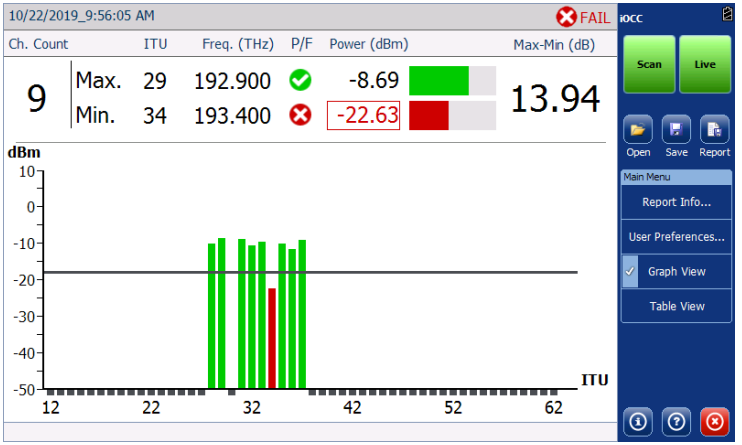
User Guide

iOCC

intelligent Optical Channel Checker



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The information contained in this publication is subject to change without notice.

Trademarks

EXFO's trademarks have been identified as such. However, the presence or absence of such identification does not affect the legal status of any trademark.

Units of Measurement

Units of measurement in this publication conform to SI standards and practices.

Patents

Feature(s) of this product is/are protected by one or more of : US design patent D710,222 and equivalent(s) in other countries; US pending patent(s); US design patent D798,171 and equivalent(s) in other countries and US design patent D842,144 and equivalent(s) in other countries.

Version number: 2.0.0.1

Contents

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Regulatory Information

Electromagnetic Interference and Compatibility Regulatory Information

For Electromagnetic Interference and Compatibility Regulatory information on your product, refer to the user documentation of your platform.

European Declaration of Conformity

The full text of the EU declaration of conformity is available at the following Internet address: *www.exfo.com/en/resources/legal-documentation*.

1 Introducing the intelligent Optical Channel Checker

The intelligent Optical Channel Checker (iOCC) is a DWDM measurement instrument that allows you to monitor presence of DWDM channels and measure their power in the extended C-band. The tests are performed on live networks, through taps.

Technicians can use it when installing and debugging DWDM networks, to make sure that all of the expected channels at the transmitter location are present and that they meet the minimum power per channel requirements. You can indicate a power offset value to help correct values related to tap ratios. When your scans show a failed result, you can switch to the OTDR application included in your module to troubleshoot and analyze the faulty channel.

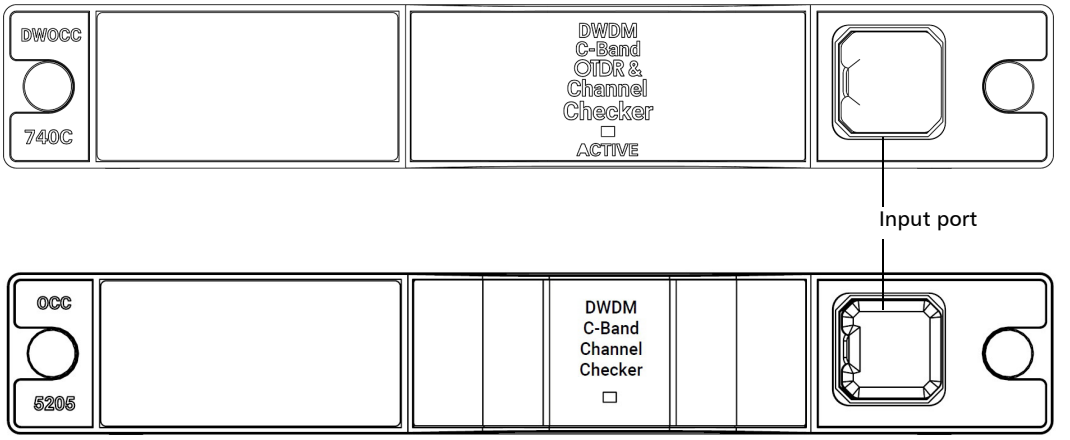
Available Models

The following iOCC models are available:

- FTBx-/MAX-740 DWOCC: These modules are a combination of optical channel checker and OTDR modules in one. Both applications are accessed separately.
- MAX-5205 DWOCC: This module features an optical channel checker only.

Module Overview

FTBx-740C DWOCC / MAX-740C DWOCC



MAX-5205 DWOCC

Conventions

Before using the product described in this guide, you should understand the following conventions:

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in *death or serious injury*. Do not proceed unless you understand and meet the required conditions.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in *minor or moderate injury*. Do not proceed unless you understand and meet the required conditions.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in *component damage*. Do not proceed unless you understand and meet the required conditions.

IMPORTANT

Refers to information about this product you should not overlook.

2 Safety Information

General Safety Information

WARNING

Do not install or terminate fibers while a light source is active. Never look directly into a live fiber and ensure that your eyes are protected at all times.

WARNING

The use of controls, adjustments and procedures, namely for operation and maintenance, other than those specified herein may result in hazardous radiation exposure or impair the protection provided by this unit.

WARNING

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

WARNING

Use only accessories designed for your unit and approved by EXFO. For a complete list of accessories available for your unit, refer to its technical specifications or contact EXFO.

IMPORTANT

Refer to the documentation provided by the manufacturers of any accessories used with your EXFO product. It may contain environmental and/or operating conditions limiting their use.

IMPORTANT

When you see the following symbol on your unit  **, make sure that you refer to the instructions provided in your user documentation. Ensure that you understand and meet the required conditions before using your product.**

IMPORTANT

When you see the following symbol on your unit  **, it indicates that the unit is equipped with a laser source, or that it can be used with instruments equipped with a laser source. These instruments include, but are not limited to, modules and external optical units.**

IMPORTANT

Other safety instructions relevant for your product are located throughout this documentation, depending on the action to perform. Make sure to read them carefully when they apply to your situation.

Your intelligent Optical Channel Checker does not operate with a laser in itself, but other applications and modules that you work with may do so. Refer to the user documentation for specific laser and other safety information related to your product.

Laser Safety Information for the FTBx-/MAX-740C DWOCC Modules

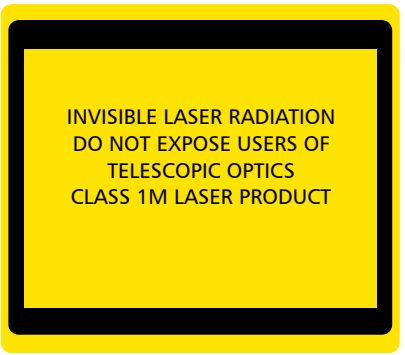
Your instrument is in compliance with standard IEC 60825-1: 2014.

WARNING

Viewing the laser output with telescopic optical instruments (for example, telescopes and binoculars) may pose an eye hazard and thus the user should not direct the beam into an area where such instruments are likely to be used.

Laser radiation may be encountered at the optical output port.

The following labels indicate that the product contains a Class 1M source:



Wavelengths: / Longueurs d'onde : 1525-1570 nm

Pulse width: / Largeur de l'impulsion : $\leq 20\ \mu s$

Max. peak power: / Puissance crête maximum : ≤ 600 mW

Complies with FDA performance standards for laser products except for conformance with IEC 60825-1 Ed. 3, as described in Laser Notice No. 56, dated May 8, 2019.

Electrical Safety Information

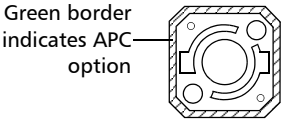
For more information on product safety and equipment ratings, refer to the user documentation of your platform.

All intelligent Optical Channel Checker modules power consumption is below 10 W.

3 Setting up and Using Your intelligent Optical Channel Checker

Installing the EXFO Universal Interface (EUI)

The EUI fixed baseplate is available for connectors with angled (APC) polishing. A green border around the baseplate indicates that it is for APC-type connectors.

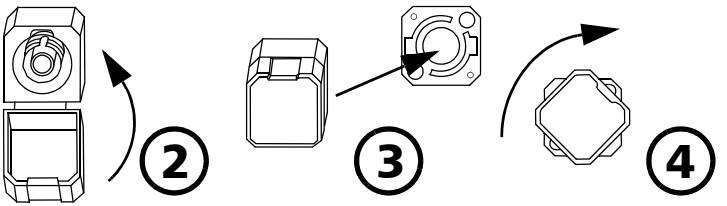


IMPORTANT

EXFO strongly recommends to only use APC module connectors.

To install an EUI connector adapter onto the EUI baseplate:

1. Hold the EUI connector adapter so the dust cap opens downwards.



2. Close the dust cap in order to hold the connector adapter more firmly.
3. Insert the connector adapter into the baseplate.
4. While pushing firmly, turn the connector adapter clockwise on the baseplate to lock it in place.

Cleaning and Connecting Optical Fibers

IMPORTANT

To ensure maximum power and to avoid erroneous readings:

- **Always inspect fiber ends and make sure that they are clean as explained below before inserting them into the port. EXFO is not responsible for damage or errors caused by bad fiber cleaning or handling.**
- **Ensure that your patchcord has appropriate connectors. Joining mismatched connectors will damage the ferrules.**

To connect the fiber-optic cable to the port:

1. Inspect the fiber using a fiber inspection probe. If the fiber is clean, proceed to connecting it to the port. If the fiber is dirty, clean it as explained below.
2. Clean the fiber ends as follows:
   - **2a.** Gently wipe the fiber end with a lint-free swab dipped in optical-grade liquid cleaner.
   - **2b.** Use a dry swab to dry the connector completely.
   - **2c.** Visually inspect the fiber end to ensure its cleanliness.

3. Carefully align the connector and port to prevent the fiber end from touching the outside of the port or rubbing against other surfaces.

   If your connector features a key, ensure that it is fully fitted into the port's corresponding notch.

4. Push the connector in so that the fiber-optic cable is firmly in place, thus ensuring adequate contact.

   If your connector features a screw sleeve, tighten the connector enough to firmly maintain the fiber in place. Do not overtighten, as this will damage the fiber and the port.

Note: *If your fiber-optic cable is not properly aligned and/or connected, you will notice heavy loss and reflection.*

EXFO uses good quality connectors in compliance with EIA-455-21A standards.

To keep connectors clean and in good condition, EXFO strongly recommends inspecting them with a fiber inspection probe before connecting them. Failure to do so will result in permanent damage to the connectors and degradation in measurements.

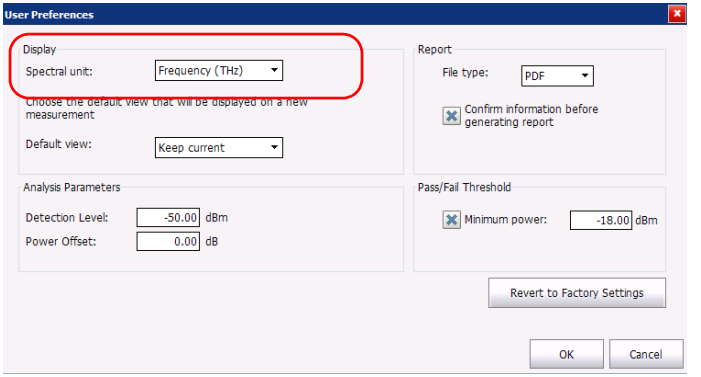
Setting up Your Unit

You can set up your iOCC easily in a few steps. This includes the pass/fail thresholds, analysis parameters, spectral unit and default view for your tests.

If you set power offset and detection level values, they will pertain to each channel. The power offset value will let you detect a wider array of channels. So for example, if a channel has a value of –12 dBm and the detection level is at –10 dBm with no power offset, the channel will not be detected, whereas an offset value of 5 dBm will let you detect the channel even if the value is slightly different.

To select the spectral unit to display:

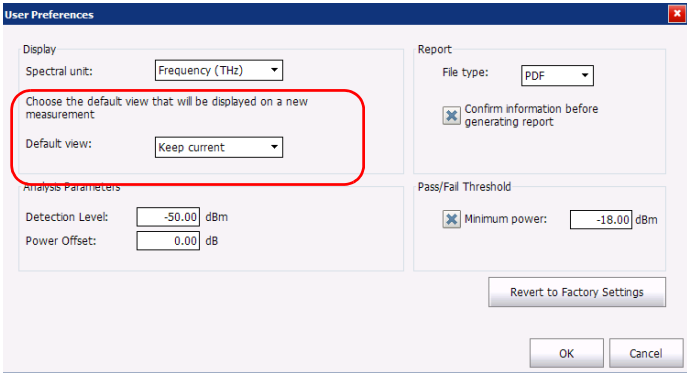
1. From the main window, tap **User Preferences**.
2. Under **Display**, select the units, either none, the wavelength or the frequency. This will reflect both in the detailed view in the upper part of the display and in the table view.



3. Once you are done, tap **OK**.

To select the default view for your measurements:

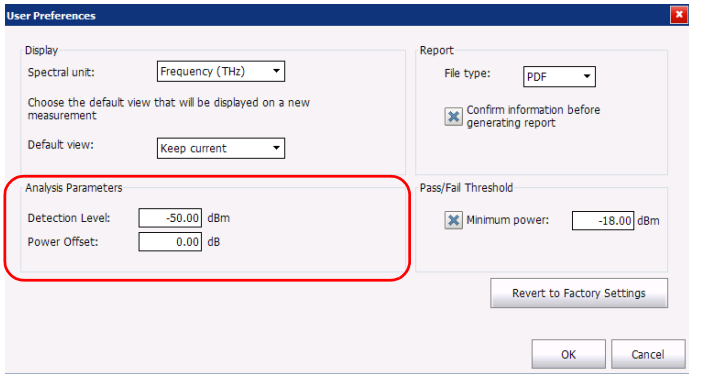
1. From the main window, tap **User Preferences**.
2. Under **Display**, select the desired view.
   - ➤ Keep current: use the view type currently displayed.
   - ➤ Graph - All channels: Displays all of the channels without zooming.
   - ➤ Graph - Auto zoom: The zoom is done on the first detected channel on the left, unless there is a failed result; in that case, the zoom will be centered on that failed channel.
   - ➤ Result table: Displays the results in table format rather than graph format.



3. Once you are done, tap **OK**.

To set the analysis parameters:

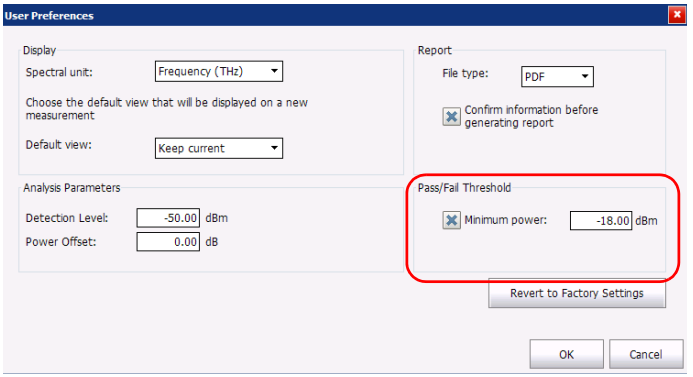
1. From the main window, tap **User Preferences**.
2. Under **Analysis Parameters**, enter the values to use for detection level and power offset.



3. Once you are done, tap **OK**.

To use and set the power threshold value:

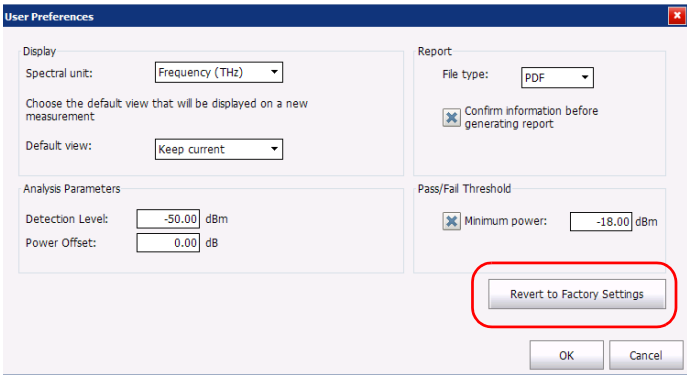
1. From the main window, tap **User Preferences**.
2. Under **Pass/Fail Threshold**, enable the option, then enter the value that will set your pass/fail threshold.



3. Once you are done, tap **OK**.

To revert to the factory settings:

1. From the main window, tap **User Preferences**.
2. Tap the corresponding button.



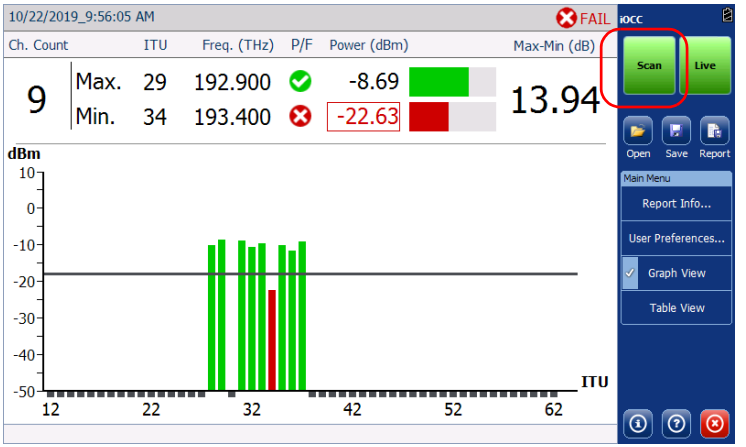
3. Once you are done, tap **OK**.

Performing an Acquisition

You can either perform a single acquisition or have the application run a continuous, or live, scan. The live scan is particularly useful if you want to have instant and dynamic retroaction on your tests as you repair a network. For example, it can help you see how the quality of a signal is improved in real-time or see the variation in the signal when enabling or disabling a transmitter.

To do a single acquisition:

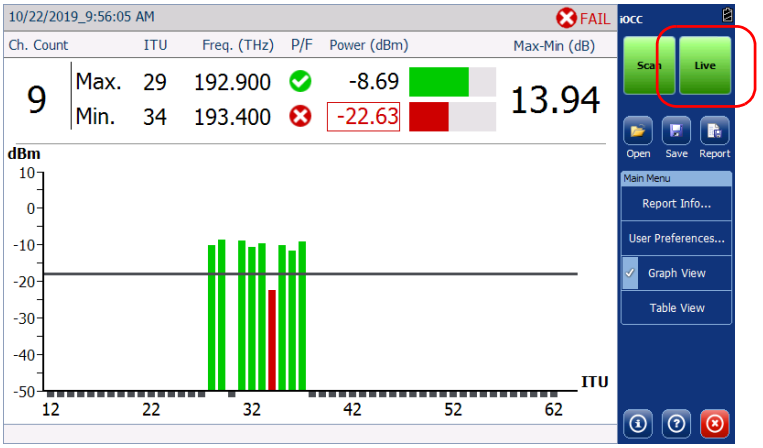
From the main window, tap **Scan**.



The results appear once the scan is complete.

To run a continuous scan:

From the main window, tap **Live**.



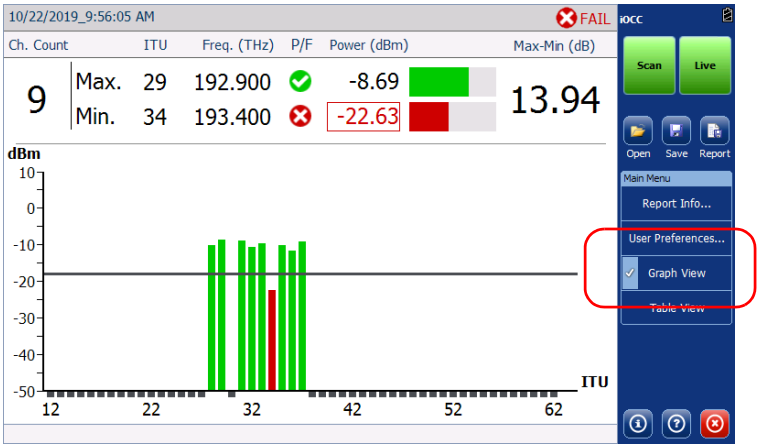
To stop the scan, tap **Stop**.

Changing the Viewing Mode

You can view the results as a graph or as a table, which is split into two columns for a quicker view. When in the graph mode, you can zoom in for a more precise view of the results.

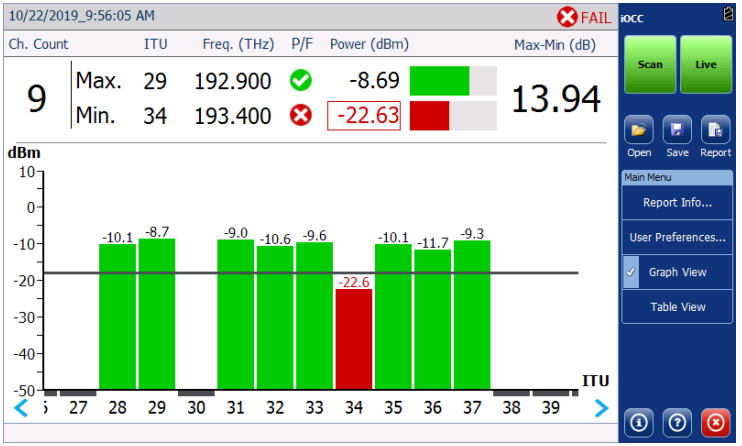
To view results in graph mode:

From the main window, tap **Graph View**.



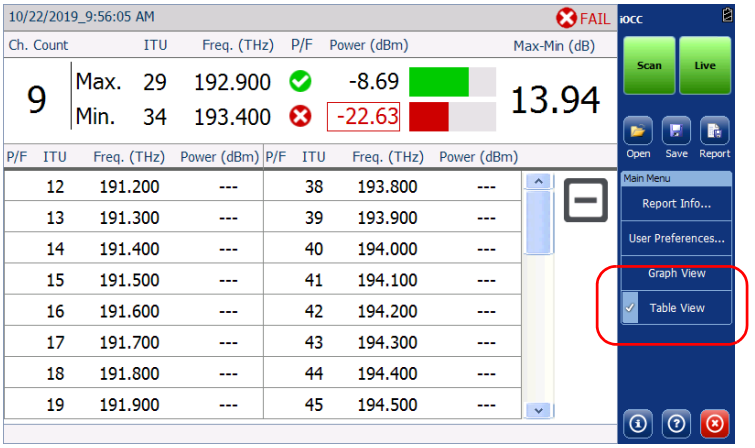
To use the zoom feature:

When the graph window is shown on-screen, tap once in the graph to zoom in, then tap again to zoom out. To move on the graph, drag your finger or stylus on the screen to move it to the desired location. You can also use the blue arrow buttons at the bottom of the screen to move within the zoomed channel view.

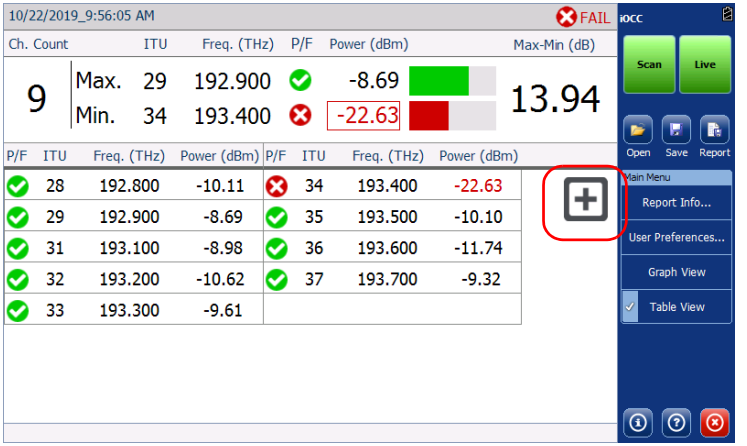


To view results in table mode:

From the main window, tap **Table View**.

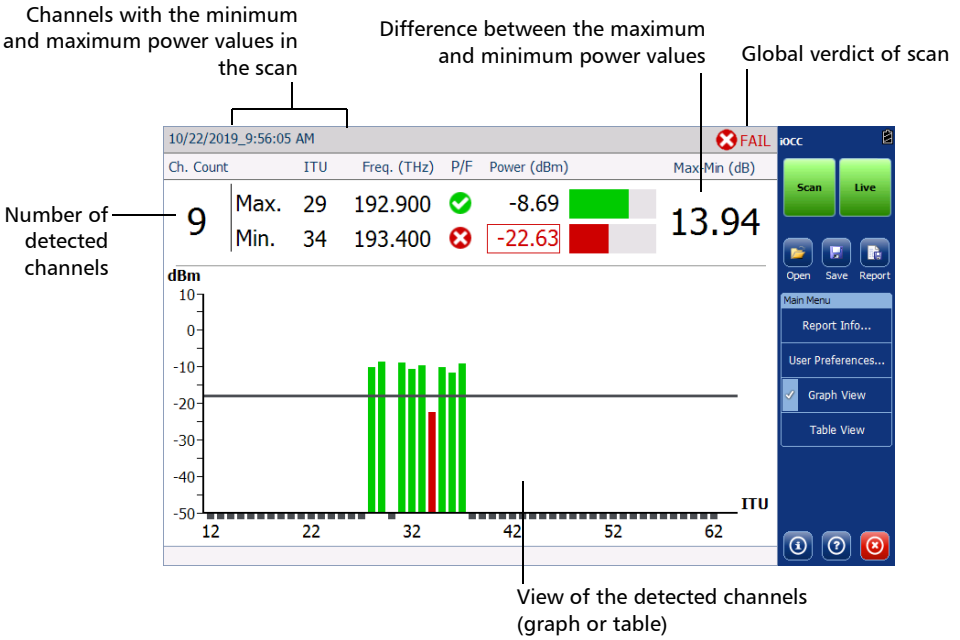


To view only the channels where power was detected, use the – button. To revert to the full channel view, use the **+** button.



Analyzing Results

When you have performed the scan, you can quickly view the results for your test.

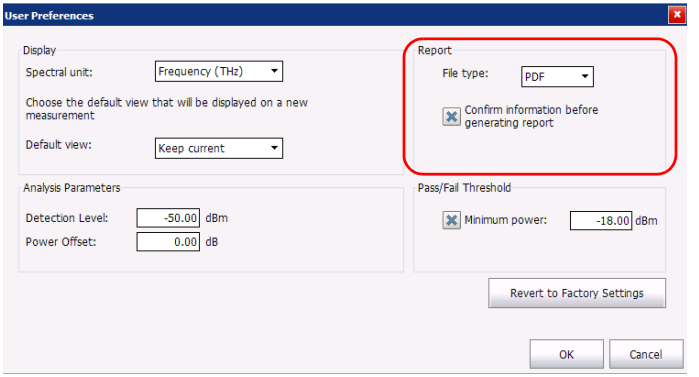


Generating Reports

You can create reports for your results in either XML or PDF format. You can have the application prompt you to confirm the report details each time you create one or you can set it up as needed.

To set up reports:

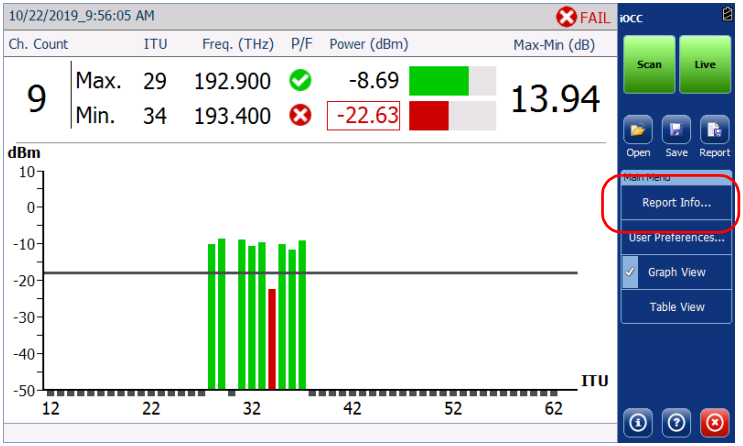
1. From the main window, tap **User Preferences**.
2. Under **Report**, select the format you want to use and whether the application will prompt you to validate the information prior to creating a report. These are default values that might help you work faster if you always use the same format and information, but you can always change them later when actually generating the report.



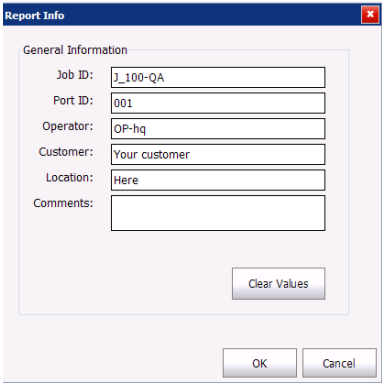
3. Once you are done, tap **OK**.

To modify report details:

1. From the main window, tap **Report Info**.

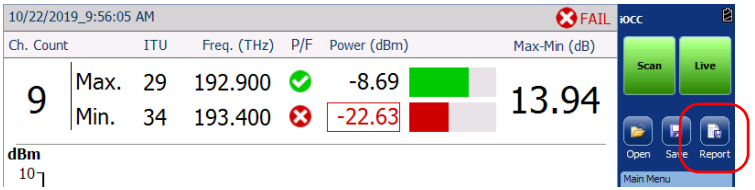


2. Change the report details as needed, then tap **OK**.

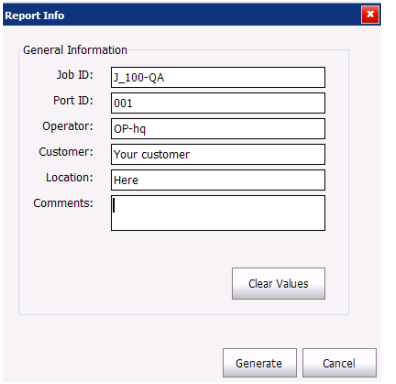


To generate a report:

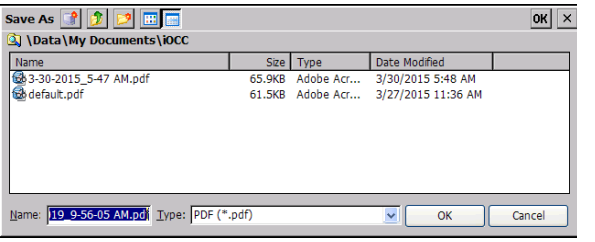
1. From the main window, tap **Report**.



2. Confirm the report details or change them as needed, then tap **Generate**.



3. By default, the name of the report will be the date and time of the acquisition in your current language format, but you can change it as needed. If you want to change the report type, you can do so as well. When you are done, tap **OK**.

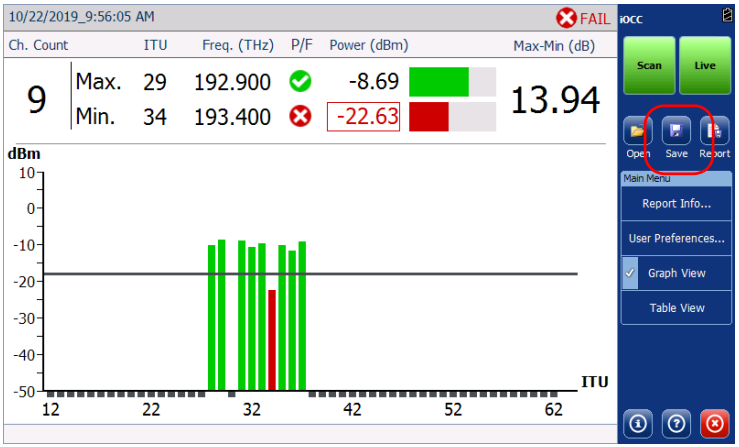


Saving Acquisitions

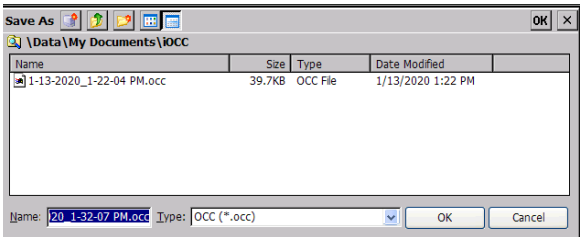
You can save the current acquisition for future consultation.

To save an acquisition file:

1. From the main window, tap **Save**.



2. Select a location and change the file name as needed, then tap **OK**.

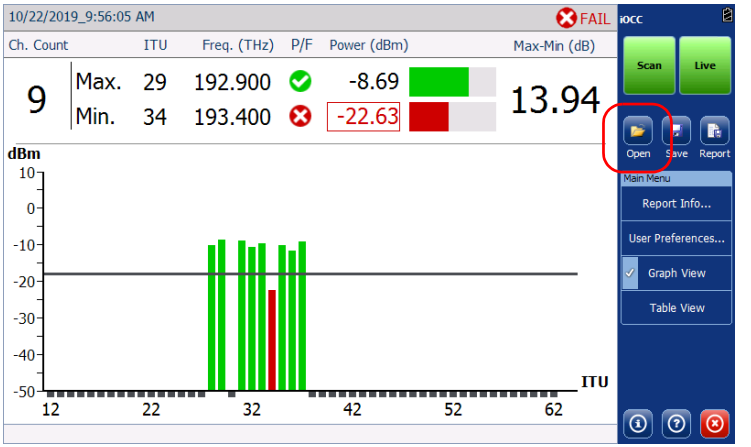


Opening Acquisition Files

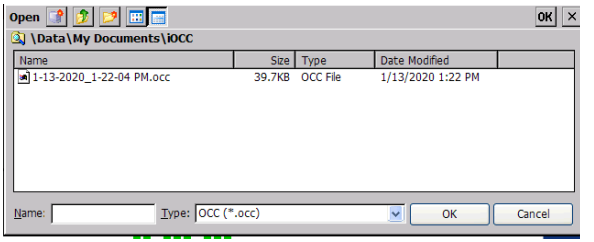
You can consult acquisition files you have previously saved at any time.

To open an acquisition file:

1. From the main window, tap **Open**.



2. Locate the file that you want to open, then tap **OK**.



4 Maintenance

To help ensure long, trouble-free operation:

- Always inspect fiber-optic connectors before using them and clean them if necessary.
- Keep the unit free of dust.
- Clean the unit casing and front panel with a cloth slightly dampened with water.
- Store unit at room temperature in a clean and dry area. Keep the unit out of direct sunlight.
- Avoid high humidity or significant temperature fluctuations.
- Avoid unnecessary shocks and vibrations.
- If any liquids are spilled on or into the unit, turn off the power immediately, disconnect from any external power source, remove the batteries and let the unit dry completely.

WARNING

The use of controls, adjustments and procedures, namely for operation and maintenance, other than those specified herein may result in hazardous radiation exposure or impair the protection provided by this unit.

Cleaning EUI Connectors

Regular cleaning of EUI connectors will help maintain optimum performance. There is no need to disassemble the unit.

IMPORTANT

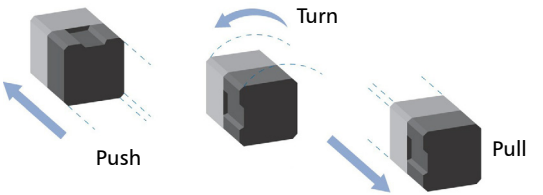
If any damage occurs to internal connectors, the module casing will have to be opened and a new calibration will be required.

WARNING

Looking into the optical connector while the light source is active WILL result in permanent eye damage. EXFO strongly recommends to TURN OFF the unit before proceeding with the cleaning procedure.

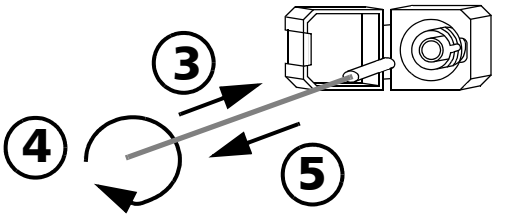
To clean EUI connectors:

1. Remove the EUI from the instrument to expose the connector baseplate and ferrule.



2. Moisten a 2.5 mm cleaning tip with *one drop* of optical-grade liquid cleaner.

3. Slowly insert the cleaning tip into the EUI adapter until it comes out on the other side (a slow clockwise rotating movement may help).



4. Gently turn the cleaning tip one full turn, then continue to turn as you withdraw it.

5. Repeat steps 3 to 4 with a dry cleaning tip.

Note: *Make sure you don't touch the soft end of the cleaning tip.*

6. Clean the ferrule in the connector port as follows:

6a. Deposit *one drop* of optical-grade liquid cleaner on a lint-free wiping cloth.

IMPORTANT

Avoid contact between the tip of the bottle and the wiping cloth, and dry the surface quickly.

6b. Gently wipe the connector and ferrule.

6c. With a dry lint-free wiping cloth, gently wipe the same surfaces to ensure that the connector and ferrule are perfectly dry.

6d. Verify connector surface with a fiber inspection probe (for example, EXFO's FIP).

7. Put the EUI back onto the instrument (push and turn clockwise).

8. Throw out cleaning tips and wiping cloths after one use.

Recalibrating the Unit

EXFO manufacturing and service center calibrations are based on the ISO/IEC 17025 standard (*General Requirements for the Competence of Testing and Calibration Laboratories*). This standard states that calibration documents must not contain a calibration interval and that the user is responsible for determining the re-calibration date according to the actual use of the instrument.

The validity of specifications depends on operating conditions. For example, the calibration validity period can be longer or shorter depending on the intensity of use, environmental conditions and unit maintenance, as well as the specific requirements for your application. All of these elements must be taken into consideration when determining the appropriate calibration interval of this particular EXFO unit.

Under normal use, the recommended interval for your intelligent Optical Channel Checker is: one year.

For newly delivered units, EXFO has determined that the storage of this product for up to six months between calibration and shipment does not affect its performance.

To help you with calibration follow-up, EXFO provides a special calibration label that complies with the ISO/IEC 17025 standard and indicates the unit calibration date and provides space to indicate the due date. Unless you have already established a specific calibration interval based on your own empirical data and requirements, EXFO would recommend that the next calibration date be established according to the following equation:

Next calibration date = Shipping date+ Recommended calibration period (one year)

To ensure that your unit conforms to the published specifications, calibration may be carried out at an EXFO service center or, depending on the product, at one of EXFO's certified service centers. Calibrations at EXFO are performed using standards traceable to national metrology institutes.

Note: *You may have purchased a FlexCare plan that covers calibrations. See the Service and Repairs section of this user documentation for more information on how to contact the service centers and to see if your plan qualifies.*

Recycling and Disposal

This symbol on the product means that you should recycle or dispose of your product (including electric and electronic accessories) properly, in accordance with local regulations. Do not dispose of it in ordinary garbage receptacles.

For complete recycling/disposal information, visit the EXFO Web site at www.exfo.com/recycle.

5 Troubleshooting

Solving Common Problems

Here are solutions to the most common problems that could occur with your application:

Problem	Possible Cause	Solution
Low power level or no power displayed	➤ Defective patchcord or dirty connector ➤ Fiber output port requires cleaning ➤ Angle polish mated with UPC polish ➤ Loss on the link under test.	➤ Replace or clean the patchcord. ➤ Clean and inspect the port. ➤ Examine the connector ends for damage. Use UPC connectors *only*. ➤ Use the OTDR or iOLM application on the ITU channel to troubleshoot.

CAUTION

If you see that a channel is missing or the power level detected is much lower than expected, you can switch to the OTDR application on your module or an iOLM to troubleshoot the situation.

However, troubleshooting a live network is a delicate task regardless of the method used and you must pay attention to the following instructions before proceeding:

- **The signal that the OTDR or iOLM will receive must be below the live fiber threshold. Live power over -50 dBm will degrade OTDR/iOLM performance and eventually prevent you from starting the measurement.**
- **Avoid damaging the SFP. You might have to disconnect the SFP at the end of the link under test. If you are using an iOLM and have purchased the iOLM Advanced (iADV) option, you can use the safe mode, which is designed to avoid damaging SFPs.**

Viewing Online Documentation

In addition to the online help available from the application, you will also find a printable PDF version on your unit.

To access online help:

At the bottom of the **Main Menu**, tap  .

Contacting the Technical Support Group

To obtain after-sales service or technical support for this product, contact EXFO at one of the following numbers. The Technical Support Group is available to take your calls from Monday to Friday, 8:00 a.m. to 7:00 p.m. (Eastern Time in North America).

Technical Support Group

400 Godin Avenue
Quebec (Quebec) G1M 2K2
CANADA

1 866 683-0155 (USA and Canada)
Tel.: 1 418 683-5498
Fax: 1 418 683-9224
support@exfo.com

For detailed information about technical support, and for a list of other worldwide locations, visit the EXFO Web site at www.exfo.com.

If you have comments or suggestions about this user documentation, you can send them to customer.feedback.manual@exfo.com.

To accelerate the process, please have information such as the name and the serial number (see the product identification label), as well as a description of your problem, close at hand.

Viewing Information About Your iOCC

You can view information about your iOCC such as the version number and contact information for technical support in the **About** window.

To view iOCC information:

From the main window, tap  .

Transportation

Maintain a temperature range within specifications when transporting the unit. Transportation damage can occur from improper handling. The following steps are recommended to minimize the possibility of damage:

- Pack the unit in its original packing material when shipping.
- Avoid high humidity or large temperature fluctuations.
- Keep the unit out of direct sunlight.
- Avoid unnecessary shocks and vibrations.

6 Warranty

General Information

EXFO Inc. (EXFO) warrants this equipment against defects in material and workmanship for a period of one year from the date of original shipment. EXFO also warrants that this equipment will meet applicable specifications under normal use.

During the warranty period, EXFO will, at its discretion, repair, replace, or issue credit for any defective product, as well as verify and adjust the product free of charge should the equipment need to be repaired or if the original calibration is erroneous. If the equipment is sent back for verification of calibration during the warranty period and found to meet all published specifications, EXFO will charge standard calibration fees.

IMPORTANT

The warranty can become null and void if:

- **unit has been tampered with, repaired, or worked upon by unauthorized individuals or non-EXFO personnel.**
- **warranty sticker has been removed.**
- **case screws, other than those specified in this guide, have been removed.**
- **case has been opened, other than as explained in this guide.**
- **unit serial number has been altered, erased, or removed.**
- **unit has been misused, neglected, or damaged by accident.**

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED, IMPLIED, OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL EXFO BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.

Liability

EXFO shall not be liable for damages resulting from the use of the product, nor shall be responsible for any failure in the performance of other items to which the product is connected or the operation of any system of which the product may be a part.

EXFO shall not be liable for damages resulting from improper usage or unauthorized modification of the product, its accompanying accessories and software.

Exclusions

EXFO reserves the right to make changes in the design or construction of any of its products at any time without incurring obligation to make any changes whatsoever on units purchased. Accessories, including but not limited to fuses, pilot lamps, batteries and universal interfaces (EUI) used with EXFO products are not covered by this warranty.

This warranty excludes failure resulting from: improper use or installation, normal wear and tear, accident, abuse, neglect, fire, water, lightning or other acts of nature, causes external to the product or other factors beyond the control of EXFO.

IMPORTANT

In the case of products equipped with optical connectors, EXFO will charge a fee for replacing connectors that were damaged due to misuse or bad cleaning.

Certification

EXFO certifies that this equipment met its published specifications at the time of shipment from the factory.

Service and Repairs

EXFO commits to providing product service and repair for five years following the date of purchase.

To send any equipment for service or repair:

1. Call one of EXFO's authorized service centers (see *EXFO Service Centers Worldwide* on page 40). Support personnel will determine if the equipment requires service, repair, or calibration.
2. If equipment must be returned to EXFO or an authorized service center, support personnel will issue a Return Merchandise Authorization (RMA) number and provide an address for return.
3. If possible, back up your data before sending the unit for repair.
4. Pack the equipment in its original shipping material. Be sure to include a statement or report fully detailing the defect and the conditions under which it was observed.
5. Return the equipment, prepaid, to the address given to you by support personnel. Be sure to write the RMA number on the shipping slip. *EXFO will refuse and return any package that does not bear an RMA number.*

Note: *A test setup fee will apply to any returned unit that, after test, is found to meet the applicable specifications.*

After repair, the equipment will be returned with a repair report. If the equipment is not under warranty, you will be invoiced for the cost appearing on this report. EXFO will pay return-to-customer shipping costs for equipment under warranty. Shipping insurance is at your expense.

Routine recalibration is not included in any of the warranty plans. Since calibrations/verifications are not covered by the basic or extended warranties, you may elect to purchase FlexCare Calibration/Verification Packages for a definite period of time. Contact an authorized service center (see *EXFO Service Centers Worldwide* on page 40).

EXFO Service Centers Worldwide

If your product requires servicing, contact your nearest authorized service center.

EXFO Headquarters Service Center
400 Godin Avenue
Quebec (Quebec) G1M 2K2
CANADA

1 866 683-0155 (USA and Canada)
Tel.: 1 418 683-5498
Fax: 1 418 683-9224
support@exfo.com

EXFO Europe Service Center
Winchester House, School Lane
Chandlers Ford, Hampshire S053 4DG
ENGLAND

Tel.: +44 2380 246800
Fax: +44 2380 246801
support.europe@exfo.com

EXFO Telecom Equipment (Shenzhen) Ltd.
3rd Floor, Building C,
FuNing Hi-Tech Industrial Park, No. 71-3,
Xintian Avenue,
Fuhai, Bao'An District,
Shenzhen, China, 518103

Tel: +86 (755) 2955 3100
Fax: +86 (755) 2955 3101
support.asia@exfo.com

To view EXFO's network of partner-operated Certified Service Centers nearest you, please consult EXFO's corporate website for the complete list of service partners:
http://www.exfo.com/support/services/instrument-services/exfo-service-centers.

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CHINESE REGULATION ON RESTRICTION OF HAZARDOUS SUBSTANCES (RoHS)
中国关于危害物质限制的规定

NAMES AND CONTENTS OF THE TOXIC OR HAZARDOUS SUBSTANCES OR ELEMENTS CONTAINED IN THIS EXFO PRODUCT
包含在本 EXFO 产品中的有毒有害物质或元素的名称及含量

Part Name 部件名称	Lead 铅 （Pb）	Mercury 汞 （Hg）	Cadmium 镉 （Cd）	Hexavalent Chromium 六价铬 （Cr(VI)）	Polybrominated biphenyls 多溴联苯 （PBB）	Polybrominated diphenyl ethers 多溴二苯醚 （PBDE）
Enclosure 外壳	O	O	O	O	O	O
Electronic and electrical sub-assembly 电子和电气组件	X	O	X	O	X	X
Optical sub-assembly[a] 光学组件 [a]	X	O	O	O	O	O
Mechanical sub-assembly[a] 机械组件 [a]	O	O	O	O	O	O

Note:
注：
This table is prepared in accordance with the provisions of SJ/T 11364.
本表依据 SJ/T 11364 的规定编制。
O: Indicates that said hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.
O：表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 标准规定的限量要求以下。
X: indicates that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572. Due to the limitations in current technologies, parts with the “X” mark cannot eliminate hazardous substances.
X：表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 标准规定的限量要求。
标记“X”的部件，皆因全球技术发展水平限制而无法实现有害物质的替代。
a. If applicable.
如果适用。

MARKING REQUIREMENTS
标注要求

Product 产品	Environmental protection use period (years) 环境保护使用期限 （年）	Logo 标志
This EXFO product 本 EXFO 产品	10	
Battery[a] 电池	5	

a. If applicable.
如果适用。

P/N: 1079289

www.EXFO.com · info@EXFO.com

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