



REPORT INTERTEK / ETL SEMKO

3933 US ROUTE 11, CORTLAND, NEW YORK 13045
Phone Number: 1-800-345-3851 Fax Number: 607-758-3648

PROJECT NO.: 3120311-311

DATE: April 24, 2007

REPORT NO.: 3120311CRT-001

RENDERED TO:

HellermannTyton Corporation
P.O. Box 245017
7930 N. Faulkner Road
Milwaukee, WI 53224-9517

TEST:

Performance testing of the cabling configurations as defined in and to the requirements of TIA/EIA-TSB-155, Additional Guidelines for 4 Pair 100 Ω Category 6 Cabling for 10GBASE-T Applications.

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

ANSI/TIA/EIA-568-B.2-1, Addendum 1: Transmission Performance Specifications for 4 Pair, 100 Ω Category 6 Cabling, dated June 2002

TIA/EIA-TSB-155, Additional Guidelines for 4-pair 100 Ω Category 6 Cabling for 10GBASE-T Applications, dated October 31, 2006

AUTHORIZATION:

The project was authorized by, Mr. Ilan Shakked representing the client HellermannTyton Corporation, Purchase Order No. 19027.

SAMPLE DESCRIPTION:

The client supplied a 55 meter RapidNet F/UTP Cat 6 Assembly identified as part number RNSC6CMP180 and Category 6 F/UTP patch cords. The samples were received on April 16, 2007 in good condition.

DATE OF TEST:

April 24, 2007

Page 1 of 4

An independent organization testing for safety, performance, and certification.

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

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 No.</u>	<u>Calibration Date</u>
Hewlett Packard Automatic Cable Test System	HP46152A	3903U01003	E536	03/07/2007

PROCEDURE:**Measurements**Attenuation (Insertion Loss)

The Attenuation of all four-conductor pairs was measured in accordance with ASTM D4566-98, Paragraph 26. Losses due to reflection, radiation, etc. are assumed to be part of the attenuation.

Near End Cross Talk (NEXT)

NEXT measurements were made between the six combinations of the four conductor pairs in accordance with ASTM D4566-98, Paragraph 24.

Far End Cross Talk (FEXT)

FEXT was measured on twelve permutations of four conductor pairs in accordance with ASTM D4566-98, Paragraph 25.

Return Loss

Return Loss was measured on all four-conductor pairs in accordance with ASTM D4566-98, Paragraph 45.3.

CalculationsPower Sum NEXT

NEXT Power Sum was determined by the method outlined in ASTM D4566-98, Paragraph 24.6 and TIA/EIA-TSB-155, Paragraph 6.1.2.

Equal Level FEXT (ELFEXT)

ELFEXT was computed by using the Attenuation and Far-End Crosstalk for each pair of the links and the method outlined in ASTM D4566-98, Paragraph 25 and TIA/EIA-TSB-155, Paragraph 8.3.

Power Sum ELFEXT

Power Sum ELFEXT was determined by the method outlined in ASTM D4566-98, Paragraph 25 and TIA/EIA-TSB-155, Paragraph 8.3.2.1.

Power Sum ACR

The Power Sum ACR was determined using the same procedure as ACR except that the Power Sum Near-End Cross Talk was used in the computation in lieu of the NEXT.

Power Sum Alien NEXT loss

The Power Sum Alien NEXT loss was determined by the method outlined in TIA/EIA-TSB-155, Paragraph 6.1.2.3.

Propagation Delay

Propagation Delay was computed in accordance with TIA/EIA-TSB-155, Paragraph 8.5.

Delay Skew

Propagation Delay Skew is determined in accordance with TIA/EIA-TSB-155, Paragraph 8.5.2.

REQUIREMENTS:**Measurements**Insertion Loss

Insertion Loss was tested to the requirements of the ANSI/TIA/EIA-568-B.2-1, Paragraph 8.1.1 using equation 13 and 14.

Near End Cross Talk (NEXT)

NEXT was tested to the requirements of TIA/EIA-TSB-155, Paragraph 8.2.

Return Loss

Return Loss was tested to the requirements of the TIA/EIA-TSB-155, Paragraph 8.4.

CalculationsPower Sum NEXT

PS NEXT was tested to the requirements of the ANSI/TIA/EIA-B.2-1, Paragraph 6.2.2.1 using equation in table 10.

Equal Level FEXT (ELFEXT)

ELFEXT was tested to the requirements of the ANSI/TIA/EIA-B.2-1, Paragraph 8.3.1 using equation 16.

Power Sum ELFEXT

PS ELFEXT was tested to the requirements of the ANSI/TIA/EIA-B.2-1, Paragraph 6.3.1 using equation 18.

Propagation Delay

Propagation Delay was tested to the requirements of the TIA/EIA-TSB-155, Paragraph 8.5.1.

Delay Skew

Propagation Delay Skew was tested to the requirements of the TIA/EIA-TSB-155, Paragraph 8.5.2.

RESULTS:

See Appendix A for Test Results.

CONCLUSION:

The channel configurations, 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
Lab Supervisor
Global Cabling Products Testing



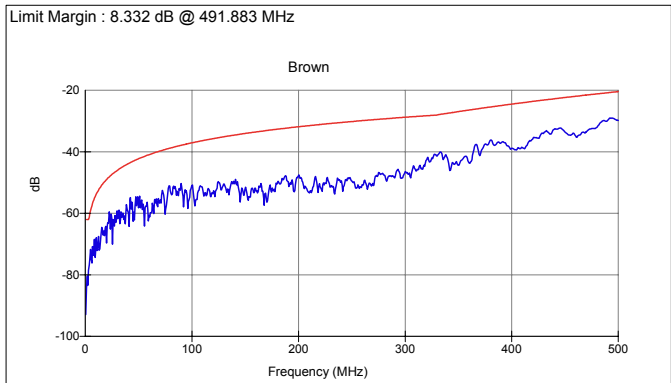
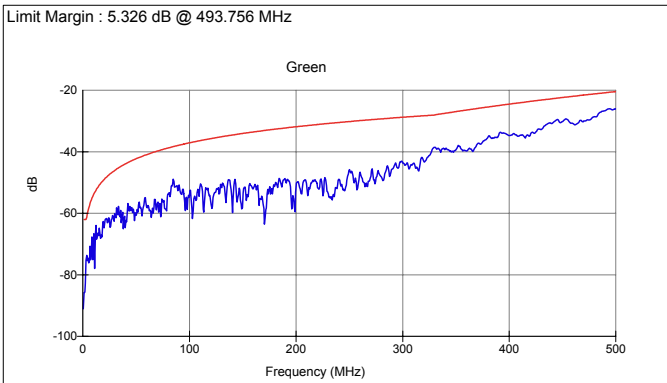
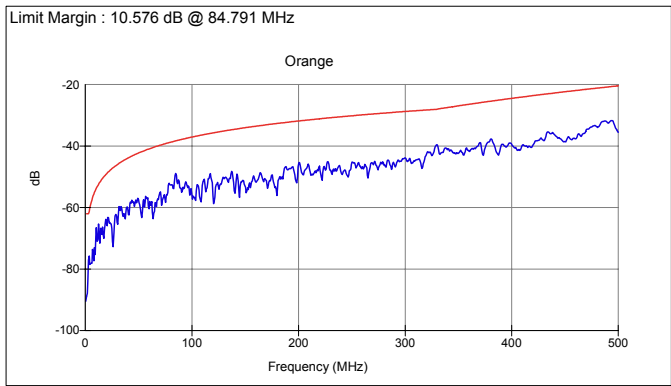
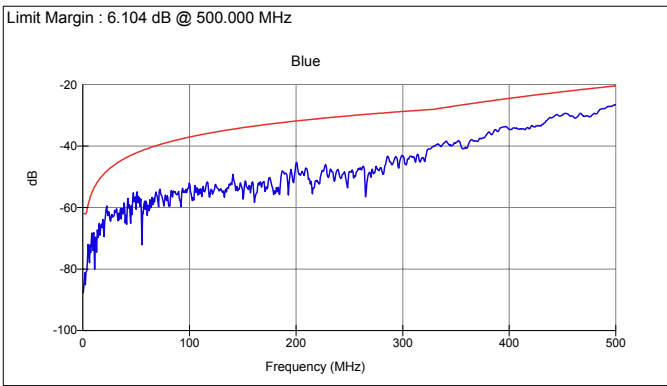
Dean Beverley
Technician
Global Cabling Products Testing



ETL SEMKO

Power Sum NEXT (Near End)

Client	HellermannTyton	Project No	3120311CRT-001
Specification	TSB-155 Augmented Cat 6 55m 500Mhz (Channel)		
Part No		Length(m)	55
Test Started	4/24/2007 9:35:07 AM	Temperature	20 °C
Description	2 Connector Channel Testing Center Channel		
Operator Name	Dean Beverley	Test Status	Complies

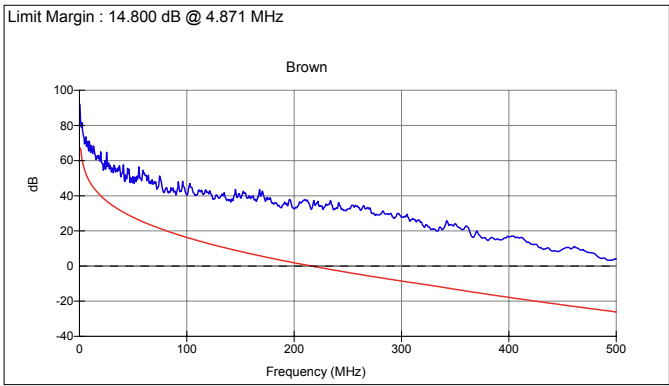
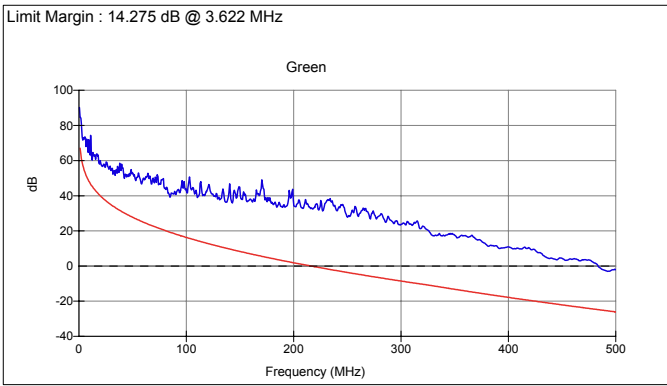
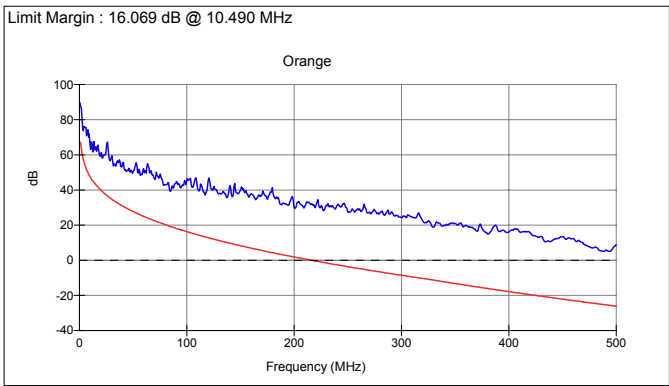
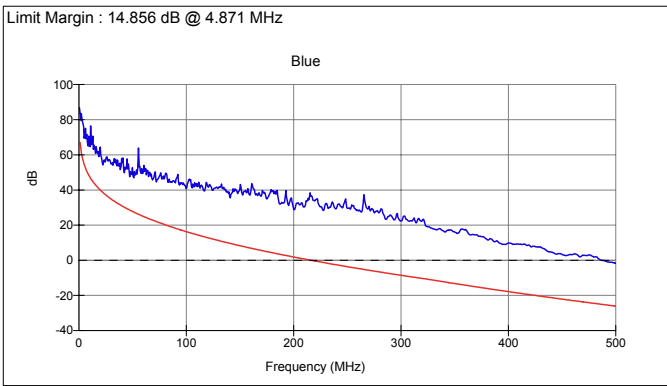




ETL SEMKO

Power Sum ACR (Near End)

Client	HellermannTyton	Project No	3120311CRT-001
Specification	TSB-155 Augmented Cat 6 55m 500Mhz (Channel)		
Part No		Length(m)	55
Test Started	4/24/2007 9:35:07 AM	Temperature	20 °C
Description	2 Connector Channel Testing Center Channel		
Operator Name	Dean Beverley	Test Status	Complies

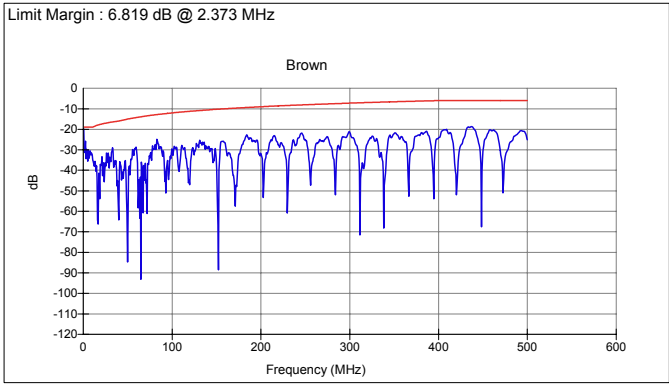
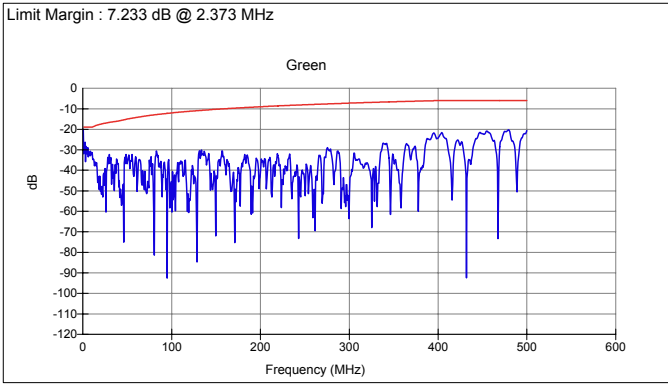
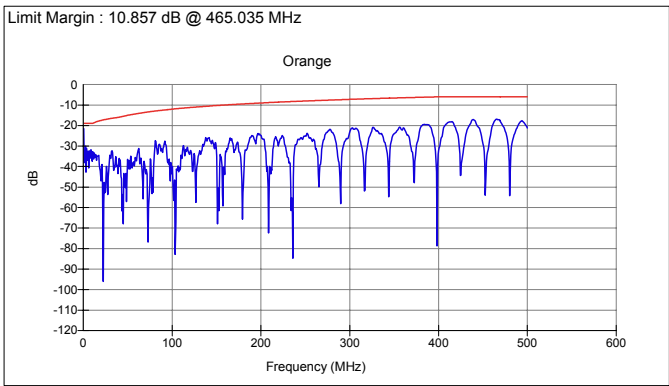
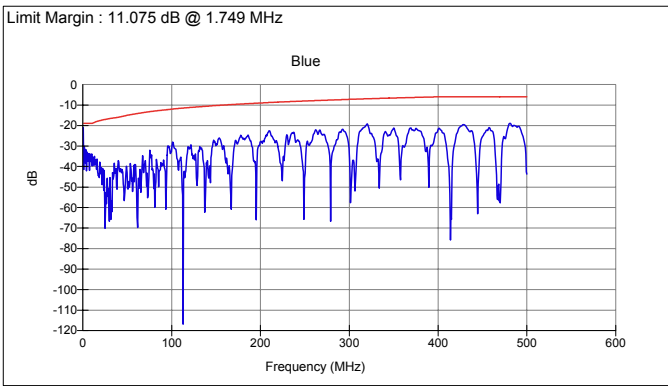




ETL SEMKO

Return Loss (Near End)

Client	HellermannTyton	Project No	3120311CRT-001
Specification	TSB-155 Augmented Cat 6 55m 500Mhz (Channel)		
Part No		Length(m)	55
Test Started	4/24/2007 9:35:07 AM	Temperature	20 °C
Description	2 Connector Channel Testing Center Channel		
Operator Name	Dean Beverley	Test Status	Complies

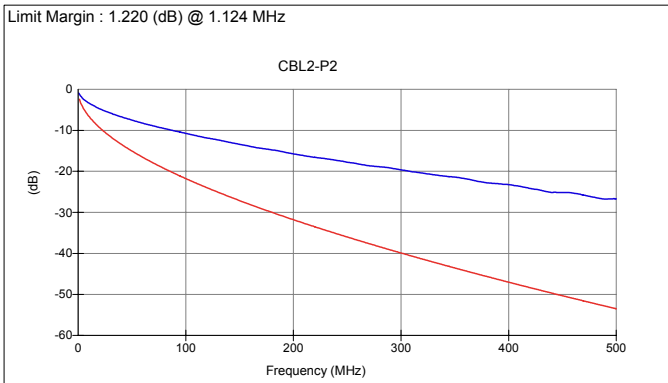
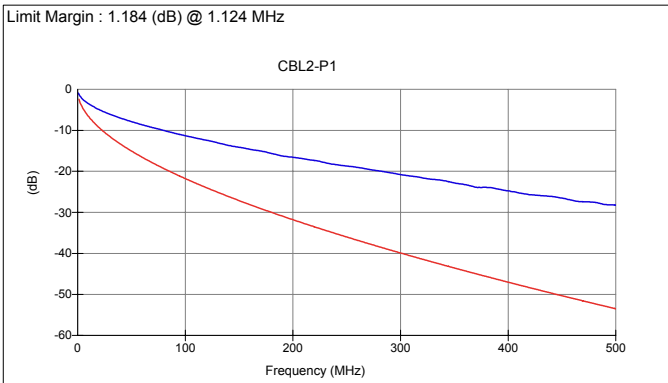
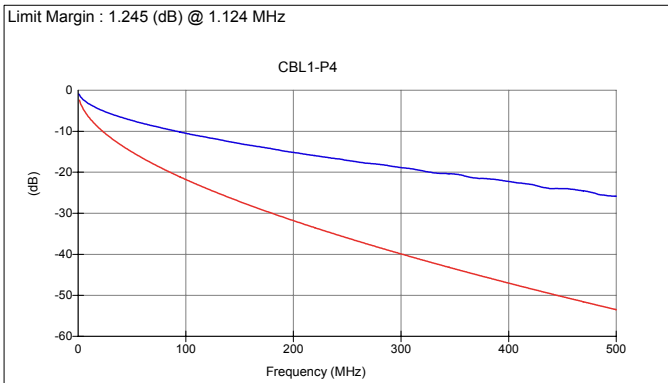
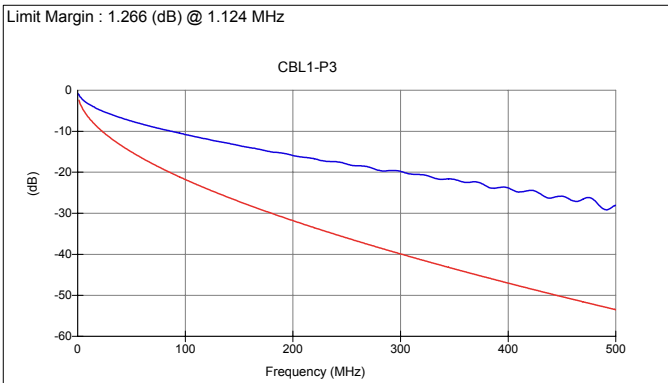
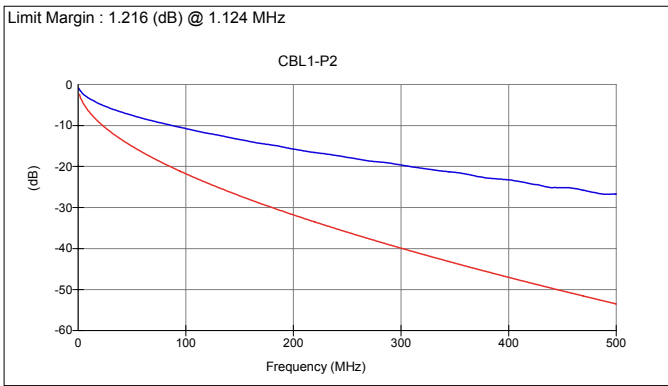
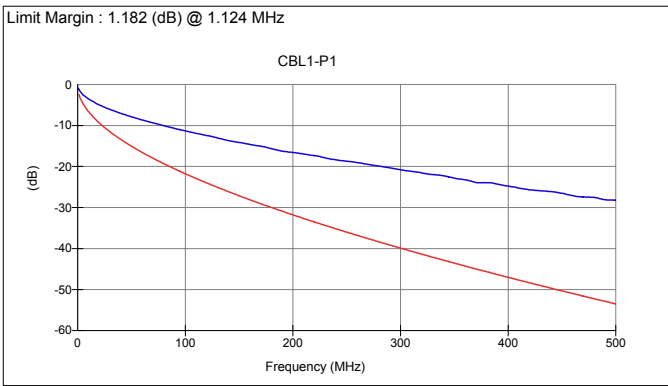




ETL SEMKO

Attenuation (Near End)

Client	HellermannTyton	Project No	3120311CRT-001
Specification	TSB-155 Augmented Cat 6 55m 500Mhz (Channel)		
Part No		Length(m)	55
Test Started	4/24/2007 11:55:12 AM	Temperature	20 °C
Description	2 Connector Channel Testing Center Channel PSAACRF& PSANEXT Reversed		
Operator Name	Dean Beverley	Test Status	Complies

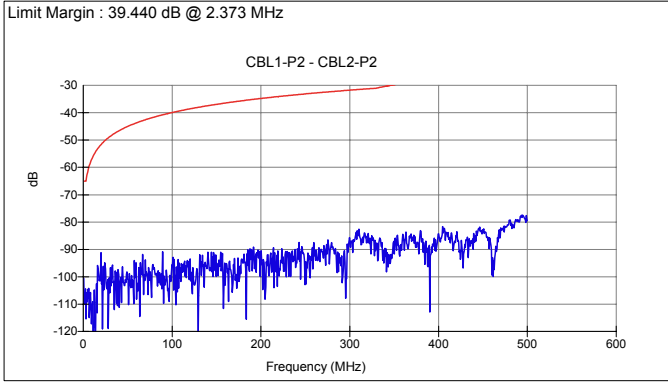
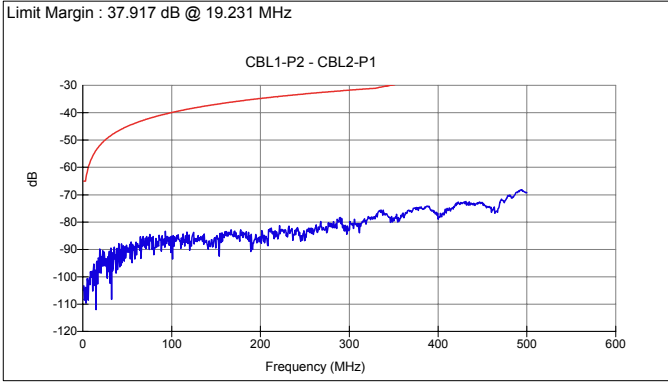
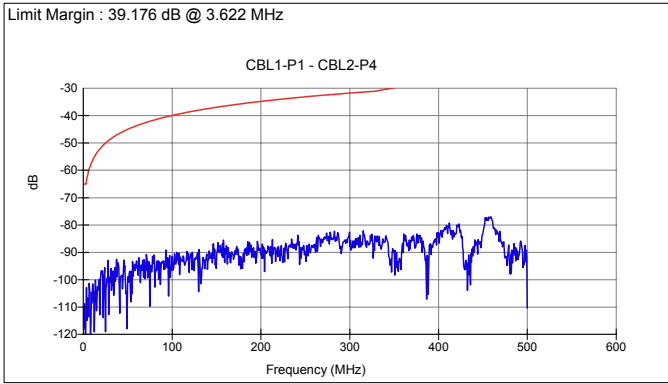
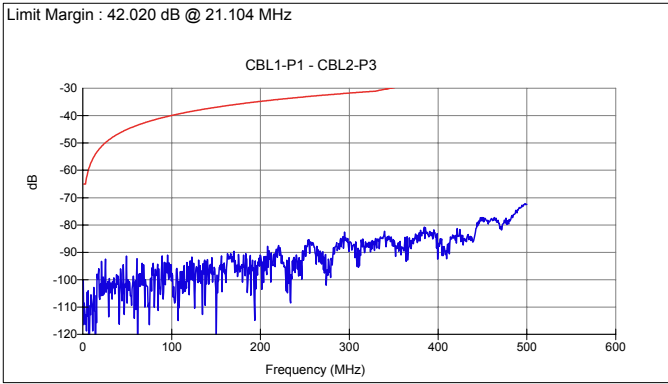
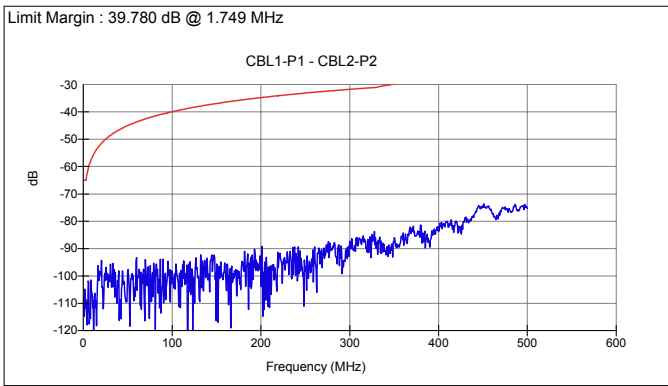
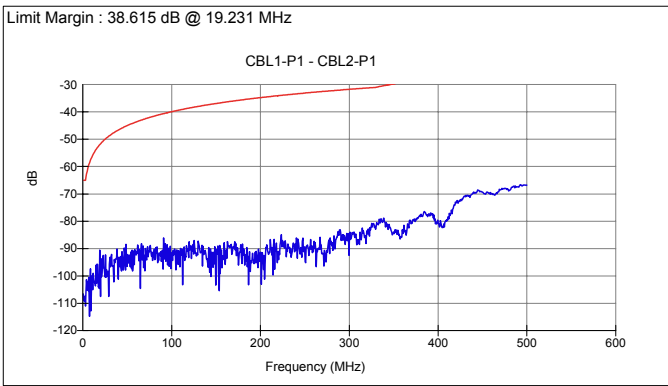




ETL SEMKO

ANEXT Near

Client	HellermannTyton	Project No	3120311CRT-001
Specification	TSB-155 Augmented Cat 6 55m 500Mhz (Channel)		
Part No		Length(m)	55
Test Started	4/24/2007 11:56:00 AM	Temperature	20 °C
Description	2 Connector Channel Testing Center Channel PSANEXT		
Operator Name	Dean Beverley	Test Status	Complies

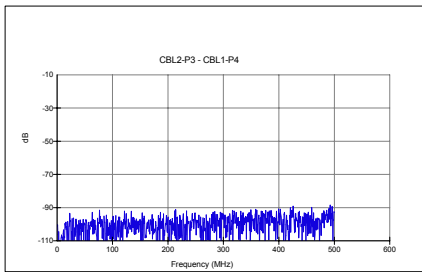
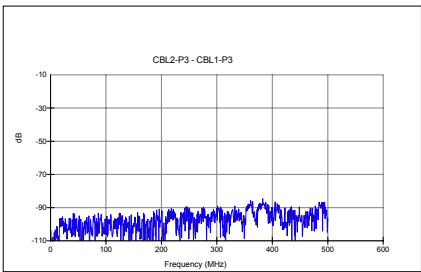
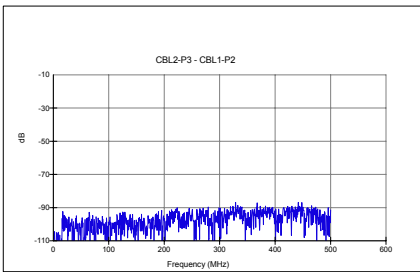
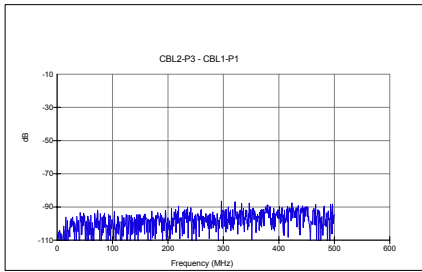
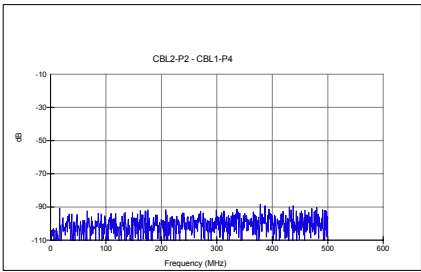
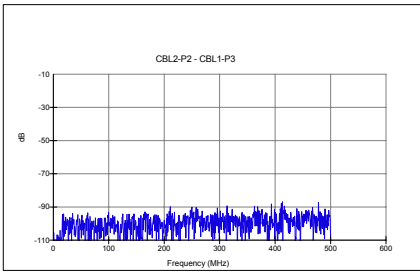
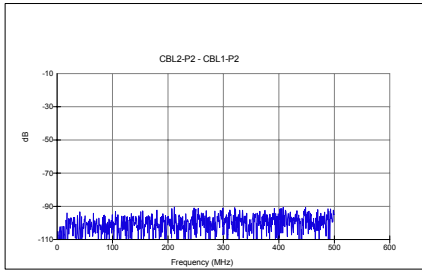
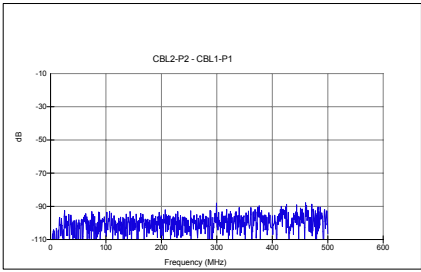
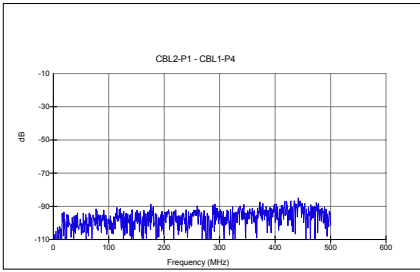
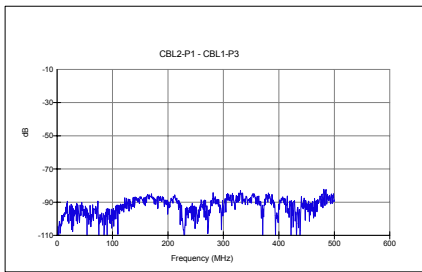
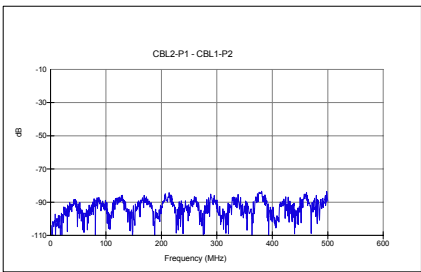
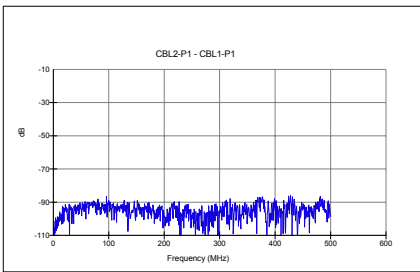




ETL SEMKO

AFEXT Near

Client	HellermannTyton	Project No	3120311CRT-001
Specification	TSB-155 Augmented Cat 6 55m 500Mhz (Channel)		
Part No		Length(m)	55
Test Started	4/24/2007 11:55:12 AM	Temperature	20 °C
Description	2 Connector Channel Testing Center Channel PSAACRF& PSANEXT Reversed		
Operator Name	Dean Beverley	Test Status	Complies





ETL SEMKO

PSAACRF

Client	HellermannTyton	Project No	3120311CRT-001
Specification	TSB-155 Augmented Cat 6 55m 500Mhz (Channel)		
Part No		Length(m)	55
Test Started	4/24/2007 11:55:12 AM	Temperature	20 °C
Description	2 Connector Channel Testing Center Channel PSAACRF& PSANEXT Reversed		
Operator Name	Dean Beverley	Test Status	Complies

