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Phone Number: 1-800-345-3851 Fax Number: 607-758-3648

PROJECT NO.: 3022866-3311

DATE: February 9, 2009

TEST REPORT NO.: 3022866CRT-079

**RENDERED TO:**

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

**TEST:**

C6 2-connector channel testing of the cabling configuration as defined in and to the requirements of TIA-568-C.2 (Draft 2.2), *Balanced Twisted Pair Telecommunications Cabling And Components Standard*, with internal channel parameter limits extended per guidelines of TIA TSB-155 (excluding ANEXT).

**STATEMENT OF LIMITATIONS:**

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.

**STANDARD USED:**

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

TIA-568-C.2 (Draft 2.2): *Balanced Twisted Pair Telecommunications Cabling And Components Standard*, dated December 2008.

TSB-155, Guidelines for the Assessment and Mitigation of Installed Category 6 Cabling to Support 10GBASE-T dated March 2007.

**AUTHORIZATION:**

The project was authorized by, Dr. Shadi AbuGhazaleh, representing Hubbell Premise Wiring.

**DATE OF TEST:**

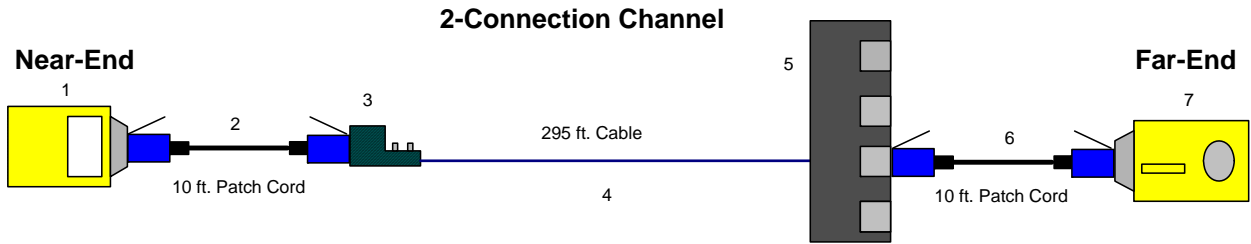
10/17/2008

**TEST REPORT REVISION HISTORY:**

First Issue: February 9, 2009 Original Document

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**SAMPLE DESCRIPTION:**

<u>Component ID</u>	<u>Manufacturer</u>	<u>Part Number</u>	<u>Description</u>
1, 7	Fluke Networks	DTX-1800	Fluke MAIN & REMOTE Units
2,6	Hubbell	PCX6XX <sup>1</sup> 10	10' C6 Patch Cords
3	Hubbell	HXJ6	C6 Jack
4	Hubbell	C6ESPX <sup>2</sup>	C6E Cable
5	Hubbell	P6E**U <sup>3</sup>	C6 Patch Panel

- 1. 'XX' is the color of patch cord (black, blue, etc...)
- 2. X is the color of cable (blue, gray, etc...)
- 3. '\*\*' is the number of ports in the panel (24, 48)

**EQUIPMENT LIST:**

The following equipment was employed in conducting the tests.

<u>Equipment Used</u>	<u>Model Number</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Fluke Networks (Portable Cable Analyzer)	DTX-1800	8582073	04/29/08

**RESULTS:**

See appendix A for the test results.

**CONCLUSION:**

The channel configuration, as previously described, was tested under the SAT program of Intertek in accordance with the standard contained herein, and did comply with the indicated applicable transmission requirements. Alien Crosstalk was not measured.

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

Reviewed and approved by:

Antoine Pelletier  
 Engineer  
 Global Cabling Products Testing

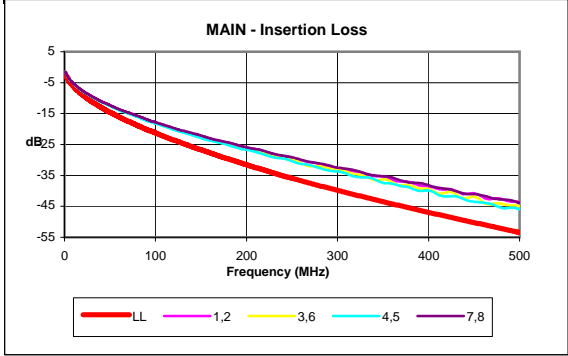
Kathy Heath  
 Project Coordinator  
 Global Cabling Products Testing

**Appendix A**  
Test results

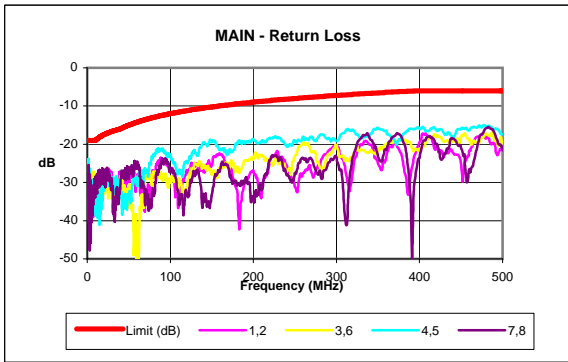
Any data reported above 500 MHz is for indication only.

This appendix contains 4 Pages.

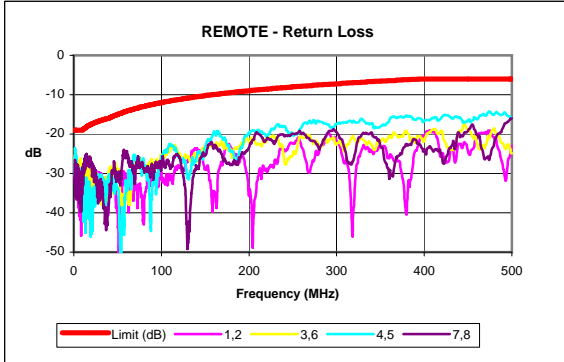
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Frequency	Worst Case	TIA Spec
1	-1.5	-3.0
10	-5.4	-6.3
31.3	-9.8	-11.4
62.5	-14.1	-16.5
100	-18.3	-21.3
155	-23.4	-27.2
200	-26.7	-31.5
250	-30.4	-36.0
350	-37.4	-43.5
500	-46.0	-53.4

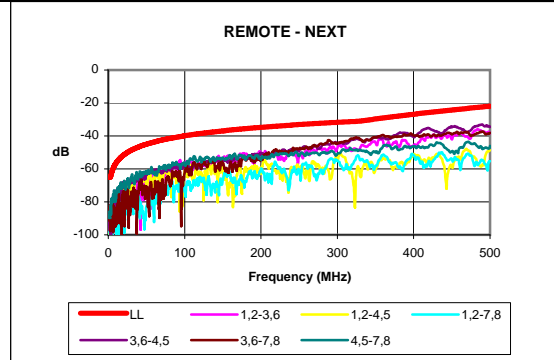
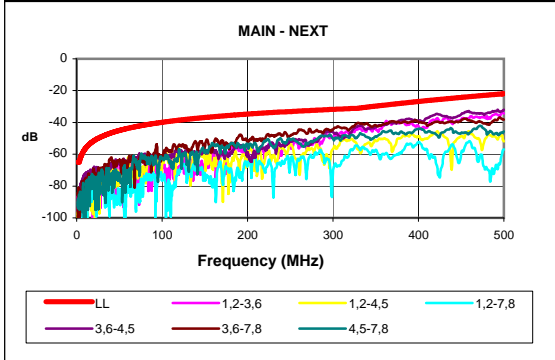


Frequency	Worst Case	TIA Spec
1	-27.7	-19.0
10	-28.6	-19.0
31.3	-29.1	-16.5
62.5	-26.2	-14.0
100	-22.6	-12.0
155	-19.9	-10.1
200	-18.7	-9.0
250	-19.0	-8.0
350	-15.8	-6.6
500	-17.4	-6.0



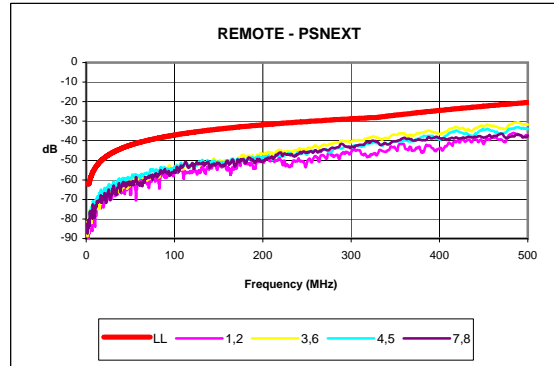
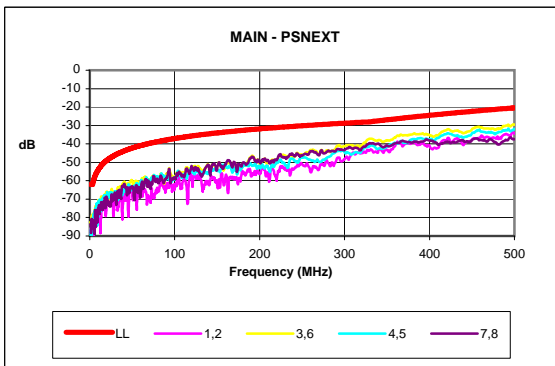
Frequency	Worst Case	TIA Spec
1	-25.4	-19.0
10	-28.1	-19.0
31.3	-30.1	-16.5
62.5	-27.1	-14.0
100	-25.6	-12.0
155	-21.4	-10.1
200	-19.8	-9.0
250	-19.9	-8.0
350	-18.1	-6.6
500	-16.0	-6.0

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Frequency	Worst Case	TIA Spec
1	-84.4	-65
10	-73.3	-56.6
31.3	-71.9	-48.4
62.5	-62.5	-43.4
100	-60.8	-39.9
155	-54.3	-36.7
200	-51.9	-34.8
250	-48.4	-33.1
350	-41.8	-29.7
500	-32	-22

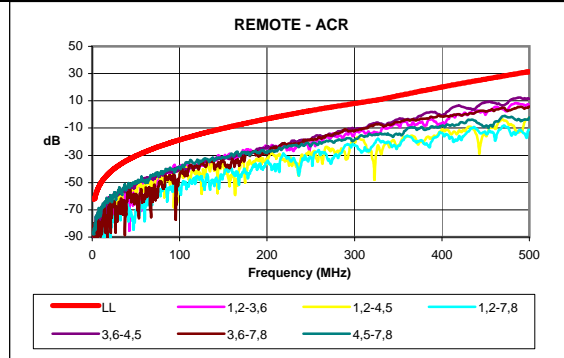
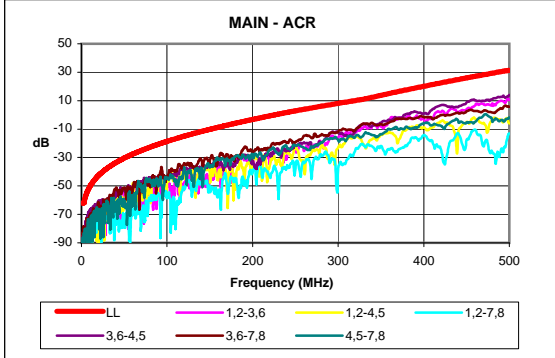
Frequency	Worst Case	TIA Spec
1	-84.2	-65
10	-74.3	-56.6
31.3	-63.3	-48.4
62.5	-60.8	-43.4
100	-56.7	-39.9
155	-53.4	-36.7
200	-50.5	-34.8
250	-47.6	-33.1
350	-40.8	-29.7
500	-34.5	-22



Frequency	Worst Case	TIA Spec
1	-82.8	-62
10	-71.5	-54
31.3	-68.9	-45.7
62.5	-59.5	-40.6
100	-57.8	-37.1
155	-51.7	-33.8
200	-49.6	-31.9
250	-46.1	-30.2
350	-38.2	-26.9
500	-29.5	-20.4

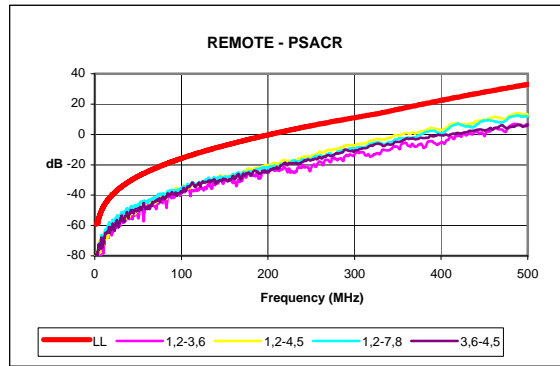
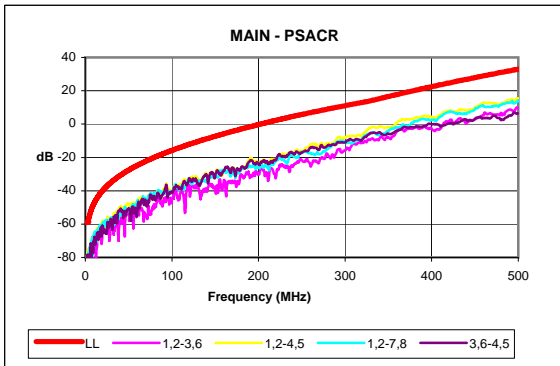
Frequency	Worst Case	TIA Spec
1	-82.3	-62
10	-72.6	-54
31.3	-61.3	-45.7
62.5	-57	-40.6
100	-53.4	-37.1
155	-50.8	-33.8
200	-46.8	-31.9
250	-44.4	-30.2
350	-36.9	-26.9
500	-31.8	-20.4

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Frequency	Worst Case	TIA Spec
1	-82.9	-62.0
10	-67.9	-50.3
31.3	-62.1	-37.0
62.5	-48.4	-26.9
100	-42.9	-18.6
155	-31.7	-9.5
200	-26.0	-3.3
250	-19.3	2.9
350	-5.6	13.8
500	14.0	31.4

Frequency	Worst Case	TIA Spec
1	-82.7	-62
10	-68.9	-50.3
31.3	-53.7	-37
62.5	-46.7	-26.9
100	-38.8	-18.6
155	-30.7	-9.5
200	-23.8	-3.3
250	-18.5	2.9
350	-3.5	13.8
500	11.5	31.4

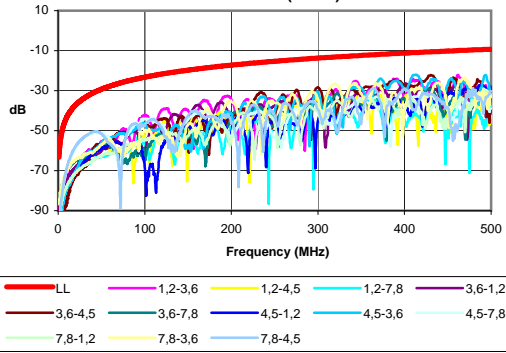


Frequency	Worst Case	TIA Spec
1	-81.4	-59
10	-66.1	-47.7
31.3	-59.2	-34.3
62.5	-45.5	-24.1
100	-39.7	-15.8
155	-28.3	-6.6
200	-23.7	-0.4
250	-16.2	5.8
350	-1.9	16.6
500	15.4	33

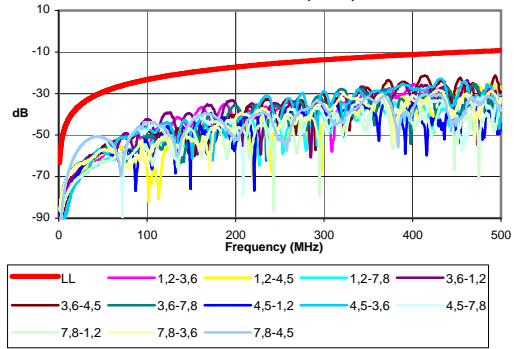
Frequency	Worst Case	TIA Spec
1	-80.9	-59
10	-67.2	-47.7
31.3	-51.5	-34.3
62.5	-42.9	-24.1
100	-35.1	-15.8
155	-27.7	-6.6
200	-20.3	-0.4
250	-14.5	5.8
350	-0.6	16.6
500	13.1	33

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MAIN - ELFEXT (ACRF)



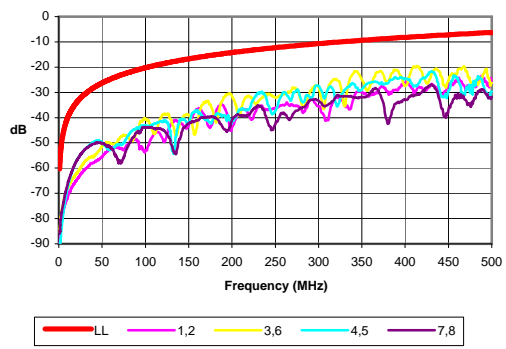
REMOTE - ELFEXT (ACRF)



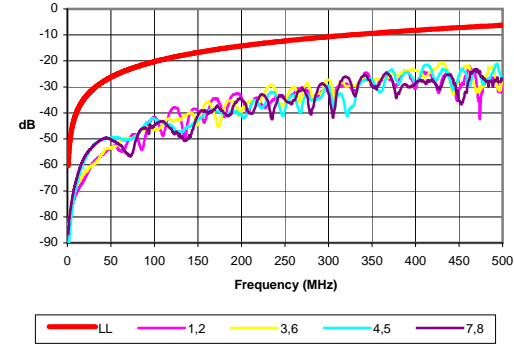
Frequency	Worst Case	TIA Spec
1	-86.4	-63.3
10	-68.7	-43.3
31.3	-52.8	-33.4
62.5	-53.2	-27.3
100	-42.4	-23.3
155	-39.8	-19.5
200	-34.4	-17.2
250	-35.2	-15.3
350	-28.5	-12.4
500	-29.5	-9.3

Frequency	Worst Case	TIA Spec
1	-86.5	-63.3
10	-68.8	-43.3
31.3	-52.6	-33.4
62.5	-53.1	-27.3
100	-42.6	-23.3
155	-39.5	-19.5
200	-34.9	-17.2
250	-35.8	-15.3
350	-27.4	-12.4
500	-28.3	-9.3

MAIN - PSELFEXT



REMOTE - PSELFEXT



Frequency	Worst Case	TIA Spec
1	-85.4	-60.3
10	-66.7	-40.3
31.3	-52.3	-30.4
62.5	-50.4	-24.3
100	-40.6	-20.3
155	-38.0	-16.5
200	-31.5	-14.2
250	-31.9	-12.3
350	-24.9	-9.4
500	-26.1	-6.3

Frequency	Worst Case	TIA Spec
1	-85.0	-60.3
10	-66.1	-40.3
31.3	-52.1	-30.4
62.5	-50.1	-24.3
100	-41.8	-20.3
155	-38.7	-16.5
200	-34.1	-14.2
250	-33.9	-12.3
350	-27.1	-9.4
500	-27.1	-6.3