



# IRIG-B ANALYZER

## FIRMWARE UPGRADE GUIDE



## 1. Introduction

This document describes how to upgrade the Tekron IRIG-B Analyzer firmware in the field using Bluetooth. For information on the IRIG-B Analyzer, please refer to the IRIG-B Analyzer User manual available from the Tekron website [www.tekron.com](http://www.tekron.com).

## 2. Upgrading the IRIG-B Analyzer Firmware

If a firmware update is required, the upgrade file will be available from our website: [www.tekron.com](http://www.tekron.com). The upgrade pack includes the Universal Upgrade Tool, firmware release notes and an upgrade procedure guide.



Note: The IRIG-B Analyzer uses Bluetooth to perform the upgrade. This will require that you pair your Bluetooth enabled PC / Laptop with the IRIG-B Analyzer. See section 3 Bluetooth Pairing Guide for help doing this.

### WARNING:

Do not disrupt the power to the unit during the upgrade process. This could cause the unit to stop functioning and will need to be returned to Tekron for repair. It is recommended that the battery level on the IRIG-B Analyzer shows at least 2 bars before attempting to upgrade the firmware. If using a Laptop computer to run the Upgrade Tool, ensure this also has plenty of battery power or is running from mains for the process.

- Download the upgrade package from the Tekron website, and decompress the zip folder to your local drive.
- Ensure Bluetooth is enabled on the PC or Laptop you are using.
- Ensure you have paired the laptop and IRIG-B Analyzer.
- Power up the IRIG-B Analyzer, and bring up the Analyzer's menu.

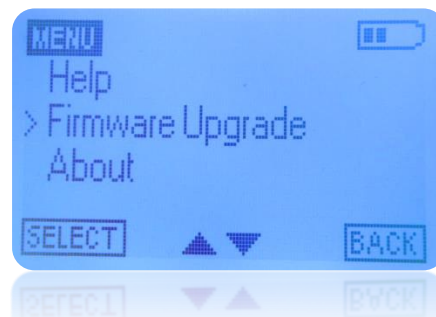


Figure 1: Menu

Navigate and select Firmware Upgrade in the menu

- The analyzer will notify when it is ready to connect to the computer, the standard preparation time is 10 seconds.

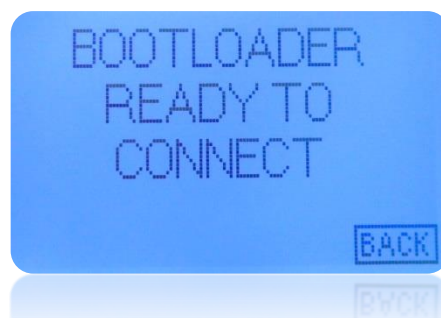


Figure 2: Bootloader with Bluetooth enabled

You can exit this mode by pressing F2.

Run the Universal Upgrade tool, and then click Discover. Note that the Universal Upgrade Tool is also used to apply upgrades to Tekron Clocks, therefore it will identify itself as the Tekron Clock Upgrade Tool.

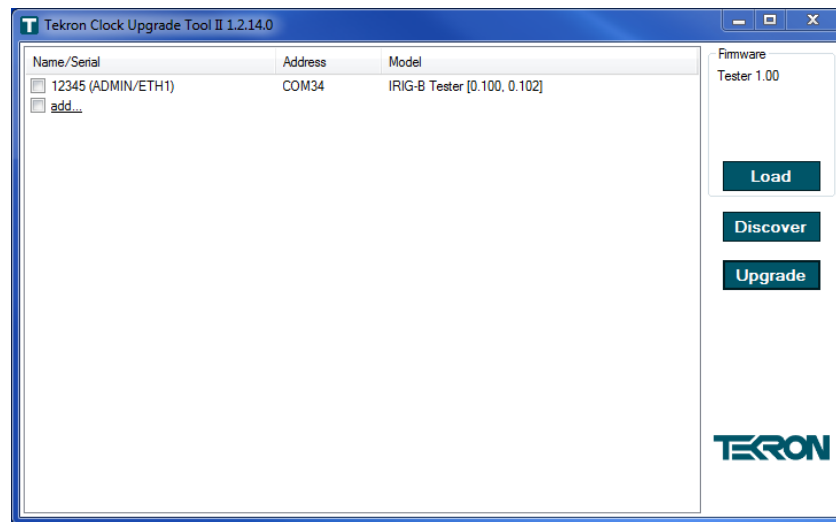


Figure 3: Upgrade Tool

When “discovered”, the Upgrade Tool screen will be shown as above in Figure 4 and the IRIG-B Analyzer screen will show “Connected” as per Figure 4 below.

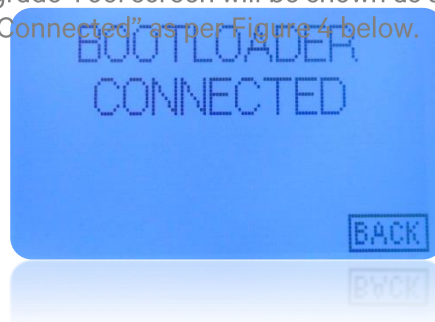


Figure 4: Bluetooth connected to PC

- On the PC Select the IRIG-B Analyzer and press upgrade.
- The upgrade tool will now send the upgrade file to the IRIG-B Analyzer with the status shown as per Figure 5 below.

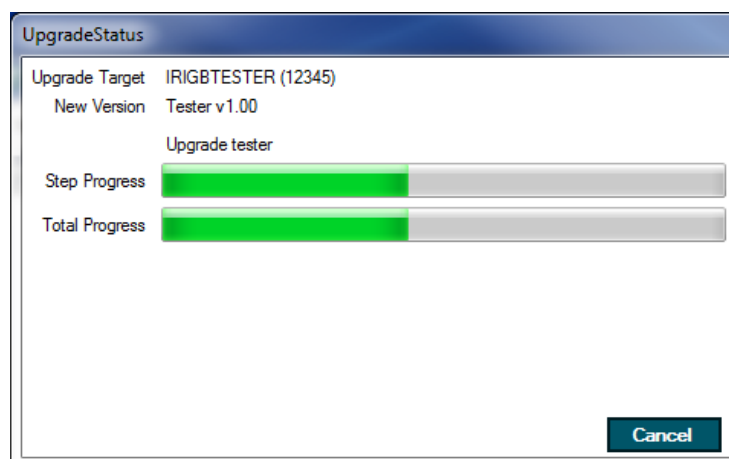


Figure 5: Upgrade in progress

- Note: If Bluetooth communication is interrupted during this stage, the IRIG-B Analyzer will indicate the upgrade has failed and recover to its current firmware and the upgrade process will need to be restarted.
- After the file transfer is complete, the IRIG-B Analyzer will turn itself off and the upgrade tool will indicate the process is complete and show the “Success” screen as below in Figure 6.

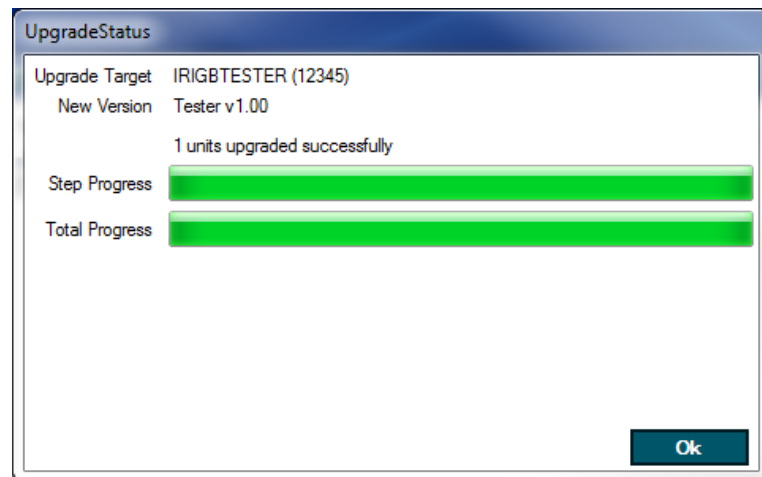


Figure 6: Successful Upgrade.

- Turn the IRIG-B Analyzer on, the IRIG-B Analyzer will start installing the firmware
  - The Boot loader is checked first and if present it will be updated first with the progress reported with the two screens below in Figure 7 and Figure 8.

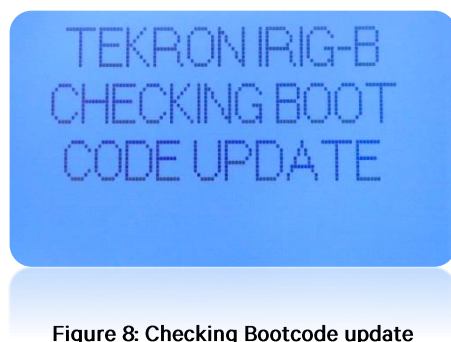


Figure 8: Checking Bootcode update

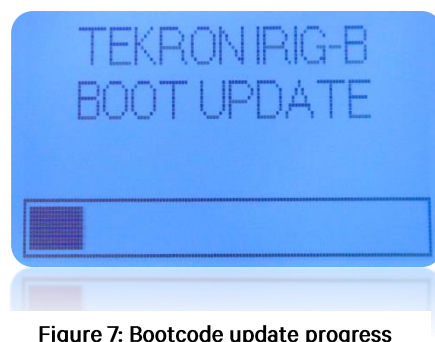


Figure 7: Bootcode update progress

- The main IRIG-B Analyzer code is next checked and upgraded with the progress reported as below in Figure 10 and Figure 9.



Figure 10: Checking Main Code Update



Figure 9: Main Code Update progress

- If none of these screens appear, the upgrade has failed and should be performed again.
- Once the upgrade is complete the IRIG-B Analyzer will restart itself and present the normal operation screen.

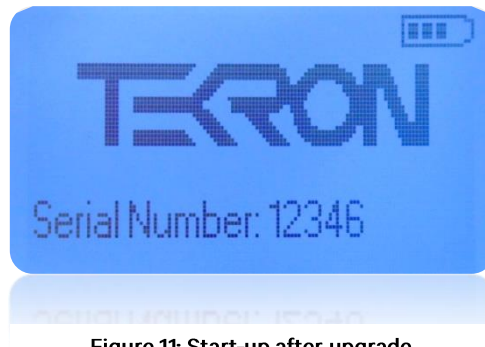


Figure 11: Start-up after upgrade

You can select the **About** option from the IRIG-B Analyzer menu and check the firmware revision matches that installed.

### 3. Bluetooth Pairing Guide

The IRIG-B Analyzer uses Bluetooth to communicate with a Bluetooth enabled PC or Laptop and before you can do this, the Analyzer must be Bluetooth paired with the PC / Laptop.

The basic steps required to pair the devices are:

1. Enable the Bluetooth on the IRIG-B Analyzer
2. Start Windows searching for the IRIG-B Analyzer using Bluetooth
3. When found, then pair with the device. This process should not require you to enter any pairing code.

The exact steps on how to do Bluetooth pairing vary depending on the Windows operating system and within each operating system there usually are several ways of accomplishing pairing. The examples below are how to pair the IRIG-B analyzer with a Windows 7, Windows 8 and a Windows 10 PC. It is assumed that Bluetooth has been enabled on the PC / Laptop before attempting to pair with the IRIG-B Analyzer.

Note: The screen appearance of your Windows device will depend on what customization or Personalization settings you have chosen. The examples in the sections below therefore may differ from what you see but the basic method should be the same.

#### Pairing the IRIG-B Analyzer (Windows 7)

On the IRIG-B Analyzer, press the Power button and the IRIG-B Analyzer should immediately power on with the backlight lit.

1. Press **F1** and select the **Firmware Upgrade** option and press **F1** again to select it and the IRIG-B analyzer should show the screen below in Figure 12: Bootloader screen with Bluetooth active

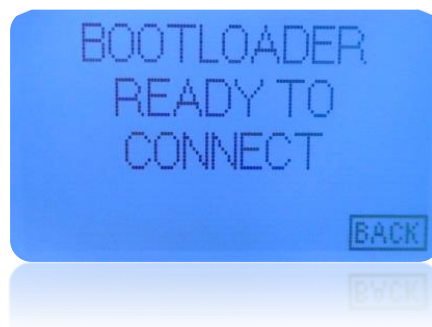


Figure 12: Bootloader screen with Bluetooth active

This should make the IRIG-B Analyzer discoverable on Bluetooth.

2. On your Windows 7 PC choose **Start - Devices and Printers** and choose **Add a Device** and you should see the **TEKRON IRIG ANALYZER** appear into the list as below in Figure 13.

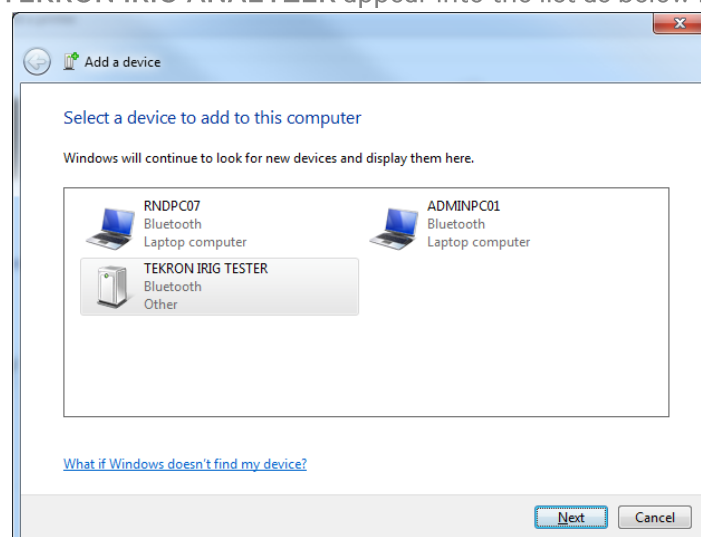


Figure 13: Tekron IRIG Analyzer discovered on Bluetooth

3. Select the **TEKRON IRIG Analyzer** and click on **Next** the PC should connect and pair with the Analyzer showing a window as below as in Figure 14.

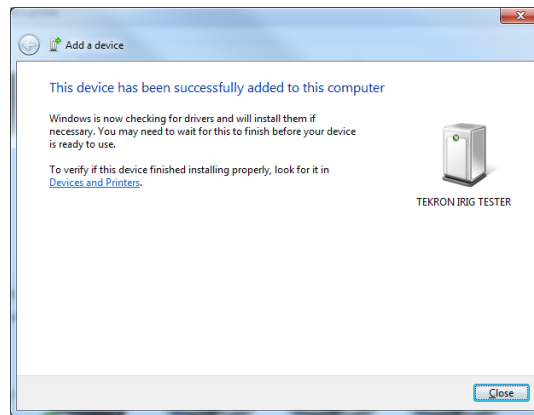


Figure 14: Tekron IRIG Analyzer added successfully

4. The IRIG-B Analyzer should now be ready for use. If you select **Start – Devices and Printers** you should now see your IRIG-B Analyzer listed and ready for connection as below in Figure 15 .

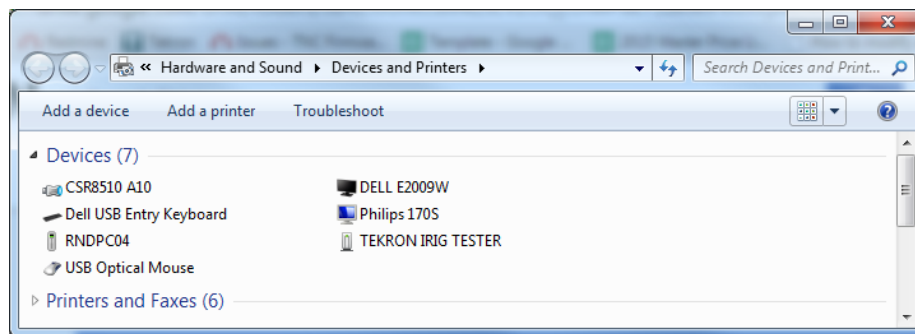


Figure 15: Device List

## Pairing the IRIG-B Analyzer (Windows 8)

On the IRIG-B Analyzer, press the Power button and the IRIG-B Analyzer should immediately power on with the backlight lit.

1. Press **F1** and select the **Firmware Upgrade** option and press **F1** again to select it and the IRIG-B analyzer should show the screen below in Figure 12: Bootloader screen with Bluetooth active  
active.



Figure 16: Bootloader screen with Bluetooth active

This should make the IRIG-B Analyzer discoverable on Bluetooth.

2. On your Windows 8 PC or Laptop move the mouse to the right side of the screen which should bring up pop-up menu, click the search icon and type in **Bluetooth**; **Bluetooth settings** should appear as below. Select **Bluetooth settings** as per Figure 17 below.

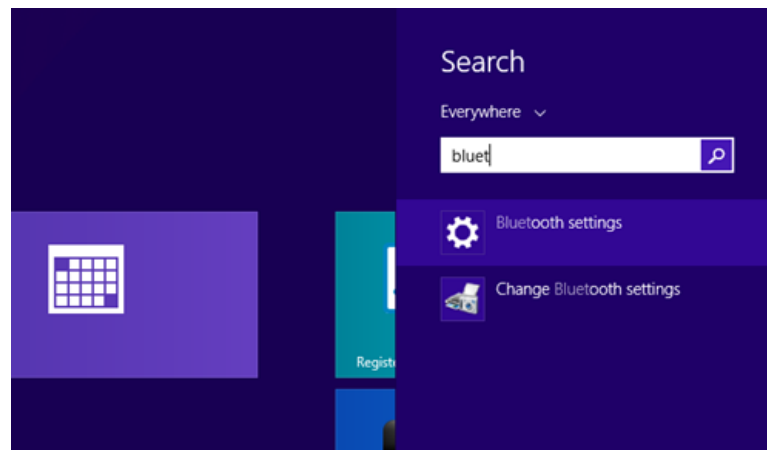


Figure 17: Search for Bluetooth



3. The **PC and Devices** window should open and with **Bluetooth** selected, you should see the **Tekron IRIG Analyzer** appear in the list “Ready to pair” as below in Figure 18.

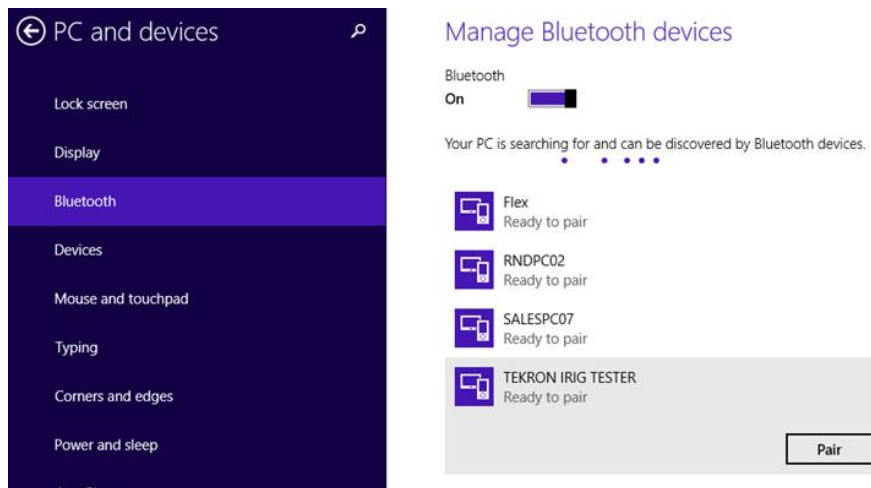


Figure 18: Ready to pair

4. Select the Tekron IRIG Analyzer and click on Pair. The PC should start the Bluetooth pairing process with the IRIG-B Analyzer and show a status of Connected initially.

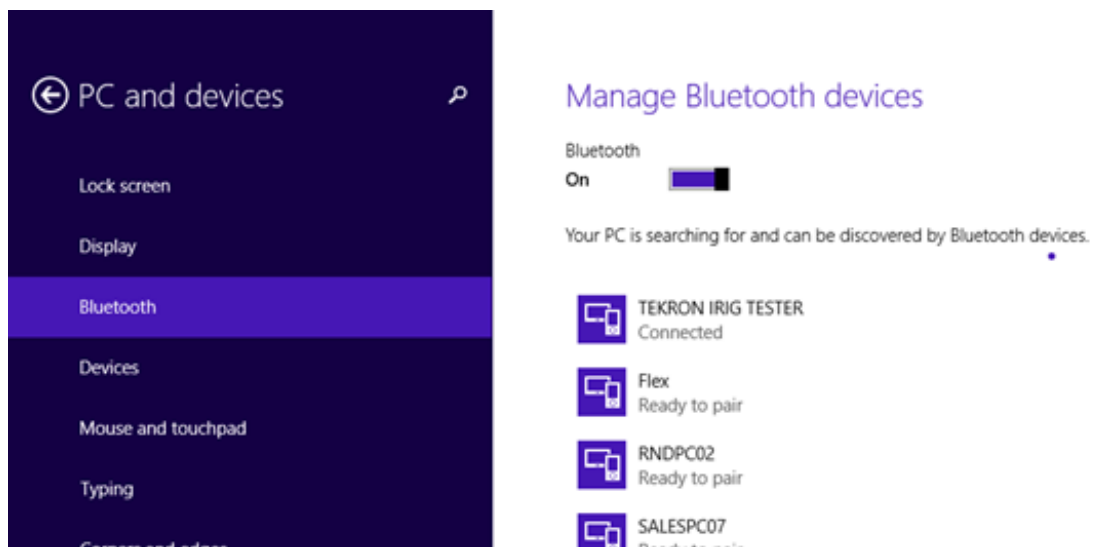


Figure 19: Bluetooth pairing

5. When the pairing process is complete, the status should change to **Paired** as below in
6. Figure 20.

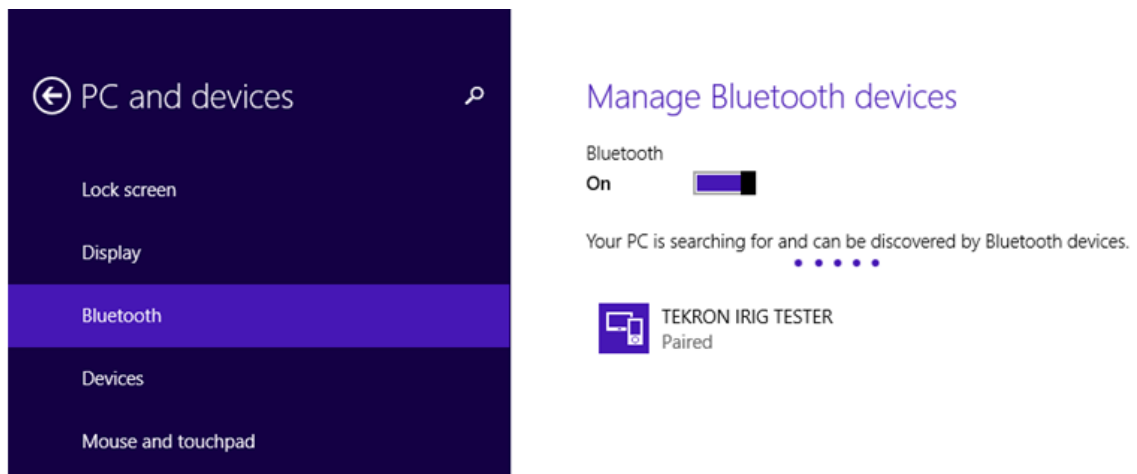


Figure 20: IRIG-B Analyzer Paired

This completes the process. The IRIG-B Analyzer should now be able to communicate with the Tekron Upgrade Tool.

### Pairing the IRIG-B Analyzer (Windows 10)

On the IRIG-B Analyzer, press the Power button and the IRIG-B Analyzer should immediately power on with the backlight lit.

1. Press **F1** and select the **Firmware Upgrade** option and press **F1** again to select it and the IRIG-B Analyzer should show the screen below in Figure 12: Bootloader screen with Bluetooth active.

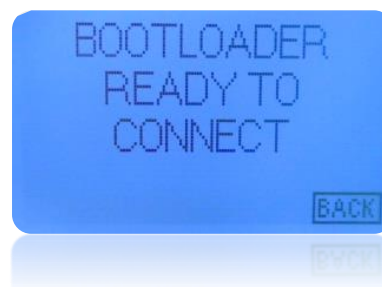


Figure 21: Bootloader screen with Bluetooth active

This should make the IRIG-B Analyzer discoverable on Bluetooth.

2. On your Windows 10 PC or Click on search and type in **Bluetooth**, and **Bluetooth settings** should come up, click on this to bring up the screen as in below in Figure 22.

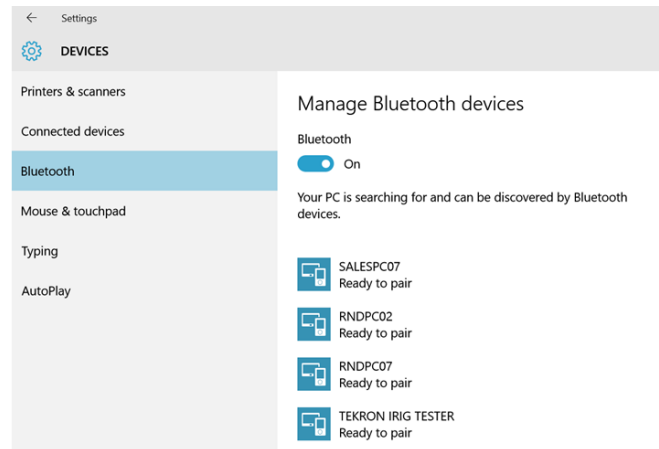


Figure 22: Bluetooth settings

3. You should see the **TEKRON IRIG ANALYZER - ready to pair** appear in the list of devices found.

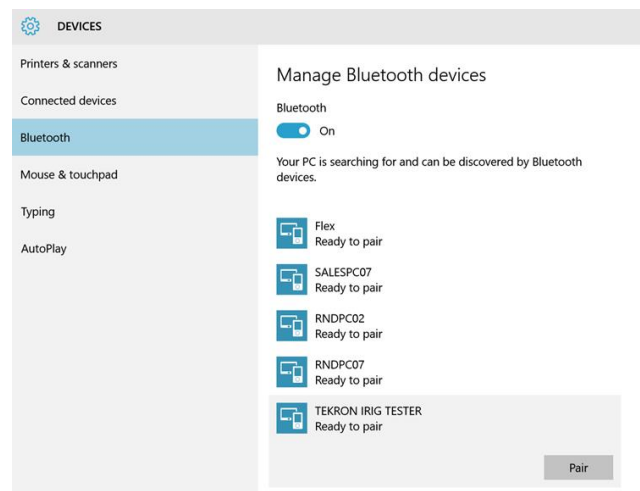


Figure 23: IRIG Analyzer Ready to pair

Click on the Tekron IRIG Analyzer device and a Pair button will be shown. Click on the Pair button to start the pairing process.

4. The PC will next pair with the IRIG-B Analyzer. The screen will show the Tekron IRIG ANALYZER – Connected initially as below in Figure 24.

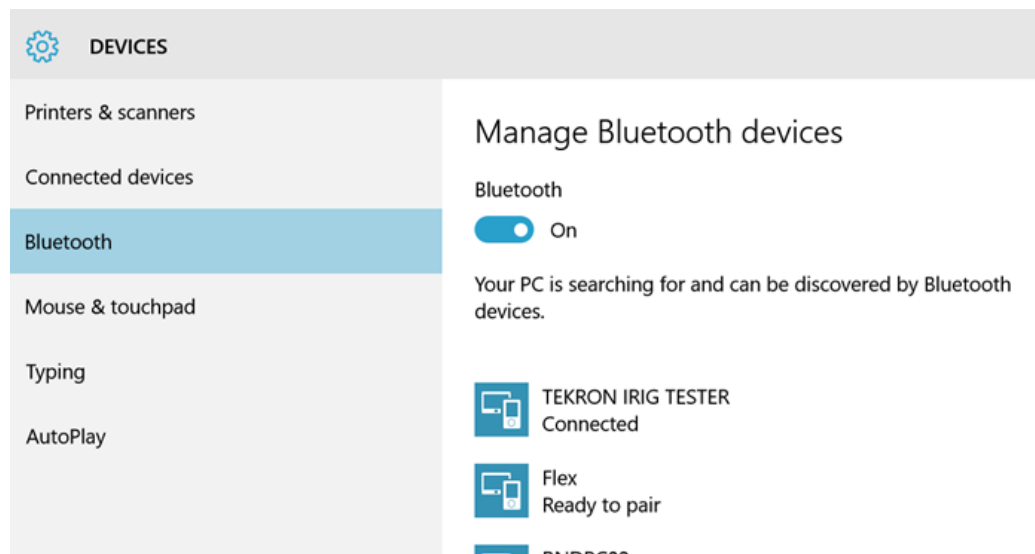


Figure 24: IRIG Analyzer – Connected

5. Once the pairing process is complete, the IRIG ANALYZER will show as “Paired” as below in Figure 25. This process may take a few minutes to complete.

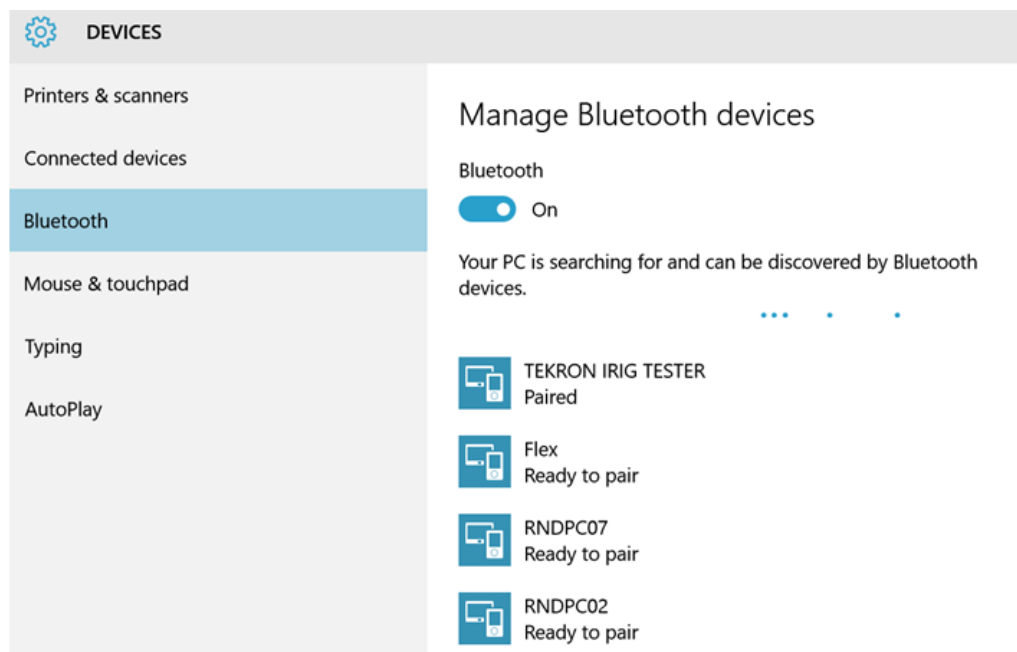


Figure 25: IRIG Analyzer Paired

The IRIG-B Analyzer should now be ready to communicate with the Upgrade Tool.

## 4. Troubleshooting Guide

- Cannot discover IRIG-B Analyzer with Universal Upgrade Tool.
  - Check that “TEKRON IRIG ANALYZER” appears in the Bluetooth devices. Note that sometimes it takes several minutes for the driver to load fully.
  - In the computer’s device manager, check that “Standard Serial over Bluetooth” appears under COM & LPT Ports.
  - Check if the PC can discover other Bluetooth devices to check the Bluetooth is working. E.g. try to discover a Bluetooth enabled smart phone with the PC.
- Upgrade Fails
  - Power cycle the analyzer and repeat the upgrade.
  - Repeated failure of the upgrade could be caused by a corrupt firmware package, re-download the Universal Upgrade Tool from the Tekron website.
  - Try upgrading the driver for your Bluetooth adapter.
  - Try using a different Bluetooth Adaptor or a different PC.
- Trouble Pairing with the IRIG-B Analyzer
  - Refer to section 3 Bluetooth Pairing Guide for information on how to pair with the IRIG-B Analyzer.
  - Where the IRIG-B Analyzer is already paired and you can’t connect, try deleting the Analyzer from the Bluetooth list and re-pair.
  - Where you cannot successfully pair, consider updating the PC or Laptop’s Bluetooth driver.

If your problem is not covered above, or it persists contact Tekron International’s technical support at [support@tekron.com](mailto:support@tekron.com)