



REPORT INTERTEK TESTING SERVICES, INC.

3933 US ROUTE 11, CORTLAND, NEW YORK 13045

ORDER NO.: 3035814-406

DATE: February 13, 2003

REPORT NO.: 3035814-001S

RENDERED TO:

Coble Enterprise Co., Ltd.
5F, No.41, Cheng Ho St.
Lujou City, Taipei Hsien
Taiwan, R.O.C.

TEST: Performance Testing of the cabling configurations as defined in, and to the requirements of, TIA/EIA 568-B.2-1 for Category 6 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.2-1, Addendum 1: Transmission Performance Specifications for 4 Pair, 100 Ω Category 6 Cabling dated June 2002.

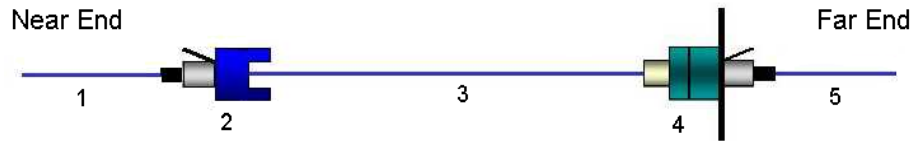
AUTHORIZATION: The tests were authorized by Mr. Michael Chen, representing the client, Coble Enterprise Co., Ltd., with Quote No. 11876099 .

DATE OF TEST: February 12, 2003

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SAMPLE DESCRIPTION:

Channel (2 Connector)



<u>Component</u>	<u>Manufacturer</u>	<u>Part Number</u>	<u>Description</u>
1,5	Coble	10102-LLCC	Equipment Cord
2	Coble	20201-CC	Wall Outlet
3	Hosiwell	30023-CC	Horizontal Cable
4	Coble	20383	Patch Panel

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 250 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.2-1, Cat. 6.

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 6 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

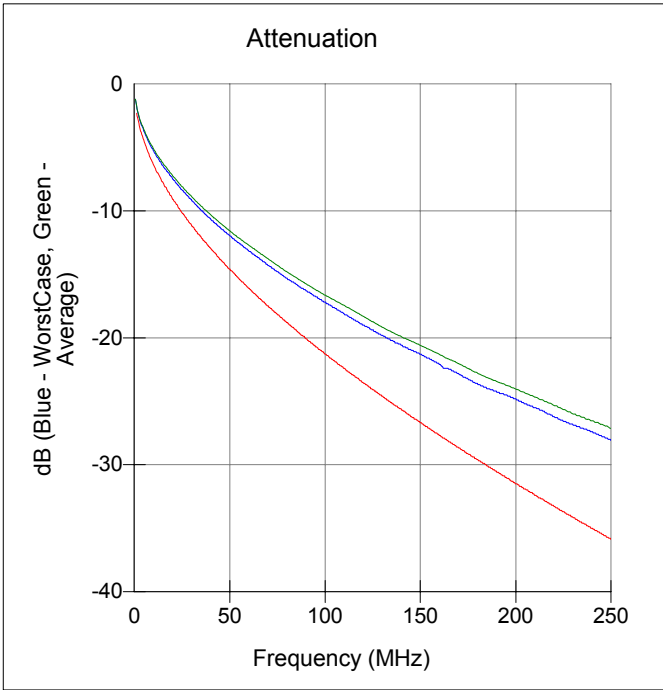
David L. Ayers
Technician
Communications Products

APPENDIX A
Test Results

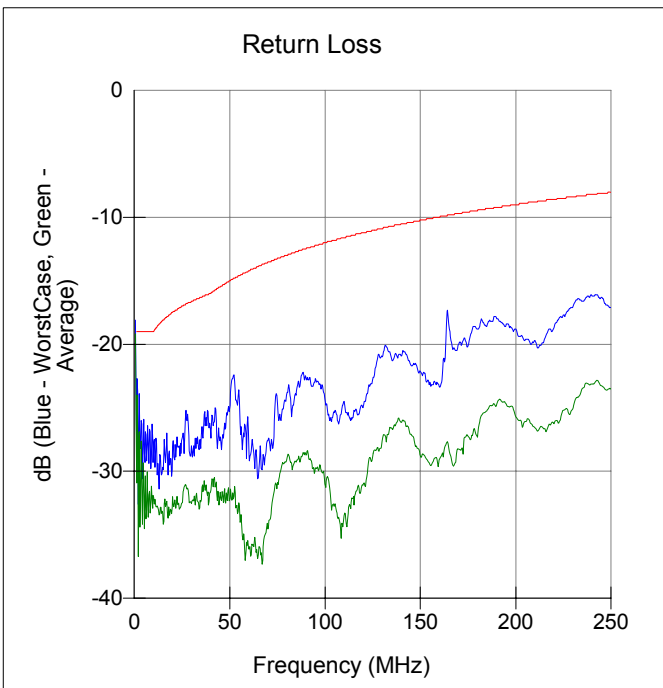
Any data shown above 250 MHz is for indication only.

Client	Coble	Report No	3038514-001S
Specification	TIA 568B2-1 - Cat 6 Chan Swept250 Limits250MHz		
Part No	Test-1-2-3	Length	100
Test Started	2/12/03 4:34:19 PM	Temperature	21 °C
Comments	2 Connector Channel S250 MHz L250 MHz		
Technician	David Ayers	Test Status:	PASS

Summary



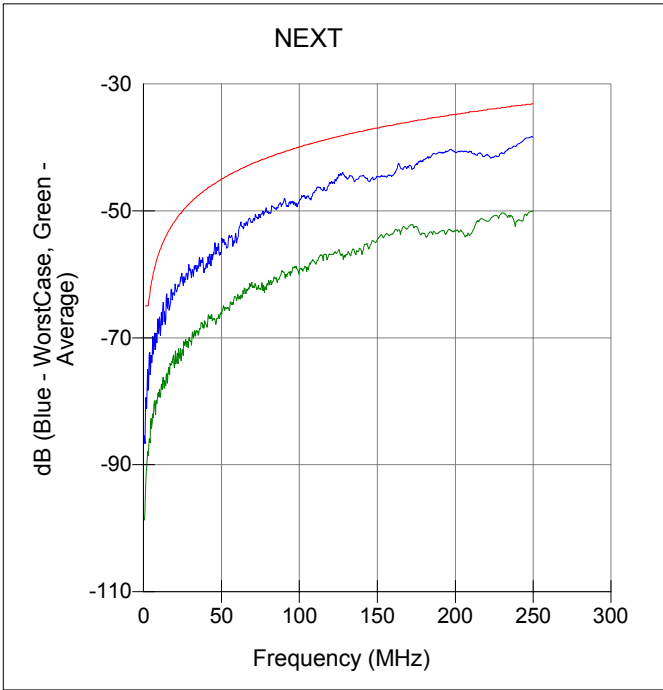
Attenuation			
Freq	Worst Case	Average	Spec
1.	1.7	1.6	2.2
4.	3.3	3.2	4.0
8.	4.7	4.6	5.7
10.	5.2	5.1	6.3
16.	6.7	6.4	8.1
20.	7.5	7.2	9.1
25.	8.4	8.1	10.2
31.25	9.4	9.1	11.4
62.5	13.4	13.0	16.5
100.	17.2	16.6	21.3
200.	24.8	24.0	31.5
250.	28.1	27.1	35.9



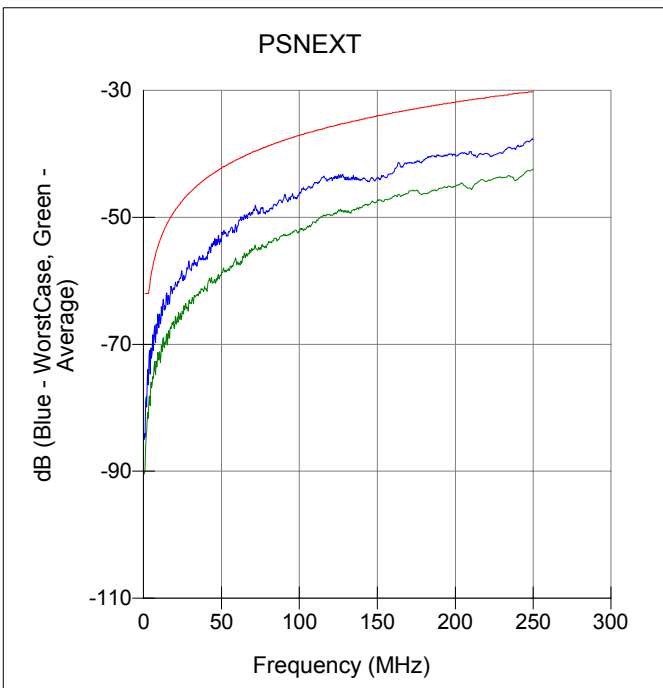
Return Loss			
Freq	Worst Case	Average	Spec
1.	28.3	29.1	19.0
4.	27.6	32.3	19.0
8.	26.7	31.7	19.0
10.	28.6	32.0	19.0
16.	28.5	32.3	18.0
20.	29.4	32.4	17.5
25.	27.4	32.5	17.0
31.25	28.5	32.1	16.5
62.5	28.5	35.9	14.0
100.	24.3	31.0	12.0
200.	18.8	25.7	9.0
250.	17.1	23.5	8.0

Client	Coble	Report No	3038514-001S
Specification	TIA 568B2-1 - Cat 6 Chan Swept250 Limits250MHz		
Part No	Test-1-2-3	Length	100
Test Started	2/12/03 4:34:19 PM	Temperature	21 °C
Comments	2 Connector Channel S250 MHz L250 MHz		
Technician	David Ayers	Test Status:	PASS

Summary



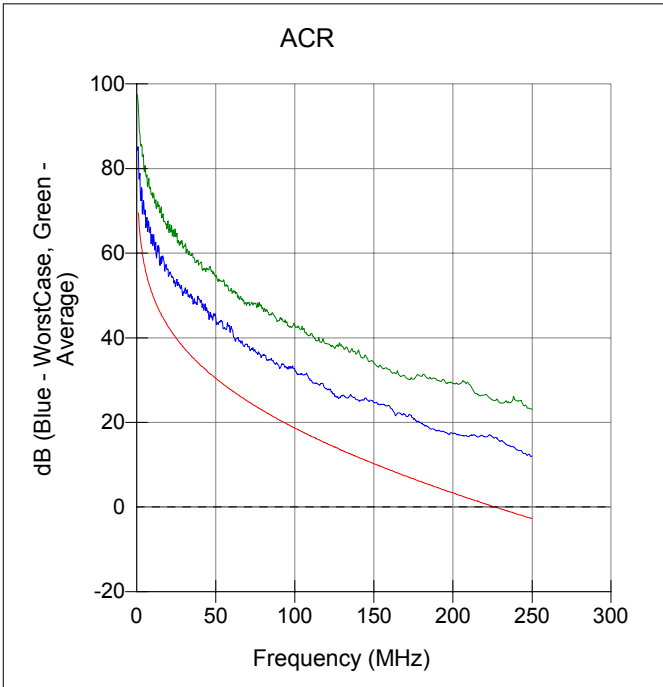
NEXT			
Freq	Worst Case	Average	Spec
1.	87.3	97.0	65.0
4.	73.4	86.1	63.1
8.	69.3	80.1	58.2
10.	69.0	78.8	56.6
16.	64.0	74.9	53.2
20.	62.4	73.7	51.6
25.	60.9	72.0	50.0
31.25	59.4	69.7	48.4
62.5	51.7	63.4	43.4
100.	48.5	59.5	39.9
200.	40.7	53.1	34.8
250.	38.3	50.1	33.1



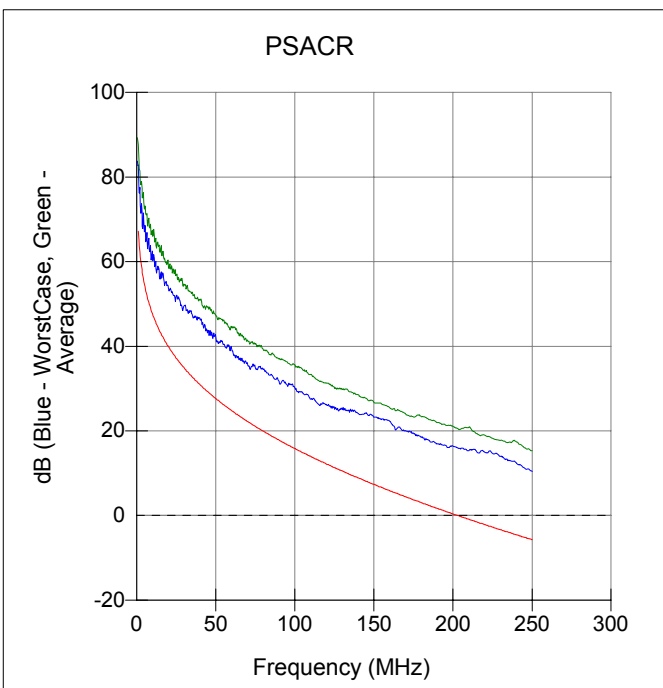
PSNEXT			
Freq	Worst Case	Average	Spec
1.	84.5	89.6	62.0
4.	71.7	78.6	60.6
8.	67.3	72.9	55.6
10.	66.4	71.9	54.0
16.	62.4	68.0	50.6
20.	61.0	66.8	48.9
25.	59.6	64.9	47.3
31.25	57.4	62.8	45.7
62.5	49.9	57.0	40.6
100.	46.3	52.2	37.1
200.	40.1	45.1	31.8
250.	37.7	42.4	30.2

Client	Coble	Report No	3038514-001S
Specification	TIA 568B2-1 - Cat 6 Chan Swept250 Limits250MHz		
Part No	Test-1-2-3	Length	100
Test Started	2/12/03 4:34:19 PM	Temperature	21 °C
Comments	2 Connector Channel S250 MHz L250 MHz		
Technician	David Ayers	Test Status:	PASS

Summary



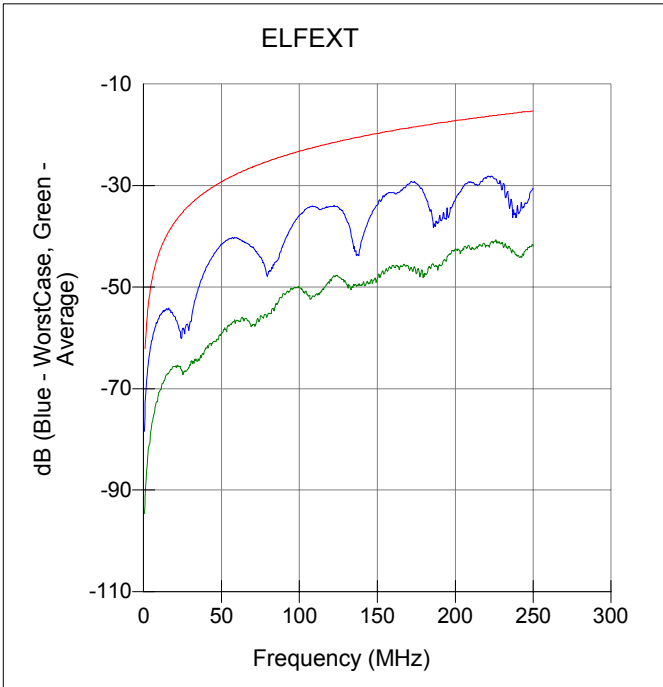
ACR			
Freq	Worst Case	Average	Spec
1.	85.7	95.3	70.4
4.	70.3	82.9	59.0
8.	64.9	75.6	52.5
10.	64.1	73.8	50.3
16.	57.8	68.5	45.2
20.	55.5	66.6	42.6
25.	53.1	64.0	39.9
31.25	50.6	60.7	37.0
62.5	39.1	50.5	26.9
100.	32.5	43.0	18.7
200.	17.3	29.2	3.3
250.	12.0	23.2	-2.8



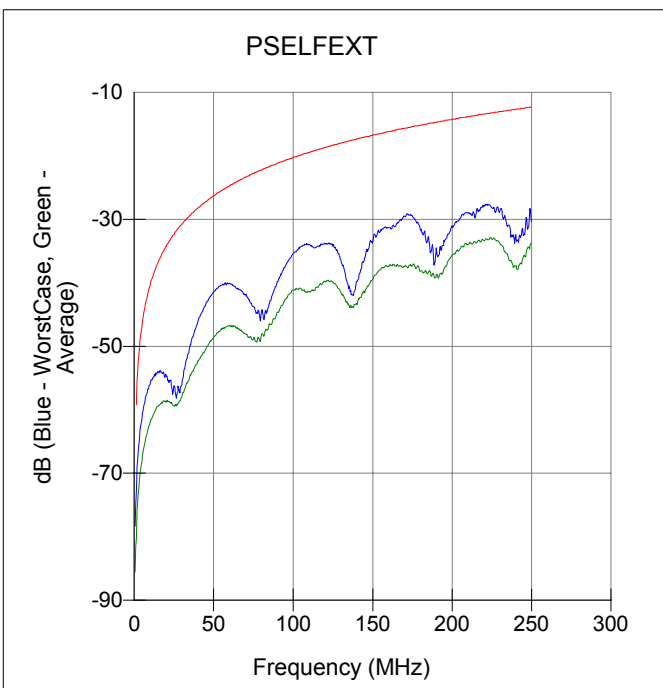
PSACR			
Freq	Worst Case	Average	Spec
1.	82.9	87.9	68.0
4.	68.6	75.4	56.5
8.	62.9	68.3	50.0
10.	61.4	66.8	47.7
16.	56.2	61.5	42.6
20.	54.0	59.6	40.0
25.	51.8	56.8	37.2
31.25	48.6	53.7	34.3
62.5	37.3	44.0	24.1
100.	30.2	35.6	15.8
200.	16.4	21.1	0.4
250.	10.4	15.3	-5.7

Client	Coble	Report No	3038514-001S
Specification	TIA 568B2-1 - Cat 6 Chan Swept250 Limits250MHz		
Part No	Test-1-2-3	Length	100
Test Started	2/12/03 4:34:19 PM	Temperature	21 °C
Comments	2 Connector Channel S250 MHz L250 MHz		
Technician	David Ayers	Test Status:	PASS

Summary



ELFEXT			
Freq	Worst Case	Average	Spec
1.	74.0	92.0	63.0
4.	62.7	80.6	51.2
8.	57.5	72.9	45.2
10.	56.1	70.7	43.3
16.	54.2	67.0	39.2
20.	55.8	65.6	37.2
25.	58.2	66.9	35.3
31.25	55.3	64.8	33.3
62.5	40.8	56.3	27.3
100.	35.9	50.2	23.3
200.	32.8	42.5	17.2
250.	30.5	42.1	15.3



PSELFEXT			
Freq	Worst Case	Average	Spec
1.	73.7	80.8	60.0
4.	62.5	69.3	48.2
8.	57.3	63.6	42.2
10.	55.9	61.9	40.3
16.	53.9	59.2	36.2
20.	54.6	58.7	34.2
25.	56.3	59.4	32.3
31.25	53.8	57.1	30.3
62.5	40.5	46.8	24.3
100.	35.4	41.1	20.3
200.	31.3	35.6	14.2
250.	30.4	33.7	12.3