

PORTABLE FIBER ENDFACE INSPECTOR INSTRUCTION MANUAL



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ALERT

- Any improper disassembling may cause the electric shock and damage on the personal safety. Please do not unpack any units without authorization unless the approval and guidance from related official personnel.
- Please do not look directly to the fiber end face which gets the laser signal delivery. Any damage caused will be out of duty to the product.
- Please note any product changes will subject to the company policies without notification.

OVERVIEW

This Microscope is the upgraded version which provides network personnel with high performance fiber inspection solutions. The whole set includes a digital probe, a monitor with the capability to inspect/record/file the data of fiber end face from assorted connectors.

Specifically, this probe can not only detect ferrule end of patch cord, but also the fiber end face mounted into the bulkhead adapters with PC/APC end. Connectors even installed at the bottom of patch panels or inside hardware devices can be also easily accessed and inspected without any removal or disassembling of equipment with specific or customized tips.

Compared with the traditional probe, its unique one-way focus control in the probe greatly simplifies the work. No matter left or right hand, forward or reverse operation, it can instantly have the end face inspected and image displayed, save more time for efficiency.

The monitor equipped with the probe is the upgraded version for real on-the-go inspection. New Monitor can be carried along the wrist whenever and wherever for the greatest convenience of image data review and file. New functions like notification sounds, standard output connector etc., are added on for the upgrade while traditional features are hold unchanged as capture/record/store etc., to further handy the operation.

APPLICATION

- End face inspection in patch cord / bulkhead-mounted equipment / module transceiver etc.
- End face inspection of assorted connectors PC/APC, MPO/MTRJ etc.
- End face inspection of connectors at different angles for the bottom of patch panels or hard-to-access places.

KEY FEATURES

- One-way focus control for instant detection, have image in seconds.
- 35 assorted tips available to test or customize.
- 95% tips interchangeability in-between probes.
- 95% Image centralization on screen.
- Precise resolution (<1 μm), no shadow or dark edge around screen.
- High definition image and video, no noise or flash.
- Strong performance under stress operation.

SPECIFICATION

Magnification/Resolution	400× / 0.75μm (Based on benchmark 8 Inch monitor)
Field of View	0.31mm×0.25mm
Tips Connection	Cone contact
Focus Way / Range	One-way / <3mm
Output Type	PAL or NTSC or USB (optional)
Light Source/ Life time	Coaxial blue LED / 100,000 hrs. above
Size/Weight (mm/kg)	180*41*36mm/ 0.164kg
Image Sensor	1/3 Inch SONY B/W CCD
Temperature	-20~50°C
Humidity	Maximum to 90% relative humidity, no condenses

PROBE

MAGNIFICATION

The Probe initially enlarges the fiber end face through optical amplification, then output the image via CCD electronically. Due to the complicated and precise structure, the magnification is decided firstly by the multiple of objective lens and size of CCD inside the probe, and varies afterwards with its corresponding output monitor. In other words, display is the ultimate factor responsible for the magnification. The bigger the size of display, the larger of magnification a whole set microscope hold.

General size of monitors Eternal offer include 2.5, 8 inch two type for handheld on-site inspection, 10.4 inch for bench-top labs or factory inspection, or Wi-Fi one for laptop inspection.

The table below indicates different magnification with respect to corresponding display.

Parameters	Size			
	2.7 in	3.5 in	8 in	10.4 in
Enlarged Diameter	21.0 mm	24.0 mm	51.0 mm	62.5 mm
Magnification	168	192	408	500

Note

All the image size are based on fiber end face with diameter of 125 μ m and measured directly. The magnification is derived from actual image size divided by diameter length of 125 μ m.

Field of View

The field for ferrule detected can reach up to 0.31*0.25mm, which includes the end face with 125 μ m diameter in central and 300 μ m area around. More fields can be viewed when adjusting the probe slightly.

COMPONENTS

Handle Body the handle houses CCD camera, ray apparatus structure, optical routine system, coaxial lamp-house, focus control, video output and power supply system etc. Default output signal PAL, optional signal for NTSC or USB through either explicit or embedded devices.

The inner structure of handle body is compact and complex that, a fever may be caused for a long time work. This isn't the mechanical defect but a normal phenomena. Any action in disassembling of the probe without authorization will lose the service of troubleshooting.



1. **Handle:** also named as probe, all the optical routines are concentrated inside the handle, responsible for the fiber imaging.
2. **Focus Control:** control for definition adjust of the image.
3. **Assembly Nut:** lock the tips to keep alignment with the probe.
4. **Assembly:** central kits to imaging alignment.
5. **Lens-bar:** central kits to tips usage and imaging.
6. **Cable:** wire output to connect the terminal, please note that repeated bending resulting in damage or break to the signal transmission should be avoided.

TIPS SELECTION

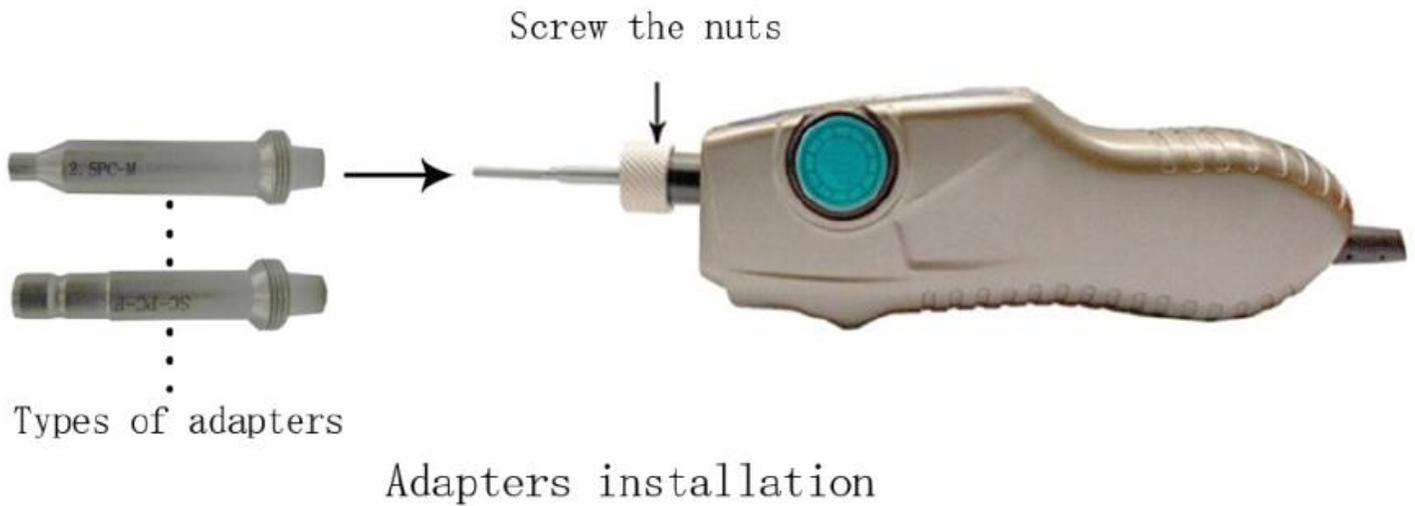
Wide ranges of adapter tips are available to reach assorted connectors inspection, from common use of 2.5PC-M, LC-FC-F, SC-PC-F, FC-PC-F to specific ones as E2000-PC-F, MPO-APC-F etc., or angle tips for bulkhead connector, patch cord of PC /APC et., hard-to-access testing points.

Tips Appendix: optional tips can be ordered individually to augment the existing standard tips as below:



	Types	Description
Adapters	1.25 PC-M	To test the 1.25 mm diameter male fiber PC end face
	ST-PC-F	To test the ST female fiber PC end face
	MU-PC-F	To test the MU female fiber PC end face
	SMA-M	To test the SMA male fiber PC end face
	E2000-F-PC	To test the E2000 fiber PC end face
	MTRJ-PC-F	To test the MTRJ fiber PC end face
	MPO-PC-F	To test MPO fiber PC end face
	FC-F-APC	To test FC female APC end face
	SC-F-APC	To test SC female APC end face
	2.5M-APC	To test 2.5mm diameter male APC end face
	LC-APC-F	To test LC female APC end face
	E2000-APC-F	To test E2000 female APC end face
	MPO-PC/APC-F	To test MPO PC/APC end face
	SC-PC-60F	60 angle to test SC female PC end face
	FC-PC-60F	60 angle to test FC female PC end face
	LC-PC-60F	60 angle to test LC female PC end face
	LC-APC-60F	60 angle to test LC female APC end face
	SC-APC-60F	60 angle to test SC female APC end face
E2000-PC-60F	60 angle to test E2000 female PC end face	

TIPS INSTALLATION AND SWITCH

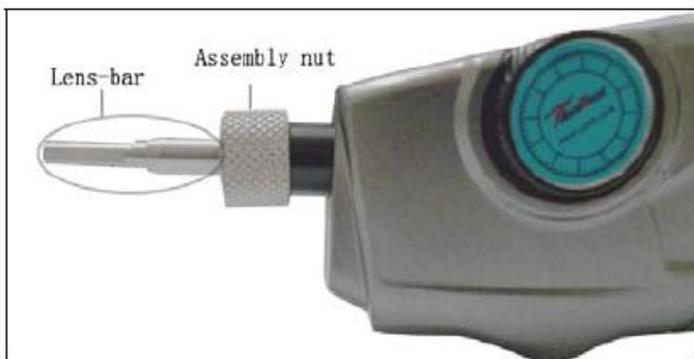


Installation: Choose an appropriate tip with regard to the connector inspection. Loose the nut and put the tip in the front of probe along with the lens-bar. Screw the nut and lock the tip.

Switch: Loose the nut firstly to remove the tip and switch with an alternative one.

Please note:

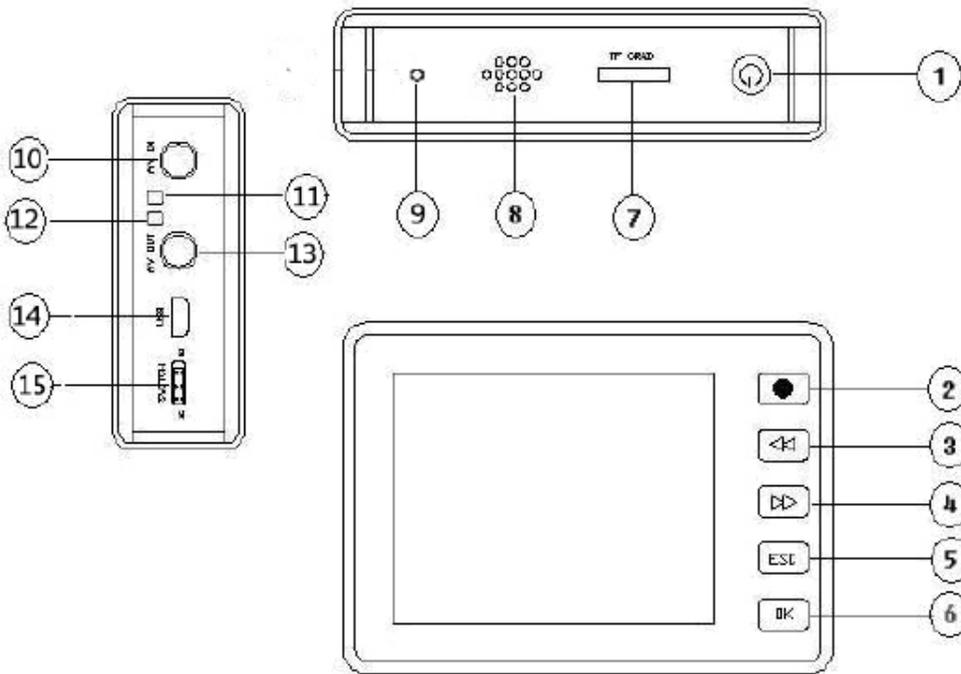
- Try to avoid the friction incurred to the lens-bar for badly damage on imaging.
- Loose the nut completely if the tip is attached too tightly.
- Screw the nut completely to lock the tip.
- Lens-bar may be contaminated after a long-time work, use the cotton or swap to clean the surface as below.



VIDEO MONITOR

The Viewer is the upgrade version. Not only does it keep the single-frame capture/video/store functions as before, new features as sounds notification (power on/off/ TF memory card/ signal status) are also added on. It can be carried along the wrist whenever and wherever with ease for on-site inspection, and the connector applies Audio & Video standard to secure the connection.

Also please take care the plug-in direction, any reverse or opposite operation will cause no input signal.



1. Power on/off/ Image Capture	7. TF Slot	13. Video/Audio output
2. Video	8. Speaker	14. Charging/USB connector
3. Left Arrow	9. Microphone	15. Lock
4. Right Arrow	10. Video/Audio input	
5. Return	11. Charging indicator	
6. Confirm	12. Video indicator	

On work



Menu



POWER ON

Press the button in the upper right hand corner for 3-5 seconds, to power on, and a check-up page shows up afterwards. And make sure the TF memory card (default 8G) has been put in before the display, or sounds and texts notifications would act on.

The charging status shows up in the bottom left hand corner, date time shows up in the upper right hand corner and record period/memory status shows up in the bottom right hand corner.

IMAGE ADJUST

- ✓ Press "Ok" to choose Image adjustment of "Brightness/Contrast/Color".
- ✓ Press "Ok" again to switch the in-between options.
- ✓ Press arrows to adjust to an appropriate value.
- ✓ Press "ESC" to return to the check-up page.



CAPTURE AND VIDEO

- ✓ Press "Capture" to save the image, files will be saved in the TF on real-time name.
- ✓ Press "Video" to record the video and "ESC" to stop, files will be saved in the TF on real-time name.

PLAY BACK

Return to the check-up page, press “Ok” to choose “Video/Image” mode for play back.

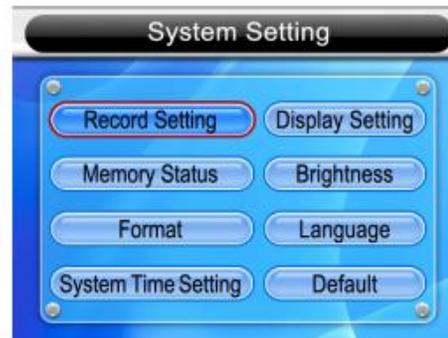
[Video/Image]

- ✓ Arrows: press arrows key to adjust the volume;
- ✓ Pause: press “Ok” to pause;
- ✓ Delete: press “●” and “Ok” to delete files.



SETTINGS

Return to the check-up page, press “Ok” to choose setting mode for adjustment.



Please note:

- ✓ Charge the display periodically to avoid any battery leak or damage.
- ✓ The plug-in direction for the AV connector, the upper one is for signal transmission while the down one is for holding purpose. Any opposite or reverse operation will cause no input signal.



- ✓ The first-in files will be automatically replaced with the future files once the memory is full.