



REPORT INTERTEK / ETL SEMKO

3933 US ROUTE 11, CORTLAND, NEW YORK 13045

ORDER NO.: 3022866-311

DATE: July 25, 2005

REPORT NO.: 3022866-038

RENDERED TO:

Hubbell Premise Wiring
14 Lord's Hill Road
Stonington, CT 06378

TEST: Performance testing of the cabling configurations as defined in, and to the requirements of, TIA/EIA 568-B.1 for Category 5e Cabling Systems.

STATEMENT OF LIMITATIONS: At the client's request, the purpose of this report is to provide electrical performance data on the test sample. It is not valid to use this report for any other purpose.

STANDARDS USED:

ASTM D4566-98, dated December 10, 1998, Standard Test Methods for Electrical Performance Properties of Insulations and Jackets for Telecommunications Wire and Cable

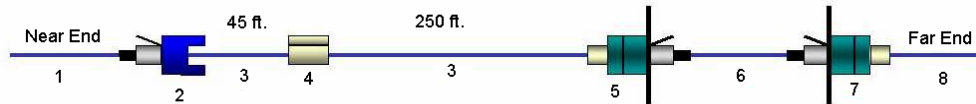
TIA/EIA-568-B.1, dated April 12, 2001, Commercial building telecommunications Cabling Standard

TIA/EIA-568-B.2, dated April 23, 2001, Commercial Building Telecommunications Cabling Standard

ISO/IEC 11801-N696 - 2001 Second Edition, Information Technology – Cabling for Customer Premises, dated April 19, 2001

AUTHORIZATION: The project was authorized by, Dr. Shadi AbuGhazaleh, representing the client, Hubbell Premise Wiring.

DATE OF TEST: 04/06/2005

SAMPLE DESCRIPTION: Channel (4 Connector)

<u>Component ID</u>	<u>Manufacturer</u>	<u>Part Number</u>	<u>Description</u>
1,8	Hubbell Premise Wiring	PCX5E	Equipment Cord
2	Hubbell Premise Wiring	HXJ5E	Wall Outlet
3	Hubbell Premise Wiring	C5EPRPW	Horizontal Cable
4	Hubbell Premise Wiring	110BLK	110 Block
5,7	Hubbell Premise Wiring	P5E**U	Patch Panel
6	Hubbell Premise Wiring	PCX5E	Cross Connect

All samples were supplied by the client

EQUIPMENT LIST: The following equipment was employed in conducting the tests.

<u>Equipment Used</u>	<u>Model Number</u>	<u>Serial Number</u>	<u>Control Number</u>	<u>Calibration Date</u>
Hewlett Packard Automatic Cable Test System	HP46152A	87CT10L	N/A	11/02/04

Equipment

The testing was performed using a Hewlett Packard 46152A Automatic Cable Test System. The system was calibrated using a full 2 port calibration with 801 linearly spaced data points, 300 Hz I/F bandwidth and a 5-second sweep time.

Measurements

For the cabling configurations previously described, Attenuation, Near End Cross Talk, Far End Cross Talk and Return Loss were measured in accordance with ASTM D4566. These tests were performed on three separate channels.

Requirements

Attenuation, Near End Cross Talk, Power Sum NEXT, Equal Level Far End Cross Talk (ELFEXT), Power Sum ELFEXT and Return Loss were tested to the requirements of TIA/EIA-568-B.1, Cat. 5e.

Results

The results for the 1 channel test are shown in graphs 1-8. In each plot, the worst case and average readings are compared with the appropriate limits from the category 5e cabling specification.

Conclusion:

The channels, as previously described and supplied by the client, were tested in accordance with the procedures contained herein, and did comply with the indicated applicable transmission requirements. The testing was performed at Intertek ETL SEMKO located in Cortland, New York.

These procedures and requirements were taken from the standards referred to on page 1.

Reviewed and Approved By:

Stephen R. Comer
Laboratory Supervisor
Global Cabling Products Testing

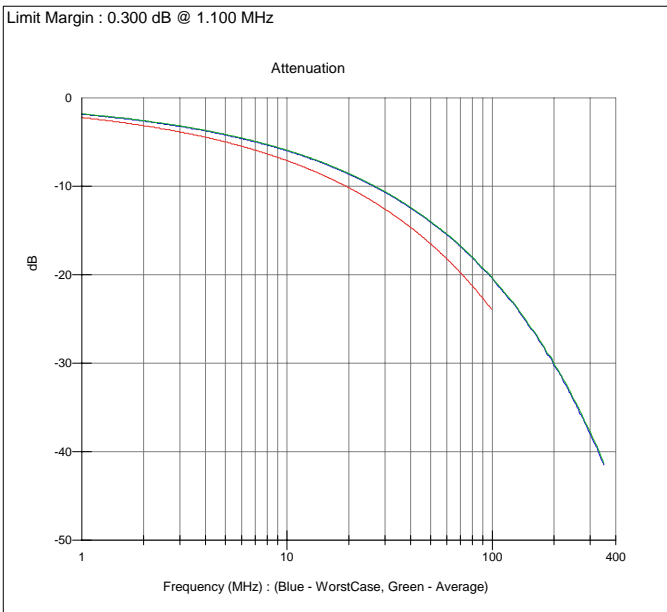
APPENDIX A
Test Results

Any data reported above 100 MHz is for indication only.

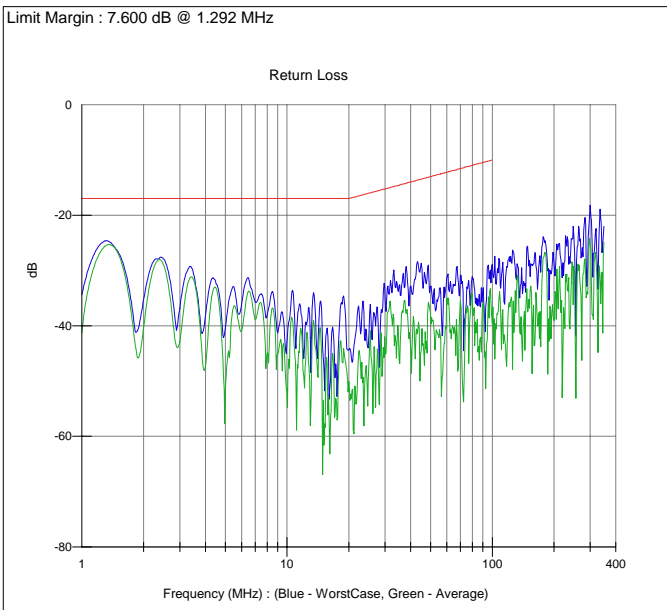
This appendix contains 4 pages.

Summary

Client	Hubbell Premise Wiring	Report No	3022866-038
Specification	4Connec-C5EChannel		
Part No	TR487x1e (4CC) HUBB C5E	Length	100
Test Started	4/6/2005 11:59:21 AM	Temperature	21.67 °C
Description	Hubbell Premise Wiring- SPEEDGAIN Category 5e UTP 4CC, Test 1		
Technician	S. Schultz	Test Status:	Complies



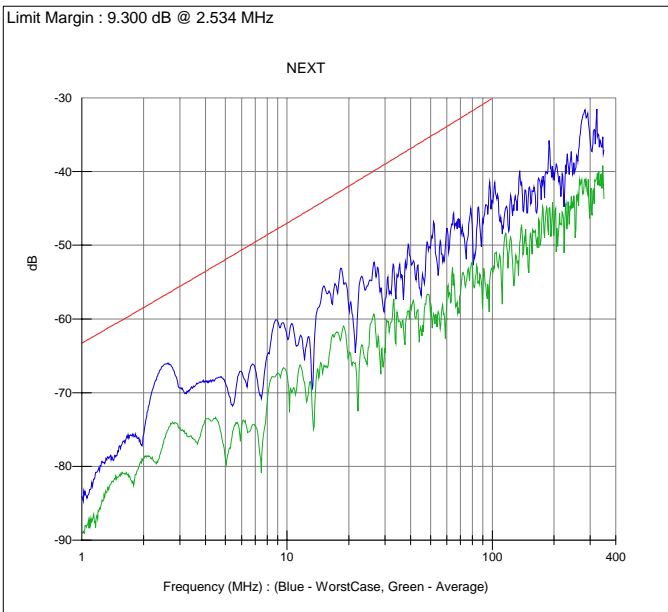
Attenuation			
Freq	Worst Case	Average	Spec
1.	1.8	1.8	2.2
4.	3.7	3.7	4.4
8.	5.3	5.3	6.3
10.	6.0	5.9	7.1
16.	7.7	7.6	9.1
20.	8.6	8.6	10.2
25.	9.7	9.6	11.4
31.25	10.9	10.9	12.8
62.5	15.8	15.7	18.6
100.	20.4	20.3	23.9
200.	30.3	30.1	
250.	34.3	34.1	
350.	41.5	41.3	



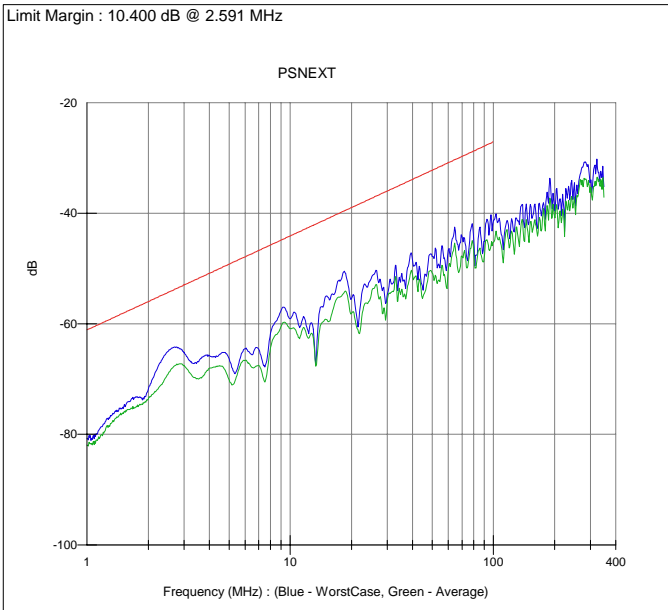
Return Loss			
Freq	Worst Case	Average	Spec
1.	34.4	41.3	17.0
4.	38.2	47.3	17.0
8.	38.0	44.9	17.0
10.	42.7	52.9	17.0
16.	50.9	55.0	17.0
20.	44.4	50.3	17.0
25.	42.3	47.8	16.0
31.25	34.0	37.3	15.1
62.5	32.1	40.8	12.0
100.	28.9	39.5	10.0
200.	29.1	38.9	
250.	23.8	29.3	
350.	22.0	24.9	

Summary

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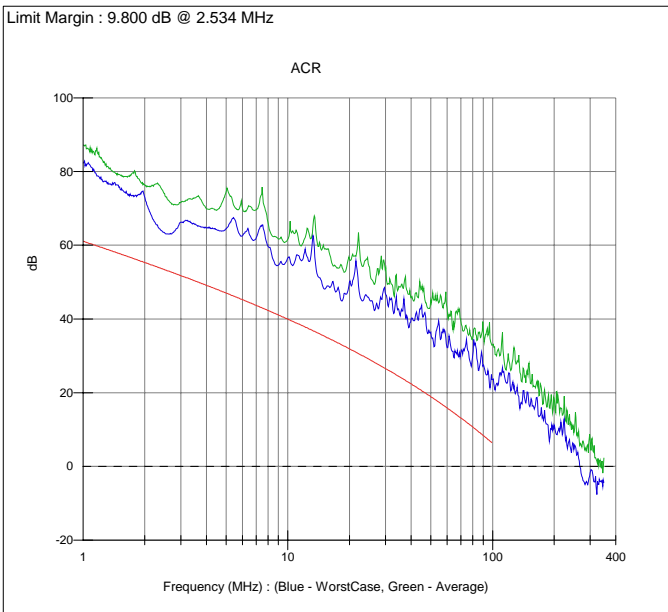
NEXT			
Freq	Worst Case	Average	Spec
1.	84.0	89.0	63.3
4.	68.4	73.6	53.6
8.	64.9	71.4	48.6
10.	62.4	67.6	47.0
16.	56.3	65.3	43.6
20.	58.6	64.9	42.0
25.	55.1	63.8	40.3
31.25	55.8	60.4	38.7
62.5	48.3	57.4	33.6
100.	44.0	53.3	30.1
200.	40.8	48.3	
250.	38.9	43.3	
350.	37.1	43.7	



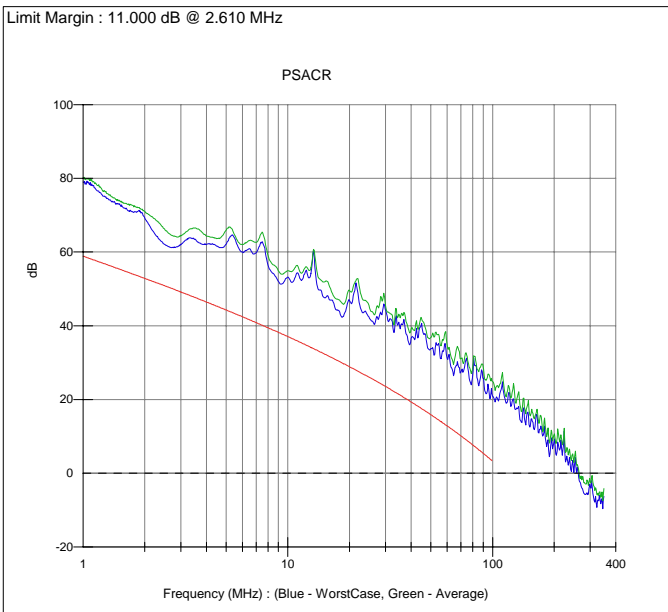
PSNEXT			
Freq	Worst Case	Average	Spec
1.	80.8	81.9	61.1
4.	65.7	68.0	50.9
8.	61.7	64.4	45.7
10.	59.1	60.8	44.1
16.	54.7	58.2	40.6
20.	55.5	58.1	39.0
25.	51.8	54.8	37.3
31.25	52.3	54.4	35.7
62.5	44.8	47.6	30.6
100.	41.3	45.2	27.1
200.	39.0	40.6	
250.	34.6	37.1	
350.	35.2	37.1	

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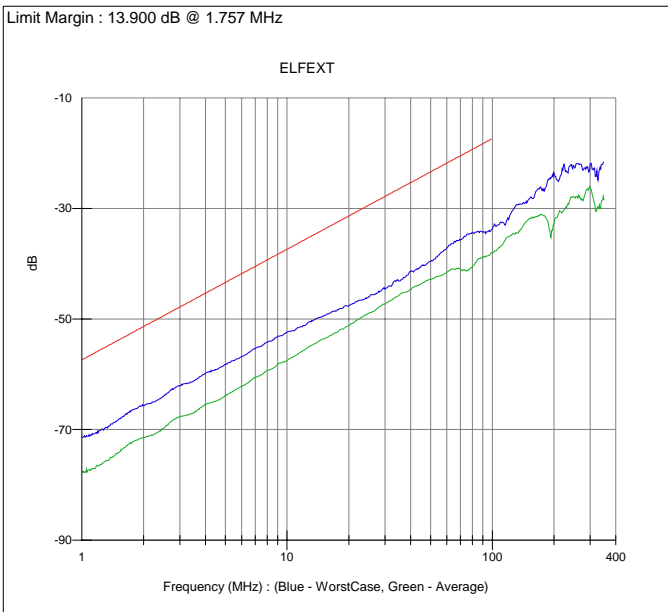
ACR			
Freq	Worst Case	Average	Spec
1.	82.2	87.2	61.1
4.	64.7	70.0	49.2
8.	59.7	66.1	42.3
10.	56.5	61.6	40.0
16.	48.6	57.7	34.6
20.	50.0	56.3	31.9
25.	45.4	54.2	29.0
31.25	44.9	49.6	26.0
62.5	32.5	41.7	15.2
100.	23.6	33.0	6.4
200.	10.7	18.2	
250.	4.7	9.2	
350.	-4.4	2.3	



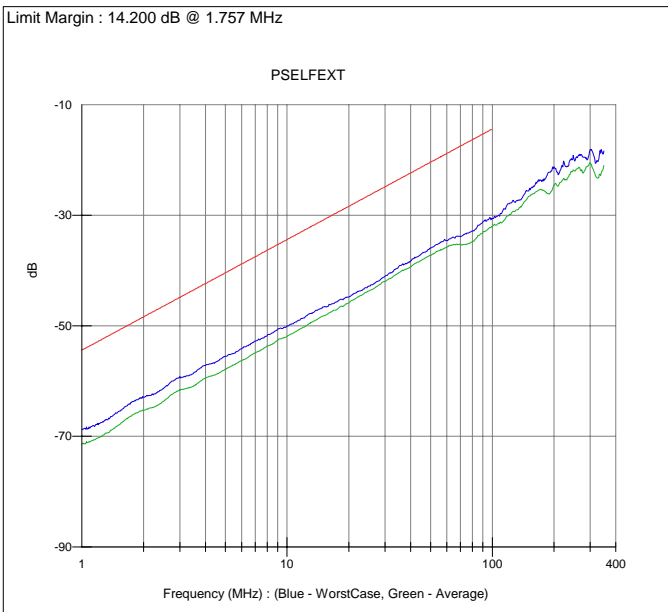
PSACR			
Freq	Worst Case	Average	Spec
1.	79.0	80.1	58.9
4.	62.0	64.4	46.5
8.	56.4	59.1	39.5
10.	53.2	54.9	37.1
16.	47.1	50.6	31.6
20.	46.9	49.6	28.9
25.	42.2	45.2	26.0
31.25	41.4	43.5	23.0
62.5	29.0	31.9	12.1
100.	20.9	24.9	3.4
200.	8.7	10.5	
250.	0.3	3.0	
350.	-6.3	-4.2	

Summary

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Test Started	4/6/2005 11:59:21 AM	Temperature	21.67 °C
Description	Hubbell Premise Wiring- SPEEDGAIN Category 5e UTP 4CC, Test 1		
Technician	S. Schultz	Test Status:	Complies



ELFEXT			
Freq	Worst Case	Average	Spec
1.	71.4	77.7	57.4
4.	59.9	65.4	45.4
8.	54.2	59.3	39.3
10.	52.4	57.5	37.4
16.	49.0	53.1	33.3
20.	47.6	51.2	31.4
25.	46.0	49.0	29.4
31.25	44.1	46.9	27.5
62.5	36.6	41.1	21.4
100.	33.7	38.1	17.4
200.	23.6	32.7	
250.	22.3	27.9	
350.	21.6	28.5	



PSELFEXT			
Freq	Worst Case	Average	Spec
1.	68.8	71.3	54.4
4.	57.2	59.4	42.4
8.	51.8	53.7	36.3
10.	50.1	51.9	34.4
16.	46.2	47.7	30.3
20.	44.8	45.8	28.4
25.	42.8	43.7	26.4
31.25	40.6	41.5	24.5
62.5	34.2	35.5	18.5
100.	30.6	32.1	14.5
200.	21.3	24.6	
250.	19.7	22.0	
350.	18.4	21.0	