FlexScan® FS200 OTDR
With SmartAuto®, FleXpress™ and LinkMap®
Quick Reference Guide

Controls, Display, Interfaces
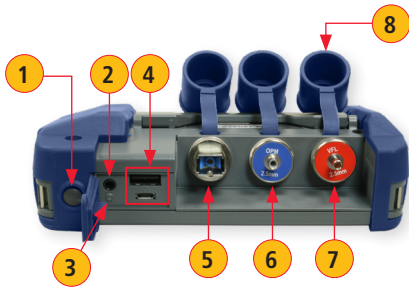
1. Power button
2. Power jack (5 VDC)
3. Charge/AC indicator
4. USB ports
5. OTDR/source port
6. Power meter port
7. VFL port
8. Dust cover
9. Home button
10. Start/stop test button
11. VFL indicator
12. VFL button
13. Touchscreen display

Battery Charging

- Plug the included AC charger into AC outlet.
- Connect charger plug to power jack (2).
- LED (3) indicates charging status as follows:
  OFF - AC not connected
  RED - Charging battery
  GREEN - Fully charged
- FlexScan charges while operating.

Configure FlexScan to Auto-Off

- From the Home screen, select Settings menu.
- Locate and select the Auto Off Timer menu.
- From the Auto Off Timer menu, select the desired power save option (5 min, 15 min, Never).

Home Screen

The Home screen is the FlexScan's Main menu that is displayed at startup. While in any other screen, return to Home by either pressing the Home button 🏠 or touching (if available) the Back ↩ soft key. This screen contains menus of Test and Utility modes that allow users to set test parameters, select user preferences, manage saved test results, configure general settings and perform other non-test functions.

Test Modes and Features Summary

① **SmartAuto™ OTDR**: Configure and run SmartAuto OTDR test using multi-pulse acquisition.

② **Expert OTDR:** Configure and run Expert OTDR test with averaging.

③ **Real Time OTDR:** Configure and initiate OTDR test with real-time updates.

④ **Source & Power Meter:** Enable light source and/or measure optical power.

⑤ **Connector Inspection:** View connector inspection results received via Bluetooth from FOCIS Flex auto-focus probe.

Utility Modes and Features Summary

⑥ **USB:** Touch to enable file transfer.

⑦ **Last:** Touch to view the most recent test results.

⑧ **Saved**: Touch to recall and view saved test results.

⑨ **Settings:** Touch to access General Settings menu.

⑩ **Menu:** Touch to view Device Information screen.

⑪ **Bluetooth:** Indicates Bluetooth enabled.

⑫ **USB:** Indicates external USB memory stick detected.
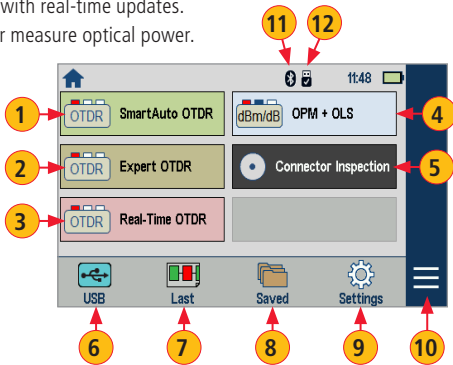
OTDR Modes: SmartAuto™ with LinkMap® Display Summary

While in the SmartAuto OTDR Settings Menu:

- Touch the desired setting field/tab (e.g. **(1)** Test Type) to display a sub-menu (where applicable).
- Touch ⬅ ➡ **(A)** to navigate to next/previous screen.
- Touch ↩ **(B)** to return to the previous menu.
- Touch Use Defaults **(C)** (if displayed) to reset settings to defaults.
- Touch 'Press ▶ to start' **(D)** to initiate testing.

SmartAuto OTDR Settings Summary

(1) Test Type: Limited to Characterize in FS200-50B/100.
Select Characterize or FleXpress™ Fast Test in FS200-60/300/304 when Network Type = Point-to-Point.

(2) Pass/Fail Rule: Indicates selected LinkMap event pass/fail rules. Touch to select ITU G.671, TIA-568.3-D or User. Touch and hold to view/edit pass/fail event thresholds.

(3) Network Type: Limited to Point-to-Point in FS200-50B/100 models. Select Point-to-Point or FTTH PON in FS200-60/300/304 models. If PON selected, configure split ratio settings to match expected network splitter configuration.

(4) Fiber Type: Touch to select G.65x or User fiber type. Touch and hold to view/edit associated Group Index of Refraction (GIR) and Backscatter Coefficient (BC) settings.

(5) Launch Cord: Touch to configure length of Launch cable, if present.

(6) Tail Cord: Touch to configure length of Receive cable, if present.

(7) Launch Quality Check: Enable to check OTDR connection to launch cord or jumper cable at start of test.
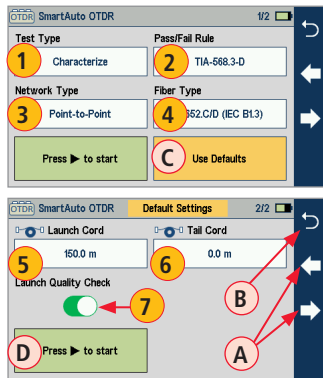
OTDR Modes: Live Fiber Detection and Launch Quality Check

Live Fiber Detection

To prevent service disruption on live PONs, FlexScan performs a Live Fiber check prior to every OTDR test. If a live fiber is detected, FS200-50B/100/300 models display a warning screen and do not allow testing; FS200-60/304 displays a warning (A) and allows the user to complete a test at 1650 nm only.

Launch Quality Check

An optional launch quality check enables users to detect dirty, damaged, poorly seated, or mismatched (UPC to APC) connectors.

To perform the launch quality check:

1. With the Launch Quality Check option (B) enabled in the OTDR or General Settings screen, initiate an OTDR test.
2. The FlexScan will assess the loss and reflectance at the OTDR's connection to the launch cord (fiber ring) or fiber under test.
3. If excess loss or reflectance is detected, the OTDR displays the 'Launch Quality is Poor' warning screen (C). From this screen the user may chose to perform one of the following:
   - Cancel a test by touching either Cancel (D) or Back (E).
   - Clean connectors, then repeat the launch quality check by touching Re-check (F).
   - Continue testing without checking and cleaning the connection by pressing Continue (G).

Note: Testing a fiber with poor launch quality may produce poor test results.
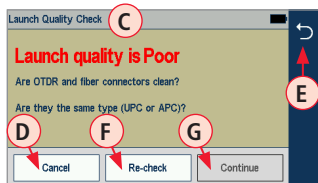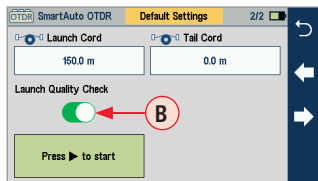
OTDR Modes: Testing in SmartAuto™

Initiate the SmartAuto test by touching 'Press ▶ to start' soft key or pressing Start/Stop button.

1. FlexScan begins testing with the Live Fiber check and if a live fiber is NOT detected, proceeds to next step.
2. If the Launch Quality check is enabled, FlexScan checks loss and reflectance of the OTDR connection.
3. If launch quality is good, FlexScan starts testing at one or more wavelengths using SmartAuto settings.
4. When testing is completed, FlexScan displays the LinkMap® screen, which is a primary display in SmartAuto OTDR mode.

LinkMap Display Features

LinkMap is an icon-based representation of the analyzed network.

File name: consists of cable name and fiber number, or "New Trace" if file has not been saved

Link map thumbnail view with proportionally spaced events

Link Length

x/y or x1-x2/y, where
x = number of the selected event
x1-x2 = link section between events,
y = total events

Back key: touch to return to the previous menu

LinkMap detail view: shows summary and first 4 events, or up to 5 events. White highlighted area in thumbnail view indicates region of fiber for which events are shown in the detail view.

Menu key: touch to navigate to Save As screen

OTDR Modes: Testing in SmartAuto™

Link Summary icon: may be green (all events passed), red (one or more events failed, but no major fault detected), or black (one or more major faults detected)

Event icon: event icons may be green (pass), red (fail), or black (major fault). Pass/fail/major fault is based on event loss and reflectance thresholds configured by the currently selected Pass/Fail Rule.

Link Section between events

Selection marker ▲ indicates active icon: Summary, Event, or Section

Touch to move to next or previous event or link section

Details of the currently selected Summary, Event, or Section

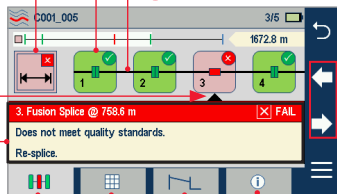Info tab: touch to display summary of OTDR settings used for this test

LinkMap tab: when in any other test results viewer (Event Table, Trace view, Info view), touch to return to LinkMap view

Trace tab - touch to display Trace view that depends on selection:

Selection	Display View
Summary	Trace of entire network
Event	Trace around event
Section	N/A

Event Table tab: touch to display measurements for the currently selected Link Summary (A), Event (B), or Section (C)

C001_005   3/5   1672.8 m

3. Fusion Splice @ 768.6 m   ✕ FAIL
Does not meet quality standards.
Re-splice.

Expert and Real Time OTDR: Trace Display

File name: consists of cable name and fiber number, or "New Trace" if file has not been saved

A and B cursors

1310 nm trace is red; 1550 nm trace is blue

White background indicates the currently selected (active) wavelength. Cursor measurements apply to active wavelength.

Grid units display dB/div on vertical axis and distance/div on horizontal axis

Used for cursor position and fine adjustments. Touch or touch and hold arrows to move the active cursor.

A cursor location (A is inactive cursor). Touch non-highlighted cursor box to make the A cursor active.

Touch to select LinkMap view

B cursor location (B is active).
• Yellow highlight indicates the currently active cursor
• Touch the screen where you want to reposition the currently active cursor

Touch to toggle active traces (for multi-wavelength tests)

Fiber under test

Touch to enable and display 'zoom control' mode

Receive cable (if present)

Launch cable (if present)

Loss-per-distance between A and B cursors

Distance from A to B cursor

Loss between A and B cursor

Maximum Reflectance between A and B cursor

OTDR C001_001   1310 1550

9.00 dB, 242 m/div
A-B 1523.78 m   1.714 dB   -53.6 dB   1.13 dB/km
A: 0.06 m   B: 1523.84 m

OTDR C001_001   1310 1550

9.00 dB, 242 m/div
A-B 1523.77 m   1.401 dB   -52.7 dB   0.92 dB/km

Expert and Real Time OTDR: Trace Display

Touch the cursor select key to enable and display the 'cursors control' mode

Horizontal zoom: Touch the right/left arrow to zoom trace view horizontally around the currently active cursor

Vertical zoom: Touch the up/down arrow to zoom trace view vertically around the currently active cursor

Touch the LinkMap icon to display the LinkMap view

General Settings

While in the General Settings screen, touch the desired setting field to display a sub-menu and perform settings as follows:

1. Select Language
2. Select Distance Units
3. Set Speaker volume
4. Set Date and Time
5. Enable/configure Bluetooth
6. Set brightness and auto-dim
7. Set Auto Off Timer
8. Configure Remote Control (future)
9. Enable/disable Launch Quality Check
10. Display received FOCIS Flex results in popup window or save in background
11. If enabled, capture current screen using Home key
12. Configure MPO Switch Control (if Switch connected and enabled)
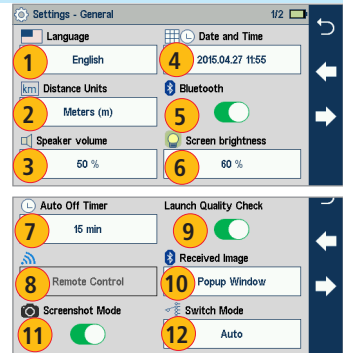
Light Source and Power Meter Operation

Source Settings and Features

(1) Touch to enable/disable light source. RED dot indicates that source is ON.

(2) Touch to select test mode: Wave ID, CW, Tone (270 Hz, 330 Hz, 1 kHz, 2 kHz).

– Select Wave ID mode for fastest loss measurements.
While in this mode, the FlexScan source transmits wavelength information, enabling a Wave ID power meter to synchronize and measure power at received wavelength(s).

– Use CW mode to generate continuous wave light at a single wavelength.

– Generate Tone for fiber identification (270 Hz, 330 Hz, 1 kHz, 2 kHz).

(3) Touch to select test wavelength: 1310, 1550 or 1650 nm (depending on model).

Power Meter Settings and Features

(4) If used with non Wave ID source, touch to select wavelength. If used with Wave ID source, power meter automatically synchronizes to and indicates received wavelength(s).

(5) Hold to store new reference(s) at received wavelength(s). Touch Ref/Set to view stored reference(s).

(6) Touch to toggle between power (in dBm or Watts) and loss (dB) mode.

Note: Power meter detects and indicates fiber identifying tones when used with a light source capable of generating a modulated Tone signal.
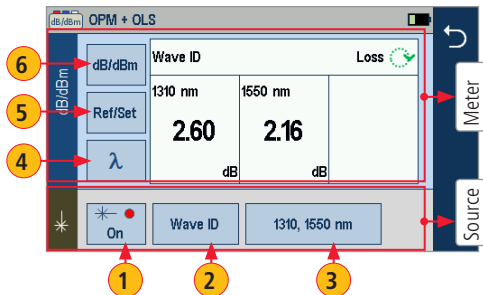
Saving, Recalling and Uploading Test Results

Test results (A) may be stored in the FlexScan Internal memory (B) or on USB (C). Saved test results are organized into a Cable sub-folder (D) within a Job folder (E).

Results, Internal

Results, USB

Cables, Internal

Jobs, Internal
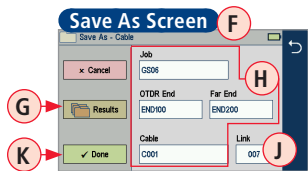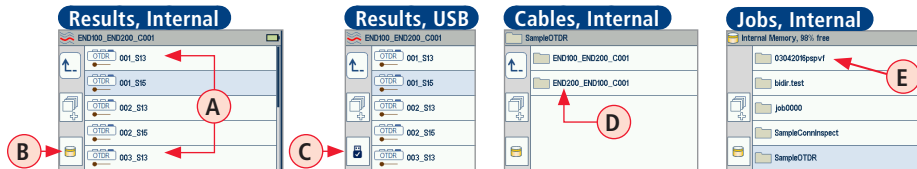
Save As Screen (F)

A name of the saved result consists of several parameters, which are defined in the Save As screen (F).

OTDR End _ Far End _ Cable _ Link _ Wavelength

Cable Name (D)   Link Number

S13 for 1310 nm
S15 for 1550 nm
S16 for 1650 nm
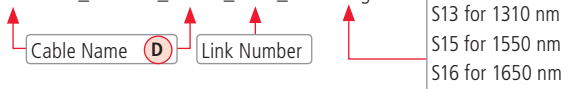
- Touch Results (G) to select Internal memory or USB (if present) and navigate to the desired Job/Cable folder.
- Job, OTDR End, Far End, and Cable (H) are user-defined in String Editor.
- Link number (J) auto-increments after each save, but can be modified in Number Editor as needed.
  – Touch the desired field to display the String/Number editor sub-screen.
  – Make edits using on-screen controls.
  – Touch Done (K) when finished.
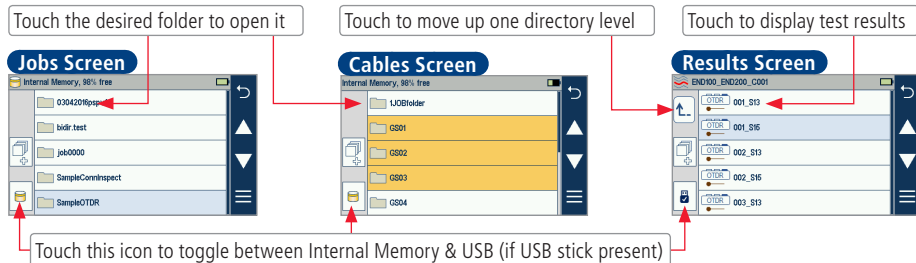
Saving, Recalling and Uploading Test Results

To Save Test Results

1. While in the Results view, touch the Menu (A), then Save As (B).
2. Define Job/OTDR End/Far End/Cable/Link fields (C) used to name saved results. Touch Done (D) when finished.
3. Touch Results (E) to view, navigate and select a different Job or Cable folder, or to select USB or Internal memory.
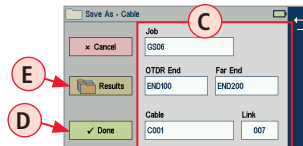
To View Saved Test Results

1. From the Home screen, touch Saved to display the Results Manager.
2. Navigate through Job/Cable/Results screen to locate the desired test record, then touch it to display test results.

| Touch the desired folder to open it | Touch to move up one directory level | Touch to display test results |

Jobs Screen

Cables Screen

Results Screen

Touch this icon to toggle between Internal Memory & USB (if USB stick present)

Refer to the FlexScan User's Guide (available on the supplied CD or USB stick and **www.AFLglobal.com**).