FOCIS WiFi
Fiber Optic Connector Inspection System
User's Guide

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Table of Contents

Table of Contents

FOCIS WiFi Product Overview

FOCIS WiFi is a family of wireless fiber inspection solutions that combine proven AFL inspection and analysis capabilities with the latest tablet and smartphone technologies. FOCIS WiFi enables users to equip their mobile devices with a world-class fiber optic connector inspection solution that leverages the increased productivity, job satisfaction and cost-saving of mobile devices and apps.

FOCIS WiFi works the way you do – connected to your phone or tablet. FOCIS WiFi enables mobile workers to complete remote fiber optic connector inspection tasks while remaining connected to coworkers and managers.

Three different FOCIS WiFi kit options are available.

- FOCIS WiFi VIEW – enables users to view live images of a fiber end-face on a mobile device (smartphone or tablet).
- FOCIS WiFi PLUS – enables users to view, save, compare and share saved end-face images via email, text or mobile cloud applications.
- FOCIS WiFi PRO – automatically analyzes connector integrity according to IEC 61300-3-35, AT&T TP-76461, or user defined standards and save, recall and share results via email, text or mobile cloud applications.

Feature	FOCIS WiFi Kit		
	PRO	PLUS	VIEW
Live End-face Image	●	●	●
Pair Image	●	●	
Capture and Store Image	●	●	
Recall/Review Image	●	●	
Share Image via email, text & cloud-based means	●	●	
Produces TRM/TRM 2.0 compatible images	●	●	
Validate per IEC 61300-3-35	●		
Validate per AT&T TP-76461	●		
Validate per user-defined criteria	●		
Share analyses' via email, text & cloud-based means	●		
Produces TRM/TRM 2.0 compatible analyses'	●		

FOCIS WiFi can easily be upgraded from VIEW to PLUS to PRO as your inspection needs change.

A FOCIS WiFi system is composed of the following elements:

- DFS1 Digital FiberScope - a rugged reliable connector video inspection probe
- PAL Portable Application Link - a companion WiFi appliance that supports wireless communication between the DFS1 and your tablet or smartphone
- FOCIS MOBILE - a companion application for Android and iOS7 compatible tablets and smartphones. FOCIS MOBILE is a free download from "Google play" and the "App Store"

FOCIS WiFi Hardware Overview

Contents of FOCIS WiFi Kit

Your FOCIS WiFi Kit contains the following items:

• DFS1 Digital FiberScope *

• PAL Portable Application Link unit

• Power AC Adapter

• Holster/Belt Clip

• Hard Carry Case

Note: * DFS1 Digital FiberScope is not included in FOCIS WiFi Upgrade Kits

Soft Carry Case

Holster/Belt Clip

PAL Portable Application Link

AC Adapter

DFS1

PAL and DFS1 Digital FiberScope in the Holster/Belt Clip

PAL Portable Application Link
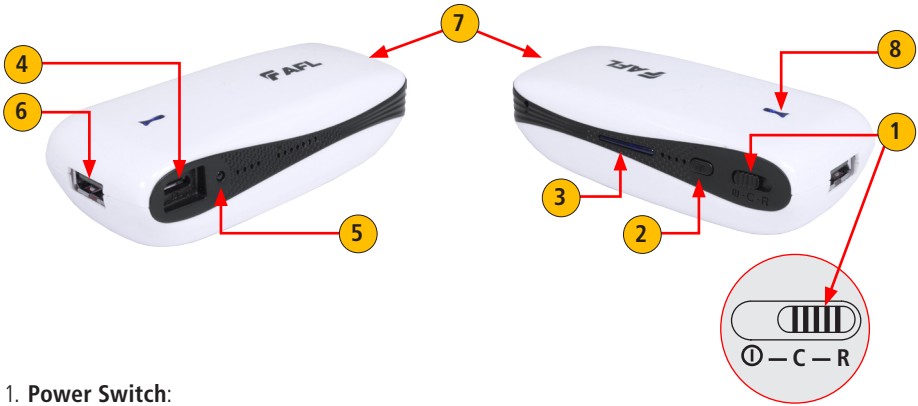
1. **Power Switch**:
- **①** - this position turns the PAL unit Off.
- **C** - this position is for manufacturer use only!
- **R** - this position turns the PAL unit On.
2. **Battery Status Button** - pressing this button will illuminate Battery Status Indicator to indicate PAL's battery charge status.
3. **Battery Charge Indicator** - indicates the PAL battery charge status and will illuminate BLUE segments ranging from 4 to 1, where 4 segments indicate 'Full Battery' and 1 segment indicates 'Low Battery'.
4. **Power Port (micro USB)** - used to connect the provided AC adapter/battery charger.
5. **AC Adapter/Battery Charger Indicator** - illuminates to indicate that PAL is connected to the AC adapter/battery charger.
6. **USB Port** - this port is used to plug a DFS1 FiberScope.
7. **Network Port** - This port is for OEM use only.
8. **Function LED** - Indicates the status of the PAL.
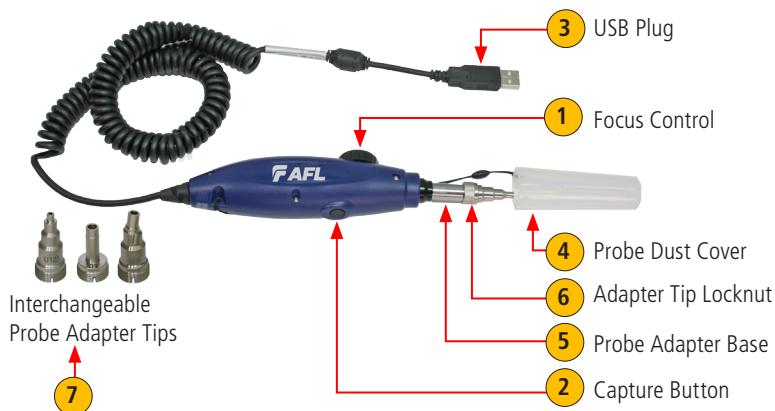
Holster / Belt Clip

1. PAL storage compartment
2. DFS1 FiberScope storage compartment
3. Cleaning accessories storage compartment
4. Keeper strap
5. Belt clip
6. Adapter tip keepers

Front View   **Back View**

DFS1 Digital FiberScope

The DFS1 is a hand-held electronic imaging device used to inspect fiber optic connector end-faces for damage or contamination. It is connected to AFL's PAL unit (Portable Application Link WiFi unit) via a USB port. The DFS1 obtains power from the PAL unit and streams video images to the attached mobile device.

Adapter tips are used with the DFS1 Digital FiberScope to inspect ferrule ends of jumper cables, as well as fiber ends mounted inside bulkhead adapters on the front panels of transmission equipment and in patch panels. An extensive range of tips is available. Please refer to the Adapter Tips Selection Guide available at http://www.aflglobal.com/productlist/Product-Lines/Test-and-Inspection/DFS1-Digital-FiberScope/doc/DFS1-AC-CAT_Rev3.aspx

3 USB Plug
1 Focus Control
4 Probe Dust Cover
6 Adapter Tip Locknut
5 Probe Adapter Base
2 Capture Button

Interchangeable Probe Adapter Tips **7**

Ref #	Name	Function
1	Focus Control	Rotate to obtain a sharp, clear image.
2	Capture Button	This button may be configured to start automatic analysis or capture an image of the fiber end-face.
3	USB Plug	• Powers the DFS1 from the attached PAL unit (Portable Application Link WiFi unit). • Streams digital video to the smartphone or tablet.
4	Probe Dust Cover	Protects probe base and adapter tip when not in use.
5	Probe Base	• Accepts interchangeable probe adapter tips. • Includes alignment key and threaded locknut to securely retain installed adapter tip.
6	Adapter Tip Locknut	Holds an adapter tip in place. See section "Properly Removing and Installing DFS1 Adapter Tips" on page 7 for details.
7	Interchangeable Adapter Tips	Adapts DFS1 for precise viewing of fiber end-faces on a wide variety of fiber optic connectors and bulkhead adapters.

DFS1 Digital FiberScope

Properly Removing and Installing DFS1 Adapter Tips

It is very important to properly remove and install the DFS1 adapter tips!

Removing Adapter Tips

Probe tips are held in place with a knurled locknut Ⓐ. To remove the installed adapter tip do the following:

- Holding the probe with the tip facing up, turn the captive knurled locknut at the base of the adapter tip Ⓐ in the clockwise direction.

  (The **tip cannot rotate**, only the locknut, barrel, or collar, on the probe can be turned.)

  STOP: Do NOT use tools on the locknut. If you think you need a tool you are doing it wrong!

- Once the knurled knob is fully unscrewed from the adapter tip, slide it down the probe base.

- Remove the adapter tip by pulling it gently straight off the probe base.

- Now that the adapter tip is removed, this is a good time to inspect the lens that is in the end of the probe. If the lens has somehow become contaminated, clean the lens.
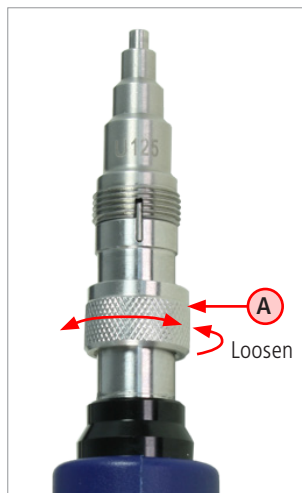
Adapter tip installation is the reverse of removal

Cleaning the DFS1 Lens and Adapter Tip

If the DFS1 lens has become contaminated, use canned air if it is a dust type of contamination, or alcohol and a cleaning swab if is an oily type of contamination. Avoid using anything abrasive which might scratch the lens or anything that might cause corrosion.

DFS1 Cleaning Procedure

1. Remove the DFS1 adapter tip as outlined above.
2. Inspect the adapter tip and probe shaft to insure there is no physical damage.
3. Clean the inside of the adapter tip with oil/water free compressed air and a cleaning stick dampened with either FCC2 or FPF1 (available from AFL) optical quality cleaning fluid.
4. Inspect surface of the lens for dust or debris.
5. Clean lens surface with oil/water-free compressed air.
6. Use FiberWipes (available from AFL) dampened with either FCC2 or FPF1 optical quality cleaning fluid to clean the lens surface.
7. Allow lens to completely dry.
8. Re-inspect surface of the lens for cleanliness.
9. Reassemble probe and adapter tip.

Downloading FOCIS MOBILE Application

FOCIS MOBILE compatibility

- Compatible with Android™ 2.3.3 and up
- Refer to the user guide for your Android device to determine the OS revision level.

To set-up a store account:

Refer to the Google Play Store for instructions on setting up an account and downloading applications.

To download and verify:

- Open the Google Play Store app.
- Touch the Apps icon.
- Tap the search icon and type "FOCIS MOBILE" and tap the Enter key.
- Tap the FOCIS MOBILE icon and tap INSTALL.
- When installation is complete, you will see two buttons: "UNINSTALL" and "OPEN".
- Tap OPEN to start the app (an app icon will populate on your desktop screen).

To manually update apps:

- Open the Google Play Store app.
- Touch the Play Store icon > **My Apps** to view your downloaded apps. Apps with available updates are labeled "Update."
- Select individual apps to update or touch **Update all** to download all available updates.

To allow apps to be updated automatically:

- Open the Google Play Store app.
- Touch the Play Store icon > **My Apps** to view your downloaded apps. Apps with available updates are labeled "Update."
- Select the app you want to update.
- Touch Menu > **Auto-update** (depending on your device, your Menu icon may look different).
  – When the **Auto-update** box is selected, the app will update automatically when updates are available.

On **My Apps**, you can also touch "Update All" to download available updates for apps that you've downloaded. If prompted when downloading an app, you can also select **OK** to update an app automatically when on WiFi.

How to troubleshoot:

Please visit our website at http://www.aflglobal.com/Resources/Frequently-Asked-Questions/FAQ-Test-and-Inspection.aspx to review an up to date list of FAQs. You may also submit any question you may have there.

Downloading FOCIS MOBILE Application

FOCIS MOBILE compatibility

- Compatible with iPhone and iPad (iOS7)
- Refer to the user guide for your iOS device to determine the OS revision level.

To set-up a store account:

Refer to the Apple Store for instructions on setting up an account and downloading applications.

To download and verify:

- Open the Apple Store app.
- Touch the Apps icon.
- Tap the search icon and type "FOCIS MOBILE" and tap the Enter key.
- Tap the FOCIS MOBILE icon and tap INSTALL.
- When installation is complete, you will see an "OPEN" icon.
- Tap OPEN to start the app (an app icon will populate on your desktop screen).

To manually update apps:

- Open the Apple Store app.
- Touch the Update icon.
- Select individual apps to update or touch Update all to download all available updates.

To allow apps to be updated automatically:

- Open iPad or iPhone settings icon
- Scroll down and tap the "iTunes & App Store" from the left-side menu.
- Automatically updating apps is the last setting under "Automatic Downloads". Tap the button to turn it on or off.

How to troubleshoot.

Please visit our website at http://www.aflglobal.com/Resources/Frequently-Asked-Questions/FAQ-Test-and-Inspection.aspx to review an up to date list of FAQs. You may also submit any question you may have there.

Getting Started

Charging your PAL unit

Charge your PAL unit for at least 7 hours before first use!

To connect the AC adapter/charger:

- Plug the AC adapter/charger into a standard wall outlet.

- Connect the AC adapter/charger to the power port (mini USB port) on the PAL unit (**A**).
  Note: the PAL unit may be used while plugged into AC adapter/charger.

- Note that the AC adapter/charger indicator (**B**) illuminates to indicate that PAL is connected to the AC adapter/battery charger. Charging time is 7 hours maximum.
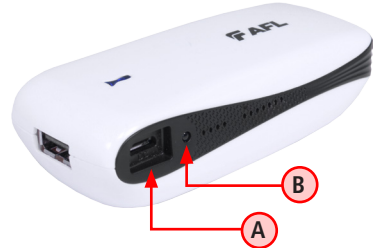
Powering up the PAL Portable Application Link

- Slide the Power switch to **[R]** position (**A**) to power up your PAL unit.

- It is required approximately 45 seconds for start-up of the PAL.

- Assuming that PAL's battery is charged, you should see Function LED indicator (**B**) flashing in a proper sequence to indicate PAL's function state.

1 second on, **5** seconds off:
signifies that the PAL unit has power and is booting up.

1 second on, **1** second off; **1** second on, **3** seconds off:
signified that the WiFi and USB port are ready for use.

1 second on, **1** second off, **1** second on, **1** second off, **1** second on, **1** second off:
signified that USB port is communicating with user's mobile device.
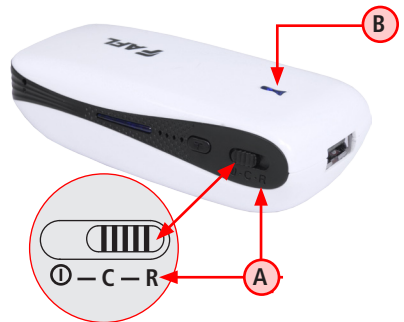
Connecting the DFS1 Digital FiberScope and PAL Unit

- Plug USB connector of the DFS1 (**A**) into the PAL USB port (**B**).
- LED will illuminate to indicate PAL operation modes status.
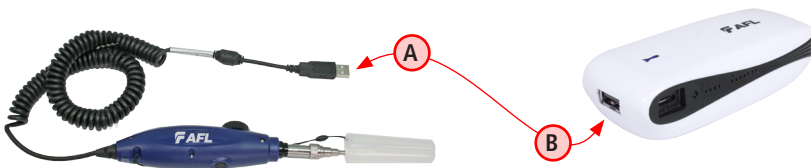
Getting Started

## Connecting your Mobile Device with your FOCIS WiFi PAL

On your mobile device, launch FOCIS MOBILE App. It will automatically connect to the PAL and start live streaming. If your mobile device does not connect to the PAL unit via WiFi, then manually connect to the SSID on the back of the PAL via your phone or tablet settings.

To manually connect your mobile device to a FOCIS WiFi System:

• Navigate to the WiFi networks screen.

• Locate the SSID of your FOCIS WiFi PAL (in our example: AFL_2C18TB046) and select it.

• Select Connect when instructed to do so.
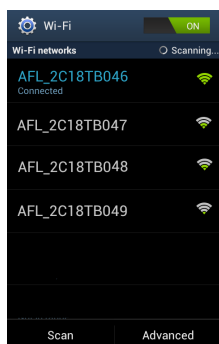
Android
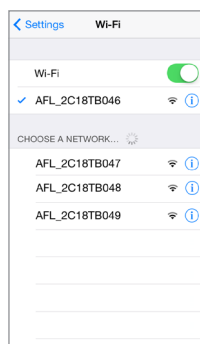
iOS7

Notes:

• PAL unit supports streaming to one mobile device but there is no limit to the number of mobile devices that can be used with a PAL unit. Connection between your mobile device and a PAL unit may not be shared.

• PAL SSID (Service Set Identifier, Network Name) PAL structure: e.g. **AFL_2C18TB046** Where "AFL_" is a prefix on all devices and "XXXXXXXXX" is the serial number of the PAL unit.

• The WiFi range is 2.4 meters minimum.

FOCIS MOBILE Connectivity Status Screen (Android)

When opening FOCIS MOBILE by tapping on the FOCIS MOBILE icon may see the FOCIS MOBILE Connectivity Status screen.

This screen list four headings:

• Phone/Tablet WiFi Active

• WiFi Connection
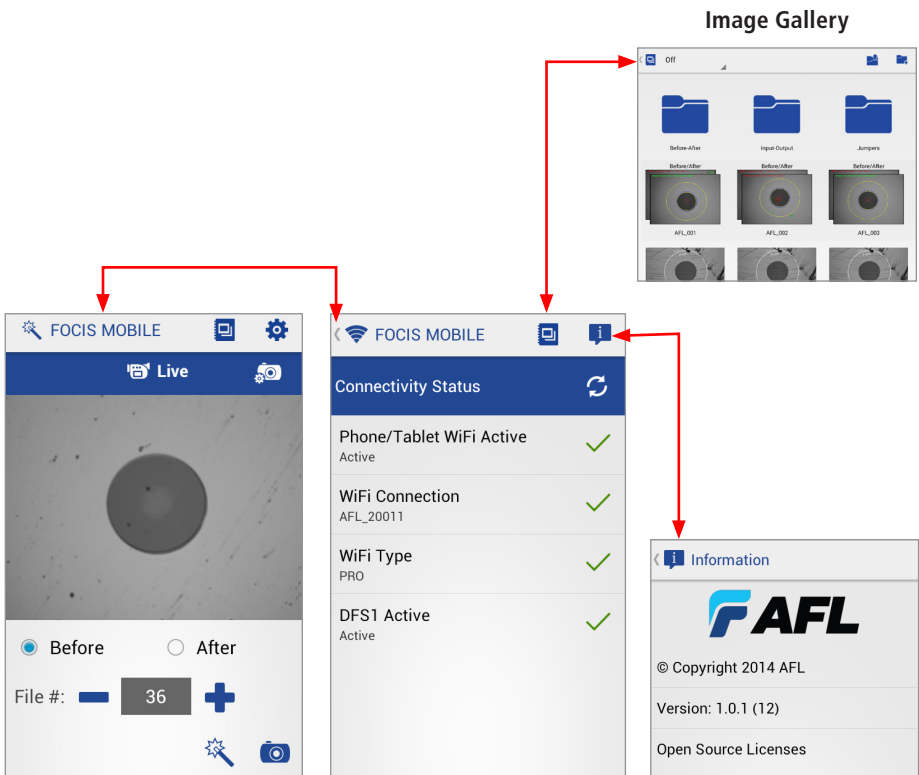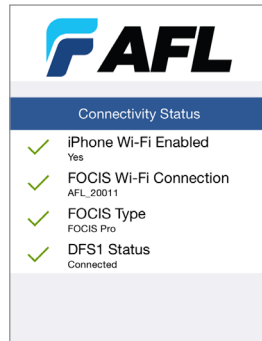
• WiFi Type

• DFS1 Active
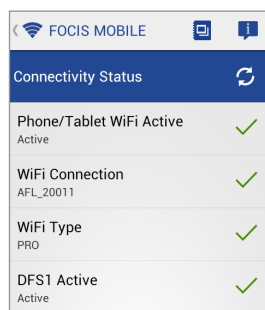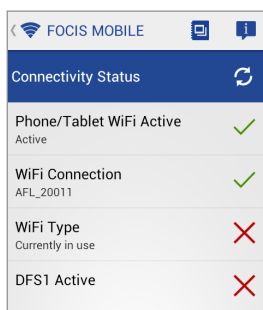
Getting Started

All four headings should display a green check ✓ at the end of each header. If you see a red ✗, then that particular function needs to be addressed to ensure complete connectivity with your DFS1 probe.

- **Phone/Tablet WiFi Active:** indicates if your device is set up to receive a WiFi signal. If this header shows a red X, make sure you have WiFi turned on in your device's System Settings.

- **WiFi Connection:** indicates your device is receiving a WiFi signal from your PAL. If this header shows a red ✗, make sure you have selected the PAL WiFi and not another one in your device System Settings, and that your PAL is in turned On.

- **WiFi Type:** Indicates the type of FOCIS WiFi system to which the mobile device is connected.

- **DFS1 Active:** indicates if your PAL is connected to your DFS1. If this header shows a red X, make sure you have plugged the DFS1 into the PAL.

Be sure to tap the Refresh icon ⟳ after making any of the required adjustments above.

Once all of the headers the FOCIS MOBILE Connectivity Status screen show a green check ✓,

- The FOCIS MOBILE application will display the Live Image screen in three seconds, or you can tap the back icon ❮ to enter the app as soon as all four green check marks ✓ appear.

- If you want to go directly to the saved images screen, tap the Image Gallery icon 🖵.

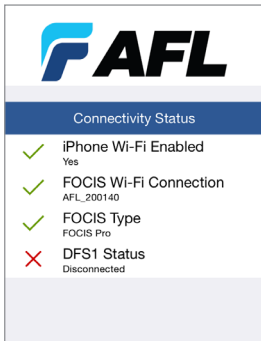- Tapping the Information icon ℹ️ will display the application version screen.

Image Gallery

12

FOCIS MOBILE Connectivity Status Screen (iOS7)

When opening FOCIS MOBILE by tapping on the FOCIS MOBILE icon you will get the FOCIS MOBILE Connectivity Status screen.

This screen list four headings:

• Phone/Tablet WiFi Active

• WiFi Connection

• WiFi Type

• DFS1 Active

All four headings should display a green check ✓ at the end of each header. If you see a red ✗, then that particular function needs to be addressed to ensure complete connectivity with your DFS1 probe.

• **Phone/Tablet WiFi Active:** indicates if your device is set up to receive a WiFi signal. If this header shows a red X, make sure you have WiFi turned on in your device's System Settings.

• **WiFi Connection:** indicates your device is receiving a WiFi signal from your PAL. If this header shows a red ✗, make sure you have selected the PAL WiFi and not another one in your device System Settings, and that your PAL is in turned On.

• **WiFi Type:** Indicates the type of FOCIS WiFi system to which the mobile device is connected.

• **DFS1 Active:** indicates if your PAL is connected to your DFS1. If this header shows a red X, make sure you have plugged the DFS1 into the PAL.

Once all of the headers the FOCIS MOBILE Connectivity Status screen show a green check ✓, The FOCIS MOBILE application automatically switch to the Live Image Mode.

FOCIS MOBILE Application Overview

Depending on the type of FOCIS WiFi system in use, the FOCIS MOBILE application on your device will provide you with the capabilities described for FOCIS WiFi PRO, FOCIS WiFi PLUS or FOCIS WiFi VIEW.
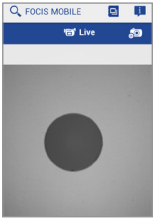
Live Image

FOCIS WiFi VIEW – enables users to view live images of a fiber end-face.

Operating mode in **FOCIS VIEW:**

- Live Image mode:
    - enables the user to view live images of a fiber end-face on a mobile device
    - permits the user to focus, zoom and pan for visual inspection of the displayed fiber end-face image

FOCIS WiFi PLUS – enables users to view, save, compare and share saved end-face images via email, text and mobile cloud applications. Operating modes in **FOCIS PLUS:**

- Live Image mode
- Image Capture mode - adds capability to capture and save fiber images in user-defined folders
- Image Review mode - enables the user to recall, compare and share results via email, text or mobile cloud applications.
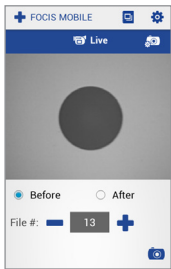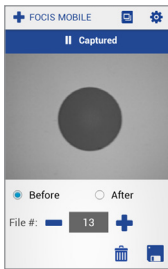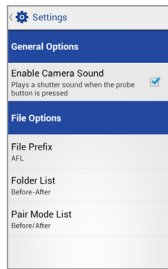
| Live Image | Image Capture | Settings | Image Gallery | Image Review |
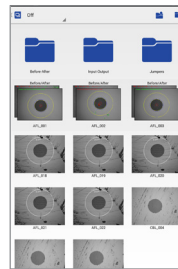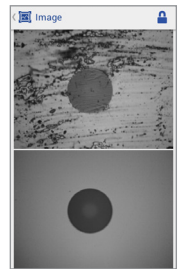
FOCIS WiFi PRO – enables users to automatically analyze connector integrity and allows to save, recall and share results via email, text or mobile cloud applications. Operating modes in **FOCIS PRO:**

- Live Image mode
- Image Capture mode
- Analysis mode - adds capability to automatically analyze connector integrity according to IEC 61300-3-35, AT&T TP-76461 or user defined standards.
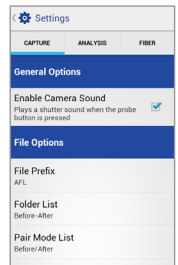- Image Review mode
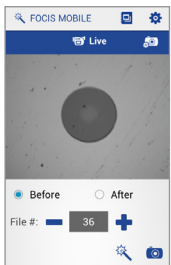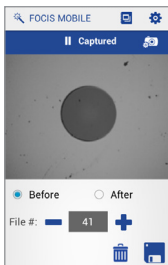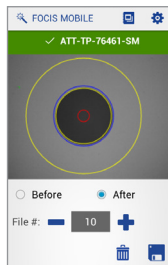
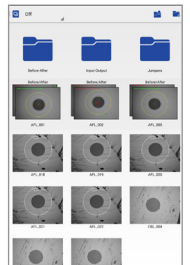| Live Image | Image Capture | Analysis | Settings | Image Gallery |

14

FOCIS MOBILE Application Overview

The table below summarizes FOCIS MOBILE operating modes and features available with FOCIS PRO, FOCIS PLUS, or FOCIS VIEW.

Operating Modes	FOCIS PRO	FOCIS PLUS	FOCIS VIEW
Live Image: – Enables the user to view live images of a fiber end-face on a mobile device (smartphone or tablet)	●	●	●
Image Capture: – Provides all functions of the Live Image mode – Adds capability to capture and save fiber end-face images in user-defined folders	●	●	
Automatic Analysis: – Provides all functions of the Live and Capture mode – Adds capability to automatically analyzes connector integrity according to IEC 61300-3-35, AT&T TP-76461, or user defined standards and save analysis results in user-defined folders	●		
User Settings	●	●	
Features			
Image focus, zoom, pan	●	●	●
Pair Image	●	●	
Capture and Store Image	●	●	
Recall and Review Image:	●	●	
Share Image via email, text & cloud-based means	●	●	
Produces TRM/TRM 2.0 compatible images	●	●	
Validate per IEC 61300-3-35	●		
Validate per AT&T TP-76461	●		
Validate per user-defined criteria	●		
Share analyses' via email, text & cloud-based means	●		
Produces TRM/TRM 2.0 compatible analyses'	●		

The following sections of this User's Guide provide detailed descriptions of all features and functionality of the FOCIS PRO the most comprehensive of the FOCIS WiFi family.

If you own FOCIS PLUS or FOCIS VIEW, please refer to sections that apply to your software license.

FOCIS MOBILE Application Overview

Live Mode On-screen Controls (FOCIS PRO / PLUS / VIEW)

The Live Image mode enables the user to view live images of a fiber end-face on a mobile device and to focus, zoom and pan for visual inspection of the displayed fiber end-face image.

1. Status bar contains the following controls:
   – 🖳 **In FOCIS PRO and PLUS:** Tapping this icon will display the Image Gallery.
   – ⚙ **In FOCIS PRO:** Tapping this icon will display the Settings mode where users configure Automatic Analysis Pass/Fail criteria, define file prefix and save location, select image pair mode.
   – ⚙ **In FOCIS PLUS:** Tapping this icon will display the Settings mode where users define file prefix and save location, select image pair mode.
2. Header 'Live' indicates that FOCIS MOBILE is in the Live Inspection mode.
3. 📷 Brightness & Contrast. Tap on this icon do display the Brightness and Contrast adjustment sliders. Touch and move sliders to adjust brightness/contrast level.
4. Image Viewer displays a real-time live view of a fiber end-face that is being inspected and permits the user to zoom and pan for visual inspection of the displayed fiber end-face.
   – To Zoom: Tap the screen twice or pinch and swipe to zoom in/out.
   – To Pan: Press and hold the fiber-end image displayed in the Image Viewer to drag it to the desired location within the Viewer.
5. **In FOCIS PRO and PLUS:** This field displays the Image Pair mode (defined in Settings) if enabled.
6. **In FOCIS PRO and PLUS:** File Number field: displays the current File #, which may be changed by tapping ▬ or ➕. Once the image has been saved in the Capture mode, the file number is automatically incremented.
7. 🪄 **In FOCIS PRO:** Tap the Magic Wand icon to start an automatic analysis of the fiber end-faced (according to the selected Pass/Fail criteria). Alternatively, if so configured in the user Settings, press the probe Capture button once to start an automatic analysis.
8. 📷 **In FOCIS PRO and PLUS:** Tap the Camera icon to capture the displayed image. Alternatively, if so configured in the user Settings, press the probe Capture button once to capture a snapshot of the fiber end-face image.


Android   **iOS7**

16
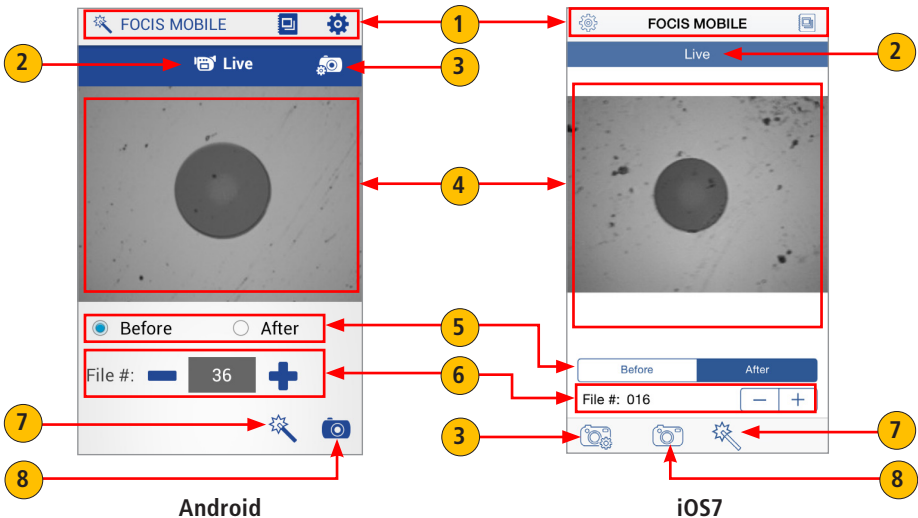
FOCIS MOBILE Application Overview

Capture Mode On-screen Controls (FOCIS PRO / PLUS)

This mode is available in FOCIS PRO and PLUS only!

The Image Capture mode enables users to view, save, compare and share saved end-face images via email, text or mobile cloud applications. It is accessed from the Live Image mode by tapping the Capture icon 🔘 and when enabled is indicated by the Header 'Captured'.

1. Status bar contains the same controls as in the Live Image mode:
   – 🔲 Tapping this icon will display the Image Gallery.
   – ⚙️ **In FOCIS PRO:** Tapping this icon will display the Settings mode where users configure Automatic Analysis Pass/Fail criteria, define file prefix and save location, select image pair mode.
   – ⚙️ **In FOCIS PLUS:** Tapping this icon will display the Settings mode where users define file prefix and save location, select image pair mode.

2. Header 'Captured' indicates that FOCIS MOBILE operates in the Image Capture mode.

3. 📷 Brightness & Contrast. Tap on this icon do display the Brightness and Contrast adjustment sliders. Touch and move sliders to adjust brightness/contrast level.

4. Image Viewer displays a still image of the fiber being inspected and allows the user to zoom and pan for visual inspection of the displayed fiber end-face.
   – To Zoom: Tap the screen twice or pinch and swipe to zoom in/out.
   – To Pan: Press and hold the fiber-end image displayed in the Image Viewer to drag it to the desired location within the Viewer.

5. This field displays the Image Pair mode (user-defined in Settings) if enabled.

6. File Number field: displays the current File #, which may be changed by tapping ▬ or ➕. Once the image has been saved in the Capture mode, the file number is automatically incremented.

7. 💾 Tapping the Floppy disc icon will save the displayed image (according to Save settings). After saving, FOCIS MOBILE reverts to Live Image mode.

8. 🗑️ Tapping Trash Can icon will discard the displayed image. After deleting, FOCIS MOBILE reverts to Live Image mode.


Android   **iOS7**

17
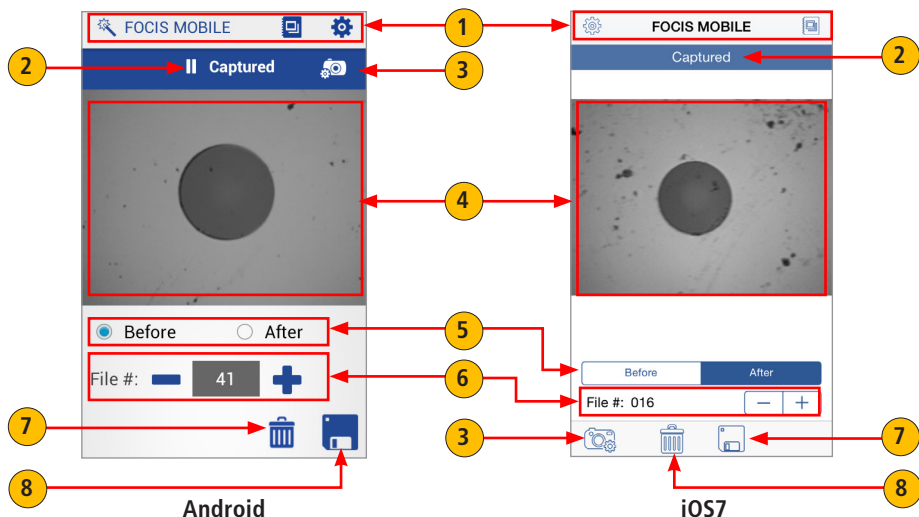
Automatic Analysis and On-screen Controls (FOCIS PRO only)

The Analysis mode analyzes the integrity of a fiber end-face in less than 1 second and is capable of centering a fiber image, identifying core, cladding, adhesive and contact zones and detecting and tallying the types of defects found. The Analysis mode is enabled from the Live Image mode by tapping the Magic Wand icon ✨. Alternatively, the Analysis mode may be enabled by pressing the Capture button if so configured in the user Settings. Once analysis is completed, the Image Viewer displays results as either 'Pass' or 'Fail' and allows the user to preview an image using zoom/pan features.

1. Status bar contains the same controls as in the Live Image mode:
   – 🖳 Tapping this icon will display the Image Gallery.
   – ⚙ Tapping this icon will display the Settings mode where users configure Automatic Analysis Pass/Fail criteria, define file prefix and save location, select image pair mode.

2. Header displays 'Pass' or 'Fail' analysis results (according to the options selected in the Analysis Settings mode).
   – 'Pass' display is presented when the connector inspection criteria are satisfied.
   – 'Fail' display is presented when the connector inspection criteria are not satisfied

3. Image Viewer displays a static image of the inspected fiber end-face, analysis zones and defect borders if set to 'Visible and Saved' and permits the user to zoom and pan for visual inspection of the displayed fiber end-face.
   – To Zoom: Tap the screen twice or pinch and swipe to zoom in/out.
   – To Pan: Press and hold the fiber-end image displayed in the Image Viewer to drag it to the desired location within the Viewer.

4. This field displays the Image Pair mode (user-defined in Settings) if enabled.

5. File Number field: displays the current File #, which may be changed by tapping ▬ or ➕. Once the image has been saved in the Capture mode, the file number is automatically incremented.

6. 💾 Tapping the Floppy disc icon will save the displayed image (according to Save settings). After saving, FOCIS MOBILE reverts to Live Image mode.

7. 🗑 Tapping Trash Can icon will discard the displayed image. After deleting, FOCIS MOBILE reverts to Live Image mode.

**Android**   **iOS7**
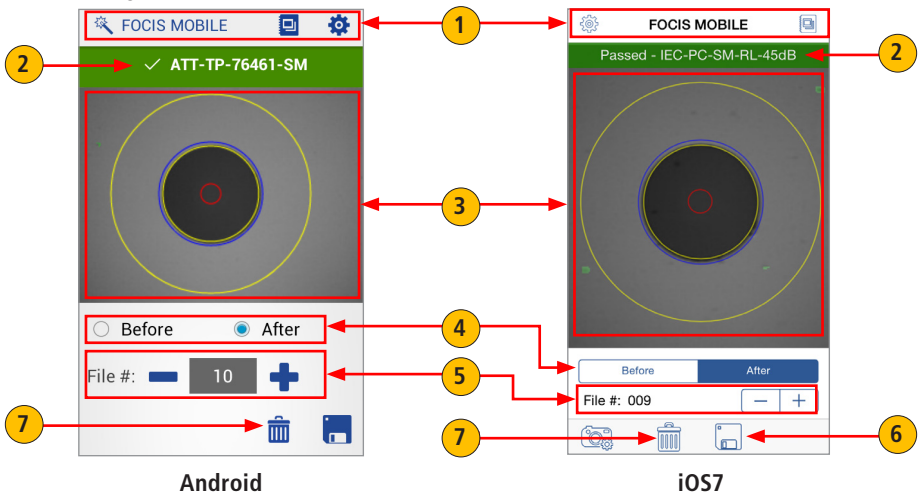
FOCIS MOBILE Application Overview

User Settings and Controls

The Settings mode is accessed by tapping the Settings icon ⚙ located in the Status bar. The Settings mode allows the user to perform various setup functions as follows:

Android

- **Capture (FOCIS PLUS and PRO)** - enable/disable camera sound, select active folder for captured images storage, define file prefix, and select a preset pairing mode for fibers inspection.
- **Analysis (FOCIS PRO only)** - configure the Capture button functionality on the DFS1 probe, select zone visibility, select defect border visibility.
- **Fiber (FOCIS PRO only)** - select Fiber and Connector type and define Pass/Fail criteria.
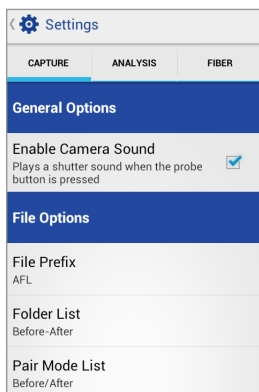
FOCIS PRO Settings
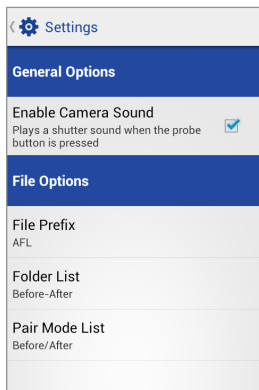
FOCIS PLUS Settings

iOS7

- **Capture (FOCIS PLUS and PRO)** - enable/disable camera sound, select active folder for captured images storage, define file prefix, and select a preset pairing mode for fibers inspection.
- **Analysis (FOCIS PRO only)** - select Fiber and Connector type and define Pass/Fail criteria, select zone visibility, select defect border visibility, configure the Capture button functionality on the DFS1 probe

FOCIS PRO Settings

FOCIS PLUS Settings

FOCIS MOBILE Application Overview

Behavior of the DFS1 Probe Button

The DFS1 Probe Capture button functionality is user-defined and may be configured to either enable the Analysis mode or enable the Capture mode.

• Analysis mode
  – Press the DFS1 Probe Capture button once to analyze the displayed end-face image
  – Press the DFS1 Probe Capture button second time to save analysis results in the designated folder
• Capture mode:
  – Press the DFS1 Probe Capture button once to capture the displayed end-face image
  – Press the DFS1 Probe Capture button second time to save captured results in the designated folder

Android

• Tap on this field to display the available options.
• Tap on the desired option to select it.

iOS7

Tap on this field to select.

Select Zone Visibility

This setting provides the choice to control how the analysis zones (core, cladding, adhesive, contact) are stored with the analyzed image. Available options:

- **Visible and Saved** - the analysis zones are displayed and saved with the image file as overlays on the image (as shown in our example image).

- **Visible** - the analysis zones are displayed, but not saved.

- **Hidden** - the analysis zones are not displayed and not saved.

Core

Cladding

Adhesive

Contact
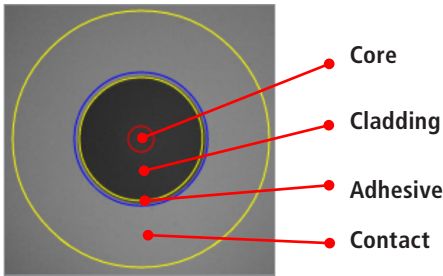
Zones set to Visible
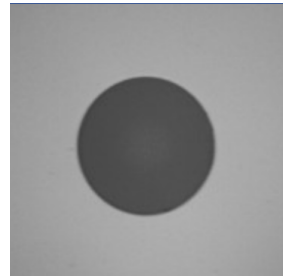
Zones set to Hidden

Android
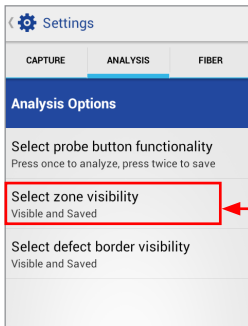
To select Zone Visibility:
- Tap on 'Select Zone Visibility' to display the available options.
- Tap on the desired option to select it.

iOS7

To select Zone Visibility:
- Tap on 'Zone Visibility' to display the available options.
- Tap on the desired option to select it.

Select Defect Border Visibility

This setting provides the choice to control how the defect borders (red & green borders around defects and scratches) are stored with the analyzed image. Available options:

- **Visible and Saved** - the defect borders are saved with the image file as overlays on the image (as shown in our example image).

- **Visible** - the defect borders are displayed, but not saved.

- **Hidden** - the defect borders are not displayed and not saved.
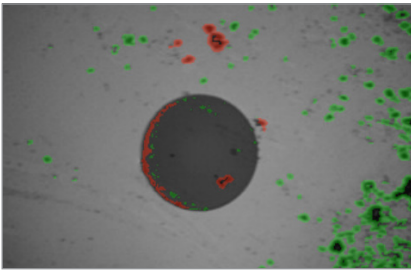
Borders set to Visible
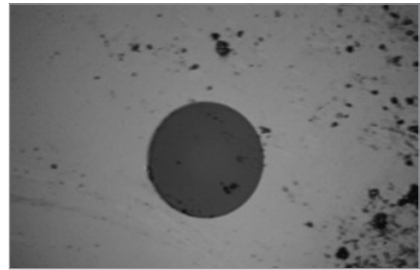
Borders set to Hidden

Android
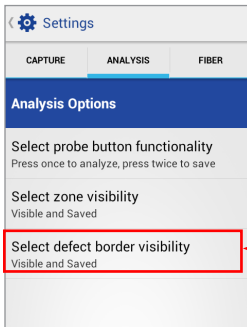
To select Defect Border Visibility:
- Tap on 'Select Defect Border Visibility' to display the available options.
- Tap on the desired option to select it.
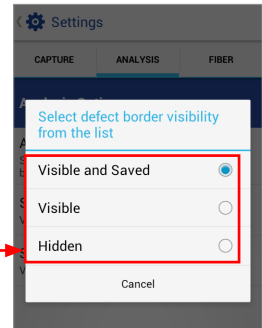
iOS7

To select Zone Visibility:
- Tap on 'Zone Visibility' to display the available options.
- Tap on the desired option to select it.
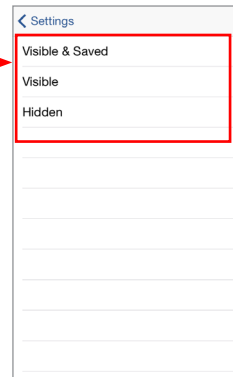
Configuring Automatic Analysis

Select Fiber Type, Connector Type and Pass Fail Criteria

Android device

While in the Fiber Settings screen, tapping on a Fiber Type/Connector Type (A) displays the available Pass/Fail Specifications menu allowing the user to perform one of the following:

- Select one of the available Pass/Fail presets.
  - Tap on the desired Pass/Fail preset icon 📄 to see the criteria, as explained in "Understanding the Pass/Fail Criteria" on page 26
  - Tap on the desired Pass/Fail preset select button ⦿ to select it - the selected Pass/Fail criteria will be used in Analysis.
- Create a new user-defined Pass/Fail preset. Tap on ➕ to launch the creation screen that allows the user to define and add new criteria. See "Define New Pass/Fail Specification" on page 24.

Notes:

📄 **Locked List icon:** indicates that Pass/Fail preset is not editable and can't be deleted

📄 **User List icon:** indicates that Pass/Fail preset is editable and also may be removed from the list by tapping 🗑 Trash icon.
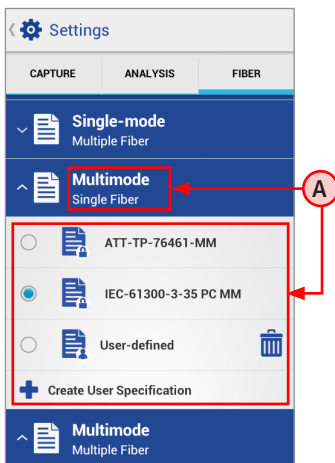
iOS7 device

While in the Settings screen, tapping on a Specification field (A) displays the available Pass/Fail Specifications menu allowing the user to perform one of the following:

- Select one of the available Pass/Fail presets.
  - Tap on the desired Pass/Fail preset info icon ⓘ to see the criteria, as explained in "Understanding the Pass/Fail Criteria" on page 26
  - Tap on the desired Pass/Fail preset name to select it - the selected Pass/Fail criteria will be used in Analysis.
- Create a new user-defined Pass/Fail preset. Tap on ⊕ to launch the creation screen that allows the user to define and add new criteria. See "Define New Pass/Fail Specification" on page 24.
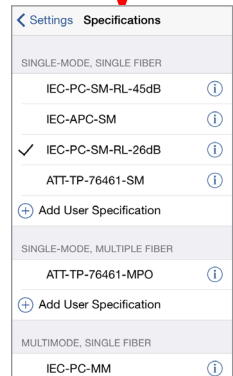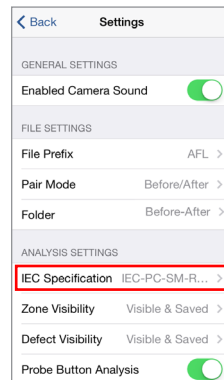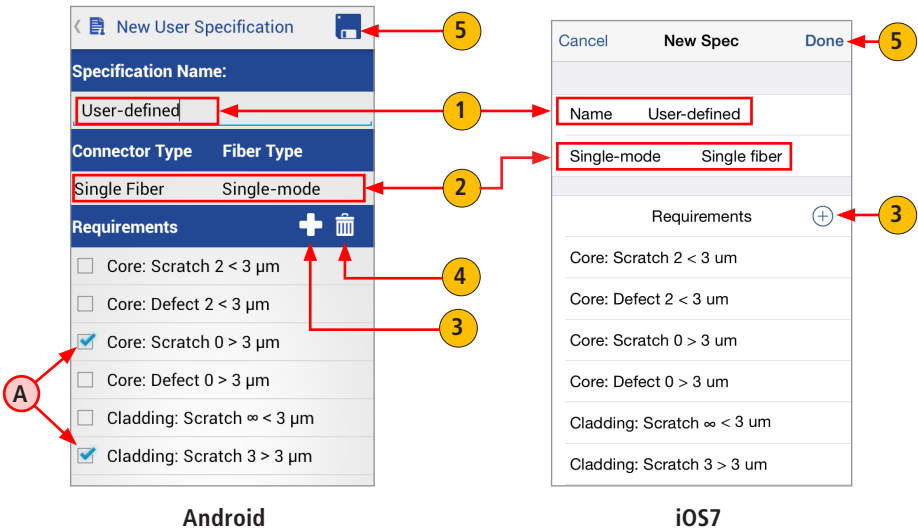
Configuring Automatic Analysis

Define New Pass/Fail Specification

The new User Pass/Fail Specification is defined in the New User Specification screen, which is accessed from Settings by tapping ![plus icon] 'Create User Specification' / ⊕ 'Add User Specification' .

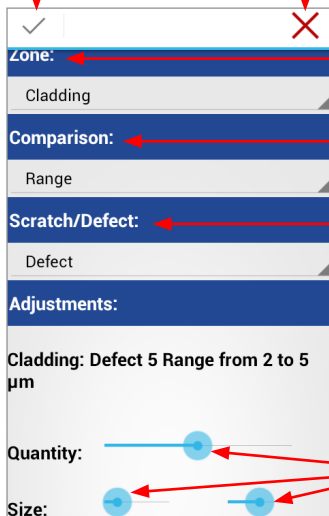| Ref #	Feature		Description
1	New Pass/Fail Specification Name		Using the displayed on-screen keyboard, enter a name for the newly created Pass/Fail Specification.
2	Connector Type and Fiber Type		This is this is an informative field. It displays Connector and Fiber Type selected in the previous setup screen.
	Android	**iOS7**	Tapping Plus icon displays the Limits Definition screen, which allows the user to define zone, comparison type, defect quantity / size, and scratch quantity / size.
3	![plus icon]	⊕	
4	![trash icon]	N/A	Tapping Trash icon with requirement(s) selected Ⓐ will delete selection(s)
5	![floppy disc icon]	Done	Tapping Floppy disc icon saves the newly created/defined criteria and reverts to the Fiber settings screen.

Android

iOS7

Define Zones and Limits

| Ref #	Feature	Description
1	Zone	Tapping on ◢ - down arrow / tapping on 'Zone' field displays a list and allows the user to select one of the following zones: • Core • Cladding • Adhesive • Contact
2	Comparison Type	Tapping on ◢ - down arrow / tapping on 'Comparison' field allows the user to select the comparison type: • Greater Than • Less Than • Range
3	Scratch/ Defect Type	Tapping on ◢ - down arrow / tapping on 'Type' field allows the user to select the defect type: • Defect • Scratch
4	Adjustment Sliders	Tapping on a slider -and dragging it left/right allows the user to adjust quantity and size aspects of the criteria.

Tapping ✓ saves the defined criteria
Tapping ✗ discards settings

Tapping Done saves the defined criteria
Tapping Done discards settings
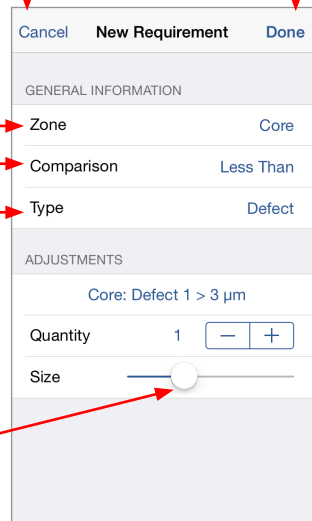
Android

iOS7

Configuring Automatic Analysis

Understanding the Pass/Fail Criteria

The Pass/Fail criteria viewer displays information about the applicable limits by zone and by type of defects. The example screen below shows the IEC-61300-3-35 PC SM RL-45dB Pass/Fail criteria viewer and a table below provides explanation of limits by zone and by type of defects.

Pass/Fail criteria name

Defect Type

Pass/Fail criteria name

Zone names and defect limits

Android   **iOS7**

| Zone	Defect Type and Pass Limits Range and Limits Explanation		
		Scratch	**Defect**
Core	Pass Limits Range	**0**	**0**
	Limits Explanation	*Scratches in the Core zone are not allowed*	*Defects in the Core zone are not allowed*
Cladding	Pass Limits Range	**∞ ≤ 3 μm**	**∞ ≤ 2 μm** **5 from 2 μm to 5 μm** **0 > 5 μm**
	Limits Explanation	*Any number of Scratches ≤ 3 μm are allowed in the Cladding zone and can be ignored*	• *Any number of Defects ≤ 2 μm are allowed and can be ignored* • *5 defects > 2 μm and < 5 μm are allowed and can be ignored* • *Defects > 5 μm are not allowed in the Cladding zone*
Adhesive	Pass Limits Range	∞	∞
	Limits Explanation	*Any number of Scratches in the Adhesive zone are allowed and can be ignored*	*Any number of Defects in the Adhesive zone are allowed and can be ignored*
Contact	Pass Limits Range	∞	**0 ≥ 10 μm**
	Limits Explanation	*Any number of Scratches in the Contact zone are allowed and can be ignored*	*Defects ≥ 10 μm are not allowed in the Contact zone*

Enabling Camera Sound

Tap on the 'Camera Sound' selection box to enable (check) or disable (uncheck) the Camera Sound option. When enabled, your mobile device plays a shutter sound when you press the Capture button on your DFS1 probe.
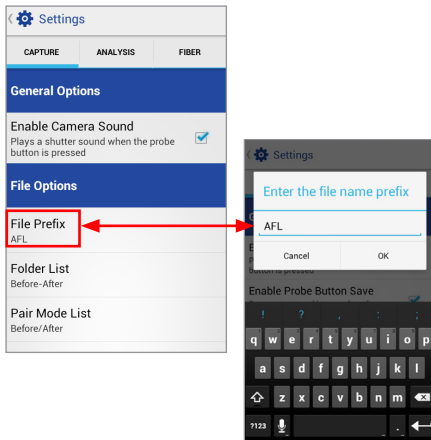
Android
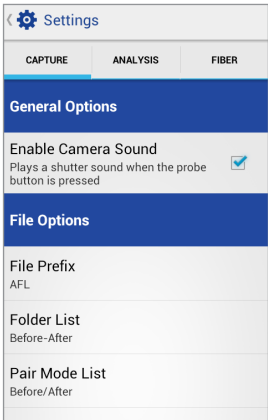
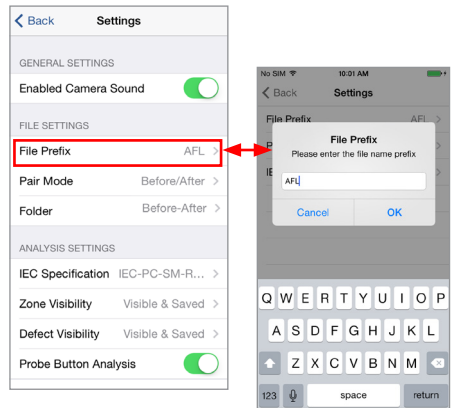**iOS7**
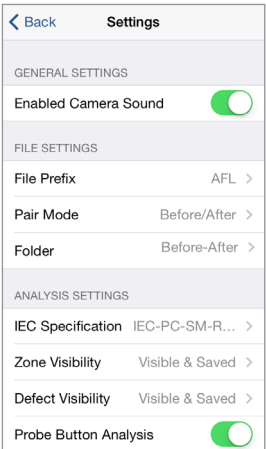
Defining Saving Options

Defining a File Prefix

1. Tap anywhere on the File Prefix field to display the Text Editor.

2. Use the displayed on-screen keyboard to enter the desired prefix name in the text field.

3. Press OK to save and exit the Text Editor.
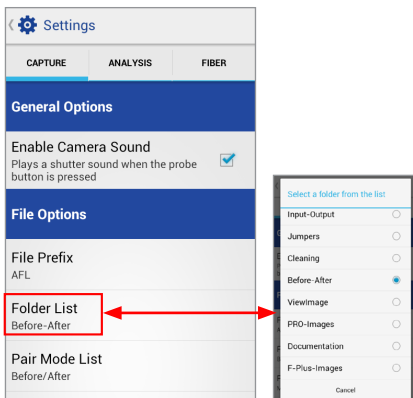
Android

iOS7

Defining Save Location

The user defines where test results will be save by selecting a destination folder:

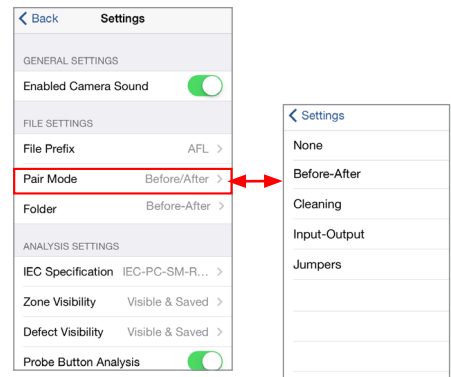1. Tap on the Folder List field to display a list of currently available folders.

   Note: New folders are created in the Image Gallery.

2. Tap on the desired folder to select and make it current.

Android

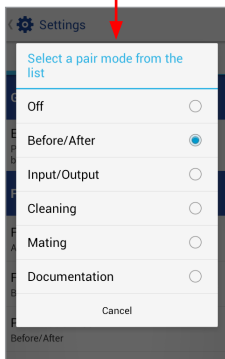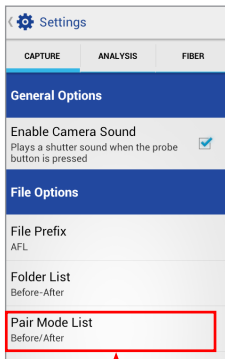**iOS7**

Defining Saving Options

Image Pairing

Enabling the Image Pair mode allows the user to select a preset pairing mode prior to fibers inspection, then inspect fiber end-faces and save captured images with the selected pairing preset label for simplified identification, recall, and review. This setup is done in the Setting mode screen.

1. Display the Setting mode by tapping the Settings icon ⚙ located in the Status bar.

2. Tap on the Pair Mode List field to display a list of the available image pair presets:

Preset	Description
Before/after	This is a general preset for any before/after fiber inspection comparisons
Input/output	This is a general preset for any input/output fiber inspection comparison
Cleaning	This preset is used for inspection fiber end-faces before and after cleaning
Mating	This preset is used for inspection of mating connector and bulkhead
Documentation	This preset is used for as-built/as-found fiber installation and maintenance

3. Tap on the desired pair mode to select and make it current. After the Image Pair mode is enabled, captured images are stored with the selected pairing mode label (Before/After, Input/Output, Cleaning, Mating, Documentation) for image pair identification.

4. To simplify images recall and review, stored images may be optionally filtered by the user-selected image pair mode.
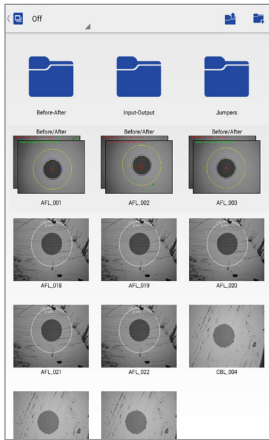

Android
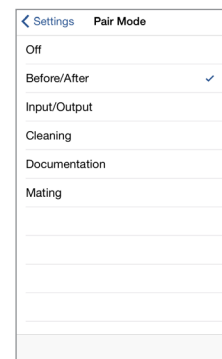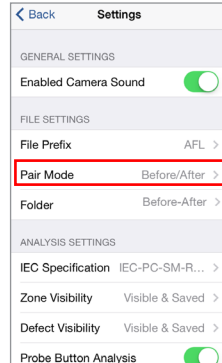
iOS7

Saved Image Gallery

The Image Gallery provides file manager functions enabling users to browse and select stored results for review, create new folders, and share stored data.

1. Tap the Image Gallery icon to display saved folders, images and image pairs/

Folder icon represents a user-defined folder
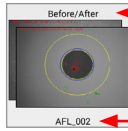
Folder name

Image pair preset name

2-image thumbnail indicates an image pair

File prefix and fiber number 'AFL_002', where 'AFL' is the file prefix and '002' is the fiber number
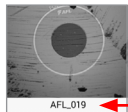
Single image thumbnail indicates a single image
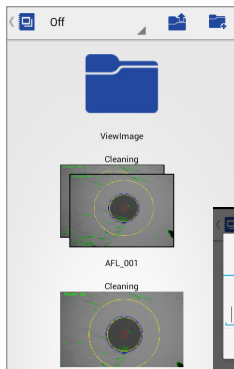
File prefix and fiber number 'AFL_019', where 'AFL' is the file prefix and '019' is the fiber number
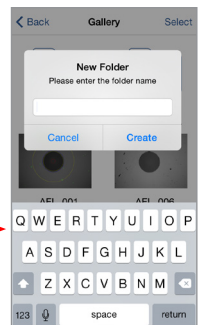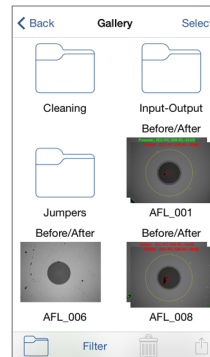
Creating Folders

- Tap the New Folder / icon to display the New Folder screen.
- Use the displayed on-screen keyboard to create New Folder Name.
- Tap Create to save and return to Image Gallery.

Note: only one level of folders can be created.

Android
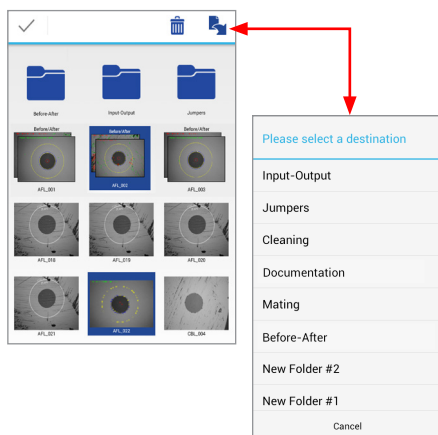
iOS7

Copy or Move Images

Android

Note: Only image files can be copied.

1. Navigate to the desired image. Swipe Up/ Down to scroll through saved images.

2. Press & hold the desired image thumbnail to select (highlight) it. You may select as many items as needed.

3. Tapping the Copy ![icon] icon will display a list of destination folders.

4. FOCIS MOBILE support copy, paste and move images:

   – Tap on the desired destination folder to copy selection(s).

   – If you want to move an image from one folder to another, copy the original, paste it into the new destination and then go back and delete the original.

iOS7

Note: Only image files can be copied.

1. Navigate to the desired image. Swipe Up/ Down to scroll through saved images.

2. Tap 'Select' located in the Image Gallery header.

3. Tap the desired image thumbnail to select it. You may select as many items as needed.

4. Tapping Copy/Share ![icon] icon will display a list of Copy/Share options.

5. Tapping ![icon] will display a list of destination folders.

6. FOCIS MOBILE support copy, paste and move images:

   – Tap on the desired destination folder to copy selection(s).

   – If you want to move an image from one folder to another, copy the original, paste it into the new destination and then go back and delete the original.
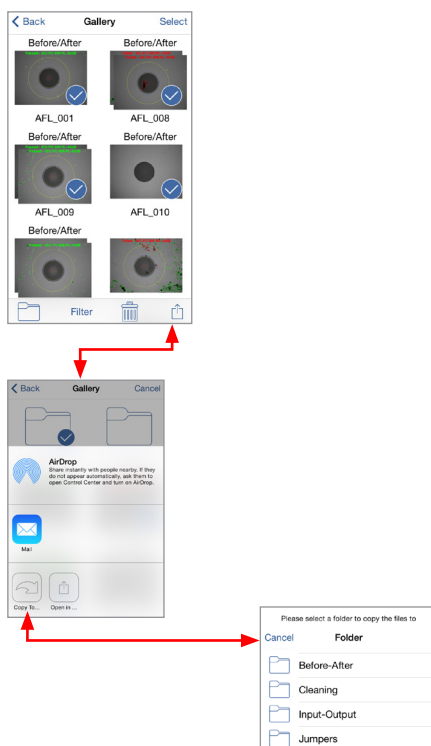
Saved Image Gallery

Delete Images and Folders

Android

1. Navigate to the desired image or folder.

2. Press & hold to highlight the desired image or folder thumbnail to select (highlight) it. You may select as many items as needed.

3. Tap the Trash Can 🗑 icon to delete selection(s).

4. When prompted, tap 'YES' to confirm deletion.
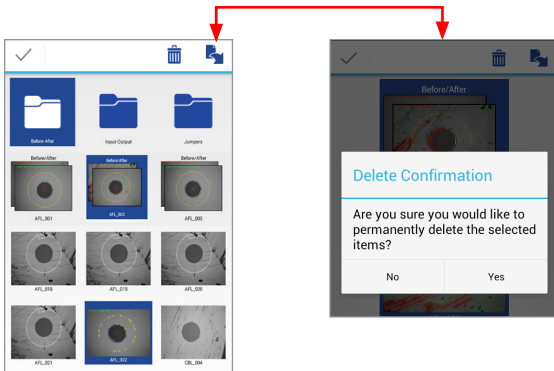
iOS7

1. Navigate to the desired image or folder.

2. Tap 'Select' located in the Image Gallery header and then tap the desired image thumbnail to select it . You may select as many items as needed.

3. Tap the Trash Can icon to delete selection(s).

NOTE: you can select multiple images and then delete the images simultaneously.
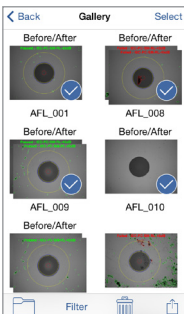
Saved Image Gallery

Using the Image Pairing Filter

The Filter feature allows users to sort and display images by one of 5 image pair options:
Off, Before/After, Input/Output, Cleaning, Mating, Documentation.

• Tap on Filter field to display the image pair presets.

• Tap the desired preset to select.

Android

iOS7
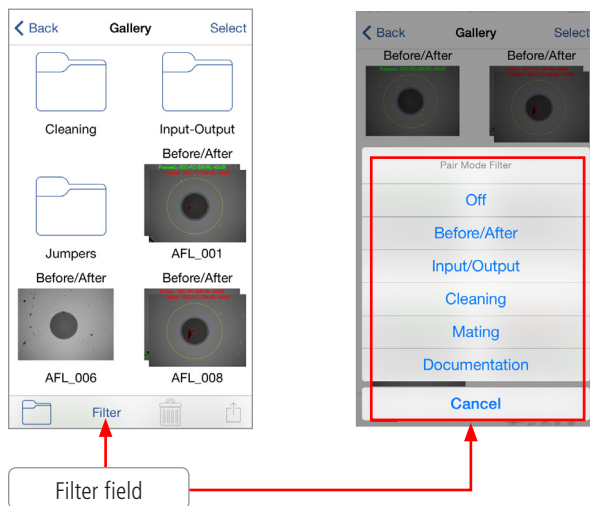
Saved Image Gallery

Recalling Saved Images

To review a single image

1. Navigate to the desired image.

2. Tap on the image thumbnail to display it in the Image Review mode.

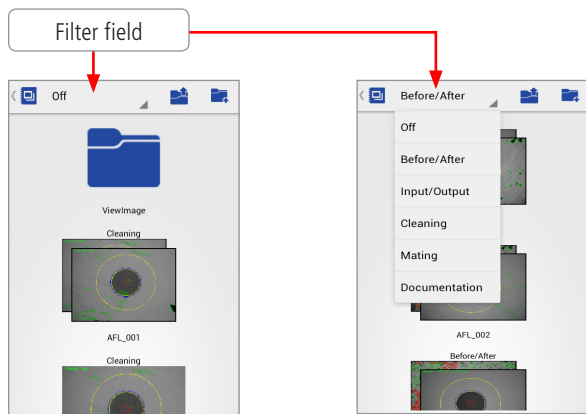3. If an image was saved with the Analysis mode enabled, then it will display Pass/Fail results, Pass/ Fail Specifications, Analysis zones and defect borders if set to 'Visible and Saved' - as shown in the 'Android #1' screen below.

4. If an image was saved with the Capture mode enabled, then it will be displayed as shown in 'iOS7 #2' screen below.

5. To Zoom: Tap the screen twice or pinch and swipe to zoom in/out.

6. To Pan: Press and hold the fiber-end image displayed in the Image Viewer to drag it to the desired location within the Viewer.

7. Tap ❮ Back Arrow or 'Back' key on your mobile device to return to the Image Gallery screen.
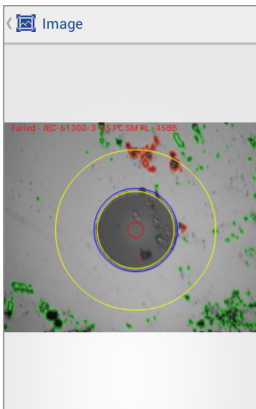
Android #1
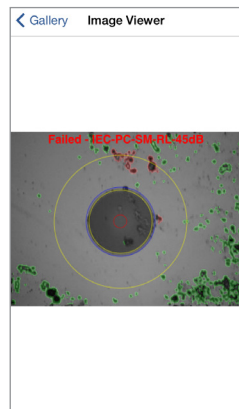
iOS7 #2

Saved Image Gallery

To review an image pair

1. Navigate to the desired image pair
2. Tap on the image pair thumbnail to display it in the Image Review mode.
3. If an image pair was saved with the Analysis mode enabled, then it will display Pass/Fail results, Pass/Fail Specifications, Analysis zones and defect borders if set to 'Visible and Saved' - as shown in the 'Android #1'/ 'iOS7 #1' screen below.
4. If an image pair was saved with the Capture mode enabled, then it will be displayed as shown in the 'Android #2'/ 'iOS7 #2' screen below.
5. To Zoom: Tap the screen twice or pinch and swipe to zoom in/out.
6. To Pan: Press and hold the fiber-end image displayed in the Image Viewer to drag it to the desired location within the Viewer.
7. Tap Back Arrow icon or 'Back' key on your mobile device to return to the Image Gallery screen.
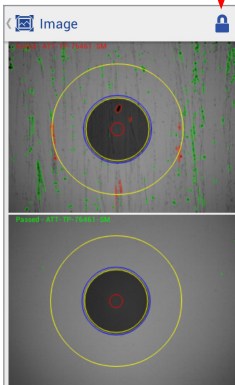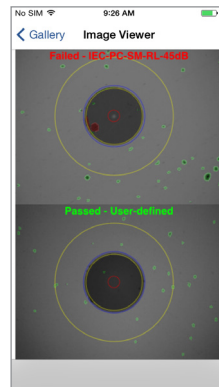
Tap 🔒 to unlock a paired image to individually zoom and pan each image separately

Android #1
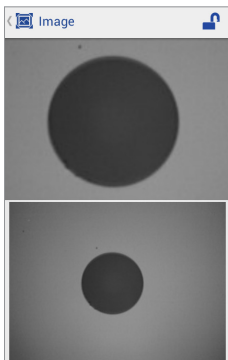
iOS7 #1

Android #2
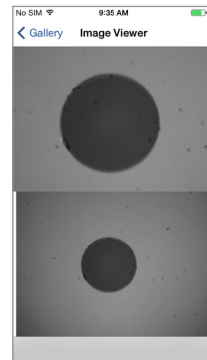
iOS7 #2

Saved Image Gallery

Share Stored Images

A mobile device Gallery Application allows the user sharing stored images via Email, Bluetooth, Gmail, DropBiox, Google Play, AllShare, Picasa and other services available with the user mobile device.

Refer to your mobile device user documentation for details on how to take a screen capture.

Android

1. Navigate to you mobile device Gallery to display saved images.
2. Touch and hold any desired folders (indicated by 'folder' icon) or images to select them (indicated by a green check mark).
3. Tap Send via or More > Share via to display your mobile device sharing options.
4. Follow you mobile device instructions on how to share stored images.
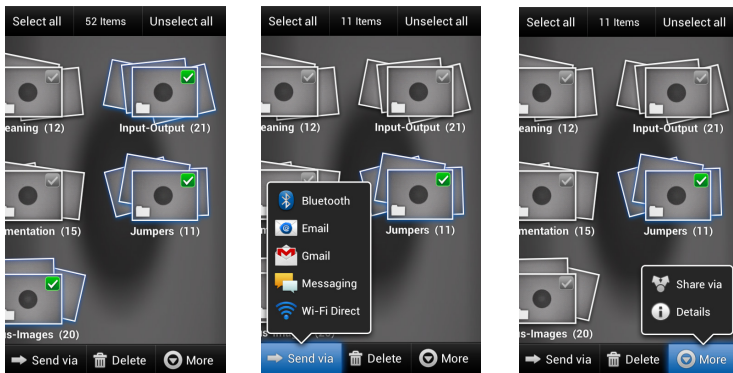
iOS7

1. While in the Image Gallery, navigate to the desired image.
2. Tap 'Select' located in the Image Gallery header.
3. Tap the desired image thumbnail to select it. You may select as many items as needed.
4. Tapping Copy/Share icon will display a list of Copy/Share options.
5. You may share images via email or text from your device, or through a cloud-based solution such as Dropbox.
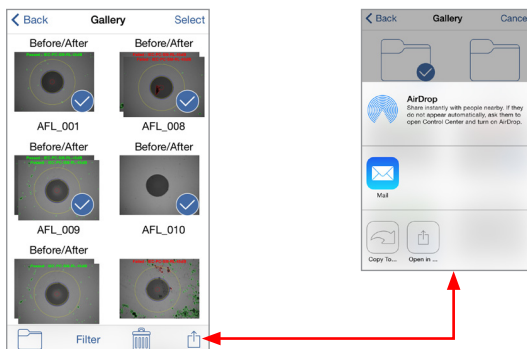
FOCIS MOBILE application version information is displayed on Information Screen.

Android

Accessing the Information screen depends on the Android device modes and can be displayed in several ways

- By tapping the Information icon 🛈 if this icon is shown on the Status Bar
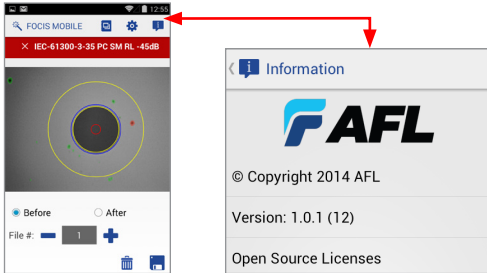
- If the Information icon 🛈 is not shown on the Status Bar, tapping menu button on you mobile device (located in the lower left on your device), and then tapping the 'Information' label.
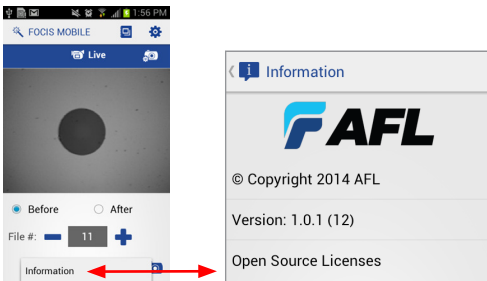
iOS device example

- While in your device Settings screen, navigate to FOCIS MOBILE app.
- Tapping on the FOCIS MOBILE icon will display the Information screen.
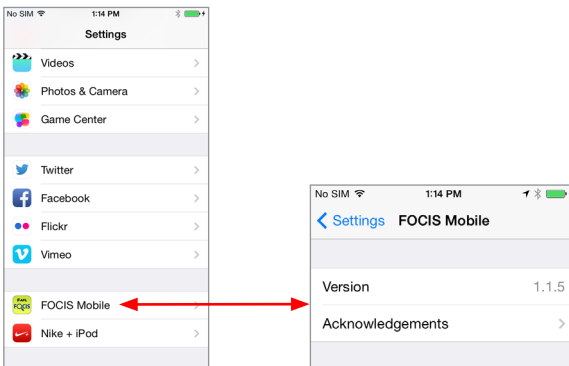
Analyzing and Inspecting Fibers and Bulkhead Connectors

The following instructions assume the DFS1 Digital FiberScope is configured with the appropriate adapter tip installed, a mobile device is powered up, the DFS1 is connected a mobile device and real-time images from the DFS1 are currently being displayed on the attached mobile device display.

1. If testing an optical fiber connector:

   – Slide the ferrule of the optical fiber into the installed adapter probe tip, using caution not to contaminate the end-face of the fiber connector.

   – A dark circle will appear on the attached device display.

2. If testing an optical fiber connector mounted in a bulkhead adapter:

   – Slide the probe adapter tip into the bulkhead adapter.

   – Adjust the angle of the adapter tip until a dark circle appears on the attached device display.

3. Rotate the Focus Adjust Knob on the DFS1 clockwise or counter-clockwise until the displayed circle is in sharp focus.

4. Once a good image has been obtained, it may be analyzed in several ways:

• **Analysis mode (FOCIS PRO)** - generates a static image of the connector and enables automatic analysis according to the analysis criteria selected by the user, allows viewing analysis criteria and the resulted image using Zoom and Pan tools and allows the user either to store or delete the captured image.

• **Image Capture mode (FOCIS PRO AND PLUS)** - features viewing the captured image using Zoom and Pan tools, allows the user either to store or delete the captured image.
After either saving or deleting the captured image, the FOCIS MOBILE reverts to the Live Image mode.

• **Live Image mode (FOCIS PRO, PLUS, VIEW)** - allows focusing the image and inspecting the condition of the connector end-face.

FOCIS WiFi Frequently Asked Questions

Please visit our website at
www.aflglobal.com/Resources/Frequently-Asked-Questions/FAQ-Test-and-Inspection/FOCIS-Wi-Fi.aspx
to review an up to date list of FAQs. You may also submit any question you may have there.

Warranty Terms and Conditions

All NOYES Test and Inspection products are warranted against defective material and workmanship for a period of (1) one year from the date of delivery to the end user. Optional Extended Warranty starts at the end of the standard (1) one year warranty period. Any product that is found defective within the warranty period, will (at the discretion of NOYES) be repaired or replaced. Warranty will be voided if the product has been repaired or altered by other than an authorized NOYES repair facility or when it has been subjected to misuse, negligence, or accident.

In no case shall NOYES liabilities exceed the original purchase price.

Product Registration

Please take a few minutes to register NOYES products at
http://marketing.noyesfiber.com/acton/media/2238/reg

Registering your product will allow you to take advantage of the latest updates and special offers from NOYES. Providing this information will allow us to better serve you.

Contact Us: Returning Equipment

To return equipment, please contact NOYES to obtain additional information and a Service Request (S.R.) number. To allow us to serve you more efficiently, please include a brief description specifying the reasons for the return of the equipment.

AFL, NOYES Test and Inspection Division

16 Eastgate Park Road, Belmont, NH 03220

Phone   800-321-5298 • 603-528-7780

Email   NOYESTechSupport@AFLglobal.com

Repair Services

Please contact customer service for a return authorization number prior to sending your NOYES test equipment in for repair.

USA Repair services

AFL

NOYES Test and Inspection Division

16 Eastgate Park Road

Belmont, NH 03220

603-528-7780

800-321-5298

Europe Repair services

Fujikura Europe Ltd.

C51 Barwell Business Park

Leatherhead Road

Chessington, Surrey, KT9 2NY

+44 (0) 208 240 2020

Safety Information

CAUTION! Never view a live fiber. Never look directly into the optical outputs of fiber optic network equipment, test equipment, patch cords and jumpers. Laser radiation is harmful to eyes.

NOTE! Refer to your company's safety procedures when working with optical systems.

NOTE! Follow your company's approved cleaning procedures.

Thank you for choosing NOYES Test and Inspection!