



Technical Paper |
etherCON® CAT6A

Content

1	Vibration	3
1.1	Object	3
1.2	Test Set-Up.....	3
1.2.1.	Testing devices	3
1.2.2.	Execution	3
1.3	Vibration Severity	6
1.4	Results	7

Technical Paper – etherCON CAT6_A

Title: NTP07

© NEUTRIK® AG. All rights reserved.

Subject:

Mechanical and electrical tests applied to the etherCON transmission system for Pro Audio / Video industry purposes with main focus on contact interruptions.

This documentation describes the results of the test series conducted at University of Applied Sciences of Technology Buchs NTB and Electrosuisse Laboratories.

The tests were carried out in accordance with the IEC-Standard main groups IEC 60603, IEC60529 as well as to Neutrik internal specifications.

NEUTRIK AG is not to be held liable for statements and declarations given in this technical paper.

NEUTRIK AG explicitly exonerates itself from all liability for mistakes in this white paper.



1 Vibration

1.1. Object:

Examination of the four receptacles, NE8FDX-P6, NE8FDX-P6-W, NE8FDX-Y6 and NE8FDX-Y6-W each one in combination with the etherCON cable connector NE8MX6. The intention of the test was to confirm the compliance of the etherCON CAT6_A system to the testing standard EN 60603-7 CP1 for vibration. In addition, the test proves the function of the mechanical locking system and the wear.

The test was carried out by an independent laboratory: NTB, "Interstaatliche Hochschule für Technik Buchs" division "Labor Mess- und Simulationstechnik" located in Buchs / Switzerland.

1.2. Test Set-Up:

1.2.1. Testing devices

Shaker:	TIRA Vib 5220	
Software:	SignalStar Vector	Version 2.3.989
		Interface: VL144x-R02
Controller:	ABACUS	
Oscilloscope:	Tektronix TDS 2004B	Inv. 711 + 712

1.2.2. Execution

The test specimens are a feedthrough adapter NE8FDX-P6, a feedthrough adapter NE8FDX-P6-W, an IDC receptacle NE8FDX-Y6 and an IDC receptacle NE8FDX-Y6-W. The chassis connectors are fixed to a mounting plate and exposed to vibration according to the test standard, specified in chapter 1.3.

The etherCON connectors are all connected in series using two readymade Ethernet cables (one end terminated with a RJ45), a NE8MX6 patch cable and two cables with a NE8MX6 on one end as in- and output.

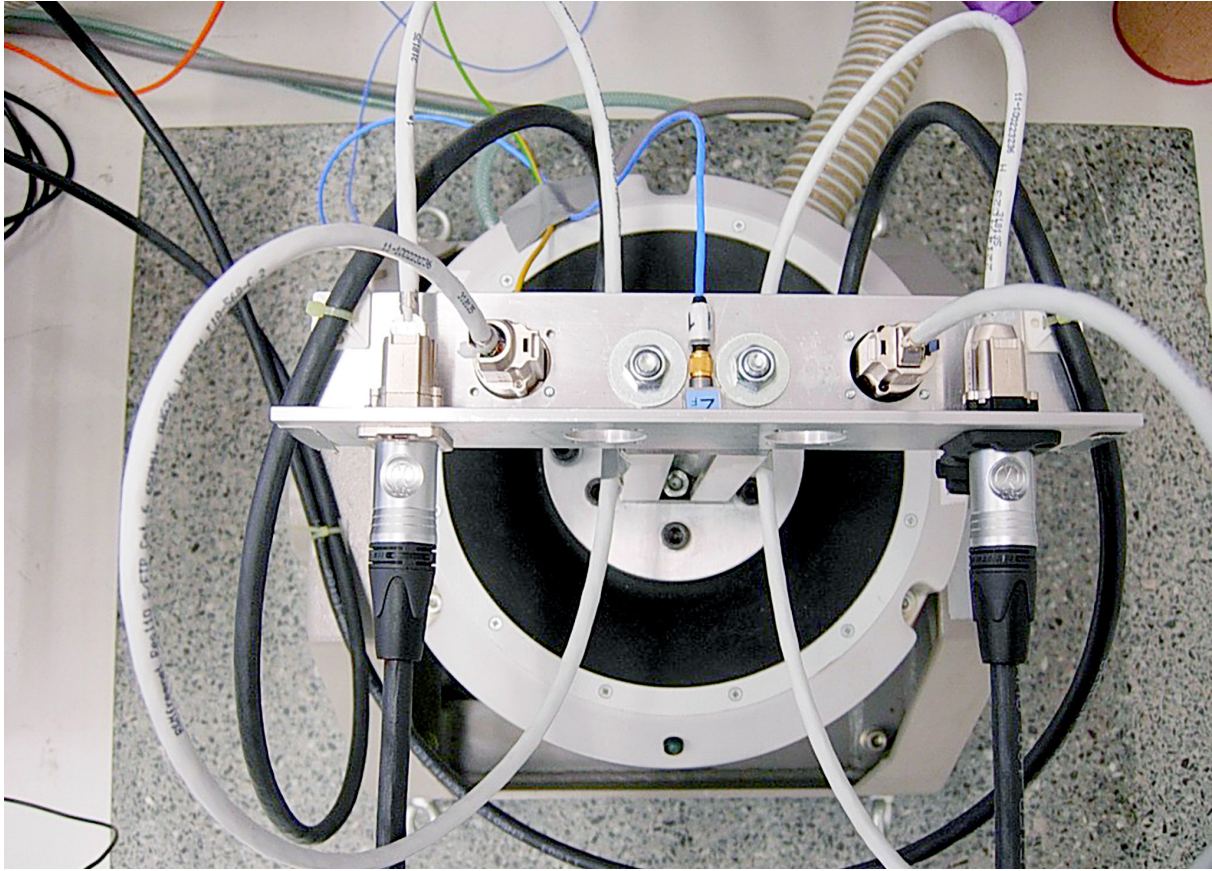


figure 1 : Test Set-Up

To detect a contact intermittence all 8 data wires have been connected in series. A 1 k Ω resistor is connected to the input and the whole setup is powered with 12 VDC from an external power supply.

In order to monitor the test, the probe of the oscilloscope is connected to the input of the DUT. For monitoring the connectivity of the screen the same monitoring system is in place. The trigger level of the oscilloscope has been set to 2 V. That will freeze the signal in case of a signal interruption.

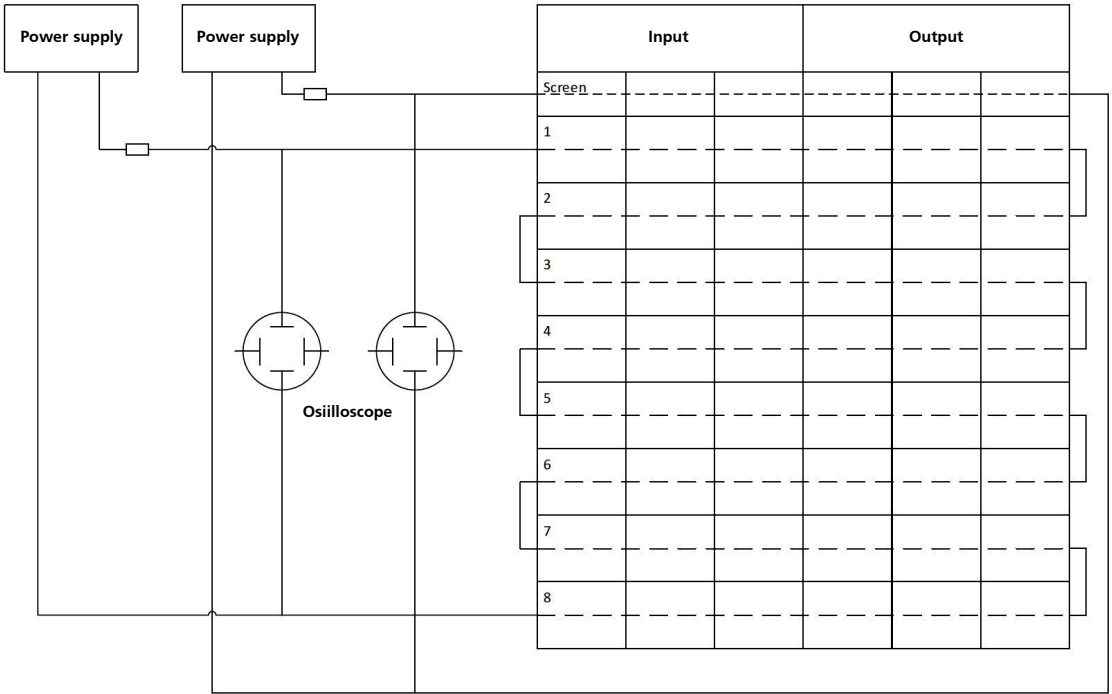
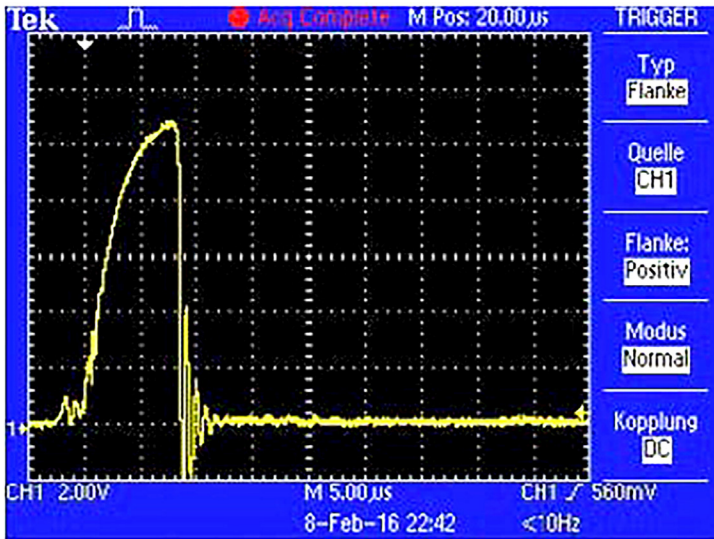


figure 1-1 : Schematic of the test setup

Under normal circumstances the voltage after the resistor is < 200 mV. In the case of an intermittence the voltage would increase abruptly to 12 V. The following figure shows the result of a forced signal interruption.

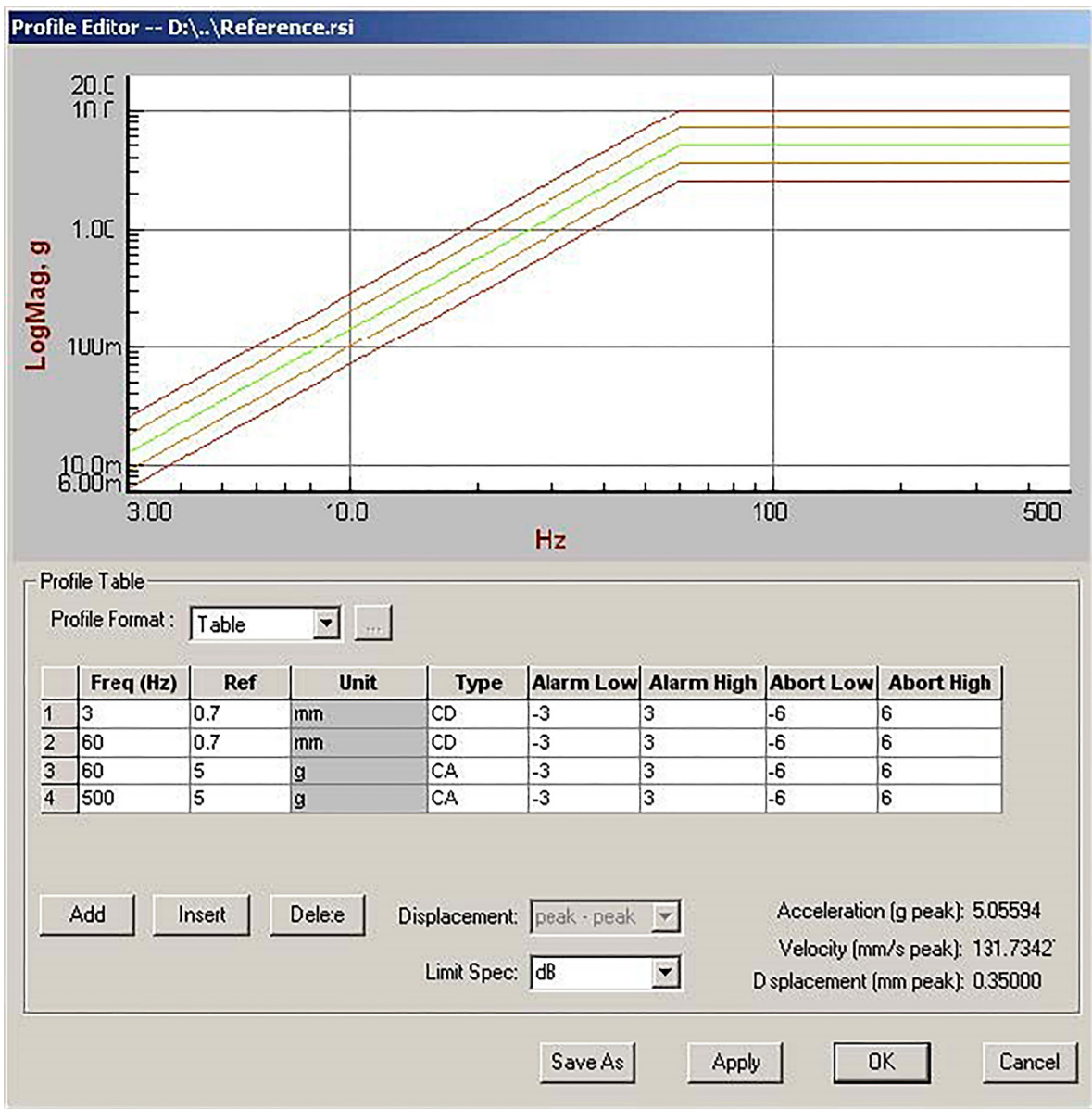


Test Unterbruch Ader zwischen bl/wsor

figure 1-2 : Forced signal interruption

1.3. Vibration Severity

Frequency range:	3 Hz – 60 Hz
Amplitude:	0.35 mm (0.7 mm pp)
Frequency range:	60 Hz – 500Hz
Acceleration:	50 m/s ² (5.0 g)
Sweep rate:	1 oct/min
Sweep cycle:	10 complete sweeps (up/dn)



1.4. Results

No contact intermittence $> 10 \mu\text{s}$ could be detected on any of the data connections or the screen. Therefore, the receptacles and the cable connectors comply with the relevant testing standard.

The locking mechanism withstands this extreme vibration without any problems, i. e. no separation or functional deterioration occurred.

etherCON CAT6^A TECHNICAL PAPER

Liechtenstein (Headquarters)

NEUTRIK AG, Im alten Riet 143, 9494 Schaan
T +423 237 24 24, F +423 232 53 93, neutrik@neutrik.com

Germany / Netherlands / Denmark / Austria

Neutrik Vertriebs GmbH, Felix-Wankel-Strasse 1, 85221 Dachau, Germany
T +49 8131 28 08 90, info@neutrik.de

Great Britain

Neutrik (UK) Ltd., Westridge Business Park, Cothey Way
Ryde, Isle of Wight PO33 1 QT
T +44 1983 811 441, sales@neutrik.co.uk

France

Neutrik France SARL, Rue du Parchamp 13, 92100 Boulogne-Billancourt
T +33 1 41 31 67 50, info@neutrik.fr

USA

Neutrik USA Inc., 4115 Taggart Creek Road, Charlotte, North Carolina, 28208
T +1 704 972 30 50, info@neutrikusa.com

Japan

Neutrik Limited, Yusen-Higashinohonbashi-Ekimaie Bldg., 3-7-19
Higashinohonbashi, Chuo-ku, Tokyo 103
T +81 3 3663 47 33, mail@neutrik.co.jp

Hong Kong

Neutrik Hong Kong LTD., Suite 18, 7th Floor Shatin Galleria
Fotan, Shatin
T +852 2687 6055, neutrik@neutrik.com.hk

China

Ningbo Neutrik Trading Co., Ltd., Shiqi Street, Yinxian Road West
Fengjia Villiage, Yinzhou Area, Ningbo, Zhejiang, 315153
T +86 574 88250488 800, neutrik@neutrik.com.cn

India

Neutrik India Pvt. Ltd., Level 3, Neo Vikram, New Link Road,
Above Audi Show Room, Andheri West, Mumbai, 400058
T +91 982 05 43 424, anklesaria@neutrik.com

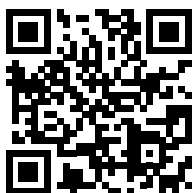
Associated companies

Contrik AG

Steinackerstrasse 35, 8902 Urdorf, Switzerland
T +41 44 736 50 10, contrik@contrik.ch

H. Adam GmbH

Felix-Wankel-Straße 1, 85221 Dachau, Germany
T +49 08131 28 08-0, info@adam-gmbh.de



www.neutrik.com