

## QUICK CARD

### PON Fiber Inspection with the SmartOTDR

This Quick Card outlines how to use the P5000i Fiber Inspection Microscope to inspect fiber end faces commonly found in GPON, XGSPON, and NG-PON2 deployments.

#### EQUIPMENT REQUIREMENTS

- ▶ SmartOTDR Handheld Fiber Tester
- ▶ P5000i Fiber Microscope
- ▶ Bulkhead and Patch Cord Inspection Tips matching the fiber under test
- ▶ Fiber optic cleaning tools



Figure 1: Equipment Requirements

#### CONNECT TIP TO P5000i

Inspection Tips are attached to the front of the P5000i by threading the collar of the tip onto the probe:

- ▶ <sup>1</sup> The Corning Evolve PushLok tip (FBPT-CEV-A6), OptiTap Bulkhead tip (FBPT-COD-L), and OptiTip tip (FBPT-COD-MTA) **connect directly** to the probe.
- ▶ <sup>2</sup> The SC-APC Patchcord tip (FBPT-U25A) and SC-APC Bulkhead tip (FBPT-SC-APC) connect to the **Barrel Assembly** (FBPT-BAP1) by loosening and tightening the Retaining Nut on the Barrel Assembly.



Figure 2: P5000i, Barrel Assembly and Tips

## QUICK CARD

### SETTING UP THE P5000i



Figure 3: P5000i and SmartOTDR

1. Insert the P5000i **USB Connector** into a **USB Port** under the flap on top of the SmartOTDR.
2. Press the **Home** button.
3. Tap the **MICROSCOPE** icon.
4. Tap the **Setup** soft key .



Figure 4: Home Screen

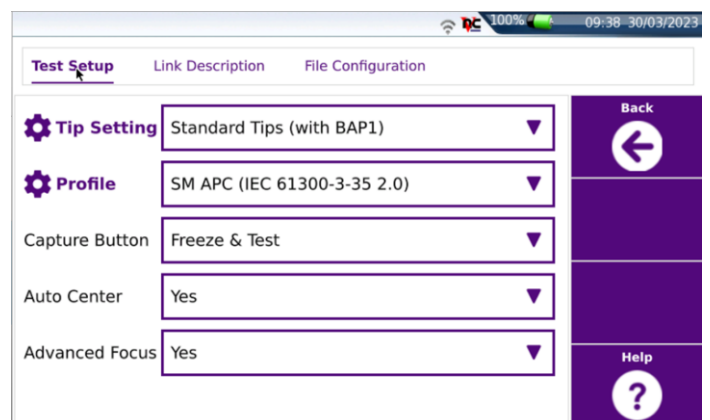










Figure 5: Test Setup

5. Configure **Tip Setting** and **Profile** per the table below. If the Tip Selection is not shown, connect the P5000i to a PC or laptop and move the appropriate tip setting onto the P5000i with FiberChekPRO™ software. For more information, consult the FiberChekPRO user manual. To download FiberChekPRO to your PC, visit <http://fcpro.updatemyunit.net/>.

Connection Type		Tip	Profile Selection	Tip Selection
SC-APC	Bulkhead <sup>2</sup>		SM APC (IEC-61300-3-35 Ed. 2.0)	Standard Tips (with BAP1)
	Patch Cord <sup>2</sup>		SM APC (IEC-61300-3-35 Ed. 2.0)	Standard Tips (with BAP1)
Corning OptiTap	Bulkhead <sup>1</sup>		SM APC (IEC-61300-3-35 Ed. 2.0)	FBPT-COD-L
	Patch Cord <sup>2</sup>		SM APC (IEC-61300-3-35 Ed. 2.0)	Standard Tips (with BAP1)
Corning OptiTip	Bulkhead <sup>1</sup>		Ribbon, SM APC (IEC-61300-3-35 Ed. 2.0)	Ribbon Tips
	Patch Cord <sup>1</sup>		Ribbon, SM APC (IEC-61300-3-35 Ed. 2.0)	Ribbon Tips
Corning PushLok	Bulkhead <sup>1</sup>		SM APC (IEC-61300-3-35 Ed. 2.0)	FBPT-CEV-A6
	Patch Cord <sup>2</sup>		SM APC (IEC-61300-3-35 Ed. 2.0)	Standard Tips (with BAP1)

## QUICK CARD

### INSPECT THE BULKHEAD


1. Set up the P5000i as described on page 2.
2. Press the **Back** soft key  to return to the inspection screen.
3. Insert the **Bulkhead inspection** tip into the Bulkhead.
  - ▶ For SC-APC and PushLok Bulkheads, align the keys on the inspection tip and the bulkhead connector.
  - ▶ For OptiTap Bulkheads, align the arc and flat pin in the inspection tip to the matching insertions inside the OptiTap receptacle adapter.
  - ▶ For OptiTip Patch Cord Inspection, slide the patch cord adapter onto the main tip assembly. Rotate wheel to view and test each fiber.
4. Adjust the **Focus Control** wheel of the P5000i microscope to focus the optical fiber. The top vertical bar on the screen indicates the level of focus adjustment. The higher the level, the better the focus. The screen will display a line in the focus bar where the optimal focus lies for that image. Focus the image until the bar is as close to the line as possible.
5. There are 2 ways to run the inspection test:
  - ▶ Press the **Test** button on the P5000i.
  - ▶ Tap the **Test** soft key on the SmartOTDR.
6. A green checkmark indicates a **PASS** result. A red **X** indicates a **FAIL** result.
7. Tap the **Live** soft key on the SmartOTDR to return to the Live fiber view.
8. If the test failed, clean the fiber end-face and re-run the inspection test. Repeat until it passes.



Figure 6: SC APC Bulkhead



Figure 7: PushLok Bulkhead



Figure 8: OptiTap Bulkhead



Figure 9: OptiTip Bulkhead

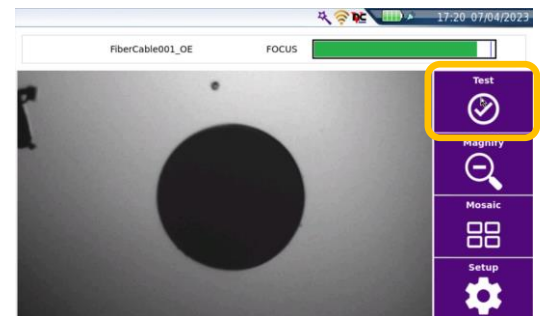


Figure 10: Live Inspection

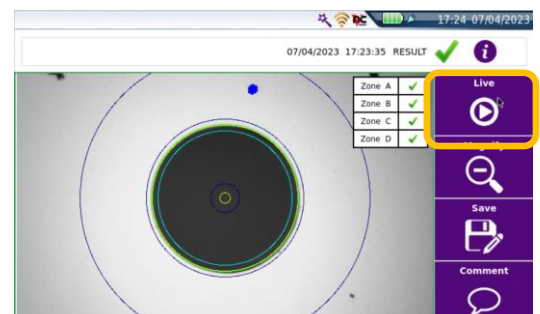


Figure 11: Pass/Fail Analysis



## QUICK CARD

### INSPECT PATCH CORD

1. Insert the Patch Cord into the Inspection tip:
  - For **SC-APC Patch Cord** inspection through an SC-SC Optical Coupler, insert the Patch Cord into the SC APC optical coupler. The Patch Cord, coupler, and tip are all keyed and the keys must be aligned.
  - For Corning **OptiTap**, **PushLok**, and **SC-APC Patch Cord** Inspection without an Optical Coupler, insert the Patch Cord into the 2.5mm APC Patch Cord inspection tip. Rotate fiber and align the connector key to the notch on inspection tip for proper alignment.
  - For **OptiTip Patch Cord** Inspection, slide the bulkhead adapter onto the main tip assembly. Rotate wheel to view and test each fiber.

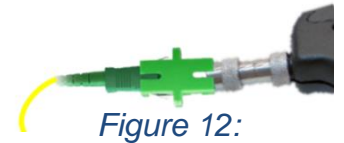


Figure 12: SC APC Patch Cord and Coupler




Figure 13: SC APC Patch Cord



Figure 14: OptiTip Patch Cord



Figure 15: OptiTip Patch Cord

2. Set up the P5000i as described on page 2.
3. Press the **Back** soft key  to return to the inspection screen.
4. Adjust the **Focus Control** wheel of the P5000i microscope to focus the optical fiber.
5. There are 2 ways to run the inspection test:
  - ▶ Press the **Test** button on the P5000i.
  - ▶ Tap the **Test** soft key on the SmartOTDR.
6. A green checkmark indicates a **PASS** result. A red **X** indicates a **FAIL** result.
7. Tap the **Live** soft key on the SmartOTDR to return to the Live fiber view.
8. If the test failed, clean the fiber end-face and re-run the inspection test. Repeat until it passes.

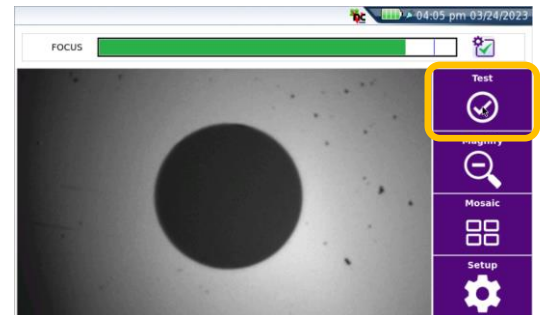


Figure 16: Live Inspection

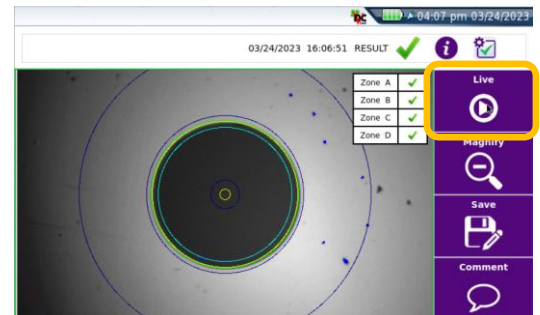


Figure 17: Pass/Fail Analysis

