



Designation : 650M log
Specification : DGi CAT6A

Length : 100.0 m
Test Date/Time : 06.06.2012 11:13

Temp : 20.0 Deg C
Sample-ID-No. : 000008BWGB

Customer :
Cable type :
Specification :

Drum no. :
Order number :
Operator :

Test Result: **PASS**

Final inspection

Worst Case Summary

{ v = Value / = Limit m = Margin f = Frequency (MHz) p = Pair / Combo < = Lower Limit > = Upper Limit }

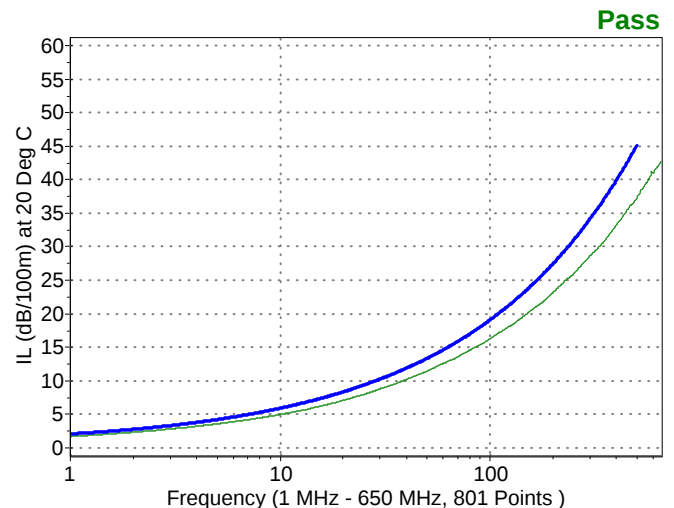
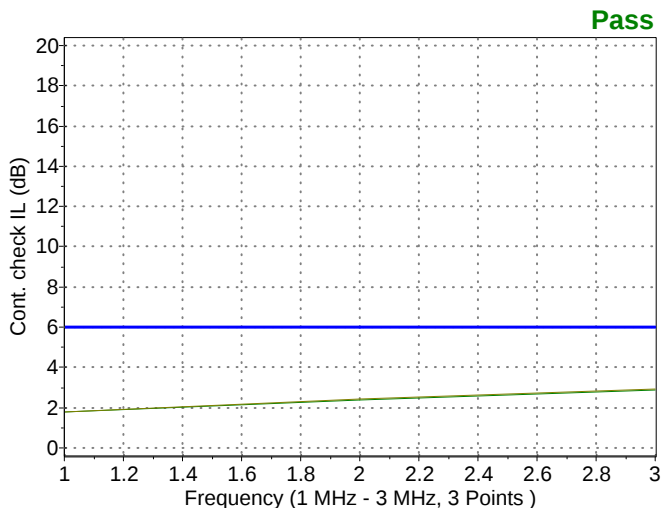
Parameter	Frequency	Points	Minimum	{ v [f] p }	Maximum	{ v [f] p }	Min. Margin	{ m (v l) [f] p }	Result
Cont. check IL (dB)	1-3	3	1.76	[1] 3	2.94	[3] 4	3.06	(2.94 > 6.00)	[3] 4 ✓
IL (dB/100m) at 20 Deg C	1-650	801	1.69	[1] 2	42.79	[650] 2			
Phase delay (ns/100m)	1-650	1601	415.31	[650] 1	425.50	[2.217] 1			
V (km/s)	1-650	1601	-1'734'447	[1] 1	1'225'967	[1.406] 1			
V % (%)	1-650	1601	-578.15	[1] 1	408.66	[1.406] 1			
NEXT (dB)	1-650	1601	72.52	[292.8] 2-4	109.39	[45.48] 3-4	13.54	(87.74 < 74.19)	[1.016] 2-4 ✓
PS NEXT (dB)	1-650	1601	72.34	[292.8] 2	106.92	[44.03] 2	10.11	(84.31 < 74.19)	[1.016] 4 ✓
FEXT (dB)	1-650	801	84.66	[3.96] 1-3	110.16	[594.6] 1-4			
ELFEXT (dB)	1-650	801	61.16	[614.2] 2-4	104.36	[9.967] 2-3	17.23	(83.90 < 66.67)	[1.138] 1-3 ✓
PS FEXT (dB)	1-650	801	83.43	[2.359] 4	108.07	[16.2] 4			
PS ELFEXT (dB)	1-650	801	59.45	[644.8] 4	101.94	[9.967] 4	18.65	(82.18 < 63.53)	[1.157] 3 ✓
ZIN (Ohm)	1-650	801	80.83	[585.1] 2	121.50	[580.3] 1	3.50	(121.50 > 125.00)	[580.3] 1 ✓
RFL (C)	1-650	801	0.0	[106] 1	0.1	[609.2] 2			
Z0 (Ohm) (4th Order)	1-650	801	98.88	[49.12] 4	106.43	[1.499] 3			
RL (dB)	1-650	801	18.48	[609.2] 2	43.55	[11.25] 3	3.05	(18.55 < 15.50)	[455.2] 4 ✓
SRL (dB)	1-650	801	18.47	[589.8] 2	45.61	[68.46] 1			

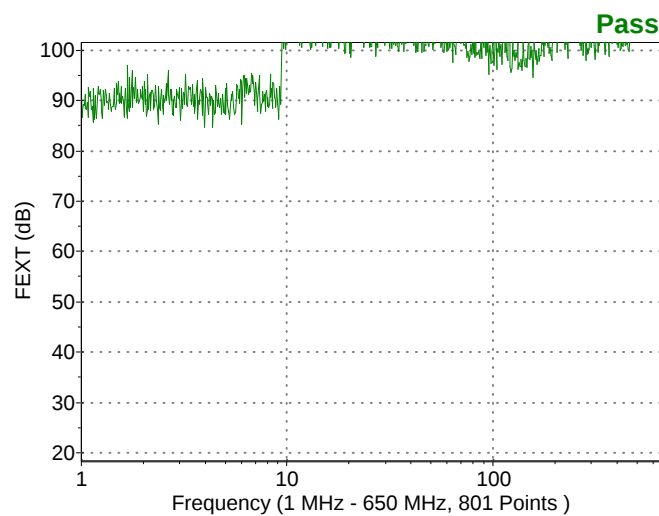
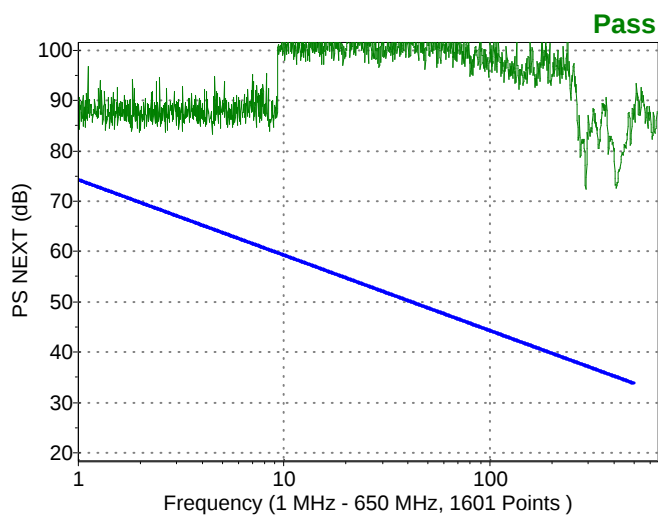
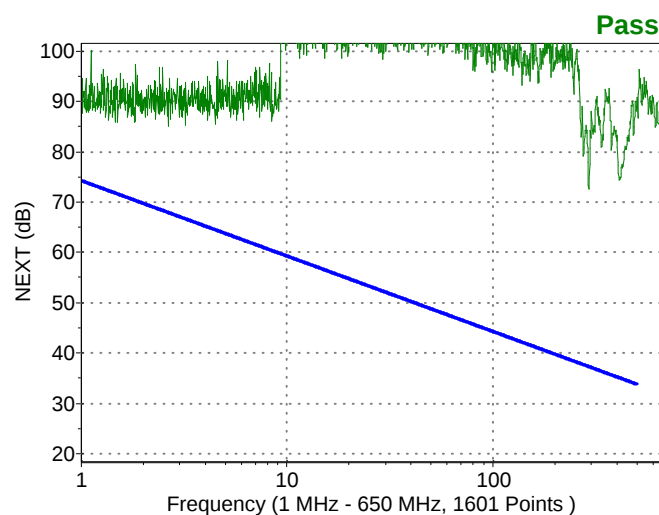
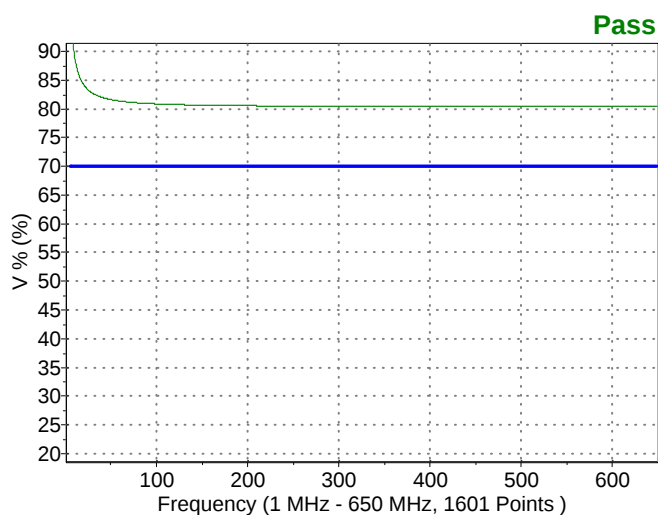
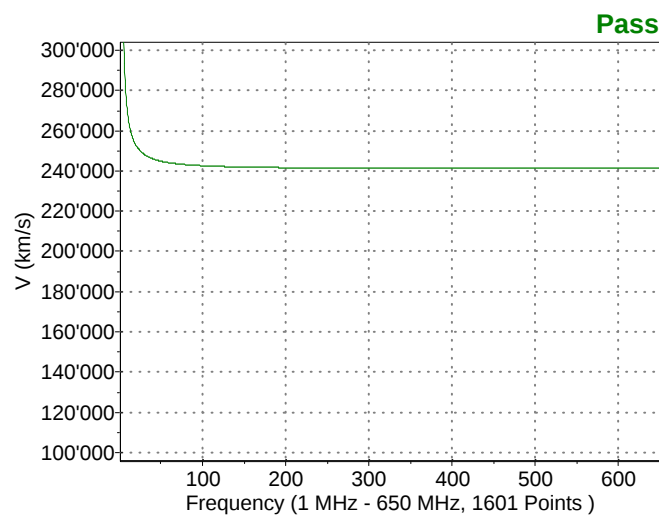
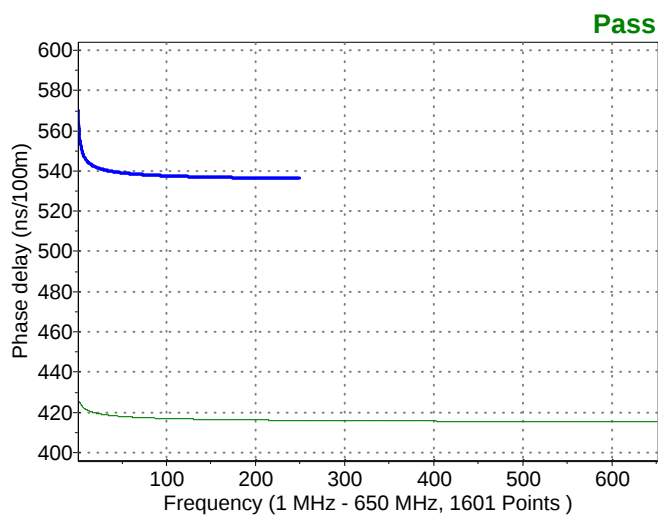
Legend

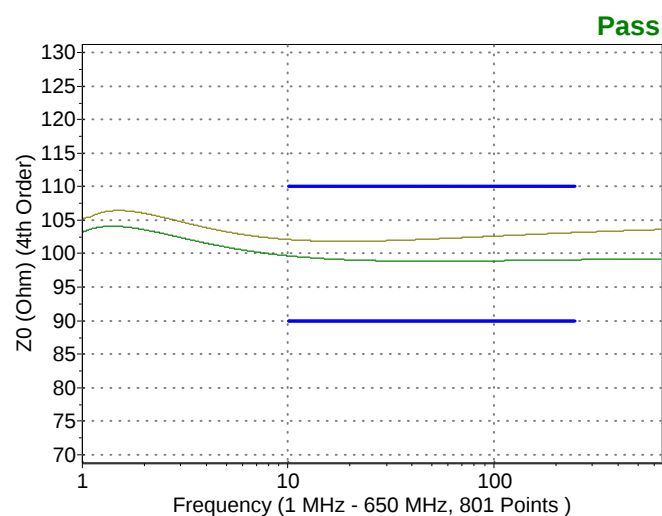
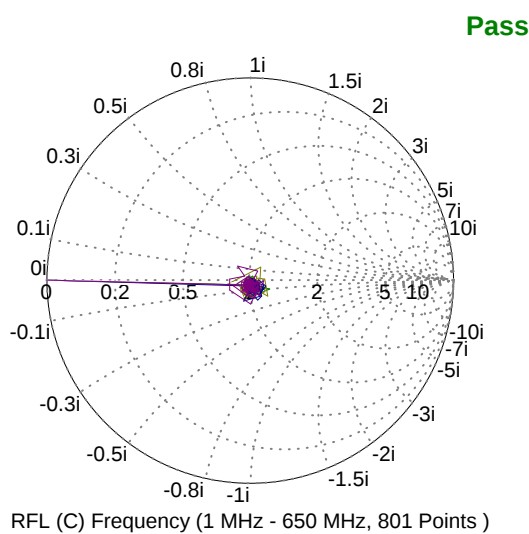
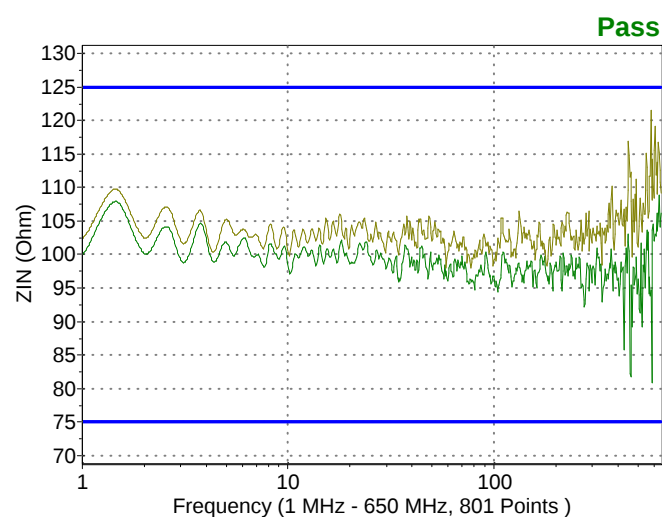
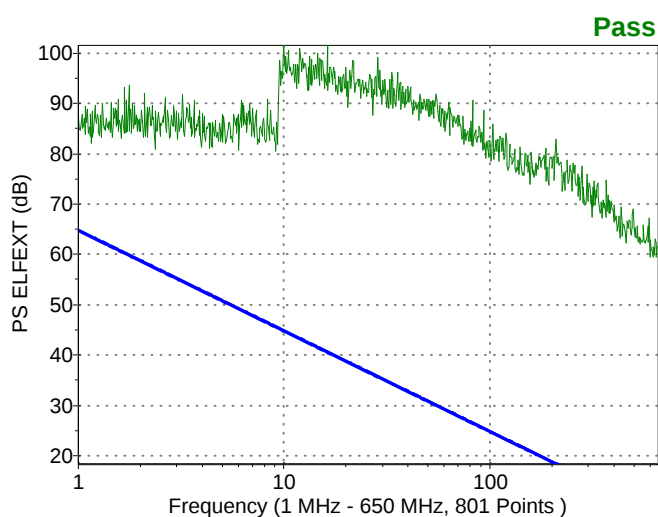
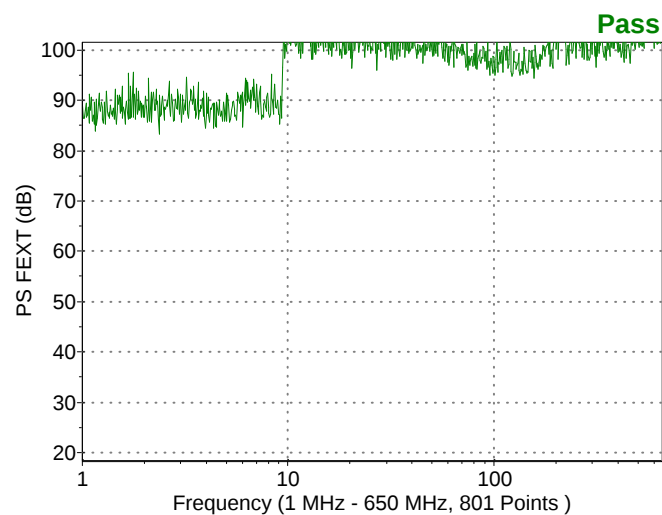
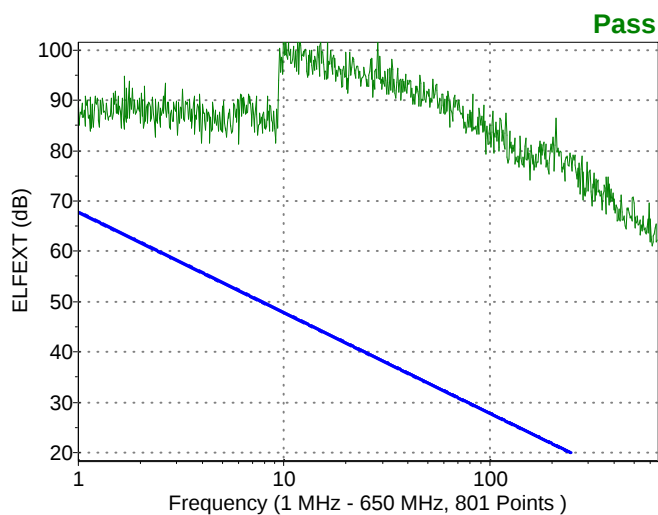
Cont. check IL = Continuity check IL
V % = Velocity %
FEXT = Far End Crosstalk
PS ELFEXT = Power Sum ELFEXT
Z0 = Fitted Impedance

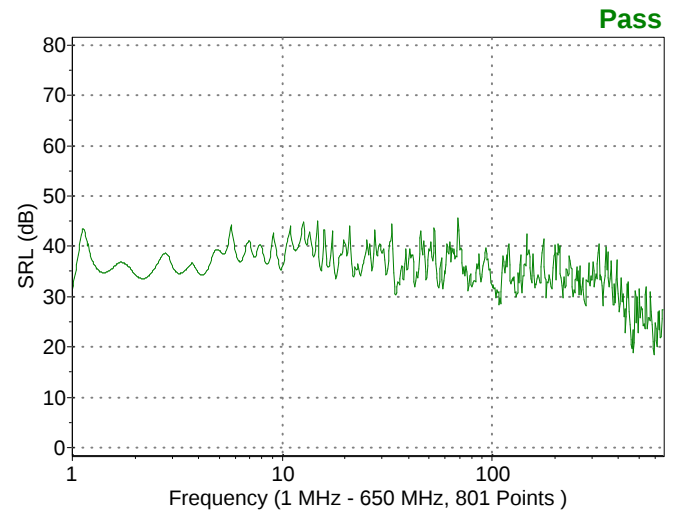
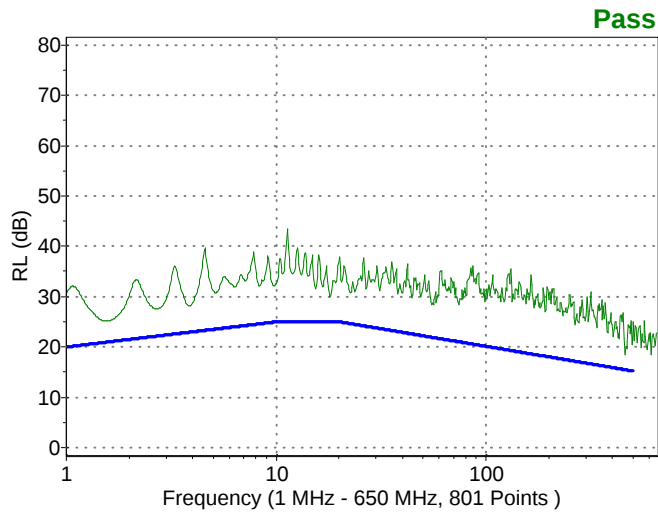
Phase delay = Phase delay
NEXT = Near End Crosstalk
ELFEXT = Equal Level FEXT
ZIN = Input Impedance
RL = Return Loss

V = Velocity
PS NEXT = Power Sum NEXT
PS FEXT = Power Sum FEXT
RFL (C) = Reflection (complex)
SRL = Structural Return Loss





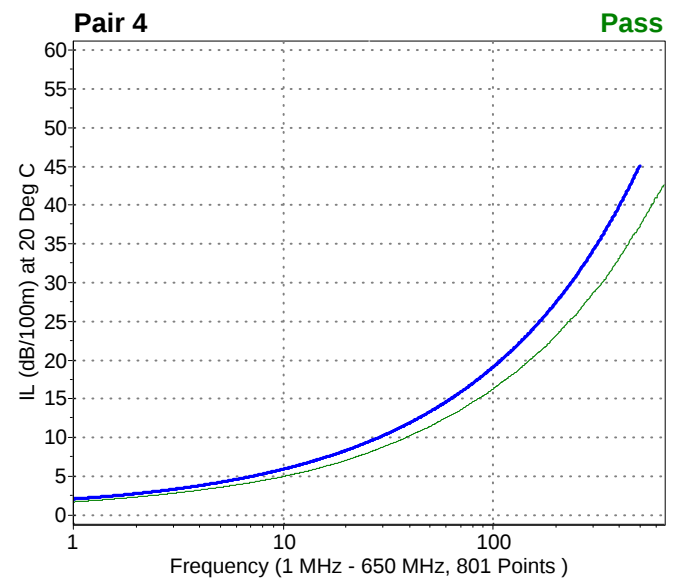
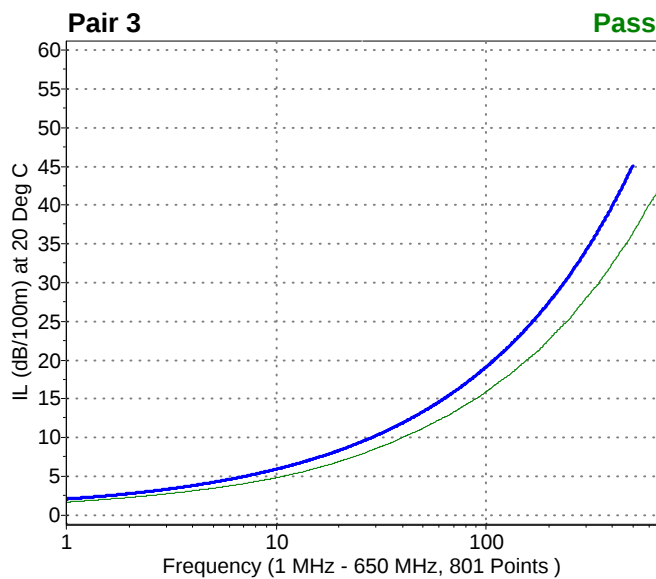
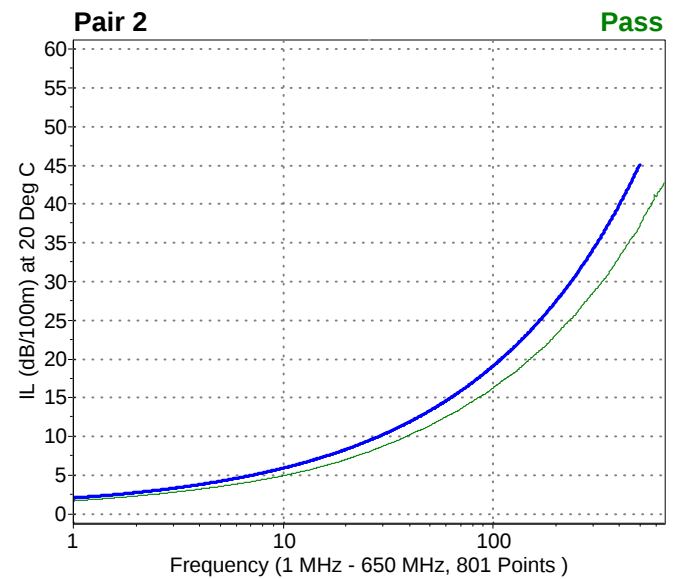
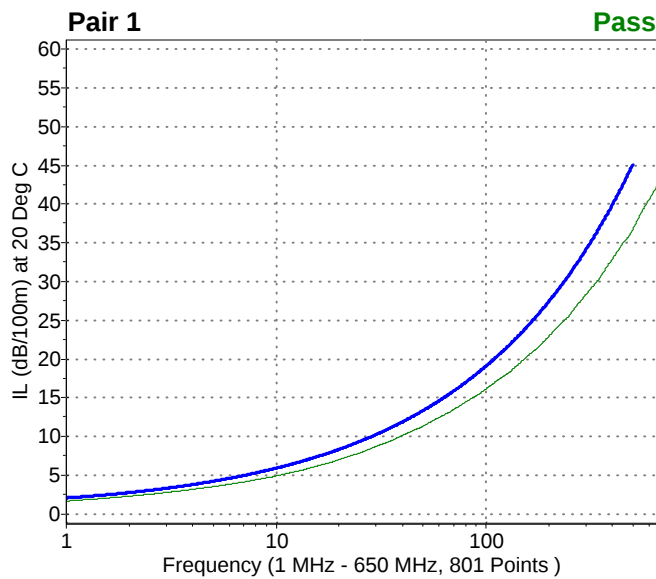




**Summary and Graphic: Insertion loss (IL)**

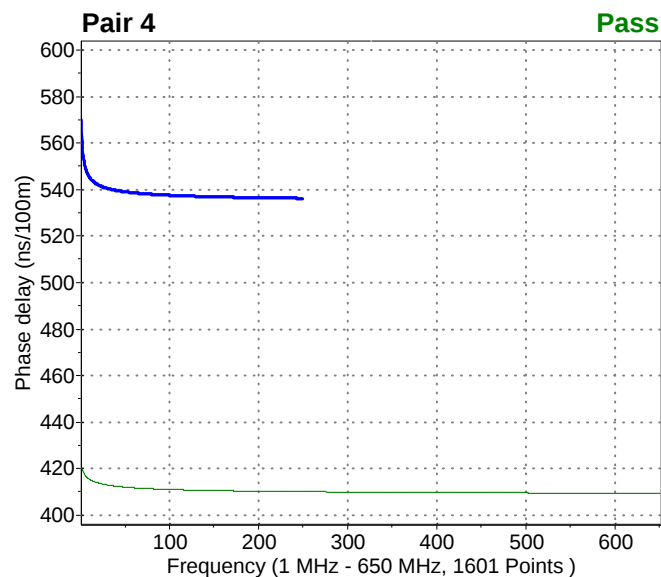
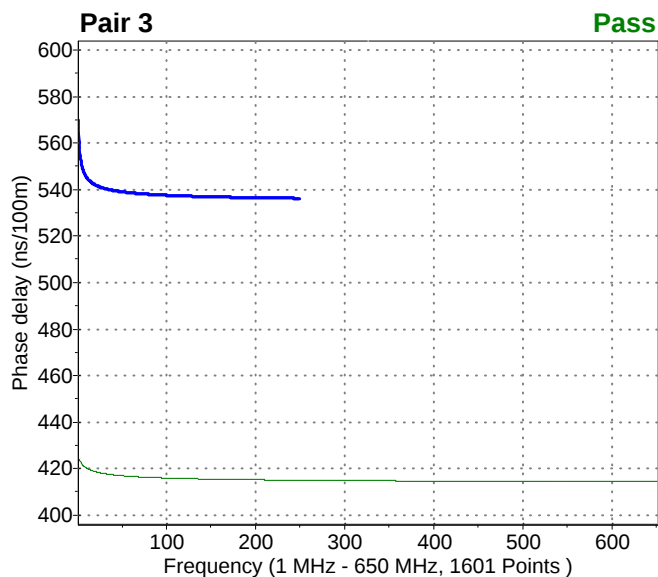
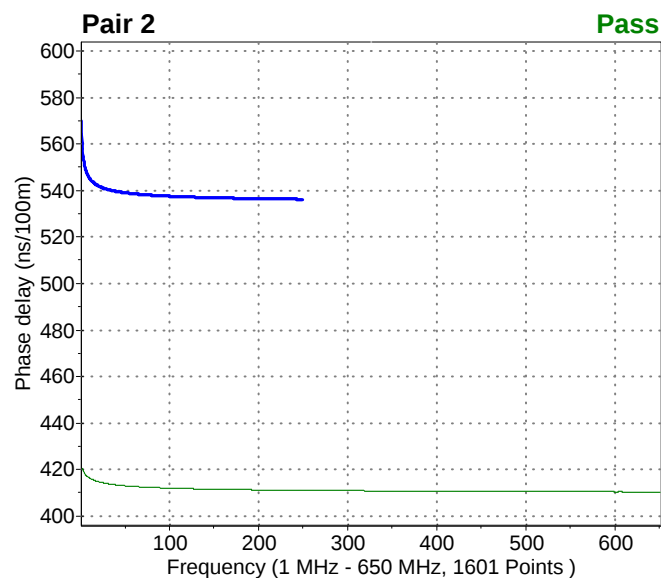
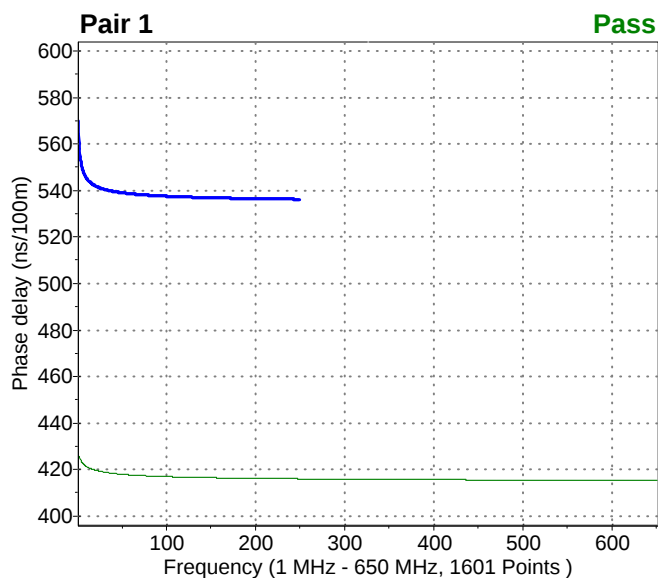
{ v = Value (dB/100m) at 20 Deg C l = Limit (dB/100m) at 20 Deg C m = Margin (dB/100m) at 20 Deg C f = Frequency (MHz) }

Pair	Start f	Stop f	Points	Minimum	{ v [f] }	Maximum	{ v [f] }	Min. Margin	{ m (v l) [f] }	Result
1	1	650	801	1.67	[1]	42.33	[650]			✓
2	1	650	801	1.69	[1]	42.79	[650]			✓
3	1	650	801	1.66	[1]	41.68	[650]			✓
4	1	650	801	1.68	[1]	42.68	[650]			✓



**Summary and Graphic: Phase delay (Phase delay)**{ v = Value (ns/100m) l = Limit (ns/100m) m = Margin (ns/100m) f = Frequency (MHz) }

Pair	Start f	Stop f	Points	Minimum { v [f] }	Maximum { v [f] }	Min. Margin { m (v l) [f] }	Result
1	1	650	1601	415.31 [650]	425.50 [2.217]		✓
2	1	650	1601	410.37 [650]	420.41 [2.217]		✓
3	1	650	1601	414.33 [650]	424.11 [2.217]		✓
4	1	650	1601	409.39 [650]	419.50 [2.217]		✓

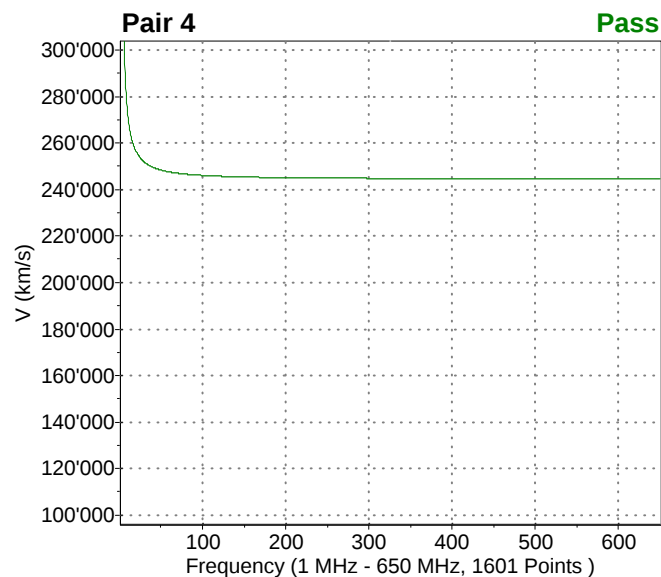
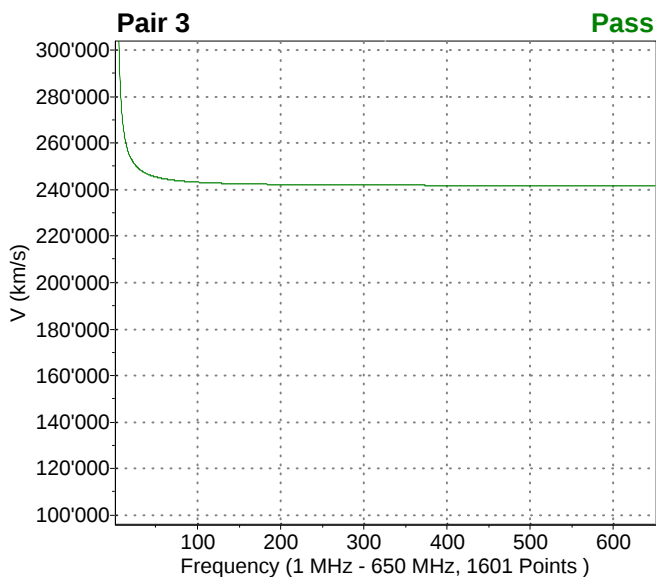
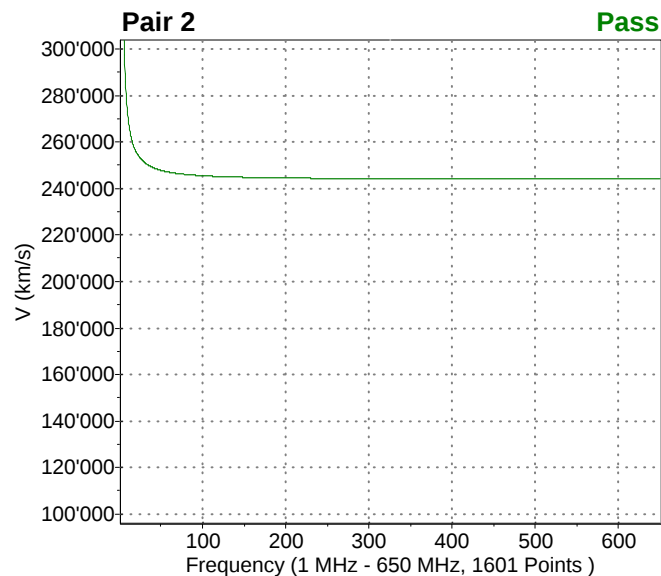
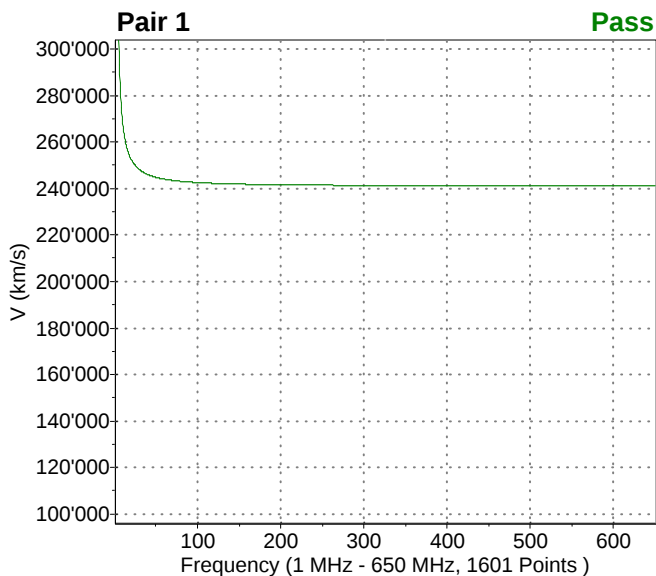




Summary and Graphic: Velocity (V)

{ v = Value (km/s) l = Limit (km/s) m = Margin (km/s) f = Frequency (MHz) }

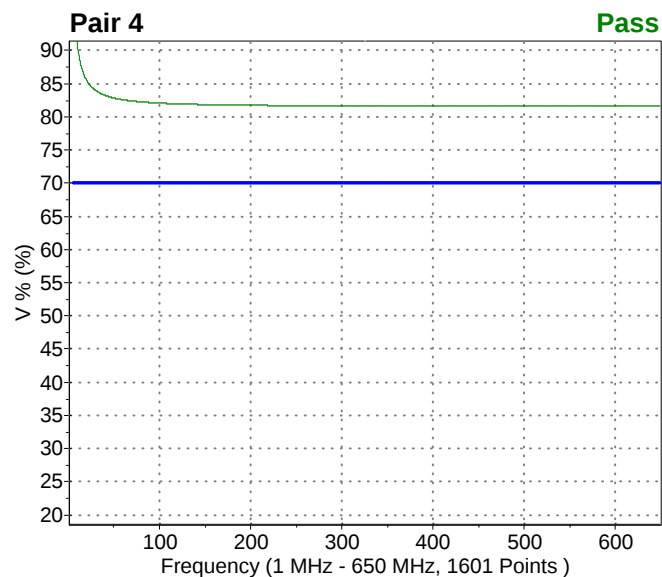
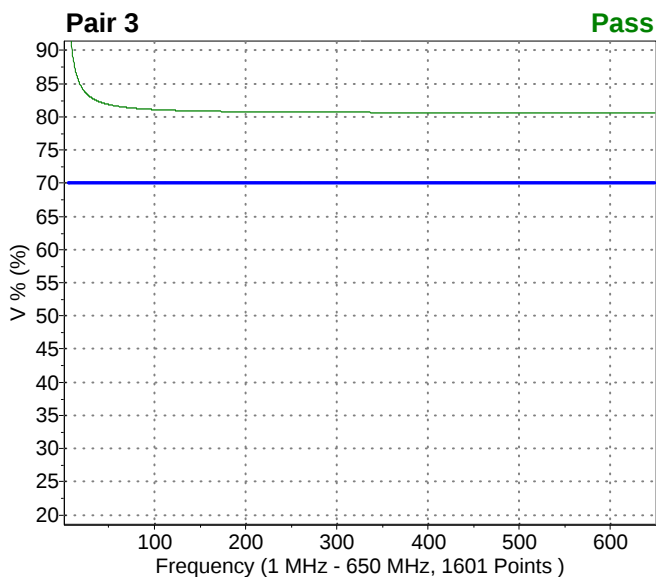
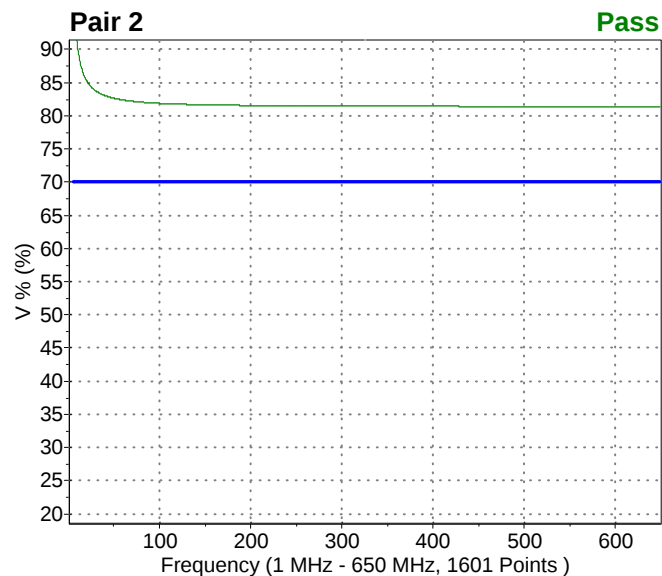
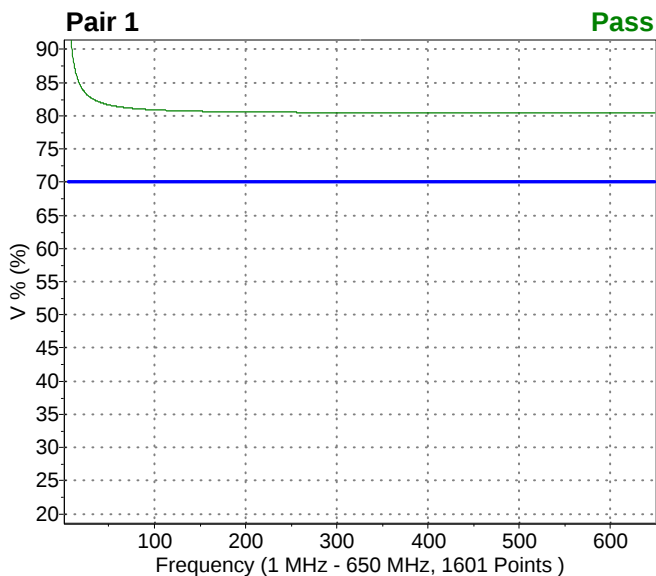
Pair	Start f	Stop f	Points	Minimum { v [f] }	Maximum { v [f] }	Min. Margin { m (v l) [f] }	Result
1	1	650	1601	-1'734'447 [1]	1'225'967 [1.406]		✓
2	1	650	1601	-1'607'030 [1]	1'301'960 [1.406]		✓
3	1	650	1601	-1'689'571 [1]	1'249'363 [1.406]		✓
4	1	650	1601	-1'588'773 [1]	1'314'845 [1.406]		✓



**Summary and Graphic: Velocity % (V %)**

{ v = Value (%) l = Limit (%) m = Margin (%) f = Frequency (MHz) }

Pair	Start f	Stop f	Points	Minimum { v [f] }	Maximum { v [f] }	Min. Margin { m (v l) [f] }	Result
1	1	650	1601	-578.15 [1]	408.66 [1.406]		✓
2	1	650	1601	-535.68 [1]	433.99 [1.406]		✓
3	1	650	1601	-563.19 [1]	416.45 [1.406]		✓
4	1	650	1601	-529.59 [1]	438.28 [1.406]		✓

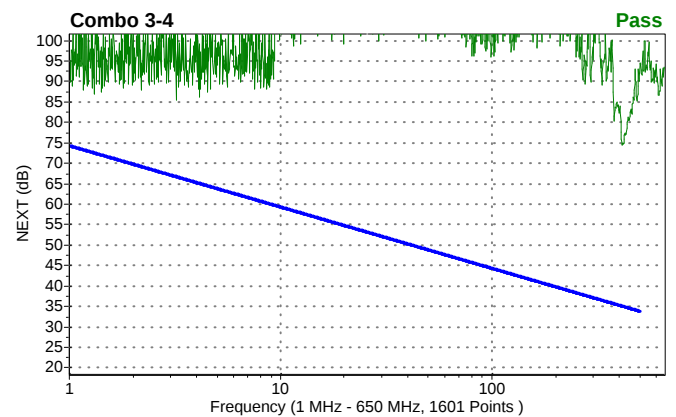
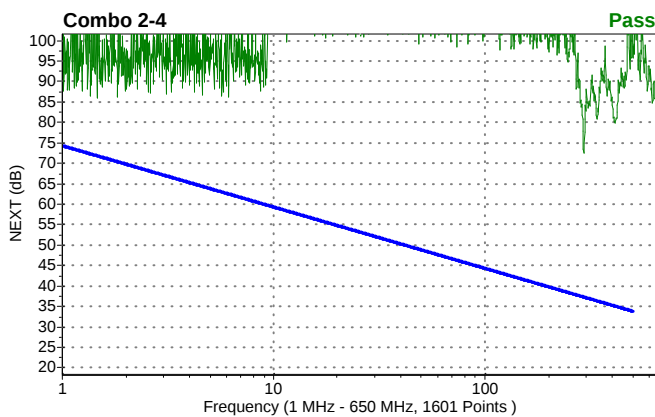
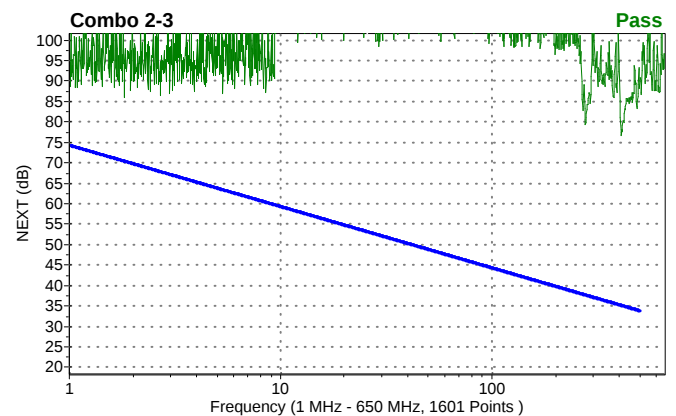
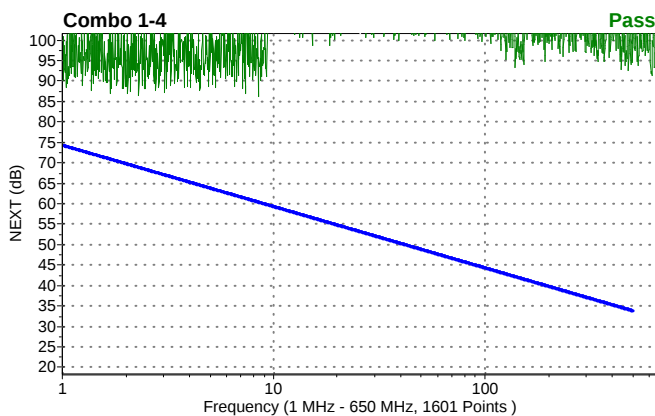
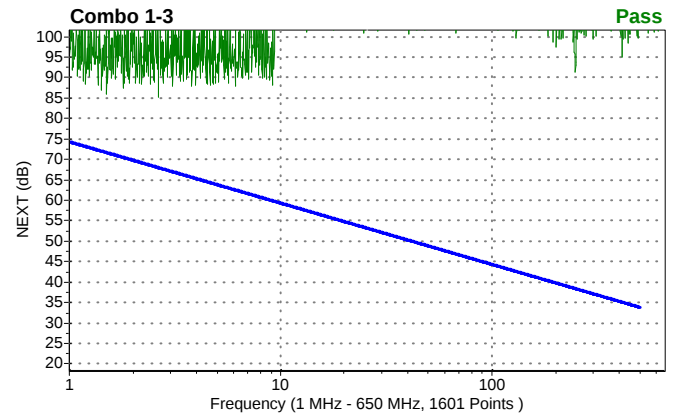
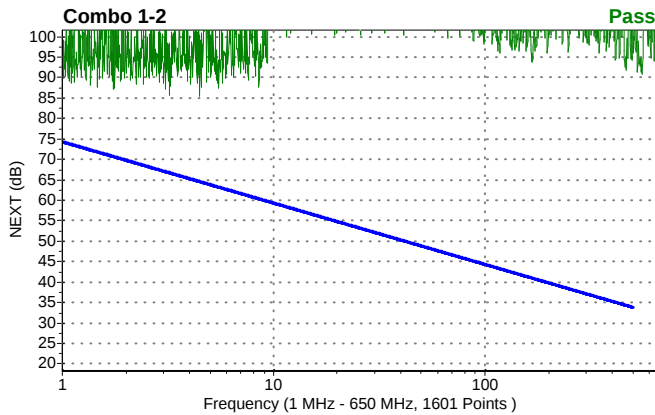




Summary and Graphic: Near End Crosstalk (NEXT)

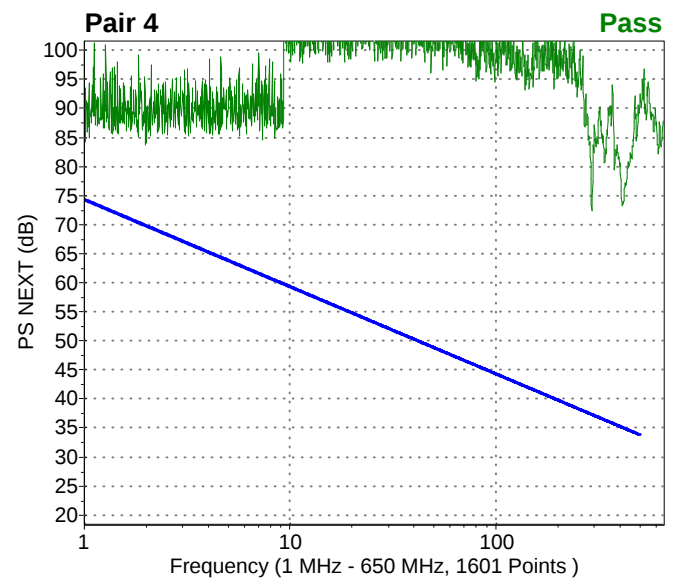
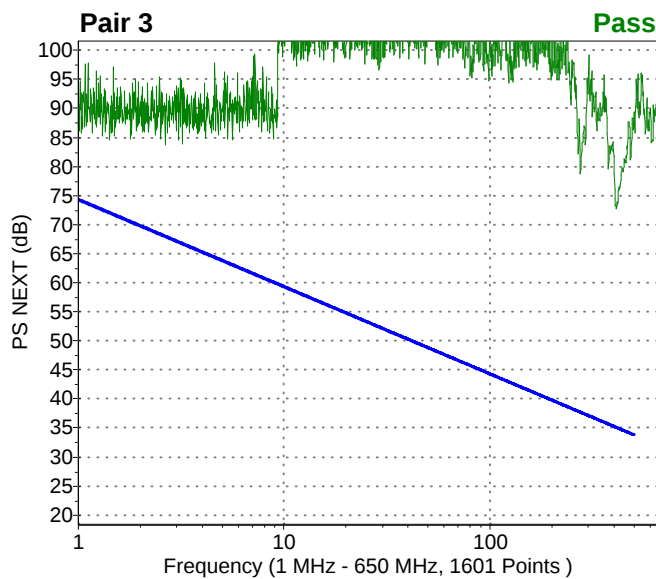
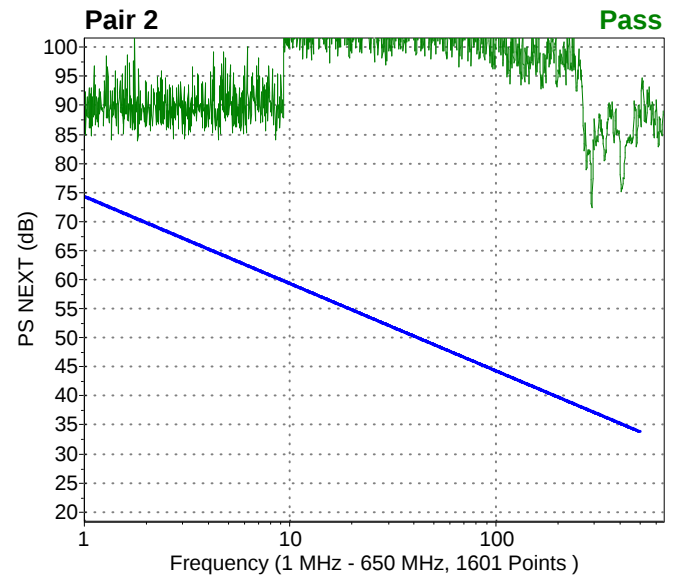
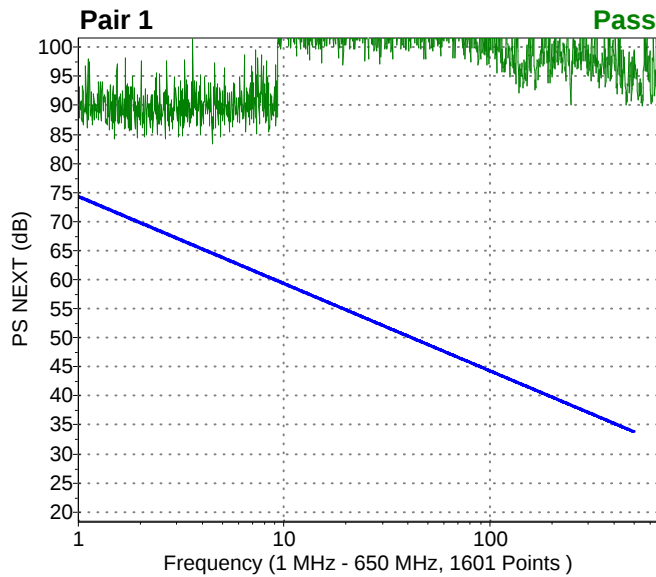
{ v = Value (dB) l = Limit (dB) m = Margin (dB) f = Frequency (MHz) }

Combo	Start f	Stop f	Points	Minimum { v [f] }	Maximum { v [f] }	Min. Margin { m (v l) [f] }	Result
1-2	1	650	1601	85.44 [4.472]	138.31 [58.22]	15.06 (88.72 < 73.67) [1.102]	✓
1-3	1	650	1601	85.15 [2.642]	145.47 [18.82]	14.20 (85.83 < 71.64) [1.505]	✓
1-4	1	650	1601	86.09 [8.443]	131.01 [282.3]	14.45 (88.48 < 74.04) [1.041]	✓
2-3	1	650	1601	76.75 [408.1]	133.51 [160.8]	14.46 (88.31 < 73.85) [1.071]	✓
2-4	1	650	1601	72.52 [292.8]	138.61 [18.15]	13.54 (87.74 < 74.19) [1.016]	✓
3-4	1	650	1601	74.39 [411.4]	137.17 [52.83]	14.46 (86.99 < 72.53) [1.312]	✓



**Summary and Graphic: Power Sum NEXT (PS NEXT)**{ v = Value (dB) l = Limit (dB) m = Margin (dB) f = Frequency (MHz) }

Pair	Start f	Stop f	Points	Minimum { v [f] }	Maximum { v [f] }	Min. Margin { m (v l) [f] }	Result
1	1	650	1601	83.33 [4.472]	112.16 [188.3]	12.12 (86.42 < 74.30) [1]	✓
2	1	650	1601	72.34 [292.8]	115.54 [69.86]	10.80 (85.00 < 74.19) [1.016]	✓
3	1	650	1601	72.70 [411.4]	113.65 [77.3]	11.78 (85.87 < 74.09) [1.033]	✓
4	1	650	1601	72.44 [292.8]	112.25 [14.82]	10.11 (84.31 < 74.19) [1.016]	✓

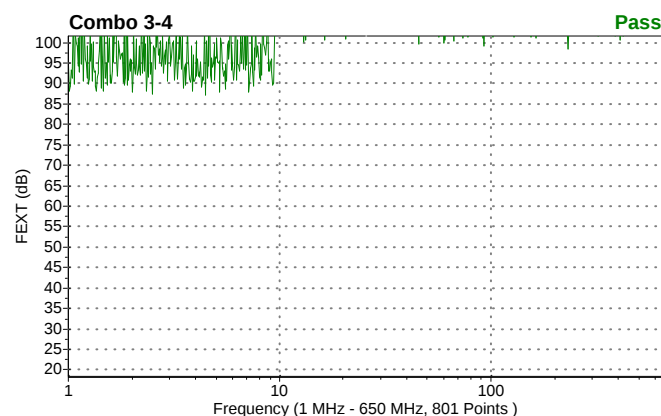
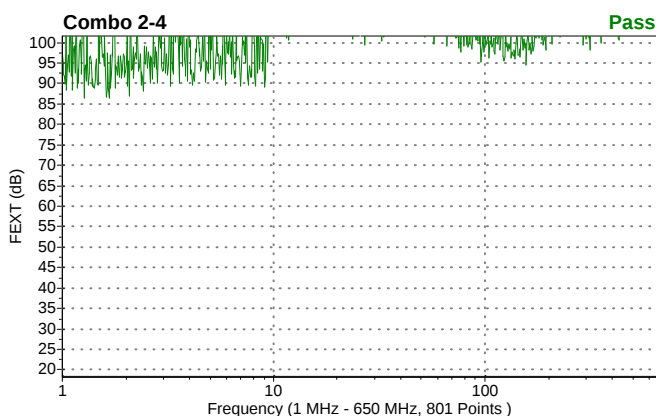
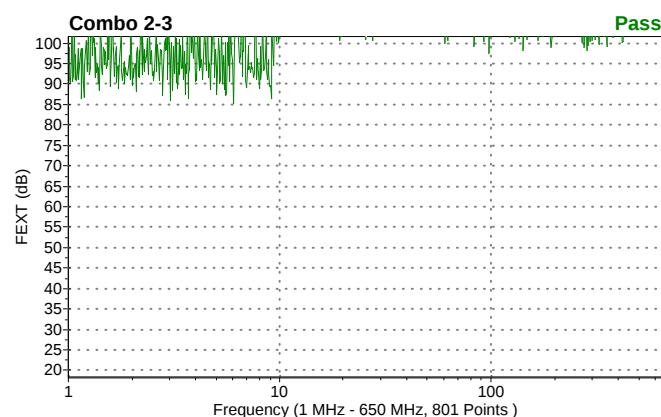
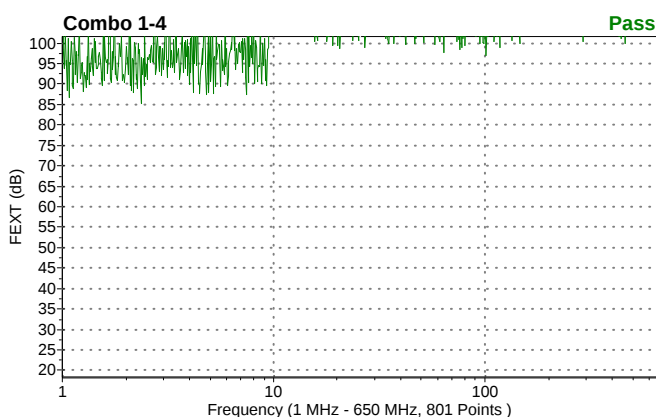
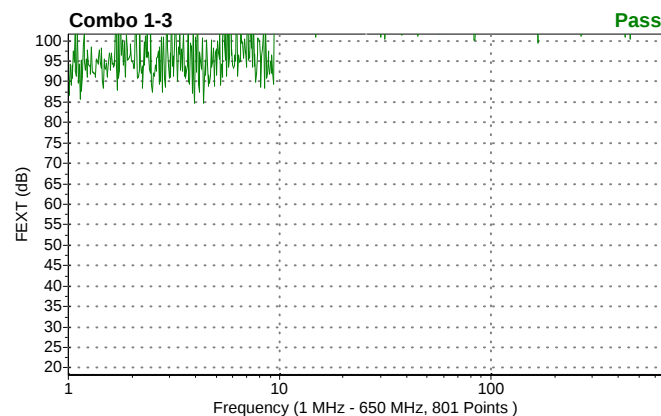
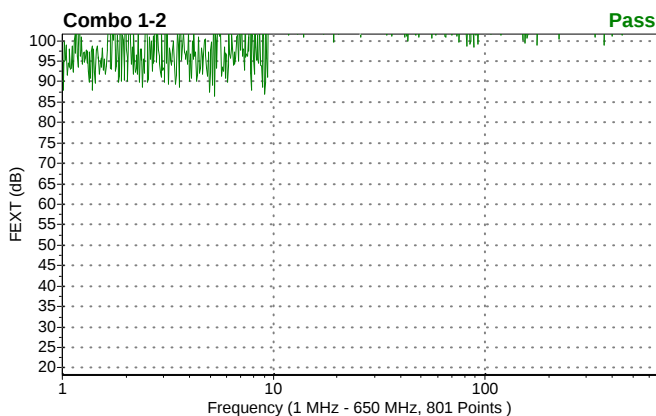




Summary and Graphic: Far End Crosstalk (FEXT)

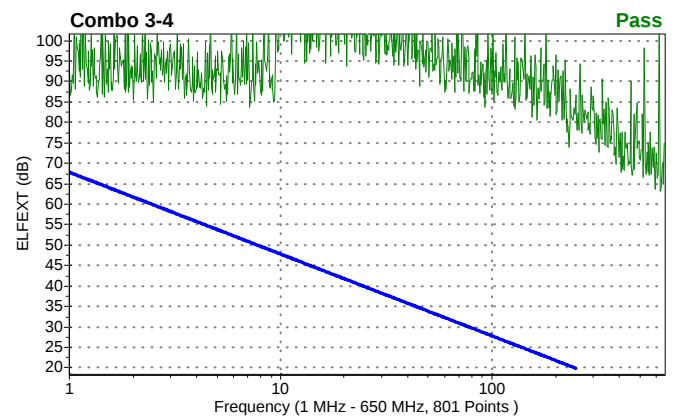
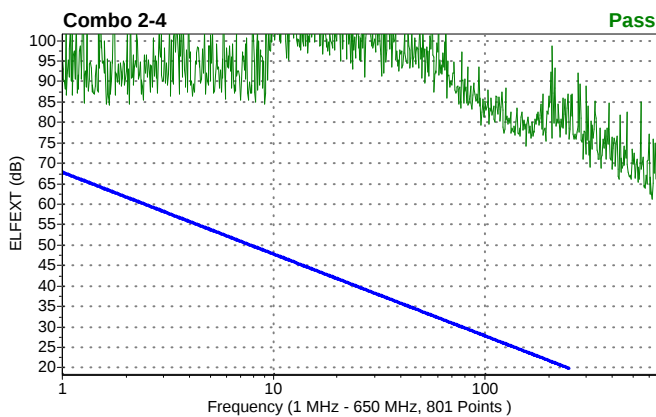
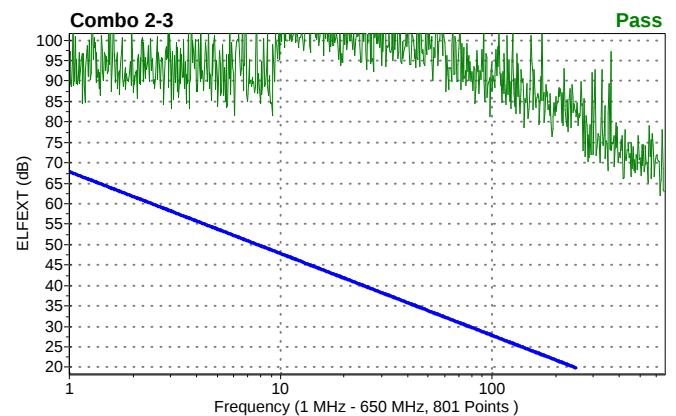
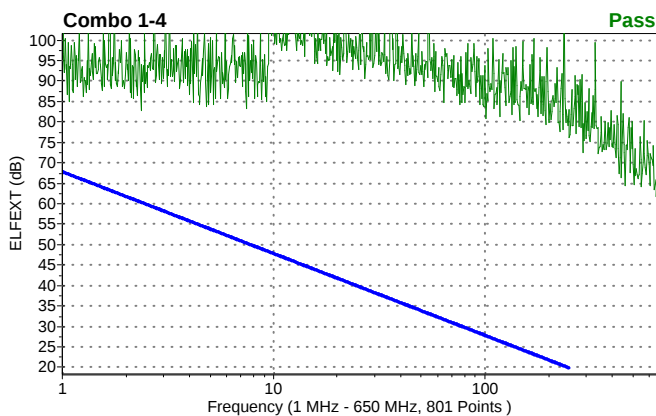
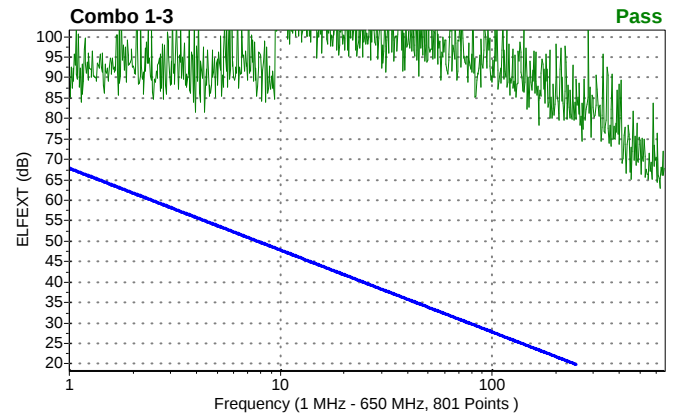
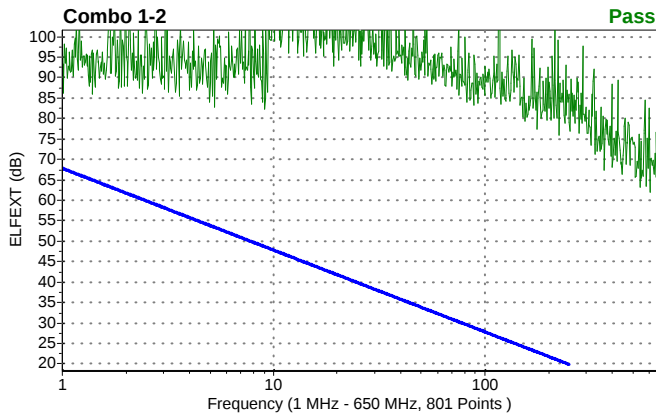
{ v = Value (dB) l = Limit (dB) m = Margin (dB) f = Frequency (MHz) }

Combo	Start f	Stop f	Points	Minimum { v [f] }	Maximum { v [f] }	Result
1-2	1	650	801	86.32 [5.258]	141.86 [115.9]	✓
1-3	1	650	801	84.66 [3.96]	134.38 [284.6]	✓
1-4	1	650	801	85.31 [2.359]	135.02 [236.3]	✓
2-3	1	650	801	85.33 [6.034]	134.31 [26.76]	✓
2-4	1	650	801	86.45 [1.665]	130.93 [55.91]	✓
3-4	1	650	801	87.21 [4.436]	144.36 [614.2]	✓



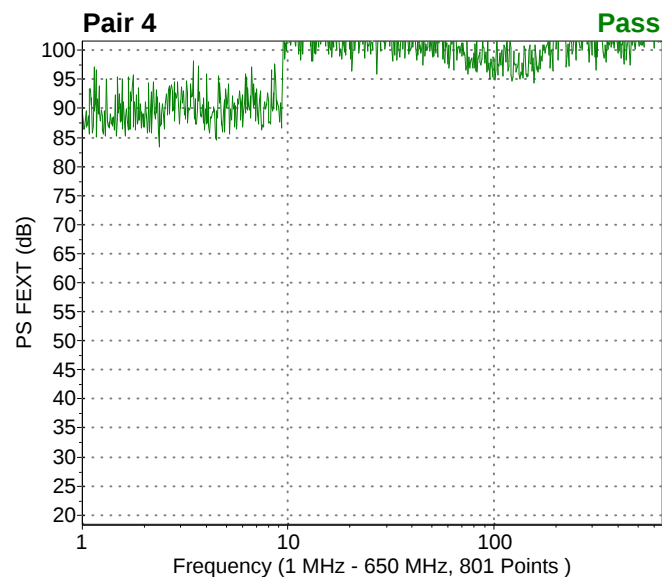
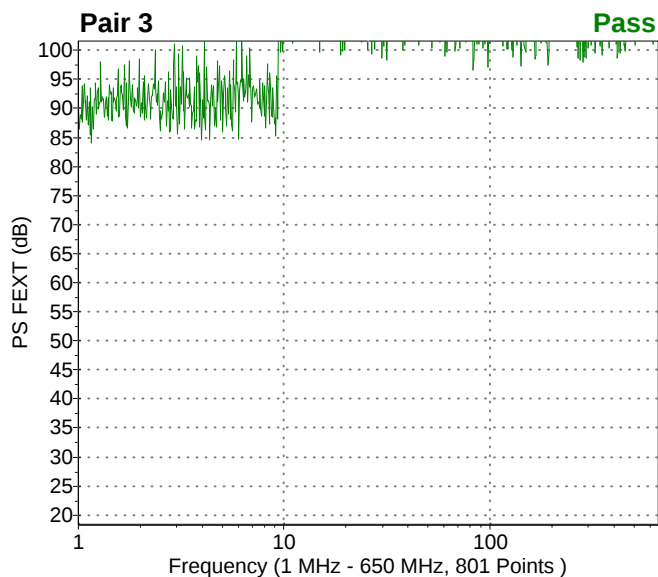
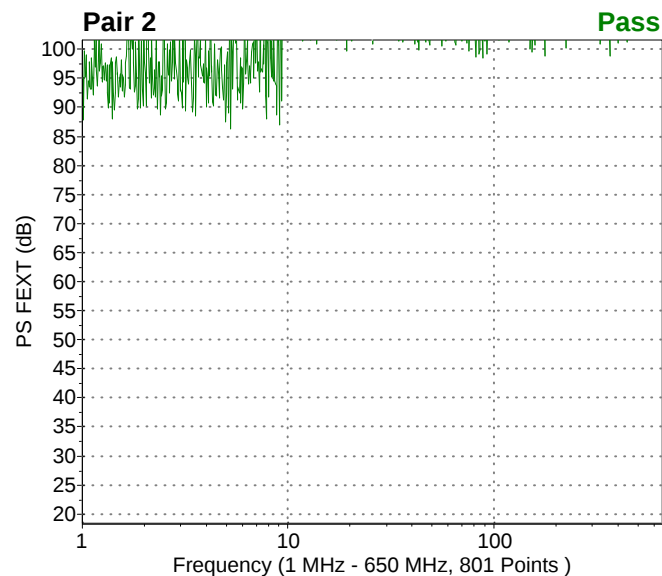
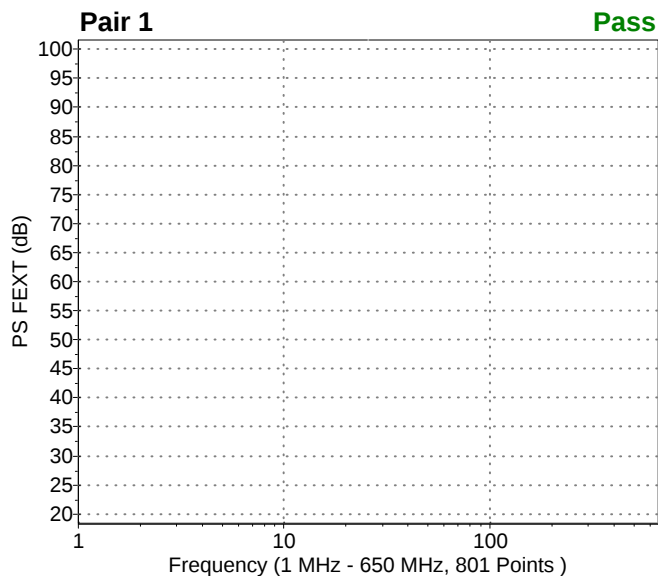
**Summary and Graphic: Equal Level FEXT (ELFEXT)**{ v = Value (dB) l = Limit (dB) m = Margin (dB) f = Frequency (MHz) }

Combo	Start f	Stop f	Points	Minimum { v [f] }	Maximum { v [f] }	Min. Margin { m (v l) [f] }	Result
1-2	1	650	801	61.89 [599.4]	131.86 [10.21]	18.45 (86.11 < 67.66) [1.016]	✓
1-3	1	650	801	63.04 [619.2]	122.54 [12.3]	17.23 (83.90 < 66.67) [1.138]	✓
1-4	1	650	801	61.82 [644.8]	120.92 [5.889]	17.72 (84.89 < 67.17) [1.076]	✓
2-3	1	650	801	61.97 [619.2]	126.06 [26.76]	18.02 (84.55 < 66.53) [1.157]	✓
2-4	1	650	801	61.16 [614.2]	121.49 [21.51]	18.87 (84.63 < 65.76) [1.265]	✓
3-4	1	650	801	63.15 [624.2]	132.11 [12.5]	18.92 (86.58 < 67.66) [1.016]	✓



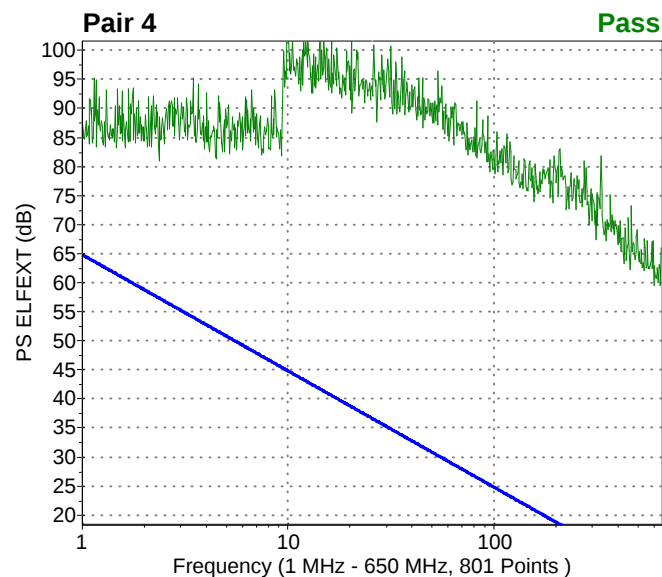
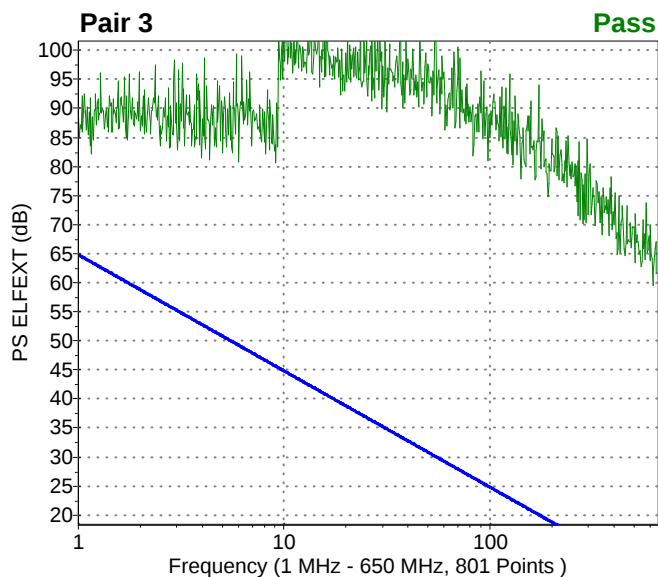
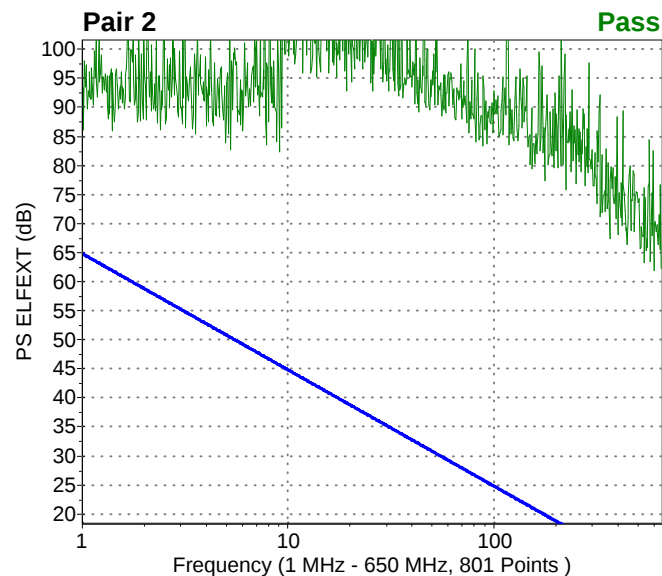
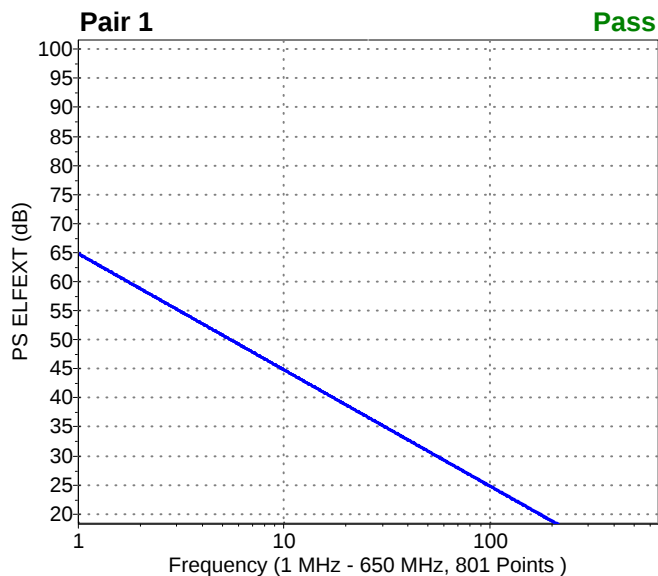
**Summary and Graphic: Power Sum FEXT (PS FEXT)**{ v = Value (dB) l = Limit (dB) m = Margin (dB) f = Frequency (MHz) }

Pair	Start f	Stop f	Points	Minimum { $v[f]$ }	Maximum { $v[f]$ }	Result
1	1	650	801			✓
2	1	650	801	86.32 [5.258]	141.86 [115.9]	✓
3	1	650	801	83.99 [1.157]	119.45 [10.21]	✓
4	1	650	801	83.43 [2.359]	117.83 [14.35]	✓



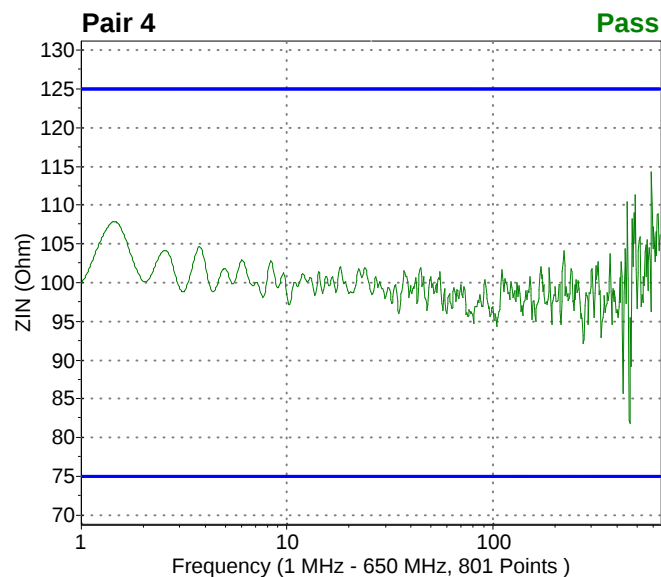
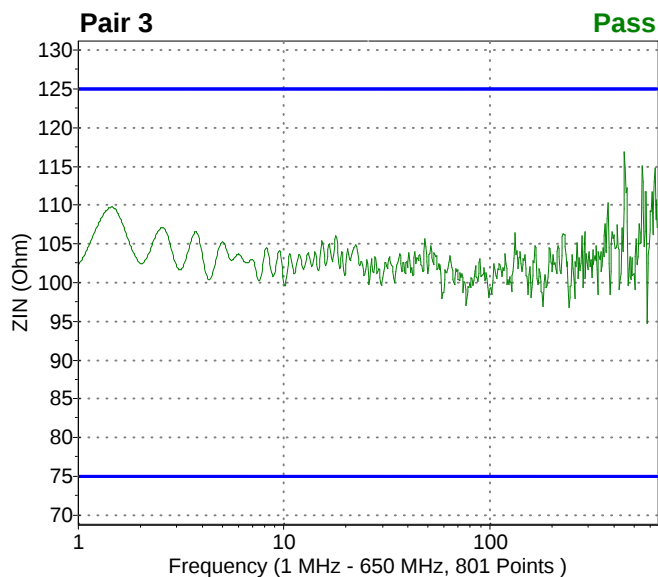
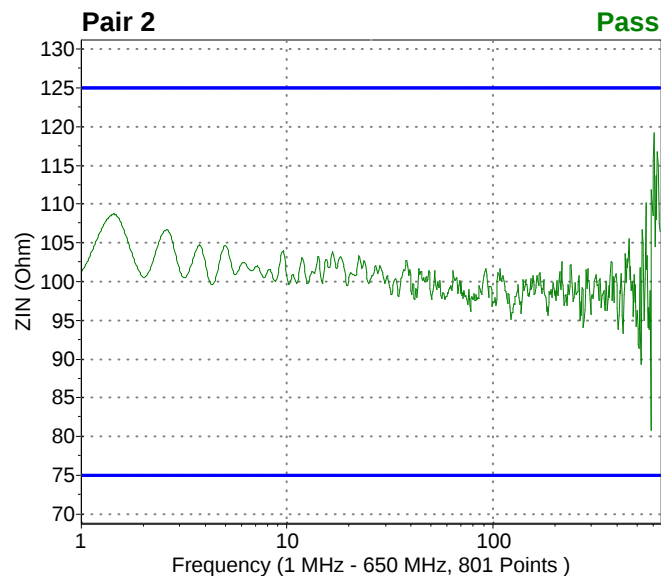
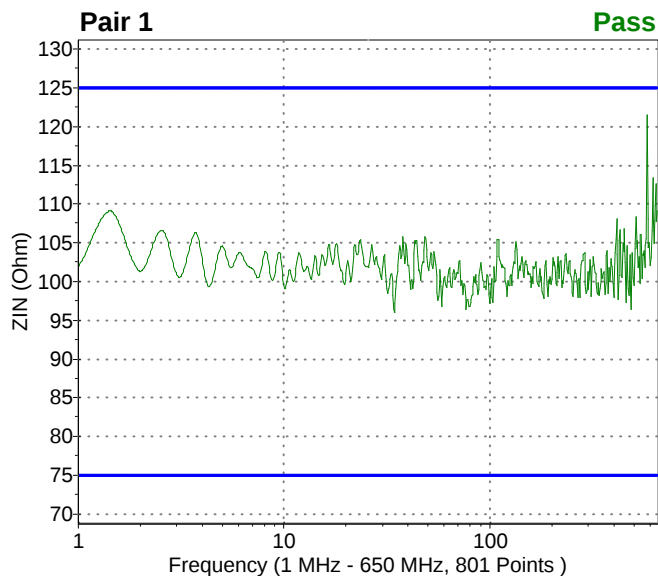
**Summary and Graphic: Power Sum ELFEXT (PS ELFEXT)**{ v = Value (dB) l = Limit (dB) m = Margin (dB) f = Frequency (MHz) }

Pair	Start f	Stop f	Points	Minimum { $v[f]$ }	Maximum { $v[f]$ }	Min. Margin { $m(v,l)[f]$ }	Result
1	1	650	801				✓
2	1	650	801	61.89 [599.4]	131.86 [10.21]	21.45 (86.11 < 64.66) [1.016]	✓
3	1	650	801	59.47 [619.2]	114.46 [10.21]	18.65 (82.18 < 63.53) [1.157]	✓
4	1	650	801	59.45 [644.8]	111.91 [14.35]	19.70 (83.86 < 64.17) [1.076]	✓



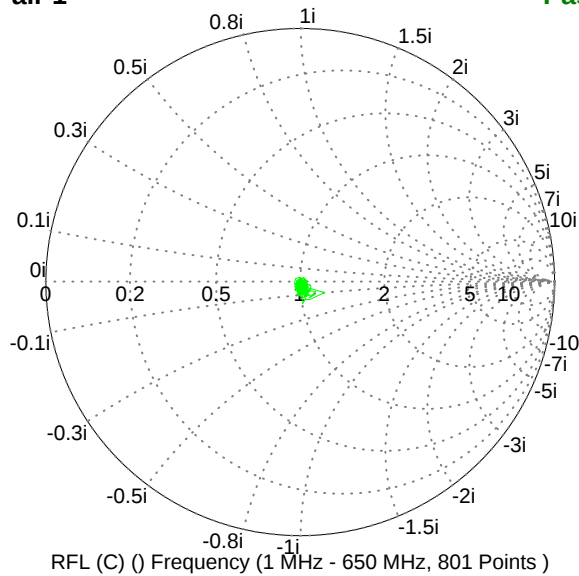
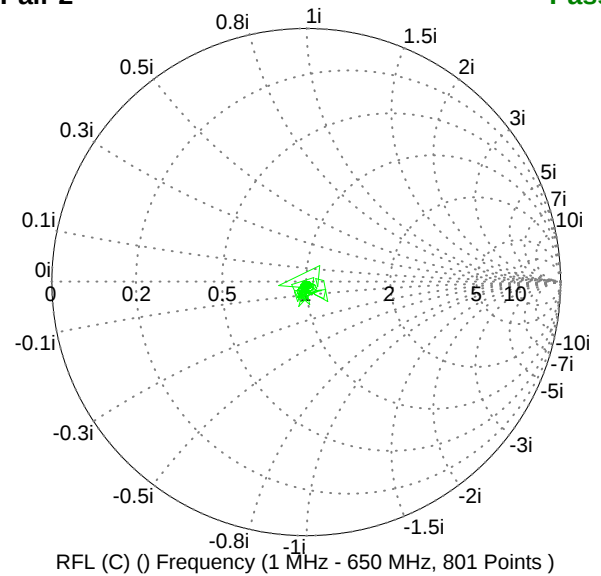
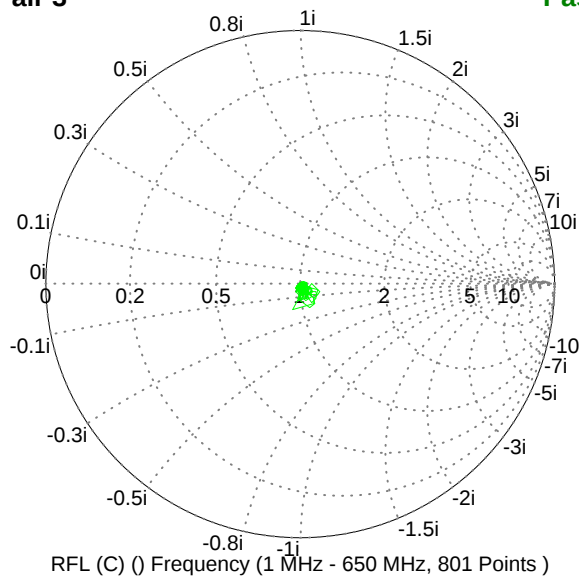
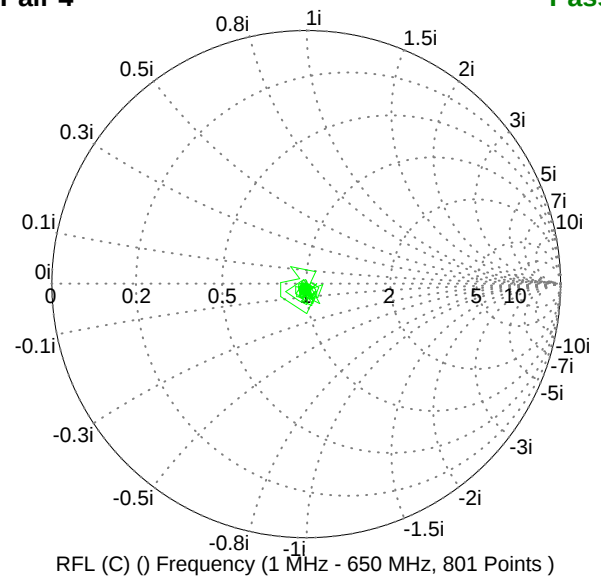
**Summary and Graphic: Input Impedance (ZIN)**{ v = Value (Ohm) l = Limit (Ohm) m = Margin (Ohm) f = Frequency (MHz) }

Pair	Start f	Stop f	Points	Minimum { v [f] }	Maximum { v [f] }	Min. Margin { m (v l) [f] }	Result
1	1	650	801	95.98 [34.4]	121.50 [580.3]	3.50 (121.50 > 125.00) [580.3]	✓
2	1	650	801	80.83 [585.1]	119.17 [609.2]	5.83 (119.17 > 125.00) [609.2]	✓
3	1	650	801	94.71 [580.3]	116.85 [451.5]	8.15 (116.85 > 125.00) [451.5]	✓
4	1	650	801	81.77 [462.6]	114.27 [589.8]	6.77 (81.77 < 75.00) [462.6]	✓



**Summary and Graphic: Reflection (complex) (RFL (C))**{ v = Value () l = Limit () m = Margin () f = Frequency (MHz) }

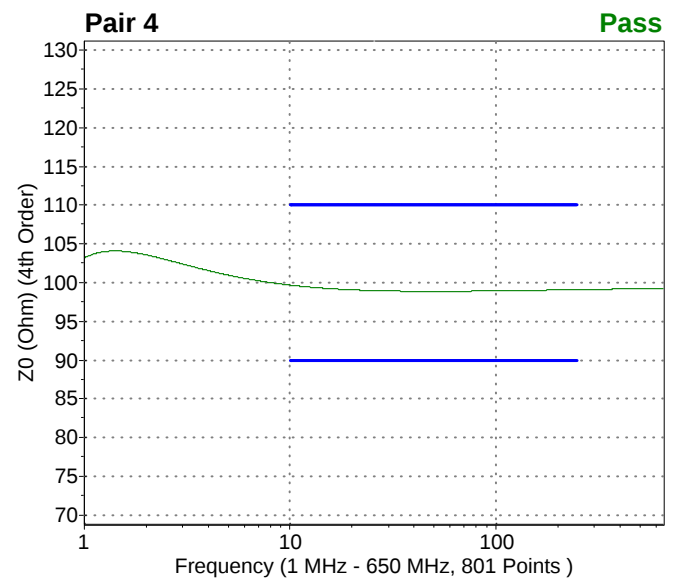
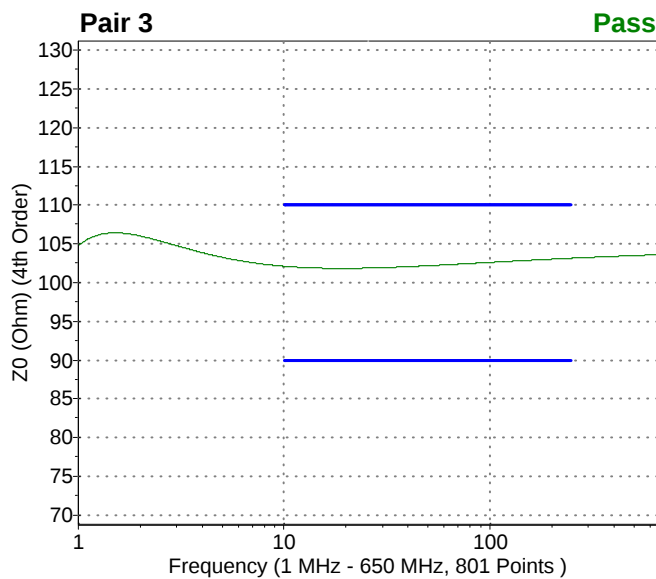
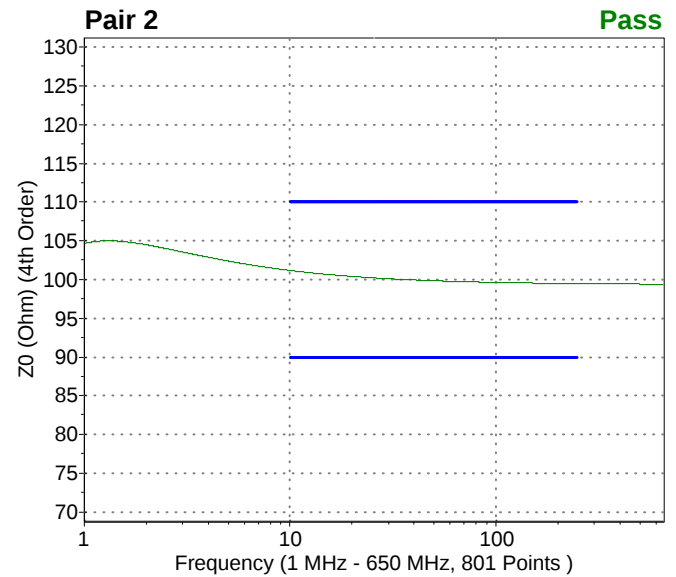
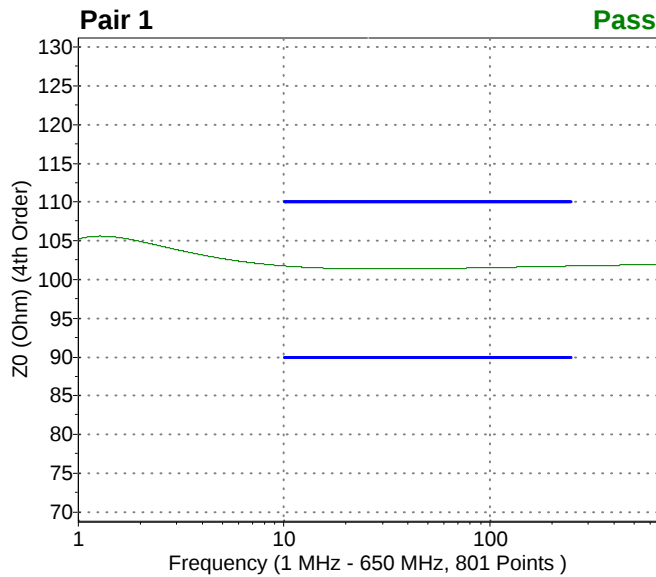
Pair	Start f	Stop f	Points	Minimum { $v[f]$ }	Maximum { $v[f]$ }	Result
1	1	650	801	0.0 [106]	0.1 [580.3]	✓
2	1	650	801	0.0 [548.4]	0.1 [609.2]	✓
3	1	650	801	0.0 [10.21]	0.1 [580.3]	✓
4	1	650	801	0.0 [7.946]	0.1 [455.2]	✓

Pair 1**Pass****Pair 2****Pass****Pair 3****Pass****Pair 4****Pass**

**Summary and Graphic: Fitted Impedance (Z0 (4th Order))**

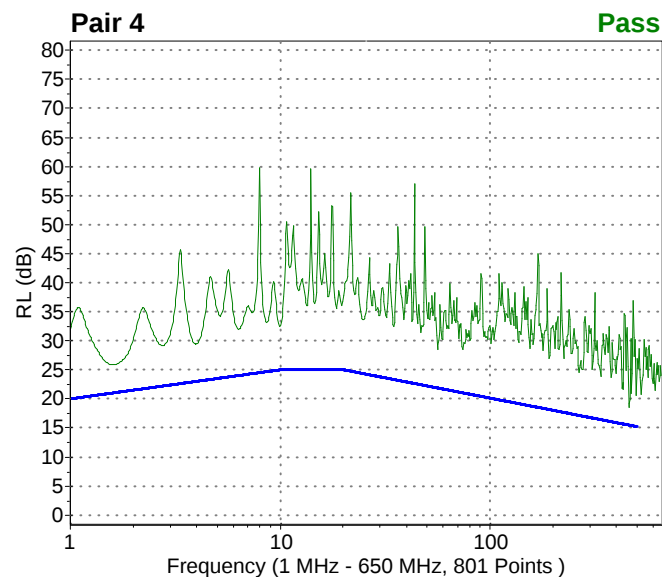
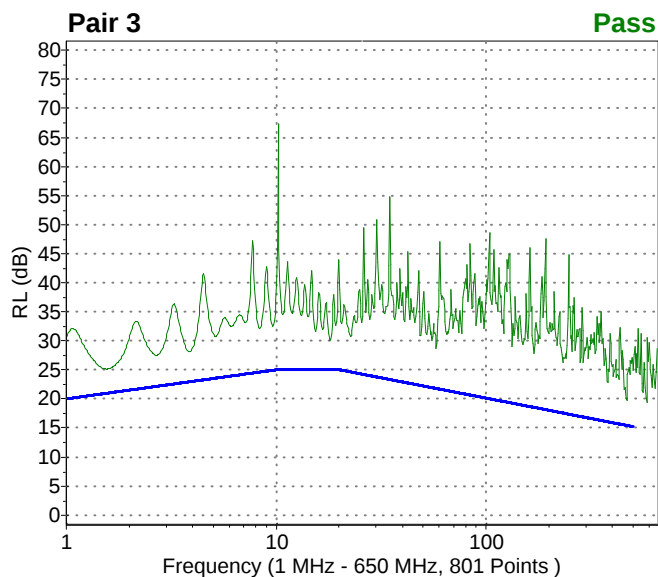
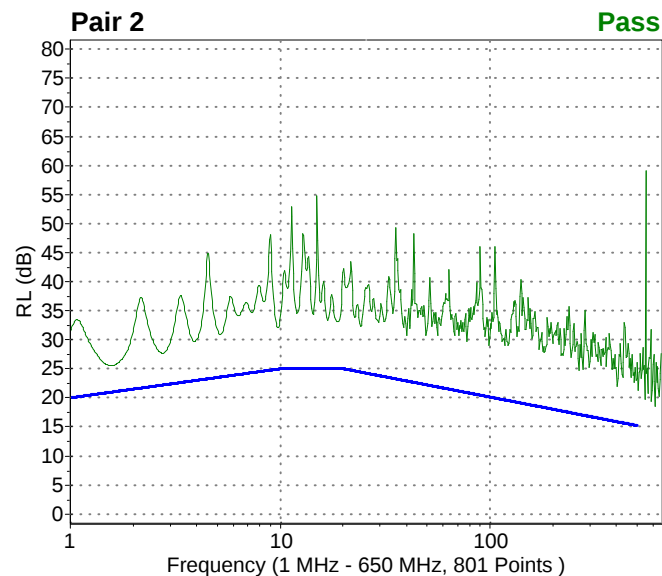
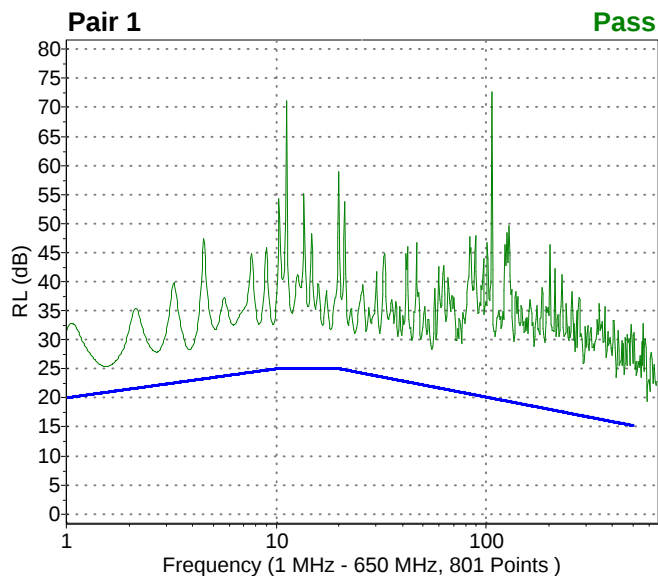
{ v = Value (Ohm) l = Limit (Ohm) m = Margin (Ohm) f = Frequency (MHz) }

Pair	Start f	Stop f	Points	Minimum { v [f] }	Maximum { v [f] }	Min. Margin { m (v l) [f] }	Result
1	1	650	801	101.36 [30.47]	105.61 [1.275]		✓
2	1	650	801	99.40 [650]	105.00 [1.306]		✓
3	1	650	801	101.84 [19.05]	106.43 [1.499]		✓
4	1	650	801	98.88 [49.12]	104.09 [1.405]		✓



**Summary and Graphic: Return Loss (RL)**{ v = Value (dB) l = Limit (dB) m = Margin (dB) f = Frequency (MHz) }

Pair	Start f	Stop f	Points	Minimum { v [f] }	Maximum { v [f] }	Min. Margin { m (v l) [f] }	Result
1	1	650	801	19.40 [580.3]	72.72 [106]	4.42 (25.41 < 20.98) [1.574]	✓
2	1	650	801	18.48 [609.2]	59.16 [548.4]	4.52 (25.50 < 20.98) [1.574]	✓
3	1	650	801	19.35 [580.3]	67.25 [10.21]	4.15 (25.15 < 21.00) [1.586]	✓
4	1	650	801	18.55 [455.2]	59.72 [7.946]	3.05 (18.55 < 15.50) [455.2]	✓

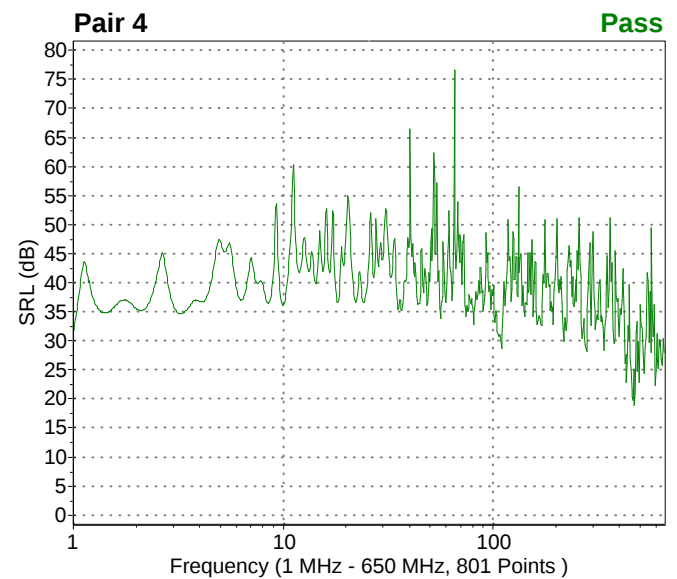
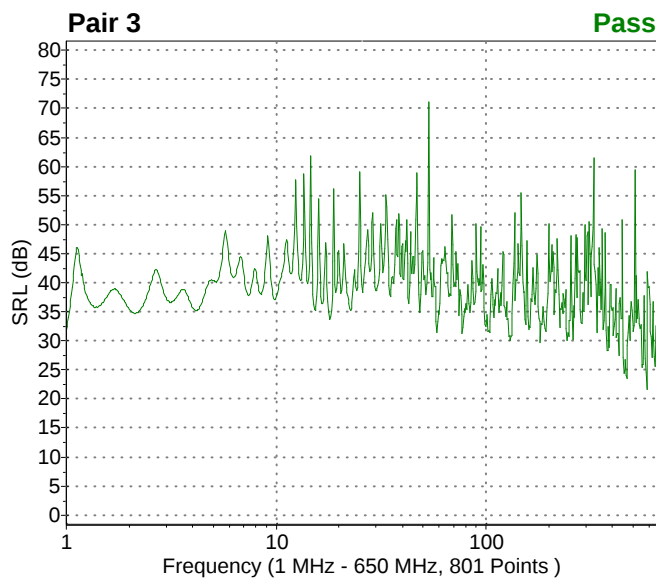
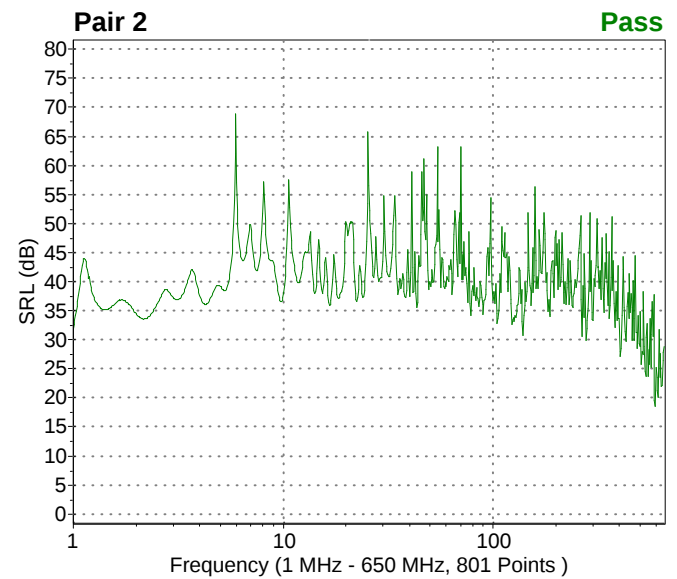
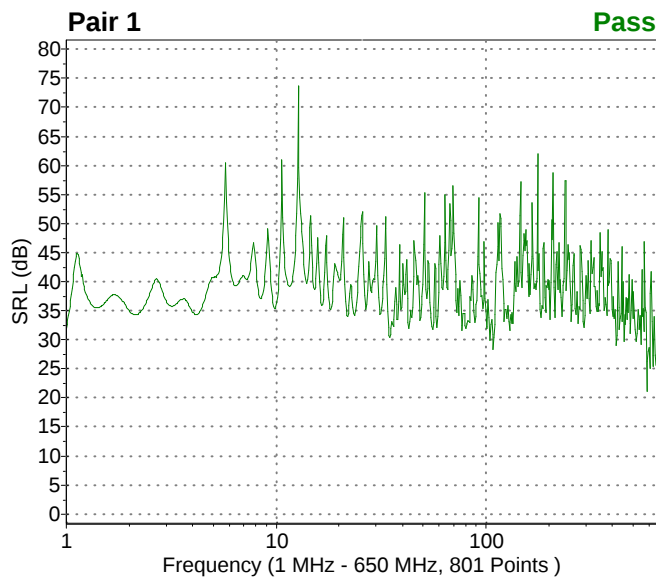




Summary and Graphic: Structural Return Loss (SRL)

{ v = Value (dB) l = Limit (dB) m = Margin (dB) f = Frequency (MHz) }

Pair	Start f	Stop f	Points	Minimum { v [f] }	Maximum { v [f] }	Result
1	1	650	801	21.04 [580.3]	73.69 [12.71]	✓
2	1	650	801	18.47 [589.8]	68.94 [5.937]	✓
3	1	650	801	21.55 [580.3]	71.07 [53.26]	✓
4	1	650	801	18.79 [470.2]	76.60 [65.21]	✓



All measurements according ISO9001



Test Report

Designation : CAT6 LF only
 Testorder : CAT6 TIA LF only
 Test Date/Time : 07/02/2020 10:29:42

Sample-ID-No. : 000009BC8T

Length : 100.0m

Temp : 21.0°C

Customer : AESA
 Cable type :
 Specification :

drum no. :
 Order number :
 operator :

Test Result: **PASS**

Final inspection under TIA stds

Worst Case Summary

Units	Units	Ra-b	R	D%	C	K	E	RUp2p%	K
		Ohm	Ohm	%	nF	pF	pF	%	pF
RefLength	Ref.length	100	100	1000	100	100	100	1000	100
ULim	UL Limit Meas. Values	9.30	18.60	2.000	5.60	330	140	4.000	330
Max	Maximum value	6.72	13.41	0.149	4.52	2	14	0.399	3 ✓
Min	Minimum value	6.64	13.31	-0.306	4.43	-36	-42	0.059	-38 ✓
LLim	LL Limit Meas. Values	6.00	12.00	-2.000	4.00	-330	-140	-4.000	-330
SX	Average value	6.68	13.36	-0.05	4.47	-16.94	-21.92	0.23	-11.95 ✓
SSX	Standarddeviation	0.02	0.04	0.16	0.04	18.44	21.69	0.12	17.70 ✓
No>Lim	Number of elements >Limit								

LF open/short test

Open/Short-Test OK

LF RCKE 1 kHz

No	From	To	Ra	Rb	Rl	RD1%	C1	K	E
			Ohm	Ohm	Ohm	%	nF	pF	pF
			/100m	/100m	/100m		/100m	/100m	/100m
1	1-	2	6.72	6.70	13.41	0.149	4.49	2	-36 ✓
2	2-	3	6.64	6.68	13.32	-0.306	4.43	-36	-24 ✓
3	3-	4	6.69	6.69	13.38	-0.052	4.52	1	14 ✓
4	4-	1	6.65	6.65	13.31	0.007	4.44	-35	-42 ✓

LF resistance unbalanced pair to pair 1 kHz

#LRUp2p% resistance unbalanced

1 kHz

	2	3	4	
1	0.339	0.130	0.399	1 ✓
2		0.209	0.059	2 ✓
3			0.269	3 ✓
	2	3	4	

LF K triangle 1 kHz
#LK cap-unbalance s/s K pairs
1 kHz

	2	3	4		
1	3	-2	-1	1	✓
2		-36	-38	2	✓
3			2	3	✓
	2	3	4		