

CXBALANCER BLUETOOTH INTERFACE

1 INTRODUCTION

If the *CXBalancer Instrument* has a Bluetooth interface, the user can proceed a balancing session using a remote Tablet or Laptop.

This document detailed describes how this facility can be used.

Briefly, before to be able to make Remote Balancing, the following tasks must be done:

- Pair the *CXB Bluetooth* device with your computer
- Install the *APT300Software* balancing application on your PC (For more details read the *APT300Software User Manual*).
- Configure the *APT300Software* to get the connection with *CXBalancer Instrument*
- Configure your Tablet for best performances (For more details read *TABLET CONFIGURATION.PDF* document).

To use Remote Balancing, access the *CXBalancer Balancing Menu* and select *7.PC Remote balancing*.

From now on, *CXBalancer* will be a "black box" and all the balancing procedure will be done in the *APT300Software* application.

CXBalancer can be far away from the computer. Just place *CXBalancer* near the machine, connect the transducers and entry in the *PC Remote Balancing* mode.

Run *APT300Software* on the computer and do remotely all the job.

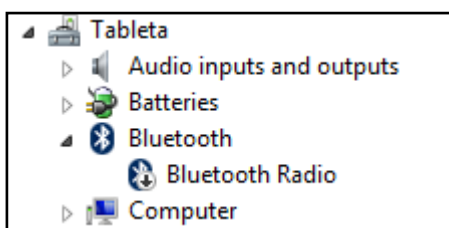
2 PAIR THE CXB BLUETOOTH INTERFACE

If the *CXBalancer Instrument* has a Bluetooth interface, the user can pair these devices with his computer, similar with any Bluetooth device (mouse, keypad, etc).

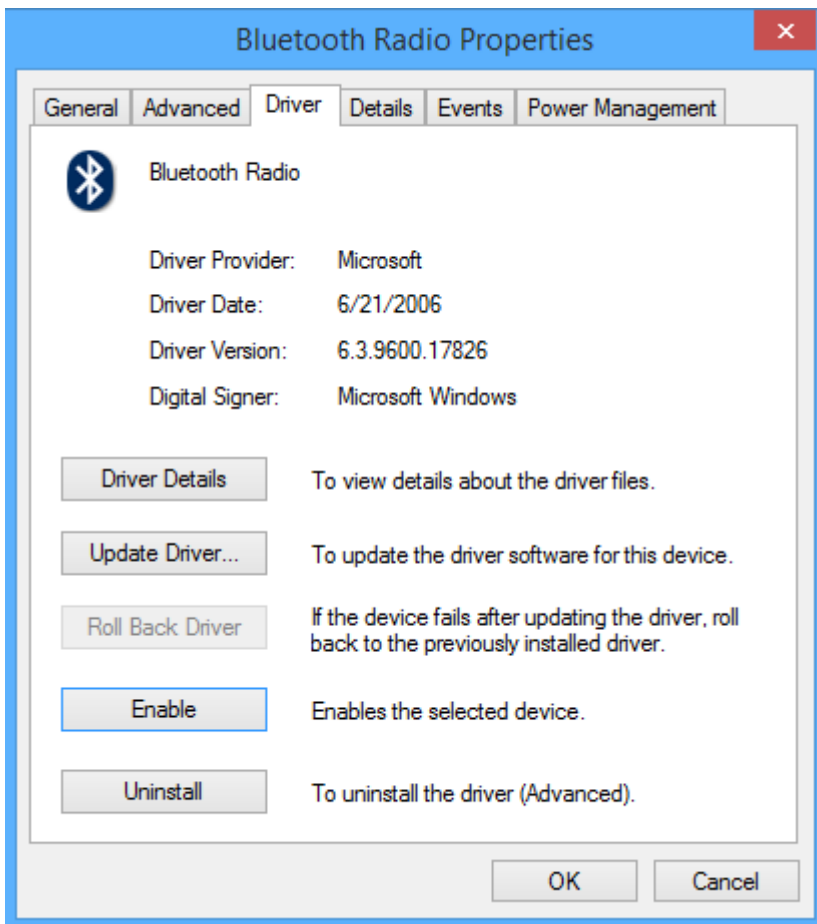
2.1 ENABLE COMPUTER BLUETOOTH DEVICE

First, make sure the computer Bluetooth Interface is *Enabled*.

Go to *Device Manager*.

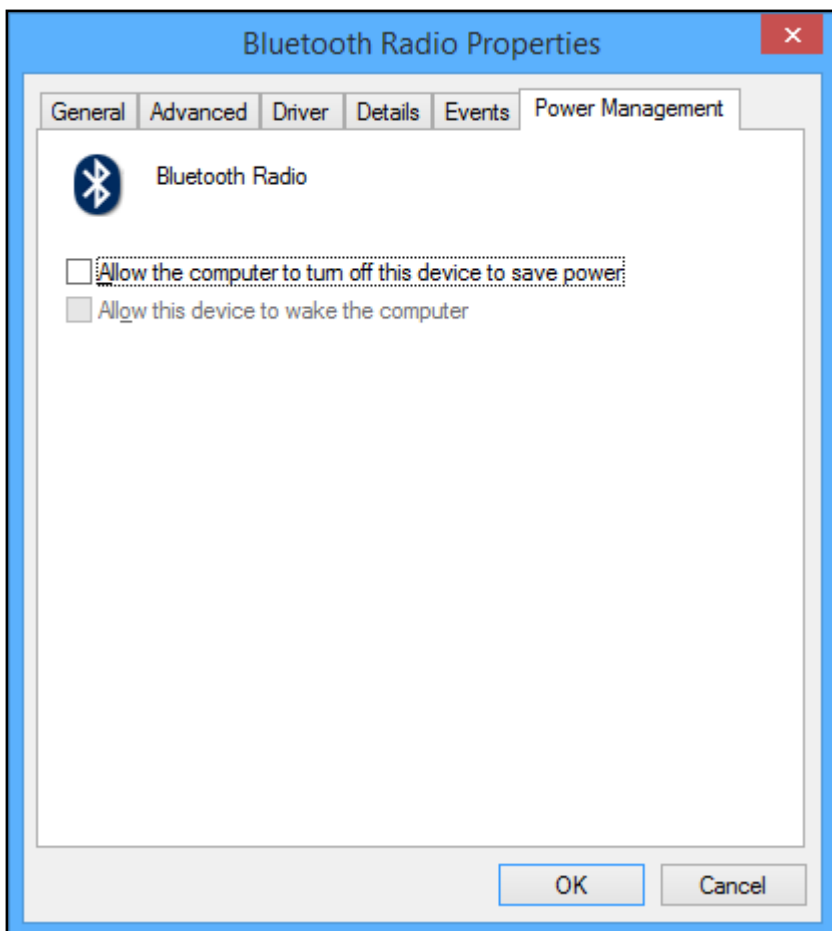


Locate *Bluetooth* and select *Bluetooth Radio*.



Select the *Driver* tab.

Press the *Enable* button and wait.



Select the *Power Management* tab.

Uncheck "Allow the computer to turn off the device to save power".

We don't want to turn off Bluetooth devices automatically!

Press *OK* to exit.

Now, the Laptop Bluetooth device is always enabled and powered.

2.2 CREATE CONNECTION WITH CXB BLUETOOTH INTERFACE

Creating a connection with any external Bluetooth device requires three steps.

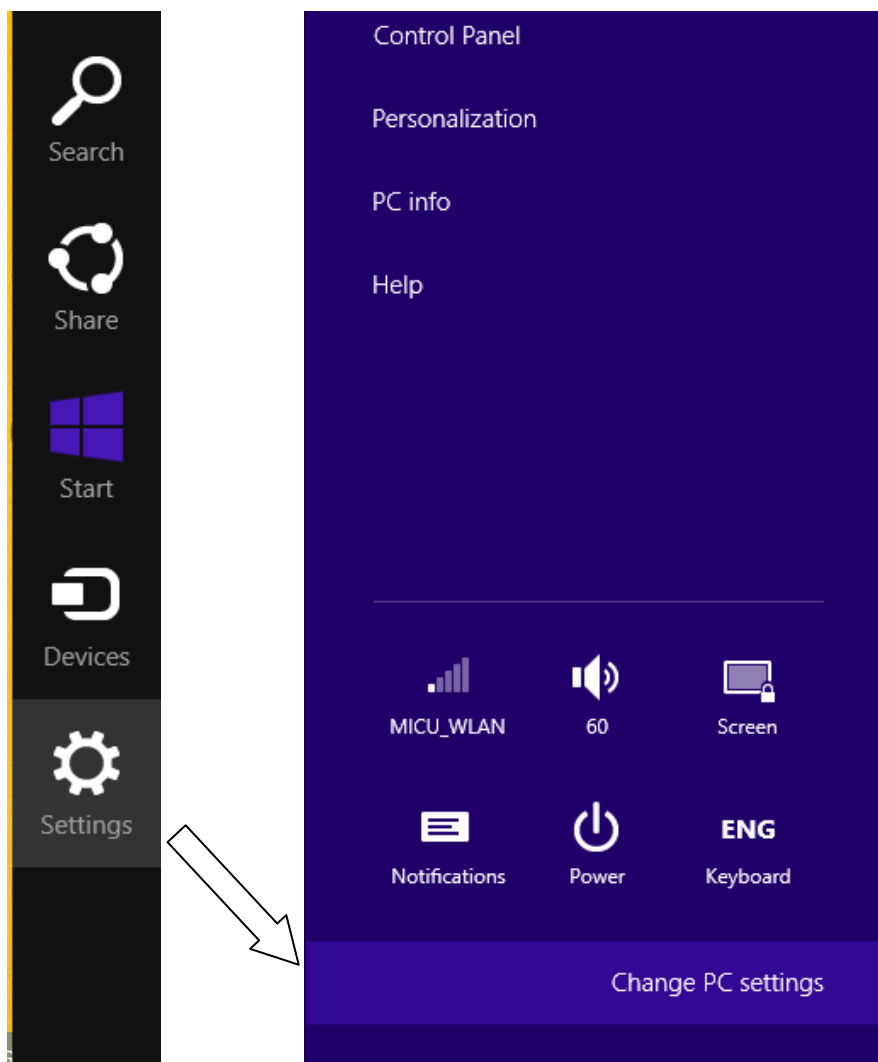
Regardless of the operating system, it follows the same process: Discovery, Pairing, and Connecting.

To fulfill this process, you must access the *Bluetooth device manager* first.

2.2.1 Accessing Bluetooth device (Option 1)

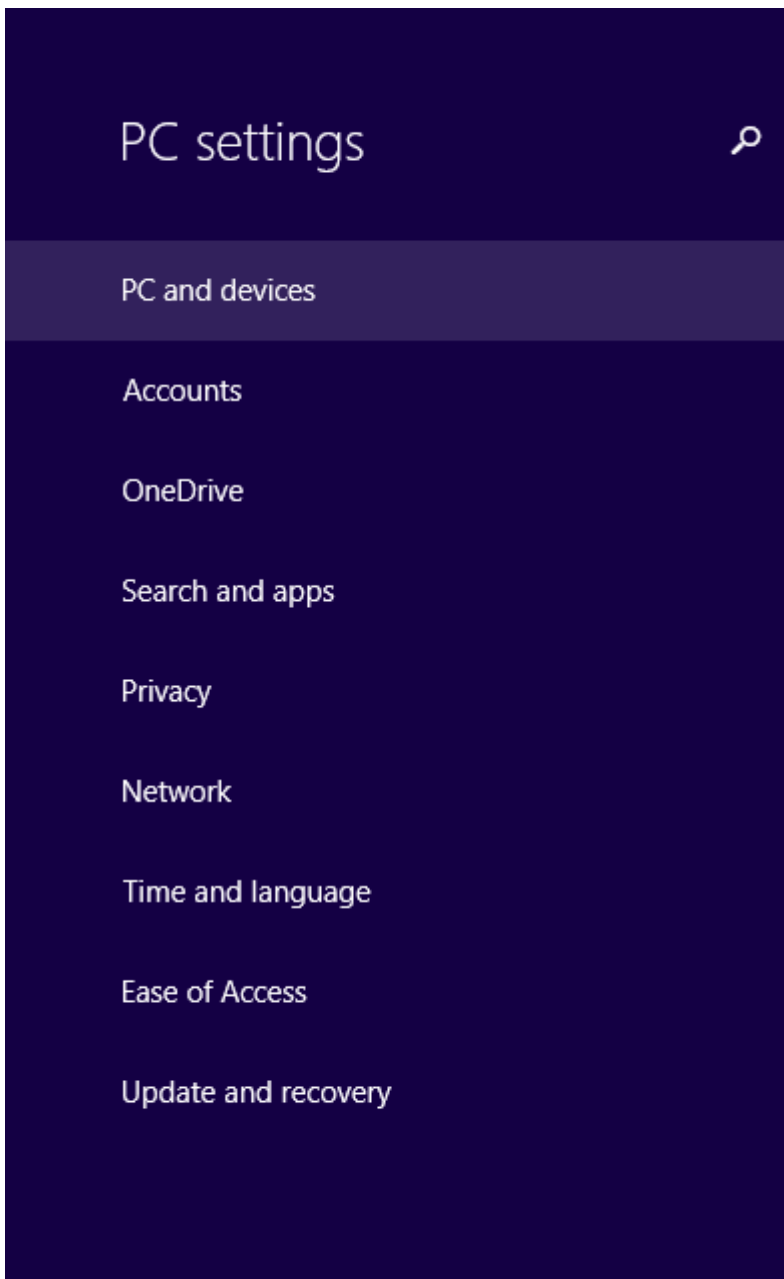
Use the *Settings* charm.

To bring up the charms, move the mouse (or finger) to the top or bottom right corner of the screen. Then, move the cursor (or finger) downwards (if you used the top corner) or upwards (if you used the bottom corner) and a black background is displayed for the charms.

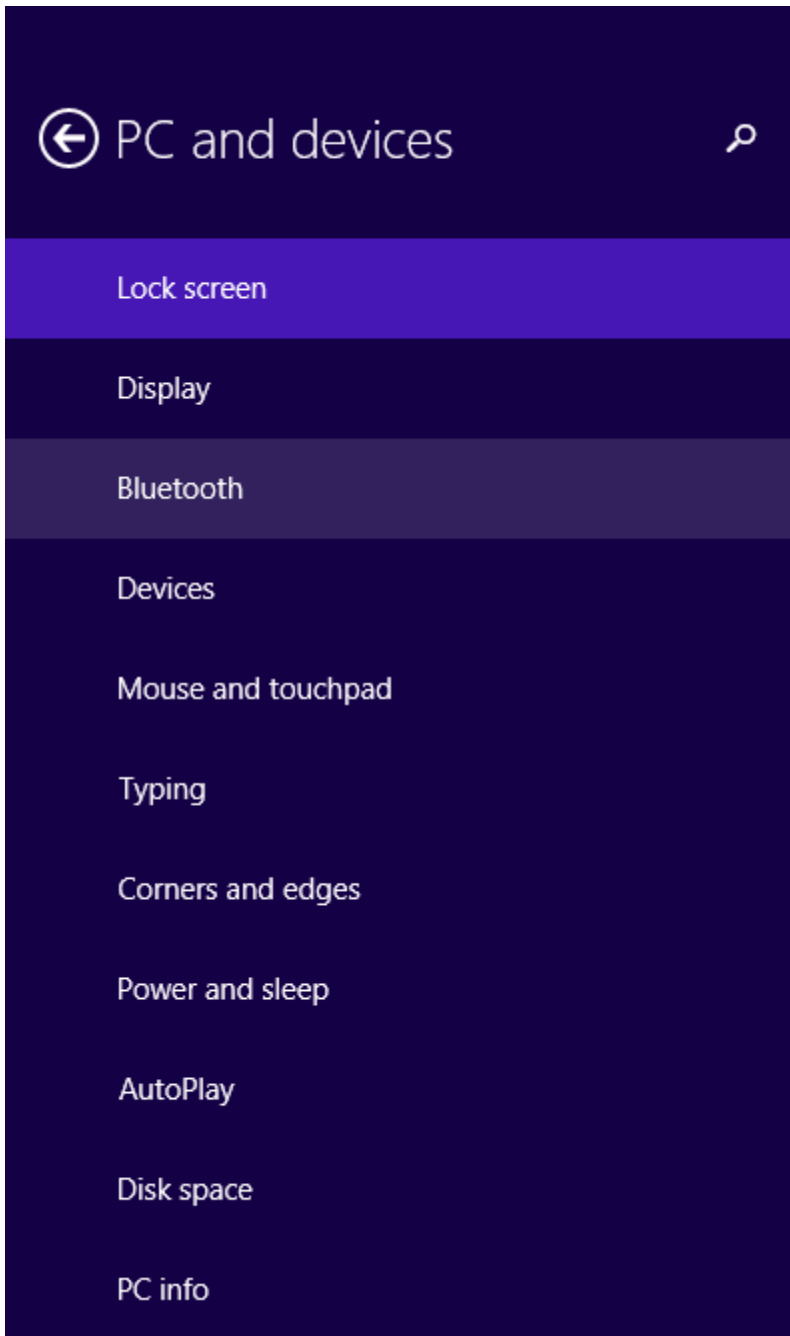


Click on the *Settings* button.

Click on the *Change PC Settings* button.



Click on the *PC and devices* button.



Click on the *Bluetooth* button.

Now, you can see the *Bluetooth device manager* window (see paragraph 2.2.3).

2.2.2 Accessing Bluetooth device (Option 2)

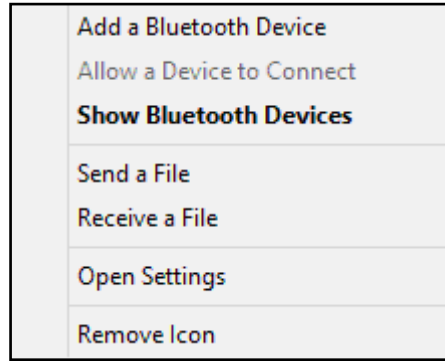


The Bluetooth device manager's icon is located at the bottom right corner, on the host's computer screen in the taskbar.

Just click on the *Bluetooth* icon:



From the menu, select the "*Show Bluetooth Devices*" item.



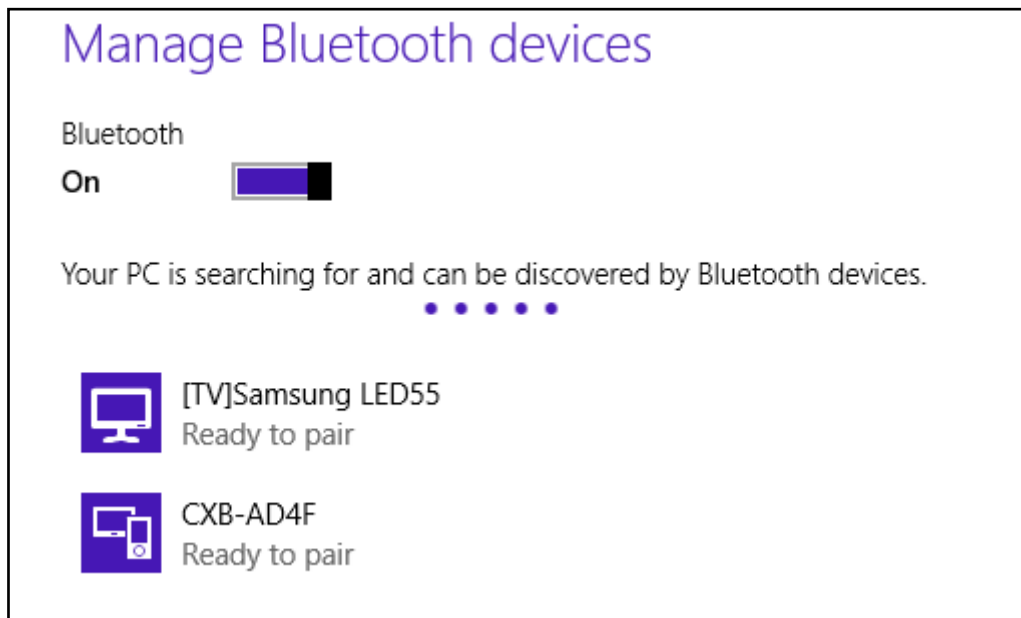
Now you can see the *Bluetooth device manager* window (paragraph see 2.2.3).

2.2.3 Create connection

Start the CXB, go to *Balancing Menu*, and press **7** (PC remote balancing).

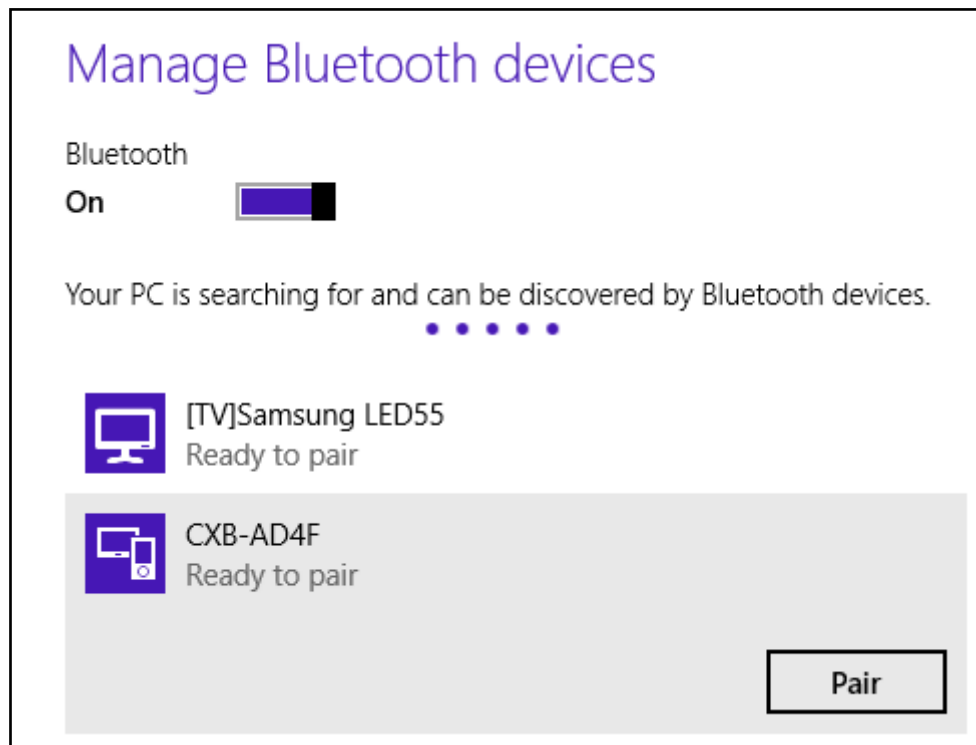
Activate *Bluetooth* device (Set *Bluetooth* switch to **ON**).

In a few seconds, you must see one or more icons of the found devices:

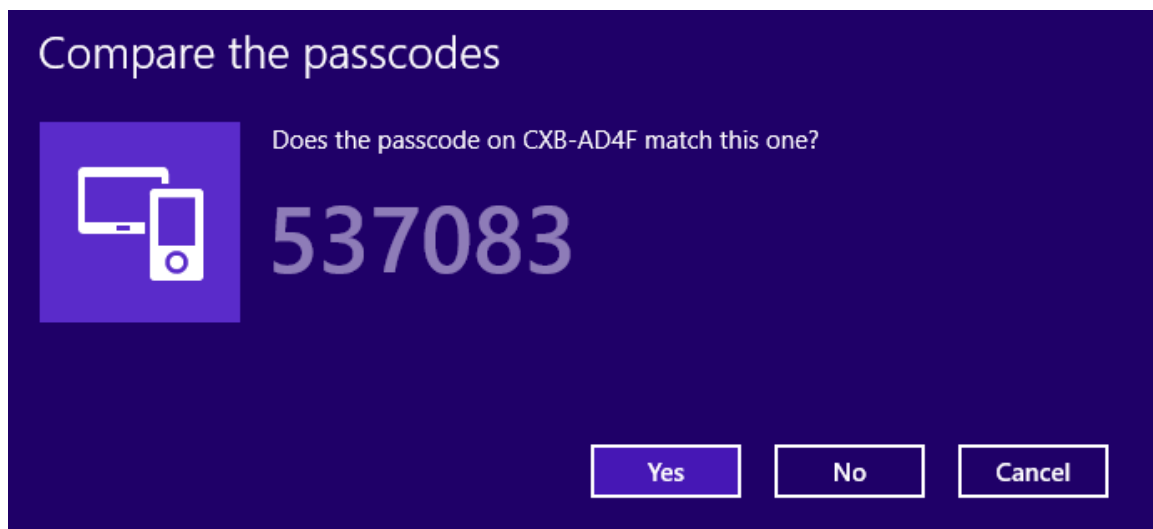


Find CXB Instrument Bluetooth (The name of the icon must begin with "CXB"; but the last four letters can be any).

Click on the Icon named *CXB-xxxx*:

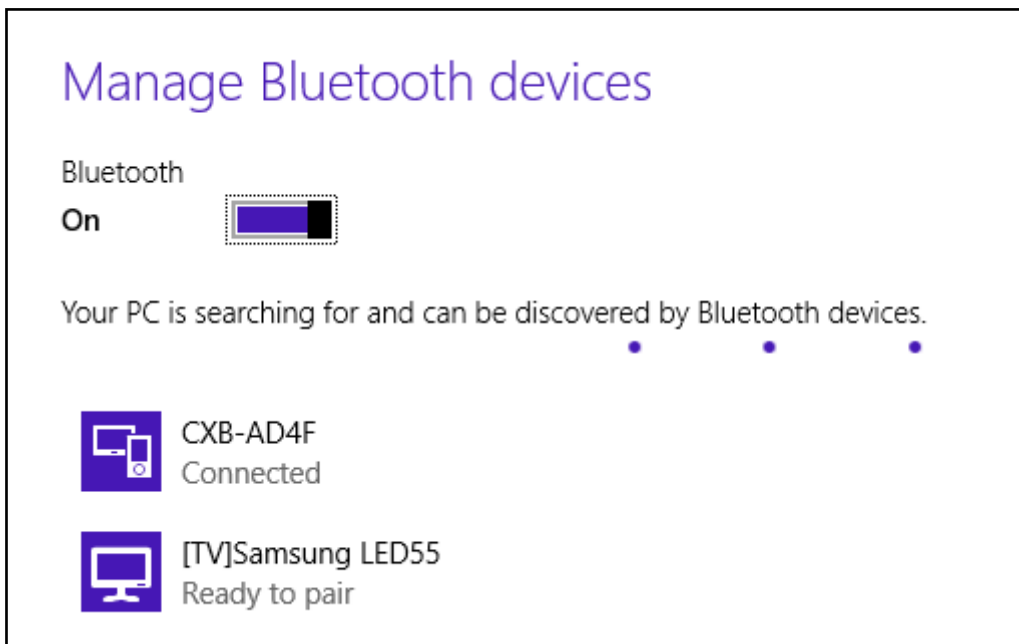


Press the *Pair* button and wait until the "*Compare the passcodes*" window will appear.

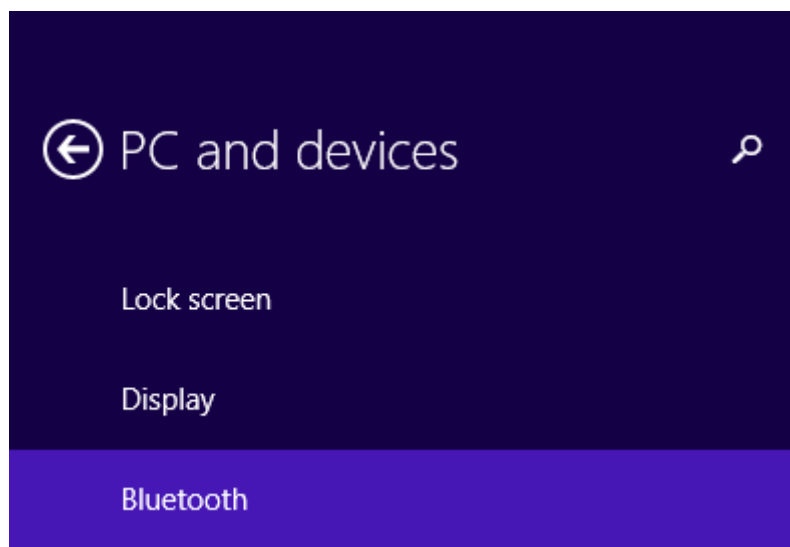


Answer *Yes* and wait.

The Icon will change to *Connected* or *Paired*.



The Discovery, Pairing, and Connecting process is now finished.
To exit, press the left arrow (from the screen-left).



From the bottom, press:



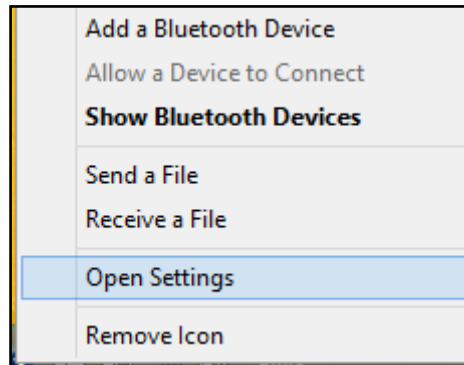
Close the *Control Panel* window.

2.2.4 DETECTING COMMUNICATION PORT

The CXB Bluetooth interface is seen as a Virtual Serial Port.

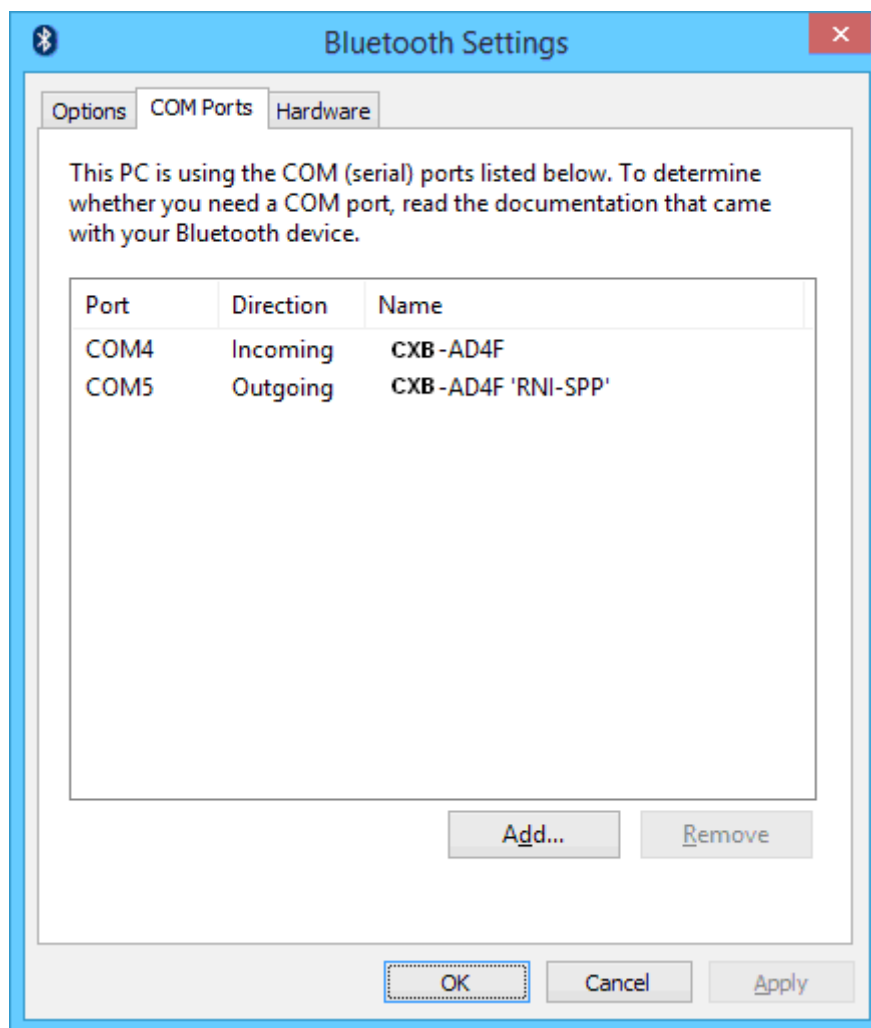
The port number can be anyone. Before using *APT300Software*, you must know the COM port emulated by the CXB device.

Click on the *Bluetooth* icon from the tray.



Select *Open settings*.

Press the *COM Ports* tab, to visualize these ports:



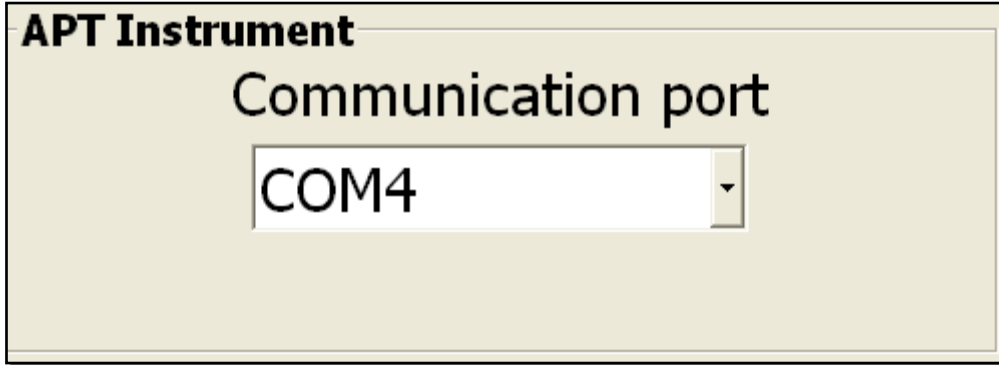
Note the *Outgoing* port number (e.g. COM5)

Press *OK* to close the window.

3 CONFIGURE THE BALANCING APPLICATION

Start *APT300Software*.

Go to "*Program Setup*" and change the COM port (with the port found as described in paragraph 2.2.4):

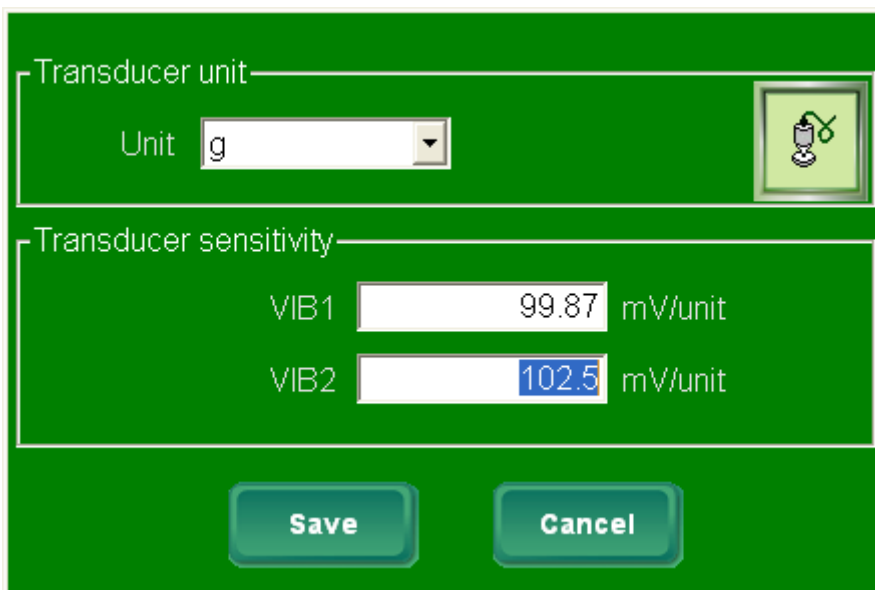


Press "*Transducer properties*":



Set the transducers as they are settled in the *CXBalancer Instrument*.

For example, if standard accelerometers are used, these will be the settings:



Press *Save* and exit from the "*Program Setup*" menu.

Restart the *APT300Software* application.

Now, *APT300Software* is properly configured for the *CXBalancer Instrument* and the connection between PC and *CXBalancer* will be automatically established, every time when you power on the Instrument and select the "*PC Remote balancing*" option.

For more details regarding the full *APT300Software* configuration, read the *APT300Software USER MANUAL*.

4 BLUETOOTH INTERFACE SPECIFICATION

4.1 Description

The *CXB Bluetooth* module is a small form factor, low power, class 1 Bluetooth radio. With its high-performances, on-chip antenna, the *CXB Bluetooth* module delivers data for distances up to 100 meters.

4.2 Features

- Fully qualified Bluetooth® version 2.1 module
- Backwards-compatible with Bluetooth version 2.0, 1.2, and 1.1
- Low power (30 mA connected)
- UART (SPP) data connection interface
- SPP data rates: 115 Kbps
- Class 1 high power amplifier with on board ceramic RF chip antenna (100 m range, 15 dBm output transmitter
- 80 dBm typical receive sensitivity) - See Note 1
- Certifications: FCC, ICS, CE
- Environmentally friendly, RoHS compliant applications
- Secure communication, 128-bit encryption
- Error correction for guaranteed packet delivery

Note 1: The transmitter power may be adjusted to a lower value, during production (to save more power).

4.3 Compliance Information

Category	Country	Standard
Radio	USA	FCC CFR47 Part 15 C, para 15.247
	FCC ID:	T9J-R41-1
	Europe	EN 300 328-1
		EN 300 328-2 2.4GHz
EMC	USA	FCC CFR47 Part 15 subclass B
	Europe	EN 55022 Class B radiated
		EN61000-4-2 ESD immunity
		EN61000-4-3 radiated field
		EN61000-4-6 RF immunity
		EN61000-4-8 power magnetic immunity
Bluetooth		B013180

4.4 Environmental Conditions (Operating)

- Temperature Range: -40° C ~ 85° C
- Relative Humidity: ≤ 90%

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