

1000BASE-T Unit

AE5523

*Efficient high-performance module
Supports PoE for LAN switch*



Product Overview

The AE5523 is a new module for AE5511 TrafficTesterPro platform - a low-cost and easy-to-use Ethernet traffic tester.

The AE5523 supports 12 ports of 10/100/1000 Tri-mode copper interface. The AE5523 provides efficient tri-mode Ethernet traffic test capability.

Features

- 3 mode 10BASE-T/100BASE-TX and 1000BASE-T
- Multi-port function – 12 UTP ports and 1 SFP port
- Multi user support (Max 8 user) simultaneously
- PoE (Power over Ethernet) measurement function (PD emulation, class declaration, power supply detect)
- Maximum 8 flow QoS separate statistic function
- IPv6 emulation function (NDP, Ping6 auto reply)
- Sequence check function (Packet loss, Packet sequence change, Packet duplex detection)
- Capture function (1MB capture memory per port)
- Variable transmit clock
variable clocks from -100ppm to +100ppm for a reference clock.

Specification

Ethernet unit specification

item		Specification
		AE5523 1000BASE-T UNIT
Measurement ports	RJ-45 x 1 2 ports	10BASE-T, 100BASE-TX, 1000BASE-T
	SFP x 1 ports	1000BASE-SX, 1000BASE-LX(SFP Option)
Network speed		10Mbit/s, 100Mbit/s, 1000Mbit/s
Duplex mode		Full duplex/Half duplex(1000BASE-T is full)
Flow control		ON/OFF(IEEE802.3x)
MDI/MDI-X		MDI(straight), MDI-X(cross), auto
Check terminal for PoE		check terminal of 26 pins(monitors the PoE feeding voltage of each RJ-45 port)
Clock variation		Range: ±100ppm Resolution: 1ppm unit Accuracy: 5ppm±1digit

Function specifications

Generate function

Transmission function	Transmit mode	Rate	Constant: % μ s, ns, bit (Min 48bit), frame/s, bos Burst (Interval setting: 1 μ s ~ 1s)
		Transmission mode	Continuous, Count (set transmit frame count), Time (min 1sec)
		Transmission data (fixed)	Frame setting: Max 128frame per port (Single frame will be reserved for insert frame) Frame length: 48 to 9999bytes fixed frame length
	Define frame	Define frame	VLAN tag, MPLS header, EoMPLS, IPv4, IPv4+UDP, IPv4+TCP, IPv6, IPX, TCP, UDP, ICMP, ICMPv6, IGMP, Pause, ARP, IPv4 Multicast, IPv4 Multicast+UDP, Custom (with MAC), Custom (without MAC)
		Increment	MAC address
		Payload setting	Available within a range of 00 to FFH. The size of payloads can be selected from bytes, words, long words.
		Error	CRC error, Symbol error, IP header checksum error, TCP checksum error, UDP checksum error, ICMP checksum error, ICMPv6 checksum error, IGMP checksum error
	Transmission data (variable)	Number of field	maximum 4 field
		Variable size	128 bits length (32 bits unit in a maximum 4 field)
		Offset	maximum 9991 bytes
		Method	Increment, random, reference of table (maximum number of table: 1024)
	Insert frame function	Manual	Transmission only 1 frame with manual
		Interval	Transmission insert frame by interval. Range: 1ms to 600s (in steps of 1ms)
	Link up/down control function	Manual	Link up/Down with manual
		Interval	Link up/Down by interval. Minimum: 10sec, maximum: 3600sec in steps of 1sec
Receive	Filter function	MAC filter	Destination MAC address, Source MAC address, receive only unicast frame
		VLAN filter	VLANID, TPID, Priority
		Pattern filter	a 6byte comparison pattern, mask pattern, and 2 offsets can be set. Two filters can be combined using the AND/OR logic. Operations to skip or remove filters can also be executed.
	Transmission statistics display	Right	Frame count, Byte count, Rate (%), Rate (frame/s), Rate (byte/s), Rate (bos), Insert frame count, Reply frame count
		Error	Error frame count, CRC error count, Undersize frame count, Oversize frame count, symbol error frame count
	Receive statistics display	Right	Error frame (frame/s), CRC error (frame/s), Undersize (frame/s), Oversize (frame/s), Symbol error (frame/s)
		Error	Error frame count, CRC error count, Undersize frame count, Oversize frame count, Alignment error count, Symbol error frame count
	QoS statistics display	Statistics mode	Every flow (compare frame pattern), Every frame length
		Statistics channel	8 channel
		Statistics item	Total (Frame), Total (Byte), Rate (Frame/s), Rate (%), Rate (bos)
QoS statistics filter		comparison pattern with 32bit, Mask pattern, 2 set of offset.	

Delay measurement function

Delay measurement	Measurement item	IFG	The maximum, minimum and average of IFG (Inter Frame Gap) (unit: μ sec)
		Packet delay	The maximum, minimum and average of Packet (unit: μ sec)
		Packet delay every GoS	Measure a packet delay every flow (8 channels)

Bit error test measurement function

Transmission function	Transmit mode	Rate	Constant: % μ s, ns, bit (min 48bit), frame/s, bos
		Transmission mode	Continuous, Count (set transmit frame count), Time (min 1sec)
	Transmission data (Fixed)	Frame setting	1 frame per port (64 to 9999bytes)
		Frame length	64 to 9999byte fixed frame length
Receive function	Statistics display	Test pattern (payload area)	PNI5
		Display item	Bit error rate, Error frame (with bit error) count, Bit error count, Sync loss count, Sync byte count, Bit error (bps), Bit error frame (frame/s), Sync loss of BERT for 1 sec, Test object byte of BERT (byte/s), Bit error insertion count, Bit error insertion frame count

Capture capacity	1M byte every port
Frame slice function	Select from 4 settings of under 64, under 256, under 2048, under 9999byte
Filter function	Pattern filter (reference pattern: 6 byte x 2, mask pattern: 6 byte x 2, Offset: 0 to 58 byte, Error frame, Normal frame only capture available)
Trigger function	Normal frame pattern (reference pattern: 6byte x2, mask pattern: 6byte x2, Offset: 0 to 58byte)
	Error frame (FCS error, Undersize, Oversize, Symbol error, Bit error, All error frame, Link up, Link down)
Trigger position	Selection from top, center, end
Display item	Frame number, Time stamp, Frame status, Frame length, Destination MAC address, Source MAC address, Payload data (Hex)
File format	exclusive, Etherreal (tcpdump) format, CSV format

PoE measurement function

PD Emulation function	Sequence emulation of IEEE802.3af standard
Class declaration	Default class and arbitrary class
Check the power status	Check the Power ON and OFF for PoE

Sequence check function

Error type	Packet loss, Maximum burst loss count, Reorder, Duplication
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Emulation function

IPv4	ARP reply, Ping reply
IPv6	NDP (neighbor discovery protocol) address resolution, IPv6 address autoconfiguration, PING6 auto reply

Alarm log function

Alarm item	Packet error, Illegal received traffic rate, Illegal packet delay, Illegal IFG, Change of layer 1 state.
Log count	Maximum 1000 event (Minimum interval is every 1sec)

Note : specification may change without notice.

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