MW9070B

Optical Time Domain Reflectometer

1.31/1.55 µm (SM), 0.85/1.3 µm (GI)

High-performance mini-OTDR for installing and maintaining optical fiber cables

Compact, Lightweight, Easy to Operate

The MW9070B is a high-performance mini-OTDR for installation and maintenance of subscriber fiber optic lines and other fiber optic cables. It automatically detects the positions of faults in the cable, and displays an event table listing faults, and a trace waveform. Despite the large 7” screen, the high-performance mini-OTDR is just the size of a B5 file and it weighs in at only 3.2 kg.
The MW9070B is designed with a wide dynamic range and short dead zone, and is indispensable for detecting faults in optical trunk lines, subscriber lines, optical CATV cables, optical LANs, and other types of fiber optic cables. In addition, it is also invaluable in measuring transmission line losses, connection losses, return loss and other parameters. Six optical units are available depending on the wavelength and type of optical fiber, making the MW9070B an economic choice for a wide range of applications.

Basic configuration

Models		Wavelength (µm)	Optical fiber	Dynamic range dB (SNR=1)
Main frame	MW9070B	—	—	—
Optical units	MW0970B	1.31	SM	36
	MW0972B	1.31/1.55	SM	36/34
	MW0972C	1.31/1.55	SM	41.5/39.5
	MW0973J	0.85	GI	18
	MW0975J	0.85/1.3	GI	22/22

Full Complement of Features and Functions

Compact, lightweight, battery-operated

The MW9070B is the size of a B5 file (19.4 x 29 x 7.5 cm) and weights about 3.2 kg; it has a dustproof construction suitable for outdoor use. It can be used continuously for more than 5 hours. The 7” LCD simultaneously displays the trace waveform and event table; it is a semi-transparent type to provide clear displays both indoors and outdoors.

Easy operation and fully-automated measurements

In the fully-automatic mode (FULL AUTO), simply pressing the Start key sets the optimum distance range, pulse width and averaging processing for the optical fiber cable being measured, and automatically detects the positions of any faults.
Furthermore, the real-time sweep function can be used to update the waveform at 0.4 s/one sweep (MW0970B/0972B/0972C), to confirm the status of the connected fiber cable in real-time, so trouble from loose connectors can be prevented in advance.

Event registration

Events (splices, far end, and breaks) in each fiber of a multifiber optical fiber may sometimes occur at the same position. Consequently, events in the first fiber that are not detected at the threshold set previously in the event table are registered on a second fiber when using fully automatic mode. These events can be added to the table using the event addition function and then events are set to the Fixed Mode. Next, when the measurement fiber is changed, and the Start key is pressed, all the target events of the second and subsequent fibers are measured repeatedly and efficiently.

Functions for convenient on-site use

Automatic optical connector connection status check
This function checks the status of the connection between the optical connector and the mini-OTDR. It automatically detects whether or not there are any problems with the connector such as dirt in the connector or a poor fit, and outputs an alarm.

Battery pack
The Ni-Cd battery and dry cell battery pack can be used.

File storage
Data measured in the field can be stored in the internal RAM, in a memory card, or on a 3.5” floppy disk. The volatile internal RAM is back-up by battery. Files can be copied from one storage medium to another.

MX3607B OTDR Emulation Software
Data measured by the MW9070A/B can be downloaded to a personal computer, analyzed in detail in the Microsoft Windows environment, and compared with previously-recorded waveforms using the MX3607B OTDR Emulation Software. (For details, please refer to the MX3607B data sheet.)

RS-232C interface
On-site data can be sent via the RS-232C interface to a remote computer.

Ghost Fresnel reflection detection
Since the * marker can jump to twice the range of the x marker, ghost Fresnel reflection can be detected easily. In addition, a ghost marker is displayed at ghost Fresnel events in the Event Table.

File printing
Several selected files can be printed continuously.

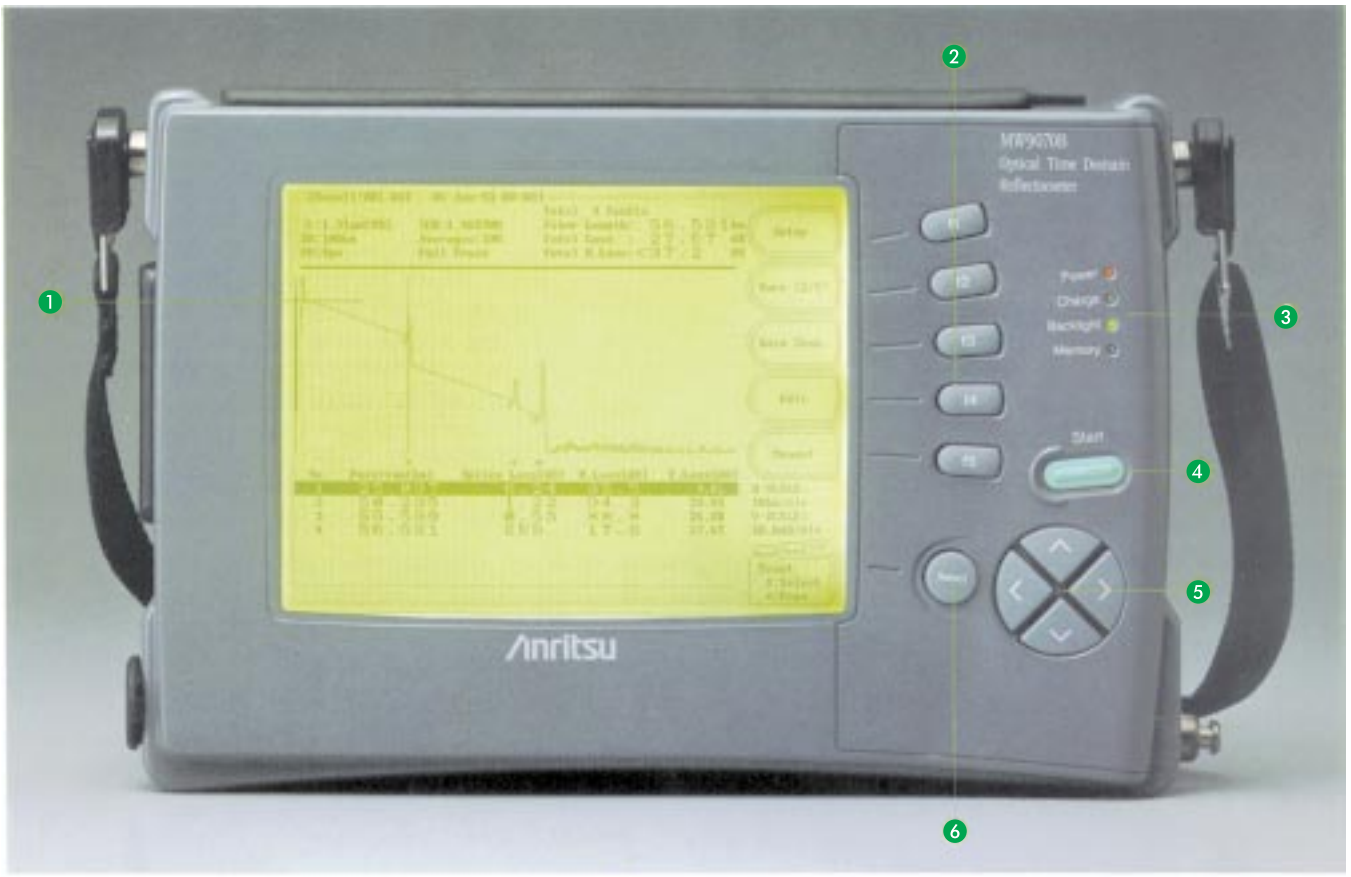
Visible LD light source (optical unit: option 05)
The optional visible LD light source enables direct visual detection of optical leakage and faults even in the dead zone. It is also useful for core identification in multicore fibers and blinks at contrast. intervals for simple confirmation even with weak optical output.

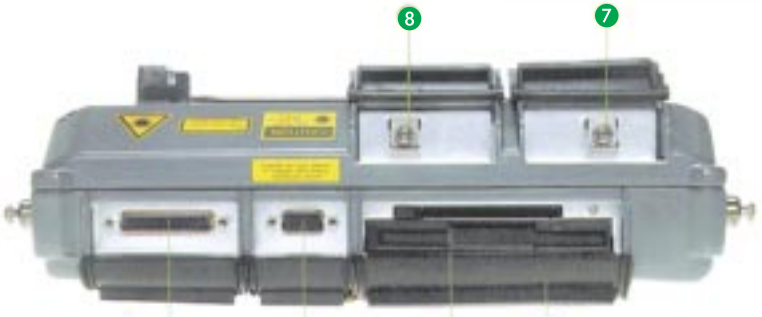
System software upgrading
MW9070B system software can be upgraded using memory cards. The software is read from a memory card to add new functions. (For information on system software upgrading, consult your sales representative.)

OLTS function
The MW0972C has a light source function (standard) and a power meter function (Option 07). The total optical loss of an optical fiber can be measured easily by using the MW9070B as an OLTS (Optical Loss Test Set).

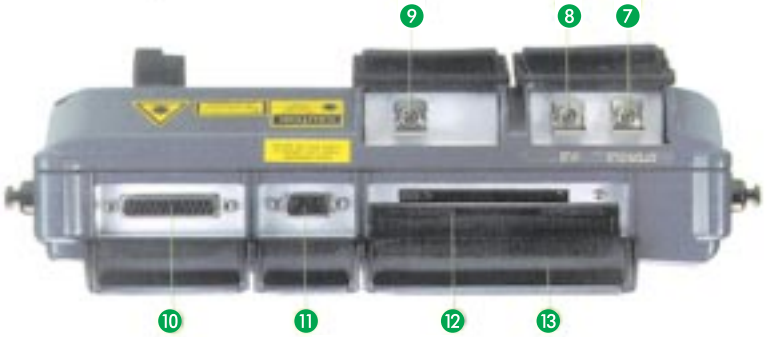
Monitoring function (Option 02)
With this option, the MW9070B can be setup from an external host to monitor an optical fiber; monitoring can be performed at specified measurement intervals and an alarm is generated if the measured loss exceeds the set value.

Convenient Key Layout, Simple Operation





(MW0970B, MW0972B, MW0973J, MW0975J)



(MW0972C)

Optical connector

1 **Display**
7” LCD for large, bright images

2 **Function keys (F1 to F5)**
Set measurement conditions, manual operation, saving data in memory, printing, and other tasks

3 **Status lamps**
Indicate state of power supply (whether power on or off) battery charge (whether batteries charging), display back-lighting (whether LCD backlight or not), and memory (whether memory card or floppy disk being accessed)

4 **Start key**
Starts measurement

5 **Arrow keys**
Select items from on-screen menu, enter characters, move markers, and other operations

6 **Select button**
Switches between event, zoom, shift and other modes

7 **Optical output connector (OTDR pulse/MW0972C Unit light source output)**
Outputs measured optical signals. On removing the connector adapter, cables with FC, SC, ST, DIN or Diamond (PC type) optical connectors can be connected. The connector facet can be easily cleaned by removing the adapter.

8 **Visible LD light source output connector (optional)**
Outputs bright visible red light (wavelength 635 nm)

9 **Optical power meter connector (MW0972C Option 07)**
This option can measure an optical power of +23 dBm (CW).

10 **Printer connector**
Connected to parallel printer (Centronics interface). The recommended printer is the DPU-411.

11 **RS-232C connector**
Connected to serial-interface printer, or to external computer for remote control

12 **Memory card slot**
Saves results on memory card

13 **Floppy disk drive (optional)**
Saves results on 3.5” MS-DOS format floppy disk

14 **DC power supply input connector**
Connected to AC adapter
(standard accessory with MW9070B)

15 **Power switch**

16 **Backlighting on/off switch, contrast adjustment**
Toggles backlighting on and off. When it is turned the contrast is adjusted.

17 **Keyboard Connector**
Connects full-size keyboard for inputting comments, titles and headers

18 **Loop for carrying strap**
The screen can be viewed easily during operation by hanging the main frame from the neck.

19 **Optical unit**
Changeable by removing two screws from rear panel

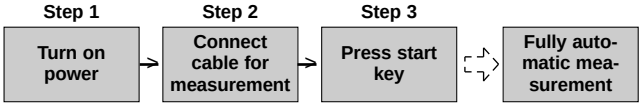
20 **Stand**
Supports unit on desk or other level surface

21 **Battery pack**
Changeable by removing two screws from rear panel. The Ni-Cd battery pack can be recharged using the AC adapter either while it is in the unit, or after removal.
In addition, it can be replaced with a dry-cell battery pack for emergency use.

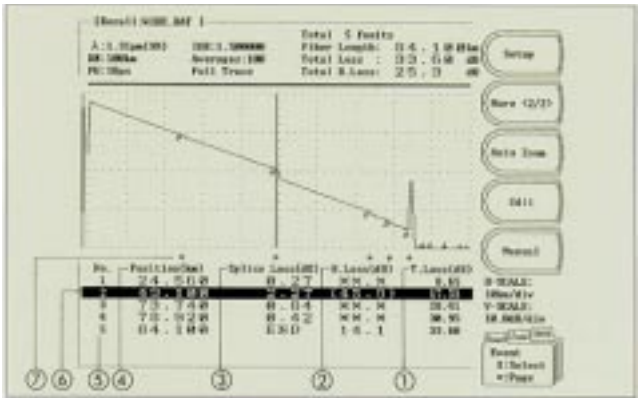
Excellent Operability, High Performance

Simple operation

In the fully-automatic mode, faults can be detected in just three steps.

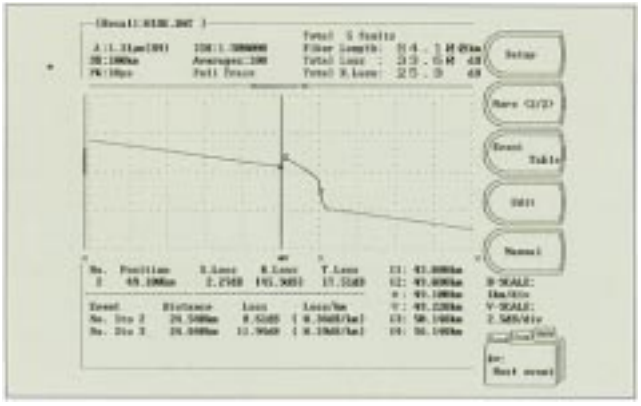


When a fault (event) is detected, measured results are output. The waveform trace and event table are displayed on the same screen, so the event position can be confirmed accurately.
Arrows on the trace waveform show detected faults exceeding the set threshold. The event where the cursor is positioned is reverse displayed. The FULL AUTO measured results screen is shown below.



1 Total loss up to each event from near end
2 Return loss at connector position
3 Connection loss
4 Distance to each event from near end
5 Event (fault) number, counted from near end
6 The arrows on the trace waveform indicate detected faults exceeing the measured threshold.
7 The event where the cursor is positioned is reverse displayed.

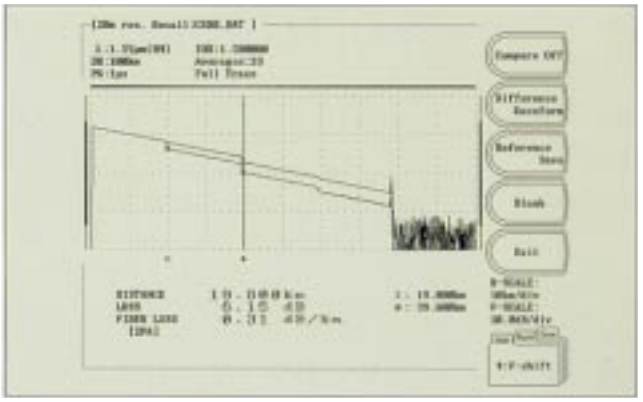
The highlighted-displayed event can be zoomed automatically to the optimum scale for viewing by pressing the Auto Zoom key.



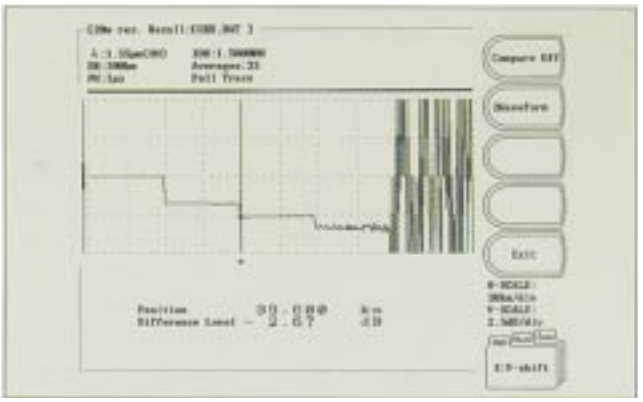
Auto Zoom screen

Dual waveform and waveform difference display

This screen is useful for monitoring aging changes in optical fiber by comparison of current waveform data with the same data at fiber installation. The MW9070B waveform comparison function displays two waveforms simultaneously making it easy to detect large changes in loss at any range. Furthermore, the difference between the two waveforms can be displayed and the loss values can be read.



Dual waveform display

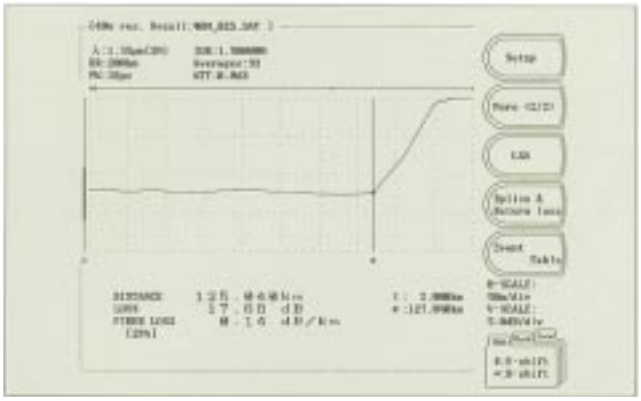


Difference display

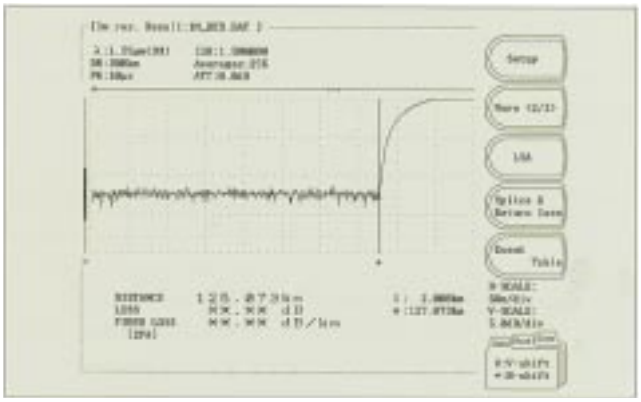
0.5 m* measurement resolution at 200 km far-end

Since the number of measured data points is limited, usually, the data resolution gets worse as the distance range increases meaning that it is difficult to accurately measure the far-end distance of long fibers.
However, this problem is solved by using the MW9070B variable sampling resolution function to sample the far-end section of the fiber at higher resolution.

*MW0972C Unit



125.073 km far-end waveform measured at 200 km full scale



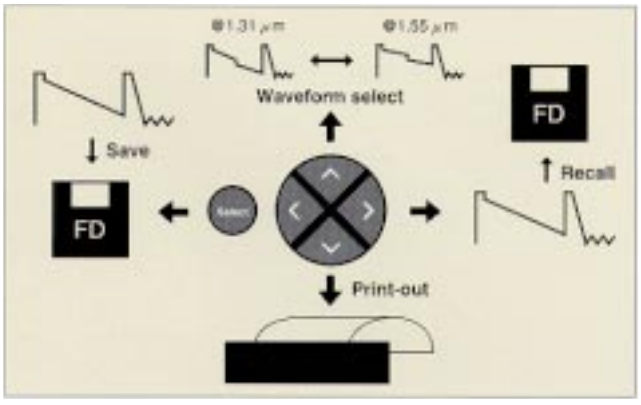
Waveform measured at 1 m resolution at 125.073 km far-end

Excellent performance

Although the MW9070B is a mini-OTDR with a full range of functions for every need, the design details described below make it very easy to use.

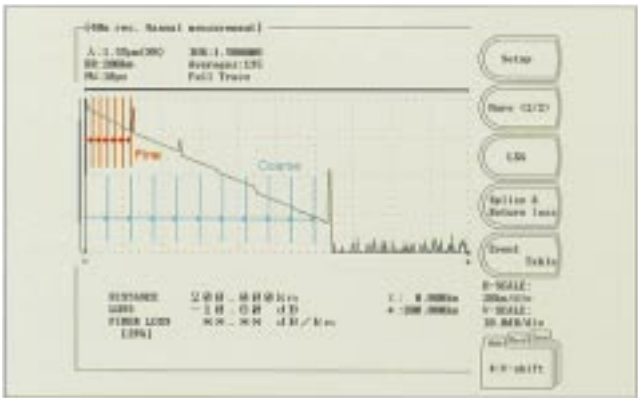
● **Shortcut keys**

Commonly-used functions can be executed at the single touch of a key.



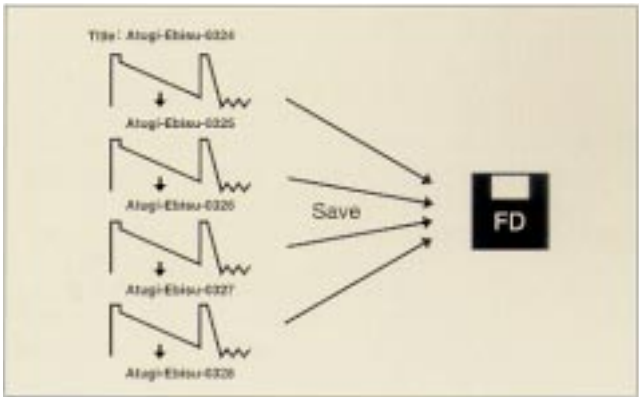
● **Fine/Coarse marker move and waveform shift**

The fine key moves the markers and shifts the waveform accurately, while the Coarse key moves them quickly but less accurately.



● **Title auto-increment**

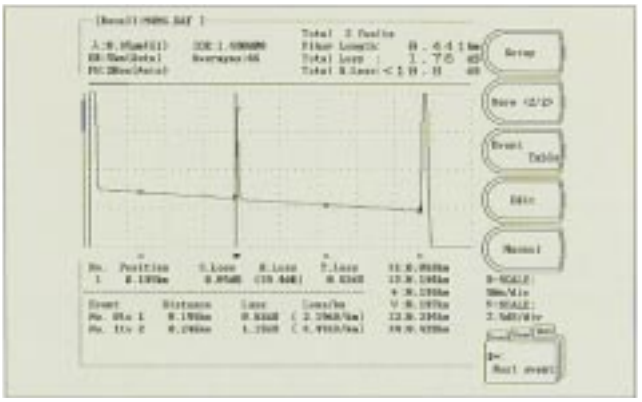
The title is incremented by 1 automatically each time a



High performance

● 0.01 dB threshold

At periodic inspection of optical fiber cables, it is necessary to check increases in connection loss due to aging. The loss level that must not be exceeded as a result of aging can be called the threshold level. The MW9070B allows the threshold to be set anywhere from 0.01 dB to a maximum 9 dB in 0.01 dB increments.



Detection of 0.05 dB loss event using 0.01 dB threshold

● Event editing

In fully automatic measurement, splice points with levels below 0.01 dB but which are not judged faults can be added to the event table, events which were mistakenly determined to be faults due to noise can be removed, and event points can be moved and set to their correct positions. In addition, both ends of the cable can be specified on the trace waveform(end-to-end registration). These event editing functions can be used to modify results to produce accurate measurement data. An asterisk is appended to edited events to discriminate them from other events.

Saving and printing data

● Saving measured data

In addition to internal RAM, data can also be saved in memory cards and on floppy disks. All saved waveforms can be printed at once, or only selected files can be printed continuously.

● Number of saved screens (print mode)

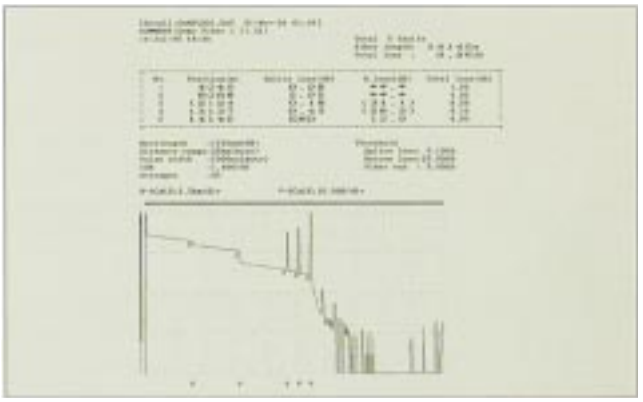
Medium	Internal RAM	Memory card (1 MB)	Floppy disk (2HD, 1.44 MB)
Number of screens	170	280	400

Note: The number of screens are for reference only.

● Common OTDR format (GR-196-CORE)

The GR-196-CORE is an OTDR common file format proposed by Bellcore that is independent of markers and instruments. The MW9070B can save both waveform data and fault (event) data in this format. In addition, data in this format can be read using the MX3607B emulation software. (However, note that files saved in this format cannot be read by the MW9070B.)

Measurement data print out example

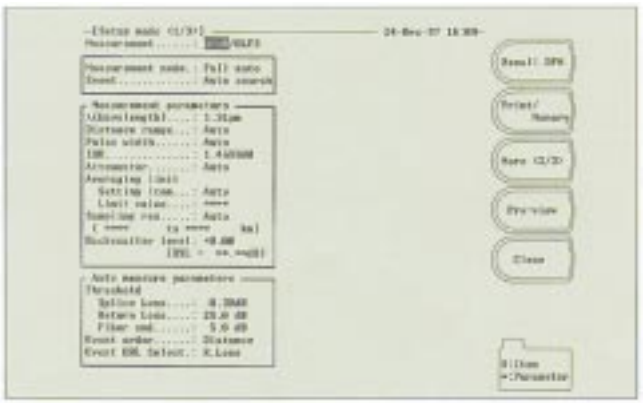


Setup screen

When the power is turned on, the setup screen is displayed. The setup screen consists of one page <1/3> to set measurement conditions and other parameters, and another page <3/3> to set system parameters.

● Setup screen <1/3>

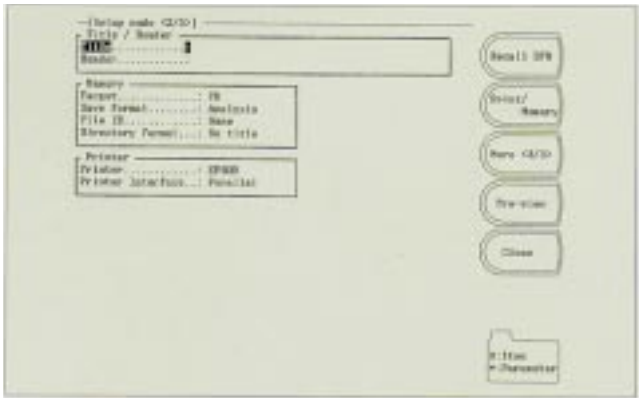
When the measurement mode is set to the fully automatic mode, the optimum distance range, pulse width, and number of averaging times are set automatically. After averaging, fault positions are detected automatically. The MW0972C has an OTDR/OLTS (Optical Loss Test Set) switchable item.



Setup screen <1/3>

● **Setup screen <2/3>**

Print mode and analysis mode: When saving measurement results in memory, the print mode can be selected to increase the number of screens that can be saved. Files saved in the print mode can be printed but cannot be viewed in the zoom mode or otherwise analyzed in detail. If data analysis is necessary, files should be saved in the analysis mode.



Setup screen <2/3>

● **Setup screen <3/3>**

Automatic backlighting off, automatic power off: The MW9070B can be set so that the backlighting and power are turned off automatically, if no panel operations are performed within a fixed period of time, helping to save power and permit use over longer periods of time. In this case, the displayed waveform immediately before auto power-off is backed-up automatically.

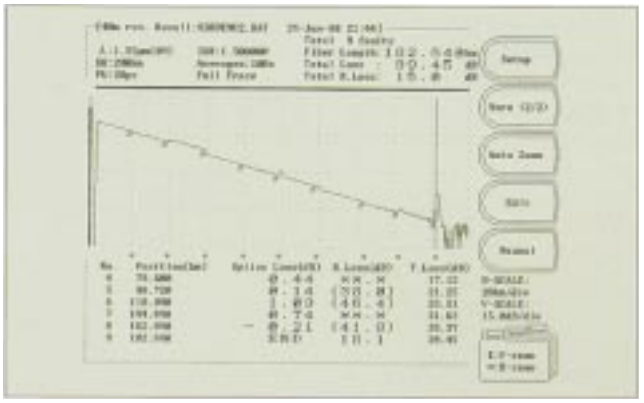
Visible LD light source on/off function

Setup screen <3/3>

● **Function for saving settings**

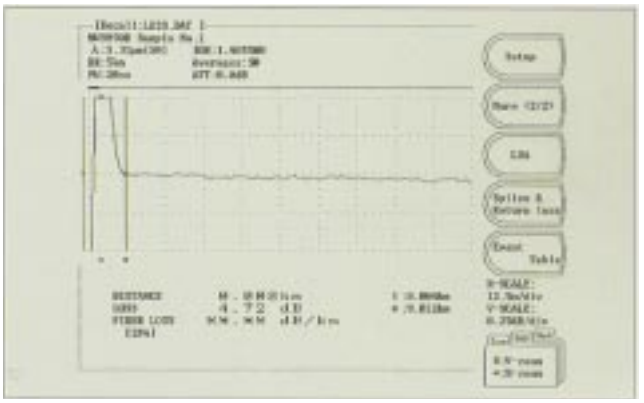
Parameters entered from the setup screen <1/3> can be saved in dedicated DFN memory. Even after using the panel to change measurement parameters, saved settings can be recalled to return the MW9070B to its previous setting state.

Long-distance fiber measurements using wide dynamic range unit



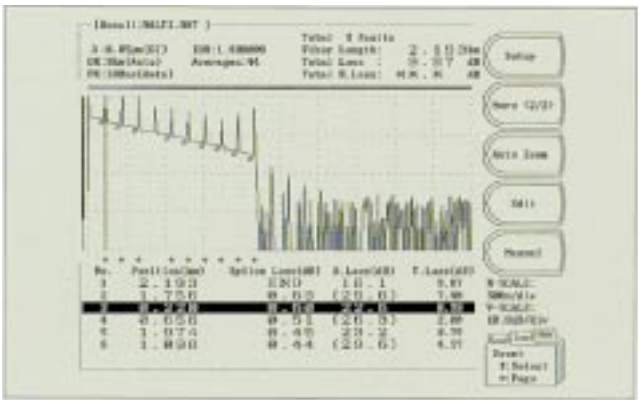
Measurement approx. 182 km single-mode fiber

Short dead zone



Loss measurement in 12 m dead zone

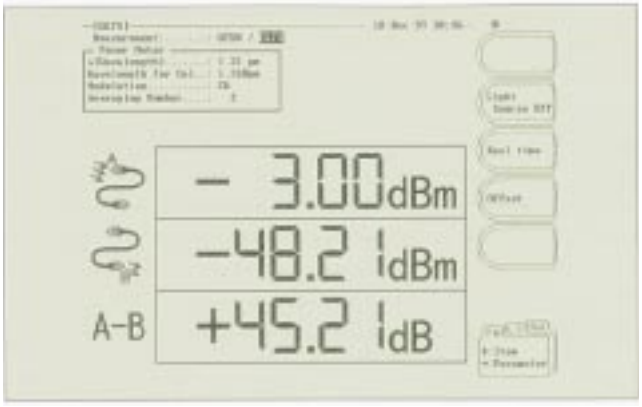
Multimode fiber measurement



Measurement of multimode fiber at 0.85 µm wavelength

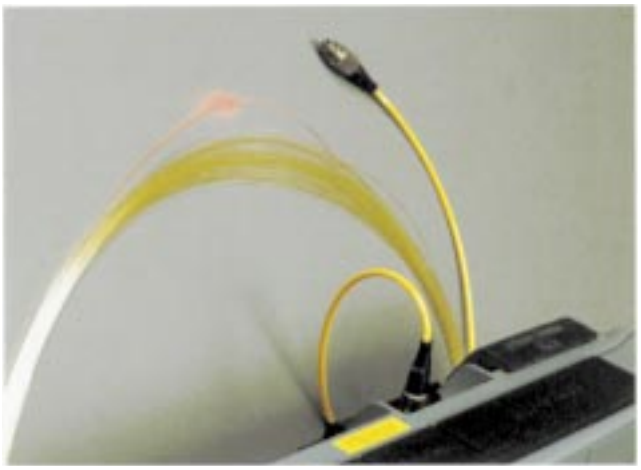
OLTS function (only MW0972C)

By using the light source (standard) and the power meter functions (Option 07), the MW9070B can be used as an OLTS (Optical Loss Test Set). The total loss of an optical fiber can be measured easily.



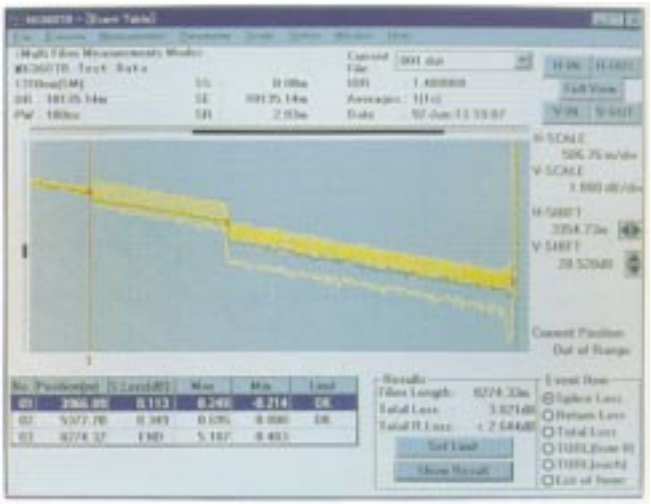
Visible LD light source

In OTDR measurements, there are some regions (dead zones) where faults cannot be observed. It is particularly difficult to detect faults in the dead zone at near end of a fiber cable. A visible LD light source emitting visible light at 635 nm is connected to the fiber, so the position where light is leaking from a fault (break, bend) can be determined. This can also be used for core identification in multicore fibers.



MX3607B Emulation Software

This software can be run on a personal computer to analyze waveform data obtained from the MW9070B at multi-core fiber or both-end measurements.



Specifications

◆ MW9070B (main frame)

Display		640 x 480 dot semi-transparent LCD, 7-inch (with backlight on/off function)
Interface		Serial: RS-232C, 1 port (D-sub 9P connector) Printer: 8 bit parallel (Centronics, D-sub 25P connector) Keyboard: For IBM US English keyboard (101 keys), DIN 5P connector
Waveform storage		Internal memory (battery back-up), memory card slot: 1 (memory card slot conforms to PCMCIA R1.0 standard), 3.5-inch FDD: 1 (option), saves GR-196-CORE format files*2
Calendar clock		Displays year, month, day, hour, minute (battery back-up, on/off display)
Auto measure-ments	Measurement items	Event distance, loss, return loss, loss from near end, and total return loss
	Threshold	Connection loss: 0.01 to 9 dB (in 0.01 dB steps) Return loss: 20 to 60 dB (in 1 dB steps) Fiber end: 1 to 10 dB (in 1 dB steps)
	No. of detection points	99 max.
	Automatic setting items	Pulse width, distance range, averaging times
	Event registration function	Event points are registered, and the loss, return loss, etc. for these points are measured and used to create an event table
	Connection check	On/off switchable
Manual measurements		Real-time sweeping, point-to-point distance/loss measurements, point-to-point loss measurements per unit length, return loss measurements, splice/connection loss measurements and total return loss
Distance unit		m, km, ft, kft, mi
Relative distance measurement		Zero cursor settable
Functions*2		Waveform comparison: Dual or difference waveform display Variable sampling resolution: Switchable from 1 to 40 m Shortcut keys: Save, recall, print, switch waveform Ghost detection: Moves marker to ghost Fresnel reflection and indicates ghost events with ghost marker
Keyboard input		Allows input of file names, titles, headers and event comments
IOR		1.400000 to 1.699999 (in 0.000001 steps)
Title input		32 characters max. (Title Auto-increment*2)
Power supply		Battery: MZ5018A Battery Pack (sold separately), MZ5020A Dry-cell Battery Pack (sold separately) DC input: 10 to 18 V/14 W, AC input: 90 to 250 V, 50/60 Hz, 50 VA (with SWA1702W AC Adaptor: standard accessory)
Dimensions and mass		194 (H) x 290 (W) x 75 (D) mm, <3.2 kg (including optical unit and MZ5018A Battery Pack)
Environmental conditions*1		Temperature: –10° to +40°C (operate), –20° to +60°C (storage) Humidity: 85% (operate and storage) Vibration: Conforms to MIL-T-28800E (Class 3) Shock: Height 76 cm, 6 surfaces, 8 corners EMI: CISPR Pub 22 (Class A) Dustproofing: MIL-T-28800E Water proofing: MIL-T-28800E
EMC*3		EN55011: 1991, Group 1, Class A EN50082-1: 1992 Harmonic current emissions: Not applicable to EN61000-3-2 (1995)
Safety		EN61010-1: 1993 (Installation Category Ⅱ, Pollution Degree Ⅱ)

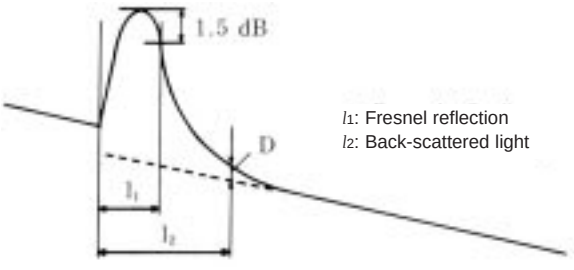
*1 Not applied to AC adaptor. When using memory card, limited by memory card's specifications.
*2 Only software version 3.0 and later.
*3 EMC: Electromagnetic Compatibility.

◆ MW0970B, MW0972B/C, MW0973J, MW0975J Optical Unit

(All typical values are given for reference only to assist in the use the unit, and are not guaranteed specifications.)

Model		MW0970B	MW0972B	MW0972C
Fiber		10/125 µm SM fiber ✻ITU-T (formerly CCITT) G.652		
Center wavelength		1310 ±30 nm*2 (typical: ±15 nm)	1310/1550 ±30 nm*2 (typical: ±15/20 nm)	1310/1550 ±25 nm*2 (typical: ±15/20 nm)
Optical connector		FC, ST, DIN, SC, DIAMOND (HMS-10/A)*4 ✻Replaceable and cleanable (all PC type)		
Distance range (km)		2.5, 5, 10, 25, 50, 100, 200 (2.5 km is added to only MW0972C)		
Pulse width (ns)		20, 50, 100, 500, 1000, 2000, 4000, 10000, 20000 (20000 ns is added to only MW0972C)		
Dynamic range (S/N=1)		36 dB*6	36 dB at 1.31 µm*6 34 dB at 1.55 µm*6	41.5 dB at 1.31 µm*7 39.5 dB at 1.55 µm*7
Measurement range*10		22 dB*11 (typical: 25 dB)	22 dB at 1.31 µm*11 (typical: 25 dB), 20 dB at 1.55 µm*11 (typical: 23 dB)	—
Dead zone	Fresnel reflection	5 m	5 m	3 m
	Back-scattered light	25 m*12	25 m*12	8 m*12
Marker-resolution		1 m (at 5 km range)		0.5m (at 2.5 km range)
Accuracy		Distance measurements: ±2 m*16(1m*17) ± (10^{-4} x distance) ± marker resolution ✻Excluding uncertainly caus Loss measurements (linearity): ±0.05 dB/dB or 0.1 dB (whichever greater) Return loss measurements: ±4 dB		
Measurement time*18		180 s max. (auto-measurement mode)		
Real-time sweep		0.4 s*19		
Dimensions		120H x 290W x 35D mm		
Safety		Laser: 21CFR Class 1, IEC Class 1		
Environmental conditions		Same as mainframe		
EMC		Same as mainframe		

*1: When used with 50/125 µm fiber, the dynamic range is decreased by approx. 4 dB, and the dead zone (defined using 0.5 dB back-scattered light) will increase to approx. 20 m at 850 nm, and 30 m at 1300 nm.
*2: Pulse width of 1 µs at 25°C
*3: Pulse width of 100 ns at 25°C
*4: One of these connectors is attached. D4 and Biconic connectors are factory options (not user replaceable).
*5: One of these connectors is attached. D4, Biconic and Amphenol 906 connectors are factory options (not user replaceable).
*6: Pulse width of 10 µs at 25°C
*7: Pulse width of 20 µs at 25°C
*8: 100 ns pulse width during auto-measurement
*9: 500 ns pulse width during auto-measurement
*10: 0.5 dB splice detectable range with ±0.1 dB accuracy (test method of optical unit for SM fiber depends on Bellcore TR-NWT-001138)
*11: Pulse width of 4 µs during auto-measurement
*12: At ≥40 dB return loss with 20 ns pulse width
*13: Refer to the figure below



*14: At ≥20 dB return loss with 20 ns pulse width
*15: Typical value at ≥30 dB return loss

MW0973J	MW0975J
62.5/125 µm multimode fiber*1	
850 ±30 nm*3	850/1300 ±30 nm*3 (typical: ±20 nm)
FC, ST, DIN, SC, DIAMOND (HFS-13/A)*5 *Replaceable and cleanable (all PC type)	
5, 10, 25, 50, 100	
20, 50, 100, 500 (500 ns is added to only 1300 nm wavelength)	
18 dB*8	18 dB at 0.85 µm*8 (typical: 22 dB), 22 dB at 1.3 µm*9
10 dB*8	10 dB*8, 14 dB*9
6 m*13 *14	6 m at 0.85 µm*13, *14 (typical: 5 m*15) 8 m at 1.3 µm*13, *14 (typical: 6 m*15)
15 m*13, *14	50 m*13 (at 0.85/1.3 µm, D=±0.1 dB), 15 m*13 (at 0.85 µm, D=±0.5 dB, typical: 9 m*15), 20 m*13 (at 1.3 µm, D=±0.5 dB, typical: 13 m*15),
1m (at 5 km range)	
iber IOR	
1.0 s*20	

*16:Excepts MW0972C

*17:MW0972C only

*18:Measurement time is the period from when the Start key is pressed until the measurement results is displayed in the table with full-auto mode. This time changes according to the fiber loss, pulse width, and level of Fresnel reflection, and to whether or not distance range and pulse width are set to Auto. The typical measurement time is 45 seconds when measuring a 5 km fiber (0.35 dB/km loss) at a wavelength of 1.31 µm with distance range and pulse width to set Auto.

*19:For loss measurements (2 point method) of 25 km fiber, the 50 km distance range and displayed with full scale (5 km/div).

*20:For loss measurements (2 point method) of 2 km fiber, the 5 km distance range and displayed with full scale (500 m/div).

*21: CW, 25°C

*22:Temperature variation: ≤±1°C (1 minute), SM fiber (2 m)

*23:–10 dBm, 1.31/1.55 µm, CW

*24:1550 ±20 nm

◆ Function (MW0972C only)

Light source (standard)

Output level accuracy	–3 dBm ±1.5 dB*21
Center wavelength	1310/1550 nm ±25 nm*21
Short-term stability	≤0.1 dB*22
Spectrum width	≤5 nm (1.31 µm)*21, ≤10 nm (1.55 µm)*21
Output waveform	CW, 270 Hz, 1 kHz, 2 kHz
Safety	21CFR Class 1, IEC 825-1 Class 1

Optical power meter (Option 07)

Wavelength range	1.2 to 1.7 µm
Measurement range	+23 to –50 dBm (CW), +20 to –55 dBm (MOD)
Measurement accuracy	±5 %*23
Return loss	≥40 dB*24

◆ MW9070B (main unit) Option 02: Monitoring function

Form	Installed in MW9070B (main unit)
Functions	Detects optical-fiber fault (high-speed scan, full scan, near-end scan),scheduler, modem setting/communication, alarm generation control, optical switch control (able to control total of 8 ports for optical switches and alarm generators)
Installation program	Functions: Read/write files, set OTDR measurement conditions, execute OTDR measurement functions, read OTDR waveforms, manipulate waveforms, define optical switch/alarm port, set modem controlling OTDR, select basic data types, set threshold values for fault points, set evaluation range, save basic data, create/download/execute schedule, set serial port/modem, connect/disconnect line Operating requirements Computer: i486™ or higher processor (Pentium 75 MHz or higher recommended) running Windows95 Memory required: 16 MB or more (32 MB or more recommended) Hard disk space: 16 MB or more (20 MB or more recommended) FDD: 3.5" (1.44 MB × 1) Display: 800 × 600 or more higher resolution, color Mouse RS-232C: 1 port or more

◆ MW9070B Option 01: Built-in 3.5-inch FDD

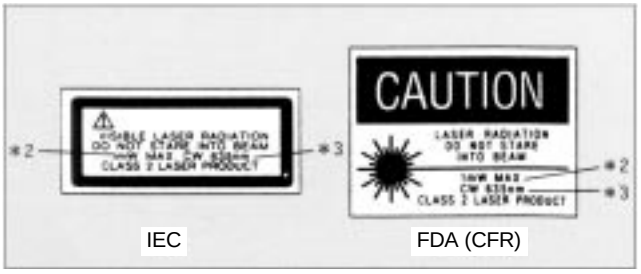
Storage media	3.5" FD (2DD, 2HD)
Format	MS-DOS
Capacity	2DD: 720 Kbyte, 2HD: 1.44 Mbyte
File copying	Between FD, memory card and internal memory
Operating temperature	+5 to +40°C
Operating humidity	≤80%
Operating conditions	Horizontal or tilted
Mass	<300 g

◆ Optical units Option 05: Visual LD light source

Wavelength	635 nm ±10 nm at 25°C
Output	–3.0 dBm ±1.5 dBm (blinks at constant intervals*1)
Output fiber	10/125 µm, SM fiber
Optical connector	FC, SC, ST, DIN, Diamond (user replaceable), D4, Biconic (factory option)
Optical safety	IEC 825 Class 2, FDA (21CFR 1040.10) class 2
Environmental conditions	See respective units

Safety measures for laser products

This option complies with the optical safety standards in Class 2 of the IEC pub. 825 and the FDA (21CFR 1040.10, USA); the following descriptive labels are affixed to the product (FDA label is only affixed to product for export to the USA).



Only software version 3.0 and later*1
The maximum output is indicated under *2, and the wavelength under *3.
Caution: Do not look directly into the laser beam.

◆ MZ5018A Battery Pack

Power, capacity	10.8 V, 2.8 AH (nominal value)
Type	Ni-Cd secondary cell
Charging time	14 hours (at 25°C using SWA1702W AC Adaptor)
Temperature range when charging	0° to +40°C
Drive time	≥5 hours (at 25°C with backlight off)
Dimensions	74 (H) x 290 (W) x 35 (D) mm

◆ MZ5020A Dry-cell Battery Pack

Batteries	Ten C/BABY-size alkaline or manganese (LR14, R14) dry cells (provided by user)
Life*1	4 hours (backlight on), 13 hours (backlight off)
Ambient temperature	Same as with main frame
Dimension and mass	74 (H) x 290 (W) x 35 (D) mm, <450 g (excluding batteries)

*1: Typical continuous at room temperature using LR14 dry cells

◆ SWA1702W AC Adaptor (Tamura Corporation)

AC input	90 to 250 Vac, 50/60 Hz
DC output	17.5 Vdc, 1.2 A
Dimensions	36 (H) x 163 (W) x 63 (D) mm
Safety standards	UL1950, CSA1402C, EN60-950
Temperature	0° to +40°C (operate), –10° to +70°C (storage)
Humidity	90% (operate), 95% (storage)

◆ MX3607B OTDR Emulation Software

Functions	Waveform display, manual measurement, auto search, auto zoom, event editing, continuous printing, waveform comparison, waveform difference, both ends measurement, multi-wave form display, text output, multi fiber measurement
Operating environment	Personal computer: i486™ or higher processor, and capable of running Microsoft Windows 3.1 or Windows 95 OS: Microsoft Windows 3.1 or Windows 95 Memory required: 8 MB to run this program (Extra 15 MB may be required depending on functions.) Hard disk required: At least 5 MB of free disk space FDD: 3.5" (1.44 MB) x 1 drive Display: 640 x 480 dots or higher resolution color monitor Others: Mouse or other pointing device

*4: Supported in MX3607B version 2.0 or later

Ordering Information

Please specify model/order number, name and quantity when ordering.

Model/Order No.	Name		Remarks
	Main frame		
MW9070B	Optical Time Domain Reflectometer		
	Standard accessories (for main frame)		
SWA1702W	AC adaptor:	1 pc	Tamura Corporation
	Power cord, 2.5 m:	1 pc	
W1046AE	MW9070B operation manual:	1 copy	
W1046BE	MW9070B service manual:	1 copy	
W1047AE	MW9070B serial interface manual:	1 copy	
	Short-cut label:	1 copy	
	Optical units		
MW0970B	SMF 1.31 µm Unit		
MW0972B	SMF 1.31/1.55 µm Unit		
MW0972C	SMF 1.31/1.55 µm Unit		
MW0973J	GIF 0.85 µm Unit		
MW0975J	GIF 0.85/1.3 µm Unit		
	Standard accessories (for optical unit)		
	Replaceable optical connector*1:	1 pc	
	Battery pack		
MZ5018A	Battery Pack		Ni-cd secondary cell
MZ5020A	Dry-cell Battery Pack		Ten C/BABY size alkaline or manganese (LR14, R14) dry cells (provided by user)
	Options (for main frame)		
MW9070B-01	3.5-inch FDD		
MW9070B-02	Monitoring function		
MW9070B-10	English language display*2		
MW9070B-12	German language display*2		
MW9070B-13	French language display*2		
MW9070B-14	Italian language display*2		
MW9070B-15	Spanish language display*2		
MW9070B-17	Japanese language display*2		
MW9070B-18	Chinese language display*2		
MW9070B-19	Finnish language display*2		

Model/Order No.	Name	Remarks
	Options (for optical unit)	
MW0970B-05	Visual LD light source for MW0970B*3	Factory option
MW0972B-05	Visual LD light source for MW0972B*3	Factory option
MW0972C-05	Visual LD light source for MW0972C*3	Factory option
MW0973J-05	Visual LD light source for MW0973J*3	Factory option
MW0975J-05	Visual LD light source for MW0973J*3	Factory option
MW0972C-07	Optical power meter	Factory option
MW0970B-21	D4 connector	Factory option
MW0972B-21	D4 connector	Factory option
MW0972C-21	D4 connector	Factory option
MW0973J-21	D4 connector	Factory option
MW0975J-21	D4 connector	Factory option
MW0970B-22	Biconic (AT&T) connector	Factory option
MW0972B-22	Biconic (AT&T) connector	Factory option
MW0972C-22	Biconic (AT&T) connector	Factory option
MW0973J-22	Biconic (AT&T) connector	Factory option
MW0975J-22	Biconic (AT&T) connector	Factory option
MW0973J-23	Amphenol 906 connector*4	Factory option
MW0975J-23	Amphenol 906 connector*4	Factory option
MW0970B-38	ST connector	User replaceable
MW0972B-38	ST connector	User replaceable
MW0972C-38	ST connector	Factory option
MW0973J-38	ST connector	User replaceable
MW0975J-38	ST connector	User replaceable
MW0970B-39	DIN connector	User replaceable
MW0972B-39	DIN connector	User replaceable
MW0972C-39	DIN connector	User replaceable
MW0973J-39	DIN connector	User replaceable
MW0975J-39	DIN connector	User replaceable
MW0970B-40	SC connector	User replaceable
MW0972B-40	SC connector	User replaceable
MW0972C-40	SC connector	User replaceable
MW0973J-40	SC connector	User replaceable
MW0975J-40	SC connector	User replaceable
MW0973J-42	DIAMOND (HFS-13/A) connector	User replaceable
MW0975J-42	DIAMOND (HFS-13/A) connector	User replaceable
MW0970B-43	DIAMOND (HMS-10/A) connector	User replaceable
MW0972B-43	DIAMOND (HMS-10/A) connector	User replaceable
MW0972C-43	DIAMOND (HMS-10/A) connector	User replaceable
MW0970B-45	FC connector	User replaceable
MW0972B-45	FC connector	User replaceable
MW0972C-45	FC connector	User replaceable
MW0973J-45	FC connector	User replaceable
MW0975J-45	FC connector	User replaceable

Model/Order No.	Name	Remarks
	Application software	
MX3607B	OTDR Emulation Software	Supplied on 3.5" (2HD); includes setup program
	Standard accessories (for MX3607B)	
W1058AE	MX3607B operation manual: 1 copy	
	Optional accessories	
Z0301A	Keyboard	
JS256G3-C-13	256 KB memory card	Conforms to PCMCIA R1.0
JS512G3-C-13	512 KB memory card	Conforms to PCMCIA R1.0
JS1024G3-C-13	1024 KB memory card	Conforms to PCMCIA R1.0
JS2048G3-C-13	2048 KB memory card	Conforms to PCMCIA R1.0
FC-AP	Adaptor	
J0486M□*5	Optical fiber cable	With FC-PC at both ends (SM)
MZ8012A	Connector Cleaning Set	
Z0242	Soft carrying Bag	
Z0243	Hard carrying Case	Holds main frame and thermal printer
J0617B	Replaceable optical connector (FC)	
J0618D	Replaceable optical connector (ST)	
J0618E	Replaceable optical connector (DIN)	
J0618F	Replaceable optical connector (HMS-10/A, HFS-13/A)	
J0619B	Replaceable optical connector (SC)	
J0699□*5	FDDI-FC conversion cord	
J0700□*5	FDDI-ST conversion cord	
J0701□*5	FDDI-SC conversion cord	
J0654A	Serial interface cable	For remote control with IBM-PC/AT or J-3100
J0661A	Serial interface cable	For connection with peripherals
	Peripherals	
DPU-414-31B	Thermal Printer	120 V ±10%, 60 Hz, 0° to +40°C (Seiko Instruments Inc.),
PW-4007-U1	AC Adapter	Printer cable sold separately
DPU-414-31B	Thermal Printer	230 V ±10%, 50 Hz, 0° to +40°C (Seiko Instruments Inc.),
PW-4007-E1	AC Adapter	Printer cable sold separately
J0614	Printer connection cable (parallel)	
	Supplies	
TP411-28CL	Printer Paper for DPU-414	10 rolls/set

*1: Specify one of FC, ST, DIN, SC or DIAMOND. When the connector type is not specified, FC is supplied.
*2: If the display language is not specified, the English version is installed.
*3: Supplied with same connector as optical unit.
*4: FC type and dead zone is varied.
*5: Specify the optical fiber length as A, B, or C (A: 1 m, B: 2 m, C: 3 m).

Anritsu

Specifications are subject to change without notice.

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