

Project Number: G104239938

Date Issued: 6/13/2022

ETL Verified Certificate of Conformance number: 9911244CRT-002

Test Report Number: 104239938CRT-005a



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 6/3/2021 for Quarter 2 2021 follow-up testing.

The testing was performed at Intertek located in Cortland, NY from 6/16/2021 through 6/16/2021, 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

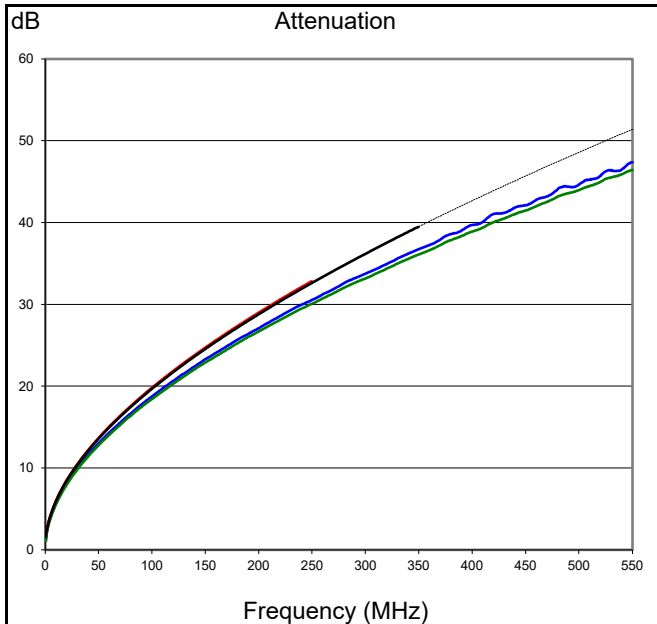
A handwritten signature in black ink that reads "David Ayers".

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

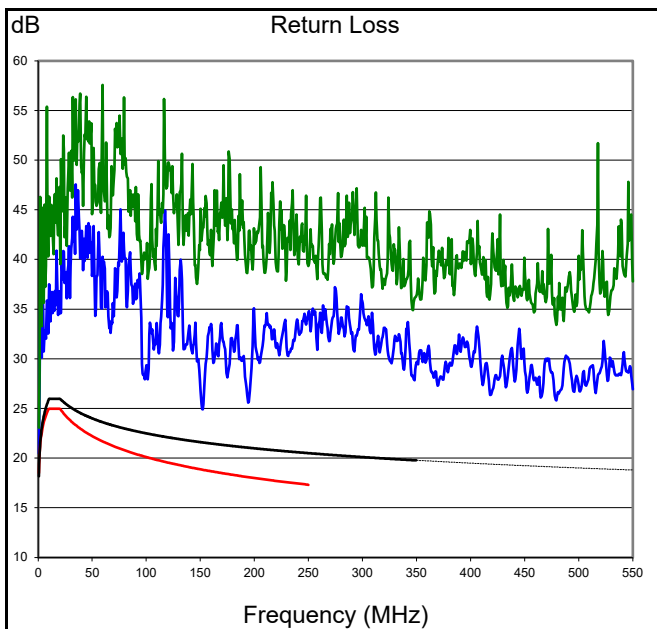
Summary

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

Test Started 6/16/2021 9:35
Technician David Ayers
Report No. 104239938CRT-005a
Length (m) 100
Temperature 19 °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	8.0	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	14.2	15.3	15.4	15.5
100	18.7	18.4	19.7	19.8	19.9
250	30.5	30.1	32.6	32.8	33.0
350	36.7	36.1	39.5		
550	47.4	46.4			
Limit Margin (dB) :			0.21	0.23	0.28
Frequency (MHz) :			3.93	2.56	4.62



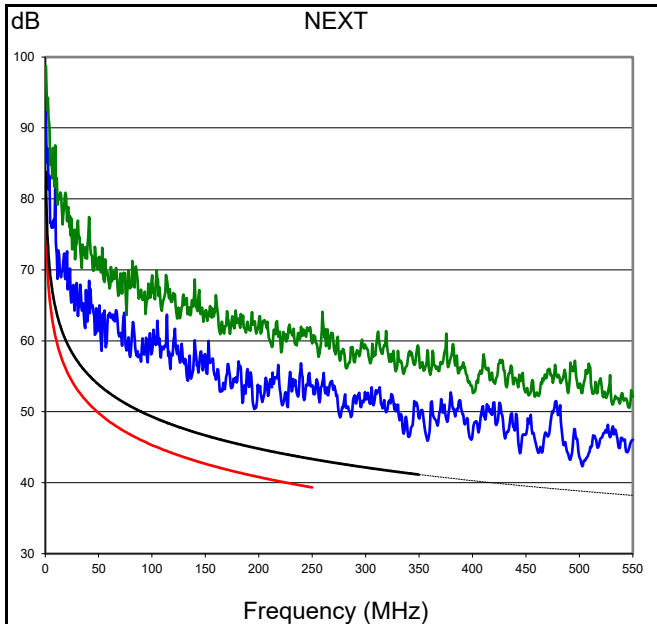
Return Loss					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	27.0	28.3	20.0	20.0	N/A
4	37.0	45.2	23.6	23.0	23.0
8	35.9	55.4	25.4	24.5	24.5
10	37.5	46.3	26.0	25.0	25.0
16	35.4	43.7	26.0	25.0	25.0
20	36.8	47.3	26.0	25.0	25.0
25	38.6	43.6	25.5	24.3	24.3
31.25	42.1	46.2	25.0	23.6	23.6
62.5	39.1	45.9	23.5	21.5	21.5
100	29.4	40.2	22.5	20.1	20.1
250	34.5	39.3	20.5	17.3	17.3
350	29.4	36.3	19.8		
550	27.0	37.8			
Limit Margin (dB) :			3.31	6.07	6.07
Frequency (MHz) :			152.30	152.30	152.30

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

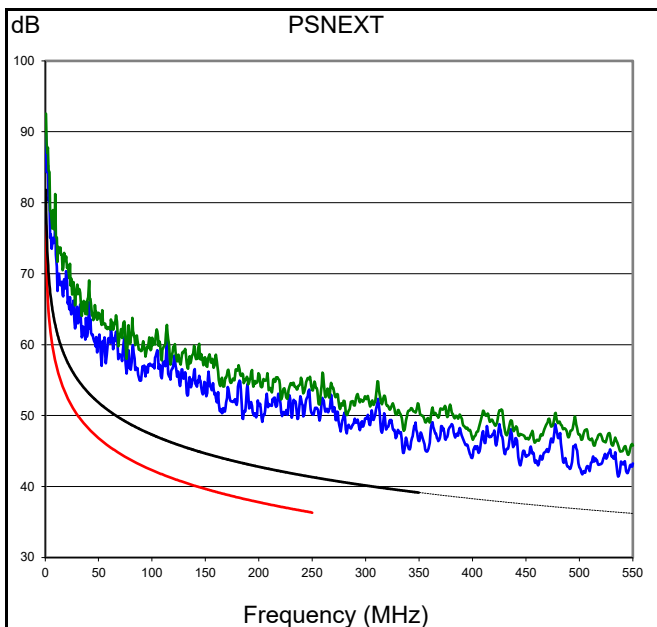
Summary

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 6/16/2021 9:35
Technician David Ayers
Report No. 104239938CRT-005a
Length (m) 100
Temperature 19 °C
Test Status **PASS**



NEXT					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	85.1	95.1	79.3	74.3	N/A
4	83.3	90.2	70.3	65.3	66.3
8	77.0	84.0	65.8	60.8	61.8
10	73.8	82.8	64.3	59.3	60.3
16	69.9	76.4	61.3	56.2	57.2
20	71.1	80.3	59.8	54.8	55.8
25	67.7	72.9	58.3	53.3	54.3
31.25	65.8	74.5	56.9	51.9	52.9
62.5	63.3	70.4	52.4	47.4	48.4
100	58.6	69.2	49.3	44.3	45.3
250	53.7	59.6	43.3	38.3	39.3
350	49.3	59.1	41.2		
550	46.1	52.1			
Limit Margin (dB) :			5.09	10.11	9.11
Frequency (MHz) :			52.70	52.70	52.70



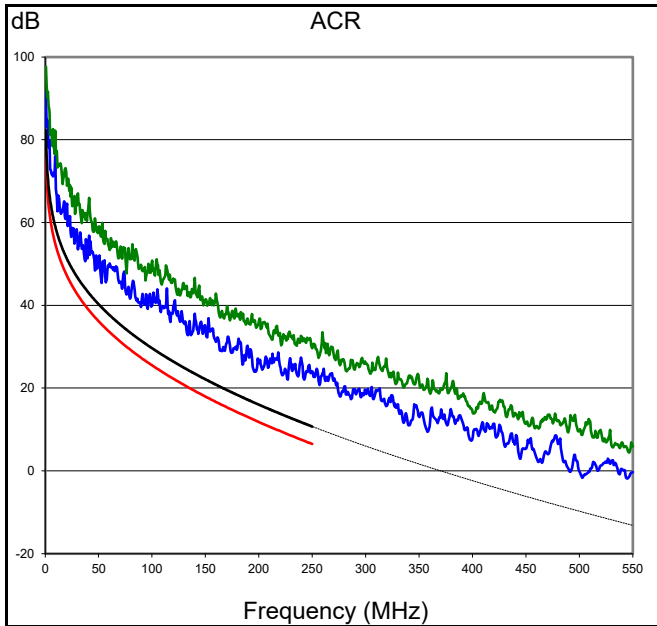
PSNEXT					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	84.4	88.4	77.3	72.3	N/A
4	81.0	84.3	68.3	63.3	63.3
8	74.3	77.2	63.8	58.8	58.8
10	72.7	75.2	62.3	57.3	57.3
16	67.0	70.5	59.3	54.2	54.2
20	70.3	72.4	57.8	52.8	52.8
25	65.2	67.1	56.3	51.3	51.3
31.25	63.4	67.9	54.9	49.9	49.9
62.5	62.2	63.6	50.4	45.4	45.4
100	57.1	61.0	47.3	42.3	42.3
250	50.2	53.6	41.3	36.3	36.3
350	46.4	51.6	39.2		
550	43.2	45.8			
Limit Margin (dB) :			5.30	10.54	10.54
Frequency (MHz) :			335.01	52.70	52.70

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

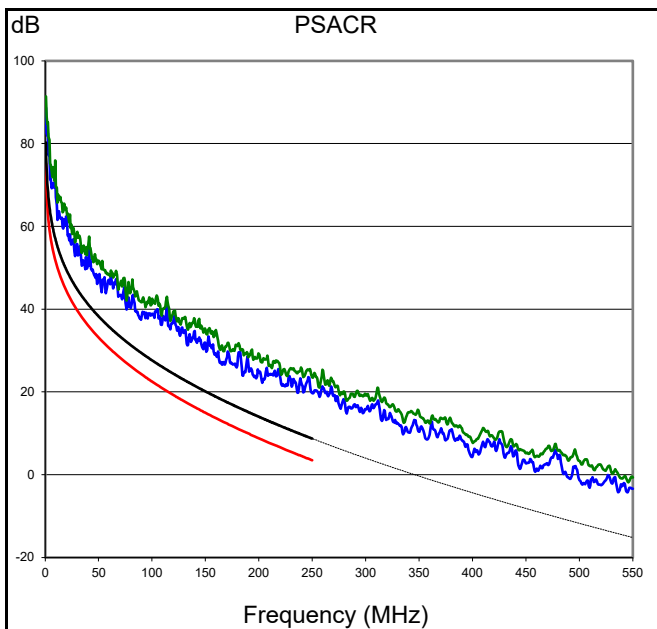
Summary

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
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 4X23 UTP-CMR-Solid

Test Started 6/16/2021 9:35
Technician David Ayers
Report No. 104239938CRT-005a
Length (m) 100
Temperature 19 °C
Test Status **PASS**



ACR					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	83.2	93.4	77.3	72.3	N/A
4	79.8	86.9	66.5	61.5	62.4
8	72.0	79.1	60.5	55.4	56.4
10	68.1	77.3	58.4	53.3	54.3
16	62.7	69.3	53.7	48.7	49.6
20	63.1	72.5	51.4	46.3	47.3
25	58.7	64.0	48.9	43.8	44.8
31.25	55.7	64.5	46.3	41.2	42.1
62.5	49.2	56.2	37.1	32.0	32.9
100	40.1	50.8	29.6	24.5	25.4
250	24.1	29.6	10.7	5.5	6.3
350	13.3	23.1			
550	-0.3	5.9			
Limit Margin (dB) :			5.63	10.69	9.74
Frequency (MHz) :			11.49	11.49	11.49



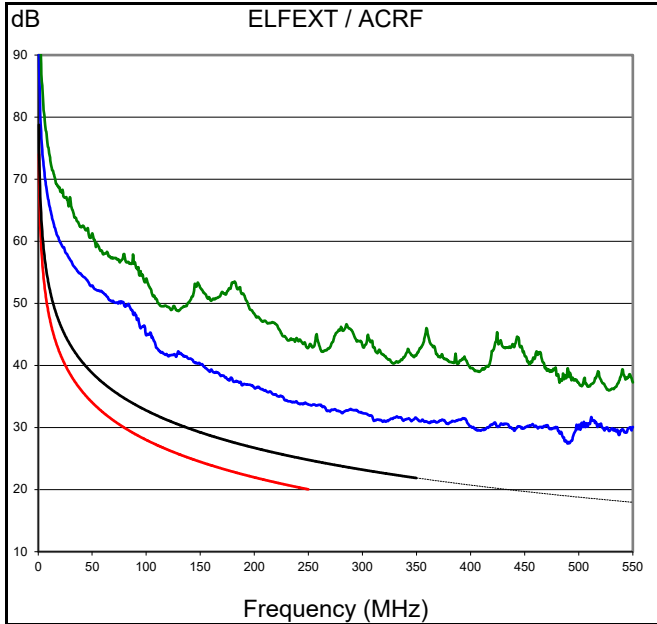
PSACR					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	82.5	86.6	75.3	70.3	N/A
4	77.6	80.9	64.5	59.5	59.4
8	69.4	72.3	58.5	53.4	53.4
10	67.1	69.6	56.4	51.3	51.3
16	59.8	63.4	51.7	46.7	46.6
20	62.4	64.6	49.4	44.3	44.3
25	56.5	58.1	46.9	41.8	41.8
31.25	53.3	57.8	44.3	39.2	39.1
62.5	47.9	49.3	35.1	30.0	29.9
100	38.9	42.5	27.6	22.5	22.4
250	19.7	23.5	8.7	3.5	3.3
350	10.5	15.5			
550	-3.4	-0.7			
Limit Margin (dB) :			6.48	11.54	11.59
Frequency (MHz) :			11.49	11.49	11.49

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

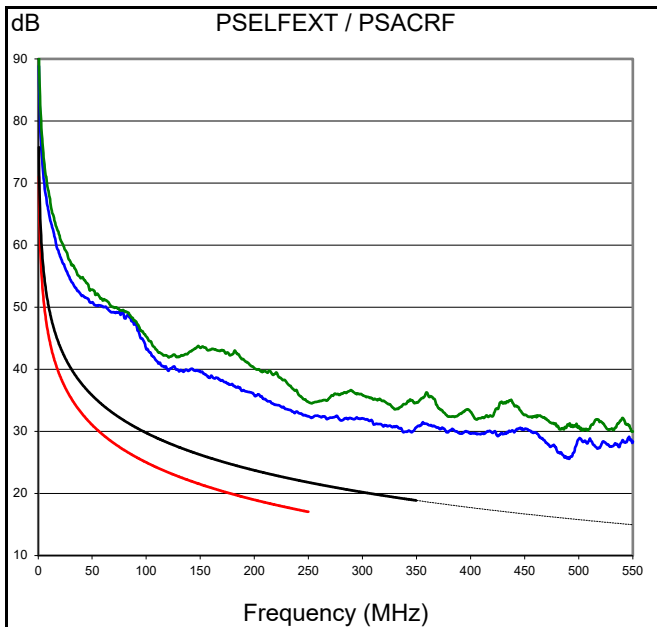
Summary

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
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 4X23 UTP-CMR-Solid

Test Started 6/16/2021 9:35
Technician David Ayers
Report No. 104239938CRT-005a
Length (m) 100
Temperature 19 °C
Test Status **PASS**



ELFEXT / ACRF					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	85.2	94.2	72.8	67.8	N/A
4	74.0	84.6	60.7	55.8	56.0
8	68.0	76.7	54.7	49.7	49.9
10	65.9	74.2	52.8	47.8	48.0
16	61.6	69.4	48.7	43.7	43.9
20	60.0	68.7	46.7	41.8	42.0
25	58.2	67.0	44.8	39.8	40.0
31.25	56.4	65.1	42.9	37.9	38.1
62.5	51.5	58.0	36.8	31.9	32.1
100	44.8	54.0	32.8	27.8	28.0
250	33.7	42.9	24.8	19.8	20.0
350	31.6	41.6	21.9		
550	30.1	37.3			
Limit Margin (dB) :			8.18	13.66	13.46
Frequency (MHz) :			310.28	241.59	241.59



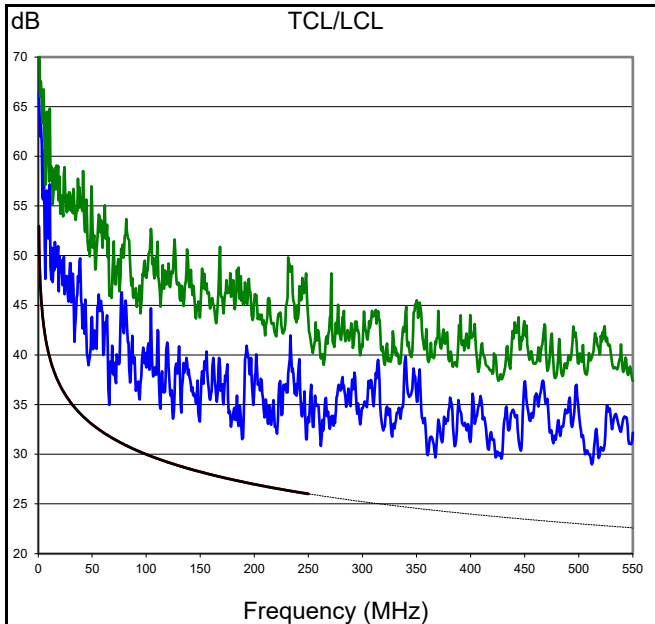
PSELFEXT / PSACRF					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	83.4	86.1	69.8	64.8	N/A
4	73.1	76.5	57.7	52.8	53.0
8	66.7	69.9	51.7	46.7	46.9
10	64.9	68.0	49.8	44.8	45.0
16	60.3	63.1	45.7	40.7	40.9
20	58.5	61.5	43.7	38.8	39.0
25	56.2	59.2	41.8	36.8	37.0
31.25	54.0	56.8	39.9	34.9	35.1
62.5	50.1	51.2	33.8	28.9	29.1
100	43.2	45.3	29.8	24.8	25.0
250	32.4	34.7	21.8	16.8	17.0
350	30.7	34.6	18.9		
550	28.4	30.0			
Limit Margin (dB) :			10.49	15.58	15.38
Frequency (MHz) :			252.58	245.03	245.03

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

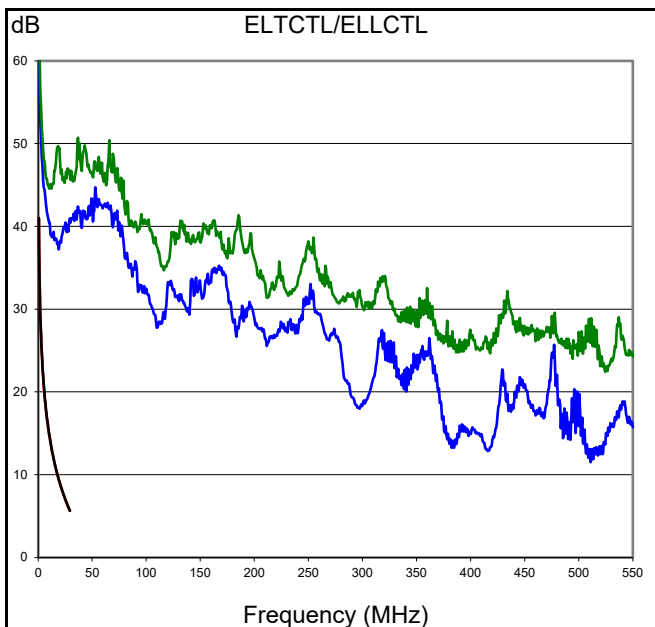
Summary

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 6/16/2021 9:35
Technician David Ayers
Report No. 104239938CRT-005a
Length (m) 100
Temperature 19 °C
Test Status **PASS**



TCL/LCL					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	64.2	69.9	50.0	40.0	50.0
4	56.0	63.4	44.0	40.0	44.0
8	56.6	64.5	41.0	40.0	41.0
10	52.1	57.4	40.0	40.0	40.0
16	48.8	56.7	38.0	38.0	38.0
20	49.9	58.0	37.0	37.0	37.0
25	47.1	55.4	36.0	36.0	36.0
31.25	46.9	55.0	35.1	35.1	35.1
62.5	42.7	55.1	32.0	32.0	32.0
100	38.7	47.8	30.0	30.0	30.0
250	33.8	43.5	26.0	26.0	26.0
350	36.6	45.2			
550	32.2	37.4			
Limit Margin (dB) :			3.14	3.14	3.14
Frequency (MHz) :			65.75	65.75	65.75



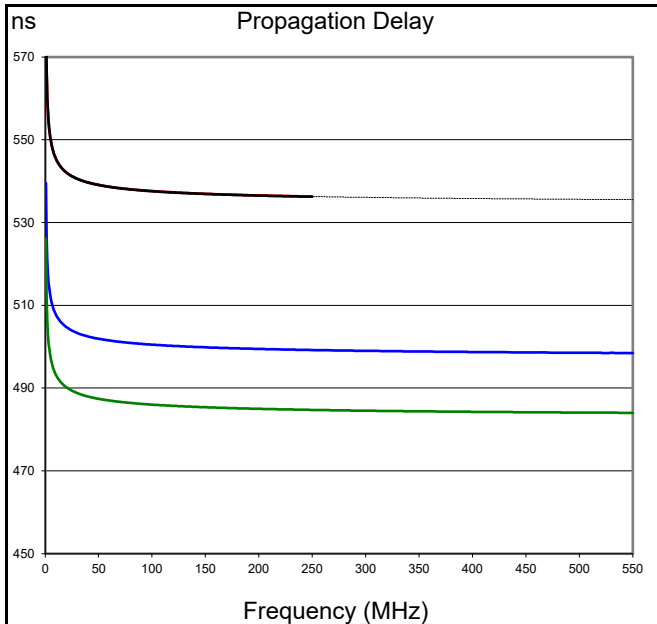
ELTCTL/ELLCTL					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	58.1	61.6	35.0	35.0	35.0
4	47.3	50.7	23.0	23.0	23.0
8	41.7	45.7	16.9	16.9	16.9
10	40.4	44.6	15.0	15.0	15.0
16	38.5	47.7	10.9	10.9	10.9
20	37.8	49.5	9.0	9.0	9.0
25	40.5	45.9	7.0	7.0	7.0
31.25	41.0	46.0			
62.5	42.7	46.4			
100	32.5	40.3			
250	31.3	38.2			
350	23.8	27.9			
550	15.7	24.3			
Limit Margin (dB) :			23.25	23.25	23.25
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

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

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Temperature 19 °C
Test Status **PASS**



Propagation Delay					
Freq. MHz	Worst Case	Average	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1	526.7	512.3	570.0	570.0	N/A
4	513.9	499.3	552.0	552.0	552.0
8	508.9	494.4	546.7	546.7	546.7
10	507.7	493.1	545.4	545.4	545.4
16	505.5	491.0	543.0	543.0	543.0
20	504.7	490.2	542.0	542.0	542.0
25	503.9	489.3	541.2	541.2	541.2
31.25	503.2	488.7	540.4	540.4	540.4
62.5	501.4	486.9	538.6	538.6	538.6
100	500.5	486.0	537.6	537.6	537.6
250	499.2	484.7	536.3	536.3	536.3
350	498.8	484.4			
550	498.5	484.0			
Limit Margin (dB) :			37.07	37.08	37.08
Frequency (MHz) :			242.97	242.97	242.97

Delay Skew				
Freq. MHz	Worst case	LM-1000 Spec	TIA Spec	ISO/IEC Spec
1-250	27.59	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	4.67	5.60	0.77	5.60	0.77	N/A	N/A
Maximum Capacitance Unbalance Pair-to-Ground (pF/100m)	12.32	5.19	160.00	147.68	330.00	317.68	160.00	147.68
Conductor DC resistance (Ω)	7.61	7.45	9.38	1.77	9.38	1.77	9.50	1.89
DC Resistance Unbalance within a pair (%) using IEC calculation method	1.00%	0.31%	1.50%	0.50%	2.50%	1.50%	2.00%	1.00%

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