

Application Note

1 Introduction

The EmStat Pico devboard has an integrated Bluetooth module that can be used to wirelessly communicate with the device from a PC, tablet or smartphone. This application note describes how to use the Bluetooth capabilities on the EmStat Pico development board.

2 Setting up the hardware

The EmStat Pico development board utilizes two DIP switches to select how the communication lines are connected. The top switch (SW3) is responsible for connecting the Bluetooth module to any of the supported interfaces. The bottom switch (SW4) works the same for the EmStat Pico. These switches should only be set to communicate with one interface at a time and the top and bottom switches must not connect to the same interface. Because of this switching architecture both switches have to be set to the right settings to connect the Pico and Bluetooth module together. The required configuration is shown below. Note that the switches are “on” when the slider is set to the right. For SW3 only slider 5 and 6 should be in the “on” position. SW4 should have sliders 5 and 6 enabled. Also the 3V3 should be enabled. The last step is to set the top jumper to “AutoRun” (bottom position). By default the Bluetooth module is configured to use Classic Bluetooth. If BLE is required a new script has to be uploaded. See *TUT-ESP-002* for more information about loading scripts.

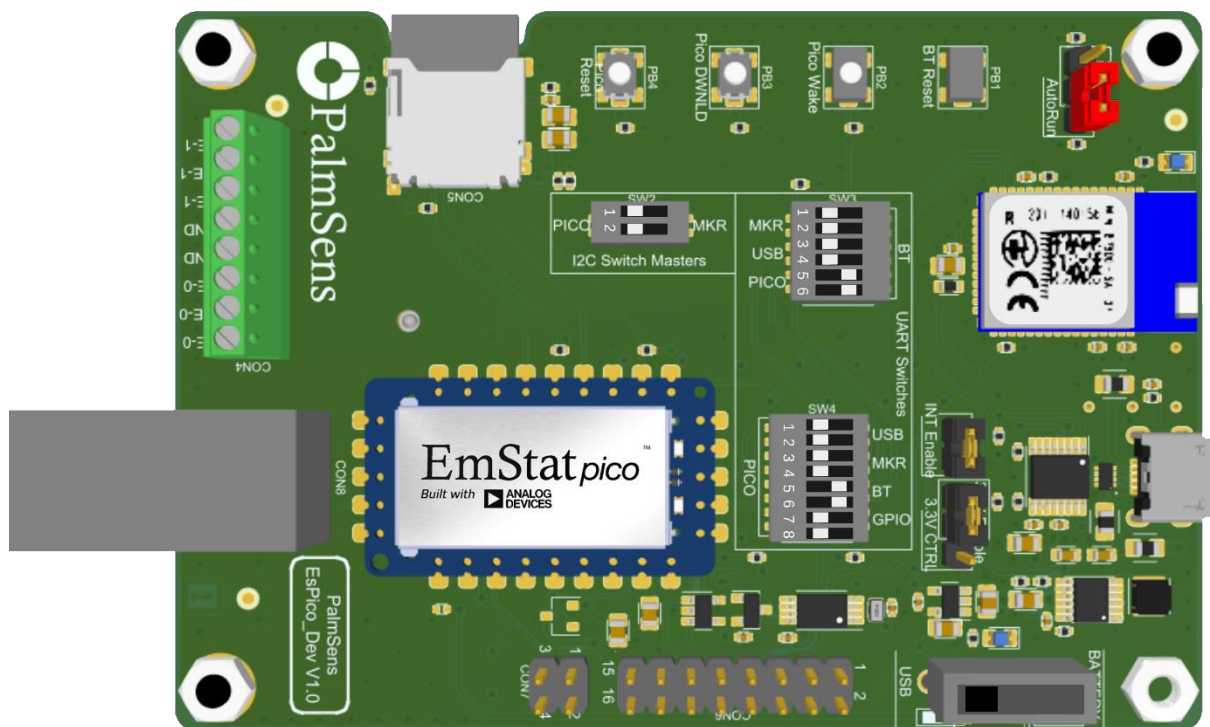


Figure 1 Pico switch and jumper settings

3 Connecting PStTrace (Windows 10)

PStTrace 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 EmStat Pico 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 of the Bluetooth module between the QR-code and “CE” logo).

The first time PStTrace 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.

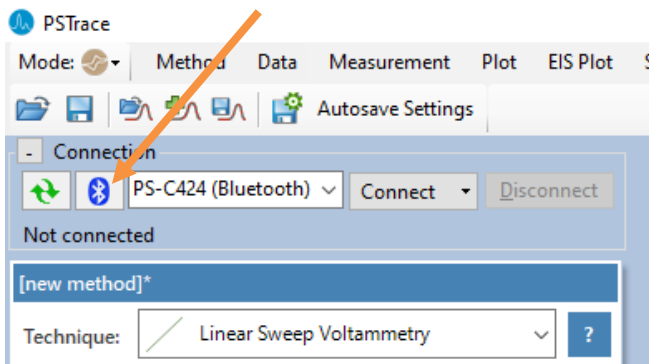


Figure 2 PStTrace – Bluetooth settings

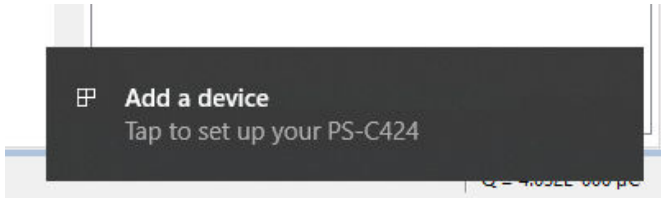


Figure 3 PStTrace - Add a device

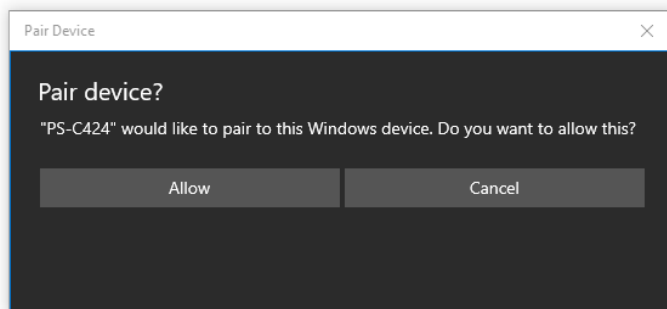


Figure 4 PStTrace - Allow pairing with Bluetooth

4 Connecting in PSTouch (Android)

The process of connecting the EmStat Pico dev board 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 EmStat Pico 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 of the Bluetooth module between the QR-code and “CE” logo). Click the device name and allow Android to pair to the device.

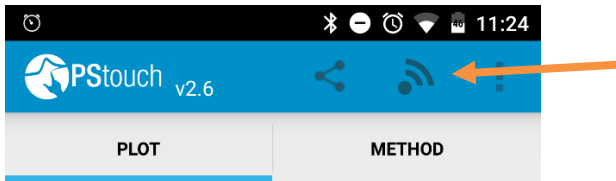


Figure 5 PSTouch connect

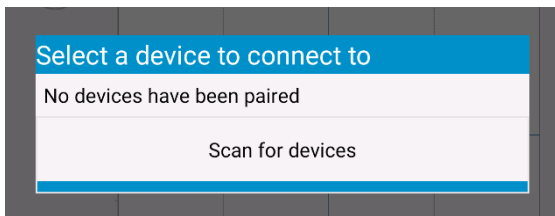


Figure 6 PSTouch - Scan for device

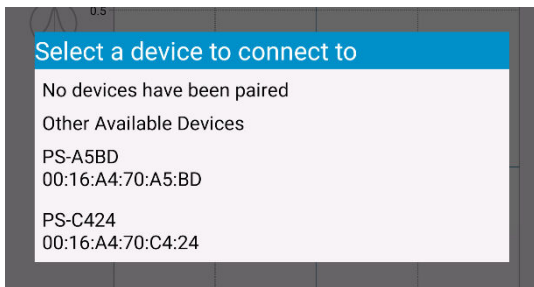


Figure 7 PSTouch - Select device

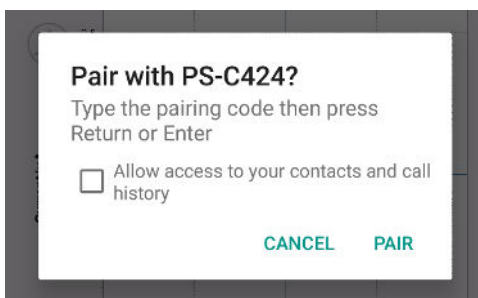


Figure 8 PSTouch - Pair