



# REPORT INTERTEK / ETL SEMKO

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

ORDER NO.: 3076675-311

DATE: January 17, 2006

REPORT NO.: 3076675-002

## RENDERED TO:

Berk-Tek, A Nexans Company  
132 White Oak Road  
New Holland, PA 17557

## CONCLUSION:

The cabling solution configured with components manufactured by Berk-Tek and Ortronics was tested to the requirements of TIA-568-B.2-10 for informational purposes only. Worst Case and Average margins are presented in the table below

	Augment Category 6	
	Margin (dB) 1-500 MHz	
	Worst Case	Average
Insertion Loss	18.7	18.1
Return Loss	24.0	29.0
NEXT	48.1	56.6
PSNEXT	47.4	50.2
ELFEXT	34.4	45.7
PSELFEXT	32.3	36.8
PSANEXT	8.6	5.7
PSAELFEXT	13.9	11.5

**TEST:** Performance Testing of the cabling configurations as defined in and to the requirements of TIA/EIA-568-B.2-10 draft 3.0, Transmission Performance Specifications for 4 Pair 100 Ω Augmented Category 6 Cabling.

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.

**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:**

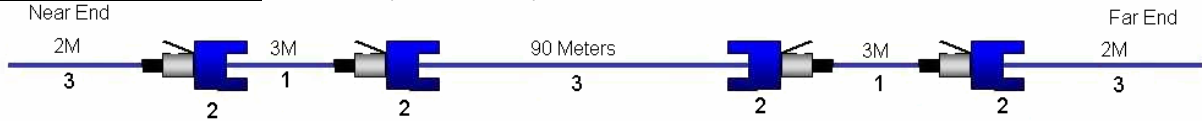
ASTM D4566-98, dated December 10, 1998, Standard Test Methods for Electrical Performance Properties of Insulations and Jackets for Telecommunications Wire and Cable

TIA/EIA-568-B.2-10 draft 3.0, Transmission Performance Specifications for 4 Pair 100  $\Omega$  Augmented Category 6 Cabling dated February 4, 2005

**AUTHORIZATION:** The tests were authorized by, Mr. Scott Steinhauer, representing the client, Berk-Tek, A Nexans Company. The sample was received on 05/04/2005 and was in good condition.

**DATE OF TEST:** May 4, 2005

**SAMPLE DESCRIPTION:** Channel (4 Connector)



Component	Manufacturer	Part Number	Description
1	Ortronics	Clarity 6 FTP	Equipment Cord
2	Ortronics	Clarity 6 FTP	Wall Outlet
3	Berk-Tek	Guard Mark 6 FTP	Horizontal Cable

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

Equipment Used	Model Number	Serial Number	Control Number	Calibration Date
Hewlett Packard Automatic Cable Test System	HP46152A	3903U01003	E356	03/04/05

**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 1601 logarithmic spaced data points, 100 Hz I/F bandwidth and a 5-second sweep time. The swept frequency measurements were performed from 1.0 MHz to 800 MHz.

Reviewed and Approved By:

Stephen R. Comer  
 Laboratory Supervisor  
 Global Cabling Products Testing

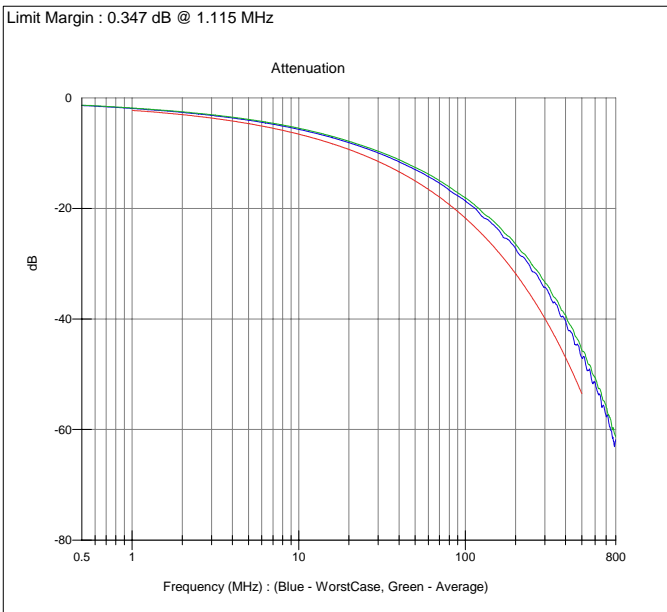
Dean Beverley  
 Technician  
 Global Cabling Products Testing

**APPENDIX A**  
Test Results

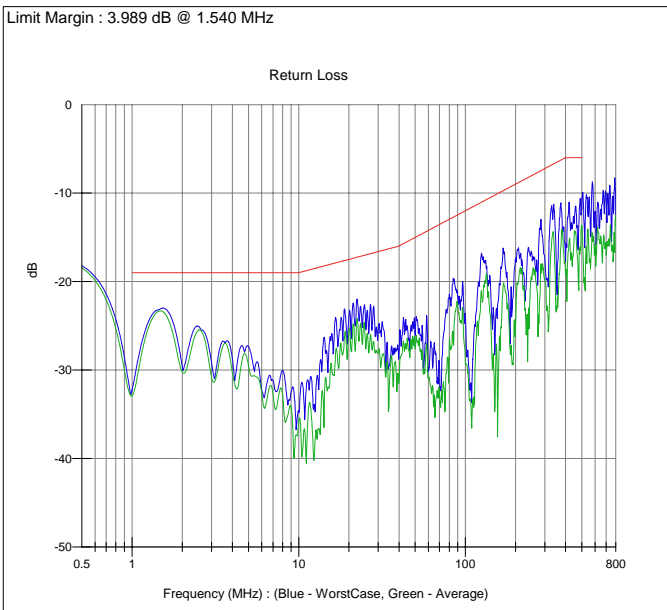


## Summary

<b>Client</b>	Berk-Tek	<b>Report No</b>	3076675-002
<b>Specification</b>	TIA 568B2-10 - Augmented Cat 6 Draft 3_0 500Mhz (Channel)	<b>Length</b>	100
<b>Part No</b>		<b>Temperature</b>	20 °C
<b>Test Started</b>	1/20/2006 1:11:46 PM	<b>Test Status:</b>	Complies
<b>Description</b>	GTS 4 Connector Channel		
<b>Technician</b>	Dean Beverley		



Attenuation			
Freq	Worst Case	Average	Spec
1.	1.9	1.8	2.3
4.	3.6	3.5	4.2
8.	5.1	4.9	5.9
10.	5.7	5.5	6.6
16.	7.2	7.0	8.3
20.	8.1	7.9	9.3
25.	9.1	8.8	10.5
31.25	10.2	9.9	11.8
62.5	14.6	14.1	16.9
100.	18.7	18.1	21.8
250.	31.2	30.1	36.0
500.	47.0	45.6	53.5
800.	61.8	61.3	

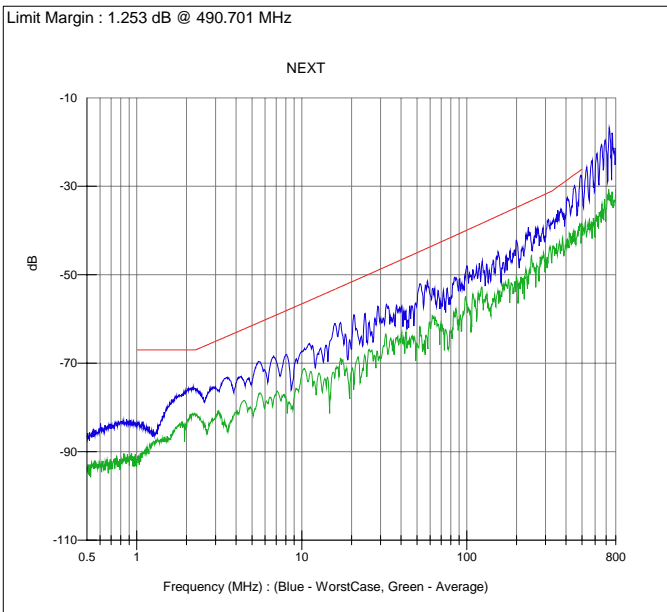


Return Loss			
Freq	Worst Case	Average	Spec
1.	32.3	32.9	19.0
4.	28.7	30.3	19.0
8.	30.1	32.8	19.0
10.	34.6	35.9	19.0
16.	26.9	30.6	18.0
20.	24.0	25.6	17.5
25.	23.2	26.1	17.0
31.25	26.1	29.3	16.5
62.5	27.3	32.5	14.0
100.	24.0	29.0	12.0
250.	16.7	19.7	8.0
500.	11.7	13.6	6.0
800.	12.6	13.7	

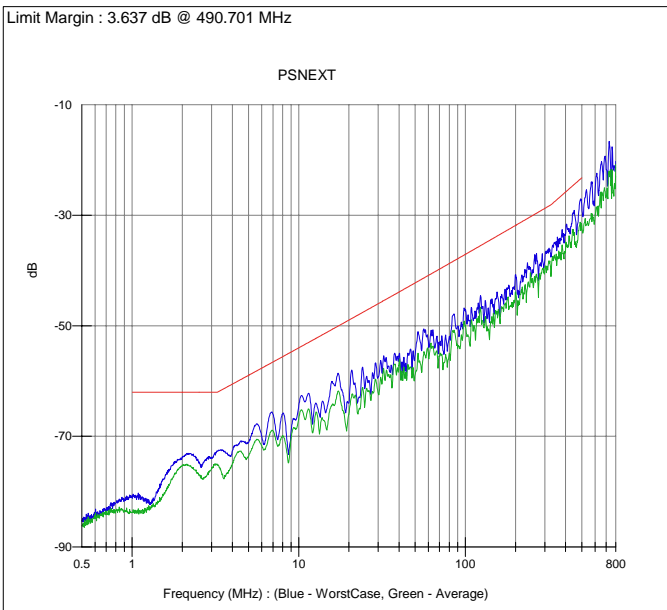


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NEXT			
Freq	Worst Case	Average	Spec
1.	83.8	92.9	67.0
4.	74.5	81.2	63.0
8.	68.1	77.7	58.2
10.	67.3	72.5	56.6
16.	61.2	71.6	53.2
20.	66.9	71.9	51.6
25.	65.2	70.3	50.0
31.25	59.8	66.1	48.4
62.5	53.1	59.9	43.4
100.	48.1	56.6	39.9
250.	44.2	48.0	33.1
500.	29.8	39.1	26.1
800.	21.3	30.5	

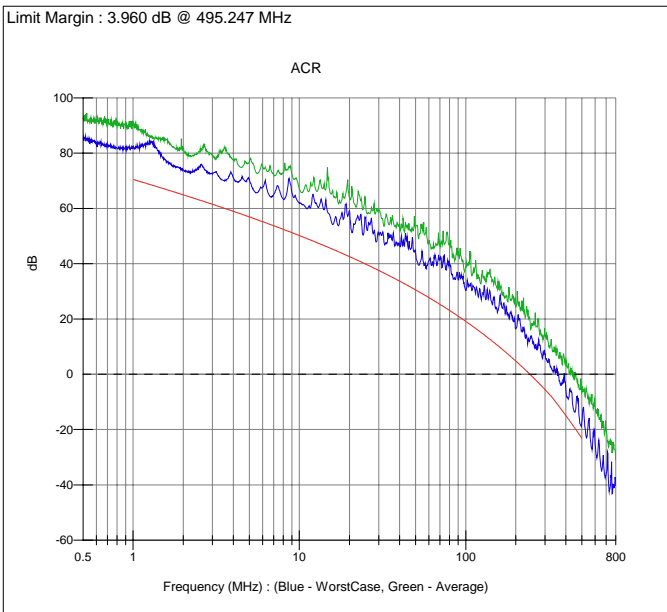


PSNEXT			
Freq	Worst Case	Average	Spec
1.	80.9	83.7	62.0
4.	72.6	74.9	60.5
8.	65.9	69.9	55.6
10.	64.5	66.8	54.0
16.	60.4	64.1	50.6
20.	64.0	66.0	49.0
25.	61.2	64.0	47.3
31.25	56.7	59.7	45.7
62.5	50.9	53.7	40.6
100.	47.4	50.2	37.1
250.	40.8	42.2	30.2
500.	28.3	32.0	23.2
800.	20.3	20.8	

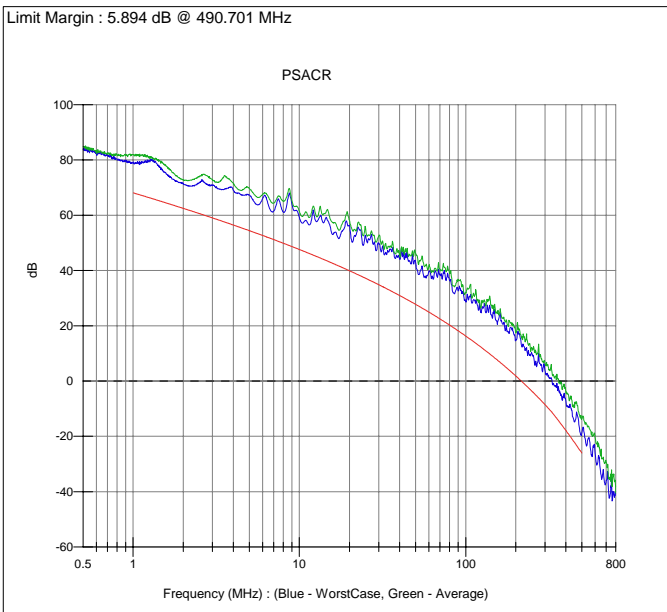


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<b>Description</b>	GTS 4 Connector Channel		
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ACR			
Freq	Worst Case	Average	Spec
1.	82.0	91.1	70.5
4.	71.1	77.8	59.0
8.	63.3	72.9	52.4
10.	62.0	67.0	50.2
16.	54.3	64.6	45.1
20.	59.2	64.1	42.6
25.	56.6	61.6	39.9
31.25	50.2	56.4	37.0
62.5	39.4	46.0	27.1
100.	30.4	38.7	19.2
250.	13.4	18.3	-0.7
500.	-17.2	-6.1	-23.2
800.	-40.4	-31.1	

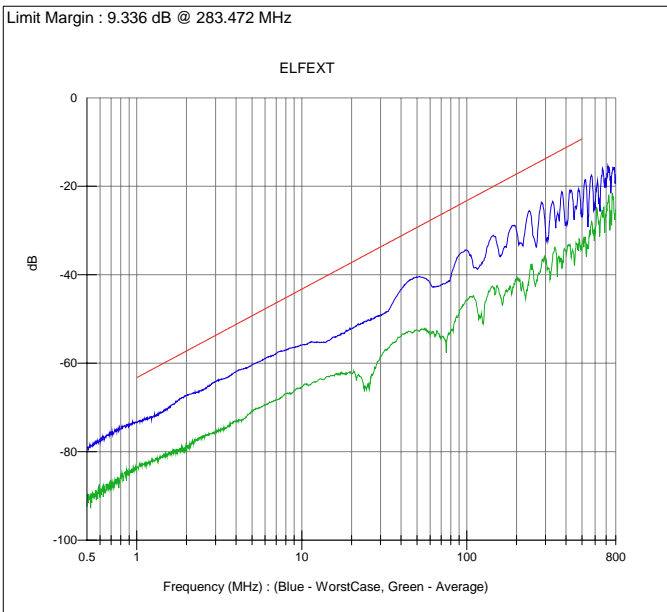


PSACR			
Freq	Worst Case	Average	Spec
1.	79.0	81.9	68.1
4.	69.0	71.4	56.5
8.	61.1	65.0	49.9
10.	59.1	61.3	47.6
16.	53.3	57.1	42.5
20.	56.3	58.1	39.9
25.	52.6	55.2	37.2
31.25	47.1	49.8	34.3
62.5	37.2	39.6	24.3
100.	29.0	32.1	16.3
250.	10.0	12.1	-3.6
500.	-18.7	-13.6	-26.1
800.	-41.4	-40.5	

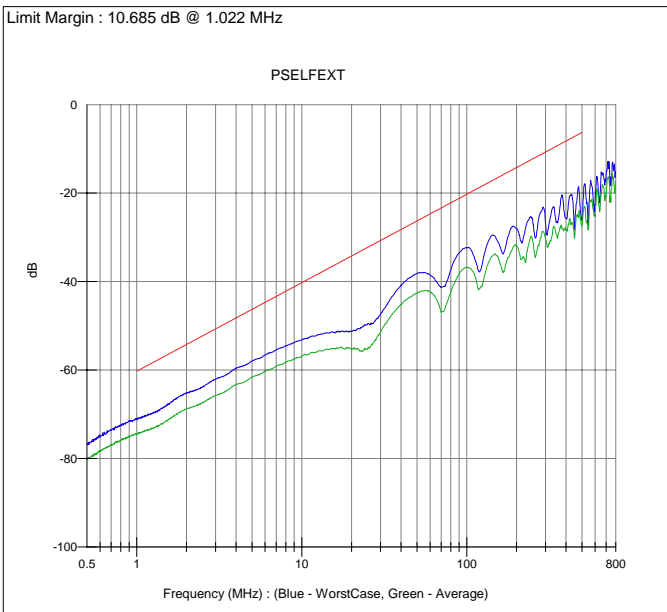


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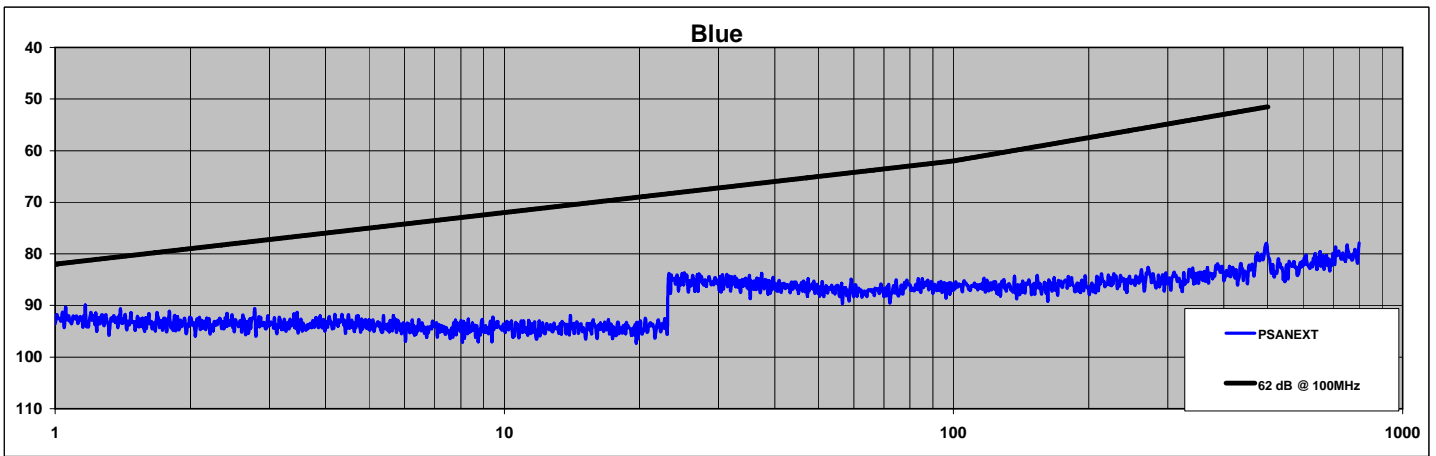
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ELFEXT			
Freq	Worst Case	Average	Spec
1.	73.3	83.4	63.3
4.	61.8	73.0	51.2
8.	57.0	66.9	45.2
10.	55.9	65.4	43.3
16.	54.1	62.5	39.2
20.	52.2	62.3	37.2
25.	50.3	65.1	35.3
31.25	48.8	57.6	33.4
62.5	42.8	53.0	27.3
100.	34.4	45.7	23.3
250.	29.5	38.4	15.3
500.	26.9	33.1	9.3
800.	17.3	25.2	

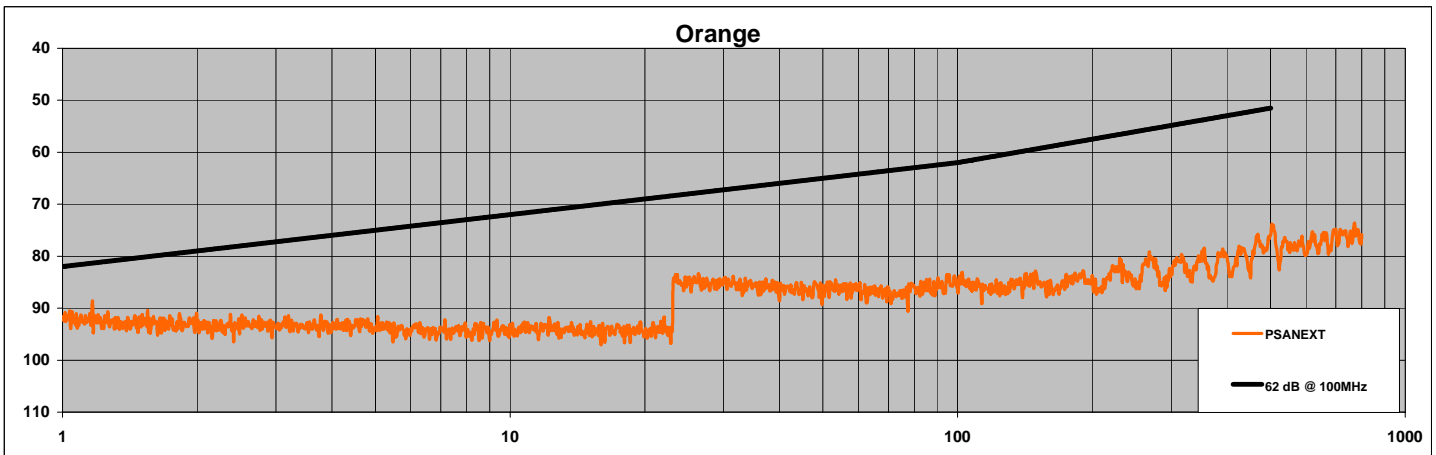


PSELFEXT			
Freq	Worst Case	Average	Spec
1.	71.1	74.5	60.3
4.	59.6	63.2	48.2
8.	54.6	58.2	42.2
10.	53.2	56.9	40.3
16.	51.5	55.1	36.2
20.	51.3	55.4	34.2
25.	49.6	55.2	32.3
31.25	46.3	50.2	30.4
62.5	39.0	42.8	24.3
100.	32.3	36.8	20.3
250.	25.9	30.5	12.3
500.	25.8	27.1	6.3
800.	16.3	17.9	



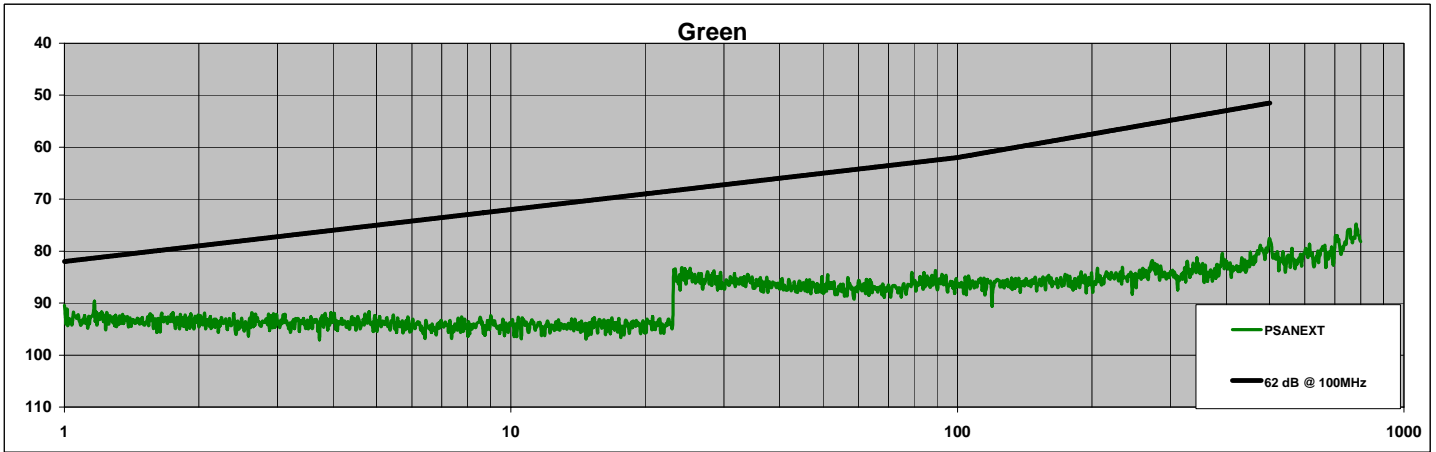
Voltage Sum  
23.92

Margin  
8.57



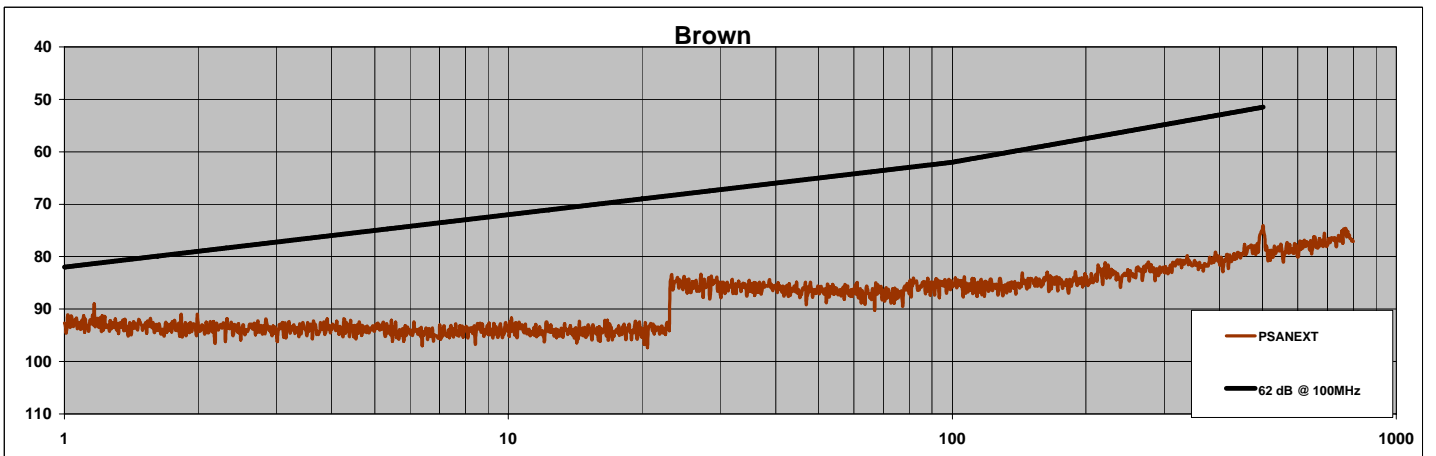
Voltage Sum  
22.31

Margin  
7.37



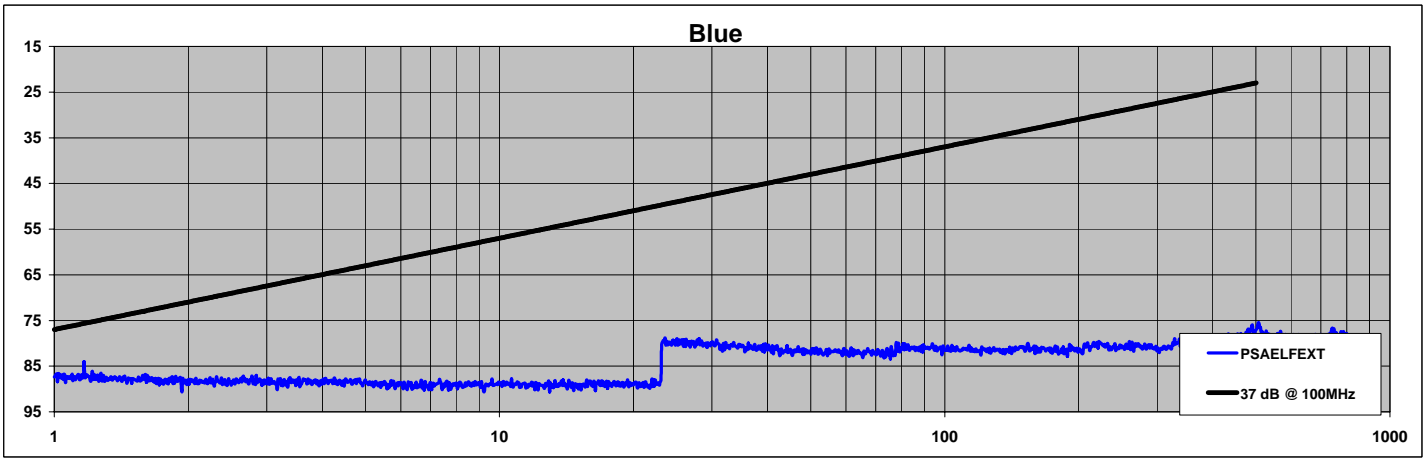
Voltage Sum  
23.54

Margin  
8.37



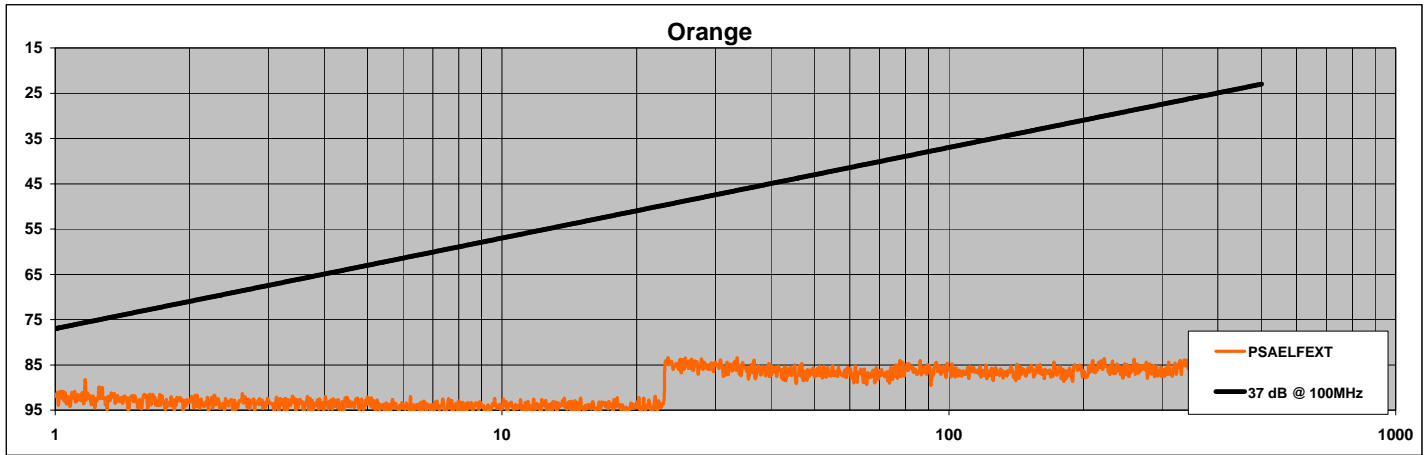
Voltage Sum  
22.43

Margin  
7.71



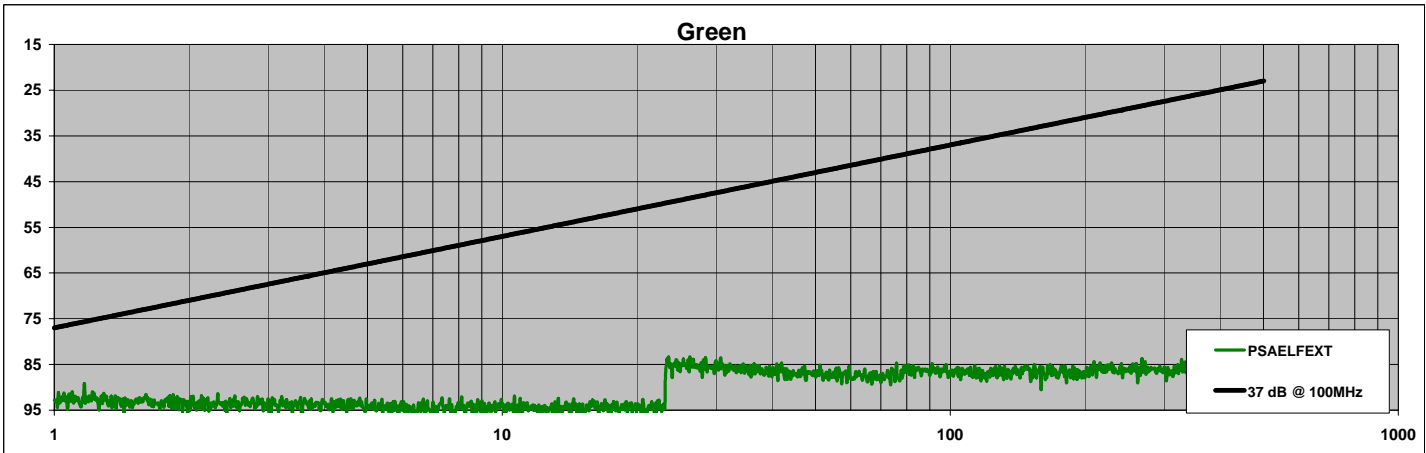
Voltage Sum  
19.24312

Margin  
8.31



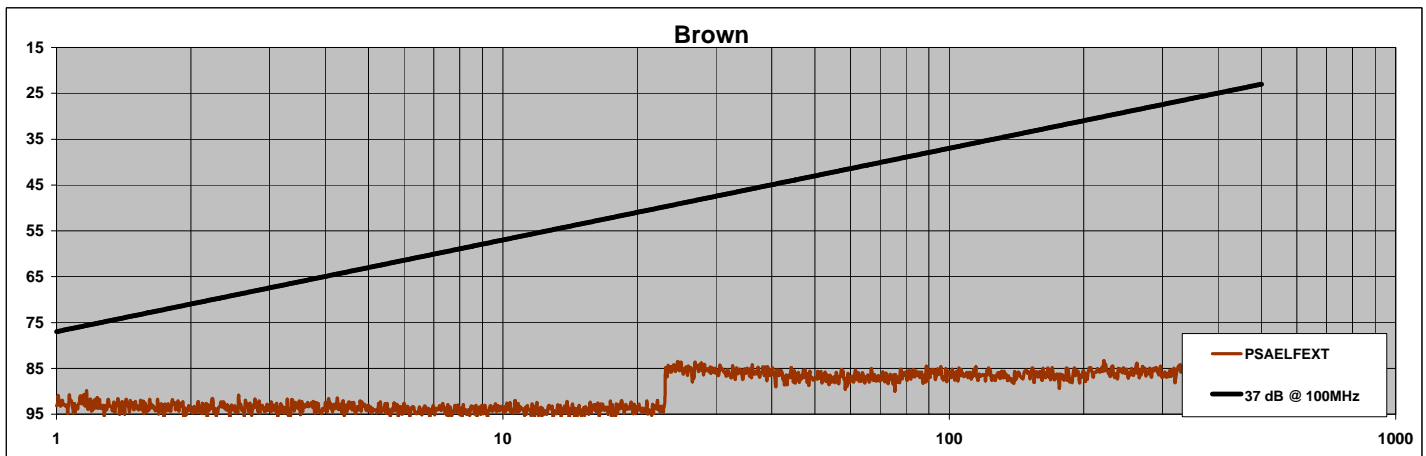
Voltage Sum  
24.296669

Margin  
12.62



Voltage Sum  
24.531968

Margin  
13.57



Voltage Sum  
24.368643

Margin  
13.98

