

User Manual

FOC-100

FTTH ONT Connection Status Checker



INTRODUCE

TheFibers is pleased to introduce FTTH ONT Connection Status Checker (**FOC-100**) which is designed for checking **unused ONT line** at FTTH PON Distribution Box (Splitter Node) regardless of ONT power Off. Also **FOC-100** is a kind of multi-functional tester which checks OLT/ONT signal status, and measure optical power and return loss in optical networks. **FOC-100** can be a bi-directional optical power meter between OLT and ONT which can measure the power of optical signal from ONT in burst mode and it also can be a general power meter which can measure optical power of 1310/1490/1550nm wavelength signals in CW mode.

STANDARD PACKAGE

- a. FTTH PON Unused ONT Line Checker (included Battery)
- b. FC/APC to SC/APC (or SC/UPC) Patchcord
- c. FC/APC to SC/APC (or SC/UPC) Hybrid Adapter
- d. USB cable
- e. PushCleaner-2.5
- f. Strap
- g. Manual

WARRANTY

FOC-100 you bought is passed our all inspection and then is

shipped to the customers. TheFibers gives you a warranty for one year from the buying date. During the warranty period, the returned product by freight prepaid from the customer, TheFibers will provide repair and replacement for any defective product without additional charge which is needed to repair or replacement.

However please be careful that the following are expressly NOT COVERED under warranty:

- Any loss, damage by using un-approved Battery and charger
- In case the serial or warranty sticker is removed
- Failure to use products under abnormal operating conditions
- Any loss, damage by user fault
- Any damage by disassembly without permission

KEY FEATURES

- Check unused ONT line regardless of ONT power Off
- Easy to check at FTTH Distribution Box (Splitter Node)
- No need to visit to subscriber's home
- No breakable (pass through) while check
- Indicate signal presence or absence (live or dead line)
- Optical power measurement of ONT signal in burst mode
- General power meter for 1310/1490/1550nm in CW mode

HARDWARE SPECIFICATIONS

Model	FOC-100
LD wavelength	1310nm
PD type	InGaAs Pin-PD
Calibrated Wavelength	1310nm Burst, 1310, 1490,1500nm
Measurement Range CW	-40dBm ~ 10dBm
Burst	-30dBm ~ 10dBm
ONT Line Indicate	Conn (ONT Power On or Off) no Conn (No ONT or Cable Cut)
Accuracy(CW)	+/-0.5dB @-20dBm
Resolution	0.01dB
Fiber type	Single mode 9/125um
Measurement unit	dB, dBm
Adapter type	FC/APC
Operation Mode	ONT status checker/ Signal Checker /Bi-directional Power Meter
Display	LCD (with LED backlight)

2 color LED(ONT Connection Indicator)
Battery
3.7V Rechargeable Lithium Ion Battery
Battery Life
>3 hours (continuous usage)
Charging & Charging Time
Micro-USB power cable, 1 hour
Dimension & Weight
128.2 (W) x 66.2 (H) x 30 (D) mm, 150g

PRODUCT BUTTON OVERVIEW

	Power	Power ON/OFF & LCD Backlight ON/OFF
	Wavelength	Wavelength Selection / Threshold Setting / ONT status check start
	Mode	Mode selection

OPERATION

1) Power on/off



- A. Press and hold the Power button for 2 seconds or longer. "FOC-100" is displayed on LCD.
- B. Press and hold the Power button again for a short time to turn on the LCD backlight.
- C. Again press and hold the Power button for 2 seconds or longer. This action turns off the LCD, FOC-100, and all LEDs.

CAUTION : FOC-100 should be required fine connector end-face. Clean all the end-faces before measurement and self-check whether they are good condition always.

2) Real-Time OLT and ONT Signal Status Checker

Real-time indicators for ONT/OLT signal **presence** or **absence** (LED Indicator : Green or Red)

- i. ONT/OLT signal **presence**



- ii. OLT signal **presence** / ONT signal **absence**

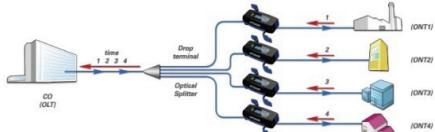


- iii. ONT/OLT signal **absence**



3) ONT Connection Status Check Mode

A. The connection status check of the ONT at the FTTH PON Distribution Box (Splitter Node Drop Terminal) regardless of ONT power Off. When ONT signal is not detected, FOC-100 checks whether an ONT is disconnected or just power off.

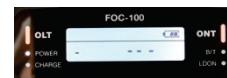


B. The ONT status check function operates by pressing the wavelength selection button in bidirectional PM mode.

- OLT Signal presence → Go to Bi-directional PM mode
- ONT Signal absent → No response from ONT side

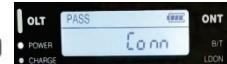


- Press the Wavelength Selection Button → ONT Check function starts :

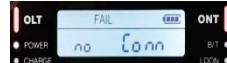


- ONT connection status displayed on LCD

1. ONT connected (Power Off) : "Conn" displayed on LCD



2. No ONT or Cable Cut : "no Conn" displayed on LCD



3. No signal from OLT¹ : "no CHEC" displayed on LCD;

Cannot perform the ONT connection status check function. Users can set FOC-100 to the bi-directional PM mode even if "no CHEC" is displayed on LCD

4. Re-check: "e CHEC" displayed on LCD. ONT connected but recommend to re-check the abnormal condition line.

CAUTION : In ONT check mode, the built-in LD light is output for the measurement. Eyes may be injured by the output light. Never look into the optical port.

4) Bi-directional power measurement (OLT presence)

A. The bi-directional power of OLT / ONT signals is measured and displayed on LCD when OLT is working.

- OLT Signal presence → Bi-directional PM



"49L" : measured OLT power value
"31r" : measured ONT power value in burst mode

B. FOC-100 measures optical power of 1310/1490 / 1550nm wavelength in CW mode and displays it on LCD.

- When OLT Signal absence → Go to general power meter(PM) mode (Measured via right side 'ONT' port)



- Wavelength button → Change the wavelength of Power meter : 1310 / 1490 / 1550nm

(Selected wavelength will be displayed on the LCD)



C. Manual mode change

- The user can manually switch the measurement mode by pressing the mode selection button regardless of the status of the OLT signal.



: Bi-directional PM mode → General PM mode (CW)
: General PM mode → Bi-directional PM mode (Burst)

5) Threshold value setting and ORL Display Mode

A. How to go into the 'Set-up mode'.

Go to the Bi-directional PM mode bv

pressing the mode selection button

→ Run ONT check function by pressing

the wavelength selection button

Press the wavelength button three times
each time '-' symbol is displayed on LCD → 'Set-up mode'
window is open

B. Set-up mode : Setting threshold values; Thr, Th3 & Th4

- Adjust threshold values using wavelength button
- Save adjusted threshold values and move to next threshold value by pressing mode selection button (Thr → Th3 → Th4 → ORL Display mode → Thr →)
- Thr : Threshold for ONT connection status

1. Default : 15dB (Difference between optical return loss values of two wavelengths)

2. Set-up value range : 1 dB ~ 30 dB, with 1dB interval

iv. Th3 : Threshold for the power level of ONT signal

1. Default : -28dBm

2. Set-up value range : -40dBm ~ 0dBm, with 1dB interval

v. Th4 : Threshold for the power level of OLT signal

1. Default : -28dBm

2. Set-up value range : -40dBm ~ 0dBm, with 1dB interval

C. ORL display mode : Display of ORL(optical return loss)

ORL is measured with 1490 nm and 1310 nm light sources.

Two measured ORL values are alternately displayed on the

LCD. ORL measurement starts when the wavelength

selection button is pressed.

6) Battery Indicator and Charge Lamp

Battery Indicator shows three stages. In case that battery is very low status, Indicator is flashing a one second interval.



Full



Low



Very Low

The color of Charge Lamp is red under charging and the color goes to green after full charging.

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