Smart Reporter

Getting Started

Managing measurement results of

- **SmartClassFiber** devices
- **SmartPocket** devices

Manual Version	Date	Based on SR-Version	Comment
V. 0.7	2018-05-09	V. 2.70	Preliminary (Author: Reinhard Beneken)
V. 1.0	2018-05-25	V. 2.70	Initial version (same author)
V. 1.1	2018-05-25	V. 2.70	Layout issues (same author)
V. 1.2	2018-05-28	V. 2.70	Some debugging (same author)
V. 1.3	2018-08-21	V. 2.80	Downloads are now running interactively. Supports “devices” on USB pen drives.
V. 1.4	2018-08-27	V. 2.82	New: “Sync”. New: “RC”, “Sync”, “Screenshot” dialogs aren’t modal (“blocking”) any more.
V. 1.5	2018-10-05	V. 2.90	Supports “devices” anywhere on disk
V. 2.98	2018-12-20	V. 2.98	Supports MPOLP-85 (preliminary).
V. 3.00	2019-04-30	V. 3.00	Supports MPOLP-85

Fig. 2: SmartReporter splash screen

Functions of the VIAVI SmartReporter

Scope:

- Supports all VIAVI (formerly: JDSU) **SmartClassFiber** and **SmartPocket** devices.

Reporting measurement results:

- Lists all supported devices that are connected via USB cable or via USB pen drive.
- Downloads measurement results from any displayed application of any listed device.
- Supports browsing, sorting and filtering (but not: editing) the measurement results.
- Exports measurement results as CSV ("Comma Separated Values") file (➔"Excel").
- Stores meta information (about the customer etc.) to include in reports.
- Creates customized reports as PDF or HTML files.

Miscellaneous:

- Offers various screenshot functionalities ..
  .. for classroom purposes.
  .. for long-time logging of measurement results.
- Offers loss-less storing and recalling of all downloaded measurement results.
- Offers a RC window to enable a "SCPI communication" with the connected device.
- Offers to synchronize the connected device's clock with the PC's system clock.

Installing the VIAVI SmartReporter

including the necessary drivers

Before connecting any SmartClassFiber or SmartPocket device to your PC you have to make sure that all the necessary drivers are installed.

On Microsoft Windows, start the “SmartReporter_xx.yy_Setup.msi” installation file, and proceed according to the instructions of the SmartReporter Setup wizard.

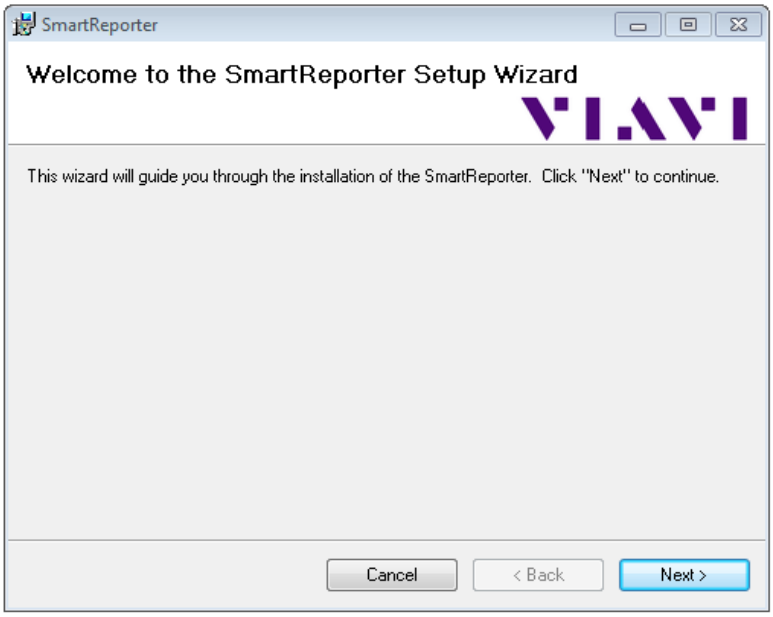


Fig. 3:
SmartReporter Setup wizard

Fig. 4:
Start menu entry

Fig. 5:
Desktop shortcut

The installation setup software proposes

"C:\Program Files (x86)\\ViaviSolutions\SmartReporter\"

as installation directory and copies all necessary files into the selected directory.

It will also create a folder "SmartReporter" within the start menu and a shortcut on the desktop.

Finally, all drivers needed for

- OLx-3y (**SmartPocket** devices)
- OLx-5y (**SmartClass** devices)
- OLx-8y (**SmartClassFiber** devices)

will be installed.

Connecting devices

After completing the setup, connect any number of SmartClassFiber and / or SmartPocket device(s) to an available USB port of your computer, using a USB-A to Micro-USB-B cable for each device.

Make sure the devices have completed their boot process before connecting them.

Fig. 6: Connecting the device to a computer.

Note:

Connecting a device for the first time, your system will detect the new hardware and complete the driver installation. This may take several seconds or even minutes.

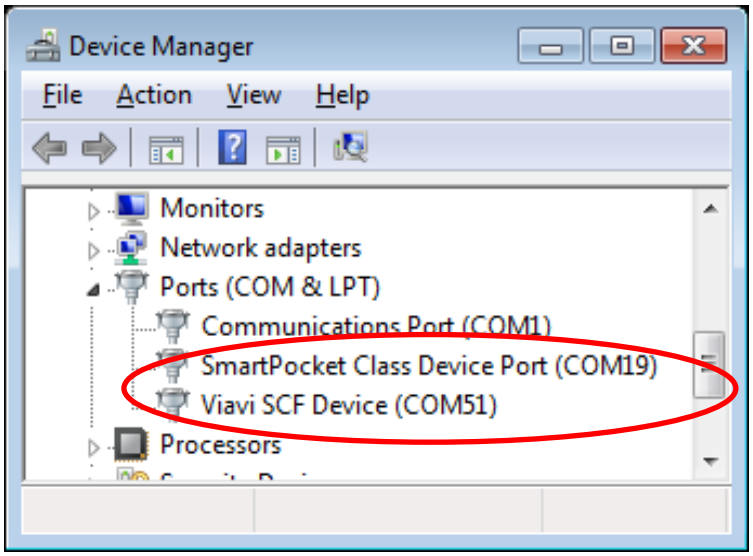
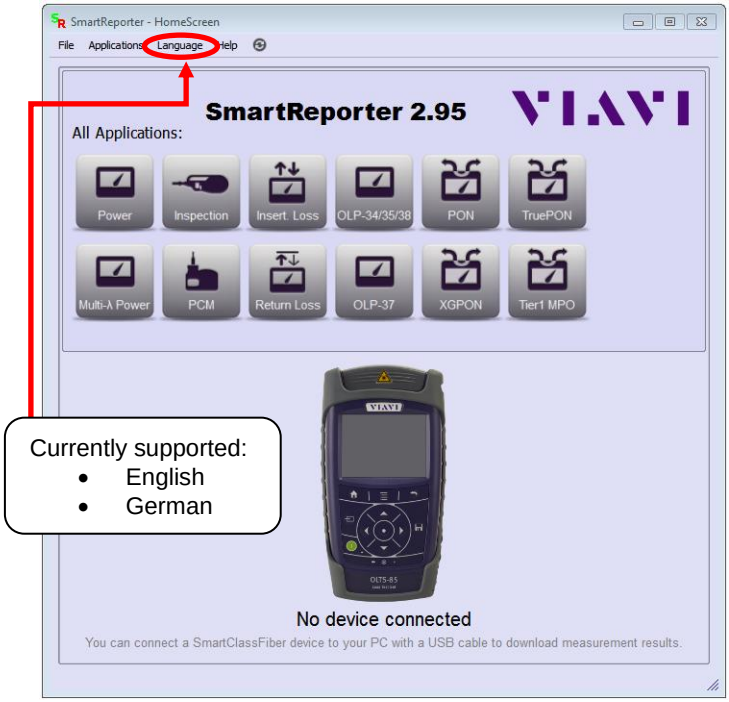


Fig. 7: Microsoft Windows device manager

To be sure that the drivers are working properly, you may check the assigned COM-Port of the SmartPocket device or the SmartClass Fiber device within the Device Manager located inside the Control Panel of Microsoft Windows (e.g. “COM19” or “COM51”) as shown.

The installation is completed now.

First steps



After starting the SmartReporter and having waited for the splash screen to disappear the SmartReporter HomeScreen will show up.

For the moment, just ignore both rows of application buttons.
They are needed to later recall any measurement results downloaded and stored before.

Fig. 8: HomeScreen
(no devices connected)

If you haven't done it already, please connect one or more SmartPocket or SmartClassFiber devices via USB cable to your PC.

SmartReporter will automatically detect them and provide an interface area for each device.

Fig. 9: HomeScreen with 2 devices
- OLP-34
- MPOLP-85P

connected to your PC.

The device interface area

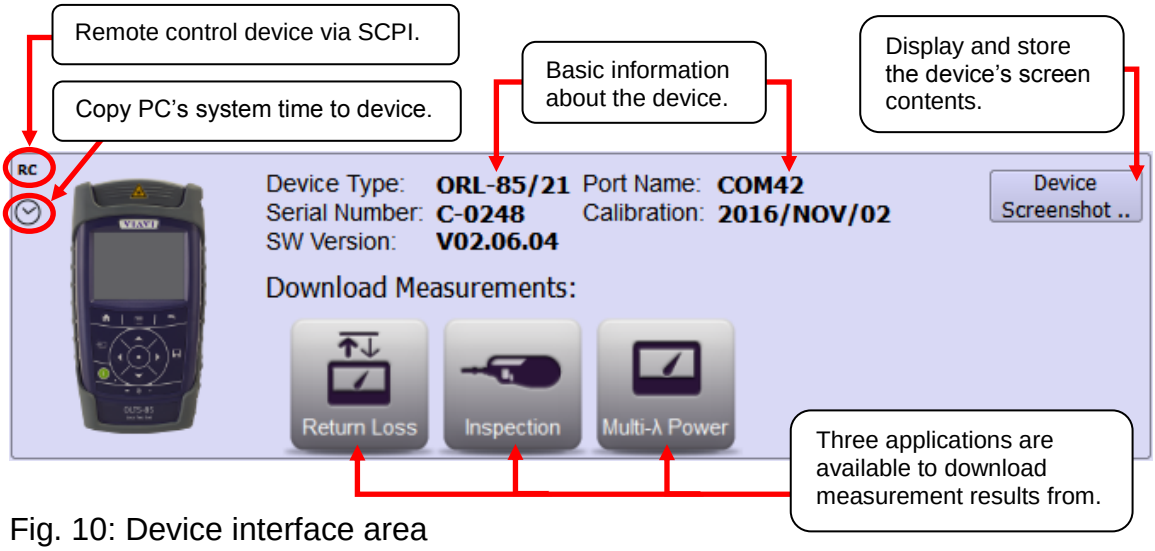


Fig. 10: Device interface area

The "**Device Screenshot**" feature *) moves a copy of the device's current screen to your PC display (and maybe a beamer) to enable or improve

- classroom situations.
- logging tasks.
- long term monitoring.

Device screenshots can be

- displayed 100 / 200 / 300 % of its original size ("Zoom").
- manually triggered ("Reload") or saved as *.png ("Save").
- automatically triggered ("Live") or saved as *.png following user defined rules ("Options..").

*) **Not supported by SmartPocket devices ("OLx-3y")**

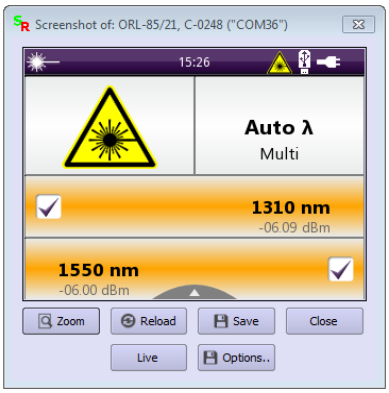


Fig. 11: Screenshot window

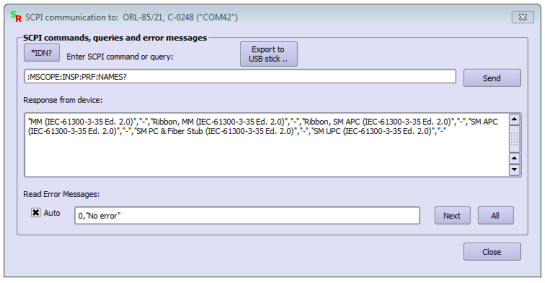


Fig. 12: Remote control ("RC") window

The "**Remote Control**" feature ("RC") establishes a SCPI session to talk with the connected device.

You might

- use the "*IDN?" button to check the connection.
- send any SCPI command or query and read any response from the device.
- monitor the device's error queue.

Importing from USB pen drive or from disk

In some cases you might want to use an USB pen drive as an intermediate memory for downloading:

Fig. 13:
Downloading via USB pen drive

Reasons:

- Minimize the risk of data loss by regularly creating backups.
- Provide preliminary reports to your customer.
- Avoid carrying your SCF device(s) physically to the report creation site.
- Speed up downloading of huge amount of measurement results.

Import: How to read the backup:

- Connect the USB pen drive to your PC. The device interface area(s) appear(s).
  or use “File” ➔ “Open device..” to select a device directory from disk.

- In case of multiple backup timestamps, select one of them before downloading results.

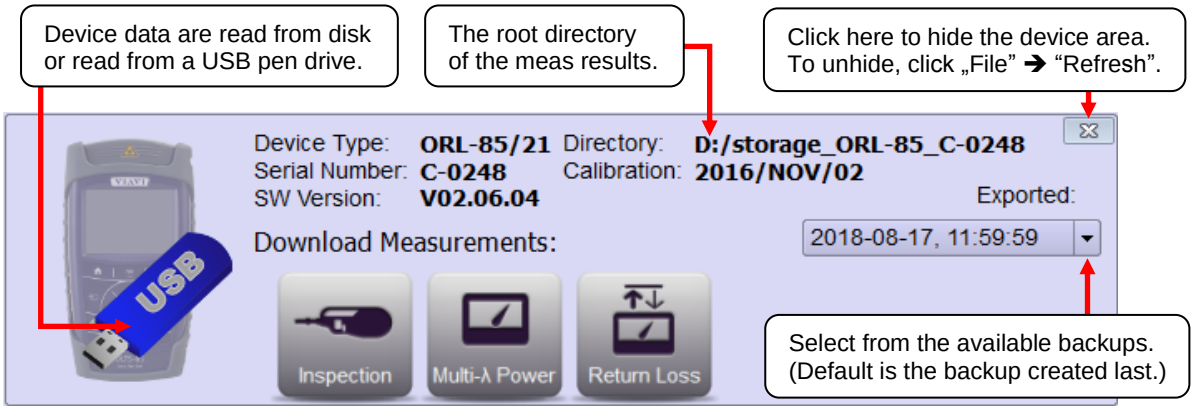


Fig. 14: Device interface area of an “imported” device

Performance: For huge amounts of data (like hundreds of PCM or MSCOPE results) the export plus import procedure is around 2 to 3 times faster than the direct download using a USB cable.

Flexibility: The Smart Reporter identifies the backups by device type, serial number and the date/time of creation.
Therefore you can use a single USB pen drive to export any number of backups from any number of SCF devices.

Excursus: Creating a SCF backup (“export”)

Fig. 15:
The management home screen of a SCF device

Export: How to create the SCF backup:

Step 1: Bring up the device’s management home screen.

Step 2: Insert any USB pen drive in either one of the device’s USB connectors.

Step 3:

SCF Software V02.06.x and before:

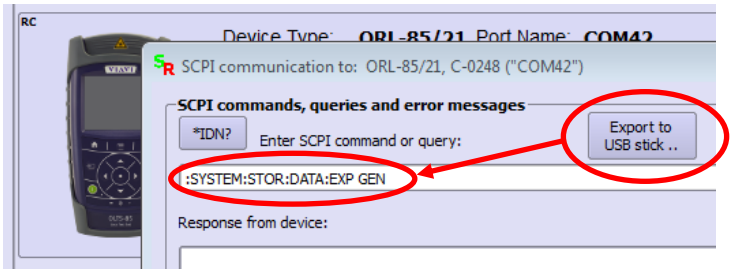


Fig. 16

Use the SmartReporter (or any other RC interface) to send “:SYSTEM:STOR:DATA:EXP GEN”

SCF Software V02.08.x and later:

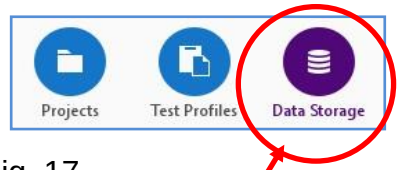


Fig. 17

Select “Data Storage”, then select “**Export Results to USB** CSV and Memory Image.”.

Step 4: A user message displayed in the SCF management home screen will reflect the begin and the end of the result export.

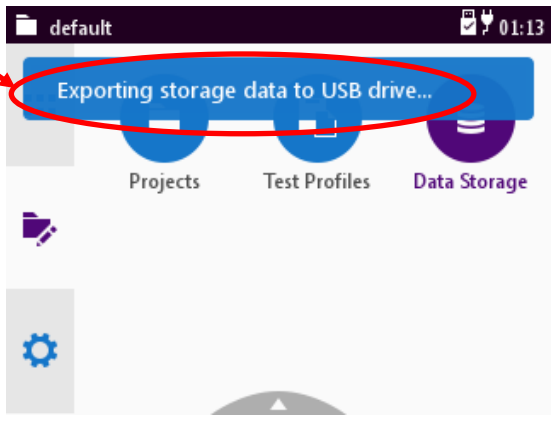


Fig. 18:
Result export in progress.

Application windows: Common properties

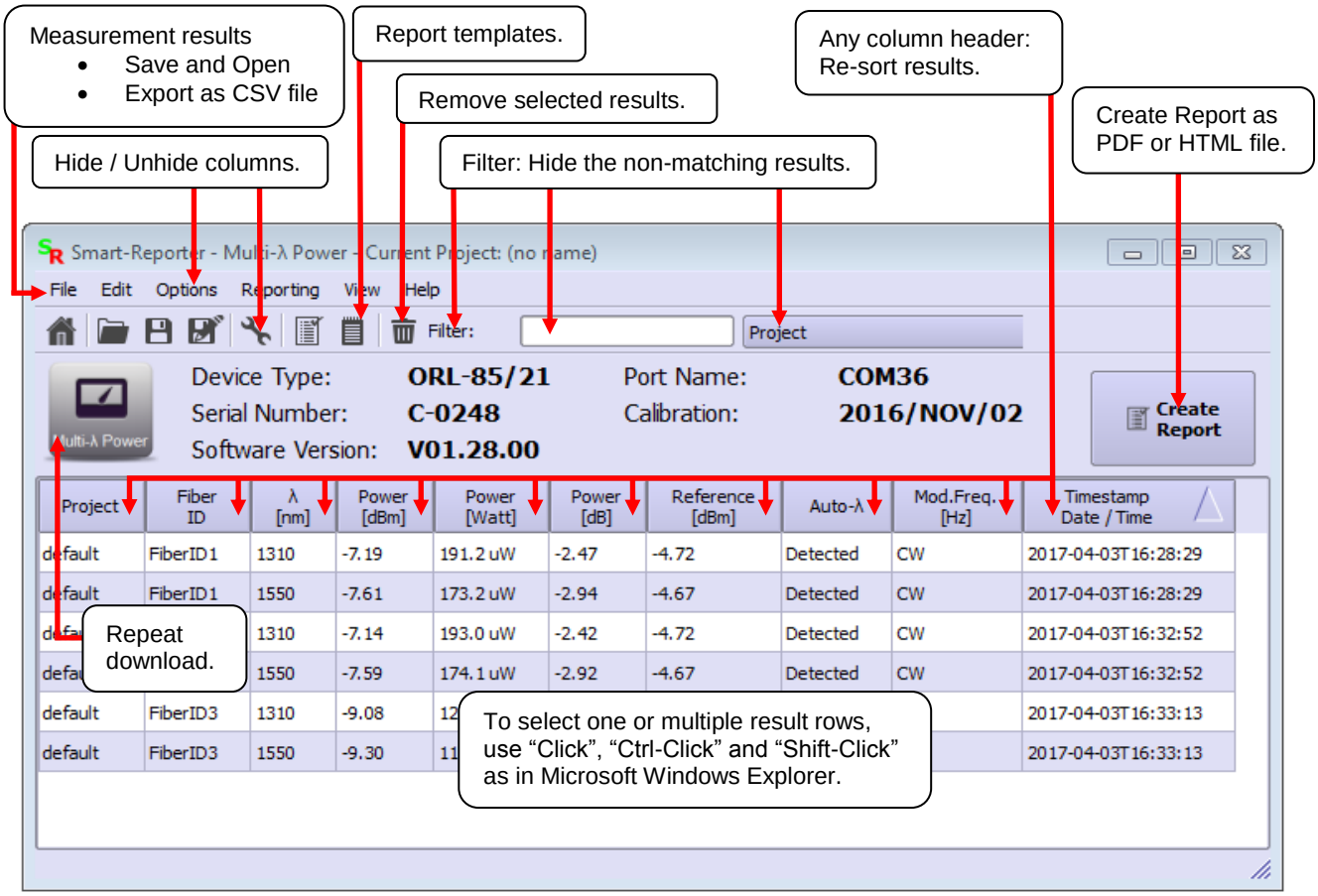


Fig. 19: The application window for the “Multi-λ-Power” application

After downloading start, an application window will pop up automatically displaying the application’s measurement results in a table.

As indicated in figure 19, you can now ..

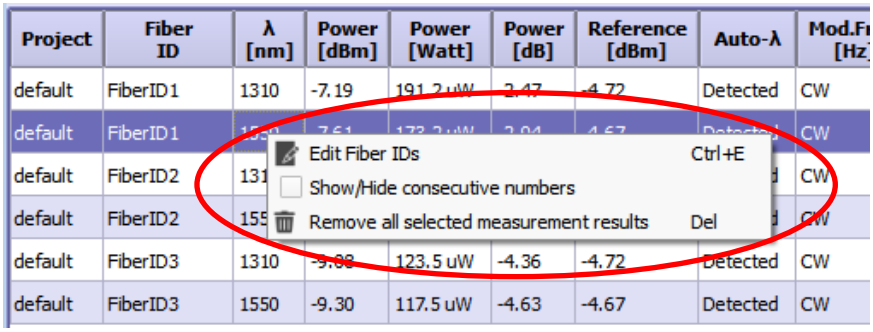
- .. re-sort the results according to any column’s contents.
- .. hide any non-relevant column.
- .. filter out any non-matching measurement result.
- .. delete any non-relevant measurement result.

As soon as the table fits your needs, you can ..

- .. create a copy of the current table for spread sheet use (like Microsoft Excel).
- .. create a copy of all download data for database storage.
- .. create a report for your customer.

Application windows: Context menu

Fig. 20:
Right-click anywhere into the measurement result table to open the context menu.



Edit Fiber IDs:

The entries in the “Fiber ID” column can be edited by the user.
To edit multiple Fiber IDs in a single step use the “Find and replace” mechanism.

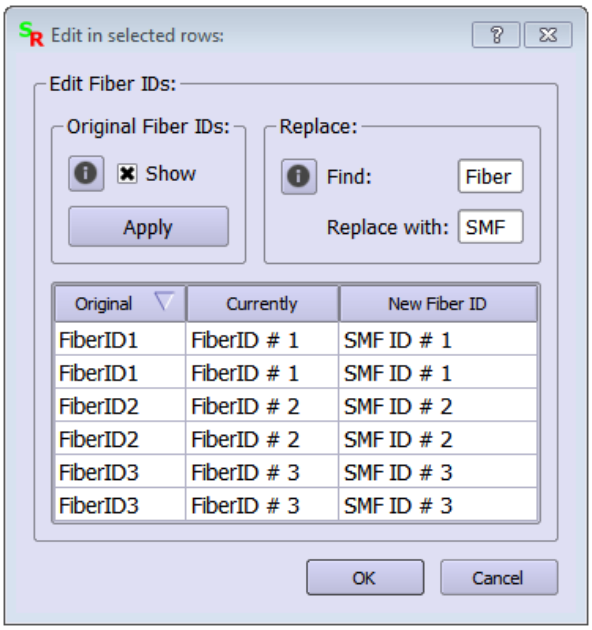
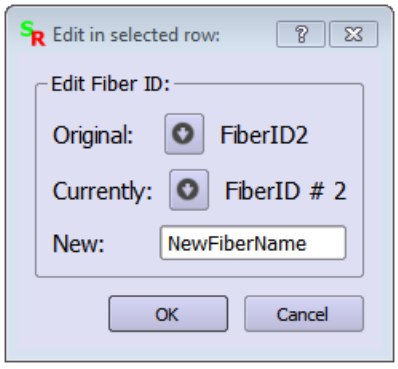


Fig. 21: Edit all selected Fiber IDs.

Fig. 22: Edit a single Fiber ID.



Note: The original Fiber IDs as read from the instrument are always kept available to provide a fallback position and to discourage from misuse.

Show/Hide consecutive numbers:

Consecutive numbers are fixed numbers automatically assigned by the SCF instrument to distinguish between measurement results that are given identical Fiber IDs by the user.

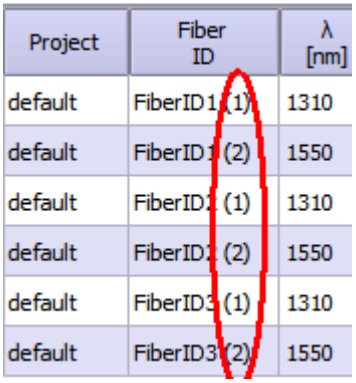
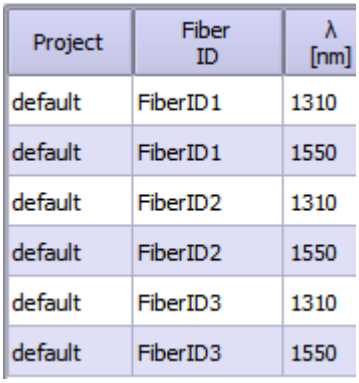
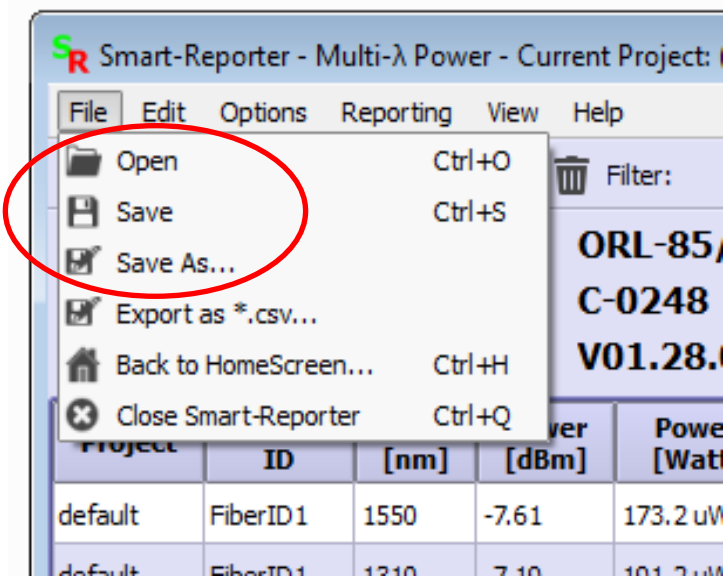


Fig. 23
Consecutive numbers shown.

Fig. 24:
Consecutive numbers hidden.



Storing and recalling the measurement results



As usual,

- "Save",
- "Save As.." and
- "Open"

is used for storing downloaded measurement results and recalling them within the SmartReporter.

Fig. 25:
"Open / Save / Save As…"

Notes:

- Any "Save" or "Save As .." will create a *.project file containing some device information and also a project directory of the same name:

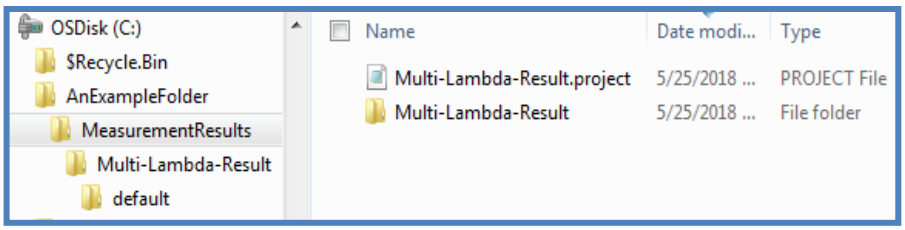


Fig. 26:
Clip from Windows Explorer

The subdirectories (like "default") of the project directory are filled with files containing the single measurement results.

- The images related to the "Inspection" and "PCM" application are stored as VGA (640 x 480 pixel) sized *.jpg files.

Recalling:

To recall the results, select "File" ➔ "Open" from the application window, then select and open the *.project file.

If no device is connected to the SmartReporter, you can open any of the applications windows by tapping the respective button on the home screen.

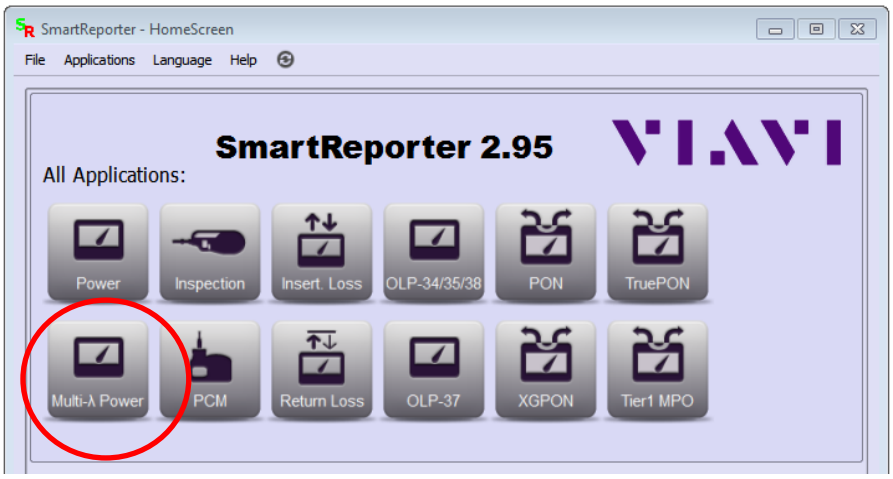
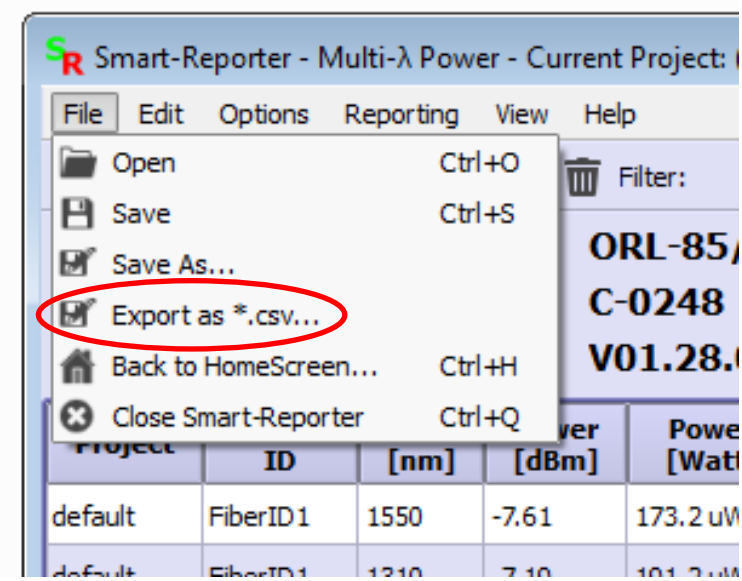


Fig. 27: HomeScreen application buttons

Exporting the measurement results



Select

"File" ➔ "Export as *.csv …"

if you want to export the measurement results as a "comma separated values" file.

There are two reasons you might want to create a *.csv file:

Fig. 28: "Export as *.csv..."

Reason 1: "**Copy of current table**":

You want to create a copy of the current table for spread sheet use (like Microsoft Excel).

Only the rows and columns presently displayed are transferred.

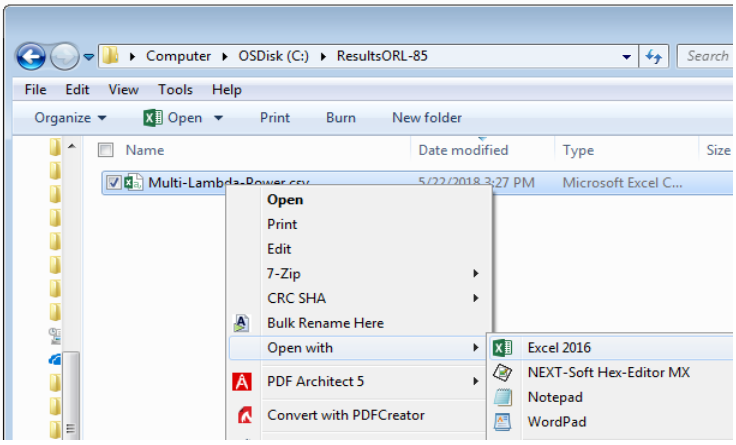


Fig. 29:
You can open the *.csv file directly with Microsoft Excel.

Fig. 30:
A database symbol

Reason 2: "**Copy of download data**":

You want to store all downloaded measurement results into a *.csv file to feed a database designed to meet your own requirements.

Included:

- Hidden columns
- Results filtered out

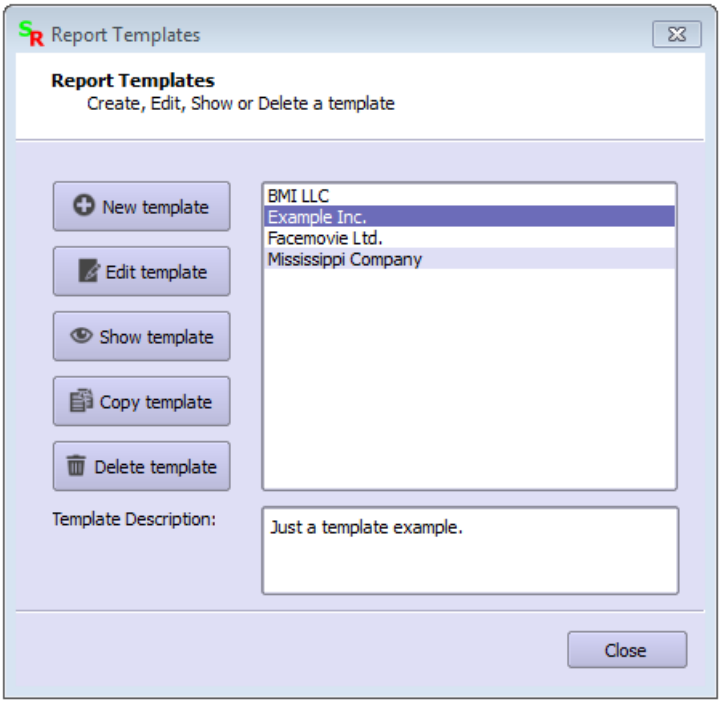
Not included:

- Results deleted

Notes:

- Each value has an associated description placed before.
- From within SCF instruments select
  "Data Storage" ➔ "Export Results to USB"
  to create *.csv files using the same format.
- If present, images can be stored optionally.

Creating a template (a report header) and a report



Templates contain information about the technician, the contractor and / or the customer associated with a report.

To create a new template or edit an existing one, select

"Reporting" ➔ "Report Templates"

from the application window.

Note: Unused (empty) fields will not be inserted into the report.

Fig. 31: "Report Templates" dialog

To finally create a Report, first click on the "Create Report" button to open a dialog for customizing the report:

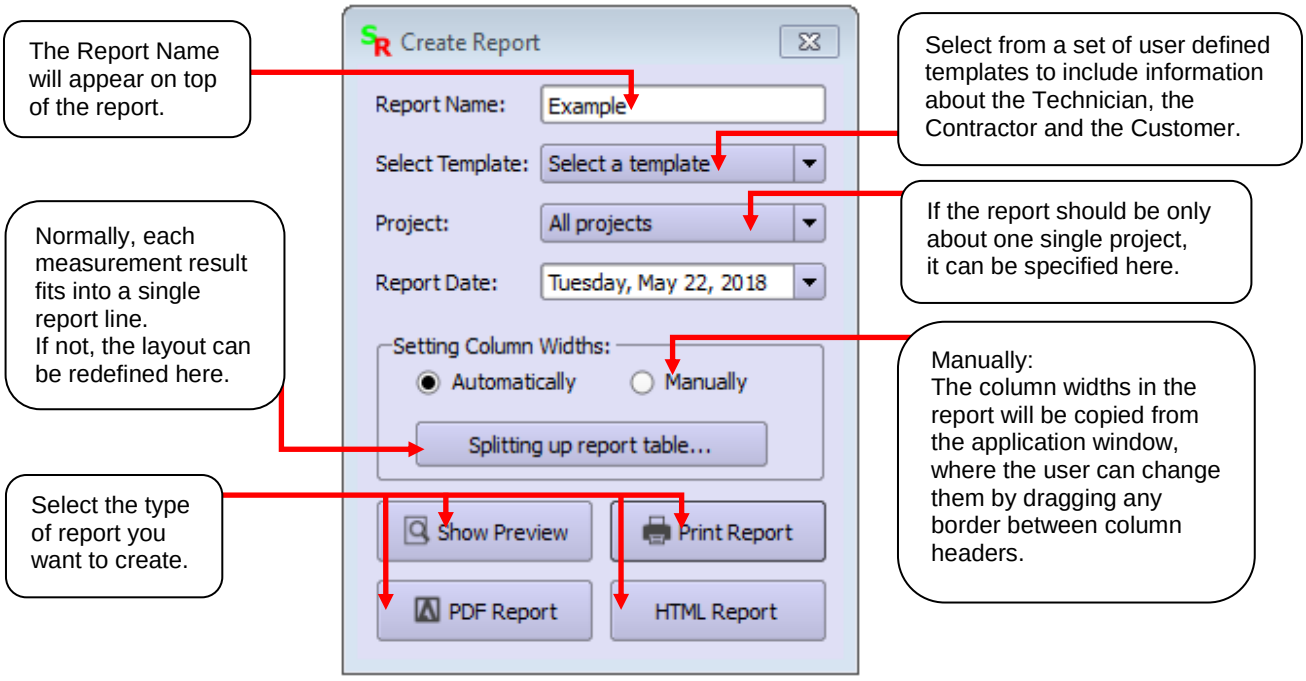


Fig. 32: "Create Report" dialog

Report date: Wednesday, May 09, 2018

Multi-λ Power Report - Example

Technician Information

Company Name: Technician AG
Technician Name: Mr. Technican
Address: Technicianstreet 12
Postal Code: 72770
City: Reutlingen
State: Baden-Württemberg
Country: Germany
Phone: 0163438574
Email: technician@office.com

Contractor Information

Company Name: Contractor AG
Contact Person: Mr. Contractor
Address: Contractorstreet 10
Postal Code: 66638
City: Reutlingen
State: Baden-Württemberg
Country: Germany
Phone: 9388847776
Email: contractor@office.de

Customer Information

Company Name: Customer AG
Contact Person: Mr. Customer
Address: Customerstreet 32
Postal Code: 98327
City: Reutlingen
State: Baden-Württemberg
Country: Germany
Phone: 928387363
Email: customer@office.de

Device Type:	ORL-85/21	Calibration Date:	2016/NOV/02
Serial Number:	C-0248	Software Version:	V01.28.00

Measurement results

Project: default

Fiber ID	λ [nm]	Power [dBm]	Power [Watt]	Power [dB]	Reference [dBm]	Auto-λ	Mod.Freq. [Hz]	Timestamp Date / Time
FiberID1	1550	-7.61	173.2 uW	-2.94	-4.67	Detected	CW	2017-04-03T16:28:29
FiberID1	1310	-7.19	191.2 uW	-2.47	-4.72	Detected	CW	2017-04-03T16:28:29
FiberID2	1550	-7.59	174.1 uW	-2.92	-4.67	Detected	CW	2017-04-03T16:32:52
FiberID2	1310	-7.14	193.0 uW	-2.42	-4.72	Detected	CW	2017-04-03T16:32:52
FiberID3	1550	-9.30	117.5 uW	-4.63	-4.67	Detected	CW	2017-04-03T16:33:13
FiberID3	1310	-9.08	123.5 uW	-4.36	-4.72	Detected	CW	2017-04-03T16:33:13

1

Fig. 33: Printed Report “Example”

Inspection / PCM: Additional features

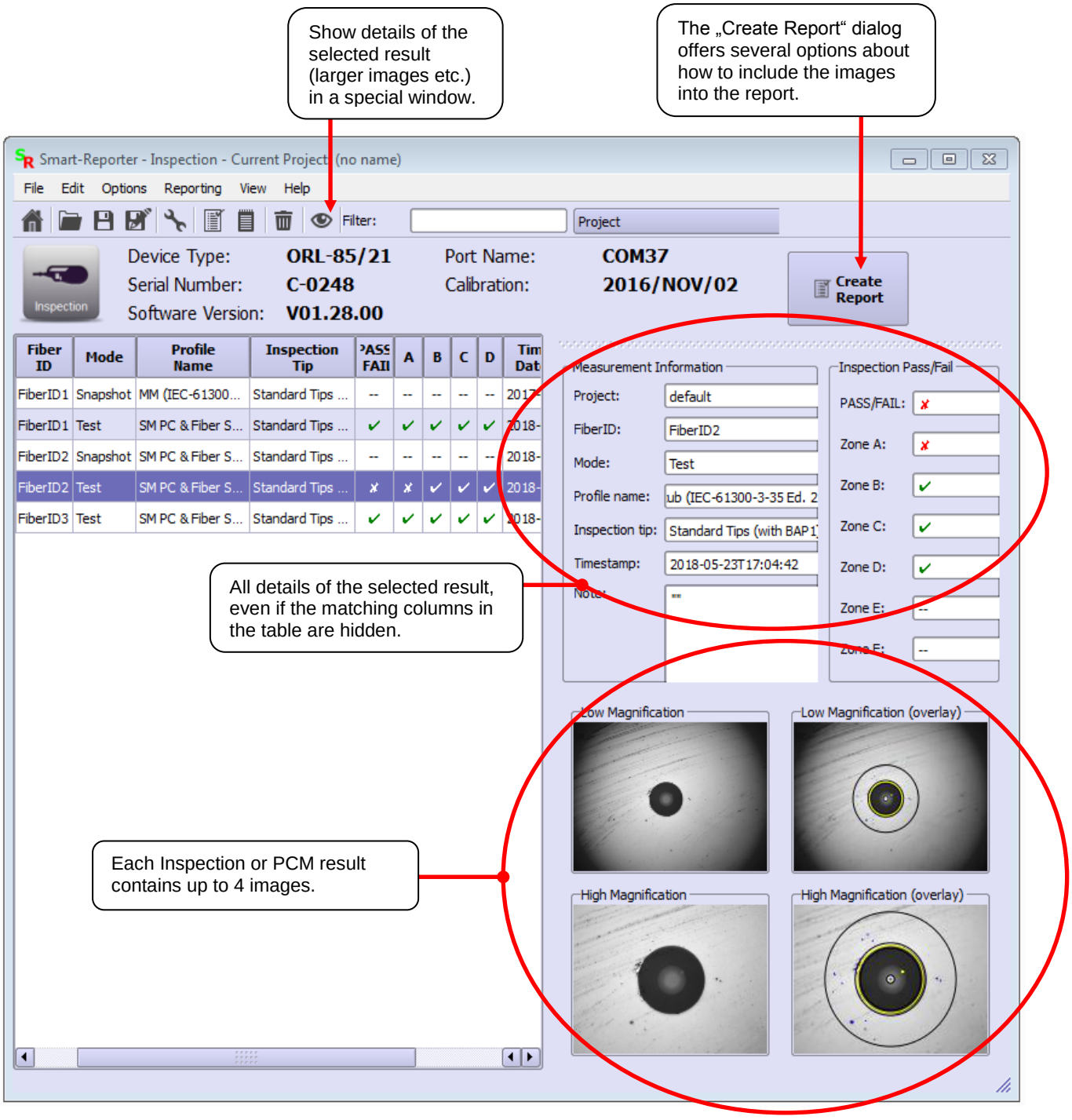
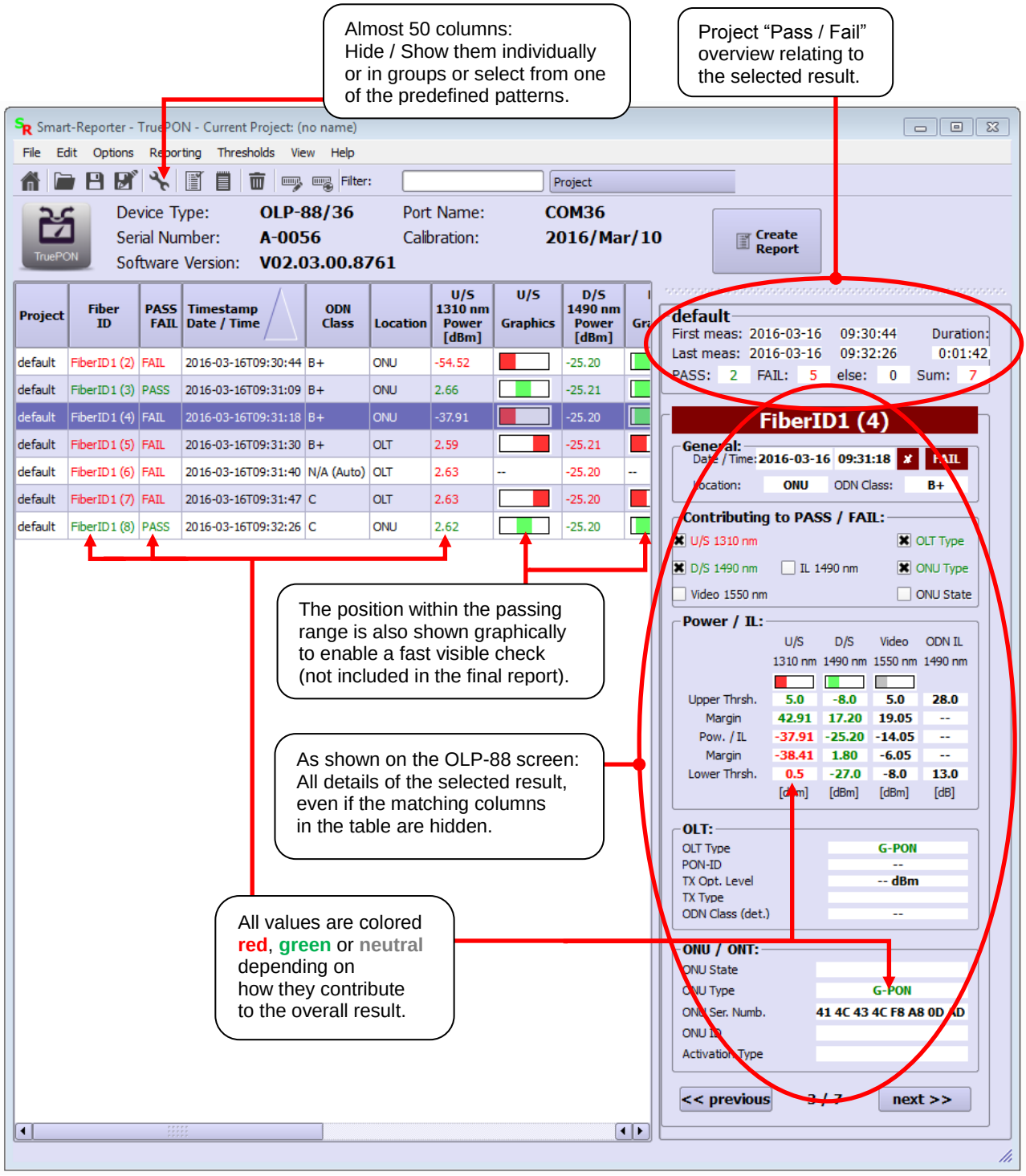


Fig. 34: Application window “Inspection”

TruePON (OLP-88): Additional features



Project	Fiber ID	PASS FAIL	Timestamp Date / Time	ODN Class	Location	U/S 1310 nm Power [dBm]	U/S Graphics	D/S 1490 nm Power [dBm]
default	FiberID1 (2)	FAIL	2016-03-16T09:30:44	B+	ONU	-54.52		-25.20
default	FiberID1 (3)	PASS	2016-03-16T09:31:09	B+	ONU	2.66		-25.21
default	FiberID1 (4)	FAIL	2016-03-16T09:31:18	B+	ONU	-37.91		-25.20
default	FiberID1 (5)	FAIL	2016-03-16T09:31:30	B+	OLT	2.59		-25.21
default	FiberID1 (6)	FAIL	2016-03-16T09:31:40	N/A (Auto)	OLT	2.63	--	-25.20
default	FiberID1 (7)	FAIL	2016-03-16T09:31:47	C	OLT	2.63		-25.20
default	FiberID1 (8)	PASS	2016-03-16T09:32:26	C	ONU	2.62		-25.20

Fig. 35: Application window “TruePON”

Tier1 MPO (MPOLP-85): Additional features (1)

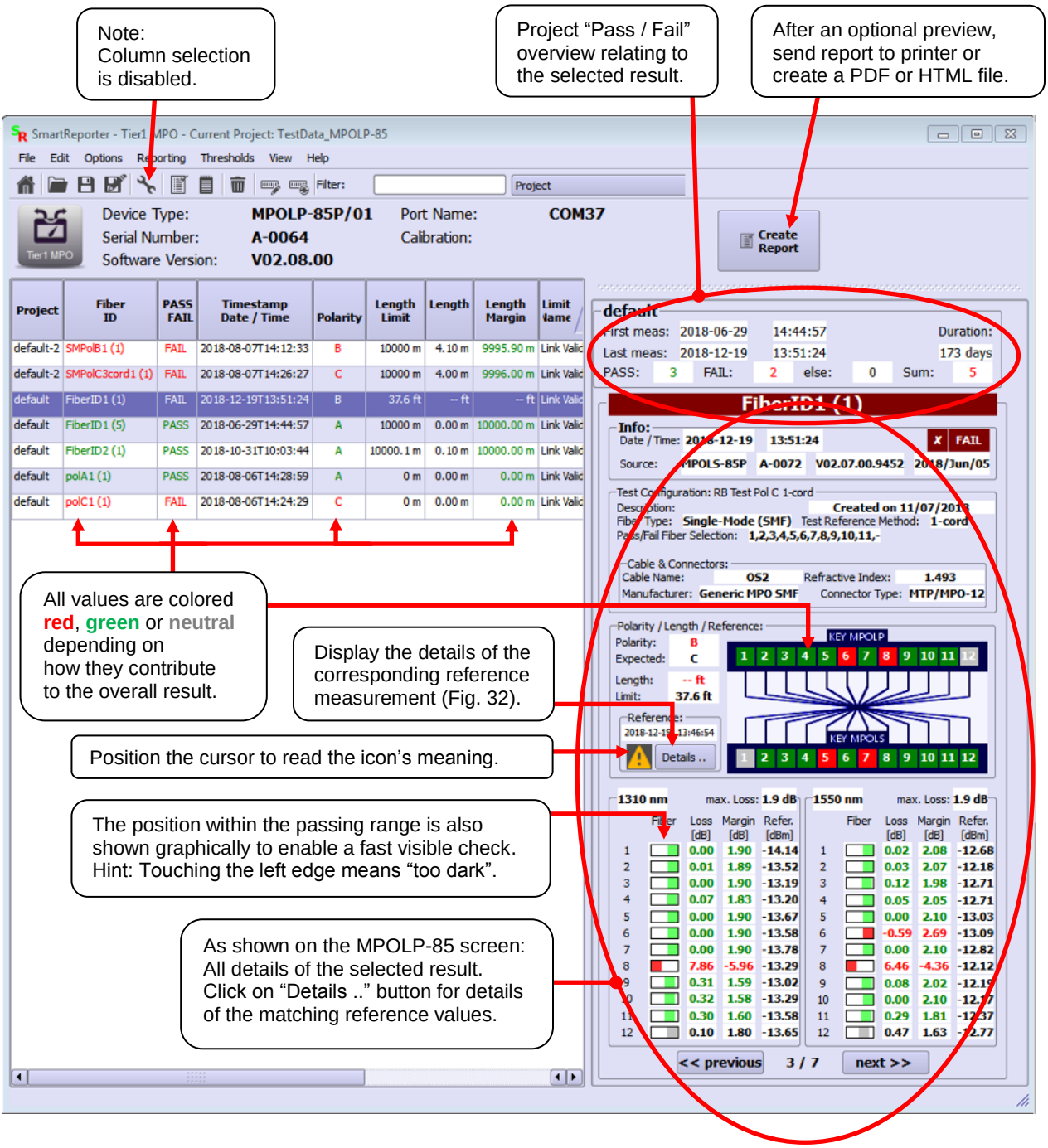


Fig. 36: Application window “Tier1 MPO”

Tier1 MPO (MPOLP-85): Additional features (2)

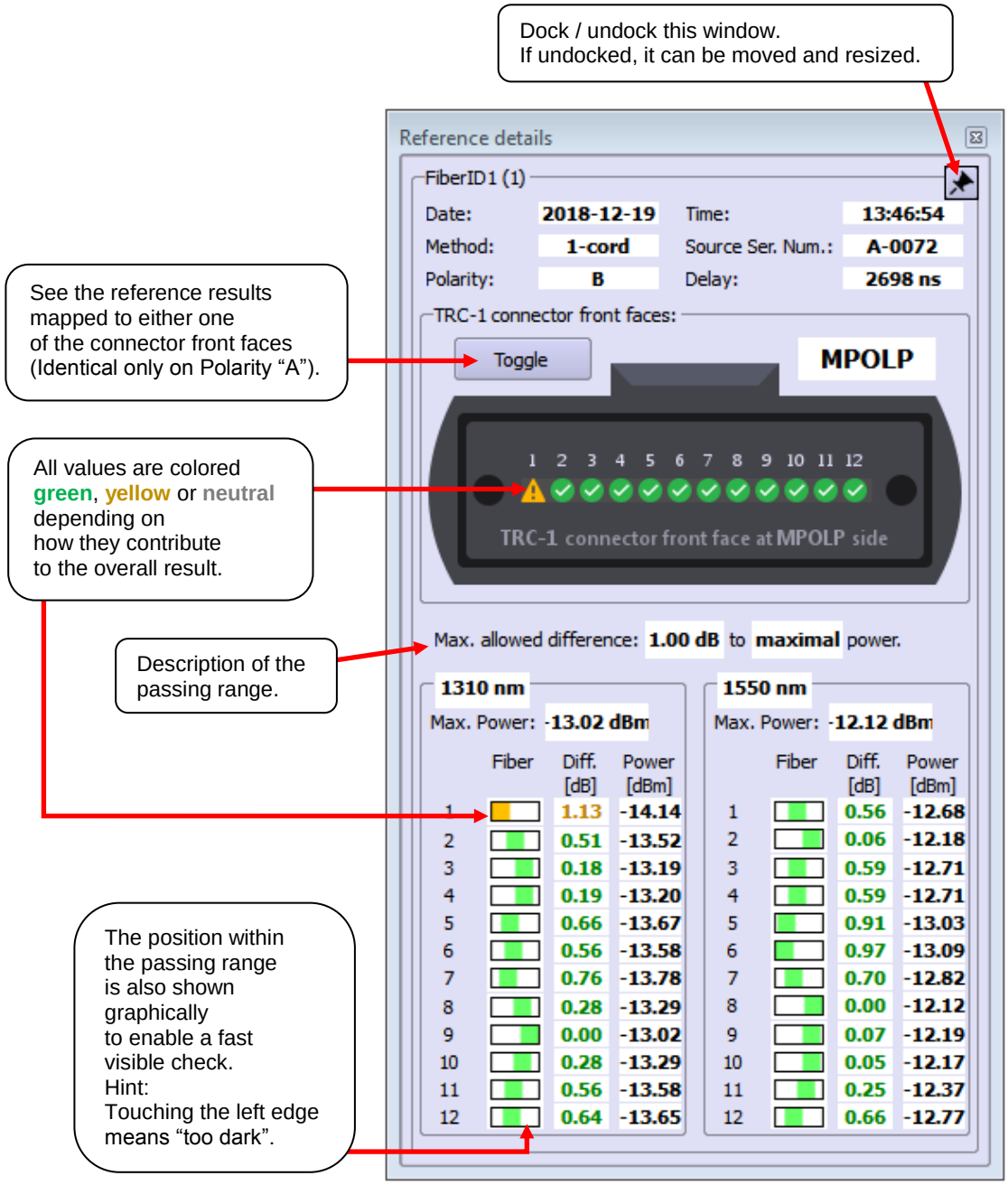
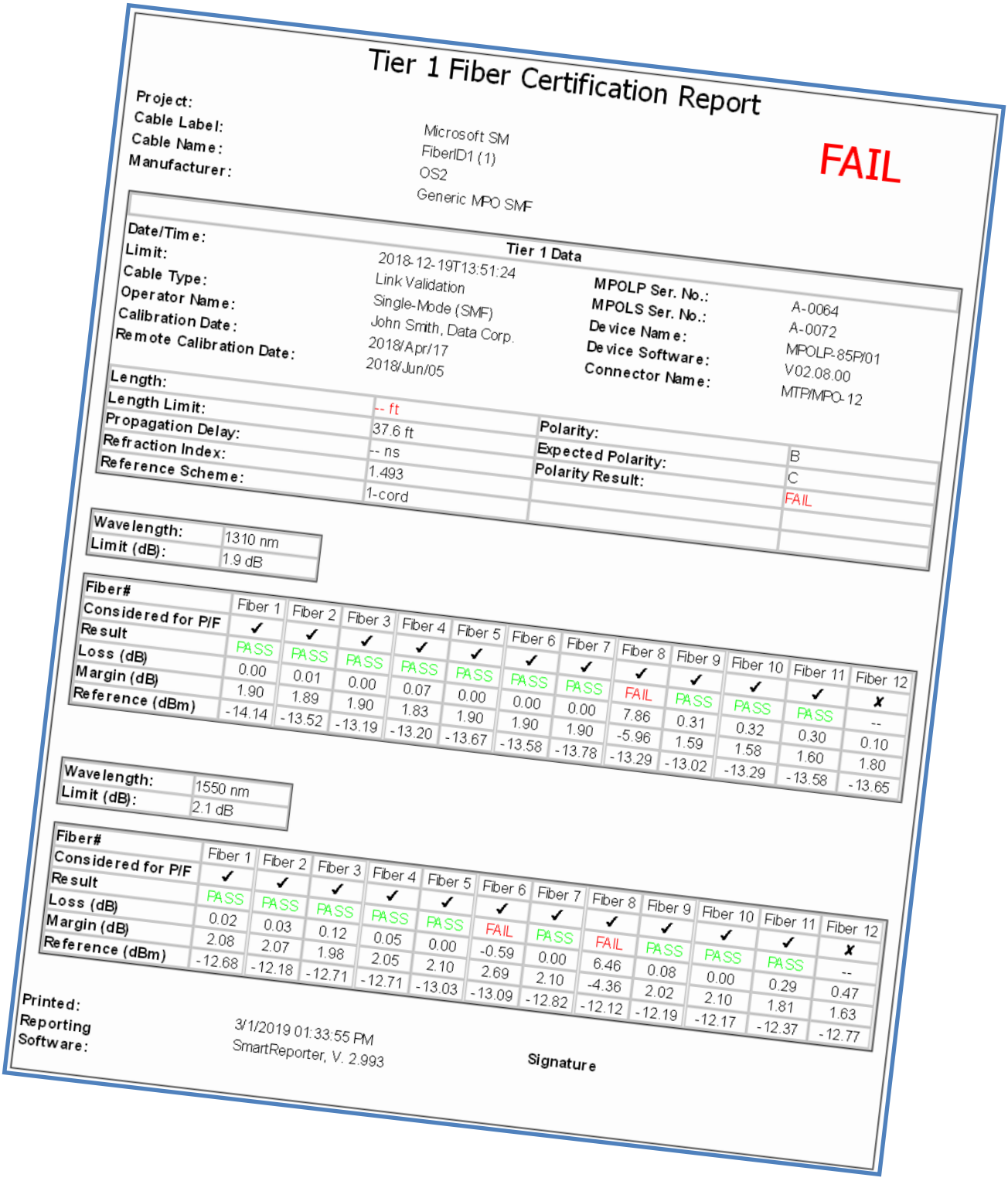


Fig. 37: Corresponding reference measurement details of selected result.

Tier1 MPO (MPOLP-85): Additional features (3)



Tier 1 Fiber Certification Report

FAIL

Project:	
Cable Label:	Microsoft SM
Cable Name:	FiberID1 (1)
Manufacturer:	OS2
	Generic MPO SMF

Tier 1 Data

Date/Time:	2018-12-19T13:51:24	MPOLP Ser. No.:	A-0064
Limit:	Link Validation	MPOLS Ser. No.:	A-0072
Cable Type:	Single-Mode (SMF)	Device Name:	MPOLP-85P/01
Operator Name:	John Smith, Data Corp.	Device Software:	V02.08.00
Calibration Date:	2018/Apr/17	Connector Name:	MTP/MPO-12
Remote Calibration Date:	2018/Jun/05		

Length:		Polarity:	
Length Limit:	-- ft	Expected Polarity:	B
Propagation Delay:	37.6 ft	Polarity Result:	C
Refraction Index:	-- ns		FAIL
Reference Scheme:	1.493		
	1-cord		

Wavelength:	1310 nm
Limit (dB):	1.9 dB

Fiber#	Fiber 1	Fiber 2	Fiber 3	Fiber 4	Fiber 5	Fiber 6	Fiber 7	Fiber 8	Fiber 9	Fiber 10	Fiber 11	Fiber 12
Considered for P/F	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
Result	PASS	PASS	PASS	PASS	PASS	PASS	PASS	FAIL	PASS	PASS	PASS	--
Loss (dB)	0.00	0.01	0.00	0.07	0.00	0.00	0.00	7.86	0.31	0.32	0.30	0.10
Margin (dB)	1.90	1.89	1.90	1.83	1.90	1.90	1.90	-5.96	1.59	1.58	1.60	1.80
Reference (dBm)	-14.14	-13.52	-13.19	-13.20	-13.67	-13.58	-13.78	-13.29	-13.02	-13.29	-13.58	-13.65

Wavelength:	1550 nm
Limit (dB):	2.1 dB

Fiber#	Fiber 1	Fiber 2	Fiber 3	Fiber 4	Fiber 5	Fiber 6	Fiber 7	Fiber 8	Fiber 9	Fiber 10	Fiber 11	Fiber 12
Considered for P/F	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
Result	PASS	PASS	PASS	PASS	PASS	FAIL	PASS	FAIL	PASS	PASS	PASS	--
Loss (dB)	0.02	0.03	0.12	0.05	0.00	-0.59	0.00	6.46	0.08	0.00	0.29	0.47
Margin (dB)	2.08	2.07	1.98	2.05	2.10	2.69	2.10	-4.36	2.02	2.10	1.81	1.63
Reference (dBm)	-12.68	-12.18	-12.71	-12.71	-13.03	-13.09	-12.82	-12.12	-12.19	-12.17	-12.37	-12.77

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Fig. 38: Printed MPO Report (one page per measurement result).

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