MP1220A
ATM Quality Analyzer
Operation Manual

13th Edition

Read this manual before using the equipment.
Keep this manual with the equipment.

ANRITSU CORPORATION

Document No.: M-W1304AE-13.0

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. Insure that you clearly understand the meanings of the symbols BEFORE using the equipment. Some or all of the following five symbols may not be used on all Anritsu equipment. In addition, there may be other labels attached to products which 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. Insure 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 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.

MP1220A
ATM Quality Analyzer
Operation Manual

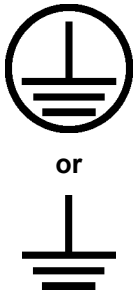
15 May 1997 (First Edition)
12 July 2005 (13th Edition)

For Safety

WARNING ⚠

1. ALWAYS refer to the operation manual when working near locations at which the alert mark shown on the left is attached. If the operation, etc., is performed without heeding the advice in the operation manual, there is a risk of personal injury. In addition, the equipment performance may be reduced.
   Moreover, this alert mark is sometimes used with other marks and descriptions indicating other dangers.

2. Measurement Categories
   This instrument is designed for Measurement category I (CAT I). Don't use this instrument at the locations of measurement categories from CAT II to CAT IV.
   In order to secure the safety of the user making measurements, IEC 61010 clarifies the range of use of instruments by classifying the location of measurement into measurement categories from I to IV.
   The category outline is as follows:
   Measurement category I (CAT I):
   Secondary circuits of a device connected to an outlet via a power transformer etc.
   Measurement category II (CAT II):
   Primary circuits of a device with a power cord (portable tools, home appliance etc.) connected to an outlet.
   Measurement category III (CAT III):
   Primary circuits of a device (fixed equipment) to which power is directly supplied from the power distribution panel, and circuits from the distribution panel to outlets.
   Measurement category IV (CAT IV):
   All building service-line entrance circuits through the integrating wattmeter and primary circuit breaker (power distribution panel).



3. When supplying power to this equipment, connect the accessory 3-pin power cord to a grounded outlet. If a grounded outlet is not available, before supplying power to the equipment, use a conversion adapter and ground the green wire, or connect the frame ground on the rear panel of the equipment to ground. If power is supplied without grounding the equipment, there is a risk of receiving a severe or fatal electric shock.

For Safety

WARNING ⚠

Repair

WARNING ⚠

4. This equipment cannot be repaired by the operator. DO NOT attempt to remove the equipment covers or unit covers or to disassemble internal components. Only qualified service technicians with a knowledge of electrical fire and shock hazards should service this equipment. There are high-voltage parts in this equipment presenting a risk of severe injury or fatal electric shock to untrained personnel. In addition, there is a risk of damage to precision components.

Falling Over

5. This equipment should be used in the correct position. If the cabinet is turned on its side, etc., it will be unstable and may be damaged if it falls over as a result of receiving a slight mechanical shock.
   And also DO NOT use this equipment in the position where the power switch operation is difficult.

LCD

6. This instrument uses a Liquid Crystal Display (LCD); DO NOT subject the instrument to excessive force or drop it. If the LCD is subjected to strong mechanical shock, it may break and liquid may leak.
   This liquid is very caustic and poisonous.
   DO NOT touch it, ingest it, or get in your eyes. If it is ingested accidentally, spit it out immediately, rinse your mouth with water and seek medical help. If it enters your eyes accidentally, do not rub your eyes, irrigate them with clean running water and seek medical help. If the liquid gets on your skin or clothes, wash it off carefully and thoroughly.

For Safety

CAUTION ⚠

Replacing Fuse

1. Before Replacing the fuses, ALWAYS remove the power cord from the poweroutlet and replace the blown fuses. ALWAYS use new fuses of the type and rating specified on the fuse marking on the rear panel of the cabinet.

   T3.15 A indicates a time-lag fuse.

   There is risk of receiving a fatal electric shock if the fuses are replaced with the power cord connected.

CAUTION ⚠

Cleaning

2. Keep the power supply and cooling fan free of dust.
   - Clean the power inlet regularly. If dust accumulates around the power pins, there is a risk of fire.
   - Keep the cooling fan clean so that the ventilation holes are not obstructed. If the ventilation is obstructed, the cabinet may overheat and catch fire.

For Safety

CAUTION ⚠

Replacing Memory Back-up Battery

This equipment uses a lithium battery to back-up the memory. This battery must be replaced by a service engineer when it has reached the end of its useful life; contact the Anritsu sales section or your nearest representative.

Storage Media

This equipment uses HDD and FDD as external media for storing data and programs.

If this media is mishandled, important data may be lost. To prevent this chance occurrence, all important data and programs should be backed-up.

Anritsu will not be held responsible for lost data.

Pay careful attention to the following points.

- Never turn off the power, while the HDD is being accessed.
- Never remove the FD from the FDD, while it is being accessed.

Equipment Certificate

Anritsu Corporation certifies that this equipment was tested before shipment using calibrated measuring instruments with direct traceability to public testing organizations recognized by national research laboratories including the National Institute of Advanced Industrial Science and Technology, and the National Institute of Information and Communications Technology, and was found to meet the published specifications.

Anritsu Warranty

Anritsu Corporation will repair this equipment free-of-charge if a malfunction occurs within 1 year after shipment due to a manufacturing fault, provided that this warranty is rendered void under any or all of the following conditions.

- The fault is outside the scope of the warranty conditions described in the operation manual.
- The fault is due to mishandling, misuse, or unauthorized modification or repair of the equipment by the customer.
- The fault is due to severe usage clearly exceeding normal usage.
- The fault is due to improper or insufficient maintenance by the customer.
- The fault is due to natural disaster including fire, flooding, earthquake, etc.
- The fault is due to use of non-specified peripheral equipment, peripheral parts, consumables, etc.
- The fault is due to use of a non-specified power supply or in a non-specified installation location.

In addition, this warranty is valid only for the original equipment purchaser. It is not transferable if the equipment is resold.

Anritsu Corporation will not accept liability for equipment faults due to unforeseen and unusual circumstances, nor for faults due to mishandling by the customer.

Anritsu Corporation Contact

In the event that this equipment malfunctions, 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.

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Disposing of Product

This product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Crossed-out Wheeled Bin Symbol

Equipment marked with the Crossed-out Wheeled Bin Symbol complies with council directive 2002/96/EC (the “WEEE Directive”) in European Union.

For Products placed on the EU market after August 13, 2005, please contact your local Anritsu representative at the end of the product's useful life to arrange disposal in accordance with your initial contract and the local law.

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CE Conformity marking

Anritsu affixes the CE Conformity marking on the following product (s) in accordance with the Council Directive 93/68/EEC to indicate that they conform to the EMC and LVD directive of the European Union (EU).

CE marking

CE

1. Product Model

Model: MP1220A ATM Quality Analyzer

2. Applied Directive

EMC: Council Directive 89/336/EEC
LVD: Council Directive 73/23/EEC

3. Applied Standards

- EMC: Emission: EN61326: 1997 / A2: 2001 (Class A)
  Immunity: EN61326: 1997 / A2: 2001 (Annex A)

	Performance Criteria*
IEC 61000-4-2 (ESD)	B
IEC 61000-4-3 (EMF)	A
IEC 61000-4-4 (Burst)	B
IEC 61000-4-5 (Surge)	B
IEC 61000-4-6 (CRF)	A
IEC 61000-4-8 (RPFMF)	A
IEC 61000-4-11 (V dip/short)	B

*: Performance Criteria
A: During testing normal performance within the specification limits
B: During testing, temporary degradation, or loss of function or performance which is self-recovering

Harmonic current emissions:
EN61000-3-2: 2000 (Class A equipment)

- LVD: EN61010-1: 2001 (Pollution Degree 2)

C-tick Conformity marking

Anritsu affixes the C-tick marking on the following product (s) in accordance with the regulation to indicate that they conform to the EMC framework of Australia/New Zealand.

C-tick marking

1. Product Model

Model: MP1220A ATM Quality Analyzer

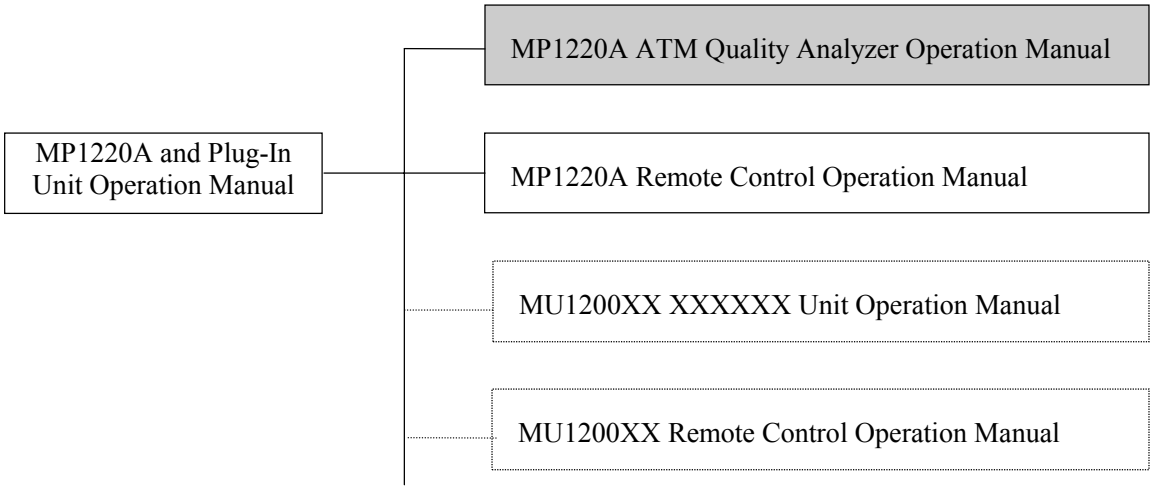
2. Applied Standards

EMC: Emission:
AS/NZS 2064.1 / 2 (ISM, Group 1, Class A equipment)

PREFACE

Operation Manual

The MP1220A ATM Quality Analyzer is the main measuring unit, into which plug-in units may be inserted. The main unit and each plug-in unit have their own Operation Manual, as well as remote control Operation Manual (the remote control software is optional). Refer to each user's guide as appropriate.



- MP1220A ATM Quality Analyzer Operation Manual

  This manual provides an outline of the MP1220A, and describes usage preparations, panels, standards, functionality, and operation.
- MP1220A ATM Quality Analyzer Remote Control Operation Manual

  This manual describes control of the main unit through external interfaces (RS-232C, GPIB and Ethernet options) and provides program examples.
- Each unit's Operation Manual

  These manuals provide an outline of the various units, and describe standards, functionality, and operation.
- Each unit's Remote Control Operation Manual

  These manuals describe control of the units through external interfaces (RS-232C, GPIB and Ethernet options) and provide program examples.

Contents

Section 1 Overview

1.1 Product Overview

The MP1220A ATM Quality Analyzer (referred to hereafter as "this equipment") is a mainframe into which various plug-in units may be inserted and used, thereby allowing the construction of a wide variety of system configurations based on the units used. All sorts of ATM quality and data analysis measurements can be made based on the combination of main unit and plug-in units.

Features

- User-friendly operation

  This device uses Microsoft Windows Version 3.1 and a large LCD screen to implement an application that is easier to understand and operate.
- Each tool is operated graphically from screens

  In order to improve the device's ease-of-use, a screen-based graphical interface including a touch panel, mouse, and keyboard is provided.
- Saving and reading large volumes of data

  This equipment comes with internal floppy and hard drives as data storage devices. Setting information, measurement results, and other types of data can be saved and read.
- Compatible with external interfaces

  This equipment is compatible with RS-232C, GPIB and Ethernet options as remote control interfaces.
- Highly expandable unit configuration

  A maximum of six plug-in units can be installed. Depending on the combination of plug-in units installed, two ports can be used for simultaneous measurement, multiple physical interfaces can be installed, and a variety of system configurations can be implemented.
- Upgrade

  Devices that can be programmed on-site are used as hardware, so function expansion, standard modifications, software modifications, and hardware modifications can be easily implemented by floppy disk.

1.2 Equipment configuration

1.2.1 Standard configuration

Standard configuration is as follows:

Table 1-1 Standard Configuration

Item	Model/Symbol	Product Name	Quantity	Notes
Unit Configuration	MP1220A	ATM Quality Analyzer	1	
Accompanying Parts	Z0340B	Protection cover	1	
	J0017	Power Cable	1	
	Z0343A	Touch Panel Pen	1	
	Z0345A	Accessory Bag	1	
	Z0339	Reinstallation Floppy Disk	1 set	
	W1304AE	MP1220A Operation Manual	1	
	W1305AE	MP1220A Remote Operation Manual	1	
	F0012	Fuse	2	3.15 A

1.2.2 Unit configuration

The plug-in units that can be used with this equipment are as follows:

Table 1-2 Units

Model/Symbol	Product Name	Notes
MU120001A	STM-4/OC-12 Unit	A 52 Mbit/s, 156 Mbit/s, or 622 Mbit/s physical interface
MU120002A	STM-1/OC-3 Unit	A 156 Mbit/s physical interface
MU120010A	T1/T3 Unit	A 1.5 Mbit/s or 45 Mbit/s physical interface
MU120011A	E1/E3/E4 Unit	A 2 Mbit/s, 34 Mbit/s, or 139 Mbit/s physical interface
MU120012A	E1/E3 Unit	A 2 Mbit/s or 34 Mbit/s physical interface
MU120015A	ATM25M Unit	ATM25M interface
MU120016A	6.3M Unit	6.3 Mbit/s interface
MU120017A	6.3/25M Unit	6.3 Mbit/s or ATM25M interface
MU120020A	QoS Unit	Mainly used for ATM measurements related to QoS.
MU120021A	Protocol Unit	Used for AAL and higher-layer analysis

1.2.3 Option configuration

The following options can be used with this equipment:

Table 1-3 Options

Model Name/Symbol	Product Name	Notes
MP1220A-01	RS-232C Control	
MP1220A-02	GPIB Control	
MP1220A-03	Ethernet Control	

1.2.4 Application parts

This device's application parts are as follows:

Table 1-4 Application Parts

Model Name/Symbol	Product Name	Notes
Z0340A	Keyboard protection cover	
Z0319A	Mouse	

1.3 Specifications

Specifications are shown in Table 1-5, "Specifications".

An asterisk (*) is used to indicate items that require options to be installed. Details are shown below the table.

Table 1-5 Specifications

Item Number	Item	Standards
1	External Interface	
	External display	Mini D-sub15 pin (VGA)
	RS-232C	D-sub9 pin (COM1)
	Printer Keyboard	Parallel port connector
	Mouse	PS/2 type mini DIN6 pin
	GPIB *[2]	PS/2 type mini DIN6 pin
	Ethernet *[3]	10Base-T
2	Operation Settings	
2.1	Screen display	TFT color liquid crystal display
	Size	640 × 480 dots
	Display color	Color (256 colors)
	Touch panel	Analog resistant membrane type
3	Data storage devices	
3.1	Floppy disk drive	
	Operating mode	2-mode (1.44 MB, 740 kB)
	Disks used	3.5 inch 2HD/2DD
3.2	Hard disk drive	
	Disk capacity	At least 500 MB (30 MB on the D drive cannot be used by the user)
4	External Control	
4.1	RS-232C *[1]	
4.2	GPIB *[2]	SH1, AH1, T6, L4, SR1, RL1, PR0, DC1, DT1, C1, C2, C3, C4, C7
4.3	Ethernet *[3]	
5	Functions	Alarms and errors can be switched on and off
5.1	Measurement buzzer	
5.2	Self-diagnosis function	Yes (uses a separate application)
5.3	Panel lock	Can be switched on and off
6	General Specifications	
6.1	Usage temperature range	5°C to 50°C (except at floppy disk drive operation)
6.2	Dimensions/weight	
	Dimensions	221.5 mm H × 284 mm W × 365 mm D
	Weight	12 kg or less
6.3	Power	
	Voltage	AC 100 V - 120 V/200 V - 240 V (maximum 250 V)
	Frequency	47.5 Hz to 63 Hz
	Consumed power	Maximum 300 VA

*1: Possible when OPT01 is installed
*2: Possible when OPT02 is installed
*3: Possible when OPT03 is installed

Section 2 Usage Preparations

2.1 Setup Location Environment Conditions

This equipment will operate normally if the temperature is between 5°C to 50°C, and if the relative humidity is 85% or less. Avoid using the device in the following types of locations:

1. In a location affected by strong vibrations
2. In a dusty location
3. In a location that receives direct sunlight
4. In a location that may be affected by active gas
5. In a location that may be affected by water

⚠ CAUTION

1. Do not block the air ventilation inlets and outlets on the sides of the equipment. In particular, make sure there is at least 10 cm. of space between the outlet on the left side and any peripheral device or obstruction. With insufficient air flow, the internal temperature will increase and cause damage to the equipment.

2. Using this equipment at room temperature after it is stored for a long period of time at a low temperature can cause short circuits due to condensation, and cause damage. Be sure to dry the equipment sufficiently before using it in this situation.

2.2 Safety Measures

To power up this equipment, be sure to plug the included three-pin power cord into a grounded power outlet, and make sure that the equipment is grounded.
If there is no grounded power outlet, use a conversion adapter to convert the cord to two poles. Always ground the back panel's grounding terminal before plugging the power cord into the outlet.
Refer to Section 4, "Starting Up and Shutting Down the MP1220A" for notes regarding starting up and shutting down the MP1220A.
When installing a unit, be sure to read the safety measure information in the unit's operation manual as well.

⚠ WARNING

1. Turning the power on when the equipment is not grounded can cause an electric shock, which may result in injury or death. Always either connect the three-pin cord into a grounded two-pole power outlet, or ground the conversion adapter's ground line or the back panel's grounding terminal when plugging the power cord into an outlet.
2. When plugging the power cord into an outlet, first make sure that the main unit's power switch is off. Failing to do this can cause an electric shock, which may result in injury or death.

⚠ CAUTION

1. This equipment's rated power consumption is from AC 100 V to 120 V or AC 200 V to 240 V. Connect the power cord only after verifying that the voltage of the power supply is within this range.
2. When input signals into this equipment, make sure that the voltage is not in excess of the rating to avoid destroying the circuits.
3. To avoid damage due to static electricity, be sure to ground any other device (including experimental circuits) with an earth ground line before connecting it to this equipment's input/output terminal.
4. Be sure to discharge external conductors and cable connectors of their electrical charges with a metal part etc. before using them. The external conductor and cable line of coaxial cables sometimes act as a condenser and carry static build-up.
5. Connect mouses, keyboards, printers, and other peripherals with the power off.
6. This equipment contains an internal hard drive. Avoid subjecting this device to strong vibrations or physical blows, which may damage the hard drive.
7. Do not turn the power off when the hard disk access indicator on the front panel is on. This can damage the hard drive.
8. Do not touch the touch panel with anything other than the pen provided for that purpose, or your finger.
9. This equipment's memory backup battery has a life span of seven years. When the life span is exceeded, the backup memory information will be lost, and during the power on will not restore the device to its state just before it was previously turned off. Replace the battery as soon as possible.

2.3 Unit Installation

Follow these steps to insert a unit:
1. Align the unit's bottom plate with the main unit's slot, along the guides on the left and right sides.
2. Insert the unit straight into the back of the main unit. Insert the unit slowly.
3. Insert the two screws on the left and right sides of the unit panel.

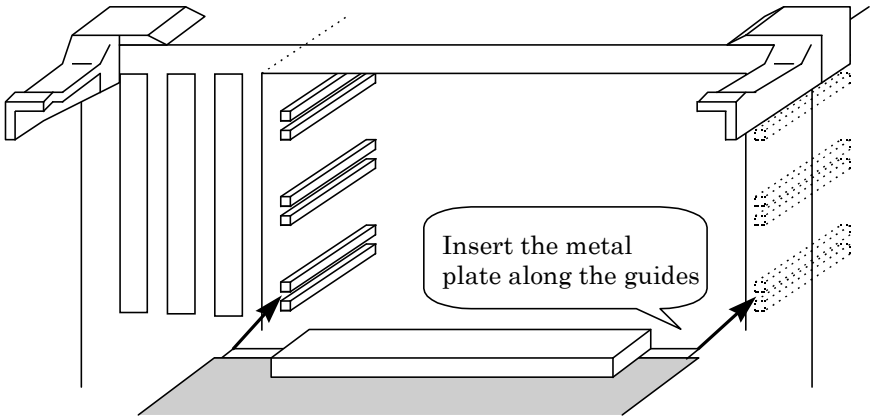


Figure 2-1 Inserting a Unit

Follow these steps to remove a unit:
1. Remove the two screws from the left and right sides of the unit panel.
2. Opening the ejector to the outside will release the unit.
3. Pull the unit straight out of the main unit.

Any number of units from one to a maximum of six can be installed into this equipment. Since the measurement signal can be transmitted between the units that are physically connected to the main unit, functionality will change depending on how the units are installed.
Signals can be indirectly sent to and from units without a physical interface by piggybacking them on top of units with physical interfaces during installation. A maximum of two units can be installed into one physical interface unit. A physical interface and the one or two units connected to it are referred to as a unit group.
Two ports can be measured simultaneously when two unit groups are installed.

⚠ CAUTION

Attach the included blank panels to any slots that have no units installed.

2.4 Using Applications Reliably

This equipment comes with the Microsoft. MS-DOS operating system, the Microsoft. Windows operating system, device control drivers, and other software preinstalled.

The Control Panel and Windows Setup can be used to change the Windows user environment, but if you make changes other than those described in this operation manual, the reliable operation of the various applications cannot be guaranteed.

Do not modify the Windows user environment in ways or for purposes not described in this manual.

Section 3 Panel Explanation/Connection

3.1 Panel Explanation

Diagrams of this device's front and back panels follow, along with a description of each part.

Front Panel

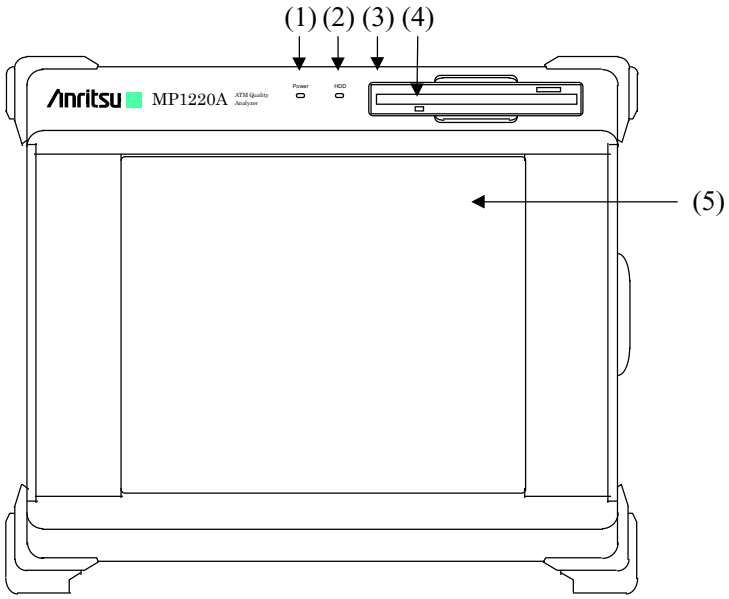


Figure 3-1 Front Panel

Number	Label	Name	Description
1	Power	Power LED	Turns on when the power is on
2	HDD	Hard disk drive access LED	Turns on when the hard disk is being accessed
3		Floppy disk drive	This is a 3.5" floppy disk drive. 2DD (720 kB) and 2HD (1.4 MB) floppy disks can be used.
4		Floppy disk drive access LED	Turns on when the floppy disk is being accessed
5		Color LCD	This display shows setting items and measurement results, and comes with a touch panel.

⚠ CAUTION

When removing a floppy disk, make sure that the access LED is off first.

Back Panel

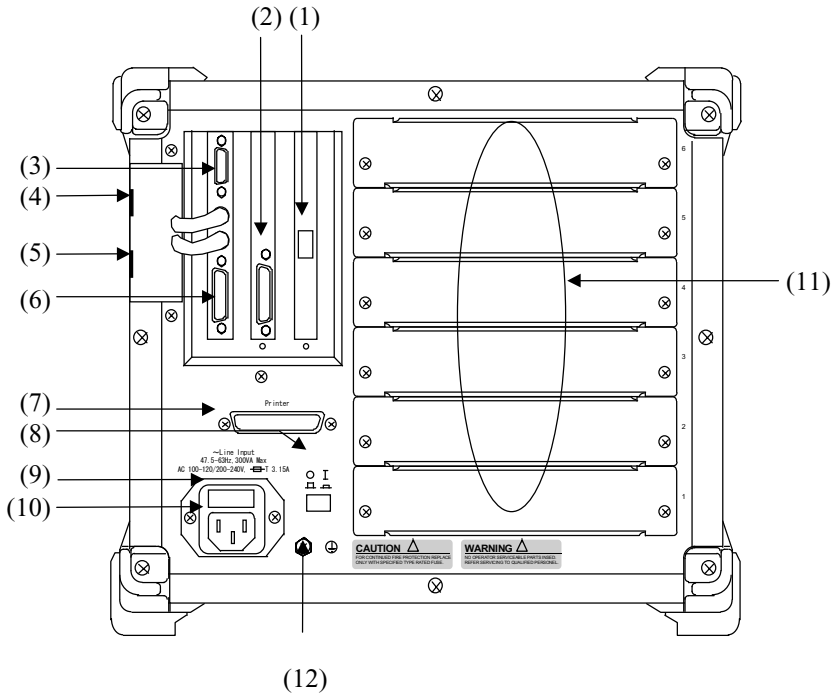


Figure 3-2 Back Panel

Number	Label	Name	Description
1	GPIB (OPT02)	GPIB connector	This connector is used to connect an external controller through a GPIB interface.
2	(Ethernet) (OPT03)	10Base-T connector	This connector is used to connect an external controller through a Ethernet.
3	CRT	VGA connector	This connector is used to connect an external display.
4	Mouse	Mouse connector (PS/2)	This connector is used to connect a mouse.
5	Keyboard	Keyboard connector (PS/2)	This connector is used to connect a keyboard.
6	Rs-232C (COM1)	RS-232C connector	This connector is used to connect an external controller through an RS-232C interface.
7	Printer	Printer connector	This connector is used to connect an external printer.
8		Power switch	This switch is used to turn the power on and off.
9		Fuse holder	This holds the AC power fuse.
10		AC power cable connector	This is the AC power cable connector.
11		Slot 1 to 6	These slots are for inserting plug-in units.
12		Frame ground	This is the frame ground.

3.2 Connection

3.2.1 Connecting peripheral devices

This section describes how to set up peripheral devices once they are connected, and includes setup notes.

n Mouse

Connect a serial mouse (application part) to the mouse connector of the filter pad on the back panel with the main unit's power off. The mouse will be usable when turn the power on.

Detailed mouse settings can be made from the Microsoft Windows operating system's Mouse Control Panel.

Note

Double-click the Windows Main group's Control Panel icon to open the Control Panel.

n Keyboard

Connect a keyboard (application part) to the keyboard connector of the filter pad on the back panel with the main unit's power off. The keyboard will be usable when turn the power on.

Detailed keyboard settings can be made from the Windows operating system's Keyboard Control Panel.

Note

When a keyboard other than the application part listed in section 1.2.4 is connected, use the Windows Setup program in the Program Manager's Main group to set up the keyboard.

n Printer

Connect a printer to the printer connector on the back panel with the main unit's power off, then turn the power on once the printer is connected. Once the application starts up, set up the printer in the Windows operating system's Printer Control Panel.

■ External Display

An external display can be connected to display measurement information in high resolution. To do so, follow these steps:

1. Connect the display to be used to the VGA connector on the back panel of the main unit, with the main unit's power off.
2. Turn the power on. The application will start up on both the main unit's front panel LCD and the connected external display CRT.
3. Select the Chips CLP icon in the Windows Control Panel and run the Display Driver Control Panel program.
4. Select the resolution, number of colors, and font size to be used for the screen from CRT in the Display group box.
5. This completes the setup. Press the OK button to exit the Display Driver Control Panel program.

Note

When you select the CRT or LCD from the Display Control Panel's Display group box settings, the other screen will go blank. If you select CRT, the main unit's front panel LCD will go blank, and if you select LCD, the external display CRT will go blank.

Section 4 Starting Up and Shutting Down the MP1220A

4.1 Starting Up and Shutting Down the MP1220A

This equipment uses Microsoft MS-DOS and Microsoft “Windows” (referred to as “Windows” hereafter) operating system software as its graphical operating system. For this reason, this equipment's applications work in the same way as other “Windows” applications. This Section describes how to start up and shut down this device, and the necessary cautions.

Starting Up the MP1220A

Follow these steps to start up the device:

- Turn the power on

  Turn the equipment's power on. The system will start up, and the applications will run automatically.
- Run the MP1220A ATM Quality Analyzer from the “Windows” Program Manager

  Double click the MP1220A ATM Quality Analyzer icon in the Program Manager's MP1220A group to run the application.

Note

This equipment remembers its settings just before it is switched off. This allows it to return to the state it was in immediately before being shut down when it is powered up next. The remote status and the panel lock status will be returned to the default settings, however (remote status: Local, panel lock status: off).

Shutting Down the MP1220A

Follow these steps to shut down the equipment :

1. Select [File]-[Exit] from the parent window's menu bar. This exits the application and leaves only Windows running.
2. Select [File]-[Exit Windows] from the “Windows” Program Manager to exit “Windows”.
3. The MP1220A menu will be displayed after “Windows” exits. Turn the power off with the device in this state.

⚠ Precautions

1. Turning the equipment off without following the steps outlined above (for instance, turning the power switch off during operation) can damage the hard disk. Follow the steps outlined above to protect the hard disk in any case other than when an unintentional accident occurs (for instance, if there is a power outage, or someone mistakenly unplugs the power cord).
2. Do not turn the power off when the hard disk is being accessed. This can damage the hard disk.

4.2 MP1220A Menu

When Windows exits, the MP1220A menu program will start up. The power can be turned off at this point. Also, if you have a keyboard in application parts connected to the device, the following items can be selected from the menu:

1. Start Windows
2. Defrag
3. Scandisk
4. Windows Setup
5. Etherboard Diagnostics

Note

Above functions can not be used without a keyboard in application parts.

Start Windows

Select number 1 from the menu screen to start Windows.

Defrag

Select number 2 from the menu screen to run the MS-DOS command Defrag.

The Defrag command rearranges files that have been saved discontinuously on the hard disk so that they are contiguous, to reduce file access time. Follow the instructions on the screen when you execute the Defrag program.

Note

As a hard disk is read and written to numerous times, the information on the hard disk will become more and more fragmented. There is no difference between data stored on the hard disk in a contiguous or discontinuous manner, but extra time is required to access data stored in a discontinuous manner. Defragmenting a hard disk reduces the extra time required to access information by storing it in a contiguous manner.

Scandisk

Select number 3 from the menu screen to run the MS-DOS command Scandisk.

The Scandisk program analyzes a disk's condition and repairs any locations with problems. Follow the instructions on the screen when you execute the Scandisk program.

Note

Using a disk with a damaged region can cause free space to be covered by the damaged region, and can cause applications to behave incorrectly or result in the loss of created data. The Scandisk command can be used to analyze a disk's condition and repair any damaged disk regions.

Windows Setup

Select number 4 from the menu screen to run the MS-DOS Windows Setup program.

The Windows Setup program displays currently installed hardware and software. It also automatically detects and sets up newly installed hardware and software so that it can be used under Windows.

Run this program to set up the display, keyboard, and mouse. (The Windows version of the Windows Setup program can be run from the Windows Main group. Each program has the same functionality, with the exception of the method of operation.)

Note

Do not change the settings in the Windows Setup program unless you have connected a peripheral device that requires setting modifications. See Section 3 for the peripheral device connection method.

Etherboard Diagnostics

Select number 5 for “Select Number” from the menu screen to run the MS-DOS to start the Ethernet adapter card setup/diagnostic program.

This number is not displayed when option 03 Ethernet Control software is not installed. Selecting this number and running the setup program allows you to diagnose and set up the Ethernet adapter card. For more details, see Section 7, “Maintenance” and the MP1220A ATM Quality Analyzer Remote Control operation manual.

Note

The above number is not displayed when option 03 Ethernet Control is not installed.

4.3 Basic Glossary

This device uses Windows, so descriptions of how to operate the device use Windows terminology. This section explains Windows terminology and operations that are used frequently in this manual.

General Terminology

The following general terms are used throughout this manual (the explanations assume that the mouse is being used).

- Mouse pointer
  The location indicated by the mouse on the screen can be verified graphically by checking the "mouse pointer." The shape of the pointer can be an arrow or an hourglass, and changes depending on the pointer's location and the application's operation.
- Click
  "Clicking" refers to pressing the mouse's button with the mouse pointer at a specific location, then releasing the button.
- Double-click
  "Double-clicking" refers to pressing and releasing the mouse's button twice quickly with the mouse pointer at a specific location.
- Drag
  "Dragging" refers to moving the mouse with the mouse button held down.
- Drop
  "Dropping" refers to releasing the mouse button after a drag.
- Control
  A "control" is a button, text box, or other such object located somewhere on the screen. Controls are used to display results, select items, and perform other such tasks.
- Focus
  The control that "has the focus" is the control that will be affected by the next input. For instance, if there are multiple controls on the screen, the focus will be designated by a box drawn with dotted lines, or by highlighting.

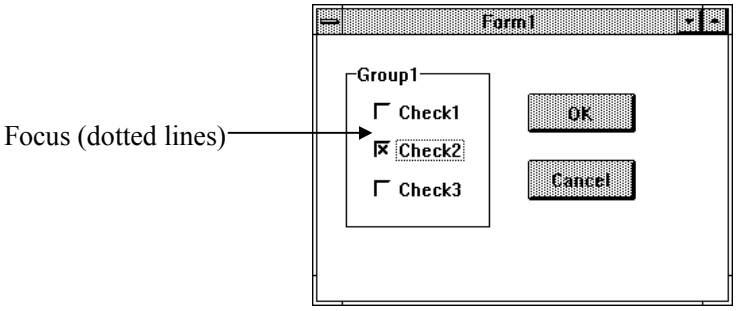


Figure 4-1 Example of Focus on a Check Box

Note

Since this device's screen has a touch panel installed, screen operations can be performed by touching the touch panel. Touch panel operations and mouse operations are essentially identical, with the exception that right-button operations cannot be performed from the touch panel. Touching the touch panel with a finger or the touch panel pen results in the same operation as clicking on the same location with the left mouse button.

Window Elements

This section describes the various window elements.

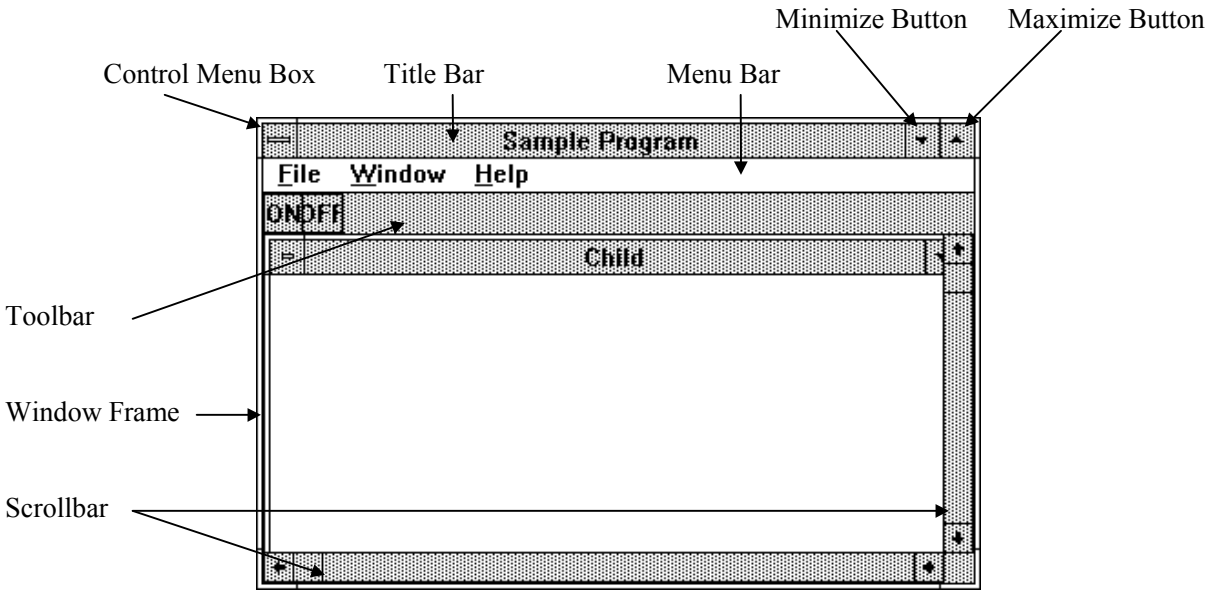


Figure 4-2 Window Elements

- Title bar

  The title bar includes the title, Control menu box, Minimize button, Maximize button, etc.

- Title

  The title is a label that indicates the functions of a window.

- Control menu box

  Double-click the Control menu box to close a window. Click the Control menu box to open the Control menu.

  The Control menu can be used to maximize or minimize a window, or execute other commands.

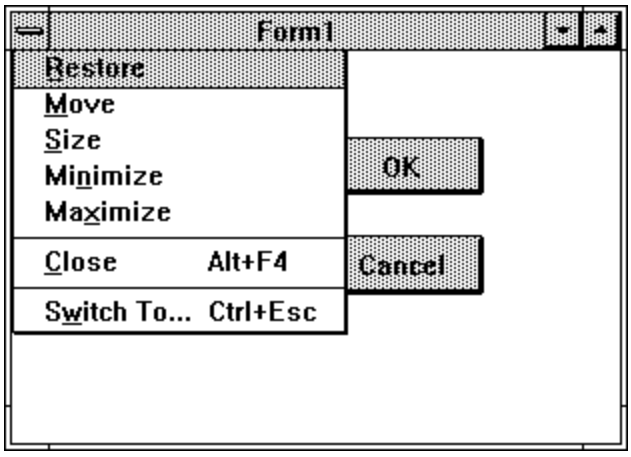


Figure 4-3 Control Menu

- Minimize button
  Click the Minimize button to minimize a window. A minimized window is usually displayed as an icon.
- Maximize button
  Click the Maximize button to maximize a window.
- Menu bar
  The region with a row of menu titles is called the menu bar.
- Menu title
  Menu titles are strings of characters in the menu bar. Clicking a menu title causes a drop-down menu to appear. Click the menu item you wish to execute (Figure 4-4).

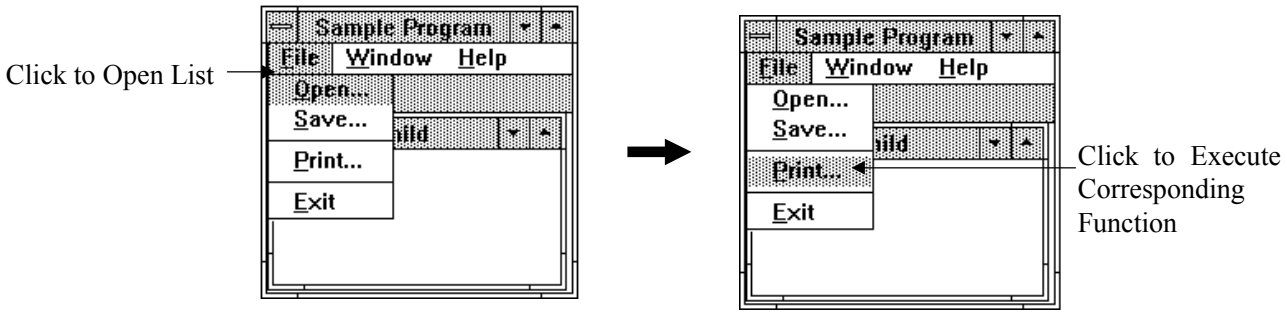


Figure 4-4 Selecting a Menu

Some menu items allow you to select an active item from among multiple options. A check mark indicates the current active option (Figure 4-5).

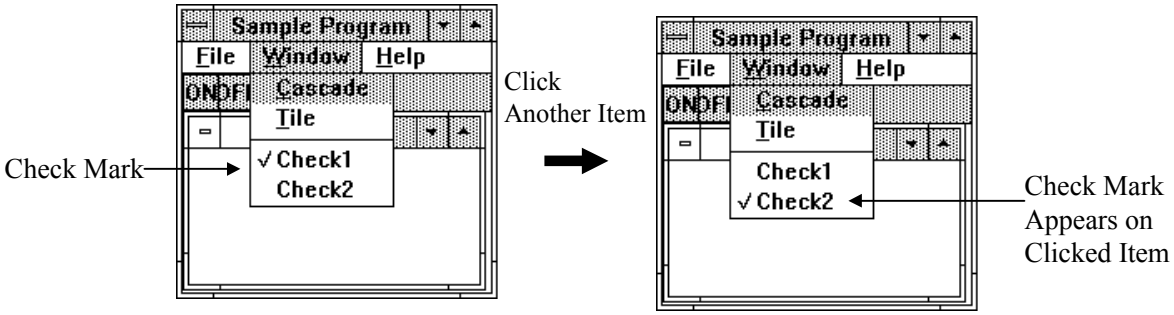


Figure 4-5 Menu with Check Marks

- Toolbar
  The toolbar is a region where frequently used functions are accessible in button or other formats.
- Scroll bar
  When all of the information cannot be displayed on the screen at once, a scroll bar will appear. Move the scroll bar to display concealed information.
- Window frame
  A window frame indicates the borders of a window.

Window Operations

This section describes basic window operations.

- Minimizing a window
  Clicking on the Minimize button in the upper right corner of a window minimizes that window (changes it into an icon).
- Reverting an icon back to a window
  Revert an icon back to the original window by double-clicking on the icon with the mouse pointer.

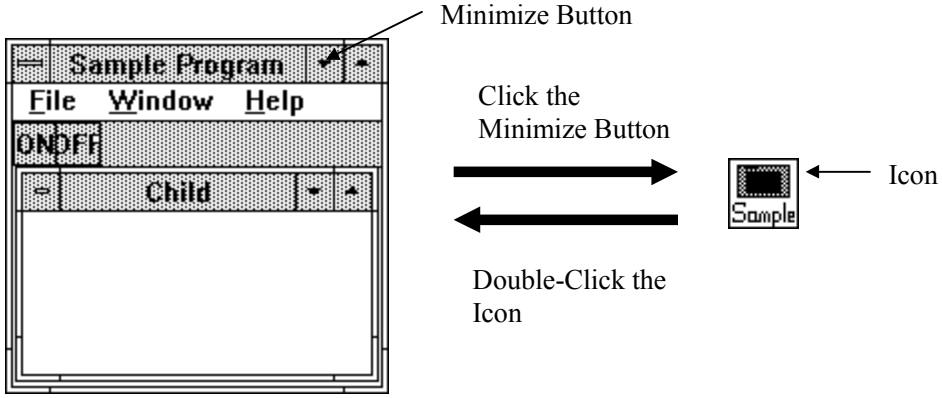


Figure 4-6 Icon Display and Window Display

- Maximizing a window
  Clicking a window's maximize button causes the window to expand to fill the entire screen. Double-clicking a title bar also maximizes that window. When a window is maximized, the Maximize button will turn into a Revert button, which causes the window to revert to its original size.
- Reverting a window to its original size
  Click the Revert button or double-click the title bar to revert a maximized window to its original size.

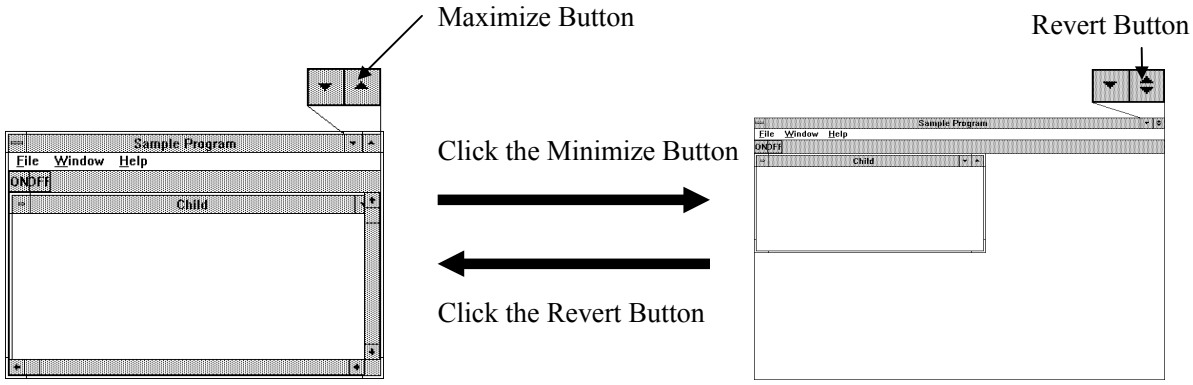


Figure 4-7 Maximizing and Reverting Windows to Their Original Size

Controls

This section describes controls used by this device.

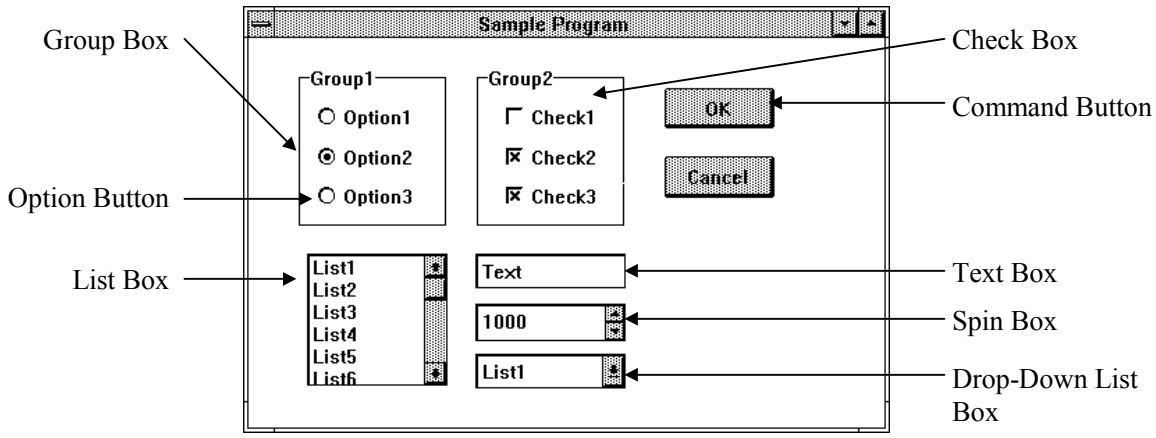


Figure 4-8 Controls

- Command button
  A "command button" is a rectangular button with a button label that indicates its function. Pressing a button causes its function to be executed. (This device's interface includes toggle buttons that have a pressed state and a released state, option buttons from which only one button may be selected at a time, and other types of buttons.)
- Option button
  "Option buttons" come in groups from which only one button may be selected at a time. Click the button corresponding to the desired item. A black circle appears inside the selected button. Usually multiple option buttons with similar functions will appear inside a group box from which a single option button may be selected.
- Check box
  "Check boxes" are buttons that are used when multiple items can be selected simultaneously. Select the buttons corresponding to the desired items. X's appear inside selected check boxes.
- List box
  A "list box" is a box with a list of selectable items. Select the desired items from the list by clicking. Selected items will be highlighted. There are standard list boxes, which allow only one item to be selected at a time, and expanded selection list boxes, from which multiple items can be selected at a time.
- Drop-down list box
  "Drop-down list boxes" are functionally identical to list boxes (described above). Drop-down list boxes usually show only the selected item. Clicking on a drop-down list box's arrow button causes the list to be displayed. Click the desired item in the list to make a selection.
- Text box
  A "text box" is a box that allows text to be input and edited. Text boxes include a cursor for input and editing.

- Resizing a window

  Bringing the mouse pointer to a window's border changes the pointer into an arrow that indicates the directions in which the size can be changed. Hold the left mouse button down at this point and drag it to the desired location, then release the mouse button to resize the window.

- Moving a window

  Bring the mouse pointer to the window's title bar and hold down the left button, then drag the mouse to the desired location and release the left button to move a window.

- Moving an icon

  Bring the mouse pointer to the icon and hold down the left button, then drag the mouse to the desired location and release the left button to move a icon.

- Moving the focus between controls

  To move the focus between multiple controls in a single window, click the desired control to give it the focus. Alternatively, press the [Tab] key, or hold down the [Shift] key while pressing the [Tab] key, to move the focus between controls.

- Spin box

  A "spin box" is comprised of a text box and arrow buttons, and is used to input numbers. The arrow buttons can be used to increase and decrease the numerical value. The keyboard can also be used to input the value directly.

- Group box

  A "group box" is a box that is used to group together related controls.

Section 5 Screen Description

5.1 Types of Screens

This equipment has multiple setting and display screens. Categorized by function, there are four basic types of screens, Parent Window, Child Window, Panel and Dialog box.

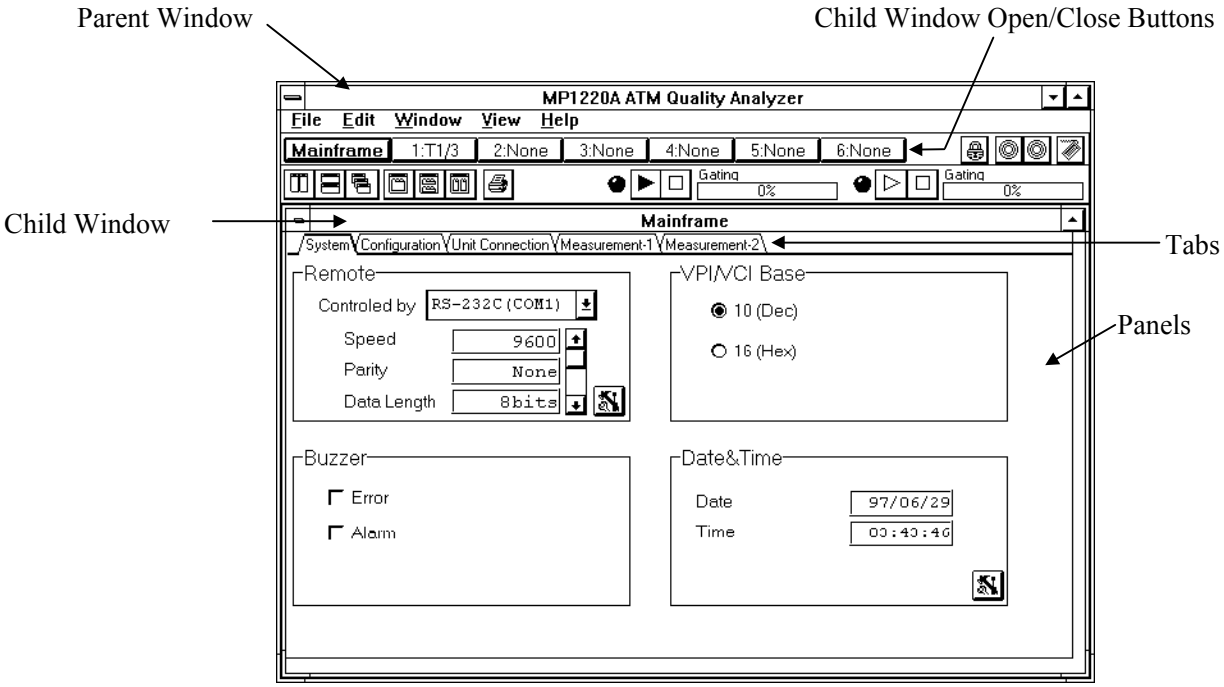


Figure 5-1 Screen Types

- Parent window

  This is the window for the entire MP1220A application. This window is used to open child windows and to exit the application.

- Child window (unit window)

  The "Child windows" are the windows that are opened by pressing the Child window Open and Close buttons in the Parent window. This Child windows include the Mainframe window and the Unit windows for the units installed in the slots. The Child windows have their own setting and display panels.

- Child window open and close buttons

  There are buttons for the Mainframe and the inserted Units in the Mainframe. Each child windows are opened by pressing these buttons.

  The button is indicated with the boldface letter when child window is opened.

  The button is red when the alarm is occured in the receiving unit, and is yellow when the error is occured in it.

- Panel

  A "panel" is a window that is opened by switching between the Child window tabs. All setting details, measurement results, and other such information is contained in the panels.

- Tab

  Switch the panels.

- Dialog box

  A "dialog box" is a window that is opened by selecting a panel's command button or a menu item. Once opened, this dialog boxes will not allow you to proceed to the next operation until they are closed. Dialog boxes are usually used to change settings.

  Dialog box settings become active when the OK button is pressed. Press the Cancel button to close a dialog box without changing any settings.

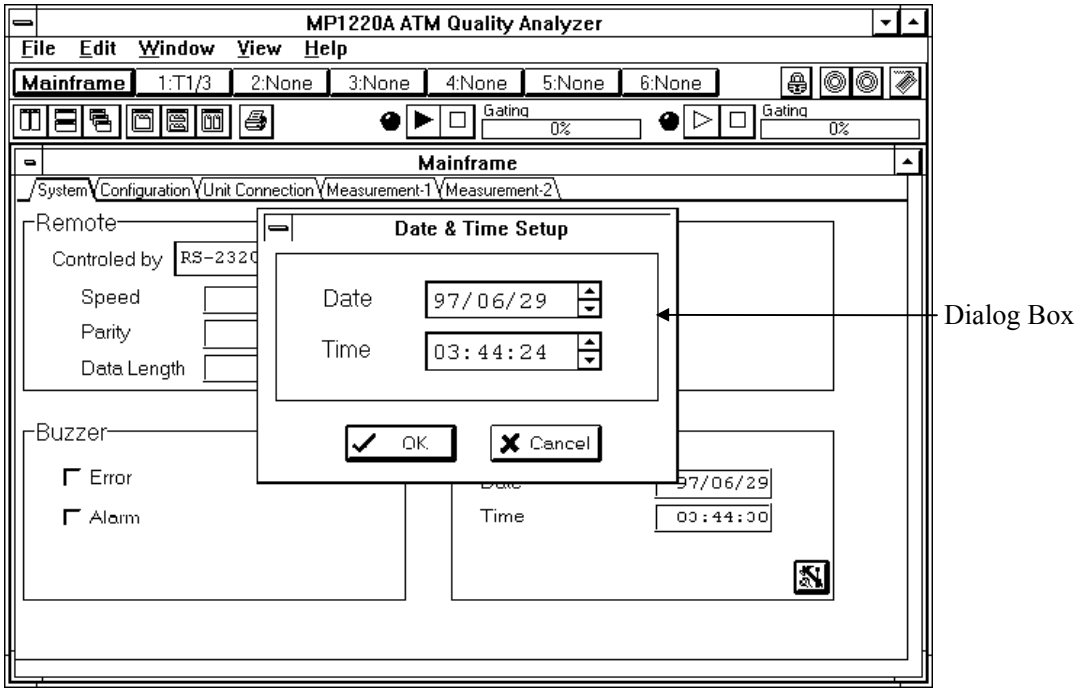


Figure 5-2 Dialog Box

5.2 Menu Structure

The menu bar displays titles such as File, Window, and Help. Click a title to display the associated drop-down menu (the menu title and the items displayed in the drop-down menu vary depending on the unit type). This section describes the items that are common to all menus. Refer to each unit's manual for information about items that differ between units.

5.2.1 File menu

The following table describes each item in the File menu and the associated functions:

Item	Function
Open...	The "Open..." item opens the open file dialog box and allows the user to load files containing previously saved setting items and measurement results.
Save... Save As...	The "Save..." and "Save As..." items open the save file dialog box and allow the user to save current setting items and measurement results in a file.
Print...	The "Print..." item opens the print dialog box and allows the user to print the current setting items and measurement results.
Hardcopy	The "Hardcopy" item prints the current screen.
Print Setup...	The "Print Setup..." item opens the printer setup dialog box and allows the user to change the printer settings.
Exit	The "Exit" item exits this application.

5.2.2 Window menu

The following table describes each item in the Window menu and the associated functions:

Item	Function
Tile (Vertical)	The "Tile (Vertical)" item repositions Child windows in a vertical arrangement.
Tile (Horizontal)	The "Tile (Horizontal)" item repositions Child windows in a horizontal arrangement.
Cascade	The "Cascade" item repositions Child windows in a stacked arrangement.

5.2.3 View menu

The following table describes each item in the View menu and the associated functions:

Item	Function
All	The "All" item displays only one panel in the Child window.
Lengthwise	The "Lengthwise" item displays two panels in the Child window, oriented lengthwise and stacked vertically.
Widthwise	The "Widthwise" item displays two panels in the Child window, oriented widthwise and stacked horizontally.

5.2.4 Help menu

The following table describes each item in the Help menu and the associated functions:

Item	Function
Contents	The "Contents" item displays a table of contents for the online help.
Search for Help On...	The "Search for Help On..." item is used to search for an online help keyword.
About...	The "About..." item displays version information for this application.

5.3 Toolbar Structure

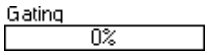
5.3.1 Toolbar structure

This equipment has two toolbars. Toolbar #1 has icons for opening and closing Child windows and so on, and Toolbar #2 has icons for changing the display of child windows and panels, running and quitting measurements, and so on. The icons are buttons that execute the corresponding functions when pressed. The following table describes the various icons and associated functions:

Table 5-1 Toolbar #1 Icons

Button	Function
Main frame	This button opens a window that is used to set up the main unit, measurement groups, measurement times, and so on.
1:T1/3 etc.	This button opens Child windows for the corresponding units.
	This button locks the panel to prevent accidental operation. No operation is executed on the panel, except unlocked by the lock release button shown in the center of the display.
	This button turns on when an error or alarm occurs relating to a unit in measurement group #1. Pressing this button when the LED is on displays details for the error or alarm.
	This button turns on when an error or alarm occurs relating to a unit in measurement group #2. Pressing this button when the LED is on displays details for the error or alarm.
	This button displays a software keyboard.

Table 5-2 Toolbar #2 Icons

Button	Function
	This button tiles the Child windows vertically. This is the same as the menu item Window | Tile (Vertical).
	This button tiles the Child windows horizontally. This is the same as the menu item Window | Tile (Horizontal).
	This button displays the Child windows in a stacked manner. This is the same as the menu item Window | Cascade.
	This button displays one panel over the entire Child window. This is the same as the menu item View | All.
	This button displays two panels lengthwise. This is the same as the menu item View | Lengthwise.
	This button displays two panels widthwise. This is the same as the menu item View | Widthwise.
	This button prints a hard copy of the screen. This is the same as the menu item File | Hardcopy.
	This button starts the measurement process (two measurement groups can be set). The LED located in the left side is lit when measurement.
	This button stops the measurement process (two measurement groups can be set).
	This button changes the measurement time display method (click this button to switch between the Measurement Gauge, Measurement Start Time, Elapsed Measurement Time, and Time Remaining in Measurement displays).

5.4 Window and Panel Display

5.4.1 Opening and closing child windows, and switching the display

This section describes the method for switching the display of Child windows between open and closed.

Opening and Closing Child Windows

- To open a Child window

  Press the Child Window Open/Close button in the Parent window. The Child window indicated by the button label (the Mainframe window in the figure) will be opened.

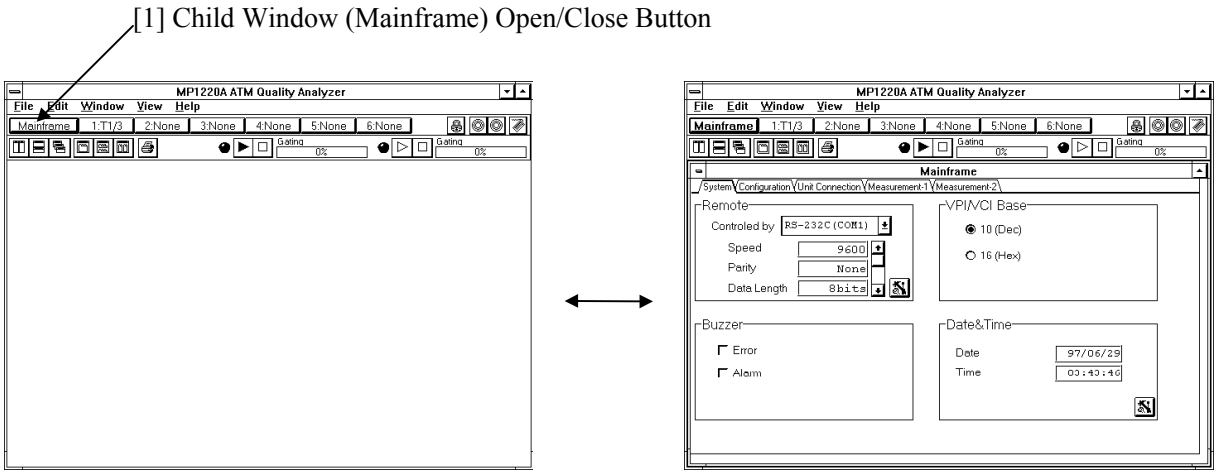


Figure 5-3 Opening and Closing Child Windows

- To close a Child window

  Press the button you pressed to open the Child window one more time. The Child window indicated by the button will close.

- To open multiple Child windows at the same time

  More than one Child window can be open at the same time. Press the buttons corresponding to the Child windows you wish to open.

Switching the Display Between Different Child Windows

Opened Child windows can be maximized and switched between.

- To maximize a Child window

  Press the Maximize button. The Child window will be displayed maximized within the Parent window.

- To revert the maximized Child window to its original size

  The Maximize button will have changed into a Revert button. Press the Revert button of the maximized Child window you wish to return to its original size.

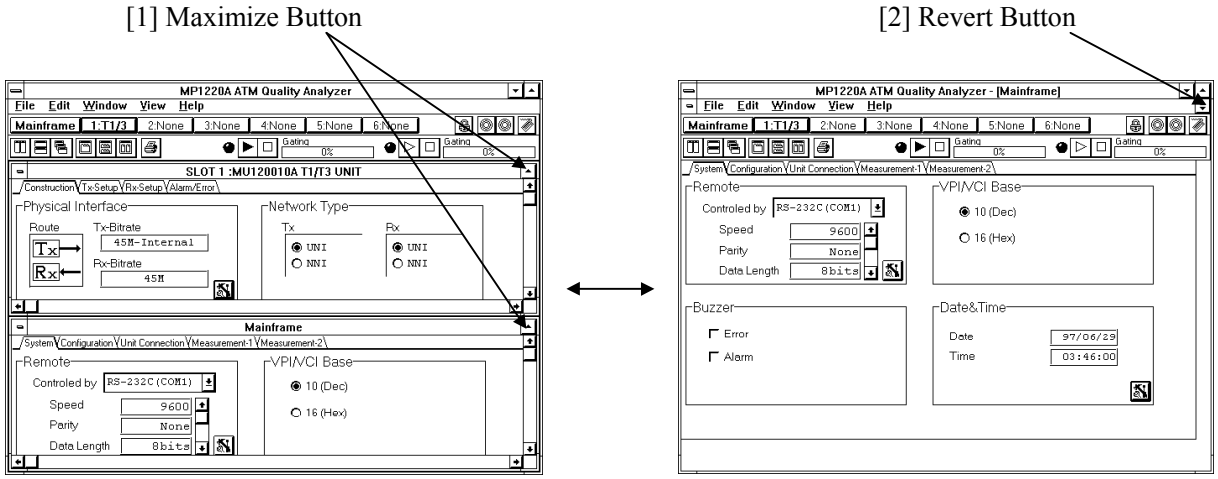
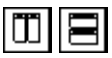


Figure 5-4 Maximizing Child Windows

- To display Child windows in a tiled arrangement

  Select [Window]-[Tile] from the Parent window's menu bar. Multiple opened Child windows will be displayed in a tiled arrangement inside the Parent window ( is also available in toolbar #2).

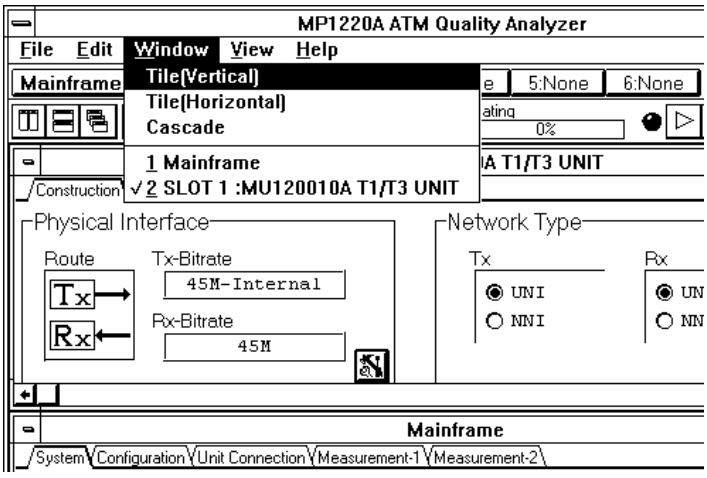


Figure 5-5 Window Menu

- To display Child windows in a cascade arrangement

  Select [Window]-[Cascade] from the Parent window's menu bar. Multiple opened Child windows will be displayed in a cascade arrangement inside the Parent window ( is also available in toolbar #2).

- To move the focus to a Child window

  Click inside the window frame of the Child window to which you wish to move the focus. The selected Child window will receive the focus and its title bar will be highlighted.

5.4.2 Switching between panels

Multiple panels exist inside each Child window. The contents of multiple panels inside a single Child window cannot be displayed at the same time.

- To display a concealed panel

  To display a panel that is concealed behind the currently displayed panel, click on the tab of the panel to be displayed. The selected panel will be displayed.

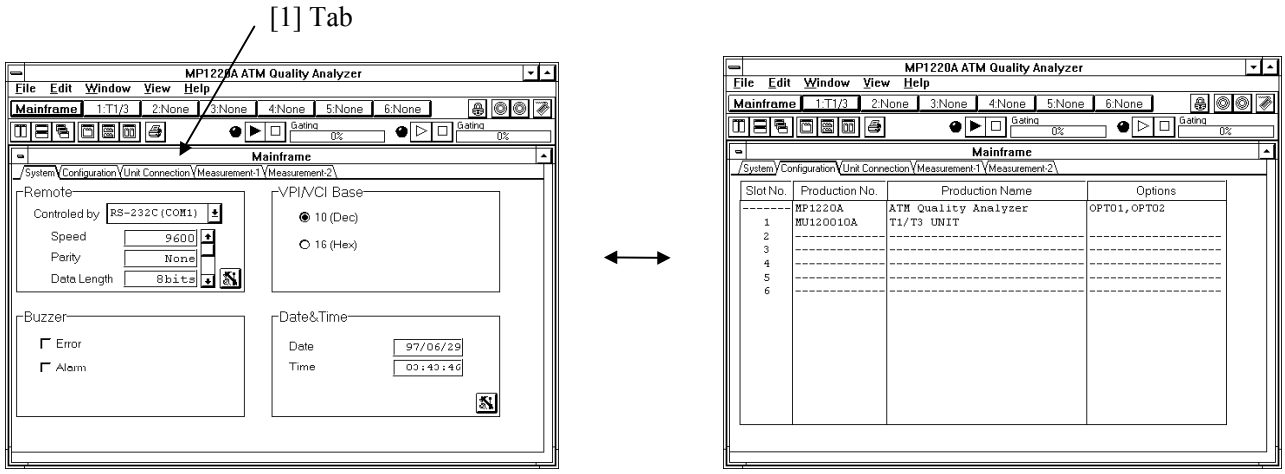


Figure 5-6 Switching Between Panels

- To display two panels

  Two panels can be displayed at one time in a Child window. Select [View]-[Lengthwise] or [View]-[Widthwise] from the Parent menu's menu bar. Two panels will be displayed.

  To display a single panel again, select [View]-[All] from the Parent window's menu bar (these commands can also be selected from toolbar #2 ).

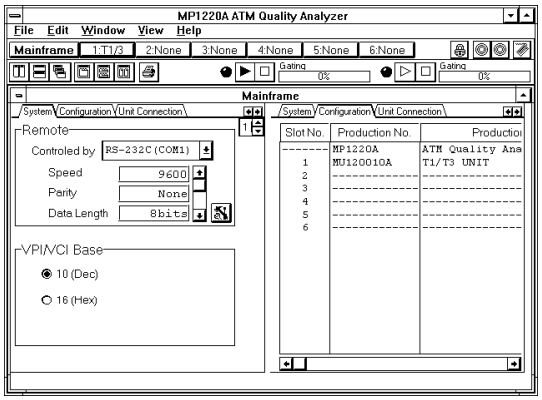


Figure 5-7 Displaying Two Panels

5.5 Basic Setup Method

This equipment is usually set up through dialog boxes (general settings are sometimes changed through panels). This section describes how to change settings through the dialog boxes.

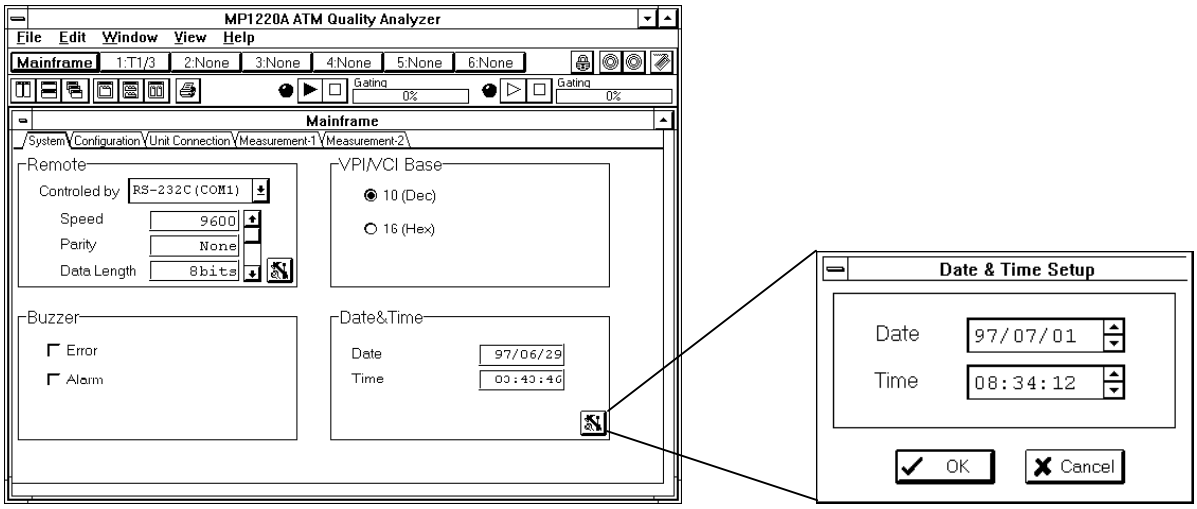


Figure 5-8 Basic Setup Methods

1. Press the  for the item you want to set. The setting dialog box will open.
2. Change the settings in the dialog box (some items require further settings to be made in another dialog box that opens when they are modified). At this stage, the changed settings are only being displayed in the dialog boxes, and they do not affect the device's operation yet.
3. Press the OK button to close the dialog box. The new modifications are first made active and begin affecting operation at this point. To cancel modifications in a dialog box and revert settings to the state they were in before the dialog box was closed, press the Cancel button and close the dialog box.

5.6 Data Setup Method

This equipment's screens can be modified by the following methods.

- Mouse

  Applications can be operated with the mouse in the same way as other applications running under Windows are operated on your personal computer.

- Touch panel

  This equipment can be operated with the touch panel in the same way as it is operated with the mouse. Use the included pen to touch the touch panel.

- Keyboard

  Applications can be operated with a connected keyboard.

- Software keyboard

  This equipment comes with a software keyboard that runs under Windows. The software keyboard can be used to input characters even when a normal keyboard is not available. Refer to section 5.7, "Using the Software Keyboard" for an explanation of how to use the software keyboard.

5.7 Using the Software Keyboard

5.7.1 Entering characters

This equipment does not have keys on its front panel. Instead, a software keyboard is provided as a supplementary character entry function. The software keyboard can be used to enter characters when no keyboard is connected to the main unit.

This section uses entering a file name as an example to show how to use the software keyboard.

1. Click on the keyboard icon in toolbar #1 to activate the software keyboard.
2. Click on the text box into which you would like to enter characters (in this case, the File Name text box) and click on the keys in the software keyboard. The clicked characters will appear in the text box.

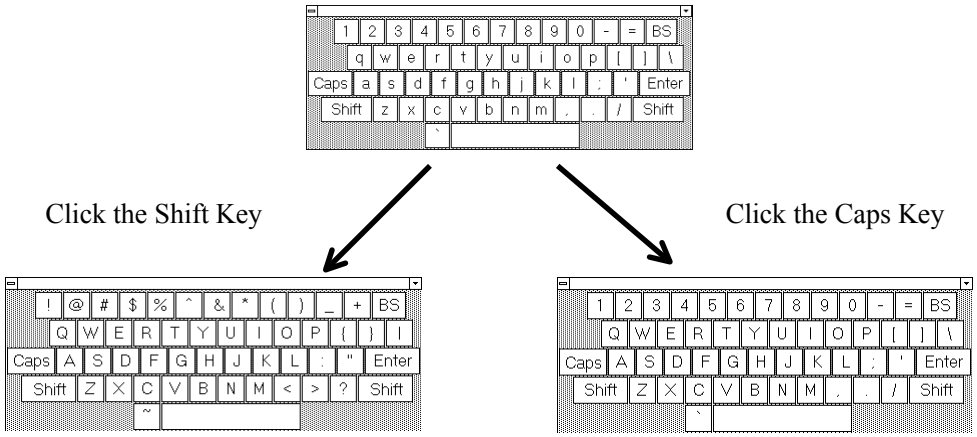


Figure 5-9 Software Keyboard

3. To quit the software keyboard, open the control box in the upper left corner of the software keyboard, and select [Exit].

Note

The software keyboard enters characters into the control with the focus when keys are pressed (the control has to be of a type that accepts text, such as a text box or a spin box). In addition to the File Name text box that was used in the example, spin boxes that accept numerical values, and the Windows <?> R <?> Memo Pad can also be used with the software keyboard for input.

5.7.2 Software keyboard setup

The size and display method of the software keyboard included with this equipment can be changed based on the usage method.

- Changing the size
  Click the button in the upper left corner to open the control box. Click the menu's Size item to select a size from SS, S, M, L, and LL. A check mark will appear next to the selected size.

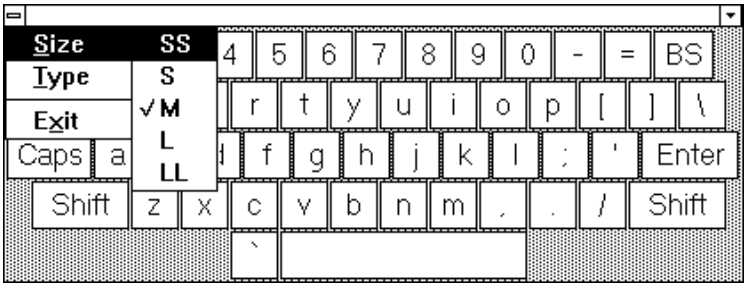


Figure 5-10 Changing the Size

- Changing the keyboard type
  Click the button in the upper left corner to open the control box. Click the menu's Type item to select a size from Full-Key, 10-Key, and 16-Key. A check mark will appear next to the selected type.

Full-Key	All keys can be used.
10-Key	The numerical keys can be used.
16-Key	The numerical keys and the letter keys A through F can be used.

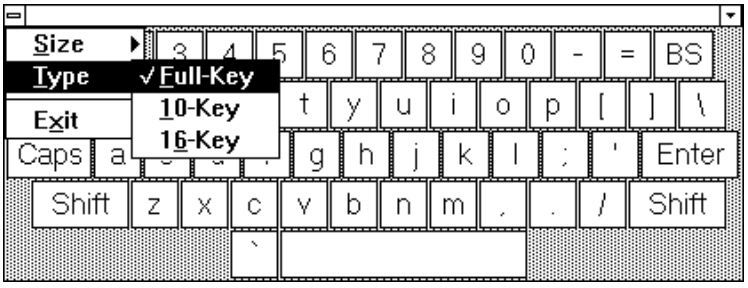


Figure 5-11 Changing the keyboard type

Section 6 Operation Methods

6.1 Window Structure

Parent window, Child windows, and panels are arranged in the hierarchical structure shown below. Refer to each unit's manual for an explanation of the shaded screen part.

Table 6-1 Screen Hierarchical Structure

Child Window	Panel	Main Uses
Mainframe	System	Sets the date, time, remote functions, and system operation mode
	Option	Displays the configuration of units inserted into the main unit
	Unit Connection	Sets to connect the signal between each units.
	Measurement-1	Sets the configuration, measurement time, and so on for measurement group #1.
	Measurement-2	Sets the configuration, measurement time, and so on for measurement group #2.
Each Unit's Child Window	Each Unit's Panels	Refer to each unit's manual for specific information about settings and displayed information.

The following section describes each panel in the Mainframe Child window.

6.2 System Panel

The System panel is used to set up the remote interface, buzzer, date, and time.

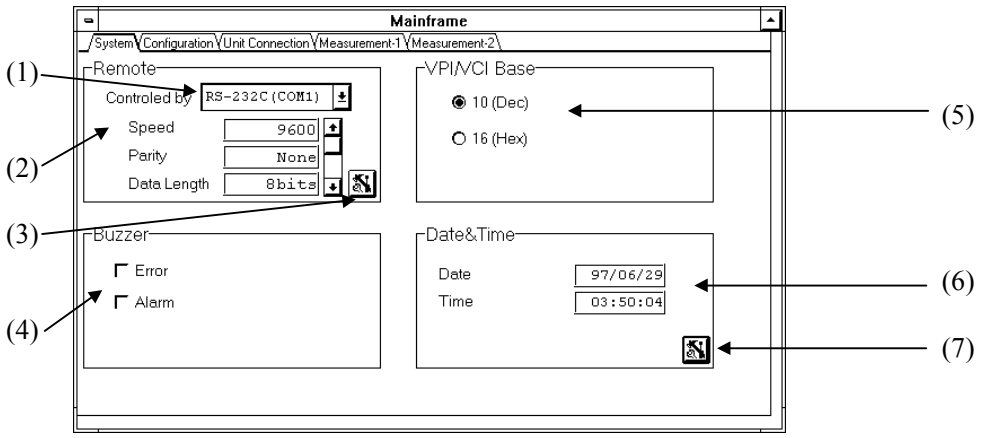


Figure 6-1 System Panel

Number	Item	Description
1	Remote	Displays and sets the remote control interface (remote control is an option)
2	Interface Condition Display	Displays the remote control interface parameters (the parameters displayed vary depending on the remote control interface)
3	Interface Settings	Opens a dialog box for setting the remote control interface parameter settings (the parameters that can be set vary depending on the remote control interface)
4	Buzzer	Sets whether or not to make a buzzer sound when an error occurs
5	VPI/VCI Base	Sets the display and setting of VPI/VCI Base by the decimal or hexadecimal system.
6	Date/Time Display	Displays the current date and time
7	Date/Time Setting	Opens a dialog box for setting the date and time

6.3 Configuration Panel

The Option panel displays information about the main unit and any units inserted in the slots. Slot numbers, model numbers, product names, and option information are displayed.

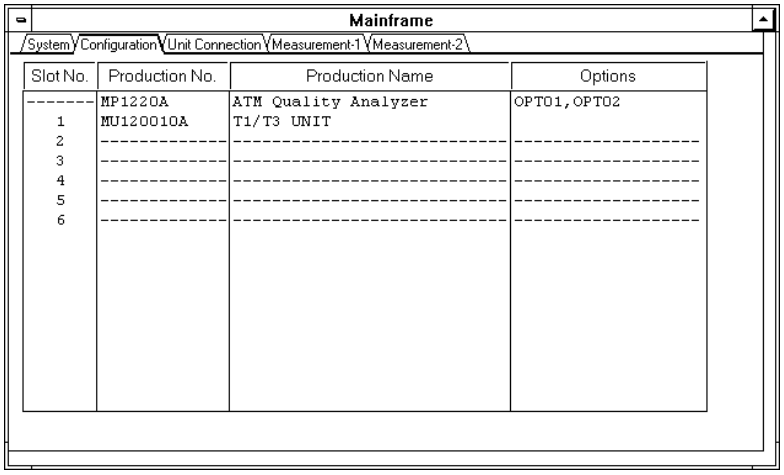


Figure 6-2 Configuration Panel

6.4 Unit Connection Panel

This equipment can changes the physical interface without replacing the unit by installing plural units. And also can selects the different physical interfaces for the transmission and reception.

Use the Unit Connection panel to set these items.

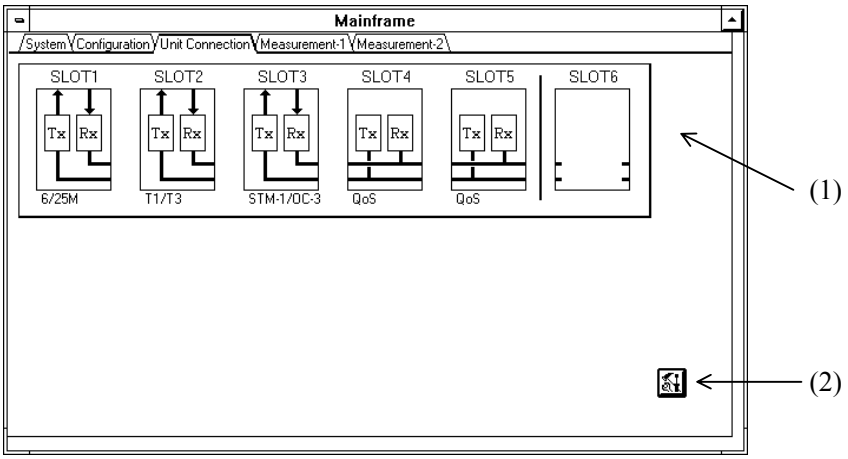


Figure 6-3 Unit Connection Panel

Number	Item	Description
1		Displays the current connection between units. In the figure above, QoS unit (SLOT 4) generates the cell, and STM-1/OC-3 unit (SLOT 3) sends it. STM-1/OS-3 unit receives the cell, and QoS unit measures it. The line between the SLOT5 and SLOT6 indicates the border of the unit group. See the paragraph 2.3 for the unit group.
2	Inter-units settings	Opens a dialog box for setting and changing the connection between units.

6.4.1 Unit Connection Dialog Box

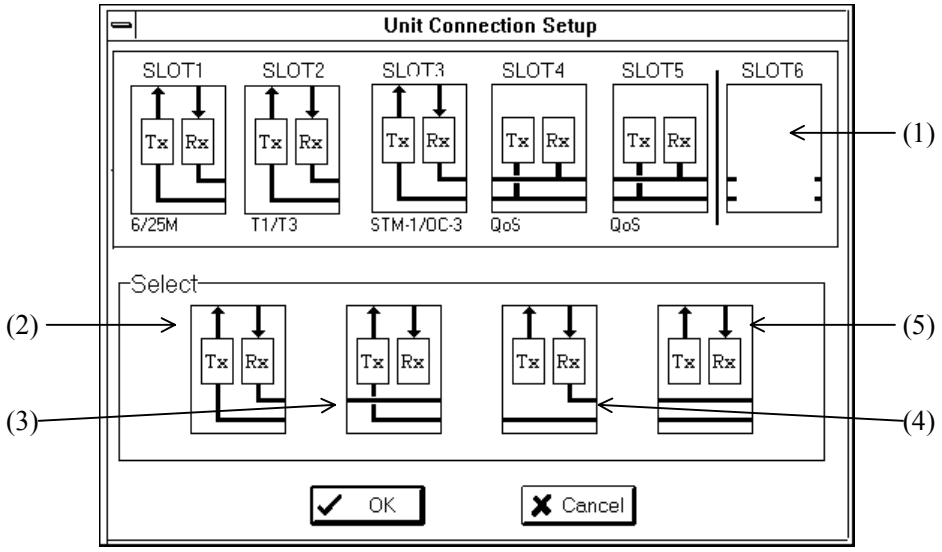


Figure 6-4 Unit Connection Dialog Box

Number	Item	Description
1		Displays the setting connection between units. Click the unit to be changed, and select the operation between (2) to (5) in this table. Only the physical interface unit can be changed. The lowest-rank unit (left side on the screen) in the unit group cannot be changed.
2	Transmission/Reception connection	Connect both the Transmission/Reception of the specified unit to the higher-rank unit.
3	Reception Unit through	Connect the Transmission of the specified unit to the higher-rank unit. For the reception, connect the lower-rank unit to the higher-rank unit.
4	Transmission Unit through	Connect the Reception of the specified unit to the higher-rank unit. For the transmission, connect the lower-rank unit to the higher-rank unit.
5	Transmission/Reception Unit through	For both the transmission and reception, connect the lower-rank unit to the higher-rank unit.

6.5 Measurement Panel

This equipment allows for measurement based in two independent groups, with the first group's settings accessed from the Measurement-1 panel, and the second channel's settings accessed from the Measurement-2 panel. Each of the Measurement panels is used to set the corresponding measurement group's configuration settings, measurement mode, measurement time and other measurement settings, and log file settings.

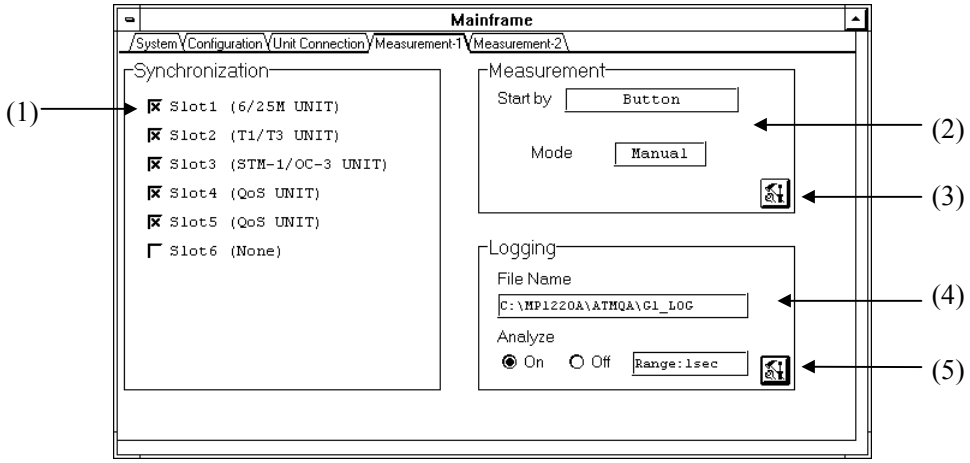


Figure 6-5 Measurement Panel

Number	Item	Description
1	Measurement Group's Configuration Settings	Specifies the channels that comprise the measurement group
2	Measurement Mode Display	Displays the measurement mode, measurement time, and other settings
3	Measurement Mode Settings	Opens a dialog for setting the measurement mode, measurement time, and other settings.
4	Log File Display	Displays the log file name, and selects whether or not to record a log
5	Log File Settings	Opens a dialog box for setting the log.

6.5.1 Measurement Mode Dialog Box

The Measurement Mode dialog box is used to set the measurement start trigger, measurement mode, and measurement conditions.

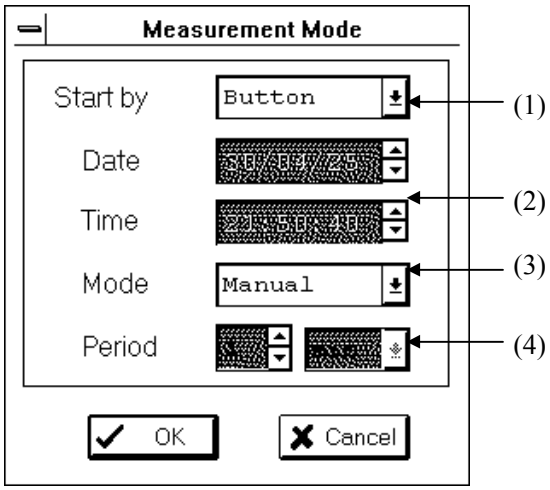


Figure 6-6 Measurement Mode Dialog Box

Number	Item	Description
1	Start By	Specifies the measurement start trigger Button: Press the Go button in toolbar #2 to start the measurements Timed: The measurements will begin at the specified time
2	Start Time	Start By: Used to specify the time at which measurements will start if Timed mode is selected
3	Mode	Used to specify one of the following three types of measurement modes: Repeat : Execute the measurements repeatedly at the specified frequency* Single : Execute the measurements once at the specified frequency* Manual : Execute the measurements until the Stop button is pressed *Measurements can be stopped by pressing the Stop button even when Repeat or Single is selected.
4	Period	Used to specify the frequency for the measurements (cannot be specified when the mode is Manual) Some measurements cannot be executed unless the period is at least as long as a specific minimum amount of time.

6.5.2 Logging Setup Dialog Box

Logging Setup dialog box is used to set the log file name and log contents.

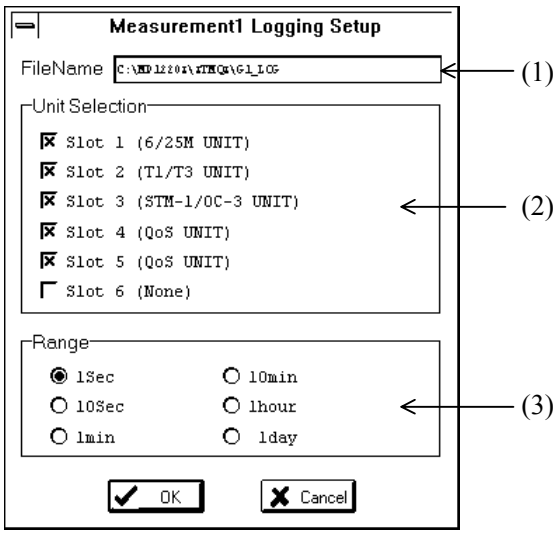


Figure 6-7 Logging Setup Dialog Box

Number	Item	Description
1	File Name	Log file name is displayed.
2	Unit Selection	Select the object unit to be logged.
3	Range	Specify the measurement range to be logged. The log data is stored in accordance with the selected range. When 1 sec range is selected, the log data is stored at 1 sec interval. This range is reflected in the Bar width setting range of Analyze in each unit.

Section 7 Maintenance

7.1 Daily Care

- Wipe dirt off of the device with a diluted, neutral cleaning agent.
- Use a vacuum cleaner to remove any dust that has collected on the device.
- Used a standard tool to tighten any screws or other similar items used to hold parts in place that may have loosened.

7.2 Storage Notes

Pay attention to the following points when storing the device for a long time:

1. Store the device after wiping off any dirt or dust that may have accumulated.
2. Avoid storing the device in a location that attains temperatures above 60°C or below -20°C, or humidity levels of over 85%.
3. Avoid storing the device in locations that are subject to direct sunlight, or excessive dust.
4. Avoid storing the device in locations that are subject to water or active gasses.
5. Avoid storing the device in locations where it might be subject to oxidization or extreme vibrations.

- Recommended Storage Conditions

When storing the device for long periods of time, in addition to avoiding the conditions listed above, it is recommended that the device is stored in an environment that fulfills the following conditions:

1. Temperature: 5°C to 30°C
2. Humidity: 40% to 75%
3. Changes in temperature and humidity throughout the day are minimal

7.3 Shipping Method

When shipping this device, if you have saved t he original packaging materials, be sure to use them again to repackage the device. If you discarded the original packaging materials, follow the instructions provided below to package the device. Be sure to wear clean gloves when handling the device, and to handle it gently to avoid scratching it or hitting it against a hard object.

1. Use a dry cloth to clean the device's outer surface of dust and grime.
2. Check to make sure that none of the screws are loose or unscrewed.
3. Protect any protruding or easily bendable parts and wrap the device in a polyethylene sheet, as well as moisture-proof sheets and other protective sheets.
4. Place the wrapped device into a cardboard box, and tape the seams shut with adhesive tape. If the shipping distance and/or method necessitates packing the cardboard box inside a larger wooden crate, do so.
5. Make sure that the device remains in an environment that satisfies the conditions listed in section 7.2, "Storage Notes" during shipment.

7.4 Calibration

This device cannot be calibrated except by the manufacturer. Be sure to have the device calibrated on a regular basis in order to assure its accuracy.

7.5 Touch Panel Calibration

This device is operated from the touch panel. Before you use the touch panel, it must be calibrated so that the software can correctly recognize the location where it is being touched. This section describes how to calibrate the touch panel before using it.

1. Double-click the "TTSetup3.20" icon in the Program Manager's Main group to run the touch panel setting application.
2. Execute the [Calibrate] item in the touch panel setup application's menu bar. Follow the instructions on the screen to calibrate the touch panel.
3. This completes the calibration. Select [Exit] from the menu bar to exit the touch panel setting application.

Note

Do not execute any of the touch panel setting applications functions other than [Calibrate]. Executing these functions and changing their settings can prevent the touch panel from functioning correctly.

7.6 Software Recovery

This device is controlled by the Microsoft operating systems MS-DOS and Windows, control applications, and other software. If the device's hard disk drive is damaged during use, or if a mistaken file operation or other such problem ruins part of the software described above, the device may no longer operate correctly.
If this sort of problem occurs, then the recovery tools that are provided with this device must be used to recover the software.

Note

1. A keyboard is necessary for recovering this device's software. Connect an external keyboard to the device before beginning the recovery process.
2. Recovering the software will cause all information on the hard disk to be lost. It is recommended that you take regular backups of all measurement result data, setting data, and other types of data on the hard disk.
3. Do not use the recovery tool on devices (such as personal computers) other than this device. This represents a violation of the software usage license.

Recovery Tool Summary

The recovery tools recover MS-DOS, Windows, the control applications, etc. The following three recovery tools are provided:

1. System Software Recovery
   This tool recovers MS-DOS, Windows, and the various drivers so that Windows will operate normally again. The touch panel and software keyboard will be usable again.
2. Application Recovery
   This tool recovers the MP1220A control applications so that the device can be used for measurement normally again.
3. External Interface Recovery (Option)
   This tool recovers the software necessary for connecting external interfaces so that the external interface can be used again.

Preparation for Recovery

The following preparations are necessary before recovery can be started:

1. Connect an external keyboard

   Recovery is impossible without an external keyboard. Connect a keyboard to the device through the back panel's keyboard connector.

2. Set the device to boot from a floppy disk when the power is turned on.

   This device is usually set up to boot from the software on the hard disk when power is turned on. Recovery requires that the recovery disk is inserted into the device so that the recovery tools on the disk can be run. For this reason, the device must be set up so that it boots from the floppy disk when the power is turned on. Follow these steps starting with the power turned off:

   [1] Turn the power on and press the "S" key with the "Ctrl" and "Alt" keys held down once the message "Ctrl+Alt+S to run the setup utility" is displayed. The setup screen will be displayed.

   [2] Move the cursor to the screen's "Quick Boot" selection. The Quick Boot will be currently set to "Enabled" to boot from the hard disk. Use the +/- keys to change the setting to "Disabled" so that the device will boot from the floppy disk.

Note

Do not change any setting other than Quick Boot. The screen's settings will be reinitialized to the default settings when the power is turned off.

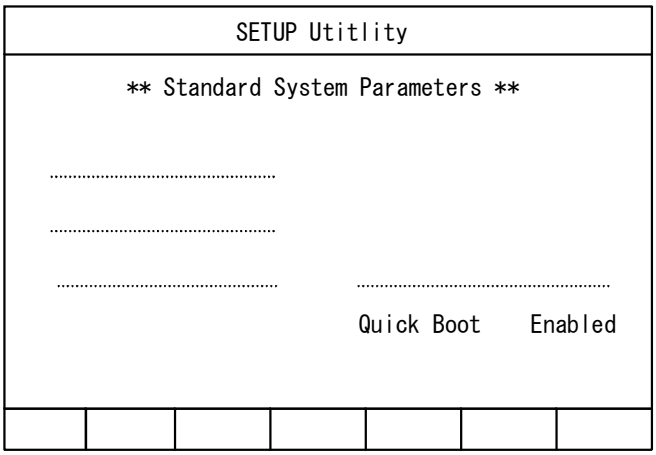


Figure 7-1 Recovery Preparations

   [3] Insert the recovery disk "DISK1" into the floppy disk drive.

   [4] Press the ESC key, then press the F4 key. The Recovery Tool will run from the floppy disk, and the recovery process will begin.

Recovery Procedures

The recovery procedures are described below.

1 System Software Recovery

1. Once the recovery preparations are complete, the Recovery Tool will run, and the following message will be displayed. Enter [Y] to continue with the recovery and reformat the hard drive. Enter [N] if you wish to cancel the recovery process. Enter [Y] to reformat the hard drive and boot the system.

Figure 7-2 User Confirmation Screen

2. Once the format is complete, files will be copied to the hard drive. Follow the instructions on the screen and swap the floppy disks.

Figure 7-3 Copying

3. The following message will be displayed once the System Software recovery is complete. Remove the floppy disk and press the [Enter] key. The system will reboot and Windows will start up.

Figure 7-4 System Software Recovery Complete

l Application Recovery

Next, follow these steps to recover the applications:

1. Insert "DISK1" of the Application Installer disks in the floppy disk drive and select [File]-[Run] from the Program Manager. Enter "a:\setup" in the Command Line text box and press the OK button. The application recovery process will begin. Follow the instructions on the screen and swap the floppy disks.
2. When the recovery process completes, the MP1220A group and application icon (icon name: [MP1220A ATM Quality Analyzer]) will be created in the Program Manager, and Windows will restart.
3. This completes the operating system and application recovery processes.

Messages Displayed During Recovery

The following type of message may be displayed during the recovery process. This section describes how to respond to such messages.

1. "MP1220A application is running."
   This message will be displayed if the application is running. Exit the application to continue with the recovery process.

Figure 7-5 Message Dialog Box

l Recovering the External Interface Driver (Option)

Next, follow these steps to recover the optional software. Recovering the application after recovering the option could erase option-related files. If you have recovered the application, be sure to recover the option again.

1. Insert "DISK1" of the Application Installer disks in the floppy disk drive and select [File]-[Run] from the program manager. Enter "a:¥setup" in the Command Line text box and press the OK button. The application recovery process will begin. Since the option may be stored on two or more floppy disks, follow the instructions on the screen and swap the floppy disks.
2. When the recovery process completes, shut down Windows forcibly and re-boot it. When the Ethernet option is installed, the Pathway group and application icon will be created in the Program Manager.
3. This completes the optional software recovery process.

7.7 Self-Testing

This device has its own self-test function. This allows you to detect the failures of the unit.

7.7.1 Starting Self-Test Application

Before starting the self-test application, make sure that you terminate the ATM Quality Analyzer. Then, double-click on an icon called Self-test in the MP1220A group of the Program Manager.

7.7.2 Screen Features

Figure 7-6 shows the start-up screen of the self-test application and Table 7-1 explains its items.

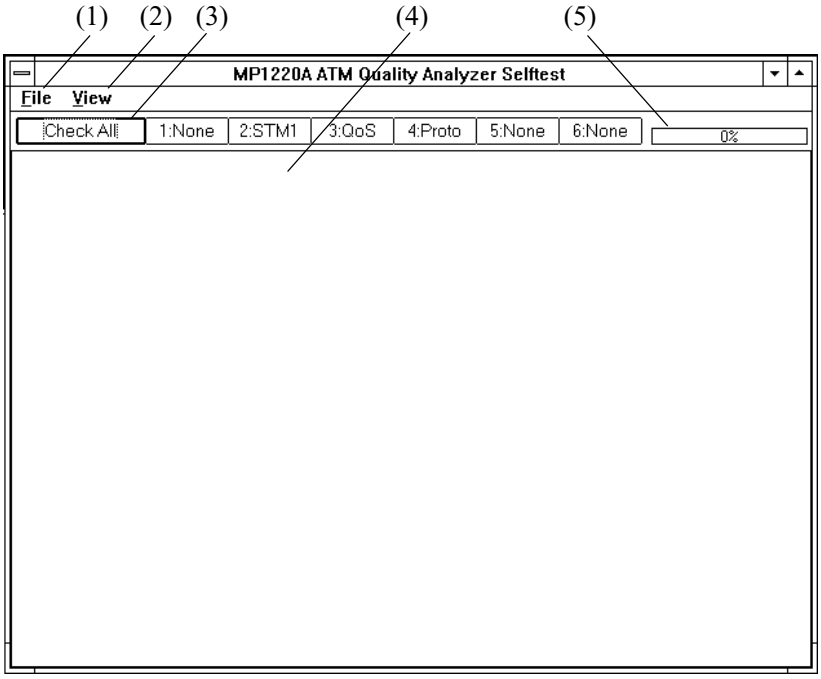


Figure 7-6 Start-up Screen

Table 7-1 Self-Test Screen Description

Number	Item	Description
1	File menu	This brings up a pull-down menu on the file operation. Refer to Section 7.7.3.
2	View menu	This brings up a pull-down menu to display the test results. Refer to Section 7.7.3.
3	Self-test start buttons	Press the Check All button to start the self-test for all units or to cause forced termination. Press the other button to start the self-test for their corresponding unit or to cause forced termination.
4	Self-test result display panel	This displays the results of the self-test.
5	Self-test gauge	This displays the progress status of the self-test.

7.7.3 Menu Configuration

• File menu

Item	Description
Save	This opens the File Save dialog box and save the results of self-test in a file.
Print	This prints the results of the self-test.
Exit	This quits the self-test application and returns to the Windows screen.
Exit to DOS	This quits the self-test application and returns to the MP1220A menu.

• View menu

Item	Description
Brief	This displays only success or failure for each unit.
Detail	This displays a detailed description of success or failure for each alarm/error.

7.7.4 Self-Test Result

Figure 7-7 shows a screen when no failures have been detected as a result of self-test.

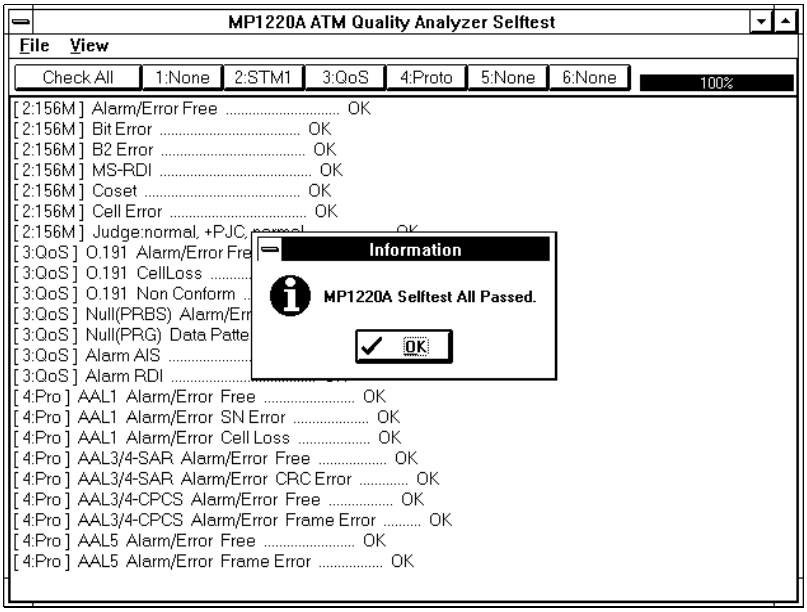


Figure 7-7 Screen When No Failures Have Been Detected

When no failure has been detected as a result of self-test, each test item and the indication OK for each item are displayed in the Self-test Result Display panel, and the characters on the unit button turns green.
When any failure has been detected, the characters on the unit button turn red and NG is displayed for each failed item in the Self-test Result Display panel.
Also, when the self-test has been terminated forcedly, the characters on the corresponding unit button turns yellow.

7.7.5 Basic Diagnosis of Ethernet Option

If your system has the Ethernet Control option (Option 3), you can conduct a basic diagnosis of the inserted Ethernet adapter card. Selecting Number 5 for "Select Number" in the MP1220A menu program displays the diagnostic tool screen. To conduct the diagnosis, Ethernet connection and adapter card setup must have been completed properly.

For details on connection and setup, refer to the operation manual for the MP1220A ATM Quality Analyzer Remote Control.

Note

A keyboard is required to conduct the basic diagnosis.

7.7.6 Setup/Diagnosis Screen Ethernet Adapter Card

Check whether "3comCE" is printed on the back of ether card as shown in Figure 7-8. If it is not, proceed to A. If it is, proceed to B.

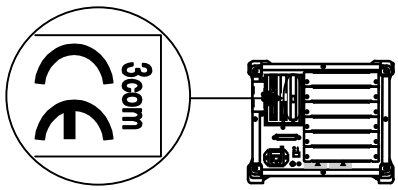


Figure 7-8 Ether Card

A. Without "3comCE"

```
+-------------------------------------------------------------------------------+
¦D-Link DE-220 Family Ethernet Card Setup/Diagnostic Program   Ver2.61(970516) ¦
+-------------------------------------------------------------------------------+

 +-------- Your Current Configuration --------+ +-------- Main Menu ---------+
 ¦  Node ID -------------- 00 80 C8 1E FC 5D  ¦ ¦  SetUp Configuration       ¦
 ¦  Bus Mode ------------- 16-bit             ¦ ¦  Adapter Basic Diagnostics ¦
 ¦  Card Type ------------ CT                 ¦ ¦  Network Diagnostics       ¦
 ¦  I/O Base Address ----- 300                ¦ +-----------------------------+
 ¦  Interrupt Number ----- 10                 ¦
 ¦                                            ¦
 ¦+---------- Setup Configuration ----------+ ¦
 ¦¦ Connector Type ------> UTP (RJ-45)       ¦ ¦
 ¦¦ I/O Base Address ----> 300               ¦ ¦
 ¦¦ Interrupt Number ----> 10                ¦ ¦
 ¦¦ Plug and Play -------> Disabled          ¦ ¦
 ¦¦ Remote Boot ---------> Disabled          ¦ ¦
 ¦¦                                          ¦ ¦
 ¦¦                                          ¦ ¦
 ¦¦                                          ¦ ¦
 ¦+------------------------------------------+ ¦
 +--------------------------------------------+

 ■■ Move    Enter Select    F1 Help    Esc Exit
```

Figure 7-9 Setup/Diagnosis Main Screen

The main menu has the following three options:

- Setup Configuration (Initializing adapter card)
- Adapter Basic Diagnostics
- Network Diagnostics

Select “Adapter Basic Diagnosis” from the main menu shown in Figure 7-9, and press the return key. To select a menu option, move the cursor using ←, →, ↑ and ↓ keys and then press the return key.

To start diagnosis Select a menu option and press the return key to display the screen shown below. If the diagnosis result is OK or No Good, “PASS” or “FAIL” is displayed in the diagnosis item, respectively. To cancel the diagnostic process or close the Setup/Diagnosis screen, press the ESC key.

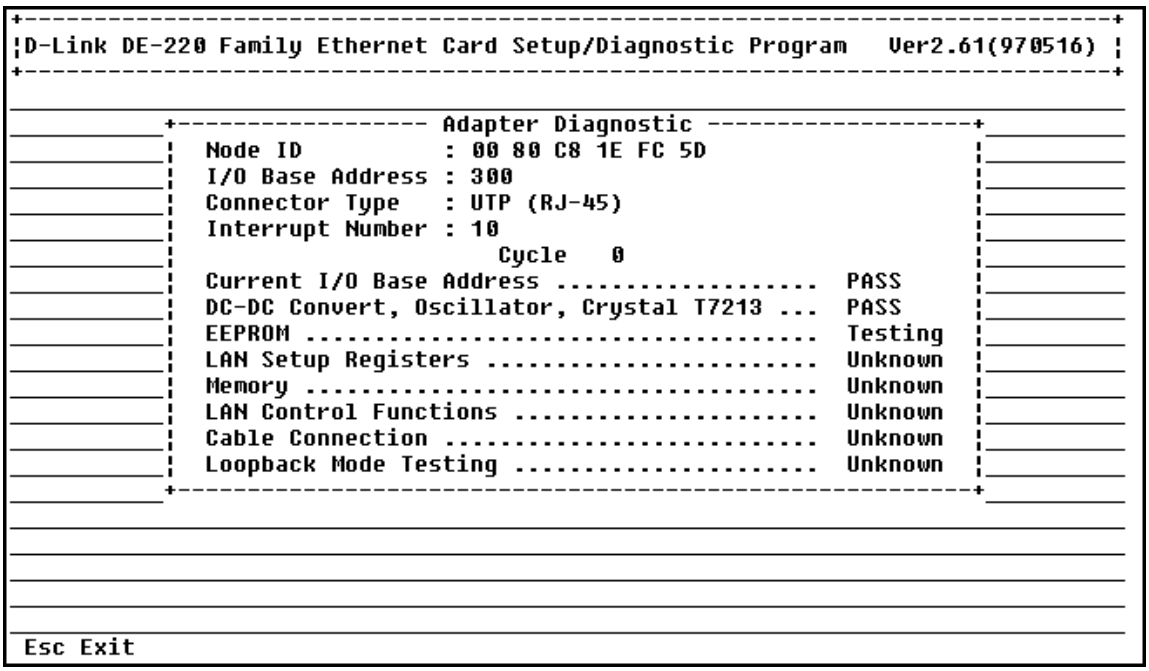


Figure 7-10 Diagnostic Program Screen

B. With “3comCE”

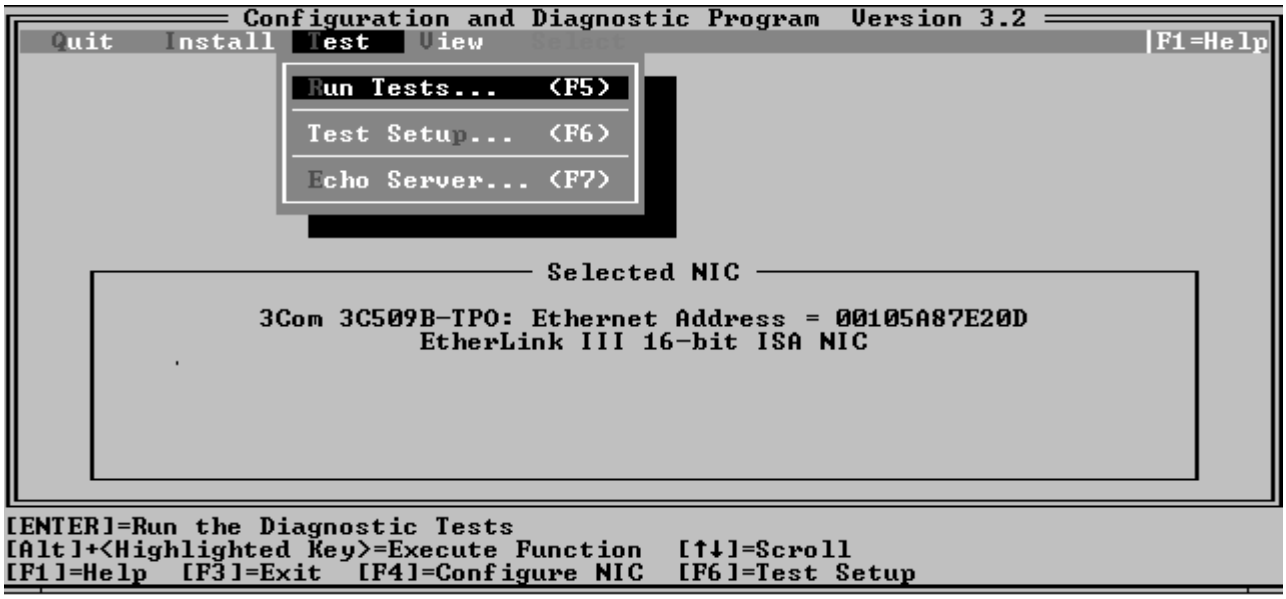


Figure 7-11 Setup/Diagnosis Main Screen

Select "Test” from the main menu shown in Figure 7-11, and press the return key. Then select ”Run Tests…” and press the return key to move to the diagnosis program screen. To select a menu option, move the cursor to it using the ←, →, ↑, ↓ keys and then press the return key.

Select “Start” from the menu option and press the return key to start the diagnosis. If the result of the diagnosis is OK or No Good, “Passed” or "!Failed” is displayed for each diagnosis item. When the diagnosis is completed, select “Cancel” from the menu at the bottom of the screen. Then press the return key to return to the main menu screen. To end the diagnosis, select “Quit” at the top of the screen and press the return key.

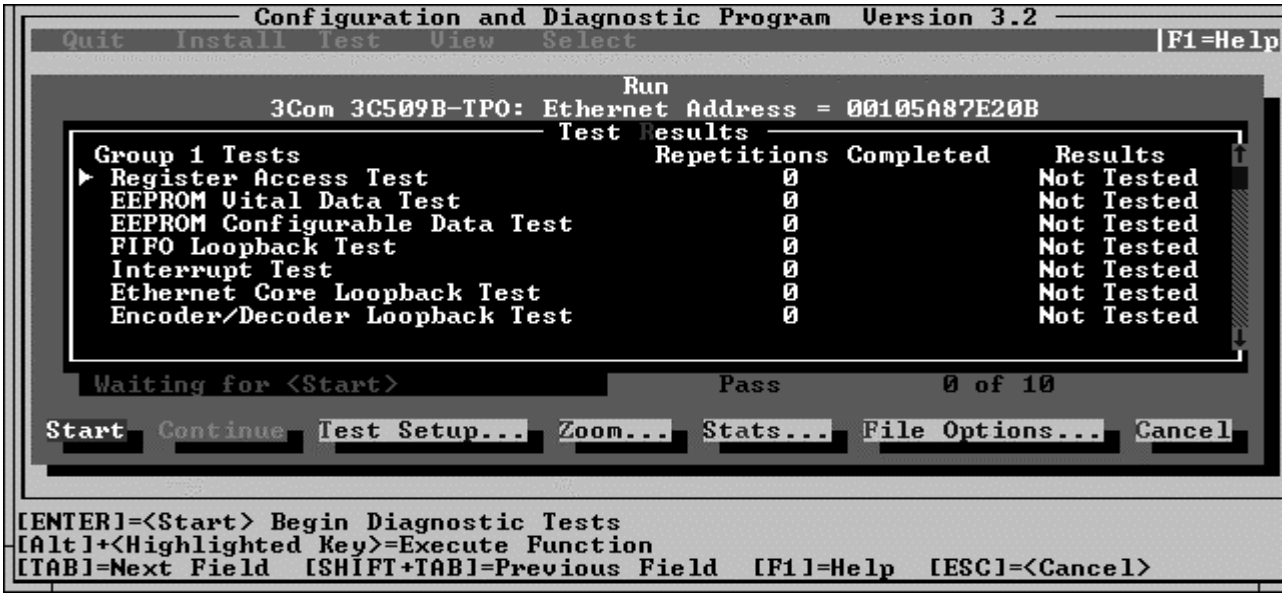


Figure 7-12 Diagnosis Program Screen

If any abnormality is detected in the diagnosis, contact our nearest branch, sales office or agent noted at the end of this manual.

Note

Do not select any menu option other than “Adapter Basic Diagnosis.” Do not change the settings, or this device may not work properly.

Some diagnose may take approximately 30 seconds to 1 minute to complete.

7.8 Initial Start Up

This equipment has the function to start up the equipment with the initial settings at factory shipment.

7.8.1 Starting initial startup

Make sure to terminate the ATM Quality Analyzer, before starting up the initial start.

Then, double-click the Initial Start Up icon in the MP1220A group on the Program manager in order to start the ATM Quality Analyzer after initializing to the setting at factory shipment.

Section 8 Disposal

This device contains an internal lithium battery. Follow all applicable national and local disposal regulations.