USER MANUAL

FX40/45 Series

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1.0 Introduction

1.1 Summary

This manual describes characteristics of both FX40 and FX45 optical test devices, as they are very similar in operation.

The operator is assumed to have received basic training in fiber optics and related testing and measurement practices.

1.2 Disclaimer

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2.0 General Information

2.1 Overview

The FX40/45 series optical loss test sets can be factory configured to meet customer requirements. A single device can combine several test functions for fiber optic network testing and measurement. The most popular optical combinations are listed below:

- OPM (Optical Power Meter)
- OPM + VFL (Visual Fault Locator)
- OPM + OLS (Optical Light Source)
- OLS (pure Laser Source)
- OLS + VFL
- ORL (Optical Return Loss) + BiDi LTS (auto-bi-directional) + OPM + OLS

The above units have the following parameters:

- The FX40/45 Optical Power Meter has >7 calibrated wavelengths (model dependent PM1/PM2/PM3, see datasheet for exact wavelengths).
- Visual Fault Locator (not available in ORL model) with the CW (Continuous Wave) mode and two modulation modes (1 Hz and 2 Hz)
- Laser Source up to 2 wavelengths (1310/1550 or 1310/1490 nm)
- ORL Meter (two wavelengths 1310/1550 or 1310/1490nm)
- Automated Optical Loss Test/ORL Meter (two configurations 1310/1550nm or 1310/1490nm) for bidirectional testing integrated optical receiver and transmitter linked to the connector on the top panel

Key features:

- InGaAs photodiode with large sensitive area (1000 µm) integrated into the front panel adaptor
- Wavelength detection (Wave ID code) – FX45 series only
- Frequency/tone detection for fiber identification
- Interchangeable optical adaptors for Power Meter and Light Source
- Extremely rugged, pocket-sized form factor
- Extra-long battery life, AA type alkaline or rechargeable NiMH
- Client USB software for data transfer and remote control

2.2 Definitions

Optical Interface: PC, UPC, APC (designates the type of surface polish):

- PC (regular Physical Contact): better than -45 dB return loss
- UPC (Ultra Physical Contact): better than -55 dB return loss
- APC (Angled Physical Contact): better than -65 dB return loss

Optical Pigtail: A piece of fiber (typically tight-buffered) terminated with an Optical Connector on one end (see below).

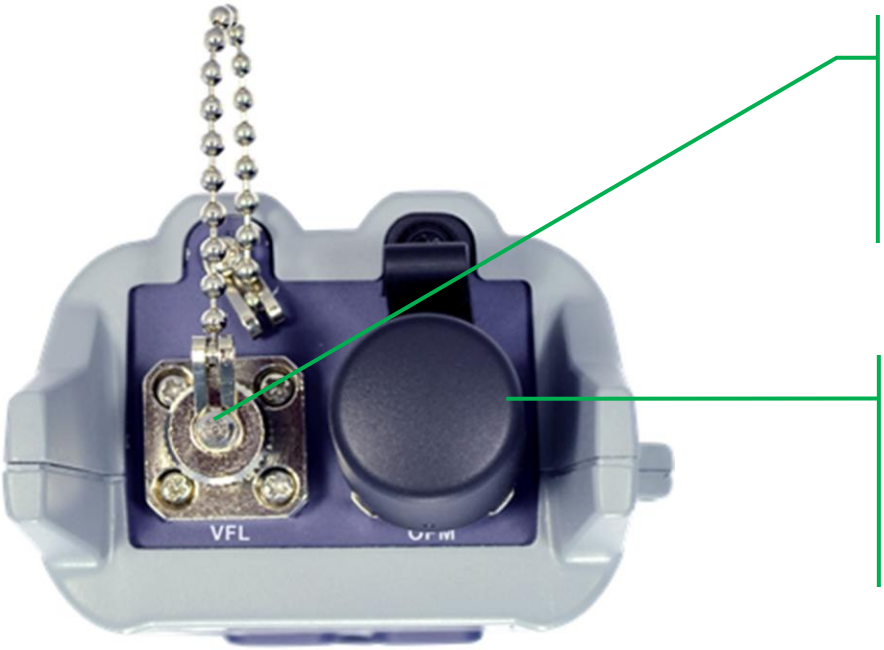
Optical Connector: A Pigtail is terminated with a MALE type connector. There are a variety of optical connectors, such as FC, SC, LC, MU, etc., with the end faced either ‘flat’ or ‘angled’ Optical Polish (for example FC/UPC or FC/APC).

Optical Adapter: (a.k.a. mid-coupler or bulkhead) The Optical Adapter/Coupler is used to connect two male Optical Connectors together (Example: FC-FC, FC-SC, FC-LC). On the test set, one side of the coupler may be changed by user using universal/variable adapters (see Variable Optical Adapter). However, the connectors have to be of the same Optical Polish (for example FC/UPC or FC/APC). Optical Adapters are located on instrument test ports (OTDR, Power Meter, Light Source, OSA, etc.), network equipment front panels or patch panels

Variable Optical Adapter: Unlike with the Fixed Optical Adapter, one or both end female connectors of a Variable Optical Adapter can be changed to accommodate different male Optical Connectors.

2.3 FX40/45 Optical Test Ports

The general layout of the device is shown below. Please note the color and keypad buttons will vary based on model and optical configuration.



Port 2: OLS or VFL only

OLS: Optical Light Source at 1310/1550 or 1310/1490 nm

VFL: 650 nm visible laser

Port 1:

PM1: standard power meter

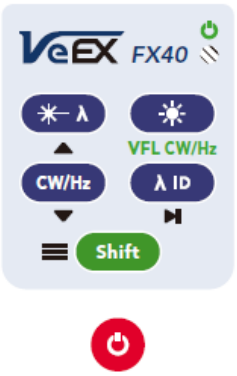
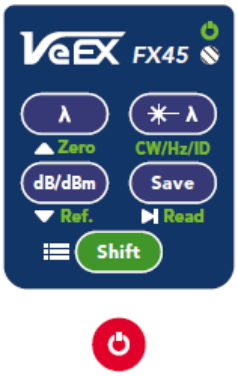
PM2: high power meter

ORL: return loss meter

PM3: BiDi power meter (ORL/OLS)

Note: *For ORL + BiDi configuration, there are no Port 2 optional available.*

2.4 FX40/45 Keypad Layouts

FX40	FX45	Model
		OPM + VFL or OPM
		LS + VFL or LS
N/A		OPM + LS
N/A		ORL/OPM BiDi OPM LS

2.5 FX40/45 Control Elements

The control buttons are described in the table below:

OPM + VFL

View	Name	Function		
		Press	**[Shift] then press**	**Press and hold**
	Calibration Wavelength for Power Meter	Changes the current wavelength; In the **Menu** mode: Increases the current field value. In the **Read** mode: Selects the memory cell to be read.	Calibrates the zero level	None
	Absolute Relative OPM	Cycle between absolute (dBm) and relative power (dB) measurement In the **Menu** mode: Decreases the current field value.	Sets the current power value as reference	None
	VFL	Switches the Visual Fault Locator ON/OFF, Continuous Wave mode	Turn the Visual Fault Locator ON/OFF	Screen backlight ON/OFF
	Save	Saves the current power values to the current memory cell. In the **Menu** mode: Selects the field.	Enters the Read mode, showing onscreen the saved results from the current memory cell	None
	Shift	Enters the **Shift** mode (see the next column).	None	Enters the **Menu** mode

OLS + VFL

View	Name	Function		
		Press	**[Shift] then press**	**Press and hold**
	Optical Light Source Wavelength	Turn Source ON/OFF and cycle through available wavelengths	None	None
	Optical Light Source Mode	Cycles through Modulation mode: Continuous Wave, 270 Hz, 1000 Hz, 2000 Hz	None	None
	VFL	Turn the Visual Fault Locator ON/OFF	Switches the Visual Fault Locator ON/OFF, 1 Hz and 2 Hz	Screen backlit ON/OFF
	WaveID	Turn WaveID mode ON/OFF (**FX45 only**); auto detect incoming wavelength	None	None
	Shift	Enters the **Shift** mode (see the next column)	None	No Auto Off or 1-hour Auto Off

OLS + OPM

View	Name	Function		
		Press	**[Shift] then press**	**Press and hold**
	OPM Wavelength	Changes the current wavelength; In the **Menu** mode: Increases the current field value. In the **Read** mode: Selects the memory cell to be read.	Calibrates the zero level	None
	Absolute Relative OPM	Cycle between absolute (dBm) and relative (dB) power measurement mode. In the **Menu** mode: Decreases the current field value.	Sets the onscreen signal as reference	None
	Optical Light Source Wavelength	Turns Source ON/OFF and cycle through available wavelengths	Changes the Light Source Mode: Continuous Wave, 270 Hz, 1000 Hz, 2000 Hz	None
	Save	Saves the onscreen results to the current memory cell; In the **Menu** mode: selects field.	Enters the **Read** mode, shows onscreen the saved results from the current memory cell.	None
	Shift	Enters the **Shift** mode (see the next column)	None	Enters the **Menu** Mode.

ORL + OPM-BiDi⇵ + OLS (FX45 only)

View	Name	Function		
		Press	**[Shift] then press**	**Press and hold**
	OPM Wavelength	Changes the current wavelength; In the **Menu** mode: Increases the current field value. In the **Read** mode: Selects the memory cell to be read.	Calibrates the zero level.	None
	Absolute Relative OPM	Cycle between absolute (dBm) and relative (dB) power measurement mode. In the **Menu** mode: Decreases the current field value.	Sets the onscreen signal as reference	None
	Optical Light Source Wavelength	Turns Source ON/OFF and cycle through available wavelengths.	Changes the measurement mode: ORL, OPM, Bidirectional	None
	Save	Saves the onscreen results to the current memory cell; In the **Menu** mode: Selects field.	Enters the **Read** mode, shows onscreen the saved results from the current memory cell.	None
	Shift	Enters the **Shift** mode (see the next column)	None	Enters the **Menu** mode.

Note: *The FX40/45 is designed for one-hand operation.*

[Shift] then [button] implies that after you have pressed **[Shift]** then you have about 3 seconds to press another button to execute the operation (green text). The ‘UP’ arrow will display on the screen during that 3 second period.

3.0 Preparing for Operation

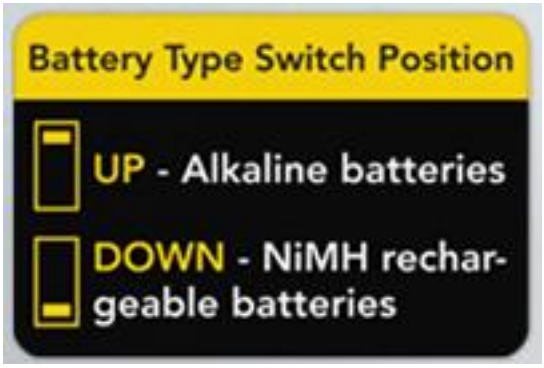
3.1 Battery and Connectors

Prior to using the device, you need to:

1. Charge the battery (factory-configured option). While charging, the LED indicator is illuminated. The LED switches off when the battery is fully charged.

   Note: *The device can use regular alkaline batteries or NiMh rechargeable batteries.*

   WARNING: Due to different voltage, you must place the battery switch to the corresponding position (UP for alkaline batteries and DOWN for NiMh rechargeable batteries). The switch in the battery compartment and the short instruction on its cover are shown below:



2. Install the optical adapters necessary for your testing. Always remember to clean the fiber before connecting it to the device.

3.2 Setting Up Your Device

To set the FX40/45 parameters, enter the **Menu** mode by an extended press of the **[Shift]** button. The resulting screen parameters are shown in the table below:

Parameters	Possible values	Description
A.OFF	OFF, 15min, 30 min, 45 min	Time before the device automatically switches off after the last press of a button. If 'OFF' is selected, the device does not switch off automatically.
TIME		Setting the time
DATE		Setting the date

The necessary field is selected with the help of the ▶| button. The necessary parameter is selected with the help of the ▲ and ▼ buttons. To exit the **Setting** mode, press and hold the **[Shift]** button again.

4.0 Fiber Measurements

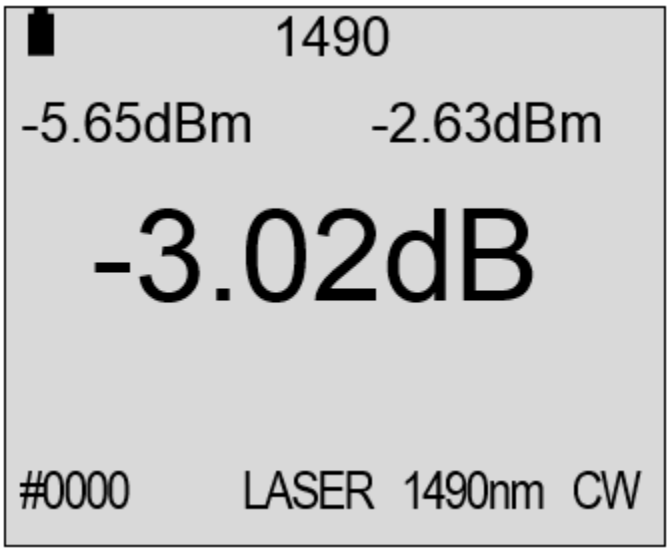
4.1 Optical Light Source

To use your device as a stable light source, proceed as follows:

1. Press the red Power button to turn ON the FX40/45.
2. Press the **[☼—λ]** button to turn ON/OFF the Light Source and toggle to the desired wavelength (Example OFF/1310/1550).
3. Press the **[CW/Hz]** or **[ID]** (FX40) or **[Shift]** then **[☼-λ]** (FX45) to access the (CW/Hz/ID) mode and select the desired laser operating mode.

   See Section 2.5 for FX40/45 Controls.

   A typical measurement screen is shown below:



4.2 Zeroing the Optical Power Meter

This procedure should be performed anytime the measurement conditions change significantly. When in doubt, the user should perform this procedure prior to making any measurements.

Example: Testing in cold outdoor temperatures and then moving testing within heated building.

4.2.1 Zero Value Calibration for Optical Power Meter

1. Close the dust cap on test port labeled OPM or ORL.
2. Press the red **Power** button.
3. Enter the Power Meter mode by pressing **[Shift]** then **[☼-λ].** Repeat this step until the **PMx** mode is shown on the top of the display.
4. Press **[Shift]** then **[λ]** to calibrate the dark current zero value.
5. The display will show briefly show **ZERO** if the procedure is performed correctly.

4.3 Optical Power Meter

The device can be used to measure absolute optical power across the dynamic range with specified accuracy (specification will vary with models; but usually 5% and range +10…-70dBm). The OPM wavelength must be set the same as the incoming Light Source wavelength.

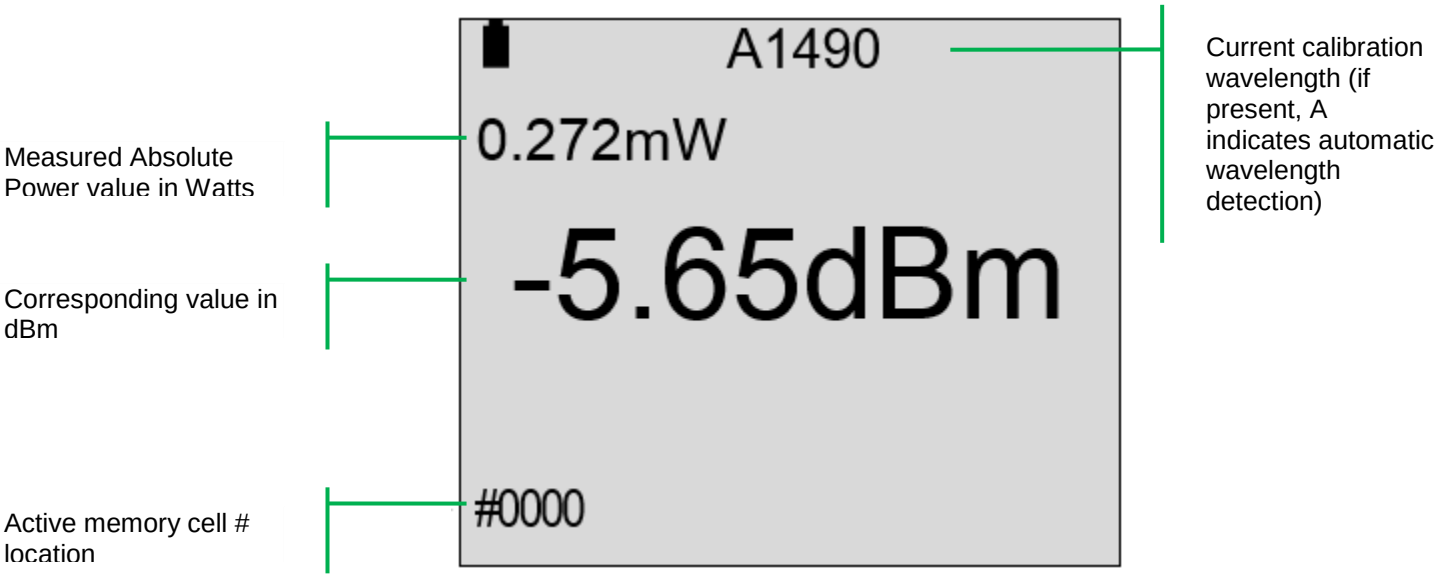
If the Light Source supports Wave ID (FX45), the incoming wavelength (A----) will be detected automatically by a compatible VeEX device e.g. FX45, FX50, FX300, RXT, TX300s.

To use the Optical Power Meter:

1. Press the red **Power** button to turn ON the FX40/45.
2. Enter the Power Meter mode by pressing **[Shift]** then **[☼-λ]**. Repeat this step until the **PMx** mode is shown on the top of the display next to the battery icon.
3. Press the **[λ]** to select desired wavelength (1310/1490/1550/1625/1650/A----).
4. Press **[dB/dBm]** to switch between dB and dBm mode.

   Refer to Section 2.5 Controls.

   A sample display when in PMx mode is shown below:



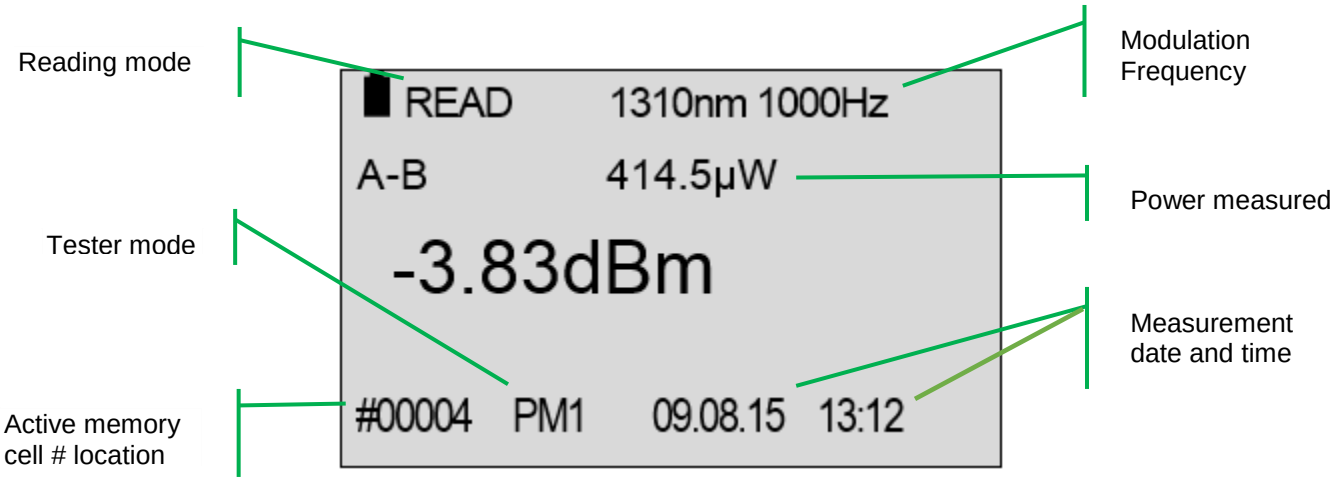
4.4 Saving and Viewing the Measurement Results

To save the measurement results to the device's memory, press the [SAVE] button.

To change the memory cell # to save results, press **[Shift]+[Save]** to access the **Read** mode. The corresponding memory cell # is indicated in the bottom-left corner (see the measurement screen example below). The available memory cells will vary depending upon model (FX40 is 100 and FX45 is 4096). Each cell stores a single measurement value. To select a cell to save, press the ▲ and ▼ buttons while in the **Read** mode. To exit the **Read** mode, press the **[Shift]+[Save]** buttons again.

WARNING: Please note that you are defining what memory cell will be used to save the current measurement result. You should select an EMPTY cell for saving, otherwise the new result over-writes the previous result.

If your device is equipped with a built-in clock, the saved measurement result will have a time stamp (see example below).



4.5 Measuring Relative Optical Power Levels (Loss)

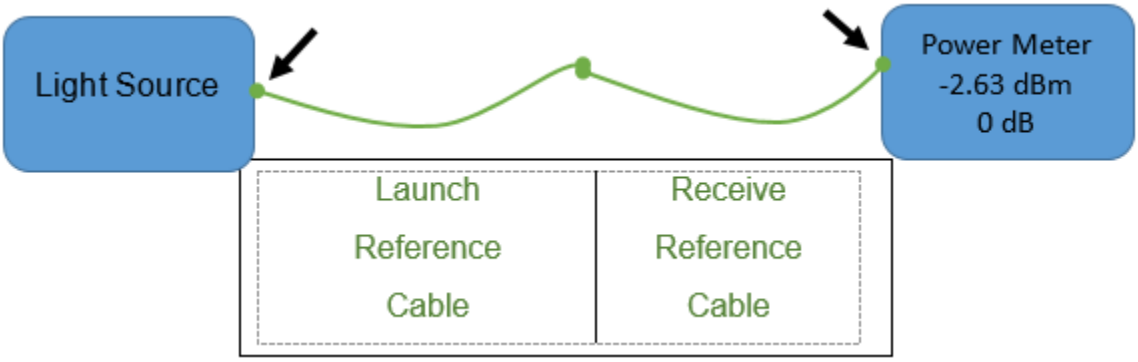
This procedure describes how to measure the loss of a fiber span or across an optical component. Before measuring the FUT (Fiber Under Test), a "0 dB" reference level must be established for each wavelength. A reference cable (**at least one**, but two or three reference cables can also be used depending on the measurement technique) to connect the Light Source directly to Power Meter.

Referencing can be accomplished using the end-to-end method (most accurate) or the loop-back method when source and meter cannot be brought together and each test set has a unique test port for Light Source and Optical Power meter.

Clean each optical connector (test sets and patchcords) before connecting. *Use the DI-1000 FiberScope to inspect each connector.*

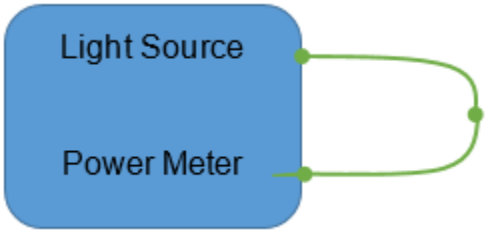
4.5.1 Two Patchcord '0 dB' Referencing Method

The diagram shows a "two reference cable" technique. Reference Cables are connected together via an Optical Adapter (mid-coupler) when setting the "0 dB" level.



4.5.2 Loop-back Referencing

If the test set has both a light source and a power meter, you can also set the the Reference "0 dB" level by using a loopback technique as shown below.

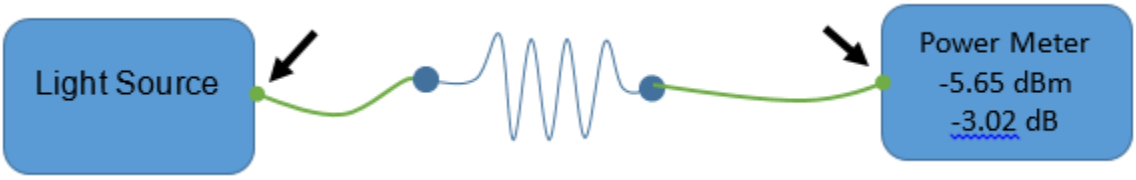


To set the "0 dB" level, proceed as follows:

1. Press the red **Power** button to turn ON both Light Source and Optical Meter. Let the source to warm up 15 minutes to allow lasers to stabilize.
2. Connect the two patchcords to the two devices as shown above.
3. Press the **[☼-λ]** button turn on and select the Laser wavelength.
4. Press the **[CW/Hz]** button to get into **CW** mode (not required in ORL+Bi-Di model).
5. Press the **[λ]** button until the Optical Meter wavelength to match the Source wavelength. If available on Source, you can activate WaveID mode by pressing the **[λ ID]** button on FX40 or **[λ]** until A---- is displayed on FX45.
6. Press the **[dB/dBm]** button to get into the **dBm** mode on the Optical Meter.
7. Press **[Shift]** then **[dB/dBm]** to establish '0 dB' reference (Ref) on the Power Meter. The display will change to "-0.00 dB" on the display.
8. Repeat Steps 4-8 for each laser wavelength.

4.5.3 Measuring Loss of Fiber or Device

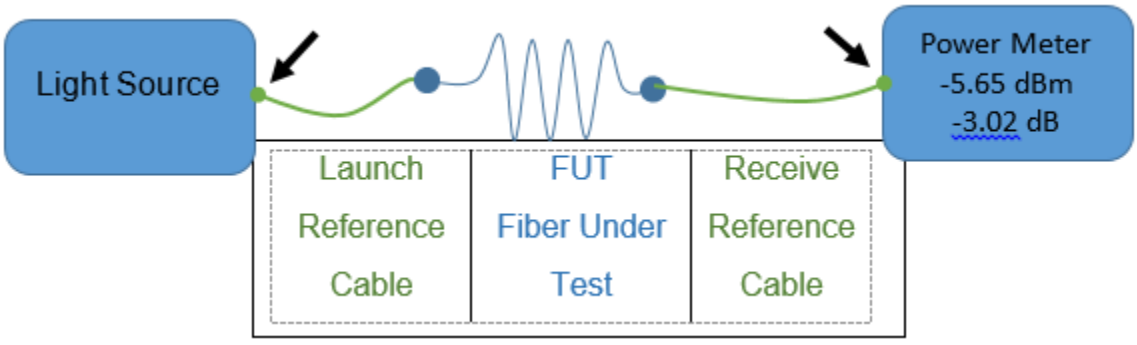
You are now ready to make loss measurements.



1. Clean the connectors for the FUT and place between the two reference cables using couplers as shown above.
2. Press **[Shift]** then **[SAVE]** to change the active memory cell #.
3. Press the **[Save]** button to save measurement results.

   The figure below shows a typical display when you are in relative **Loss Measurement** mode (dB) after the patchcord reference levels have been established.

The larger digits represent the relative optical power level in dB (i.e. the loss of the device or fiber under test).



Note: *The procedure of setting the "0 dB" level should be performed every time a reference cable is disconnected/reconnected from either the optical light source and/or optical power meter (see above figure).*

4.6 Optical Return Loss (ORL)

4.6.1 Zero Level Calibration (only if necessary)

This procedure is performed if the measurement conditions change significantly such as bringing equipment from cold environments into warm buildings.

1. Make sure the dust caps for the ports on the top panel are closed.
2. Press red **POWER** button to turn **ON** the test set.
3. Enter the **ORL** mode by pressing **[Shift]** then **[☼-λ],** until '**ORL**' appears in the top left corner.
4. Press the **[☼-λ]** button to turn ON the laser. The word '**LASER'** and the wavelength value appear at the bottom of the screen.
5. Calibrate the Zero level by pressing **[Shift]** then **[Zero]. ZERO** appears onscreen as a result.
6. Repeat Steps 3-5 for all wavelengths.

   The zero level in your device now calibrated. It is recommended that all previously stored reference values be re-established. To make your device fully ready for measurements, wait for a few minutes so that the calibrated laser source stabilizes.

4.6.2 ORL Reference Value Calibration

Before each calibration, turn your laser ON for 10-15 minutes to allow the output power to stabilize. This procedure should also be performed if the measurement conditions change significantly. The far-end connector of the reference cable should be a UPC connector (-14dB) for the calibration procedure.

1. Clean each optical connector (test sets and patchcords) before connecting. *Use the DI-1000 FiberScope to inspect each connector.*
2. Press the red **POWER** button to turn ON the test set.
3. Connect the reference patchcord to the ORL port.
4. Press **[Shift]** then **[☼-λ]** to enter the **ORL** mode in which '**ORL**' will display on the top left corner.
5. Pressing the **[☼-λ]** button to turn ON the laser, which results in 'LASER' and the wavelength value, will display at the bottom of the screen.
6. Press **[Shift]** then **[dB/dBm]** to set the **ORL REF** level. The '**-14.00 dB**' value appears on screen and will begin flashing.

   Note: *If the calibrated value for the patchcord differs from '-14.00 dB', adjust the value by pressing the Up or Down arrow button.*
7. Press **[Shift]** to immediately store the value or wait 20 seconds after which time the value will be automatically saved.
8. Repeat Steps 4-6 for the next wavelength.

   The ORL is now calibrated and you are ready to perform measurements.

4.6.3 Measuring the Optical Return Loss (ORL)

Note: *Turn ON the laser for 10-15 minutes whenever testing has been interrupted for any extended length of time and the laser has been turned OFF.*

To measure the optical return loss (ORL), disconnect the calibrated patchcord from the ORL port and connect the optic fiber to be tested onto ORL. The ORL measurement result for the fiber under test will appear on the display.

Press '**SAVE**' if you wish to save this measurement to the memory cell # shown on display. *See section 4.4.*

4.7 Automatic Bi-Directional Measurement (AUTO)

To perform automatic bi-directional measurement of optical power and ORL (optical return loss), you will need two FX45 devices at the opposite ends of an optic fiber, operated by two technicians who can communicate real-time.

4.7.1 Reference Preparation for AUTO Bi-Directional Measurement

4.7.1.1 Zero Value Calibration for AUTO Bi-Directional Measurement of Optical Power

This Zero value calibration procedure is also described in Section 4.1.1 and must be performed on **both FX45** if the measurement conditions change significantly.

1. Close the dust cap on test port labeled OPM or ORL.
2. Press the red **Power** button.
3. Enter the Power Meter mode by pressing **[Shift]** then **[☼-λ].** Repeat this step until the **PMx** mode is shown on the top of the display.
4. Press **[Shift]** then **[λ]** calibrate the zero value.
5. The display will show briefly show **ZERO** if the procedure is performed correctly. If not, repeat Step 3.

4.7.1.2 Zero Value Calibration for AUTO Bi-Directional Measurement of ORL

This Auto ORL Zero value calibration procedure is the same as described in Section 4.5.1 and must be performed on **both FX45** if the measurement conditions change significantly.

1. Make sure the dust caps for the ports on the top panel are closed.
2. Press red **POWER** button to turn ON the test set.
3. Enter the ORL mode by pressing **[Shift]** then **[☼-λ]**, until '**ORL**' appears in the top left corner.
4. Pressing the **[☼-λ]** button to turn ON the laser. The word '**LASER**' and the wavelength value appear at the bottom of the screen.
5. Calibrate the Zero level by pressing **[Shift]** then **[λ]**, which results in the word 'ZERO', will appear onscreen.
6. Repeat the Steps 4-5 for the other laser.

The ORL zero level in your device now calibrated. It is recommended that all previously stored reference values be re-established. To make your device fully ready for measurements, wait for a few minutes so that the calibrated laser source stabilizes.

4.7.1.3 ORL Reference Value Calibration

This ORL reference value calibration procedure is also described at Section 4.5.2 and must be performed on **both FX45** if the measurement conditions change significantly.

Before each calibration, turn your laser ON for 10-15 minutes to allow the output power to stabilize. This procedure should also be performed if the measurement conditions change significantly. The far-end connector of the two reference cable should be a UPC connector (-14dB) for the calibration procedure.

Clean each optical connector (test sets and patchcords) before connecting. *Use the DI-1000 FiberScope to inspect each connector.*

1. Press the red **POWER** button to turn ON the test set.
2. Connect the reference patchcord to the ORL port.
3. Press **[Shift]** then **[☼-λ]** to enter the ORL mode which results with '**ORL**' appears in the top left corner.
4. Pressing the **[☼-λ]** button to turn ON the laser which results in '**LASER**' and the wavelength value appears at the bottom of the screen.
5. Press **[Shift] + [dB/dBm]** to calibrate the ORL REF level. The **'-14.00 dB'** value appears on screen and will begin flashing.

   Note: *If the calibrated value for the patchcord differs from **'-14.00 dB'**, adjust the value by pressing the Up or Down arrow button.*
6. Press **[Shift]** to immediately store the value or wait 20 seconds after which time the value will be automatically saved.
7. Repeat Steps 4-6 for the second wavelength.

The ORL is now calibrated and you are ready to perform measurements.

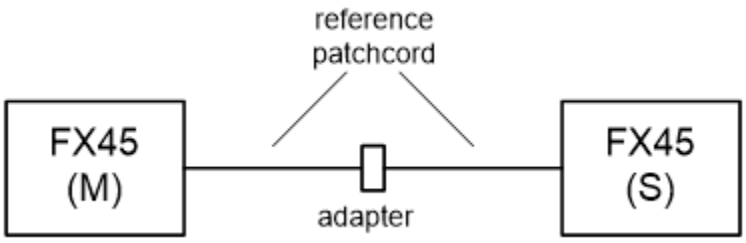
4.7.2 Referencing the FX45s for AUTO Bi-Directional Measurement

To perform this procedure, both devices must be next to each other.

Note: *The FX45 devices **cannot** be remotely referenced (placed at the opposite ends of the fiber under test).*

Establish the output reference value for the two reference cables that will be used to perform your testing.

1. Each unit must be configured as the Master **or** the Slave device.
2. Connect the two FX45s as shown below with the two reference patch cords used in the previous reference procedures:



   Note: *Pressing **[Shift]** then **[☼-λ]** cycles through 3 modes PM>ORL>Auto.*
3. Activate the automatic bi-directional test mode (AUTO TEST) by pressing **[Shift]** then **[☼-λ]** until **AUT TIMEOUT** countdown is displayed.

4. On one FX45 press **[Shift]** then **[dB/dBm]** to initiate the countdown timer.
5. Press **[dB/dBm]** on the **other FX45** to initiate the referencing procedure.

   Note: *Upon completion of referencing* ***READY*** *will appear on the display of both FX45s. Each FX45* ***retains*** *its* ***own reference values*** *for all wavelengths.*

You are now ready to make bi-directional loss and ORL measurements by connecting the FX45s to opposite ends of the fiber under test. **DO NOT disconnect** the reference patchcords from the FX45 during transport.

4.7.3 Measuring Optical Power and ORL Bi-Directionally

1. Disconnect the patchcords from the middle adapter, but **leave the patchcords connected to the devices.**
2. Connect the fiber under test (FUT) between the reference patchcords.
3. To set the memory cell number for future measurements:
   a. On both FX45 (master or slave) press **[Shift]** then **[Save]** to access the **READ** mode.
   b. Press the Up and Down arrows **([λ]** and **[dB/dBm]** respectively) to set the number of the first memory cell where measurement data is to be saved. This number appears at the bottom, left of the screen.
   c. Press **[Shift]** → **[Save]** to return to the **AUTO TEST** mode.

   Note: *Data is stored on both FX45s but only the unit designated as the Master FX45 will retail records from both FX45s (reference values from both FX45s and bi-directional loss and ORL measurements)*

   Determine which device will serve as the Master FX45. The other FX45 will operate as the Slave FX45.
4. Press **[λ]** on the **Slave FX45** to initiate a 40 second countdown mode shown at the top of the screen.
5. Press **[☼-λ]** on the **Master FX45** anytime during the countdown.

   The automatic bi-directional measurement (AUTO) is now activated. During the process, the measurement data will be displayed on each FX45. After testing in both directions is completed, each FX45 will once again display **READY**.
6. Repeat Steps 2-5 until all fibers have been tested.

Note: *The memory cell automatically advances as records are saved.*

To review previously saved test results, press **[Shift]** then **[Save]** on the **Master FX45** to access the **READ** mode.

To view the measurement data in the memory cells, press the Up and Down arrows (**[λ]** and **[dB/dBm]** respectively).

5.0 Transferring Measurement Results to Cloud or PC

Your FX45 device forms part of the VeEX VeSion ecosystem, which includes the Fiberizer Cloud service. Sign in or register for a Fiberizer Cloud account at https://cloud.fiberizer.com. You can then organize, analyze test data and generate customer reports in both MS Excel and PDF file formats. To use this capability, you must transfer or upload your measurement results to your Fiberizer Cloud account.

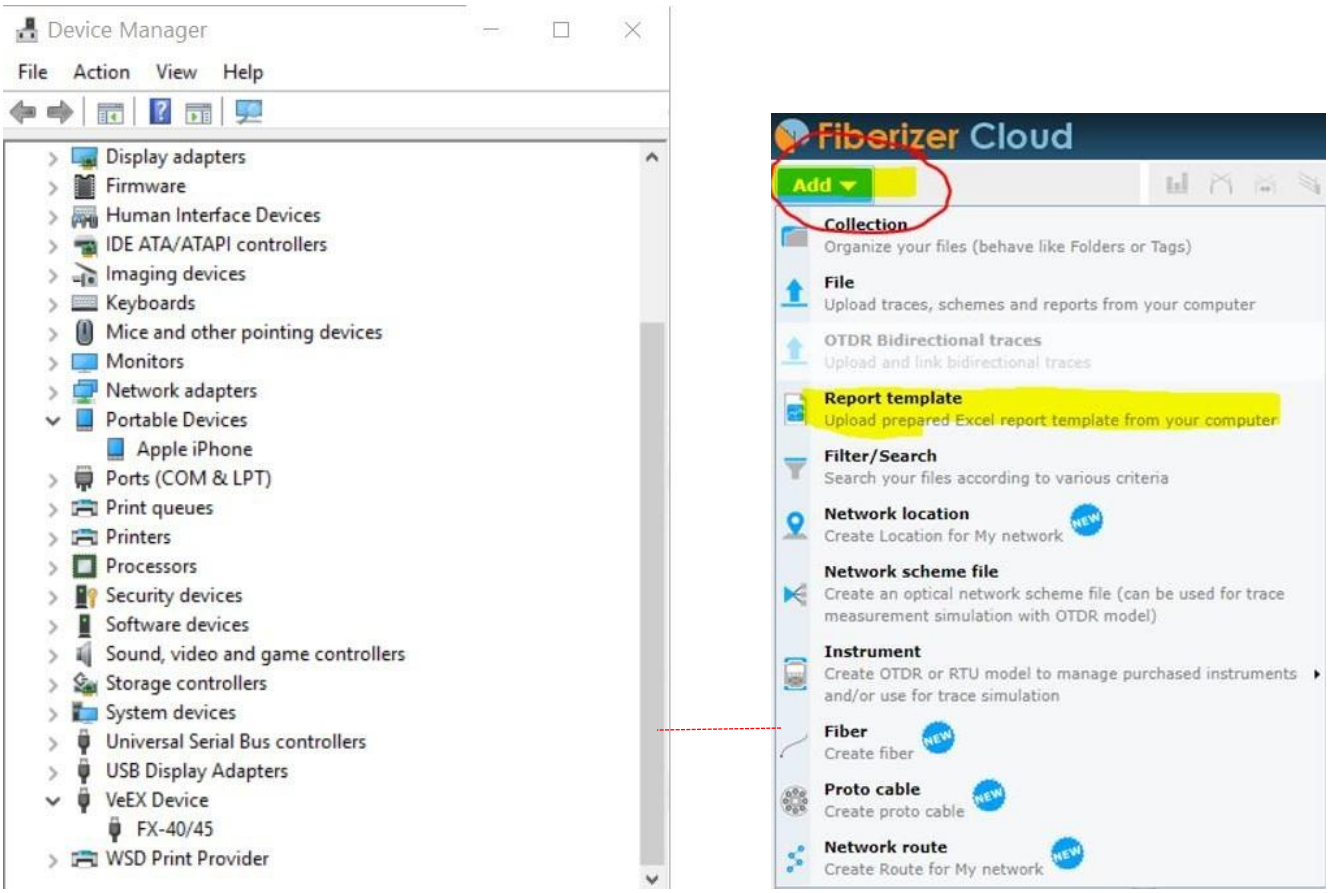
You can also transfer data from the device to your PC's local hard drive for storing and basic viewing.

More information on Fiberizer Cloud can be found at the VeEX website (veexinc.com).

5.1 Preparing your PC for Transfer

To transfer measurement results from your device to a PC, you will need the LTSync software and a FX40/45 USB driver. Download at www.veexinc.com or contact Customer Care. Proceed as follows:

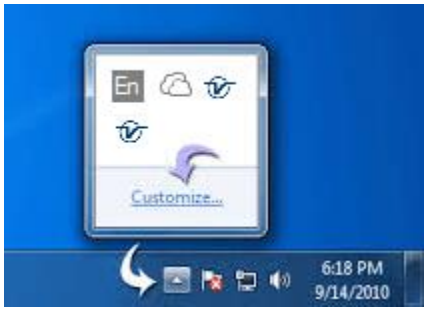
1. Download LTSync software and unzip and install it onto your PC (example: C:\VeEX\Programs\LTSync). For quick launch, right-click mouse to pin a shortcut to your taskbar.
2. Download the USB driver and unzip and install it at the same directory. Connect the FX45 to your PC using the USB cable that was provided. Open 'Device Manager' and scroll down until you see VeEx Device. Right Click on FX-40/45 Click on 'Update Driver Software' and 'Browse my computer' for driver software where you previously unzipped the USB driver.
3. Create a MS Excel or PDF template to use for arranging your test results or download the sample VeEX MS Excel template (Olts-template.slsx). Sign in to your Fiberizer Cloud account and "ADD" your template.

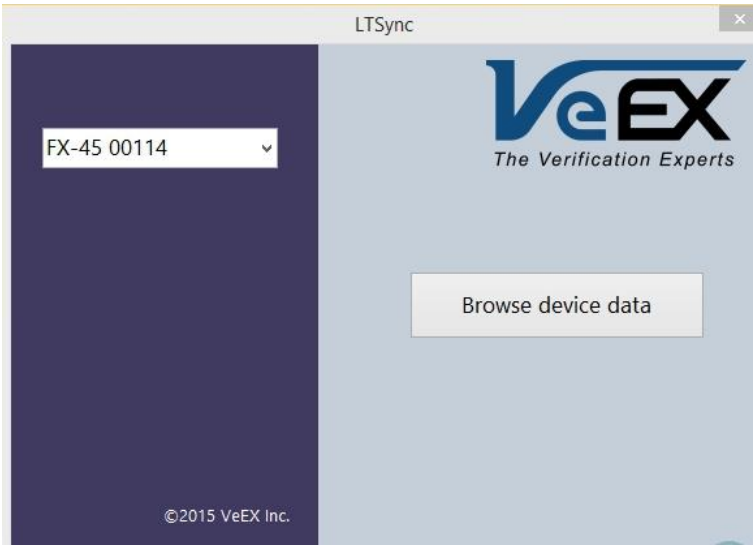


5.2 Transferring Measurement Results from your Device

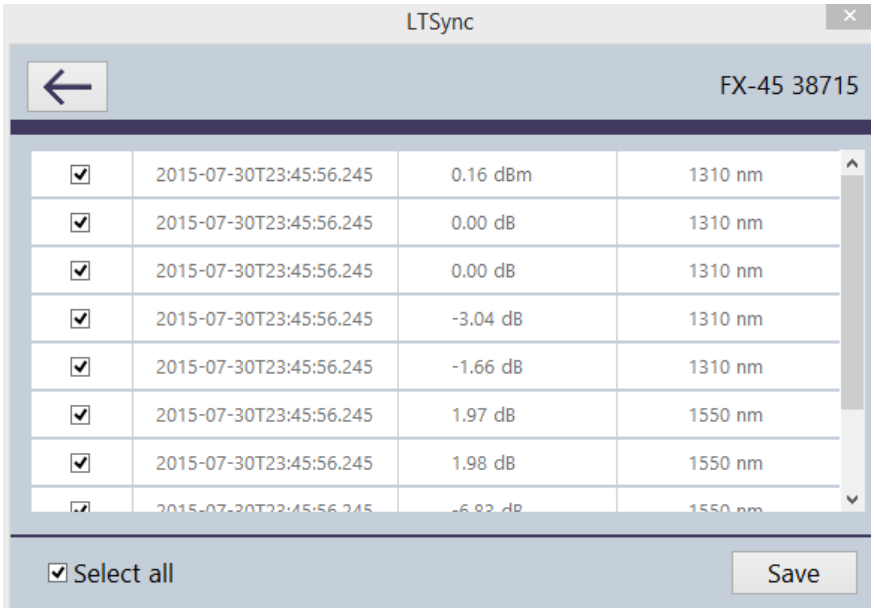
To transfer measurement results from the device to your Fiberizer Cloud account or your Windows computer, proceed as follows:

1. Connect your PC and the FX45 via a USB port using the cable supplied;
2. Launch the LTSync application on your PC. Once the application is started, its icon appears in the Windows tray. Click the icon in the tray to view LTSync onscreen and make sure your current device is selected in the drop-down menu on the left as shown below:



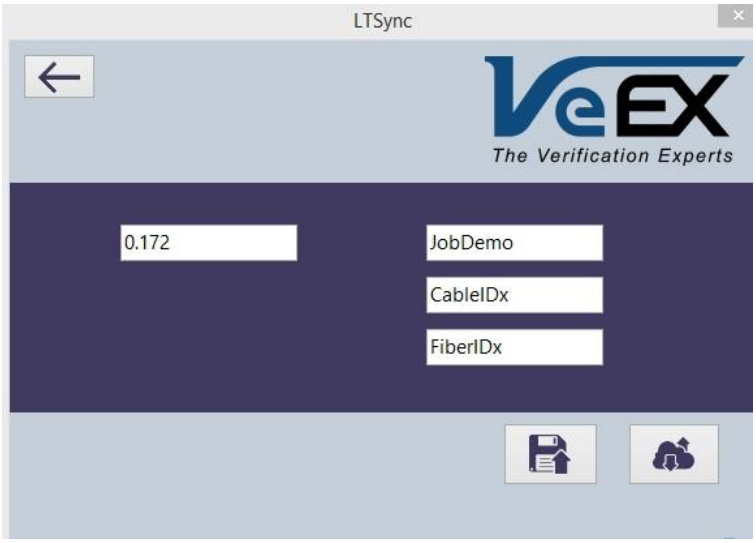


3. Click **Browse device data**. The measurement data is listed and shown below:

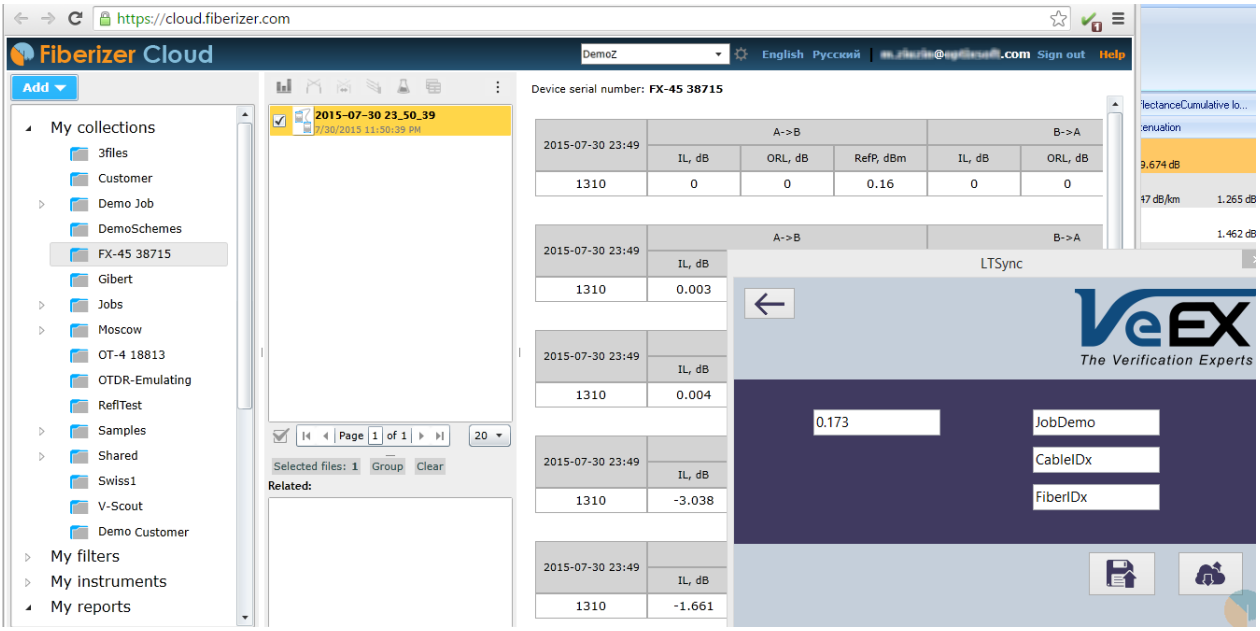


The measurement results are sorted according by storage # or the measurement time stamp (the feature is enabled in the Settings dialog of the LTSync application).

4. Select the necessary measurement data and click **Save**. In the window below, you should enter the Job ID, Cable ID, Fiber ID, as well as the fiber length (0.172 in the example shown below). It is important that you save your test data in this hierarchy for efficient saving, fast reporting and easy future reference purposes. If you are connected to the Internet, click the Cloud button to save the measurement data in your Fiberizer Cloud account:



A successful upload result is shown below:



Fiberizer Cloud allows you to generate a variety of customizable reports in MS Excel or PDF formats. For a sample MS Excel template file, contact VeEX customer care. For more detailed instructions, refer to the Fiberizer Cloud online help. Please visit www.fiberizer.com.

5. If you want to save your measurement results to your PC's local hard drive, click the floppy disk icon (located next to the Cloud icon). The measurement results are then saved in one file, in the *oxlts* format. To view the *oxlts* file on your PC, right-click the LTSync icon in the Windows tray, then select the **Open File Browser** option.