

Radar Development Environment Guide

Introduction

This document is intended to assist with setup and running of the code for the UxV/35 Radar board.

Important components:

- MCU: STM32L476RGT6
- Radar Sensor: Acconeer XS121
- ST-Link V2 Programmer
- 2x USB Mini Cables
- UxV/35 Serial to USB board

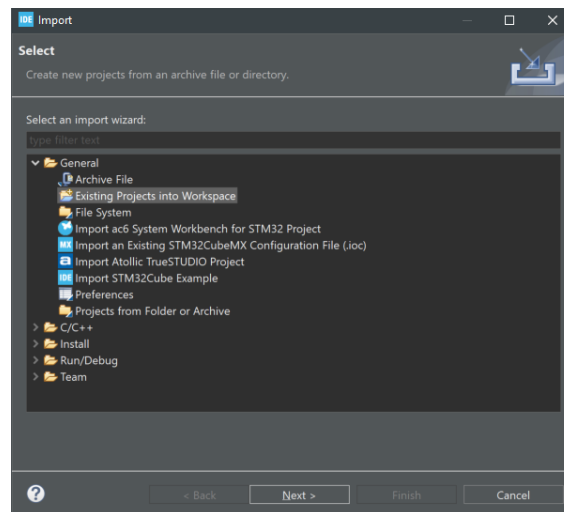
Dev Env Setup

Begin by downloading and installing the STM integrated development environment from the STM website:

<https://www.st.com/en/development-tools/stm32cubeide.html#get-software>

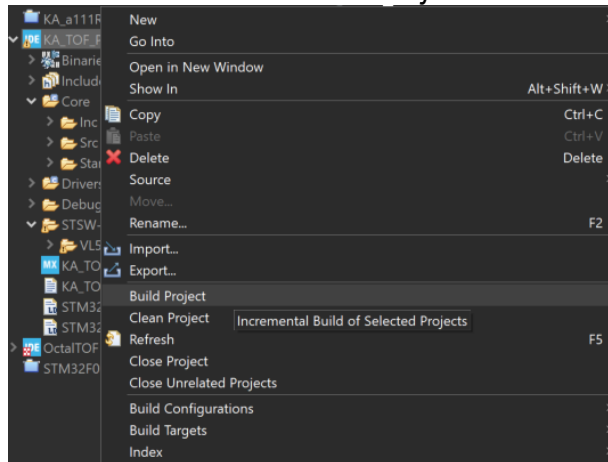
Development for the Radar board was done on a Windows 10 machine running version 1.13.2 of STM32CubeIDE. For initial setup it is recommend to match this configuration.

Once the IDE is installed and running, begin importing the Radar project:
File > Import > General > Existing Projects into Workspace



Locate the root directory. It will be called Radar_Project. Select this directory and one option should appear in the *Projects:* box. Select *AcconeerCurrRelease* and then *finish*.

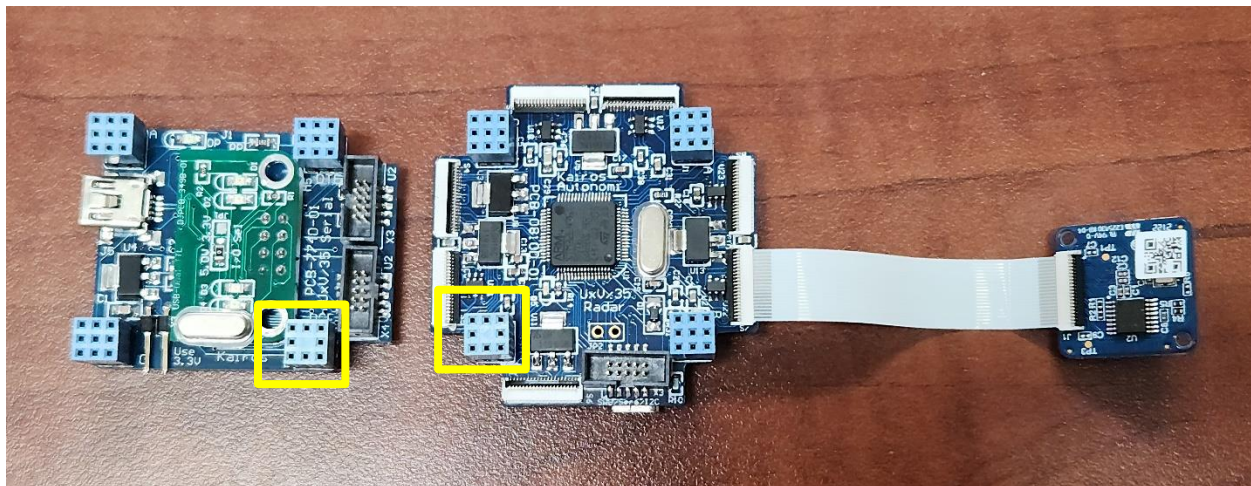
After importing the next step will be to run the build command. Right-click on the project in *Project Explorer* and then select *Build Project* from the dropdown menu.



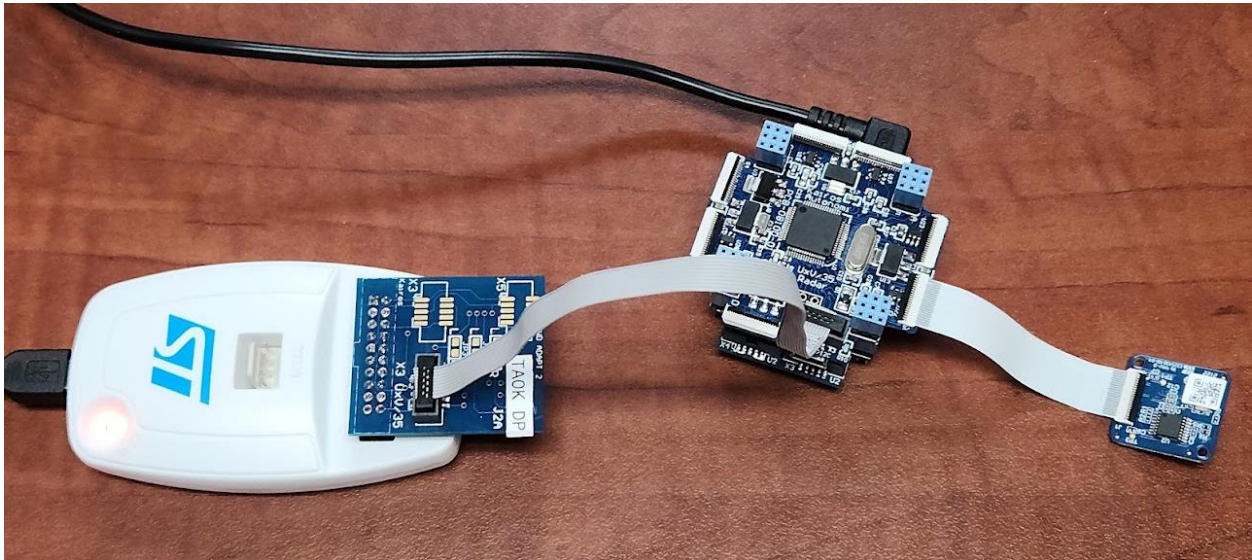
Programming

Programming requires the ST-Link programming tool. Connect the Kairos ST Programmer board to the ST-Link and connect the 10-pin flexible cable to the ST Programmer board.

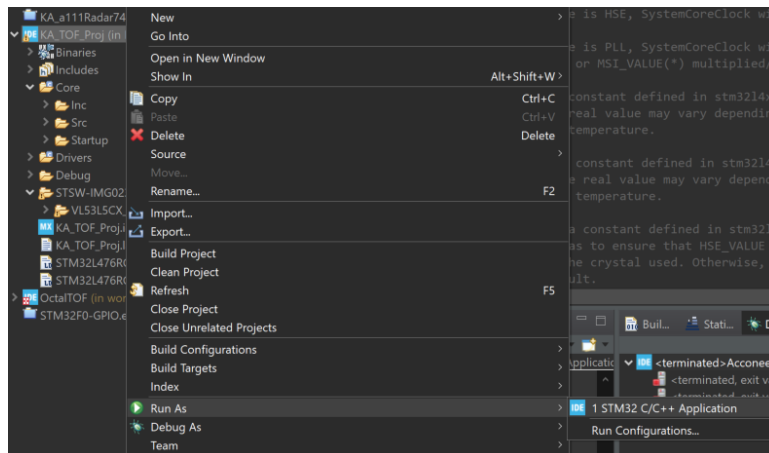
If programming off of the drone, it is recommended to provide power to the board through the UxV/35 Serial board. Connect the Radar to the Serial board making sure to align the keyed UxV/35 connectors.



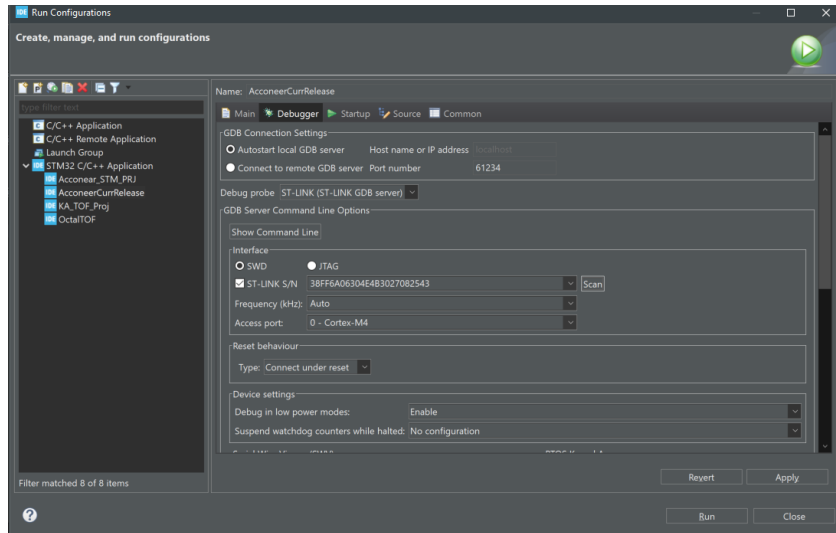
The 10-pin flexible cable can now be connected to the Radar board. Connect a data capable USB Mini cable to both the ST-Link programmer and UxV/35 Serial board.



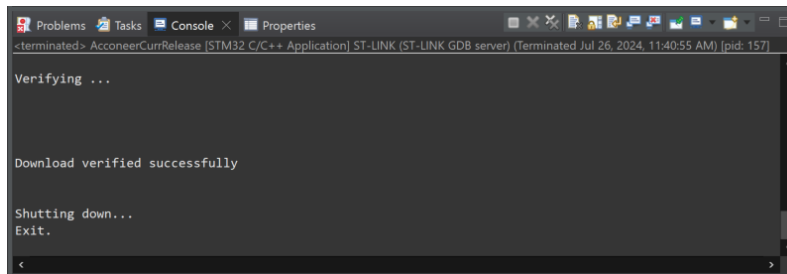
To program, right-click on the project in the *Project Explorer* and select *Run As -> STM32 C/C++ Application*.



The first-time programming may require selecting the ST-Link for debugging. Open the *Run Configurations* window and select ST-Link S/N in the *Debugger* tab. Then select *Scan* and the connect programmer S/N should appear. Now select *Apply* and then *Close*.



Successful programming should see the following *Download verified successfully* in the *Console* window.



Version History

Date and Signature	Revisions	Reasons for Revision
07/25/2024 Jack R.	Document was written. (v01.00.00)	



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