



REPORT INTERTEK TESTING SERVICES, INC.

3933 US ROUTE 11, CORTLAND, NEW YORK 13045

ORDER NO.: 3039425-406

DATE: March 7, 2003

REPORT NO.: 3039425-001S

RENDERED TO:

AESP
1005 Sussex Blvd.
Lawrence Industrial Park
Broomall, PA 19008

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

AUTHORIZATION: The tests were authorized by Mr. Don Daily, representing the client, AESP, with Purchase Order No. 303084.

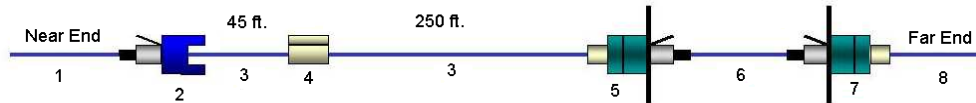
DATE OF TEST: March 6, 2003

Page 1 of 2

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SAMPLE DESCRIPTION:

Channel (4 Connector)



<u>Component ID</u>	<u>Manufacturer</u>	<u>Part Number</u>	<u>Description</u>
3	Commscope	5504M	Horizontal Cable
5,7	Signamax	24458MD-C5E	Patch Panel
1,8	Signamax	C5ES-114GY-10FB	Equipment Cord
6	Signamax	C5ES-114GY-10FB	Cross Connect
4	Signamax	110WB-100PR-L	110 Block
2	Signamax	KJ458-C5E	Wall Outlet

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	3903U01003	N/A	03/18/02

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. The swept frequency measurements were performed from 0.5 MHz to 100 MHz.

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 3 channel tests 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.

These Procedures and Requirements were taken from the Standards referred to on Page 1.

Reviewed and Approved By:

Robert Southworth
Lab Supervisor
Communications Products

David L. Ayers
Technician
Communications Products

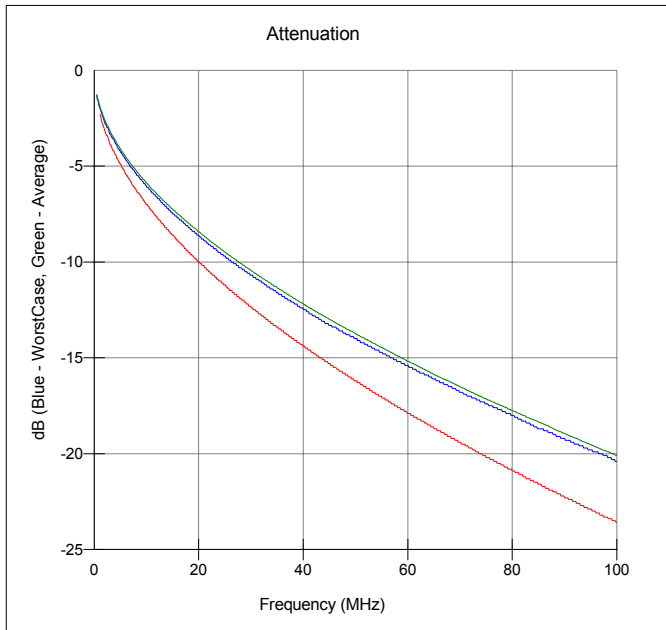
APPENDIX A

Test Results

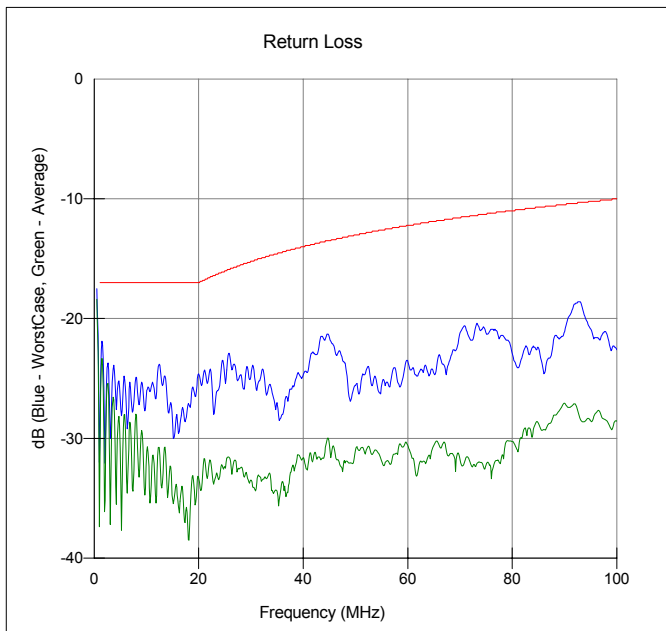
Any data reported above 100 MHz is for indication only.

Summary

Client	AESP PA	Report No	3039425-001S
Specification	TIA 568B1 - Cat5e 4 Conn Channel 100 MHz		
Part No	Test-1-2-3	Length	100
Test Started	3/6/03 3:02:57 PM	Temperature	21 °C
Comments	4 Connector Channel S100MHz L100MHz		
Technician	David Ayers	Test Status:	PASS



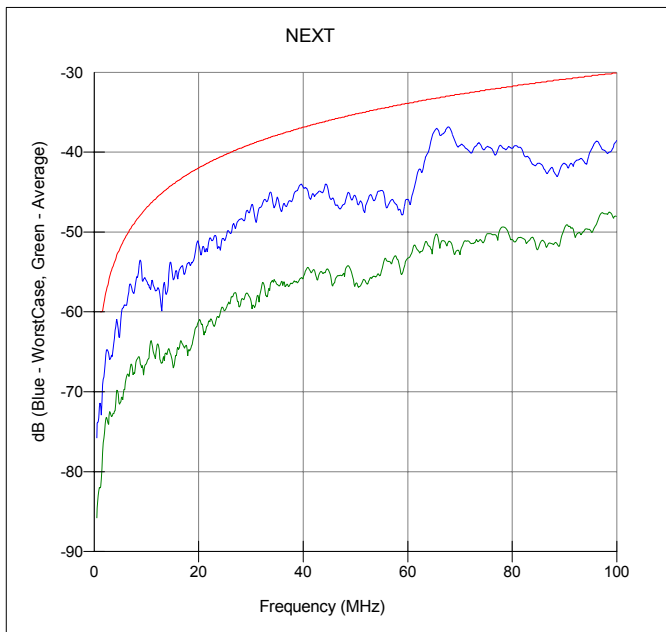
Attenuation			
Freq	Worst Case	Average	Spec
1.	1.9	1.8	2.2
4.	3.8	3.7	4.4
8.	5.4	5.2	6.2
10.	6.0	5.9	7.0
16.	7.7	7.5	8.9
20.	8.6	8.4	10.0
25.	9.7	9.5	11.2
31.25	10.9	10.7	12.6
62.5	15.8	15.5	18.2
100.	20.4	20.1	23.6



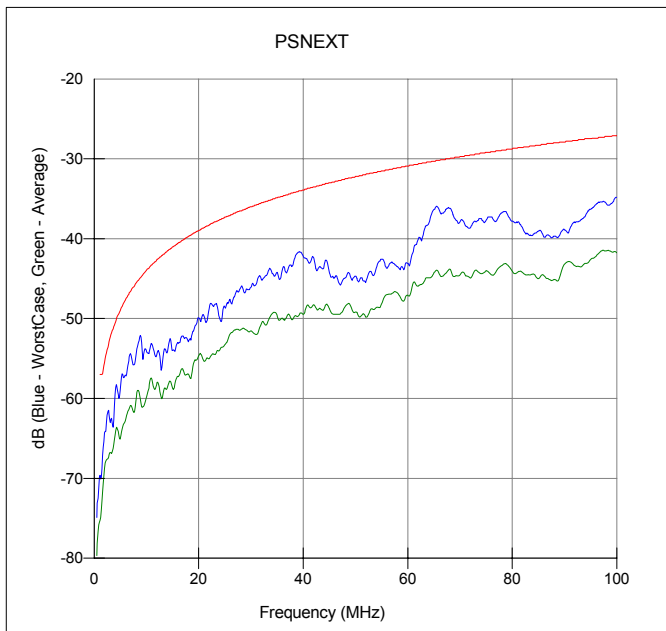
Return Loss			
Freq	Worst Case	Average	Spec
1.	32.0	37.3	17.0
4.	25.5	30.9	17.0
8.	24.9	28.0	17.0
10.	26.4	31.8	17.0
16.	28.7	35.0	17.0
20.	24.6	33.3	17.0
25.	24.9	32.4	16.0
31.25	25.7	33.3	15.1
62.5	24.3	31.9	12.1
100.	22.6	28.6	10.0

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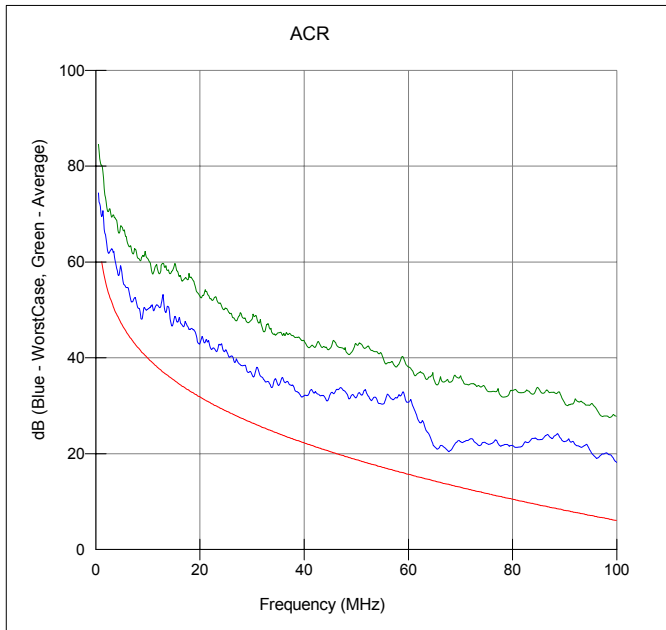
NEXT			
Freq	Worst Case	Average	Spec
1.	71.9	81.9	60.0
4.	62.2	72.2	53.6
8.	56.0	66.2	48.6
10.	56.1	66.5	47.0
16.	56.0	64.5	43.6
20.	51.4	61.2	42.0
25.	51.1	59.8	40.3
31.25	48.0	58.0	38.7
62.5	42.2	52.4	33.6
100.	38.5	48.0	30.1



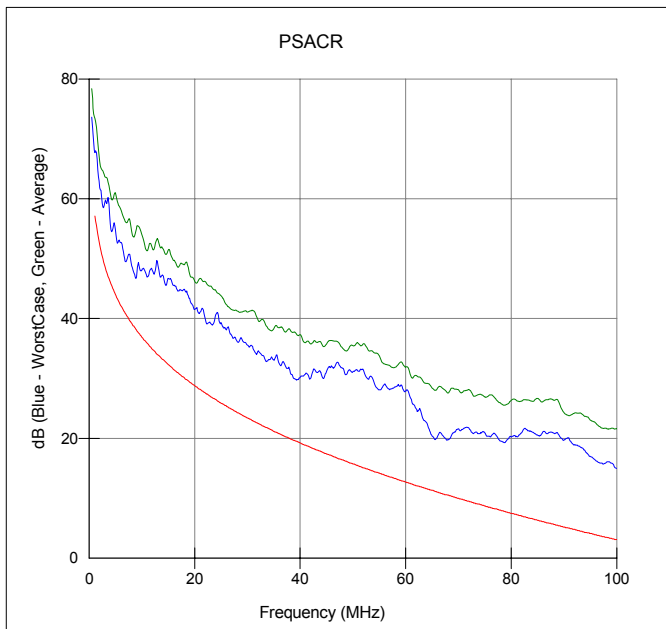
PSNEXT			
Freq	Worst Case	Average	Spec
1.	69.9	75.5	57.0
4.	59.4	64.5	50.6
8.	54.5	60.2	45.6
10.	54.0	59.9	44.0
16.	53.0	57.2	40.6
20.	49.9	54.7	39.0
25.	48.6	53.3	37.3
31.25	45.2	51.9	35.7
62.5	40.0	45.8	30.6
100.	34.8	41.8	27.1

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Comments	4 Connector Channel S100MHz L100MHz		
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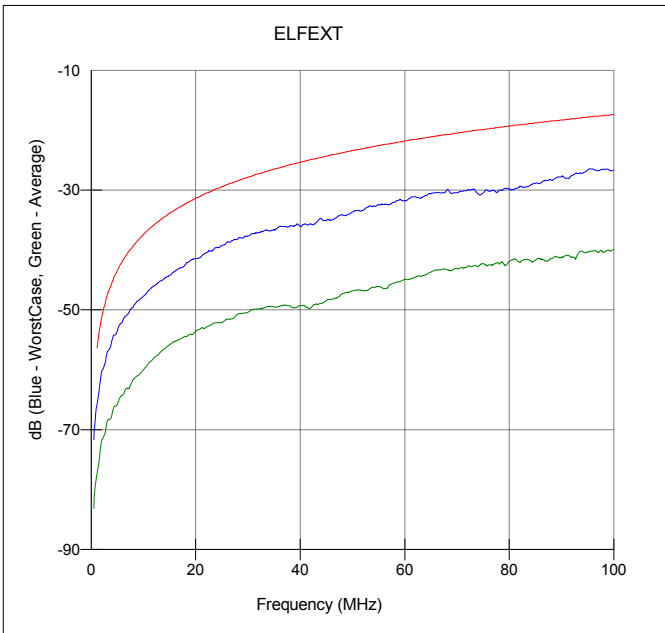
ACR			
Freq	Worst Case	Average	Spec
1.	70.1	80.2	60.9
4.	58.5	68.6	49.1
8.	50.7	61.0	42.3
10.	50.2	60.6	39.9
16.	48.5	57.0	34.5
20.	43.1	52.8	31.8
25.	41.7	50.3	28.9
31.25	37.3	47.3	25.9
62.5	26.5	36.9	15.0
100.	18.1	27.9	6.1



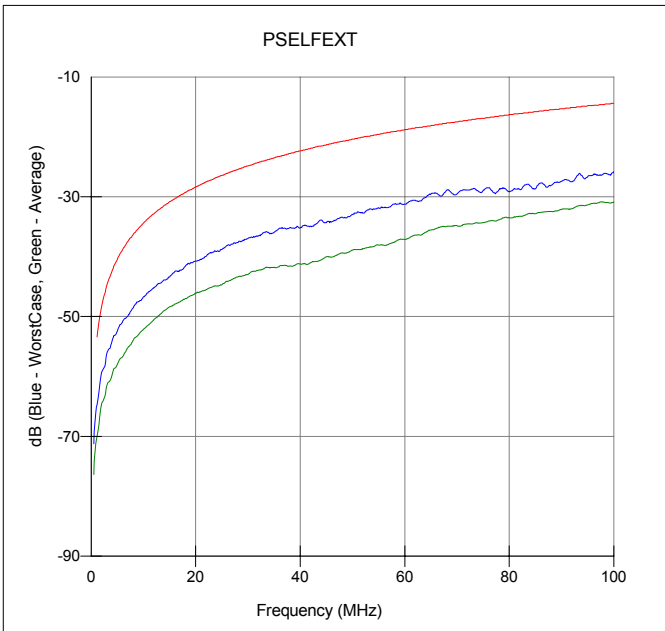
PSACR			
Freq	Worst Case	Average	Spec
1.	68.1	73.7	57.9
4.	55.7	60.9	46.1
8.	49.2	55.0	39.3
10.	48.1	54.0	36.9
16.	45.5	49.7	31.5
20.	41.5	46.3	28.8
25.	39.3	43.8	25.9
31.25	34.7	41.3	22.9
62.5	24.7	30.2	12.0
100.	15.0	21.7	3.1

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Comments	4 Connector Channel S100MHz L100MHz		
Technician	David Ayers	Test Status:	PASS



ELFEXT			
Freq	Worst Case	Average	Spec
1.	66.2	78.0	57.3
4.	55.0	67.2	45.4
8.	49.6	61.6	39.3
10.	47.8	60.0	37.4
16.	43.6	55.2	33.3
20.	41.4	53.6	31.4
25.	39.3	52.2	29.4
31.25	37.2	49.9	27.5
62.5	31.2	44.3	21.5
100.	26.6	39.9	17.4



PSELFEXT			
Freq	Worst Case	Average	Spec
1.	65.1	70.6	54.3
4.	54.0	59.7	42.4
8.	48.6	54.0	36.3
10.	46.8	52.2	34.4
16.	42.5	47.9	30.3
20.	40.7	46.1	28.4
25.	38.8	44.7	26.4
31.25	36.7	42.5	24.5
62.5	30.7	36.4	18.5
100.	25.8	30.9	14.4