Product Introduction

Anritsu envision:ensure

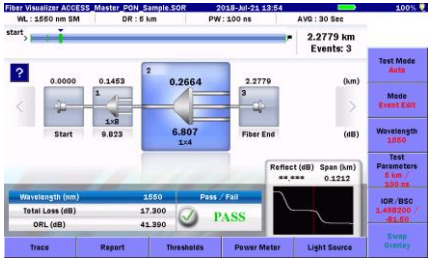
ACCESS Master
MT9085 Series

Strengthen of MT9085 Series: 1/5

- All Optical Fiber Evaluation Functions in One Tester

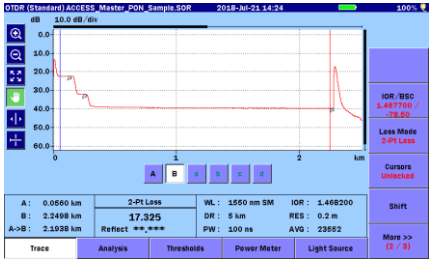
- The ACCESS Master MT9085 series is an all-in-one tester with OTDR, OLTS, and Visible Light Source functions required for evaluating optical fiber transmission links. It supports optical loss and reflectance measurements and analysis as well as evaluation of fiber events.
- In addition, connecting an external fiberscope (VIP–sold separately) enables inspection and automatic Pass/Fail evaluation of scratches and contamination on the fiber end face.

<OTDR>

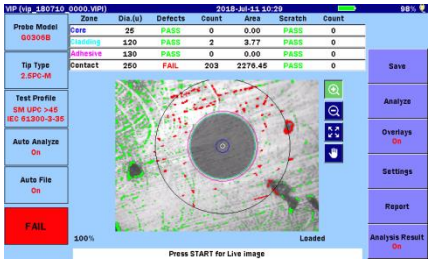


<OLTS, Power Meter>

<Video Inspection Probe (VIP)>



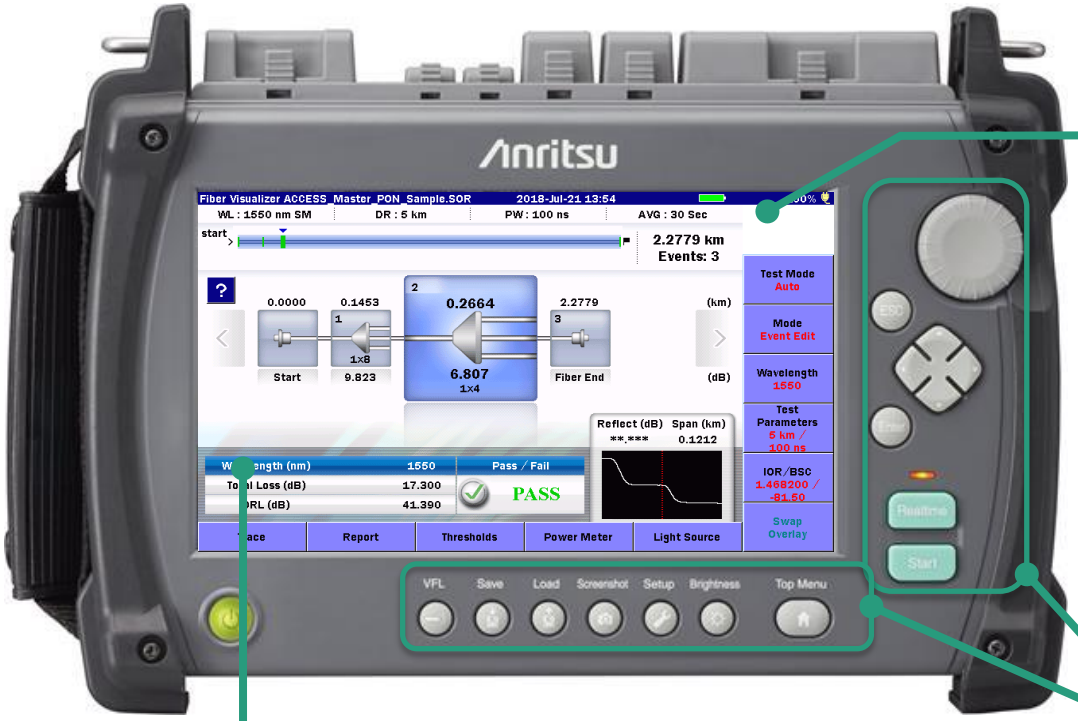
<Visual Light Source (VLS)>



Strengthen of MT9085 Series: 2/5

- Pursuing Easy On-site Measurement

Keeps Basic ACCESS Master Design Concept
- Compact and Lightweight
- 12-hour Battery Operation



8-inch Wide Touch Screen

Improved operability due to synergy between large touchscreen and hard keys with no need to remove work gloves

Hard keys Easy Operation

Built-in rotary knob, hard keys and shortcut keys for efficient manual trace analysis

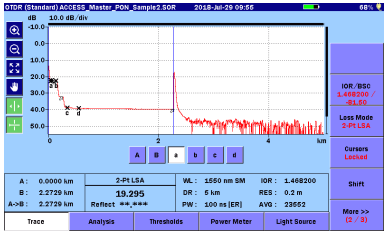
Easy Analysis Fiber Visualizer

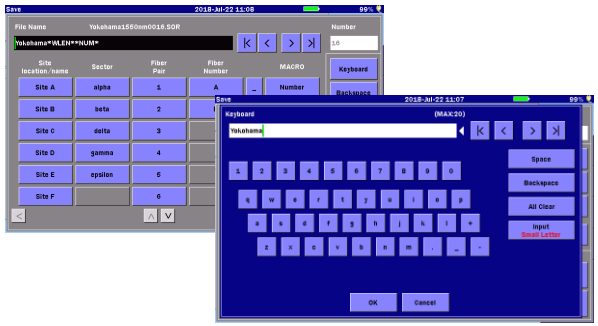
At-a-glance confirmation of loss and reflectance measurement results Pass/Fail evaluation using fiber event icon schematics

FiberVisualizer

Strengthen of MT9085 Series: 3/5

- Improved Operability with 8-inch Wide Touchscreen and Hard Keys

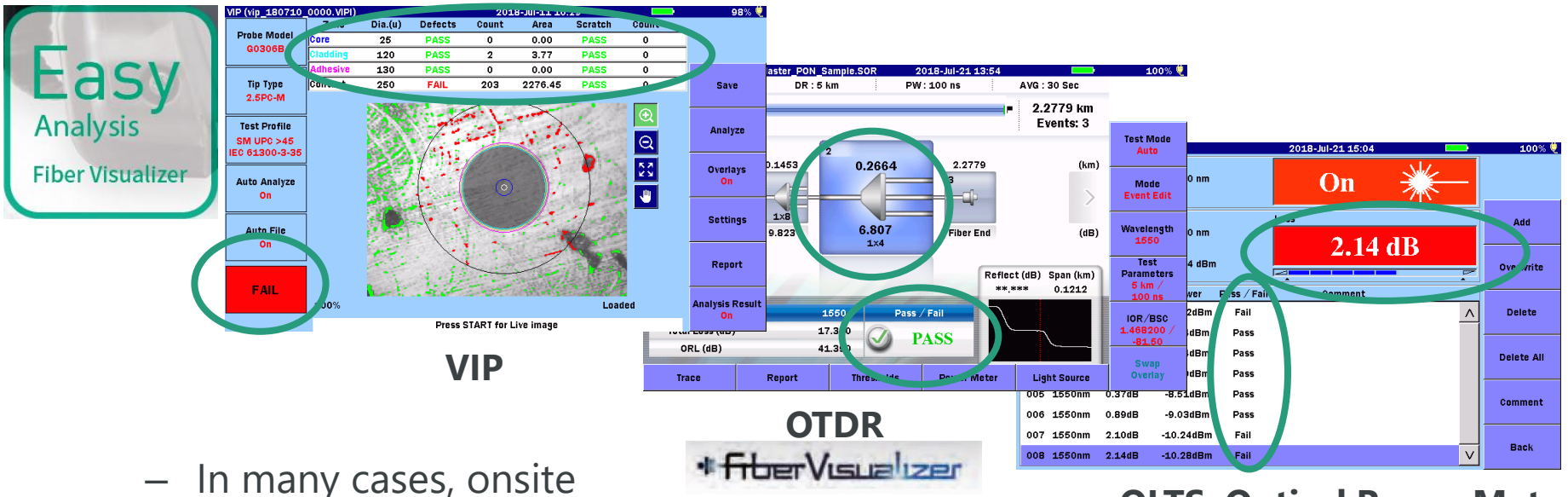




- OTDR Trace Analysis
  - Trace magnification
  - Cursor operation and marker positioning
- Easy analysis using synergy of both touchscreen and hard keys
- Data Saving and Report Creation
  - Intuitive data file naming using touchscreen input matrix
- Fast Application Start
  - File saving/loading
  - Screen capture
  - Visual light source
- Start applications using shortcut keys without screen transitions

Strengthen of MT9085 Series: 4/5

- Easy-to-Read Measurement Results Pass/Fail Evaluation



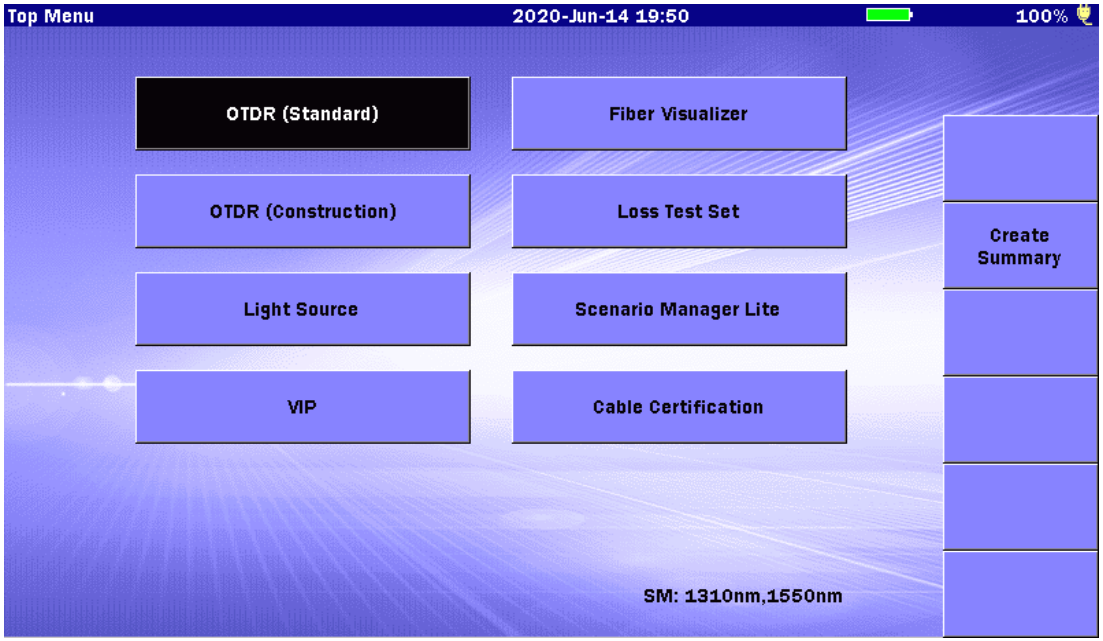
– In many cases, onsite measurement requires Pass/Fail evaluation of the optical fiber path trace in accordance with installation work specifications

– The MT9085 series displays easy to understand Pass/Fail evaluation results for each of the OTDR Fiber Visualizer, OLTS, and VIP functions

– These evaluations are based on preset threshold values and international standards

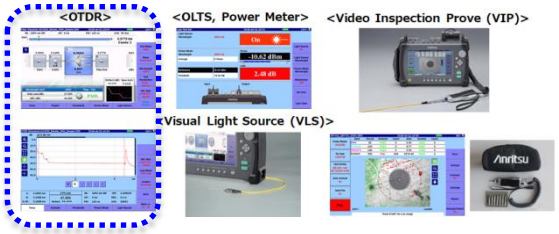
Strengthen of MT9085 Series: 5/5

- Top Menu Selection of Measurement Application



  - The MT9085 series keeps the popular Top Menu selection method from previous ACCESS Master series
  - Any required application can be chosen at any time by pressing a dedicated Top Menu hard key

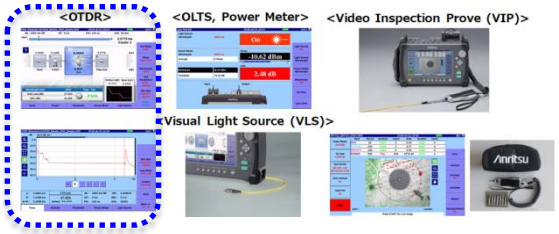
Measurement Applications (OTDR): 1/8



- Multiple wavelength Models for Every Measurement requirement
  - Full range of models with multiple OTDR wavelengths matching customer applications
  - Ranging from,
    - Optical fiber operations and maintenance
    - Live network measurements and evaluation
    - Macro-bending analysis.
  - Also many models for applications such as PON network evaluation

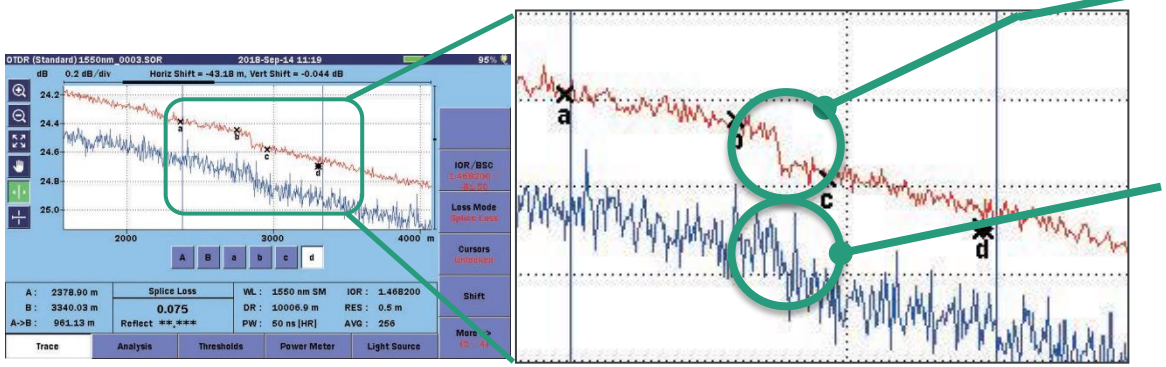
Option	Wavelength	Dynamic Range	Features
MT9085C-053	1310/1550 nm SM	46/46 dB	General model for operations and maintenance
MT9085C-057	1310/1550/1625 nm SM	46/46/44 dB	Model with maintenance wavelengths for macrobending analysis
MT9085B-053	1310/1550 nm SM	42/41 dB	General model for operations and maintenance
MT9085B-055	1310/1550 nm, 1650nm SM	41/41/35 dB	Model with built-in filters for in-service (live) circuit maintenance
MT9085B-056	1310/1490/1550 nm SM	42/41/41 dB	Model for FTTx/PON I&M
MT9085B-057	1310/1550/1625 nm SM	40/39/38 dB	Model with maintenance wavelengths for macrobending analysis
MT9085B-058	1310/1490/1550/1625 nm SM	42/41/41/40 dB	Model for FTTx/PON I&M and partial evaluation of CWDM wavelength band
MT9085B-063	1310/1550 nm SM 850/1300 nm MM	42/41dB, 29/28 dB	Model for both SMF and MMF
MT9085A-053	1310/1550 nm SM	39/37.5 dB	General model for operations and maintenance
MT9085A-057	1310/1550/1625 nm SM	37/35.5/32.5 dB	Model with maintenance wavelengths for macrobending analysis
MT9085A-063	1310/1550 nm SM 850/1300 nm MM	39/37.5dB, 29/28 dB	Model for both SMF and MMF

Measurement Applications (OTDR): 2/8



- High Waveform Quality and Analysis Accuracy
  - MT9085 maintains the powerful hardware functions of earlier ACCESS Master's, based on Anritsu's long history of technical excellence with updated higher trace quality and analysis accuracy

- Up to 46 dB Dynamic Range
  - Loss measurement of optical fibers up to 200 km
    - *Varies with wavelength and optical fiber loss conditions
- 0.8 m Event Dead Zone
  - Identifies fiber connectors only separated by only a few meters
- High-Quality Realtime Measurements
  - Two realtime measurement modes; support macro bending location identification and easy loss measurement



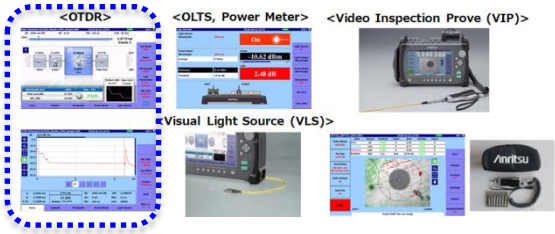
Realtime Measurement, using High S/N Mode.

- Noise suppression assures easy loss measurement

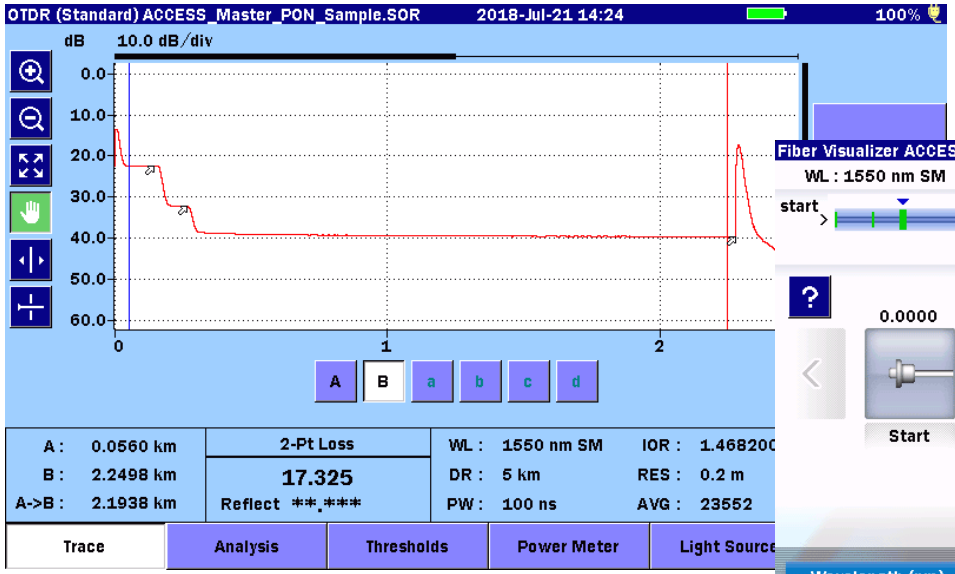
Realtime measurement, using High-Speed mode

- High speed sweep refresh rate, effective for locating fiber bending

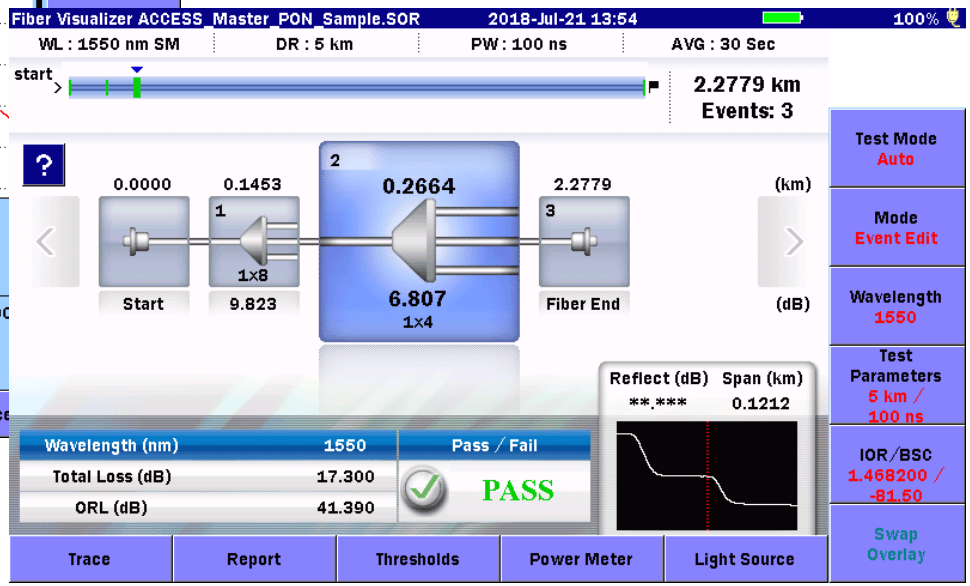
Measurement Applications (OTDR): 3/8



- PON Splitter Analysis for up to 1 x 128 Branches



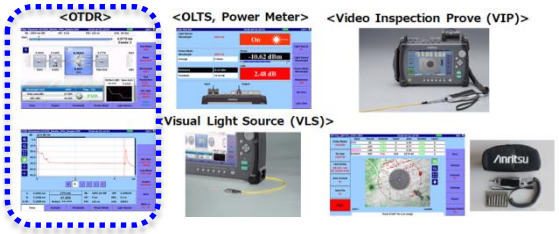
Loss Measurement and Analysis using OTDR (Standard) Test Menu



Loss Measurement and Analysis using OTDR (Fiber Visualizer) Menu

*Sample screens are downstream measurement of splitter circuit including 1*8 and 1*4 splitters
*Refer to following slides for OTDR (Standard) and OTDR (Fiber Visualizer) menus

Measurement Applications (OTDR): 4/8

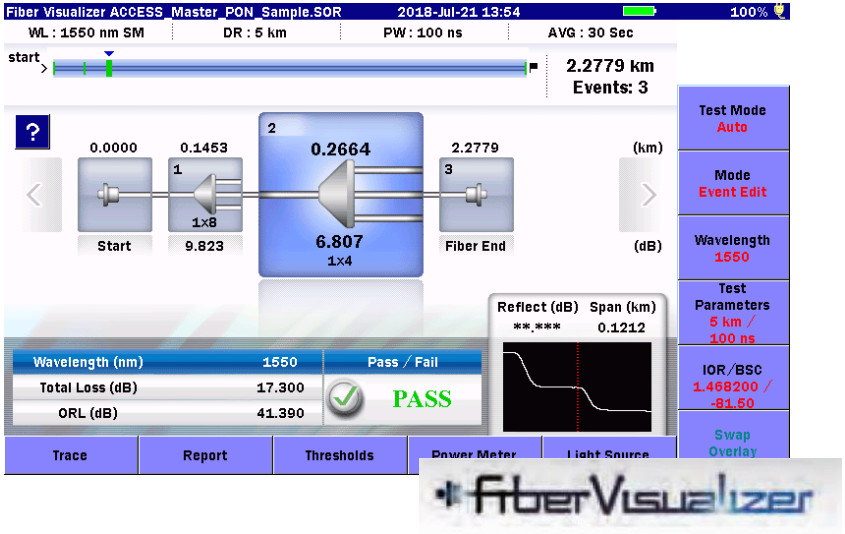


- Two Analysis Modes Matching Measurement Environment and Field Engineer Experience

Maintenance Fault Troubleshooting? First-Time Operator?

OTDR (Fiber Visualizer)

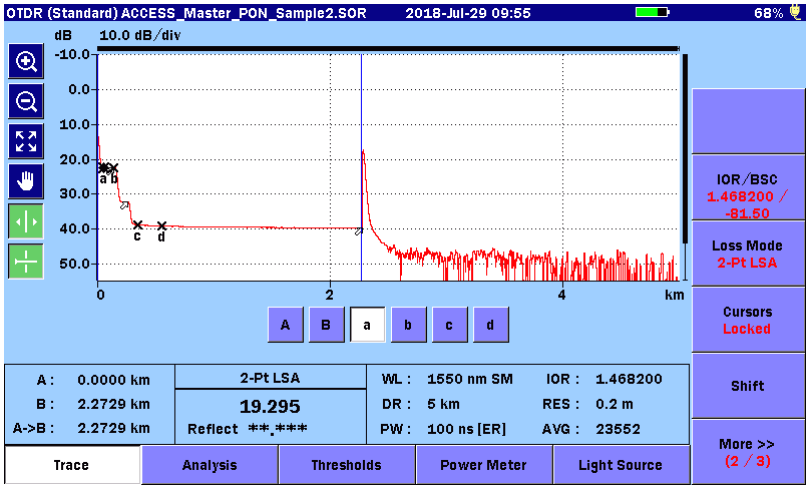
Automated measurement from setting measurement conditions to Pass/Fail evaluation



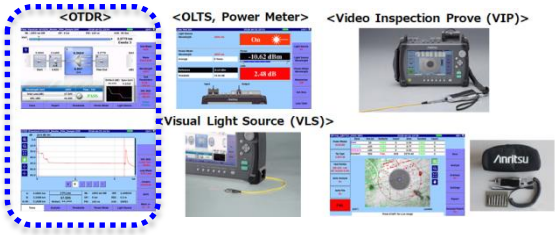
Fiber Installation? Experienced Operator?

OTDR (Standard) Test

Manual measurement from setting measurement conditions to Pass/Fail evaluation

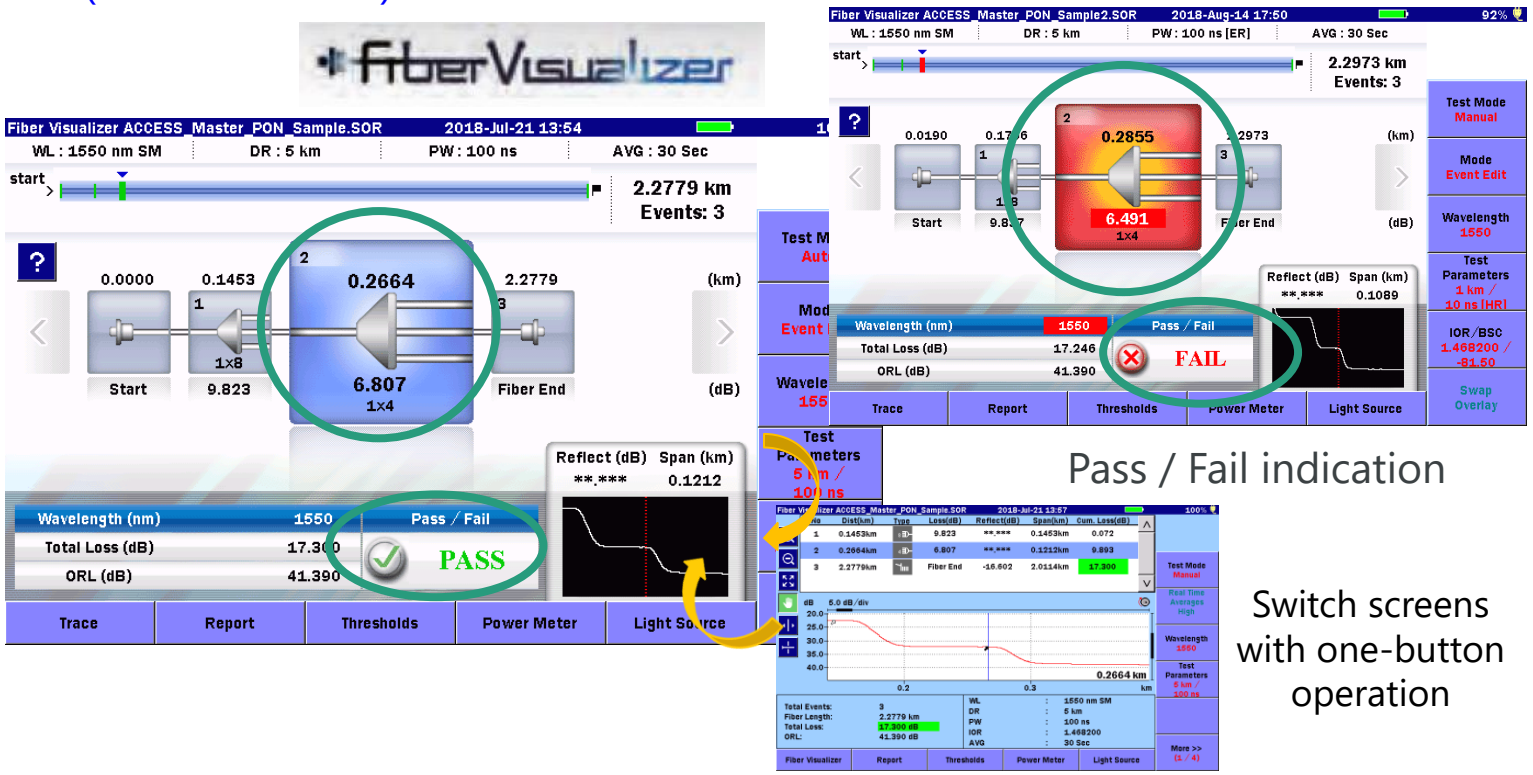


Measurement Applications (OTDR): 5/8



- Fiber Visualizer for Easy Measurement and Analysis

OTDR (Fiber Visualizer)

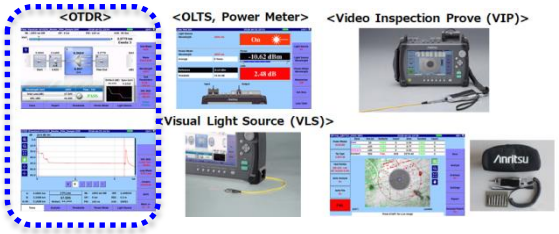


Pass / Fail indication

Switch screens with one-button operation

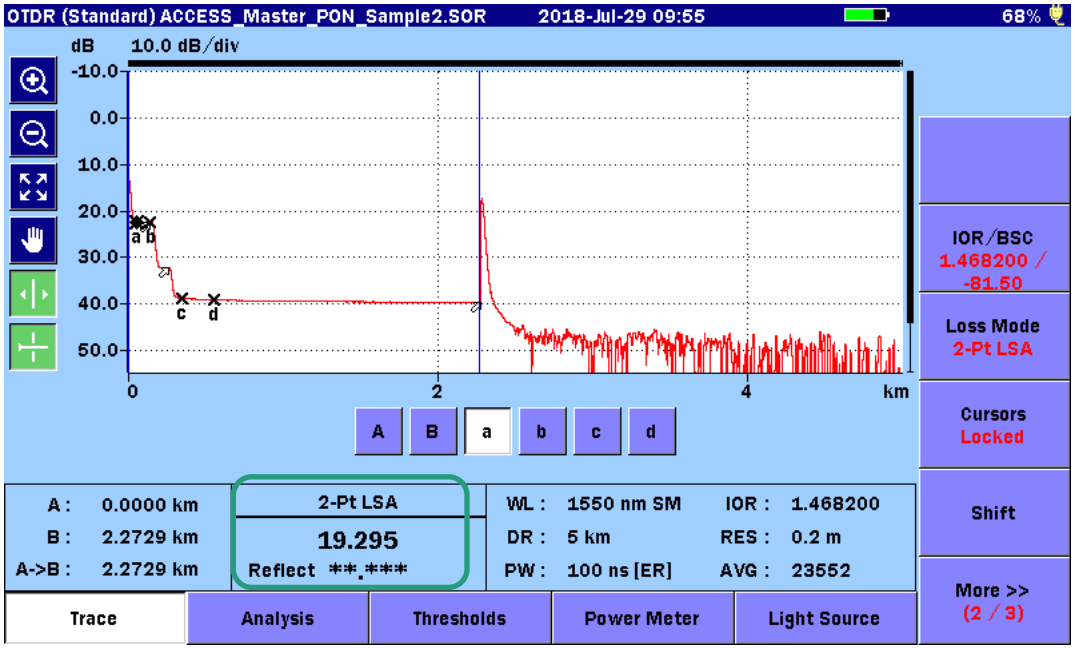
- Optical fiber splices, connectors, splitters, etc., are displayed as easy-to-understand schematic icons for each event
- Connection loss and reflectance measurements for each event are confirmed easily at-a-glance from the Pass/Fail Evaluation results
- Faults are highlighted in red and simple English explains possible course

Measurement Applications (OTDR): 6/8



- Manual Measurement and Analysis Following Work Order Specification Measurement Procedures

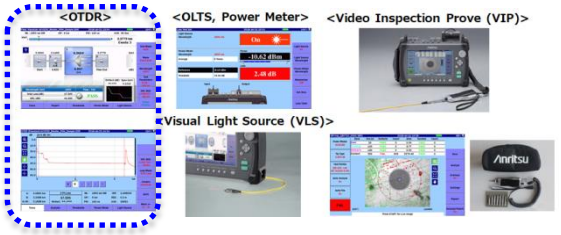
OTDR (Standard) Test



- Trace are evaluated using the 2PA and LSA methods based on the position of four markers to analyze the optical fiber connection loss and reflectance
- Touchscreen operation adds to the feature set from previous ACCESS master models, improving manual analysis and operability

– This method is used for manual analysis when the measurement and analysis conditions are specified in the work order specification requirements

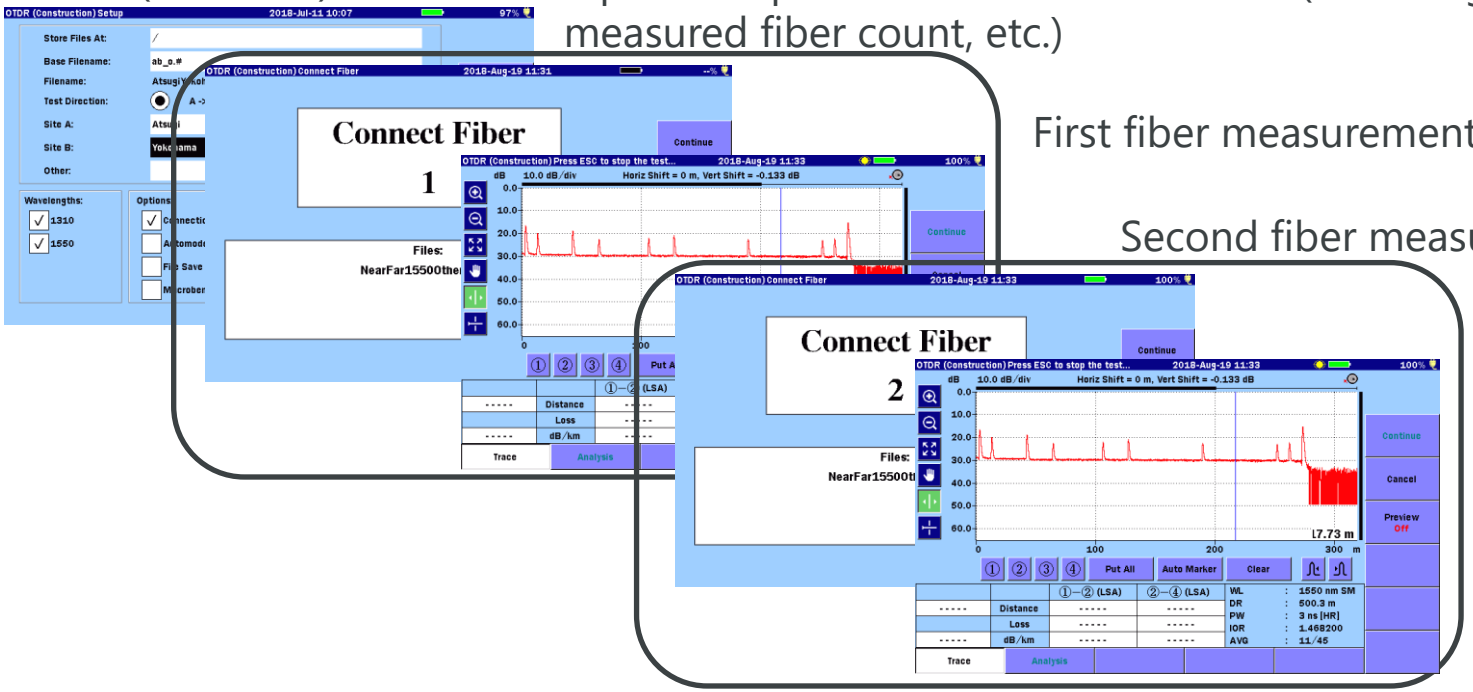
Measurement Applications (OTDR): 7/8



- Increased Multiple Fiber Measurement Enhancing Work Efficiency

OTDR (Standard) Test

Input multiple fiber measurement data (wavelength, measured fiber count, etc.)



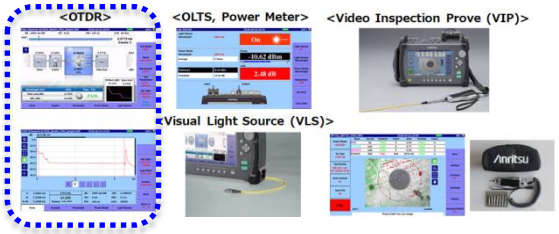
First fiber measurement

Second fiber measurement

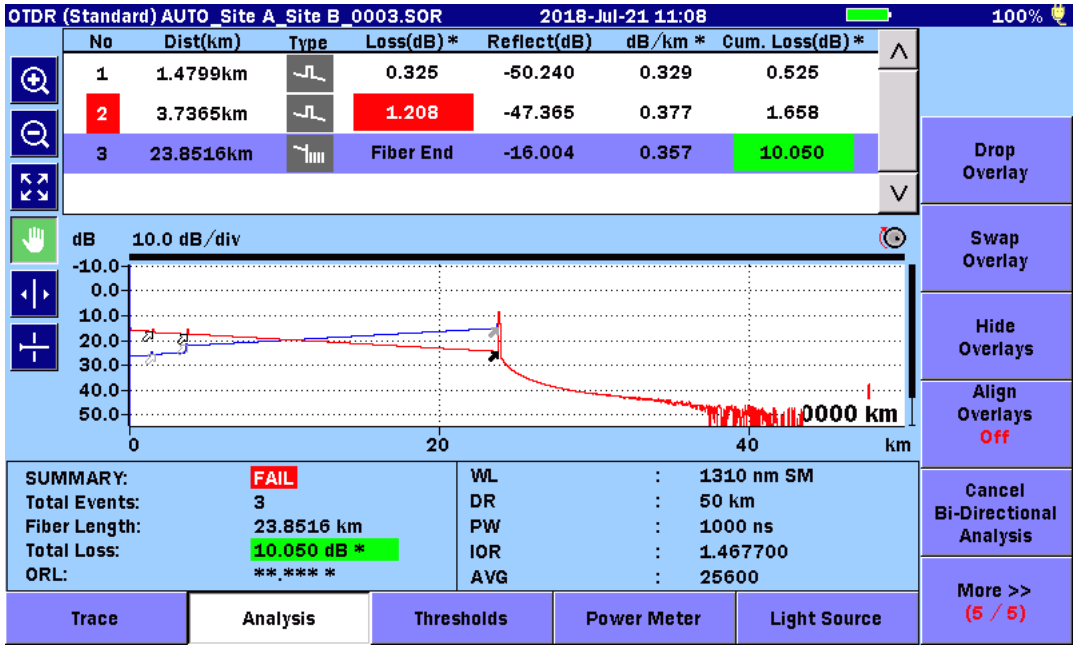
. . . . . .

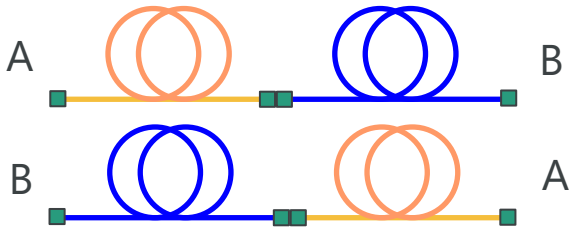
- Multiple optical fibers can be measured continuously under the same setting conditions
- Automatic saving of the measured data as a .sor file each time
- Every fiber measurement completed improves work efficiency
- Auto naming remove user error and reduces testing time

Measurement Applications (OTDR): 8/8



- Accurate Analysis using Bi-directional Measurement of Optical Fiber Connection Loss

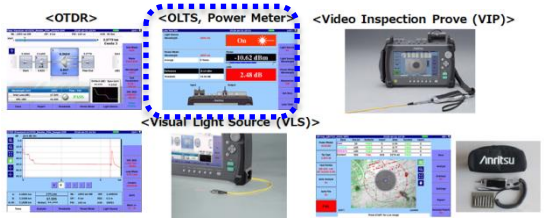




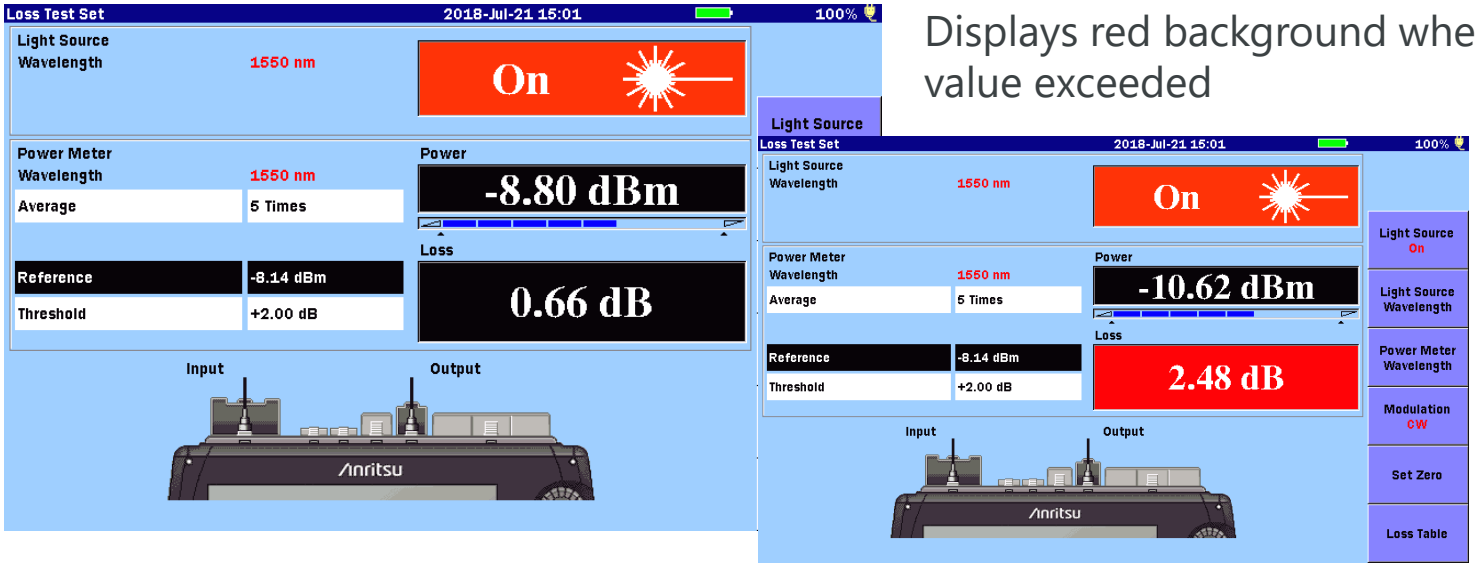
Analyzes by superimposing two traces measured respectively from point A and point B

  - When connecting different fiber types it is sometimes impossible to measure connection loss accurately (especially if mixing old and new fiber types)
  - Bi-directional trace measurement function supports accurate analysis of loss values by analyzing and combining the results from both directions of the event

Measurement Applications (OLTS, Optical Power Meter): 1/2



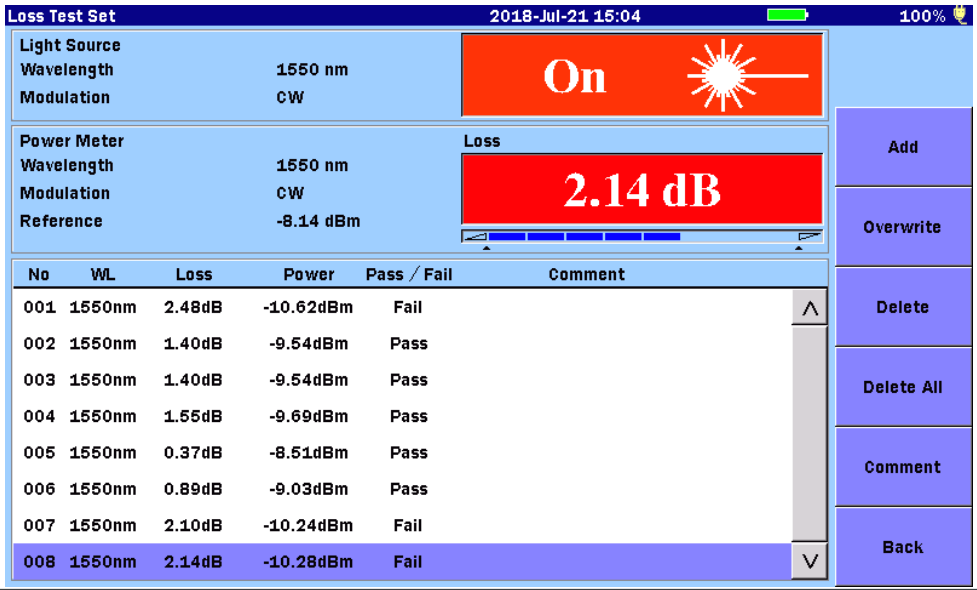
- Key Measurement Function for Evaluating Optical Fiber Installation Condition and Event Status



Displays red background when threshold value exceeded

  - The OLTS/Optical Power meter function is used for primary fault evaluation before OTDR tests.
    - The Light Source and Optical Power meter functions are built-in as standard options
      - Optical Power meter option must be installed to use the OLTS function

Measurement Applications (OLTS, Optical Power Meter): 2/2

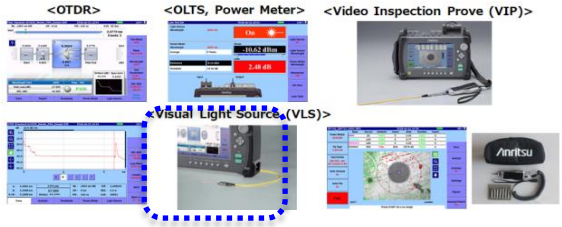


The Power Meter Loss Table screen is used to log measured results

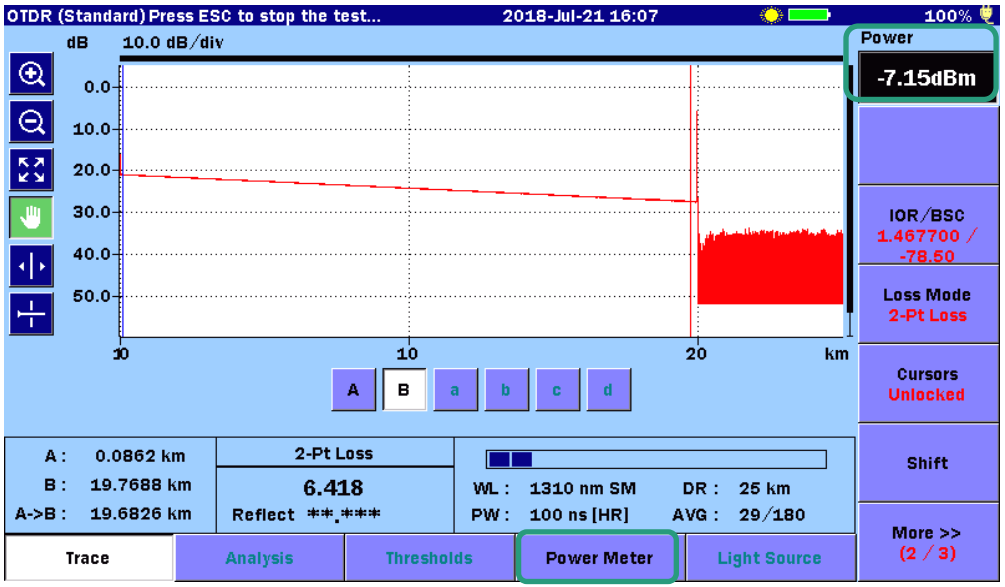
Measured loss table logs can be output as .csv files.

	A	B	C	D	E	F	G	H	I	J	K
1	<MT908x Series Loss Table Data>										
2	Anritsu	MT9085A-057	570000008	2018/7/21	Line:8	CRC:d6d2					
3	<File Version>	1									
4	<Title>										
5	<No>	<nm>	<Reference(dB	<Absolute(dB	<Loss(dB)	<Pass/Fail>	<Modulation(	<Average	<Comment>	<Threshold(dB/dBm)>	
6	1	1550	-8.14	-10.62	2.48	1	0	5		2	
7	2	1550	-8.14	-9.54	1.4	0	0	5		2	
8	3	1550	-8.14	-9.54	1.4	0	0	5		2	
9	4	1550	-8.14	-9.69	1.55	0	0	5		2	
10	5	1550	-8.14	-8.51	0.37	0	0	5		2	
11	6	1550	-8.14	-9.03	0.89	0	0	5		2	
12	7	1550	-8.14	-10.24	2.1	1	0	5		2	
13	8	1550	-8.14	-10.28	2.14	1	0	5		2	

Measurement Applications (Visual Light Source)



- Improved Work Efficiency by using OTDR, Optical Power Meter and Visual Light Source Simultaneously

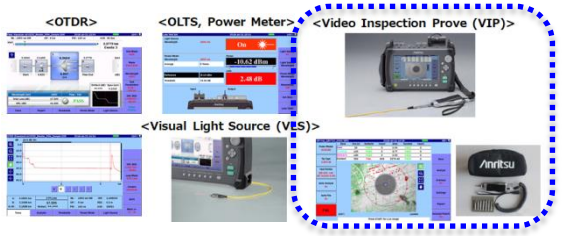


Optical Power Meter measurement results are displayed at the top right of the main OTDR measurement screen

The visual light source is operated using a shortcut key.

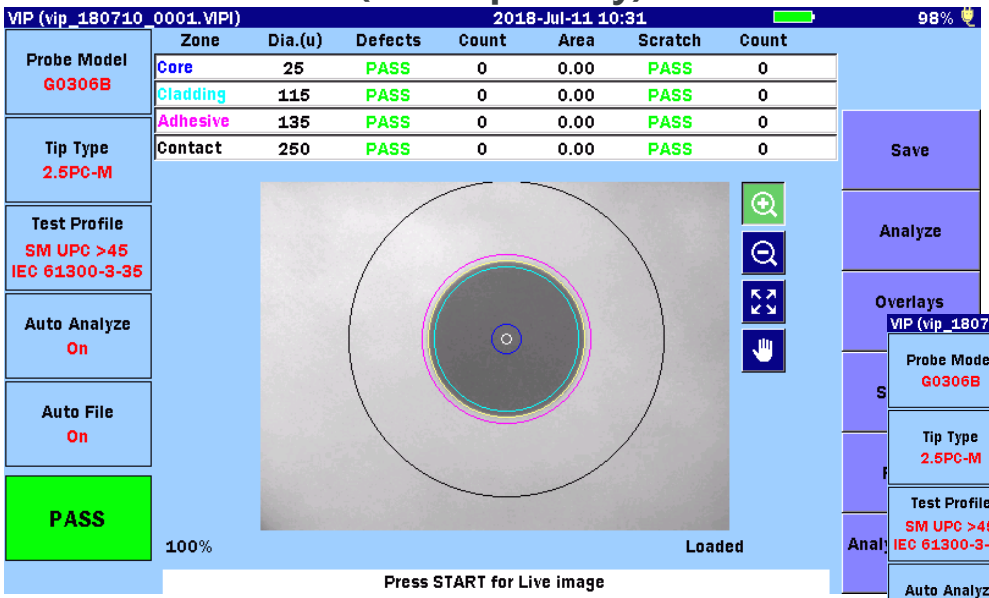
  - The Visual Light Source and Optical Power meter tests can be completed while performing OTDR measurements
    - For example, preform a multiple fiber measurement completing Power Meter and Visual Light Source measurements on other fibers while in parallel preforming an OTDR measurements, improving work flow efficiency

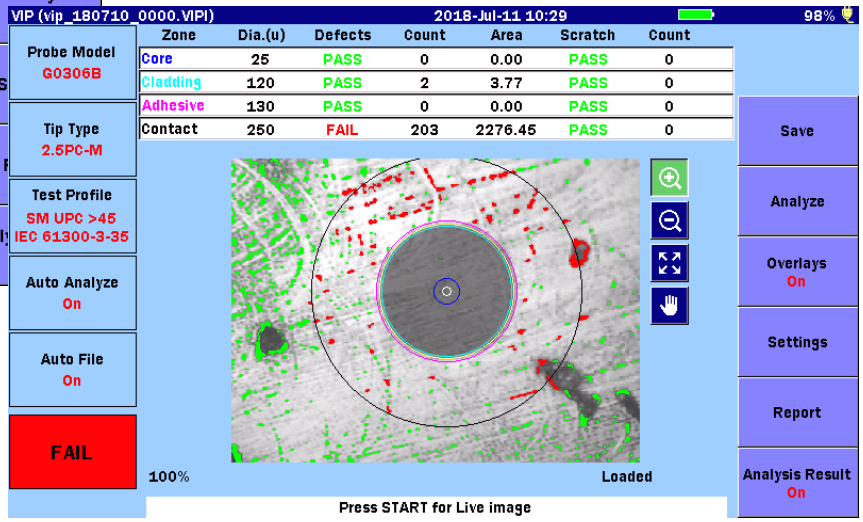
Measurement Applications (VIP)



- Checks for Scratches and contamination on Fiber End Face before Optical Power Meter and OTDR Measurements

Used with G0306B (sold separately)



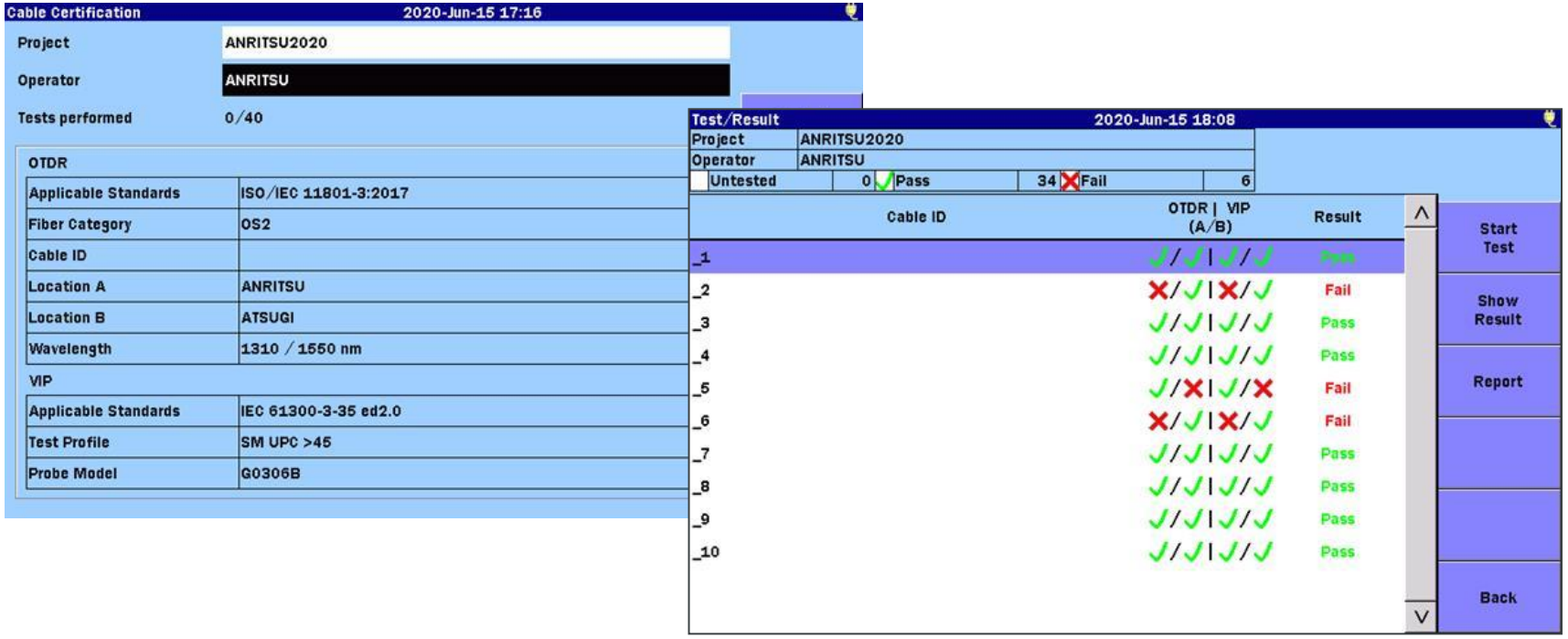


Example of Failed Evaluation Result

- Using MT9085 in combination with Fiberscope G0306B (VIP)
- Automatic Pass/Fail evaluation of the optical connector end-face status in accordance with IEC61300-3-35 standard

Measurement Applications (Cable Certification): 1/2

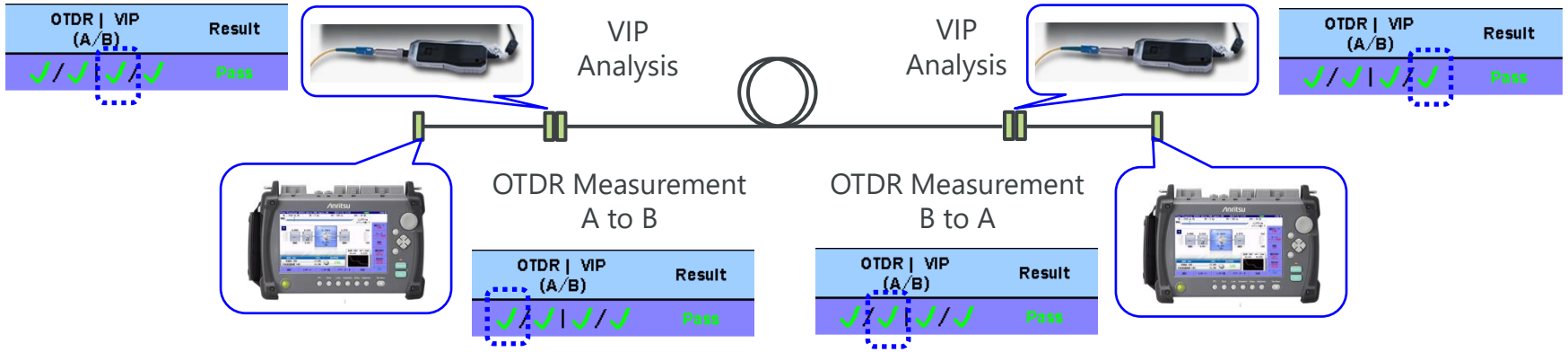
Automatic Pass/Fail Evaluation using Cable Certification Test Function



The automatic Pass/Fail measurements of the Cable Certification Test function meet the IEC/ISO standards. Users create an all-in-one measurement project including the relevant standards, measured-fiber type, OTDR test items, VIP measurement conditions, etc., with the measurement test results managed as multiple fibers for report output as a pdf.

Measurement Applications (Cable Certification): 2/2

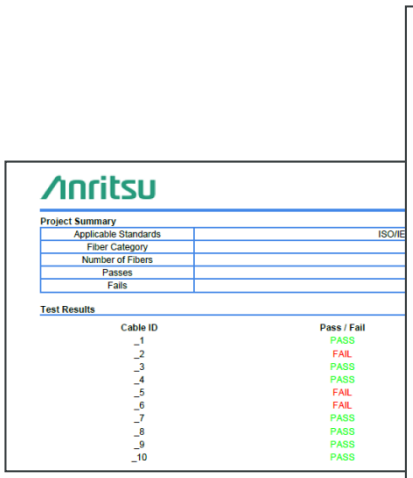
Measurement and Analysis per Fiber

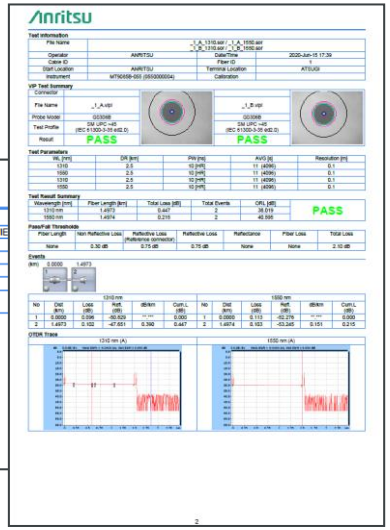


Automatic Pass/Fail evaluation in compliance with IEC/ISO and JIS standards

OTDR | VIP (A/B)	Result
✓/✓ | ✓/✓	Pass
✗/✓ | ✗/✓	Fail
✓/✓ | ✓/✓	Pass
✓/✓ | ✓/✓	Pass
✓/✗ | ✓/✗	Fail
✗/✓ | ✗/✓	Fail
✓/✓ | ✓/✓	Pass
✓/✓ | ✓/✓	Pass
✓/✓ | ✓/✓	Pass
✓/✓ | ✓/✓	Pass

Displayed results for 10 measured fibers





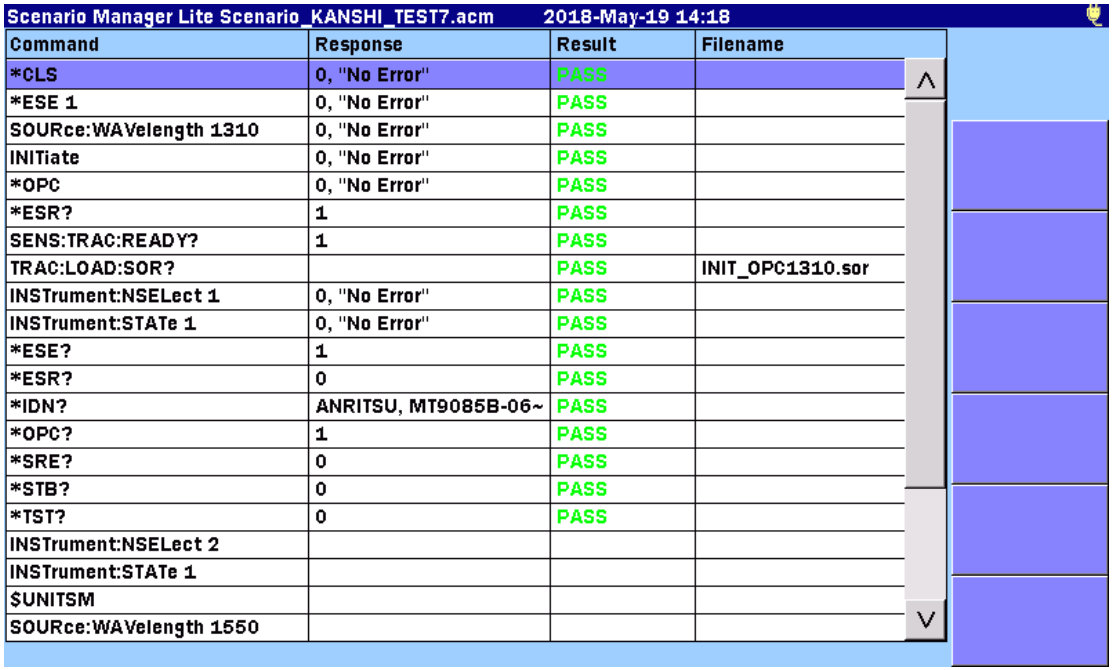
Overall Evaluation

OTDR | VIP (A/B)	Result
✓/✓ | ✓/✓	Pass

Report Output:
In addition to the overall evaluation, the report indicates the OTDR and VIP measurement results for each fiber.

Measurement Applications (Scenario Manager Lite)

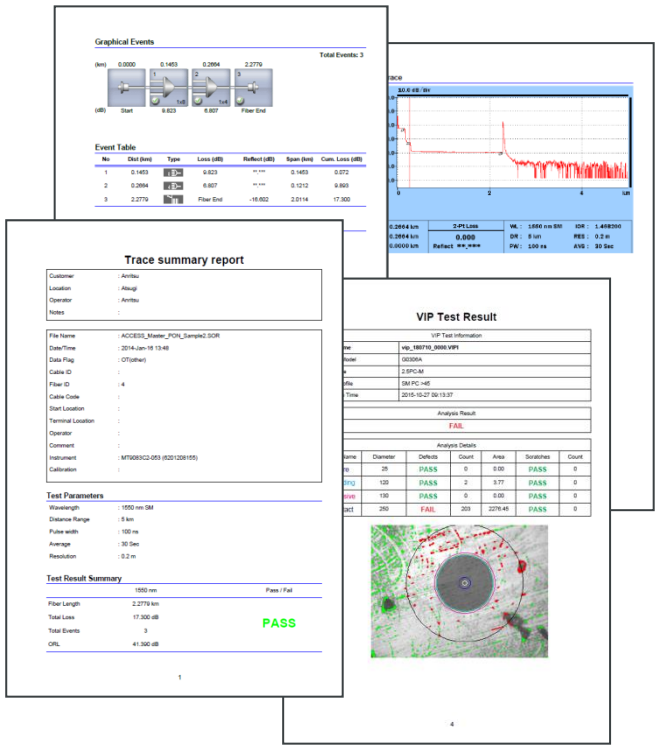
- Automatic Testing using Scenario Manager and Lite Function

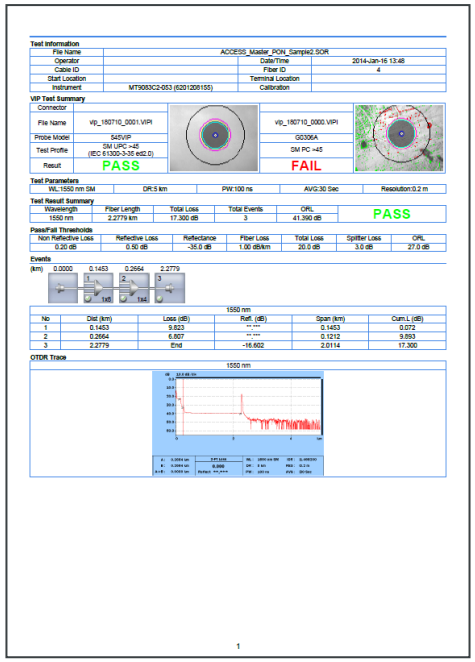


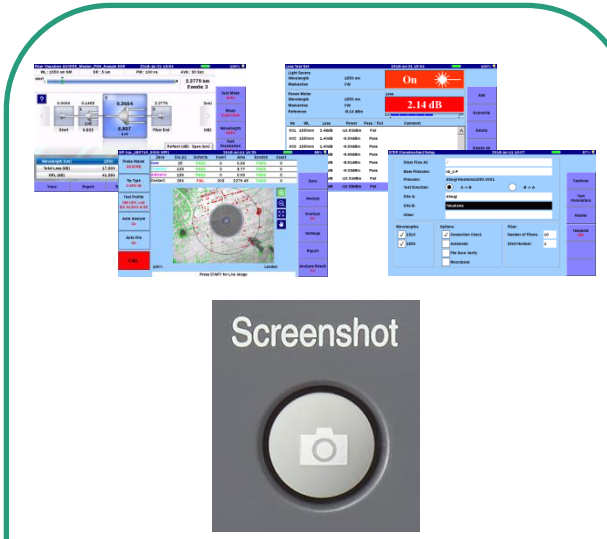
  - Application executes predefined programs on the tester
  - Test procedures and parameters can be registered in scenarios on the MT9085 using remote commands to fully automate testing without requiring a PC for remote control

Measured Data Management: 1/3

- PDF Reports of OTDR and VIP Results







*The Screen Capture function is useful for saving measured data easily using a shortcut key.

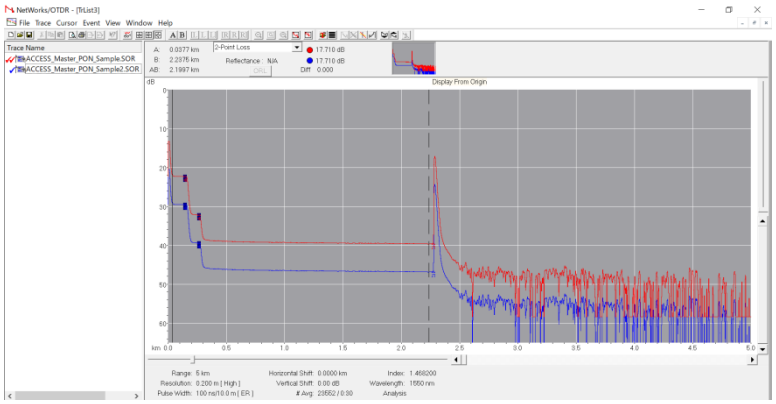
- OTDR (Fiber Visualizer) measurement results output as PDF reports
- Can be combined with VIP analysis results into a single comprehensive test report

Measured Data Management: 2/3

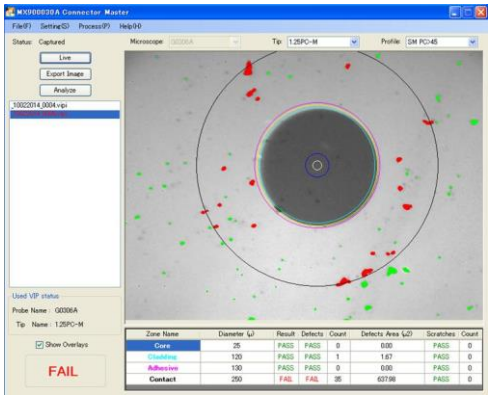
- Measured Original Data Analyzed by Connected PC

Methods for Saving MT9085 Measured Data

	Original Data File	Screen Capture	.csv File	PDF Report Output
OTDR	✓	✓		✓
OLTS		✓	✓	
VIP	✓	✓		✓



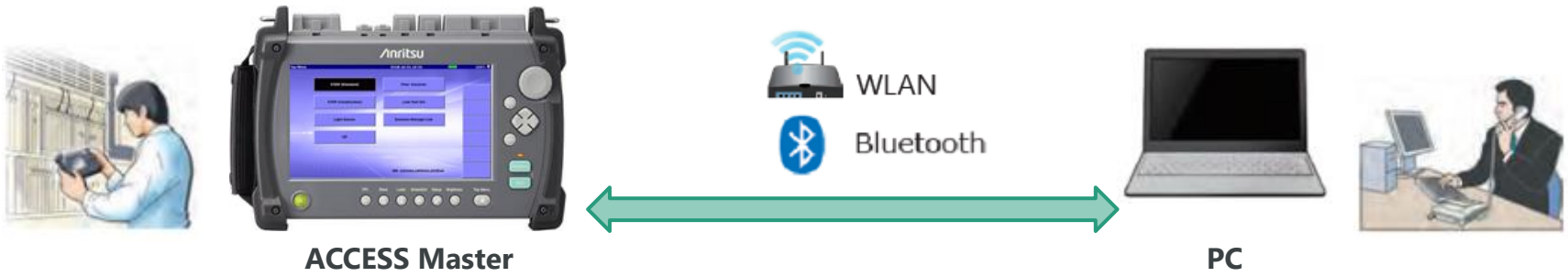
NETWORKS: OTDR Trace Analysis using Emulation Software (chargeable)



VIP Analysis Screen using Connector Master MX900030A on PC (free-of-charge)

Measured Data Management: 3/3

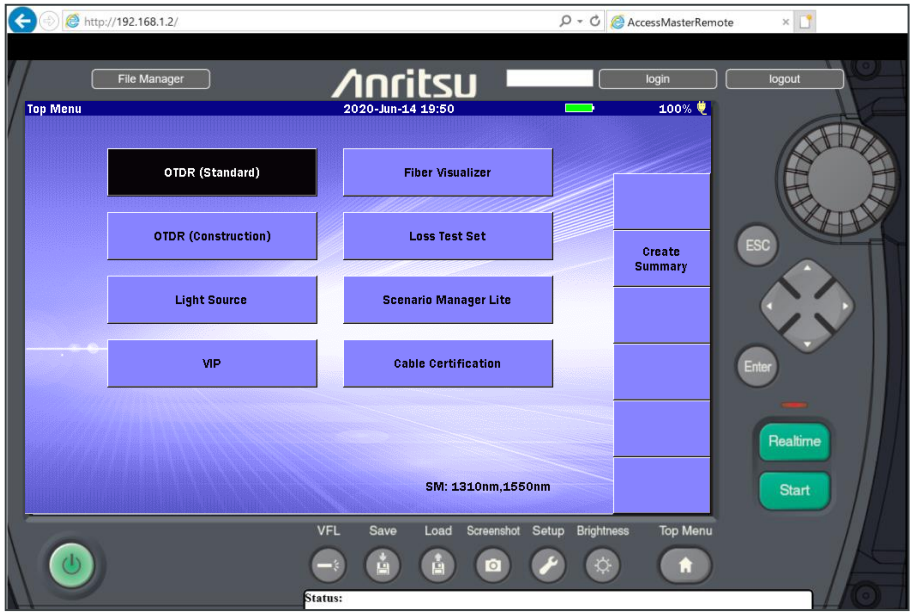
- Share Measured Saved Data and Report Files with PC via WLAN / Bluetooth Wireless Network



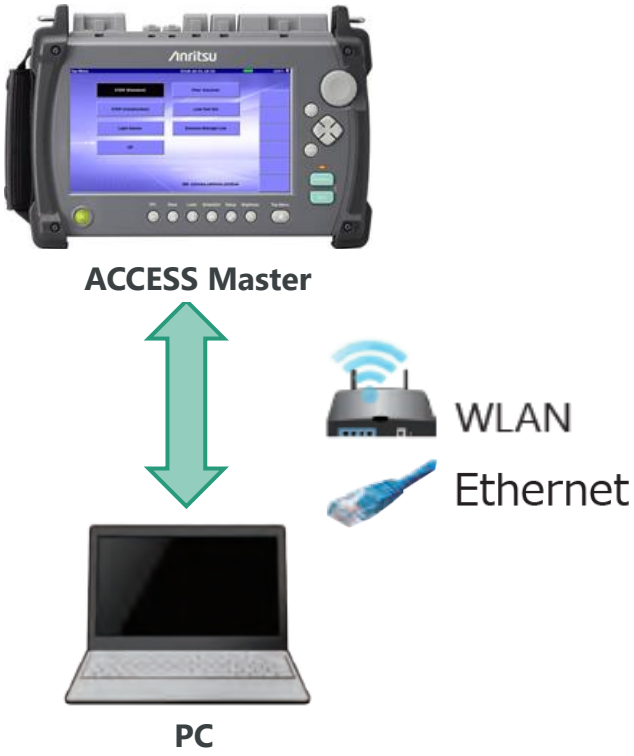
  - Simple transfer of files and reports from MT9085 series to a PC using WLAN and Bluetooth*
    - *Requires external USB dongle adapter
  - Share files using USB memory or USB cable

External Measurement Control

- Remote Control of MT9085 from PC using Remote GUI and Remote Commands



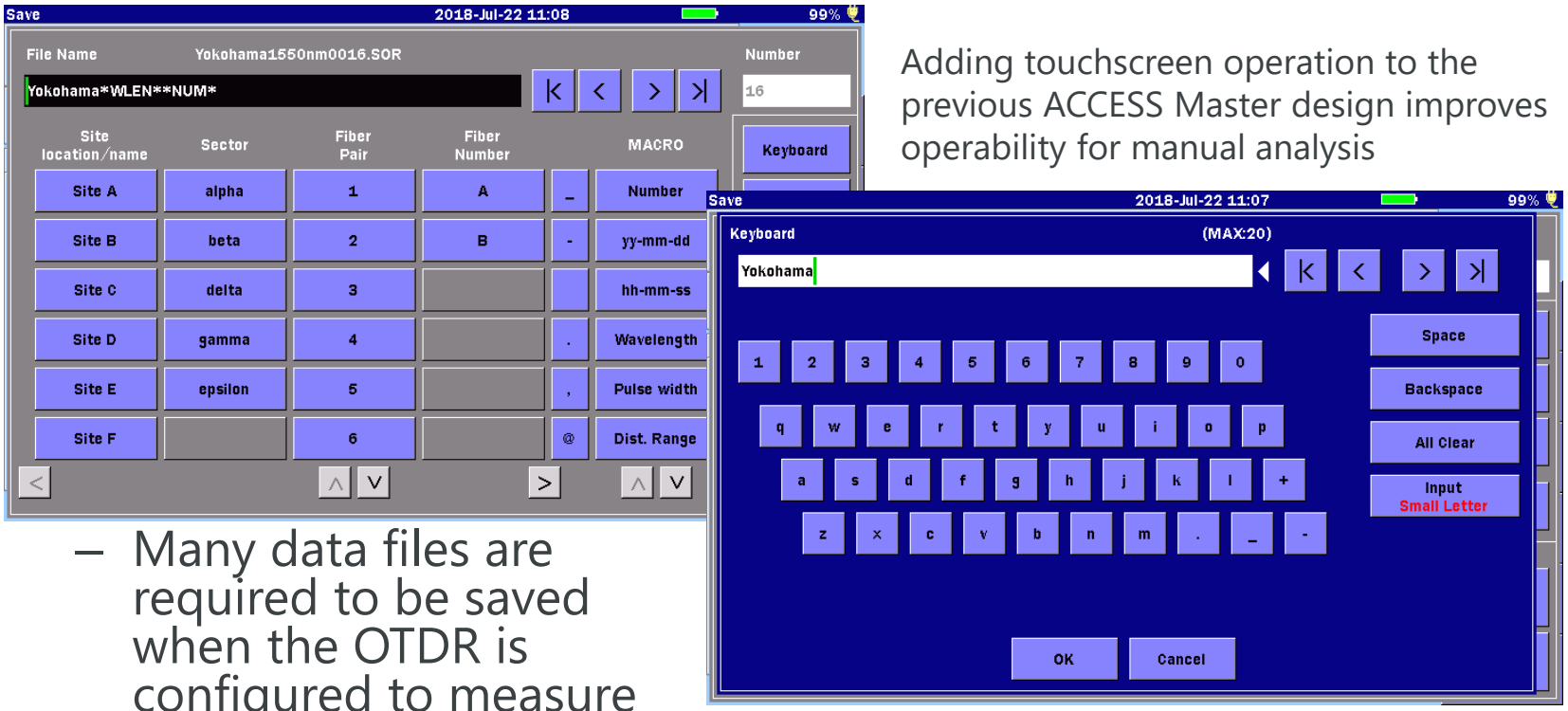
PC External Control Screen using Remote GUI



  - MT9085 series can be remote-controlled via WLAN and Ethernet interfaces using both a remote GUI (web browser) and remote commands
    - *WLAN communications requires USB dongle adapter
    - *Ethernet connection requires USB–Ethernet conversion cable

Other Useful Functions: 1/2

- Better Work Efficiency with File Name Input Support Function

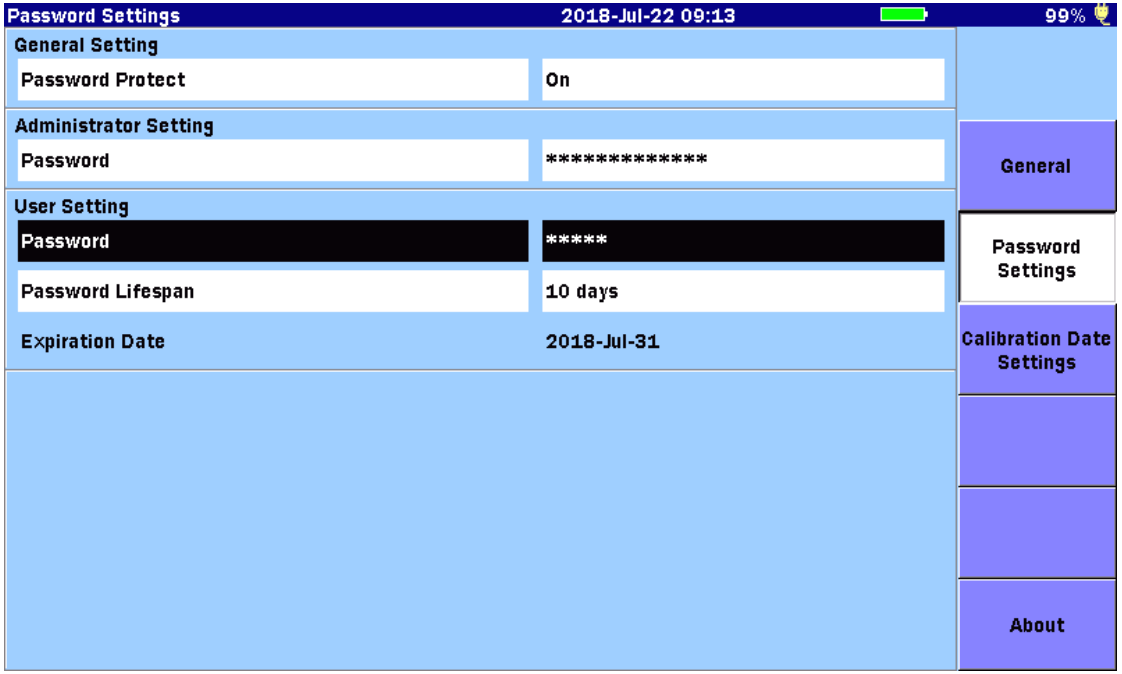


Adding touchscreen operation to the previous ACCESS Master design improves operability for manual analysis

- Many data files are required to be saved when the OTDR is configured to measure multiple fibers.
- The MT9085 series has a built-in function to simplify filename input
  - Automatically incrementing the file name based on the measurement setting conditions (wavelength, pulse width) and fiber number

Other Useful Functions: 2/2

- Password Protection Function protects Important Internal Data



  - MT9085 series has a built-in password protection, requiring password input after booting the tester
  - Not only protects important internal data but also limits use to approved users

Main Specification: 1/2

Dimensions and Mass	Without Protector	Dimensions: 270 (W) × 165 (H) × 61 (D) mm
		Mass: 1.6kg without battery, 1.9 kg Including battery
	With Protector (Option 010)	Dimensions: 284 (W) × 200 (H) × 77 (D) mm
		Mass: 2.6 kg including battery
Display	8-inch touch screen TFT-Color LCD	
Interface	USB 2.0: Type A × 3 (memory), USB1.1: MicroB × 1 (USB mass storage)* 500 mA USB power supply	
Wireless Interface	WLAN/Bluetooth via USB adapter connected to USB port	
Data Storage	Internal memory: 1 GB (up to 50,000 traces), External memory (USB): up to 32 GB	
Power Supply	12 V(dc), 100 V(ac) to 240 V(ac), Allowable input voltage range: 90 V to 264 V, 50 Hz/60 Hz	
Battery	Type: Lithium ion Operating Time: 12 hours, Telcordia GR-196-CORE Issue 2, September 2010 Recharge Time: <5 hours (power off)	
Power Saving Functions	Backlight off: Disable/1 to 99 minutes Auto shutdown: Disable/1 to 99 minutes	
Vertical Scale	0.1, 0.2, 0.5, 1.0, 2.0, 5.0, 10.0 dB/div	
IOR Setting	1.300000 to 1.700000 (0.000001 steps)	
Units	km, m, kft, ft, mi	
Sampling Points	Up to 150,001	
Sampling Resolution	0.05 m to 60 m	
Reflectance Accuracy	Single mode: ±2 dB, multimode: ±4 dB	
Distance Accuracy	±1 m ±3 × measurement distance × 10^{-5} ± marker resolution (excluding IOR uncertainty)	
Distance Range	Single mode: 0.5, 1, 2.5, 5, 10, 25, 50, 100, 200, 300 km Multimode: 0.5, 1, 2.5, 5, 10, 25, 50, 100 km	

*Refer to the separate catalog for details.

Main Specification: 2/2

MT9085C				
Opt.	Wavelength	Dynamic Range	Dead Zone (Fresnel) (IOR=1.500000)	Dead Zone (Backscatter) (IOR=1.500000)
MT9085C-053	1310/1550nm ±25nm	46/46dB	≤1 m, 0.8 m (typ.)	≤3.8/4.3 m
MT9085C-057	1310/1550/1625nm ±25nm	46/46/44dB		≤3.8/4.3/4.8 m
MT9085B				
Opt.	Wavelength	Dynamic Range	Dead Zone (Fresnel) (IOR=1.500000)	Dead Zone (backscatter) (IOR=1.500000)
MT9085B-053	1310/1550 nm ±25 nm	42/41 dB	≤1 m 0.8 m (typ.)	≤5/5.5 m
MT9085B-055	1310/1550 nm ±25 nm, 1645 to 1655 nm	42/41/35 dB		≤5/5.5/6.5 m
MT9085B-056	1310/1490/1550 nm ±25 nm	42/41/41 dB		≤6/6.5/6.5 m
MT9085B-057	1310/1550/1625 nm ±25 nm	40/39/38 dB		≤6/6.5/7.5 m
MT9085B-058	1310/1490/1550/1625 nm ±25 nm	42/41/41/40 dB		≤7/7.5/7.5/8.5 m
MT9085B-063	1310/1550 nm ±25 nm, 850/1300 nm ±30 nm	42/41 dB 29/28 dB		≤5/5.5 m, ≤4/5 m (3/4 m typ.)
MT9085A				
Opt.	Wavelength	Dynamic Range	Dead Zone (Fresnel) (IOR=1.500000)	Dead Zone (backscatter) (IOR=1.500000)
MT9085A-053	1310/1550 nm ±25 nm	39/37.5 dB	≤1 m 0.8 m (typ.)	≤5/5.5 m
MT9085A-057	1310/1550/1625 nm ±25 nm	37/35.5/32.5 dB		≤6/6.5/7.5 m
MT9085A-063	1310/1550 nm ±25 nm, 850/1300 nm ±30 nm	39/37.5 dB 29/28 dB		≤5/5.5 m, ≤4/5 m (3/4 m typ.)

*Refer to the separate catalog for details.

Ordering information: 1/2

1) Specify one required main unit.

Model/Order No.	Name	
	－Main Unit－	
MT9085A/B/C	ACCESS Master	
	－Standard Accessories－	
Z1991A	MT9085 Operation Manual (CD) :	1pc
W3974AE	MT9085 Series Quick Guide :	1pc
Z1625A	AC adapter :	1pc
	Line cord :	1pc
Z0921A	Battery Pack :	1pc

2) Specify at least one module option (wavelength).

Model/Order No.	Name
	－Module Option (OTDR)－
	High Performance Model
MT9085C-053	SMF 1.31/1.55µm OTDR
MT9085C-057	SMF 1.31/1.55/1.625µm OTDR
	Enhanced Model
MT9085B-053	SMF 1.31/1.55µm OTDR
MT9085B-055	SMF 1.31/1.55/1.65µm OTDR
MT9085B-056	SMF 1.31/1.49/1.55µm OTDR
MT9085B-057	SMF 1.31/1.55/1.625µm OTDR
MT9085B-058	SMF 1.31/1.49/1.55/1.625µm OTDR
MT9085B-063	MMF 0.85/1.3µm & SMF 1.31/1.55µm OTDR
	Standard Model
MT9085A-053	SMF 1.31/1.55µm OTDR
MT9085A-057	SMF 1.31/1.55/1.625µm OTDR
MT9085A-063	MMF 0.85/1.3µm & SMF 1.31/1.55µm OTDR

*Refer to the separate catalog for details.

Ordering information: 2/2

3) Specify at least one optical connector.

Model/Order No.	Name
	－Option (Connector)－
MT9085A/B/C-025	FC-APC Connector Key width 2.0mm
MT9085A/B/C-026	SC-APC Connector
MT9085A/B/C-037	FC Connector
MT9085A/B/C-038	ST Connector
MT9085A/B/C-039	DIN47256 Connector
MT9085A/B/C-040	SC Connector

4) Choose from the following options.

Model/Order No.	Name
	－Option (Visual light Source)－
MT9085A/B/C-002	Visual Fault Locator
	－Option (Power Meter)－
MT9085A/B/C-004	SMF Optical Power Meter
MT9085A/B/C-005	SMF High Power Optical Power Meter
MT9085A/B/C-007	SMF/MMF Optical Power Meter
	－Option (Others)－
MT9085A/B/C-010	Protector

*Refer to the separate catalog for details.

With Protector (Option 010)

Without Protector

Anritsu

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