Last document update: November 24, 2020

Application Note

1   Introduction

The SensitBT combines the Emstat Pico with Bluetooth in a portable housing. This app-note will show how to connect the SensitBT with PSTrace, PSTouch and how to use it with the MethodSCRIPT code examples.

2   Setting up the hardware

As soon as the device is turned on the "power" LED will light up. At this stage Bluetooth is not yet connected. How to connect with it will be described in the following paragraphs.

3 Connecting PSTrace (Windows 10)

PSTrace has to search for Bluetooth devices before it can connect to them. Click the Bluetooth icon under "Connection" to perform this action. When it is finished it should list the SensitBT in the dropdown list. The name has the format "PS-xxxx" where xxxx is the last digits of the Bluetooth MAC address. (This MAC address can be found on the sticker on the bottom of the SensitBT).
The first time PSTrace connects with an new device Windows 10 show a pop-up message in the right bottom corner of the screen. Click on this message and allow Windows to pair the device. The Bluetooth LED on the SensitBT should light up.
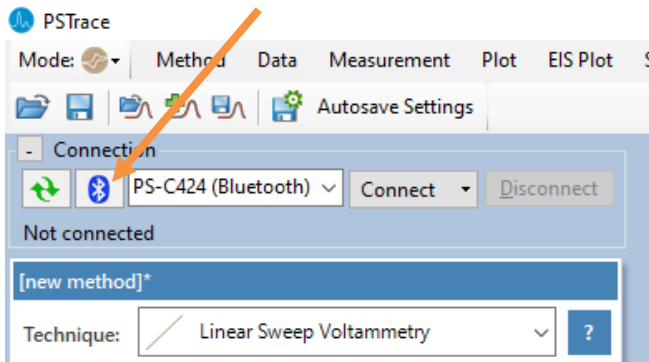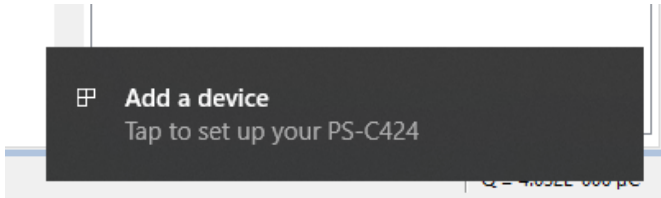

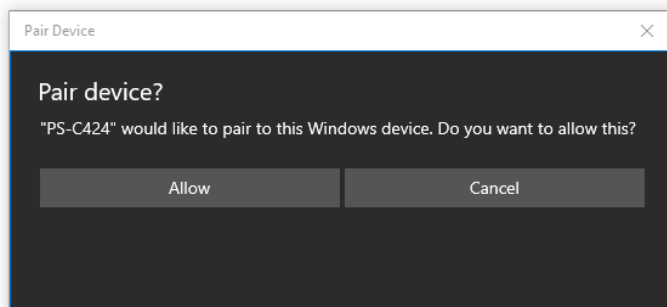*Figure 1 PSTrace – Bluetooth settings*

Figure 2 PSTrace - Add a device

Figure 3 PSTrace - Allow pairing with Bluetooth

4   Connecting in PSTouch (Android)

The process of connecting the SensitBT with Android is similar to the process on Windows 10. In PSTouch click on the wireless symbol. This will open a pop-up window that lists the previous discovered devices. Click "scan for devices" to fill this list. When this is finished the SensitBT should show up as "PS-xxxx" where xxxx is are the last 4 digits of the Bluetooth MAC address. (This MAC address can be found on the sticker on the bottom of the SensitBT). Click the device name and allow Android to pair to the device. The Bluetooth LED on the SensitBT should light up.
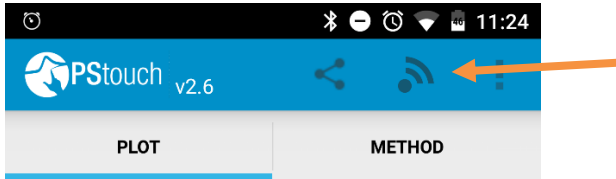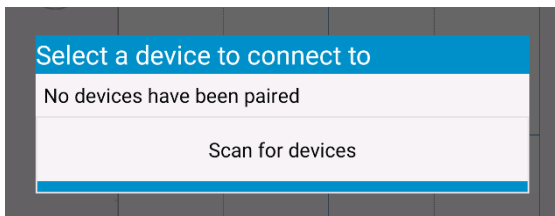

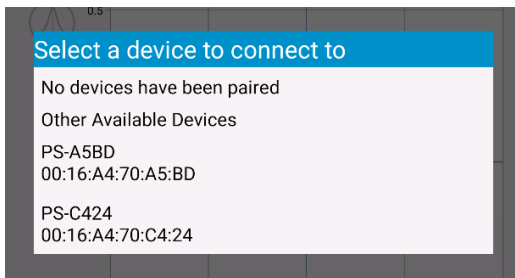*Figure 4 PSTouch connect*

Figure 5 PSTouch - Scan for device
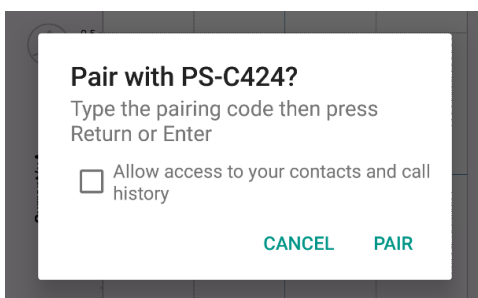

Figure 6 PSTouch - Select device

Figure 7 PSTouch – Pair

5 Connecting using the MethodSCRIPT code examples

Because the SensitBT is based on the EmStat Pico it works with the MethodSCRIPT/EmStat Pico code examples from Github. Those examples do, however, not pair with the Bluetooth device automatically. How this can be done depends on the used programming language/operating system and is outside of the scope for this document. For the C and Python examples the easiest solution is to pair manually to the device, as one might do with for example a wireless headphone or input device. On Windows this can be accomplished with the "Bluetooth and other devices" wizard (part of the "settings" app).
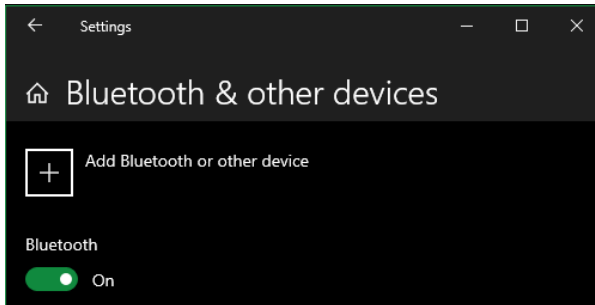

Ensure that he "Bluetooth" slider is *On* and click on the "Add Bluetooth or other device" button. Then select "Bluetooth". The PC will start searching for devices and list what it finds.
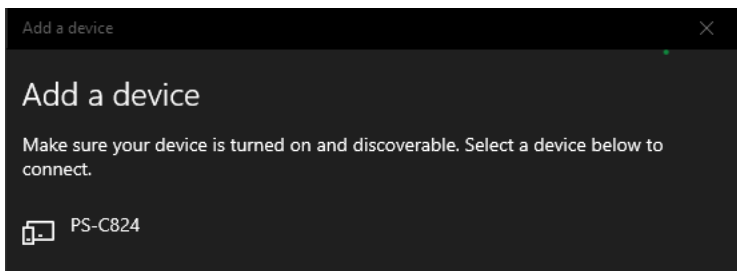
The SensitBT has a Bluetooth name in the format "PS-xxxx" where xxxx are the last four digits of the MAC address as can be found on the bottom sticker. Select the appropriate device to tell Windows to pair to the device. Make sure to connect with the Sensit that shows a logo representing a phone and PC since that uses classic Bluetooth. The connection that shows an heartrate monitor utilizes BLE.

If connected to the SensitBT via Bluetooth classic then windows opens 2 serial ports for every Bluetooth connection. One is reserved for "incoming" connections and the other for "outgoing" ones. We will use the "outgoing" port. When not sure which one is which then try to communicate with the Sensit with a terminal application such as TeraTerm or Putty. If nothing happens then it is probably the other port.

Just as when connecting to an EmStat, the port numbers are listed in "device manager" under "ports". At this point the port can be used as a regular serial port for communication. The examples should work out of the box when setting the serial port as is described in the individual examples on Github.

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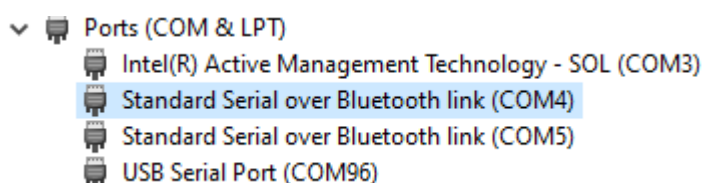
6 SDKs for developing a custom application for the SensitBT

The SDKs for interfacing with our devices, including the SensitBT, can be found on MyPalmsens and Github. These are available for Windows, Android and IOS. See the documentation included with each SDK for a detailed description on how to use it and how to interface with a device using Bluetooth. At time of writing only the IOS example has support for BLE. All other examples that include Bluetooth make use of classic Bluetooth.

| Main software | Dev tools | Documents |

PalmSens SDK 5.7 for WinForms .NET   16-08-2019

PalmSens Software Development Kit for developing WinForms applications in Visual Studio .NET or other .NET 4.5.2 supporting platform. Can be used with all PalmSens instruments and EmStats.
More info...

VISIT WEBSITE   DOWNLOAD

PalmSens SDK 5.7 for WPF   16-08-2019

PalmSens Software Development Kit for developing Windows Presentation Foundation (WPF) applications in Visual Studio .NET. Can be used with all PalmSens instruments and EmStats.
More info...

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PalmSens SDK 5.7 for Android   16-08-2019

PalmSens Software Development Kit for developing Android applications in Visual Studio .NET using Xamarin. Can be used with all PalmSens instruments and EmStats.
More info...

VISIT WEBSITE   DOWNLOAD

MethodSCRIPT code examples   29-08-2019

Click here for MethodSCRIPT code examples

DOWNLOAD

PalmSens SDK 5.7 for Matlab   16-08-2019

PalmSens Software libraries for use with Matlab. Can be used with all PalmSens instruments and EmStats.
Includes:

Read more

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PalmSens SDK 5.7 for UWP   29-08-2019

PalmSens Software Development Kit for developing Universal Windows Platform (UWP) applications in Visual Studio .NET. Can be used with all PalmSens instruments and EmStats. UWP apps can also run on Windows 10 IOT on a **Raspberry Pi 3** for example.
More info...

VISIT WEBSITE   DOWNLOAD

EmStat Embedded SDK 1.23   27-11-2017

EmStat development library for use with C/C++ or Arduino.
Included:

Read more

VISIT WEBSITE   DOWNLOAD

PalmSens SDK 5.3 for LabVIEW   07-11-2017

This LabVIEW project shows how to implement the PalmSens 5.3 core library in LabVIEW using it to run measurements and acquire data directly in LabVIEW. **Please note that this example comes AS IS and is not supported by PalmSens BV.**

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