

GFP-Pen GFP100

Operation Manual

Please read this guide before operating this product



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1. Technical Specification

Measured Parameters:

Green Fluorescent Protein (GFP)

Measuring Light:

Solid state LED light source with band limiting filter to subtract background, GFP unrelated, fluorescence

Detector Wavelength Range:

PIN photodiode - band limiting filter sets detection range

Wireless Communication:

Bluetooth 1.1 (optional)

FluorPen 1.0 Software:

Windows 2000, XP, or higher*

Memory Capacity:

Up to 4 Mb

Internal Data Logging:

Up to 100,000 data points

Display:

2 x 8 characters LC display

Keypad:

Sealed, 2-key tactile response

Keypad Escape Time:

Turns off after 3 minutes of no use

Power Supply:

4 AAA alkaline batteries (single use or rechargeable)

Battery Life:

48 hours typical with full operation

Low Battery Detection:

Low battery indication displayed

Size:

120 mm x 57 mm x 30 mm

4.7" x 2.2" x 1.2"

Weight:

180 g, 6.5 oz

Sample Holder:

Mechanical leaf clip - non-destructive for plants, effective for sample pre-darkening

* Windows is a registered trademark of Microsoft Corporation.

Operating Conditions:

Temperature: 0 to 55 °C; 32 to 130 °F Relative humidity: 0 to 95 % (non-condensing)

Storage Conditions:

Temperature: -10 to +60 °C; 14 to 140 °F Relative humidity: 0 to 95 % (non-condensing)

Warranty:

1 year parts and labor (see the last page of this Operation Manual for precise conditions)

The Bluetoothmodule BlueNiceCom III is endowed with a declaration of conformity with the following norms:

EN 300 328 V1.6.1 (2004-11)

EN 301 489-1, -3 V1.5.1 (2003-12)

EN 50371 December 2002

EN60650

FCC Part 15.247

FCC Grantee Code: R7T

Bluetooth Qualified Product Notice:

GRA_013_04

Bluetooth Listing Identifier: B01572

2. General Information

The **GFP-Pen** is a handheld, battery-powered fluorometer that provides rapid and accurate measurements of **Green Fluorescent Protein (GFP)** emission. Equipped with a leaf-clip, the device allows rapid, repeated and non-destructive GFP determinations in intact leaf samples. It is a perfect tool for studying the difference between the high and low GFP expressing plants and between the transformed and non-transformed organisms.



Green Fluorescent Protein (GFP) serves as a genetic marker in genetically modified plants and as a very useful tool in gene expression studies. **The GFP-Pen** can be used for tracking the expression of these modified genes in crops. It allows quick field or laboratory screening of multiple samples with a very high degree of accuracy.

3. List of Equipment

Carefully unpack the carton. You should have received the following items:

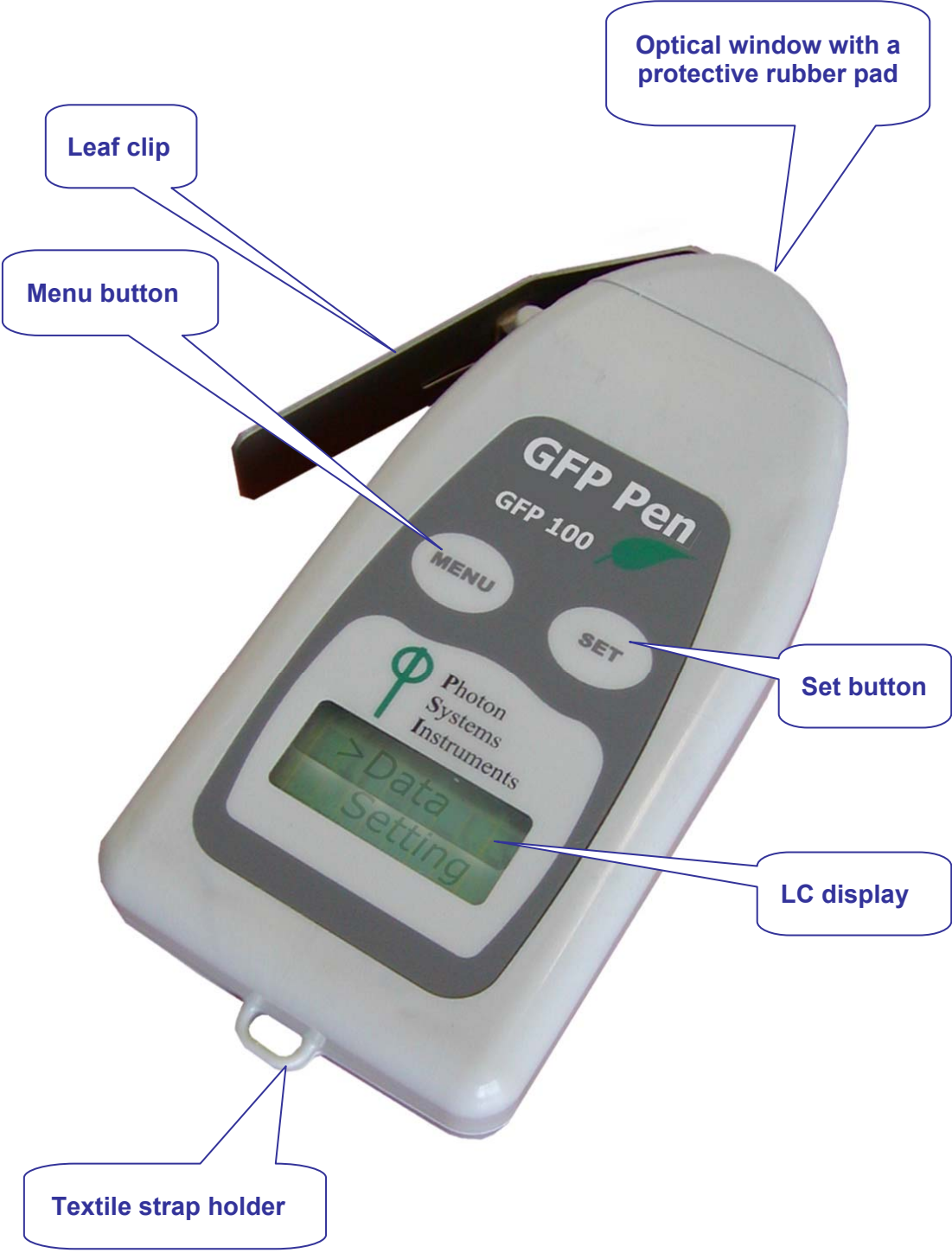
- **GFP-Pen GFP 100**
- **4 AAA Alkaline Batteries**
- **This Owner's Manual** (*on a CD or a printed version*)
- **Carrying Case**
- **Textile Strap for Comfortable Wearing**
- **Reserve Self-Adhesive Rubber Pads**
- **Install CD with the Communication Software** (*optional*)
- **Bluetooth Communication Module** (*optional*)
- **Other Accessories or Optional Features** (*according to your specific order*)

Note:

If any item is missing, please, contact the manufacturer. Also check the carton for any visible external damage. If you find any damage, notify the carrier and the manufacturer immediately. The carton and all packing materials should be retained for inspection by the carrier or insurer.

For customer support, please write to: support@psi.cz

4. Physical Features



5. Care and Maintenance

- Protect the device from impact.
- Never submerge the device in water and protect it from excessive humidity.
- The GFP-Pen is supplied with a carrying case which is padded to protect the instrument during transportation. You can either carry the GFP-Pen case over the shoulder or hang it on your belt.
- The device should not come in contact with any organic solvents, strong acids or bases.



- Keep the optical part clean and dry. If cleaning is needed, use the soapy water and soft, non-abrasive tissue for cleaning optical elements.
- The optical part of the GFP-Pen is covered with a self-adhesive rubber pad that protects the optics from dirt or moisture.
- The damaged or dirty pad can be easily removed by tearing it off from the surface. To affix a new one, just remove the sheeting and stick the pad on cleaned and dried surface. Be sure that you placed the pad properly and that you did not cover the optical window.



- The GFP-Pen operates from four AAA single-use or rechargeable batteries. They may be easily replaced by unscrewing the cover of the battery holder on the rear of the instrument. Battery life is approximately 48 hours when the GFP-Pen is operated continuously.



6. Operation Instructions

The device is operated by two keys - MENU and SET.

In general, use the MENU key to scroll through sequential menu options on the digital display. Use the SET key to select a menu option based on cursor (>) position.

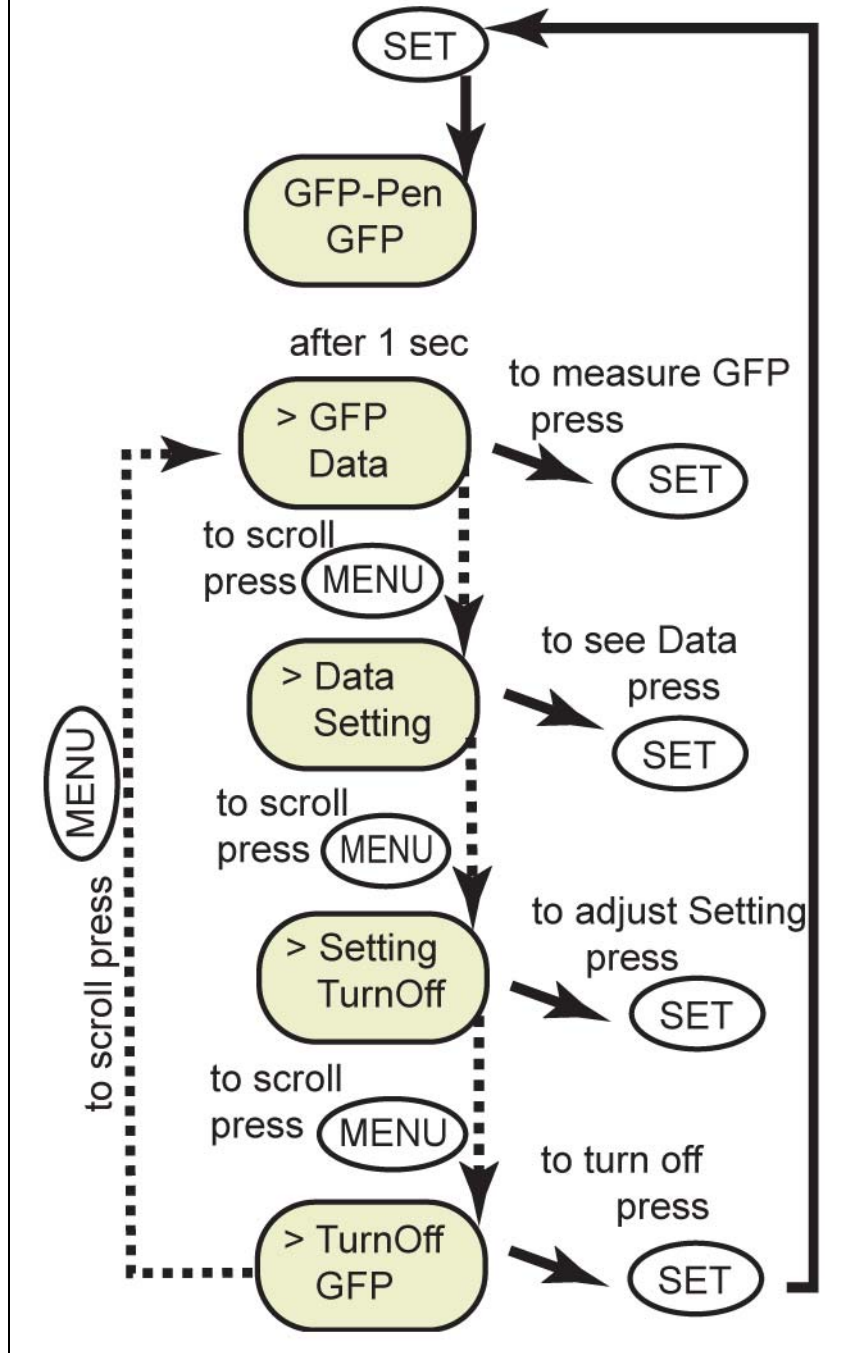
The following five schematic drawings show the structure of all available GFP-Pen functions and commands.

The device operates in:

- the main menu (green color in the drawing);
- 1st level submenu (blue color in the drawing);
- 2nd level submenu (pink color in the drawing).

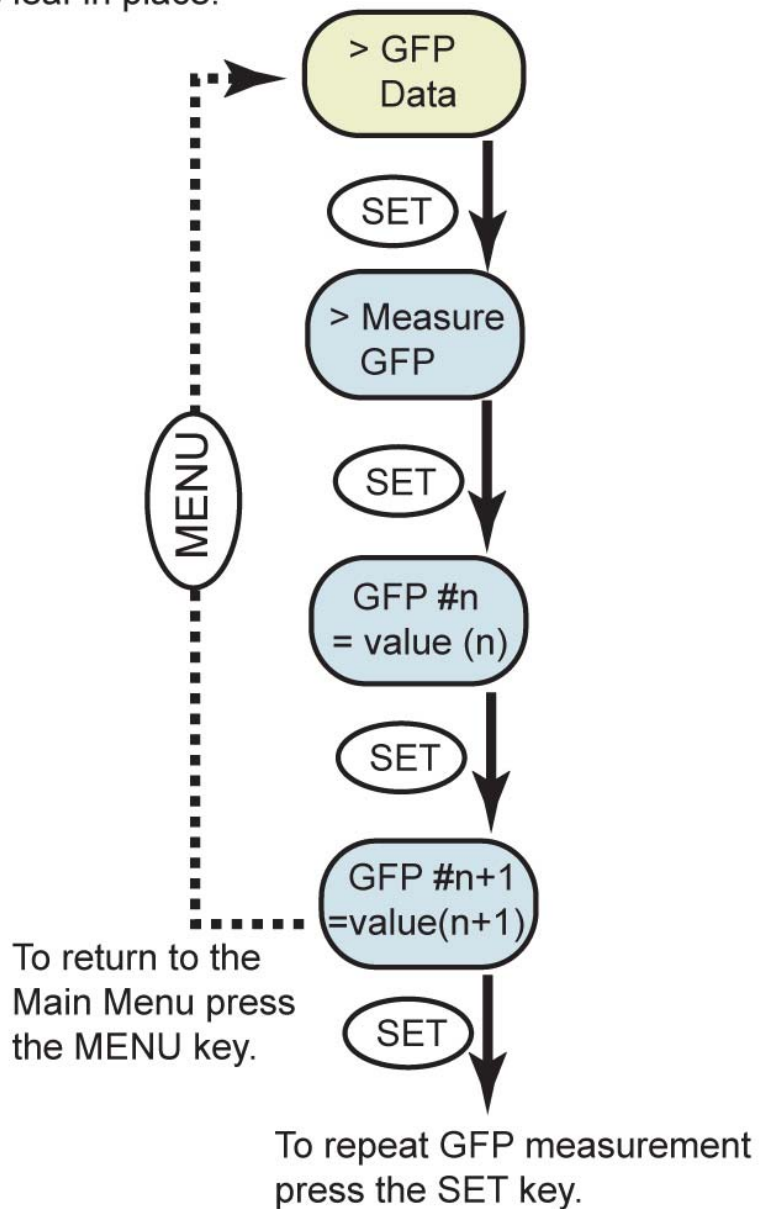
Main Menu

To start hold the SET key for 1 second

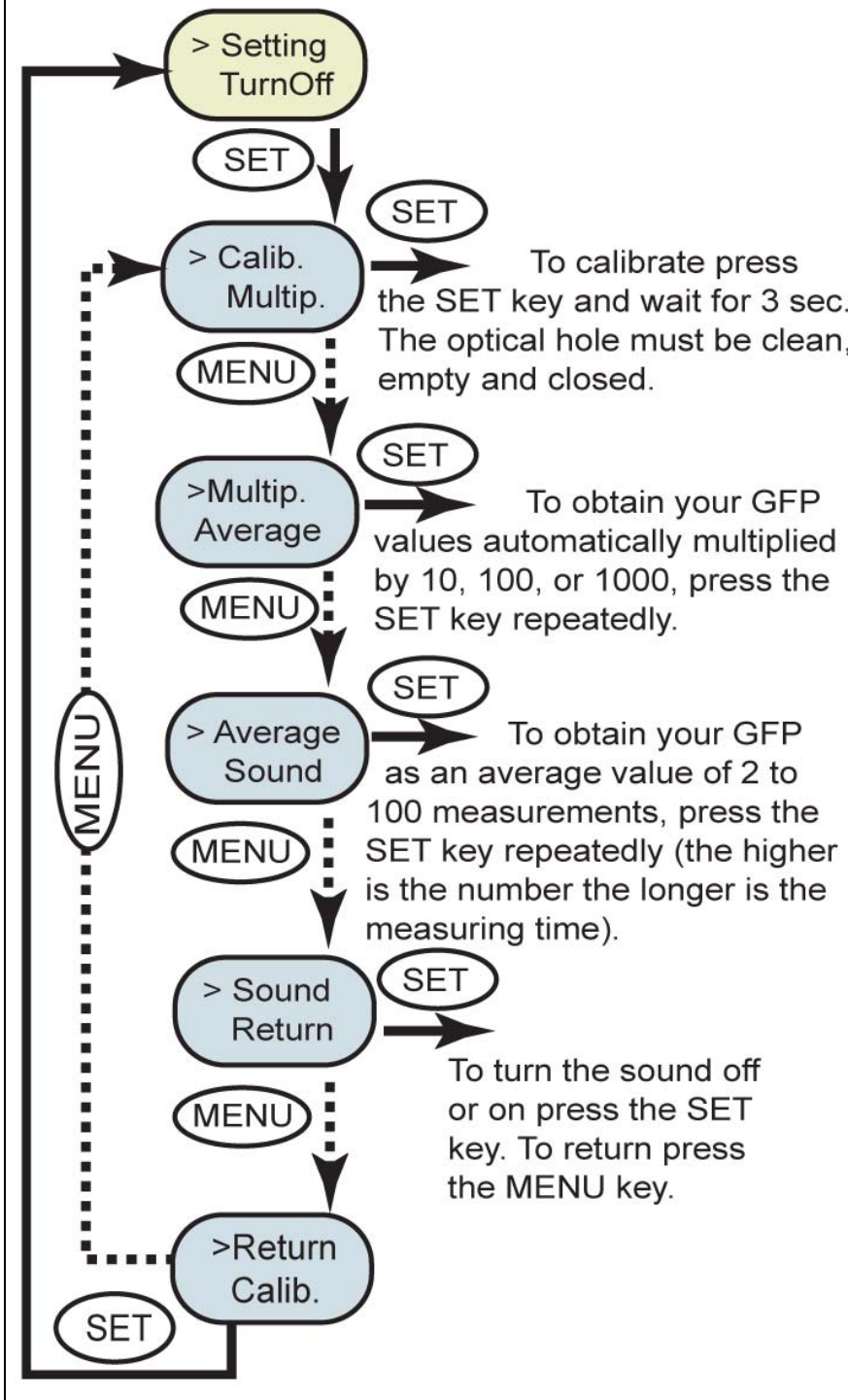


Measure GFP Submenu

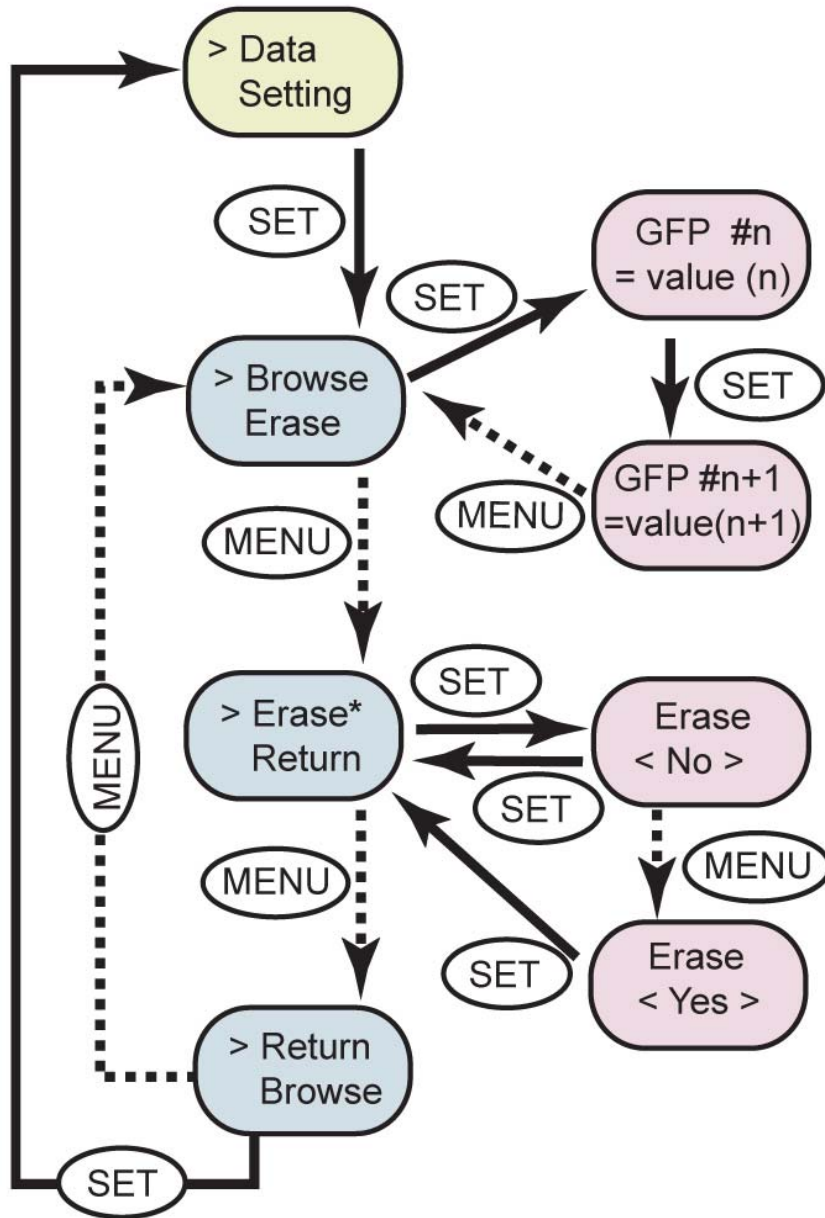
To measure GFP, depress the clip on the side of the GFP-Pen to expose the optical window. Place the leaf against the window and allow the clip to hold the leaf in place.



Setting Submenu



Data Submenu



* **Important note:** It is not possible to erase single data. ALL stored data are erased.

TurnOff Submenu

> TurnOff
GFP



Good Bye
:-)

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7. Bluetooth Pairing and Connecting

Note: Chapter 7 applies only to the **GFP-Pen model** with Bluetooth wireless communication (optional).

Before you set up the Bluetooth connection between the GFP-Pen and your PC, make sure you have these components:

- **Bluetooth enabled GFP-Pen**
-

- **Bluetooth enabled PC**

The PC with which you connect must have Bluetooth wireless technology, either built-in or through a Bluetooth card. Make sure that the PC's Bluetooth setting is "discoverable" (meaning that it shows up when other devices search for nearby Bluetooth connections). Consult the user guide for your PC or Bluetooth card to learn how to do this.

- **Bluetooth configuration software properly set up on PC**

Before you can exchange files with your PC, you will need to set up the Bluetooth software that came with your PC, or your PC's Bluetooth card. This software varies by manufacturer. Please consult your PC's Bluetooth documentation for more information.

- **Bluetooth must be switched on visible on both devices**

To pair the GFP-Pen with another Bluetooth device, such as a computer, you will need to ensure that Bluetooth is switched on visible on both devices.

7 steps to set up the Bluetooth connection between the GFP-Pen and a PC:

Step 1: Enabling Bluetooth in the GFP-Pen

Switch on the GFP-Pen (press and hold the SET key).

Scroll to the “Setting” menu (press the MENU key twice,

then press the SET key once).

Select “BT_On” to enable Bluetooth (press the SET key).

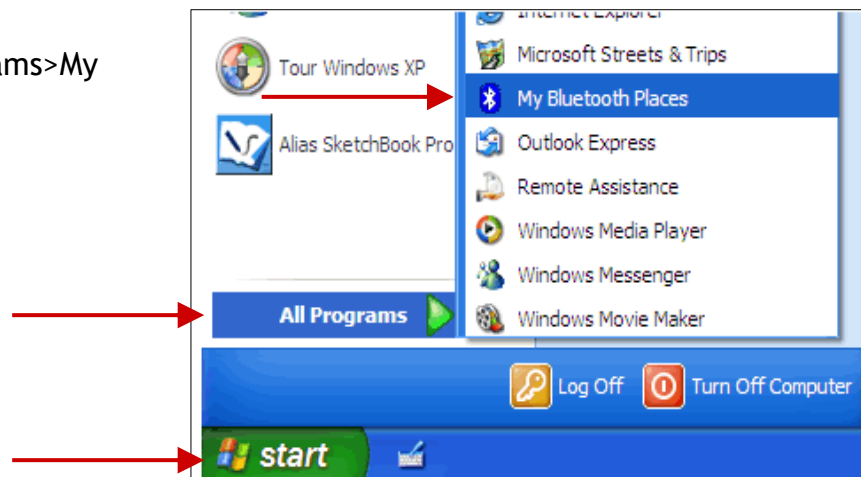


** Keep in mind that the GFP-Pen turns off automatically after about 3 minutes of no action. Turning off the GFP-Pen always turns off Bluetooth.*

Step 2: Starting the Bluetooth Application on Your PC

Be aware that this description is a general example; some of the steps may be different on your PC.

Select: Start>All Programs>My Bluetooth Places.



You may also start your Bluetooth application via the Control Panel:

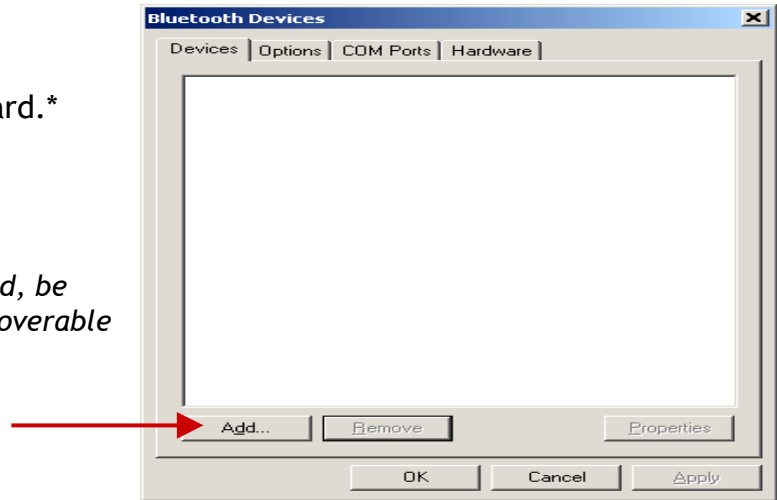
Select: Start>Settings>Control Panel>Bluetooth Devices.



Step 3: Opening the Add Bluetooth Device Wizard

Select: "Add" to start the wizard.*

* Before starting to use the wizard, be sure that the GFP-Pen is in discoverable mode (see Step 1).



Step 4: Searching for a New Bluetooth Device

Mark the following box: "My device is set up and ready to be found".

Select: Next.

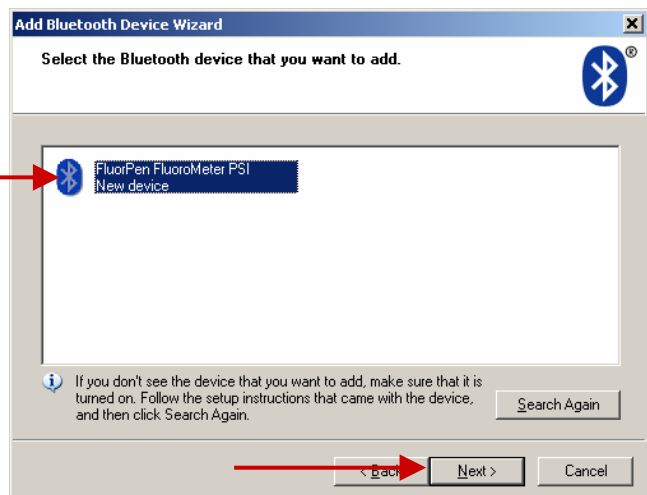


Step 5: Selecting the GFP-Pen

Select: FluorPen software icon (FluorPen FluoroMeter PSI).*

Select: Next.

* Your display may show more Bluetooth Device icons.



Step 6: Starting the Pairing Process

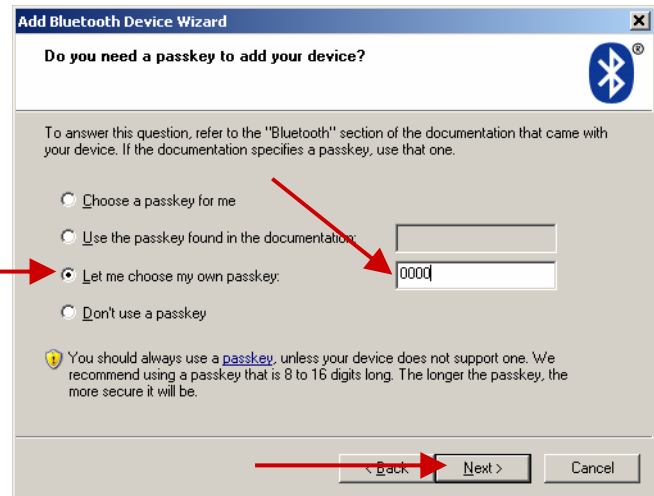
Your Bluetooth Pairing Passkey is:

0000

Select: “Let me choose my own passkey.”

Enter: **0000** (four digits).

Select: Next.



Step 7: Completing the GFP-Pen Pairing

Select: Finish.



8. Statement of Limited Warranty

- This Limited Warranty applies only to the GFP-Pen GFP 100 and its accessories (excluding any batteries). It is valid one year from the date of shipment.
- If at any time within this warranty period the instrument does not function as warranted, return it and the manufacturer will repair or replace it at no charge. The customer is responsible for shipping and insurance charges (for the full product value) to PSI. The manufacturer is responsible for shipping and insurance on return of the instrument to the customer.
- No warranty will apply to any instrument that has been (i) modified, altered, or repaired by persons unauthorized by the manufacturer; (ii) subjected to misuse, negligence, or accident; (iii) connected, installed, adjusted, or used otherwise than in accordance with the instructions supplied by the manufacturer.
- The warranty is return-to-base only, and does not include on-site repair charges such as labor, travel, or other expenses associated with the repair or installation of replacement parts at the customer's site.
- The manufacturer repairs or replaces faulty instruments as quickly as possible; the maximum time is one month.
- The manufacturer will keep spare parts or their adequate substitutes for a period of at least five years.
- Returned instruments must be packaged sufficiently so as not to assume any transit damage. If damage is caused due to insufficient packaging, the instrument will be treated as an out-of-warranty repair and charged as such.
- PSI also offers out-of-warranty repairs. These are usually returned to the customer on a cash-on-delivery basis.
- *Wear & Tear Items* (such as sealing, tubing, padding, etc.) are excluded from this warranty. The term *Wear & Tear* denotes the damage that naturally and inevitably occurs as a result of normal use or aging even when an item is used competently and with care and proper maintenance.

For customer support, please write to: support@psi.cz

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