



# SdsDroneSdk

## Build Examples

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# 1 Introduction

The goal of this document is to explain how to run the build examples included with the DroneSdk.

The code for the build examples sits in the `drone_sdk\examples` folder.

The goal of the build examples is to ensure that users have their environment properly configured and can seamlessly connect to the sensor, enabling them to receive accurate output data.

## 2 Setting Up Visual Studio Code

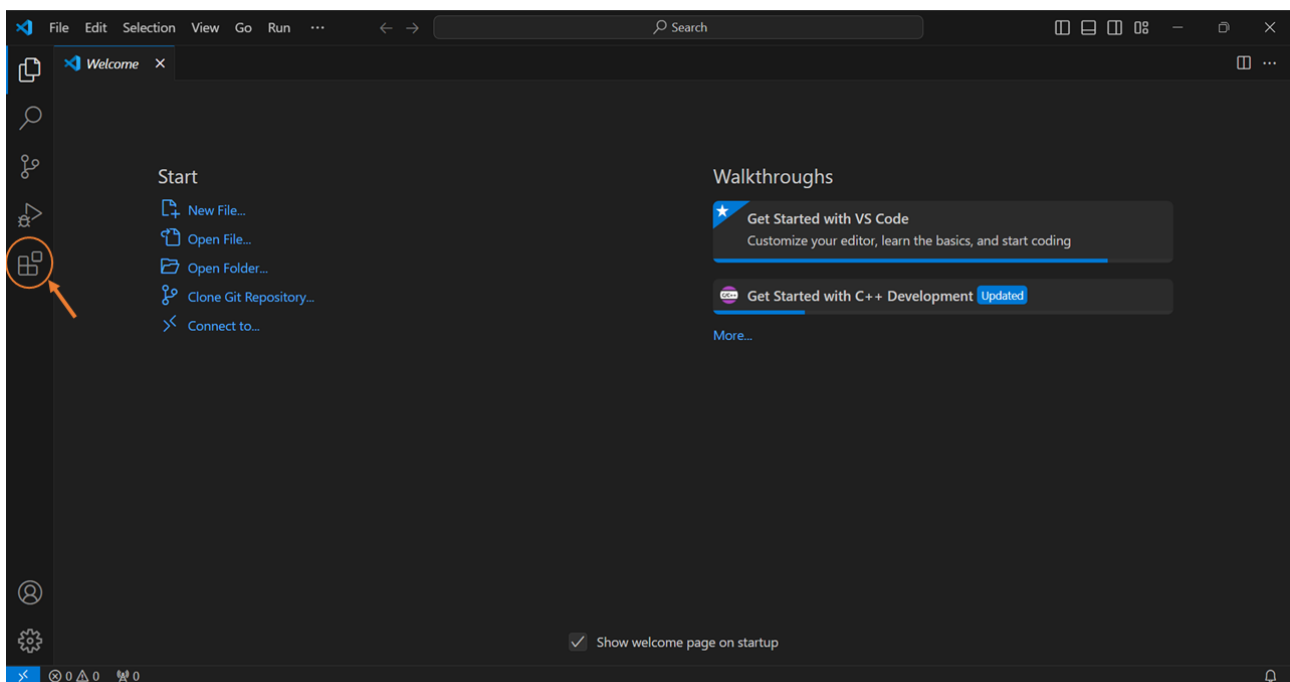
In this section, we will guide you through each step of setting up Visual Studio Code on your computer. If you have already completed this setup, please ensure that you have all the required extensions installed before proceeding to the next section.

### 2.1 Installation

To begin, download and install Visual Studio Code from the official website: [Visual Studio Code](#).

### 2.2 Installing Extensions

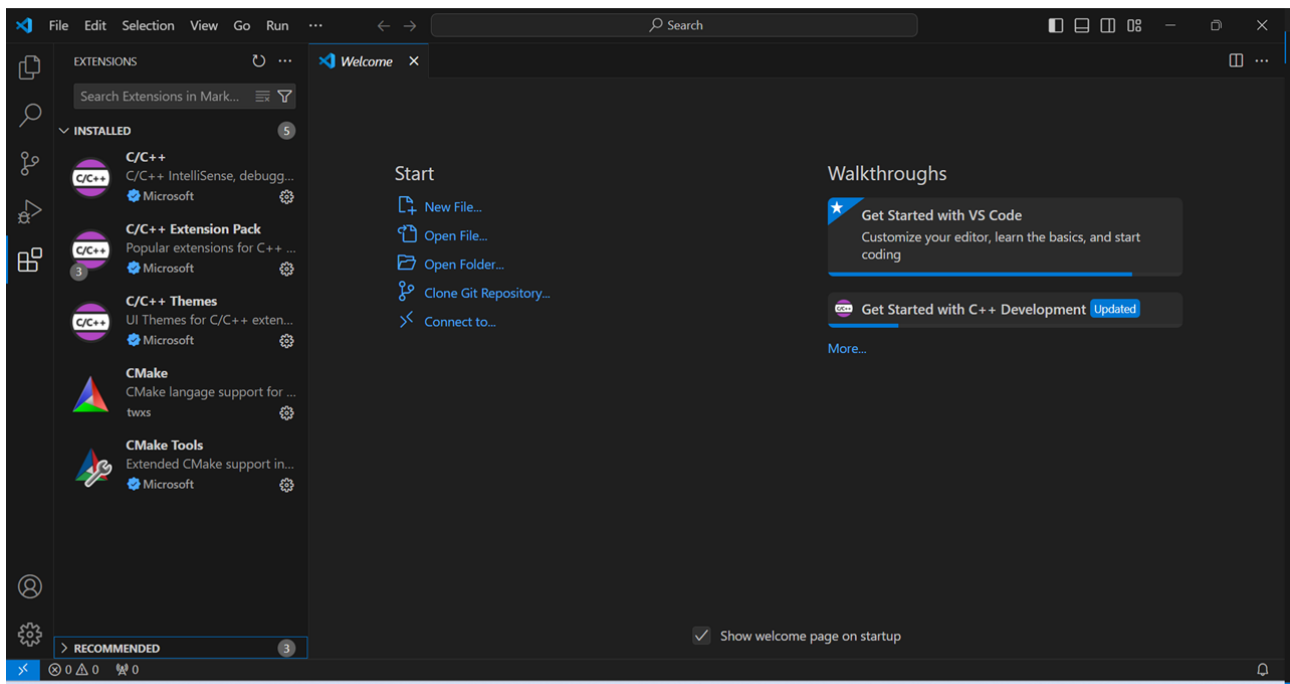
Next, open Visual Studio Code and click on the extensions icon.



Install the following extensions:

- CMake
- CMake Tools
- C/C++
- C/C++ Extension Pack
- C/C++ Themes

## 2 Setting Up Visual Studio Code

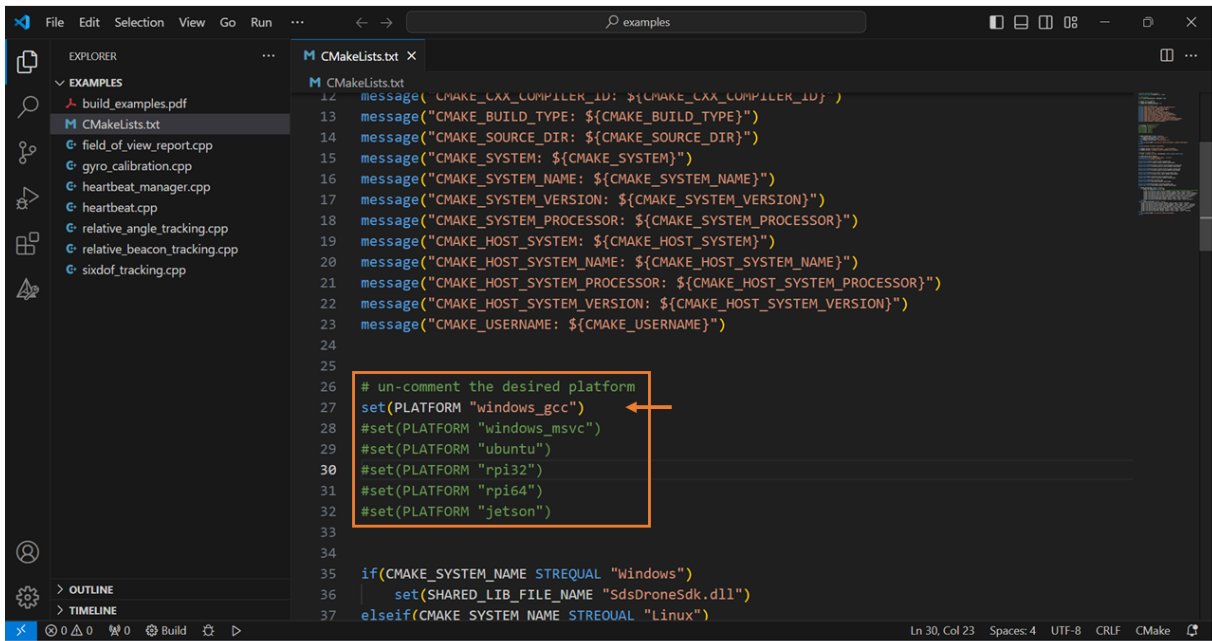


## 3 Running the Examples

In this section, we will guide you through configuring Visual Studio Code to run the build examples smoothly. Before proceeding, ensure you have a compiler installed on your system and added to your PATH.

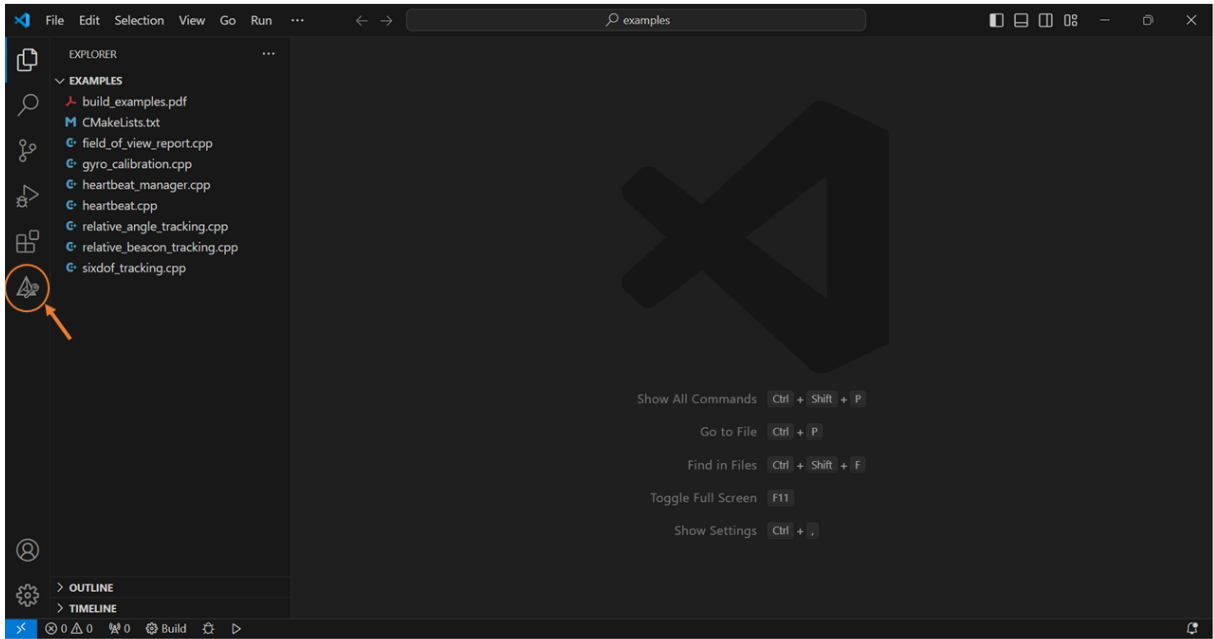
### 3.1 Project Configuration

- Open Visual Studio Code in the **examples** folder.
- Review the code to locate where the network configuration details are set. Enter your sensor ID and network name accordingly.
- If you are running the **sixdof\_tracking** example or any of the heartbeat examples, ensure you enter your map. Enter each beacon separately in a 4-tuple format: {x, y, z, id}.
- Open the "CMakeLists.txt" file and un-comment the line with the platform you are using.

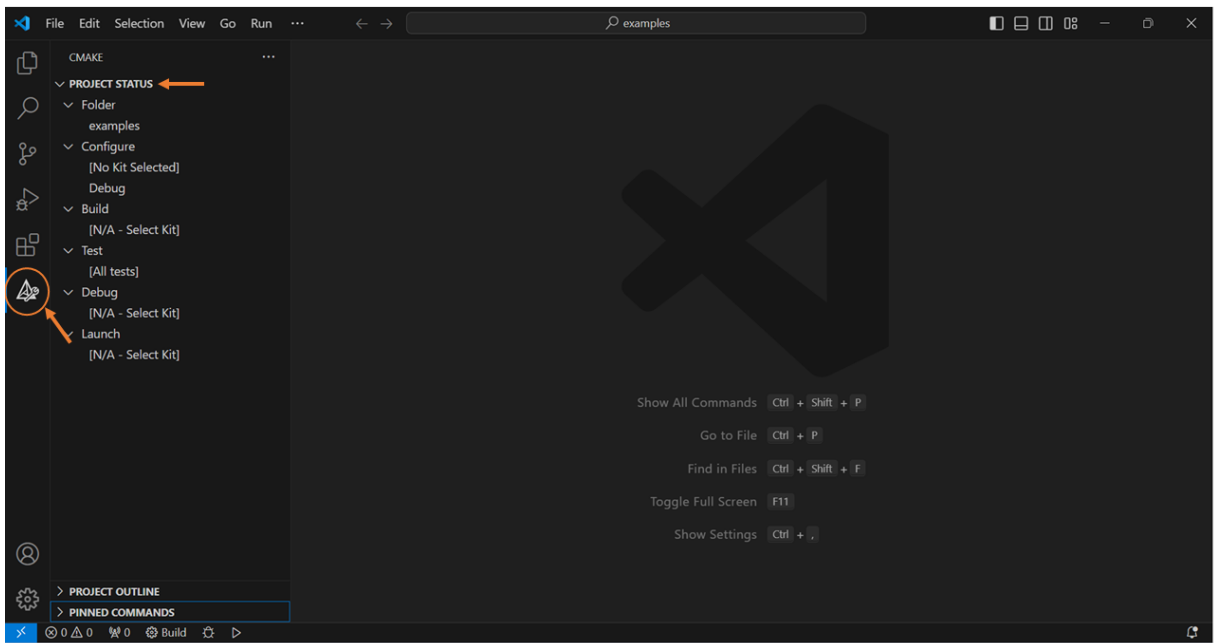


- Locate the CMake icon.

### 3 Running the Examples

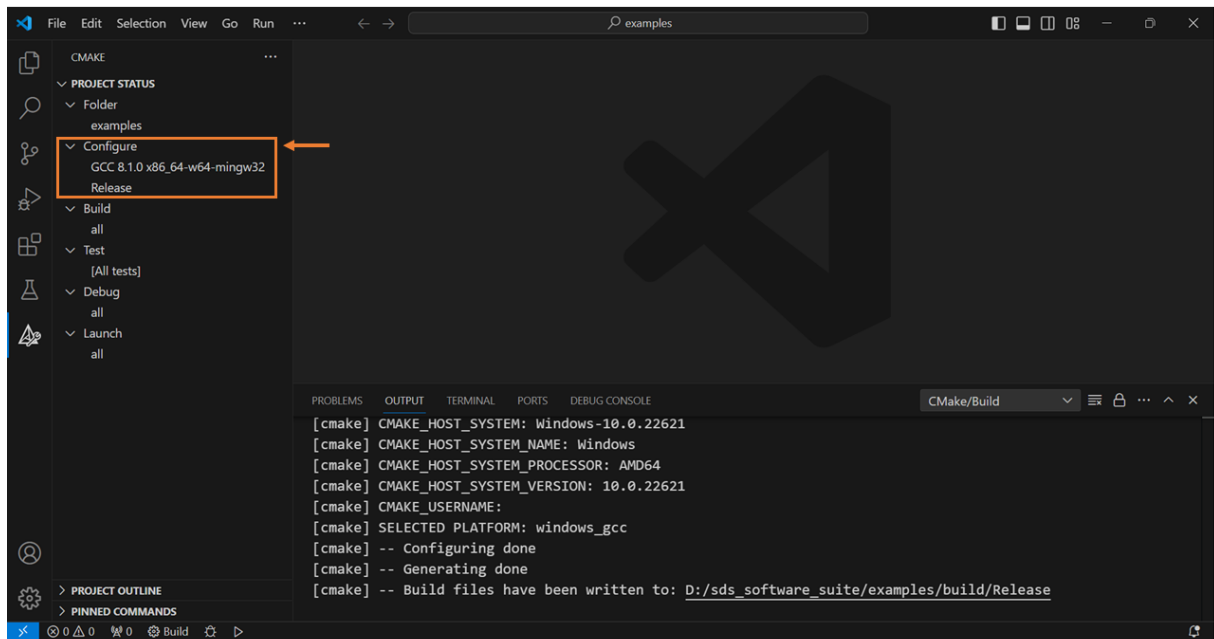


- Click on the CMake icon and check the "Project Status" section.

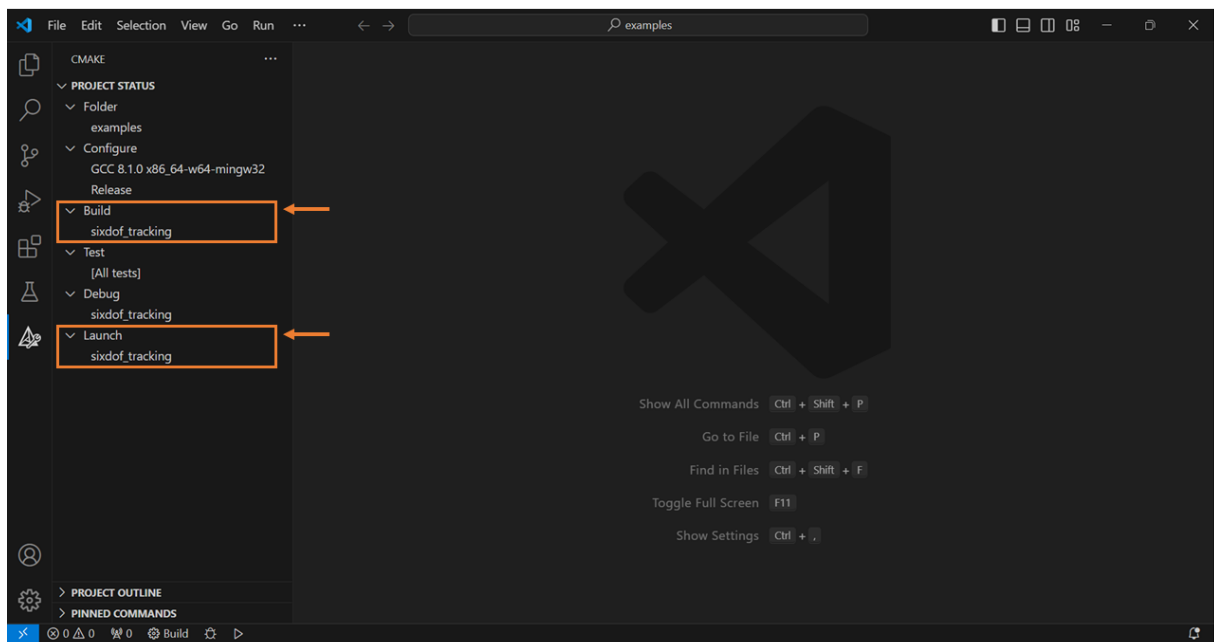


- Under "Configure" select your compiler kit and choose "Release" (not "Debug").

### 3 Running the Examples



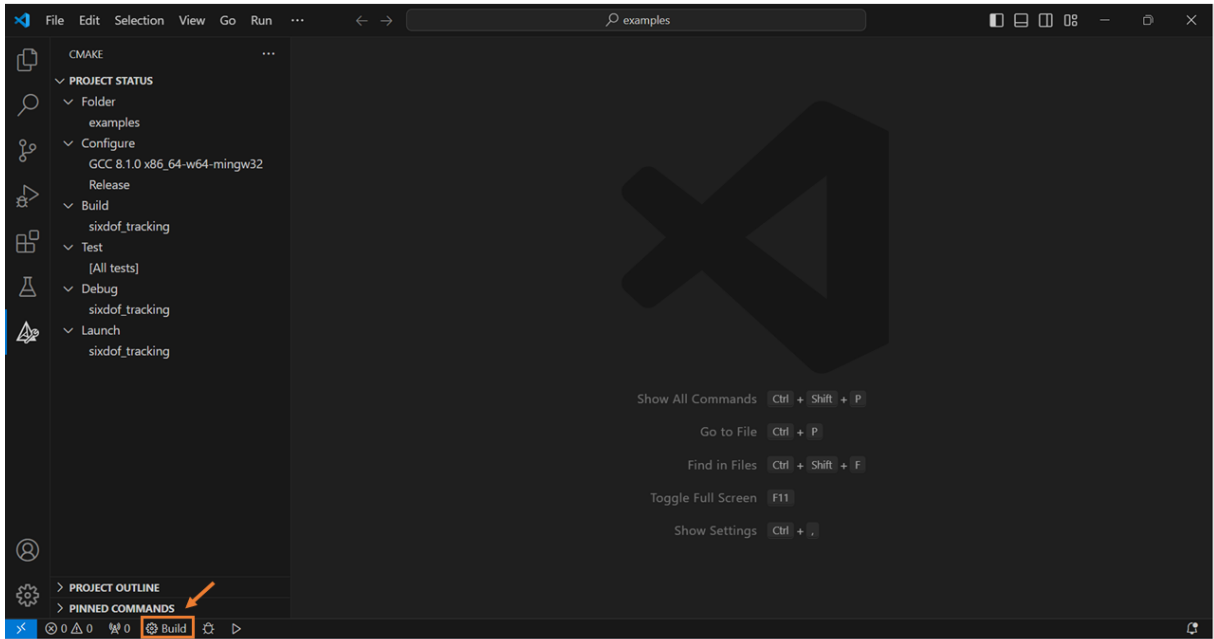
- Under "Build" and "Launch," select the name of the example you wish to build and run. For example, in the image we chose to build `sixdof_tracking`.



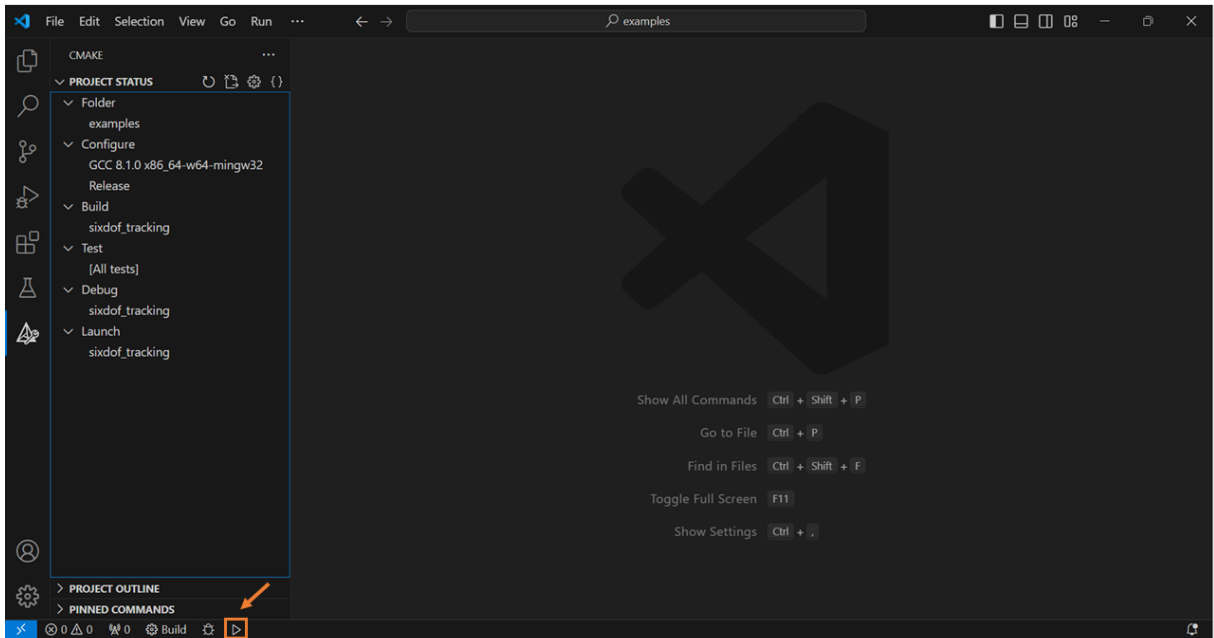
- Build the example using the build button located at the bottom left corner.



### 3 Running the Examples



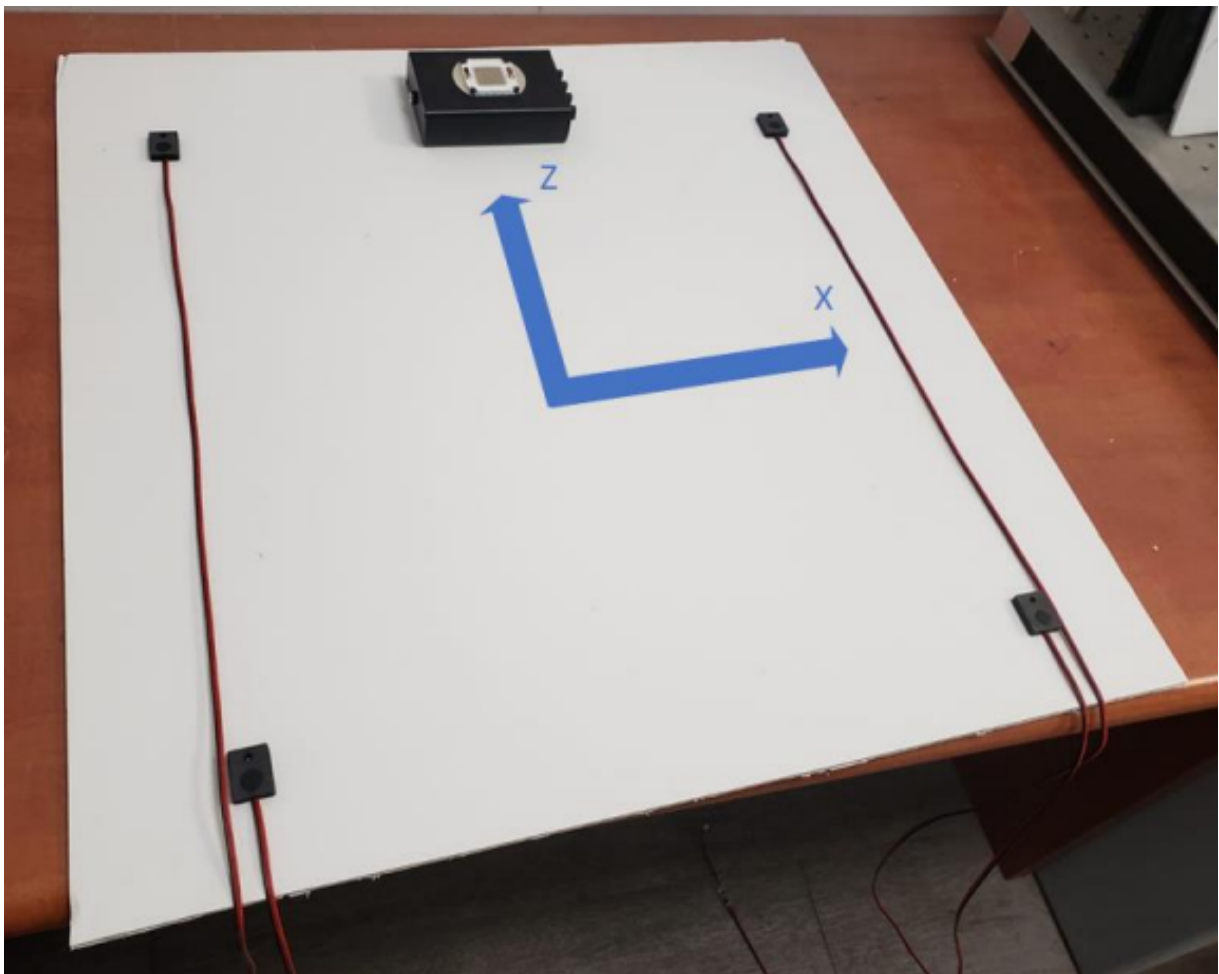
- Connect the sensor's micro-USB to a 5V power source, and the sensor's RJ45 port to a network port on the host computer or to a USB dongle.
- Set up the beacons in a map. For more information on how to set up a map, see [Creating a Map](#).
- Run the executable file in a terminal opened in `examples\build\Release` (the location of the executable file). Alternatively, you can press the play button on the bottom left of the screen, which will rebuild and then run the executable.



## 4 Creating a Map

To create the map:

1. Choose a rigid surface, ideally about 1 meter square.
2. Establish a right-hand coordinate system by selecting an origin point (typically the center of the surface) and defining two perpendicular axes (e.g., the x-axis points to the right from the origin, and the z-axis points up). It is recommended to mark these on the surface for easy reference.
3. Attach all the beacons to the rigid surface. Two criteria must be kept in mind when placing beacons:
  - By spreading out the beacons to the corners of the surface, you can achieve better geometry and therefore tracking accuracy.
  - 6DOF localization requires 3 beacons to be seen, the field of view of the sensor is a 120 degrees cone, therefore to localize when close to the map, ensure that at least 3 beacons will be positioned in the field of view.



4. Each beacon is labeled with a unique id.
5. Once the physical map is set up, determine the coordinates of each beacon, in meters, and record it with the corresponding id.