

Thank you for purchasing the AQ2200 Series Modules.

To ensure correct use, please read this manual thoroughly before beginning operation. For details on the functions and performance, see the AQ2200 Multi Application Test System User's Manual (IM735101-01EN/-03EN or IM810518920-05E).

The latest editions of manuals and firmware (AQ2211/AQ2212/AQ2201/AQ2202 software) are available to registered customers for download from our Web site.

You can register from the following web page.

<http://www.yokogawa.com/tm/>

Handling Precautions of the Modules

The following precautions must be observed when handling the modules. Yokogawa Electric Corporation assumes no liability for the customer's failure to comply with these requirements. For details on the installation/removal procedure and the specifications of the modules, see the AQ2200 Multi Application Test System User's Manual (IM735101-01EN or IM810518920-05E).



WARNING

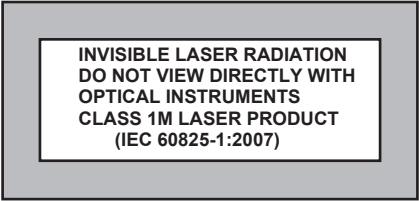
- Make sure to put the AQ2200-901 Blank Panel on the slots that are not being used to prevent electric shock and to satisfy the specifications. Using the main unit without the Blank Panel allows dust to enter the main unit and may cause malfunction due to the rise in temperature inside the main unit.
- Do not apply input voltage exceeding the maximum input voltage, withstand voltage, or allowable surge voltage.
- To prevent electric shock, be sure to furnish protective earth grounding of the AQ2211/AQ2212/AQ2201/AQ2202 Frame Controller.
- Do not look at the laser's direct light, reflected light from a mirror, or indirect light without proper protective eyewear. In addition, avoid being exposed to the laser light. It can cause blindness or damage to the eye. Place a cover over unused optical connectors.
- Only connect an angled-physical contact type optical fiber to the ANGLED PC ONLY connector. Other types of connectors can damage the connector's ferrule end.
- This instrument is a "Class 1M Laser Product" as Defined in "IEC60825-1: 2007."
Never look at the optical output section or the end of the optical fiber that is connected to the optical output section during laser beam generation. Using an optical instrument, such as a loupe, magnifying glass, or microscope, when observing the laser beam from a distance of less than 100 mm may cause eye injury. The laser beam that this instrument uses cannot be seen by the human eye. However, the laser beam is extremely hazardous to the human eye and eyesight if it happens to hit the eye.

Safety Precautions for Laser Products

This instrument uses a laser light source. This instrument is a Class 1M laser product as defined by IEC60825-1 Safety of Laser Products—Part1: Equipment Classification and Requirements. In addition, this instrument complies with 21 CFR 1040.10 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.

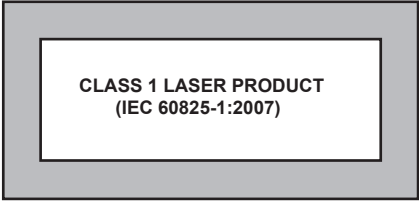
Laser Class 1M Label

Using an optical instrument, such as a loupe, magnifying glass, or microscope, when observing the laser beam from a distance of less than 100 mm may cause eye injury.



Laser Class 1 Label

Using an optical instrument, such as a loupe, magnifying glass, or microscope, when observing the laser beam from a distance of less than 100 mm may cause eye injury.



Model	Class	Laser Type	Center Wavelength	Maximum Output Power	Mode Field Diameter	Numerical Aperture
810518901	1M	DFB-Laser	1310 to 1650 nm	40 mW	9 μm	0.1
810518902	1	FP-Laser	1310/1550 nm	10 mW	9 μm	0.1
810518903	1	FP-Laser	1310/1550 nm	10 mW	9 μm	0.1
810518904	1M	EC-Laser	1440 to 1640 nm	50.2 mW	9 μm	0.1

Note

- Commercially available XFP transceivers installed in the AQ2200-641 XFP Interface Module are not covered under warranty.
- For safe handling of the laser, consult the user's manual that came with the XFP transceiver.

Waste Electrical and Electronic Equipment



Waste Electrical and Electronic Equipment (WEEE), Directive 2002/96/EC (This directive is only valid in the EU.) This product complies with the WEEE Directive (2002/96/EC) marking requirement. This marking indicates that you must not discard this electrical/electronic product in domestic household waste.

Product Category

With reference to the equipment types in the WEEE directive Annex 1, this product is classified as a “Monitoring and Control instrumentation” product.

Do not dispose in domestic household waste.

When disposing products in the EU, contact your local Yokogawa Europe B. V. office.

Compatibility between the AQ2211/AQ2212 Software Version and AQ2200 Series Modules

Some modules cannot be used with older versions of the AQ2211/AQ2212 software. Refer to the table below for version requirements. If your AQ2211/AQ2212 requires a newer version of the software, download from our Web site.

To determine the software version, press the SYSTEM soft key and then the “Information“. The version number is displayed under “FIRM VER” in the Overview screen.

Model	Module Name/Application Name	AQ2211/AQ2212 Version (FIRM VER)
810518901	AQ2200-111 DFB-LD Module	1.01 or later
810518902	AQ2200-141 FP-LD Module	1.01 or later
810518903	AQ2200-142 DUAL FP-LD Module	1.01 or later
810518904	AQ2200-136 TLS Module	2.20 or later
810518905	AQ2200-201 Interface Module	1.01 or later
810518906	AQ2200-231 Optical Sensor Head (Long-Wavelength Sensor)	1.01 or later
810518907	AQ2200-241 Optical Sensor Head (Short-Wavelength Sensor)	1.01 or later
810518908	AQ2200-211 Optical Sensor Module (High-Sensitivity Sensor)	1.01 or later
735122	AQ2200-221 Optical Sensor Module (Dual)	1.01 or later
735125	AQ2200-215 Optical Sensor Module (High Power Sensor)	1.01 or later
735185	AQ2200-271 ORL Module	1.01 or later
810518915	AQ2200-311 ATTN Module	1.01 or later
735131	AQ2200-311A ATTN Module	1.01 or later
735133	AQ2200-331 ATTN Module (Optical Variable Attenuator)	1.01 or later
735141	AQ2200-411 OSW Module	1.01 or later
735142	AQ2200-421 OSW Module (Dual)	1.01 or later
735143	AQ2200-412 OSW Module (1 x 16)	1.01 or later
810518801	AQ2200-601 BERT Module	2.01 or later
810518802	AQ2200-621 10Gbit/s Optical Modulator (Wavelength 1.55 μ m)	2.01 or later
810518803	AQ2200-631 10Gbit/s Optical Receiver	2.01 or later
810518804	AQ2200-622 10Gbit/s Optical Modulator (Wavelength 1.31 μ m)	2.01 or later
735161	AQ2200-641 XFP Interface Module	2.01 or later
735162	AQ2200-642 Transceiver I/F Module	2.01 or later
735163	AQ2200-651 SG Module	2.01 or later

Compatibility between the AQ2201/AQ2202 Software Version and AQ2200 Series Modules

Some modules cannot be used with older versions of the AQ2201/AQ2202 software. Refer to the table below for version requirements.

If your AQ2201/AQ2202 requires a newer version of the software, download from our Web site.

To determine the software version, press the SYSTEM key and then the "Information". The version number is displayed under "Soft Version" in the Overview screen.

Model	Module Name	AQ2201\AQ2202 Version (Soft Version)
810518901	DFB-LD Module	2.0 or later
810518902	FP-LD Module	2.0 or later
810518903	DUAL FP-LD Module	2.0 or later
810518904	TLS Module	2.0 or later
810518905	Interface Module	2.0 or later
810518906	Optical Sensor Head (Long-Wavelength Sensor)	2.0 or later
810518907	Optical Sensor Head (Short-Wavelength Sensor)	2.0 or later
810518908	Optical Sensor Module (High-Sensitivity Sensor)	2.0 or later
735122	Optical Sensor Module (Dual)	5.0 or later
735125	Optical Sensor Module (High Power Sensor)	6.0 or later
735185	ORL Module	8.01 or later
810518915	ATTN Module	4.0 or later
735131	ATTN Module	8.01 or later
735133	ATTN Module (Optical Variable Attenuator)	5.0 or later
735141	OSW Module	5.0 or later
735142	OSW Module (Dual)	5.0 or later
735143	OSW Module (1 x 16)	7.0 or later
810518801	BERT Module	3.0 or later
810518802	10Gbit/s Optical Modulator (Wavelength 1.55 μ m)	4.0 or later
810518803	10Gbit/s Optical Receiver	4.0 or later
810518804	10Gbit/s Optical Modulator (Wavelength 1.31 μ m)	4.0 or later
735161	XFP Interface Module	7.0 or later

Checking the Contents of the Package

If some of the contents are not correct or missing or if there is physical damage, contact the dealer from which you purchased them. Also, check that the model and suffix code on the name plate on the side panel of the module match those of your order.

AQ2200-111 DFB-LD Module (MODEL 810518901)

Item	Suffix Code	Description
Wavelength	-Mxxxx	See the list of supported wavelengths (Page 4)
	-W1310	1310 nm
	-W1490	1490 nm
Optical connector	-FCA	FC/AngledPC connector
Optical output level	-P10	10 mW optical output
	-P20	20 mW optical output
Fiber	-SMF	SM fiber
	-PMF	PM fiber
External modulation	-MODN	No external modulation
	-MODS	External modulation (sine)
	-MODC	External modulation (chop)

DFB-LD Module Applicable Wavelengths

UNIT Optical Frequency : THz, Wavelength : nm

Suffix Code	Optical Frequency	Wave-length	Suffix Code	Optical Frequency	Wave-length
M0290	191.60	1564.679	M0145	193.85	1546.518
M0275	191.65	1564.271	M0160	193.90	1546.119
M0270	191.70	1563.863	M0165	193.95	1545.720
M0255	191.75	1563.455	M0180	194.00	1545.322
M0250	191.80	1563.047	M0185	194.05	1544.924
M0235	191.85	1562.640	M0200	194.10	1544.526
M0230	191.90	1562.233	M0205	194.15	1544.128
M0215	191.95	1561.826	M0220	194.20	1543.730
M0210	192.00	1561.419	M0225	194.25	1543.333
M0195	192.05	1561.013	M0240	194.30	1542.936
M0190	192.10	1560.606	M0245	194.35	1542.539
M0175	192.15	1560.200	M0260	194.40	1542.142
M0170	192.20	1559.794	M0265	194.45	1541.746
M0155	192.25	1559.389	M0280	194.50	1541.349
M0150	192.30	1558.983	M0285	194.55	1540.953
M0135	192.35	1558.578	M0300	194.60	1540.557
M0130	192.40	1558.173	M0305	194.65	1540.162
M0115	192.45	1557.768	M0320	194.70	1539.766
M0110	192.50	1557.363	M0325	194.75	1539.371
M0095	192.55	1556.959	M0340	194.80	1538.976
M0090	192.60	1556.555	M0345	194.85	1538.581
M0075	192.65	1556.151	M0360	194.90	1538.186
M0070	192.70	1555.747	M0365	194.95	1537.792
M0055	192.75	1555.343	M0380	195.00	1537.397
M0050	192.80	1554.940	M0385	195.05	1537.003
M0035	192.85	1554.537	M0400	195.10	1536.609
M0030	192.90	1554.134	M0405	195.15	1536.216
M0015	192.95	1553.731	M0420	195.20	1535.822
M0010	193.00	1553.329	M0425	195.25	1535.429
M0005	193.05	1552.926	M0440	195.30	1535.036
M0000	193.10	1552.524	M0445	195.35	1534.643
M000H	193.15	1552.122	M0460	195.40	1534.250
M0020	193.20	1551.721	M0465	195.45	1533.858
M0025	193.25	1551.319	M0480	195.50	1533.465
M0040	193.30	1550.918	M0485	195.55	1533.073
M0045	193.35	1550.517	M0500	195.60	1532.681
M0060	193.40	1550.116	M0505	195.65	1532.290
M0065	193.45	1549.715	M0520	195.70	1531.898
M0080	193.50	1549.315	M0525	195.75	1531.507
M0085	193.55	1548.915	M0540	195.80	1531.116
M0100	193.60	1548.515	M0545	195.85	1530.725
M0105	193.65	1548.115	M0560	195.90	1530.334
M0120	193.70	1547.715	W1310	228.85	1310.000
M0125	193.75	1547.316	W1490	201.203	1490.000
M0140	193.80	1546.917			

• Accessories

Name	Q'ty	Notes
Dust cap	1	Green
Dust cap	1	White (for use with external modulation option)
User's Manual	1	This manual

AQ2200-141 FP-LD Module (MODEL 810518902), AQ2200-142 DUAL FP-LD Module (MODEL 810518903)

Item	Suffix Code	Description
Wavelength	-W1310	1310 nm (Model 810518902)
	-W1550	1550 nm (Model 810518902)
	-W135D	1310/1350nm (Model 810518903)
Optical connector	/FCC	AQ9441 (FC) Connector Adapter included
	/SCC	AQ9441 (SC) Connector Adapter included

• Accessories

Name	Q'ty	Notes
Dust cap	1	
User's Manual	1	This manual

AQ2200-136 TLS Module (MODEL 810518904)

Item	Suffix Code	Description
Optical connector	-FCA	FC/AngledPC connector
Fiber	-SMF	SM fiber
Wavelength	-WLSTD	1440 to 1640 nm

• Accessories

Name	Q'ty	Notes
Wavelength Meter control cable	1	
Dust cap (small)	2	Green
Dust cap (large)	1	
User's Manual	1	This manual

AQ2200-201 Interface Module (MODEL 810518905)

• Accessories

Name	Q'ty	Notes
Analog out plug	1	
Optical sensor head connector cable	1	
User's Manual	1	This manual

AQ2200-231 Optical Sensor Head (MODEL 810518906), AQ2200-241 Optical Sensor Head (MODEL 810518907)

Item	Suffix Code	Description
Optical connector	/FCC	AQ9355C (FC) Connector Adapter with Light Shield cap
	/SCC	AQ9335C (SC) Connector Adapter with Light Shield cap
	/STC	AQ9335C (ST) Connector Adapter with Light Shield cap

• Accessories

Name	Q'ty	Notes
Dust cap	1	
Ring	1	
User's Manual	1	This manual

AQ2200-211 Sensor Module (MODEL 810518908)

Item	Suffix Code	Description
Optical connector		
	/FCC	AQ9447 (FC) Connector Adapter with Light Shield cap
	/SCC	AQ9447 (SC) Connector Adapter with Light Shield cap
	/STC	AQ9447 (ST) Connector Adapter with Light Shield cap

• Accessories

Name	Q'ty	Notes
Dust cap	1	
Analog out plug	1	
User's Manual	1	This manual

**AQ2200-215 Sensor Module (MODEL 735125),
AQ2200-221 Sensor Module (MODEL 735122)**

Item	Suffix Code	Description
Optical connector		
	-NON	No connector adapter
	-FCC	AQ9335C (FC) Connector Adapter with Light Shield cap
	-SCC	AQ9335C (SC) Connector Adapter with Light Shield cap
	-STC	AQ9335C (ST) Connector Adapter with Light Shield cap
	-LCC	AQ9335C (LC) Connector Adapter with Light Shield cap
	-MUC	AQ9335C (MU) Connector Adapter with Light Shield cap

• Accessories

Name	Q'ty	Notes
Ring	1	Model 735125
	2	Model 735122
Protective cover	1	Model 735125
	2	Model 735122
User's Manual	1	This manual

AQ2200-271 ORL Module (MODEL 735185)

Item	Suffix Code	Description
Fiber	-SA	SMF (10/125)

• Accessories

Name	Q'ty	Notes
Dust cap	3	
User's Manual	1	This manual

AQ2200-311 ATTN Module (MODEL 810518915)

Item	Suffix Code	Description
Optical connector	-FCC	FC/PC connector
	-SCC	SC/PC connector
	-FCA	FC/Angled PC connector
	-SCA	SC/Angled PC connector
Monitor port	/MON	Monitor port included

• Accessories

Name	Q'ty	Notes
Dust cap	2	
	3	Monitor port included
User's Manual	1	This manual

AQ2200-311A ATTN Module (MODEL 735131)

Item	Suffix Code	Description
Fiber	-SA	SMF (10/125)
	-G6	MMF (62.5/125)
Optical connector	-FCC	FC/PC connector
	-SCC	SC/PC connector
Monitor port	/MON	Monitor port included

• Accessories

Name	Q'ty	Notes
Dust cap	2	
	3	Monitor port included
User's Manual	1	This manual

AQ2200-331 ATTN Module (MODEL 735133)

Item	Suffix Code	Description
Fiber	-SA	SMF (10/125)
	-G6	MMF (62.5/125)
Optical connector	-FCC	FC/PC connector
	-SCC	SC/PC connector

• Accessories

Name	Q'ty	Notes
Dust cap	3	
User's Manual	1	This manual

AQ2200-411 OSW Module (MODEL 735141)

Item	Suffix Code	Description
Port configuration		
	-04	1×4 type
	-08	1×8 type
Fiber	-SA	SMF (10/125)
	-G6	MMF (62.5/125)
Optical connector	-FCC	FC/PC connector
	-SCC	SC/PC connector

• Accessories

Name	Q'ty	Notes
Dust cap	5	1 x 4 type
	9	1 x 8 type
User's Manual	1	This manual

AQ2200-421 OSW Module (MODEL 735142)

Item	Suffix Code	Description
Port configuration		
	-21	1×2 type
	-22	2×2 type
Fiber	-SA	SMF (10/125)
	-G6	MMF (62.5/125)
Optical connector	-FCC	FC/PC connector
	-SCC	SC/PC connector

• Accessories

Name	Q'ty	Notes
Dust cap	6	1 x 2 type
	8	2 x 2 type
User's Manual	1	This manual

AQ2200-412 OSW Module (MODEL 735143)

Item	Suffix Code	Description
Port configuration	-16	1×16 type
Fiber	-SA	SMF (10/125)
Optical connector	-FCC	FC/PC connector
	-SCC	SC/PC connector

• Accessories

Name	Q'ty	Notes
Dust cap	17	
User's Manual	1	This manual

AQ2200-601 10Gbit/s BERT Module (MODEL 810518801)

Item	Suffix Code	Description
Option	/M	64 Mbit-program pattern option. WinPC software for creation and CF memory are included.
	/P1	SDH/SONET frame pattern option. WinPC software for create of pattern.

• Accessories

Name	Q'ty	Notes
Terminator for circuit protection	6	This terminator is already attached to the output terminals.
Protective cap	5	This protective cap is already attached to the INPUT terminals.
User's Manual	1	This manual

AQ2200-621 10Gbit/s Optical Modulator (MODEL 810518802),**AQ2200-622 10Gbit/s Optical Modulator (MODEL 810518804)**

Item	Suffix Code	Description
Cutting direction of LN modulator	-A	X-cut
	-B	Z-cut
Optical connector	-S	SC connector
	-F	FC connector
Cable (810518802)	/P	PMF (FC-SC) for 1.5 μm
	/U	PMF (FC-SC) for 1.3 μm (810518803) U-link coaxial cable

• Accessories

Name	Q'ty	Notes
Dust Cap	2	
Terminator for circuit protection	1	This terminator is already attached to the electrical terminal.
User's Manual	1	This manual

AQ2200-631 10Gbit/s Optical Receiver (MODEL 810518803)

Item	Suffix Code	Description
Optical connector	-S	SC connector
	-F	FC connector
Cable	/U	U-link coaxial cable

• Accessories

Name	Q'ty	Notes
Dust Cap	1	
Terminator for circuit protection	1	This terminator is already attached to the electrical terminal.
User's Manual	1	This manual

AQ2200-641 XFP Interface Module (MODEL 735161)**• Accessories**

Name	Q'ty	Notes
Dust Cap	2	
Terminator for circuit protection	1	This terminator is already attached to the electrical terminal.
User's Manual	1	This manual

AQ2200-642 Transceiver I/F Module (MODEL 735162)**• Accessories**

Name	Q'ty	Notes
User's Manual	1	This manual

AQ2200-651 SG Module (MODEL 735163)**• Accessories**

Name	Q'ty	Notes
Dust Cap	1	
Terminator for circuit protection	6	This terminator is already attached to the electrical terminal.
User's Manual	1	This manual