

Project Number: G104239938

Date Issued: 6/13/2022

ETL Verified Certificate of Conformance number: 2034144CRT-003

Test Report Number: 104239938CRT-007a



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 2034144CRT-003. The sample was randomly selected by an Intertek inspector from your manufacturing facility, Berk-Tek LLC, on 11/4/2021 for Quarter 4 2021 follow-up testing.

The testing was performed at Intertek located in Cortland, NY from 11/30/2021 through 11/30/2021, to the ANSI/TIA-568.2-D; ISO/IEC 11801-1 and LM-2000 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". The signature is written in a cursive, slightly slanted style.

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

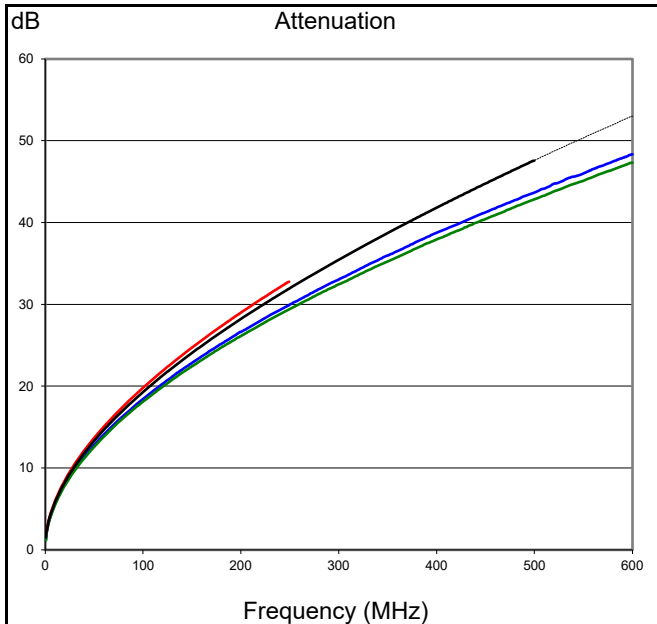
A handwritten signature in black ink that reads "Craig L. Williams". The signature is written in a cursive, slightly slanted style.

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

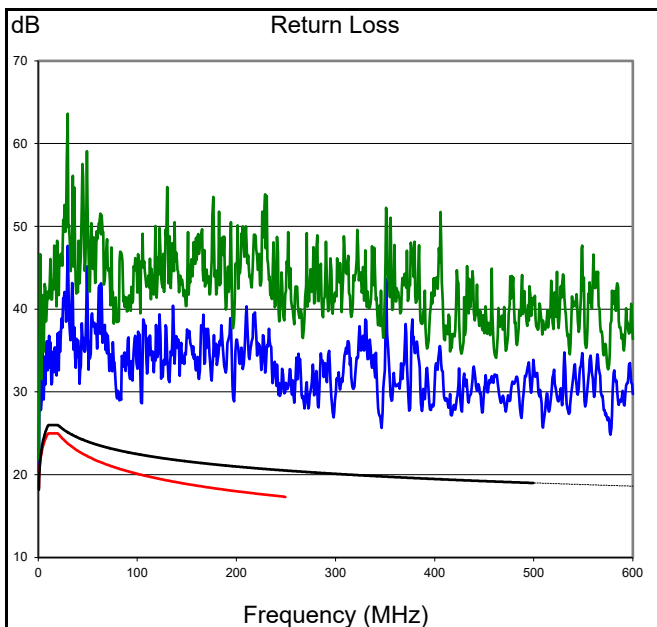
Summary

Client Berk-Tek LLC
Specifications Berk-Tek LM-2000
 ANSI/TIA-568.2-D, Category 6
 ISO/IEC 11801-1, Category 6
Part Number LM-2000 CMP UTP
Description **Berk-Tek LM-2000 CMP**
 4X23 UTP-CMP-Solid

Test Started 11/30/2021 14:07
Technician Craig Williams
Report No. 104239938CRT-007a
Length (m) 100
Temperature 20.2 °C
Test Status **PASS**



Attenuation					
Freq. MHz	Worst Case	Average	LM-2000 Spec	TIA Spec	ISO/IEC Spec
1	1.9	1.9	2.0	2.0	N/A
4	3.6	3.5	3.7	3.8	3.8
8	5.0	4.9	5.2	5.3	5.4
10	5.6	5.5	5.8	6.0	6.0
16	7.2	7.0	7.4	7.6	7.6
20	8.0	7.8	8.2	8.5	8.5
25	9.0	8.8	9.3	9.5	9.6
31.25	10.0	9.9	10.4	10.7	10.7
62.5	14.4	14.1	15.0	15.4	15.5
100	18.4	18.1	19.3	19.8	19.9
250	29.9	29.4	32.0	32.8	33.0
350	36.0	35.2	38.7		
500	43.7	42.9	47.6		
600	48.3	47.3			
Limit Margin (dB) :			0.19	0.27	0.34
Frequency (MHz) :			4.25	2.00	5.00



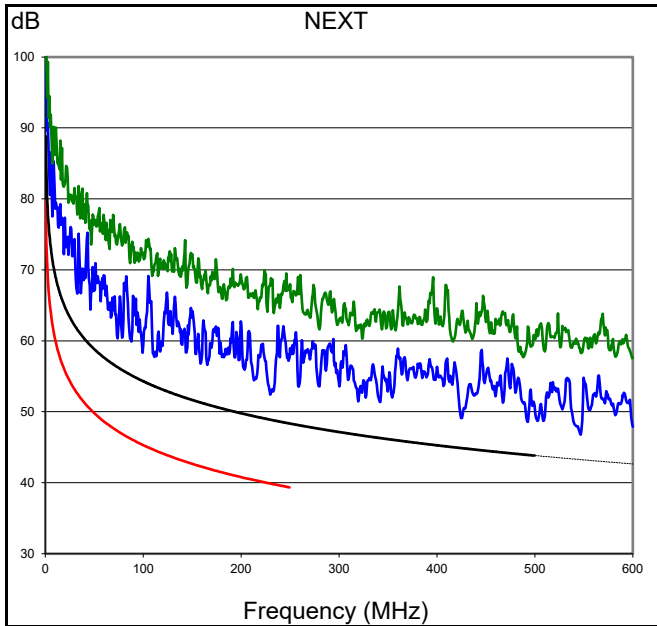
Return Loss					
Freq. MHz	Worst Case	Average	LM-2000 Spec	TIA Spec	ISO/IEC Spec
1	26.9	28.1	20.0	20.0	N/A
4	36.6	41.7	23.6	23.0	23.0
8	33.9	38.5	25.4	24.5	24.5
10	34.3	41.2	26.0	25.0	25.0
16	34.8	47.7	26.0	25.0	25.0
20	37.1	46.0	26.0	25.0	25.0
25	41.3	50.8	25.5	24.3	24.3
31.25	39.0	50.2	25.0	23.6	23.6
62.5	37.0	51.5	23.5	21.5	21.5
100	32.8	42.0	22.5	20.1	20.1
250	30.0	41.9	20.5	17.3	17.3
350	32.6	41.5	19.8		
500	33.1	40.6	19.0		
600	29.8	36.4			
Limit Margin (dB) :			4.52	5.28	5.28
Frequency (MHz) :			5.75	5.75	5.75

Legend : Blue - Worst Case; Green - Average; Red - TIA and ISO/IEC Specifications; Black - LM-2000 Specification

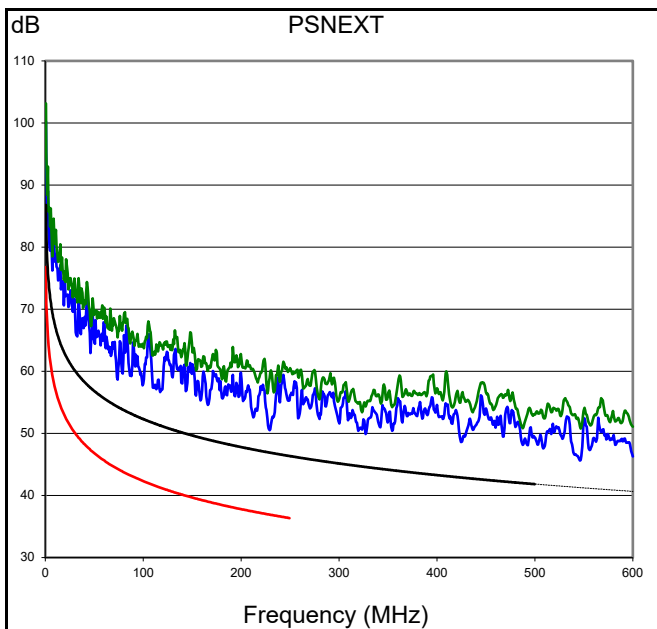
Summary

Client Berk-Tek LLC
Specifications Berk-Tek LM-2000
 ANSI/TIA-568.2-D, Category 6
 ISO/IEC 11801-1, Category 6
Part Number LM-2000 CMP UTP
Description **Berk-Tek LM-2000 CMP**
 4X23 UTP-CMP-Solid

Test Started 11/30/2021 14:07
Technician Craig Williams
Report No. 104239938CRT-007a
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Temperature 20.2 °C
Test Status **PASS**



NEXT					
Freq. MHz	Worst Case	Average	LM-2000 Spec	TIA Spec	ISO/IEC Spec
1	95.2	100.9	84.3	74.3	N/A
4	82.6	94.5	75.3	65.3	66.3
8	80.9	88.0	70.8	60.8	61.8
10	78.6	88.8	69.3	59.3	60.3
16	76.3	82.7	66.3	56.2	57.2
20	77.4	82.1	64.8	54.8	55.8
25	74.7	80.6	63.3	53.3	54.3
31.25	68.9	80.3	61.9	51.9	52.9
62.5	67.7	76.6	57.4	47.4	48.4
100	59.3	72.4	54.3	44.3	45.3
250	57.6	67.2	48.3	38.3	39.3
350	52.8	63.4	46.2		
500	49.8	60.2	43.8		
600	47.9	57.6			
Limit Margin (dB) :			3.52	13.53	12.53
Frequency (MHz) :			229.81	229.81	229.81



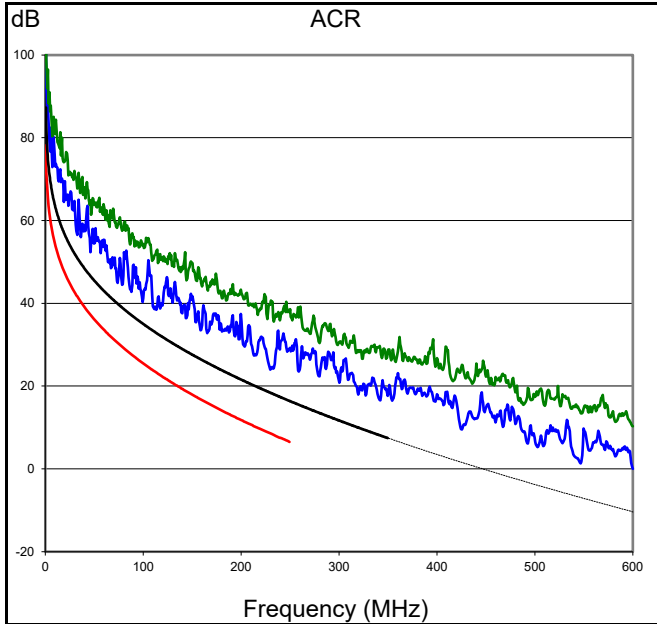
PSNEXT					
Freq. MHz	Worst Case	Average	LM-2000 Spec	TIA Spec	ISO/IEC Spec
1	92.8	95.2	82.3	72.3	N/A
4	80.4	86.3	73.3	63.3	63.3
8	79.3	81.3	68.8	58.8	58.8
10	77.6	81.2	67.3	57.3	57.3
16	73.2	76.3	64.3	54.2	54.2
20	74.7	76.0	62.8	52.8	52.8
25	71.7	75.0	61.3	51.3	51.3
31.25	66.3	72.0	59.9	49.9	49.9
62.5	65.6	68.8	55.4	45.4	45.4
100	58.0	64.3	52.3	42.3	42.3
250	55.3	60.1	46.3	36.3	36.3
350	51.8	55.8	44.2		
500	49.3	53.0	41.8		
600	46.3	51.1			
Limit Margin (dB) :			3.58	13.60	13.60
Frequency (MHz) :			229.06	229.06	229.06

Legend : Blue - Worst Case; Green - Average; Red - TIA and ISO/IEC Specifications; Black - LM-2000 Specification

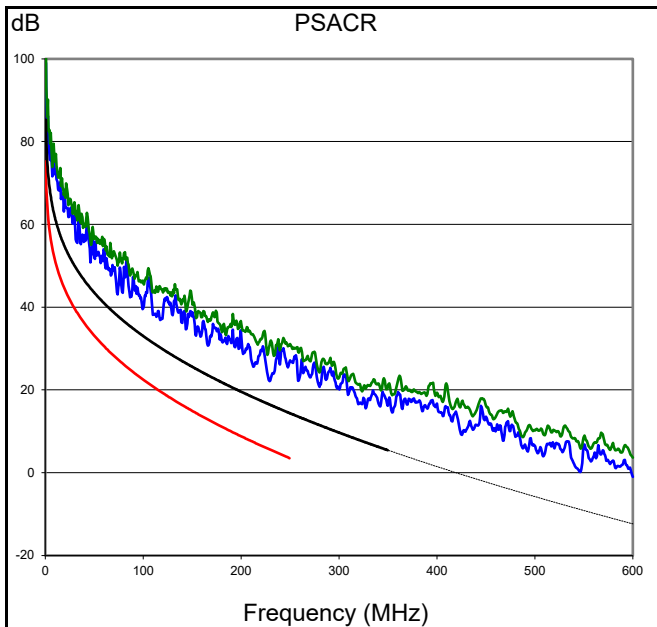
Summary

Client Berk-Tek LLC
Specifications Berk-Tek LM-2000
 ANSI/TIA-568.2-D, Category 6
 ISO/IEC 11801-1, Category 6
Part Number LM-2000 CMP UTP
Description **Berk-Tek LM-2000 CMP**
 4X23 UTP-CMP-Solid

Test Started 11/30/2021 14:07
Technician Craig Williams
Report No. 104239938CRT-007a
Length (m) 100
Temperature 20.2 °C
Test Status **PASS**



ACR					
Freq. MHz	Worst Case	Average	LM-2000 Spec	TIA Spec	ISO/IEC Spec
1	93.3	99.0	82.3	72.3	N/A
4	79.1	91.0	71.6	61.5	62.4
8	76.1	83.1	65.6	55.4	56.4
10	73.1	83.2	63.5	53.3	54.3
16	69.3	75.7	58.9	48.7	49.6
20	69.5	74.3	56.6	46.3	47.3
25	65.8	71.8	54.1	43.8	44.8
31.25	59.1	70.5	51.5	41.2	42.1
62.5	54.0	62.5	42.4	32.0	32.9
100	41.2	54.3	35.0	24.5	25.4
250	29.0	37.8	16.4	5.5	6.3
350	17.6	28.2	7.4		
500	6.5	17.4			
600	0.1	10.3			
Limit Margin (dB) :			4.99	15.45	14.55
Frequency (MHz) :			73.94	73.94	73.94



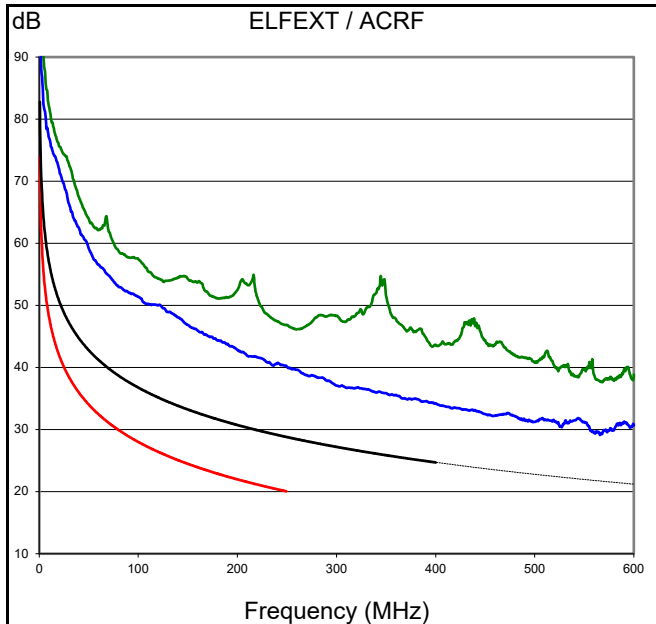
PSACR					
Freq. MHz	Worst Case	Average	LM-2000 Spec	TIA Spec	ISO/IEC Spec
1	90.9	93.3	80.3	70.3	N/A
4	76.8	82.8	69.6	59.5	59.4
8	74.6	76.4	63.6	53.4	53.4
10	72.1	75.7	61.5	51.3	51.3
16	66.1	69.3	56.9	46.7	46.6
20	66.8	68.2	54.6	44.3	44.3
25	62.8	66.2	52.1	41.8	41.8
31.25	56.4	62.1	49.5	39.2	39.1
62.5	51.8	54.7	40.4	30.0	29.9
100	39.7	46.1	33.0	22.5	22.4
250	26.8	30.7	14.4	3.5	3.3
350	16.2	20.6	5.4		
500	6.3	10.2			
600	-1.0	3.7			
Limit Margin (dB) :			5.13	15.59	15.69
Frequency (MHz) :			73.94	73.94	73.94

Legend : Blue - Worst Case; Green - Average; Red - TIA and ISO/IEC Specifications; Black - LM-2000 Specification

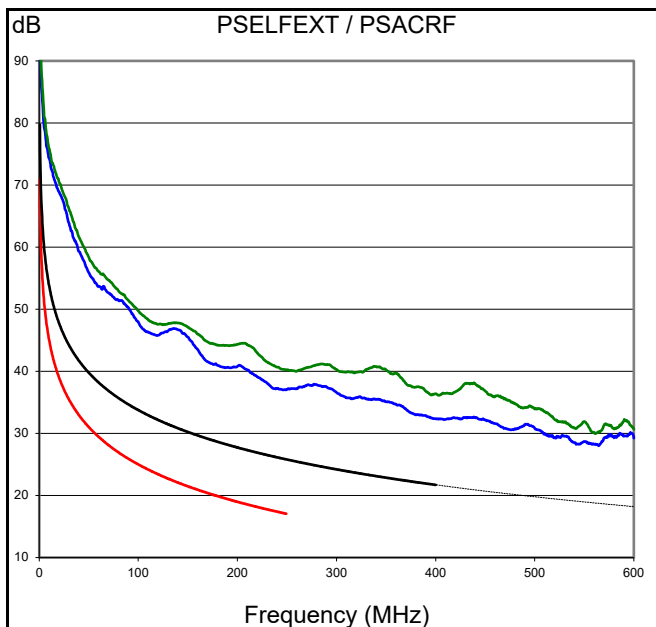
Summary

Client Berk-Tek LLC
Specifications Berk-Tek LM-2000
 ANSI/TIA-568.2-D, Category 6
 ISO/IEC 11801-1, Category 6
Part Number LM-2000 CMP UTP
Description **Berk-Tek LM-2000 CMP**
 4X23 UTP-CMP-Solid

Test Started 11/30/2021 14:07
Technician Craig Williams
Report No. 104239938CRT-007a
Length (m) 100
Temperature 20.2 °C
Test Status **PASS**



ELFEXT / ACRF					
Freq. MHz	Worst Case	Average	LM-2000 Spec	TIA Spec	ISO/IEC Spec
1	93.6	101.5	76.8	67.8	N/A
4	82.4	90.0	64.7	55.8	56.0
8	78.6	84.6	58.7	49.7	49.9
10	76.8	81.6	56.8	47.8	48.0
16	74.0	77.4	52.7	43.7	43.9
20	72.0	75.6	50.7	41.8	42.0
25	69.3	74.3	48.8	39.8	40.0
31.25	65.7	72.2	46.9	37.9	38.1
62.5	56.1	62.4	40.8	31.9	32.1
100	51.4	57.4	36.8	27.8	28.0
250	40.2	46.9	28.8	19.8	20.0
350	35.9	51.7	25.9		
500	31.3	40.8			
600	30.7	38.9			
Limit Margin (dB) :			9.45	19.96	19.76
Frequency (MHz) :			381.18	235.80	235.80



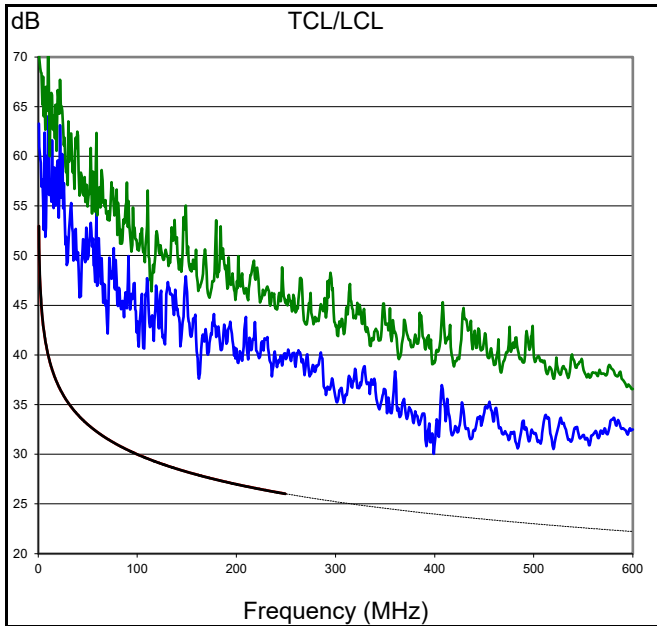
PSELFEXT / PSACRF					
Freq. MHz	Worst Case	Average	LM-2000 Spec	TIA Spec	ISO/IEC Spec
1	91.7	93.8	73.8	64.8	N/A
4	80.5	83.1	61.7	52.8	53.0
8	75.9	77.7	55.7	46.7	46.9
10	74.2	75.7	53.8	44.8	45.0
16	70.4	72.1	49.7	40.7	40.9
20	68.9	70.5	47.7	38.8	39.0
25	66.8	68.3	45.8	36.8	37.0
31.25	63.1	65.7	43.9	34.9	35.1
62.5	53.3	55.6	37.8	28.9	29.1
100	47.9	49.7	33.8	24.8	25.0
250	37.0	40.3	25.8	16.8	17.0
350	35.1	40.2	22.9		
500	30.7	33.9			
600	29.2	30.7			
Limit Margin (dB) :			10.60	19.90	19.70
Frequency (MHz) :			381.18	236.55	236.55

Legend : Blue - Worst Case; Green - Average; Red - TIA and ISO/IEC Specifications; Black - LM-2000 Specification

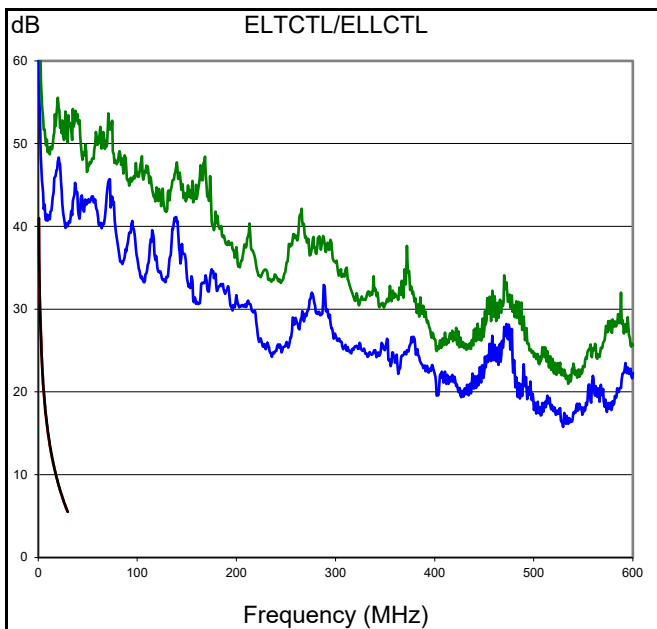
Summary

Client Berk-Tek LLC
Specifications Berk-Tek LM-2000
 ANSI/TIA-568.2-D, Category 6
 ISO/IEC 11801-1, Category 6
Part Number LM-2000 CMP UTP
Description **Berk-Tek LM-2000 CMP**
 4X23 UTP-CMP-Solid

Test Started 11/30/2021 14:07
Technician Craig Williams
Report No. 104239938CRT-007a
Length (m) 100
Temperature 20.2 °C
Test Status **PASS**



TCL/LCL					
Freq. MHz	Worst Case	Average	LM-2000 Spec	TIA Spec	ISO/IEC Spec
1	61.0	69.9	50.0	40.0	50.0
4	57.7	65.2	44.0	40.0	44.0
8	52.8	67.0	41.0	40.0	41.0
10	64.1	73.4	40.0	40.0	40.0
16	58.9	64.1	38.0	38.0	38.0
20	59.6	66.7	37.0	37.0	37.0
25	54.8	62.6	36.0	36.0	36.0
31.25	52.5	59.5	35.1	35.1	35.1
62.5	48.4	54.8	32.0	32.0	32.0
100	43.4	50.6	30.0	30.0	30.0
250	40.2	45.3	26.0	26.0	26.0
350	36.6	43.9			
500	32.1	39.7			
600	32.5	36.6			
Limit Margin (dB) :			9.73	9.73	9.73
Frequency (MHz) :			162.37	162.37	162.37



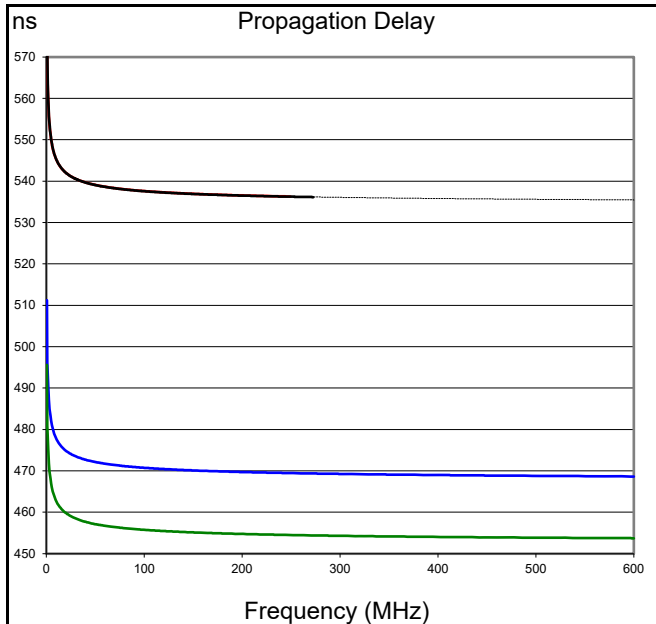
ELTCTL/ELLCTL					
Freq. MHz	Worst Case	Average	LM-2000 Spec	TIA Spec	ISO/IEC Spec
1	56.0	64.5	35.0	35.0	35.0
4	45.1	54.4	23.0	23.0	23.0
8	40.7	49.8	16.9	16.9	16.9
10	41.2	49.5	15.0	15.0	15.0
16	45.8	51.3	10.9	10.9	10.9
20	47.8	55.5	9.0	9.0	9.0
25	41.5	50.8	7.0	7.0	7.0
31.25	40.6	52.1			
62.5	40.3	52.0			
100	36.0	46.0			
250	25.5	34.5			
350	25.0	30.5			
500	17.8	24.2			
600	22.3	25.6			
Limit Margin (dB) :			21.89	21.89	21.89
Frequency (MHz) :			2.00	2.00	2.00

Legend : Blue - Worst Case; Green - Average; Red - TIA and ISO/IEC Specifications; Black - LM-2000 Specification

Summary

Client Berk-Tek LLC
Specifications Berk-Tek LM-2000
 ANSI/TIA-568.2-D, Category 6
 ISO/IEC 11801-1, Category 6
Part Number LM-2000 CMP UTP
Description **Berk-Tek LM-2000 CMP**
 4X23 UTP-CMP-Solid

Test Started 11/30/2021 14:07
Technician Craig Williams
Report No. 104239938CRT-007a
Length (m) 100
Temperature 20.2 °C
Test Status **PASS**



Propagation Delay					
Freq. MHz	Worst Case	Average	LM-2000 Spec	TIA Spec	ISO/IEC Spec
1	496.2	480.9	570.0	570.0	N/A
4	483.4	468.2	552.0	552.0	552.0
8	479.1	464.0	546.7	546.7	546.7
10	477.8	462.7	545.4	545.4	545.4
16	475.7	460.6	543.0	543.0	543.0
20	474.9	459.8	542.0	542.0	542.0
25	474.1	459.0	541.2	541.2	541.2
31.25	473.4	458.4	540.4	540.4	540.4
62.5	471.6	456.6	538.6	538.6	538.6
100	470.7	455.7	537.6	537.6	537.6
250	469.5	454.5	536.3	536.3	536.3
350	469.1	454.2	535.9		
500	468.8	453.9	535.6		
600	468.7	453.7			
Limit Margin (dB) :			66.82	66.82	66.82
Frequency (MHz) :			249.29	249.29	249.29

Delay Skew				
Freq. MHz	Worst case	LM-2000 Spec	TIA Spec	ISO/IEC Spec
1-250	28.34	35	45	45

Low frequency measurements								
Parameter	Worst Case	Average	LM-2000		TIA		ISO/IEC	
			Spec	Margin	Spec	Margin	Spec	Margin
Mutual capacitance (nF/100m)	4.49	4.33	5.60	1.11	5.60	1.11	N/A	N/A
Maximum Capacitance Unbalance Pair-to-Ground (pF/100m)	13.91	5.99	160.00	146.09	330.00	316.09	160.00	146.09
Conductor DC resistance (Ω)	7.19	7.08	9.38	2.19	9.38	2.19	9.50	2.31
DC Resistance Unbalance within a pair (%) using IEC calculation method	0.48%	0.26%	1.50%	1.02%	2.50%	2.02%	2.00%	1.52%

Legend : Blue - Worst Case; Green - Average; Red - TIA and ISO/IEC Specifications; Black - LM-2000 Specification