

SONET/SDH/PDH/ATM ANALYZER
MP1570A
 1.5 Mbit/s to 10 Gbit/s



Comprehensive Testing of Core Networks from One Compact Portable Analyzer



For detail and specification, refer to the data sheet.

The MP1570A analyzer is designed for the development, manufacturing, construction, maintenance, and inspection of SDH, SONET, PDH, and ATM equipment and networks.

A variety of plug-in units and options are available that offer the flexibility to the users to configure various analysis systems for different applications.

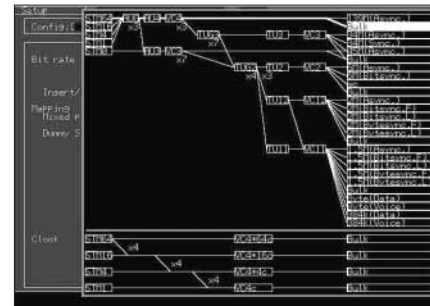
The MP1570A is scalable from 1.5 Mbit/s to 10 Gbit/s, and has six slots to install the plug-in units required for SDH, SONET and PDH tests at bit different rates. Installing the appropriate combinations of plug-in units can also perform ATM, jitter and wander tests that conform to ITU-T O.171/O.172.

The MP1570A conforms to the ITU-T recommendations and Bellcore standards, and supports concatenation mapping, tandem connection, APS measurement, CID measurement and POS measurement. The user can measure 1.5 Mbit/s to 10 Gbit/s signals using a single MP1570A; previously, this required several measuring instruments. The MP1570A has a built-in printer and a 3.5-inch floppy disk drive as standard output devices to print measurement results, and to save and read measurement data to and from the floppy disk (FD), which can also be read on an external PC. The user can also save screen data to the FD. The MP1570A has a "HELP" key function that explains operations, functions and connections.

SDH, SONET and PDH measurement

• Measurement at bit rates from 1.5 Mbit/s to 10 Gbit/s

A mapping route to a bit rate of up to 10 Gbit/s can be set. The MP1570A mainly supports SDH, SONET, and Japanese mapping, European PDH and North American DS_n for digital communications. For concatenation mapping, a route can be set from STM-1c/STS-3c up to STM-64c/STS-192c. Furthermore, the MP1570A supports a combination of channels. For example, 64 channels of VC4c/STS3c, 16 channels of VC4-4c/STS-12c, and four channels of VC4-16c/STS-48c.



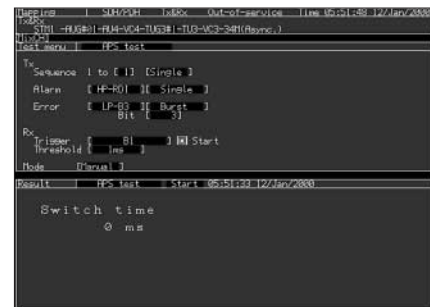
Mapping

• Overhead setting and testing

The user can modify and capture the overhead, and test the overhead portion with overhead change, pointer 64 frames, overhead add/drop and overhead bit errors.

• APS function

The user can test the automatic protection switch (APS) by measuring the equipment switching time accurately in milliseconds. The MP1570A also conforms to ITU-T Rec. G.783 and G.841.



APS test sub-screen

• Mixed payload

At mapping measurement in TUG-3 and AU3, the user can set different mapping for three additional channels other than the target measurement channel.

• Tandem connection

The N1/Z5 and N2/Z6 bytes can be set and measured.

• Various analysis functions

The internal optical power meter and frequency counter allows the user to measure optical power and frequency during error and alarm measurement without changing the connections of the signal cables. The MP1570A can capture any SOH/TOH or POH (1 byte), K1/ K2 byte, or H1/H2 byte in 1023 frames to analyze errors and alarms, and check APS operation.

Measured errors and alarms can be displayed as a graph with a time scale in 1 second, 1 minute, 15 minutes, or 60 minutes.

• Pointer value monitoring

Changes in pointer value can be displayed as a graph with values updated in real time.

• MUX/DEMUX function (option)

When the MUX/DEMUX option is added, the multiplexing structure including the frame alignment signal can be generated, and multiplexer/demultiplexer measurement can be performed.

• Non frame pattern/CID pattern

Frames can be set on/off at all bit rates. CID pattern can generate or analysis at SONET/SDH measurements.

• Through modes

One of the three through modes can be selected: (1) Transparent, (2) Overhead/Overwrite, and (3) Payload/Overwrite. The external DS1/DS3/PDH signal can be added/dropped to/from payload by payload overwrite.

• Enhanced error/alarm simulation

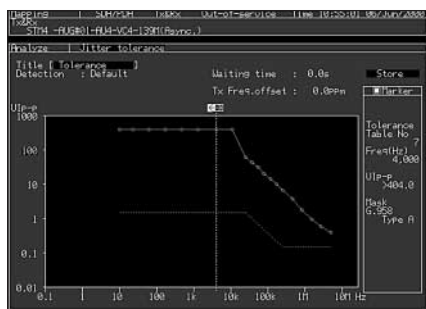
The MP1570A can generate normal and abnormal frames alternately to test the frame synchronization function of terminal equipment. (This is an SDH/SONET FAS error addition function.)

• Easily operated pointer sequence test (combined jitter measurement)

Able to generate the justification pattern conforming to ITU-T G.783 from the transmission equipment side, and simultaneously make the tributary signal offset variable. This makes the combined jitter test possible.

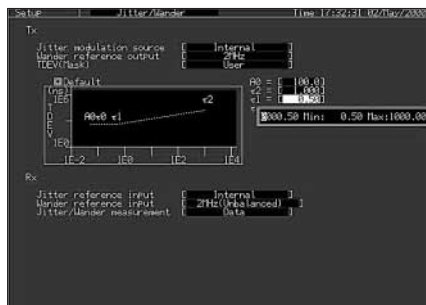
Jitter, wander measurements

The jitter/wander measurement conforming to ITU-T O.171/O.172 exceeds these standards in performance evaluation. Automatic measurements, such as jitter tolerance, jitter transfer, and jitter vs. frequency offset are performed in a short time. Various automatic measurements can be achieved with just one unit.



• Various wander generation functions (option)

Various wander generations for evaluation are available: such as TDEV wander tolerance measurement and TDEV wander transfer characteristics measurement that were regulated by ITU-T, ANSI, Bellcore, and ETSI.



• Wander measurement (option)

Subdivides the bandwidth of the wander measurement into three ranges, and can analyze the wander factor caused by temperature change, pointer, etc. It can also perform measurements conforming to ITU-T O.172.

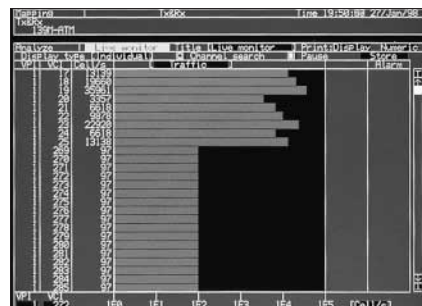
• Through jitter function (only SONET/SDH)

Able to generate the jitter by through, while monitoring the input jitter quality.

ATM

• Supports ATM from 1.5M to 622M rates

TC layer mappings of 622M, 156M, 52M, 139M, 45M, 34M, 2M and 1.5M are supported along with ATM mappings of O.191, AAL1, AAL2, AAL3/4, and AAL5, which makes the MP1570A ideal for various combinations of layers. The VPI/VCI for 1023 channels can be detected automatically, and the presence/absence of alarms, cell count, and non-conforming cell count can be displayed graphically, for easy comparison of line channel traffic.



• 1- and 2-point CDV in conformance with I.356

When measuring delay in cell traffic, either 1-point CDV or 2-point CDV conforming to ITU-T Rec. I.356 can be selected according to the conditions.

• Simultaneous display of error cells, inserted error cells and lost cells

The error/alarm generation conditions can be displayed both numerical and graphically to give a visual impression of the traffic conditions.

• Traffic monitoring

The constantly changing traffic can be displayed as a graph for the selected-one-channel VPI/VCI.

IP-over-SONET/SDH, IP-over-ATM (option)

Programs IP/PPP at will transmits it, picks PPP packet from capture memory (option), displays it and supports high-speed POS router evaluation. Programs IP in the AAL5 payload at will transmits it, picks the IP packet from the cell capture memory, and displays it. And evaluate router ATM function.

• IP/PPP header setting

Able to set the value of each header optionally when selecting IPv4 or IPv6. Calculates FCS or header checksum automatically.



• PPP packet transmission and real time count

Transmits the three types of packets (can be set separately) by optional sequence (the idle length between each packet can be set simultaneously.). Displays the number of Tx packets and Rx PPP packets at real time.

• PPP packet capture and display

Samples PPP packet from the capture memory, and displays IP header. Detects FCS error and displays it in red.

Ordering information

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

Model/Order No.	Name
MP1570A*1	Main frame SONET/SDH/PDH/ATM Analyzer
	Standard accessories
	AC power cord: 1 pc
Z0169	Printer paper (5 rolls/pack): 1 pack
F0079	Fuse, 10 A: 2 pcs
B0329G	Front cover: 1 pc
Z0486	Side cover: 1 pc
J0907Q	Remote interlock cord (for MU150001A/B, MU150008A, MU150009A, MU150010A, MU150031A/C, MU150061A/B): 1 pc
J0908	Remote interlock terminator (for MU150001A/B, MU150008A, MU150009A, MU150010A, MU150031A/C, MU150061A/B): 1 pc
E0008A	Optical output control key (for MU150001A/B, MU150008A, MU150009A, MU150010A, MU150031A/C, MU150061A/B): 2 pcs
J0747A	Fixed optical attenuator (5 dB, for MU150017A/B): 1 pc
J0747B	Fixed optical attenuator (10 dB, for MU150002A): 1 pc
J0900A	Coaxial cable (AA-165-200), 20 cm (for MU150011A): 2 pcs
J0635A	Optical fiber cable (FC · PC-FC · PC), 1 m (for MU150002A, MU150008A, MU150009A, MU150010A, MU150017A/B): 1 pc
MX150001B	Wander (MTIE, TDEV) Measurement Application Software (supplied with MU150005A-02, MU150006A-02, MU150007A-02): 1 pc
W1719AE	MP1570A operation manual (Vol. 1 Basic operation for SDH): 1 copy
W1720AE	MP1570A operation manual (Vol. 1 Basic operation for SONET): 1 copy
W1721AE	MP1570A operation manual (Vol. 2 Remote control): 1 copy
W1722AE	MP1570A operation manual (Vol. 3 ATM measurement): 1 copy
W1723AE	MP1570A operation manual (Vol. 4 2.5G/10G measurement): 1 copy
W1724AE	MP1570A operation manual (Vol. 5 Add/Drop function): 1 copy
W1725AE	MP1570A operation manual (Vol. 6 Jitter/wander measurement, for MU150005A/150006A/150007A): 1 copy
W1726AE	MP1570A operation manual (Vol. 7 2.5G jitter/wander measurement, for MU150011A): 1 copy
W1763AE	Wander (MTIE, TDEV) APPLI SOFT manual (supplied with MX150001B): 1 copy
J1002A	Semi-rigid cable (for MU150001A/B, MU150031A/C, MU150061A/B): 2 pcs
J1002B	Semi-rigid cable (for MU150002A, MU150017A/B): 2 pcs
J1002C	Semi-rigid cable (for MU150000A): 3 pcs
	Plug-in units
MP0121A	2/8/34/139/156M Unit
MP0122A	1.5/45/52M Unit
MP0122B*2	1.5/45/52/52M (1.31) Unit
MP0123A	ATM Unit
MU150008A*2	2.5G (1.31) Unit (with optical power meter)
MU150009A*2	2.5G (1.55) Unit (with optical power meter)
MU150010A*2	2.5G (1.31/1.55) Unit (with optical power meter)
MP0131A	Add/Drop Unit
MU150000A	2.5G/10G Unit
MU150001A*2	Optical 10G Tx (1.55) Unit (2 km transmission)
MU150001B*2	Optical 10G Tx (1.55) Unit (40 km transmission)
MU150002A*2	Optical 10G Rx (Narrow) Unit (with optical power meter)
MP0111A*2	Optical 156M/622M (1.31) Unit (with optical power meter)
MP0112A*2	Optical 156M/622M (1.55) Unit (with optical power meter)
MP0113A*2	Optical 156M/622M (1.31/1.55) Unit (with optical power meter, 1.31/1.55 switchable)
MU150017A	Optical 10G Rx (Wide) Unit
MU150017B	Optical 2.5G/10G Rx (Wide) Unit
MU150031A	Optical 10G Tx (1.55) High Power Unit
MU150031C	Optical 2.5G/10G Tx (1.55) High Power Unit
MU150061A	Optical 10G Tx (1.31) Unit

Model/Order No.	Name
MU150061B	Optical 2.5G/10G Tx (1.31) Unit
MU150005A	2/8/34/139M, 156/622M Jitter Unit [jitter generation/measurement only (requires MP0121A)]
MU150006A	1.5/45/52M, 156/622M Jitter Unit [jitter generation/measurement only (requires MP0122A/B)]
MU150007A	2/8/34/139M, 1.5/45/52M, 156/622M Jitter Unit [jitter generation/measurement only (requires MP0121A or MP0122A/B)]
MU150011A	2.5G Jitter Unit [jitter generation/measurement only (requires MU150008A/150009A or MU150010A)]
MP0105A	CMI Unit
MP0108A	NRZ Unit
	Options
MP1570A-01*3	RS-232C
MP1570A-02*3	GPIO
MP1570A-03*3	Ethernet
MP1570A-04*3	VGA output
MP1570A-06	MUX/DEMUX (2/8/34/139 Mbit/s, for MP0121A)
MP1570A-07	MUX/DEMUX (1.5/45 Mbit/s, for MP0122A/B)
MP1570A-08	45M-2M MUX/DEMUX (requires MP0121A and MP0122A/B)
MP1570A-09	Japan mapping (requires MP0122A or MP0122B)
MP1570A-10*1	SDH
MP1570A-11*1	SONET
MP1570A-13	Frame memory capture (156M/622M, 64 frame)
MP1570A-14	IP-over-SONET/SDH (requires MP1570A-13)
MP1570A-15	IP-over-ATM (requires MP0123A)
MP1570A-22	K1/K2 overwrite through
MU150005A-02	Wander measurement
MU150006A-02	Wander measurement
MU150007A-02	Wander measurement
MU150005A-03	Wander reference output
MU150006A-03	Wander reference output
MU150007A-03	Wander reference output
MU150008A-01	Frame memory capture (2.5G, 64 frame)
MU150009A-01	Frame memory capture (2.5G, 64 frame)
MU150010A-01	Frame memory capture (2.5G, 64 frame)
MU150000A-01	Frame memory capture (2.5G/10G, 26 frame)
MU150001A/B-01	2.5G (1.31)
MU150001A/B-02	2.5G (1.55)
MU150001A/B-03	2.5G (1.31/1.55)
MU150002A-01	2.5G
MU150002A-04	Available for 10G (1.31)
MP0111A/0112A-37	FC connector (replaceable, 2 sets)
MP0111A/0112A-38	ST connector (replaceable, 2 sets)
MP0111A/0112A-39	DIN connector (replaceable, 2 sets)
MP0111A/0112A-40	SC connector (replaceable, 2 sets)
MP0111A/0112A-43	HMS-10/A connector (replaceable, 2 sets)
MP0113A-37	FC connector (replaceable, 3 sets)
MP0113A-38	ST connector (replaceable, 3 sets)
MP0113A-39	DIN connector (replaceable, 3 sets)
MP0113A-40	SC connector (replaceable, 3 sets)
MP0113A-43	HMS-10/A connector (replaceable, 3 sets)
MP0122B-37	FC connector (replaceable, 2 sets)
MP0122B-38	ST connector (replaceable, 2 sets)
MP0122B-39	DIN connector (replaceable, 2 sets)
MP0122B-40	SC connector (replaceable, 2 sets)
MP0122B-43	HMS-10/A connector (replaceable, 2 sets)
MU150008A-37	FC connector (replaceable, 2 sets)
MU150008A-38	ST connector (replaceable, 2 sets)
MU150008A-39	DIN connector (replaceable, 2 sets)
MU150008A-40	SC connector (replaceable, 2 sets)
MU150008A-43	HMS-10/A connector (replaceable, 2 sets)
MU150009A-37	FC connector (replaceable, 2 sets)
MU150009A-38	ST connector (replaceable, 2 sets)
MU150009A-39	DIN connector (replaceable, 2 sets)
MU150009A-40	SC connector (replaceable, 2 sets)
MU150009A-43	HMS-10/A connector (replaceable, 3 sets)
MU150010A-37	FC connector (replaceable, 3 sets)
MU150010A-38	ST connector (replaceable, 3 sets)
MU150010A-39	DIN connector (replaceable, 3 sets)
MU150010A-40	SC connector (replaceable, 3 sets)
MU150010A-43	HMS-10/A connector (replaceable, 3 sets)
MU150001A/B-37	FC connector (replaceable, 1 set)

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Model/Order No.	Name
MU150001A/B-38	ST connector (replaceable, 1 set)
MU150001A/B-39	DIN connector (replaceable, 1 set)
MU150001A/B-40	SC connector (replaceable, 1 set)
MU150001A/B-43	HMS-10/A connector (replaceable, 1 set)
MU150002A-37	FC connector (replaceable, 1 set)*4
MU150002A-38	ST connector (replaceable, 1 set)*4
MU150002A-39	DIN connector (replaceable, 1 set)*4
MU150002A-40	SC connector (replaceable, 1 set)*4
MU150002A-43	HMS-10/A connector (replaceable, 1 set)*4
MU150017A/B-37	FC connector (user replaceable, 1 set)
MU150017A/B-38	ST connector (user replaceable, 1 set)
MU150017A/B-39	DIN connector (user replaceable, 1 set)
MU150017A/B-40	SC connector (user replaceable, 1 set)
MU150017A/B-43	HMS-10/A connector (user replaceable, 1 set)
MU150031A/C-37	FC connector (user replaceable, 1 set)
MU150031A/C-38	ST connector (user replaceable, 1 set)
MU150031A/C-39	DIN connector (user replaceable, 1 set)
MU150031A/C-40	SC connector (user replaceable, 1 set)
MU150031A/C-43	HMS-10/A connector (user replaceable, 1 set)
MU150061A/B-37	SC connector (user replaceable, 1 set)
MU150061A/B-38	ST connector (user replaceable, 1 set)
MU150061A/B-39	DIN connector (user replaceable, 1 set)
MU150061A/B-40	SC connector (user replaceable, 1 set)
MU150061A/B-43	HMS-10/A connector (user replaceable, 1 set)
	Maintenance service *5
MP1570A-90	Extended three year warranty service
MP0121A-90	Extended three year warranty service
MP0122A-90	Extended three year warranty service
MP0122B-90	Extended three year warranty service
MP0123A-90	Extended three year warranty service
MU150005A-90	Extended three year warranty service
MU150006A-90	Extended three year warranty service
MU150007A-90	Extended three year warranty service
MU150008A-90	Extended three year warranty service
MU150009A-90	Extended three year warranty service
MU150010A-90	Extended three year warranty service
MU150011A-90	Extended three year warranty service
MU150000A-90	Extended three year warranty service
MU150001A-90	Extended three year warranty service
MU150001B-90	Extended three year warranty service
MU150002A-90	Extended three year warranty service
MP0111A-90	Extended three year warranty service
MP0112A-90	Extended three year warranty service
MP0113A-90	Extended three year warranty service
MP0105A-90	Extended three year warranty service
MP0108A-90	Extended three year warranty service
MU150017A/B-90	Extended three year warranty service
MU150031A/C-90	Extended three year warranty service
MU150061A/B-90	Extended three year warranty service
	Application equipment
MP1580A	Portable 2.5G/10G Analyzer
MU150018A	2.5G/10G Jitter Unit (for MP1580A)
	Optional accessories
MX150001B	Wander (MTIE, TDEV) Measurement Application Software (supplied with MU150005A-02/150006A-02/150007A-02)

Model/Order No.	Name
J0796A	ST connector (replaceable, with protective caps, 1 set)
J0796B	DIN connector (replaceable, with protective caps, 1 set)
J0796C	SC connector (replaceable, with protective caps, 1 set)
J0796D	HMS-10/A connector (replaceable, with protective caps, 1 set)
J0796E	FC connector (replaceable, with protective caps, 1 set)
J0162A	Balanced cable, 1 m (Siemens 3p-Siemens 3p)
J0162B	Balanced cable, 2 m (Siemens 3p-Siemens 3p)
J0845A	Balanced cable, 6 ft (BANTAM 3P/BANTAM 3P)
J0775D	Coaxial cable (BNC-P620 · 3C-2WS · BNC-P620, 75 Ω), 2 m
J0776D	Coaxial cable (BNC-P-3W · 3D-2W · BNC-P-3W, 50 Ω), 2 m
J0898A	Conversion cable (M-1PS · BANTAM 3P), 1 m
J0898B	Conversion cable (M-1PS · BANTAM 3P), 2 m
J0635A	Optical fiber cable, 1 m (SM, FC-SPC connector both ends)
J0635B	Optical fiber cable, 2 m (SM, FC-SPC connector both ends)
J0635C	Optical fiber cable, 3 m (SM, FC-SPC connector both ends)
J0660A	Optical fiber cable, 1 m (SM, SC connector, both-ends)
J0660B	Optical fiber cable, 2 m (SM, SC connector, both-ends)
J0660C	Optical fiber cable, 3 m (SM, SC connector, both-ends)
J0756A	Optical fiber cable, 1 m (SM, ST connector, both-ends)
J0756B	Optical fiber cable, 2 m (SM, ST connector, both-ends)
J0756C	Optical fiber cable, 3 m (SM, ST connector, both-ends)
J0747A	Fixed optical attenuator (5 dB)
J0747B	Fixed optical attenuator (10 dB)
J0747C	Fixed optical attenuator (15 dB)
J0747D	Fixed optical attenuator (20 dB)
J1049A	Fixed optical attenuator, SC (5 dB)
J1049B	Fixed optical attenuator, SC (10 dB)
J1049C	Fixed optical attenuator, SC (15 dB)
J1049D	Fixed optical attenuator, SC (20 dB)
J1050A	Fixed optical attenuator, ST (5 dB)
J1050B	Fixed optical attenuator, ST (10 dB)
J1050C	Fixed optical attenuator, ST (15 dB)
J1050D	Fixed optical attenuator, ST (20 dB)
J0322B	Coaxial cable (11SMA · SUCOFLEX104 · 11SMA), 1 m
J0008	GPIB cable, 2 m
A0006	Head set
B0453B	Blank panel (for front slot)
B0454C	Blank panel (for slot 1 to 3)
B0454D	Blank panel (for slot 4/5)
B0448	Soft case
B0336C	Carrying case

*1: Must specify SDH (Option 10) or SONET (Option 11) when ordering depends on your system. The option price is included in the MP1570A. These two options can be installed simultaneously. But in this case, one option price is charged.

*2: Specify the connector to be supplied as the standard connector when ordering the above options. If the connector is not specified the FC connector (MP0111A/0112A/0113A/0122B-37, MU150008A/150009A/150010A/150001A/150001B/150002A-37) is supplied as standard.

*3: The video output, RS-232C, GPIB and Ethernet options cannot all be used simultaneously. Only the video output + RS-232C, or video output + GPIB, or RS-232C + GPIB board, or Ethernet board combinations support simultaneous use, so change the board combinations according to the purpose.

*4: With Option 01, 2 sets

*5: Please ask your local Anritsu Field Office or Sales. Representative for price and availability.