

Project Number: G104239938

Date Issued: 3/12/2024

ETL Verified Certificate of Conformance number: 103400479CRT-002

Test Report Number: 104239938CRT-022a



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 2/13/2024 for Quarter 1 2024 follow-up testing.

The testing was performed at Intertek located in Cortland, NY from 3/12/2024 through 3/12/2024, 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

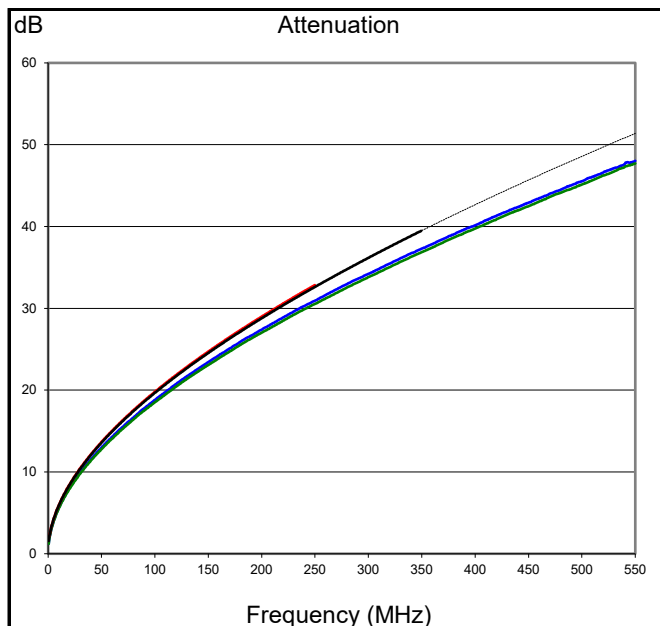
A handwritten signature in black ink that reads "David Ayers".

David Ayers
Technician
Global Cabling Products Testing
Phone: (607) 758-6321

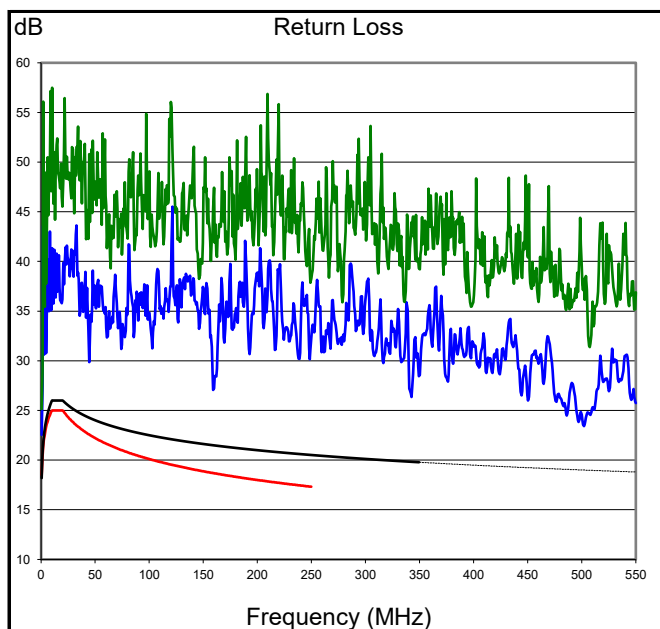
Summary

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 3/12/2024 15:51
Technician David Ayers
Report No. 104239938CRT-022a
Length (m) 100
Temperature 23.3 °C
Test Status **PASS**



Attenuation					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	1.9	1.9	2.0	2.0	N/A
4	3.5	3.4	3.8	3.8	3.8
8	5.0	5.0	5.3	5.3	5.4
10	5.6	5.6	5.9	6.0	6.0
16	7.2	7.1	7.5	7.6	7.6
20	8.0	7.9	8.4	8.5	8.5
25	9.1	8.9	9.4	9.5	9.6
31.25	10.2	10.0	10.6	10.7	10.7
62.5	14.5	14.3	15.3	15.4	15.5
100	18.8	18.5	19.7	19.8	19.9
250	30.9	30.5	32.6	32.8	33.0
350	37.3	36.8	39.5		
550	48.0	47.7			
Limit Margin (dB) : 0.25 0.27 0.33					
Frequency (MHz) : 3.25 3.25 4.62					



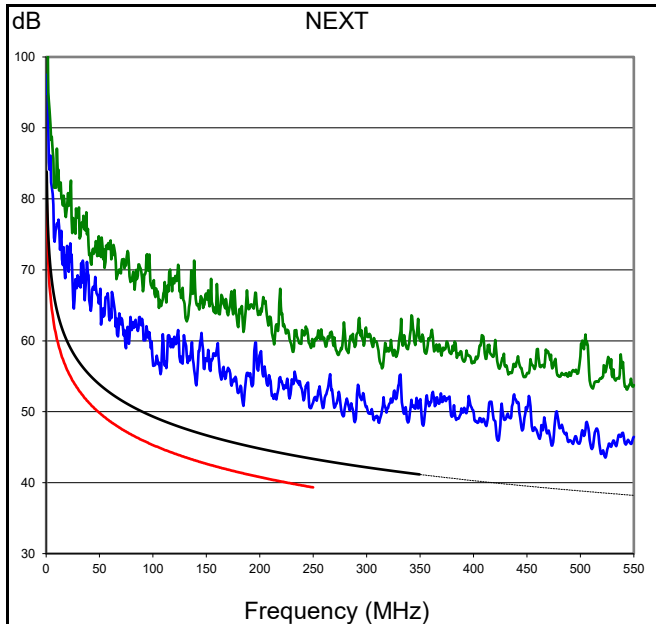
Return Loss					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	27.4	29.0	20.0	20.0	N/A
4	39.9	48.9	23.6	23.0	23.0
8	43.0	49.6	25.4	24.5	24.5
10	41.3	57.5	26.0	25.0	25.0
16	40.6	48.6	26.0	25.0	25.0
20	36.2	45.5	26.0	25.0	25.0
25	40.1	48.3	25.5	24.3	24.3
31.25	40.7	50.5	25.0	23.6	23.6
62.5	32.5	43.6	23.5	21.5	21.5
100	34.8	49.1	22.5	20.1	20.1
250	32.4	38.3	20.5	17.3	17.3
350	28.4	39.3	19.8		
550	25.7	36.9			
Limit Margin (dB) : 5.58 7.00 7.30					
Frequency (MHz) : 159.17 1.19 44.46					

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

Summary

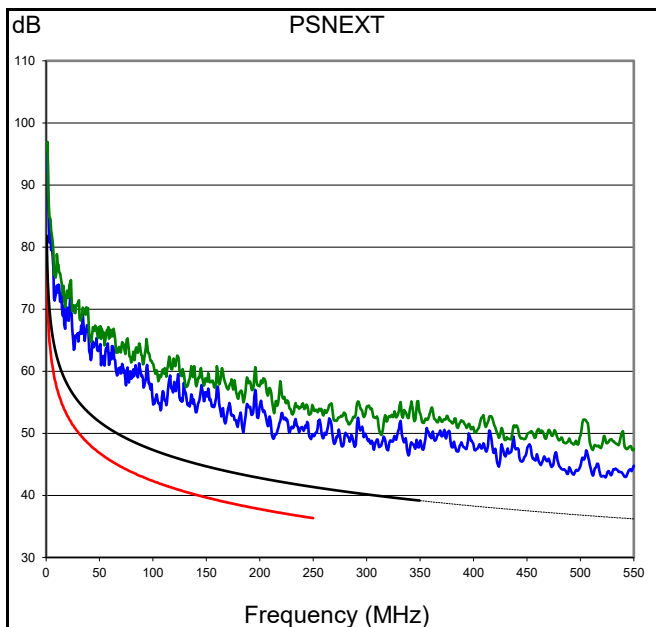
Client Berk-Tek LLC
Specifications Berk-Tek LM-1000
ANSI/TIA-568.2-D, Category 6
ISO/IEC 11801-1, Category 6
Part Number LM-1000 CMP UTP
Description **Berk-Tek LM-1000 CMP**
4X23 UTP-CMP-Solid

Test Started 3/12/2024 15:51
Technician David Ayers
Report No. 104239938CRT-022a
Length (m) 100
Temperature 23.3 °C
Test Status **PASS**



NEXT					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	97.6	103.8	79.3	74.3	N/A
4	86.1	90.4	70.3	65.3	66.3
8	74.0	82.7	65.8	60.8	61.8
10	76.5	87.1	64.3	59.3	60.3
16	73.2	80.5	61.3	56.2	57.2
20	73.4	79.0	59.8	54.8	55.8
25	65.8	77.3	58.3	53.3	54.3
31.25	68.9	74.4	56.9	51.9	52.9
62.5	66.9	72.0	52.4	47.4	48.4
100	56.5	68.1	49.3	44.3	45.3
250	51.3	59.6	43.3	38.3	39.3
350	51.6	60.3	41.2		
550	46.5	53.8			

Limit Margin (dB) : 5.50 10.51 9.51
Frequency (MHz) : 184.58 184.58 184.58



PSNEXT					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	95.1	96.9	77.3	72.3	N/A
4	82.3	84.5	68.3	63.3	63.3
8	71.4	76.3	63.8	58.8	58.8
10	73.8	78.9	62.3	57.3	57.3
16	70.5	73.7	59.3	54.2	54.2
20	70.3	73.0	57.8	52.8	52.8
25	65.0	70.4	56.3	51.3	51.3
31.25	66.3	68.5	54.9	49.9	49.9
62.5	64.1	65.7	50.4	45.4	45.4
100	54.6	61.2	47.3	42.3	42.3
250	49.8	54.3	41.3	36.3	36.3
350	48.4	53.4	39.2		
550	44.8	47.5			

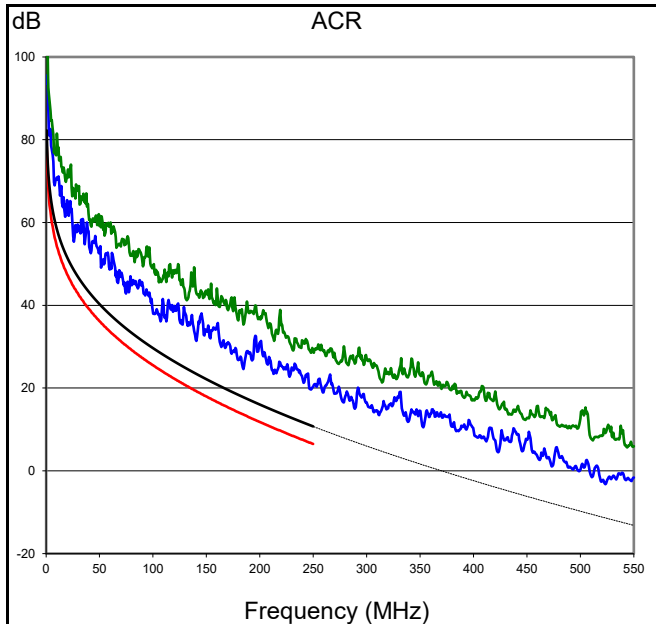
Limit Margin (dB) : 6.70 11.71 11.71
Frequency (MHz) : 212.74 212.74 212.74

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

Summary

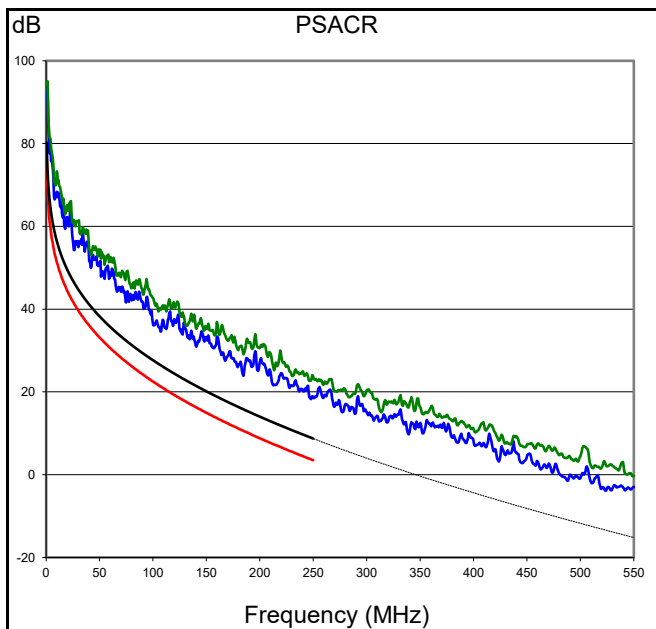
Client Berk-Tek LLC
Specifications Berk-Tek LM-1000
ANSI/TIA-568.2-D, Category 6
ISO/IEC 11801-1, Category 6
Part Number LM-1000 CMP UTP
Description **Berk-Tek LM-1000 CMP**
4X23 UTP-CMP-Solid

Test Started 3/12/2024 15:51
Technician David Ayers
Report No. 104239938CRT-022a
Length (m) 100
Temperature 23.3 °C
Test Status **PASS**



ACR					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	95.7	101.9	77.3	72.3	N/A
4	82.6	87.0	66.5	61.5	62.4
8	69.0	77.7	60.5	55.4	56.4
10	70.9	81.5	58.4	53.3	54.3
16	66.1	73.3	53.7	48.7	49.6
20	65.4	71.1	51.4	46.3	47.3
25	56.7	68.3	48.9	43.8	44.8
31.25	58.9	64.4	46.3	41.2	42.1
62.5	52.6	57.7	37.1	32.0	32.9
100	38.0	49.6	29.6	24.5	25.4
250	20.3	29.0	10.7	5.5	6.3
350	14.5	23.4			
550	-1.6	6.0			

Limit Margin (dB) : 6.77 11.94 11.01
Frequency (MHz) : 184.58 25.91 25.91



PSACR					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	93.2	95.0	75.3	70.3	N/A
4	78.9	81.1	64.5	59.5	59.4
8	66.5	71.3	58.5	53.4	53.4
10	68.3	73.3	56.4	51.3	51.3
16	63.4	66.6	51.7	46.7	46.6
20	62.3	65.1	49.4	44.3	44.3
25	55.9	61.4	46.9	41.8	41.8
31.25	56.3	58.5	44.3	39.2	39.1
62.5	49.8	51.4	35.1	30.0	29.9
100	36.1	42.7	27.6	22.5	22.4
250	18.9	23.7	8.7	3.5	3.3
350	12.1	16.6			
550	-3.0	-0.2			

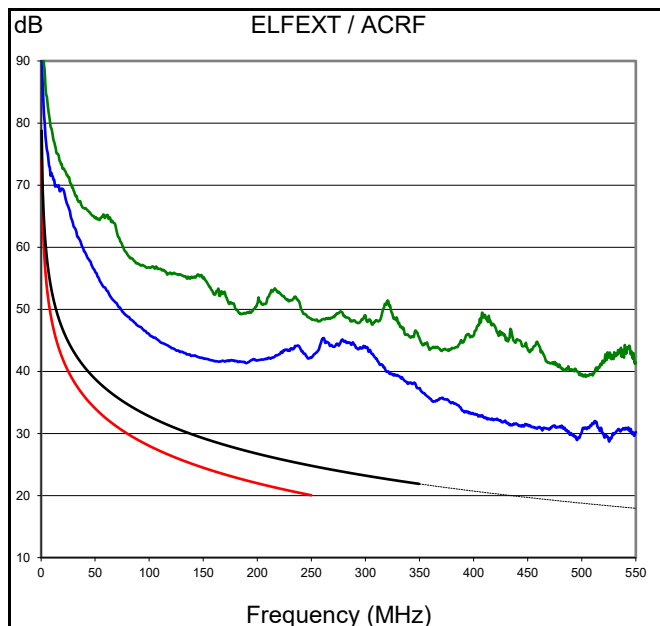
Limit Margin (dB) : 7.75 12.83 12.90
Frequency (MHz) : 25.91 25.91 25.91

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

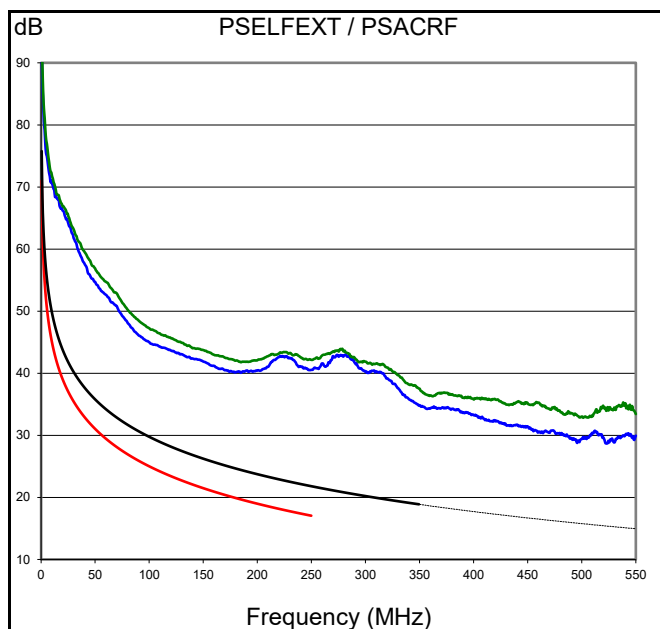
Summary

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 3/12/2024 15:51
Technician David Ayers
Report No. 104239938CRT-022a
Length (m) 100
Temperature 23.3 °C
Test Status **PASS**



ELFEXT / ACRF					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	87.5	96.9	72.8	67.8	N/A
4	78.1	86.1	60.7	55.8	56.0
8	72.8	80.4	54.7	49.7	49.9
10	71.5	78.6	52.8	47.8	48.0
16	69.9	74.7	48.7	43.7	43.9
20	69.4	72.7	46.7	41.8	42.0
25	66.5	71.2	44.8	39.8	40.0
31.25	63.0	68.4	42.9	37.9	38.1
62.5	52.9	65.2	36.8	31.9	32.1
100	45.9	56.7	32.8	27.8	28.0
250	42.2	48.5	24.8	19.8	20.0
350	37.3	45.5	21.9		
550	30.2	41.4			
Limit Margin (dB) : 12.53 17.48 17.28					
Frequency (MHz) : 128.26 128.26 128.26					



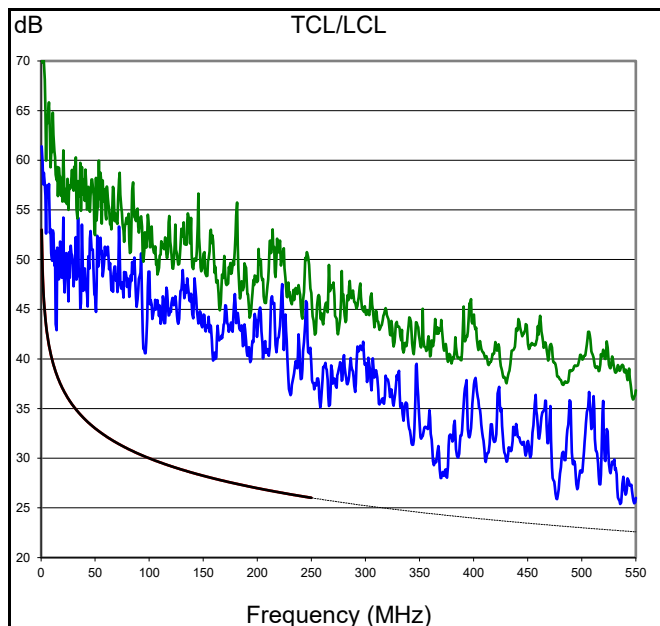
PSELFEXT / PSACRF					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	86.8	89.5	69.8	64.8	N/A
4	76.8	79.1	57.7	52.8	53.0
8	71.7	73.1	51.7	46.7	46.9
10	70.5	71.7	49.8	44.8	45.0
16	68.0	68.7	45.7	40.7	40.9
20	66.2	66.9	43.7	38.8	39.0
25	64.1	65.2	41.8	36.8	37.0
31.25	61.2	62.5	39.9	34.9	35.1
62.5	52.3	54.5	33.8	28.9	29.1
100	45.0	47.2	29.8	24.8	25.0
250	40.5	42.2	21.8	16.8	17.0
350	34.8	37.5	18.9		
550	29.9	33.4			
Limit Margin (dB) : 15.12 20.08 19.88					
Frequency (MHz) : 101.47 101.47 101.47					

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

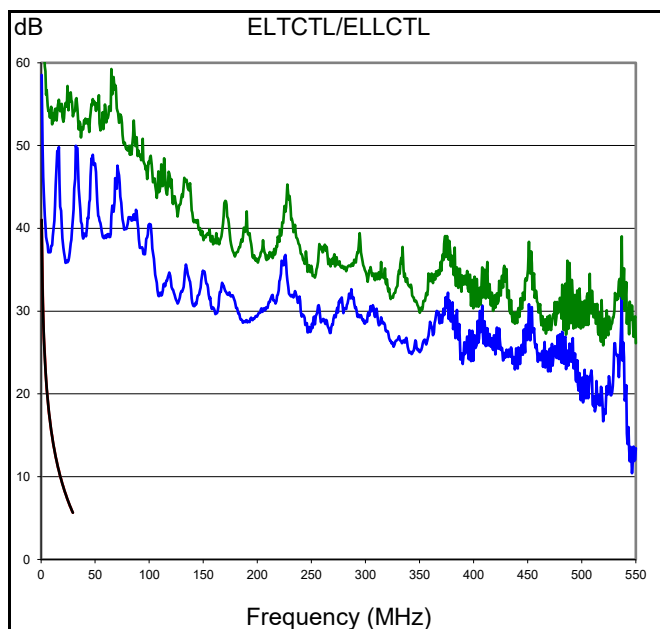
Summary

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 3/12/2024 15:51
Technician David Ayers
Report No. 104239938CRT-022a
Length (m) 100
Temperature 23.3 °C
Test Status **PASS**



TCL/LCL					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	59.9	69.9	50.0	40.0	50.0
4	56.4	65.0	44.0	40.0	44.0
8	52.7	62.8	41.0	40.0	41.0
10	49.9	60.9	40.0	40.0	40.0
16	48.0	59.3	38.0	38.0	38.0
20	48.8	55.8	37.0	37.0	37.0
25	45.8	55.0	36.0	36.0	36.0
31.25	50.2	59.1	35.1	35.1	35.1
62.5	51.3	56.2	32.0	32.0	32.0
100	48.8	52.5	30.0	30.0	30.0
250	39.4	46.6	26.0	26.0	26.0
350	34.8	42.4			
550	26.0	36.8			
Limit Margin (dB) :			4.44	4.44	4.44
Frequency (MHz) :			14.24	14.24	14.24



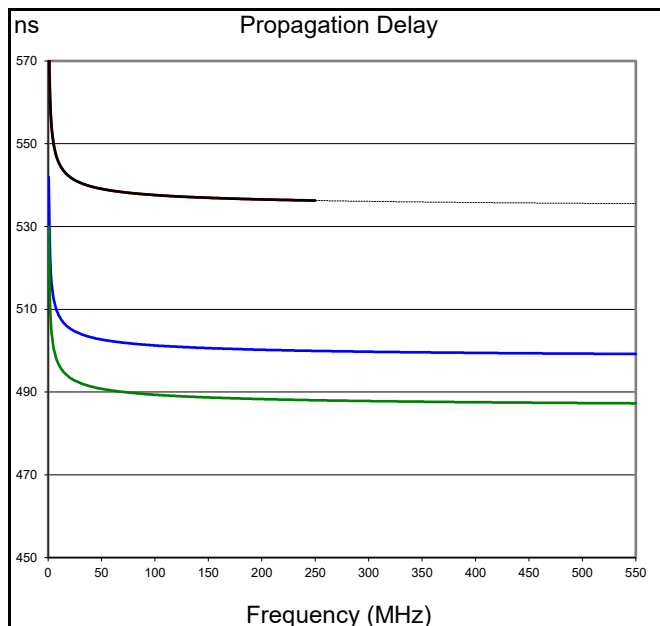
ELTCTL/ELLCTL					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	50.0	66.3	35.0	35.0	35.0
4	40.4	59.0	23.0	23.0	23.0
8	37.1	53.4	16.9	16.9	16.9
10	38.0	52.6	15.0	15.0	15.0
16	49.8	55.5	10.9	10.9	10.9
20	38.8	53.5	9.0	9.0	9.0
25	36.1	54.3	7.0	7.0	7.0
31.25	46.0	54.3			
62.5	39.3	53.3			
100	40.5	47.9			
250	27.9	35.5			
350	25.2	30.3			
550	13.4	26.1			
Limit Margin (dB) :			16.50	16.50	16.50
Frequency (MHz) :			1.19	1.19	1.19

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 3/12/2024 15:51
Technician David Ayers
Report No. 104239938CRT-022a
Length (m) 100
Temperature 23.3 °C
Test Status **PASS**



Propagation Delay					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	527.6	515.6	570.0	570.0	N/A
4	514.6	502.7	552.0	552.0	552.0
8	509.7	497.8	546.7	546.7	546.7
10	508.4	496.5	545.4	545.4	545.4
16	506.2	494.3	543.0	543.0	543.0
20	505.5	493.6	542.0	542.0	542.0
25	504.6	492.7	541.2	541.2	541.2
31.25	503.9	492.0	540.4	540.4	540.4
62.5	502.2	490.3	538.6	538.6	538.6
100	501.3	489.3	537.6	537.6	537.6
250	500.0	488.0	536.3	536.3	536.3
350	499.6	487.7			
550	499.2	487.3			
Limit Margin (dB) :			36.31	36.31	36.31
Frequency (MHz) :			179.09	179.09	179.09

Delay Skew				
Freq. MHz	Worst case	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1-250	23.98	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)	4.93	4.74	5.60	0.67	5.60	0.67	N/A	N/A
Maximum Capacitance Unbalance Pair-to-Ground (pF/100m)	14.49	7.01	160.00	145.51	330.00	315.51	160.00	145.51
Conductor DC resistance (Ω)	7.39	7.34	9.38	1.99	9.38	1.99	9.50	2.11
DC Resistance Unbalance within a pair (%) using IEC calculation method	0.32%	0.15%	1.50%	1.18%	2.50%	2.18%	2.00%	1.68%

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