

Project Number: G104239938

Date Issued: 6/13/2022

ETL Verified Certificate of Conformance number: 103400479CRT-002

Test Report Number: 104239938CRT-009a



**Applicant:**

Berk-Tek LLC  
132 White Oak Rd  
New Holland, PA 17557

**Manufacturer:**

Berk-Tek LLC  
132 White Oak Rd  
New Holland, PA 17557

**Applicant Contact:** Mr. Michael Boland

**Mfg. Contact:** Mr. Michael Boland

Dear Mr. Boland

Intertek is pleased to provide this letter report covering the testing of your 4-pair, 23 AWG, U/UTP, CMP, horizontal (solid) cable covered by ETL Verified certificate of conformance number 103400479CRT-002. The sample was randomly selected by an Intertek inspector from your manufacturing facility, Berk-Tek LLC, on 2/1/2022 for Quarter 1 2022 follow-up testing.

The testing was performed at Intertek located in Cortland, NY from 2/8/2022 through 2/8/2022, to the ANSI/TIA-568.2-D; ISO/IEC 11801-1 and LM-1000 standard(s) for category 6 and passed the applicable requirements.

We have appreciated this opportunity to be of service to you. If there are any questions regarding this letter or any other services offered by Intertek, Please do not hesitate to contact us.

Sincerely,

A handwritten signature in black ink that reads "Antoine Pelletier".

Antoine Pelletier  
Project Engineer  
Global Cabling Products Testing  
e-mail: antoine.pelletier@intertek.com  
Phone: (607) 758-6718

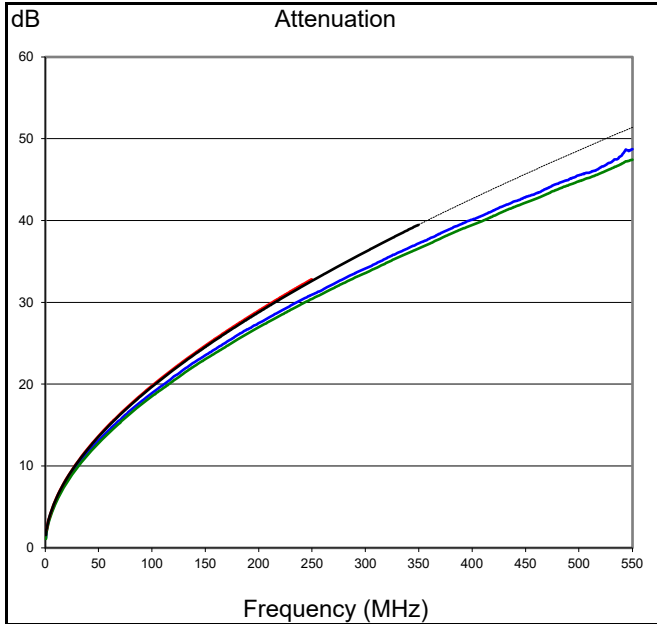
A handwritten signature in black ink that reads "Craig L. Williams".

Craig L. Williams  
Technician  
Global Cabling Products Testing  
Phone: (607) 758-6321

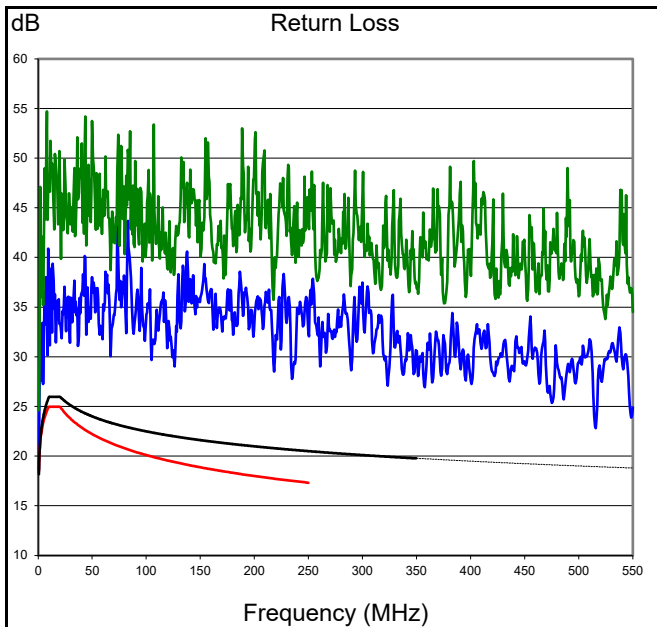
Summary

**Client** Berk-Tek LLC  
**Specifications** Berk-Tek LM-1000  
 ANSI/TIA-568.2-D, Category 6  
 ISO/IEC 11801-1, Category 6  
**Part Number** LM-1000 CMP UTP  
**Description** **Berk-Tek LM-1000 CMP**  
 4X23 UTP-CMP-Solid

**Test Started** 2/8/2022 16:17  
**Technician** Craig Williams  
**Report No.** 104239938CRT-009a  
**Length (m)** 100  
**Temperature** 22 °C  
**Test Status** **PASS**



Attenuation					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	1.9	1.8	2.0	2.0	N/A
4	3.5	3.4	3.8	3.8	3.8
8	5.1	4.9	5.3	5.3	5.4
10	5.7	5.5	5.9	6.0	6.0
16	7.3	7.1	7.5	7.6	7.6
20	8.1	7.8	8.4	8.5	8.5
25	9.2	8.9	9.4	9.5	9.6
31.25	10.3	10.0	10.6	10.7	10.7
62.5	14.6	14.3	15.3	15.4	15.5
100	18.9	18.5	19.7	19.8	19.9
250	30.9	30.4	32.6	32.8	33.0
350	37.2	36.6	39.5		
550	48.7	47.4			
Limit Margin (dB) :			0.19	0.21	0.27
Frequency (MHz) :			3.25	3.25	4.62



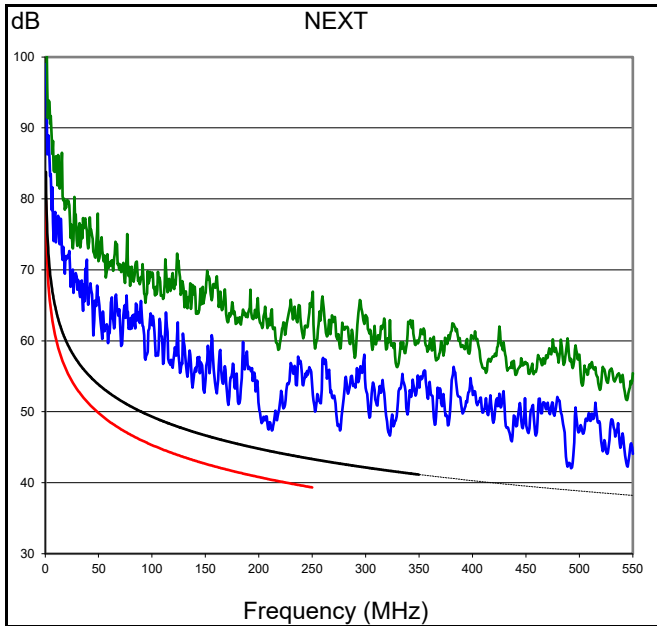
Return Loss					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	27.9	30.1	20.0	20.0	N/A
4	33.4	42.1	23.6	23.0	23.0
8	35.2	54.7	25.4	24.5	24.5
10	37.9	48.4	26.0	25.0	25.0
16	31.5	49.3	26.0	25.0	25.0
20	33.3	50.7	26.0	25.0	25.0
25	34.1	47.3	25.5	24.3	24.3
31.25	33.5	45.1	25.0	23.6	23.6
62.5	35.5	44.3	23.5	21.5	21.5
100	34.3	41.3	22.5	20.1	20.1
250	32.5	43.8	20.5	17.3	17.3
350	30.7	37.5	19.8		
550	24.9	34.5			
Limit Margin (dB) :			3.28	3.95	3.95
Frequency (MHz) :			4.62	4.62	4.62

Legend : Blue - Worst Case; Green - Average; Red - TIA and ISO/IEC Specifications; Black - LM-1000 Specification

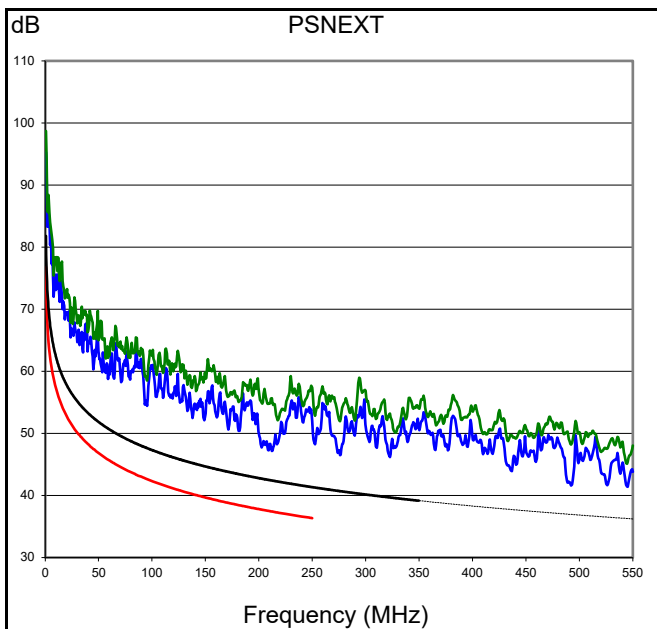
Summary

**Client** Berk-Tek LLC  
**Specifications** Berk-Tek LM-1000  
 ANSI/TIA-568.2-D, Category 6  
 ISO/IEC 11801-1, Category 6  
**Part Number** LM-1000 CMP UTP  
**Description** **Berk-Tek LM-1000 CMP**  
 4X23 UTP-CMP-Solid

**Test Started** 2/8/2022 16:17  
**Technician** Craig Williams  
**Report No.** 104239938CRT-009a  
**Length (m)** 100  
**Temperature** 22 °C  
**Test Status** **PASS**



NEXT					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	94.4	102.9	79.3	74.3	N/A
4	85.8	93.7	70.3	65.3	66.3
8	74.1	84.0	65.8	60.8	61.8
10	73.9	86.0	64.3	59.3	60.3
16	71.4	80.4	61.3	56.2	57.2
20	71.5	78.7	59.8	54.8	55.8
25	68.9	74.1	58.3	53.3	54.3
31.25	68.3	75.8	56.9	51.9	52.9
62.5	65.4	71.2	52.4	47.4	48.4
100	62.2	69.6	49.3	44.3	45.3
250	53.7	66.1	43.3	38.3	39.3
350	54.2	59.8	41.2		
550	44.1	55.4			
Limit Margin (dB) :			2.92	7.93	6.93
Frequency (MHz) :			212.06	212.06	212.06



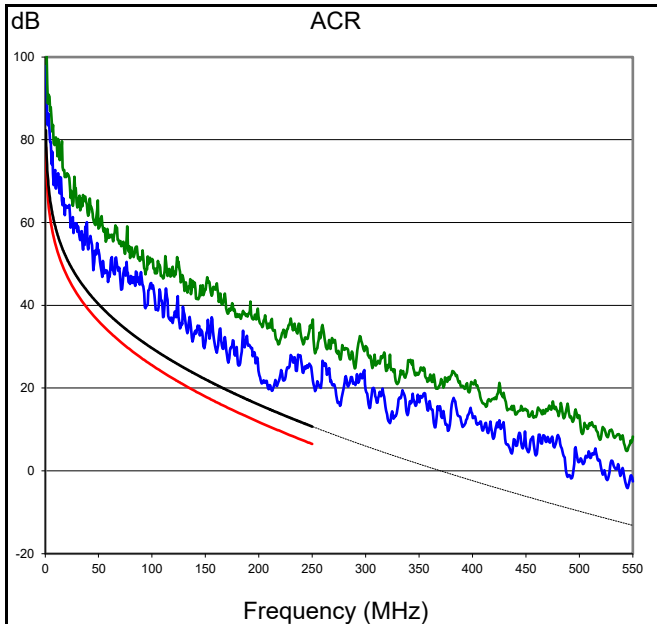
PSNEXT					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	92.3	94.3	77.3	72.3	N/A
4	84.1	85.4	68.3	63.3	63.3
8	72.0	75.4	63.8	58.8	58.8
10	73.1	78.0	62.3	57.3	57.3
16	70.0	74.5	59.3	54.2	54.2
20	69.2	72.4	57.8	52.8	52.8
25	66.0	68.5	56.3	51.3	51.3
31.25	66.7	69.0	54.9	49.9	49.9
62.5	62.5	64.9	50.4	45.4	45.4
100	60.7	62.5	47.3	42.3	42.3
250	52.0	57.4	41.3	36.3	36.3
350	51.0	54.1	39.2		
550	43.8	48.1			
Limit Margin (dB) :			4.75	9.77	9.77
Frequency (MHz) :			212.06	212.06	212.06

Legend : Blue - Worst Case; Green - Average; Red - TIA and ISO/IEC Specifications; Black - LM-1000 Specification

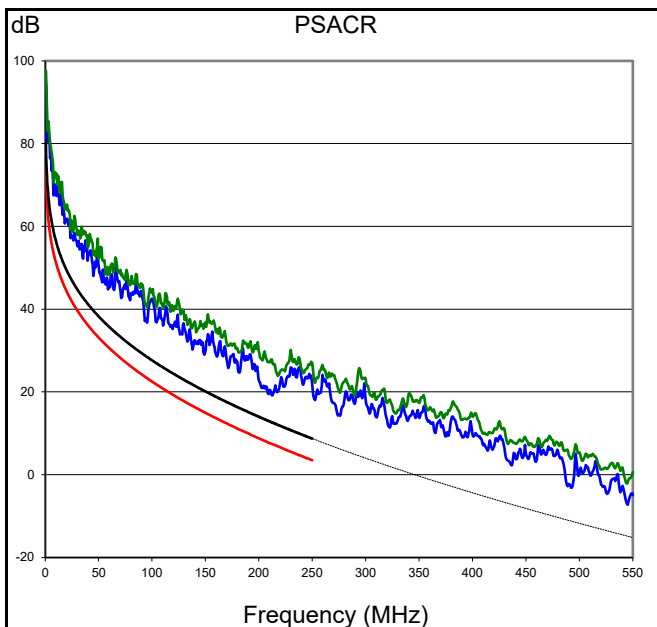
Summary

**Client** Berk-Tek LLC  
**Specifications** Berk-Tek LM-1000  
 ANSI/TIA-568.2-D, Category 6  
 ISO/IEC 11801-1, Category 6  
**Part Number** LM-1000 CMP UTP  
**Description** **Berk-Tek LM-1000 CMP**  
 4X23 UTP-CMP-Solid

**Test Started** 2/8/2022 16:17  
**Technician** Craig Williams  
**Report No.** 104239938CRT-009a  
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**Test Status** **PASS**



ACR					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	92.5	101.2	77.3	72.3	N/A
4	82.3	90.4	66.5	61.5	62.4
8	69.0	79.1	60.5	55.4	56.4
10	68.2	80.5	58.4	53.3	54.3
16	64.2	73.4	53.7	48.7	49.6
20	64.0	71.0	51.4	46.3	47.3
25	59.9	65.2	48.9	43.8	44.8
31.25	58.2	65.8	46.3	41.2	42.1
62.5	51.0	57.0	37.1	32.0	32.9
100	44.0	51.2	29.6	24.5	25.4
250	23.1	35.8	10.7	5.5	6.3
350	17.4	23.3			
550	-2.6	8.3			
Limit Margin (dB) :			4.69	9.91	9.07
Frequency (MHz) :			212.06	212.06	212.06



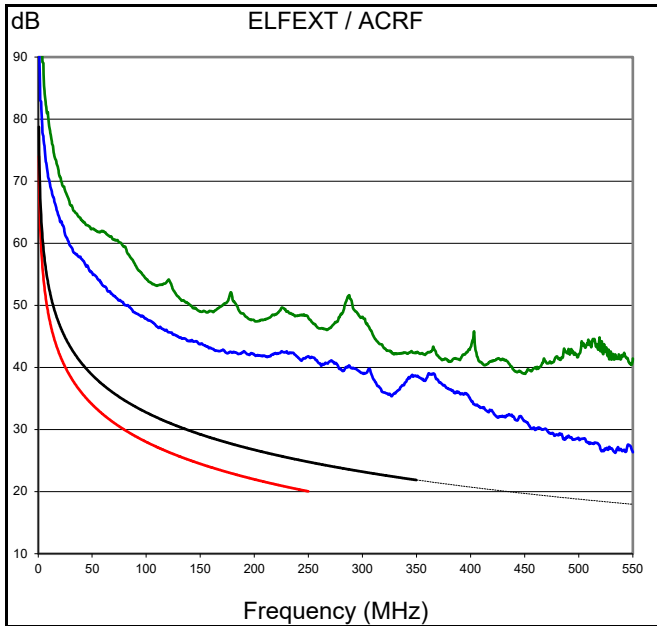
PSACR					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	90.4	92.5	75.3	70.3	N/A
4	80.8	82.0	64.5	59.5	59.4
8	67.5	70.5	58.5	53.4	53.4
10	67.4	72.5	56.4	51.3	51.3
16	62.8	67.4	51.7	46.7	46.6
20	61.7	64.6	49.4	44.3	44.3
25	57.4	59.6	46.9	41.8	41.8
31.25	56.5	59.0	44.3	39.2	39.1
62.5	48.3	50.6	35.1	30.0	29.9
100	42.5	43.9	27.6	22.5	22.4
250	22.0	27.0	8.7	3.5	3.3
350	14.2	17.5			
550	-4.9	0.6			
Limit Margin (dB) :			6.52	11.73	11.89
Frequency (MHz) :			209.31	209.31	209.31

Legend : Blue - Worst Case; Green - Average; Red - TIA and ISO/IEC Specifications; Black - LM-1000 Specification

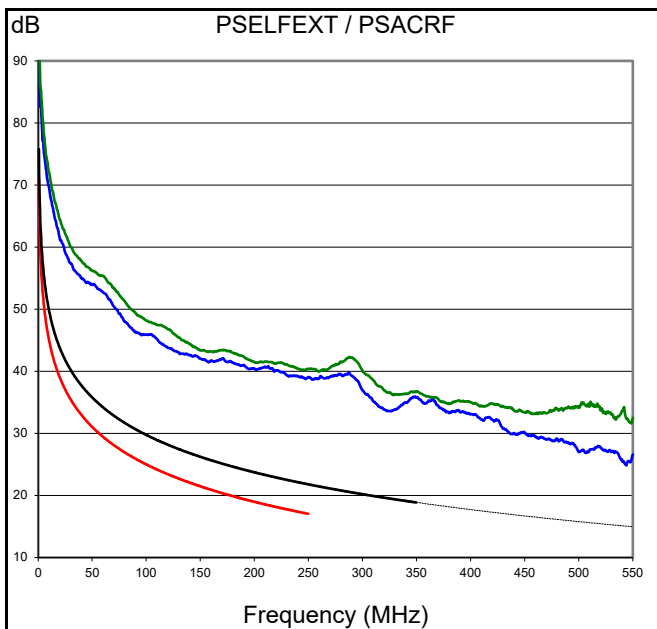
Summary

**Client** Berk-Tek LLC  
**Specifications** Berk-Tek LM-1000  
 ANSI/TIA-568.2-D, Category 6  
 ISO/IEC 11801-1, Category 6  
**Part Number** LM-1000 CMP UTP  
**Description** **Berk-Tek LM-1000 CMP**  
 4X23 UTP-CMP-Solid

**Test Started** 2/8/2022 16:17  
**Technician** Craig Williams  
**Report No.** 104239938CRT-009a  
**Length (m)** 100  
**Temperature** 22 °C  
**Test Status** **PASS**



ELFEXT / ACRF					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	88.6	98.4	72.8	67.8	N/A
4	77.9	89.2	60.7	55.8	56.0
8	72.2	81.0	54.7	49.7	49.9
10	70.2	78.9	52.8	47.8	48.0
16	66.0	73.4	48.7	43.7	43.9
20	63.9	70.7	46.7	41.8	42.0
25	61.3	68.3	44.8	39.8	40.0
31.25	59.2	65.9	42.9	37.9	38.1
62.5	53.1	61.8	36.8	31.9	32.1
100	47.8	54.2	32.8	27.8	28.0
250	41.8	48.0	24.8	19.8	20.0
350	38.6	42.3	21.9		
550	26.4	41.4			
Limit Margin (dB) :			12.89	19.21	19.01
Frequency (MHz) :			326.77	163.98	163.98



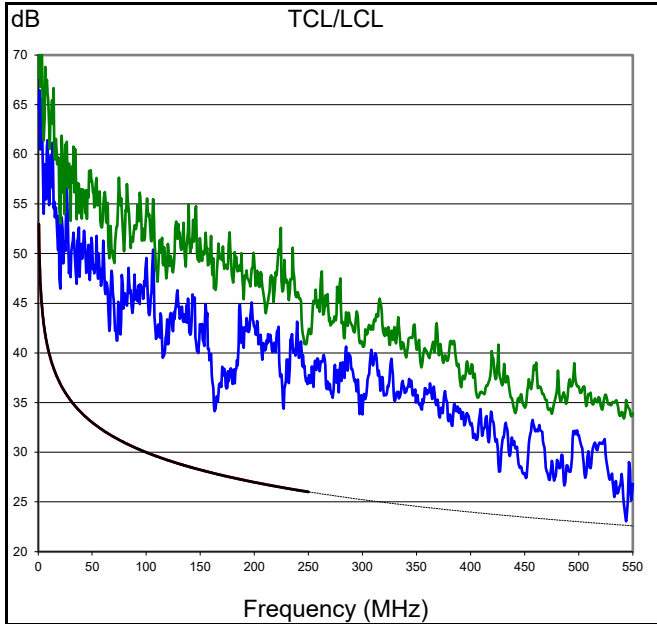
PSELFEXT / PSACRF					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	88.2	90.8	69.8	64.8	N/A
4	77.2	81.1	57.7	52.8	53.0
8	71.3	74.1	51.7	46.7	46.9
10	69.5	72.0	49.8	44.8	45.0
16	64.2	67.0	45.7	40.7	40.9
20	61.6	64.5	43.7	38.8	39.0
25	59.0	62.1	41.8	36.8	37.0
31.25	57.1	59.7	39.9	34.9	35.1
62.5	52.5	55.1	33.8	28.9	29.1
100	45.9	48.2	29.8	24.8	25.0
250	39.1	40.4	21.8	16.8	17.0
350	35.8	36.7	18.9		
550	26.6	32.5			
Limit Margin (dB) :			14.04	20.34	20.14
Frequency (MHz) :			322.64	131.01	131.01

Legend : Blue - Worst Case; Green - Average; Red - TIA and ISO/IEC Specifications; Black - LM-1000 Specification

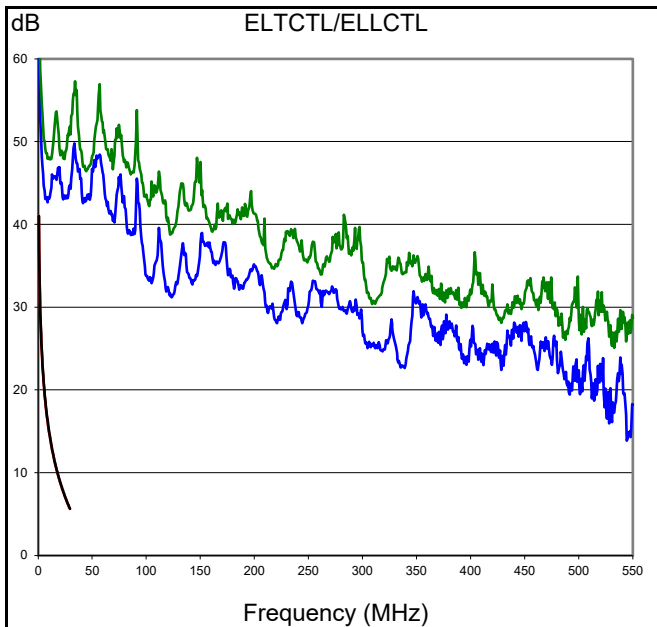
Summary

**Client** Berk-Tek LLC  
**Specifications** Berk-Tek LM-1000  
 ANSI/TIA-568.2-D, Category 6  
 ISO/IEC 11801-1, Category 6  
**Part Number** LM-1000 CMP UTP  
**Description** **Berk-Tek LM-1000 CMP**  
 4X23 UTP-CMP-Solid

**Test Started** 2/8/2022 16:17  
**Technician** Craig Williams  
**Report No.** 104239938CRT-009a  
**Length (m)** 100  
**Temperature** 22 °C  
**Test Status** **PASS**



TCL/LCL					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	66.5	71.6	50.0	40.0	50.0
4	60.9	66.3	44.0	40.0	44.0
8	60.8	67.5	41.0	40.0	41.0
10	54.9	62.9	40.0	40.0	40.0
16	54.7	61.5	38.0	38.0	38.0
20	47.5	54.5	37.0	37.0	37.0
25	50.3	61.0	36.0	36.0	36.0
31.25	51.0	58.8	35.1	35.1	35.1
62.5	46.4	56.2	32.0	32.0	32.0
100	49.6	54.4	30.0	30.0	30.0
250	36.9	42.1	26.0	26.0	26.0
350	35.0	40.9			
550	26.8	33.9			
Limit Margin (dB) :			6.27	6.27	6.27
Frequency (MHz) :			163.29	163.29	163.29



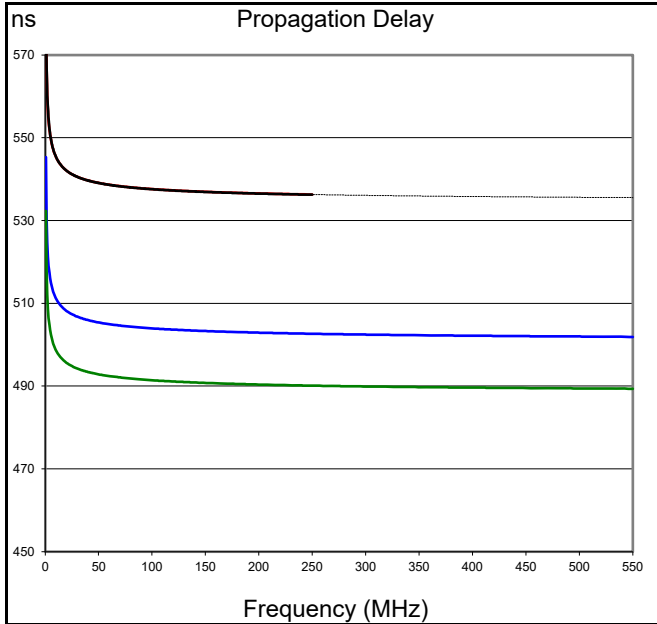
ELTCTL/ELLCTL					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	57.7	64.3	35.0	35.0	35.0
4	47.1	53.3	23.0	23.0	23.0
8	43.3	48.6	16.9	16.9	16.9
10	43.1	47.9	15.0	15.0	15.0
16	45.6	53.5	10.9	10.9	10.9
20	46.9	49.2	9.0	9.0	9.0
25	43.1	48.9	7.0	7.0	7.0
31.25	46.6	53.3			
62.5	43.6	50.5			
100	33.8	43.6			
250	30.2	35.7			
350	30.5	35.7			
550	18.2	28.7			
Limit Margin (dB) :			23.31	23.31	23.31
Frequency (MHz) :			1.87	1.87	1.87

Legend : Blue - Worst Case; Green - Average; Red - TIA and ISO/IEC Specifications; Black - LM-1000 Specification

Summary

**Client** Berk-Tek LLC  
**Specifications** Berk-Tek LM-1000  
 ANSI/TIA-568.2-D, Category 6  
 ISO/IEC 11801-1, Category 6  
**Part Number** LM-1000 CMP UTP  
**Description** **Berk-Tek LM-1000 CMP**  
 4X23 UTP-CMP-Solid

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**Temperature** 22 °C  
**Test Status** **PASS**



Propagation Delay					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	530.5	517.8	570.0	570.0	N/A
4	517.4	504.8	552.0	552.0	552.0
8	512.4	499.9	546.7	546.7	546.7
10	511.2	498.6	545.4	545.4	545.4
16	509.0	496.4	543.0	543.0	543.0
20	508.2	495.7	542.0	542.0	542.0
25	507.3	494.8	541.2	541.2	541.2
31.25	506.6	494.1	540.4	540.4	540.4
62.5	504.9	492.4	538.6	538.6	538.6
100	503.9	491.4	537.6	537.6	537.6
250	502.6	490.1	536.3	536.3	536.3
350	502.3	489.8			
550	501.9	489.4			
Limit Margin (dB) :			33.63	33.63	33.63
Frequency (MHz) :			174.97	174.97	174.97

Delay Skew				
Freq. MHz	Worst case	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1-250	24.67	35	45	45

Low frequency measurements								
Parameter	Worst Case	Average	LM-1000		TIA		ISO/IEC	
			Spec	Margin	Spec	Margin	Spec	Margin
Mutual capacitance (nF/100m)	4.98	4.77	5.60	0.62	5.60	0.62	N/A	N/A
Maximum Capacitance Unbalance Pair-to-Ground (pF/100m)	15.09	8.67	160.00	144.91	330.00	314.91	160.00	144.91
Conductor DC resistance (Ω)	7.44	7.40	9.38	1.94	9.38	1.94	9.50	2.06
DC Resistance Unbalance within a pair (%) using IEC calculation method	0.30%	0.11%	1.50%	1.20%	2.50%	2.20%	2.00%	1.70%

Legend : Blue - Worst Case; Green - Average; Red - TIA and ISO/IEC Specifications; Black - LM-1000 Specification