# **User Manual**

# Optical DWDM Power Meter ODPM-48

TheFibers Inc.

A-1109 Keumkang Penterium IT Tower, 282 Hagui-ro, Dongan-gu, Anyang-City, Korea Tel: +82-31-381-6108 Fax: +82-31-381-6109 Email: <u>sales@thefibers.com</u> <u>Http://www.thefibers.com</u>



Page 1/21

# **1. Introduction**

ODPM-48 is developed to measure exact power and frequency adoptable to DWDM network conditions. This instrument is portable and made to be appropriate to the outside environment.



#### **1.1 Main Functions**

- Automatic Wavelength & Power detection
- It is compact in size and lightweight for excellent portability
- ODPM-48 is easy-to-use testing instruments for optical fiber DWDM network
- Auto shut off function
- Fast response for full 48-channels
- High-quality graphics
- Saves/ Stores measured large data



Page 2/21

# **1.2 Standard Accessories**

Accessories	Quantity
Power Meter Body (included Battery)	1 EA
Body Rubber Case	1 EA
USB Data Cable	1 EA
Typical 5-pin Charger	1 EA
User Manual	1 EA

# **1.3 Optical Standards**

#### - Wavelength

Parameter	Unit	Specification
Channel Spacing	GHz	DWDM 100GHz (according to ITU-T)
Number of Channels		48
Channel Frequencies	THz	frequencies 196.3 ~ 191.6 (1527.21nm ~ 1564.68nm)

#### - Optical Power

Parameter	Unit	Specification
Range of display	dBm	+10 ~ -40
Accuracy	dB	±1.0dB @ -30dBm
Resolvability	dB	0.01
Measuring unit		dB / dBm



Page 3/21

- Optical Connector Optical connector interchangeable adapter. SC, FC, ST, LC

#### **1.4 Specifications**

- Input voltage : 1800mAh 3.7v
- Electricity consumption : MAX 0.25A
- Power Supply : Rechargeable Lithium-Polymer Battery
- Weight : 250g
- Width : 77.9mm
- Height : 154.9mm
- Thickness : 35mm
- Display size : 2.8 inch
- Operating Temperature : -20°C ~ +55°C
- Guaranteed time of operating
  - : 420 minutes when fully charged
- Relative Humidity
  - : ~90% RH from 0 ~ 40°C



A rechargeable battery is installed inside the measuring instrument, and this charger module has the Ministry of Information and Communication standard 5 pin charger phot. Connect the connecting point to the top of the ODPM-48 after the included cable is connected to the charger.





54

[Typical 5-pin Charger]

Page 4/21

-Charging conditions :

LED Color	Action of LED	Conditions for battery charge
Red	ON	Charging
Green	ON	Fully charged

- ※ Caution
  - Do not allow battery to short circuit.
  - Keep the battery away from fire.
  - Never dismantle, change structure of distort the battery.
  - Do not dip the battery in water or other liquid.
  - Do not store the battery in places warmer than 60 degrees Celsius.
  - Do not drop or give a shock to the battery.

## 1.6 Warranty

ODPM-48 you bought is passed our all inspection and then is shipped to the customers. TheFibers give 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 careful that the following are expressly NOT COVERED under warranty:

- Any loss, damage by using un-approved Battery and AC Adaptor
- 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



Page 5/21

# 2. Getting Started

## 2.1 Explanation of user interface and operating keys

Key	Function		
Backlight	Becidight	Power ON/OFF	
РМ	PM 1 .qz	Power Display	
DWDM	DWDM 2 abc	Scanned dB value of the wavelength is represented as a data.	
SCAN	SCAN 3 def	Wavelength is scanned and dB value is represented.	
dB/dBm	dB/dBm 4 ghl	Each time you press the key, dB and dBm are repeated.	
<b></b>	5 Jd	Up arrow	
Graph	Graph 6 mno	Scanned dB value of the wavelength is represented as a graph.	
Recall	Recall 7 prs	Recall data	
ENTER	ENTER -	Enter	
Save	SAVE 9 way	Data Save	
ESC	ESC	Cancel	
▼	•	Down arrow	
MENU		Set up and Data delete	



Page 6/21

## 2.2 Screen Information

#### 1) Power ON / OFF

- Is used to turn the instrument power on and off. If you press the

(Backlight) button for more than 2 seconds, the logo shown below appears and it moves to 'Power Meter', which is the basic channel.



- Press the (Backlight) button for more than 2 seconds to turn the power off.





Page 7/21

#### 2) Power Meter

- Power Measurement is divided into 'Auto' and 'Manual'. If you select 'Auto', the largest value are shown after the measurement.



- Use the arrow keys to different values can be found.
- 'Manual' is the wavelength of the desired user is used to determine the value of dBm.
- PM 1 .qz - In the above screen , click (PM) button, will write the ENTER wavelength to be measured. And click (Enter) button.



- If you want to re-select 'Auto', click (PM) button.





Page 8/21

#### 3) DWDM

- Depress the (DWDM) button, then the display will show as the figure below.
- 'DWDM' is divided into 'Auto' and 'Manual'.



- The moment you click on the (DWDM) button, it is scanned only once in Manual mode.
- If a screen shows asking for a channel selection, input the channel you want and press the (Up arrow) and (Down arrow) key.
- Selection of 'Manual' and 'Auto' can be done by this

(Menu).



Page 9/21

ODPM-48

#### 4) SCAN

00 /	01/01 💷	12:00
D٧	VDM Scan	dBm
01	1527.21	-04.40
02	1527.99	-05.05
03	1528.77	-04.54
04	1529.55	-03.61
05	1530.33	-03.33
06	1531.11	-06.02
07	1531.89	-11.46
08	1532.68	-07.94
09	1533.46	-14.81
		Υ.

00 /	01 / 01 🖾	12:00
DV	VDM Scan	dBm
10	1534.25	-07.24
11	1535.03	-02.13
12	1535.82	-03.81
13	1536.61	-03.04
14	1537.40	-10.42
15	1538.18	-06.31
16	1538.97	-05.64
17	1539.76	-17.29
18	1540.55	-24.27

- If you press the are scanned.

(SCAN) button, The selected wavelengths

#### 5) dB/dBm

- Pressing the (dB/dBm) key alternately shows the 'dBm' and 'dB'.





Page 10/21

#### 5) Graph

- If you press the Graph (Graph) button after scanning, a graph screen like the one on the right show.



- If you press the Graph (Graph) button again it returns to text mode.

00/01/01 📟 12:00		
SCA	N Text	dBm
01	1527.0	-04.40
02	1527.8	-05.05
03	1528.6	-04.54
04	1529.4	-03.61
05	1530.2	-03.33
06	1531.0	-06.02
07	1531.8	-11.46
08	1532.6	-07.94
09	1533.4	-14.81
		V

00 /	01/01	9% 12 : 00
SCA	N Text	dBm
10	1534.2	-07.24
11	1535.0	-02.13
12	1535.8	-03.81
13	1536.6	-03.04
14	1537.4	-10.42
15	1538.2	-06.31
16	1539.0	-05.64
17	1539.8	-17.29
18	1540.6	-24.27
		V A



Page 11/21

#### 6) Recall

- Press the (Recall) button to access the menu that calls the measured result of optical power for each channel in the form of text.

00/01/01 999 12:00			
Data Store			
130601 17:01:00			
130501 21:59:34			
130401 08:06:15			
130301 06:16:05			
130201 12:01:24			
130104 20:00:41			
130103 16:00:55			
130102 08:01:15			
130101 00:00:00			
▼			

- Press the (Enter) button to select the data you want, the data saved are displayed.

00 /	01/01 🛛	9% 12:00
130	0601 17:	01:00
01	1527.0	-04.40
02	1527.8	-05.05
03	1528.6	-04.54
04	1529.4	-03.61
05	1530.2	-03.33
06	1531.0	-06.02
07	1531.8	-11.46
08	1532.6	-07.94
09	1533.4	-14.81
		•

0	0/	01/	01	99% 12:00
	130	0601	17	:01:00
	10	153	4.2	-07.24
	11	153	5.0	-02.13
	12	153	5.8	-03.81
	13	153	6.6	-03.04
	14	153	7.4	-10.42
	15	153	8.2	-06.31
	16	153	9.0	-05.64
	17	153	9.8	-17.29
	18	154	0.6	-24.27



Page 12/21

#### 7) Save

- This saves the currently displayed value, and All text and graph

(save) button.

modes are savable using the



- When you press the (save) button the following message shows and asks the name of the Data to be saved, and the data based on the current data and time is saved if you press the (Enter) button.

- If you want to stop saving, press (ESC).



Page 13/21

#### 2.3 Menu

MENU

If you press the (Menu) button, it changes to a screen where you can configure the operating environment of ODPM-48.





- The menu consists of 'SCAN SET', 'Select Lambda', 'Off Set', 'Auto Power Off', 'Time Set', 'Data Delete', 'Data Format', 'System Info', 'Scan Display', 'SCAN Mode' and 'Threshold'.

#### 1) Scan Set

12 / 01 / 01 💷 12 : 00	12/01/01	99% 12:00	12/01/01	956 12:00
Menu	SCAN Set		SCAN Set	
SCAN Set	All Scan	ON	SCAN Set	OFF
Select Lambda Offset Auto Power Off Time Set Data Delete Data Format System Info Scan Display	Selected	OFF	Selected	ON

- If you press the (Enter) button after selecting 'Scan Set', a set up screen for 'Scan Set' shows up. 'All Scan' is registered 48



Page 14/21

wavelength. As the channel values that users mainly use are provided in the screen, it is easy to set up the channel value that the user wants.

#### 2) Select Lambda

12 / 01 / 01 💯 12 : 00	12/01/01 🕮 12:00		12/	01/01 99%	12:00	
Menu	Select Lambda		Select Lambda			
SCAN Set	01	1527.0	ON	01	1527.0	OFF
Select Lambda	02	1527.8	ON	02	1527.8	ON
Offset	03	1528.6	ON	03	1528.6	ON
Auto Power Off	04	1529.4	ON	04	1529.4	ON
Time Set	05	1530.2	ON	05	1530.2	ON
Data Delete	06	1531.0	ON	06	1531.0	ON
Data Format	07	1531.8	ON	07	1531.8	ON
System Info	08	1532.6	ON	08	1532.6	ON
Scan Display	09	1533.4	ON <sub>♥</sub>	09	1533.4	ON <sub>₹</sub>

- If you press the (Enter) button after selecting 'Select Lambda', you can select the channel that you want. If you then press the ENTER button, it changes from OFF to ON.

#### 3) Off Set



- If you press the (Enter) button after selecting 'Off Set', you can set up dBm value and the optical power value on the screen.



Page 15/21

- You can set the 'Off Set' by pressing the ESC key and ENTER.

#### 4) Auto Power Off



- The power automatically goes off if the user does not input any key in the determined time.
- If you press the (Enter) button after selecting 'Auto Power OFF', you can set the Auto power off time in minutes.

- You can set the time by the (ESC) key and (Enter).

#### 5) Time Set





Page 16/21

ENTER

- If you press the (Enter) button after selecting 'Time Set', you can set the today date and current time.
- You can set the time by pressing the (ESC) key and (ENTER (Enter) button.

#### 6) Data Delete

12 / 01 / 01 💯 12 : 00	12 / 01 / 01 🕮 12 : 00	12 / 01 / 01 📟 12 : 00
Menu	Data Delete	Data Delete
SCAN Set	120601 12:00:00	<u>120601 12:00:00</u>
Select Lambda	120501 21:59:34	Data delete
Offset	120401 08:06:15	Data will be
Auto Power Off	120301 06:16:05	deleted
Time Set	120201 12:01:24	deleted.
Data Delete	120104 20:00:41	ESC ENTER
Data Format	120103 16:00:55	120103 10.00.33
System Info	120102 08:01:15	120102 08:01:15
Scan Display	120101 00:00:00	120101 00:00:00
V.	V.	V

ENTER

- If you press the (Enter) button after selecting 'Delete Data', you can delete the data.
- If you press the (Enter) key after choosing the data you want to delete, message appears on the screen.
- If you press the (Enter) button, it is deleted from the memory.

#### 7) Data Format

- You can delete all saved files by formatting the transportable memory.



Page 17/21

ODPM-48



- If you press the (Enter) button, all files are deleted from the memory.

#### 8) System Info

Generates information about the equipment.

12 / 01 / 01 🖾 12 : 00	12 / 01 / 01 🕮 12 :
Menu	System Info
SCAN Set Select Lambda Offset Auto Power Off Time Set Data Delete Data Format	PN : OCPM18-28Z SN : 12GXX-000001 HW : V2.1 FW : V1.0.0
System Info	
Scan Display	



Page 18/21

00

# 9) Scan Display



- If you choose the 'All', from 1527.21nm to 1564.68nm values of 48 wavelengths are output.
- If you choose the 'Measured', the value of the wavelength to be measured are output.





Page 19/21

ODPM-48

#### 10) Scan Mode



- The 'Scan Mode' consists of the 'Auto' and 'Manual'. This can be



- If you choose the 'Auto', when selecting 'DWDM', shows the real time changing values. If you choose the 'Measured', when 'SCAN' and selecting 'DWDM', shows the values.





Page 20/21

#### 11) Threshold

12 / 01 / 01 🕮 12 : 00	12 / 01 / 01 🕮 12 : 00	12 / 01 / 01 🕮 12 : 00	
Menu	Menu	Menu	
SCAN Mode	SCAN Mode	SCAN Modo	
Threshold	Threshold	Threshold	
	-00.00 dBm dBm ESC ENTER	-00.00 dBm -30.00 dBm ESC ENTER	

- You can change the baseline.
- '-30.00dBm' is the default setting.
- If you press the (Enter) button after selecting 'Threshold', you can set the baseline.





- Baseline changes can be found at the graph screen.



Page 21/21