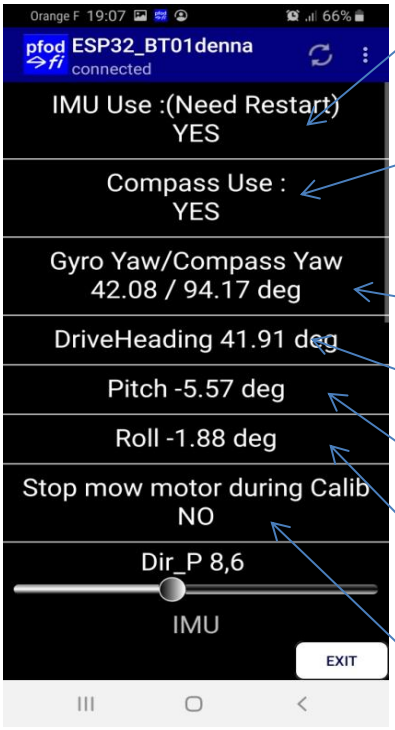
The IMU is used to drive in straight line on slope and to have the correct BY Lane mowing,
The Gyro/Accel is used non stop (each 50 ms) but a drift can occur after some minutes
So the compass help to adjust the heading and continue to mow parallel
If the compass is not use you can see the drift only in by lane mowing mode,



Use or not

Compass can't work near metal or magnet so it's possible to deactivate it according to your chassis and IMU location inside.
If not use the heading 0 is the station and heading can

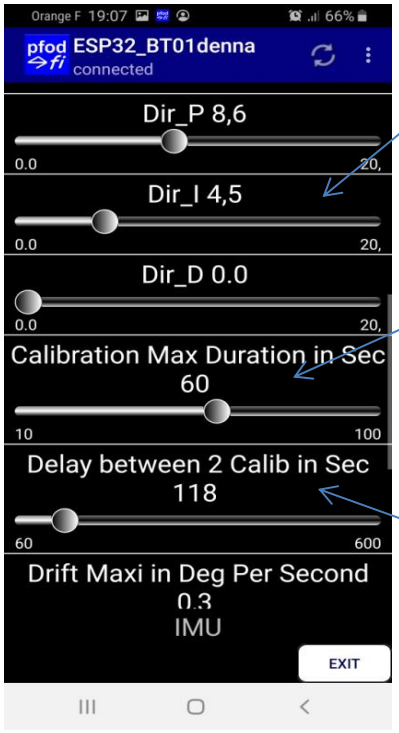
Actual value of Compass and Gyro/Accel

Actual Drive heading

Actual Pitch near 0 normaly

Actual Roll near 0 normaly

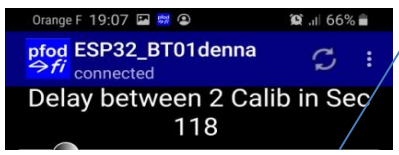
Stop the mow motor when the mower adjust the Gyro/Accel and the Compass into normal mowing mode



Pid setting if correctly set , the mower need to find again easily the heading when wheel slip on big slope,
Test with your foot to change the mower heading in auto mowing mode

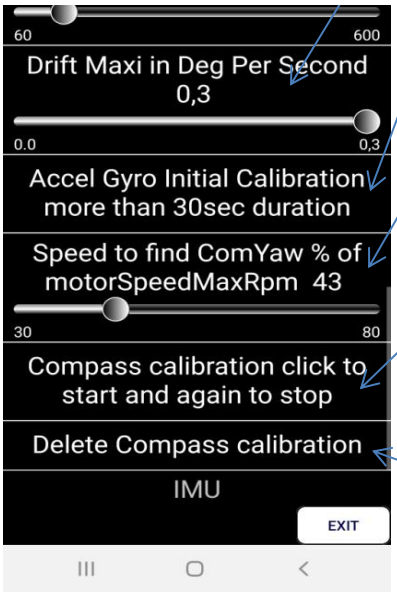
Maxi stop duration to find the compass heading in auto mode (After this delay or 3 full rev the compass is consider to be in error and the mower continue to mow without compass in random mode)

Delay between 2 adjustement of the Gyro to Compass
This help a lot to reduce Gyro Drift



Drift maxi when the mower is in calibration in auto mode, If fail the mower continue to mow without compass in random mode

Accel/Gyro calibration (Only for GY88,GY87 Gy521)
To do only once without moving the mower during less than 1



minute and check that the Pitch and roll are near 0 at the end,

When mower roll to find the Compass heading , it's possible to reduce the speed ,

Compass calibration click to start ,Move the mower arround all the axes and Check the result in the console.
When no new data you can click again to stop and save the value

Delete all the calibration data from RTC eeprom