DP83867IR
Compliance Test Results

2020/4/13

Contents of Compliance Test:

- Conduct all test items of 10Base-Te, 100Base-TX and 1000Base-T
  - But Harmonic Contents of 10Base-T was not conducted, since the external measuring instrument could not output the ALL1 signal.

- Number of Test Board:
  - No3, No4

• 10Base-Te	:	Board No3	Conducted all test items at only Port1
• 100Base-TX	:	Board No3	Conducted all test items with all Ports
• 1000Base-T	:	Board No3 and No4	Conducted all test items with all Ports

Compliance Test Results at 2020/4/13:

10Base-Te : 4 fail items
100Base-TX : Passed all items
1000Base-T : 1 fail item

Compliance Test Results of 10Base-T/10Base-Te:

2020.4.13

測定時間　30分～1時間30分程度

					1回目（3/11）		2回目(4/13～15)		
1回目：10BASE-T **2回目：10BASE-Te**				Load1: 115Ω と180μHの並列 Load2: 76.8Ω と220μHの並列 Load3:100Ω	試験結果（Port1）		試験結果（Port1）		コメント）NG項目について、事さ加減（全然だめ、惜しいなど）を記載してください。可能であれば数値で表現
試験項目	点数	テストパターン	TPM	負荷	No8	No3	No3	No4	
Link Test Pulse, with TPM	1	リンクパルス	あり	Load1/Load2/Load3	OK		OK	---	
Link Test Pulse, without TPM	1	リンクパルス	なし	Load1/Load2/Load3	OK		OK	---	
TP_IDL Template, with TPM (last bit CD0)	1	疑似ランダム	あり	Load1/Load2/Load3	NG（Load2）	NG（Load2）	NG(Load2)	---	NGの程度：中 Load２の試験において、電圧が低くマスクに当たる
TP_IDL Template, with TPM (last bit CD1)		疑似ランダム	あり	Load1/Load2/Load3	NG（Load2）	NG（Load2）	NG(Load2)	---	上に同じ
MAU Template		疑似ランダム	あり	Load3	NG	NG	OK	---	
Jitter with TPM		疑似ランダム	あり	Load3	OK		OK	---	
TP_IDL Template, without TPM (last bit CD0)	1	疑似ランダム	なし	Load1/Load2/Load3	NG（Load1）	NG（Load3）	OK	---	NGの程度：中 波形立ち上がり部分で時間軸方向のジッタがあり、マスクに当たる
TP_IDL Template, without TPM (last bit CD1)		疑似ランダム	なし	Load1/Load2/Load3	NG（Load1）	NG（Load1）	NG(Load1)	---	
Jitter without TPM		疑似ランダム	なし	Load3	OK		OK	---	
Peak Differential Voltage		疑似ランダム	なし	Load3	NG	NG	OK	---	
Harmonic Content	1	ALL1	なし	Load3	未		実施無し	---	
Common Mode Output Voltage	1	疑似ランダム	なし	47.5Ω×2	OK		OK	---	
Transmitter Return Loss	1	疑似ランダム	なし	Zs=85/100/111Ω	NG(111Ω)	NG(111Ω)	NG	---	NGの程度：中 111Ωでの Lossが大きい（前回と同様？）
Receiver Return Loss	1	疑似ランダム	なし	Zs=85/100/111Ω	OK		OK	---	

Compliance Test Results of 100Base-TX:

2020.4.13

測定時間　30分程度

					1回目（3/11）		2回目(4/13～15)		
100BASE-TX					試験結果（Port1）		試験結果（Port 全）		
試験項目	点数	テストパターン	TPM	負荷	No8	No3	No3	No4	コメント）
UTP +Vout Differential Output Voltage		Test Mode 5	なし	Load3(100Ω)	OK		OK	---	
UTP -Vout Differential Output Voltage					NG	OK	OK	---	
UTP Signal Amplitude Symmetry					OK		OK	---	
+Vout Overshoot					OK		OK	---	
-Vout Overshoot					OK		OK	---	
UTP AOI Template					OK		OK	---	
AOI +Vout Rise Time					OK		OK	---	
AOI +Vout Fall Time	1				OK		OK	---	
AOI +Vout Rise/Fall Symmetry					OK		OK	---	
AOI -Vout Rise Time					OK		OK	---	
AOI -Vout Fall Time					OK		OK	---	
AOI -Vout Rise/Fall Symmetry					OK		OK	---	
AOI Overall Rise/Fall Symmetry					OK		OK	---	
Transmit Jitter					OK		OK	---	
Duty Cycle Distortion					OK		OK	---	
Transmitter Return Loss	1			Zs=85/100/115Ω	OK		OK	---	
Receiver Return Loss	1			Zs=85/100/115Ω	OK		OK	---	
	計3点								

Compliance Test Results of 1000Base-T:

2020.4.13

測定時間　1時間～1時間30分程度

1000BASE-T					1回目（3/11）試験結果（Port1）		2回目(4/13) 試験結果（Port 全）		
試験項目	点数	テストパターン	TPM	負荷	No8	No3	No3	No4	コメント）
Point A Peak Output Voltage(w/ Disturbing Signal)	1	Test Mode1	なし		NG(A,B,C,D)	NG(A,B,C,D)	OK	OK	
Point B Peak Output Voltage(w/ Disturbing Signal)					NG(A,B,C,D)	NG(A,B,C,D)	OK	OK	
Difference A,B Peak Output Voltage(w/ Disturbing Signal)					NG(A,B,C,D)	NG（A,D)	Port1：NG（ペアA,D) Port2：NG（ペアA,B) Port3：NG（ペアA,B) Port4：NG（ペアA,C,D) TEST：OK	Port1：NG（ペアD) Port2：NG（ペアA,D) Port3：NG（ペアD) Port4：NG（ペアA,B,C,D) TEST：NG（ペアB,C,D)	NGの程度：中 Point A,B間の電圧の誤差が大きい（1%未満のところ1.3～2%程度）
Point C Peak Output Voltage(w/ Disturbing Signal)					OK		OK	OK	
Point D Peak Output Voltage(w/ Disturbing Signal)					OK		OK	OK	
Point A Template Test(w/ Disturbing Signal)					OK		OK	OK	
Point B Template Test(w/ Disturbing Signal)					OK		OK	OK	
Point C Template Test(w/ Disturbing Signal)					OK		OK	OK	
Point D Template Test(w/ Disturbing Signal)					OK		OK	OK	
Point F Template Test(w/ Disturbing Signal)					OK		OK	OK	
Point H Template Test(w/ Disturbing Signal)					OK		OK	OK	
Point G Droop Test(w/ Disturbing Signal)					OK		OK	OK	
Point J Droop Test(w/ Disturbing Signal)					OK		OK	OK	
Transmitter Distortion(w/ Disturbing Signal)	1	Test Mode4			NG(A,C)	NG（C)	OK	OK	
MDI Common Mode Output Voltage	1	Test Mode4			OK		OK	OK	
MASTER mode JTxOut	1	Test Mode2			OK		OK	OK	
Jitter MASTER Filtered (w/o TX_TCLK)					OK		OK	OK	
Jitter MASTER Unfiltered (w/o TX_TCLK)					OK		OK	OK	
SLAVE mode JTxOut	1	Test Mode2 Test Mode3			OK		OK	OK	
Jitter SLAVE Filtered (w/o TX_TCLK)					OK		OK	OK	
Jitter SLAVE Unfiltered (w/o TX_TCLK)					OK		OK	OK	
MDI Return Loss	1	Test Mode4		Zs=85/100/115Ω	OK		OK	OK	
	計6点								

※1000BASE-Tは4ペア（A,B,C,D)で実施

Resolved by adding register setting

Expected to improve by setting the amplitude one level higher, but did not improve the voltage difference between Point A and B.

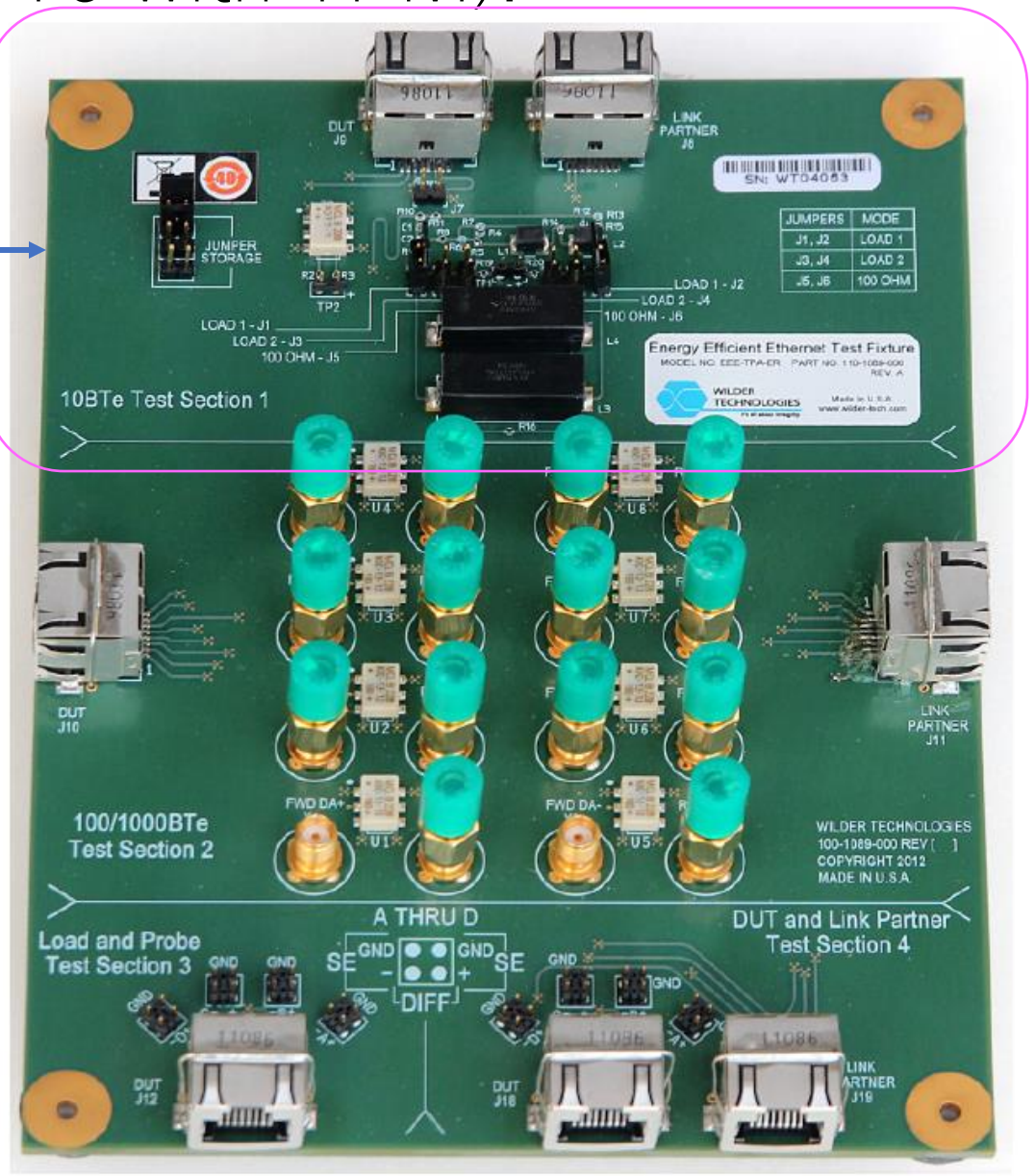
The countermeasure was effective (it was assumed that channel interference and only the channel concerned was output)

Measuring instruments:

Device Description			
	10Base-Te	**100Base-TX**	**1000Base-T**
ReturnLossTest	Use Vector Network Analyzer	Same as left	Same as left
DisturberSource	Useb Agilent 33250A	Same as left	Same as left
Test Session Details			
Infiniium SW Version	06.00.00628	04.60.0011	Same as left
Infiniium Model Number	DSAV204A	DSO9404A	Same as left
Infiniium Serial Number	MY56110125	MY53450126	Same as left
Application SW Version	2.44	2.21	Same as left
Probe	Model : 1131A Head ： E2678A/B	Same as left	Model : User Deffined Head ： User Deffined

Test fixture (10Base-Te with TPM):

10Base-Te

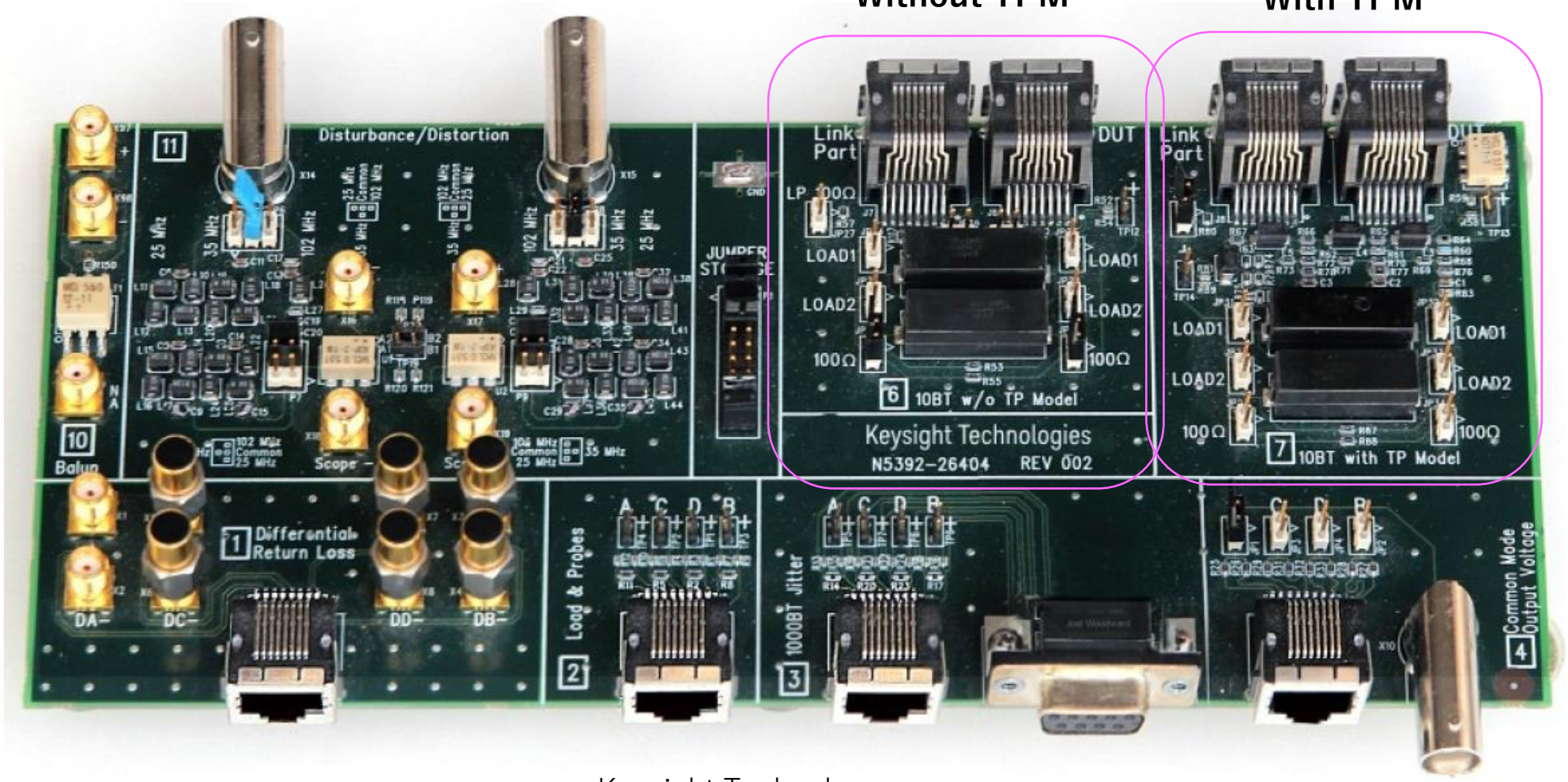


Wilder Technologies
Model Name: 110-1089-000

Test fixture (10Base-Te without TPM):

Section 6
10Base-Te/10Base-T
Without TPM

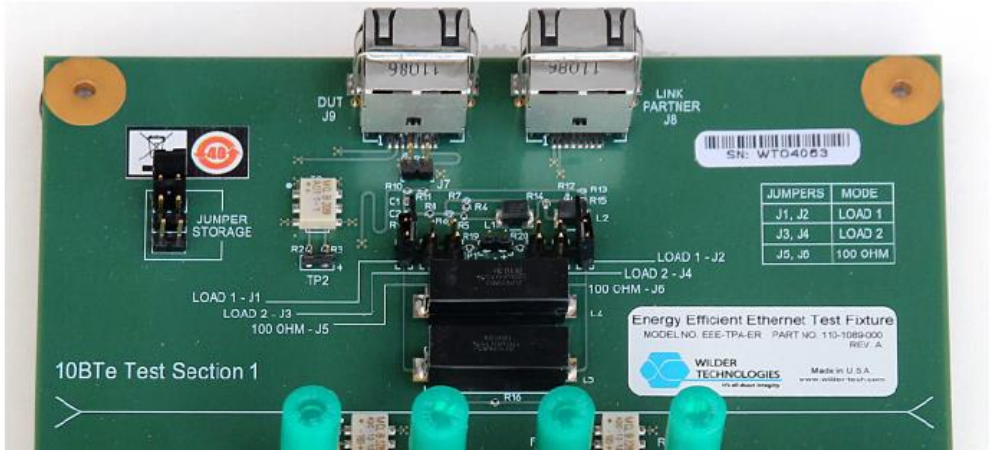
Section 7
10Base-T
With TPM



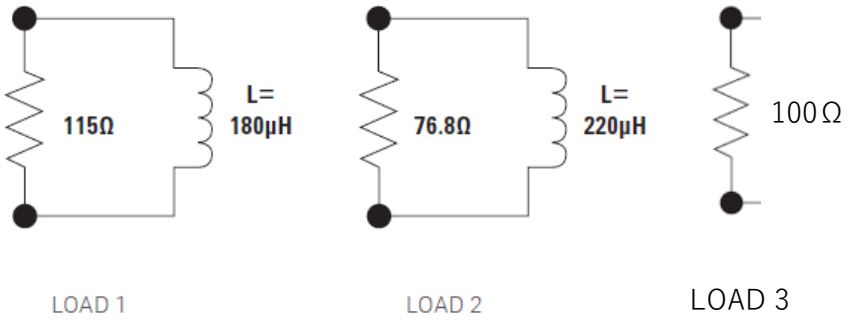
Keysight Technology
Model Name: N5395C

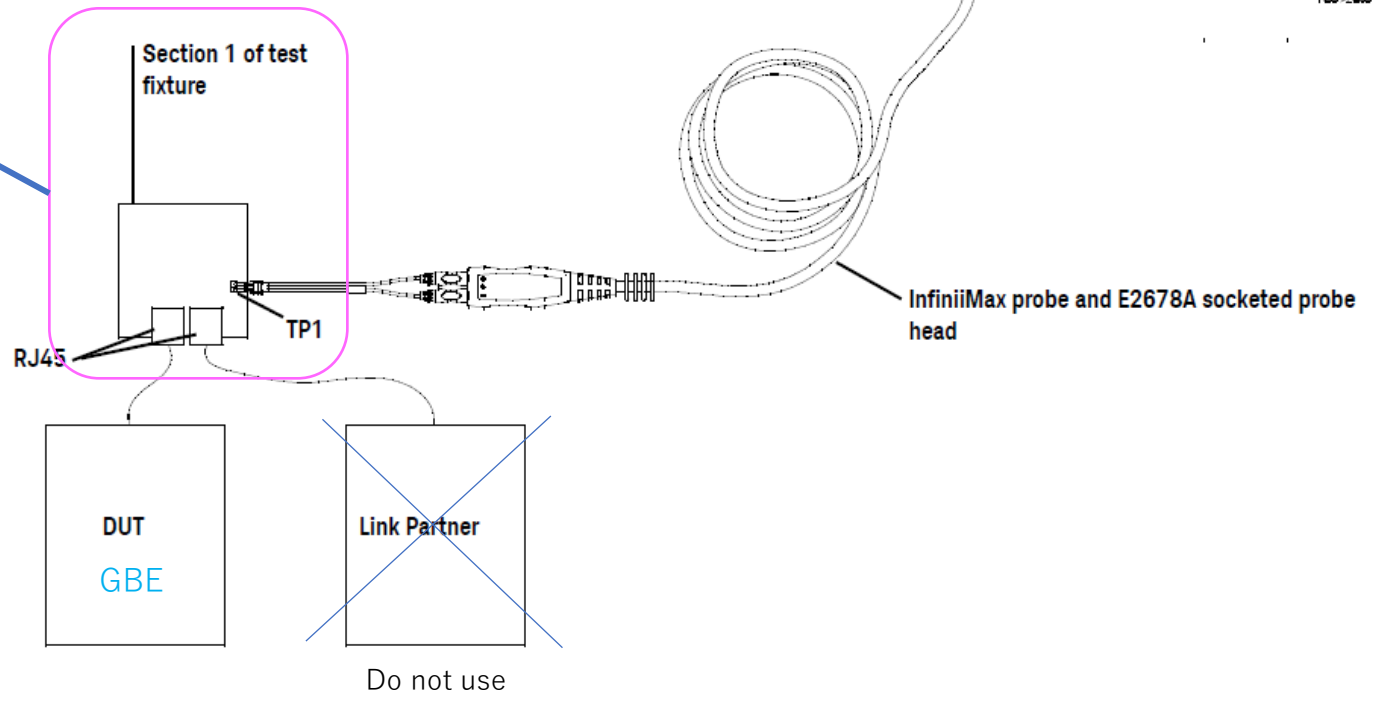
Measurement system (10Base-Te with TPM):

2020.5.6



TEST FIXTURE　(Section 1)
Wilder Technologies
Model Name: 110-1089-000

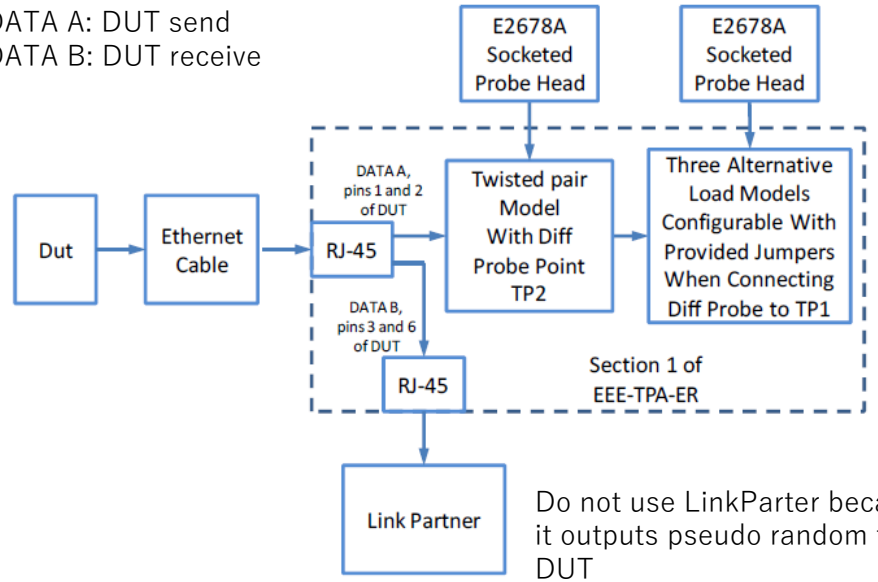




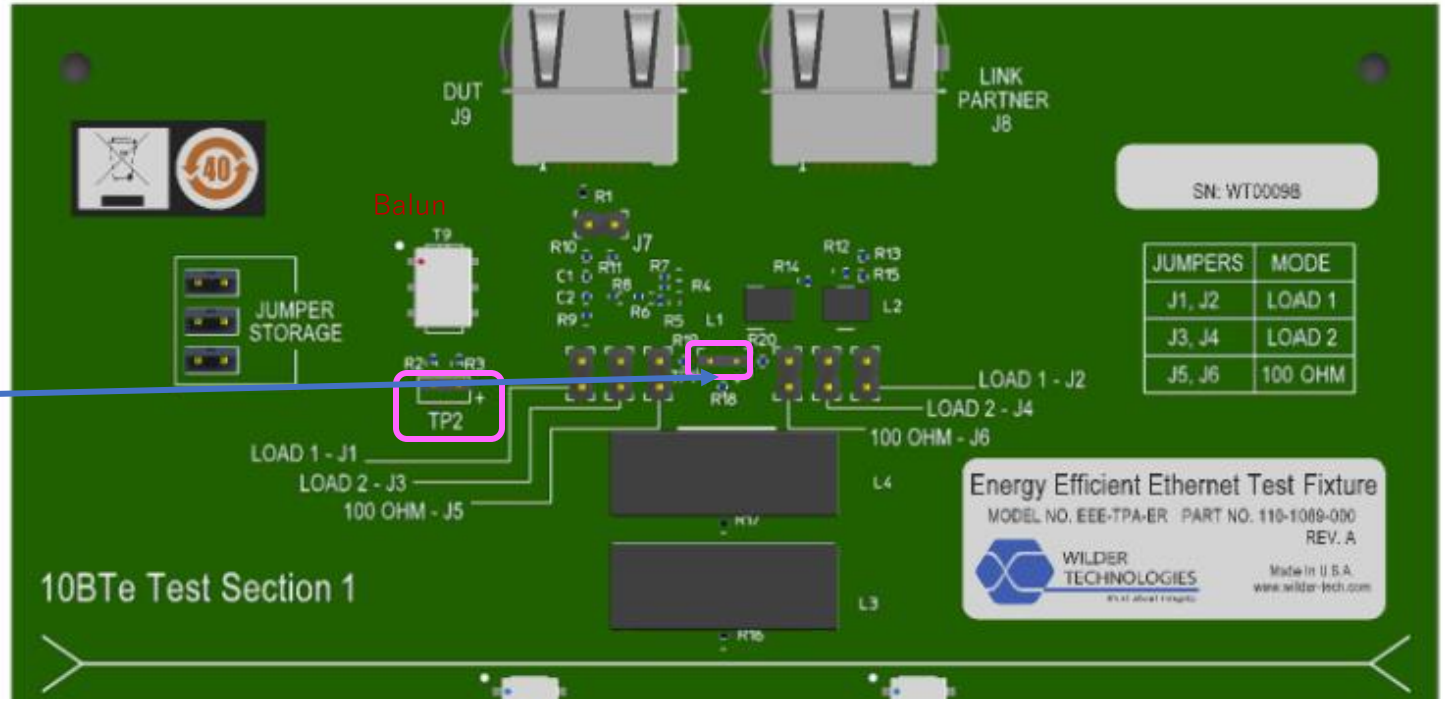
Measurement system (10Base-Te with TPM):

2020.5.6

MDI Mode:
DATA A: DUT send
DATA B: DUT receive



Do not use LinkParter because it outputs pseudo random from DUT



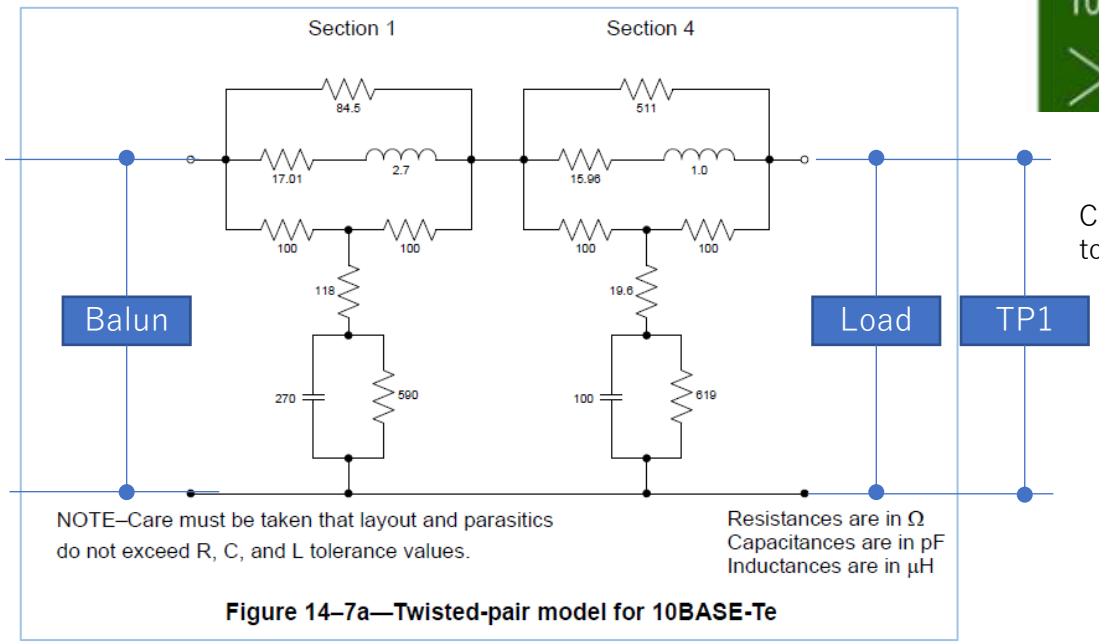
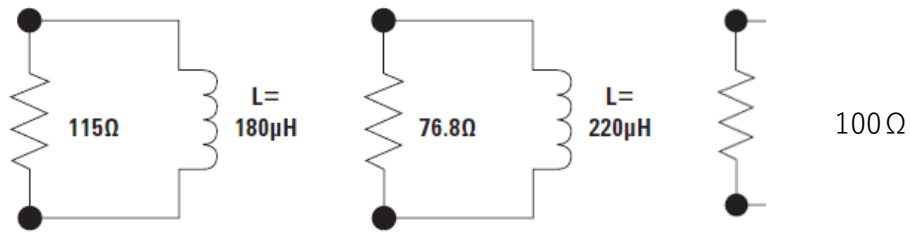


Figure 14–7a—Twisted-pair model for 10BASE-Te

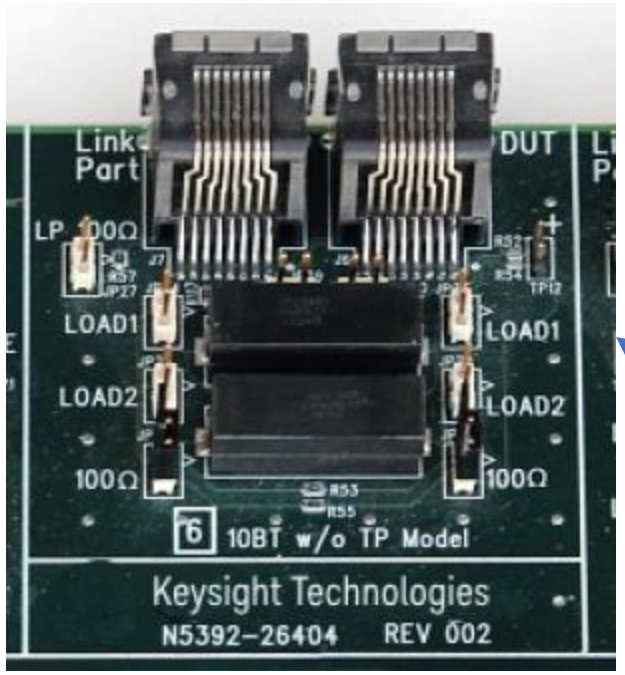
Connect to Probe

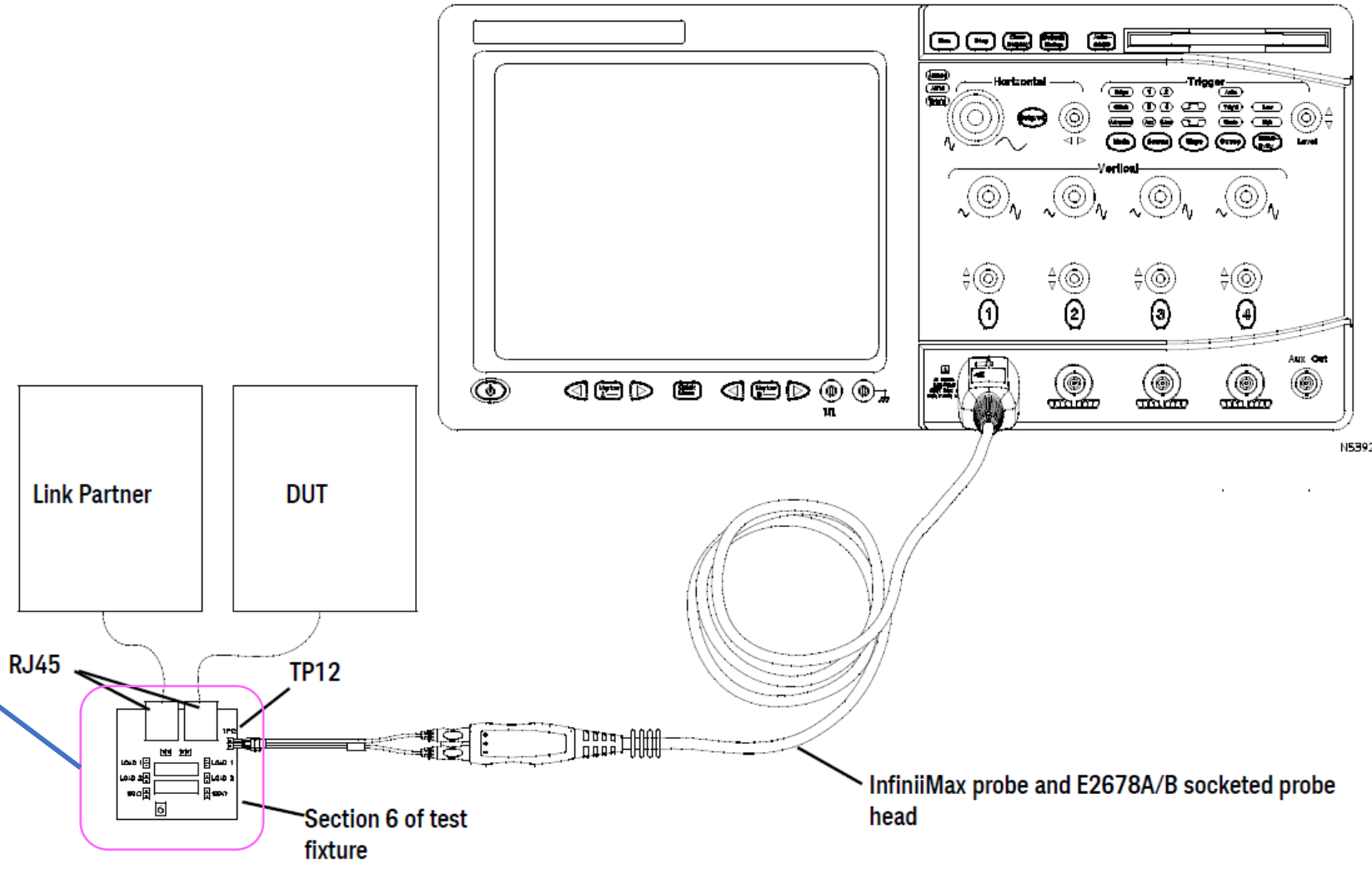


LOAD 1 LOAD 2 LOAD 3

Measurement system (10Base-Te without TPM):

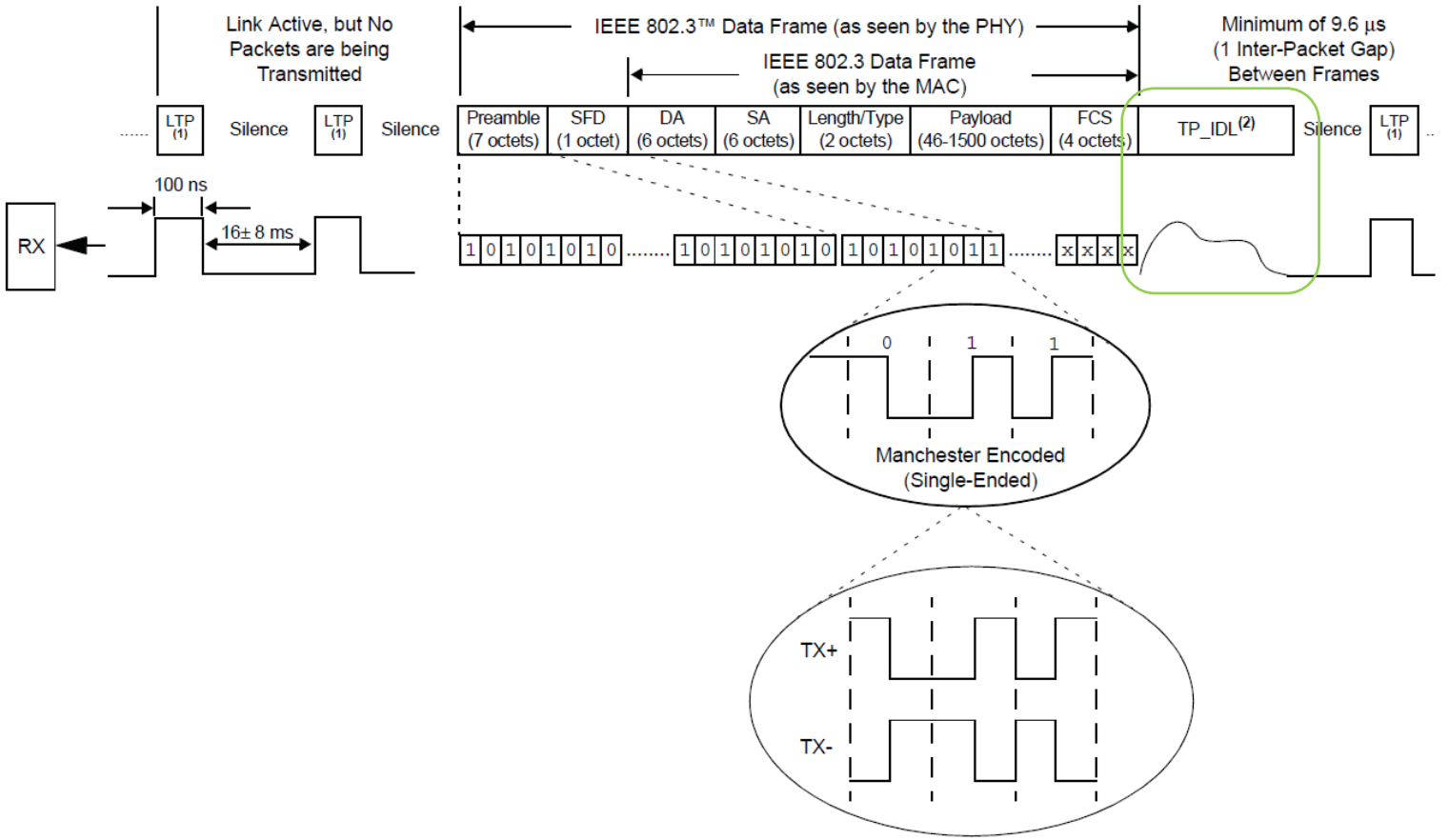
2020.5.6





10Base-Te ～TP_IDL Template, with TPM (last bit CD0/1)～
- About TP_IDL signal

FIGURE 12: 10 Mb/s ETHERNET STREAM(3)



Note 1: The Link Test Pulse (LTP) is also known as a Normal Link Pulse (NLP) and consists of a pulse that is approximately 1-bit time wide. The exact voltage profile for this pulse is described in the IEEE 802.3 specification, section 14.3.1.2.1.
2: The exact voltage profile for TP_IDL is described in the IEEE 802.3 specification, section 14.3.1.2.1.
3: Ethernet frames are transmitted Most Significant Byte (octet) first, Least Significant bit within an octet first.

CD0/1 = Clock xor Data

1bit幅、0

CD0：Clock Data Zero

1bit幅、1

CD1：Clock Data One

10Base-Te ～TP_IDL Template, with TPM (last bit CD0/1)～
- About pulse mask

The same mask applied with / without TPM and Load1 / 2 / 3

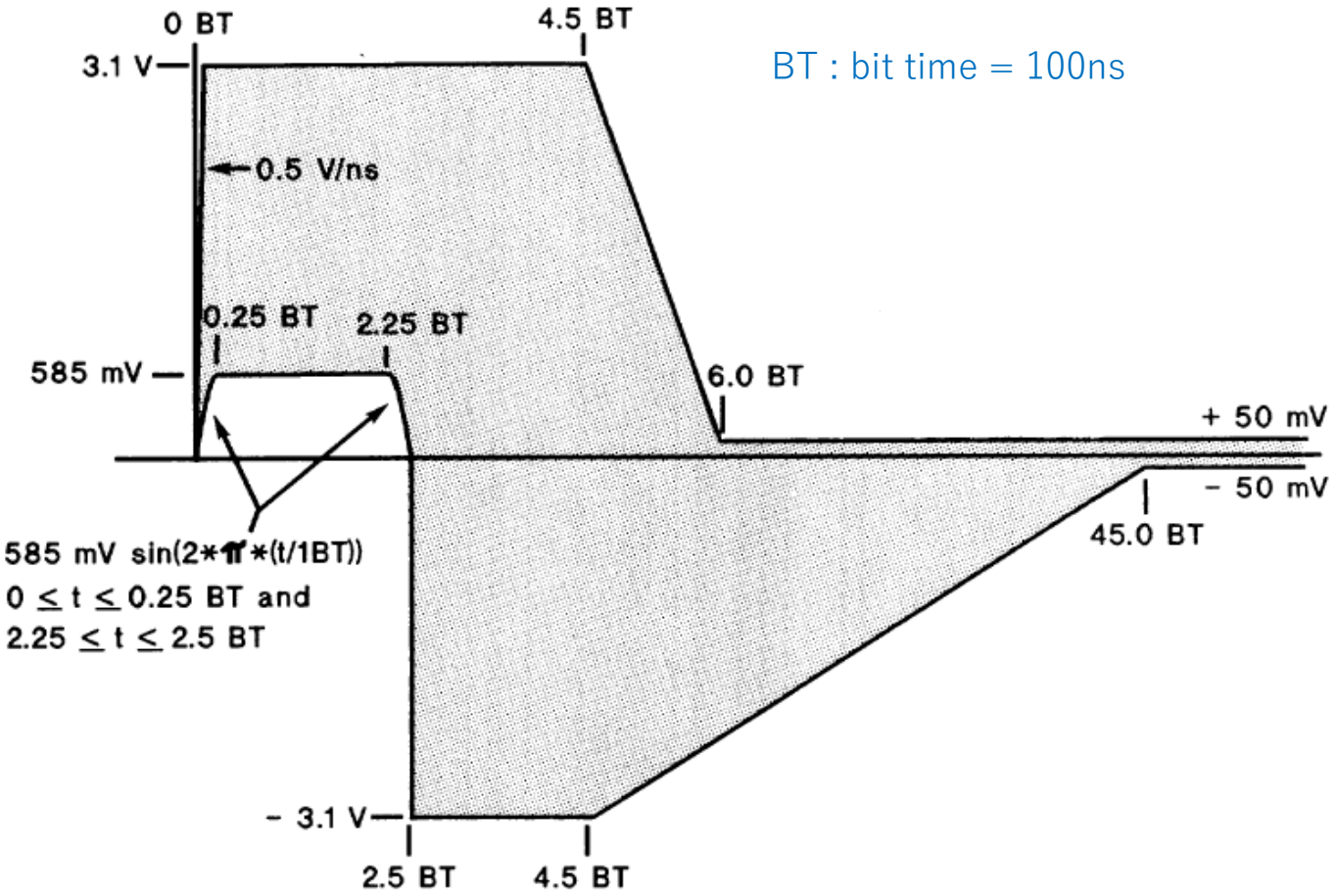


Figure 14–11—Transmitter waveform for start of TP_IDL

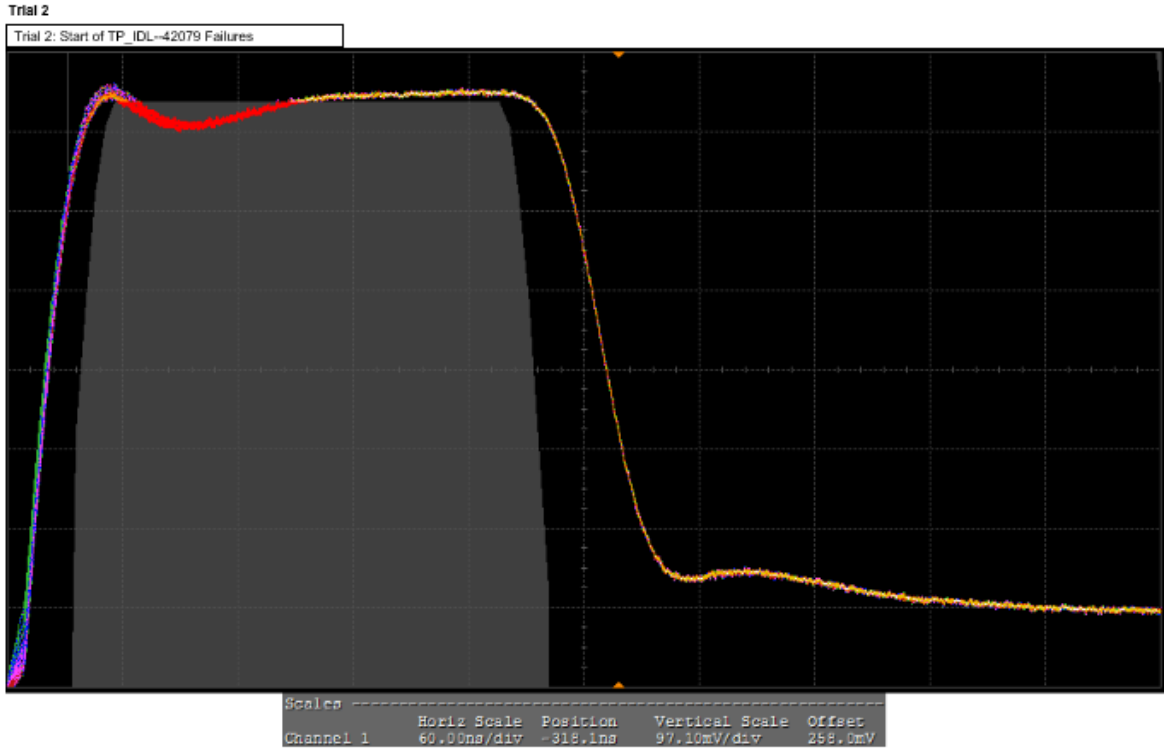
IEEE std 802.3 - 2018

Results: 10Base-Te ～TP_IDL Template, with TPM (last bit CD0)～

2020.3.19
2020.4.13

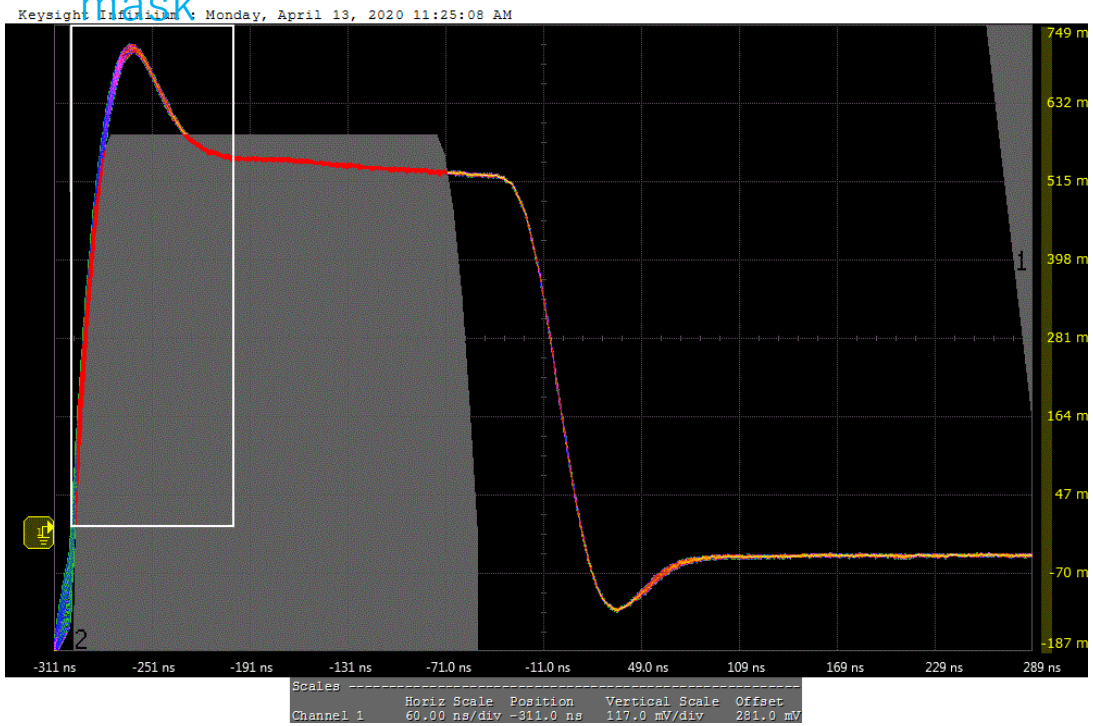
	10Base-T （3/11）	10Base-Te （4/13）
Load1	OK	OK
Load2	NG	NG
Load3	OK	OK

NG level: Middle
Overshoot at rising edge of signal is large



3/11試験　Load2　（基盤No3）

NG level: Middle
In the Load2 test, the voltage is low and hits the mask



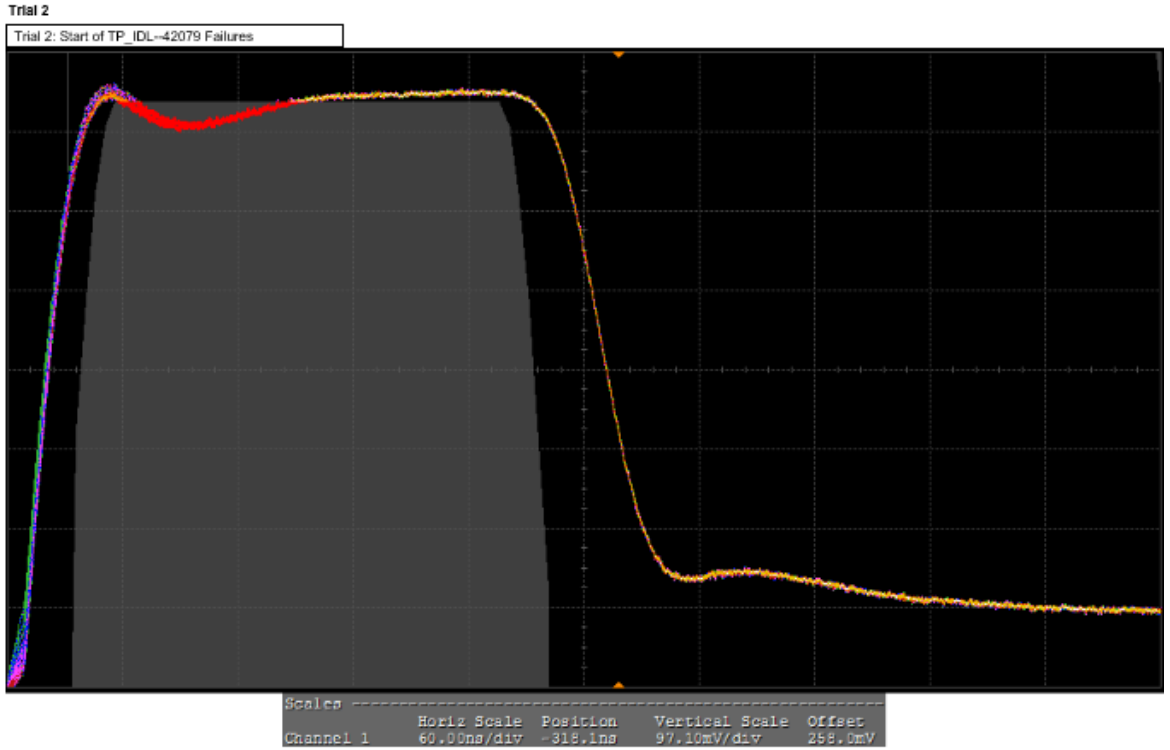
4/13試験　Load2　（基盤No3）

Results: 10Base-Te ～TP_IDL Template, with TPM (last bit CD1)～

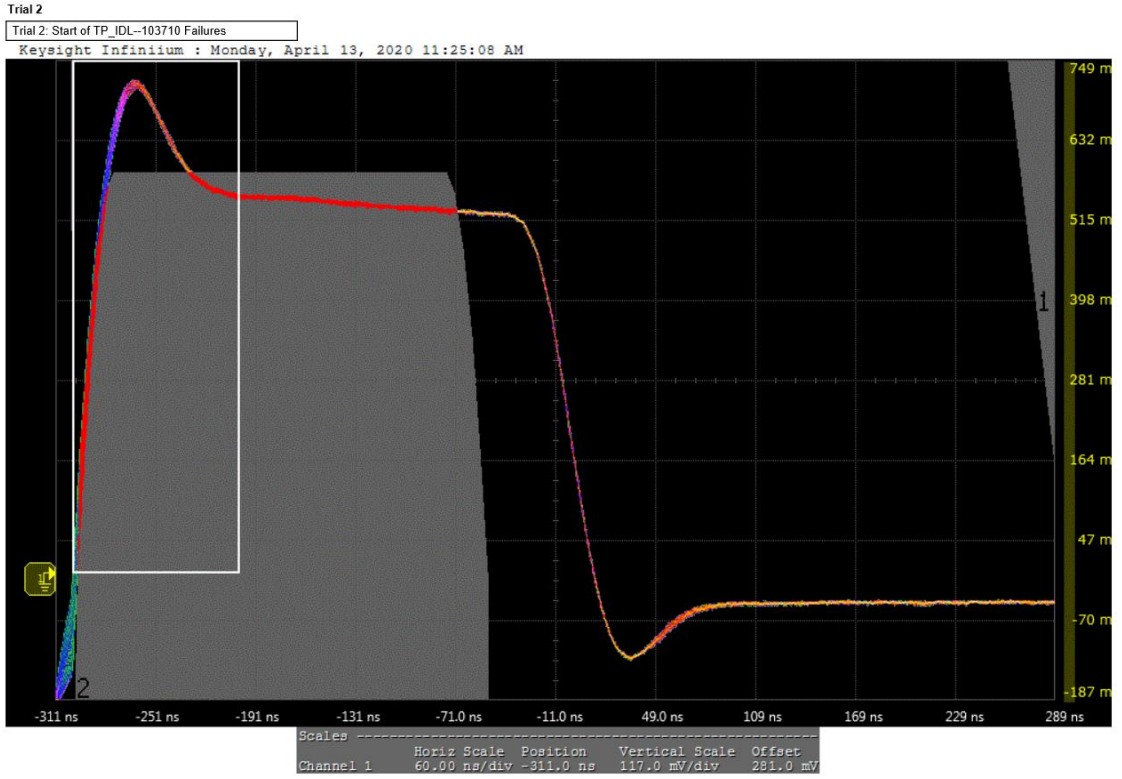
2020.3.19
2020.4.13
2020.5.5

	10Base-T（3/11）	10Base-Te（4/13）
Load1	OK	OK
Load2	NG	NG
Load3	OK	OK

NG level: Middle
Overshoot at rising edge of signal is large



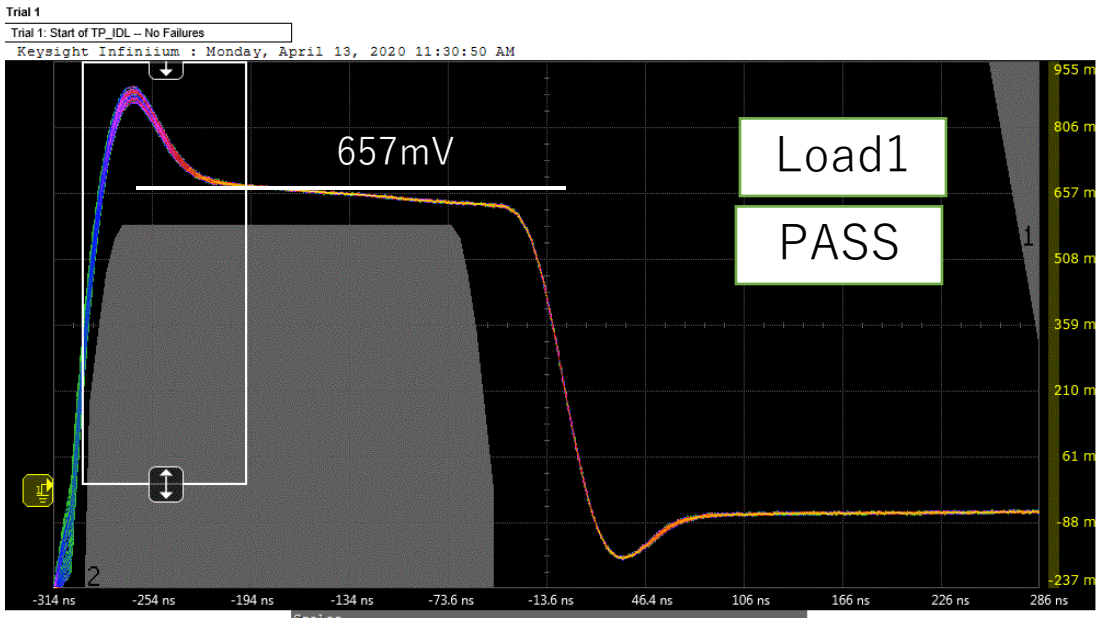
3/11試験　Load2　（基盤No3）

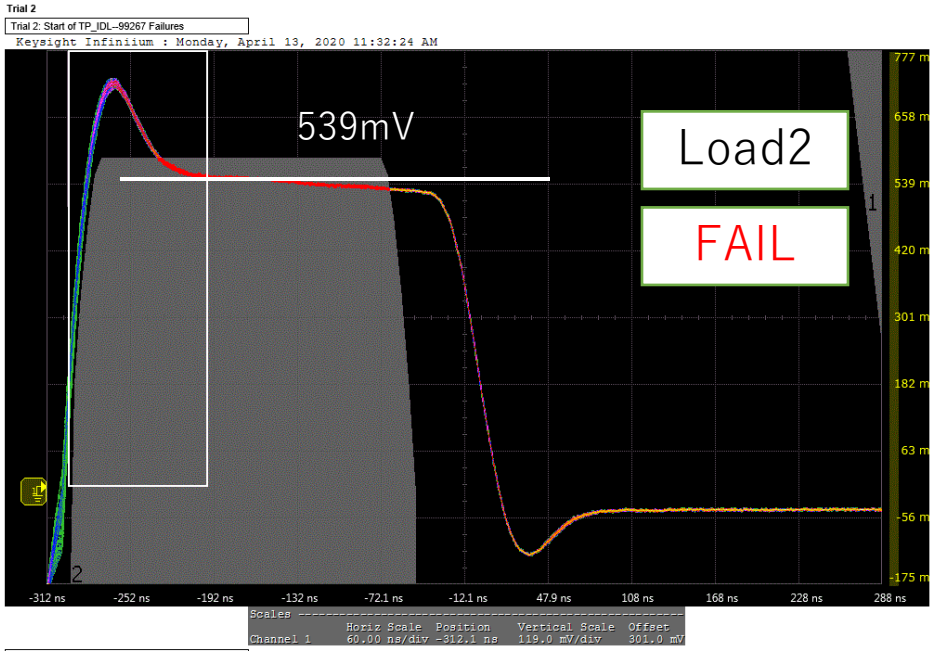


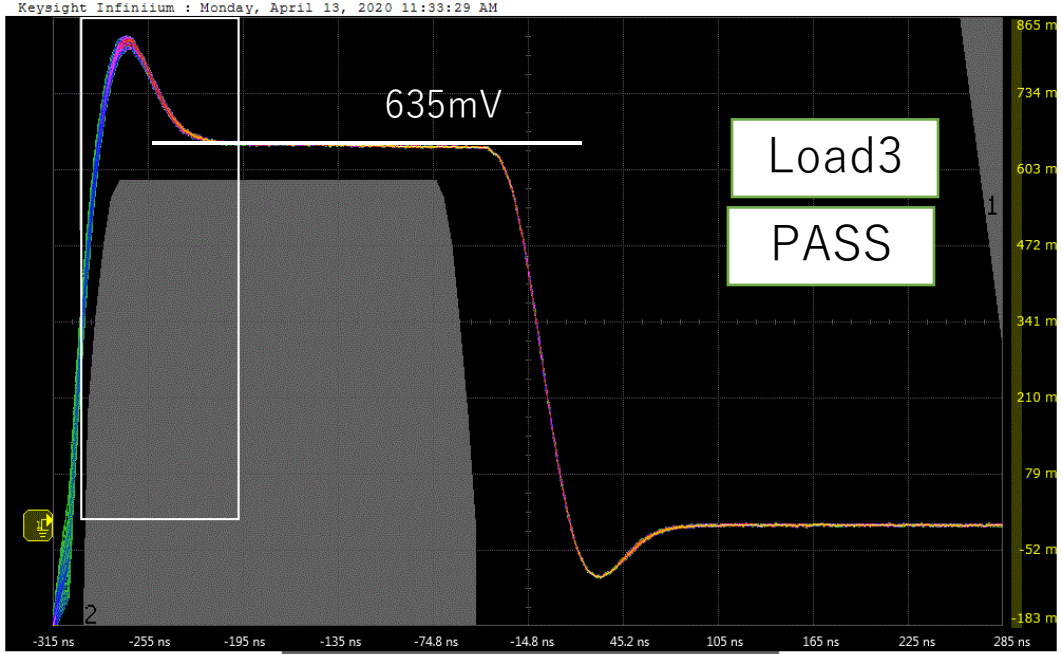
4/13試験　Load2　（基盤No3）

Results: 10Base-Te ～TP_IDL Template, with TPM (last bit CD1)～

2020.5.6







Reasons of fail at Load2:

The mask is the same between Load1/2/3

When calculated, the amplitude fluctuation of Load1/2/3 is almost the same as the load fluctuation ratio.

Load1 and 3 have passed, but the upper limit of the mask is 3.1V, so the amplitude may be larger.
Otherwise Load2 will not pass

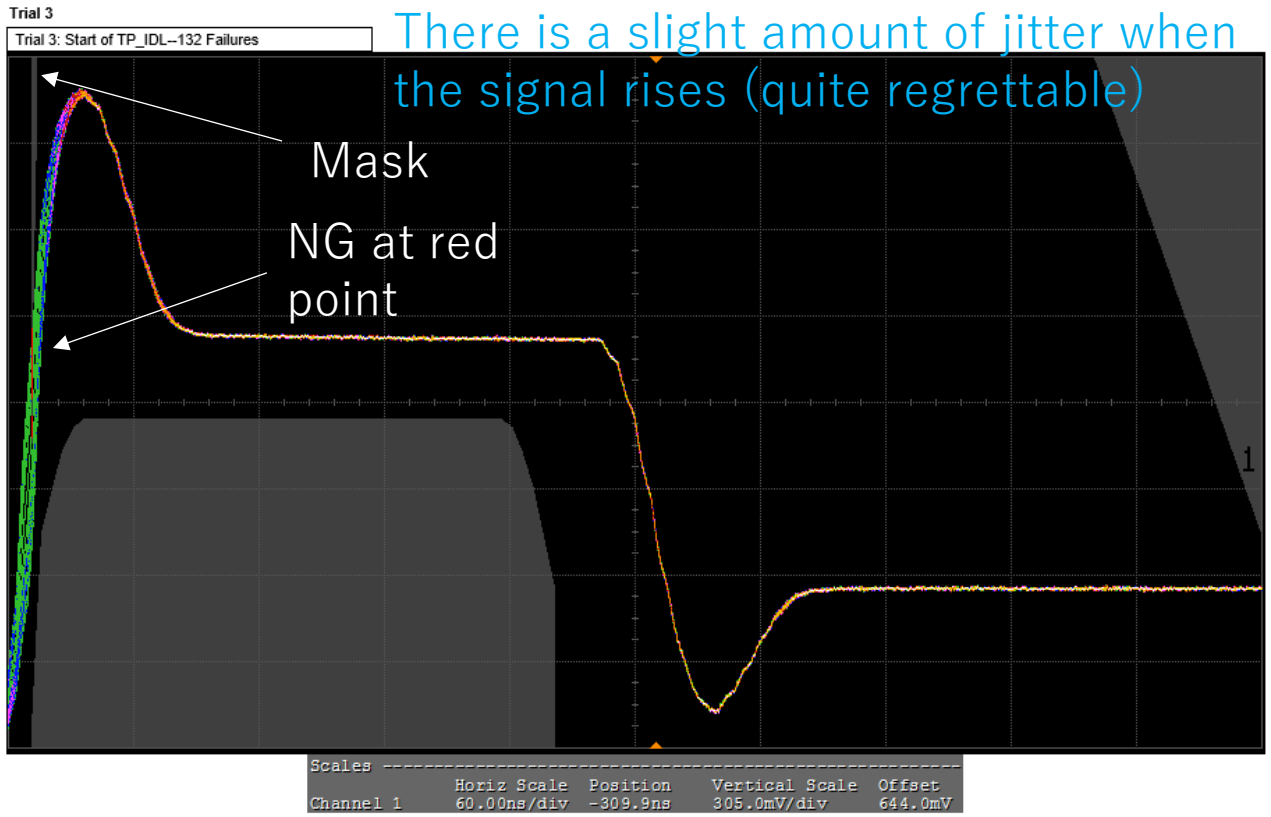
Need to investigate the reason more.

Results: 10Base-Te ～TP_IDL Template, without TPM (last bit CD0)～

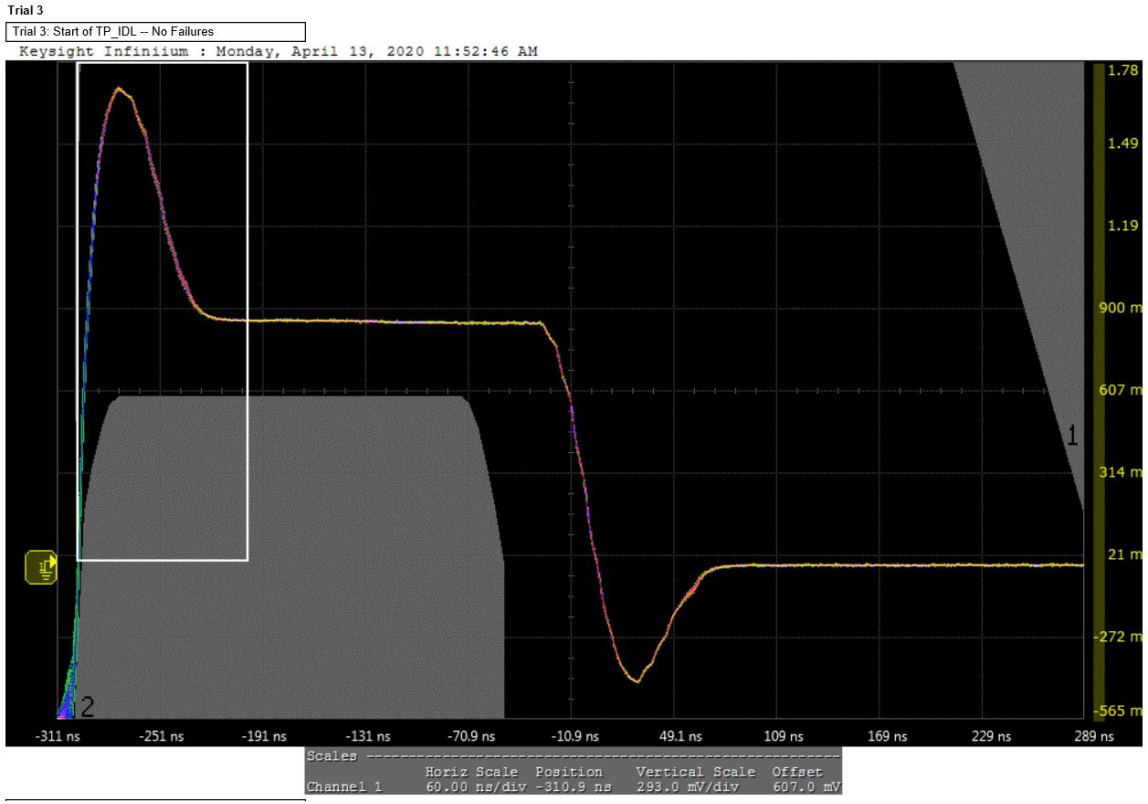
2020.3.19
2020.4.13

	10Base-T	10Base-Te
Load1	OK	OK
Load2	OK	OK
Load3	NG	OK

NG level: low
There is a slight amount of jitter when the signal rises (quite regrettable)



PASS

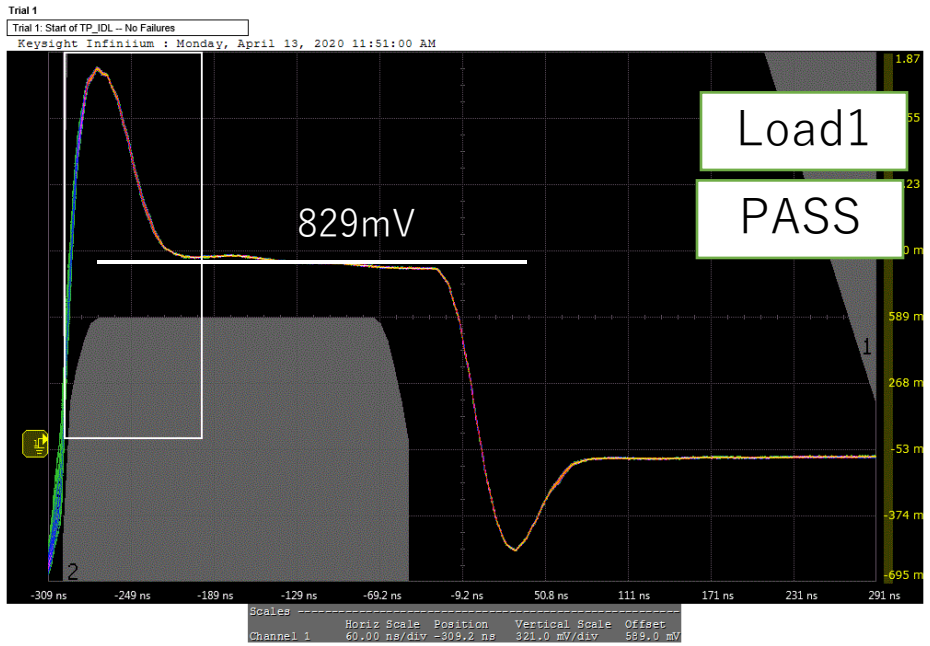


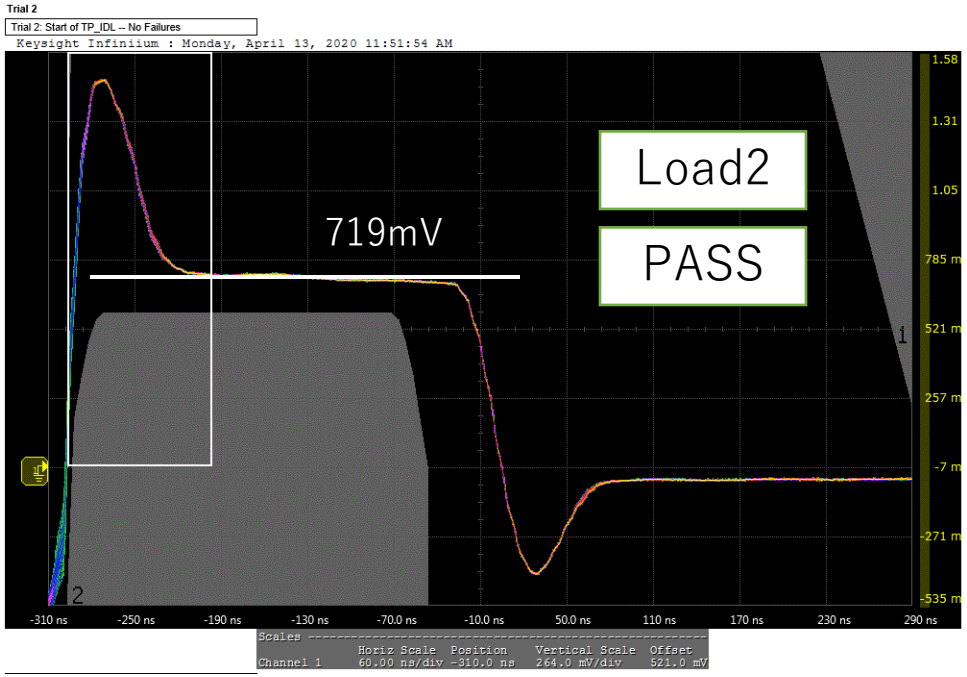
3/11試験　Load3　（基盤No3）

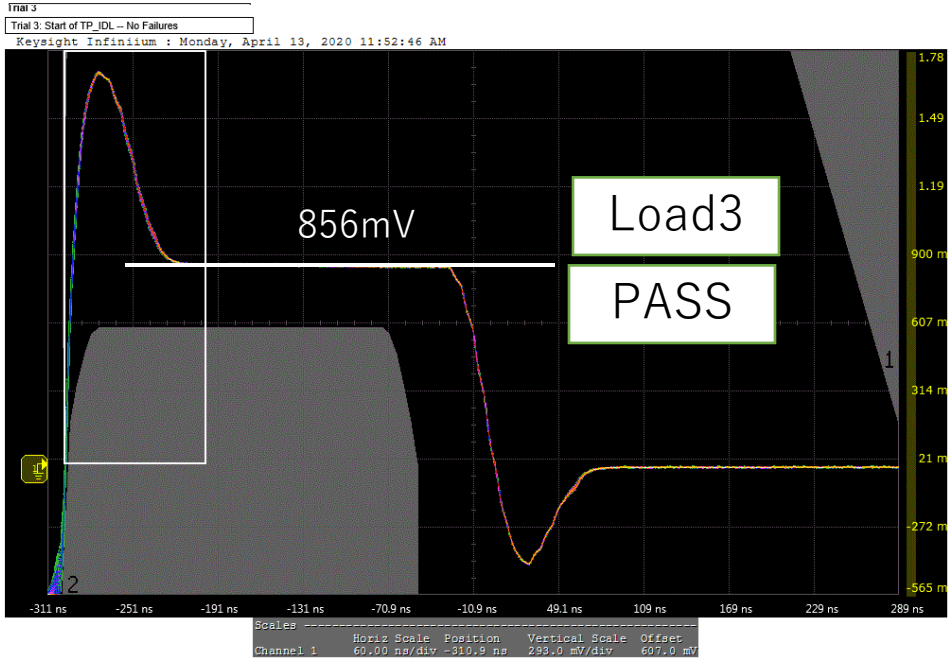
4/13試験　Load3　（基盤No3）

Results:10Base-Te ～TP_IDL Template, without TPM (last bit CD0)～

2020.5.6







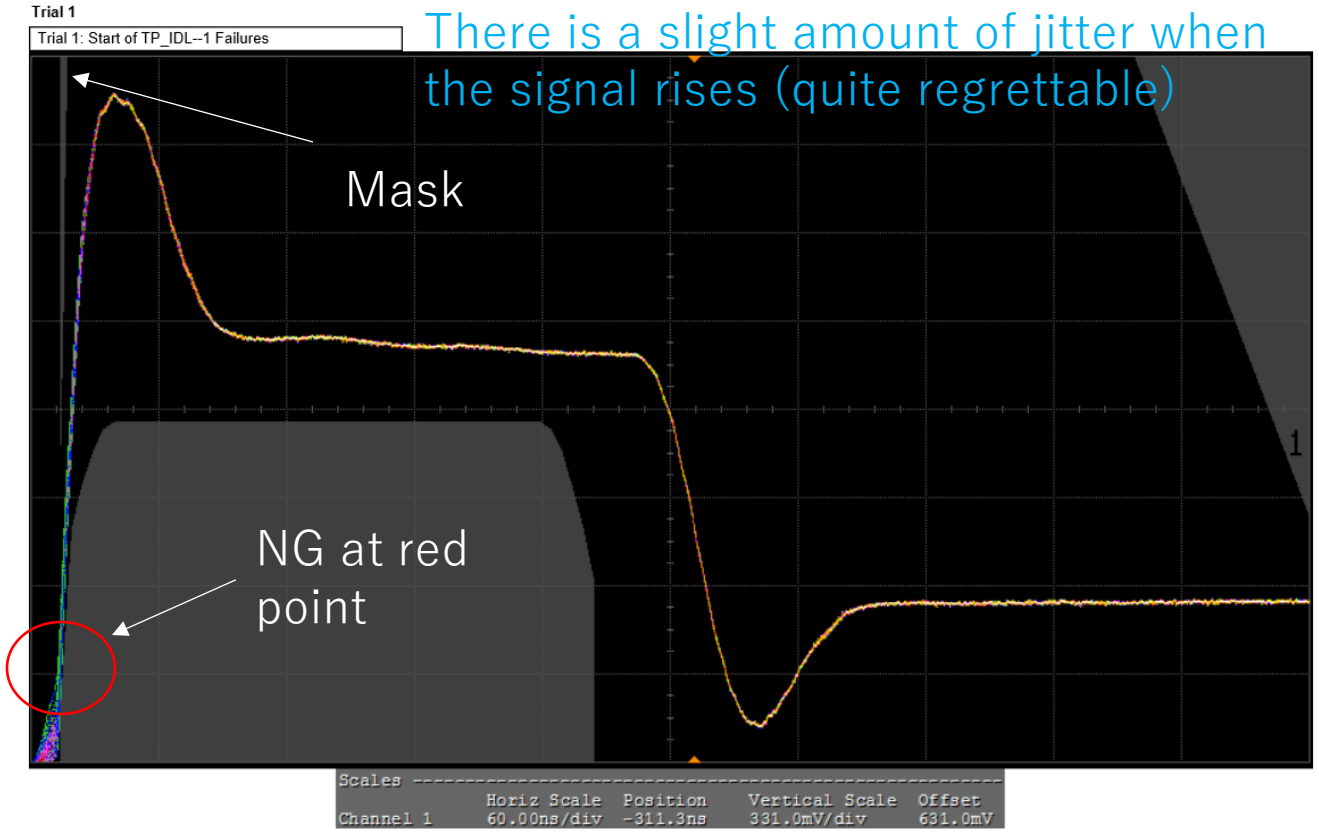
4/13試験　基盤No3)

Results: 10Base-Te ～TP_IDL Template, without TPM (last bit CD1)～

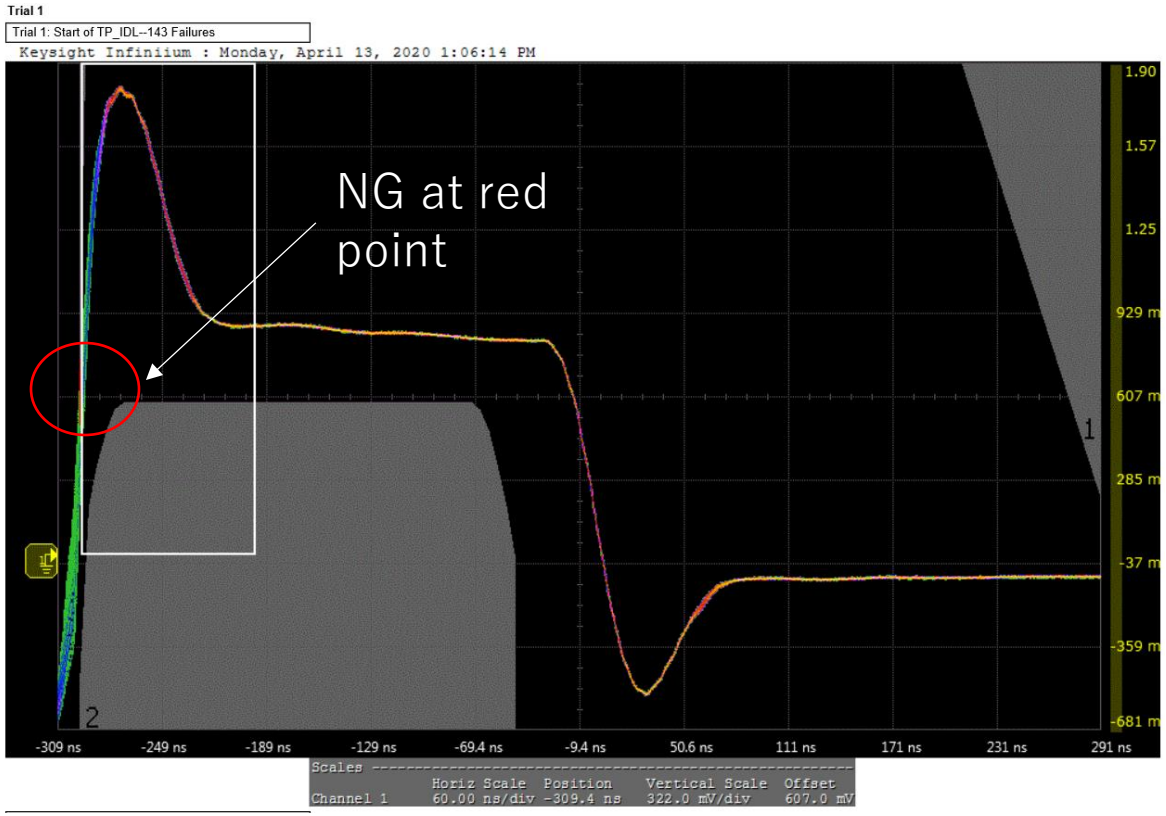
2020.3.19
2020.4.13
2020.5.5

	10Base-T	10Base-Te
Load1	OK	OK
Load2	OK	OK
Load3	NG	NG

NG level: low
There is a slight amount of jitter when the signal rises (quite regrettable)



NG level: Middle
There is jitter in the time axis direction at the rising edge of the waveform and hits the mask

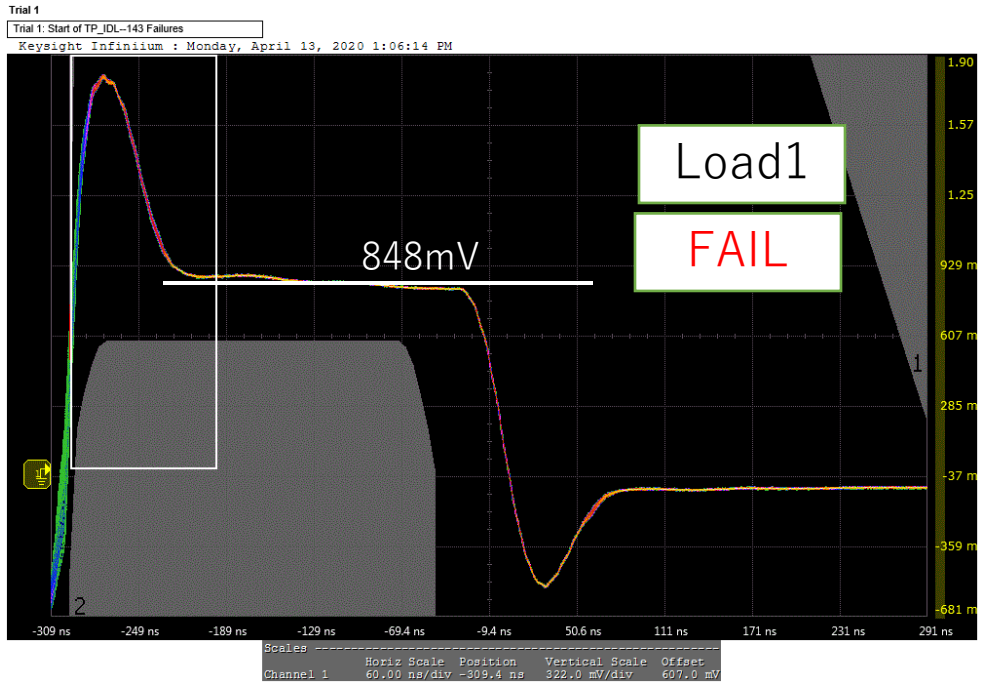


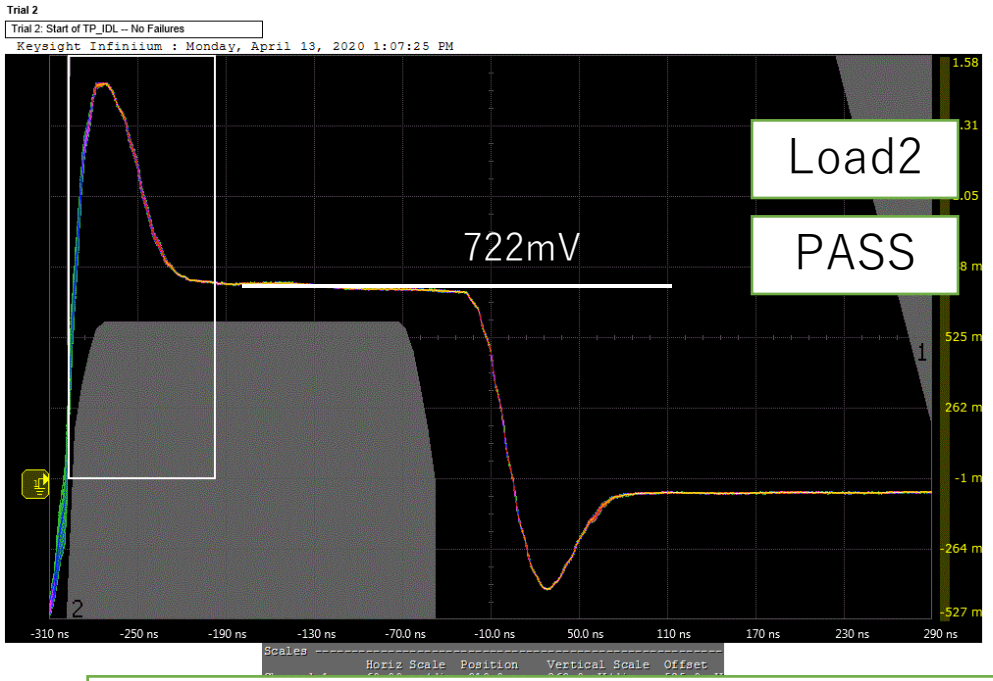
3/11試験　Load1　（基盤No3）

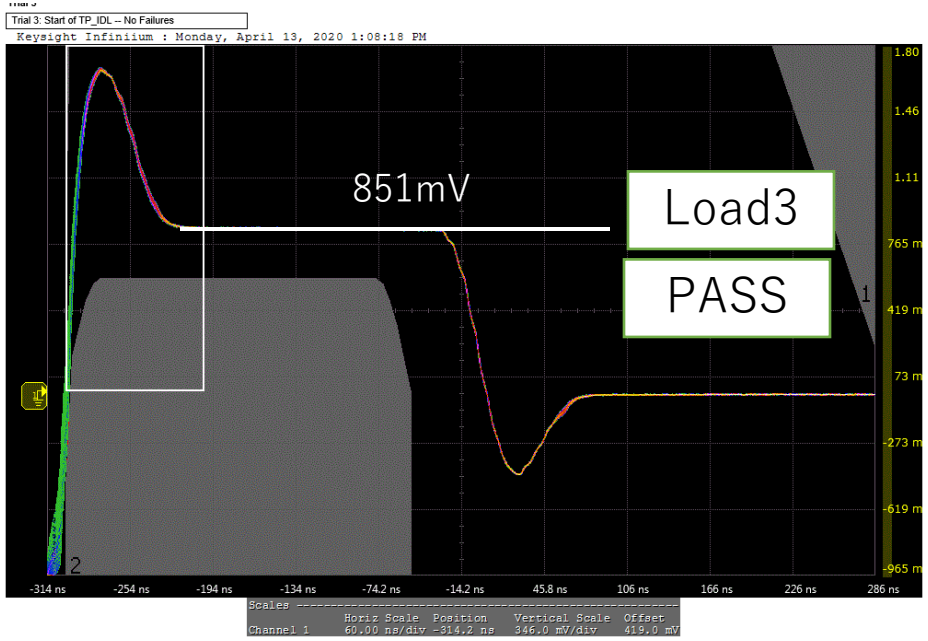
4/13試験　Load1　（基盤No3）

Results: 10Base-Te ～TP_IDL Template, without TPM (last bit CD1)～

2020.5.6







4/13試験　基盤No3)

Detailed Test Results of 10Base-Te:

Items	Results	Considerations
TP_IDL Template, with TPM (last bit CD0)	Load1/3：PASS Load2：Fail Amplitude is small	Passed with Load1 / 3, Load2 does not pass unless the amplitude is larger
TP_IDL Template, with TPM (last bit CD1)	Same as above	Same as above
TP_IDL Template, without TPM (last bit CD1)	Load2/3：PASS Load1：Fail FAIL because the rising edge is too steep	

Measurement system (10Base-Te, TX Return loss calibration):

2020.5.6

Section10

Section1

For RX return loss, use DB (channel B)

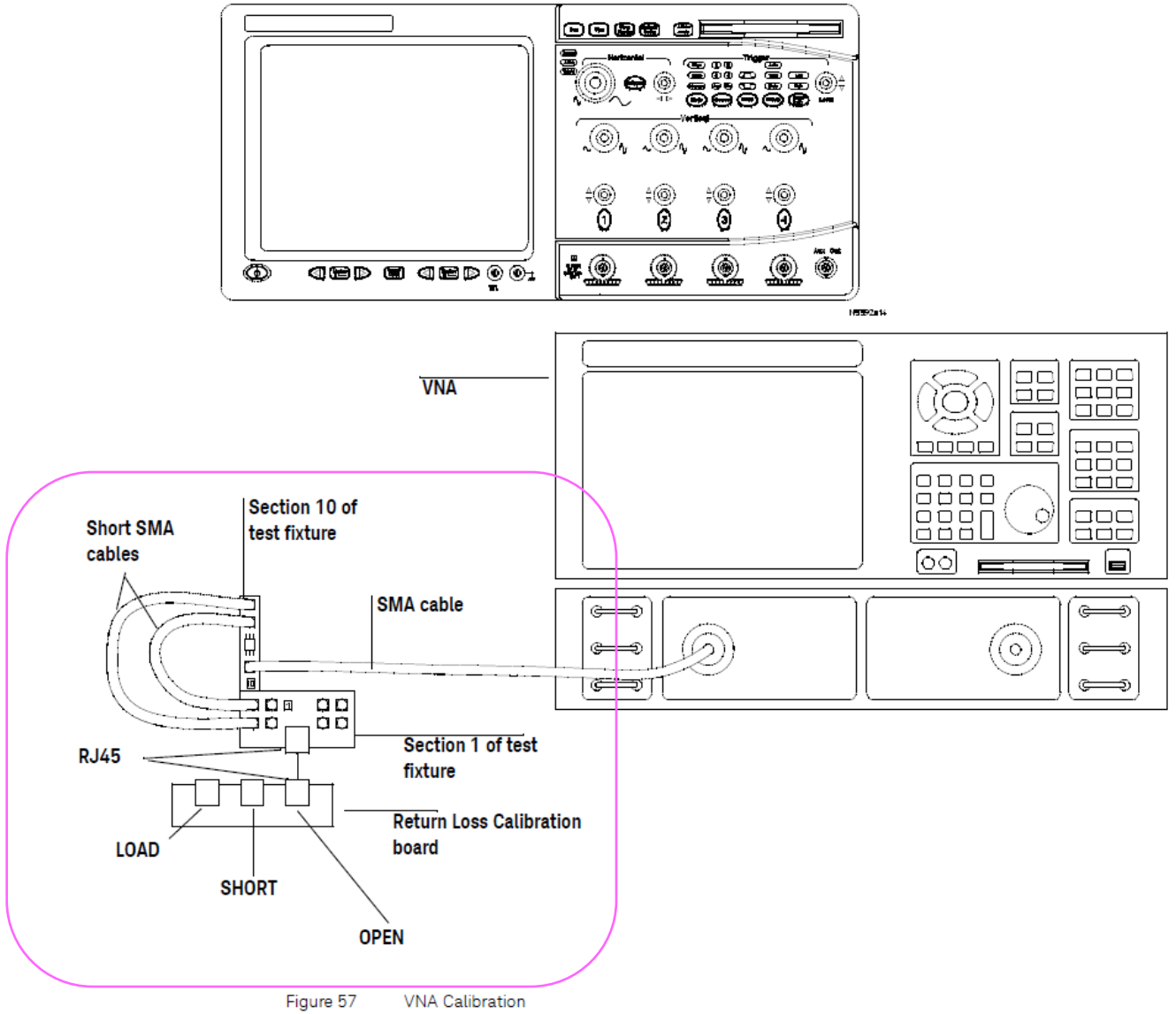


Figure 57 VNA Calibration

Measurement system (10Base-Te, Return Loss):

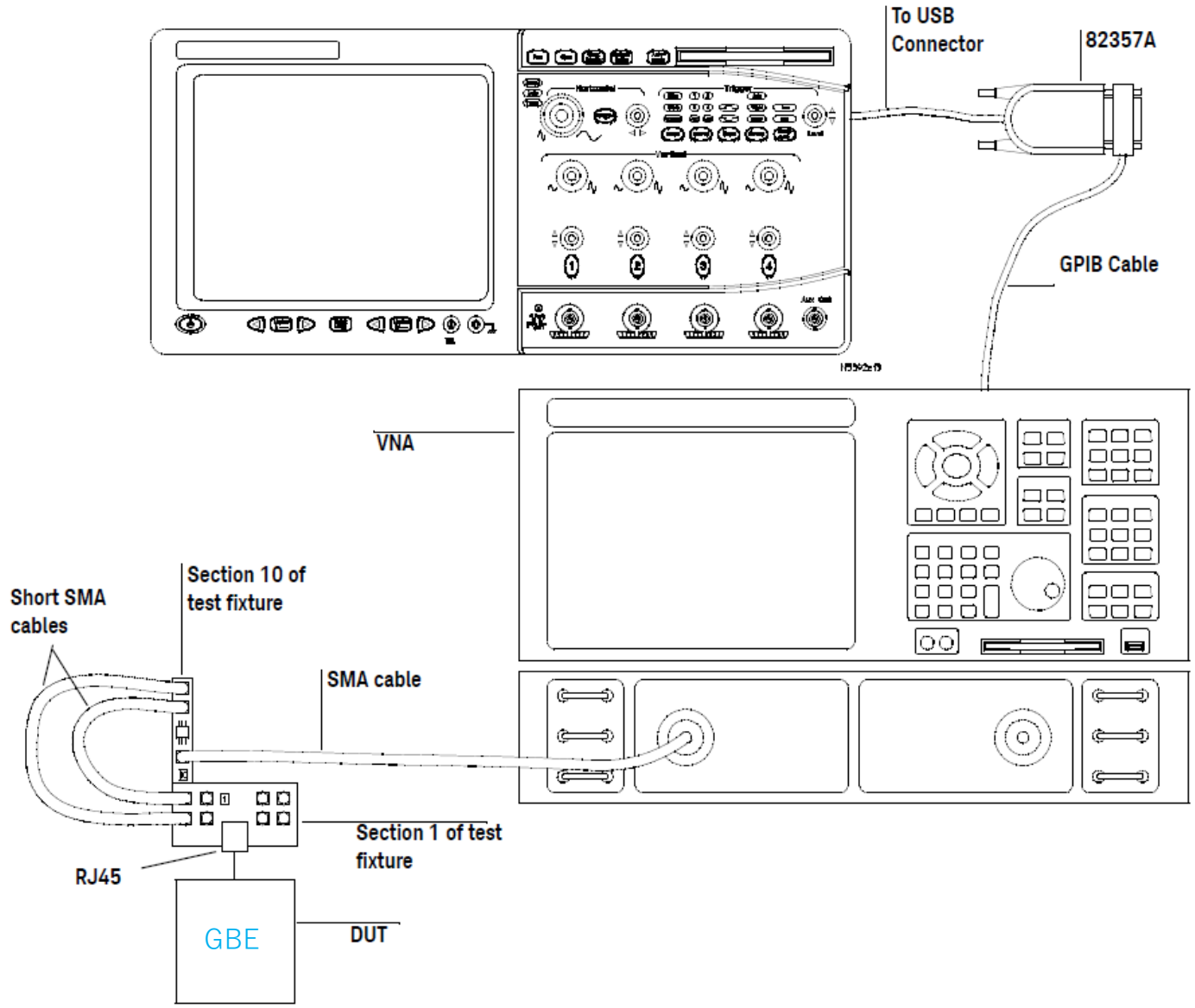


Figure 58 Probing for 10 Base-Te Transmitter Return Loss

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✗10 Base-T, Transmitter Return Loss

Test Summary: FAIL | Test Description: | The Return Loss obtained must conform to the requirements specified in IEEE802.3-2008 Subclause 14.3.1.2.2 and Annex B.4.3.2

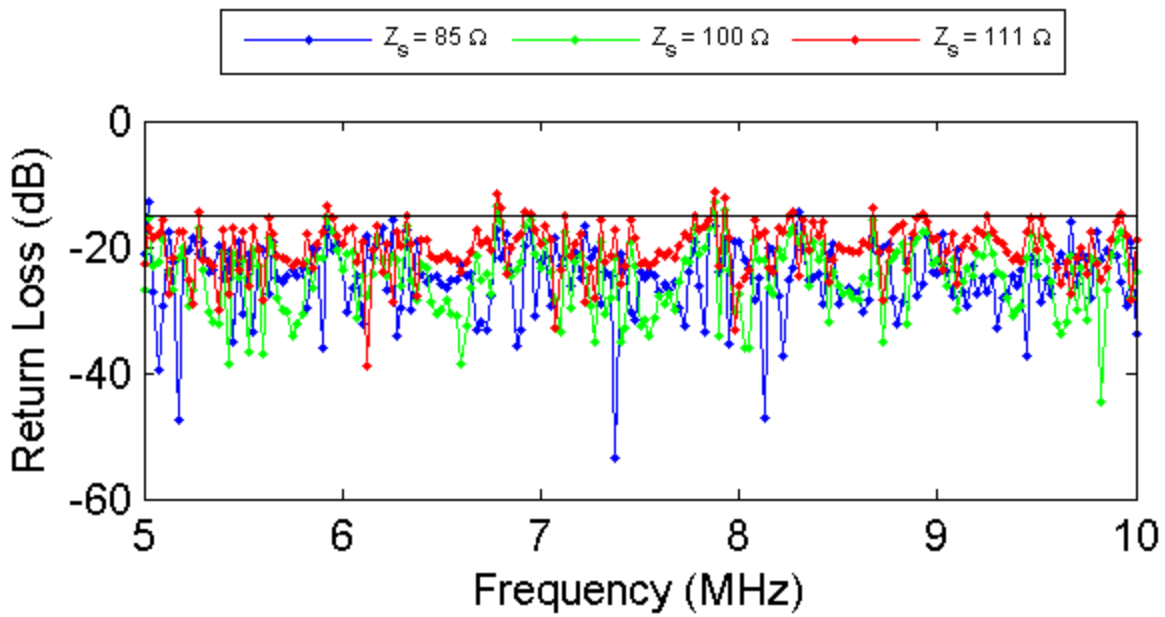
Pass Limits: > 0.00dB **Worst Margin** -3.67dB

Result Details

Data File Using VNA. **Return Loss vs. Frequency** (See image)

Trial 1

Trial 1: Return Loss vs. Frequency



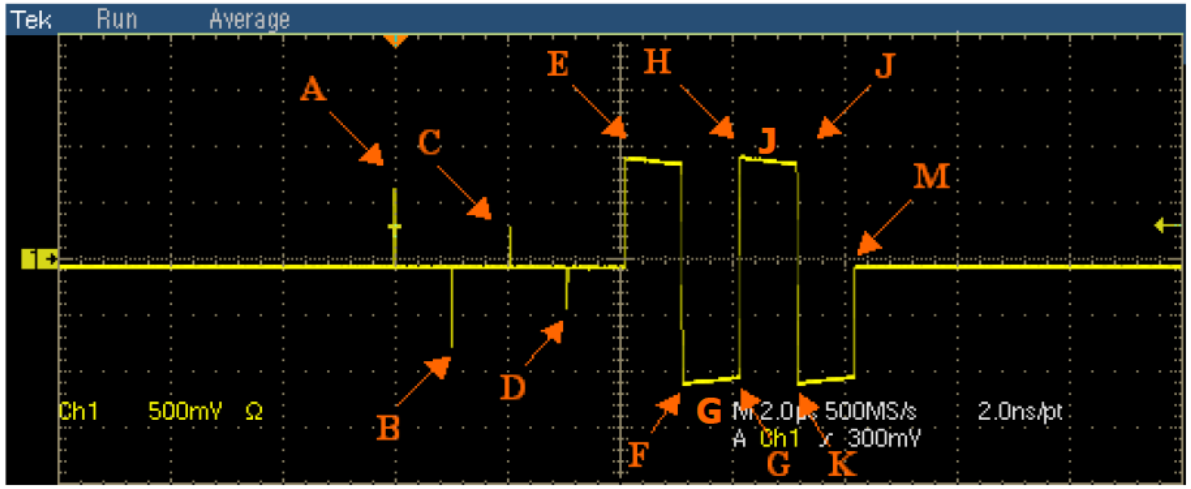
1000Base-T

Contents of Compliance Test of 1000Base-T:

2020.3.11
2020.4.16

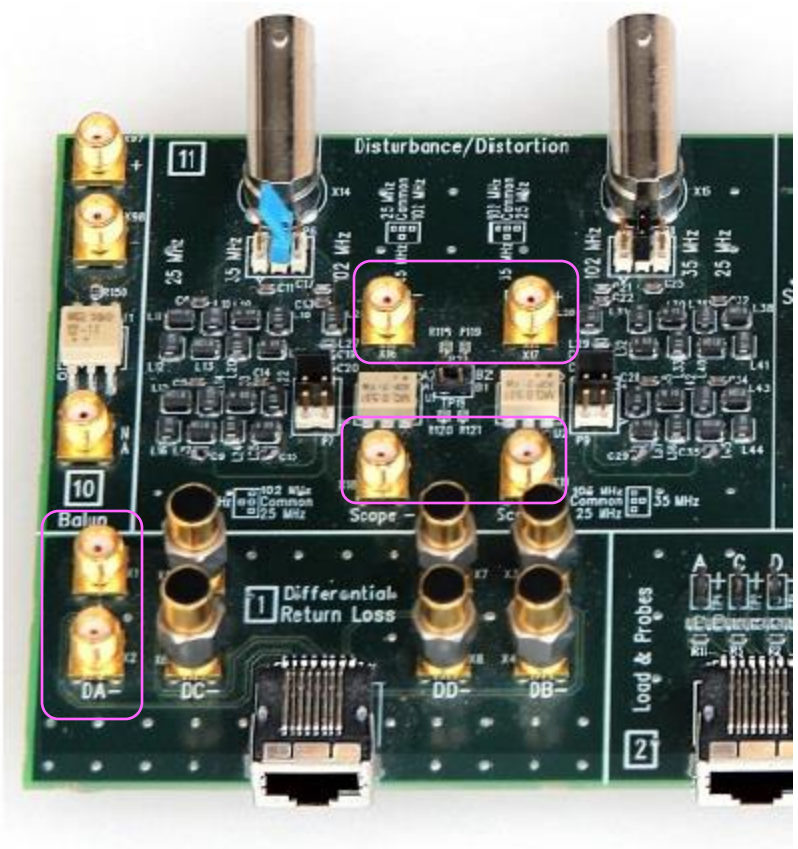
Point A Peak Output Voltage(w/ Disturbing Signal)
Point B Peak Output Voltage(w/ Disturbing Signal)
Difference A,B Peak Output Voltage(w/ Disturbing Signal)

- Test mode 1の信号波形
- Template, Peak Voltage, Droop試験で使用
- 測定ポイントは下表の通り



Test	Points
Template	A,B,C,D,F, and H
Droop	G and J （上図でF またはH から500ns後ろのポイント）
Peak Voltage	A,B,C, and D

Measurement system (1000Base-T):



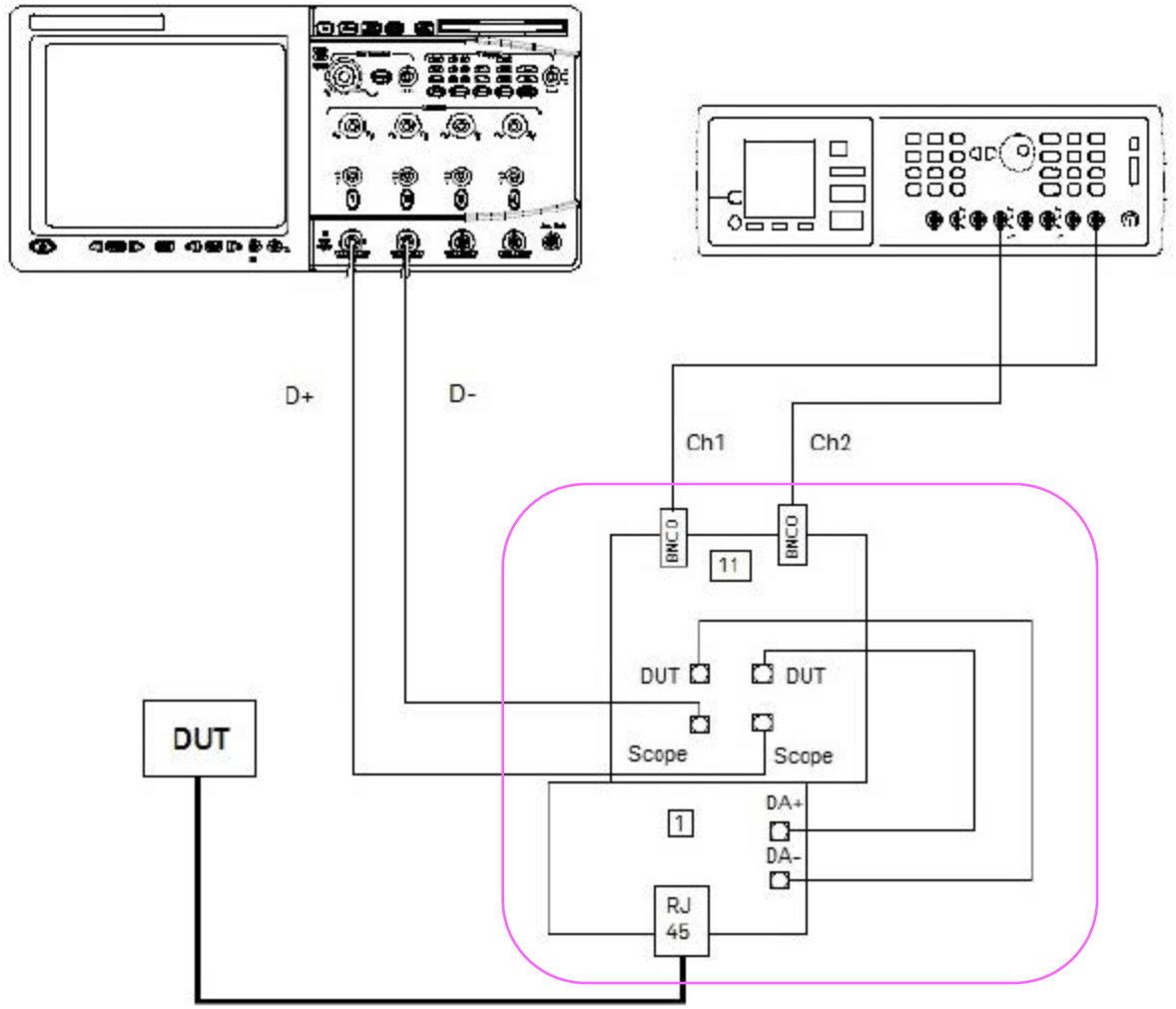


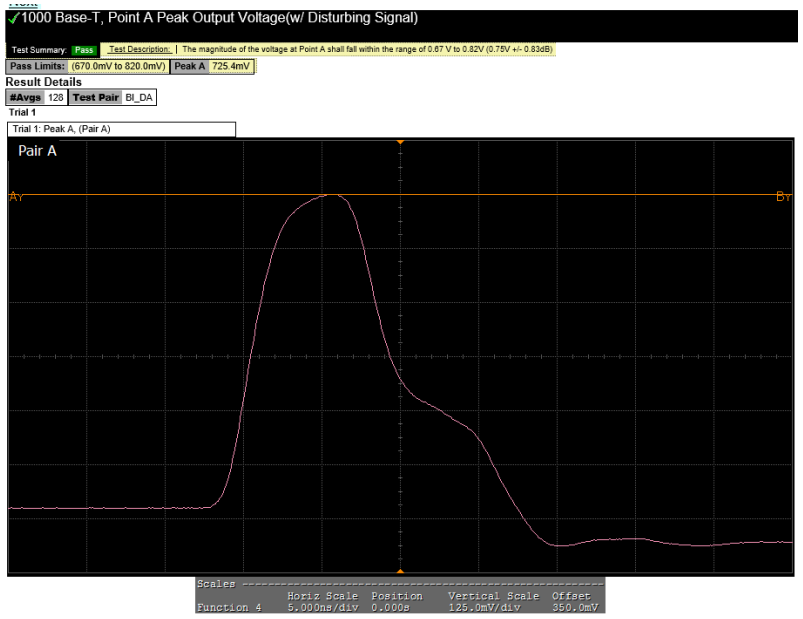
Figure 8 Probing for 1000 Base-T Test Mode 1 Tests

Results: 1000Base-T:

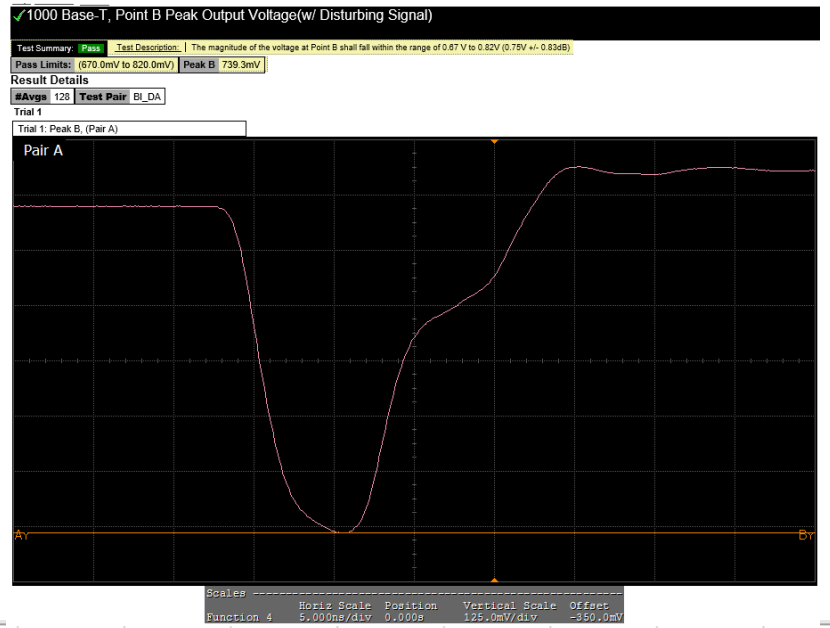
2020.3.11

2020.4.16

Point A



Point B



Difference A,B Peak Output Voltage(w/ Disturbing Signal)

基盤	No3																			
ポート	P1				P2				P3				P4				TEST			
チャネル	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
Peak A [mV] 670~820 mV	725.4	723.7	717.8	721.6	727.3	720.1	722.6	726.5	734.6	722.7	733.4	736.9	738.8	711.3	721.7	738.4	726.5	720.1	721.7	724.3
Peak B [mV] 670~820 mV	-739.3	-723.4	-722	-731.5	-741	-727.7	-722.9	-732.8	-742.4	-731.7	-739.2	-743.8	-746.9	-716.3	-729.8	-747.6	-733.3	-716.9	-723.1	-730.5
difference <1%	1.90%	0.03%	0.59%	1.37%	1.86%	1.04%	0.05%	0.87%	1.05%	1.25%	0.78%	0.93%	1.10%	0.70%	1.11%	1.23%	0.93%	0.45%	0.20%	0.85%

基盤	No4																			
ポート	P1				P2				P3				P4				TEST			
チャネル	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
Peak A [mV] 670~820 mV	735.3	722.9	724.6	733.7	703.2	719	719.3	729.3	725.7	727.3	711.2	734.5	722	724.8	725.7	740.7	727.7	713.7	742.7	729.4
Peak B [mV] 670~820 mV	-739.1	-723.6	-728.8	-742.5	-713.3	-722.8	-723.2	-738.9	-729.3	-733	-715.3	-742	-731.7	-734.5	-733.9	-754.5	-732.5	-722.2	-752.6	-741.4
difference <1%	0.52%	0.10%	0.57%	1.19%	1.43%	0.53%	0.17%	1.31%	0.49%	0.79%	0.14%	1.01%	1.34%	1.33%	1.13%	1.84%	0.66%	1.18%	1.33%	1.63%

Contents of compliance test of 1000Base-T:

2020.3.11

2020.4.16

IEEE Std 802.3-2008　翻訳

40.6.1.2.1 Peak differential output voltage and level accuracy
The absolute value of the peak of the waveform at points A and B, as defined in Figure 40–19, shall fall within the range of 0.67 V to 0.82 V (0.75 V ± 0.83 dB). These measurements are to be made for each pair while operating in test mode 1 and observing the differential signal output at the MDI using transmitter test fixture 1 with no intervening cable.

The absolute value of the peak of the waveforms at points A and B shall differ by less than 1% from the average of the absolute values of the peaks of the waveform at points A and B.

The absolute value of the peak of the waveform at points C and D as defined in Figure 40–19 shall differ by less than 2% from 0.5 times the average of the absolute values of the peaks of the waveform at points A and B.

40.6.1.2.1ピーク差動出力電圧とレベル精度
図40–19で定義されているポイントAおよびBでの波形のピークの絶対値は、0.67 V～0.82 V（0.75 V±0.83 dB）の範囲内でなければなりません。 これらの測定は、テストモード1で動作し、ケーブルを介さずに送信機テストフィクスチャ1を使用してMDIで差動信号出力を観察しながら、各ペアに対して行われます。

A点とB点の波形のピークの絶対値は、A点とB点の波形のピークの絶対値の平均と1%未満の差があります。

図40-19で定義されているポイントCおよびDでの波形のピークの絶対値は、ポイントAおよびBでの波形のピークの絶対値の平均の0.5倍から2%未満の差があります

40. 6. 1. 2. 1 Pīku-sa dō shutsuryoku den'atsu to reberu seido-zu 40 – 19 de teigi sa rete iru pointo A oyobi B de no hakei no pīku no zettaichi wa, 0. 67 V ～ 0. 82 V (0 . 75 V ± 0. 83 DB) no han'i-naidenakereba narimasen. Korera no sokutei wa, tesutomōdo 1 de dōsa shi,

1000Base-T Test Mode 1 standard:

Difference between PointA and B did not become within standard

測定器の使用

Keysight D9010ETHC Ethernet Compliance Test Application

Absolute value of amplitude of Peaks A and B differ by less than 1%

Table 15 Allowable Ranges for Peak Output Voltage Measurements

Point on Test Mode 1 Signal	Allowable Range	Description
Point A	0.67 V to 0.82 V	Absolute value of Peak A is 0.75 V +/- 0.83 dB
Point B	|Peak B| between 0.67 V and 0.82 V	Absolute value of Peak B is 0.75 V +/- 0.83 dB
Difference A,B	100*[(|Peak B|- ½*(|Peak A|+ |Peak B|))/(½*(|Peak A|+ |Peak B|))]	Absolute values of amplitude of Peaks A and B differ by less than 1%[1]
Point C	<2% of ½* (|Peak A|+|Peak B|)/2	Absolute value of Peak C is within 2% of ½ the average amplitude of Peaks A and B[1]
Point D	<2% of ½* (|Peak A|+|Peak B|)/2	Absolute value of Peak D is within 2% of ½ the average amplitude of Peaks A and B[1]

[1] NOTE: The specified tolerance for this measurement is extremely tight. If this test fails, consult the vertical gain accuracy of your oscilloscope before you draw any conclusions about conformance.

Results: 1000Base-T ～ Difference A,B Peak Output Voltage(w/ Disturbing Signal):

2020.3.19

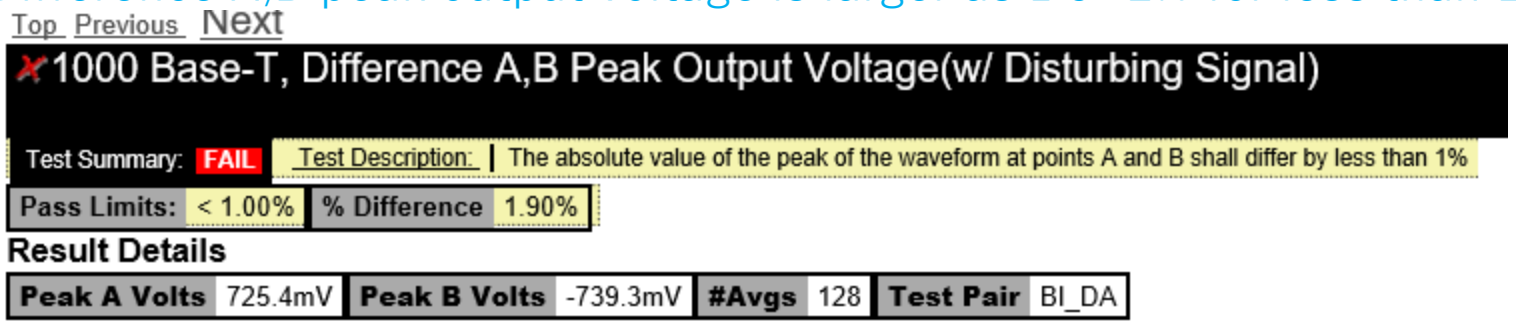
2020.5.5

Results of prior test (2020/3/19)

Pair B

NG level : Middle

Difference A,B peak output voltage is larger as 1.5~2% for less than 1%



Calculation results do not match measurement results
Calculation result is about half of measurement result
Is the formula wrong?

Formula: 100*[(|Peak B|- ½*(|Peak A|+ |Peak B|))/(½*(|Peak A|+|Peak B|))]
* If numerator of " ½*(|Peak A|+ |Peak B|)" was "|Peak A|", calculation results would match measurement results

They wondered if they didn't match, but they found that the measurement result and the calculation formula matched.
See next page (2020.5.5)

1000Base-T Test Mode 1 standard:

2020.5.5

The level difference between Point A and B does not meet the standard

Understand the measurement contents from the specifications of IEEE802.3 and the specifications of the measuring instrument (calculation formula)

Since the measurement result and the calculation result matched, they could understand the measurement content

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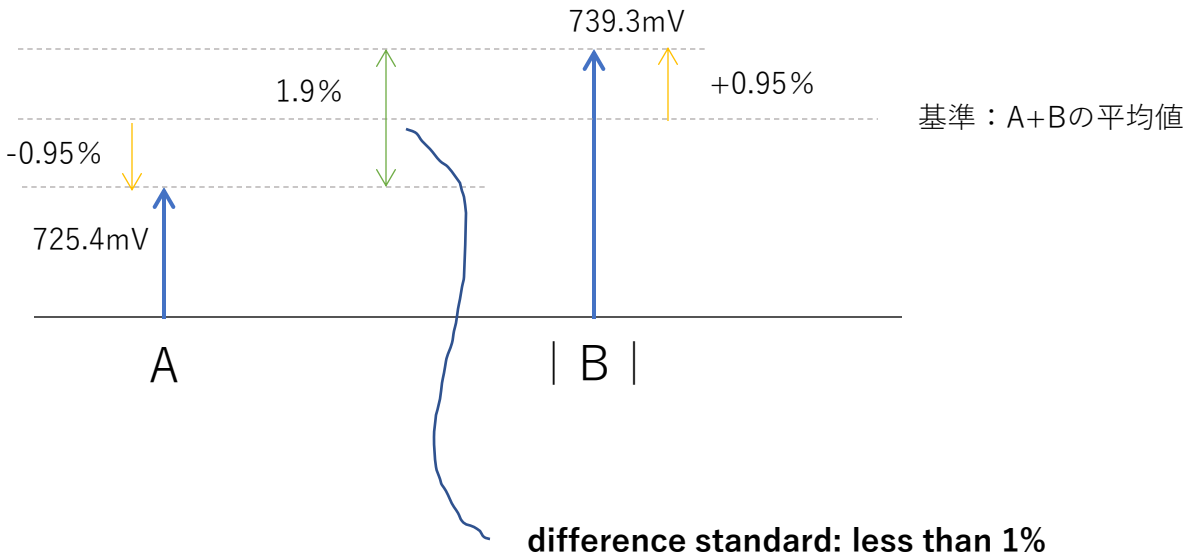
1000 Base-T, Difference A,B Peak Output Voltage(w/ Disturbing Signal)

Test Summary: FAIL | Test Description: | The absolute value of the peak of the waveform at points A and B shall differ by less than 1%

Pass Limits: < 1.00% | % Difference 1.90%

Result Details

Peak A Volts	725.4mV	Peak B Volts	-739.3mV	#Avgs	128	Test Pair	BI_DA



基準：A+Bの平均値

Difference A,B Peak Output Voltage(w/ Disturbing	
基盤	
ポート	
チャネル	A
Peak A [mV] 670~820 mV	725.4
Peak B [mV] 670~820 mV	-739.3
difference <1%	1.90%
①計算値 Peak A 精度	-0.95%
②計算値 Peak B 精度	0.95%
③計算値 differ = abs(①-②)	1.90%

difference standard: less than 1%

Test fixture of 10Base-T is the same as that of 10Base-Te?

概要

N5392Aイーサネット電気性能検証／コンプライアンス・ソフトウェアは、Infiniiumシリーズ・オシロスコープ用のソフトウェアで、1000BASE-T、100BASE-TX、10BASE-Tイーサネット・デザインの容易な検証／デバッグを実現します。イーサネット・テスト・ソフトウェアを使用すれば、イーサネット物理層 (PHY) 電気テストを自動的に実行できます。また、テスト結果が柔軟なレポート・フォーマットで表示されます。レポートには、測定データのほかに、どの程度のマージンでデバイスが各テストに合格／不合格したかを示すマージン解析も含まれています。

イーサネット電気性能検証／コンプライアンス・ソフトウェアは、IEEE 802.3-2005およびANSI X3.263-1995規格の1000BASE-T/100BASE-TX/10BASE-Tシステム用イーサネット電気仕様に適合するさまざまなテストを提供します。

N5392Aイーサネット電気性能検証／コンプライアンス・ソフトウェアには、Keysight N5395Bイーサネット電気コンプライアンス・テスト・フィクスチャ、最低1個のInfiniiMaxアクティブ差動プローブ（1131A/1132A/1134A/1168A/1169A）およびE2678Aソケット付き差動プローブ・ヘッド、BNCケーブル（1000BASE-Tおよび10BASE-T測定の場合のみ）が必要です。1000BASE-Tのジッタ測定には、N5396Aギガビット・イーサネット・ジッタ・テスト・ケーブルとN5395Bイーサネット・テスト・フィクスチャ、2個のInfiniiMaxアクティブ差動プローブ、2個のE2677Aまたは N5381Aソルダイン差動プローブ・ヘッドが必要です。

N5392Aイーサネット電気性能検証／コンプライアンス・ソフトウェアは、Microsoft Windows XP Proオペレーティング・システム搭載のすべてのInfiniiumシリーズ・オシロスコープで実行できます。

概要

N5392B Energy Efficient Ethernet電気性能検証／コンプライアンス・ソフトウェアは、Infiniiumシリーズ オシロスコープ用のソフトウェアで、1000BASE-T/100BASE-TX/10BASE-Te Energy Efficient Ethernetデザインの容易な検証／デバッグを実現します。イーサネット・テスト・ソフトウェアを使用すれば、イーサネット物理層（PHY） 電気テストを自動的に実行できます。また、テスト結果が柔軟なレポート・フォーマットで表示されます。レポートには、測定データのほかに、どの程度のマージンでデバイスが各テストに合格／不合格になったかを示すマージン解析も含まれています。

Energy Efficient Ethernet電気性能検証／コンプライアンス・ソフトウェアは、IEEE 802.3az-2010規格の1000BASE-T/100BASE-TX/10BASE-TeシステムのEnergy Efficient Ethernet電気仕様に適合するさまざまなテストを提供します。

N5392B Energy Efficient Ethernet電気性能検証／コンプライアンス・ソフトウェアには、Wilder TechnologiesのEnergy Efficient Ethernet電気コンプライアンス・テスト・フィクスチャ（EEE-TPA-ERK）、最低1個のInfiniiMaxアクティブ差動プローブ（1131A/1132A/1134A/1168A/1169A）およびE2678Aソケット付き差動プローブ・ヘッド、SMAケーブル2本（1000BASE-T測定の場合のみ）が必要です。

1000BASE-Tの標準イーサネット・ジッタ測定には、N5395C イーサネット・テスト・フィクスチャとN5396A ギガビット・イーサネット・ジッタ・テスト・ケーブル、2本目のInfiniiMaxアクティブ差動プローブ、2個のE2677A/N5381A はんだ付け差動プローブ・ヘッド、BNCケーブル（1000BASE-T/10BASE-Te測定の場合のみ）が必要です。

N5392Bイーサネット電気性能検証／コンプライアンス・ソフトウェアは、すべての Infiniiumシリーズ オシロスコープで動作します。