

MT1810A 4 Slot Chassis Operation Manual

Seventh Edition

- For safety and warning information, please read this manual before attempting to use the equipment.
- Additional safety and warning information is provided within the MT1810A 4 Slot Chassis Installation Guide. Please also refer to this document before using the equipment.
- Keep this manual with the equipment.

ANRITSU CORPORATION

Safety Symbols

To prevent the risk of personal injury or loss related to equipment malfunction, Anritsu Corporation uses the following safety symbols to indicate safety-related information. Ensure that you clearly understand the meanings of the symbols BEFORE using the equipment. Some or all of the following symbols may be used on all Anritsu equipment. In addition, there may be other labels attached to products that are not shown in the diagrams in this manual.

Symbols used in manual

-  **DANGER** This indicates a very dangerous procedure that could result in serious injury or death if not performed properly.
-  **WARNING** This indicates a hazardous procedure that could result in serious injury or death if not performed properly.
-  **CAUTION** This indicates a hazardous procedure or danger that could result in light-to-severe injury, or loss related to equipment malfunction, if proper precautions are not taken.

Safety Symbols Used on Equipment and in Manual

The following safety symbols are used inside or on the equipment near operation locations to provide information about safety items and operation precautions. Ensure that you clearly understand the meanings of the symbols and take the necessary precautions BEFORE using the equipment.



This indicates a prohibited operation. The prohibited operation is indicated symbolically in or near the barred circle.



This indicates an obligatory safety precaution. The obligatory operation is indicated symbolically in or near the circle.



This indicates a warning or caution. The contents are indicated symbolically in or near the triangle.



This indicates a note. The contents are described in the box.



These indicate that the marked part should be recycled.

MT1810A
4 Slot Chassis
Operation Manual

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About This Manual

A testing system combining an MP1800A Signal Quality Analyzer or MT1810A 4 Slot Chassis mainframe, module(s), and control software is called the Signal Quality Analyzer Series. The operation manuals of the Signal Quality Analyzer Series consist of separate documents for the installation guide, the mainframe, remote control operation, module(s), and control software, as shown below.

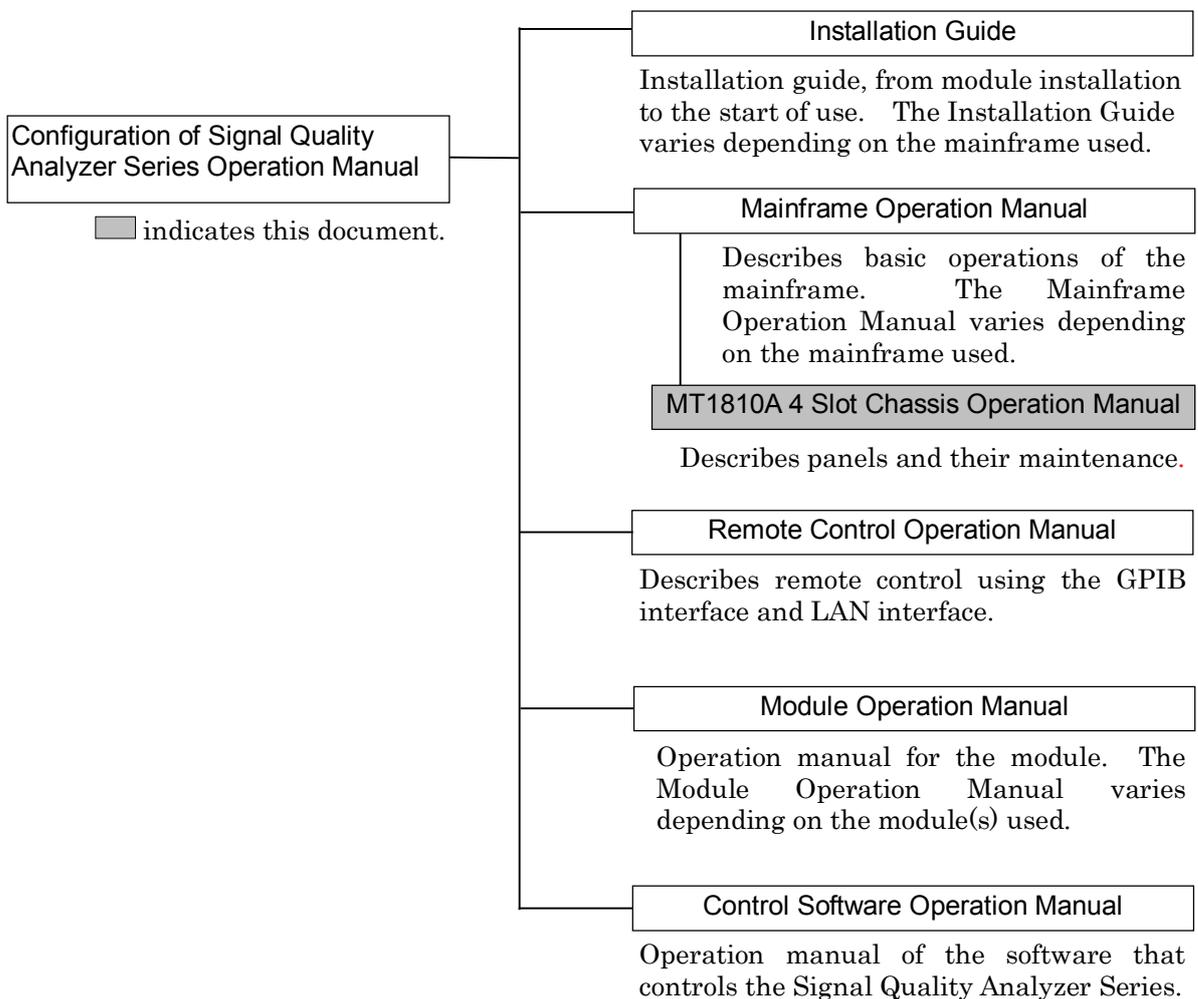


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Chapter 1 Overview

This Chapter provides an overview and the specifications of the MT1810A 4 Slot Chassis (hereinafter, referred to as “MT1810A”).

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1.1 Product Overview

Various plug-in modules (hereinafter, referred to as “module”) can be installed into the MT1810A, to support research, development and production of module devices for the optical communication market or interconnection within a Gbit/s class high-speed device. The MT1810A is also useful for research and development for the next-generation communication market, including optical packet transmission.

Up to 4 modules can be installed into the MT1810A. For the MU181020A 12.5 Gbit/s PPG and MU181040A 12.5 Gbit/s ED, among the installable modules, the number of controllable modules can be increased to 2 or 4 by selecting an optimal option to the MT1810A. As a way of reducing cost, the display and control parts have been omitted from the MT1810A, which is then controlled by the MX180000A Signal Quality Analyzer Control Software installed in the external control PC. Remote control by the control PC can also be performed via the GPIB or LAN interface.

For the latest information on the modules that can be mounted on the main unit, refer to the Anritsu homepage (<http://www.anritsu.com>).

1.2 Product Composition

1.2.1 Standard composition

Table 1.2.1-1 shows the standard composition of the MT1810A. For the latest information, refer to the Anritsu homepage (<http://www.anritsu.com/en-us/products-solutions/products/mp1800a.aspx>).

Table 1.2.1-1 Standard composition of MT1810A

Item	Model	Product	Q'ty	Remarks
Main unit	MT1810A	4-Slot Chassis	1	
Accessories	Z0306A	Wrist strap	1	
	Z0897A	Operation Manual	1	CD-ROM
	Z0918A	MX180000A Software CD	1	CD-ROM
	-	Power Code (13A)	1	
	J1109B	LAN cable	1	CAT5, Crossover, 5 m
	B0575A	MT1810A protective cover	1	
	G0342A	ESD Discharger	1	
	J1627A	GND connection cable	1	

1.2.2 Options

Table 1.2.2-1 shows the options for the MT1810A. All options are sold separately.

Table 1.2.2-1 Options installed at shipment

Model	Product	Remarks
MT1810A-x14	2-slot for PPG and/or ED	Enables control of 2 units of the MU181020A 12.5 Gbit/s PPG or MU181040A 12.5 Gbit/s ED in total.
MT1810A-x15	4-slot for PPG and/or ED	Enables control of 4 units of the MU181020A 12.5 Gbit/s PPG or MU181040A 12.5 Gbit/s ED in total.
MT1810A-032	32Gbit/s PPG and/or ED Support	Enables control of 4 units of the MU183020A 28G/32Gbit/s PPG, MU183021A 28G/32Gbit/s 4ch PPG, MU183040A 28G/32Gbit/s ED, or MU183041A 28G/32Gbit/s 4ch ED in total.

1.2.3 Application parts

Table 1.2.3-1 shows the application parts for the MT1810A. All application parts are sold separately.

Table 1.2.3-1 Application parts

Model	Product	Remarks
J0008	GPIB connection cable, 2.0 m	2 m
W2746AE	MT1810A 4 Slot Chassis Operation Manual	Printed version
W2748AE	MT1810A 4 Slot Chassis Installation Guide	Printed version
J1109B	LAN cable	CAT5, crossover, 5 m
B0593A	Blank panel	
B0587A	Rack mount kit	

1.3 Specifications

Table 1.3-1 MT1810A specifications

No.	Item	Specifications
1	Electrical performance	
1.1	Functions	Buzzer which sounds during measurement
1.2	Remote interface	10 BASE-T, 100 BASE-TX Ethernet (dedicated port for external control PC)
1.3	Mainframe ID	Used to identify the MT1810A units when multiple (up to 4) MT1810A units are connected.
1.4	GPIO	Reserved connectors. This function is currently not available
1.5	Maintenance	Connector for maintenance. Do not connect this connector.
2	Environmental performance	
	Power supply*	AC 100 to 120 V, 200 to 240 V (automatic switching between 100- and 200-V systems), 50 to 60 Hz
	Power consumption	450 Vac or less
	Operating temperature range	+5 to +40°C (without condensation)
	Operating humidity range	20 to 80%
	Storage temperature range	-20 to +60°C (Recommended storage temperature range: +5 to +30°C)
	Storage humidity range	20 to 80% (Recommended storage humidity range: 40 to 75%)
3	Mechanical measurements	
	Dimensions	350 mm (W) × 132.5 mm (H) × 400 mm (D) (Protrusions excluded)
	Mass	≤13.0 kg (excluding modules and blank panels)

*: Operating voltage: within the range of +10% to -15% from the rated voltage

Refer to the Anritsu homepage (<http://www.anritsu.com>), for information on options and application parts which can be installed into the MT1810A.

Chapter 2 Preparations

This chapter describes preparations for using MT1810A.

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2.1.2	How to use the ESD Discharger	2-3

2.1 Measures Against EOS and ESD

This section describes how to prevent MT1810A from being damaged by electrical over-stress (EOS) or electrostatic discharge (ESD).

2.1.1 How to use the GND connection cable

There is a risk of damaging MT1810A due to EOS if MT1810A and other peripheral equipment (including experimental circuits) are not connected to the common ground.

When connecting MT1810A and other peripheral (including experimental circuits), connect other peripheral equipment to the ground terminal of MT1810A's chassis with the GND connection cable before connecting the I/O connectors.

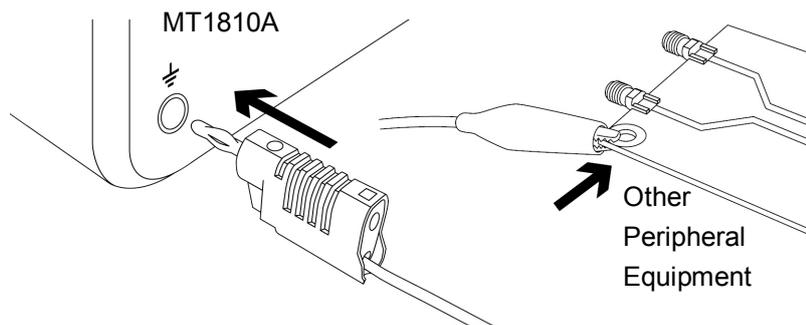


Figure 2.1.1-1 How to Use the GND Connection Cable

2.1.2 How to use the ESD Discharger

There is a risk of damaging MT1810A if the coaxial cable you connect to MT1810A is charged electrostatically.

To prevent MT1810A from being damaged by ESD, remove electrostatic charges from the cable by using the ESD Discharger before cabling the connectors.

The ESD Discharger can be used with one of SMA connector (and its compatible connector) and V connector (and its compatible connector).

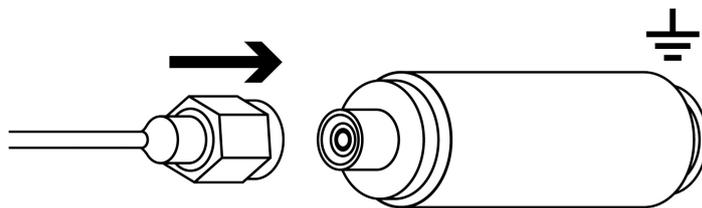


Figure 2.1.2-1 How to Use the ESD Discharger

Chapter 3 Panels and Connections

This Chapter describes panels and connections of the MT1810A.

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3.1 Front Panel

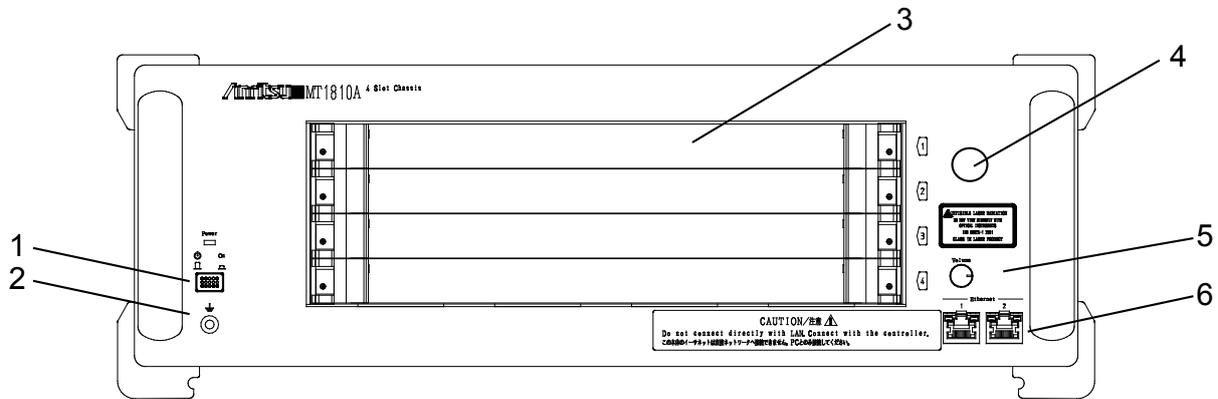


Fig. 3.1-1 Front panel

Table 3.1-1 Front panel

No.	Name	Function
1	Power switch	Turns the power to the MT1810A on/off. When this switch is turned on, power is turned on and the Power LED above the switch lights.
2	Earth jack	Connects to the wrist strap during operation, as a countermeasure against static electricity. Be sure to use the wrist strap when using the MT1810A.
3	Module slots	Up to 4 modules can be installed into the MT1810A. See “MT1810A 4 Slot Chassis Installation Guide” for how to install/remove the modules to/from the slots.
4	Mainframe ID	Used to identify the MT1810A units when multiple (up to 4) MT1810A units are connected. Refer to “MT1810A 4 Slot Chassis Installation Guide” for details on 4-unit serial connection.
5	Volume	Volume for measurement error sound
6	Ethernet connectors	Two RJ45 Ethernet connectors are provided. A 10 BASE-T or a 100 BASE-TX cable can be used. The internal hub provides the same function to the two connectors. In addition to direct connection, the control PC can be connected to the MT1810A via an Ethernet interface device. Note that the IP address for the MT1810A is fixed, so it cannot be directly connected to a network. Each connector has two LEDs. The left one indicates the Link/Act status. The connector is in Link status when the left LED is on, No Link status when it is off, and Act status when it blinks. The right LED indicates the collision status. When it is off, collision is not detected. It blinks when collision is detected.

3.2 Rear Panel

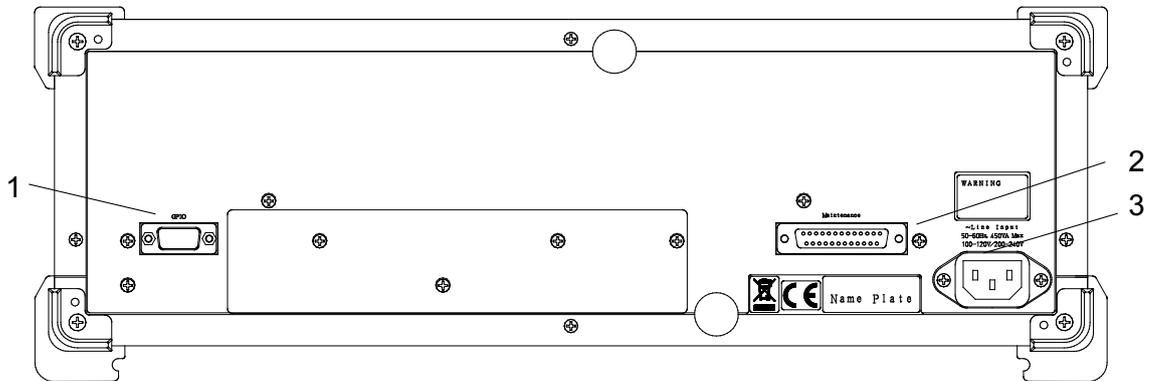


Fig. 3.2-1 Rear panel

Table 3.2-1 Rear panel

No.	Name	Function
1	GPIO	Reserved connector. Currently not available.
2	Maintenance	Maintenance connector. Do not use.
3	Inlet	Connect to a 100 to 120 Vac or to a 200 to 240 Vac power supply via the 3-pin power cord.

Chapter 4 Maintenance

This Chapter describes the maintenance of the MT1810A.

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4.1 Daily Maintenance

- Wipe off any external stains with a cloth dampened with diluted mild detergent.
- Vacuum away any accumulated dust or dirt with a vacuum cleaner.
- Tighten any loose parts fixed with screws, using the specified tools.

4.2 Cautions on Storage

Wipe off any dust, soil, or stain on the device prior to storage. Avoid storing the device in any of the following locations:

- In direct sunlight for extended periods
- Outdoors
- In excessively dusty locations
- Where condensation may occur
- In liquids, such as water, oil, or organic solvents, and medical fluids, or places where these liquids may adhere
- In salty air or in place chemically active gases (sulfur dioxide, hydrogen sulfide, chlorine, ammonia, nitrogen dioxide, or hydrogen chloride etc.) are present
- Where toppling over may occur
- In the presence of lubricating oil mists
- At low atmospheric pressure
- In the presence of frequent vibration or mechanical shock, such as in cars, ships, or airplanes
- Under the following temperature and humidity conditions:
Temperature range of $\leq -20^{\circ}\text{C}$ or $\geq 60^{\circ}\text{C}$
Humidity range of $\geq 85\%$

Recommended storage conditions

In addition to the abovementioned storage cautions, the following environment conditions are recommended for long-term storage.

- Temperature range of 5 to 30°C
- Humidity range of 40 to 75%
- Slight daily fluctuation in temperature and humidity

4.3 Transportation

Use the original packing materials, if possible, when packing the MT1810A for transport. If you do not have the original packing materials, pack the device according to the following procedure. When handling the MT1810A, always wear clean gloves, and handle it gently so as not to damage it.

<Procedure>

1. Use a dry cloth to wipe off any stain or dust on the exterior of the MT1810A.
2. Check for loose or missing screws.
3. Provide protection for structural protrusions and parts that can easily be deformed, and wrap the MT1810A with a sheet of polyethylene. Finally, cover with moisture-proof paper.
4. Place the wrapped MT1810A into a cardboard box, and tape the flaps with adhesive tape. Furthermore, store it in a wooden box as required by the transportation distance or method.
5. During transportation, place it under an environment that meets the conditions described in Section 4.2 “Cautions on Storage”.

4.4 Calibration

Regular maintenance such as periodic inspections and calibration is essential for the Signal Quality Analyzer Series for long-term stable performance. Regular inspection and calibration are recommended for using the Signal Quality Analyzer Series in its prime condition at all times. The recommended calibration cycle after delivery of the Signal Quality Analyzer Series is twelve months.

If you require support after delivery, contact an Anritsu Service and Sales office. Contact information can be found on the last page of the printed version of this manual, and is available in a separate file on the CD version.

We may not provide calibration or repair if any of the following cases apply.

- Seven or more years have elapsed after production and parts for the instrument are difficult to obtain, or it is determined that reliability cannot be maintained after calibration and repair due to significant wear.
- Circuit changes, repair, or modifications are done without our approval.
- It is determined that the repair cost would be higher than the price of a new item.

4.5 Disposal

Confirm the notes described in the Signal Quality Analyzer Series Installation Guide and observe national and local regulations when disposing of the MT1810A.

Before disposal, dismantle or physically destroy any non-volatile memory media in the MT1810A to ensure that data in memory cannot be recovered by third parties.