

Specification

Ethernet unit specification

item	Specification
	AE5524 1000BASE-X UNIT
Measurement ports	SFP x 1 2 ports
Network speed	1000BASE-SX, 1000BASE-LX (Requires optional SFP module)
Duplex mode	1 Gbit/s
Flow control	Fixed full duplex
Clock variation	ON/OFF (IEEE802.3x) 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 function	Transmission mode	Transmission mode	Continuous, Count (set transmit frame count), Time (min 1sec)	
		Transmission data (fixed)	Max 128frame per port (Single frame will be reserved for insert frame)	
	Transmission data (fixed)	Frame setting	Frame length	48 to 9999bytes fixed frame length
		Define frame	Increment	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	
		Packet setting	Available within a range of 00 to FF. The size of packets can be selected from bytes, words, keywords.	
		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
	Transmission data (variable)	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)	
		Frame length	Range: 64 to 9999bytes (Increment, decrement, random)	
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	Frame count, Byte count, Rate (%), Rate (frame/s), Rate (byte/s), Rate (bos), Pause frame count	
	QoS statistics display	Right	Error frame count, CRC error count, Undersize frame count, Oversize frame count, Alignment error count, Symbol error frame count	
		Error	Error frame (frame/s), CRC error (frame/s), Undersize (frame/s), Oversize (frame/s), Alignment error (frame/s), Symbol error (frame/s)	
		Statistics mode	Every flow (compare frame pattern), Every frame length	
		Statistics channel	8channel	
	QoS statistics display	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)
Delay measurement	Measurement item	Packet delay	The maximum, minimum and average of Packet (unit: μ sec)
		Packet delay every QoS	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 function	Transmission mode	Transmission mode	Continuous, Count (set transmit frame count), Time (min 1sec)	
		Transmission data (Fixed)	1 frame per port (64 to 9999bytes)	
	Transmission data (Fixed)	Frame setting	Frame length	64 to 9999byte fixed frame length
		Test pattern (payload area)	PN15	
		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 5 8byte, Error frame, Normal frame only capture available)
Trigger function	Normal frame pattern (reference pattern: 6byte x 2, mask pattern: 6byte x 2, 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

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 layer1 state.
Log count	Maximum 1000 event (Minimum interval is every 1sec)

Option

Name	Specification
1000BASE-SX SFP module	LC connector, 0.85 μ m, MMF
1000BASE-LX SFP module	LC connector, 1.31 μ m, SMF

Note: SFP module which was not purchased by us is not guaranteed.

Note: specifications may change without notice.

< to contact us > www.yokogawa.com or Phone: +81-422-52-6768 (Global Sales Dept.)