

Specifications

■ Main unit

Item		Specification
Control port		One 10/100BASE-T port (RJ-45 connector)
Console port		One RS-232C port (D-sub connector)
LEDs		POWER, STANDBY, HDD, REMOTE, STATUS, STATUS1, STATUS2, and LINK
Power supply		90 to 264 V AC at 48 to 63 Hz
Power consumption		200 VA or lower
Dimensions and weight	Dimensions	Approximately 435 (W) × 88 (H) × 300 (D) mm. Can be mounted on a 2U-high 19-inch rack.
	Weight	Approximately 7 kg (AE5511 main unit only)
Number of slots for mounting Ethernet units		2
Operating environment		Temperature: 5°C to 40°C; humidity: 35% to 85%
Standard accessories		User's manual (CD-ROM), start-up manual, power cable, 3p-to-2p conversion plug, control port connection cable (2-m long, cross over cable with RJ-45 connector), console port connection cable (2-m long, RS-232C cross over cable)

■ Ethernet unit

Item	Specification	
	Model AE5520 10/100BASE-T unit	Model AE5521 1000BASE-X unit
Control port	10BASE-T and 100BASE-TX	1000BASE-SX and 1000BASE-LX (GBIC module required*)
Number of ports	16	4
Connector type	RJ-45	SC
Line speed	10 Mbit/s and 100 Mbit/s	1 Gbit/s
Duplex mode	Half-duplex and full-duplex	Full-duplex
Automatic negotiation	Can be set to on/off.	Can be set to on/off (for flow control only).
Flow control	Can be set to on/off (IEEE 802.3x compliant).	Can be set to on/off (IEEE 802.3x compliant).

* Note that only the GBIC modules from Yokogawa are guaranteed.

AE5511 TrafficTesterPro Specifications

■ Functions

Traffic generation mode				
Transmission	Transmission mode	Rates	Fixed rates: %, μ s, ns, bits (10 Mbit/s and 100 Mbit/s: 48 bits min.; 1 Gbit/s: 32 bits min.), and frames/s * IFG settings: 10BASE-T: In units of 400 ns (from 4,800 to 999,979,200 ns); 100BASE-TX: In units of 40 ns (from 480 to 999,997,920 ns); 1000BASE-X: In units of 32 ns (from 32 to 999,999,808 ns) Burst transmission: Interval setting from 1 μ s to 1 sec.	
		Transmission modes	Continuous and single (transmitting the specified number of frames), Time	
	Transmitted data (fixed)	Number of frames that can be defined	A maximum of 128 frames/port * One dedicated frame is required for the frame insertion function.	
		Frame length	Fixed at from 18 to 9999 bytes	
		Defined frames	Tags: VLAN tags (up to 4 stacks), MPLS Shim headers (up to 4 stacks), and EoMPLS Layers 2 and 3: IPv4, IPv4+UDP, IPv4+TCP, IPv6, IPX, TCP, UDP, ICMP, ICMPv6, IGMP, Pause, ARP, IPv4 multicast, IPv4 multicast+UDP, and customized frames with/without MAC addresses	
		Parameter increment	Can be set for MAC addresses	
	Transmitted data (variable)	Number of frames that can be defined	1 frame/port	
		Frame length	Setting range: from 64 to 9999 bytes (increments, decrements, and random length can be set.)	
		Defined frames	Tags: VLAN tags (up to 4 stacks), MPLS SHIM headers (up to 4 stacks), and EoMPLS Layers 2 and 3: MAC addresses, IPv4, IPv6, IPX, TCP, UDP, ICMP, ICMPv6, IGMP, Pause, ARP, and payloads	
		Parameter increment	MAC addresses (lower 4 bytes), VLAN tags (VLAN ID, Priority), MPLS Shim headers (label values, EXP), IPv4 headers (IP addresses, ToS fields, ID fields), IPv6 headers (IP addresses in units of 4 bytes, traffic classes, flow labels, TCP/UDP port numbers, and payloads (offsets and a maximum size of 32 bits can be specified.)	
Receive	Filters	MAC filter	Destination and source MAC addresses. Can be set so that only unicast messages are received.	
		VLAN filter	VLAN IDs, TP IDs, and Priority can be used as filters.	
		Pattern filter	A 6-byte comparison pattern, a mask pattern, and 2 offsets can be set. Two filters can be combined using the AND/OR logics. Operations to skip or remove filters can also be executed.	
	Summarized statistics display	Statistics items	Total frame count, total byte count, rate (frames/s), rate (%), rate (bit/s), and maximum IFG (ms)	
		Duplex mode	Full-duplex and half-duplex modes can be indicated.	
	Detailed statistics display	Errors	Error status is indicated in red.	
		Statistics items	Frame count, byte count, rate (%), rate (bit/s), reply, collision, and pause	
		IFGs	CRC, undersize, oversize, alignment, and symbol	
	Bit error mode			
	Transmission	Transmission mode	Rates	Fixed rates: %, μ s, ns, bits (32 bits min.), and frames/s * 10BASE-T: In units of 400 ns (from 4,800 to 999,979,200 ns); 100BASE-TX: In units of 40 ns (from 480 to 999,997,920 ns); 1000BASE-X: In units of 32 ns (from 32 to 999,999,808 ns)
Transmission modes			Continuous and single (transmitting the specified number of frames)	
Transmitted data (fixed)		Number of frames that can be defined	1 frame/port (from 64 to 9999 bytes)	
		Frame length	From 64 to 9999 bytes (fixed frame lengths, increments, decrements, and random length can be set.)	
		Defined frames	Tags: VLAN tags (up to 4 stacks), MPLS Shim headers (up to 4 stacks), and EoMPLS Layers 2 and 3: IPv4, IPv4+UDP, IPv4+TCP, ICMP, IPv6, IPX, IPv4 multicast, IPv4 multicast+UDP, and customized frames with/without MAC addresses	
		Test pattern (payload)	PN15	
Reception	Filter	MAC filter	Destination and source MAC addresses. Can be set so that only unicast messages are received.	
		VLAN filter	VLAN IDs, TP IDs, and Priority can be used as filters.	
		Pattern filter	A 6-byte comparison pattern, a mask pattern, and 2 offsets can be set. Two filters can be combined using the AND/OR logics. Operations to skip or remove filters can also be executed.	
	Summarized statistics display	Statistics items	Total frame count and synchronized byte count	
		Duplex mode	Full-duplex and half-duplex modes can be indicated.	
	Detailed statistics display	Errors	Error status and "out-of-synchronization" are indicated in red.	
Statistics items		Synchronously received byte count, frame count, byte count, rate (%), rate (bit/s), reply, collision, and pause		
Latency measurement mode				
Transmission	Transmission mode	Rates	Fixed rates: %, μ s, ns, bits (10 Mbit/s and 100 Mbit/s: 48 bits min.; 1 Gbit/s: 32 bits min.), and frames/s * 10BASE-T: In units of 400 ns (from 4,800 to 999,979,200 ns); 100BASE-TX: In units of 40 ns (from 480 to 999,997,920 ns); 1000BASE-X: In units of 32 ns (from 32 to 999,999,808 ns)	
		Transmission modes	Continuous and single (transmitting the specified number of frames)	
	Transmitted data (fixed)	Number of frames that can be defined	1 frame/port (from 64 to 9999 bytes)	
		Frame length	Fixed at from 64 to 9999 bytes	
		Defined frames	Tags: VLAN tags (up to 4 stacks), MPLS Shim headers (up to 4 stacks), and EoMPLS Layers 2 and 3: IPv4, IPv4+UDP, IPv4+TCP, ICMP, IPv6, IPX, IPv4 multicast, IPv4 multicast+UDP, and customized frames with/without MAC addresses	
		Payload setting	Available within a range of 00 to FFh. The size of payloads can be selected from bytes, words, and longwords.	
Reception	Filter	MAC filter	Destination and source MAC addresses. Can be set so that only unicast messages are received.	
		VLAN filter	VLAN IDs, TP IDs, and Priority can be used as filters.	
		Pattern filter	A 6-byte comparison pattern, a mask pattern, and 2 offsets can be set. Two filters can be combined using the AND/OR logics. Operations to skip or remove filters can also be executed.	
	Summarized statistics display	Statistics items	A-to-B average latency (ms) and B-to-A average latency (ms) 10 Mbit/s: 100-ns resolution and (3 μ s \pm 1 digit) accuracy; 100 Mbit/s and 1 Gbit/s: 100-ns resolution and (1 μ s \pm 1 digit) accuracy	
		Duplex mode	Full-duplex and half-duplex modes can be indicated.	
	Detailed statistics display	Errors	Error status is indicated in red.	
Statistics items		Frame count, rate (%), rate (bit/s), reply, pause, and error		
Common functions				
Settings storage		Condition settings can be saved for each Ethernet unit. Test results can be saved in HTML and CSV files.		
Emulation		ARP reply and ping reply		
Automatic MDI/MDIX detection		Can detect straight-through and cross-over types.		
Automatic MAC address acquisition (for traffic generation mode only)		Can acquire and display target IP addresses' MAC addresses. The MAC address acquisition can be turned on/off on a port basis.		
Automatic measurement		Can be controlled remotely through Telnet. Automatic measurement is possible using script files.		
Operating environment for control PC and Web browser		Operating system: Windows 2000/XP; CPU: Pentium III at 1 GHz or faster; memory: at least 256 Mbytes; display resolution: 1024 x 768 dots or higher; Web browser: Internet Explorer 5.5 SP2 or later		

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