TAG CONFIGURATOR

The Tag Configurator program is used to configure the tag placed on the drone for indoor flights. In fact, the tag needs the coordinates of the beacons present in the room to derive the position of itself.

The coordinates of the beacons are X, Y, Z. They can be found thanks to our indoor guide.

It is therefore necessary, before using this program, to have the coordinates of the beacons present in the room available.

In addition to writing to the tag's memory and reading, this program is also capable of showing the current location of the tag,Shown as always in x, y, z

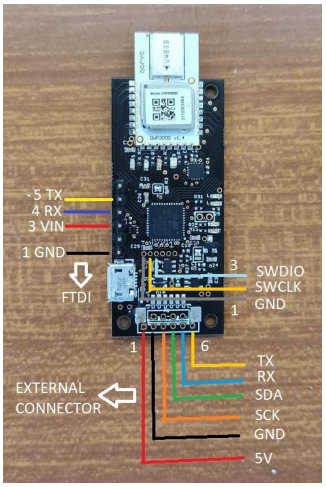
In addition to the program, you will need a Serial Monitor program, useful for interfacing with the tag. We recommend Real Term, as you will need to send a "HEX" command every time you connect the tag to your computer

THE PROGRAM:

The program is essentially divided into two parts. The right part where the position of the tag will be displayed, and the left part where it will be possible to insert the coordinates of each beacon from 0 to 7

THE PROCEDURE:

First of all , connect your tag to your pc with a ftdi-usb cable.



After connecting the tag. Open the Real Term program, connect to the USB port of the tag with a baudrate of 115200.

After connecting, go to the "**send**" section of Real Term

In this section you will need to do a simple procedure. In the textbox you will need to send 2 hexadecimal values:
These values will be used to initialize the tag when it is connected to the computer

0XCB 0XF1
OR
CB F1

After writing these 2 hexadecimal values click on "send number" or "send hex"
After sending these 2 values you should be presented with a screen with all the coordinates read from the tag memory, like the image above.

LOAD COORDINATES:

In the program you can pre load a set of coordinates .
Press “LOAD FROM FILE” ,
You can upload a file with .param extension (therefore compatible with ardupilot files) or with .txt extension.
Inside this file there will be a structure like this

BCN_BCN0_X,0.0
BCN_BCN0_Y,0.0
BCN_BCN0_Z,0.915
BCN_BCN1_X,-0.4
BCN_BCN1_Y,16.977
BCN_BCN1_Z,7.262
|
|
|
[...]

If you already have a .param from the parameter list saved by Mission planner, no problem! You can use that file to load the coordinates of all 8 beacons.

After loading the coordinates will be inserted in the table, ready to be written on the tag.

If otherwise you don't have any file with the saved coordinates, you can create it in this program with the "SAVE" option.

SAVE OR CREATE FILE:

This option gives the possibility to create or save the coordinates entered manually in the program. In fact, if you do not have a file with the coordinates saved, it will be useful to create it, to use it in the future for more convenience.

To create a coordinate file it will be necessary to MANUALLY enter the coordinates for each beacon (You can enter the symbol "," also as "." , it's not important).

After entering them manually, click on the "SAVE" button. The program will ask you for the path in which to save the file and the name, for the extension enter .param or .txt

Done ! You can now use this file to quickly load coordinates or to save multiple sets of coordinates for various show locations

READING COORDINATES :

First of all, before reading the coordinates from the tag it is necessary to turn off the beacon 0, otherwise the tag will have problems reading the coordinates from the memory

From the program connect to the USB port of the tag and wait a few seconds.

Then click on "REFRESH" .After about 10 seconds, all the coordinates read from the tag's memory should be shown.

If this does not happen, try to exit and re-enter the program and try again

WRITING COORDINATES:

First of all, before writing the coordinates from the tag it is necessary to turn off the beacon 0, otherwise the tag will have problems writing the coordinates to the memory

To write the coordinates of the beacons in the tag's memory, you need to open the program and connect to the tag's USB port. After having entered all the coordinates in the table on the left (ATTENTION NOT TO LEAVE EMPTY SPACES) , press the "WRITE" button. After approximately 20 seconds the program should return a confirmation message.
It is advisable to write a second time, for greater security

To check if the values have been saved, exit the program, reopen the program , connect to the tag and press the "REFRESH" button

READING TAG POSITION:

For this procedure it is necessary to turn ON the beacon 0

To read the tag position, open the program, connect to the tag's usb port, and then check the "print position" checkbox. After a few seconds, the real-time position should appear, divided into x, y, z. Try it to test the coordinates of the beacons!

Thanks for your attention from Luminous Bees !