

# HD MI2.1 A-A

## Test Report

**Test Date:**

2018/11/15 10:32

**Test Equipment List :**

Equipment	Manufacture	P/N	S/N	Description
Network Analyzer	Agilent	E5071C	MY46527132	4 Port, 300 kHz to 20 GHz
Time Domain Reflectometry	Agilent	ENA-TDR	MY46527132	
Pattern Generator	Agilent	ENA-TDR	MY46527132	

**Device Under Test ( DUT ) & Test Environment Information :**

P / N:	HDMI2.1 A-A	Specifications:	HDMI2.1 12Gpbs
DUT Lot:		DUT Bundle:	
DUT Length(M):	1.8	Test Pair:	5 Pairs
Temperature( °C):	20	Humidity( %):	50
Remark:	HDMI2.1 12Gpbs		

**Test Result Summary:**

1	NA Attenuation	Pass
2	NA HEAC Attenuation	Pass
3	NA SCD21 DiffToComm Convert	Pass
4	NA SDC21 CommToDiff Convert	Pass
5	NA SDC12 CommToDiff Convert	Pass
6	NA SCD12 DiffToComm Convert	Pass
7	NA FEXT	Pass
8	NA ACR	Pass
9	TDR DifferentialIMPZ	Pass
10	TDR ConnectorIMPZ	Pass
11	TDR FE ConnectorIMPZ	Pass
12	TDT DifferentialDelay	Pass
13	TDT IntraPairSkew	Pass
14	TDR HEAC SingleEnd IMPZ	Pass
15	TDR HEAC CommonModeIMPZ	Pass
16	TDR HEAC DifferentialIMPZ	Pass
17	TDR HEAC ConnectorIMPZ	Pass
18	TDR HEAC FE ConnectorIMPZ	Pass
19	TDT HEAC IntraPairSkew	Pass
20	TDT InterPairSkew	Pass

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### NA Attenuation

起始频率	结束频率	规格上限	规格下限	CLK	D0	D1	D2
1	1	--	-5	-0.038	-0.037	-0.034	-0.039
1000	1000	--	-5	-3.357	-3.312	-3.519	-3.317
2000	2000	--	-6.5	-5.145	-4.929	-5.147	-4.933
3000	3000	--	-9.2	-6.841	-6.459	-7.029	-6.500
6000	6000	--	-16.5	-9.956	-10.348	-10.818	-10.245
12000	12000	--	-29	-18.428	-17.221	-19.055	-20.397
1	12000	--	-5.00→-29.00	-4.941	-4.726	-4.920	-4.872
MHz	MHz	dB	dB	Pass	Pass	Pass	Pass

### NA HEAC Attenuation

起始频率	结束频率	规格上限	规格下限	HEAC
0.3	10	--	-1.6	-0.261
10	100	--	-5	-1.036
100	200	--	-7.1	-1.601
MHz	MHz	dB	dB	Pass

### NA SCD21 DiffToComm Convert

起始频率	结束频率	规格上限	规格下限	CLK	D0	D1	D2
1	12000	-16	--	-23.503	-30.410	-26.230	-30.062
MHz	MHz	dB	dB	Pass	Pass	Pass	Pass

### NA SDC21 CommToDiff Convert

起始频率	结束频率	规格上限	规格下限	CLK	D0	D1	D2
1	12000	-16	--	-23.754	-33.485	-27.057	-29.459
MHz	MHz	dB	dB	Pass	Pass	Pass	Pass

### NA SDC12 CommToDiff Convert

起始频率	结束频率	规格上限	规格下限	CLK	D0	D1	D2
1	12000	-16	--	-23.785	-30.625	-26.056	-30.888
MHz	MHz	dB	dB	Pass	Pass	Pass	Pass

### NA SCD12 DiffToComm Convert

起始频率	结束频率	规格上限	规格下限	CLK	D0	D1	D2
1	12000	-16	--	-23.984	-33.698	-26.734	-29.495
MHz	MHz	dB	dB	Pass	Pass	Pass	Pass

### NA FEXT

起始频率	结束频率	规格上限	规格下限	CLK-D0	CLK-D1	CLK-D2	D0-CLK	D0-D1	D0-D2
1	12000	0	--	-29.338	-32.540	-37.442	-29.632	-37.771	-30.187
MHz	MHz	dB	dB	Pass	Pass	Pass	Pass	Pass	Pass

起始频率	结束频率	规格上限	规格下限	D1-CLK	D1-D0	D1-D2	D2-CLK	D2-D0	D2-D1
1	12000	0	--	-35.484	-34.603	-31.209	-37.667	-29.246	-30.776
MHz	MHz	dB	dB	Pass	Pass	Pass	Pass	Pass	Pass

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### NA ACR

起始频率	结束频率	规格上限	规格下限	CLK	D0	D1	D2
1	1000	-30	--	-37.010	-36.421	-35.622	-38.493
1	12000	-5.00→-30.00	--	-25.435	-15.235	-35.622	-16.836
1000	4000	-20	--	-25.435	-28.123	-27.503	-29.178
4000	7000	-10	--	-16.142	-15.235	-16.285	-16.836
7000	12000	-5	--	-19.097	-17.415	-20.617	-19.908
MHz	MHz	dB	dB	Pass	Pass	Pass	Pass

### TDR DifferentialIMPZ, Tr= 75 ps (10% 90%)

对数名称	规格上限	规格下限	最大阻抗	最小阻抗	差异值	平均值	状态
CLK	110	90	100.33	98.43	1.90	99.38	Pass
D0	110	90	100.06	98.26	1.80	99.16	Pass
D1	110	90	98.44	97.20	1.24	97.82	Pass
D2	110	90	99.60	98.06	1.54	98.83	Pass
单位：	Ohm	Ohm	Ohm	--	--	--	--

### TDR ConnectorIMPZ, Tr= 75 ps (10% 90%)

对数名称	规格上限	规格下限	最大阻抗	最小阻抗	凸点宽度	差异值	状态
CLK	115~110,150	85~90,150	108.86	89.05	30.0	19.81	Pass
D0	115~110,150	85~90,150	107.45	92.91	0.0	14.54	Pass
D1	115~110,150	85~90,150	106.52	88.34	60.0	18.18	Pass
D2	115~110,150	85~90,150	109.69	92.39	0.0	17.30	Pass
单位：	Ohm	Ohm	Ohm	--	--	--	--

### TDR FE ConnectorIMPZ, Tr= 75 ps (10% 90%)

对数名称	规格上限	规格下限	最大阻抗	最小阻抗	凸点宽度	差异值	状态
CLK	115~110,150	85~90,150	108.17	90.73	0.0	17.44	Pass
D0	115~110,150	85~90,150	107.83	90.60	0.0	17.23	Pass
D1	115~110,150	85~90,150	107.00	90.17	0.0	16.83	Pass
D2	115~110,150	85~90,150	109.62	92.05	0.0	17.57	Pass
单位：	Ohm	Ohm	Ohm	--	--	--	--

### TDT DifferentialDelay, Tr= 75 ps (10% 90%)

对数名称	规格上限	规格下限	延迟值	状态
CLK	5.5	0	4.67	Pass
D0	5.5	0	4.67	Pass
D1	5.5	0	4.70	Pass
D2	5.5	0	4.68	Pass
单位：	ns/M	ns/M	ns/M	--

### TDT IntraPairSkew, Tr= 75 ps (10% 90%)

对数名称	规格上限	规格下限	延迟差值	状态
CLK	30	0	6.97	Pass
D0	30	0	-1.89	Pass
D1	30	0	7.57	Pass
D2	30	0	-3.50	Pass
单位：	ps	ps	ps	--

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### TDR HEAC SingleEnd IMPZ, Tr= 1000 ps (10% 90%)

对数名称	规格上限	规格下限	最大阻抗	最小阻抗	差异值	平均值	状态
HEAC	74.25	35.75	58.56	55.42	3.14	56.99	Pass
单位:	Ohm	Ohm	Ohm	Ohm	Ohm	Ohm	--

### TDR HEAC CommonModeIMPZ, Tr= 1000 ps (10% 90%)

对数名称	规格上限	规格下限	最大阻抗	最小阻抗	差异值	平均值	状态
HEAC	36	24	32.40	30.62	1.78	31.51	Pass
单位:	Ohm	Ohm	Ohm	Ohm	Ohm	Ohm	--

### TDR HEAC DifferentialIMPZ, Tr= 1000 ps (10% 90%)

对数名称	规格上限	规格下限	最大阻抗	最小阻抗	差异值	平均值	状态
HEAC	110	90	101.47	98.53	2.94	100.00	Pass
单位:	Ohm	Ohm	Ohm	Ohm	Ohm	Ohm	--

### TDR HEAC ConnectorIMPZ, Tr= 1000 ps (10% 90%)

对数名称	规格上限	规格下限	最大阻抗	最小阻抗	凸点宽度	差异值	状态
HEAC	125~115,250	75~85,250	110.85	100.92	0.0	9.93	Pass
单位:	Ohm,ps	Ohm,ps	Ohm	Ohm	ps	Ohm	--

### TDR HEAC FE ConnectorIMPZ, Tr= 1000 ps (10% 90%)

对数名称	规格上限	规格下限	最大阻抗	最小阻抗	凸点宽度	差异值	状态
HEAC	125~115,250	75~85,250	111.64	100.01	0.0	11.63	Pass
单位:	Ohm,ps	Ohm,ps	Ohm	Ohm	ps	Ohm	--

### TDT HEAC IntraPairSkew, Tr= 1000 ps (10% 90%)

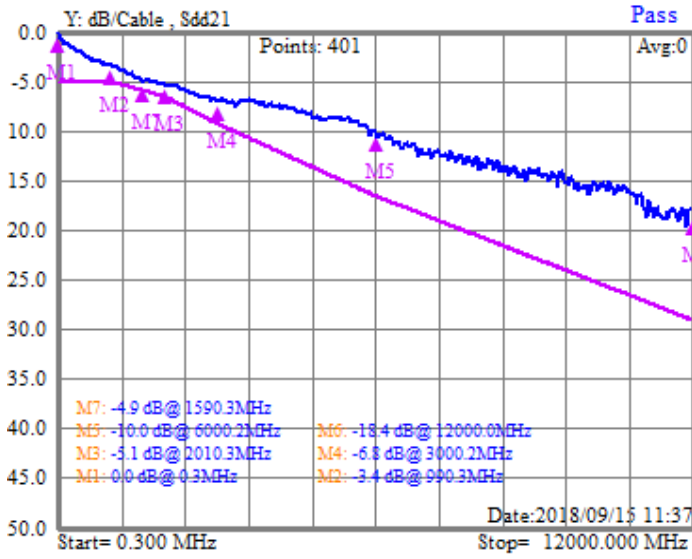
对数名称	规格上限	规格下限	延迟差值	状态
HEAC	111	--	1.588	Pass
单位:	ps	ps	ps	--

### TDT InterPairSkew, Tr= 75 ps (10% 90%)

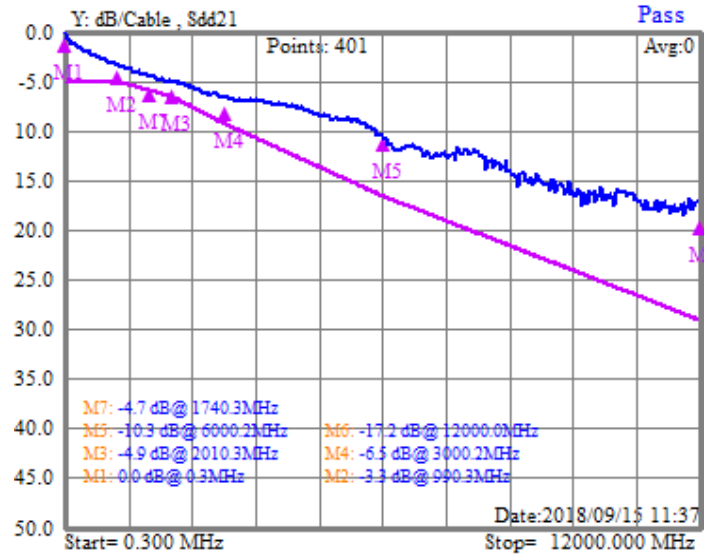
对数名称	规格上限	规格下限	延迟差值	状态
ALL	500	0	75.60	Pass
单位:	ps	ps	ps	--

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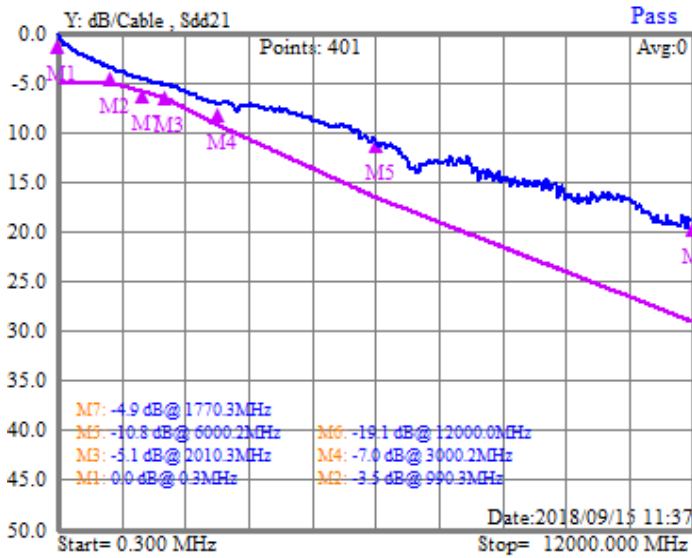
**NA Attenuation (CLK)**



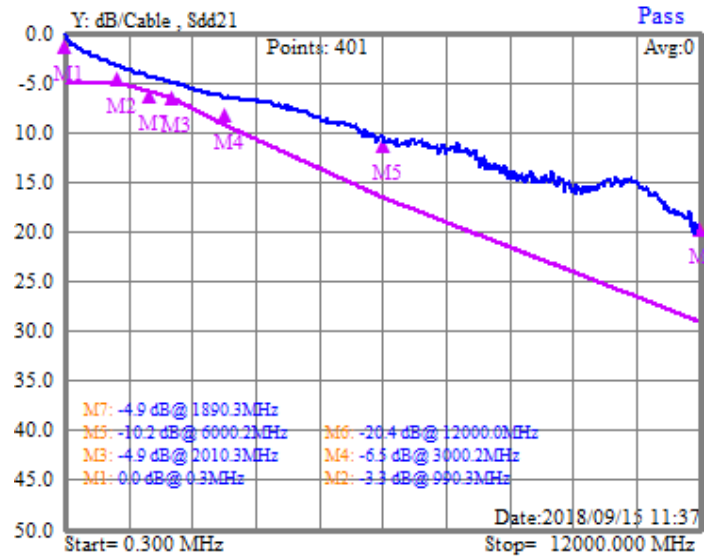
**NA Attenuation (D0)**



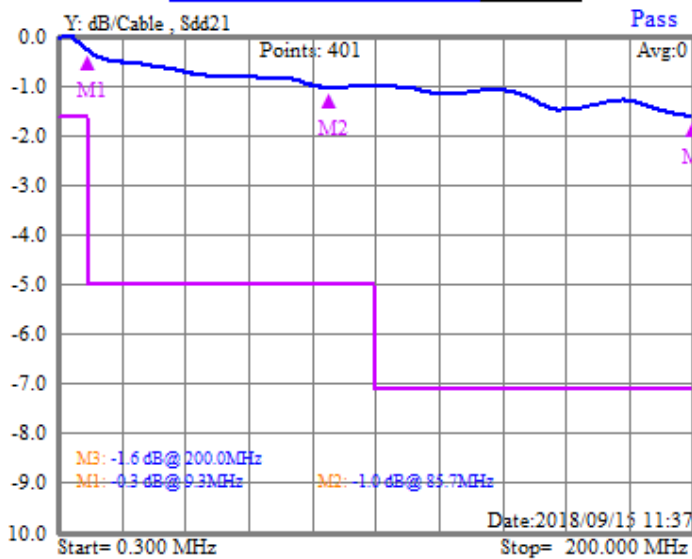
**NA Attenuation (D1)**



**NA Attenuation (D2)**



**NA HEAC Attenuation (HEAC)**

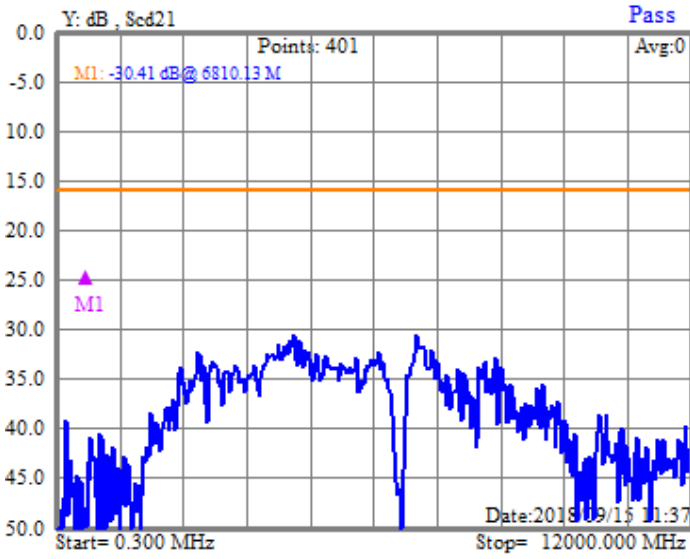


**NA SCD21 DiffToComm Convert (CLK)**

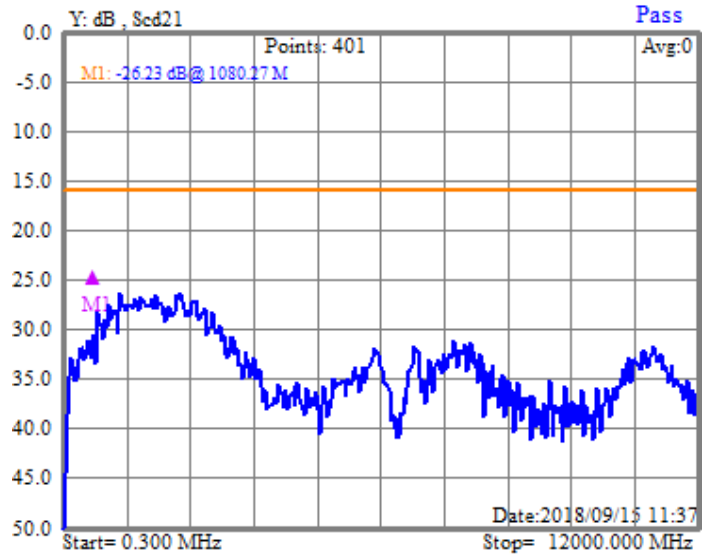


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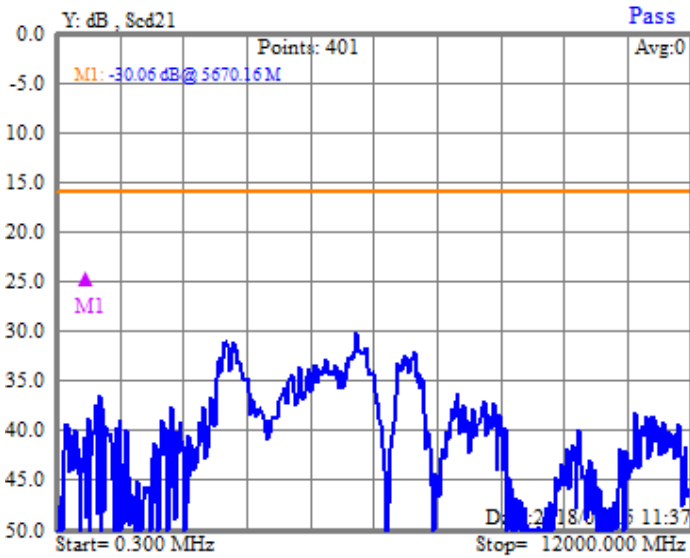
**NA SCD21 DiffToComm Convert (D0)**



**NA SCD21 DiffToComm Convert (D1)**



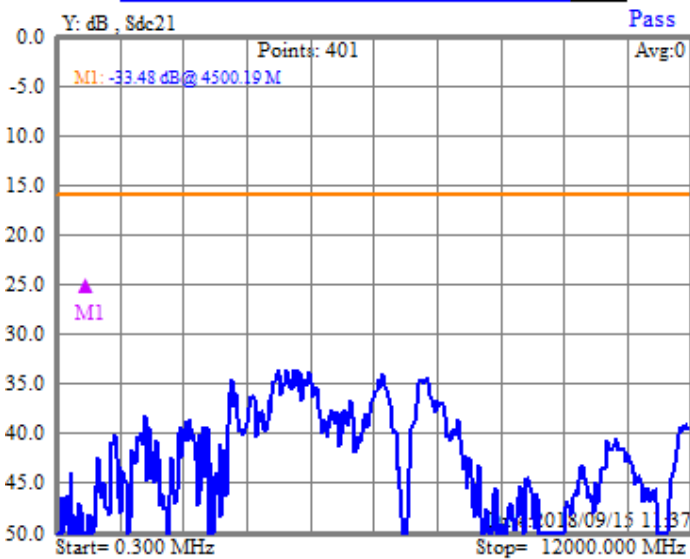
**NA SCD21 DiffToComm Convert (D2)**



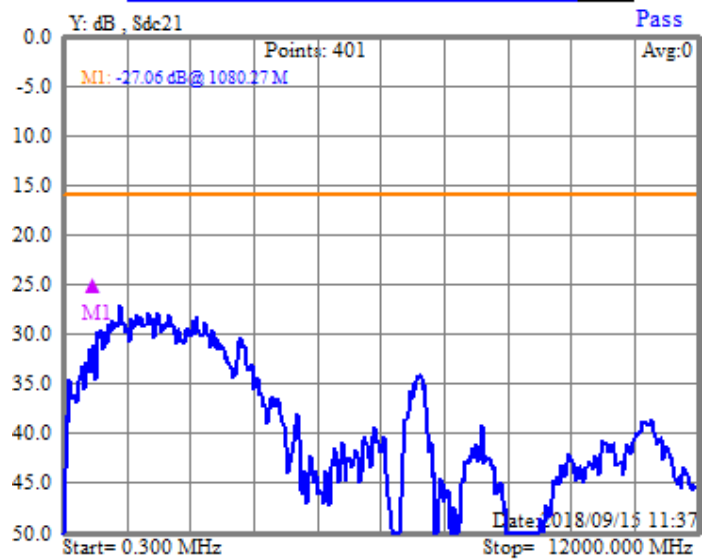
**NA SDC21 CommToDiff Convert (CLK)**



**NA SDC21 CommToDiff Convert (D0)**

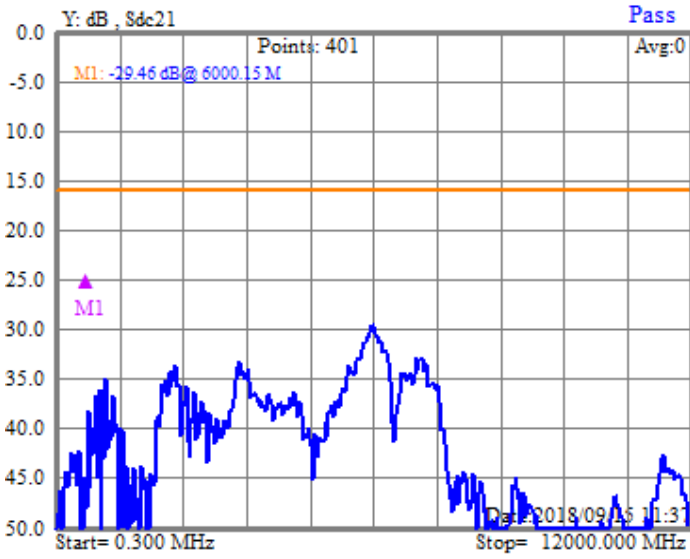


**NA SDC21 CommToDiff Convert (D1)**



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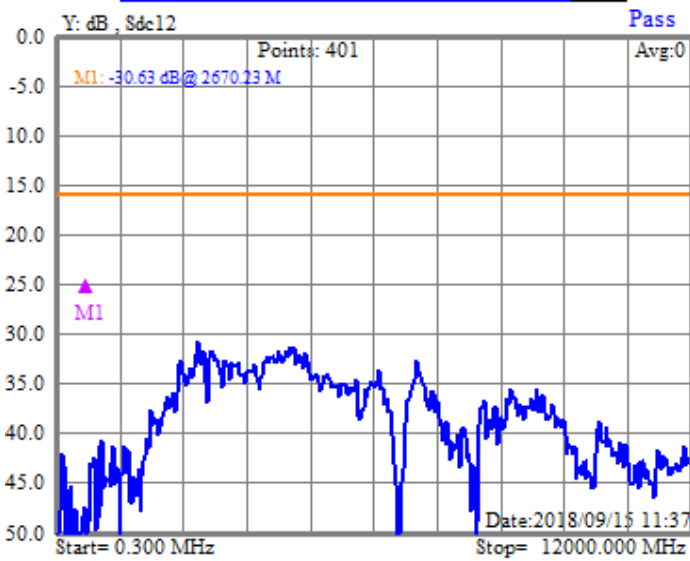
**NA SDC21 CommToDiff Convert (D2)**



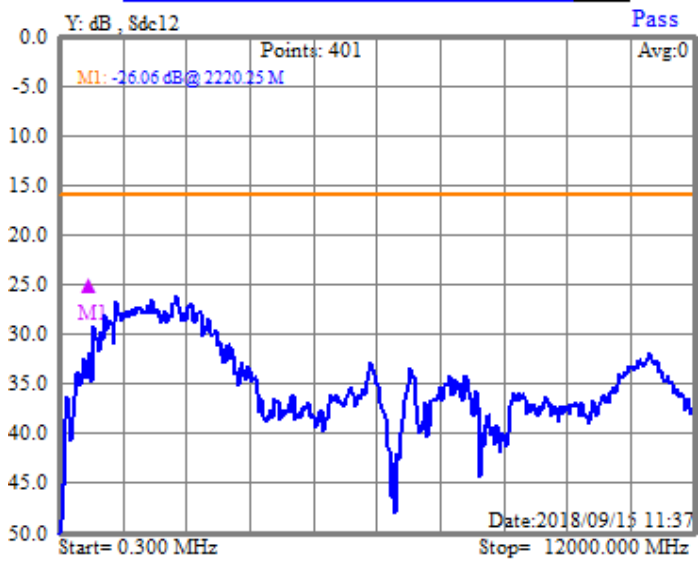
**NA SDC12 CommToDiff Convert (CLK)**



**NA SDC12 CommToDiff Convert (D0)**



**NA SDC12 CommToDiff Convert (D1)**



**NA SDC12 CommToDiff Convert (D2)**



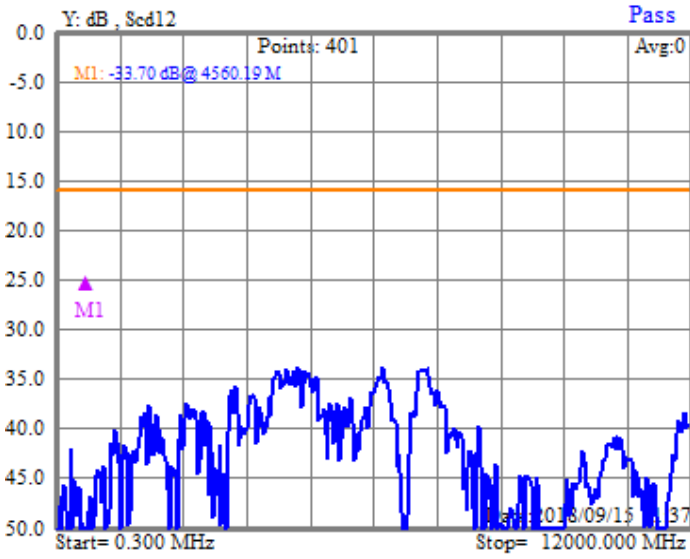
**NA SDC12 DiffToComm Convert (CLK)**



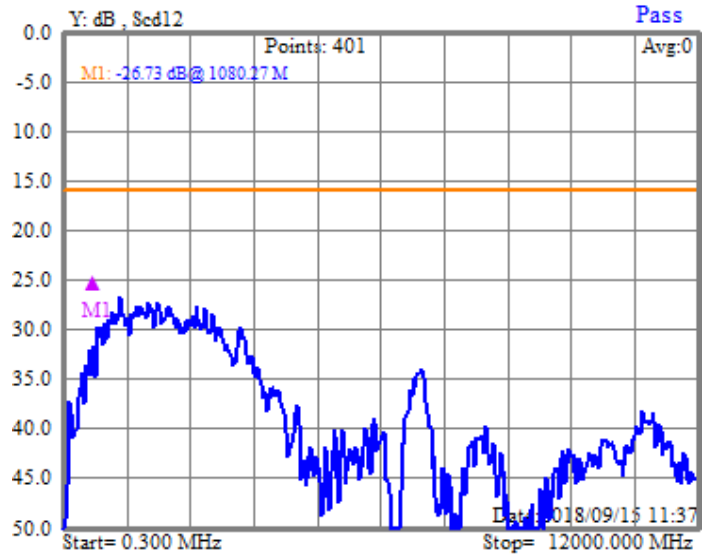


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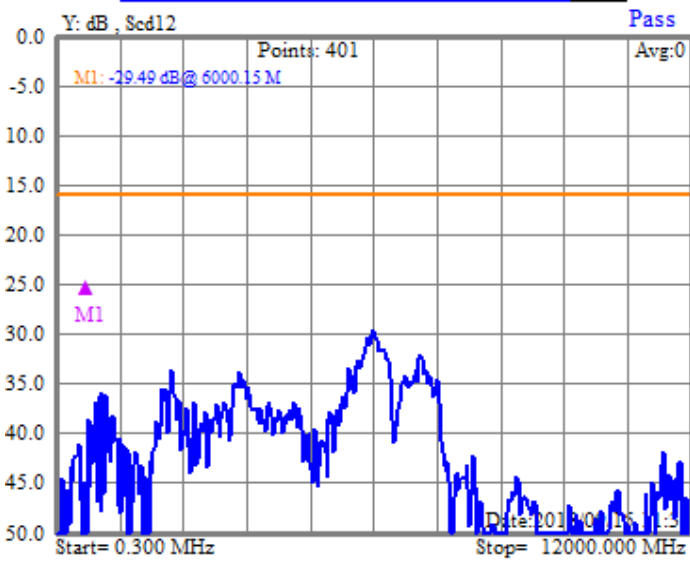
**NA SCD12 DiffToComm Convert (D0)**



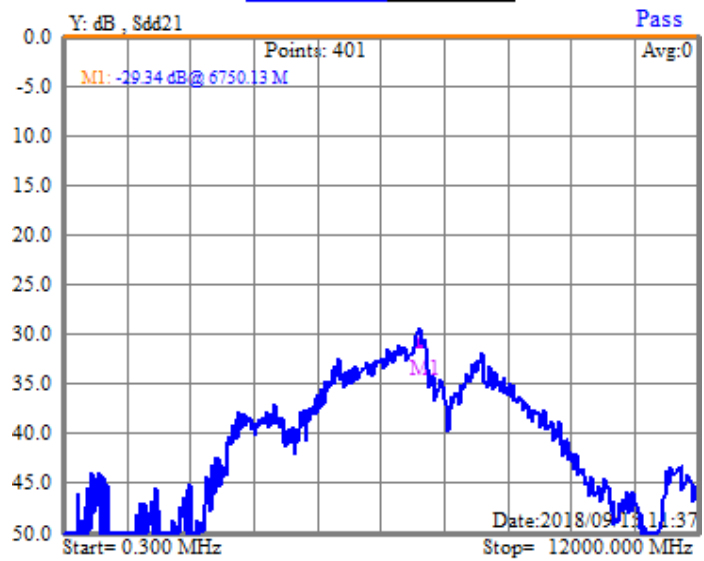
**NA SCD12 DiffToComm Convert (D1)**



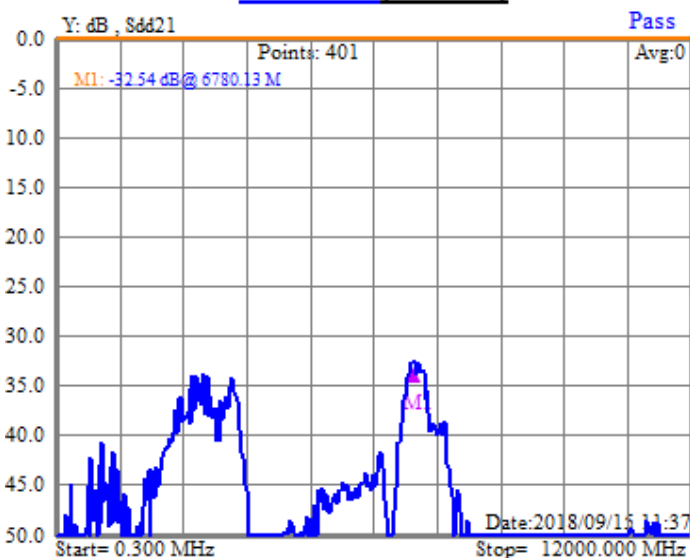
**NA SCD12 DiffToComm Convert (D2)**



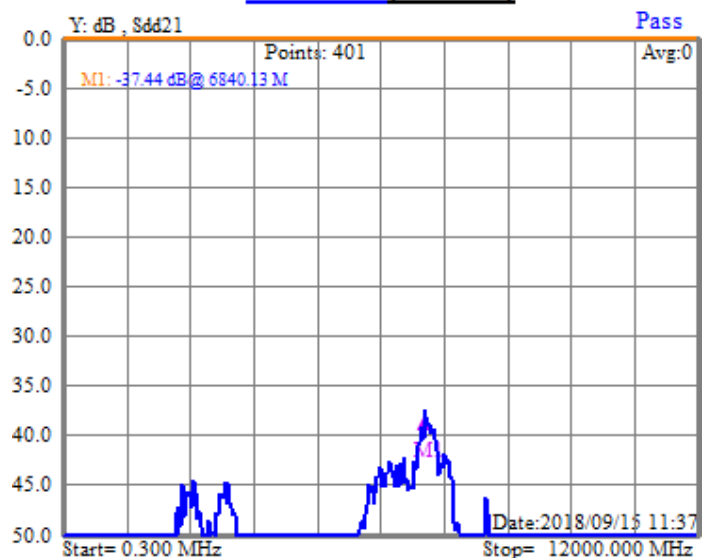
**NA FEXT (CLK-D0)**



**NA FEXT (CLK-D1)**

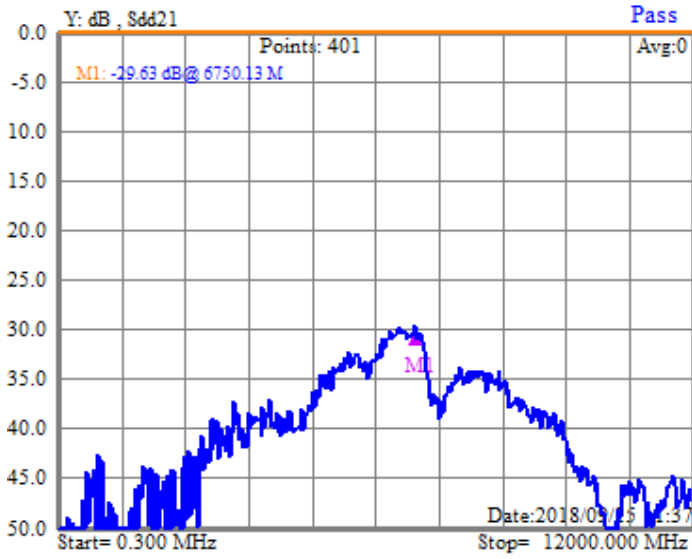


**NA FEXT (CLK-D2)**

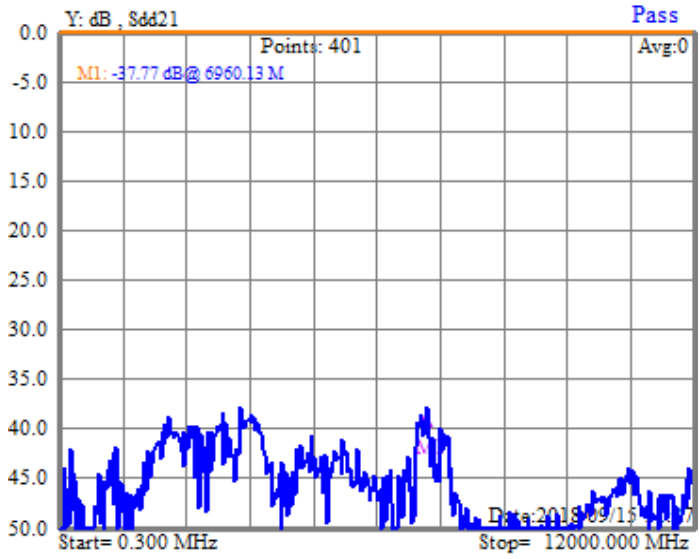


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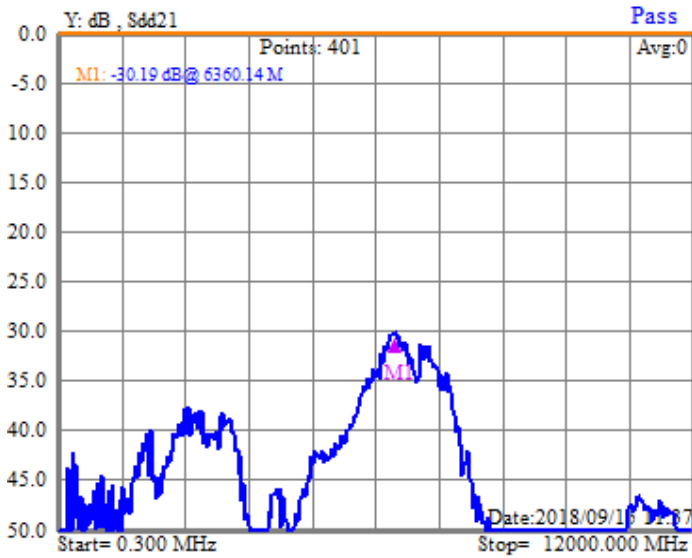
### NA FEXT (D0-CLK)



### NA FEXT (D0-D1)



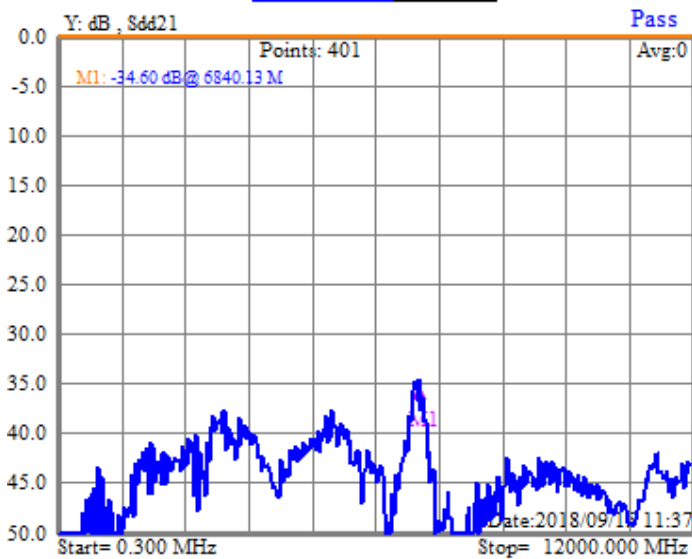
### NA FEXT (D0-D2)



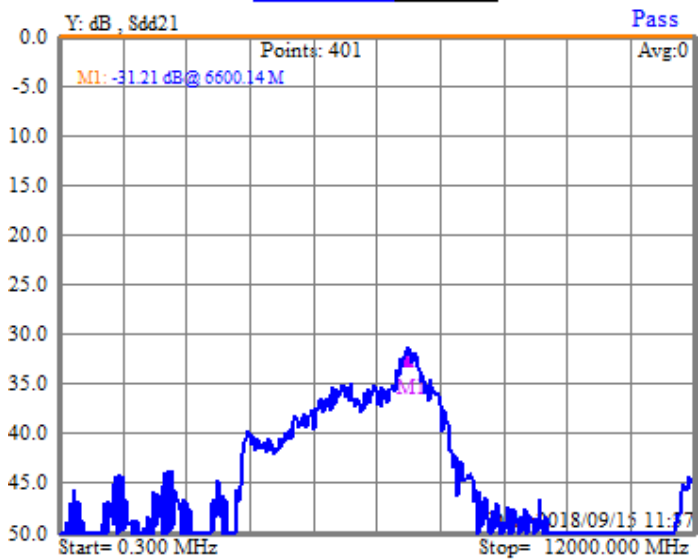
### NA FEXT (D1-CLK)



### NA FEXT (D1-D0)

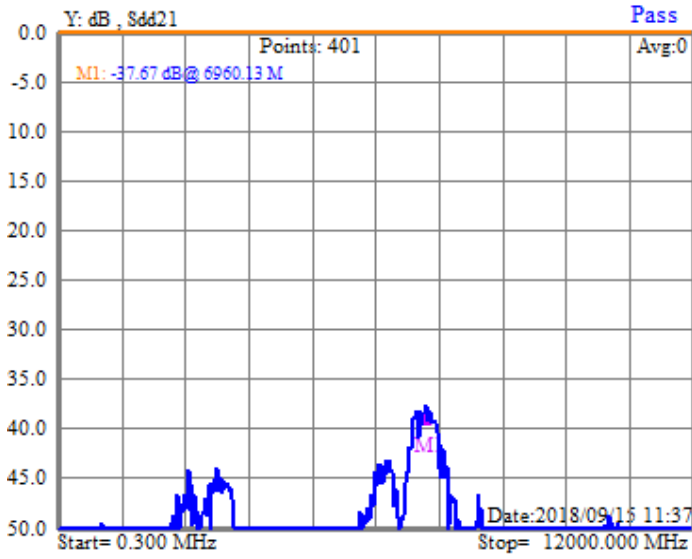


### NA FEXT (D1-D2)

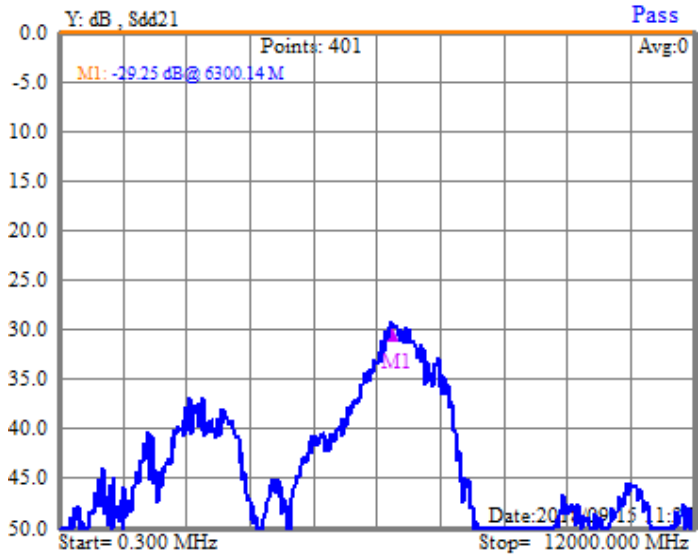


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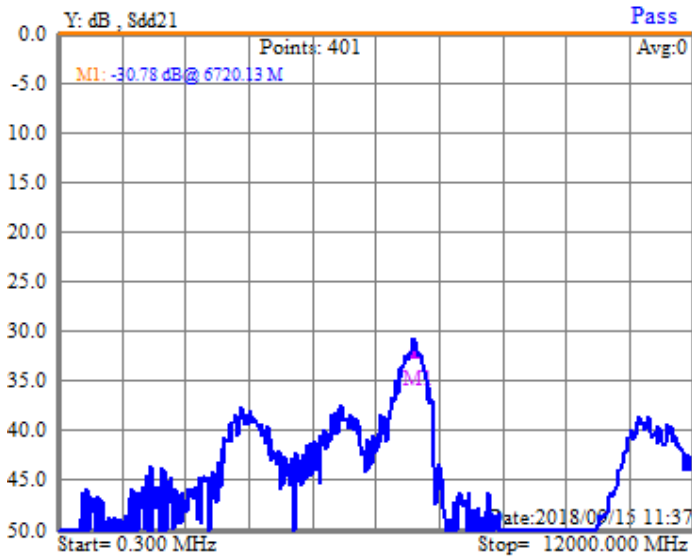
**NA FEXT (D2-CLK)**



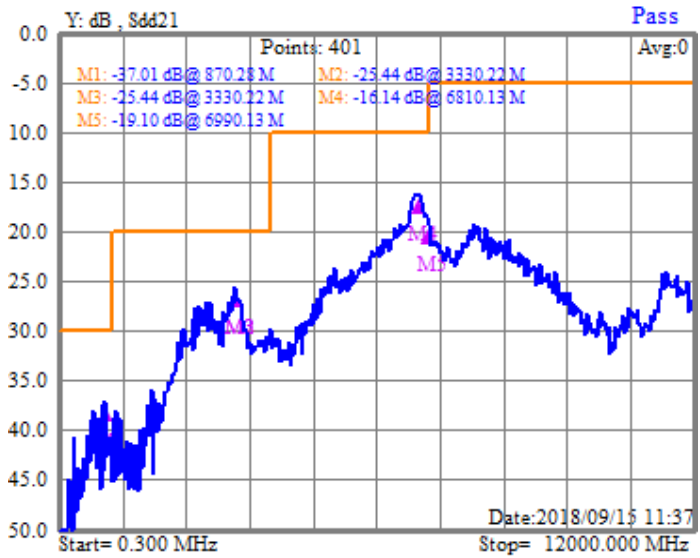
**NA FEXT (D2-D0)**



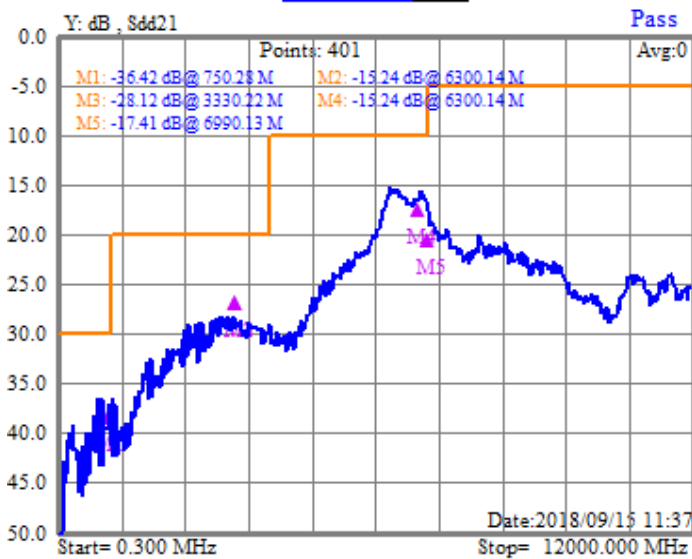
**NA FEXT (D2-D1)**



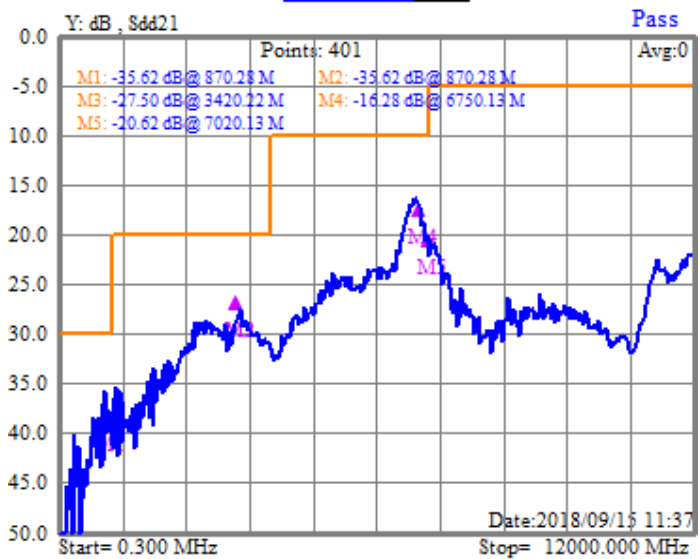
**NA ACR (CLK)**



**NA ACR (D0)**

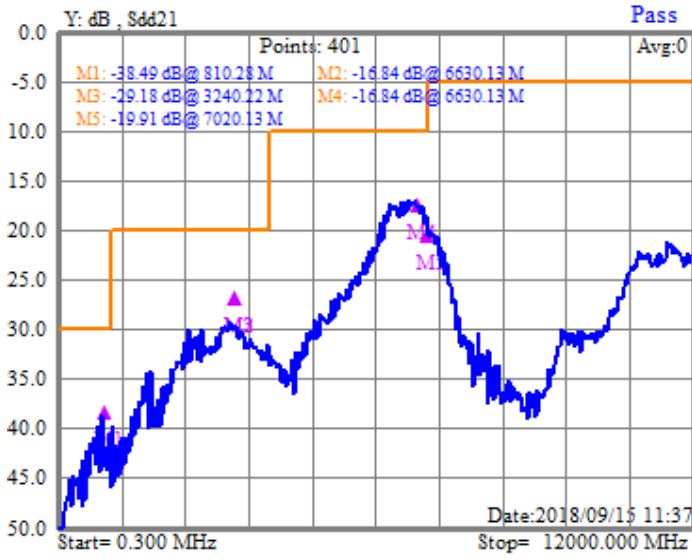


**NA ACR (D1)**

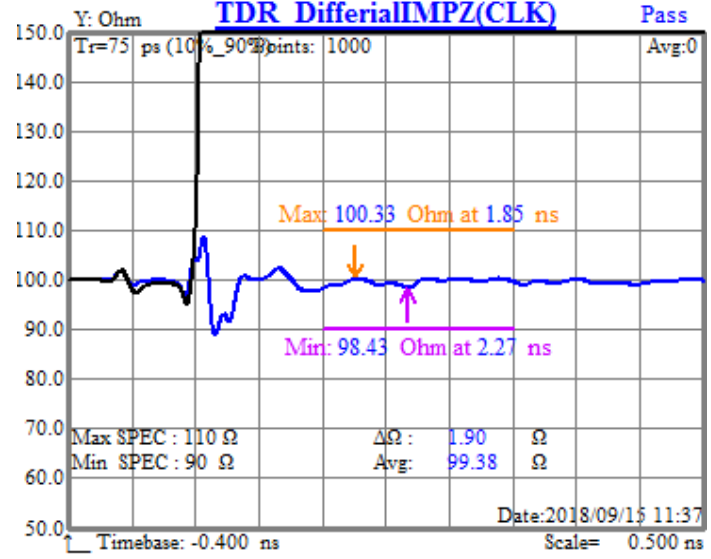


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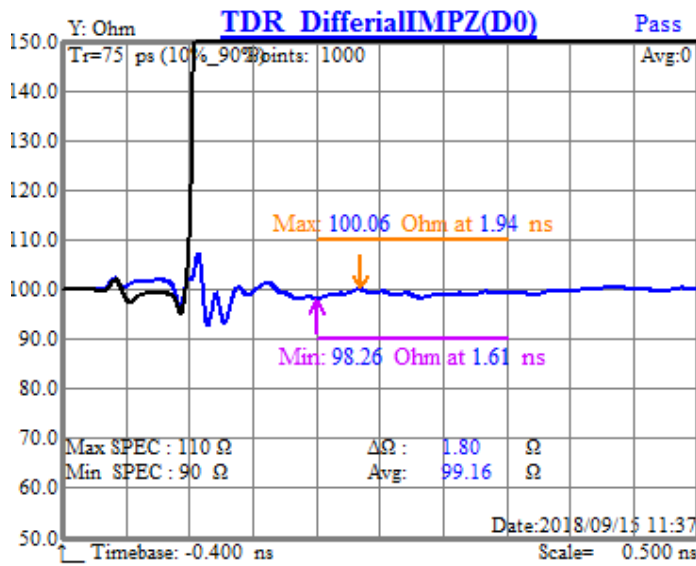
**NA ACR (D2)**



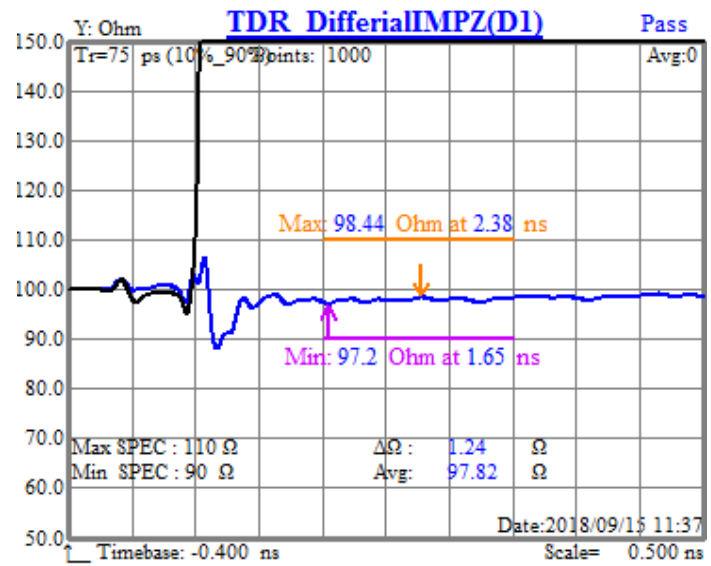
**TDR DifferentialIMPZ(CLK)**



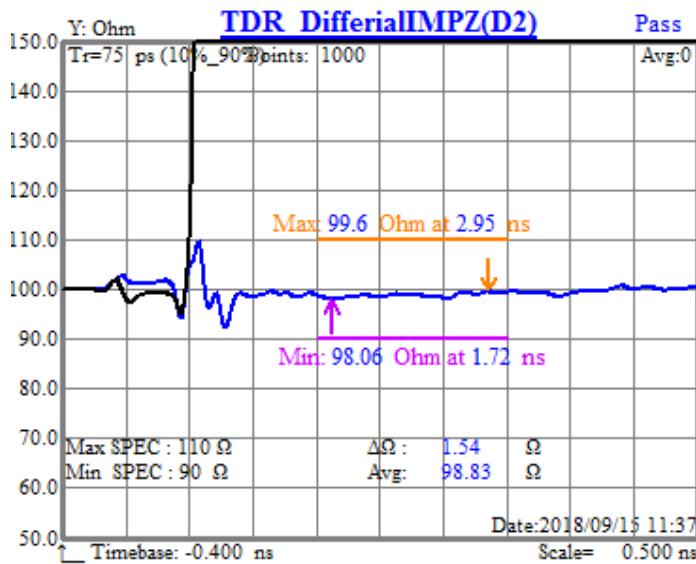
**TDR DifferentialIMPZ(D0)**



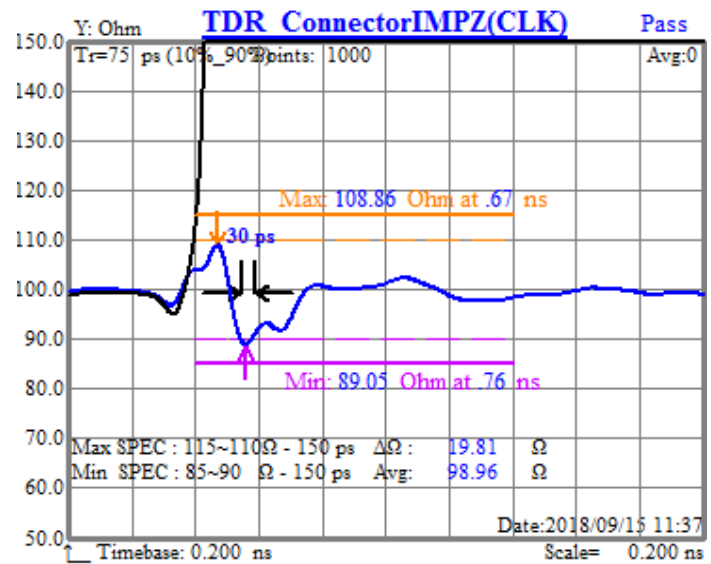
**TDR DifferentialIMPZ(D1)**



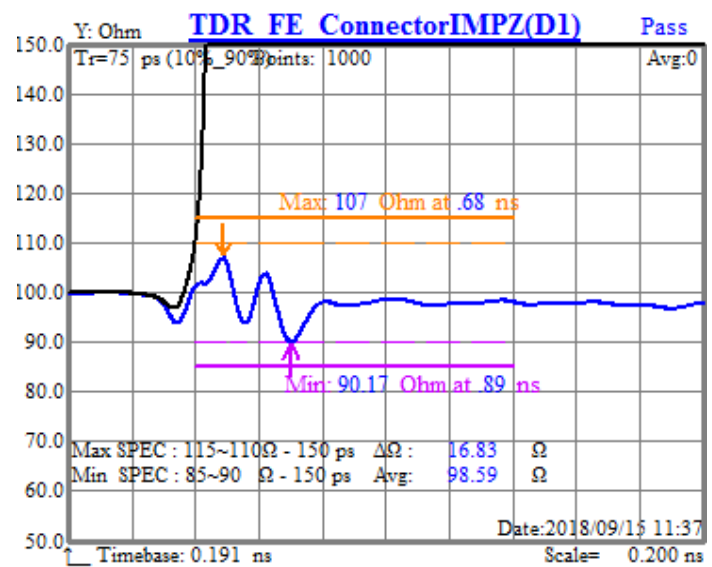
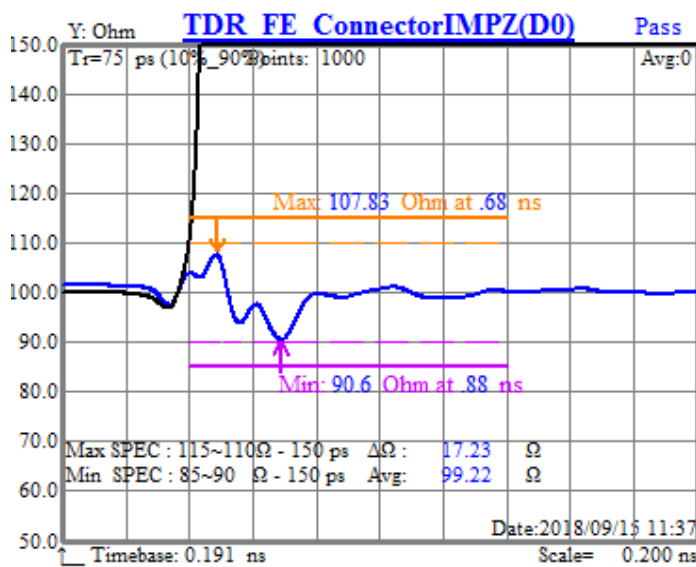
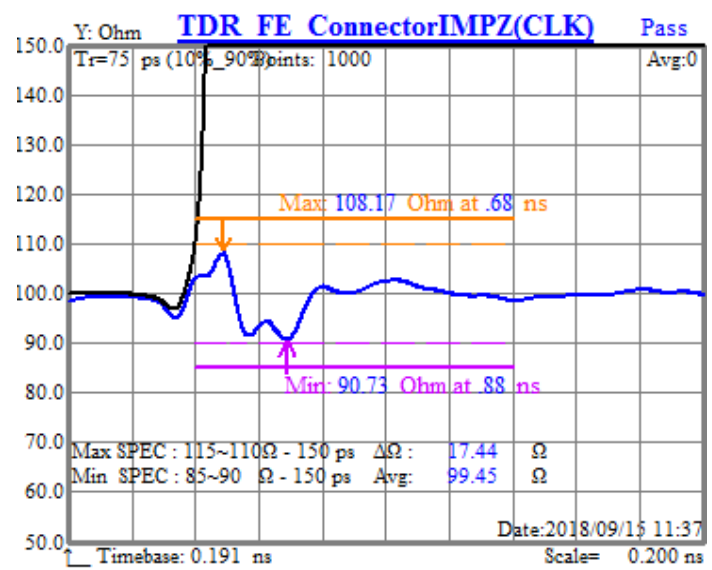
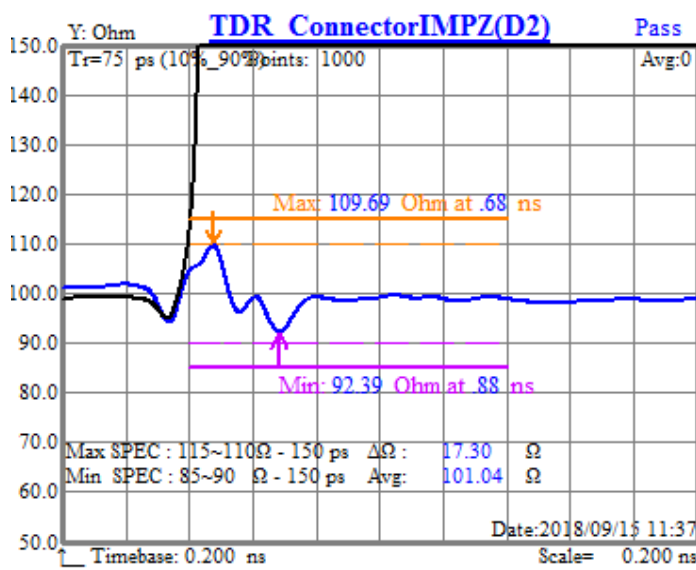
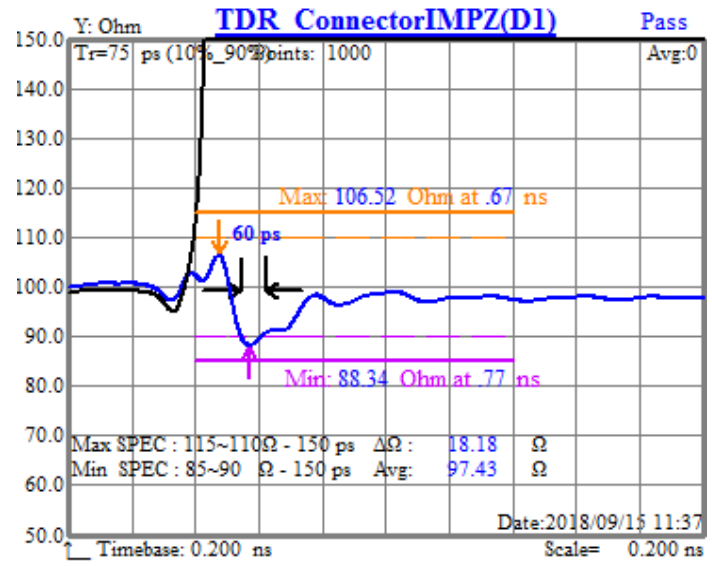
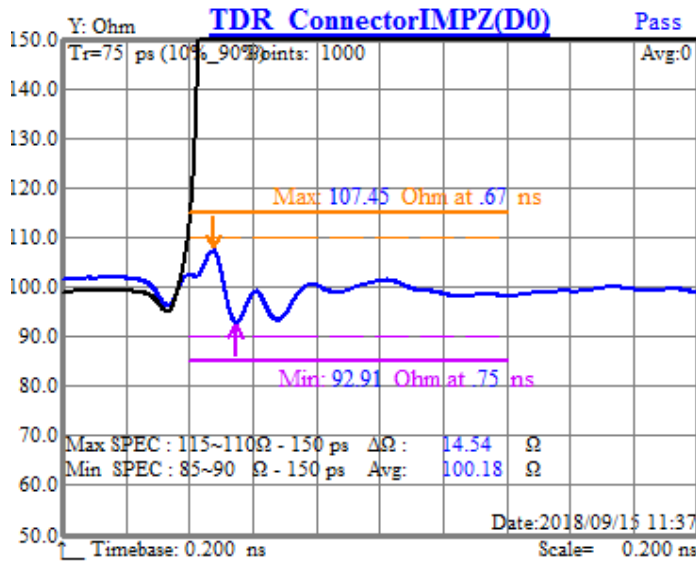
**TDR DifferentialIMPZ(D2)**



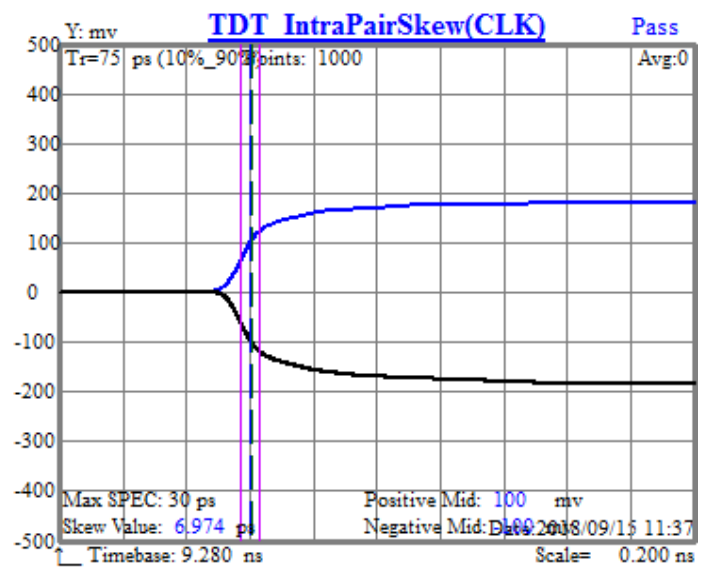
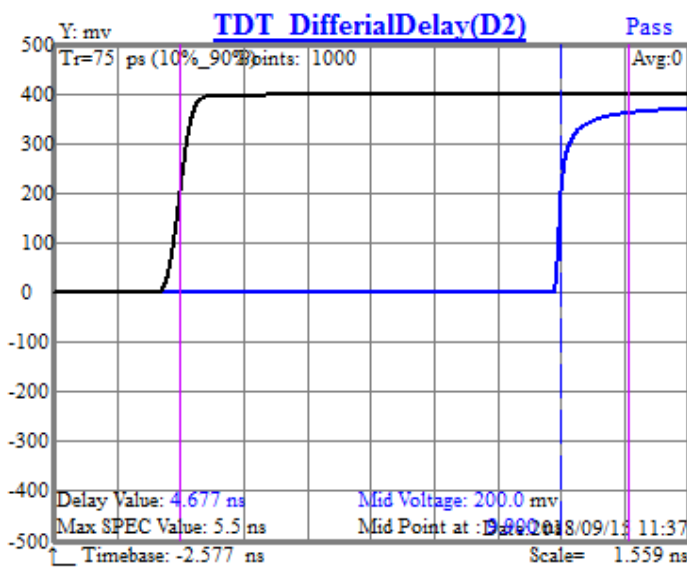
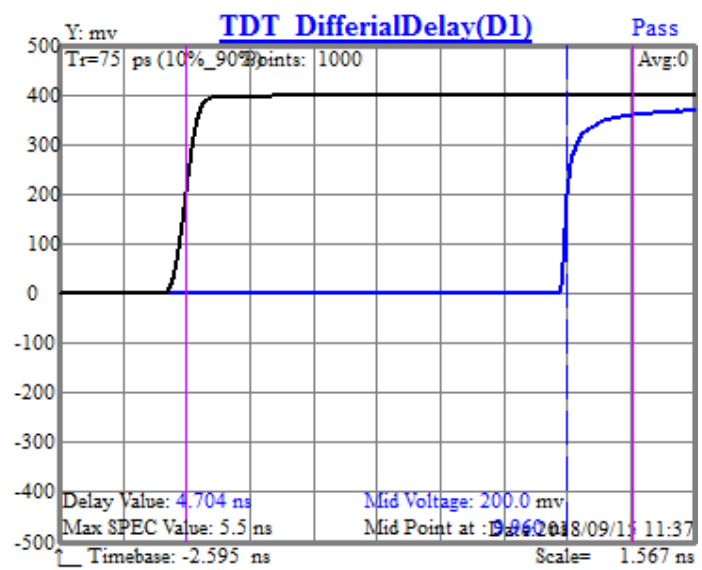
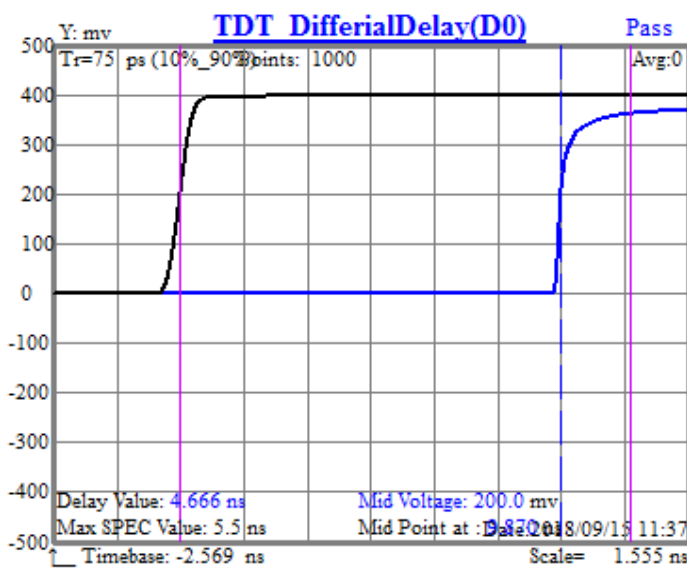
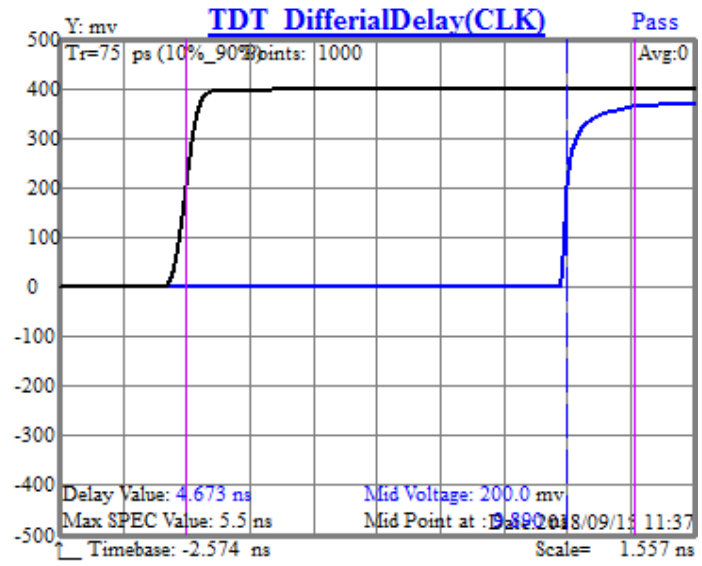
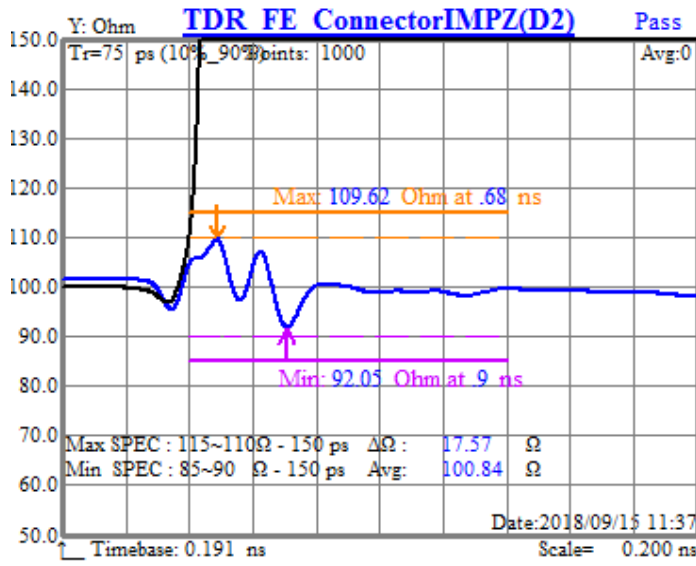
**TDR ConnectorIMPZ(CLK)**



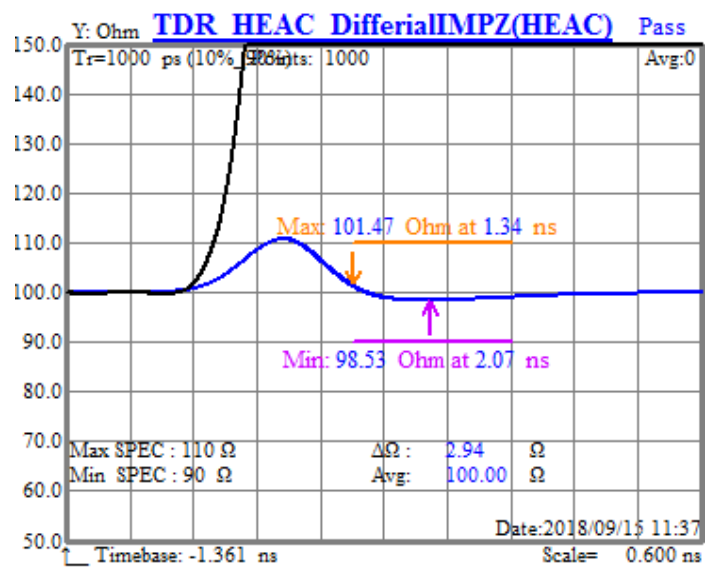
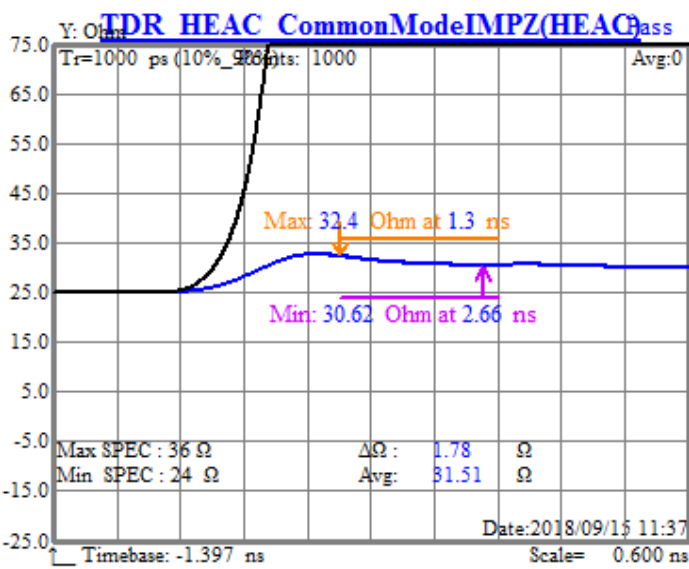
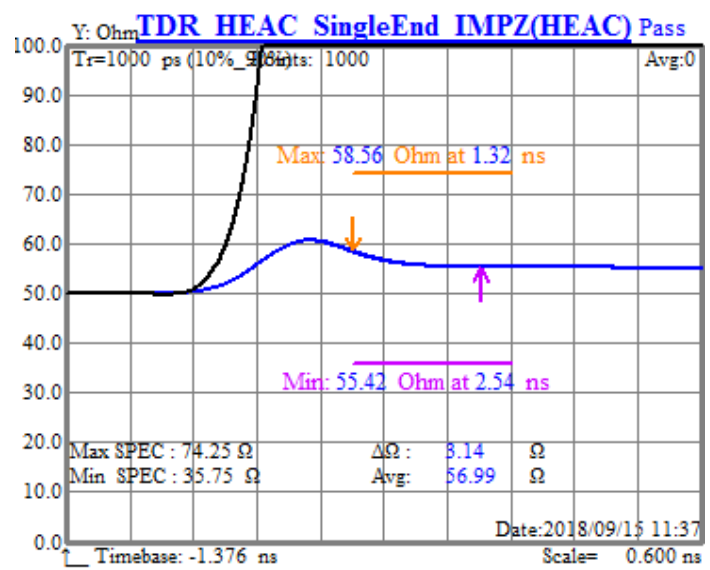
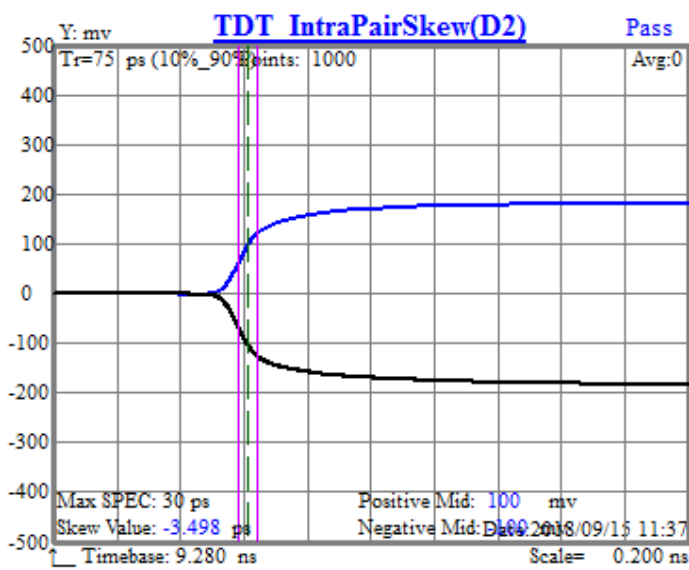
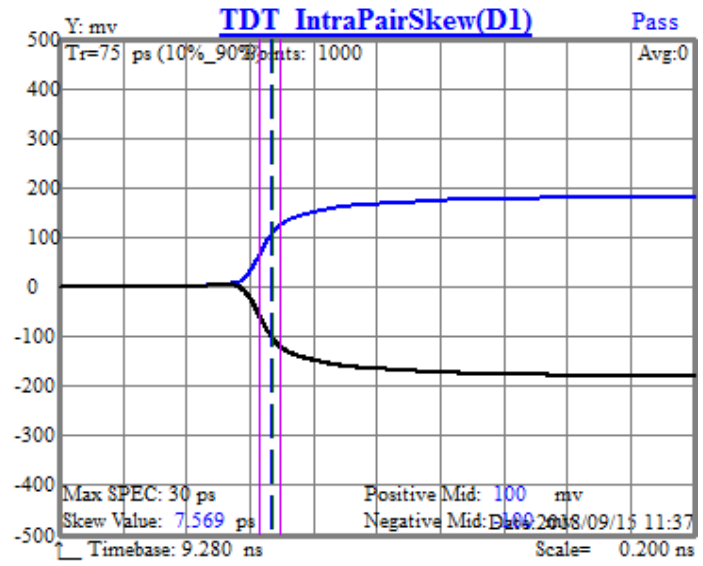
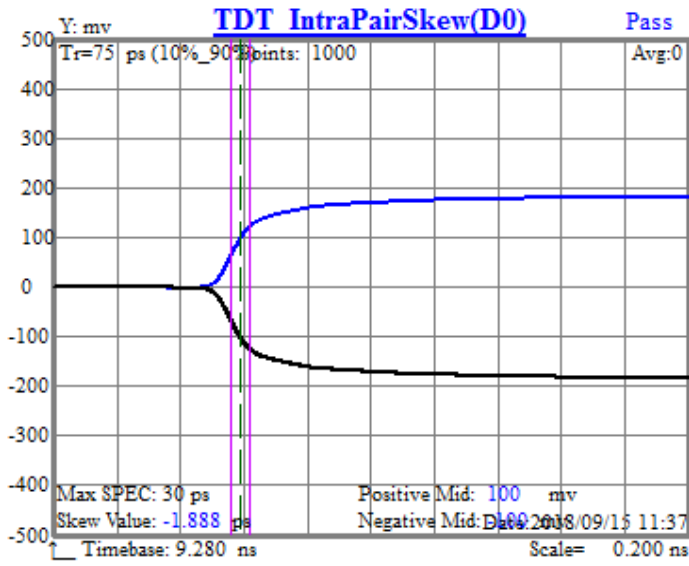
# TEST Graphic Summary Page 8 of 11



# TEST Graphic Summary Page 9 of 11



# TEST Graphic Summary Page 10 of 11



# TEST Graphic Summary Page 11 of 11

