

# **C2000 POWER METER**

**With Data Storage**

Operation Instructions



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# 1. Features

The Appointech C2000 handheld power meter has calibrated readings at 850nm, 1310nm, 1490nm, 1550nm and 1625nm . The operation is very user-friendly. When turn-on with the ON/OFF key, the last selected input wavelength is shown on the LCD. The input wavelength to be measured can be selected by pressing the  $\lambda$ -key until the correct wavelength value is shown on the LCD display, together with its corresponding power value. The power unit can be selected in dBm, dB, mW, uW, or nW by “Unit” key.

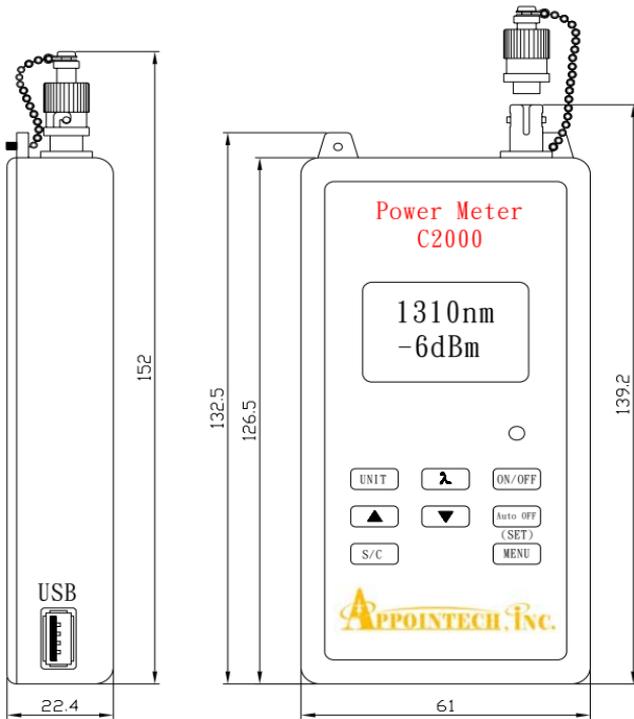
After the power meter is turned on, the auto-off feature is enable, as indicated by a cross on the power symbol. The unit will be automatically shut off after about 30 minutes on-time for saving the battery life, in case not in use for a prolonged time. To turn it back on, press the ON/OFF key again. The auto-off feature can be disabled by pressing the “Auto Off” key, as indicated by the power symbol without a cross.

A battery symbol shows the level of remained power in the battery. When an empty battery symbol is shown on the LCD display, the battery power is too low to assume proper operation. Charging is required. The included rechargeable battery works with a power adaptor (100~240VAC) of a USB connector, which is also included. When charging in OFF-mode, the indicator LED is on until charging has been completed. It takes about 4 hours to have full charge. After full charge, the unit can continuously operate for 8 hours.

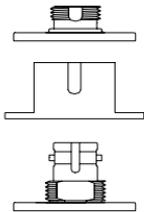
The unit can also be calibrated on-site with respect to the customer's own power standard by pressing the up ▲ and down ▼ keys until the expected power value is shown on the LCD. The on-site calibration switch is located inside the battery compartment behind the rubber jacket. The switch is preset at "normal" for measurement. When calibration is needed, the switch is moved to the left side marked "Cal". A tool symbol is shown on the LCD to indicate calibration mode. Make sure that the switch is moved back to "Normal" when calibration is done.

The data storage feature is also available. The power is measured at different selected wavelength, and event location. The data are stored, and recalled with display of event, wavelength, and power value. The power meter can also be programmed to measure at given time interval up to 500 data points. The data are then up-loaded to a PC in EXCEL file through an USB cable for analysis.

## 2. Functions



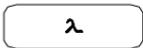
Unit:mm



FC, SC, ST Connector



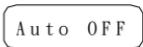
Power switch



Wavelength selection



Unit selection



Auto off  
enabled/disabled



On-Site  
calibration



Save/Clear Data



Menu for Data  
Management

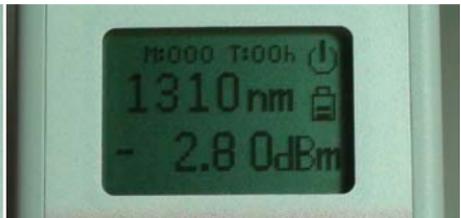
# 3. Operation

1. Press ON/OFF key to turn on.



Press  $\lambda$  -key until the correct input wavelength is displayed.  
The displayed power value is the measured value.

2. To cancel auto-off function, press the Auto Off key. A power symbol without a cross is shown on the LCD.



3. The power unit is normally in dBm. When the Unit key is pressed for about 3 seconds until dB is flashing on the LCD, the current input power level is taken as the new reference at 0 dB, and the following measurement will be the difference in dB, with respect to the new reference. The reference value is stored in the unit even after the unit is turned off. A new reference as the current

input power can be set by pressing the Unit key for 3 seconds again. When in dB mode, press the Unit key to change the unit back to dBm. The Unit key is pressed to get power reading in mW,  $\mu$ W, or nW.



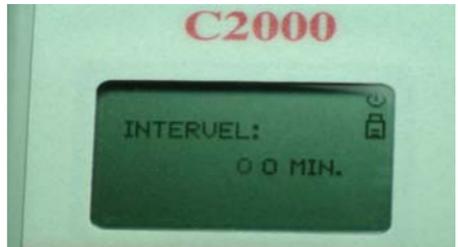
4. The measured value can be stored in the memory address M:xxx sequentially by pressing S/C key. YES or NO is selected by the  $\blacktriangle$  and  $\blacktriangledown$  keys. If YES is selected, by pressing the S/C key again, the data is stored in the memory address as shown. If NO is selected, by pressing the S/C key again, the screen is back to measuring mode without storing the data.





## 5. MENU

Press MENU for data management

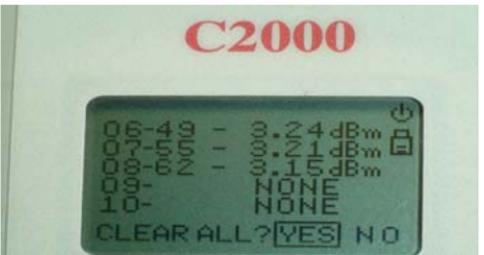
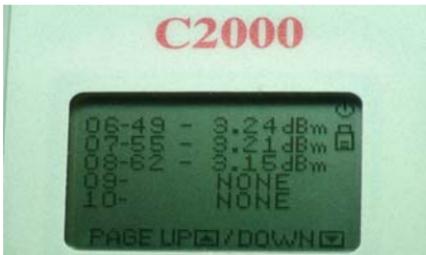
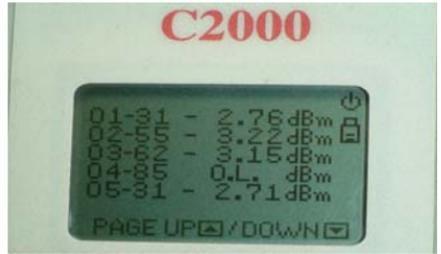


### 5.a SET TIMER

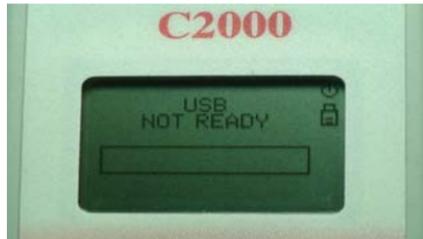
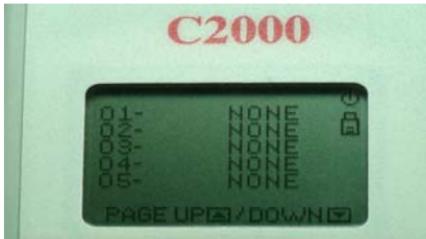
Set the time interval for continuous data logging, in unit of min. Press MENU, the first digit blinks. Use ▲ and ▼ key to set the number. Press MENU again, the second digit blinks. Use ▲ and ▼ key to set the second number. Then press MENU to start measurements. The measured value at each selected time interval is stored sequentially in the memory. The stored data can be recalled on the LCD display as explained in the section of “MEMORY DATA”, or uploaded to a PC for data analysis as explained in the section of “UPLOAD”.



## 5.b MEMORY DATA



If MEMORY DATA is selected, press MENU to recall all the stored data to the LCD display. The example shows from left to right the data address number, the wavelength, 31 for 1310nm, 55 for 1550nm, 85 for 850nm, et., and the power value. Press ▼▲ to scroll the page. The stored data can be cleared by pressing S/C. Press S/C again to confirm. Or press ▼ to NO, then press S/C to abort clearing.



## 5.c UPLOAD

**STEP 1 :** Turn on C2000 and PC. Connect USB cable from C2000 to PC. Insert the provided Appointech CD to CD\_ROM.

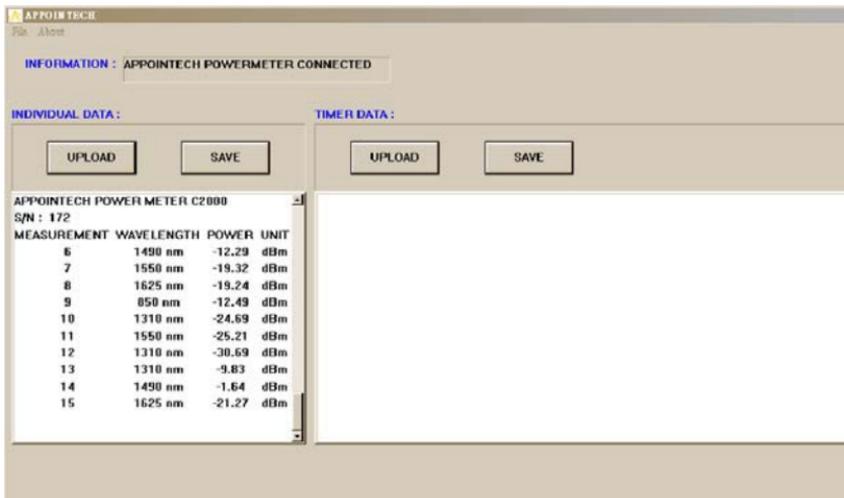
**STEP 2 :** If Windows show “**Hardware Update Wizard**”, you have to choose " **Install from a list or Specific location**" check box, and press "**Next**". Then, type or browse the path **[CD-ROM Drive]:\win2k\_xp** or **[CD-ROM Drive]:\win98** and press "**Next**". The C2000 driver installation is completed.

**STEP 3 :** If the driver has been installed before, open AP3-0.exe file from the CD\_ROM. The APPOINTECH window will appear. When the window shows “**APPOINTECH POWERMETER CONNECTED**”, the USB enumeration process is completed. Go to next step.

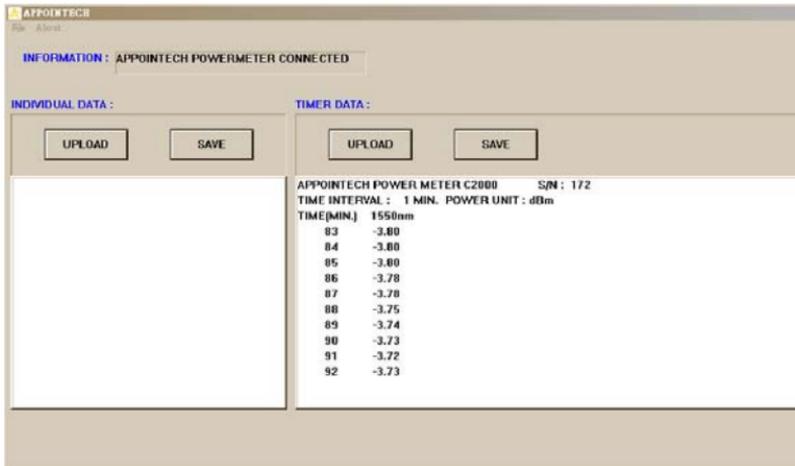


**STEP 4 :** Press **MENU** button on C2000 and select “**UPLOAD**” on the LCD with **▼** key, press **MENU** button again; The LCD shows USB ready. If USB NOT READY is shown, repeat from STEP 1.

**STEP 5 :** If uploading individual data from C2000, click dialog “**UPLOAD**” button on the individual data side. The stored individual data in C2000 will be uploaded to PC.



If uploading timer data from C2000, click dialog “**UPLOAD**” button on the timer data side. The stored timer data in C2000 will be uploaded to PC.

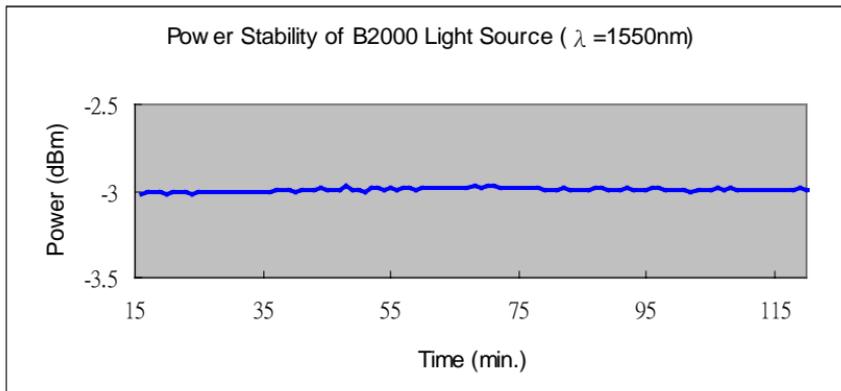


**STEP 6** : After UPLOAD is completed. Click dialog **“SAVE”** button on the individual data side to save individual data. Click dialog **“SAVE”** button on the timer data side to save timer data. The file form is EXCEL file ( \*.csv). Define your own data file name.

**STEP 7** : Close Appointech window.

**STEP 8** : Open data file for analysis. e.g. Power Stability.

The chart below is an example.



Standard Deviation=0.01dB

## 6. Calibration procedure:

- 6.1 Remove the rubber jacket and battery cover. Move the switch inside the battery compartment to CAL position,
- 6.2 The power of a stabilized light source of the wavelength to be calibrated is first measured with the standard power meter, then with the power meter to be calibrated. The unit has to be set at dBm.
- 6.3 The (Set) key is pressed to initiate calibration, as indicated by the S-symbol on the LCD.
- 6.4 The power reading is changed by pressing the up ▲ and down ▼ keys until the expected power value in dbm is shown on the LCD.
- 6.5 The (set) key is pressed again to complete the current calibration. The tool symbol is back to indicate the new calibration factor has been stored.
- 6.6 The same procedure 6.2 to 6.5 is repeated for calibrating

another wavelength. After all calibrations are completed, move the calibration switch back to “Normal”. Replace the battery compartment cover and rubber jacket.

## **7. Battery Charging**

When battery power is too low to assume proper operation, an empty battery symbol is shown on the LCD display. When charging is required, plug in the USB connector of the power adaptor (100~240VAC). When charging in OFF-mode, the indicator LED is on until charging has been completed. It takes about 2 hours to get full charge.

## 4. Specifications

Detector Material	InGaAs
Calibration Wavelength	850,1310,1490,1550, 1625nm or customer specified
Input Power Range	-1: +3 ~ -60dBm. -2: +23 ~ -40dBm
Accuracy	+/-0.25dB
Display	LCD displays power in selected unit, wavelength. Warning symbol for low battery, Auto-Off Enable/disable
Operation Temp; Humidity	-15°C~55°C 0~95%RH
Storage Temp; Humidity	-35°C~70°C 0~95%RH
Power Requirements	Rechargeable Lithium battery
Dimensions (L x W x H)	16x7x3 cm (without jacket)
Weight	<0.2Kg

# **Appointech Inc.**

## **Products Profile**

### **Connectorized Modules:**

LD, LED, PIN, PIN-TIA  
Dual LD, Dual LED, BIDI

### **Transmitter/Receiver Modules:**

1x9,2x9;SFF,SFP,  
BIDI

Bit Rate up to 2.5Gb/s

### **Test Instruments:**

LED Light Source  
GPON, CWDM Light Source  
GPON, CWDM Power meter  
Fiber Fault Locator

### **Custom Design**

OEM

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