Test Report

DANAK
Reg. no. 19

Special testing of 100 ohm unshielded channel, Class E

Performed for HCS KABLOLAMA SISTEMLERI SAN.VE TIS.A.S.

DANAK-19J1508
Project no.: 312107-2

20 December 2005

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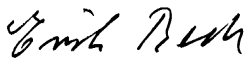
Title	Special testing of 100 ohm unshielded channel, Class E
Product description	Category 6 UTP channel
Product identification	Cords: T06-00401-XX (XX designates the length) Horizontal cable: H06-00401 RJ 45 connecting hardware (keystone jack): J6E-00813 (3 pieces)
Report no.	DANAK-19J1508
Project no.	N312107-2
Test object received	1 December 2005
Test period	1 December 2005
Client	HCS Kablolama Sistemleri San.Ve TIC.A.S. Bankalar Cad. Ekas Han No:75-77 Karakoy Istanbul Turkey
Contact	Ergun Akan
Specification	EN 50289-1-6
Results	Coupling attenuation = 48 dB
Prepared by	Erik Bech
Reviewed by	Claude Videt
Date	20 December 2005
Responsible	 _____ Erik Bech, Test Manager DELTA LAN Components and Systems Testing

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1. Summary

One communication channel has been subjected to a test for measurement of coupling attenuation.

The channel for this coupling attenuation test was assembled and delivered to DELTA by the client.

The channel testing has been performed under laboratory conditions at the European Cabling group of DELTA.

This report firstly gives a detailed description of the channels under test. Then the conclusion is given followed by the test results. At last an overview of the test procedures and applied standard are given.

2. Channel components

The channel was configured with keystone jacks for the wall outlet and consolidation point in the terminal end. One more keystone jack was used for the connector in the floor distributor end. There were one cord in each end and a length of cable (15 m) between the wall outlet and the consolidation point. A length of horizontal cable in the middle completed the channel.

Type designations of the test samples

Cords: T06-00401-XX (XX designates the length)

Horizontal cable: H06-00401

RJ 45 connecting hardware (keystone jack): J6E-00813 (3 pieces)

3. Conclusion

The measured coupling attenuation for the tested channel is 48 dB.

Below 100 MHz the coupling attenuation is better than 50 dB.

According to the report: Establishment of the needed electromagnetic performance of generic cabling for compliance with generic cabling (see clause 5.2 for the reference), this performance is adequate with EMC specifications for applications listed below:

EMC specifications:

Radiated emission EN 55022 class B and FCC part 15 class B

Radiated emission EN 55022 class A and FCC part 15 class A

Radiated immunity EN 50024 Residential and light industrial areas

Applications[1]:

10Base-T

100Base-T

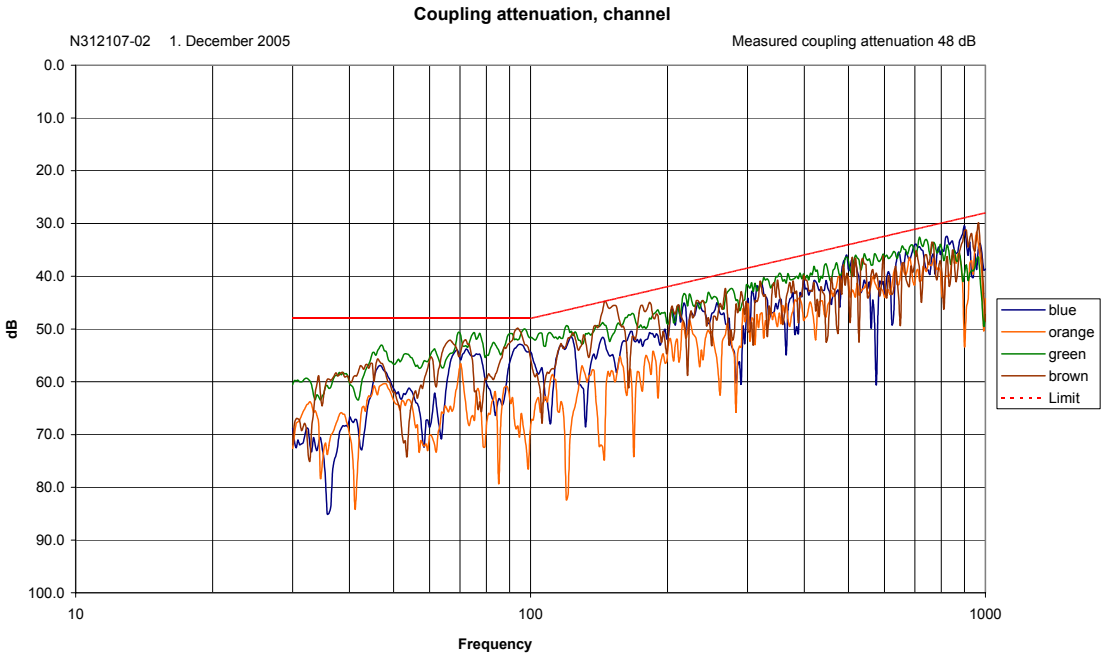
1000Base-T

EMC compliance of the complete system is only possible if compliance of the electronic equipment is verified according to the standards with application of unscreened cabling. (This means CE marked in Europe)

[1] These applications are investigated in the referenced document. Other applications, which use the lower part of the frequency spectrum may also comply.

4. Test results

4.1 Coupling attenuation



Equipment:

Network Analyser Hewlett Packard, type 8753E	Instrument no.: 31109
Absorbing clamp Rohde & Schwarz, type MDS 21	Instrument no.: 31097
Hybrid MA-COM, type H-1-4	Instrument no.: 31079
Hybrid MA-COM, type H-1-4	Instrument no.: 31080
Hybrid MA-COM, type H-1-4	Instrument no.: 31100
Hybrid MA-COM, type H-1-4	Instrument no.: 31148

5. Reference to applicable standards and documents

Test of the channel under test is performed with reference to the following standard:

5.1 Cable test standard

CENELEC EN 50289-1-15
Communication cables – Specifications for test methods-Part 1-15:Electromagnetic performance-Coupling attenuation of links and channels.

5.2 Expert contribution for JTC 1/SC 25/WG 3

WG 3 IXT025a, 13 January 2005. Establishment of the needed electromagnetic performance of generic cabling for compliance with generic cabling.

6. Test procedures and equipment

The tests carried out on the communication channel under test are performed according to test procedures worked out by DELTA and approved by DANAK. These procedures are as far as possible in compliance with the standardised procedures that are referred in the standards for cabling.

6.1 Coupling attenuation

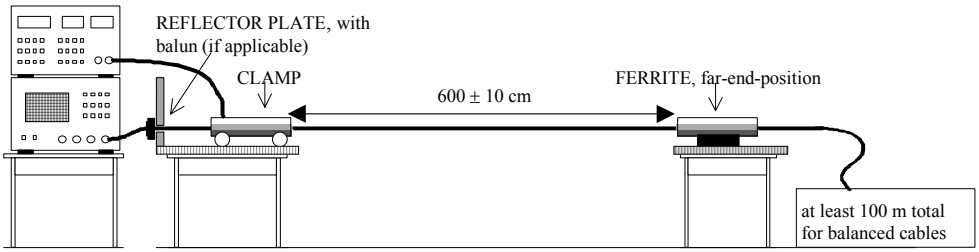


Figure 1 Test set-up for coupling attenuation measurements

The coupling attenuation is measured in different parts of the channel using an absorbing clamp. The length of the measured part of the channel under test is 6 m. The measurement result of the network analyser is corrected for insertion loss of the balun and absorbing clamp. The result is also corrected for the reflected wave at the input of the clamp. The result is evaluated by a limit curve, which is horizontal up to 100 MHz and has a slope of 20 dB/octave up to 1 GHz. The value for which the limit curve intercepts the Y axis is the coupling attenuation.

6.2 Test software

Test software according to information in the table below is used for the conducted tests.

Software name	Function	File name	Version	Date
Cablingtotal	Electrical cable tests	Cabltot	3.94	050621
DELTA Automatic Reporting Program	Automatic word processing	Rapport	1.42	050124
Cable report 2002	Cable report generation	Cable report	2.8	050823