

AQ1300 MFT-10GbE

10G ETHERNET MULTI FIELD TESTER

World's Smallest-Class 10GbE Tester
All functions in ONE, for Network path test
Easy operation



10Gigabit Ethernet Handheld Tester

MFT-10GbE AQ1300

Excellent functionality and operability
in the world's smallest-in-class field tester

Compact and lightweight handheld tester with functionality optimized for the network path testing and maintenance of 10M to 10G Ethernet networks. Integrated functions and field optimized operations in one compact box. The test solution to improve work efficiency and quality.



World's Smallest-Class 10GbE Tester

- 216(W)×157(H)×74(D) mm
- Under 1.5kg
- Robust structure suitable for field use.

All functions in ONE, for Network path test

- Optical and electrical test ports for 10M to 10G Ethernet
- Optical power meter (optional)

Simple operation with built-in functions

- Auto-Test with pre-defined test procedures
- In-band remote control simplifies far-end operations

Full scale

217.5mm(W)×157mm(H)×74mm(D) excluding protrusions

Intuitive and responsive GUI

- Optimized for the network path test and maintenance.
- Easy to operate with a single hand with the keys and knob set on the right side.

Display

- 5.7 inch color LCD
- Screen Structure : You can easy find important check point.



All test functions for commissioning in ONE

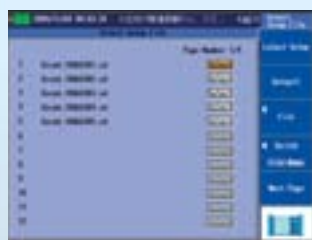
The AQ1300 measures the quality of Ethernet interfaces for network devices and systems, providing pass/fail analysis.

- Service Quality
Throughput, Frame loss, Latency, BERT (Bit Error Rate Test), Idle time (IFG)
- L2/L3 Loop-back
- Pass/Fail Analysis

AUTO TEST mode

The auto-test mode executes a predefined test scenario that performs multiple tests sequentially. A test scenario can easily be created on a PC, uploaded to an AQ1300 and then performed in the field. The AQ1300 works with the operator to improve work quality.

- Automatic test up to eight steps
- Up to 48 test scenario files can be defined.
- Pass/fail judgment on each test item.



Select setup file screen



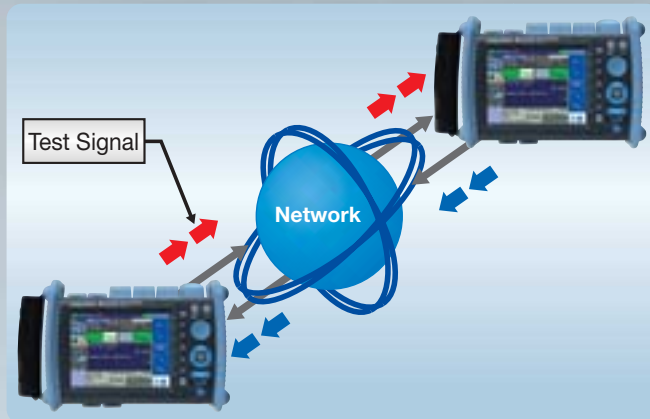
Select test item screen

In-band remote function

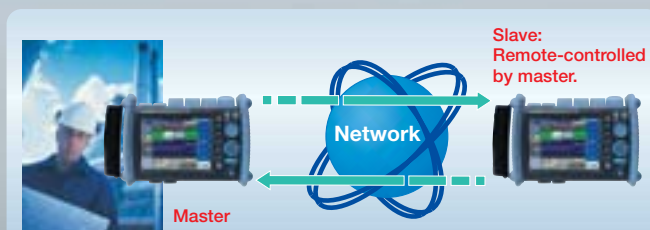
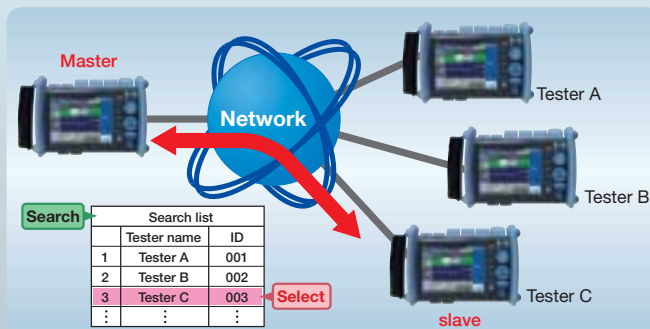
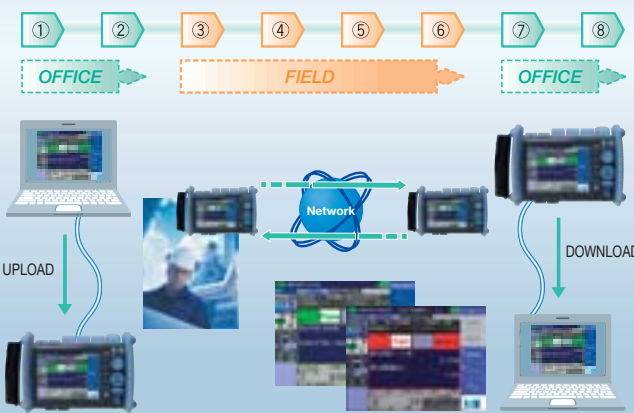
The AQ1300 can simplify operations by remote-controlling a slave unit located at the far end of the network from a master unit using a test line. On the slave side, the operator only needs to connect a test cable to the AQ1300.

- Search AQ1300s in the network (within a domain)
- Control a slave unit for a measurement
- Transfer test results in band

GUI control by USB or LAN



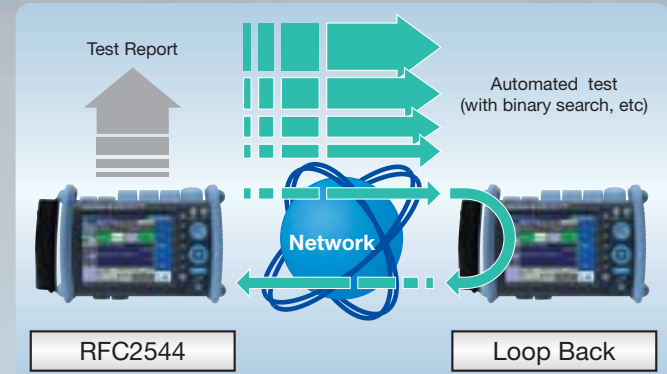
- 1 Edit a Setup File
- 2 Upload a Setup File
- 3 Select a Setup File
- 4 Execute tests up to 8 Steps
- 5 Judgment a result
- 6 Auto-save a result
- 7 Download a result file
- 8 Output a result report



RFC2544 Function

An automated test function in conformity with RFC2544, the standard benchmarking methodology for a performance examination of Ethernet service and network systems.

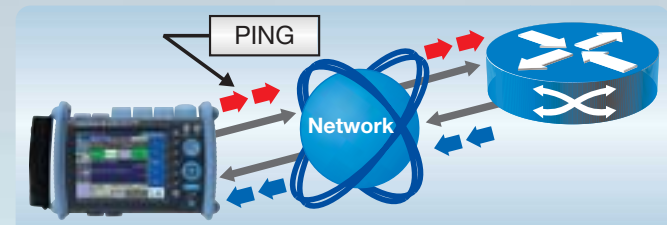
- Throughput: Maximum frame transfer rate without frame loss.
- Latency: Delay time of a frame
- Frame loss rate: Incidence rate of frame loss with excess traffic.
- Back-to back: Maximum burst value not causing a frame loss.
- Packet jitter: Variation of latency



PING test function

The AQ1300 can check network connections all the way down to servers and equipment using a hardware based reliable PING test capability.

- High-speed testing at 1ms intervals
- TraceRoute supported



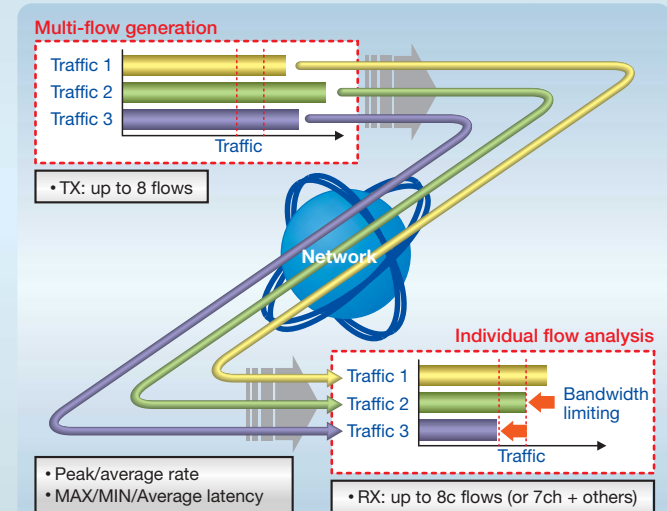
QoS test function

The AQ1300 can perform the QoS test such as the priority forwarding and the bandwidth limiting used in Next Generation Ethernet Networks.

- Traffic generation: up to 8 flows
- Individual statistics: up to 8 flows
- Pass/fail judgment on each flow (Auto-test mode)

Also supports Sequence measurements

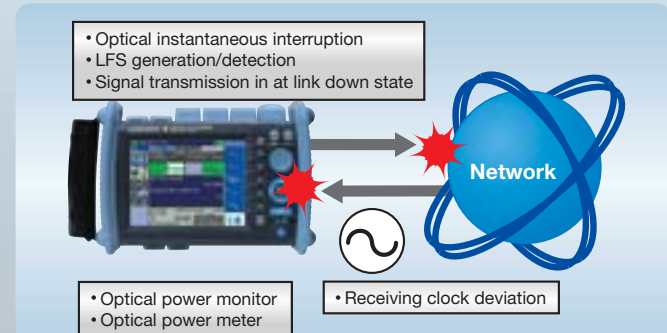
- Reorder Packet
- Duplicate Packet
- Loss Packet
- MAX Burst Loss



Layer 1 analysis

Various physical layer test functions support troubleshooting in the field.

- Optical power monitor
- Optical power meter (Optional)
- Receiving clock deviation measurement
- Link down detection
- LFS generation/detection



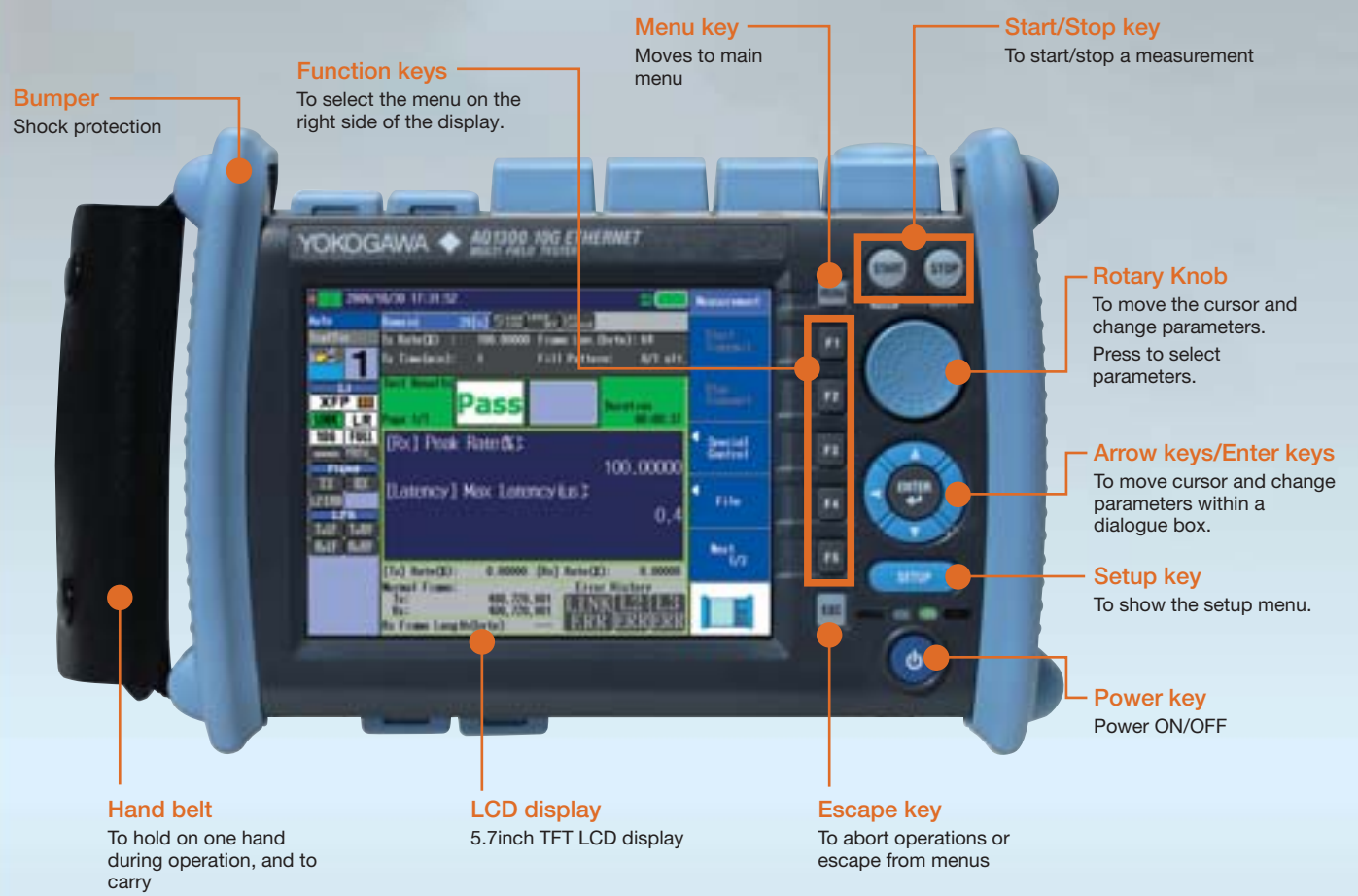
Logging function

By logging a long-term statistical trend, even an intermittent error can be detected.

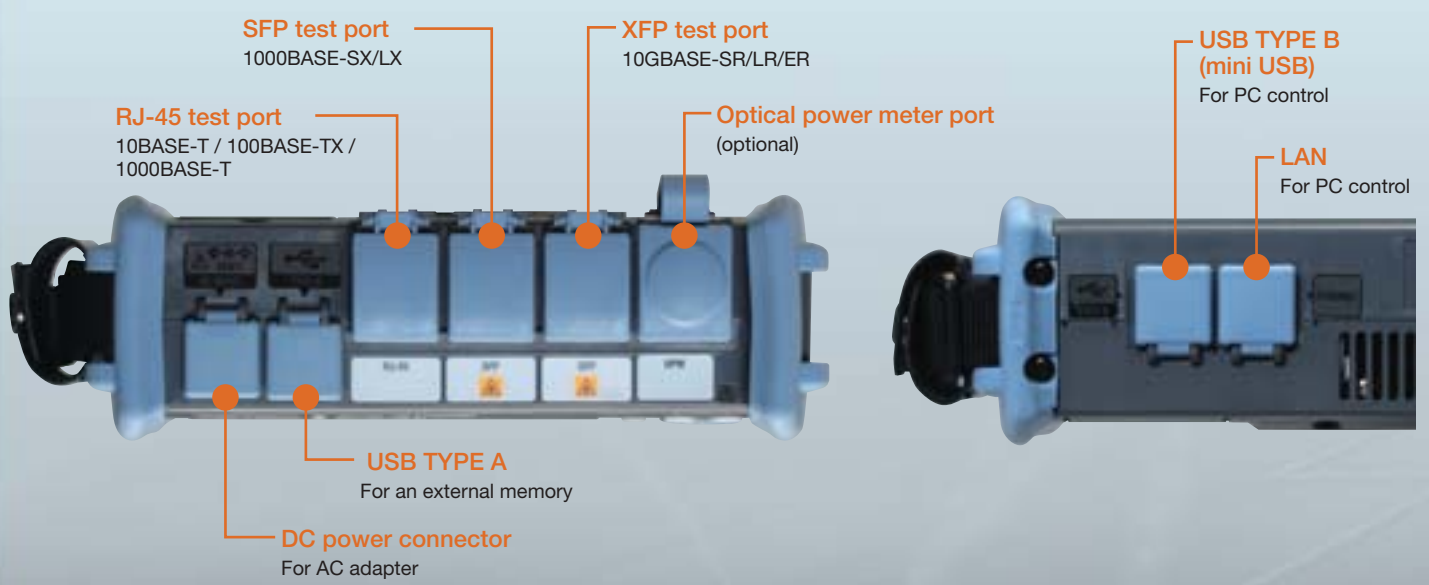
- Statistics log can be recorded every second for up to 72 hours.

10G ETHERNET MULTI FIELD TESTER MFT-10GbE AQ1300

Front view



Top view



Bottom view

Specifications

Interface		
Test port	RJ-45	10BASE-T, 100BASE-TX, 1000BASE-T
	SFP	1000BASE-SX, 1000BASE-LX
	XFP	10GBASE-SR, 10GBASE-LR, 10GBASE-ER
Remote port	LAN(RJ-45)	10BASE-T, 100BASE-TX, 1000BASE-T
	USB TYPE B (mini USB)	For PC control
Memory port	USB TYPE A	For an external memory
Measurement function		
Measurement menu		Auto, Auto(Remote), Manual, RFC2544, OPM (Optical power meter)
Measurement mode		TRAFFIC, QoS, PING, Loop back, BERT
Transmission function		
Rate setting	Unit of setting	%(Resolution:0.00001%), bit (IFG), Frame/s
		Rate is changeable during transmission
Frame length		48 to 9999 bytes
Transmission data setting		Payload setting, Variable frame field
Burst setting	Number of bursts	1 to 65535
	Burst interval	1μ to 1seconds
Transmission time		Continuous, Number of frames, Time
QoS transmission	Number of channel	Up to 8ch (up to 4ch in Auto and Auto (remote) mode)
Error addition		FCS error, Symbol error, Undersize error, Oversize error
Transmission frame setting		VLAN tag (up to 4 stacks with the standard setup software, up to 2 stacks by the unit alone)
Receive function		
Receiving performance	Receivable frame length	48 to 9999 bytes (Minimum IFG: 5 bytes)
Latency and IFG measurement	Resolution	100ns
BERT		Frame BERT (PRBS15)
Sequence error checking		Number of loss packet, Number of sequence error packet, Number of overlap packets, Maximum burst loss
QoS measurement		Up to 8ch or Up to 7ch+other, up to 4 ch in Auto and Auto(remote) mode, Latency of each channel, Payload error of each channel, Sequence error of each channel
Loop back function		
Target frame		Addressing to an own port or all ports (excluding L2 broadcasting and Multicast frames, VLAN except for an own VLAN)
Field swap		DA/SA of MAC address, DA/SA of IP address, Dst/Src port of TCP/UDP
Remote control function		
In-band remote		Remote test synchronization, Remote test start synchronization, Opposite tester automatic search(*), Opposite tester automatic addressing (*) (*: applicable only within a segment)
Remote GUI	Communication port	Remote port (RJ-45 or USB TYPE B)
	Remote desktop	With the remote-GUI software (Windows) attached as an accessory

RFC2544 function (optional)		
Test items		Throughput, Latency, Frame loss rate, Back-to-Back, Packet Jitter
Test configuration		Two units of AQ1300 at both ends (AQ1300 in Loop Back mode at the far-end)
Test conditions	Duration	1 to 999 sec.
	Number of trials	1 to 60 times
Report function	Format	csv, image (jpg and png), pdf
Layer-1 measurement function		
Receiving clock measurement	measurement range	-100 to +100ppm
	Resolution	0.1ppm
Optical output interruption LFS generation	Manual	Optical output interruption and recovery
	Auto	Continuous transmission (Start/Stop) When a link down or LF is received, RF is transmitted automatically.
Emulation function		
IPv4 Host		ARP reply, PING reply, MAC automatic acquisition, IP automatic acquisition (DHCP) (Up to 2 stacked VLAN)
IPv6 Host		NDP reply, PING reply, MAC automatic acquisition (NDP), Automatic address generation (Up to 2 stacked VLAN)
PING (IPv4) Test		Test count, LOSS count/rate/cause, Max/Min/average response time, last 5 current values (Up to 2 stacked VLAN)
Traceroute (IPv4)		Route to destination, response time (Up to 2 stacked VLAN)
Log function		
Log acquisition	Log intervals	1 second
	Log period	4, 12, 24, 48, 72 hours
	Log item	Up to 4 log items
Optical power meter (option)		
Optical connector		Universal connector (φ1.25)
Wavelength range		850/1300/1310/1490/1550/1625/1650nm
Power range		+10 to -60dBm
Measurement accuracy		±5% (Ta=23±5°C, condition : 1310nm, -20dBm, SM fiber)
General specifications		
Display		5.7-inch color TFT display
Power supply	AC adapter	AC100 to 240V 50/60Hz AC adapter
	Built-in battery	Battery operation time : One hour
Dimensions and weight	Dimensions	217.5mm(W) × 157mm(H) × 74mm(D) (excluding protrusion)
	Weight	1.5 kg or less (including built-in battery)
Accessories	Standard	CD-ROM (Setup software, Users manual)
	Optional	Operation guide Battery pack AC adapter Hand belt 10GBASE-SR XFP module 10GBASE-LR XFP module 10GBASE-ER XFP module 1000BASE-SX SFP Module 1000BASE-LX SFP Module Battery pack (spare) Soft carrying case Shoulder belt SC connector for Optical power meter FC connector for Optical power meter

Model and suffix codes

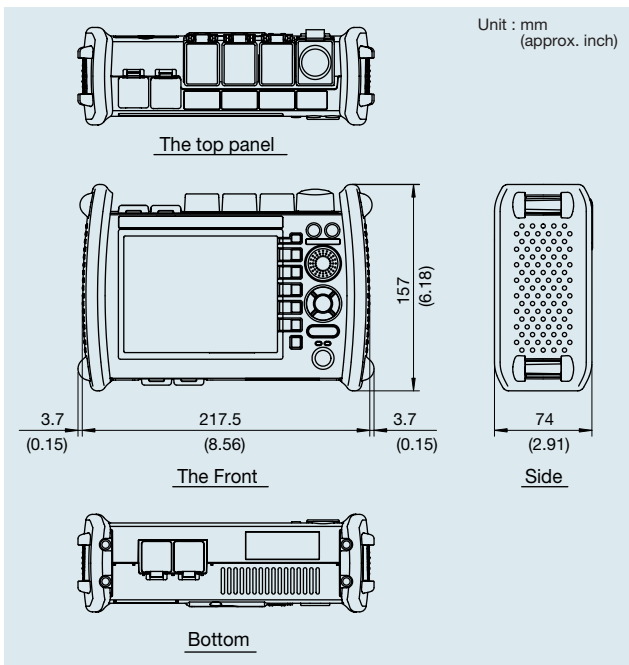
Model	Suffix Code	Description
AQ1300		AQ1300 MFT-10GbE
Language	-HE	English
Power Coad	-D	UL/CSA standard
	-F	VDE standard
	-R	AS standard
	-Q	BS, Singapore Standard
	-H	GB standard, CCC correspondence
	-P	EK standard (South Korea)
Optical power meter	/SPML	Standard Optical power meter
XFP module (*)	/SR	10 GBASE-SR XFP module
	/LR	10 GBASE-LR XFP module
	/ER	10 GBASE-ER XFP module
SFP module (*)	/SX	1000BASE-SX SFP module
	/LX	1000BASE-LX SFP module
RFC2544	/BM	RFC2544 Function
Shoulder belt	/SB	Shoulder belt

* Please do not use an SFP or XFP module other than our standard model mentioned above.
If another module is used, the performance of this product cannot be guaranteed and the product warranty expires.

Accessories

Model	Suffix Code	Description
735454 (*)		Optical transceiver module
	-SR	10 GBASE-SR XFP module
	-LR	10 GBASE-LR XFP module
	-ER	10 GBASE-ER XFP module
	-SX	1000BASE-SX SFP module
	-LX	1000BASE-LX SFP module
739882		Battery pack (reserve)
SU2006A		Soft carrying case
739871		AC/DC adaptor
	-D	UL/CSA standard
	-F	VDE standard
	-R	AS standard
	-Q	BS, Singapore Standard
	-H	GB standard, CCC correspondence
	-P	EK standard (South Korea)
	B8070CY	
735480		Connector adapter
	-SCC	SC connector adapter for optical power meters
	-FCC	FC connector adapter for optical power meters

Dimensions



Multi-Field Tester series

Light Source + Optical Power Meter

AQ1100 MFT-OLTS



Light Sources (3 models)

SM1310/1550nm
SM1310/1550/1625nm
MM850/1300nm and
SM1310/1550nm

Optical Power Meter Selections

Standard : +10 to -70dBm
High power : +27 to -50dBm
PON : 1490/1550nm Parallel measurement (split)

All-in-One handheld optical fiber network test tool

AQ1200A MFT-OTDR



Powerful test features

OTDR : SMF 1310/1550nm, Short 80cm event dead zone
Fault locator
Optical loss test (option)
Visual fault locator (option)

Excellent operations

Small and Lightweight
Easy-to-see, large color LCD
AQ7275 OTDR-like interface

YOKOGAWA

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