LINEEŸE

LAN PACKET TESTER LE-590TX User's Manual

Where to find English Manual

Before using the product, it is necessary to install the software.

Please refer to the User's Manual in "D:\Manual\English\" of the included CD-ROM.

("D:" means the CD-ROM Drive's name. CD-ROM Drive's name is different depending on the PC .)

INTRODUCTION

Thank you for your purchase of LINEEYE analyzer. To use it correctly, you are advised to read and understand this instruction manual thoroughly. Keep this together with the warranty. If you encounter any problems, you will find helpful information in this manual.

NOTICE

- a) It is prohibited to reprint or duplicate any part or the whole of this instruction manual without prior permission from LINEEYE.
- b) The contents of this instruction manual and specifications of the product is subject to change without any notice.
- c) This instruction manual has been designed and edited with great care to give you all necessary information. If you have any questions, feel free to direct your inquiries to LINEEYE CO., LTD.
- d) LINEEYE shall not be liable for any damages resulting from the use of this product. Furthermore, LINEEYE makes no guarantee if data disappears, or the recorded data corrupts while using this product.

USE LIMITATION

This product has been developed for the purpose of using as an analyzer only, and has not been developed for the use that needs exclusively high reliability and safety; aerospace apparatus, trunk communication apparatus, nuclear control apparatus, medical apparatus related with life maintenance etc. Also, this product does not warrant the use for those purposes. If you use for those purposes, please consider the safety measures in terms of fail-safe etc.

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Safety Information

Read this first ! !

This Safety Information includes the important information in order to not only learn the

right way to use the analyzer, but also prevent you from causing damage to other

people and property. Before using, please read the following WARNING and CAUTION.

WARNING : Improper handling poses a risk of causing death or serious injury.

CAUTION : Improper handling poses a risk of causing injury*1 or damage to the product and property*2.

- *1: "Injury" indicates injury, burn, an electric shock, or the like which does not require hospitalization or hospital visit for over a long period.
- *2: "Damage to the product and property" indicates damage expansion related to a house, a building, furniture, apparatus, livestock or a pet.

WARNING

Do not disassemble or modify.

This may result in fire, an electric shock and/or unit malfunction.

Stop using the analyzer immediately when smells emanate from itself. Continuous use may result in an electric shock, a burn and/or fire.

Keep the product away from water.

Failure to do so may result in the heat generation, an electric shock and/or unit malfunction.

Do not use deteriorated cables (damage etc.). This may result in the heat generation and fire.

Do not use in the place which generates inflammable gas etc. This may result fire.

CAUTION

Do not use and keep this product in the following places:

a)The places exposed to the direct rays of the sun.

b)The places with the humidity and temperature exceeding the tolerance level, and with a rapid temperature change.

c)The places with much dust and moisture.

d)The places near the objects which generate heat (the heater etc.).

Using in these places may result unit malfunction and /or injury.

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1-1. Composition

When you unpack the product, please make sure of the following:

Analyzer	: 1
Utility CD	: 1
Mini-USB Cable	: 1
USB2WayCable	: 1
LAN Cable	: 1
User's Manual	: 1 (This book)
Warranty	: 1

- a) Please contact LINEEYE or its distributors or us if you find any damage to the product caused by transportation or any insufficient part.
- b) Please keep the box carefully and use it when sending the product back to us for repair etc.

Utility CD

This product contains the analysis software, and the latest manuals.

1-2. Outline

LE-590TX is the LAN packet tester composed of hardware and 4 sets of software designed for various tests. It is able to capture data in full duplex at 10/100BASE-TX, and generate traffic at 10/100Mbps for testing networks.

LE590-TAP	Basic software to monitor networks and for loop-back test.				
LE590-SG	Software to generate packets.				
LE590-NIC	Software to use it as NIC.				
LE590-2544	Software to evaluate switches and routers based on RFC2544.				

2-1 Environment

- PC/AT compatible (DOS/V) with USB 2.0/3.0 port
- CPU : Pentium4 Processor 1.6GHx or more (recommend)
- RAM : 1G byte or more (recommend)
- HDD : 10G byte or more (recommend)
- OS : Windows 7/8/8.1/10 (32bit/64bit)

2-2. Install Software

Install the software into the PC uses with LE-590TX.

Do not connect the LE-590TX to the PC while installing the software.

Execute "autorun.exe" stored in the attached CD.

If having the below massage, set as following.

If "WinPcap 4.1.3" is not installed in the PC, click "Next",

If "WinPcap 4.1.3" is already installed in the PC, click "Cancel",



Connect the analyzer and PC after installing the software.

The USB driver for analyzer will be installed automatically.

Confirm it in the display of Device Manager.



• Install LE590-TAP

Click "LE590-TAP_Vx.xbxxxx" ("x" indicates the version number).

LE590-TAP v1.1b059 - InstallShi	eld Wizard	
	Proparing to Install	Install
ی ک	LES90-TAP v1.1b059 Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.	moun
	Extracting: LE590-TAP v1. 1b059.msi	
	Cancel	
🕼 LE590-TAP v1.1b059 - Insta	IShield Wizard X	
4.	Welcome to the InstallShield Wizard for LE590-TAP v1.1b059	Click '
	The InstallShield(R) Wizard will install LE590-TAP v1.1b059 on your computer. To continue, click Next.	
3	WARNING: This program is protected by copyright law and international treaties.	
	< Back Next > Cancel	
del como entre si como di como		1
Tesso-TAP VI. ID059 - Insta	Isnield Wizard X	D 14
Please read the following lice	nse agreement carefully.	Readt
charges paid hereunder. C the malfanction or defects 1 facilities else there shall be limited warranty shall be V third patry in any manner. Is error free or that Custon problems or interruptions. COPYRIGHT Copyright © 2019 Lineeye © Laccept the terms in the ker	ustomer must provide Lineeye with an example of ustomer must provide Lineeye with an example of uch hat Lineeye can reproduce the problem at its no obligation of Lineeye under this warranty. This OID if the Software is modified by Customer or any in no event does Lineeye warrant that the Software ler will be able to operate the Software without Co., LTD. All Rights Reserved. v se agreement Print	"do no
I do not accept the terms in t	he license agreement	
	< Back Next > Cancel	
		7
Customer Information Please enter your information	n.	Typet
User Name:		
Organization:		
ji Instalishield		
	< Back Next > Cancel	

Installation will start as left picture.

Click "Next".

Read the "license agreement" and select "accept" (or "do not accept"). Click "Next".

Type the user name and organization.



Click "Install" (or "cancel").

Installation will start as left picture.

Click "Finish".

It is able to install other software with same procedure.

If installing all software at once, it may display blank while installing one to another.

Install LE590-SG

Click "LE590-SG_Vx.xbxxxx" ("x" indicates the version number).

LE590-SG v1.1b008 - InstallShi	eld Wizard	
	Preparing to Install	Installatio
	LE590-SG v1. 1b008 Setup is preparing the InstalShield Wizard, which will guide you through the program setup process. Please wait.	
	Extracting: LE590-SG v1. 1b008.msi	
3		
	Cancel	
All serve de la visa de la visa.		
10 LE590-SG V1. 10008 - Instal	Isniela wizara X	CLARM
2	LE590-SG v1.1b008	Click Ne
	The InstallShield(P) Wozard will install LE590-SG v1. tb008 on your computer. To continue, click Next.	
	WARNING: This program is protected by copyright law and international treaties.	
	< <u>Back</u> <u>Next</u> Cancel	
🖟 LE590-SG v1.1b008 - Instal	IShield Wizard X	
License Agreement Please read the following lice	ense agreement carefully.	Read the "
charges paid hereunder. the malfunction or defect facilities else there shall t limited warranty shall be t third party in any manner is error free or that Custon problems or interruptions.	Automer must provide Lineaye with an example of Sustainer must provide Lineaye with an example of such that Lineaye can reproduce the problem at its be no obligation of Lineaye under this warranty. This VOID if the Software is modified by Customer or any In no event does Lineaye warrant that the Software mer will be able to operate the Software without	"do not ac
COPYRIGHT Copyright © 2019 Lineeye	e Co., LTD, All Rights Reserved,	
I accept the terms in the lice	inse agreement Print	
O I do not accept the terms in	the license agreement	
Instalionieu	<back next=""> Cancel</back>	
[
提 LE590-SG v1.1b008 - Instal	IShield Wizard X	_
Please enter your information	л. <mark>З</mark>	Type the u
User Name:		
Windows User		
TaskallChield		
uistaiisfileid	< Back Next > Cancel	

on will start as left picture.

ext".

'license agreement" and select "accept" (or ccept"). Click "Next".

iser name and organization.



Click "Install" (or "cancel").

Installation will start as left picture.

Click "Finish".

It is able to install other software with same procedure.

If installing all software at once, it may display blank while installing one to another.

If finding following message, install "WinPcap4.13".

Message	×
LE590-TAP cannot detect your LE-590TX Would you like to run LE590-TAP under Demo mode (for Demo p If your system cannot detect the LE-590TX even though it is pri please press the "Re-install Driver" button and restart this appli	surpose only) instead? operly connected to the system, cation after the installation is complete.
Demo Exit	Re-Install Driver

2-3. Uninstall Software

 $Uninstall \, each \, software \, from \, start \, menu \, or \, control \, panel.$

e.g. for Windows7	
Start menu: all program	: all program -> LINEEYE -> LE-590TX -> LE590-TAP_Vx.xbxxx -> Uninstall
	LE590-TAP_Vx.xbxxx
Control panel	: Programs and Features -> select and uninstall "LE590-TAP_Vx.xbxxx"

3-1 Description of each part

LE-590TX is the compact analyzer with two Ethernet ports. It is able to monitor networks, output packets at 10/100 Mbps and use it as a NIC.



LED	Color	Description
DWD	Green (blinking)	Power on
PWK	Orange (blinking)	System error
USB	Green (blinking)	Conect analyzer & PC
	Green	PG mode
PG/TAP	Orange	TAP mode
	OFF	NIC mode
Capture A/B	Green	Capture data
L/A (Link/ACT)	Green	Link to network
	Green (blinking)	Transmit or receive data
Smood	Green	100Mpbs
speed	OFF	10Mbps (L/A light on)

3-2. Basic Operation

■ TAP(LE590-TAP)

Monitor all data in the target networks without affecting the networks.

Bi-directional or one way capture function is supported with various packet counter.



■ Loop-Back(LE590-TAP)

Send back the incoming packet stream to the same port.



■ Packet Generation(LE590-SG)

Generate test packets individually in each port. It is possible to receive data simultaneously in both ports. It is useful to have the load test for switches and HUB.



■ Network Interface Card (NIC) Simulation(LE590-NIC)

In this mode, it simulates the Network Interface Card (NIC). It seems that connected PC gains two more LAN ports.



4-1. Connection with PC

Connect the analyzer with PC using the attached Mini-USB cable.

■ Usage of USB branch cable

When the analyzer does not work stably, the bus power may be unstable. Use the attached USB branch cable to power the analyzer stably.

< How to >

- 1: Connect the 2 male-sides of the cable with the USB ports of Host PC.
- 2: Connect the female-side of the cable with the USB port of the analyzer.

4-2. Network Monitor (TAP Mode)

Run the attached software "LE590-TAP". When the alert for user account control appears accept it.

Message × LE590-TAP cannot detect your LE-590TXI Would you like to run LE590-TAP under Demo mode (for Demo purpose only) instead? Click "Re-install Driver" (WinPcap 4.1.3) and set If your system cannot detect the LE-590TX even though it is properly connected to the system necessary settings. please press the "Re-Install Driver" button and restart this application after the installation is complete Demo Exit Re-Install Drive 🕌 LE590-TAP × File Config Statistics Contro Dounter USC A USCB Nedia AB Nedia A Media B Casture A Casture A Casture B price chart 0.0 Info 🗄 kapita 🖌 🛓 🗄 🚯 System Informat Port A & Port B - Capture Crite Capture Buffer : Standard -- Capture Forward : Block Joonback Alarm Port A Media Config : Auto 100M Full -- Media Status - O Link : Link Down Speed : Type : - Flow Control : Off Rate Control : Off Capture Criteria Capture Buffer : Standard -- Capture Forward : Block Loopback : TAP Mode Alarm : On Port B Media Config : Auto 100M Full Media Statu - O Link : Link Down Speed : Type : - Elow Control : Off Connected

Following massage will be appeared. (Appear only once when opening the software)

Capture packets of target line using the LE590-TAP(TAP mode).

(< How to >

1: Select "Config"=> "Analysis Mode".



2: Select"Control"=>"Capture Forward"=>"portAB"=>"Instant".

By selecting "Instant" it can display the captured packet data up to 20000 frames in real-time. "Block" cannot display data in real time, because it saves data in the inner memory first and transfers it to the PC. It displays packets up to 32768 (16384 packets for one port) after stopping the measurement.

12100	.E590-TAF)								
File	Config	Statistics	Control	Languages	Help					
₩		Cap	oture Forward	>	Port AB	>		Block	ł.	
: Red	connect	Counter	Aut	to Save	>	Port A	>	\checkmark	Instant	3 E
	LE-590T	X				Port B	>			

Check "File" => "Set Instant Mode Save Path to ..." of the menu and change it when needed.



3 : Click "Media AB" of the toolbar and check that the TAP mode is set on the Loopback tab. Set the other tabs when needed and then click "Apply" button.

Freesewert Counter USCA USCR	Churt Heds AD Heds A Nods D	Optare AB Optare A Optare B	💵 💷 🌒 LINEE'
formation A	Port A & Port B : Media Confi	g	
R O System Information	Media Config Capture Orteria Loopback Alarm		
0 5/N i 3V901002			
MAC: 00-22-A2-20-81-A4	Auto	Force	
Port A & Port B	C	0.000	
Capture Unteria	[2] one man	C Porce tow Pail	
Capture Forward : Instant Loopback	san fun	Porce 100M Pull	
Alarm	1000 Half		
8 RaPort A			
Media Config : Auto 100M Full	10000 Full		
Ink : Link Down Speed :			
Type :	MDK		
Flow Control : Off	Auto MDK	STP management interface mode	
Rate Control : Off	 Force MDI (NIC side) 	Sharlow litete	
Capture Criteria	C Force MDAX (Sectors with) Set	Oliversitied	
Capture Forward : Block		C Number wode	
Loopback : TAP Mode			
- Alami On		~449Y	
Meria Costia : Auto 100M Full			
Media Status			
- Dink : Link Down			
Speed :			
Type:			
- O How Control : Off			

4: Click "Capture AB" of the toolbar to show the capture buffer. Then check "Auto Save" of the capture buffer window to save files in pcap format automatically by each 20000 captured frames.

🚟 LE590-TAP						– 🗆 ×
File Config Statistics Control Languages Help						
Reconnect Counter USCA USCB	Chart Media AS	Nedia A Media	a B Capture AB (Dapture A Capture B	Forward STOP	🛛 🥯 LINEEŸE
Information	Port A & Port	B : Capture	Buffer			
E- CE-590TX						\frown
SVN : 3V901002	Packet : 0 Captured	Packet/s : 0			Auo Save Status Save	Start Capture Stop Capture
MAC: 00-22-A2-20-81-A4						
- 2 Port A & Port B	No.	Port.	Delta Time(us)	Length (with CRC)	Destination	Source
Capture Criteria				(mar onto)		
Capture Buffer : Standard						
Capture Forward : Instant						
Loopback						
= - Port A						
Media Config : Auto 100M Full						
Media Status						
- Cink : Link Down						
Speed :						
Type :	<u>د</u>					>
Flow Control : Off	Item Name	V	lue			
Canture Criteria				11		
Capture Citteria						
Capture Forward : Block						
Loopback : TAP Mode						
Alarm : On						
😑 🗞 Port B						
Media Config : Auto 100M Full						
Media Status						
Link : Link Down						
Speed :						
Eleve Controls Off						
<				<		
	2					Connected

- 5: Push "Start Capture" button to start capturing and then the captured packets will be shown in real-time.
- 6: Push "Stop Capture" button to stop capturing.

To check the file saved automatically, click "Status" -> click "open" on the [PortAB Instant Status Window] and confirm data using the Wireshark.

P	ort AB Instant Statu	IS		- • ×
	Folder Name : C:¥Prog	gram Files (x86)¥LINEEYE¥LE-590T	X¥LE590-TAP v1.1b063¥Report¥Capture	e¥Instant¥Port
	Start Capture Time : 2	019/03/14 16:18:04	Stop Capture Time : -	
	Total Captured Packet/s	s: -		Folder
Γ	No.	File Name		
ľ	1	1.pcap		Open
J.				

- * FCS is included in the captured packet.
- * Wireshark (free software) needs to be installed too. For the usage of Wireshark refer to the website of Wireshark (https://www.wireshark.org/).

4-3. Usage on Wireshark

LE-590TX can be used with free networok analyzers softwares. Here is the usage example with Wireshark (one of the famous freeware).

- < How to >
- 1: Select "Config"=> "Packet Mode" of the menu.

LE SAR	E590-	TAP						
File	Cont	fig Statistics	Control	Languages	Help			
Infor		Analysis Mode Counter + Pac Packet Mode Port Configura Frame gap for Options	e ket Mode ation USB transi	ferring	^			
2:1	Run	Wireshark.						
Ca	ptu	re						
····us	ing th	nis filter: 🔳 E	Enter a ca	pture filter 😶	-		-	All interfaces shown $\overline{}$
	-カル -カル	エリア接続 ↓ エリア接続 3 '	W	······	~~	~ 	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Select Local Area Connection of LE-590TX and start capturing.

*FCS will not be included in the captured packets.

*The interface of LE-590TX can be checked at the network connection of the PC.

	Capturi	ng froi	m ローカ	μIJ	ノア接続	続* 3													-		×	<
<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	/ <u>G</u> o	<u>C</u> a	pture	An	alyze	<u>S</u> ta	tistics	Te	eleph	non <u>y</u>	Wir	eless	Tools	<u>H</u> elp						
		0	010	X	G	Q	۰	• 🖻	1	ł			Ð,	Q	Q. 🎹							
	Apply a	display	/ filter •	•• <0	trl-/>	-											(→ •	E×p	ression	••	÷
No.		Time	•		1	Sourc	е					Dest	inatior	n		Pro	tocol L	ength	Info			
	15	15:0	2:15.0	0717	713		192.3	168.	0.6			255	.255	.255.	255	UDP	8	2 523	30 -	52330	Le.	
	16	15:0	2:15.	1015	89		192.	168.	0.6			255	.255	. 255.	255	UDP	8	2 523	30 →	52330	Le.	
	17	15:0	2:15.	1328	153		192.	168.	0.6			255	.255	.255.	255	UDP	8	2 523	30 →	52330	Le.	
	18	15:0	2:15.	1639	979		192.	168.	0.6			255	.255	.255.	255	UDP	83	2 523	30 →	52330	Le.	
	19	15:0	2:15.	1950	197		192.	168.	Θ.Ε			255	.255	.255.	255	UDIP	.80	2 523	30 🔸	52330	Le.,	
	20	15:0	2:15.	2264	144		192.	168.	0.6			255	.255	.255.	255	UDP	8	2 523	30 🗕	52330	Le.	
	21	15:0	2:15.3	2575	689		192.	168.	0.6			255	.255	. 255.	255	UDP	8	2 523	30 🍝	52330	Le.	Ŧ
Þ	Etherr	et II	(, S~a	. 8	-	-	48.11	i la	(38	25	-	-	10.14	. D	st; Or	wadcast	([[::::::::::::::::::::::::::::::::::::	rr= r (: [] :	rr)		à.
Þ	Interr	et Pr	rotoco	1 1	ersi	on 4	, Sno	: 1	2.16	58.8	.6,	Dst	: 25	5.25	5.255.	255						
Þ	Vser E	atagr	nam Pr	oto	col,	Sec	Port	: 57	2339,	De	t P	ert:	523	30								
ь	Data (40 hy	(tes)																			
																						*
00	100 f	fff	ff ff	ff	ff	10.27	194	-	18.1	8	8 00	45	618			6E.						
00	010 0	9 44	72 1b	08	90 8	11	1 07	ēØ	c0 a	8 0	9 00	f f	FF	. Dr	`							
00	020 f	fff	cc fa	CC	5a (00 30	a 43	ZЬ	44 4	3 5	0 Z4	1 00	66		.j.j.8	C+DCP\$						
0.0	30 0	8 8d	03 E8	08	90 c	.c 6a	a 02	869	08 0	0 04	9 96	00	68		j		•					
0.0	148 8	0 00 0	මය මෙ	66	90 0	NO 06	90 00	969	98 9	6 04	a 06	100	689									
0.0	100 0	0 00																				

The Packet Generator can generate the packet stream (previously set one) to load a network or transmit error frames for testing of network devices or network opening.

< Setting example >

Here is the setting example of 64 byte ARP packet communication generation when the Port A is in 10% rate operation and the Port B receives the traffic.

< How to >

- 1: Connect the analyzer with PC and run the attached software "LE590-SG".
- 2: Select Config => Port A Stream Generation of the menu to display the Port A multi-stream output display.

Input 60 excepting CRC (4Byte) to the Length of No.1 of Stream# number. Then click "Frame Edit" button in the Frame Data Config column to open "Frame Edit Dialog" and edit the packet information.







3: At the Overview of "Frame Edit Dialog" set Ethernet to Link Layer Type and ARP to Layer 3 Header. Input the essential information such as the destination and source of MAC Address, and then push "Apply".

Frame Edit Dialog	I			-		×
	#					
Overview	Link Layer Type	Layer 3 Header	Protocol Illustration			
Ethernet II ARP Frame View	None Ethernet II IPX PPPoE User Defined	○ IPv4 ○ IPv6 ● ARP ○ IPX	0 x00 (0) 0 x04 (4) 0 x08 (8) 0 x0C (12) 0 x10 (16) 0 DA DA DA	SA ARP		
	Tags (a) None (b) VLAN (c) Q-in-Q (c) MPLS Transfer Protocol to UDF	Layer 4 Header © None OSPF/IP TCP/IP RIP/IP UDP/IP RSVP/IP ICMP/IP ICMPv6 IGMP/IP	0x14 (20) - 0x18 (24) - 0x1C (28) - 0x20 (32) - 0x24 (36) - 0x28 (40) -			
				Apply	Can	icel

Note: For the detail of each protocol refer to the specification of the protocol.

4: Set the inter frame gap (IFG) at Rate column. Select Utilization at the Rate, input 10, and set 10% to operation rate. Then the frame gap "768" byte time at 100M mode will appear on the IFG(Byte) column of CRCTxFrame/GapControl.

					\frown									
Change and	Select	Aline	Length	Frame	Rate	Rx	Frame/Gap Cor	itrol	X-1	rag	Append	Error	Frame Data	Protocol
Stream #	tream	Allas	(w/o CRC)	Payload	Utilization •	FG (Byte)	IBG (Byte)	Frames	En	X-ID	CRC	Generation	Config	Туре
1		Base 1	60	All 0	10.00	768	12	148809		255		No Error	Frame Edit	ARP

5: After configuration of the frame setting, set "Auto" to "TX rate", "Continuous" to "Stream Transmit Mode" and push "Apply" to fix the setting.

Port	A:	Multi	Strea	ms Generat	ion										
Save	ن الحما		Qî)	Gap Calculator											
Ix Rate	e Auto	General	ted Tx R	ate 🗸											
Stream	Transr	nit Mode	Continu	Jous ~											
	_	select		Length	Frame	Rate	Rx	Frame/Gap Co	ntrol	X-1	ſAG	Append	Error	Frame Data	Protocol
Strea	am #	tream	7 110 3	(w/o CRC)	Payload	Utilization •	IFG (Byte)	IBG (Byte)	Frames	En	X-ID	CRC	Generation	Config	Туре
1	1		Base 1	60	All 0	10.00	768	12	148809		255	\leq	No Error	Frame Edit	ARP
<															
	00 01	02 03	04 05	06 07 08 09 0A	OB OC OD OE OB	F 0123456789	ABCDEF								
0000	00 22	2 A2 A1	A0 00	00 22 A2 A1 B0	00 08 06 00 01		·.ce.e								
0010	08 00	06 04	00 01	00 22 A2 A0 B0	00 CO AS 00 00	0.00.0.** *.	Å"								
0020	00 22	2 A2 A1	A0 00	CO A8 01 00 00	00 00 00 00 00) ."¢; .À"[.									
0030	00 00	00 00	00 00	00 00 00 00 00	00										
								$\boldsymbol{\mathcal{C}}$	Apply						

6: Counter panel from the top menu to open the counter windows and push transmission button icon of portA (green arrow) to transmit the target traffic. Then check the performance information at the Port A and B of the counter panel.

📰 LE590-SG							
File Config	Statistics	ool	Language				
Reconnect (Counte Counter 1x	er Pane	usc sG				
Counter Window					-	o ×	
Counter Panel							1
Save Clear Hide St	⇔ 📾 how Resize Export	10 Excel	Tx Learning Pkts A	🕼 Tx Learning Pkts B			
	Port A		Port B	Total: 2 Ports	Ope	eration	
Link Status	Link Up		Link Up				
Speed mode	100M Full		100M Full		All Ports		
Tx Packet	966	,499	0	966,499	Transmit		
Tx Byte	61,855	,936	0	61,855,936	Canture		
Tx Packets Rate	14	,881	0		capture		
Tx Line Rate(Mbps)	1	0.00	0.00	N/A	Port A		
Tx Utilization(%)	1	0.00	0.00	N/A	-		L
Rx Packet		0	0	0	Iransmit		₽
Rx Byte		0	0	0	Capture		
Rx Packets Rate		0	14,881				
Rx Line Rate(Mbps)		0.00	10.00	N/A	Port B		
Rx Utilization(%)		0.00	10.00	N/A	Transmit		
+ Collision		-	-	-	Capture		
+ Error & Loss Packet		-	-	-			L
+ Packet Size Statistics		-	-	-			L
Eaver2 Packet Counts		-	-	-			L
 Network Layer 		-	-	-			L
+ SDFR		-	-	-			L
X-TAG Packet		0	0	0			L
Tx Start Time	2019/02/04 13:1	4:02	-	-			L

7: Push the transmission button icon of PortA (red square) to stop the transmission and hen how much the transmission is made is set at the "Packets Limit" of Stream Transmit Mode" it will stop when the transmission reaches the number.)

Note: Transmission of inadequate test traffic can disturb the network.

< Reference >

Multi-stream generation (PortA/B) :

A port of LE-590TX can generate up to 64 packet streams. The user can set the frame length, content, inter-frame gap and can add various kinds of errors.

The transmission performance can be displayed at the capture buffer and counter window.

Frame edit :

Packet contents and specific prepared packet type (IPv4, IPv6, TCP, UDP, ICMP, IGMP, IPX and ARP*) can be edited.

*It is able to add tags (VLAN and MPLS) for specific types.

Gap calculation:

Operation rate of the transmission can be calculated.

4-5. RFC2544 test

Automatic test is possible by using the DApps-2544 based on the standard of RFC2544. It generates and analyzes the test packet to evaluate throughput performance, latency, packet loss, and Back-toBack of an Ethernet switch or router.

It offers the customize report and displays the effective real-time test result.

< Setting example >

Here is the setting example to transmit the 64 byte packet and the 128 byte packet of layer 2 from the Port A of LE-590TX via DUT of the measurement target to the Port B with the wire operation rate of 50% to 100% (10% interval) for 3 seconds and the Port B receives them.

- $1: \ Connect the analyzer with a PC and run the attached software LE590-2544.$
- 2: Select the "Port Configuration" on the left window and select "Layer2" on the Protocol tab.

-										
E590-2544								-		×
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							-	_	_	
- System Information	Port Config	guration								
- Port Configuration Port A	Port	Protocol								
- Port B	Port	Model	Speed	Duplex	Auto Negotiate					
Test Configuration	Port A	LE-590TX		Full						
M Throughput	Port B	LE-590TX	LinkDown	Full	Auto					
- Packet Loss										
Back to Back										
Report										
Elapsed 00.00.01										
Time 00.00.01										
Description										
LE590-2544.										
RFC compliance testing based on RFC-1242, Benchmarking										
Terminology for Network										
RFC-2544, Benchmarking										
Methodology for Network										
testing of Throughput, Latency,										
Packet Loss, and Back to Back.										
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affi . 🚬 . affi	- Auto-Negotiati	n								
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3: Select only "Latency" at "Test Configuration" on the left window. Set transmission origin port to the Port A and the destination to the Port B and configure the detail such as transmission time and number of tests at the latency tab.

ELES90-2544								-		×
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E- LE590-2544	Test Configura	ation						Reset		
Port Configuration Port A Port P	Source Port	Dest	ination Port							
	Port A		○ Port A		590TX			24	9	
Back to Back	⊖ Port B		Port B	Ether Gene	net Frame rator & Ani	alyzer		DUT		
Time 00:00:01										
Description	Throughput Latence	Y Packet Loss	Back to Back							
Latency Definition : The time interval	Duration (Secs)	3	Frame	Size(Bytes)		0		<u>.</u>		
For store and forward devices: Starting when the	Number of Trials	1	Startn	ig from	64	~	Delay Tim	e atter Lea	ming	
last bit of the input frame reaches the input port and	Load Percentage(56)	step s	ae .	64		0.5	second	(\$)	
ending when the first bit of the output frame is seen on	Initial Rate	50	Stoppi	ngat	120	v	🗌 Bi-Di	rectional		
the output port. For bit forwarding devices:	Step Rate	10	0		Edu					
Starting when the end of	Max Rate	100		Justom	Lutin	-				
	Resolution	10	C Learni	ng Mode	Once	~				
ⅆ⋴→ᢡ→ⅆ⋴	Acceptable Loss	0	CLearni	ng Retry	1	0				
Ready							1	- Co	nnected	

4: Click [RUN] button on the upper right on the window. The test result can be checked on the "Report" display.



- This product includes a warranty card.
- Fill in the blanks and confirm the contents of the card and keep it.
- The warranty period is 12 months from the date of shipment.
- The warranty terms are applied for the repair within the period.
- After the period, we will accept the repair for a fee when we judge the unit will be recovered by it.

Note: When you ask the repair please let us know the model, serial number, condition (as detailed as possible), purchase date.

LINEEYECO., LTD.

4F., Marufuku Bldg., 39-1, Karahashi Nishihiragaki-cho, Minami-ku, Kyoto, 601-8468, Japan Phone : 81-75-693-0161 Fax : 81-75-693-0163 URL : https://www.lineeye.com This instruction manual is made from recycled paper. Printed in Japan

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