

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



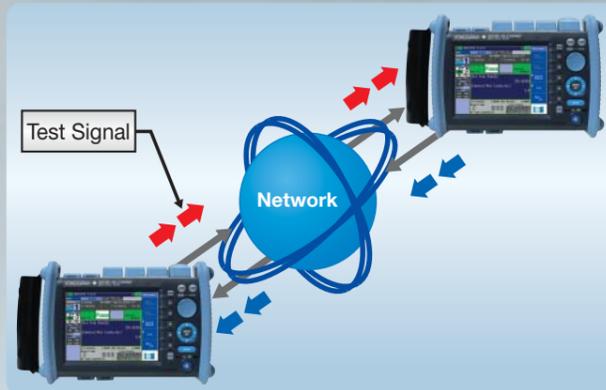
Select test item screen

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

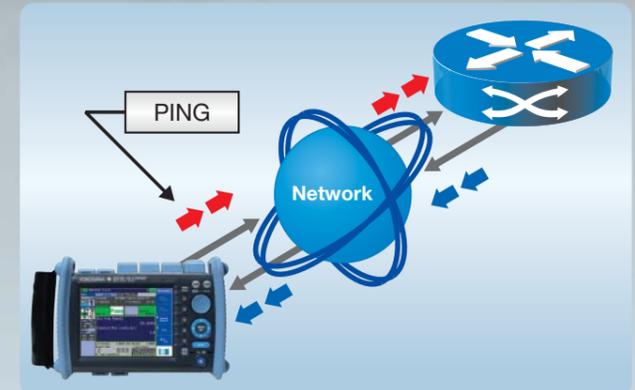
GUI control by USB or LAN



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



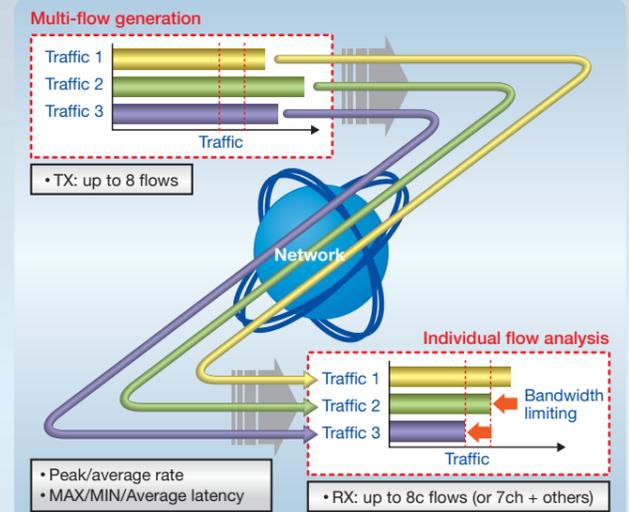
QoS test function

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

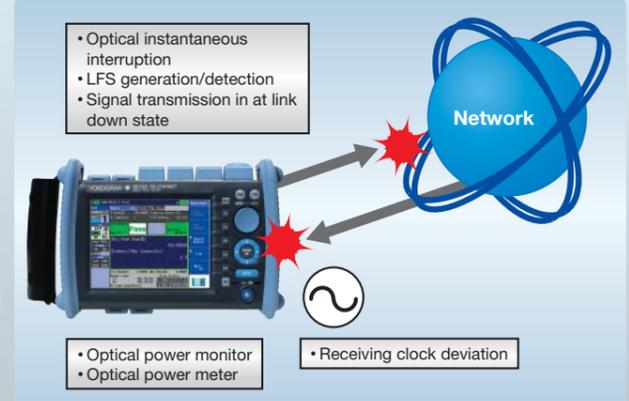
- Reorder Packet
- Duplicate Packet
- Loss Packet
- MAX Burst Loss



Layer 1 analysis

Various physical layer test functions support troubleshooting in the field.

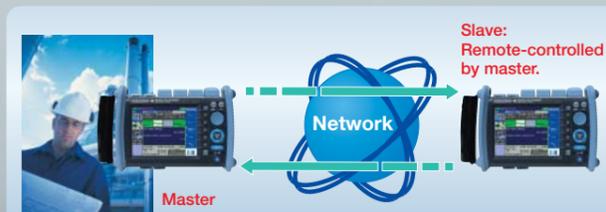
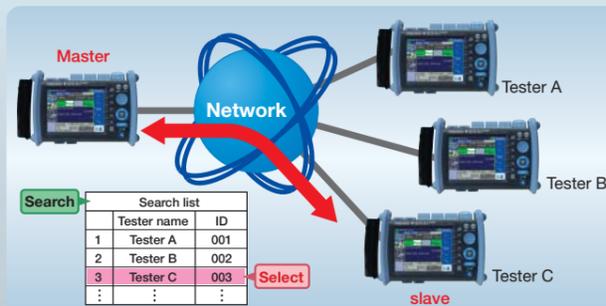
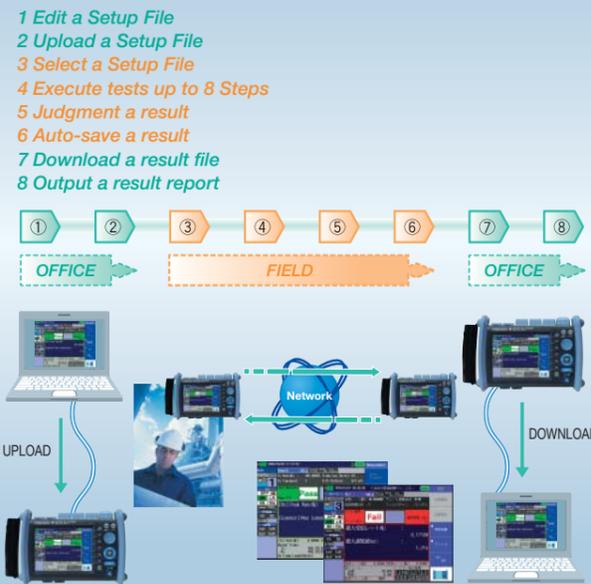
- Optical power monitor
- Optical power meter (Optional)
- Receiving clock deviation measurement
- Link down detection
- LFS generation/detection



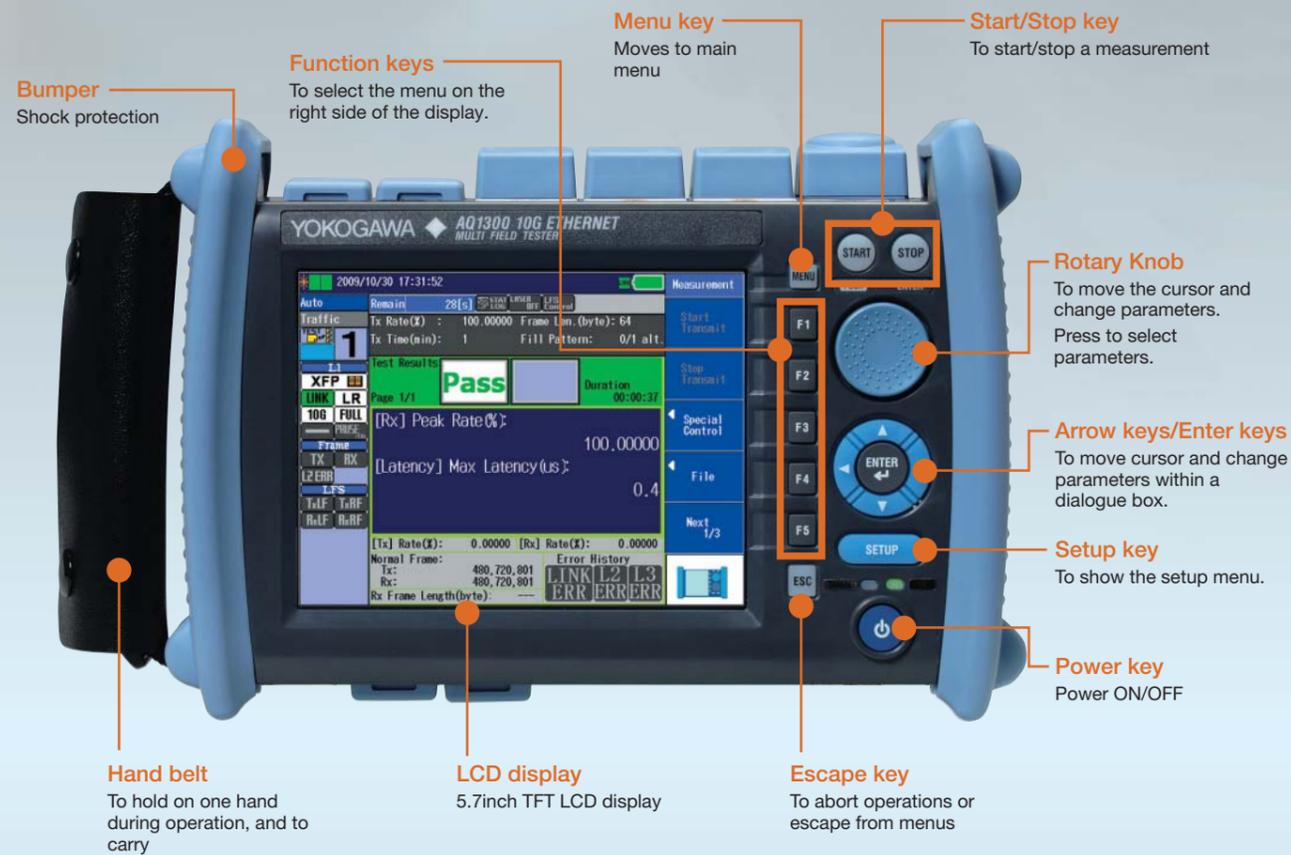
Logging function

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

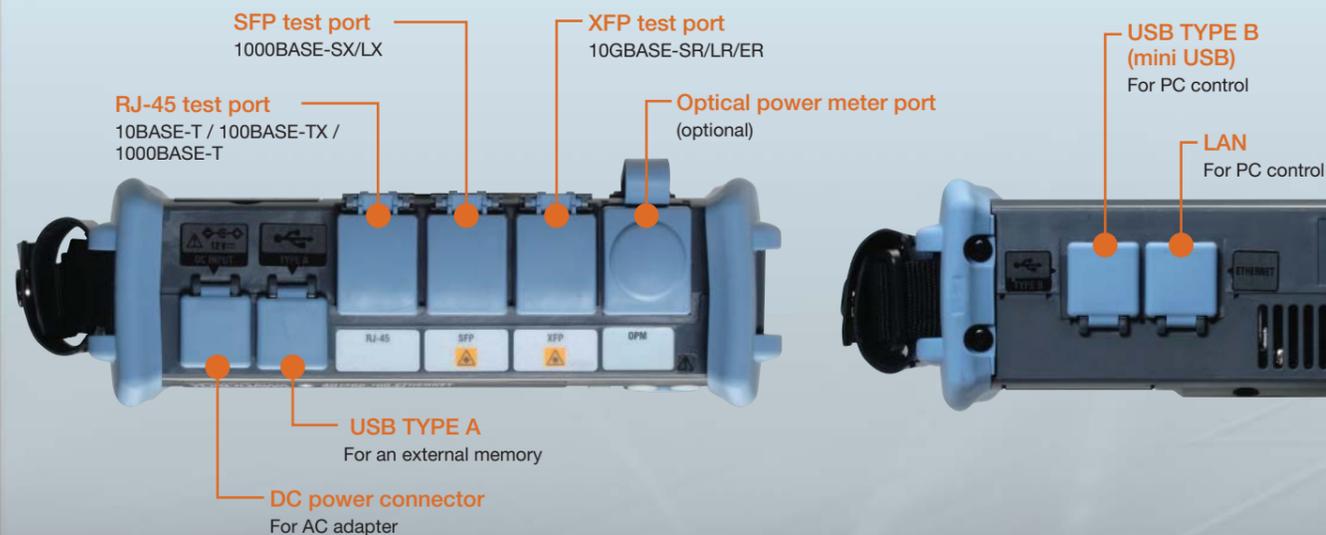
- Statistics log can be recorded every second for up to four hours.



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, 10GBASE-SR, 10GBASE-LR, 10GBASE-ER |
| | 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, 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) With the remote-GUI software (Windows) attached as an accessory |
| | Remote desktop | |

Layer-1 measurement function

| | | |
|-----------------------------|-------------------|--|
| Receiving clock measurement | measurement range | -100 to +100ppm |
| | Resolution | 0.1ppm |
| Optical output interruption | | Optical output interruption and recovery |
| LFS generation | Manual | Continuous transmission (Start/Stop) |
| | Auto | 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 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, Remote GUI software, Users manual) Operation guide Battery pack AC adapter Hand belt |
| | Optional | 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

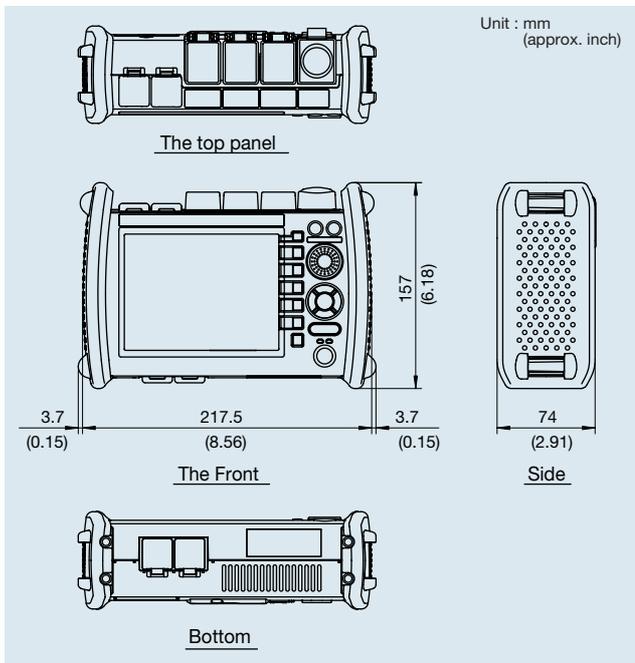
| Model | Suffix Code | Description |
|---------------------|-------------|---------------------------------|
| AQ1300 | | AQ1300 MFT-10GbE |
| Language | -HJ | English |
| Power cord | -D | UL/CSA standard |
| | -F | VDE standard |
| | -R | AS standard |
| | -Q | BS, Singapore Standard |
| | -H | GB 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 |
| 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)

YOKOGAWA ◆

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