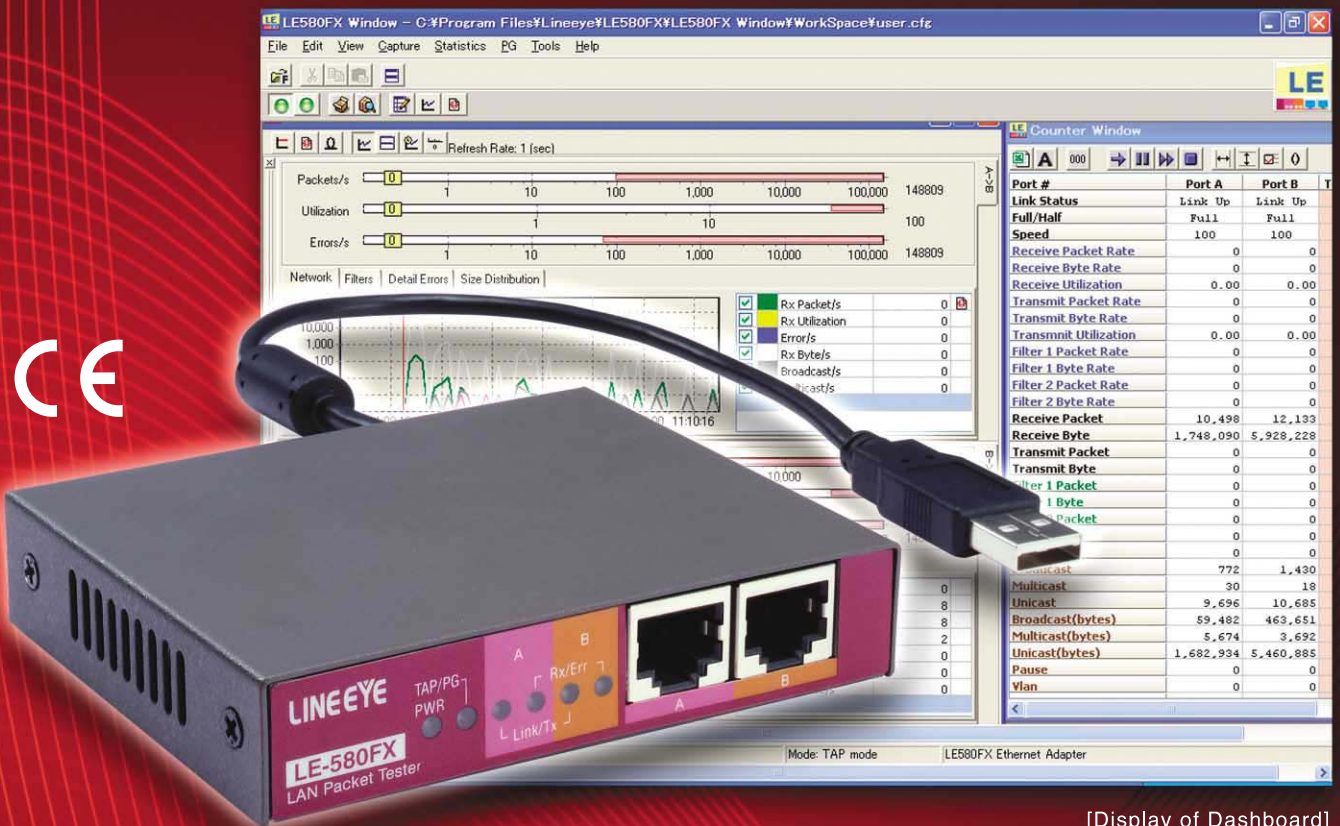# LINEEYE®

10Base-T / 100Base-TX
LAN PACKET TESTER LE-580FX

Compact and light weight analyzer used by connecting to USB port of PC.

[Display of Dashboard]

■ Feature

*Transmit 10/ 100Mbps LAN data to USB port.

*Generate test packets max. at 100Mbps line-speed.

*USB bus power.

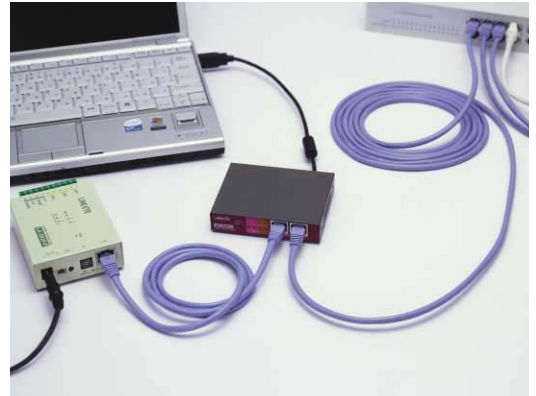*Able to use with LAN analysis software, Ethereal.

■ Use For

*Checking LAN protocols and data between the target devices.

*Checking and analyzing the traffic.

*Providing statistic information, such as error rate etc.

*Generating test packets for network test.

*Measuring QoS, such as latency etc.

*Studying network communication protocols.

LINEEYE

Easy to analysis and test
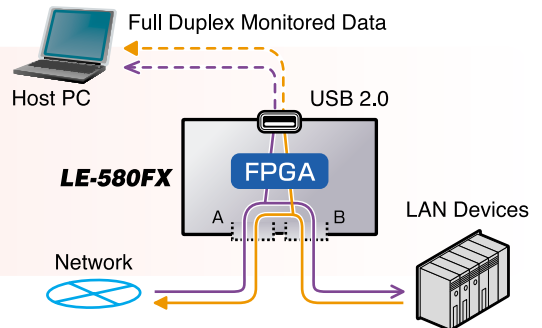## the Ethernet network via USB port.

Nowadays embedded devices have expanded its use to the network. And the LAN analysis tools, which are easy to connect, are highly needed.

LE-580FX is a LAN analyzer used by connecting USB2.0 of PC. With TAP mode, you can capture full-duplex data on 10/ 100Base-TX and transmit it to PC via USB2.0 port (480Mbps). With PG mode, you can generate traffic of max. at 100 Mbps line-speed.

Capture LAN Packets Via USB.

TAP mode captures full-duplex data on PortA/ PortB, and transmit it to PC via USB2.0 port. Captured data can be displayed on PC.
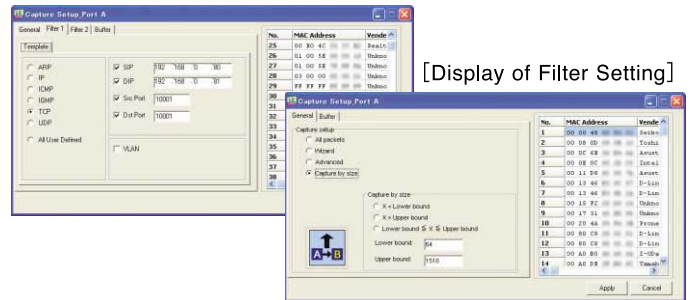
Full Duplex Monitored Data
Host PC
USB 2.0
LE-580FX
FPGA
A   B   LAN Devices
Network

[Display of Capture Window]

■ Filter To Capture Specific Packet

LE-580FX is not only able to capture all frames but also filter the specific packets.

Filtering conditions can be set by MAC/IP address, protocols (ARP/IP/ICMP/IGMP/TCP/UDP/user defined), and specifying IP address/port/ packet size etc.
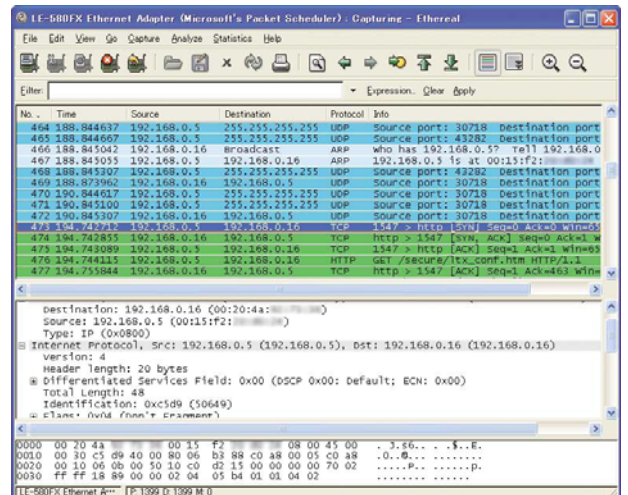
[Display of Filter Setting]

■ LAN Analysis Software, Ethereal

Captured data can be used with LAN analysis software, Ethereal. LE-580FX works as network adaptor. Able to control LE-580FX by using Ethereal.
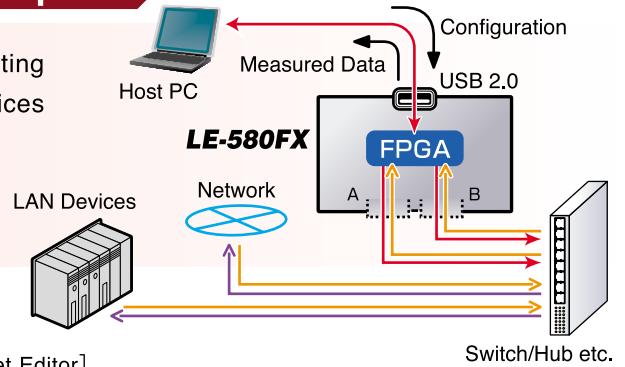
[Display of Ethereal]
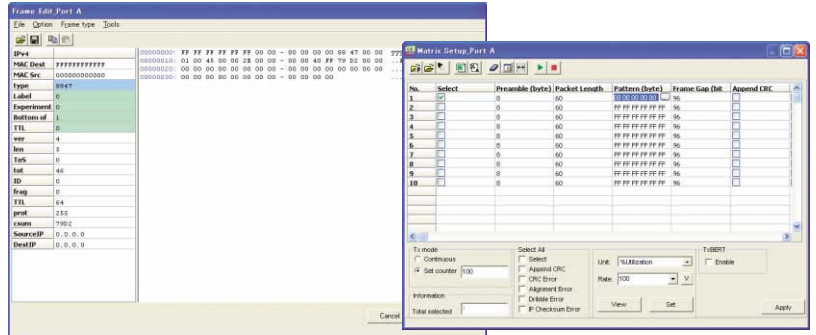
Generate Packets Max. At 100Mbps Line-speed.

PG mode generates test packets at your specified transmitting speed. Tell you the processing ability of the network devices and how they work at the high traffic. Test packets are generated in the FPGA, so it will not be affected by the performance of PC.

Host PC
Measured Data
Configuration
USB 2.0
LE-580FX
FPGA
A   B
LAN Devices
Network
Switch/Hub etc.

■ User Defined Test Packets

［Display of Packet Editor］

User can define 2-7 layer of data frames up to 128, and transmit them continuously or selected times. Add errors (CRC etc.) and VLAN/MPLS tags. Captured packets can be used as transmitting packets.

■ Hardware Counter For Statistic

［Display of Counter Window］

Calculate statistic information in the FPGA to know the quality of network. Display the results in trend charts and graphs for each port. LE-580FX does not only calculate numbers of data, but also calculate by each error, packet size, collision type and filtering.
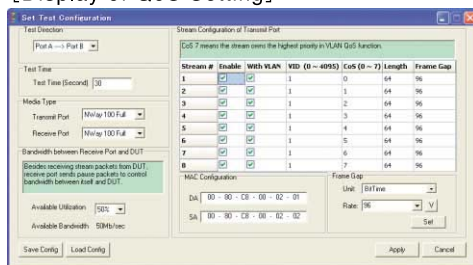
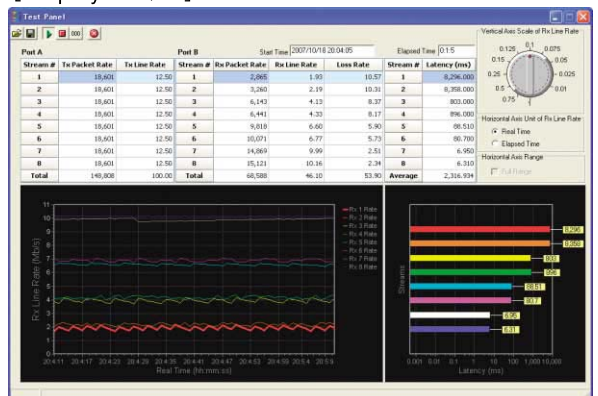| Error Type	TCP Checksum, IP Checksum, Alignment Error, Dribble Error, CRC Error, DI Checksum Error, Sequence Miss (Series Error), BERT Error
Packet Size	Less than 64 byte. 64-127byte, 128-255byte, 256-511byte, 512-1023byte, 1024-1518byte, more than 1518byte.
Collision Type	Total collisions, numbers of transmission by 1 collision, numbers of transmission by 2 collisions, numbers of transmission by failing 16 collisions, numbers of transmission by collision happened after 512bit time.

■ QoS Test (VLAN Supported)

［Display of QoS］

Able to have the network Qos Test by transmitting test data from PortA(B) to PortB(A). Test packet lines can be set up to 8, includes VLAN VID (0-4095) and CoS (0-7) Parameter. QoS test tells you the packet loss and latency etc.
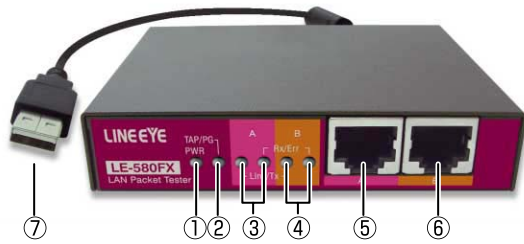
［Display of QoS Setting］

Easy To Carry LAN Analysis Tool.

Compact and light weight analyzer is easy to carry in your bag with the notebook PC.

Nomenclature

① LED for power ON/OFF   ⑤ Connector for PortA
② LED for PG/TAP   ⑥ Connector for PortB
③ LED for status of PortA   ⑦ PC connection cable (USB2.0)
④ LED for status of PortB

Specifications

Measurement Port	2 ports of Ethernet 10Base-T/ 100Base-TX (RJ-45 connector) Auto MDI/MDI-X supported *1
PC connection port	USB2.0 High Speed *2
LED	Display for power ON/OFF, TAP/PG, Link/Tx of PortA/B, Rx/Err of PortA/B
TAP mode	Capture full-duplex packet data on PortA and PortB. Data will be transmitted to USB2.0 adding the time stamp information etc.*3 **Function of LE-580FX Window (software):** *4 Display the captured packet data (filtering available)*5. Display the statistic data of packets*6. Save automatically to the specified file.*7 Export to EXCEL format. Save automatically in the Ethereal format(.enc) **Use with Ethernet Analysis Software, Ethereal/Wireshark:** Able to control LE-580FX by using Ethereal/Wireshark *8
PG mode	Generate test packets max. at 100Mbps line-rate from Port A or PortB individually. **Function of LE-580FX Window (software):** *4 Set up the transmission type (10/100M, full/half duplex, Auto), transmitting rate, flow control ON/OFF, transmission continuously or selected times (max. 65535), 2 to 7 layer (max. 128 frames *9, able to use captured data as transmitting data, select VLAN/MPLS). Add errors (CRC error, Alignment error, Dribble error, IP Checksum error) **Function of LE-580FX QoS (software):** *4 Transmit test frames (max. 8 frame lines) from PortA(B) to PortB(A). Set up the test time (5-3600s), VLAN tags, line-rate for transmission, bandwidth by pause packets. Measure received line rate, frame loss rate and latency time. Provide trend time chart (color edit available). Display statistic data. Save measured data.
NIC mode	Use PortA or PortB as NIC (Network Interface Card)
Temperature	0 to 40°C (operation), -10 to 50°C(storage)
Humidity	Below 85%RH (no condensation)
Power	USB bus power (max.3W)*10
Dimension and Weight	95(W) x 75(D) x 20(H) mm, 210g
CE	CE approval (EMI: Class A)
Environment	PC/AT compatible with USB2.0 port. Pentium 4 1.6GHz or more. Memory 256MB or more. HDD capacity 10G or more. *11
OS	Windows® 2000/XP/Vista/7/8
Accessories	Analyzer, Utility CD, Mini USB cable (0.6m), USB 2way cable, manuals, warranty.

*1 Automatically distinguish between cross cable and straight cable. *2 Only one LE-580FX can be used for one PC. *3 The time stamp value may be affected by the processing timing of PC. *4 WinPcap 4.1.3 will be installed. *5 LE-580FX captures max. 64-1536 byte of packets in TAP mode includes CRC. (48-2032 byte in PG mode) *6 Statistic data will not be affected by the performance of PC. *7 Able to capture max. at 90Mbps in half duplex and 120Mbps in full duplex without any data loss. However, it will be affected by the performance of PC or USB. LE-580FX Window (LE-580FX Window V1.5 or later) captures max. 250,000,000 frames continuously. With different software, it will be different. *8 LINEEYE will not support any issue about Ethereal/Wireshark. *9 LE-580FX Window transmits packets max. at 2004 byte, includes CRC. *10 Use 2way cable if you have power shortage. Provide the power source from 2 USB ports. *11 It is recommended to have more capacity in HDD to capture large amount of packets.

LINEEYE CO., LTD.

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QR-00337
ER-00094

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