Connecting electronic scales to a mobile EweManage application

This document defines the methodology to wirelessly connect, via the Bluetooth protocol, any electronic scale equipped with a DB9 COM port to an IOS portable device (IPhone, IPad and IPod Touch) as well as an Android one or a Windows tablet.

Pre-requisites:

1) An electronic scale with a DB9 outgoing serial port
2) You must have a DB9 to Bluetooth converter available from you administrator (described later on)
3) A « Null modem » adapter
4) The proper software on your mobile to read the bluetooth protocol, I.e.:
   a. BerGere Connect for a Windows tablet
   b. Serial Magic Keys for an Apple device
   c. Serial Magic Gears for an Android device

What is a DB9 port ?

The DB9 serial port is a communication port currently used to connect two devices via a cable. In the past, PCs were equipped with a DB9 serial connector / port but upon the availability of USB and thunderbolt connexions, modern PC do not have such connectors. Eventhough serial to USB cables exist, this type of cable does not exist for mobiles devices. We will then use a bluetooth communication via a DB9 to Bluetooth converter device.

A DB9 port is named as such as it carries 9 connection contacts and can be configured as

Male :   or Female :

Example of a DB9 port on a TSI scale head :

Note : On some scale heads such as the TruTest Eziweigh 7, one will need the TruTest DB9 adaptor cable as the connector on the back of the scale head is a proprietary round connector.

The Null Modem adapter:

DB9 communications ports are configured for bidirectional communications, but in our case, we must use an adaptor called « Null modem » who modifies the connexion between pins. This device exists in a cable format, but a simple connector as shown below suits our needs.

The DB9 bluetooth converter :

This devices converts the DB9 port into a Bluetooth connexion :

Be aware of the connections porarity

When you will order your equipment, please pay attention to the polarity of the DB9 ports on your scale. They are normally Male, but not always. The DB9 bluetooth converter for its part is always male. In this case, we will be using a female / female Null modem connector that will also serve as the interface to allow connecting the converter to your scale port. The next picture shows such a connector on a TSI DB9 port:

This way, the DB9 male connector of the connector can plug into the scale DB9 port originally female type.

Configuring your scale COM port :

The scale communications port must be configured as such (refer to your scale user guide) :

The picture below shows port 1 configuration of a TSI scale head with an Allflex LPR Bluetooth reader connected to the Bluetooth port of the scale

9600 Bauds

Parity : None

8 Databits

1 Stop Bit

Handshake : None
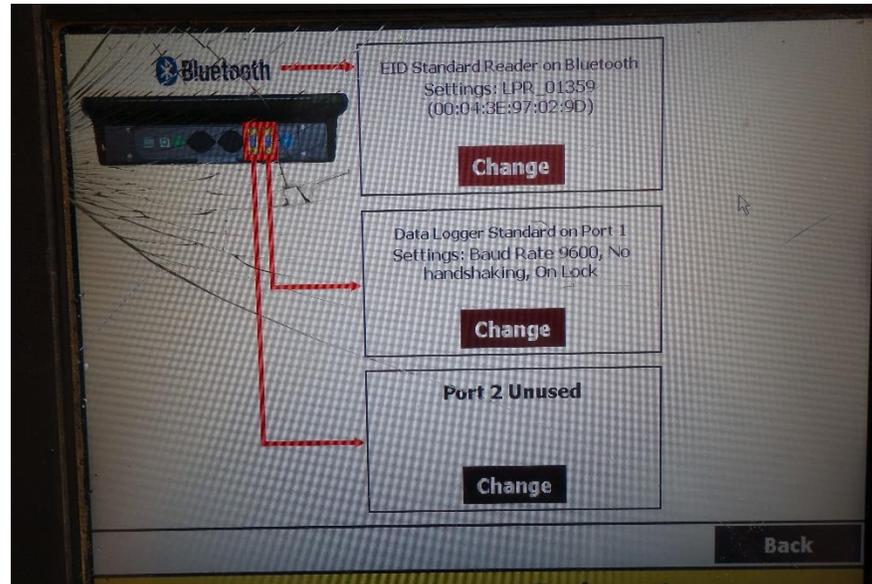
Note : For Gallagher scales, the output mode is « Standard » not « Ruddenweigh ».

You must also configure your scale in such a way that the port will send the information when the weight is stabilized (referred as "on lock" on most scales).

The DB9 bluetooth converter is also configured by default as shown above..

Connecting Bluetooth on your mobile :

1) **Bluetooth connexion on a Windows device**

If you connect a Windows device, you will need the « Bergere Connect » keyboard wedge software. You will configure the serial port as shown above. The Bergere Connect manual, available on the EweManage web site provides all the proper setup information.

2) **Bluetooth connexion on an Apple device (Iphone etc...)**

As for the connexion of an RFID reader, you must have installed the Serial Keys software available on the App Store and activated the Serial magic keyboard. Follow the instructions shown in the installation of an RFID reader on an Apple device. Then:

a) Make sure the battery of your DB9 converter is fully charged (cable is provided with the device, connect to a USB charger – not provided)
b) On your Apple device, launch Serial Magic Keys

c) Power up the DB9 / Bluetooth converter by clicking on the button on top: the green LED will blink slowly. Wou will see BlueSnap appear on the screen. Click on « Rescan » - top left of the screen.
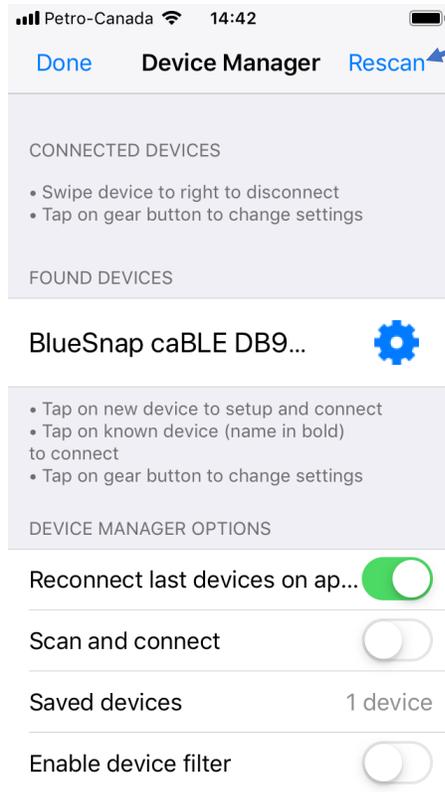
d) Next screen, click « Save » and the greed LED light steadily

e) Launch Mobile EweManage and go to the Weight function:
   a. Select the « active reader » mode
   b. Select the scale model
   c. Make sure that the keyboard is the one of Serial Magic (click on the black button at the bottom of the screen to make the keyboard active)
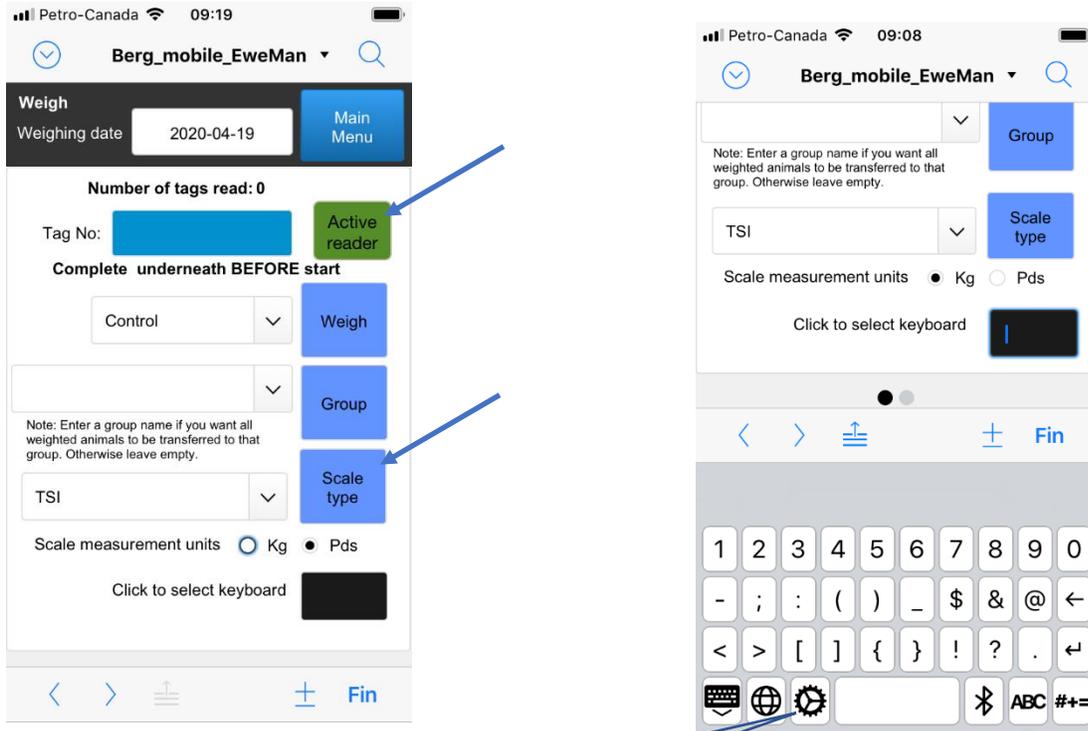
The little « gear » symbol indicates that you have the Serial Magic keyboard

   d. Place the cursor in the tag reading field and you are ready to weigh. Make sure your RFID reader is connected to the bluetooth port of your scale head, not on the Apple device.

3) **Bluetooth connexion on an Android device :**

   a) Make sure the battery of your DB9 converter is fully charged (cable is provided with the device, connect to a USB charger – not provided)
   b) On your Android device, launch the Serial Magic Gears application

c) Power up the DB9 / Bluetooth converter by clicking on the button on top: the green LED will blink slowly. If your Bluetooth is inactive, you will have a connexion request. Click "yes"
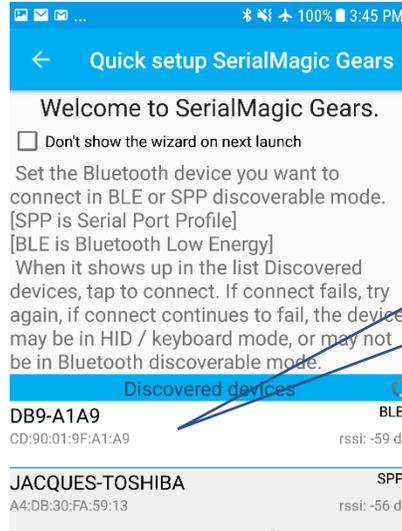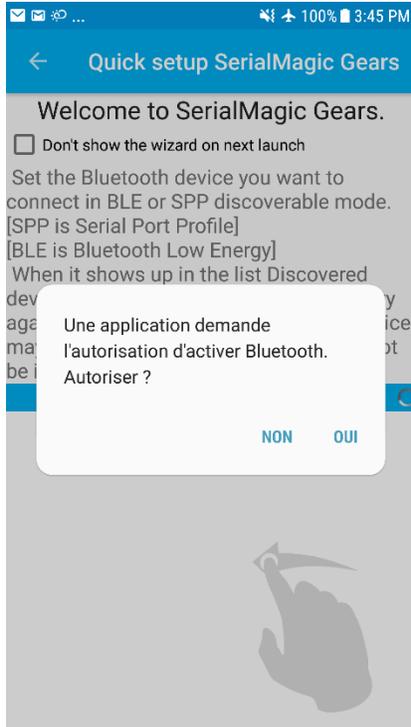
You will see « DB9-A... » appear.

Click to connect
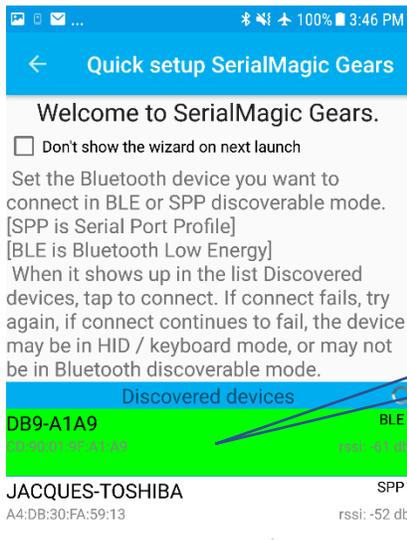
Once bluetooth connected, the field turns green and the LED on the converter lights up steadily.

d) Launch AndrOvin and access the weight function. Swap screen to the right in order to select your scale model and if required activate the « auto save » function. You may also select the weight units (Kg / Pds). If your scale is in pounds, the reading will be made in pounds but will be converted and saved in Kilograms. Note that the <u>options selected will return to the default values after each session and must be redefined for each new session.</u>
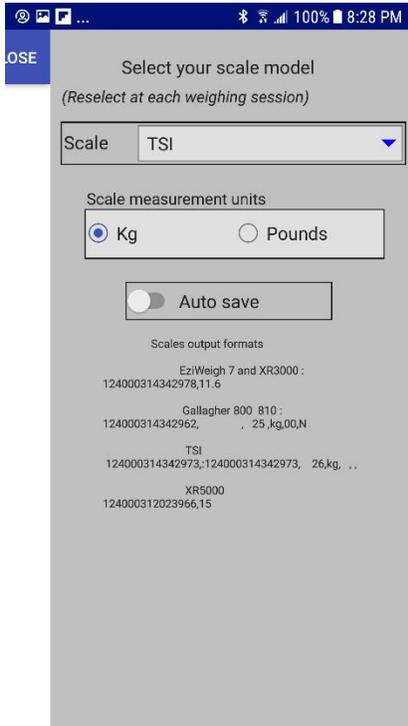
e) Place your cursor in the tag reading field and make sure that the activated keyboard is the one of Serial Magic Gears. You may start weighing, making sure that your RFID reader is connected to the bluetooth port of your scale, not on your Android mobile.
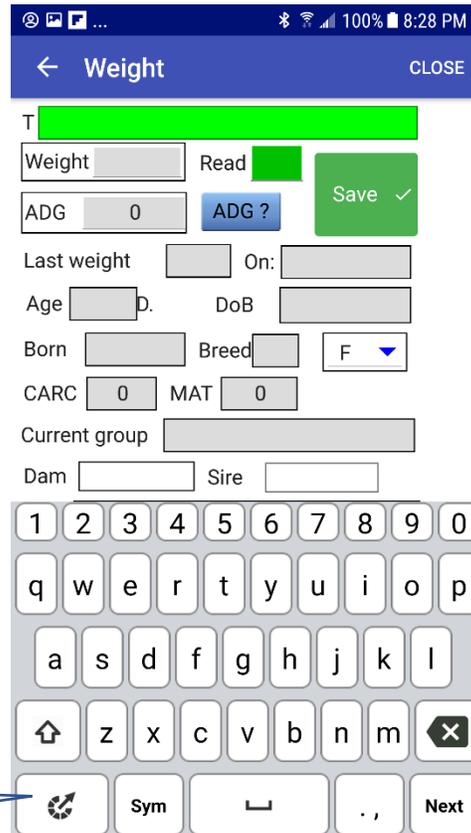
This symbol indicates that you are using the Serial Magic Gears keyboard