User's Manual

AQ1300/AQ1301 Setup Software

YOKOGAWA
Yokogawa Test & Measurement Corporation

IM AQ1300-61EN
9th Edition

Thank you for purchasing the AQ1300/AQ1301 ETHERNET Multi Field Tester.
This user's manual explains the features, operating procedures, and handling precautions of the AQ1300/AQ1301 setup software. To ensure correct use, please read this manual thoroughly before operation. Keep this manual in a safe place for quick reference in the event that a question arises.
This manual is one of five AQ1300/AQ1301 manuals. Please read all the manuals.

List of Manuals

Manual Title	Manual No.	Description
AQ1300/AQ1301 ETHERNET Multi Field Tester Operation Guide	IM AQ1300-02EN	This guide focuses on the handling precautions, basic operations, and specifications of the AQ1300/AQ1301.
AQ1300/AQ1301 ETHERNET Multi Field Tester User's Manual (included in CD)	IM AQ1300-01EN	This manual explains all the AQ1300/AQ1301 features and how to use them.
AQ1300/AQ1301 ETHERNET Multi Field Tester Communication Interface User's Manual (included in CD)	IM AQ1300-17EN	The manual explains the AQ1300/AQ1301 communication interface features and instructions on how to use them.
AQ1300 MFT 10GbE Setup Software User's Manual (included in CD)	IM AQ1300-61EN	This manual. It explains how to use a PC to create AQ1300/AQ1301 setup files, display result files, and generate CSV files.
AQ1300/AQ1301 Remote Control Software User's Manual (in CD)	IM AQ1300-63EN	This manual explains how to remotely control the AQ1300/AQ1301 from a PC.

The "-EN" in the manual number is the language code.

Notes

- **This manual (IM AQ1300-61EN 7th edition) applies to AQ1300/AQ1301 Setup Software version R1.10.01.001 and later.**
  If you are using an older version, you will not be able to use all the features described in this manual.
  Check the software version of your product with the version information. For information on how to view the version information, see section 5.3.
- The contents of this manual are subject to change without prior notice as a result of continuing improvements to the instrument's performance and functionality. The figures given in this manual may differ from those that actually appear on your screen.
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Conventions Used in This Manual

Notes

The notes and cautions in this guide are categorized using the following symbols.

Note Calls attention to information that is important for proper operation of the instrument.

Symbols and Conventions Used in Procedural Explanations

The contents of the procedural explanations are indicated using the following symbols.

Procedure Carry out the procedure according to the step numbers. All procedures are written under the assumption that you are starting operation at the beginning of the procedure, so you may not need to carry out all the steps in a procedure when you are changing the settings.

Explanation This section describes the setup items and the limitations regarding the procedures.

Character Notations

Bold formatting indicates menus, buttons, etc. that the procedure requires you to click or interface terms.

Notes about Using This Software

Storing the CD

Keep the original CD for this software in a safe place. To use this software, install it on a PC hard disk, and run it from the PC.

Using the Software

The software may stop functioning when the PC is in standby mode. Disable standby mode when you use this software.

About This Manual

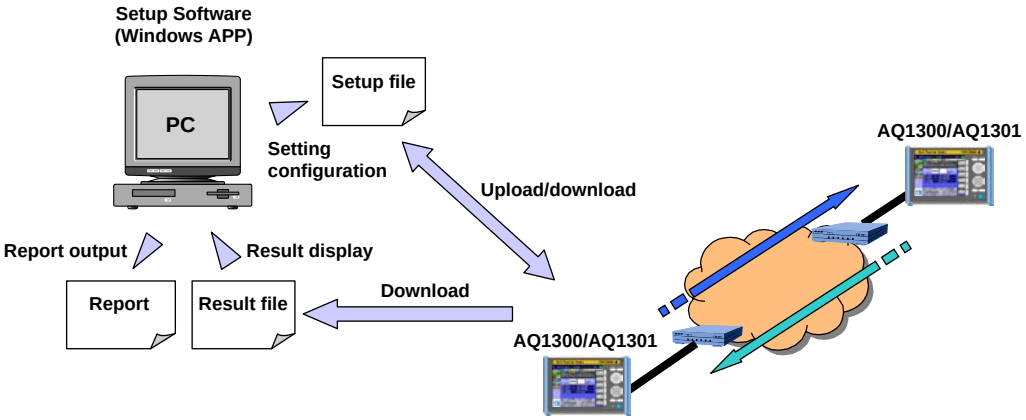
This manual contains the following chapters.
Chapter 1 explains test configuration, system requirements, and software features and screens.
Chapter 2 explains how to start and close the software.
Chapter 3 explains the basic operations for configuring items and how to use the features that are only available in the setup software.
Chapter 4 explains file operations.
Chapter 5 explains screen operations.

Contents

1.1 Test Configuration

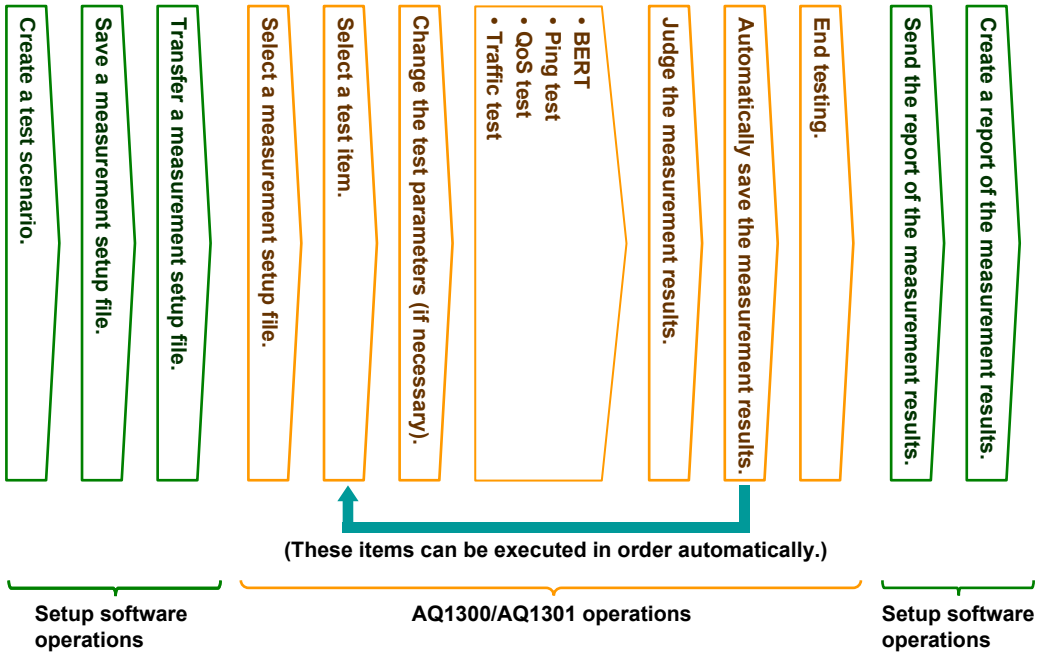
Interaction between the Setup Software and the AQ1300/AQ1301

Create a test scenario with the setup software PC application, and then save the scenario to a setup file. Upload the saved setup file to the AQ1300/AQ1301 (AQ1300 and AQ1301), and then use the test scenario to perform a test. The test results are saved to a result file. Use the PC to download the result file, and then use the setup software to print a report.
You can upload and download files using the Ethernet (FTP), USB storage media, and USB memory.



- After loading a setup file, begin measurement simply by pressing START.
- You can also change the parameters based on the loaded settings.

Operation Example (for Auto Mode)



For information on how to operate the AQ1300/AQ1301, see the user's manual, IM AQ1300-01EN.

System Requirements

PC

CPU: 1 GHz or higher
Memory: 256 MB or more
HDD: 500 MB free space or more
CD drive (required when installing the software)

Display

XGA (1024 × 768 pixels) or higher

Operating System

Windows XP, Windows Vista, or Windows 7

Communication Ports

- **Ethernet**
  An Ethernet port that supports 10BASE-T or 100BASE-TX
- **USB**
  A USB port that supports USB Revision 1.1 or higher

1.2 List of Features

The following table shows the differences between the setup software's test items and the settings that can be made on the AQ1300/AQ1301.

Common Settings

Software: The setup software. **A:** Auto test. **R:** Auto(Remote) test. **M:** Manual test.
Yes: Supported. No: Not supported.

Feature		Description	Software Test Mode			AQ 1300 Series
			A	R	M	
Port settings	Source	Test settings				
		• Test interface	Yes	Yes	Yes	Yes
		• Test layer				
		• Add UDP to Tx frame	Yes	Yes	No	Yes
		• Use jumbo frame				
		Link settings				
		• Negotiation	Yes	Yes	Yes	Yes
		• Advertisement	No	No	Yes	Yes
		• Speed	Yes	Yes	Yes	Yes
		• Duplex				
		• Flow control				
		• MDI				
		• Configuration for Link partner acquisition				
		• Automatic RF response	No	No	Yes	Yes
		• Continue transmission when a linkdown is detected				
		• Tx clock source[1]				
		Address settings				
		• MAC address	Yes	Yes	Yes	Yes
		• VLAN				
		• IPv4				
		• IPv6				
		• L4 (UDP port number)	Yes	Yes	No	Yes
		Emulation settings[2]	No	No	Yes	Yes
		• IPv4				
		• IPv6				
	Destination	Test settings				
		• Test interface	No	Yes	No	Yes
		Link settings				
		• Negotiation	No	Yes	No	Yes
		• Speed				
		• Duplex				
		• Flow control				
		• MDI				
		• Configuration for Link partner acquisition				
		Address settings				
		• MAC address	Yes	Yes	Yes	Yes
		• IPv4				
		• IPv6				
		• L4 (UDP port number)	Yes	Yes	No	Yes
Table settings	MAC address table	Number of elements: 1 to 16	Yes	Yes	Yes	No
		MAC address 1 to MAC address 16				
	IPv4 address table	Number of elements: 1 to 16	Yes	Yes	Yes	No
		IPv4 address 1 to IPv4 address 16				
	IPv6 address (64 bits) table	Number of elements: 1 to 16	Yes	Yes	Yes	No
		IPv6 address 1 to IPv6 address 16				
	Frame length table	Number of elements: 1 to 16	Yes	Yes	Yes	No
		Frame length 1 to frame length 16				

1.2 List of Features

Feature		Description	Software Test Mode			AQ 1300 Series
			A	R	M	
Table settings	VLAN table	Number of elements: 1 to 16	Yes	Yes	Yes	No
		VLAN 1 to VLAN 16				
		• User priority (CoS)				
		• VLAN ID				
	Tx rate (%) table	Number of elements: 1 to 16	Yes	Yes	Yes	No
		Tx rate 1 to Tx rate 16				
	Frames table	Number of elements: 1 to 16	Yes	Yes	Yes	No
		Send count 1 to send count 16				
	Tx time table	Number of elements: 1 to 16	Yes	Yes	Yes	No
		Tx time 1 to Tx time 16				
	QoS table	Number of elements: 1 to 16	Yes	Yes	Yes	No
		QoS setting 1 to QoS setting 16				
		• CH1 to CH4: Used				
		• CH1 to CH4: QoS				
		• CH1 to CH4: Frame length				
		• CH1 to CH4: Tx rate				
Option settings	Advanced settings	Select setup file after selecting Auto	Yes	No	No	Yes
		Allow to change the test setup	Yes	Yes	No	Yes
		Synchronize measurement and transmission controls	Yes	Yes	Yes	Yes
		Wait time before starting transmission	Yes	Yes	Yes	Yes
		Remove test tag from test frame	No	No	Yes	Yes
		Procedure function	Yes	Yes	No	Yes
		• Execution type				
		• First test item number				
		• Continuance confirmation				
		• Interval between test items				
		• Save the file system[3]				
	Measurement settings	Measurement start condition	Yes	Yes	Yes	Yes
		• Request ARP/NDP				
		• Do not start the measurement when the link is down				
		Measurement stop condition	Yes	Yes	Yes	Yes
		• When linkdown is detected				
		• When an L2 error is detected				
		• When an L3 error is detected				
		• When a test fail judjment is detected[3]	Yes	Yes	No	Yes
		Operation after measurement stops	Yes	Yes	No	Yes
		• Display the judge pass or fail result				
		• Save measurement results				
		• Save measurement results and statistics log	No	No	Yes	Yes
		Synchronization control setting	Yes	Yes	Yes	Yes
		• Try synchronizing with the other device				
		Others[3]	Yes	Yes	Yes	Yes
		• Subtracting the fixed delay time of the opposing				
File name settings	Results file name	File name format	Yes	Yes	Yes	Yes
		Comment				
		Specify a directory name				
		Directory name format				
		Directory name				
	Setup file name	File name format	Yes	Yes	Yes	Yes
		Comment				
Statistics log settings	Statistics log settings	Execute statistics logging	No	No	Yes	Yes
		Execute long logging				
		Max logging time				
		Registration setting				
		Result of Statistics Log are saved[3]				

Feature		Description	Software Test Mode A	Software Test Mode R	Software Test Mode M	AQ 1300 Series
Statistics log settings	Statistics log settings	Table components	No	No	Yes	Yes
		• Items 1 to 4: Valid flag				
		• Items 1 to 4: Statistics group				
		• Items 1 to 4: Statistics items				
		• Items 1 to 4: Statistics current[3]				
Statistics display items settings	Test result indications	Test result setting	Yes	Yes	Yes	Yes
		• Rate unit switching				
		• Traffic mode display switching				
		• QoS mode display switching				
		• Summary display switching				
	Tx/Rx comparison display	Page: 1 and 2; Line: 0 to 19	Yes	Yes	Yes	Yes
		• White space identification				
	Custom display	Page: 1 and 2; Line: 0 to 19	Yes	Yes	Yes	Yes
		• White space identification				
		• Group				
		• Item				
		• Master/slave				
	Detailed statistics display	Pages: 1 to 32	Yes	Yes	Yes	Yes
		• Identify blank pages				
		• Group				

1 In loopback mode, the operation of the Tx clock source is fixed to operate as the Rx clock, regardless of the settings.

2 In loopback mode, the ping and ping6 reply operations are set to OFF, regardless of the settings.

3 This feature is supported in firmware version (FW Ver.) R1.08.01.001 and later.

Select Test Item Settings

Software: The setup software. **A:** Auto test. **R:** Auto(Remote) test. **M:** Manual test.

Yes: Supported. No: Not supported.

Feature			Description	Software Test Mode A	Software Test Mode R	Software Test Mode M	AQ 1300 Series
Select test item settings	Test items		Test name	Yes	Yes	Yes	No
			Source (test mode)	Yes	Yes	Yes	No
			Destination (test mode)	No	Yes	No	No
			Test direction	No	Yes	No	No
			Test item addition and registration	Yes	Yes	No	No
Traffic	Auto						
		Tx rate	Tx rate (%)	Yes	Yes	No	Yes
		Tx mode	Tx mode				
			Number of frames				
			Time (min)				
		Frame length	Variable frame length setting	Yes	Yes	No	Yes
			Step				
			Minimum value				
			Maximum value				
			Frame length				
		Fill pattern	Fill pattern	Yes	Yes	No	Yes
		Pass/fail judgment settings	Link, Tx, Rx	Yes	Yes	No	No
			• L1 error: Link down detection				
			• L1 error: LF or RF reception				
			• L2 error: Error frame reception				
			• L3 error: Payload error detection				
			• L3 error: Sequence error detection				
			• Incorrect number of bytes				
			• Incorrect number of frames				
			• Maximum Rx rate				
			• Average Rx rate				
			• Maximum latency time				

Feature			Description	Software Test Mode A	Software Test Mode R	Software Test Mode M	AQ 1300 Series
Traffic	Manual						
		Tx settings	Variable frame length setting	No	No	Yes	Yes
			Variable field setting				
			Payload check offset setting				
		Tx rate settings	Traffic format	No	No	Yes	Yes
			Tx rate				
			Burst setting				
		Tx mode settings	Tx mode	No	No	Yes	Yes
			Number of frames				
			Time (s)				
		Rx settings	Oversize threshold	No	No	Yes	Yes
			Payload error detection				
			Target frame for statistics				
			Rx base filter setting				
		Frame builder	Number of frames: 1	No	No	Yes	No
Loopback	Loopback settings		Loopback target	Yes	Yes	Yes	Yes
			L4 port number is also switch	No	No	Yes	Yes
QoS	Auto						
		Tx mode	Tx mode	Yes	Yes	No	Yes
			Number of frames				
			Time (min)				
		Fill pattern	Fill pattern	Yes	Yes	No	Yes
		QoS field	Field setting	Yes	Yes	No	Yes
		Channel setting	CH1 to CH4	Yes	Yes	No	Yes
			• Use				
			• QoS pattern				
			• Frame length				
			• Tx rate (%)				
		Pass/fail judgment settings	Link, Tx, Rx	Yes	Yes	No	No
			• L1 error: Link down detection				
			• L1 error: LF or RF reception				
			• L2 error: Error frame reception				
			• L3 error: Payload error detection				
			• Incorrect number of bytes				
			• Incorrect number of frames				
			• Maximum Rx rate				
			• Average Rx rate				
			• Maximum latency time				
			QoS channel setting: CH1 to CH4	Yes	Yes	No	No
			• L3 error: Payload error detection				
			• L3 error: Sequence error detection				
			• Incorrect number of bytes				
			• Incorrect number of frames				
			• Maximum Rx rate				
			• Average Rx rate				
			• Maximum latency time				
	Manual						
		Tx QoS settings	Tx channel (1 to 8)	No	No	Yes	Yes
			• Tx rate (%)				
			• Variable frame length setting				
			• Tx rate setting				
			Payload check offset setting	No	No	Yes	Yes
		Tx mode settings	Tx mode	No	No	Yes	Yes
			Number of frames				
			Time (s)				
		Rx QoS settings	Rx QoS settings	No	No	Yes	Yes
			Classification type				
			Channel field setting				
			Rx channel (1 to 8)				
			Use CH8 as other channel				

Feature			Description	Software Test Mode			AQ 1300 Series
				A	R	M	
QoS		Rx settings	Oversize threshold	No	No	Yes	Yes
			Payload error detection				
			Target frame for statistics				
			Rx base filter setting				
		Frame builder	Number of frames: 8	No	No	Yes	No
		Emulate settings	Source MAC	No	No	Yes	Yes
			Destination MAC				
			IPv4				
Ping	Destination[1]			Yes	Yes	Yes	Yes
	Source[2]			No	No	No	No
	Auto						
		Transmission interval	Transmission interval	Yes	Yes	No	No
		Tx mode settings	Tx mode				
			Number of frames				
			Time (min)				
		Frame length	Frame length	Yes	Yes	No	No
		Pass/fail judgment settings	Ping settings	Yes	Yes	No	No
			• Frame loss detection				
			• Maximum response time				
	Manual						
		Tx settings	Frame length	No	No	Yes	Yes
			Tx mode				
			Number of frames				
			Time (s)				
			Transmission interval				
			Timeout				
BERT	Auto						
		Tx rate settings	Tx rate (%)	Yes	No	No	Yes
		Tx mode settings	Tx mode				
			Number of frames				
			Time (min)				
		Frame length	Frame length				
		Pass/fail judgment settings	Bit error detection	Yes	No	No	No
			BART checked byte doesn't exist				
	Manual						
		Tx settings	Variable frame length setting	No	No	Yes	Yes
		Tx rate settings	Traffic format	No	No	Yes	Yes
			Tx rate				
			Burst setting				
		Tx mode settings	Tx mode	No	No	Yes	Yes
			Number of frames				
			Time (s)				
		BERT Rx settings	Oversize threshold	No	No	Yes	Yes
			Include error frames in BER test				
			Timeout period for syncloss				
			Start pattern comparison from payload of Tx frame				
			Offset				
			Rx base filter setting				
		Frame builder	Number of frames: 1	No	No	Yes	No

1 This is set automatically when the test layer is L2 or L3-IPv6. You cannot set it.

2 The port settings are displayed.

Common Settings for RFC2544 Testing

Feature		Description	Software	AQ1300/ AQ1301
Port settings	Source	Test settings	Yes	Yes
		• Test interface		
		• Test layer		
		Link settings	Yes	Yes
		• Negotiation		
		• Speed		
		• Duplex		
		• Flow control		
		• MDI		
		• Configuration for Link partner acquisition		
		Address settings	Yes	Yes
		• MAC address		
		• VLAN		
		• IPv4		
		• IPv6		
		• L4 (UDP port number)		
	Destination	Address settings	Yes	Yes
		• MAC address		
		• IPv4		
		• IPv6		
Table settings	MAC address table	Number of elements: 1 to 16	Yes	No
		MAC address 1 to MAC address 16		
	IPv4 address table	Number of elements: 1 to 16	Yes	No
		IPv4 address 1 to IPv4 address 16		
	IPv6 address (64 bits) table	Number of elements: 1 to 16	Yes	No
		IPv6 address 1 to IPv6 address 16		
	VLAN table	Number of elements: 1 to 16	Yes	No
		VLAN 1 to VLAN 16		
		• User priority (CoS)		
		• VLAN ID		
Option settings	Advanced settings	Select setup file after selecting Auto	Yes	No
		Allow to change the test setup		
	Measurement settings	Measurement start condition	Yes	No
		• Request ARP/NDP		
		• Do not start the measurement when the link is down		
		Measurement stop condition	Yes	No
		• When linkdown is detected		
		• When an L2 error is detected		
		• When the test result produces a fail judgment		
		Operation after measurement stops	Yes	No
		• Display the judge pass or fail result		
		• Save measurement results		
		• Save measurement log		
		Others[1]	Yes	Yes
		• Subtracting the fixed delay time of the opposing		
File name settings	Results file name	File name format	Yes	Yes
		Comment		
		Specify a directory name		
		Directory name format		
		Directory name		
	Setup file name	File name format	Yes	Yes
		Comment		

Feature		Description	Software	AQ1300/ AQ1301
Test result display settings	Test result display settings	Summary display switching	Yes	Yes
		Throughput test	Yes	Yes
		• Rate unit switching		
		Latency test	Yes	Yes
		• Latency method switching		
		Frame loss rate test[2]	—	—
		Back to back test[2]	—	—
		Packet jitter test	Yes	Yes
		• Display of maximum packet delay variation		
		• Display of minimum packet delay variation		
		• Display of percentile packet delay variation		

1 This feature is supported in firmware version (FW Ver.) R1.08.01.001 and later.

2 Only the item is displayed.

RFC2544 Test Item Settings

Feature		Description	Software	AQ1300/ AQ1301
Test item settings	Test information	Test name	Yes	Yes
		Customer name		
		Operator name		
		Comment		
	Test items	Throughput test	Yes	Yes
		Latency test		
		Frame loss rate test		
		Back to back test		
		Packet jitter test		
	Frame length settings	64 byte	Yes	Yes
		128 byte		
		256 byte		
		512 byte		
		1024 byte		
		1280 byte		
		1518 byte		
		User setting 1	Yes	Yes
		• User definition 1		
		• Frame length		
		User setting 2	Yes	Yes
		• User definition 2		
		• Frame length		
		User setting 3	Yes	Yes
		• User definition 3		
		• Frame length		
	Frame Setting	QoS setting	Yes	Yes
		• Field specification		
		• Value		
		Payload setting	Yes	Yes
		• Fill pattern		
Throughput test	Throughput test	Test duration (in seconds)	Yes	Yes
		Number of trials	Yes	Yes
		Test rate	Yes	Yes
		• Initial rate (as a percentage)		
		• Minimum rate (as a percentage)		
		• Maximum rate (as a percentage)		
		• Resolution (as a percentage)		
		• Use acceptable loss		
		• Acceptable loss (as a percentage)		
	Pass/fail judgment	Pass/fail judge	Yes	Yes
		Rate (threshold criterion as a percentage)[1]		

Feature		Description	Software	AQ1300/ AQ1301
Latency test	Latency test	Test duration (in seconds)	Yes	Yes
		Number of trials	Yes	Yes
		Test rate	Yes	Yes
		• Measure using throughput result rate		
		• Test rate (as a percentage)		
	Pass/fail judgment	Pass/fail judge	Yes	Yes
		Delay (threshold criterion in µs)[1]		
Frame loss rate test	Frame loss rate test	Test duration (in seconds)	Yes	Yes
		Number of trials	Yes	Yes
		Test rate	Yes	Yes
		• Initial rate (as a percentage)		
		• Perform step-down measurement		
		• Step-down rate		
	Pass/fail judgment	Pass/fail judge	Yes	Yes
		Loss rate (threshold criterion as a percentage)[1]		
Back to back test	Back to back test	Test duration (in seconds)	Yes	Yes
		Number of trials		
		Resolution (frames)		
	Pass/fail judgment	Pass/fail judge	Yes	Yes
		Number of frames (threshold criterion)[2]		
Packet jitter test	Packet jitter test	Test duration (in seconds)	Yes	Yes
		Number of trials	Yes	Yes
		Test rate	Yes	Yes
		• Measure using throughput result rate		
		• Test rate (as a percentage)		
		Measurement settings	Yes	Yes
		• Test window size		
		• Measurement resolution		
		• Packet delay variation threshold		
	Pass/fail judgment	Pass/fail judge	Yes	Yes
		Packet delay variation value (threshold criterion in ms)[1]		

1 You can configure these settings on the AQ1300/AQ1301 in the detail setup screen of the RFC2544 setup screen. For details, see chapter 8 in the user's manual, IM AQ1300-01EN.

2 This feature is supported in firmware version (FW Ver.) R1.08.01.001 and later.

VLAN Test's Common Settings

This feature is supported in software version R1.09.01.001 and later.

Feature		Description	Software	AQ1300/ AQ1301
Port settings	Source	Test settings	Yes	Yes
		• Test interface		
		• Test layer		
		• Add UDP to Tx frame		
		Link settings	Yes	Yes
		• Negotiation		
		• Speed		
		• Duplex		
		• Flow control		
		• MDI		
		Address settings	Yes	Yes
		• MAC address		
		• VLAN		
		• IPv4		
		• IPv6		
		• L4 (UDP port number)		
	Destination	Address settings	Yes	Yes
		• MAC address		
		• IPv4		
		• IPv6		
Table settings	MAC address table	Number of elements: 1 to 16	Yes	No
		MAC address 1 to MAC address 16		
	IPv4 address table	Number of elements: 1 to 16	Yes	No
		IPv4 address 1 to IPv4 address 16		
	IPv6 address (64 bits) table	Number of elements: 1 to 16	Yes	No
		IPv6 address 1 to IPv6 address 16		
	Frame length table	Number of elements: 1 to 16	Yes	No
		Frame length 1 to frame length 16		
	VLAN table	Number of elements: 1 to 16	Yes	No
		VLAN 1 to VLAN 16		
		• User priority (CoS)		
		• VLAN ID		
File name settings	Results file name	File name format	Yes	Yes
		Comment		
		Specify a directory name		
		Directory name format		
		Directory name		
	Setup file name	File name format	Yes	Yes
		Comment		

VLAN Test

Feature		Description	Software	AQ1300/ AQ1301
Tx Settings	Interval	Test frame transmission interval	Yes	Yes
	Frame length	Tx frame length in bytes		
	Repeat count	VLAN ID group transmission repeat count		
VLAN ID Tx Setting	Not send VLAN ID		Yes	Yes
	VLAN ID list			
	Input VLAN ID	Set from the select list	Yes	No
		Obtain from VLAN ID file	Yes	Yes
		Same as VLAN ID Rx Setting		
VLAN ID Rx Setting	Use as monitor		Yes	Yes
	Target frame			
	VLAN ID list			
	Input VLAN ID	Set from the select list	Yes	No
		Obtain from VLAN ID file	Yes	Yes
		Same as VLAN ID Tx Setting		

Ethernet OAM Test's Common Settings

This feature is supported in software version R1.10.01.001 and later.

Feature		Description	Software	AQ1300/ AQ1301
Port settings	Source	Test settings	Yes	Yes
		• Test interface		
		• Test layer		
		• E-OAM		
		Link settings	Yes	Yes
		• Negotiation		
		• Ability Notification		
		• Speed		
		• Duplex		
		• Flow control		
		• MDI		
		• RF Automatic		
		• Tx is continued while Link is down		
		• Clock Source		
		• Configuration for Link partner acquisition		
		Address settings	Yes	Yes
		• MAC address		
		• VLAN		
		• MD Level		
		Emulate		
		• LT Reply		
		• LB Reply		
	Destination	Address settings	Yes	Yes
		• MAC address		
Table settings	MAC Address table	Number of elements: 1 to 16	Yes	No
		MAC address 1 to MAC address 16		
	Frame length table	Number of elements: 1 to 16	Yes	No
		Frame length 1 to frame length 16		
	VLAN table	Number of elements: 1 to 16	Yes	No
		VLAN 1 to VLAN 16		
		• User priority (CoS)		
		• VLAN ID		
	MEP ID table	Number of elements: 1 to 16	Yes	No
		MEP ID 1 to MEP ID 16		
	Tx time table	Number of elements: 1 to 16	Yes	No
		Tx time 1 to Tx time 16		
Option settings	Advanced settings	Allow to change the test setup	Yes	Yes
	Measurement settings	Measurement stop condition		
		• When linkdown is detected		
		• When an L2 error is detected		
File name settings	Setup file name	File name format	Yes	Yes
		Comment		

Ethernet OAM Test

Feature		Description	Software	AQ1300/ AQ1301
Test item settings	LB test	Destination MAC address	Yes	Yes
		Interval	Yes	Yes
		Tx Mode	Yes	Yes
		• Tx Mode		
		• Frames		
		• Time (min)		
		Frame Length		
	CC test	Domain	Yes	Yes
		• First Rx CCM apply to domain		
		Mentenance Domain Name	Yes	Yes
		• Format		
		• Form		
		• Short MA Name		
		MEP ID	Yes	Yes
		Tx	Yes	Yes
		• Enable		
		• Destination MAC address		
		• Interval		
		• Auto Tx RDI		
		• Tx START Condition		
		Rx	Yes	Yes
		• Enable		
		• Target MEP ID		

Common Settings for Y.1564 Testing

Feature		Description	Software	AQ1300/ AQ1301
Port settings	Source	Test settings	Yes	Yes
		• Test interface		
		• Test layer		
		Link settings	Yes	Yes
		• Negotiation		
		• Speed		
		• Duplex		
		• Flow control		
		• MDI		
		• Direction		
		• Asymmetric Test		
		Address settings	Yes	Yes
		• MAC address		
		• VLAN		
		• IPv4		
		• IPv6		
		• L4 (UDP port number)		
		Emulation Settings	Yes	Yes
		• IPv4		
		• IPv6		
	Destination	Address settings	Yes	Yes
		• MAC address		
		• IPv4		
		• IPv6		
		• UDP		
Table settings	MAC address table	Number of elements: 1 to 16	Yes	No
		MAC address 1 to MAC address 16		
	IPv4 address table	Number of elements: 1 to 16	Yes	No
		IPv4 address 1 to IPv4 address 16		
	IPv6 address (64 bits) table	Number of elements: 1 to 16	Yes	No
		IPv6 address 1 to IPv6 address 16		
	VLAN table	Number of elements: 1 to 16	Yes	No
		VLAN 1 to VLAN 16		
		• User priority (CoS)		
		• VLAN ID		
Option settings	Advanced settings	Select setup file after selecting Y.1564	Yes	No
		Enable to edit with MFT		
		Allow to change the test setup		
	Measurement settings	Enable to edit with MFT	Yes	No
		Measurement start condition		
		• Request ARP/NDP		
		• Do not start the measurement when the link is down		
		Measurement stop condition	Yes	No
		• When linkdown is detected		
		• When an L2 error is detected		
		• When an L3 error is detected		
		• When the test result produces a fail judgment		
		Operation after measurement stops	Yes	No
		• Display the judge pass or fail result		
		• Save measurement results		
		• Save measurement log		
		Others[1]	Yes	Yes
		• Subtract the fixed latency from the result		

Feature		Description	Software	AQ1300/ AQ1301
File name settings	Results file name	File name format	Yes	Yes
		Comment		
		Specify a directory name		
		Directory name format		
		Directory name		
	Setup file name	File name format	Yes	Yes
		Comment		

Y.1564 Test Item Settings

Feature		Description	Software	AQ1300/ AQ1301
Test item settings	Test information	Test name	Yes	Yes
		Customer name		
		Operator name		
		Comment		
	Test items	Configuration Test	Yes	Yes
		• Test Duration		
		• CIR Test Step count, Min. Rate (CIR×n[%])		
		• EIR Test		
		• Policing Test		
		• CBS Test		
		• EBS Test		
		Performance Test		
		• Test Duration		
	Unit Setup	Unit Setup	Yes	Yes
		• Test Rate Unit		
		Frame Delay Valiation Measurement Settings		
		• FDV Measurement		
		• FD Reference		
	Service Setup (Service 1 to Service 8)	Enable	Yes	Yes
		Service Type		
		• Codec Type		
		Payload Pattern		
		Frame Length		
		• MTU		
		• User		
		• EMIX		
		Color		
		• Green		
		• Yellow		
		SLA		
		• CIR (Committed Information Rate)		
		• FLR (Frame Loss Rate)		
		• EIR (Excess Information Rate)		
		• CBS (Committed Burst Size)		
		• EBS (Excess Burst Size)		
		• FD (Frame Delay)		
		• FDV (Frame Delay Variation)		
		• FDV (%ile)[1]		
		Source address settings	Yes	Yes
		Destination address settings		

1 %ile : percentile

1.3 Features

This section will explain the main features that you can only set and operate from the setup software.

Making Items Editable from the AQ1300/AQ1301

Set the items that you want to edit from the AQ1300/AQ1301 to ON. All items that are set to OFF cannot be edited from the AQ1300/AQ1301.
For details, see section 3.2.

Table Settings

Create the following tables for use on the AQ1300/AQ1301.

- MAC address tables
- IPv4 address tables
- IPv6 address (64 bits) tables
- Frame length tables
- VLAN tables
- MEP ID tables
- Tx rate (%) tables
- Frames tables
- Tx time tables
- QoS tables

For details, see section 3.3.

Select Test Item Settings

Specify the test items that are displayed on the AQ1300/AQ1301 “Select Test Item” screen when Auto, Auto(Remote), and RFC2544 tests are performed. You can register up to 8 test items in one setup file (.sd).
For details, see section 3.5.

Pass/Fail Judgment Settings

Set the pass/fail judgment settings for when Auto, Auto(Remote), and RFC2544 tests are performed. The AQ1300/AQ1301 only indicates the pass/fail judgment; you cannot change these settings from the AQ1300/AQ1301.
For details, see section 3.6.

Frame builder

Configure the Tx frames for when Manual tests are performed.
For details, see section 3.7.

VLAN Test

(Software versions R1.09.01.001 and later)
You can set the VLAN ID information (VLAN ID list) by specifying IDs from a select list.
In the list of VLAN test results, you can move to a specific VLAN ID position.
For details, see section 3.9.

E-OAM Test

Ethernet Operation, Administration and Maintenance (hereafter referred to as E-OAM) tests can be performed in compliance with the ITU-T Y.1731 Recommendation and IEEE802.1ag Standard.
This is supported in firmware version R1.10.01.001 and later.

- CC (continuity check) test: Connection check between network devices
- LB (loop back) test: Response check between network devices
- LT (link trace): Link check between network devices

Y.1564 Test

An automated test function in conformity with ITU-T Y.1564, the standard benchmarking methodology for a performance examination of Ethernet service and network systems.

- IR step test
  Measurement of information rate (IR), frame loss (FL), frame transfer delay (FTD), frame delay variation (FDV)
- Burst size test
  Measurement of frame loss (FL), frame transfer delay (FTD), frame delay variation (FDV)
- Service performance test
  Measurement of information rate (IR), frame loss (FL), frame transfer delay (FTD), Frame delay variation (FDV), availability
  (AVAIL)

Registering Setup Files to the Select File Display

Register the setup files that are displayed in the setup file list on the AQ1300/AQ1301 “Select Setup File” screen when Auto, Auto(Remote), and RFC2544 tests are performed. You can register up to 48 setup files to the setup file list (4 pages with 12 files per page).
For details, see section 4.3.

Exporting Statistical Results to .CSV Files

You can export statistical results files (.mr) that you downloaded from the AQ1300/AQ1301 to .CSV files.
For details, see section 4.5.

FTP Client

Use FTP over an Ethernet to transfer files (upload and download) between the AQ1300/AQ1301 and an FTP client.
For details, see section 4.6.

Simple Test Setting Auto Wizard

(Software versions R1.6.1.1 and later)

Follow the instructions in the wizard to create setup data for Auto and Auto(Remote) tests.
For details, see section 4.7.

Select File Display Data Creation Wizard

(Software versions R1.09.01.001 and later)

Follow the instructions in the wizard to register the setup file list that is displayed in the setup file list on the AQ1300/AQ1301 “Select Setup File” screen when Auto, Auto(Remote), RFC2544, and Y.1564 tests are performed.
In this process, you can also register the setup file list to a project. In addition, package files can be created.
For details, see section 4.8.

Managing Projects

(Software versions R1.09.01.001 and later)

A pair consisting of a setup file (.sd) and setup file list (disManage.dmf) or a package file (.dmfz) that contains the pair of files is managed as a project on the PC.
You can specify an AQ1300/AQ1301 connected via USB or LAN and use the Trans. Setup File and Get Result File buttons to automatically transfer these files to their appropriate folders.
Result files (.mr) are saved in a folder identified by the AQ1300/AQ1301 host name or serial number in the project.
For details, see section 4.9.

PDF Export of Statistical Results

(RFC2544 test/Y.1564 test; software versions R1.6.1.1 and later)

You can export statistical results files (.mr) that you downloaded from the AQ1300/AQ1301 to PDF format.

For details, see section 4.10.

Graph Image Export of Statistical Results

(RFC2544 test; software versions R1.6.1.1 and later)

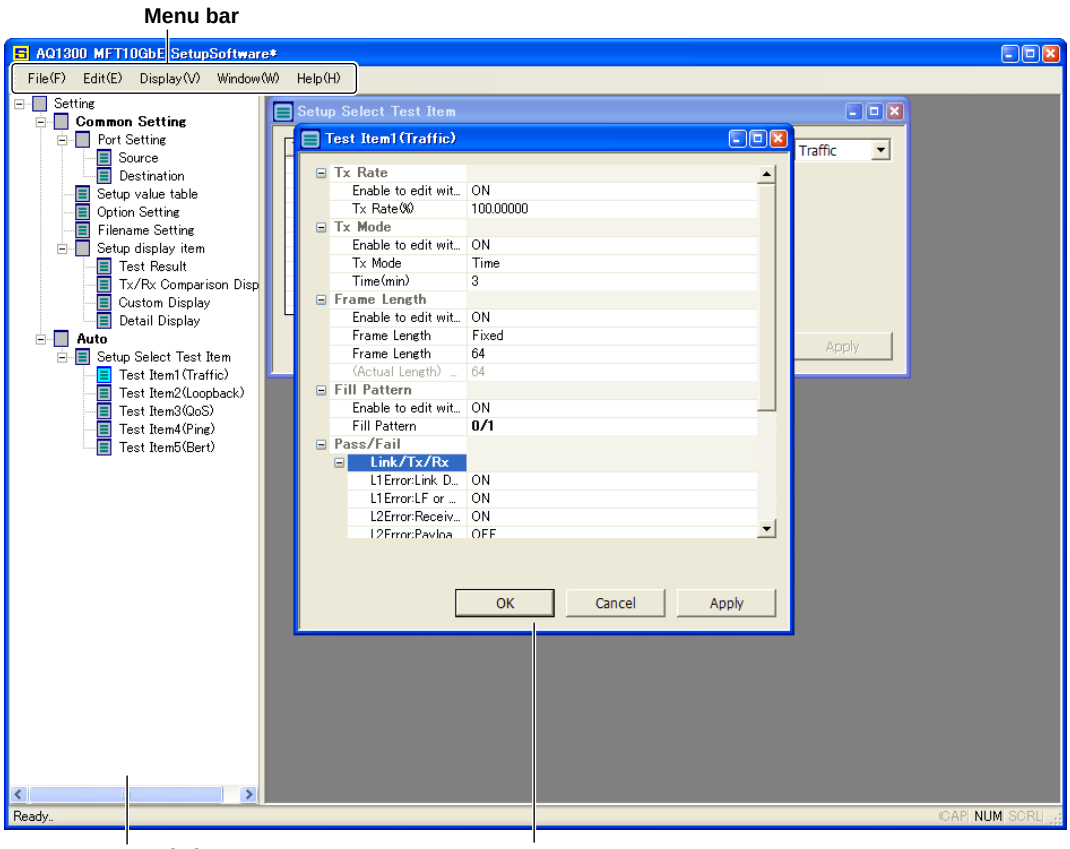
You can export graphs of the statistical results as image files.

An image file is exported for each test item that is displayed in a statistical results file (.mr) when it is opened. The statistical results file must be downloaded from the AQ1300/AQ1301.

For details, see section 4.11.

1.4 Screen Explanation

The setup software screen contains a menu bar, a control view, and an MDI screen.



Control view
Use to select the items that you want to set.

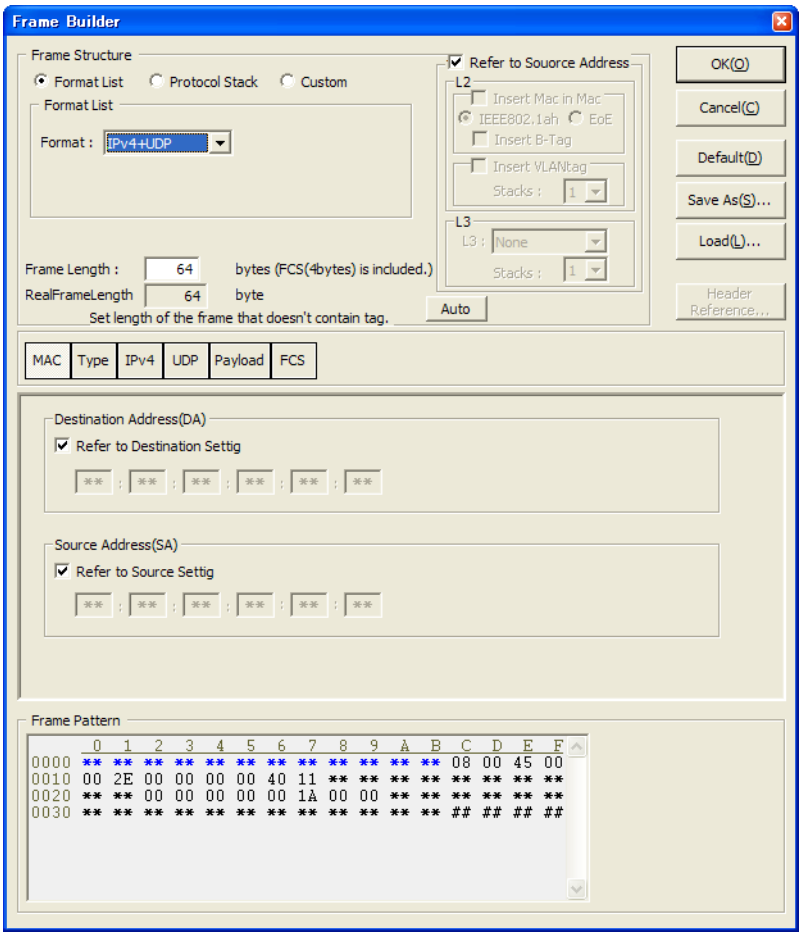
MDI screen
Displays the screens for the items that you select from the control view.

Control View

(Gray)	An item (folder) that you cannot set
(Gray)	An item that you can set
(Blue)	The selected item

The frame builder, FTP client, and Select File Display appear in their own independent screens.

Frame Builder Screen



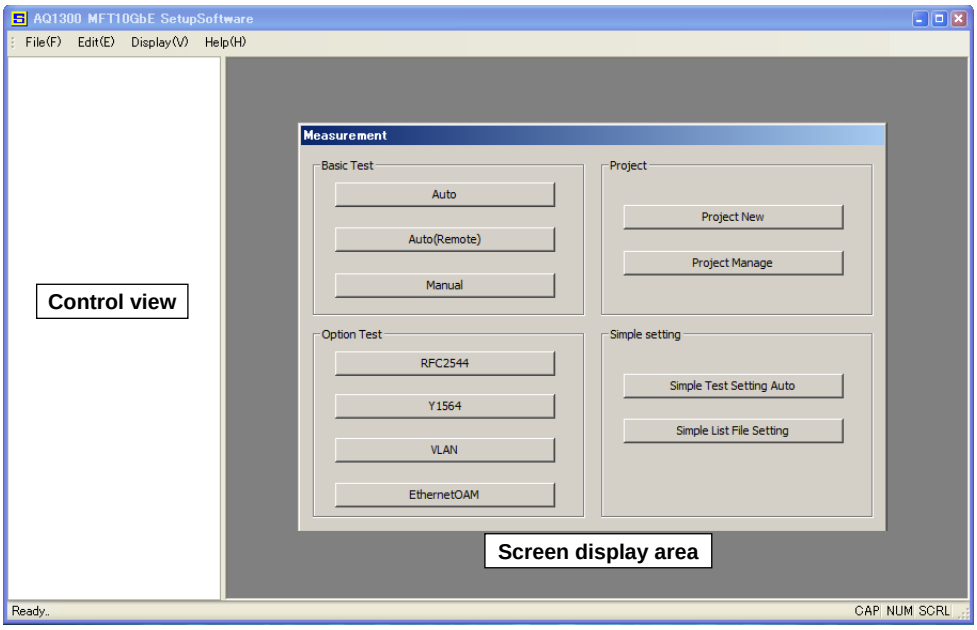
2.1 Starting and Closing the Software

Procedure

Starting the Software

1. Click **Start**, **All Programs**, **yokogawa**, **AQ1300**, and then click **AQ1300/AQ1301 SetupSoftware**.

   The setup software starts, and the Measurement dialog box appears. You can also start the software by double-clicking its shortcut icon on the desktop.



2. From the following items, click an item that you want to set.

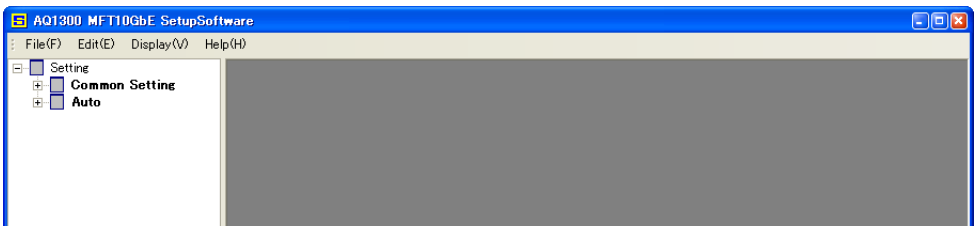
   Basic Test
   - Auto
   - Auto(Remote)
   - Manual

   Option Test
   - RFC2544
   - VLAN
   - Ethernet OAM
   - Y.1564

   To use a wizard to configure the settings, click **Simple Test Setting Auto** or **Simple List File Setting**.

   The dialog box closes, and the setup screen for the test that you selected is displayed.

Display example: Auto test setup screen



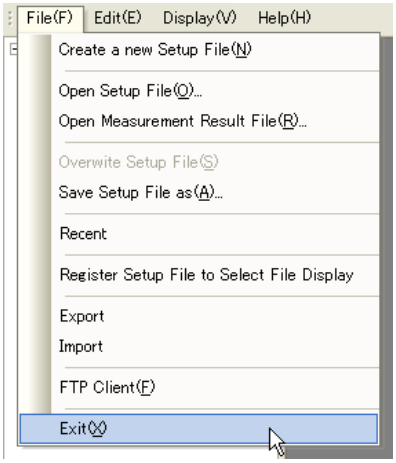
Note

You cannot proceed until you select a test and close the Measurement dialog box.

Closing the Software

On the **File** menu, click **Exit**.

The setup software closes.



Explanation

The Setup Software test items are as follows:

Basic Test

- Auto
- Auto(Remote)
- Manual

Option Test

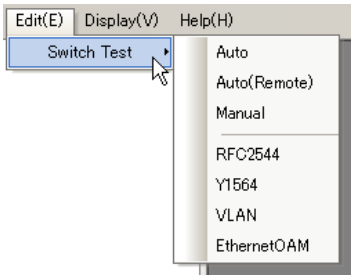
- RFC2544
- VLAN
- Ethenet OAM
- Y.1564

When you start the setup software, select a test. If you do not, you can not proceed.
You can use the Edit menu to change the test. For details, see section 2.2.

2.2 Changing the Test

Procedure

1. On the **Edit** menu, click **Switch Test** and then **Auto, Auto(Remote), Manual, RFC2544,** or **VLAN** to select the test.



2. Follow the appropriate setup procedure to set the selected test.
   For information about the items that you can specify, see section 1.2.

Explanation

The test items are as follows:

Basic Test

- Auto
- Auto(Remote)
- Manual

Option Test

- RFC2544
- VLAN
- Ethenet OAM
- Y.1564

For details on each test, see the user's manual, IM AQ1300-01EN.

Note

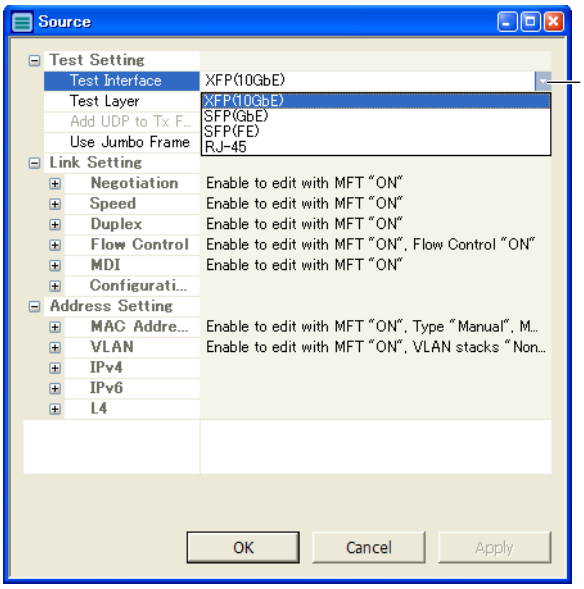
- If you use "Create a new Setup File" (see sections 2.1 and 4.1) to select a test, all the current settings are initialized.
- When you change the test type to RFC2544 or change from RFC2544 to another test type, all the settings are initialized.
- When you change the test type to VLAN or change from VLAN to another test type, all the settings are initialized.
- If you switch to a different test, all but the following settings are initialized.
  Table, file name, statistics log settings, and statistics display items.
- When you change the test type to Y.1564 or change from Y.1564 to another test type, all the settings are initialized.

3.1 Basic Operations

This section explains how to use the setup software to set items. You will mainly use the following three interface elements.

List Boxes

You can use list boxes to select the item that you want to set.

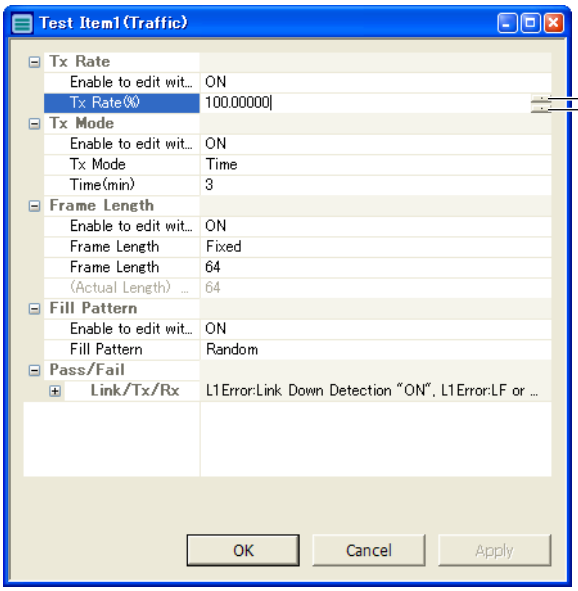


Use the list box to select the item that you want to set.

Button	Description
OK	Applies the settings and closes the screen.
Cancel	Closes the screen without applying the settings.
Apply	Applies the settings without closing the screen.

Spin Boxes

You can use spin boxes to change values.

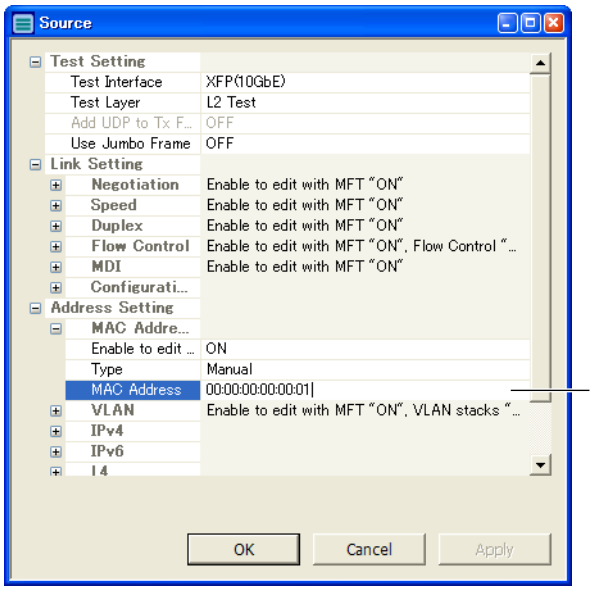


Increases the number

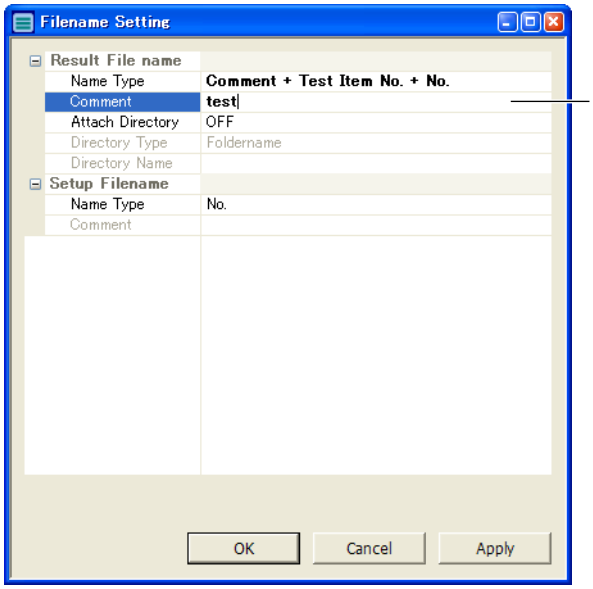
Decreases the number

Text Boxes

You can use text boxes to enter values or strings.



Enter a value in the text box.



Enter a string in the text box.

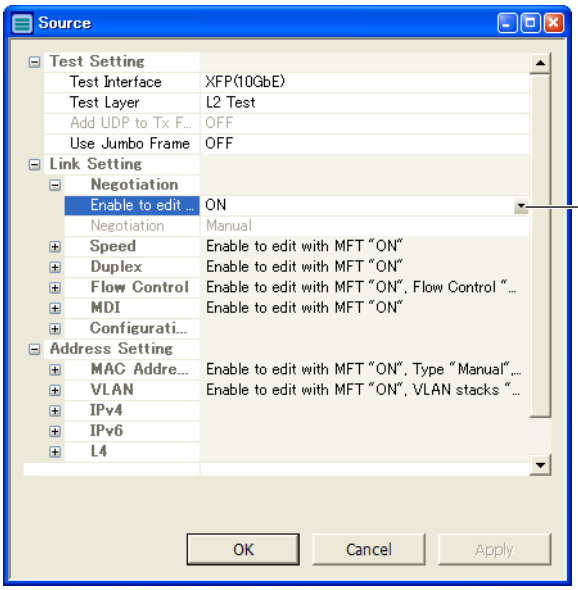
If you enter a value that is out of range, the setting will take a value within the range that is closest to the value you specified.

When you enter a string, any characters outside of the maximum number of characters are not displayed.

3.2 Making Items Editable from the AQ1300/AQ1301

Example of Setting the Source in the Port Settings

On the control view, click **Setting**, **Common Setting**, **Port Setting**, and then click **Source** to display the following screen.



Enable to edit with MFT (ON, OFF)
Set whether or not to make this item editable from the AQ1300/AQ1301.

Making Items Editable from the AQ1300/AQ1301

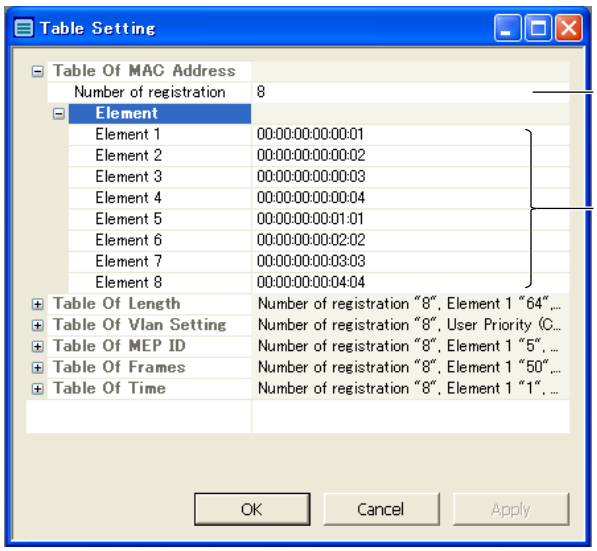
ON: Items that are set to ON can be edited from the AQ1300/AQ1301.
OFF: Items that are set to OFF cannot be edited from the AQ1300/AQ1301.

Note

- You can only set "Enable to edit with MFT" from the setup software. You cannot change this setting from the AQ1300/AQ1301.
- Set this to OFF for any settings that you do not want to be editable from the AQ1300/AQ1301.

3.3 Setting Tables

On the control view, click **Setting**, **Common Setting**, and then click **Setup value table** to display the following screen.



Number of elements to register in the table (0–16)

Table settings

Number of Table Elements to Register

Set the number of table elements that you want to register (0 to 16). If you specify 0, you cannot register any elements to the table.

Table Name	Elements	Other Settings
Table of MAC addresses	1 to 16	
Table of IPv4 addresses	1 to 16	
Table of IPv6 addresses (64 bits)	1 to 16	
Table of length	1 to 16	
Table of VLAN settings	1 to 16	User priority (CoS) and VLAN ID
Table of MEP ID	1 to 16	
Table of Tx rates (%)	1 to 16	
Table of frames	1 to 16	
Table of time	1 to 16	
Table of QoS settings	1 to 16	CH1 to CH4, whether to use or not, QoS, frame length, and Tx rate

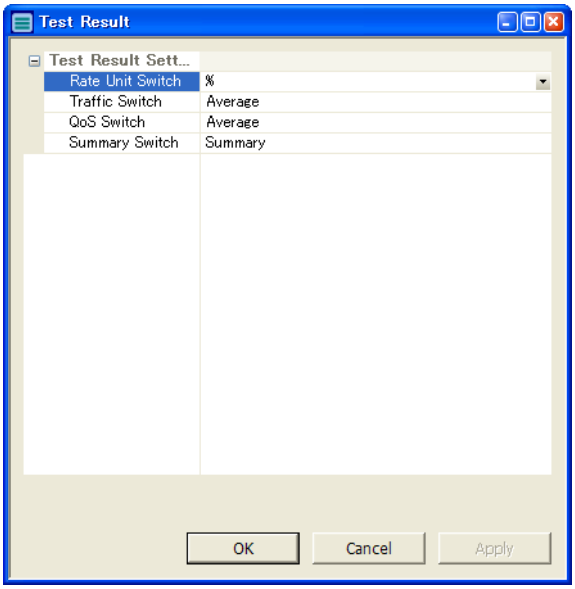
Note

You can only set tables from the setup software. You cannot set them from the AQ1300/AQ1301.

3.4 Setting Statistics Display Items for Auto, Auto(Remote), and Manual Tests

Test Result Indications

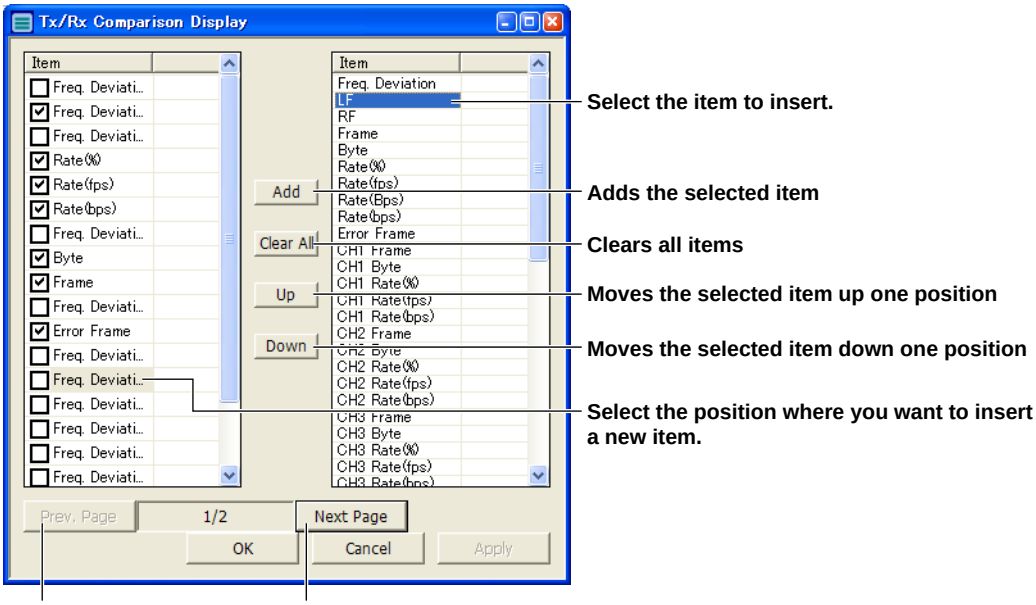
On the control view, click **Setting**, **Common Setting**, **Setup display item**, and then click **Test Result** to display the following screen.



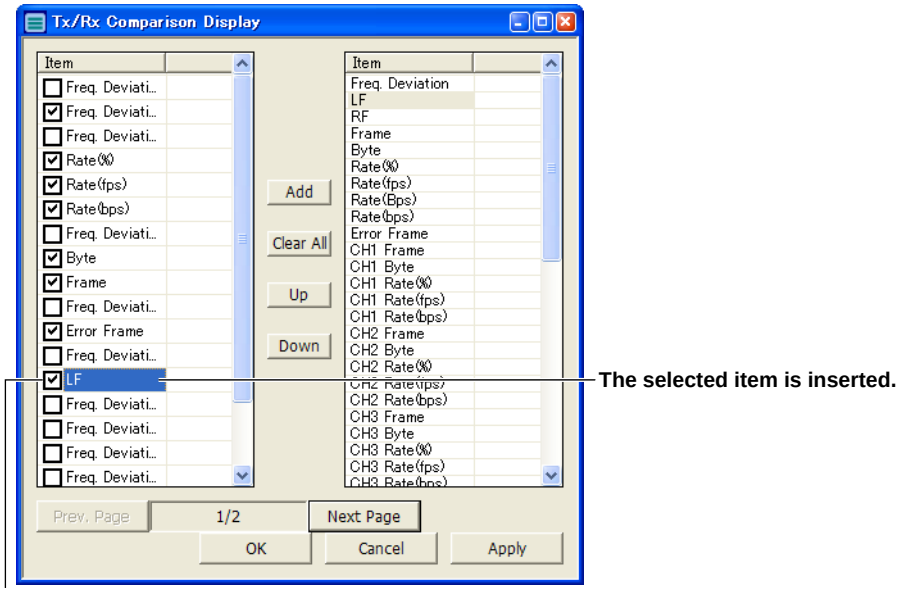
Test Result Setting	Setup Item
Rate unit switch	%, fps, bps
Traffic switch	Maximum, Average
QoS switch	Maximum, Average, Current
Summary switch	Summary, Address

Tx/Rx Comparison Display

1. On the control view, click **Setting**, **Common Setting**, **Setup display item**, and then click **Tx/Rx Comparison Display** to display the Tx/Rx Comparison Display screen.
2. Select the position where you want to insert a new item.
3. Select the item that you want to insert.



4. Click **Add** to insert the selected item.
5. Select the check boxes on the lines that you want to display.



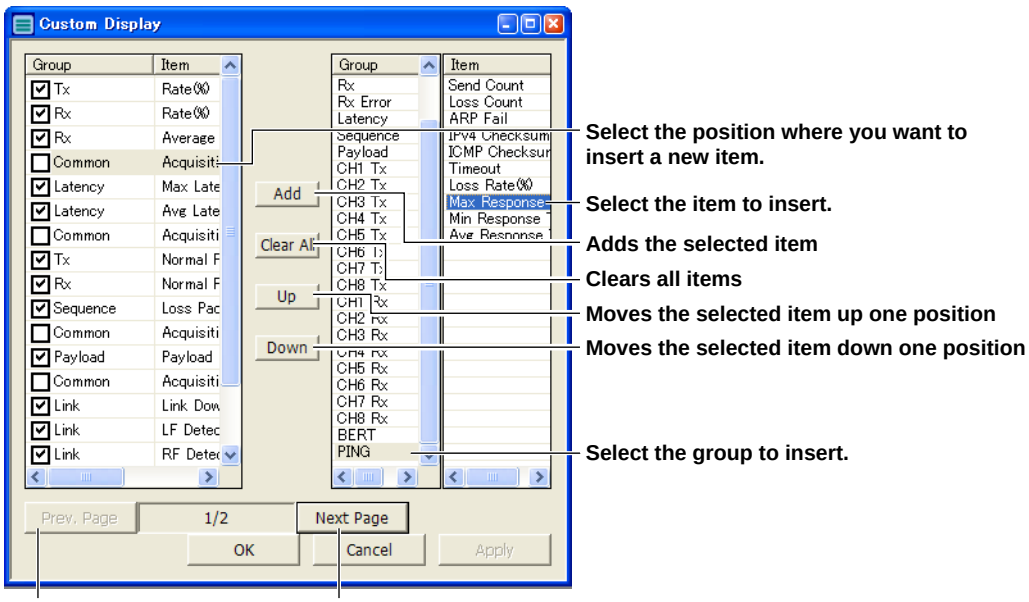
Select the check boxes for the lines that you want to display.
Lines with cleared check boxes are blank.

Note

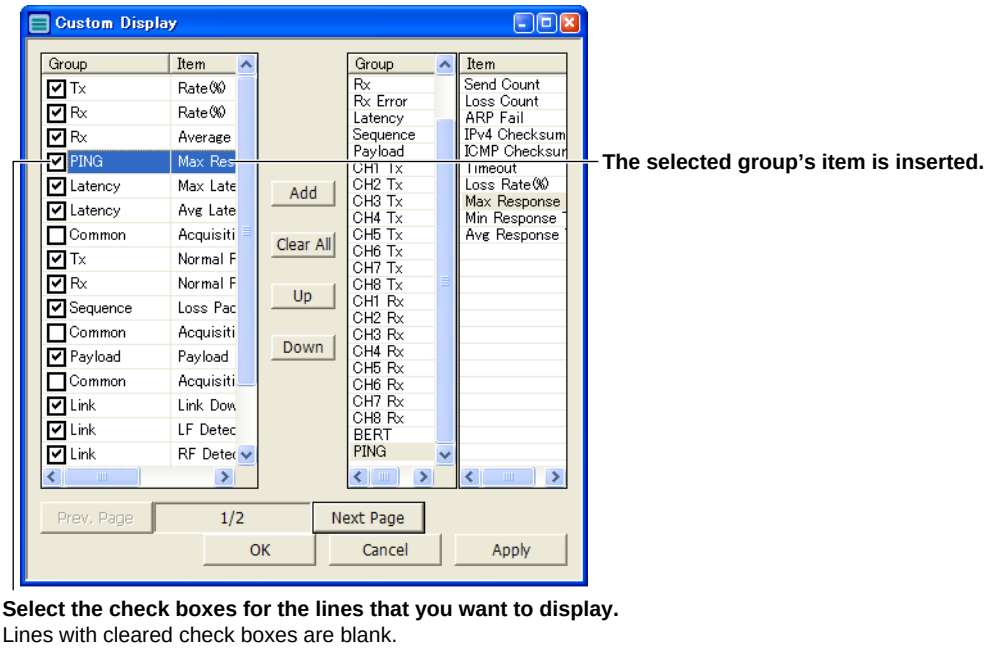
- You can register up to 2 pages of items, 19 items on each page.
- The check boxes of added items are selected automatically.
- When you add an item, the cursor moves to the item below the added item.

Custom Display

1. On the control view, click **Setting**, **Common Setting**, **Setup display item**, and then click **Custom Display** to display the Custom Display screen.
2. Select the position where you want to insert a new item.
3. Select the group that contains the item that you want to insert. The selected group's items are displayed.
4. Select the item that you want to insert.



5. Click **Add** to insert the selected item.
6. Select the check boxes on the lines that you want to display.

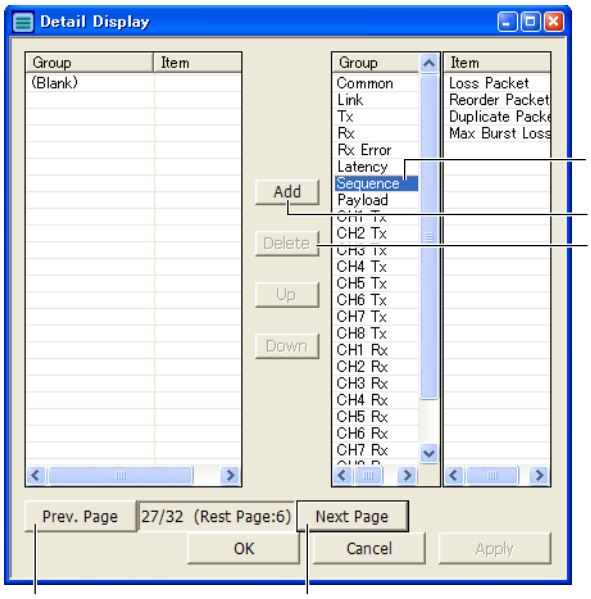


Note

- You can register up to 2 pages of items, 19 items on each page.
- The check boxes of added items are selected automatically.
- When you add an item, the cursor moves to the item below the added item.

Detailed Statistics Display

1. On the control view, click **Setting**, **Common Setting**, **Setup display item**, and then click **Detail Display** to display the Detail Display screen.
2. Use the **Next Page** and **Prev. Page** buttons to select the page where you want to insert a group.
3. Select the group that you want to insert.



Select the group to insert.

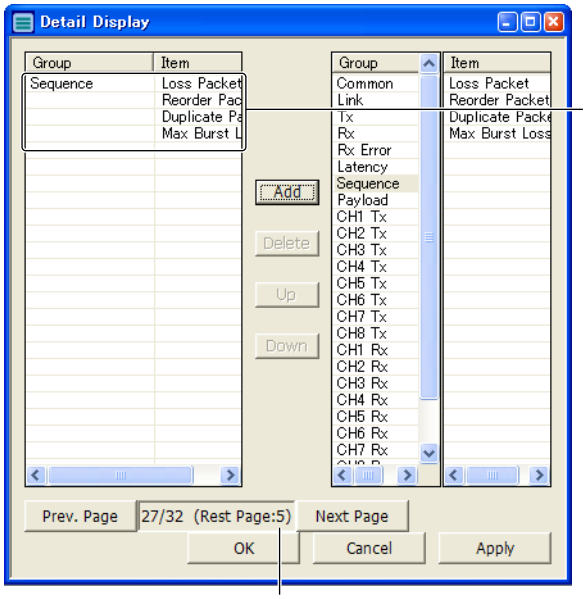
Adds the selected group

Deletes the selected group

Displays the previous page

Displays the next page

4. Click **Add** to insert the selected group's page.



The selected group is inserted.

The inserted group's page is added.

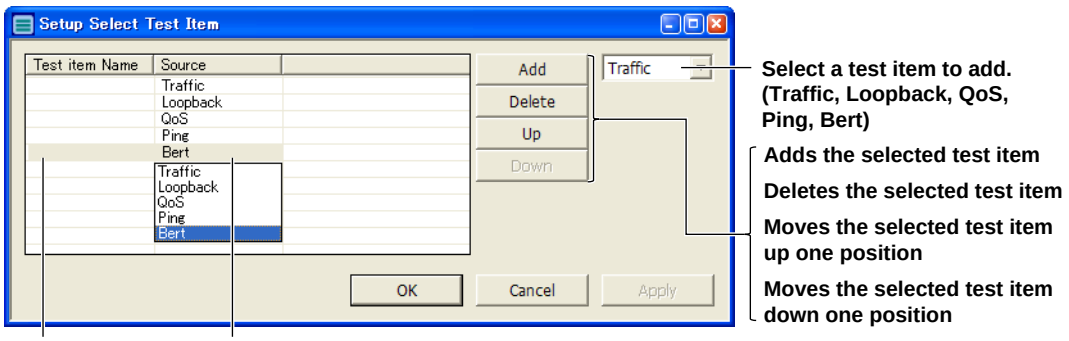
Note

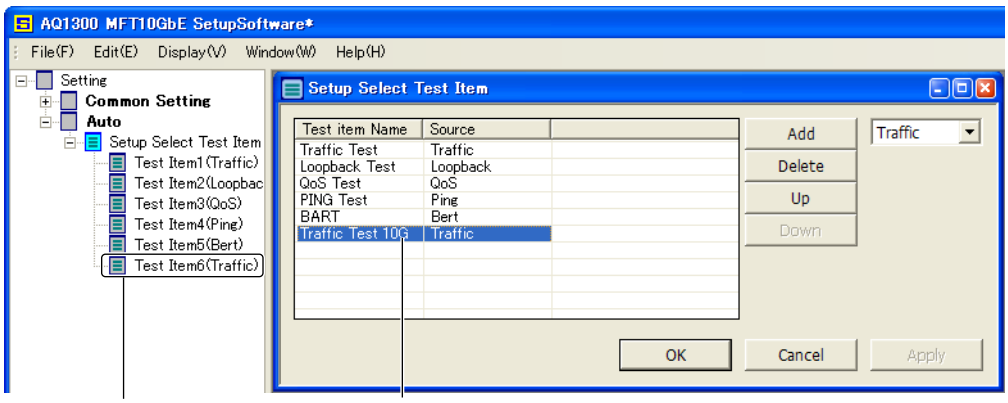
- Each group of detailed statistics is displayed on a single page.
- You can register up to 32 pages.

3.5 Setting Selected Test Items for Auto, Auto(Remote), and RFC2544 Tests

Auto Test

On the control view, click **Setting**, **Auto**, and then click **Setup Select Test Item** to display the following screen.





Number of Test Items

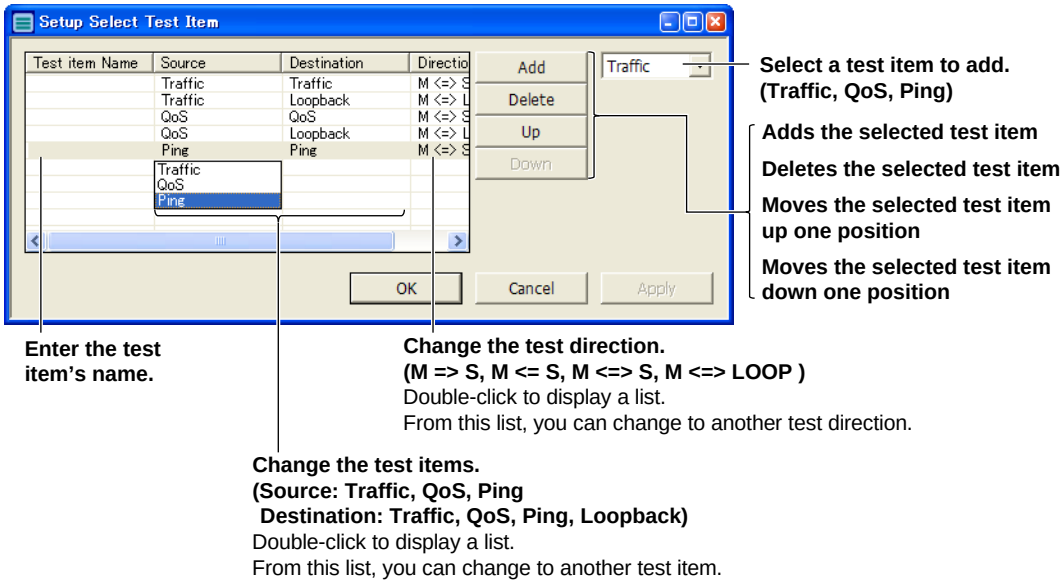
You can register up to 8 test items in one setup file (.sd).

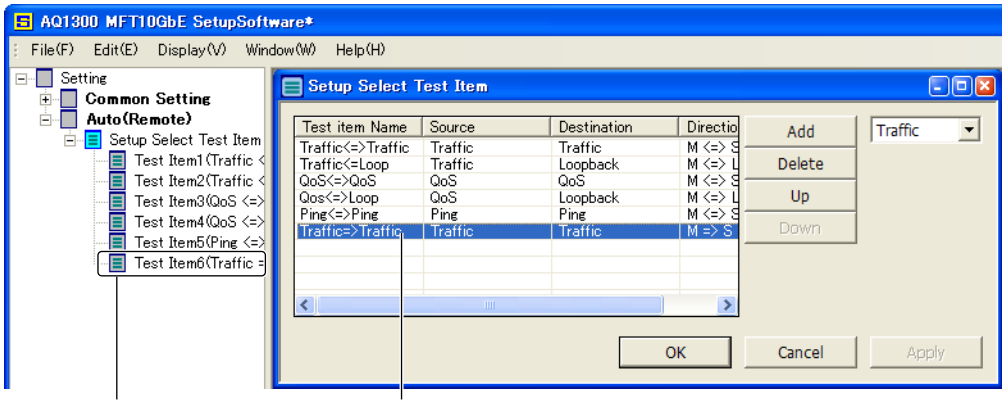
Test Item Names

Double-clicking a Test item Name cell causes a cursor to appear, and you can enter the name. Names can be up to 30 characters.

Auto(Remote) Test

On the control view, click **Setting**, **Auto(Remote)**, and then click **Setup Select Test Item** to display the following screen.





Number of Test Items

You can register up to 8 test items in one setup file (.sd).

Test Item Names

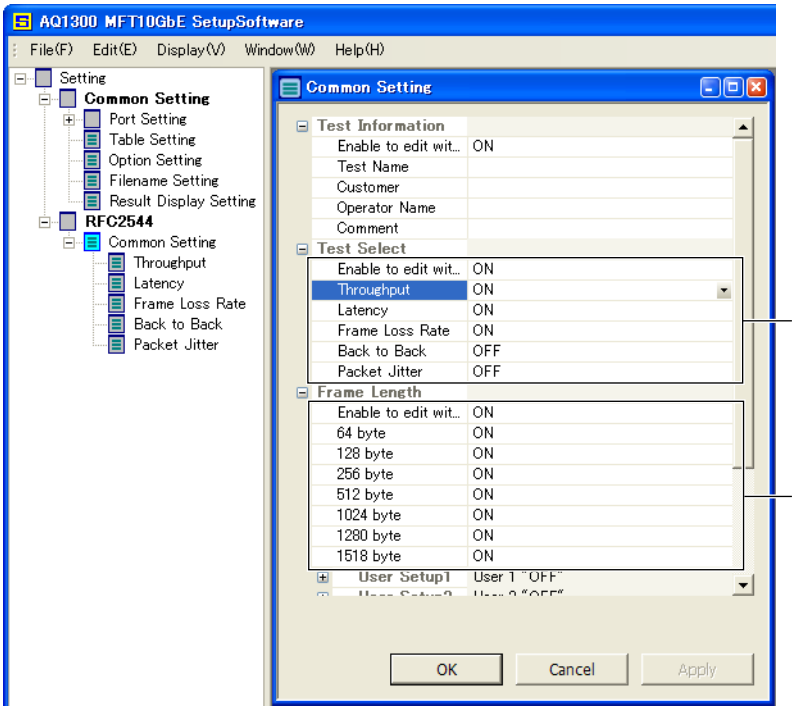
Double-clicking a Test item Name cell causes a cursor to appear, and you can enter the name. Names can be up to 30 characters.

Note

- Set the test items that you want to display on the AQ1300/AQ1301 Select Test Item screen.
- You can only set selected test items from the setup software. You cannot set them from the AQ1300/AQ1301.

RFC2544 Test

On the control view, click **Setting**, **RFC2544**, and then **Common Setting** to display the following screen.



Select test items.
ON: Selected
OFF: Not selected

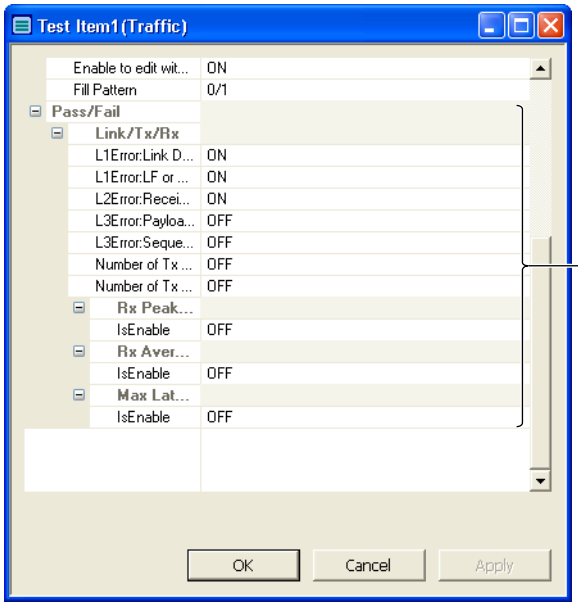
Test frame lengths
ON: Selected
OFF: Not selected

3.6 Setting Pass/Fail Judgment Conditions for Auto, Auto(Remote), and RFC2544 Tests

Auto and Auto(Remote) Tests

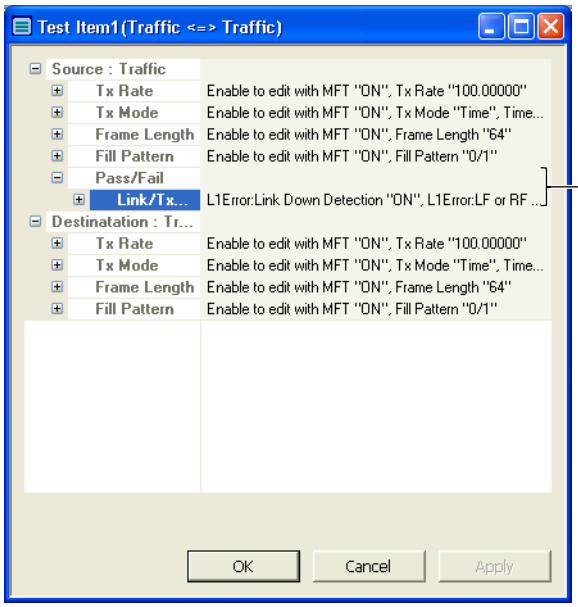
On the control view, click **Setting**, **Auto** (or **Auto(Remote)**), **Setup Select Test Item**, and then click **Test Item1** to display the following screen.

Example of Test Item1 (Traffic) for Auto Test



Set the pass/fail judgment settings (ON, OFF).
Set this to ON for items that you want to perform pass/fail judgment for.

Example of Test Item1 (Traffic <=> Traffic) for Auto(Remote) Test



Set the source pass/fail judgment setting (ON, OFF).
Set this to ON for items that you want to perform pass/fail judgment for.

Select other test items when you want to set their pass/fail judgment conditions.

Note

You can only set pass/fail judgment conditions for Auto and Auto(Remote) tests from the setup software. You cannot set them from the AQ1300/AQ1301.

Default Test Items

Auto Test

	Source
Test item 1	Traffic
Test item 2	Loopback
Test item 3	QoS
Test item 4	Ping
Test item 5	BERT

Auto(Remote) Test

	Source	Destination	Test direction
Test item 1	Traffic	Traffic	Master <=> slave
Test item 2	Traffic	Loopback	Master <=> Loop
Test item 3	QoS	QoS	Master <=> slave
Test item 4	QoS	Loopback	Master <=> Loop
Test item 5	Ping	Ping	Master <=> slave

Pass/Fail Judgment Settings

Traffic

Link, Tx, Rx	L1 error: Link down detection	
	L1 error: LF or RF reception	
	L2 error: Error frame reception	
	L3 error: Payload error detection	
	L3 error: Sequence error detection	
	Incorrect number of bytes	
	Incorrect number of frames	
	Maximum Rx rate	Judgment method, range unit, upper limit (%), and lower limit (%)
	Average Rx rate	Judgment method, range unit, upper limit (%), and lower limit (%)
	Maximum latency time	Upper limit (ms)

Loopback

Loopback does not have any pass/fail judgment settings.

QoS

Link, Tx, Rx	L1 error: Link down detection	
	L1 error: LF or RF reception	
	L2 error: Error frame reception	
	L3 error: Payload error detection	
	Incorrect number of bytes	
	Incorrect number of frames	
	Maximum Rx rate	Judgment method, range unit, upper limit (%), and lower limit (%)
	Average Rx rate	Judgment method, range unit, upper limit (%), and lower limit (%)
	Maximum latency time	Upper limit (ms)
QoS channel settings	CH1 to CH4	
	L3 error: Payload error detection	
	L3 error: Sequence error detection	
	Incorrect number of bytes	
	Incorrect number of frames	
	Maximum Rx rate	Judgment method, range unit, upper limit (%), and lower limit (%)
	Average Rx rate	Judgment method, range unit, upper limit (%), and lower limit (%)
	Maximum latency time	Upper limit (ms)

Ping

Frame loss detection
Maximum response time

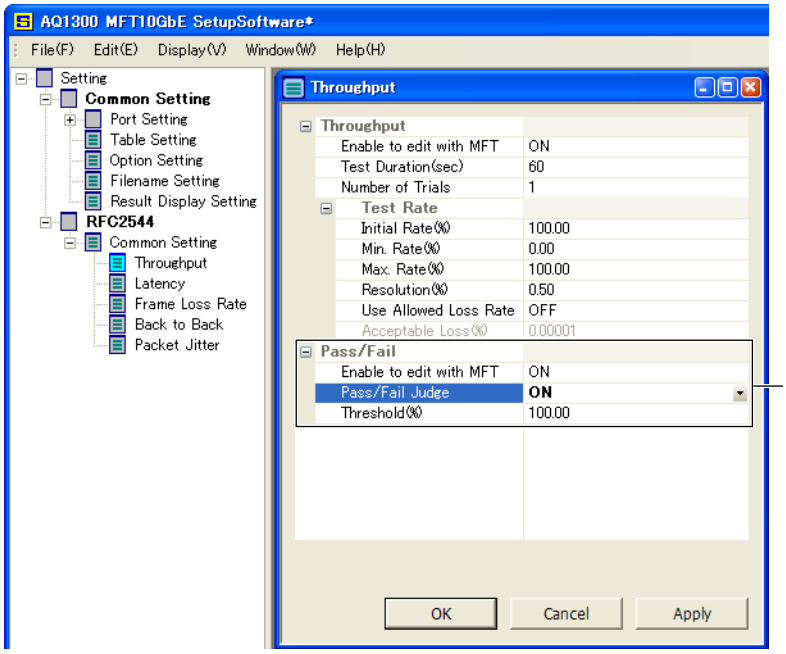
BERT

Bit error detection
No target bytes

RFC2544 Test

Example of an RFC2544 Throughput Test

On the control view, click **Setting**, **RFC2544**, **Common Setting**, and then **Throughput** to display the following screen.

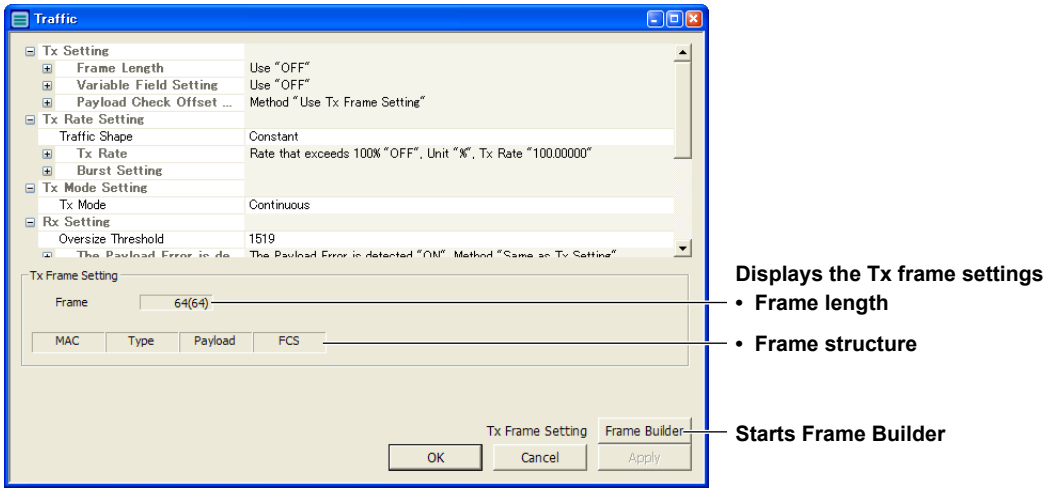


Set the pass/fail judgment settings (ON, OFF).
Set items that you want to perform pass/fail judgment on to ON.

3.7 Using Frame Builder for Manual Tests

1. On the control view, click **Setting**, **Manual**, **Setup Select Test Item**, and then click **Traffic** (**QoS** or **Bert**) to display the following screen.

Traffic Example



Displays the Tx frame settings
- **Frame length**
- **Frame structure**

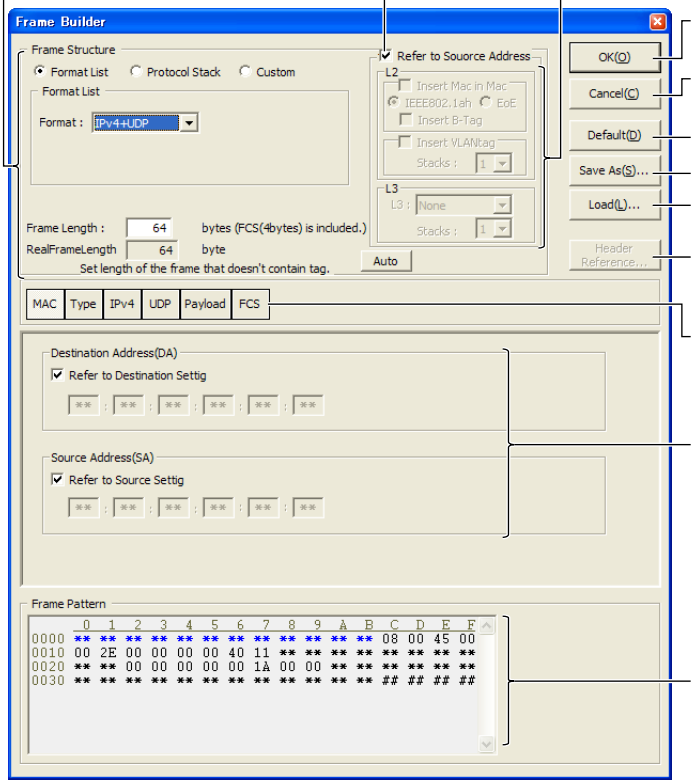
Starts Frame Builder

2. Click **Frame Builder** to display the following screen.

Frame structure selection (Format List, Protocol Stack, Custom), Frame Length setting (48–9999 bytes), Real Frame Length display, and automatic frame length calculation

Select this check box to refer to the source address for the VLAN settings.
VLAN is enabled when Frame Structure is set to Format List or Protocol Stack.

Enabled when "Refer to Source Address" is not selected.



Applies the settings and closes the screen

Discards the settings and closes the screen

Initializes the settings

Saves the settings to a file (.frd)

Loads settings from a file (.frd)

Displays the headers of the selected field items

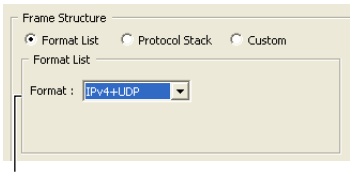
Field buttons
Press to select the field items that you want to display.

Field items
Displays the items for the selected field.

Frame Pattern display
The frame pattern data for the selected field is displayed in blue.

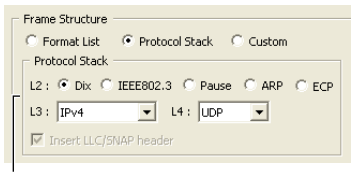
3. Select the Frame Structure. The screen updates to match the frame structure that you select.

Format List



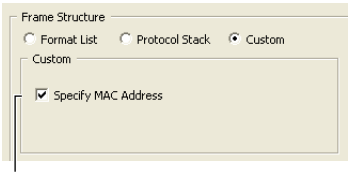
Select the frame format.

Protocol Stack



Select the protocol stack.

Custom

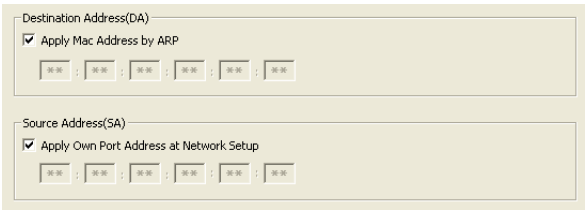


Perform custom settings.
Use the frame pattern's payload to set these settings.

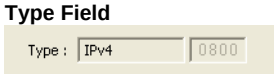
4. Configure the frame.
5. Set the frame length. Set VLAN if necessary.
6. Configure the field settings if necessary.

IPv4+UDP Example

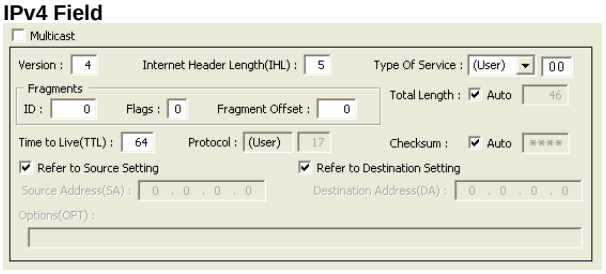
MAC Field



Type Field

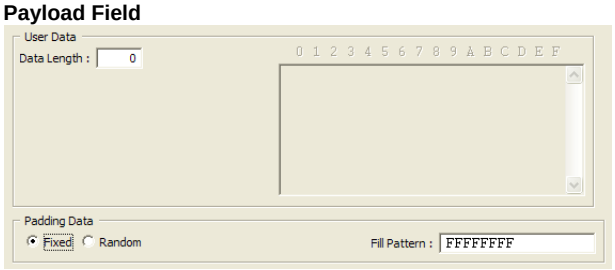


IPv4 Field

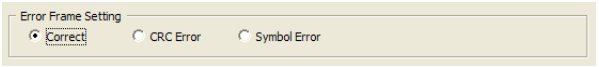


UDP Field

Payload Field

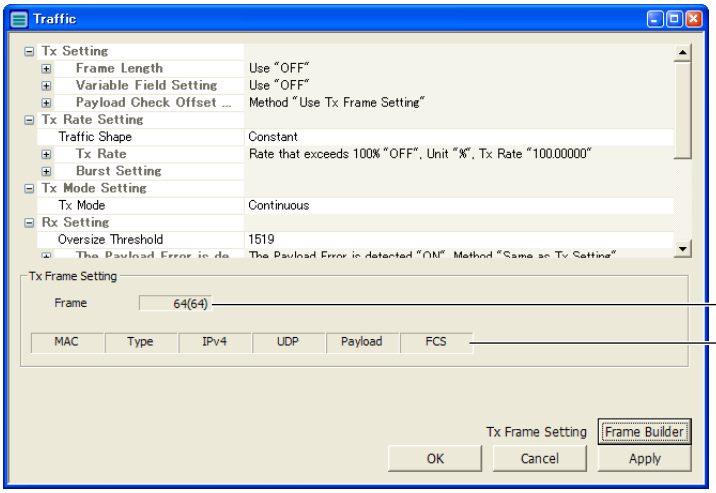


FCS Field



7. Click **OK** to fix the frame and close Frame Builder.

Traffic Example



The contents of the Tx frame change to what you specified using Frame Builder.

- **Frame length**
- **Frame structure**

Note

- If the frame structure that is displayed under Tx Frame Setting is not one of the following frame structures, the frame structure is indicated as “Unknown” on the AQ1300/AQ1301.
  - MAC+Type+Payload+FCS
  - MAC+Type+VLAN+Payload+FCS
  - MAC+Type+IPv4+Payload+FCS
  - MAC+Type+IPv4+UDP+Payload+FCS
  - MAC+Type+VLAN+IPv4+Payload+FCS
  - MAC+Type+VLAN+IPv4+UDP+Payload+FCS
  - MAC+Type+IPv6+Payload+FCS
  - MAC+Type+IPv6+UDP+Payload+FCS
  - MAC+Type+VLAN+IPv6+Payload+FCS
  - MAC+Type+VLAN+IPv6+UDP+Payload+FCS
- If you start measurement or transmission while the AQ1300/AQ1301 frame structure is “Unknown,” frames whose structure was defined in Frame Builder are transmitted.

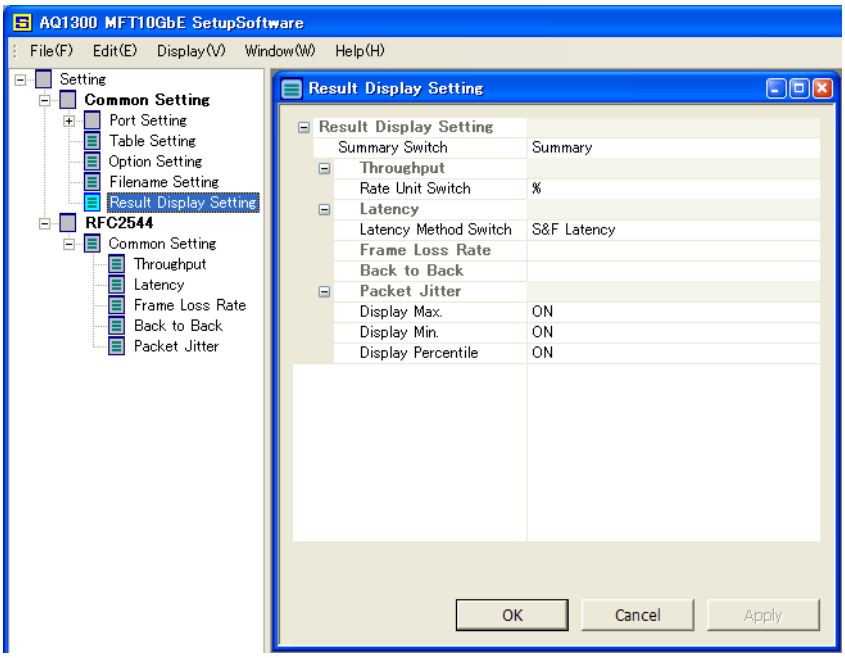
Frame Builder Settings

Item	Description		
Format list, protocol stack, and custom	Sets the frame structure.		
Format list	You can select the format from one of the following choices.		
	(User), Pause, ARP, IPv4, IPv4+UDP, IPv4+TCP, IPv4+IGMP, IPv4+ICMP, IPv6, IPv6+UDP, IPv6+TCP, IPv6+IGMP, IPv6+ICMP, IPv6+ICMPv6, IPX, E-OAM(ITU-T), E-OAM(IEEE), or ECP		
Protocol stack	You can set L2, L3, and L4 separately. The items that you can select for the upper layers differ depending on the items that you select for the lower layers.		
		Options	
	L2	Dix, IEEE802.3, Pause, ARP, or ECP	
	L3 The item selected for L2		
	Dix	(User), IPv4, IPv6, IPX, E-OAM(ITU-T), or E-OAM(IEEE)	
	IEEE802.3	(User), IPv4, IPv6, IPX, E-OAM(ITU-T), or E-OAM(IEEE)	
	Pause	None	
	ARP	None	
	ECP	None	
	L4 The item selected for L3		
	(User)	None	
	IPv4	(User), UDP, TCP, IGMP, or ICMP	
	IPv6	(User), UDP, TCP, IGMP, ICMP, or ICMPv6	
	IPX	None	
	E-OAM(ITU-T)	None	
	E-OAM(IEEE)	None	
	Insert the LLC/SNAP header	ON or OFF Enabled when L2 is selected for the Protocol Stack, and “IEEE802.3” is selected for L2.	
Custom	You can select whether to specify a MAC address or not. All other fields are used as user data.		
	Specify MAC address	ON or OFF	
OpCode	Select the “E-OAM(ITU-T)” or “E-OAM(IEEE)” OpCode. This is enabled when you set Frame Structure to “Format List” or “Protocol Stack” and set Format to “E-OAM(ITU-T)” or “E-OAM(IEEE).”		
	E-OAM(ITU-T)	(User), CCM, LBM, LBR, LTM, LTR, AIS, LCK, TST, APS, MCC, LMM, LMR, 1DM, DMM, DMR, EXM, EXR, VSM, or VSR	
	E-OAM(IEEE)	(User), CCM, LBM, LBR, LTM, or LTR	
Tag settings	You can configure tag settings when you set Frame Structure to “Format List” or “Protocol Stack.” You can set whether to use the source address setting for the VLAN setting or not. You can set this separately for the L2 and L3 tags. There are the following limitations when you set the L2 and L3 tags separately. • When Format is Pause, ARP, or ECP, you cannot set the L3 tag. • When Format is ECP, the MAC in MAC EoE is inserted automatically. • When MAC in MAC is selected, you cannot select EoMPLS.		
	Refer to source address	ON or OFF	Select this check box to refer to the source address for the VLAN settings.
	L2 Insert MAC in MAC	ON or OFF	
	IEEE802.1ah or EoE	ON	Enabled when Insert MAC in MAC is selected
	Insert B-Tag	ON or OFF	Enabled when IEEE802.1ah is selected
	Insert EoEVLAN Tag	ON or OFF	Enabled when EoE is selected
	Insert VLAN Tag	ON or OFF	
	Number of stacks	1 to 4	Enabled when Insert VLAN Tag is selected
	L3 L3 Tag	None, MPLS, or EoMPLS	
	Number of stacks	1 to 4	Enabled when MPLS or EoMPLS is selected for L3 Tag
Frame length	Sets the frame length, including the FCS. 48 to 9999 bytes When “Refer to Source Address” is selected, set the frame length to a value that does not include tags. When “Refer to Source Address” is not selected and the L2 or L3 tag is set, set the frame length to a value that includes the tags.		
	The color of the Frame Length box changes according to the frame length. • 64 White: Normal status. • 64 Red: A portion of the specified protocol header cannot be transmitted. • 64 Yellow: A portion of the specified payload cannot be transmitted.		
	Auto	Press this button to automatically calculate the minimum frame length that will make the frame length status normal (white).	

Item	Description
Field buttons	Press to display the selected field's setup screen.
Header reference button	Press to display the selected field's header. Depending on the selected field, this button may be unavailable.
Field items	Displays the settings for the field that you selected with the field buttons. The settings differ depending on the field that you select.
Frame pattern	Displays the frame pattern. The frame pattern data for the field that you selected with the field buttons is displayed in blue.

3.8 RFC2544 Test Result Display

1. On the control view, click **Setting**, **Common Setting**, and then **Result Display Setting** to display the following screen.

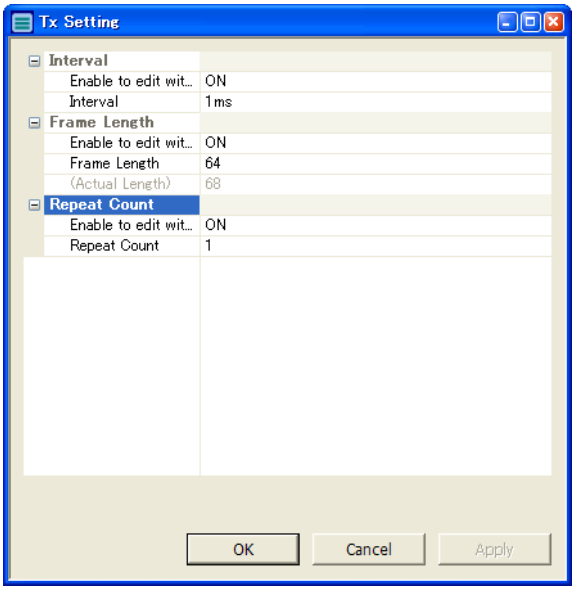


Setting	Setup Item
Summary display switching	Summary, Address
Rate unit	%, fps, bps
Latency method switching	S&F Latency, CT Latency
Display of maximum packet delay variation	OFF or ON
Display of minimum packet delay variation	OFF or ON
Display of percentile packet delay variation	OFF or ON

3.9 Configuring the VLAN Test

Tx Settings

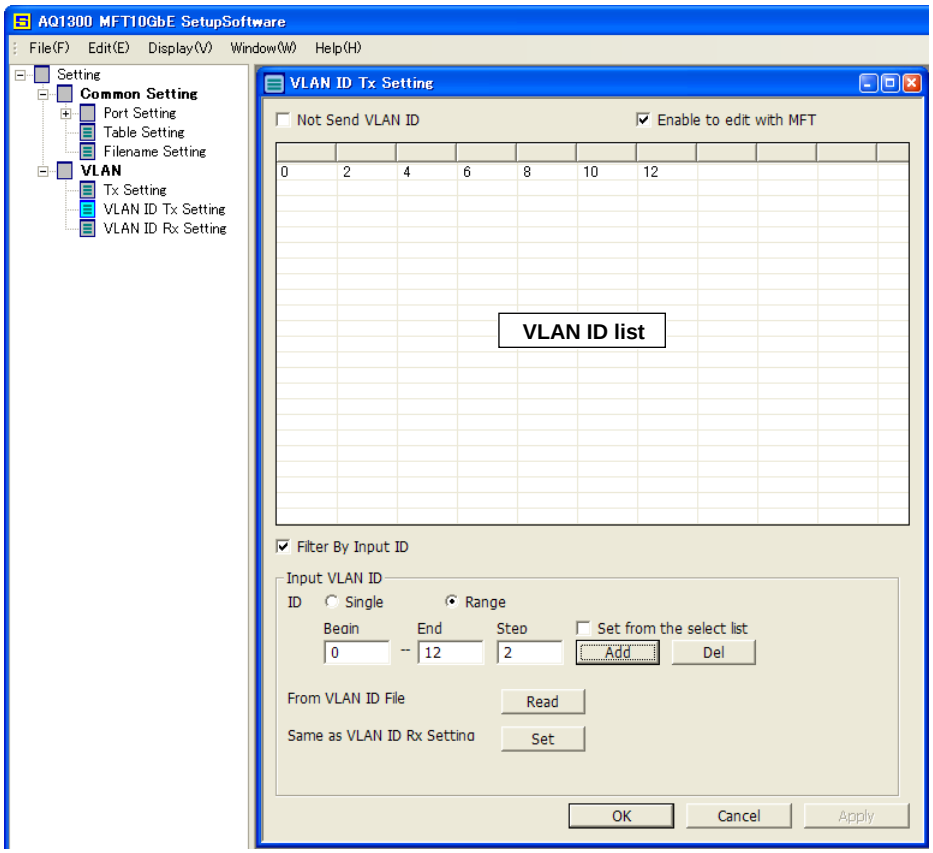
On the control view, click **Setting**, **VLAN**, and **Tx Setting**. The following screen appears.

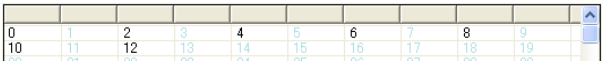


Setting	Setup Items
Interval	1ms, 10ms, 100ms, 1s
Frame Length	• L2 and L3-IPv4 VLAN 1 stack: 64 (68) to 9999 (9999) VLAN 2 stacks: 64 (72) to 9999 (9999) • L3-IPv6 VLAN 1 stack: 74 (78) to 9999 (9999) VLAN 2 stacks: 74 (82) to 9999 (9999)
Repeat Count	1 to 15

VLAN ID Tx Setting

On the control view, click **Setting**, **VLAN**, and **VLAN ID Tx Setting**. The following screen appears.

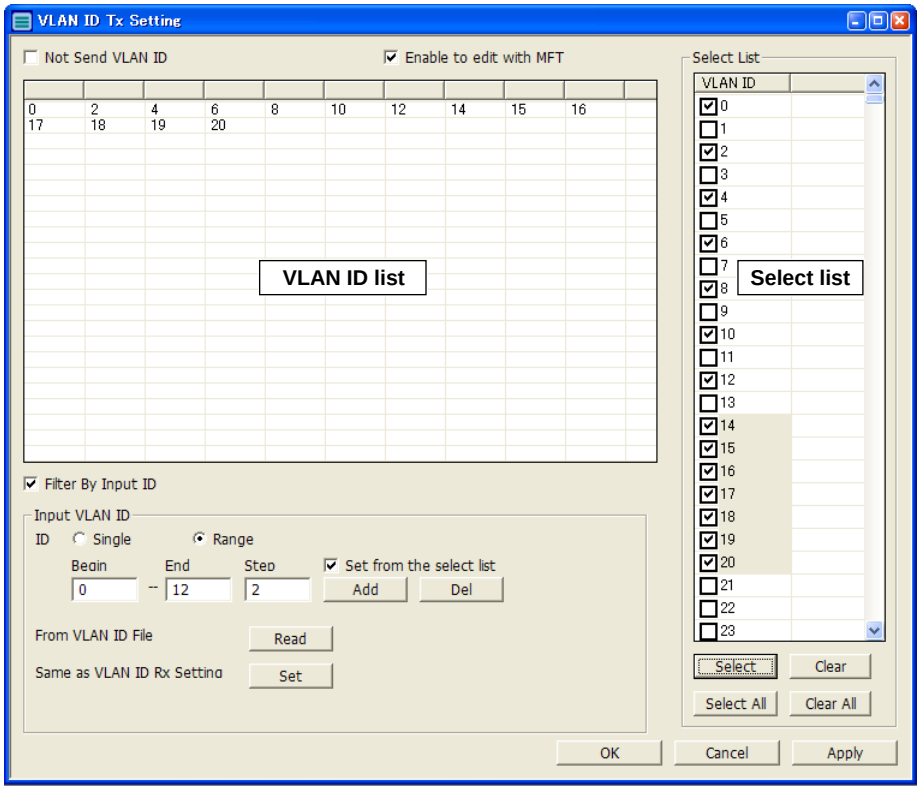


Item		Description
Not Send VLAN ID		Select this check box to not send VLAN IDs.
VLAN ID list		The IDs specified by **Input VLAN ID** are listed.
Filter By Input ID		• Selected: Only the IDs that have been set are displayed. • Cleared: IDs from 0 to 4095 are displayed with the following colors. • Black: An ID that has been set • Blue: An ID that has not been set 
Input VLAN ID		
ID	Single	Specify the ID to add or delete in the **Begin** box.
	Range	Specify the range of IDs to add or delete in the **Begin** and **End** boxes. If you enter a number in the **Step** box, IDs will be entered in the specified steps from Begin to End.
	Add	Adds the ID specified by Single or IDs specified by Range to the VLAN ID list
	Del	Deletes the ID specified by Single or IDs specified by Range from the VLAN ID list
	Set from the select list	Select this check box to display a select list on the right side of the window. See “Setting IDs from the Select List” (next section).
From VLAN ID File		
	Read	Reads IDs from a VLAN ID definition file (text file in CSV format) and displays them in the VLAN ID list
Same as VLAN ID Rx Setting		
	Set	Applies the IDs specified in VLAN ID Rx Setting to the VLAN ID Tx Setting

Setting IDs from the Select List

Selecting the “Set from the select list” check box displays a select list on the right side of the window.

Select or clear the ID check boxes in the select list to apply the changes in the VLAN ID list.



Item	Description
Select List	IDs from 0 to 4095 are listed. Check boxes corresponding to the IDs already set in the VLAN ID list are selected.
Select	Adds the IDs specified in the select list to the VLAN ID list
Clear	Clears the IDs specified in the select list from the VLAN ID list
Select All	Adds all IDs to the VLAN ID list
Clear All	Clears all IDs from the VLAN ID list

Selecting or Clearing IDs

1. In the select list, click the cell of the ID that you want to select or clear.

Hold down Shift and click to select multiple cells; drag to select a range of cells.

The cells that you clicked are highlighted. You will be able to select or clear the IDs in these cells.

2. Click **Select** or **Clear**.

Check boxes in the select list

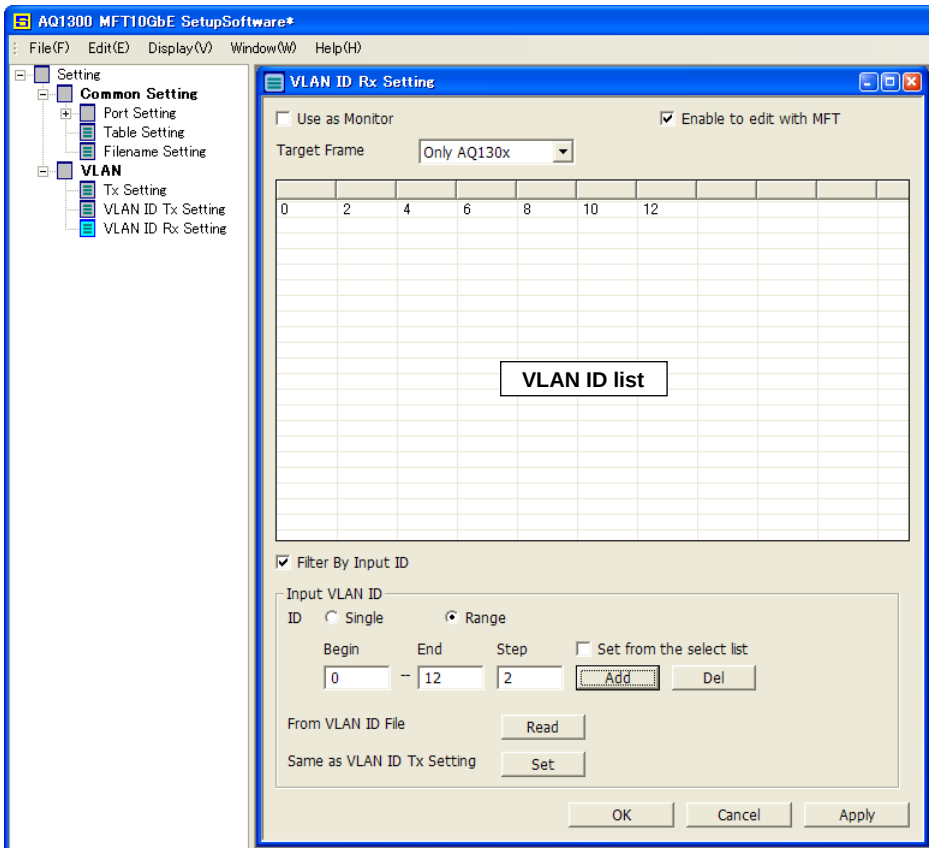
- Check boxes that correspond to IDs that are added to the VLAN ID list will be selected.
- Check boxes that correspond to IDs that are deleted from the VLAN ID list will be cleared.

Note

The feature that enables you to specify IDs in the select list to set to the VLAN ID list is only available on the Setup Software. It is not available on the AQ1300/AQ1301.

VLAN ID Rx Setting

On the control view, click **Setting**, **VLAN**, and **VLAN ID Rx Setting**. The following screen appears.



Item		Description
Use as Monitor		Select this check box to use this software as a monitor. When used as a monitor, judgment of ID errors, unreceived IDs, and pass/fail are not performed.
Target Frame		• All: All frames are received. • Only AQ130x: Only the test frames that the AQ1300/AQ1301 transmits are received.
VLAN ID list		The IDs specified by **Input VLAN ID** are listed.
Filter By Input ID		• Selected: Only the IDs that have been set are displayed. • Cleared: IDs from 0 to 4095 are displayed with the following colors. • Black: An ID that has been set • Blue: An ID that has not been set
Input VLAN ID		
ID	Single	Specify the ID to add or delete in the **Begin** box.
	Range	Specify the range of IDs to add or delete in the **Begin** and **End** boxes. If you enter a number in the **Step** box, IDs will be entered in the specified steps from Begin to End.
	Add	Adds the ID specified by Single or IDs specified by Range to the VLAN ID list
	Del	Deletes the ID specified by Single or IDs specified by Range from the VLAN ID list
	Set from the select list	Select this check box to display a select list on the right side of the window. This feature is the same as that of VLAN ID Tx Setting. See “Setting IDs from the Select List” (previous section).
From VLAN ID File		
	Read	Reads IDs from a VLAN ID definition file (text file in CSV format) and displays them in the VLAN ID list
Same as VLAN ID Tx Setting		
	Set	Applies the IDs specified in VLAN ID Tx Setting to the VLAN ID Rx Setting

Error Message

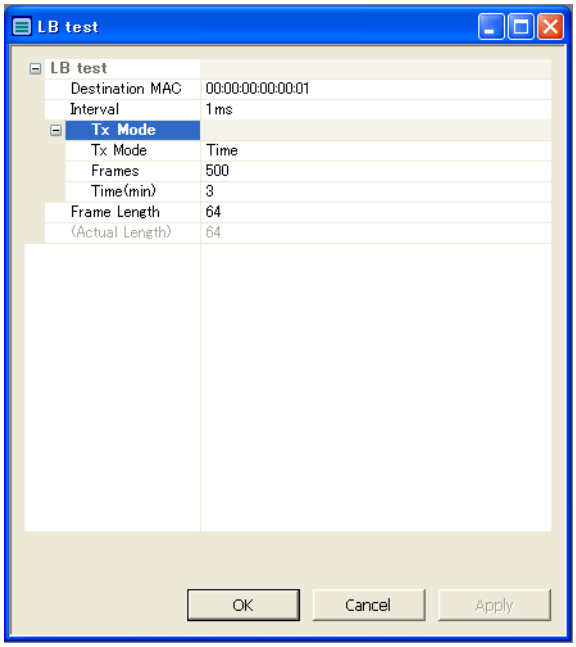
An error message may appear when VLAN IDs are read from a VLAN ID definition file. This section describes the error message and how to respond to them.

Message	Corrective Action
Illegal file format.	Check that the specified VLAN ID definition file is in the correct format.

3.10 Configuring the Ethenet OAM Test

LB Test Setting

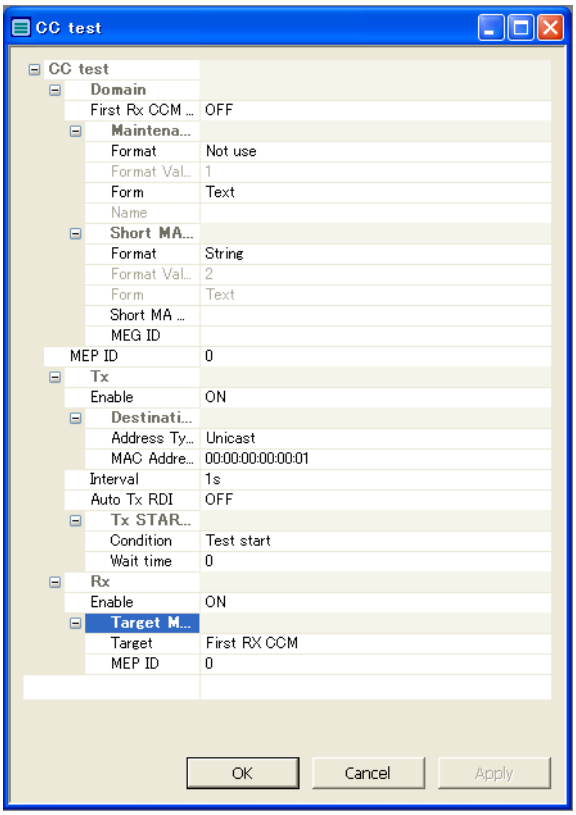
On the control view, click **Setting**, **EthernetOAM**, and **Common Setting**. and **LB test**. The following screen appears.



Item	Description
Destination MAC address	Set the target MEP's MAC address.
Interval	1ms, 10ms, 100ms, 1s
Tx Mode	Continue, Frames, Time • Frames Number of frames: 1 to 4294967295 • Time Time (min): 1 to 1440
Frame Length	No VLAN stacks: 64 (64)-9999 (9999) VLAN 1 stack: 64 (68) to 9999 (9999) VLAN 2 stacks: 64 (72) to 9999 (9999)

CC Test Setting

On the control view, click **Setting**, **EthernetOAM**, and **Common Setting**. and **CC test**. The following screen appears.

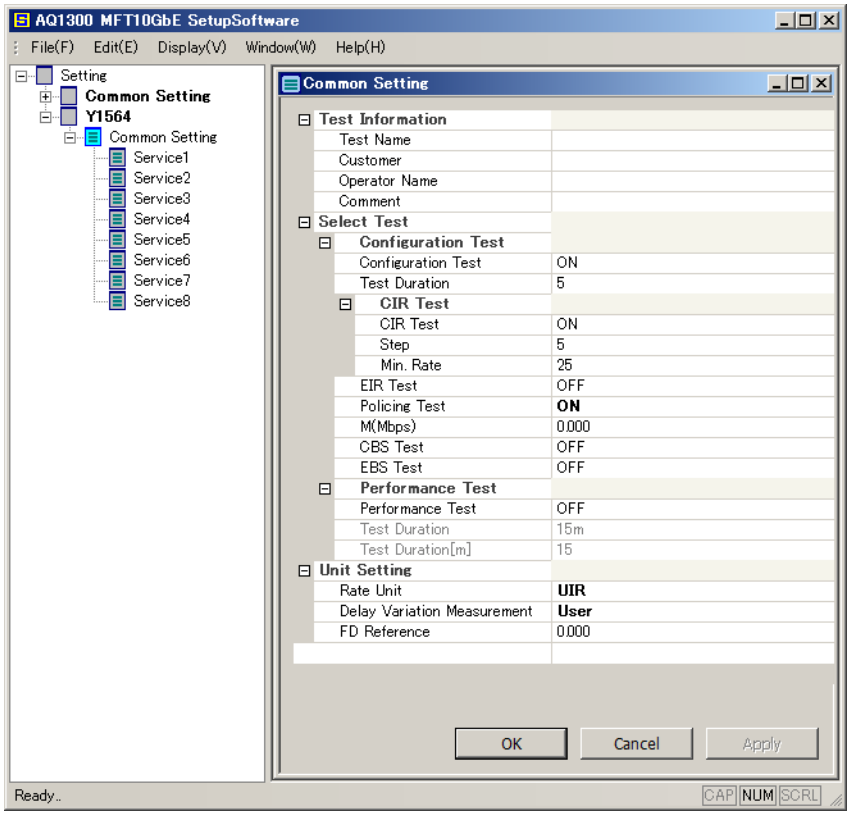


Item	Description
Domain	
First Rx CCM apply to domain	OFF, ON
Maintenance Domain Name	Manually set the maintenance domain name.
Format	Not use, String, DNS, MAC+ID, User
Format value	0 to 255, Can be set when the Format is set to User
Form	Text, Binary
Short MA Name	Manually set the short maintenance group name.
Format	String, Integer, VLAN ID, ICC-Base string, User
Format value	0 to 255, Can be set when the Format is set to User
Form	Text, Binary
Short MA name	Enter the short maintenance group name.
MEG ID	Enter the MEG ID.
MEP ID	Enter the MEP ID.
Tx	
Enable	ON, OFF
Destination MAC	
Address Type	Unicast, Multicast
MAC Address	Set the target MEP's MAC address. Can be set when the Address Type is set to Unicast.
Interval	100ms, 1s, 10s, 60s
Auto Tx RDI	ON, OFF
Tx START Condition	
Condition	Test start, First Rx CCM
Wait time	0 to 999 s, Can be set when the Condition is set to Test start.
Rx	
Enable	ON, OFF
Target MEP ID	
Target	Manual, First RX CCM
MEP ID	Enter the MEP ID. Can be set when the Target is set to Manual.

3.11 Configuring the Y.1564 Test

Common Y.1564 Test Items

On the control view, click **Setting**, **Y.1564**, and then **Common Setting** to display the following screen.

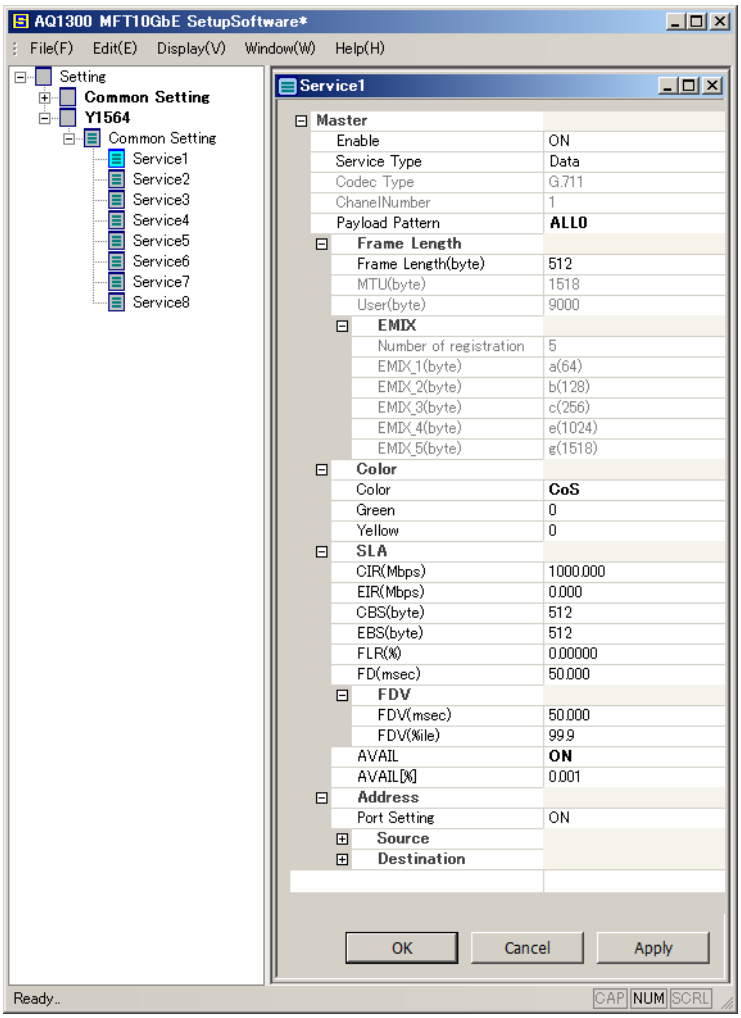


Item	Description
Test information	
Test name	Character string up to 30 characters
Customer	Character string up to 30 characters
Operator name	Character string up to 30 characters
Comment	Character string up to 30 characters
Select Test	
Configuration Test	
Configuration Test	OFF, ON
Test Duration	1 to 60
CIR Test	OFF, ON
Step	1 to 7
Min. Rate	1 to 90
EIR Test	OFF, ON
Policing Test	OFF, ON
M (Margin of the EIR rate)	0.000 to 10000.000 (when unit is IR or UIR), 0.000 to 100.000 (when unit is %)
CBS Test	OFF, ON
EBS Test	OFF, ON
Performance Test	
Performance Test	OFF, ON
Test Duration	15 m, 2 h, 24 h, User When set to User (minutes): 1 to 4320
Unit Setting	
Rate Unit	IR (effective speed: bps), UIR (utilized information rate), % (ratio of the utilized information rate to the Tx rate)
Delay Variation Measurement	Previous Frame, Min. Threshold, User
FD Reference	0.000 to 1000.000 (When set to User (ms))

The Detailed Settings (Service Setup) of the Y.1564 Test

- **Example of the service circuit 1**

  On the control view, click **Setting**, **Y.1564**, **Common Setting** and then **Service1** to display the following screen.



Item	Description
Master, Slave	
Enable	OFF, ON
Service Type	Data, Voice, Video
Data	–
Voice	G.711, G.729, G.723.1, SDTV (MPEG2)
Video	G.711, G.729, G.723.1, SDTV (MPEG2)
Channel number	1 to 367647
Payload Pattern	Random, ALL0, ALL1, 0/1 Alternate
Frame Length	
Frame Length (byte)	64, 128, 256, 512, 1024, 1280, 1518, MTU, User, EMIX
MTU (byte)	64 to 9000
User (byte)	64 to 9000
EMIX(byte)	Number of selectable frame lengths that are registered : 0 to 5 Number of selectable frame lengths : a(64), b(128), c(256), d(512), e(1024), f(1280), g(1518), h(MTU), u(User defined)
Color	
Color	OFF, CoS, ToS, DSCP
Green	0 to 7 (when set to Cos or ToS) 000000 to 111111 (when set to DSCP)
Yellow	0 to 7 (when set to Cos or ToS) 000000 to 111111 (when set to DSCP)

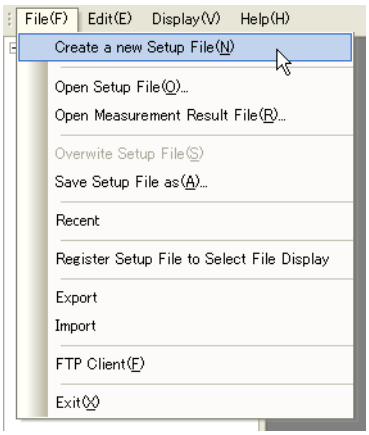
Item	Description
SLA	
CIR (Mbps)	0 to 10000
EIR (Mbps)	0 to 10000
CBS (byte)	0 to 1000
EBS (byte)	0 to 1000
FLR (%)	0.00000 to 100.00000
FD (msec)	0.001 to 10000.000
FDV (msec)	0.001 to 10000.000
FDV (%ile)	100, 99.9, 90, 75
AVAIL	OFF, ON
AVAIL [%]	0.001 to 100.000
Address	Port Setting OFF, ON
Source	Set the source address. MAC, VLAN, IPv4, IPv6, UDP
Destination	Sets the destination address. MAC, IPv4, IPv6, UDP

4.1 Creating New Setup Data and Loading Setup Data

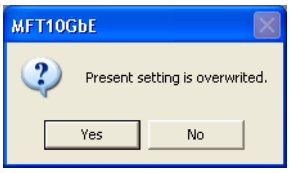
Procedure

Creating New Setup Data

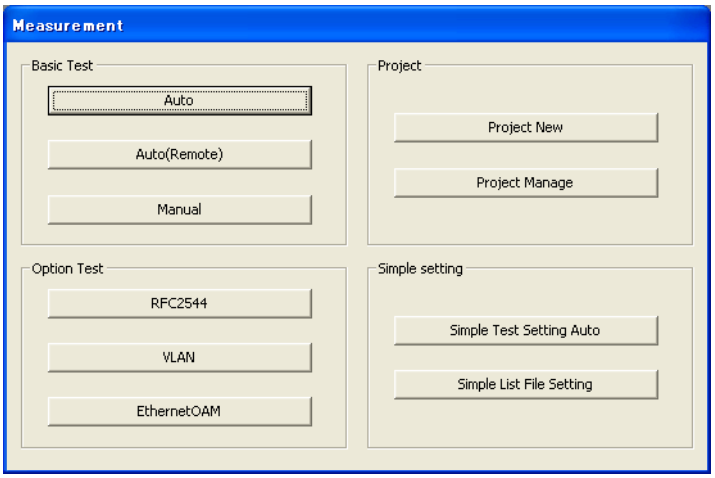
1. On the **File** menu, click **Create a new Setup File**.



A confirmation message is displayed that asks whether you want to discard the current setup data or not.



2. Click **Yes** or **No**.
   - To create new setup data, click “Yes,” and proceed to step 3.
   - To keep the current setup data, click “No.” The procedure ends here.



3. Click the **Auto**, **Auto(Remote)**, **Manual, RFC2544, VLAN, or EthernetOAM** button to select the test that you want to use.

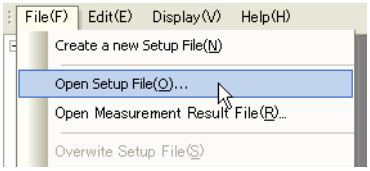
   The dialog box closes, and the setup screen for the test that you selected is displayed.

Note

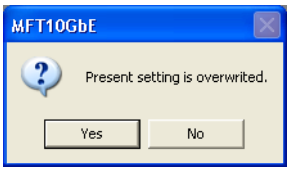
If you select a new test, all the settings are initialized.

Loading Setup Data

1. On the **File** menu, click **Open Setup File**.

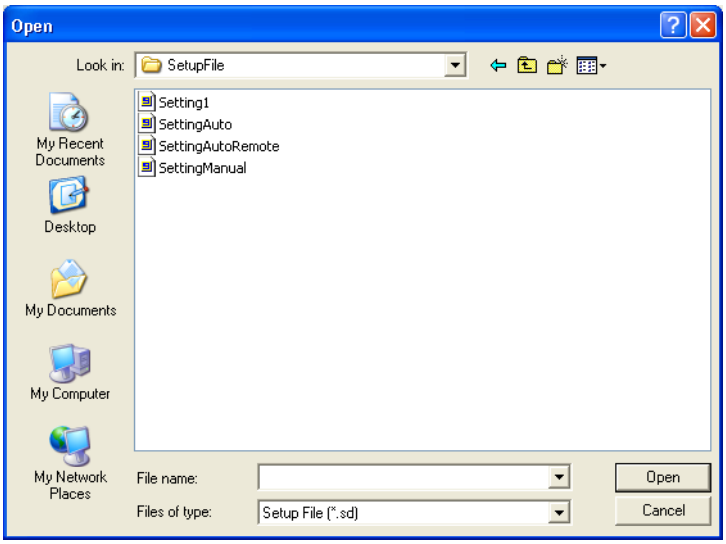


A confirmation message is displayed that asks whether you want to discard the current setup data or not.



2. Click **Yes** or **No**.
   - To load setup data, click “Yes,” and proceed to step 3.
   - To keep the current setup data, click “No.” The procedure ends here.

3. Select the setup file that you want to open, and click **Open**.



The selected file’s data is loaded.

Explanation

Creating New Setup Data

You can create new setup data. However, any changes that you have made to the current data are discarded and cannot be restored. Save the current data as necessary. For details on saving setup data, see section 4.2.

Loading Setup Data

You can load a saved setup data file and edit its contents. However, any changes that you have made to the current data are discarded and cannot be restored. Save the current data as necessary.

File Name Extension

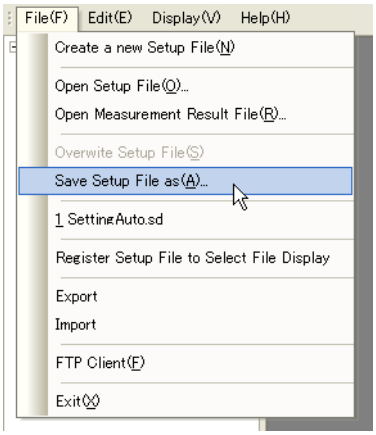
The file name extension is .sd.

4.2 Saving Setup Data

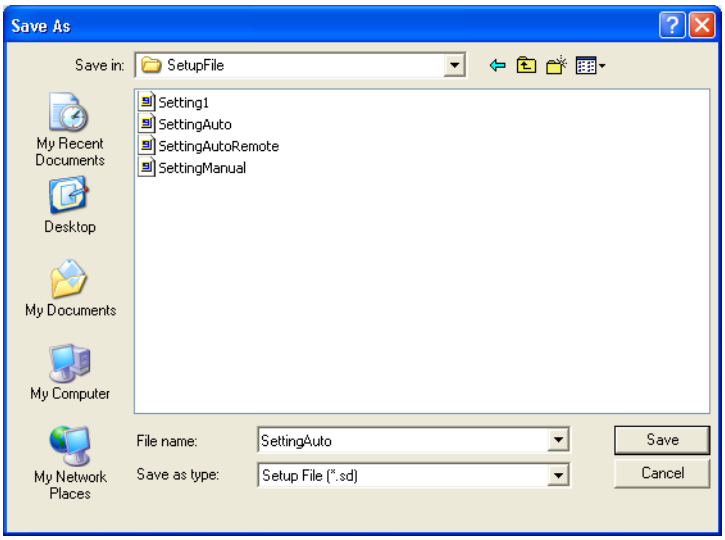
Procedure

Saving Setup Data with a New File Name

1. On the **File** menu, click **Save Setup File as**.

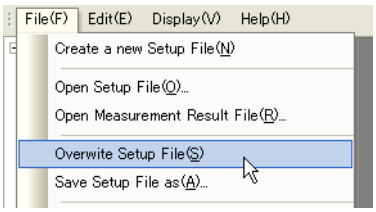


2. Specify the folder to save to, specify the file name, and click **Save** to save the file.
Check that the file was saved as a setup file (with the .sd extension).



Overwriting Setup Data

After you have saved the setup data, you can overwrite the existing file with the changes that you have made to it by clicking “Overwrite Setup File” on the File menu.



Explanation

Saving Setup Data

You can save setup data as new files or overwrite existing setup data.
Even if you click “Save Setup File as” on the File menu, you can overwrite a setup data file by specifying a file name that already exists.

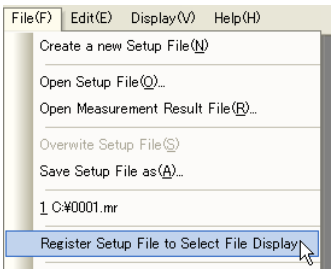
File Name Extension

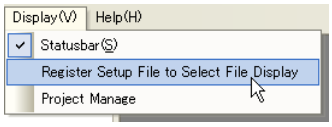
The file name extension is .sd.

4.3 Registering Setup Files to the Select File Display and Editing the Select File Display

Procedure

1. On the **File** menu, click **Register Setup File to Select File Display**, or on the **Display** menu, click **Register Setup File to Select File Display**.





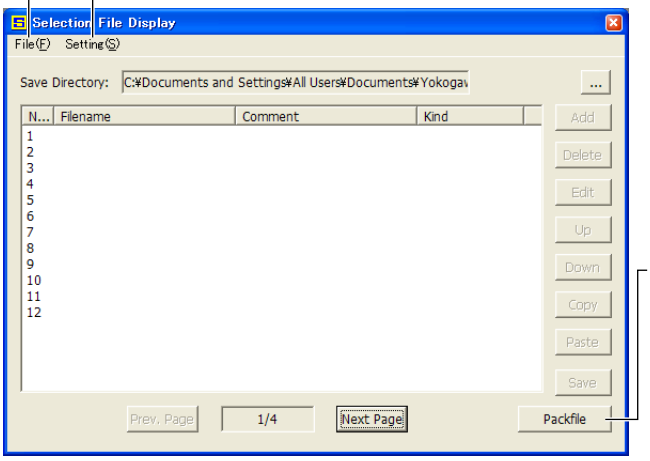
The Select File Display screen is displayed.

Performing File Operations

2. On the Select File Display screen that appears, click the menus to perform the following operations.

File menu
- **Create New:** Creates a new display data file.
- **Open:** Opens a previously registered display data file.
- **Save:** Saves a registered display data file.
- **Exit:** Closes the Select File Display.

Setting menu
- **Set Save Folder:**
  Click to set the folder where display data files are saved to. You have to select the same folder that setup files, which you register by using the Select File Display, are saved to. The path that you specify is displayed in the **Save Directory** box.

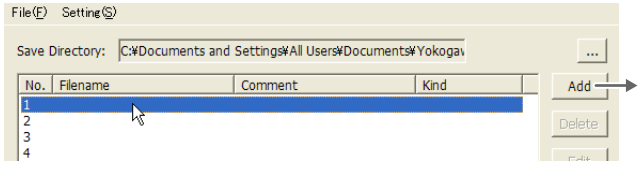


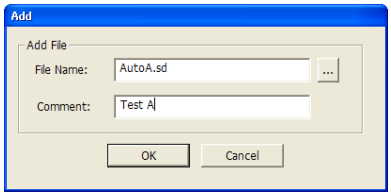
Package file
Compresses the display management file (disManage.dmf) and the setup files (.sd files) that the display management file refers to into a single file (***.dmfz).

Registering Setup Files

3. Click **No.** to make the Add button available. Click **Add** to display a dialog box, and then use this dialog box to specify the setup file to register and a comment for the file.

   The setup file that you register must be in the same folder as the folder that you specified for saving display data to in step 2.





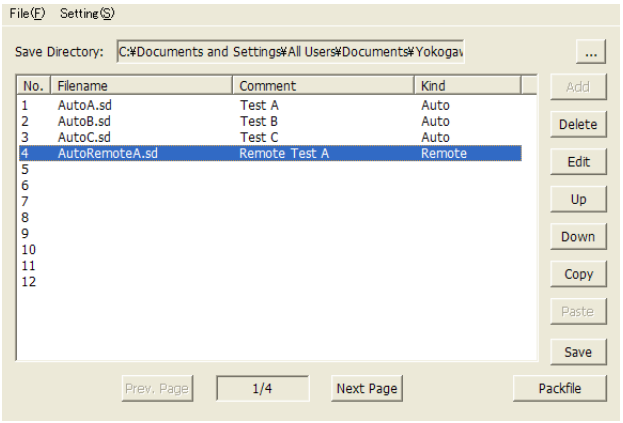
Note

File name: Up to 30 characters (including the extension)
Comment: Up to 30 characters

Editing Registered Data

4. Select a registered data file, and click the buttons to perform the following operations.

Delete: Deletes the registered data.
Edit: Changes the registered data with a different setup file.
Up: Moves the registered data up one position (No.).
Down: Moves the registered data down one position (No.).
Copy: Copies the registered data.
Paste: Pastes the copied registered data into the position that the selected No. specifies. If registered data already exists in that position, it is overwritten. This button becomes available after you click Copy.
Save: Saves a registered display data file. This performs the same function as “Save” in step 2.
Prev. Page: Displays the previous page.
Next Page: Displays the next page.



Explanation

You can create the setup file list that is displayed on the Select File Display of the AQ1300/AQ1301. Information of setup files (.sd) registered in the setup file list is saved in the display management file (disManage.dmf).

Version R1.09.01.001 and Later

To manage setup files and setup file lists in projects, you can use “Create New Project and New Setup File List” in the Select File Display Data Creation Wizard to create setup file lists. For details, see section 4.8.

File Operations

You can carry out various file operations by clicking the commands on the File and Setting menus.

- The data that you have registered and edited up to that point is deleted if you:
  - Create a new file
  - Open an existing file
  - Change the folder that files are saved to
- When you save display data, the file name is fixed to “disManage.dmf.”
- The folder that display data is saved to must be the same folder that setup files, which you register by using the Select File Display, are saved to. If these folders are different, you cannot register setup files.

Package File

You can package files on AQ1300/AQ1301 versions R1.06.01.001 and later.

Registering and Editing

You can register up to 4 pages of setup files, 12 setup files on each page. After you have registered a setup file, you can change it, change its position (No.), copy it, and delete it.

Transferring Setup Files to the AQ1300/AQ1301

You can use setup files and setup file list on the AQ1300/AQ1301 in the following ways.

- Loading Files Using the AQ1300/AQ1301 **Utility Menu**
  For details, see the AQ1300/AQ1301 User's Manual, IM AQ1300-01EN.

Version R1.09.01.001 and Later

- Setup files managed in projects can be transferred to the AQ1300/AQ1301 using the **Trans. Setup File** button in the Project dialog box.
  For details, see section 4.9.

Note

To manually copy setup files that are not managed in projects

Be sure to copy the display management file (disManage.dmf) and the setup files (.sd files) that the display manage file refers to into the AQ1300/AQ1301 /setup directory.

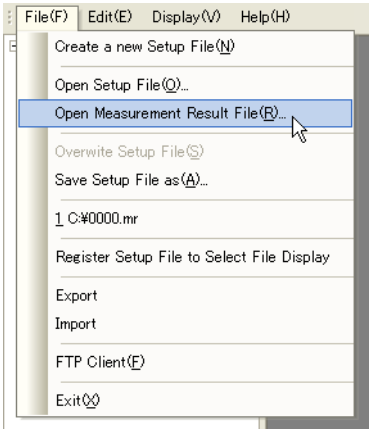
Example: /setup/disManage.dmf
/setup0000.sd
/setup0001.sd
:

4.4 Opening Statistical Result Files

Procedure

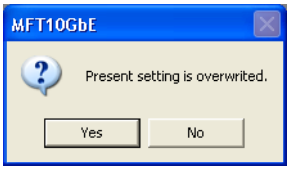
Opening Statistical Result Files

1. On the **File** menu, click **Open Measurement Result File**.



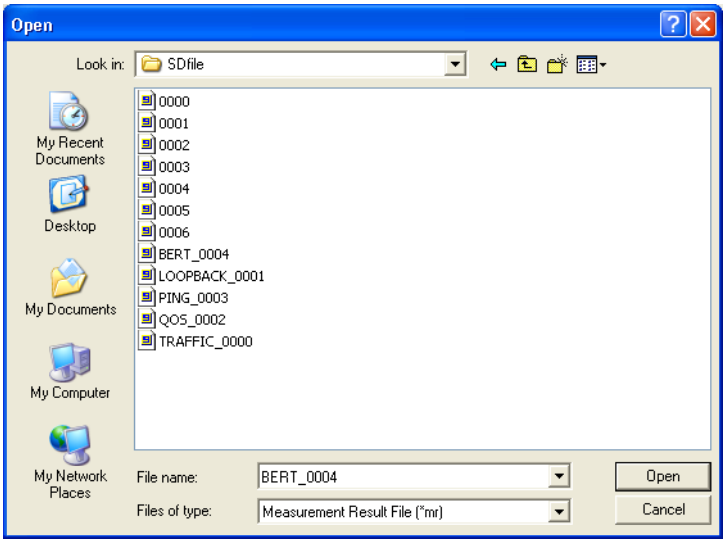
A confirmation message is displayed that asks whether you want to discard the current setup data or not.

2. Click **Yes** or **No**.
   - To load a statistical result, click “Yes,” and proceed to step 3.
   - To keep the current setup data, click “No.” The procedure ends here.



3. Select the statistical result file that you want to open, and click **Open**.

The selected statistical result file data is loaded.



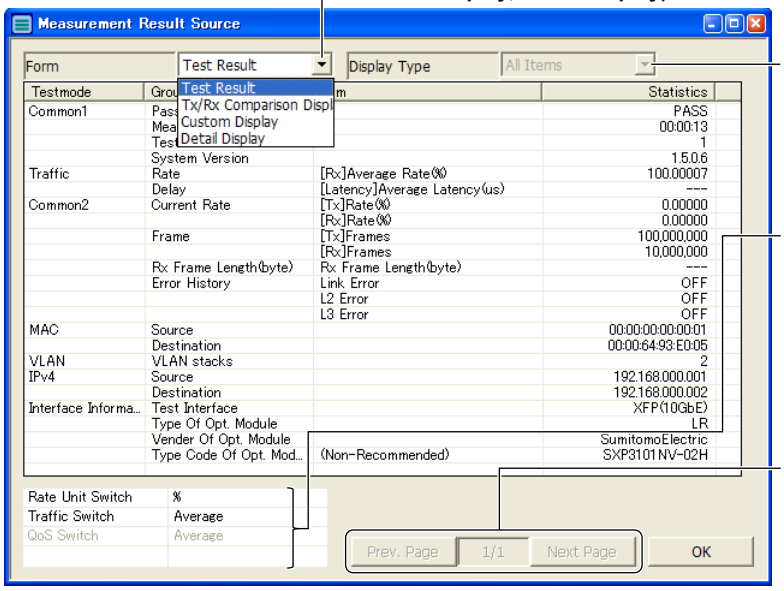
Displaying the Statistical Result Screen

4. The statistical result screen or test result summary screen appears.

Auto test or Auto(Remote) test	Execution type: **Single**
	Execution type: **Continuous**, File save type: **Separate**
Manual test	

Statistical result screen

Select the display format (Test Result, Tx/Rx Comparison Display, Custom Display, Detail Display).



Select the display method (All Items, Unit of page).

- **Rate Unit Switch**
- **Traffic Switch**
- **QoS Switch**

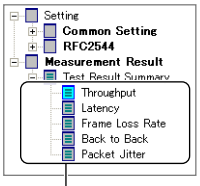
When you change the Form setting and these settings become available, you can change them.

When you set Display Type to “Unit of page,” the buttons that are used to switch between pages become available.

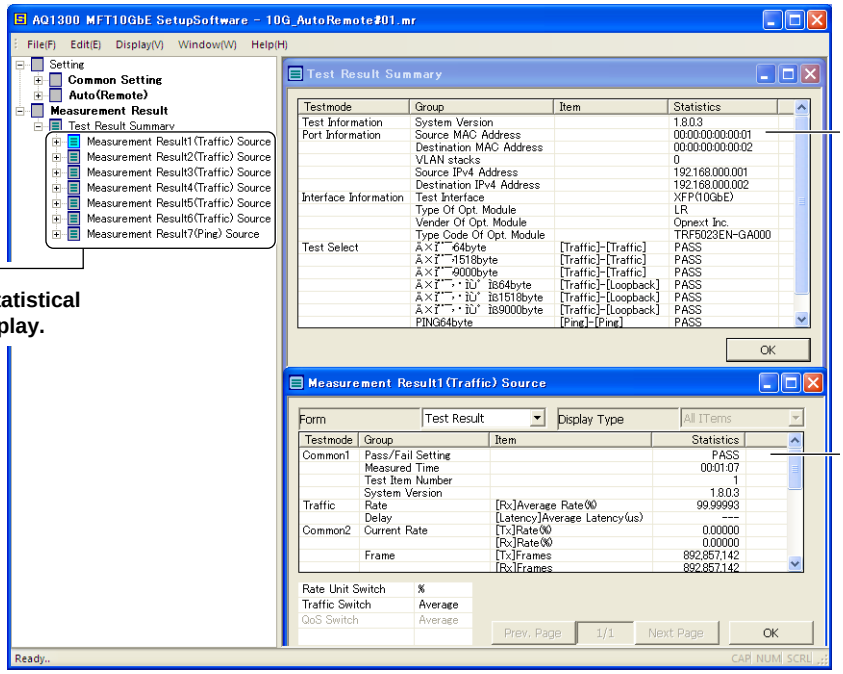
Auto test or Auto(Remote) test	Execution type: **Continuous**, File save type: **Consolidate** (Supported in version R1.08.01.001 and later)
RFC2544 Test	

In the control view, select the statistical result to display

RFC2544 Test



Select the statistical result to display.



Test result summary screen

You can check test items and pass/fail judgments.

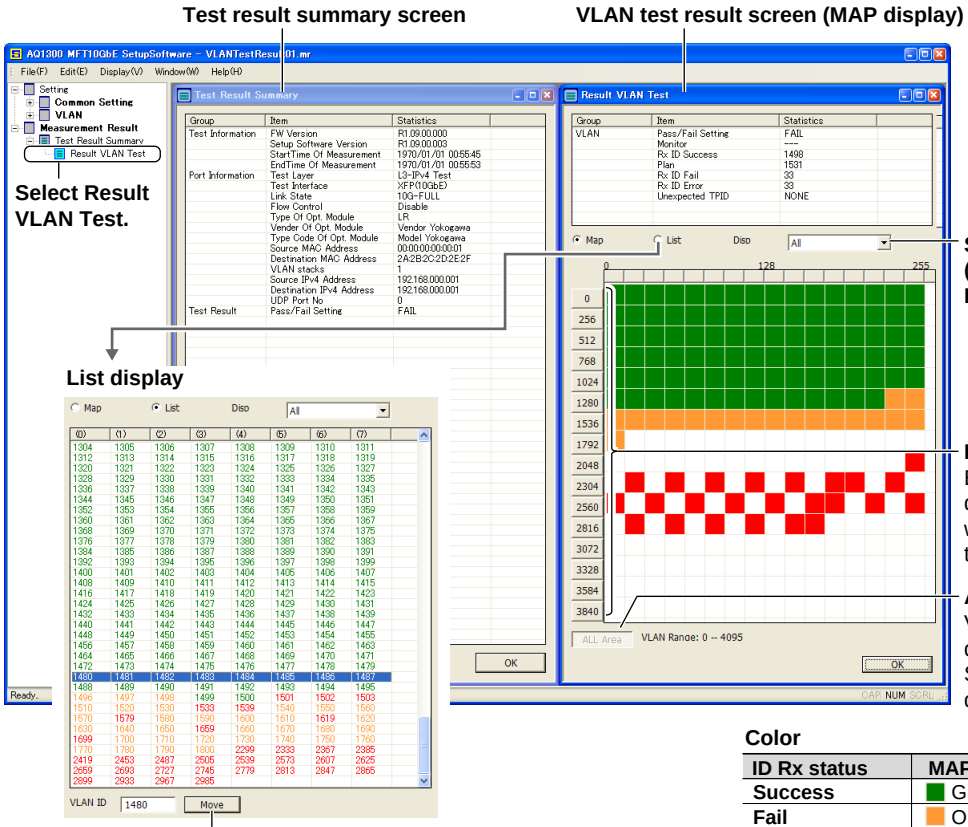
Statistical result screen (example of traffic)

For details on how to use this screen, see the statistical result screen in the previous section.

* For details on the test result screens of the RFC2544 test, see the user’s manual, IM AQ1300-01EN.

VLAN Test (Supported in version R1.09.01.001 and later)

In the control view, select the VLAN test result.



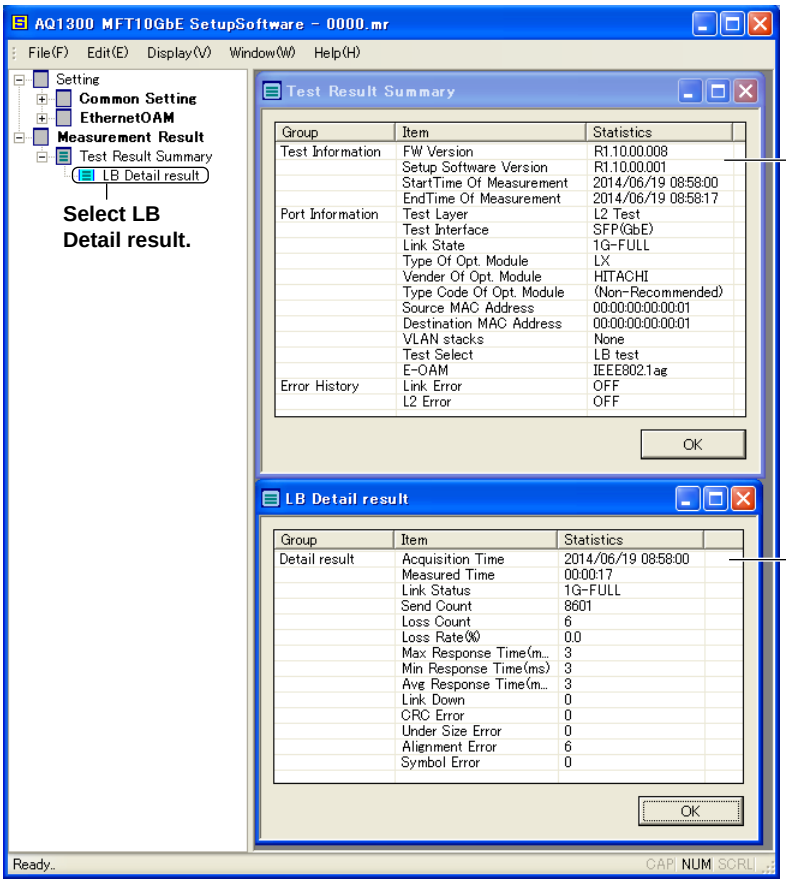
Color

ID Rx status	MAP display	List display
Success	Green	
Fail	Orange	
Error	Red	
Monitor	Blue	
None	White	—
Other	Gray	—

* For details on the VLAN test result screen, see “Explanation” in section 11.8 in the user’s manual IM AQ1300-01EN.

Ethernet OAM Test (Supported in version R1.10.01.001 and later)

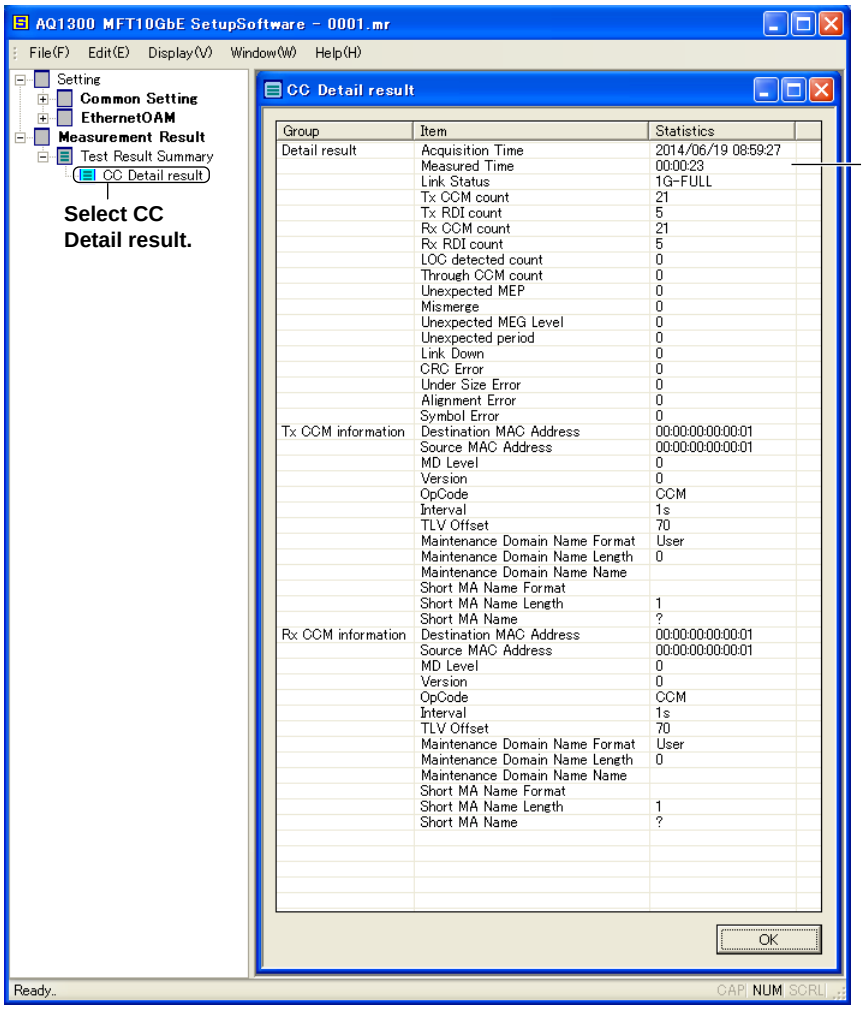
In the control view, select the LB Detail result.



Test result summary screen
You can check test items.

LB Detail result
You can check the statistical result.

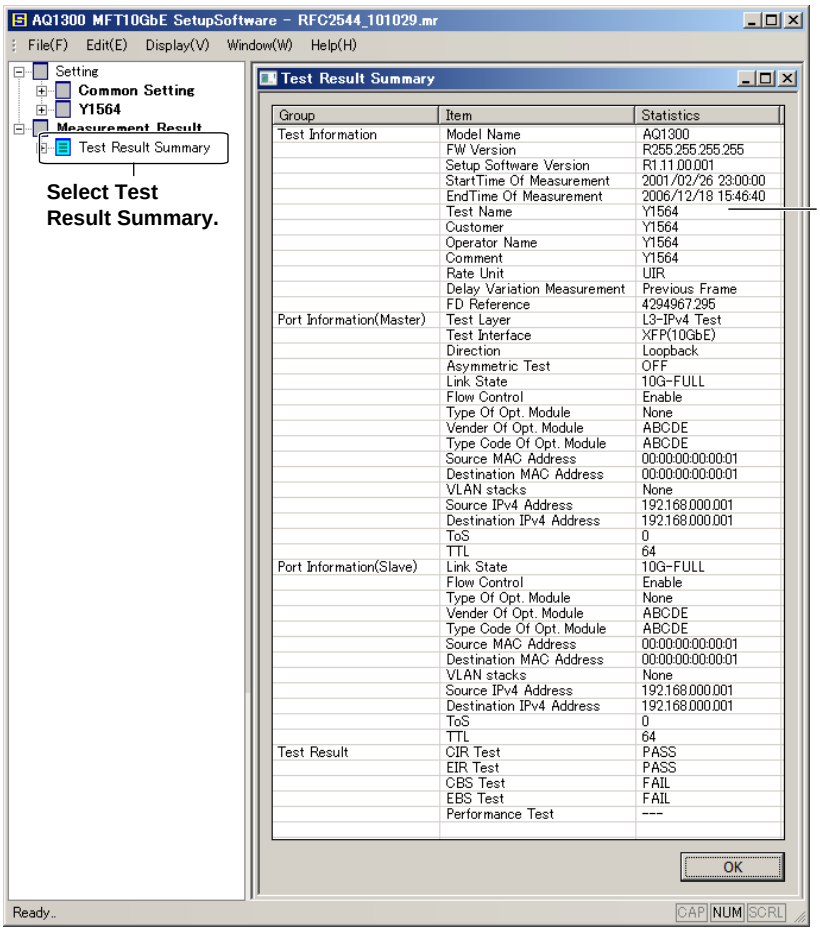
In the control view, select the CC Detail result.



CC Detail result
You can check the statistical result.

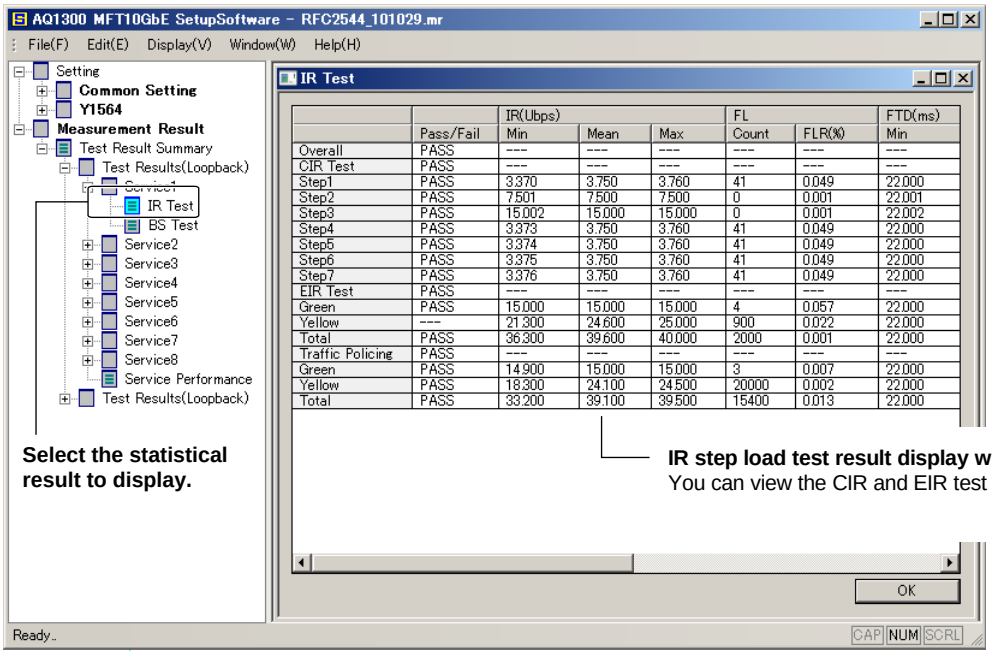
Y.1564 Test (Supported in version R1.11.01.001 and later)

In the control view, select **Test Result Summary**.



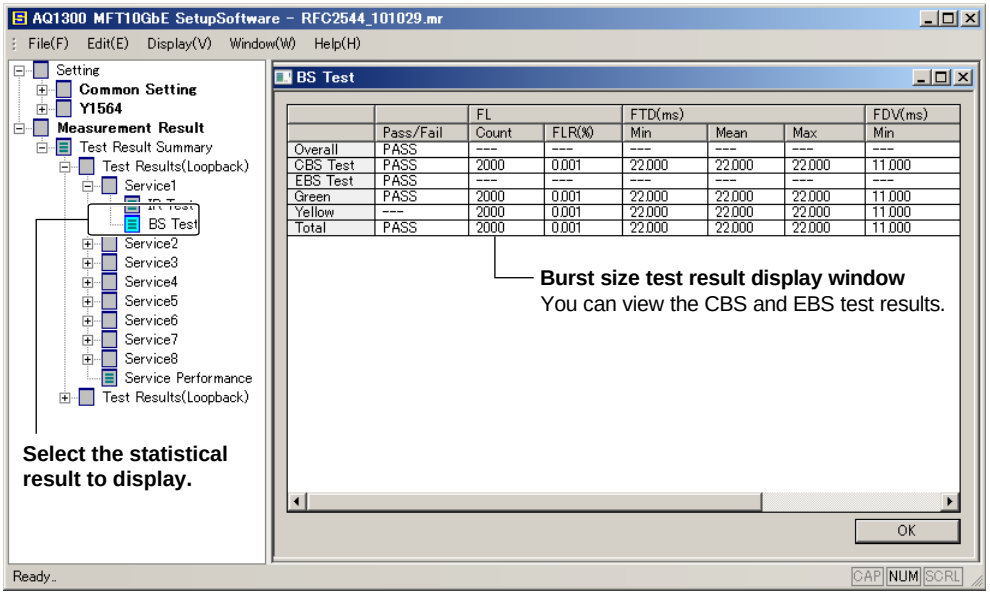
Test Result Summary window
You can view the results of the test items.

In the control view, select **IR Test**.



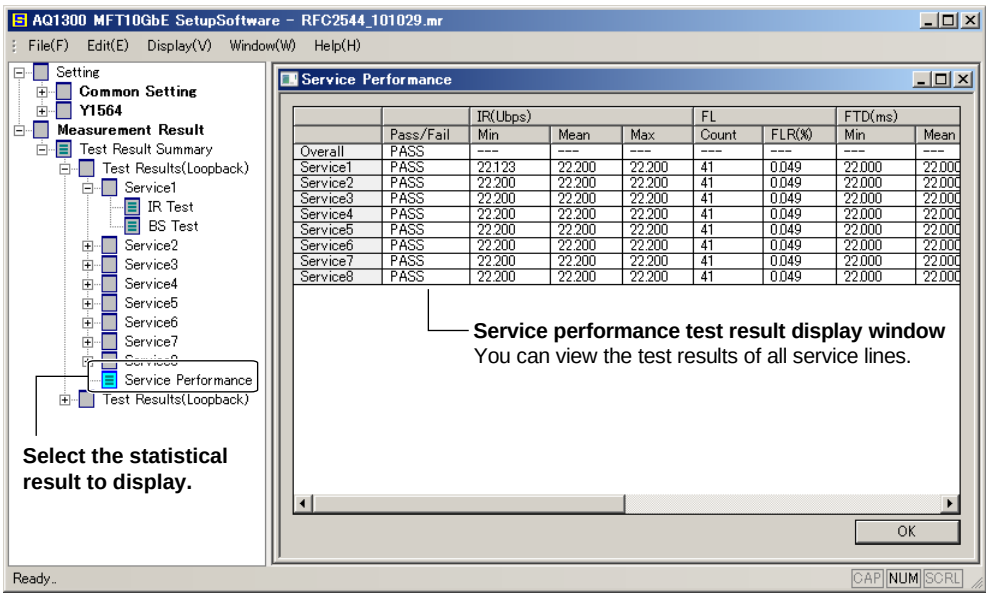
IR step load test result display window
You can view the CIR and EIR test results.

In the control view, select **BS Test**.



		FL		FTD(ms)			FDV(ms)
	Pass/Fail	Count	FLR(%)	Min	Mean	Max	Min
Overall	PASS	---	---	---	---	---	---
CBS Test	PASS	2000	0.001	22.000	22.000	22.000	11.000
EBS Test	PASS	---	---	---	---	---	---
Green	PASS	2000	0.001	22.000	22.000	22.000	11.000
Yellow	---	2000	0.001	22.000	22.000	22.000	11.000
Total	PASS	2000	0.001	22.000	22.000	22.000	11.000

In the control view, select **Service Performance**.



		IR(Ubps)			FL		FTD(ms)	
	Pass/Fail	Min	Mean	Max	Count	FLR(%)	Min	Mean
Overall	PASS	---	---	---	---	---	---	---
Service1	PASS	22.123	22.200	22.200	41	0.049	22.000	22.000
Service2	PASS	22.200	22.200	22.200	41	0.049	22.000	22.000
Service3	PASS	22.200	22.200	22.200	41	0.049	22.000	22.000
Service4	PASS	22.200	22.200	22.200	41	0.049	22.000	22.000
Service5	PASS	22.200	22.200	22.200	41	0.049	22.000	22.000
Service6	PASS	22.200	22.200	22.200	41	0.049	22.000	22.000
Service7	PASS	22.200	22.200	22.200	41	0.049	22.000	22.000
Service8	PASS	22.200	22.200	22.200	41	0.049	22.000	22.000

Explanation

Loading Statistical Results

You can open and display statistical result files that have been created on the AQ1300/AQ1301. However, any changes that you have made to the current data are discarded and cannot be restored. Save the current data as necessary.
For details on the items that are displayed in a statistical result, see the user's manual, IM AQ1300-01EN.

Note

The following items are added to statistical results files that have been processed by AQ1300s whose firmware version is R1.05.01.001 or later.

- Test item number (1 to 8) at the time of measurement
- System version at the time of measurement
- VLAN stacks at the time of measurement
- Interface information at the time of measurement
  Test interface, Optical module type, Optical module vendor, Optical module model name (identification of optical modules that are not recommended)

File Name Extension

The file name extension is .mr.

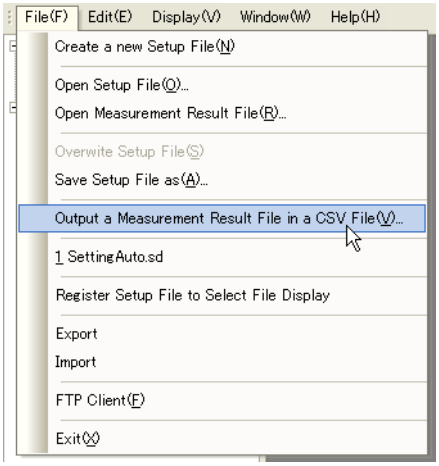
4.5 Exporting Statistical Results to CSV Files

Procedure

Exporting Statistical Results to CSV Files

1. While a statistical results file is open, on the **File** menu, click **Output a Measurement Result File in a CSV File**.

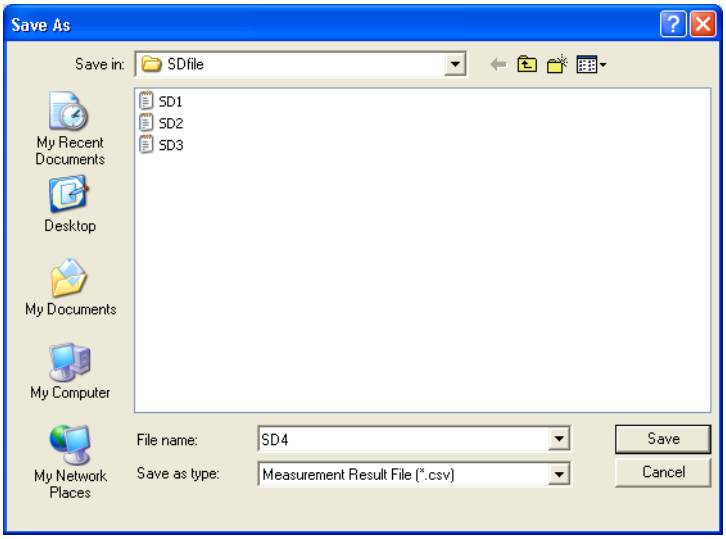
   If you do not open and display a statistical result file by following the procedure in section 4.4, **Output a Measurement Result File in a CSV File** is unavailable.



Saving Data as CSV Files

2. Specify the folder to save to, specify the file name, and click **Save** to save the file.

   Check that the file was saved as a statistical result file (with the .csv extension).



Explanation

Generating CSV from Statistical Results

You can save the data in AQ1300/AQ1301 statistical result files in CSV format.

If you do not open and display an AQ1300/AQ1301 statistical result file, you cannot perform this operation.

Output Example

The following example shows the saved data being displayed in a spreadsheet program.

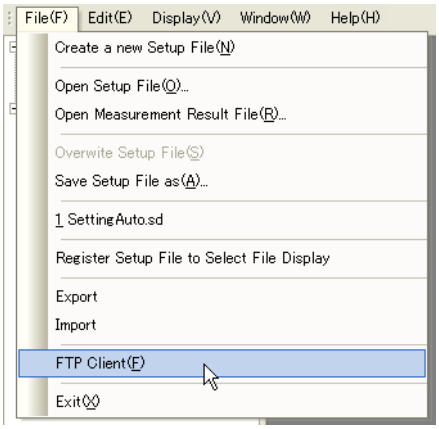
	A	B	C	D	E	F	G
1	System Version	R1.05.01.001(Master)	R1.05.00.006(Slave)				
2	StartTime Of Measurement	2010/2/16 17:12					
3	EndTime Of Measurement	2010/2/16 17:12					
4							
5	Measurement Type	Auto(Remote)					
6	Test Layer	L3-IPv4 Test					
7	Test Interface	XFP(10GbE)					
8	Filename	C:¥PROJECT¥MFT¥csvEng.sd					
9	Testmode	[Traffic]-[Traffic]					
10	Test Item Number	1					
11							
12	********Address Setting(Master)						
13	SourceMAC Address	00:00:00:00:00:01					
14	DestinationMAC Address	00:00:64:93:E0:05					
15	VLAN stacks	2					
16	VLAN2	TPID	0x8100	CoS	3	VLANID	995
17	VLAN1	TPID	0x8100	CoS	6	VLANID	2518
18	SourceIPv4 Address	192.168.0.1					
19	DestinationIPv4 Address	192.168.0.2					
20							
21	********Address Setting(Slave)						
22	SourceMAC Address	00:00:64:93:E0:05					
23	DestinationMAC Address	00:00:00:00:00:01					
24	VLAN stacks	2					
25	VLAN2	TPID	0x8100	CoS	3	VLANID	995
26	VLAN1	TPID	0x8100	CoS	6	VLANID	2518
27	SourceIPv4 Address	192.168.0.2					
28	DestinationIPv4 Address	192.168.0.1					
29							
30	********Interface Information(Master)						
31	Test Interface	XFP(10GbE)					
32	Type Of Opt. Module	LR					
33	Vender Of Opt. Module	SumitomoElectric					
34	Type Code Of Opt. Module	SXP3101NV-02H	(Non-Recommended)				
35							
36	********Interface Information(Slave)						
37	Test Interface	XFP(10GbE)					
38	Type Of Opt. Module	LR					
39	Vender Of Opt. Module	FINISAR CORP.					
40	Type Code Of Opt. Module	FTLX1411M3	(Non-Recommended)				
41							
42	********Summary(Master)						
43	Tx Rate(%)	100					
44	Frame Length	72					
45	Frames	100000000					

4.6 Starting the FTP Client

Procedure

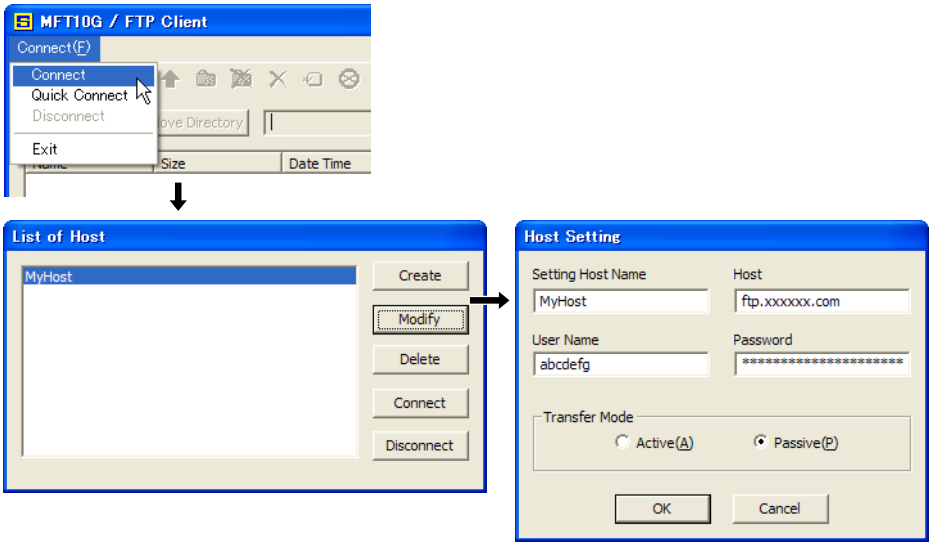
Starting the FTP Client

1. On the **File** menu, click **FTP Client**.



Configuring the Connection

2. On the **Connect** menu, click **Connect**. The List of Host screen is displayed. Select the host that you want to connect to, and then click **Modify** to configure the host settings.



Connecting to a Host

3. On the List of Host screen, click **Connect**.

Explanation

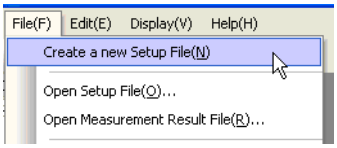
The setup software has an FTP client feature.

- You can transfer data between the client and FTP servers (upload and download).
- Ask the host's administrator for the settings of the host that you want to connect to, such as the address (Host), user name, and password.
- When you start the FTP client, you can also select Quick Connect on the Connect menu to perform a quick connection.

4.7 Using the Simple Test Setting Auto Wizard

Procedure

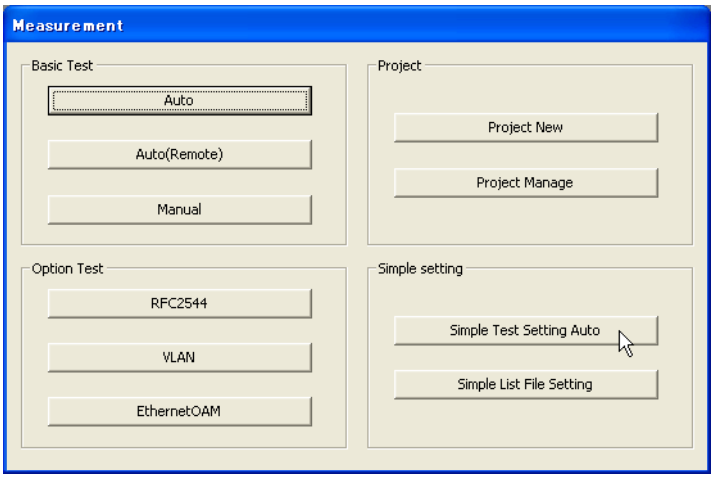
1. On the **File** menu, click **Create a new Setup File**.



A confirmation message is displayed that asks whether you want to discard the current setup data.

2. Click **Yes** or **No**.
   - To use the wizard to create new setup data, click **Yes**, and proceed to step 3.
   - To keep the current setup data, click **No**. The procedure ends here.

3. Click **Simple Test Setting Auto**.



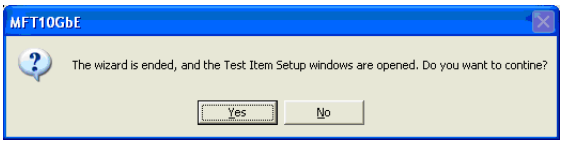
The dialog box closes, and the wizard appears.

4. Follow the instructions in the wizard, and set values for the items.

You can configure the following settings in the wizard.
- Test settings
- Link settings
- Address settings
- Test items
- Option settings
- File name settings

At the end of the wizard, a screen for confirming the settings will appear.

When you click **Next** on this screen, a message appears to confirm whether you want to open the detail setup screen.

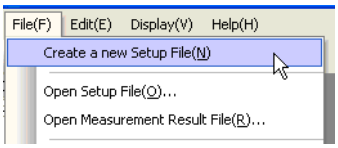


5. Click **Yes** or **No**.
   - To close the wizard and open the detail setup screen, click **Yes**. The wizard closes, and the detail setup screen for the test items you configured in the wizard appears.
   - If you do not want to close the wizard, click **No** to return to the wizard and continue configuring the settings.

4.8 Using the Select File Display Data Creation Wizard

Procedure

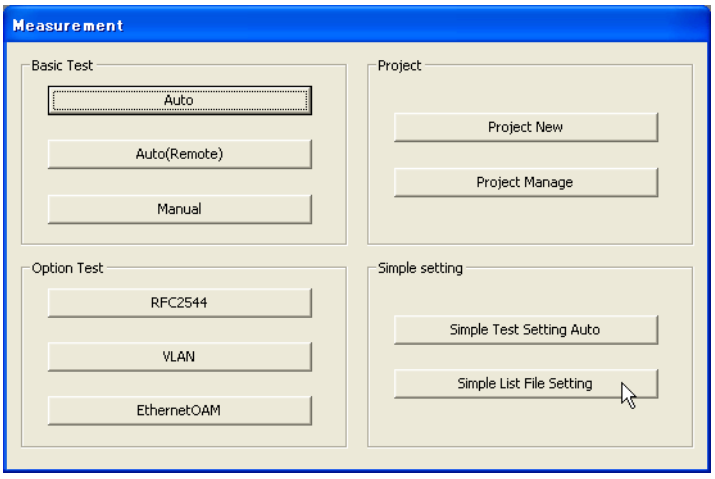
1. On the **File** menu, click **Create a new Setup File**.



A confirmation message is displayed that asks whether you want to discard the current setup data or not.

2. Click **Yes** or **No**.
   - To use the wizard to create new setup data, click **Yes**, and proceed to step 3.
   - To keep the current setup data, click **No**. The procedure ends here.

3. Click **Simple List File Setting**.

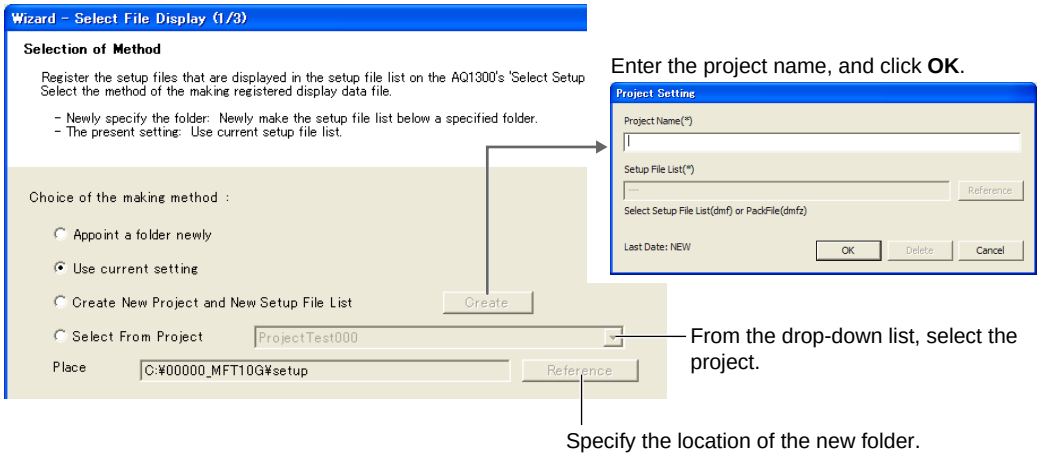


The dialog box closes, and the wizard appears.

Selecting the Creation Method

4. Click the creation method you want to use.

   Depending on the method that you have chosen, configure the following settings.



Editing the Setup File List Data

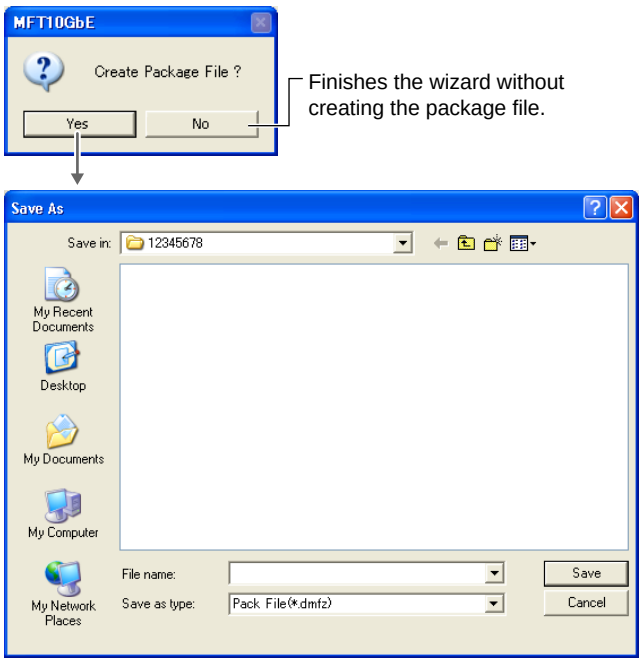
5. Follow the instructions in the wizard to set the items.
At the end of the wizard, a screen for confirming the settings will appear.

Checking the Edited Settings

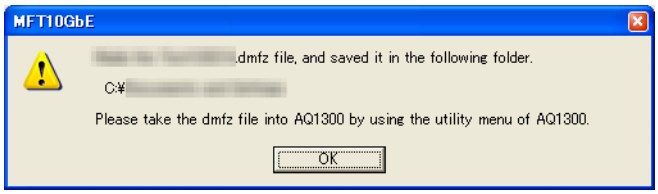
6. Check the settings, and click **Save**.

Creating a Package File

7. Click **Complete**.
A confirmation message is displayed that asks whether you want to create the package file.



8. Enter the package file name, and click **Save**.
The following confirmation screen appears.



Explanation

You can create the setup file list that is displayed on the Select Setup File Screen of the AQ1300/AQ1301 as projects.
To create a project by loading an existing setup file (.sd), specify an existing display management file[1] (disManage.dmf) or package file[2] (.dmfz), and create a new project.

A display management file or a package file is managed as a project. For details, see section 4.9.

1 A display management file (disManage.dmf) contains information of setup files (.sd) registered in the setup file list.
2 A package file (.dmfz) is a single compressed file consisting of a display management file (disManage.dmf) and the registered setup file (.sd).

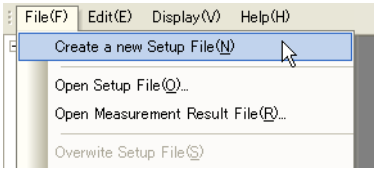
4.9 Managing Setup Files and Result Files

This feature is supported in version R1.09.01.001 and later.

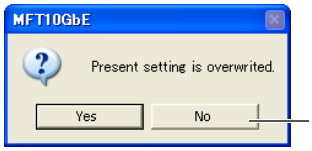
Procedure

Creating a New Project

1. On the **File** menu, click **Create a new Setup File**.

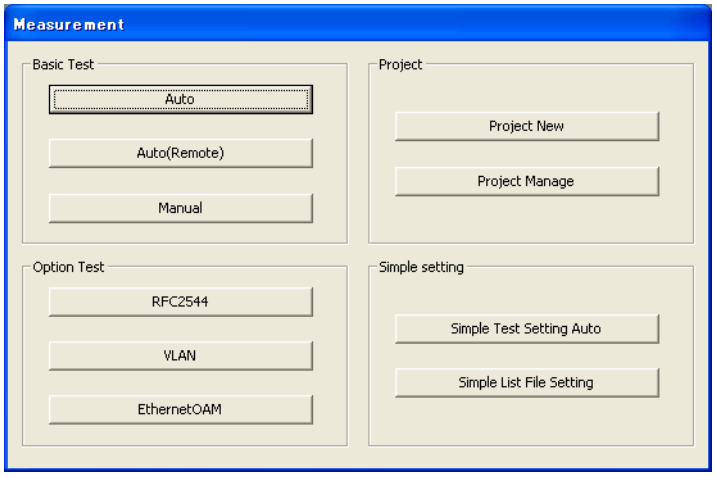


A confirmation message is displayed that asks whether you want to discard the current setup data.

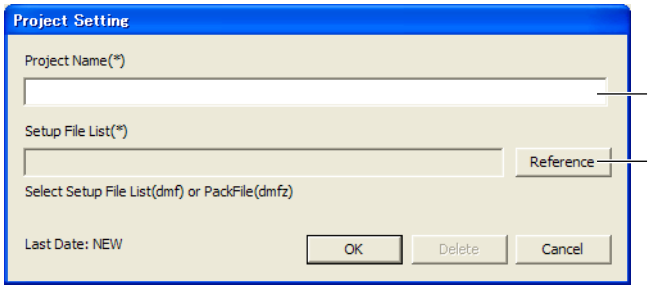


No
Click to keep the current setup data.
If necessary, save the current setup data (see section 4.3).

2. Click **Yes**.
   The current setup data is discarded, and the Measurement dialog box appears.



3. Click **Project New**.
   The Project Setting dialog box appears.



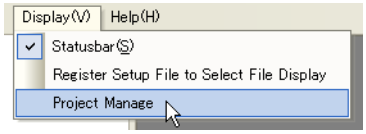
Project Name
Enter a project name of your choice.

Browse for setup files.
Specify a setup file list (disManage.dmf) or package file (.dmfz).

4. Click **OK**.
   A new project is created, and the dialog box closes. You can edit the new project in the Project dialog box explained in the next section.

Managing Projects

1. On the **Display** menu, click **Project Manage**.



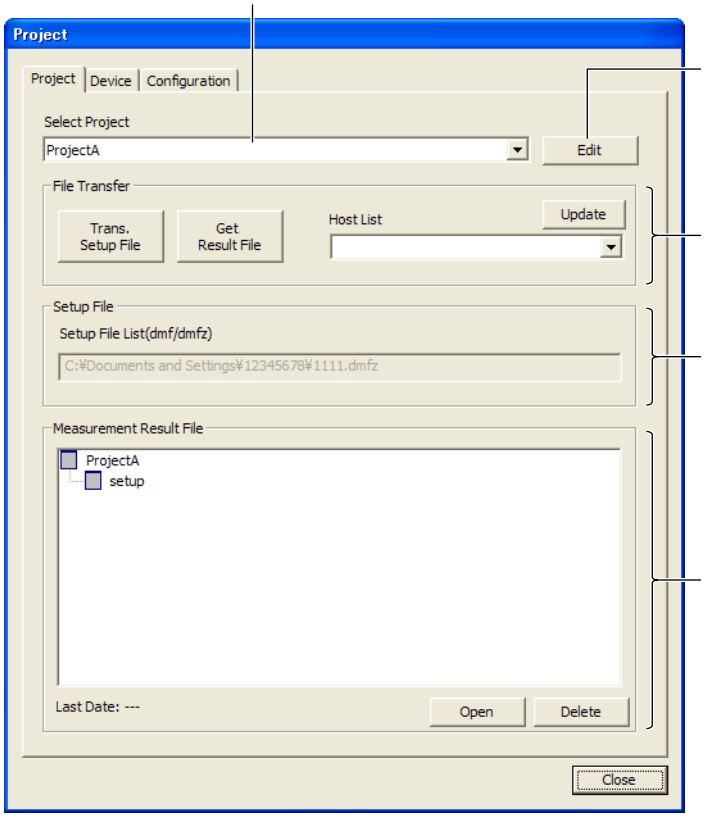
The Project dialog box appears.

Project Dialog Box

- **Configuring a Project**

  Click the **Project** tab. The following screen appears.

Select a project
Select a project that you want to use from the projects registered in the PC.



Edit
Change the project setup file list.

File transfer
Transfer files between the PC and the AQ1300/AQ1301.

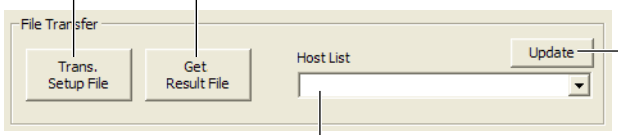
Displays the location of the current display management file or package file

Displays information about the statistical result file that has been retrieved

File Transfer

Trans. Setup File
Transfers the project setup file (.sd) and display management file (disManage.dmf) or a package file (.dmfz) from the PC to the specified the AQ1300/AQ1301.

Get Result File
Transfers the statistical result file or result file (.mr) from the specified the AQ1300/AQ1301 to the PC.



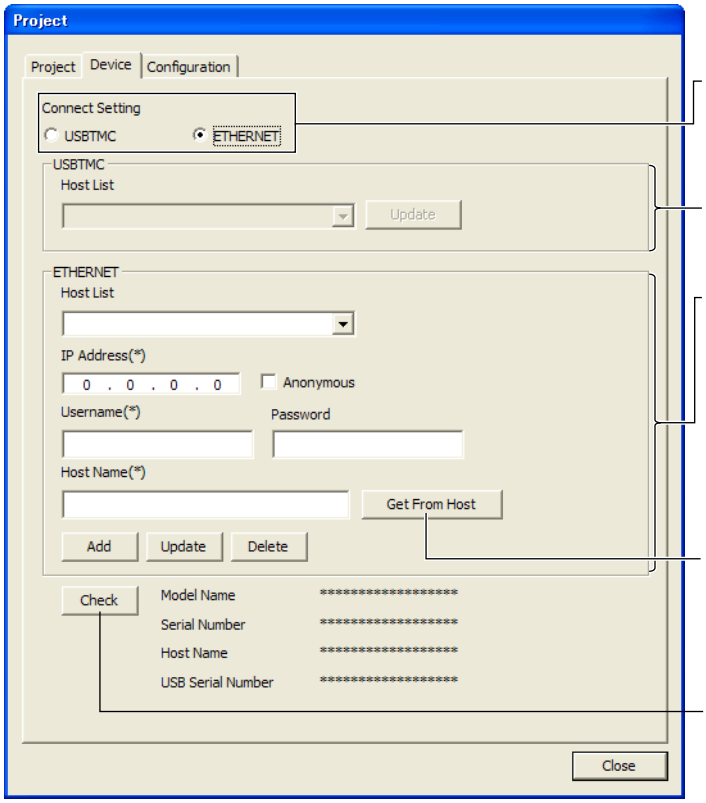
Update
Updates the host list

Host List
If there are several the AQ1300/AQ1301 that you can connect to, select the one to transfer files to.

- **Device Connection Settings**

  Click the **Device** tab. The following screen appears.

  Configure how to connect to the AQ1300/AQ1301.



Select the method to connect to the AQ1300/AQ1301.

When Connect Setting is USBTMC
Displays the host connected via USBTMC

When Connect Setting is ETHERNET
Configure the following items:
- **Select the AQ1300/AQ1301 to connect to.**
- **IP address**
- **User name**
- **Password**
- **Host name**

Retrieves the AQ1300/AQ1301 host name and displays it in the Host Name box

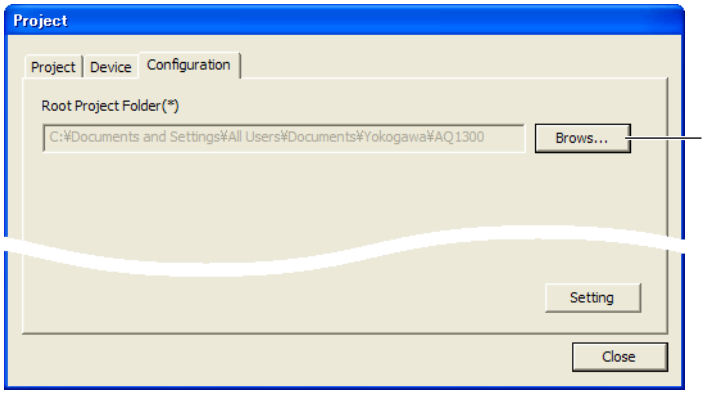
Connects to the host selected in the Host List and displays its information
- **Model Name**
- **Serial Number**
- **Host Name**
- **USB Serial Number** (for USBTMC)

- **Configuration**

  Click the **Configuration** tab. The following screen appears.

  You can change the root project folder to any folder of your choice.

  The root project folder for the first installation
  - If you using Windows XP, Shared Documents/Yokogawa/AQ1300
  - If you using Windows Vista or later, Public Documents/Yokogawa/AQ1300



Select the root project folder.

Explanation

Managing Projects

A pair of setup and display management files[1] or a package file[2] is managed as a project. All projects are managed in the root project folder.

1 Display management files (disManage.dmf) contain information of setup files (.sd) registered in the setup file list.

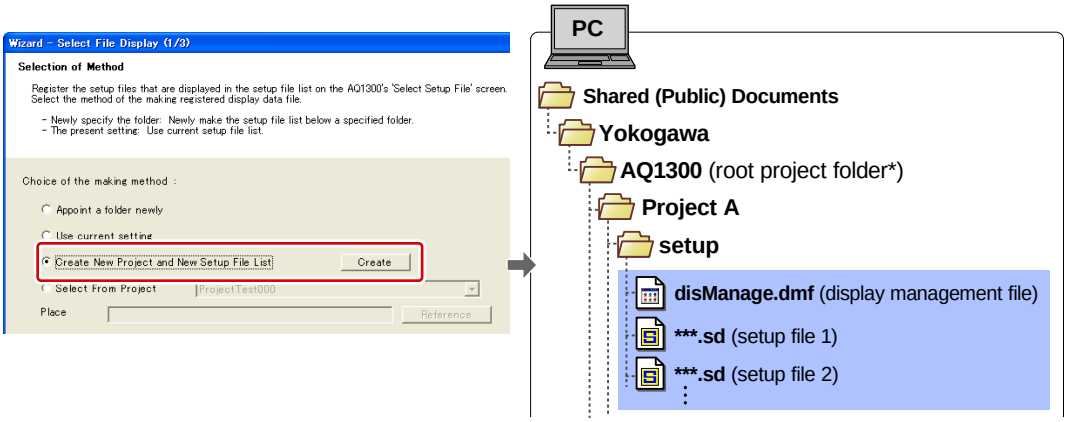
2 A package file (.dmfz) is a single compressed file consisting of a display management file (disManage.dmf) and the registered setup file (.sd).

File Structure

If a Project Is Created Using “Create New Project and New Setup File List” in the Select File Display Data Creation Wizard

The setup file list is managed in the setup folder under the newly created project.

For details on the Select File Display Data Creation Wizard, see section 4.8.



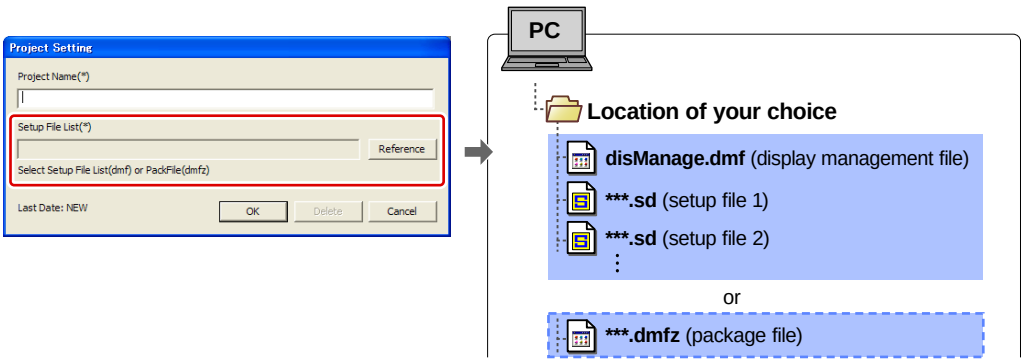
* The root project folder for the first installation.
- If you using Windows XP, Shared Documents/Yokogawa/AQ1300
- If you using Windows Vista or later, Public Documents/Yokogawa/AQ1300

You can change this folder to any folder on the Configuration tab in the Project dialog box.

If a Display Management File or Package File is Specified in the Project Dialog Box for Creating a New Project

The display management file and package file in the specified location is managed by the project.

* Files that are not in the root project folder can be used.



Trans. Setup File

The setup file and display management file of the project selected on the PC are transferred to the setup folder in the AQ1300/AQ1301.

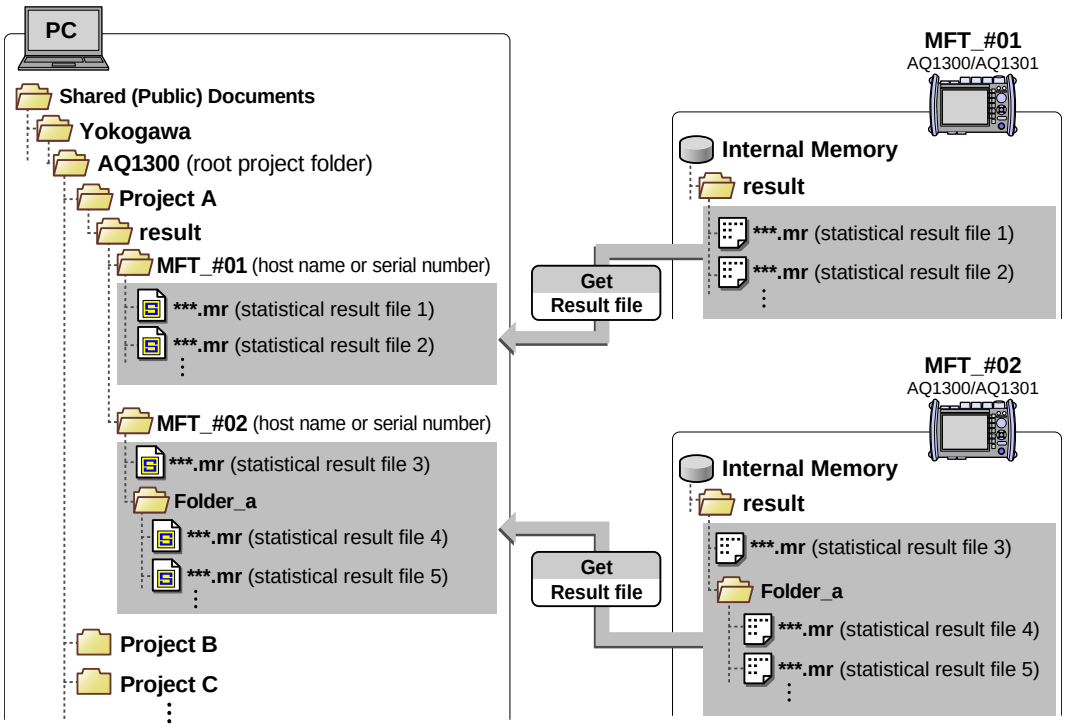
If a package file was selected when the project was created, the package file is sent to the AQ1300/AQ1301 and uncompressed in the setup folder.

* When you click **Trans. Setup File**, an overwrite confirmation message will appear.
  If you select Yes, the setup file list on the AQ1300/AQ1301 is overwritten with that on the PC.

Get Result File

The statistical result file (.mr) and the result folder are copied from the specified AQ1300/1301 to the PC. The file and folder are saved in a folder identified by the host name or serial number in the result folder of the selected project.

* When you click **Get Result File**, an overwrite confirmation message will appear.
  Selecting Yes will copy the statistical result file to the PC. If a file with the same name exists, it will be overwritten.
* When the transferring of the result file is complete, a confirmation message is displayed that asks whether you want to delete the statistical result file on the AQ1300/AQ1301. If you select Yes, the file and folder in the result folder of the AQ1300/AQ1301 will be deleted.



Error Messages

An error message may appear when you create a new project or while you edit in the Project dialog box. This section describes the error messages and how to respond to them.

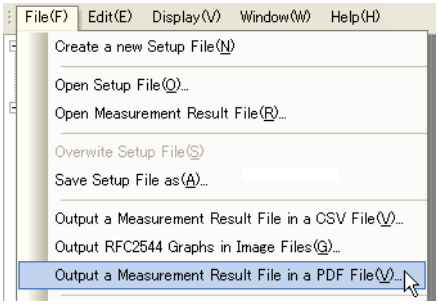
Message	Corrective Action
Please enter Project Name.	• Enter the project name.
Contains a character that can not be used in Project Name.	• Check that the following characters are not included in the project name. ¥, /, :, *, ?, ", <, >, or |
Failure to create the project. This project already exists.	• Project names already registered cannot be used. Register with another name. • Delete the project that is already registered, and then register again.
Please select Setup File List.	• Check that the setup file is selected.
Project is not registered. Please do create a new project from Top Dialog.	• Check that the project is registered. If not, register it from the project setup screen. You can start the project setup screen from the Measurement dialog box.
Please select Device.	• Select a host from the host list first.
Setup File List does not exist.	• Check that the setup file list exists in the setup file list storage location. If it does not, select the setup file list again.
Comm has time out.	• Check that a connection is established with the AQ1300/AQ1301. • Check that the connection method (USBTMC or ETHERNET) is correct. • Check that the IP address, username, and password are the same as those on the AQ1300/AQ1301.
Wrong Device.	• Check that the connected host is an AQ1300 or AQ1301.
Firmware is not compatible.	• Check that the version of the connected host is 1.09 or later.
Comm error has occurred.	• Check that a connection is established with the AQ1300/AQ1301. • Remove the cable connected to the AQ1300/AQ1301 once, and reconnect it.
Please select the Measurement Result File.	• Select a statistical result file.
Please enter User.	• Enter the username.
User can not be used characters are used.	• Check that the following characters are not included in the username. Characters other than alphanumeric characters
Password can not be used characters are used.	• Check that the following characters are not included in the password. Characters other than alphanumeric characters
Please enter Host Name.	• Enter the host name.
It is a device registered. Please delete or set a different name.	• Host names already registered cannot be used. Register with another name. • Delete the host name that is already registered, and then register again.
Host Name can not be used characters are used.	• Check that the following characters are not included in the host name. Characters other than alphanumeric characters, ¥, /, :, *, ?, ", <, >, or |

4.10 Exporting the Statistical Results of an RFC2544 Test and a Y.1564 Test to PDF

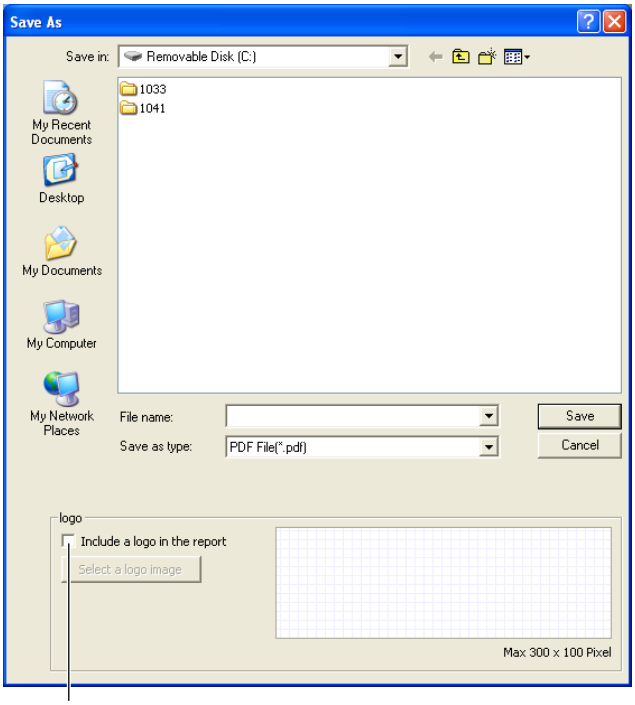
Procedure

1. On the **File** menu, click **Output a Measurement Result File in a PDF File**.

   If you do not open and display a statistical result file by following the procedure in section 4.4, **Output a Measurement Result File in a PDF File** is unavailable.



The PDF export dialog box appear.



Select this check box to insert a logo into the PDF file's header
(see page 4-25)

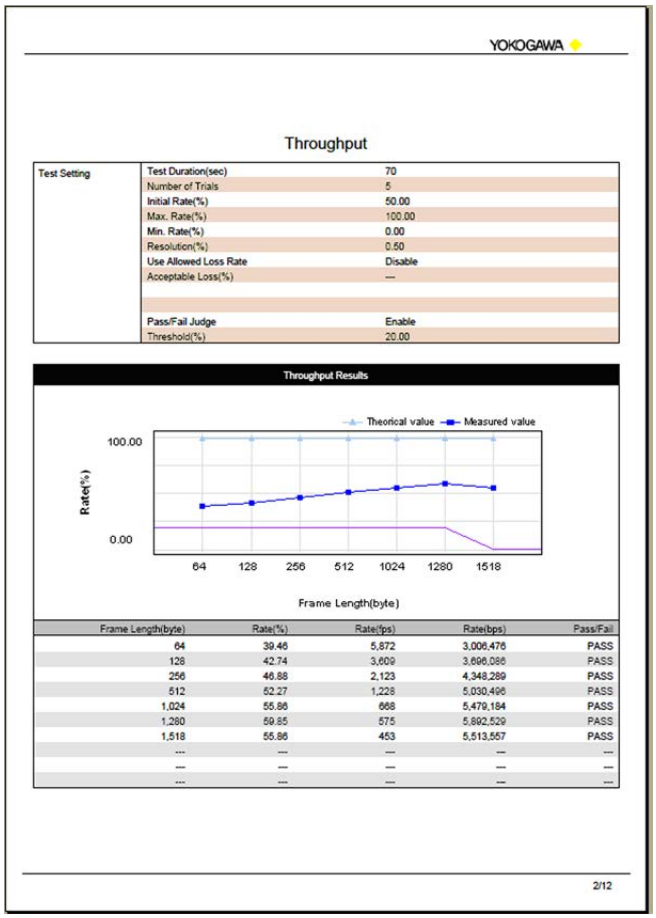
Exporting a PDF File without a Logo in the Header

2. Specify the folder to save to, specify the file name, and click **Save** to save the file.

Check that the file was saved as a PDF file (with the .pdf extension).

Output Example (RFC2544 Test)

The following example shows the saved data being displayed in a PDF reader application.



YOKOGAWA

Throughput

Test Setting	Test Duration(sec)	70
	Number of Trials	5
	Initial Rate(%)	50.00
	Max. Rate(%)	100.00
	Min. Rate(%)	0.00
	Resolution(%)	0.50
	Use Allowed Loss Rate	Disable
	Acceptable Loss(%)	---
	Pass/Fail Judge	Enable
	Threshold(%)	20.00

Throughput Results

Frame Length(byte)	Rate(%)	Rate(fps)	Rate(bps)	Pass/Fail
64	39.46	5,872	3,006,476	PASS
128	42.74	3,609	3,696,086	PASS
256	46.88	2,123	4,348,289	PASS
512	52.27	1,228	5,030,496	PASS
1,024	55.86	668	5,479,184	PASS
1,280	59.85	575	5,892,529	PASS
1,518	55.86	453	5,513,557	PASS
---	---	---	---	---
---	---	---	---	---
---	---	---	---	---

2/12

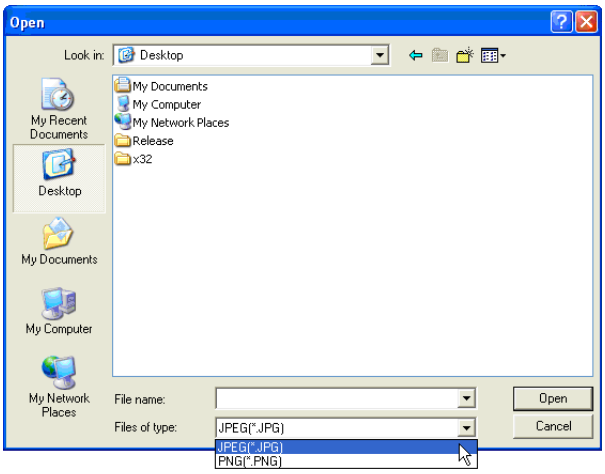
Exporting a PDF File with a Logo in the Header

You can insert a logo into the header of the PDF file.

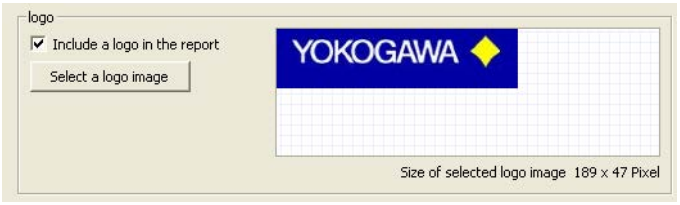
2. After step 1 on page 4-23, select the **Include a logo in the report** check box, and click **Select a logo image**.

3. Select the image file of the logo that you want to insert, and click **Open**.

   The file types that you can choose from are JPEG and PNG. The size of the image can be up to 300 × 100 pixels.

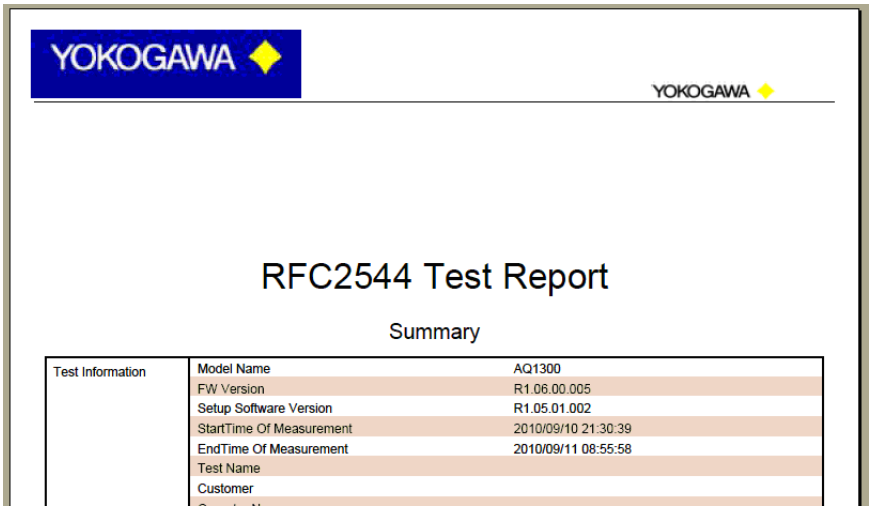


4. The logo that you selected appears in the bottom of the PDF export dialog box.



5. Specify the folder to save to, specify the file name, and click **Save** to save the file.

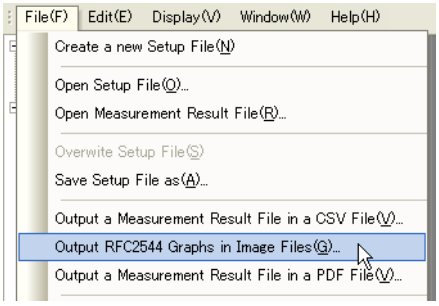
Example of an Inserted Logo



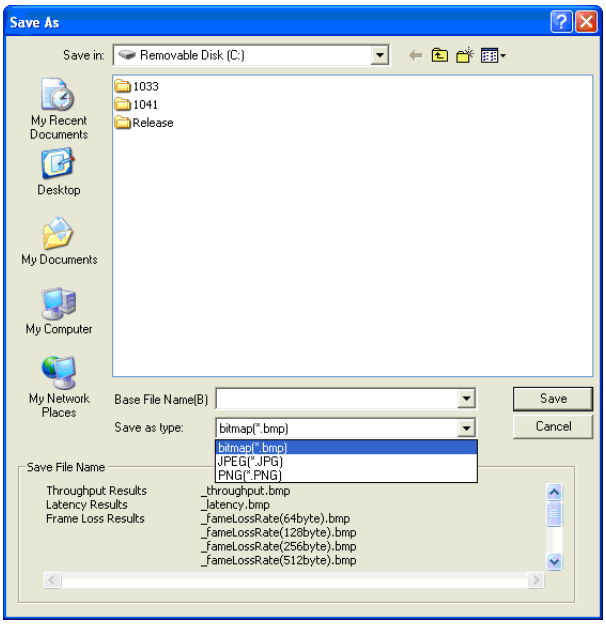
4.11 Exporting the Graph Images of the Statistical Results of an RFC2544 Test

Procedure

1. On the **File** menu, click **Output RFC2544 Graphs in Image Files**.
   If you do not open and display a statistical result file by following the procedure in section 4.4, **Output RFC2544 Graphs in Image Files** is unavailable.



2. Specify the folder to save to, specify the base file name, and click **Save** to save the file.



Note

- The image file formats that you can save to are bitmap (24 bit), JPEG, and PNG.
- The files are saved to the specified location with the following names: [The base name you entered]_[The test item name].[The extension]. One file is saved for each selected test item.

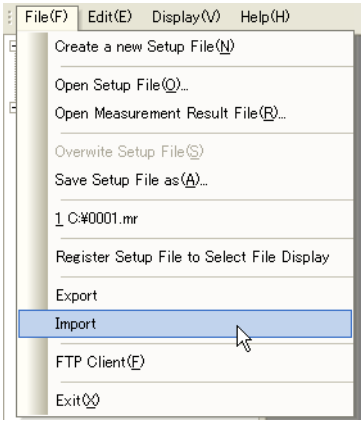
4.12 Importing and Exporting Setup Text Files

This feature is supported in version R1.08.01.001 and later.

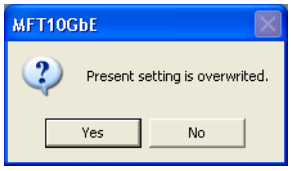
Procedure

Importing a Setup Text File

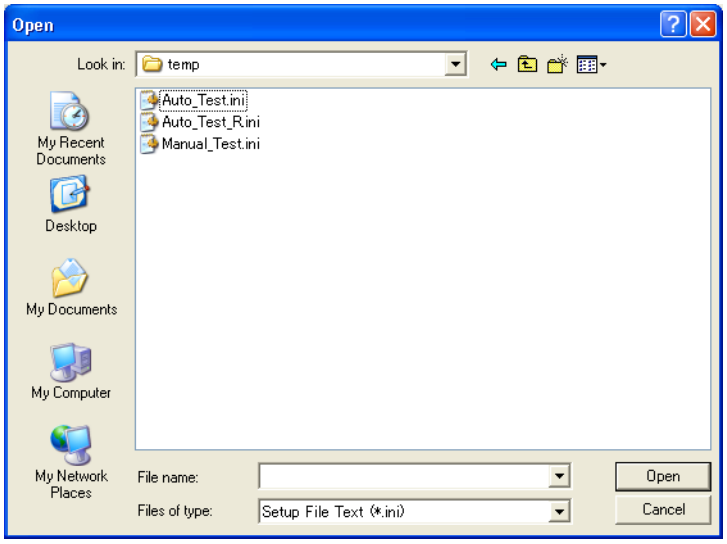
1. On the **File** menu, click **Import**.
   A confirmation message is displayed that asks whether you want to discard the current setup data.



2. Click **Yes** or **No**.
   - To import the setup text file, click Yes. Proceed to step 3.
   - To keep the current setup data, click No. The procedure ends here.

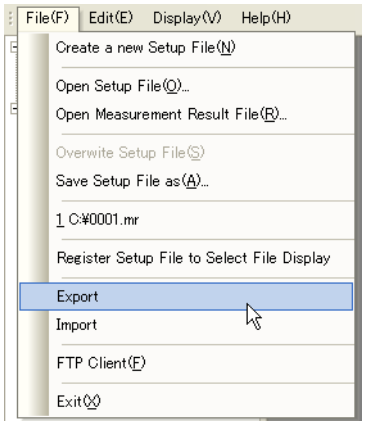


3. Select the setup text file, and click **Open**.
   The selected setup text file is imported.

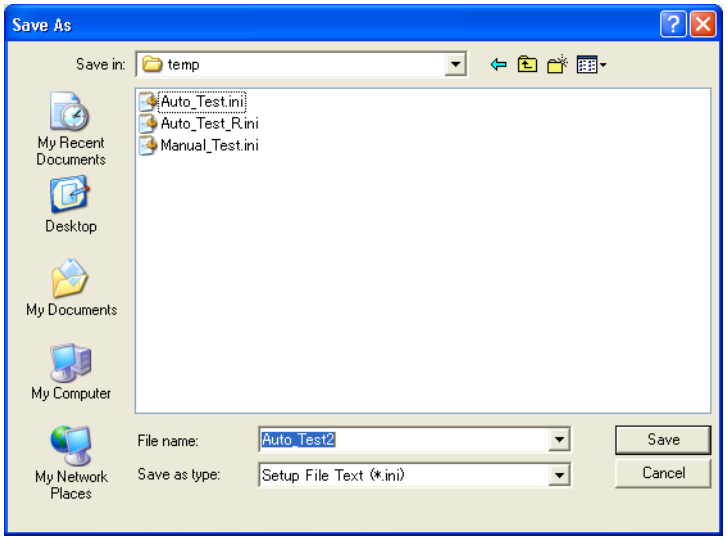


Exporting a Setup Text File

1. On the **File** menu, click **Export**.



2. Specify the folder to save to, specify the file name, and click **Save** to save the file.
   Check that the file was saved as a setup text file (with the .ini extension).



Explanation

Importing a Setup Text File

You can import a setup text file that you edited on an external device. Note that when you import a file, any changes that you have made to the current data are discarded and cannot be restored. Save the current data as necessary. For details on saving setup data, see section 4.2.
The extension of setup text files is .ini.

Note

- When creating a setup text file, use ANSI or Shift-JIS for the character encoding.
  Depending on the OS, double-byte characters may not be recognized.
  In such case, replace double-byte characters with single-byte characters.
- Items that are not specified in setup text files are set to their default values.
- To load a Frame Builder setup file (.frb extension) in a manual test, place the file in the same folder as the setup text file (.ini extension).

Exporting a Setup Text File

The extension of setup text files is .ini.
In a manual test, a Frame Builder setup file (.frb extension) is exported in addition to the setup text file.
An example of a setup text file opened in a text editor is shown next.

- **Setup Text File Example**

```
[INFORMATION]
VERSION             = R*.**.**.***
TEST_TYPE           = AUTO_REMOTE                    'AUTO, AUTO_REMOTE, MANUAL, RFC2544

[PORT_SETTING_SRC]
TEST_INTERFACE                = XFP                  'XFP, SFP(GBE), SFP(FE), RJ-45
TEST_LAYER          = L3-IPV4                        'L2, L3-IPV4, L3-IPV6
ADD_UDP             = OFF
USE_JUMBO_FRAME               = ON
NEGOTIATION_EDIT              = ON
NEGOTIATION                   = MANUAL               'MANUAL, AUTO
SPEED_EDIT          = ON
SPEED               = 10G                            '10M, 100M, 1G, 10G, AUTO
DUPLEX_EDIT                   = ON
DUPLEX              = FULL                           'HALF, FULL, AUTO
FLOW_CONTROL_EDIT             = ON
FLOW_CONTROL                  = ON
MDI_EDIT            = ON
MDI                 = MDI                            'MDI, MDI-X, AUTO
MAC_ADDRESS_EDIT              = ON
MAC_ADDRESS_TYPE              = MANUAL               'GLOBAL, ARP/NDP, MANUAL
MAC_ADDRESS                   = 00:00:00:00:00:01
VLAN_EDIT           = ON
```

Error Messages

An error message may appear when you are importing or exporting a setup text file. This section describes the error messages and how to respond to them. Some messages indicate the line number in the setup text file where there is an error. Check the indicated line.

Message	Corrective Action
The setup file Load Error	Check whether the specified file exists in the folder. Check that the file name extension is .ini.
The setup file Save Error	Check whether the specified folder exists. Check that the file name extension is .ini.
Selected unrecognized SECTION.	Check whether the test type (TEST_TYPE) is specified correctly. Test types: Auto, Auto(Remote), Manual, RFC2544, and VLAN
Selected unrecognized PARAMETER.	Enter only one equal sign in the parameter syntax. If you enter more than one, an error will occur.
There is no entry required.	Check that version information (VERSION) is specified.
Test category does not exist.	Specify the test type (TEST_TYPE). Test types: Auto, Auto(Remote), Manual, RFC2544, and VLAN
Cannot Load, because the version is different.	This software does not support the major version specified in the file. Check the supported version. For details on the version information, see section 5.3.
Is a supported version.	The middle version is different. This software may not support some of the functions specified in the file. Check the version. For details on the version information, see section 5.3.
It is not a string of numeric format.	Specify the parameter using numbers (decimals).
It is not a string of hexadecimal format.	Specify the parameter in hexadecimals. Attach “0x” to the front of numbers. Example: 0x1a
It is not a string of integer format.	Specify the parameter using a positive number.
String data is not appropriate.	If the parameter requires one of the available options to be specified, do so.
More than a 30 digit string has been specified.	Specify parameters using 30 characters or less.
Frame Builder files is illegal.	There is a syntax error in the Frame Builder setup file (.frb extension). Do not edit Frame Builder setup files using a text editor. Use the Frame Builder software for this purpose.
File Not Found Frame File.	Place the Frame Builder setup file (.frb extension) in the same folder as the setup text file (.ini extension).

5.1 Standard Bar, Control View, and Status Bar

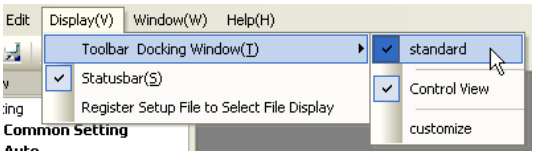
Features marked with an asterisk are not supported in software version R1.09.01.001 and later.

Procedure

Showing and Hiding the Standard Bar*

On the **Display** menu, click **Toolbar Docking Window**, and then click **standard**.

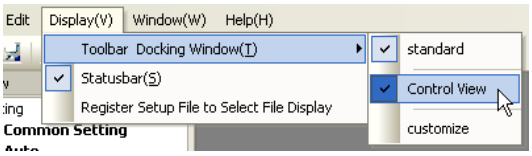
If a check mark is displayed next to "standard," the standard bar is shown. If you carry out this procedure when the check mark is displayed, the standard bar is hidden. If you carry out this procedure when the check mark is not displayed, the standard bar is shown.



Showing and Hiding the Control View*

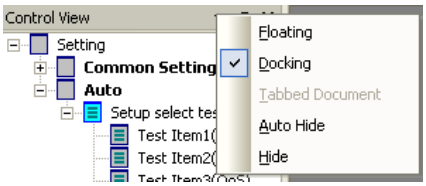
On the **Display** menu, click **Toolbar Docking Window**, and then click **Control View**.

If a check mark is displayed next to "Control View," the control view is shown. If you carry out this procedure when the check mark is displayed, the control view is hidden. If you carry out this procedure when the check mark is not displayed, the control view is shown.

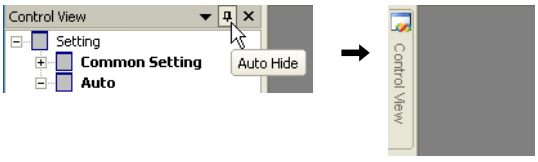


Operations that Can Be Performed on the Control View

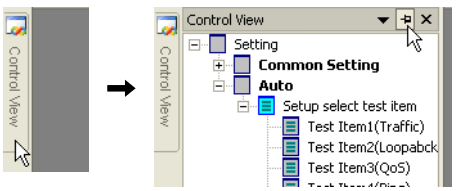
Click the ▼ icon on the control view to display a menu. By selecting commands in this menu, you can change control view settings such as its position and whether the control view is shown or hidden.



If you press the 📌 icon on the control view, the control view collapses to the left edge of the window.



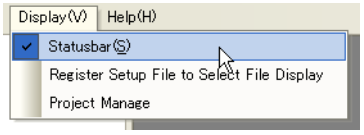
To expand the collapsed control view, move your mouse pointer over the control view's title bar to expand the control view, and then click the 📌 icon.



Showing and Hiding the Status Bar

On the **Display** menu, click **Statusbar**.

If a check mark is displayed next to “Statusbar,” the status bar is shown. If you carry out this procedure when the check mark is displayed, the status bar is hidden. If you carry out this procedure when the check mark is not displayed, the status bar is shown.



Explanation

Display Menu in Software Version R1.09.01.001 and Later

You can show or hide the status bar.

For details on other menus, see the relevant sections indicated below.

- Registering Setup Files to the Select File Display Section 4.3
- Managing Projects Section 4.9

Display Menu before Software Version R1.09.01.001

You can show and hide the standard bar, control view, and status bar.

There is also a “customize” command on the submenu that opens when you click “Toolbar Docking Window” on the Display menu. The customize screen has the following tabs: Commands, Toolbars, Keyboard, Menu, and Options. You can change the settings on these tabs as necessary.

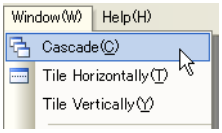
5.2 Showing Cascaded and Tiled Screens and Selecting Which Screen to Display

This section explains the commands that you can use when multiple setup or test screens are open.

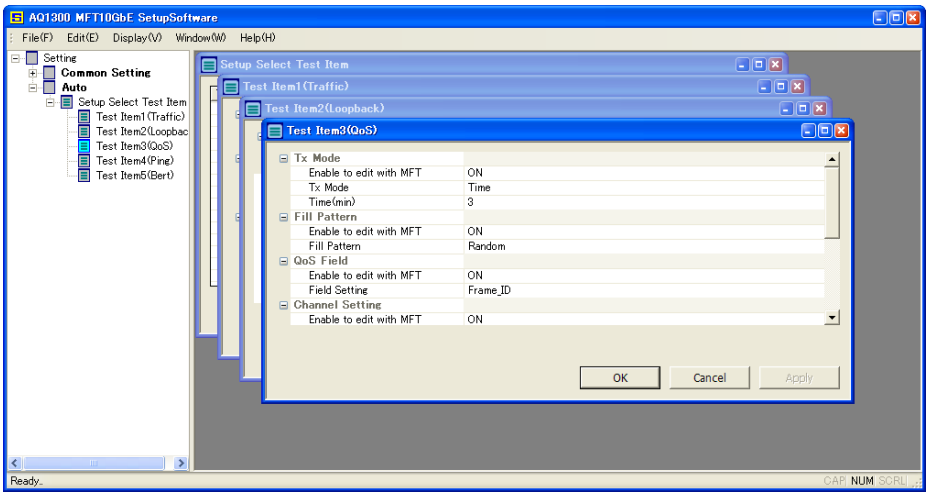
Procedure

Cascaded Screens

On the **Window** menu, click **Cascade**.

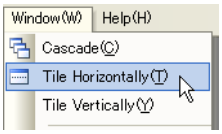


Example

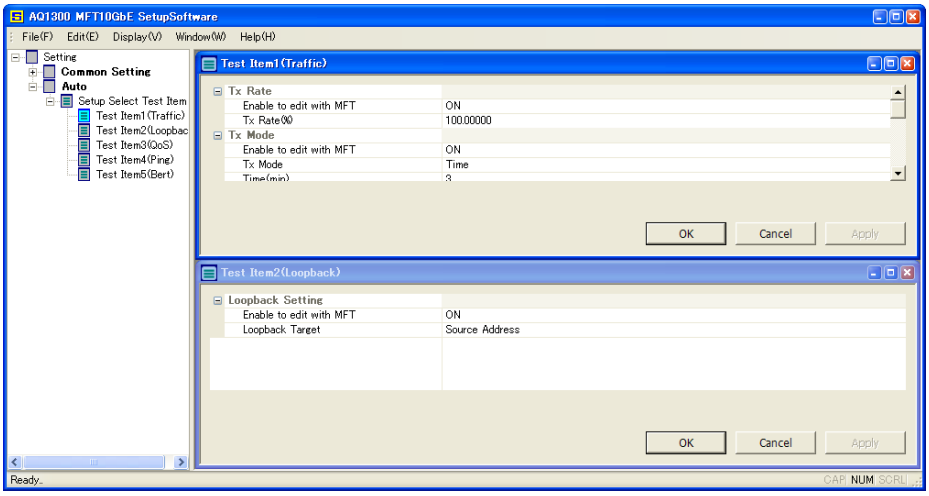


Tiled Screens

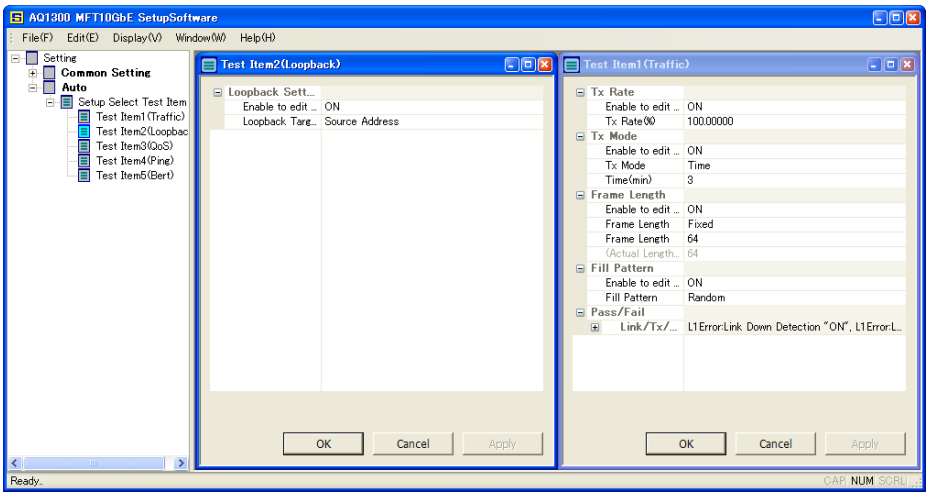
On the **Window** menu, click **Tile Horizontally** or **Tile Vertically**.



Example (Tile horizontally)

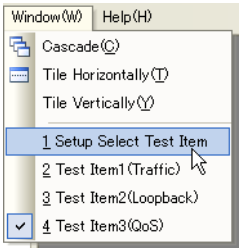


Example (Tile vertically)



Selecting Which Screen to Display

On the **Window** menu, select the screen that you want to display from the list of screens.
The selected screen is displayed on top of all other screens.



Explanation

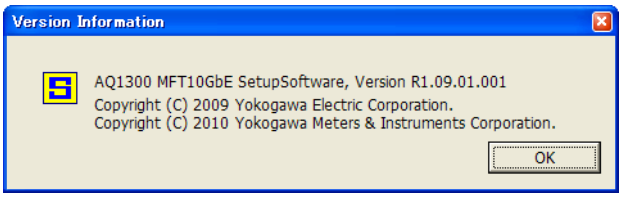
When multiple setup or test screens are displayed, you can arrange the screens and select which screen is displayed on top (the current window).

5.3 Viewing the Software Version

Procedure

On the **Help** menu, click **Version Info**.

The Version Information dialog box appears.



Explanation

Version information is managed in the following manner.

If a version related error message appears while using the software, check the relevant section of the version number below.

R1.09.01.001

- **Minor version**
- **Middle version**
- **Major version**