

Octal TOF Development Environment Guide

Introduction

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

Important components:

- MCU: STM32L476RGT6
- TOF Sensor: VL53L5CX
- ST-Link V2 Programmer
- 2x USB Mini Cables
- UxV/35 Serial to USB board

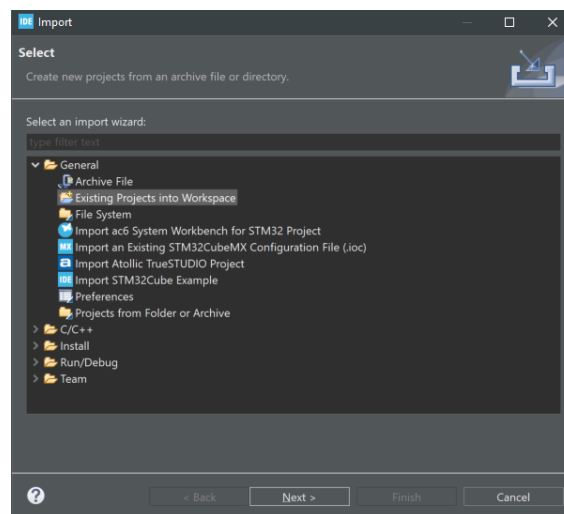
Dev Env Setup

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>

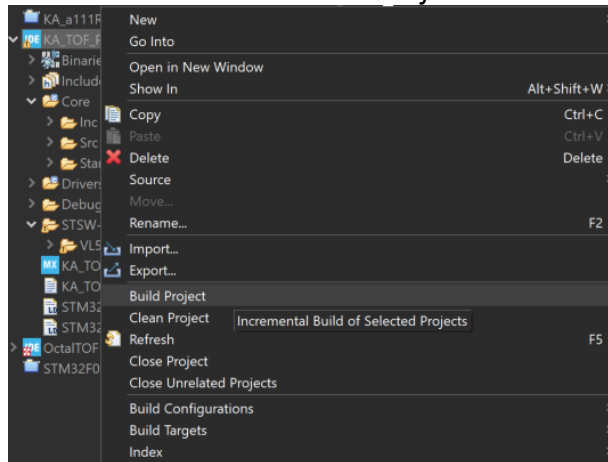
Development for the ST Octal TOF board was done on a Windows 10 machine running version 1.13.2 of STM32CubeIDE. For initial setup it is recommend to match this configuration.

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



Locate the root directory. It will be called STOctalTOF_Project. Select this directory and two options should appear in the *Projects:* box. Select *KA_TOF_Proj* 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.

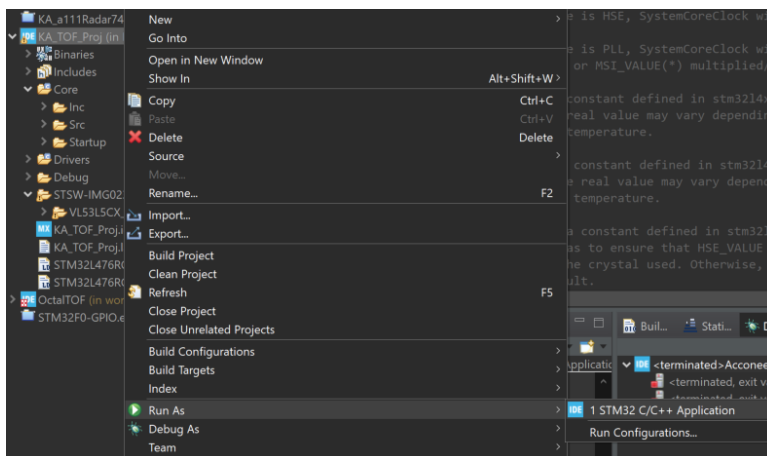
If programming off of the drone, it is recommended to provide power to the board through the UxV/35 Serial board. Connect the TOF board to the Serial board making sure to align the keyed UxV/35 connectors.



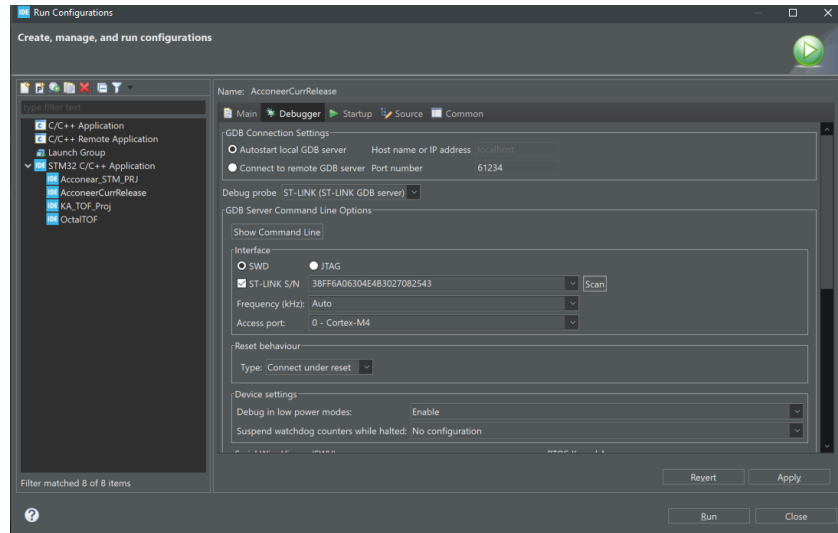
The 10-pin flexible cable can now be connected to the TOF board. Connect a data capable USB Mini cable to both the ST-Link programmer and UxV/35 Serial board.



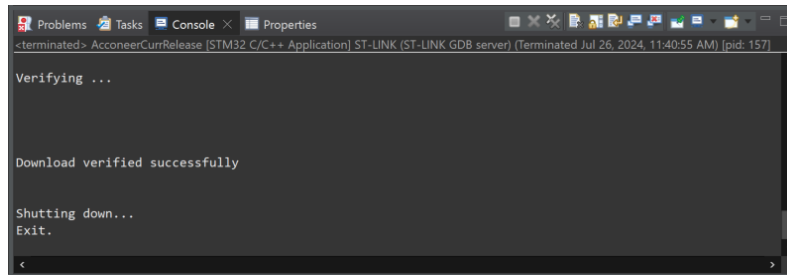
To program, right-click on the project in the *Project Explorer* and select *Run As -> STM32 C/C++ Application*.



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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