

Project Number: G104239938

Date Issued: 6/13/2022

ETL Verified Certificate of Conformance number: 104212898CRT-002

Test Report Number: 104239938CRT-007b



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 104212898CRT-002. 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 11/29/2021 through 11/29/2021, to the ANSI/TIA-568.2-D and LM-SST standard(s) for category 6A 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

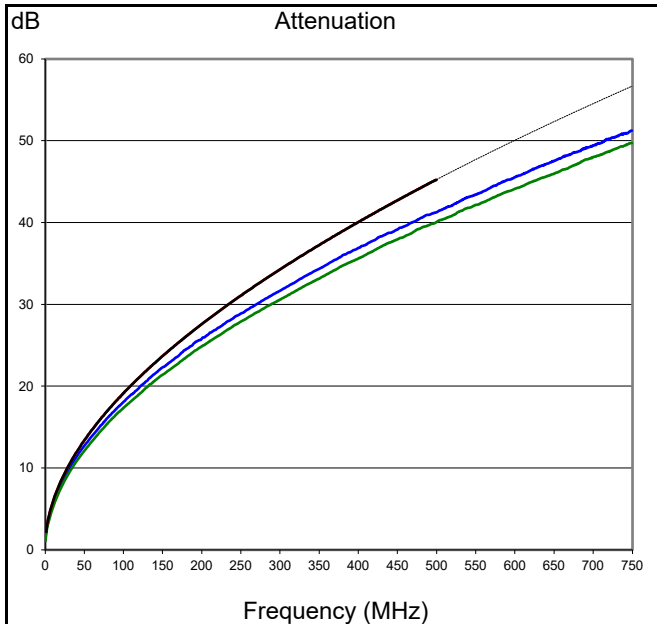
A handwritten signature in black ink that reads "Craig L. Williams".

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

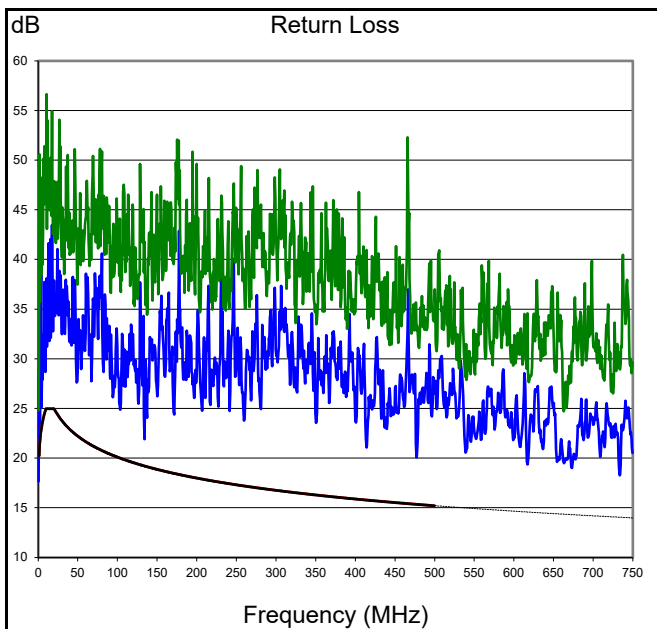
Summary

Client Berk-Tek LLC
Specifications Berk-Tek LM-SST
 ANSI/TIA-568.2-D, Category 6A
Part Number LM-SST CMR UTP
Description **Berk-Tek LM-SST CMR**
 4X23 U/UTP-CMR-Solid

Test Started 11/29/2021 11:48
Technician Craig Williams
Report No. 104239938CRT-007b
Length (m) 100
Temperature 19.2 °C
Test Status **PASS**



Attenuation				
Freq. MHz	Worst Case	Average	LM-SST Spec	TIA Spec
1	2.0	1.7	2.1	2.1
4	3.7	3.4	3.8	3.8
8	5.0	4.6	5.3	5.3
10	5.6	5.2	5.9	5.9
16	7.1	6.7	7.5	7.5
20	7.9	7.5	8.4	8.4
25	8.9	8.4	9.4	9.4
31.25	9.4	8.9	10.5	10.5
62.5	14.2	13.5	15.0	15.0
100	18.0	17.3	19.1	19.1
250	28.9	27.9	31.1	31.1
500	41.2	40.0	45.3	45.3
600	45.6	44.1		
750	51.2	49.7		
Limit Margin (dB) :			0.14	0.14
Frequency (MHz) :			1.75	1.75



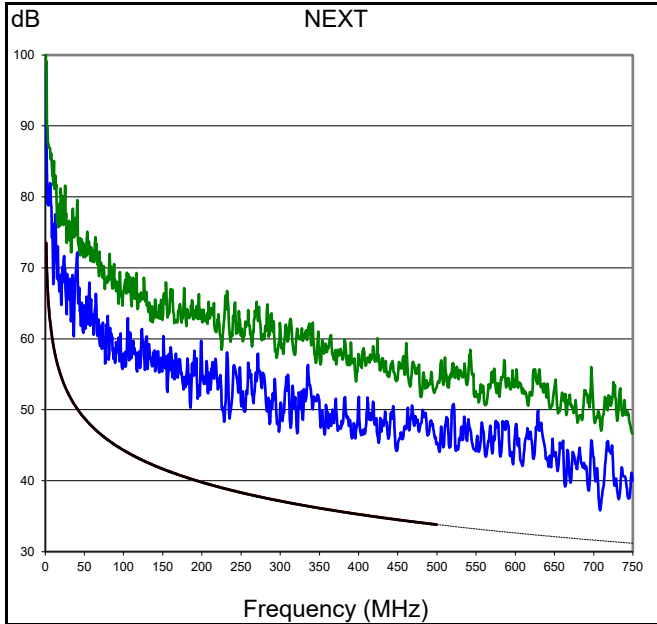
Return Loss				
Freq. MHz	Worst Case	Average	LM-SST Spec	TIA Spec
1	28.2	30.7	20.0	20.0
4	25.1	38.5	23.0	23.0
8	37.7	51.4	24.5	24.5
10	35.3	46.4	25.0	25.0
16	32.1	50.2	25.0	25.0
20	37.9	47.1	25.0	25.0
25	37.9	42.1	24.3	24.3
31.25	36.8	47.2	23.6	23.6
62.5	38.2	44.6	21.5	21.5
100	31.3	43.4	20.1	20.1
250	29.3	45.2	17.3	17.3
500	26.8	33.8	15.2	15.2
600	22.6	31.4		
750	20.5	29.6		
Limit Margin (dB) :			0.34	0.34
Frequency (MHz) :			2.37	2.37

Legend : Blue - Worst Case; Green - Average; Red - TIA Specification; Black - LM-SST Specification

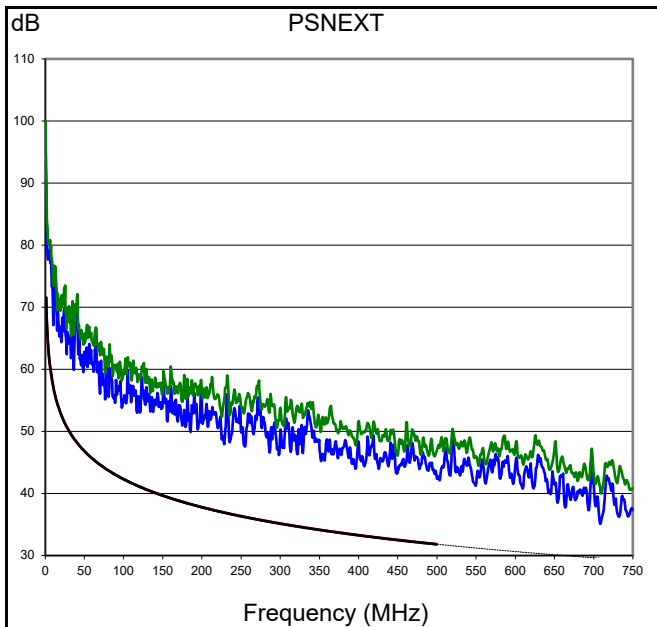
Summary

Client Berk-Tek LLC
Specifications Berk-Tek LM-SST
 ANSI/TIA-568.2-D, Category 6A
Part Number LM-SST CMR UTP
Description Berk-Tek LM-SST CMR
 4X23 U/UTP-CMR-Solid

Test Started 11/29/2021 11:48
Technician Craig Williams
Report No. 104239938CRT-007b
Length (m) 100
Temperature 19.2 °C
Test Status **PASS**



NEXT				
Freq. MHz	Worst Case	Average	LM-SST Spec	TIA Spec
1	93.2	98.9	74.3	74.3
4	78.8	87.3	65.3	65.3
8	78.6	85.9	60.8	60.8
10	70.4	82.9	59.3	59.3
16	73.0	78.0	56.2	56.2
20	67.2	81.2	54.8	54.8
25	70.4	76.7	53.3	53.3
31.25	63.4	73.5	51.9	51.9
62.5	62.1	70.8	47.4	47.4
100	57.8	66.6	44.3	44.3
250	51.1	60.5	38.3	38.3
500	45.1	53.1	33.8	33.8
600	47.4	53.9		
750	39.9	46.7		
Limit Margin (dB) :			8.71	8.71
Frequency (MHz) :			10.50	10.50



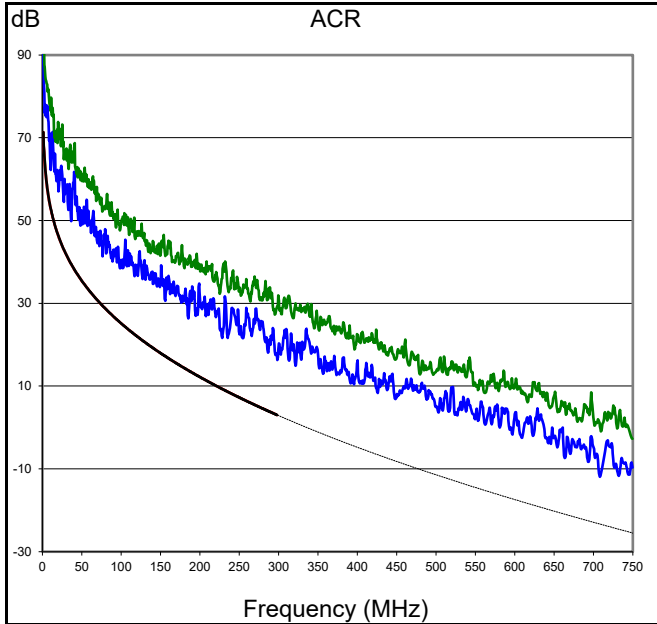
PSNEXT				
Freq. MHz	Worst Case	Average	LM-SST Spec	TIA Spec
1	91.7	92.6	72.3	72.3
4	77.8	80.1	63.3	63.3
8	75.7	78.1	58.8	58.8
10	70.0	74.3	57.3	57.3
16	70.9	72.2	54.2	54.2
20	66.2	71.1	52.8	52.8
25	67.3	70.3	51.3	51.3
31.25	62.4	66.5	49.9	49.9
62.5	60.8	63.8	45.4	45.4
100	55.2	59.6	42.3	42.3
250	50.3	54.0	36.3	36.3
500	42.7	46.8	31.8	31.8
600	44.6	47.6		
750	37.3	40.8		
Limit Margin (dB) :			10.12	10.12
Frequency (MHz) :			10.50	10.50

Legend : Blue - Worst Case; Green - Average; Red - TIA Specification; Black - LM-SST Specification

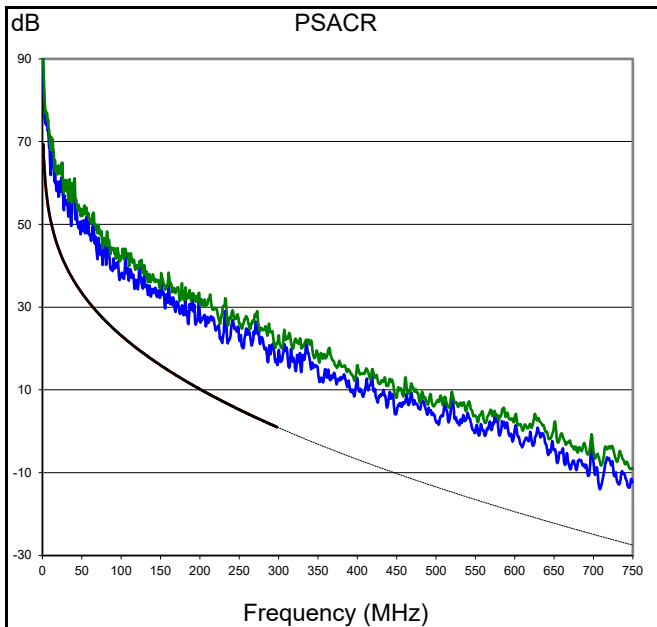
Summary

Client Berk-Tek LLC
Specifications Berk-Tek LM-SST
 ANSI/TIA-568.2-D, Category 6A
Part Number LM-SST CMR UTP
Description **Berk-Tek LM-SST CMR**
 4X23 U/UTP-CMR-Solid

Test Started 11/29/2021 11:48
Technician Craig Williams
Report No. 104239938CRT-007b
Length (m) 100
Temperature 19.2 °C
Test Status **PASS**



ACR				
Freq. MHz	Worst Case	Average	LM-SST Spec	TIA Spec
1	91.3	97.2	72.2	72.2
4	75.3	84.1	61.5	61.5
8	73.8	81.4	55.4	55.4
10	65.1	77.9	53.4	53.4
16	66.2	71.5	48.8	48.8
20	59.6	73.9	46.4	46.4
25	61.8	68.5	44.0	44.0
31.25	54.5	64.8	41.4	41.4
62.5	48.4	57.4	32.4	32.4
100	40.4	49.5	25.2	25.2
250	23.2	32.8	7.3	7.3
500	4.9	13.3		
600	3.2	10.1		
750	-9.7	-2.7		
Limit Margin (dB) :			9.30	9.30
Frequency (MHz) :			10.50	10.50



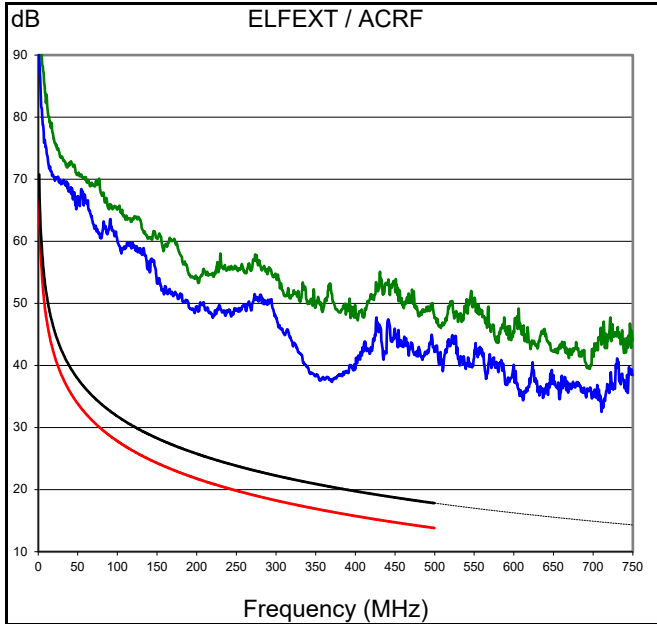
PSACR				
Freq. MHz	Worst Case	Average	LM-SST Spec	TIA Spec
1	89.8	90.9	70.2	70.2
4	74.3	76.8	59.5	59.5
8	71.4	73.5	53.4	53.4
10	64.7	69.1	51.4	51.4
16	64.3	65.5	46.8	46.8
20	58.6	63.6	44.4	44.4
25	58.8	61.9	42.0	42.0
31.25	53.4	57.7	39.4	39.4
62.5	47.1	50.2	30.4	30.4
100	37.8	42.3	23.2	23.2
250	22.7	26.2	5.3	5.3
500	2.5	6.8		
600	0.4	3.4		
750	-12.3	-8.9		
Limit Margin (dB) :			10.98	10.98
Frequency (MHz) :			10.50	10.50

Legend : Blue - Worst Case; Green - Average; Red - TIA Specification; Black - LM-SST Specification

Summary

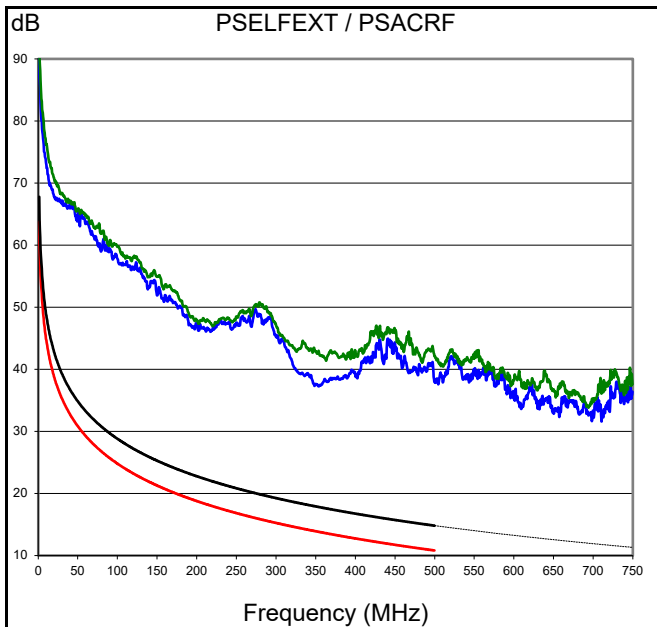
Client Berk-Tek LLC
Specifications Berk-Tek LM-SST
 ANSI/TIA-568.2-D, Category 6A
Part Number LM-SST CMR UTP
Description **Berk-Tek LM-SST CMR**
 4X23 U/UTP-CMR-Solid

Test Started 11/29/2021 11:48
Technician Craig Williams
Report No. 104239938CRT-007b
Length (m) 100
Temperature 19.2 °C
Test Status **PASS**



ELFEXT / ACRF				
Freq. MHz	Worst Case	Average	LM-SST Spec	TIA Spec
1	92.6	100.0	71.8	67.8
4	81.5	90.0	59.8	55.8
8	76.3	85.0	53.7	49.7
10	75.2	82.3	51.8	47.8
16	71.3	78.3	47.7	43.7
20	70.3	76.5	45.8	41.8
25	70.4	75.0	43.8	39.8
31.25	69.9	73.7	41.9	37.9
62.5	66.6	69.7	35.9	31.9
100	60.1	65.2	31.8	27.8
250	48.9	55.8	23.8	19.8
500	42.2	47.6	17.8	13.8
600	38.3	45.3		
750	38.5	44.0		

Limit Margin (dB) : 16.80 20.80
 Frequency (MHz) : 354.70 354.70



PSELFEXT / PSACRF				
Freq. MHz	Worst Case	Average	LM-SST Spec	TIA Spec
1	91.2	93.6	68.8	64.8
4	79.9	83.2	56.8	52.8
8	74.8	78.1	50.7	46.7
10	73.4	76.2	48.8	44.8
16	69.5	72.4	44.7	40.7
20	67.9	70.9	42.8	38.8
25	67.1	69.7	40.8	36.8
31.25	67.2	68.4	38.9	34.9
62.5	63.8	64.5	32.9	28.9
100	57.8	59.7	28.8	24.8
250	47.5	48.5	20.8	16.8
500	37.9	42.1	14.8	10.8
600	35.9	38.3		
750	36.4	37.6		

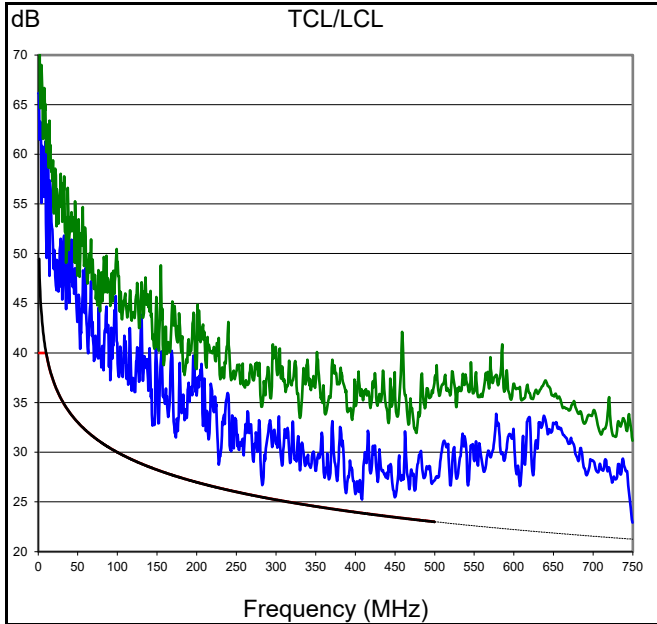
Limit Margin (dB) : 19.36 23.36
 Frequency (MHz) : 348.45 348.45

Legend : Blue - Worst Case; Green - Average; Red - TIA Specification; Black - LM-SST Specification

Summary

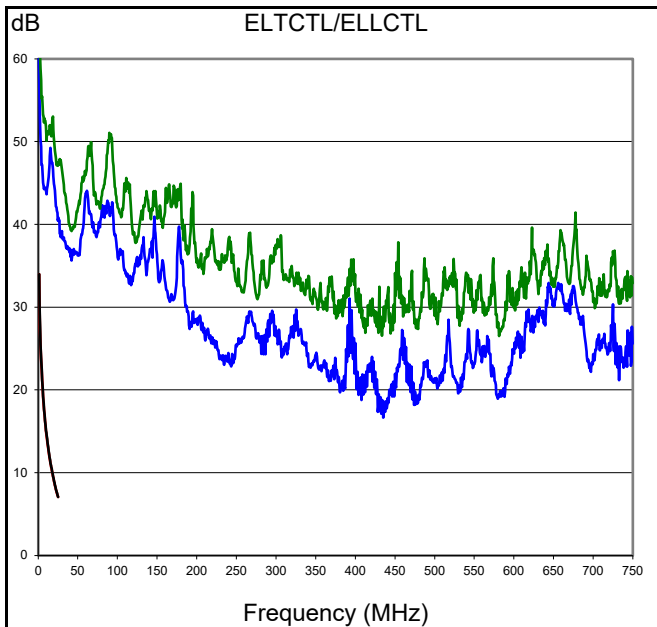
Client Berk-Tek LLC
Specifications Berk-Tek LM-SST
 ANSI/TIA-568.2-D, Category 6A
Part Number LM-SST CMR UTP
Description **Berk-Tek LM-SST CMR**
 4X23 U/UTP-CMR-Solid

Test Started 11/29/2021 11:48
Technician Craig Williams
Report No. 104239938CRT-007b
Length (m) 100
Temperature 19.2 °C
Test Status **PASS**



TCL/LCL				
Freq. MHz	Worst Case	Average	LM-SST Spec	TIA Spec
1	66.2	73.5	50.0	40.0
4	55.1	69.0	44.0	40.0
8	58.3	66.7	41.0	40.0
10	53.1	61.2	40.0	40.0
16	56.1	59.0	38.0	38.0
20	48.4	54.1	37.0	37.0
25	48.1	54.0	36.0	36.0
31.25	50.4	55.7	35.1	35.1
62.5	40.6	47.0	32.0	32.0
100	41.0	48.3	30.0	30.0
250	33.3	38.0	26.0	26.0
500	27.2	37.0	23.0	23.0
600	31.3	36.9		
750	22.9	31.2		

Limit Margin (dB) : 1.22 1.22
 Frequency (MHz) : 282.86 282.86



ELTCTL/ELLCTL				
Freq. MHz	Worst Case	Average	LM-SST Spec	TIA Spec
1	59.2	67.4	35.0	35.0
4	47.2	55.2	23.0	23.0
8	44.5	52.8	16.9	16.9
10	44.1	51.8	15.0	15.0
16	48.7	51.6	10.9	10.9
20	44.9	50.3	9.0	9.0
25	40.5	47.1	7.0	7.0
31.25	38.9	47.9		
62.5	43.6	48.1		
100	36.7	42.5		
250	25.5	33.1		
500	21.4	29.0		
600	24.4	31.1		
750	25.6	32.9		

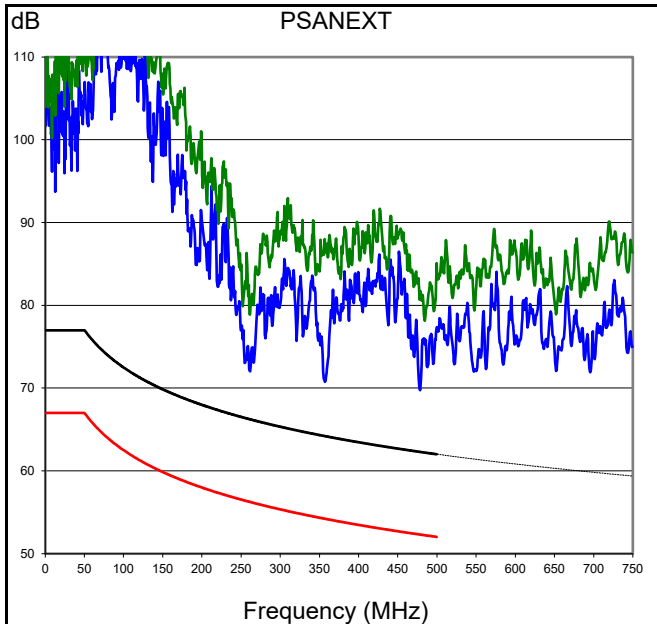
Limit Margin (dB) : 24.76 24.76
 Frequency (MHz) : 4.25 4.25

Legend : Blue - Worst Case; Green - Average; Red - TIA Specification; Black - LM-SST Specification

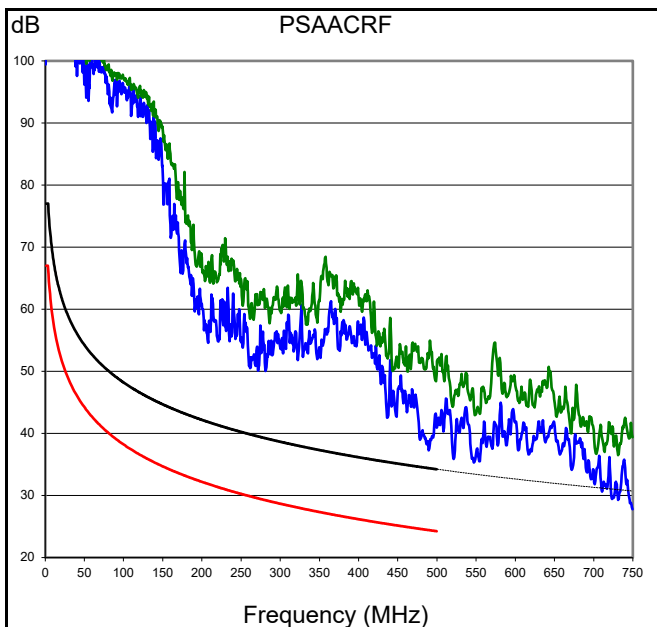
Summary

Client Berk-Tek LLC
Specifications Berk-Tek LM-SST
 ANSI/TIA-568.2-D, Category 6A
Part Number LM-SST CMR UTP
Description **Berk-Tek LM-SST CMR**
 4X23 U/UTP-CMR-Solid

Test Started 11/29/2021 11:48
Technician Craig Williams
Report No. 104239938CRT-007b
Length (m) 100
Temperature 19.2 °C
Test Status **PASS**



PSANEXT				
Freq. MHz	Worst Case	Average	LM-SST Spec	TIA Spec
1	106.5	108.8	77.0	67.0
4	102.5	103.9	77.0	67.0
8	101.1	107.3	77.0	67.0
10	98.8	103.7	77.0	67.0
16	103.7	107.7	77.0	67.0
20	104.3	111.4	77.0	67.0
25	95.9	104.0	77.0	67.0
31.25	102.5	108.6	77.0	67.0
62.5	108.9	112.2	75.6	65.6
100	109.8	112.7	72.5	62.5
250	77.0	84.6	66.5	56.5
500	77.3	85.1	62.0	52.0
600	75.9	86.7		
750	75.0	86.4		
Limit Margin (dB) :			5.79	15.79
Frequency (MHz) :			261.62	261.62

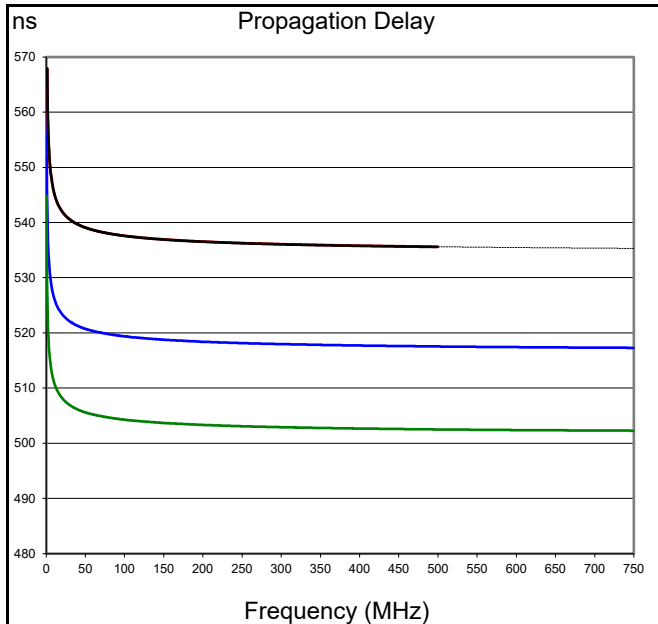


PSAACRF				
Freq. MHz	Worst Case	Average	LM-SST Spec	TIA Spec
1	104.6	107.2	77.0	67.0
4	102.0	103.9	76.2	66.2
8	107.7	108.8	70.1	60.1
10	105.7	108.4	68.2	58.2
16	106.4	107.2	64.1	54.1
20	106.1	107.5	62.2	52.2
25	100.6	104.5	60.2	50.2
31.25	103.8	105.8	58.3	48.3
62.5	98.9	101.1	52.3	42.3
100	95.8	97.3	48.2	38.2
250	55.1	64.9	40.2	30.2
500	40.9	49.6	34.2	24.2
600	41.8	47.6		
750	27.8	39.4		
Limit Margin (dB) :			2.87	12.87
Frequency (MHz) :			489.63	489.63

Legend : Blue - Worst Case; Green - Average; Red - TIA Specification; Black - LM-SST Specification

Summary

Client	Berk-Tek LLC	Test Started	11/29/2021 11:48
Specifications	Berk-Tek LM-SST ANSI/TIA-568.2-D, Category 6A	Technician	Craig Williams
Part Number	LM-SST CMR UTP	Report No.	104239938CRT-007b
Description	Berk-Tek LM-SST CMR 4X23 U/UTP-CMR-Solid	Length (m)	100
		Temperature	19.2 °C
		Test Status	PASS



Propagation Delay				
Freq. MHz	Worst Case	Average	LM-SST Spec	TIA Spec
1	546.1	530.0	570.0	570.0
4	531.6	516.1	552.0	552.0
8	527.5	512.2	546.7	546.7
10	526.4	511.1	545.4	545.4
16	524.3	509.0	543.0	543.0
20	523.5	508.3	542.0	542.0
25	522.7	507.5	541.2	541.2
31.25	522.4	507.2	540.4	540.4
62.5	520.3	505.1	538.6	538.6
100	519.4	504.3	537.6	537.6
250	518.2	503.1	536.3	536.3
500	517.5	502.5	535.6	535.6
600	517.4	502.4		
750	517.3	502.3		
Limit Margin (dB) :			18.07	18.07
Frequency (MHz) :			483.38	483.38

Delay Skew			
Freq. MHz	Worst case	LM-SST Spec	TIA Spec
1-500	27.47	45	45

Low frequency measurements						
Parameter	Worst Case	Average	LM-SST		TIA	
			Spec	Margin	Spec	Margin
Mutual capacitance (nF/100m)	5.04	4.82	5.10	0.06	5.60	0.56
Maximum Capacitance Unbalance Pair-to-Ground (pF/100m)	8.46	5.24	330.00	321.54	330.00	321.54
Conductor DC resistance (Ω)	7.36	7.28	9.38	2.02	9.38	2.02
DC Resistance Unbalance within a pair (%) using IEC calculation method	0.70%	0.32%	2.00%	1.30%	2.00%	1.30%

Legend : Blue - Worst Case; Green - Average; Red - TIA Specification; Black - LM-SST Specification