

Project Number: G104239938

Date Issued: 5/23/2024

ETL Verified Certificate of Conformance number: 9911244CRT-002

Test Report Number: 104239938CRT-023a



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, CMR, horizontal (solid) cable covered by ETL Verified certificate of conformance number 9911244CRT-002. The sample was randomly selected by an Intertek inspector from your manufacturing facility, Berk-Tek LLC, on 5/9/2024 for Quarter 2 2024 follow-up testing.

The testing was performed at Intertek located in Cortland, NY from 5/16/2024 through 5/16/2024, to the ANSI/TIA-568-D.2, 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

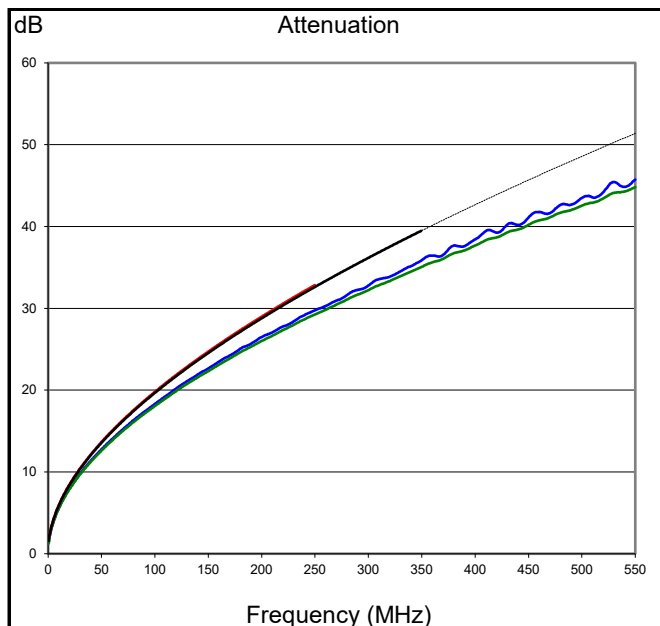
A handwritten signature in black ink that reads "Craig L. Williams".

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

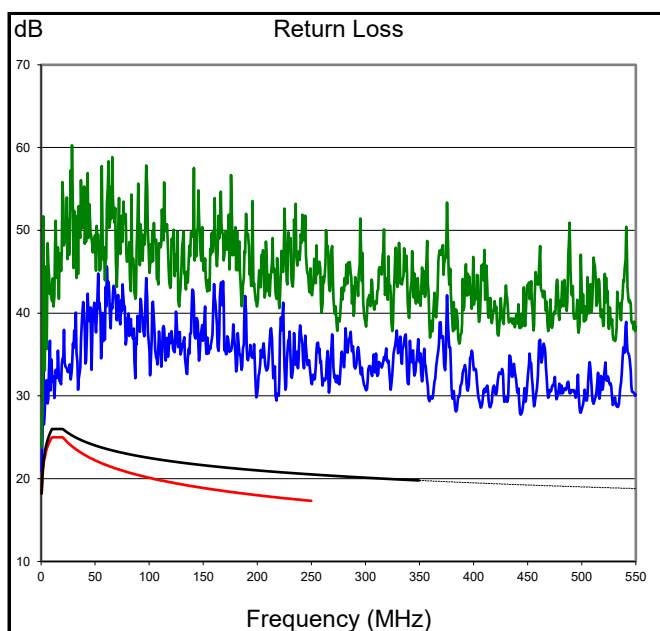
Summary

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 CMR UTP
Description **Berk-Tek LM-1000 CMR**
4X23 UTP-CMR-Solid

Test Started 5/16/2024 11:19
Technician Craig Williams
Report No. 104239938CRT-023a
Length (m) 100
Temperature 22.1 °C
Test Status **PASS**



Attenuation					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	2.0	1.9	2.0	2.0	N/A
4	3.5	3.5	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	7.9	7.8	8.4	8.5	8.5
25	9.0	8.9	9.4	9.5	9.6
31.25	10.1	9.9	10.6	10.7	10.7
62.5	14.2	14.0	15.3	15.4	15.5
100	18.3	18.1	19.7	19.8	19.9
250	29.8	29.2	32.6	32.8	33.0
350	35.8	35.0	39.5		
550	45.7	44.8			
Limit Margin (dB) :			0.18	0.20	0.31
Frequency (MHz) :			1.19	1.19	4.62



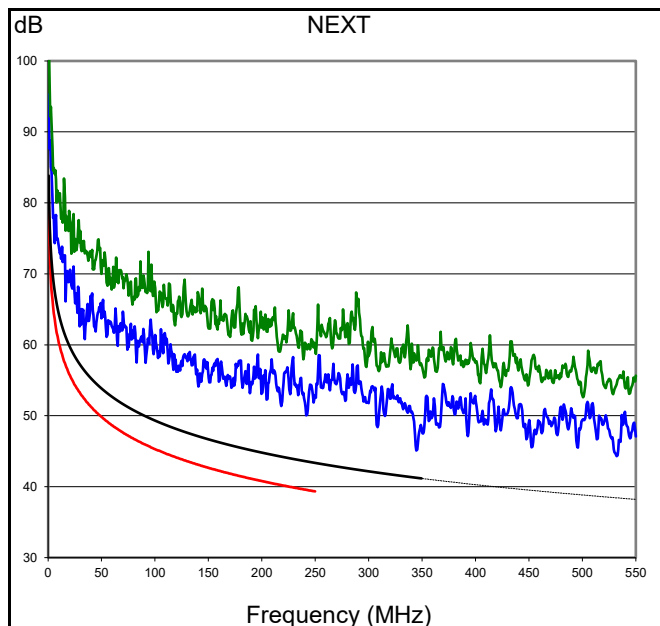
Return Loss					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	25.5	28.1	20.0	20.0	N/A
4	31.7	45.6	23.6	23.0	23.0
8	36.7	42.3	25.4	24.5	24.5
10	32.7	41.4	26.0	25.0	25.0
16	32.2	41.7	26.0	25.0	25.0
20	34.4	55.8	26.0	25.0	25.0
25	32.9	51.4	25.5	24.3	24.3
31.25	37.4	47.3	25.0	23.6	23.6
62.5	42.7	55.2	23.5	21.5	21.5
100	35.5	44.8	22.5	20.1	20.1
250	31.6	42.9	20.5	17.3	17.3
350	35.0	41.3	19.8		
550	30.2	38.4			
Limit Margin (dB) :			3.76	4.48	4.76
Frequency (MHz) :			12.18	2.56	12.18

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

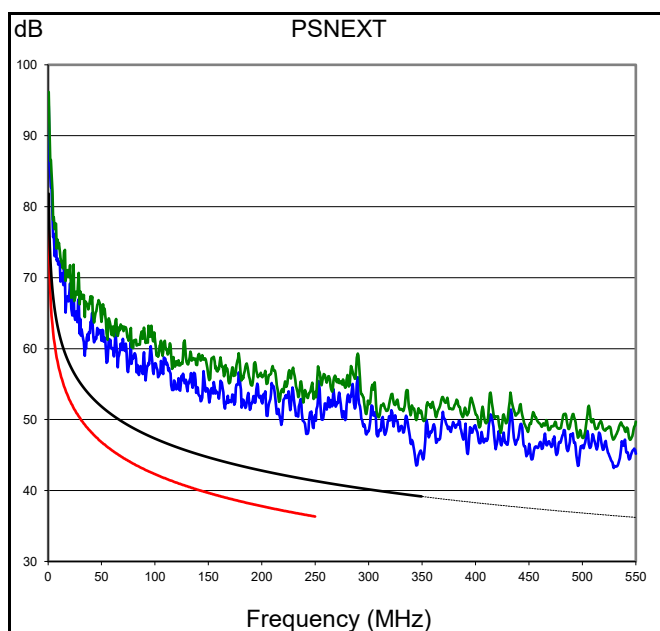
Summary

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 CMR UTP
Description **Berk-Tek LM-1000 CMR**
4X23 UTP-CMR-Solid

Test Started 5/16/2024 11:19
Technician Craig Williams
Report No. 104239938CRT-023a
Length (m) 100
Temperature 22.1 °C
Test Status **PASS**



NEXT					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	87.6	96.9	79.3	74.3	N/A
4	80.5	87.9	70.3	65.3	66.3
8	74.9	80.1	65.8	60.8	61.8
10	73.8	80.5	64.3	59.3	60.3
16	66.1	76.1	61.3	56.2	57.2
20	69.2	78.9	59.8	54.8	55.8
25	65.9	74.9	58.3	53.3	54.3
31.25	65.0	73.2	56.9	51.9	52.9
62.5	61.7	68.1	52.4	47.4	48.4
100	61.4	68.0	49.3	44.3	45.3
250	52.9	59.7	43.3	38.3	39.3
350	48.4	57.2	41.2		
550	47.1	55.7			
Limit Margin (dB) : 3.83 9.50 8.50					
Frequency (MHz) : 344.62 34.16 34.16					



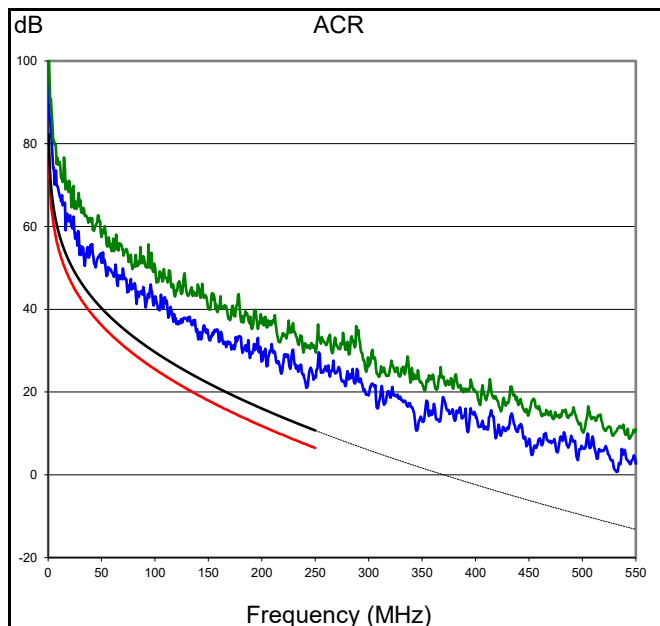
PSNEXT					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	86.1	90.3	77.3	72.3	N/A
4	78.8	82.2	68.3	63.3	63.3
8	72.4	74.1	63.8	58.8	58.8
10	72.3	74.9	62.3	57.3	57.3
16	65.1	69.6	59.3	54.2	54.2
20	67.5	70.1	57.8	52.8	52.8
25	64.0	67.2	56.3	51.3	51.3
31.25	62.7	67.0	54.9	49.9	49.9
62.5	58.9	61.7	50.4	45.4	45.4
100	58.0	60.9	47.3	42.3	42.3
250	50.6	53.9	41.3	36.3	36.3
350	45.3	51.1	39.2		
550	45.2	49.7			
Limit Margin (dB) : 4.28 9.68 9.68					
Frequency (MHz) : 344.62 34.16 34.16					

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

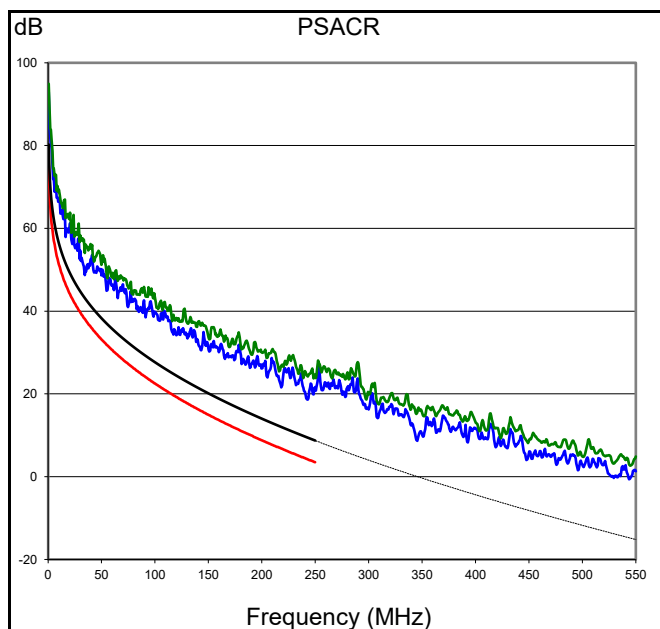
Summary

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 CMR UTP
Description **Berk-Tek LM-1000 CMR**
4X23 UTP-CMR-Solid

Test Started 5/16/2024 11:19
Technician Craig Williams
Report No. 104239938CRT-023a
Length (m) 100
Temperature 22.1 °C
Test Status **PASS**



ACR					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	85.7	95.0	77.3	72.3	N/A
4	77.1	84.4	66.5	61.5	62.4
8	69.9	75.1	60.5	55.4	56.4
10	68.3	75.0	58.4	53.3	54.3
16	59.1	69.0	53.7	48.7	49.6
20	61.3	71.1	51.4	46.3	47.3
25	57.1	66.1	48.9	43.8	44.8
31.25	55.2	63.3	46.3	41.2	42.1
62.5	47.8	54.1	37.1	32.0	32.9
100	43.1	50.0	29.6	24.5	25.4
250	23.9	30.6	10.7	5.5	6.3
350	13.7	22.4			
550	2.7	11.1			
Limit Margin (dB) : 5.32 10.40 9.48					
Frequency (MHz) : 34.16 34.16 34.16					



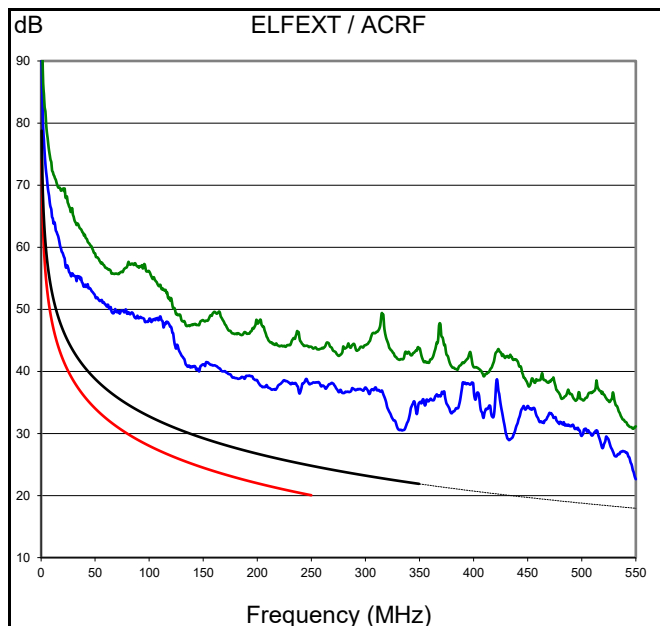
PSACR					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	84.2	88.4	75.3	70.3	N/A
4	75.3	78.7	64.5	59.5	59.4
8	67.4	69.1	58.5	53.4	53.4
10	66.7	69.3	56.4	51.3	51.3
16	57.9	62.5	51.7	46.7	46.6
20	59.8	62.3	49.4	44.3	44.3
25	55.2	58.3	46.9	41.8	41.8
31.25	52.9	57.1	44.3	39.2	39.1
62.5	45.1	47.7	35.1	30.0	29.9
100	39.7	42.9	27.6	22.5	22.4
250	21.6	24.6	8.7	3.5	3.3
350	10.7	16.0			
550	1.3	4.8			
Limit Margin (dB) : 5.50 10.59 10.66					
Frequency (MHz) : 34.16 34.16 34.16					

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

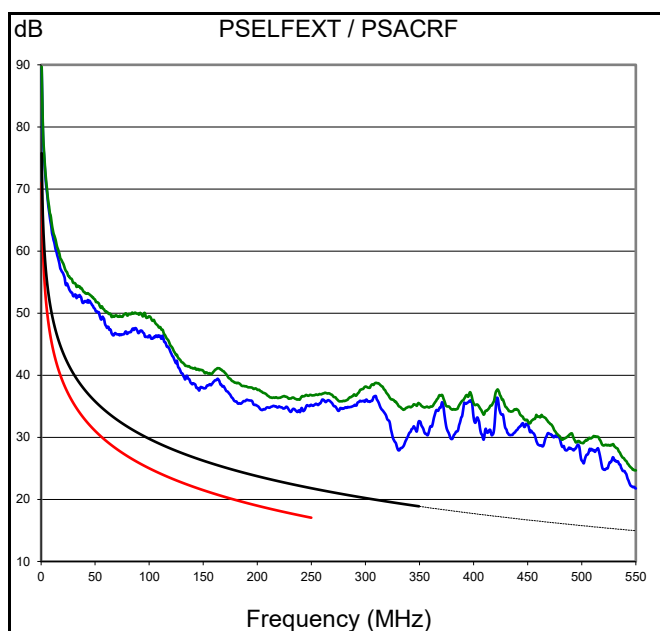
Summary

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 CMR UTP
Description **Berk-Tek LM-1000 CMR**
4X23 UTP-CMR-Solid

Test Started 5/16/2024 11:19
Technician Craig Williams
Report No. 104239938CRT-023a
Length (m) 100
Temperature 22.1 °C
Test Status **PASS**



ELFEXT / ACRF					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	83.9	91.4	72.8	67.8	N/A
4	73.4	81.9	60.7	55.8	56.0
8	67.1	74.8	54.7	49.7	49.9
10	64.9	72.4	52.8	47.8	48.0
16	61.4	69.6	48.7	43.7	43.9
20	59.1	69.3	46.7	41.8	42.0
25	56.5	66.9	44.8	39.8	40.0
31.25	55.4	64.1	42.9	37.9	38.1
62.5	50.8	56.5	36.8	31.9	32.1
100	48.5	56.1	32.8	27.8	28.0
250	38.0	44.0	24.8	19.8	20.0
350	34.9	43.6	21.9		
550	22.6	31.1			
Limit Margin (dB) : 8.20 15.47 15.27					
Frequency (MHz) : 331.57 146.12 146.12					



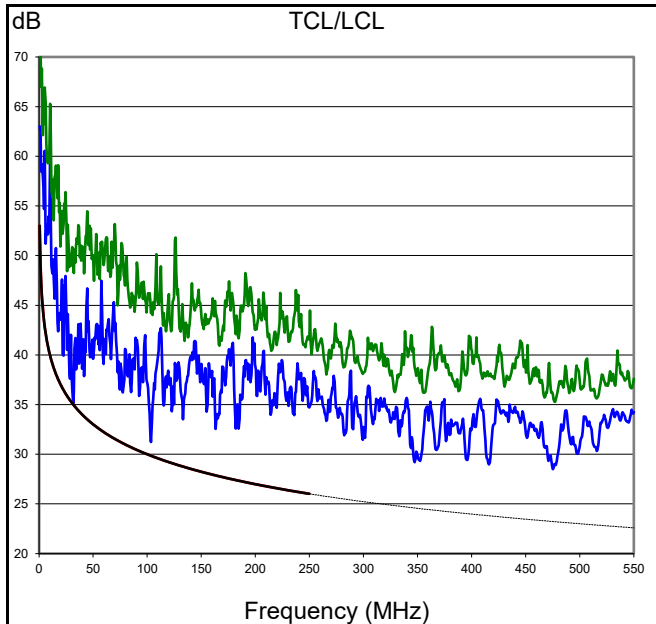
PSELFEXT / PSACRF					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	82.9	83.4	69.8	64.8	N/A
4	72.1	72.7	57.7	52.8	53.0
8	65.4	66.1	51.7	46.7	46.9
10	62.9	64.0	49.8	44.8	45.0
16	58.4	59.9	45.7	40.7	40.9
20	56.6	58.2	43.7	38.8	39.0
25	54.2	56.0	41.8	36.8	37.0
31.25	53.0	54.8	39.9	34.9	35.1
62.5	47.8	50.1	33.8	28.9	29.1
100	46.4	49.5	29.8	24.8	25.0
250	35.2	36.8	21.8	16.8	17.0
350	32.6	35.5	18.9		
550	21.8	24.7			
Limit Margin (dB) : 8.53 15.80 15.60					
Frequency (MHz) : 330.89 203.82 203.82					

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

Summary

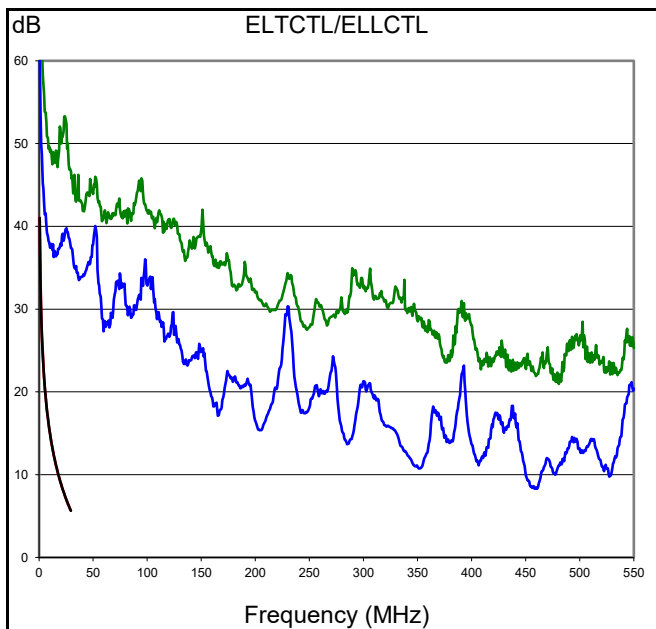
Client Berk-Tek LLC
Specifications Berk-Tek LM-1000
ANSI/TIA-568.2-D, Category 6
ISO/IEC 11801-1, Category 6
Part Number LM-1000 CMR UTP
Description **Berk-Tek LM-1000 CMR**
4X23 UTP-CMR-Solid

Test Started 5/16/2024 11:19
Technician Craig Williams
Report No. 104239938CRT-023a
Length (m) 100
Temperature 22.1 °C
Test Status **PASS**



TCL/LCL					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	62.3	70.8	50.0	40.0	50.0
4	56.9	65.4	44.0	40.0	44.0
8	52.2	59.3	41.0	40.0	41.0
10	60.3	65.3	40.0	40.0	40.0
16	47.0	57.3	38.0	38.0	38.0
20	43.5	50.9	37.0	37.0	37.0
25	44.0	53.3	36.0	36.0	36.0
31.25	35.1	50.3	35.1	35.1	35.1
62.5	40.1	51.7	32.0	32.0	32.0
100	37.1	45.5	30.0	30.0	30.0
250	34.7	41.5	26.0	26.0	26.0
350	30.2	38.1			
550	34.2	37.6			

Limit Margin (dB) : 0.06 0.06 0.06
Frequency (MHz) : 31.41 31.41 31.41



ELTCTL/ELLCTL					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	53.5	65.6	35.0	35.0	35.0
4	44.5	57.1	23.0	23.0	23.0
8	38.8	50.7	16.9	16.9	16.9
10	37.4	49.0	15.0	15.0	15.0
16	36.7	49.0	10.9	10.9	10.9
20	37.9	51.9	9.0	9.0	9.0
25	39.8	52.4	7.0	7.0	7.0
31.25	36.1	44.0			
62.5	27.9	40.9			
100	32.9	41.9			
250	18.1	27.8			
350	11.1	28.9			
550	20.4	25.3			

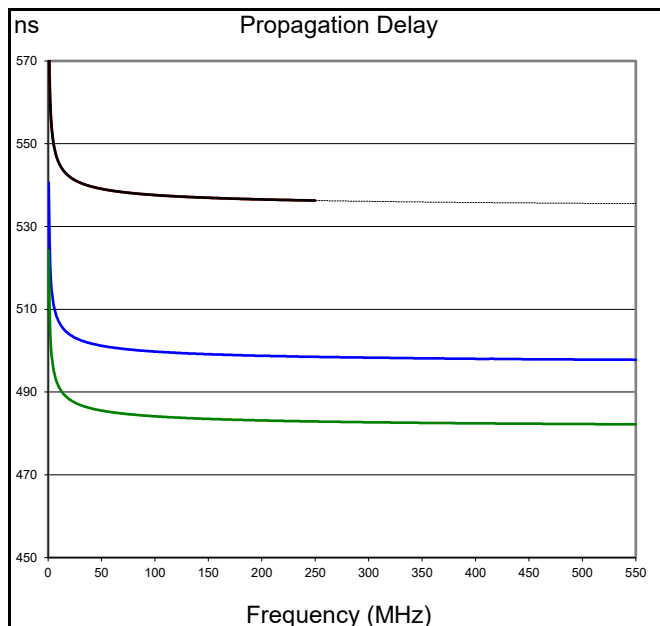
Limit Margin (dB) : 19.97 19.97 19.97
Frequency (MHz) : 1.19 1.19 1.19

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 CMR UTP
Description **Berk-Tek LM-1000 CMR**
4X23 UTP-CMR-Solid

Test Started 5/16/2024 11:19
Technician Craig Williams
Report No. 104239938CRT-023a
Length (m) 100
Temperature 22.1 °C
Test Status **PASS**



Propagation Delay					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	526.1	510.2	570.0	570.0	N/A
4	513.1	497.3	552.0	552.0	552.0
8	508.2	492.4	546.7	546.7	546.7
10	506.9	491.2	545.4	545.4	545.4
16	504.7	489.0	543.0	543.0	543.0
20	504.0	488.3	542.0	542.0	542.0
25	503.1	487.4	541.2	541.2	541.2
31.25	502.4	486.7	540.4	540.4	540.4
62.5	500.7	485.1	538.6	538.6	538.6
100	499.8	484.1	537.6	537.6	537.6
250	498.5	482.9	536.3	536.3	536.3
350	498.2	482.6			
550	497.8	482.2			
Limit Margin (dB) :			37.74	37.76	37.76
Frequency (MHz) :			249.15	249.15	249.15

Delay Skew				
Freq. MHz	Worst case	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1-250	29.78	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)	4.83	4.65	5.60	0.77	5.60	0.77	N/A	N/A
Maximum Capacitance Unbalance Pair-to-Ground (pF/100m)	12.21	8.45	160.00	147.79	330.00	317.79	160.00	147.79
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	0.25%	0.13%	1.50%	1.25%	2.50%	2.25%	2.00%	1.75%

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