



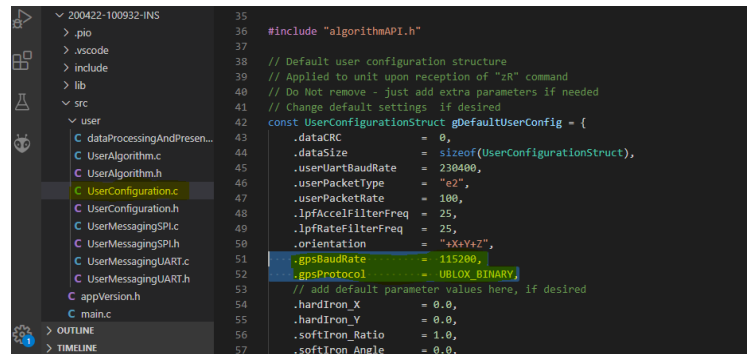
Instructions to run INS app on OpenIMU300ZI with GNSS

Application Note

Instructions to run INS app on OpenIMU300ZI with GNSS

Please make sure you have **latest INS application FW version** in your OpenIMU300ZI eval board.

- Connect your OpenIMU300ZI eval board, run Python driver, connect to Aceinna [Web GUI](#) to check version
- If it doesn't have latest INS version, then upgrade it to [latest version](#).
 - o Run Python driver, then connect to Aceinna [Web GUI](#)
 - o Go to [App store](#), then under OpenIMU300ZI, click on INS app latest version, then on Upgrade.
- Latest INS application version you upgraded in Step1 above, You can Import **same INS application version source code** in VS Code
 - o Please follow the steps in the section [link](#) to Install OpenIMU development platform.
 - o Please follow the steps in the section [link](#) to Install "Aceinna" Extension.
 - o On Aceinna Homepage Extension, click on Custom IMU Examples then select -> OpenIMU300ZI/INS App then click Import.
 - o It will import OpenIMU300ZI/INS App on to Visual Studio code workspace.
- In INS App Source code, go to folder **src -> user -> UserConfiguration.c file (line 51, 52)**. These are the **default & recommended**, GNSS baudrate & protocol are set in the code. Please see FIGURE 1 below.
 - o If needed, you can change GNSS baudrate & protocol in the source code, then build it & upload onto Unit through ST link debug.
- By **default & recommended**, GNSS baudrate & protocol is set to following in the code. So Please set your **u-blox receiver to these parameters**
 - o **gpsBaudRate = 115200**
 - o **gpsProtocol = UBLOX_BINARY**
 - o Use Ublox Software **U-Center** tool to configure the GNSS with **UBLOX_BINARY** as protocol,
 - o Then configure u-blox receiver to **output NAV PVT message at 1 Hz**
 - o Make sure only NAV PVT message is enabled, other messages are disabled in u-blox receiver
- Make sure GNSS receiver is configure correctly in U-Center SW tool.
- Connect GNSS receiver to OpenIMU300ZI EVK. Detail PIN out connections description along with pictures are provided in the online [manual](#).



```

35 #include "algorithmAPI.h"
36
37
38 // Default user configuration structure
39 // Applied to unit upon reception of "zR" command
40 // Do Not remove - just add extra parameters if needed
41 // Change default settings if desired
42 const UserConfigurationStruct gDefaultUserConfig = {
43     .dataCRC = 0,
44     .dataSize = sizeof(UserConfigurationStruct),
45     .userUartBaudRate = 230400,
46     .userPacketType = "e2",
47     .userPacketRate = 100,
48     .lpfAccelFilterFreq = 25,
49     .lpfRateFilterFreq = 25,
50     .orientation = "+X+Y+Z",
51     .gpsBaudRate = 115200,
52     .gpsProtocol = UBLOX_BINARY,
53     // add default parameter values here, if desired
54     .hardIron_X = 0.0,
55     .hardIron_Y = 0.0,
56     .softIron_Ratio = 1.0,
57     .softIron_Angle = 0.0,

```

FIGURE 1

NOTE: Refer to [Online manual](#) for displaying and logging the Navigation Solution.