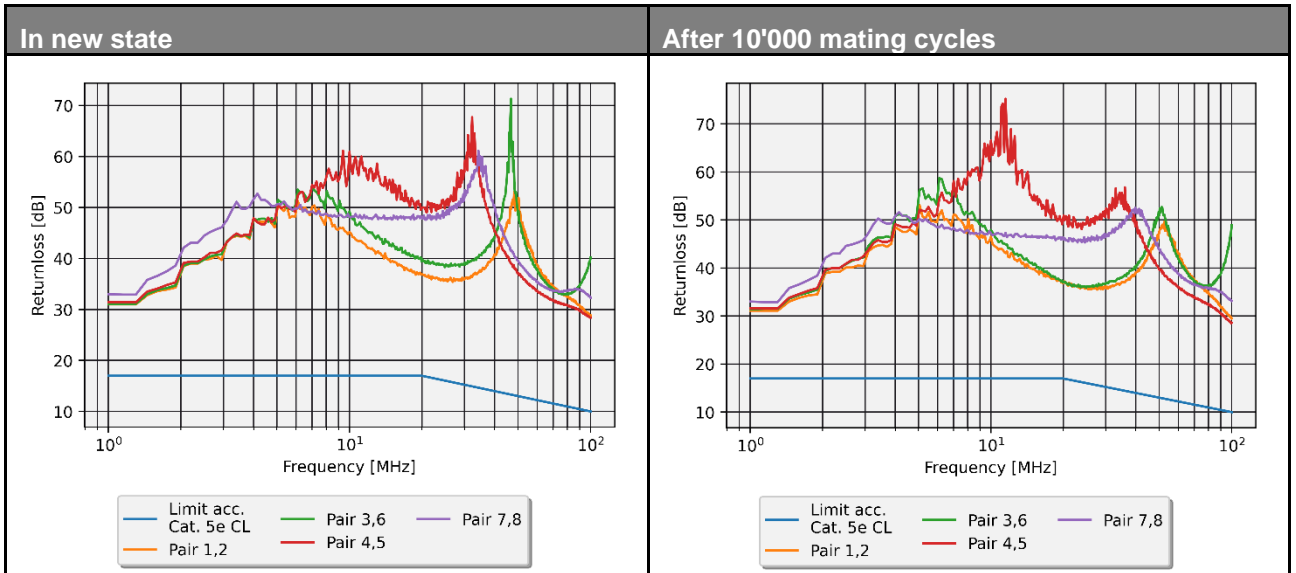
### 3.2 Attenuation characteristics:

All limits given below refer to category 5e according to the IEC 11801-1 standard for the "Channel Link (CL)" configuration.

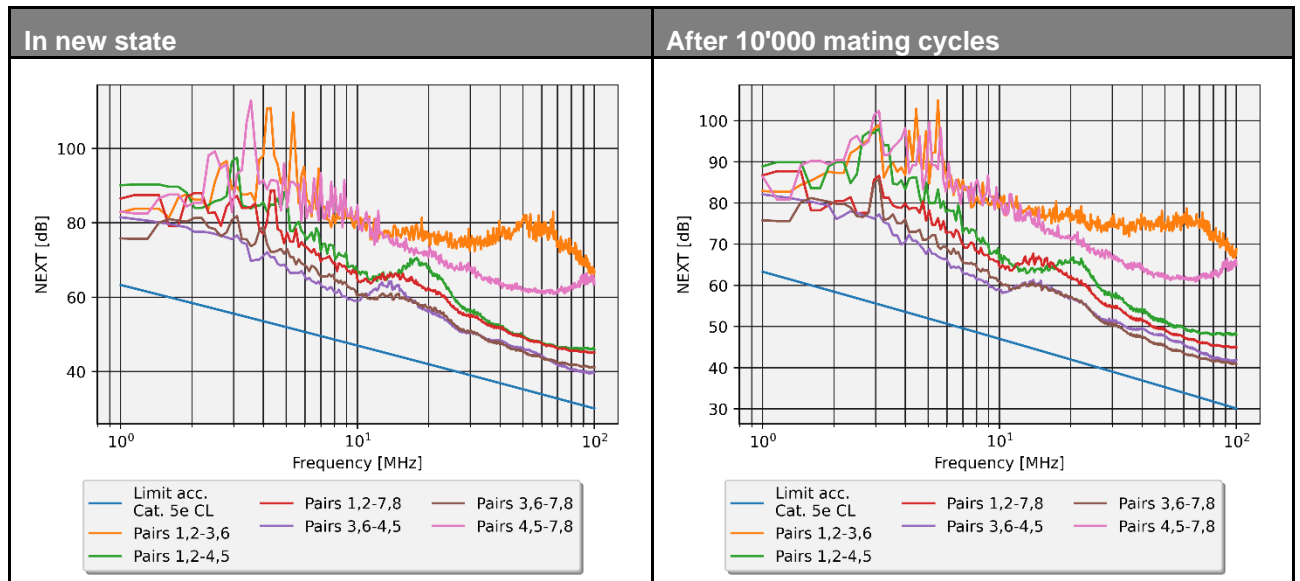
#### 3.2.1 Insertionloss:



#### 3.2.2 Returnloss:



**3.2.3 NEXT:**



## 4 EMC tests

Measurement of shielding quality in conformity with standards by ESD Test and Burst Test.

### 4.1 Burst Test:

Voltage [V]	Pol.	Freq. [kHz]	Dur. [ms]	Per. [ms]	T [s]	Operation* with shield only via pin	Operation* with housing connected to shield pin	Severity level
260	+/-	5	15	300	60	OK	OK	
260	+/-	100	0,75	300	60	OK	OK	
500	+/-	5	15	300	60	OK	OK	1
500	+/-	100	0,75	300	60	OK	OK	1
1000	+/-	5	15	300	60	OK	OK	2
1000	+/-	100	0,75	300	60	OK	OK	2
1500	+/-	5	15	300	60	OK	OK	3
1500	+/-	100	0,75	300	60	OK	OK	3
2000	+/-	5	15	300	60	OK	OK	4
2000	+/-	100	0,75	300	60	OK	OK	4

\*Ethernet ping command

The test was passed. The highest level of severity (severity level 4) defined in the IEC 61000-4-4 standard was achieved.

### 4.2 ESD Test:

Voltage [kV]	Discharge	Pole.	t [s]	Operation* with shield only via pin	Operation* with housing connected to the shield pin	Severity level
2	Contact	-	1	OK	OK	1
4	Contact	-	1	OK	OK	2
6	Contact	-	1	OK	OK	3
8	Contact	-	1	OK	OK	4
2	Air	-	1	OK	OK	1
4	Air	-	1	OK	OK	2
8	Air	-	1	OK	OK	3
15	Air	-	1	OK	OK	4

\*Ethernet ping command

The test was passed. The highest level of severity (severity level 4) defined in the IEC 61000-4-4 standard was achieved.

**Shield attenuation: 86dB**