Advanced Guide

Bluetooth & Wi-Fi Signature Pads

Contents

Overview

This guide provides assistance with advanced configuration for Topaz wireless pads (Wi-Fi or Bluetooth). It is assumed that all software setup has been completed. For information on basic Bluetooth set-up, view the Topaz Bluetooth Pairing Guide at: **www.topazsystems.com/bluetoothguide**. For information on basic Wi-Fi set-up view the Topaz Wi-Fi Connection Guide at: **www.topazsystems.com/wifiguide**.

Model Feature Comparison Table

	Bluetooth	Wi-Fi Computer Mode	Wi-Fi Router Mode
Ease of set-up and configuration	Simple	Typical	Moderate
Number of PCs that can pair with one pad at the same time	7	7	Infinite
Typical range of adapters	Low	High	High
Auto-connection	Yes	No	Yes
Multiple pads used on a single PC (only one pad at a time)	Yes*	Yes	Yes
Number of PCs that can communicate with pad at the same time	1	1	1
Configurable or unique pad name	Yes**	Yes	No
Configurable pin code or password	No	Yes	Yes
Second wireless adapter recommended	No	Yes	N/A
Device connection status in Windows system tray	Yes	Yes	No
Multiple pads used on a single PC/client, simultaneously	Yes	No	No

* Requires application development

** Latest 2019 and later model

Model Use and Selection

Wi-Fi Router Mode vs. Bluetooth

1. Bluetooth:
   - Simpler set-up
   - Significantly less configuration required
   - Auto-connection
   - Increased mobility (proximity can be to a mobile laptop instead of a stationary router)

2. Wi-Fi Router Mode:
   - Less likely for Topaz pad range to be limited by low-range wireless adapters
   - Custom user name (SSID) and password
   - Flexibility to change between Wi-Fi router mode and Wi-Fi computer mode (more information later in this guide)
   - Less hardware (one router instead of many individual wireless adapters)
   - Increased range in environments that have Wi-Fi repeaters

Wi-Fi Computer Mode vs. Bluetooth

1. Bluetooth:
   - No conflicts with a wireless internet connection
     o Wi-Fi Computer Mode prevents your Wi-Fi adapter from connecting to anything other than the pad; therefore, a wireless internet connection via the same Wi-Fi adapter is not possible. A second Wi-Fi adapter or an ethernet connection is necessary if internet is needed at same time as a connection to the pad.
   - Reliable auto-connection
     o Microsoft Windows auto-connects to the best network connection available. A PC will not auto-connect to a pad in Wi-Fi Computer Mode, even if Windows is configured to do so if a better network connection is available. A stronger Wi-Fi signal or ethernet connection will force a user to manually connect to the pad each time of use.

2. Wi-Fi Computer Mode:
   - Less likely for Topaz pad range to be limited by low-range wireless adapters
   - Custom user name (SSID) and password
   - Flexibility to change between Wi-Fi Router Mode and Wi-Fi Computer Mode

Wireless Range Information

Wireless Adapter

Range is limited by the weakest of two wireless points. Both Topaz Bluetooth and Topaz Wi-Fi pads are long range (high power) 20dBm/100mW devices. In order to achieve the maximum range capabilities of your Topaz pad, make sure the wireless adapter you are using is long range also. To confirm if your adapter is long range, do the following:

Bluetooth

1. Make sure your adapter is Class 1 (100mW/+20dBm). Class 1 long range (high power) Bluetooth adapters are readily available. If your adapter is Class 2 (2.5mW/4dBm), you should expect 10% of the range capable of a Topaz Class 1 radio.
2. Specifications for an adapter may also include a measured maximum range, which can be helpful as the maximum range can be different from one brand to another, even though the class is the same.

Wi-Fi

1. Wi-Fi adapters are not offered at different power class levels. To ensure maximum range, try some of the following:

   - Use a router with multiple antennas.
   - Add a Wi-Fi repeater to your set-up to extend range.
   - Configure your pad to use Type B Mode. Type B Mode will not degrade your pad function and can provide slightly better range than running in the more commonly used default mode G. The mode of your pad can be configured within the advanced tab of the "WiFiConfig App". See the Topaz Wi-Fi Connection Guide for more information: **www.topazsystems.com/wifiguide**.

2. Topaz Wi-Fi pads can reliably operate at up to 150 feet (dependent on user's environment). When the Topaz pad is pointed at the radio adapter connected to the PC in an open field, it can operate at up to 260 feet.

Bluetooth FAQ

1. How many PCs can <u>connect</u> to a single Bluetooth pad at the same time?

Up to 7 PCs can pair to a single Topaz Bluetooth pad at the same time. "Pairing" refers to a Bluetooth link or connection between a pad and a PC and does not refer to a connection between an application on a PC to the pad.

2. How many PCs can <u>communicate</u> with a single Bluetooth pad at the same time?

Only one application can communicate with a Bluetooth pad at a time. After a pad pairs via Bluetooth to a PC, an application can open and connect to the Bluetooth device's COM port and begin to communicate.

If two PCs are paired to the same pad and an app from the first PC is communicating with the pad, the second PC must wait until the app from the first PC has disconnected from the COM port before trying to communicate with it. Attempting to communicate with a pad while it is busy with another app will not disrupt its operation.

3. Can multiple pads be used simultaneously on a single client?

Yes. Microsoft Bluetooth drivers will automatically detect different Bluetooth devices and assign unique COM ports for each device. A pad can only communicate with one application at a time.
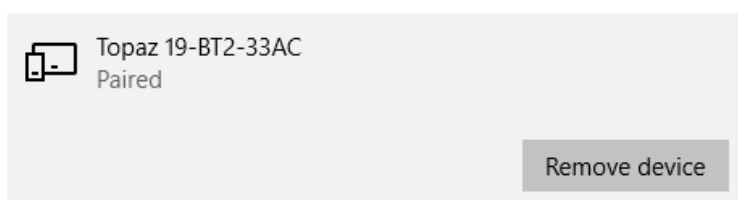
To use both pads on the same client at the same time, multiple remote sessions must be opened and each session must have a unique profile that always connects to the same unique COM port assigned to each pad. Please contact the manufacturer of the remote environment you are using to confirm support and set-up procedures.

4. If I have multiple Bluetooth devices with the same name, will my PC connect to the correct one?

Yes, your PC will use the unique identifier (MAC ID) gathered during the pairing process to guarantee connection to the correct device. However, it is strongly recommended to also label your pads.

Newer pad models have the last 4 characters of the MAC ID appended to the device name. For example, in the screenshot below, the MAC ID for the Bluetooth pad is "33AC".

If you have an older revision pad without a unique model name, a procedure is available to update the pad. Please contact Topaz Tech Support for assistance at:
www.topazsystems.com/contact.

5. Can two or more Bluetooth pads be configured to work on one PC?

Each pad is assigned a unique static COM port on a single PC. For example, Windows will automatically assign one signature pad to COM 10 and another to COM 12.

When an application is opened, it can only connect to one COM port (therefore only one device), either on COM 10 or COM 12. To use multiple pads on one PC, an application must be able to readily change between COM ports associated with each pad. To do this, an application must override the "SigPlus.ini" settings for one pad with hard coded pre-determined settings unique to each pad. Well-labeled pads are suggested so that the user knows which pad is associated with COM 10 versus COM 12. Contact your software developer to build this solution.
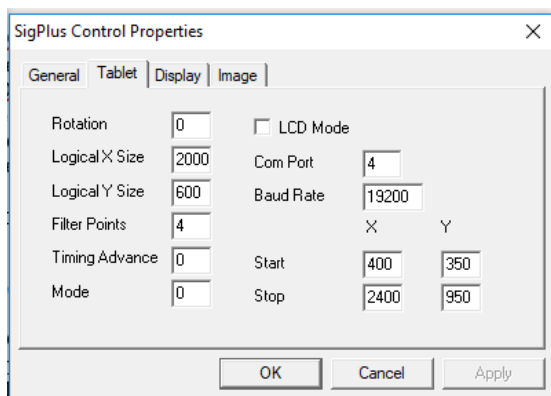
The following demonstrates this set-up:

- Pair two pads to one PC, and record the COM port assigned to each pad.

  Note: Windows auto-enumerates two COM ports; set-up your application to use the first of the two COM ports assigned.

- Open two instances of DemoOCX (found under C:\Windows\SigPlus).

- Select the "Properties" button on each instance of DemoOCX. Go to the "Display" tab, and then set the "COM port" field to the COM port number of each pad.

- Turn on both pads. Select "Start" in both instances of DemoOCX. Sign on both pads at the same time. Inking will occur in both instances of DemoOCX simultaneously.

Unique Bluetooth Set-Up Instructions

Pairing Multiple Pads with One PC

Set-up with more than one Bluetooth signature pad is only supported with Bluetooth models that include a unique ID in their model name while pairing.

If multiple Topaz Bluetooth signature pads are powered ON and included in the device list, follow the steps below:

1. During the pairing process (see the standard Bluetooth guide at **www.topazsystems.com/bluetoothguide**), choose the model from the list with the last four digits that match the last 4 digits of the pad's MAC ID number (found on the back of the signature pad).

MAC ID:
000666e5**33ac**

Topaz 19-BT2-**33AC**
Connecting

The MAC ID is a 12-character number assigned to each pad that is unique to each Bluetooth device, not just Topaz Bluetooth devices.

Pairing One Pad with Multiple PCs

1. Complete the same pairing procedure for the one pad with each PC (see the standard Bluetooth guide at **www.topazsystems.com/bluetoothguide**).

   Note: Maximum of 7 PCs can be simultaneoisly paired to one pad.

2. Open DemoOCX on each PC (see the "Test Signature Pad Functionality" section in the standard Bluetooth guide at **www.topazsystems.com/bluetoothguide**). If you did not choose to install DemoOCX on the desktop, it can be found at the following location: *C:\Windows\SigPlus\DemoOCX.exe*.

3. Click "Start" in DemoOCX on the PC with which you want to use the Bluetooth pad.

   Note: After an application on one PC has connected to the COM port of the signature pad, an app on another PC will be blocked from connecting. To use the signature pad with an app on another PC, finish with the signature pad on the first PC, click "Stop" in DemoOCX, and then move to other PC, repeating steps 2 and 3 above.

Wi-Fi FAQ

1. **How many PCs can <u>connect</u> to a single Wi-Fi pad at the same time?**

   Wi-Fi Computer Mode:
   Up to 7 PCs can pair to a single Topaz Wi-Fi pad at the same time. "Pairing" refers to a Wi-Fi link or connection between a pad and a PC and does not refer to a connection between an application on a PC to the pad.

   Wi-Fi Router Mode:
   After the pad has connected to a router via Wi-Fi, the pad is available to any PC on the router's network. Confirm with your IT department if any custom settings exist that can block access to your pad.

2. **How many PCs can <u>communicate</u> with a Wi-Fi pad at the same time?**

   Only one application can communicate with a Wi-Fi pad at a time.

   If two PCs and one pad are on the same network and an application from the first PC is communicating with the pad, the second PC must wait until the application from the first PC has disconnected from the COM port before trying to communicate with it. Attempting to communicate with a pad while it is busy with another application will not disrupt its operation.

3. **If I have multiple Wi-Fi devices with the same name, will my PC connect to the correct one?**

   Wi-Fi Computer Mode:
   No; if two pads have the same SSID and both are powered on, only one will be listed and available for connection on your PC. It is recommended to assign unique SSID and passwords for each wireless pad.

   Wi-Fi Router Mode:
   N/A

4. How do I configure many PCs to <u>connect</u> to a single Wi-Fi pad?

Only one application can communicate with the pad at a time.

Note: If a user forgets to disconnect the application on one PC from the pad, a user from another PC will be unable to connect to the pad.

Wi-Fi Computer Mode:
To configure more than one PC to communicate to the same pad, simply power on your pad, find the Topaz SSID on each PC and connect via Wi-Fi. Up to 7 PCs can pair to a single Topaz Wi-Fi pad at the same time. The Topaz "WiFiConfig" app is only necessary if the default SSID and password need to be changed to custom values.

Wi-Fi Router Mode:
To configure more than one PC to communicate to the same pad, configure each PC and pad together with the Topaz "WiFiConfig" app. Be sure to use the same network values including the same IP address for each PC.

5. Can two or more Wi-Fi pads be configured to work on one PC?

Wi-Fi Computer Mode:
Yes; after a pad has made an exclusive connection to the PC, any other Wi-Fi device can no longer connect (including other pads). One pad must be powered off and/or manually disconnected from the PC wireless adapter before another pad can be used. This means that another pad cannot be linked wirelessly while it waits.

In this set-up, it does not matter if each pad has a unique name, password, or labels. It is not possible to establish a Wi-Fi link with 2 pads simultaneously by adding an additional Wi-Fi adapter; this will result in a network conflict. Consider configuring your Wi-Fi pad for use with a router if you desire an additional pad to already be paired to a network so that connection to an application can be quicker after release from the first pad is complete.

Wi-Fi Router Mode:
To configure one PC to be able to work with multiple pads, each pad must be configured on the same PC with the same network settings, including the same IP address. Record the IP address that the Topaz "WiFiConfig" app assigns to the first pad. To configure additional pads, enter the IP address of the first pad manually into the Topaz "WifiConfig" app.