# Graphiti API Library

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### Introduction

The Graphiti API Library is an open-source library as we further our commitment to ground-breaking innovation and creative application of technology to achieve user-friendliness, affordability, and quality. Our purpose in creating this library is to improve the experience of people with disabilities by widening the application of the Graphiti. This library hopes to allow any operating system and common computer programming language to communicate with the device easily.

### Description

This library was designed and written in C++ with the interests in mind of allowing the Graphiti to be accessible using several languages with strong usability and potential to be used in different languages and on different platforms. This library provides all API calls and capabilities that Graphiti has to offer. Currently the API supports C++ definitively using VCP on Windows and has wrappers made to support C and Python but the C wrapper has not been tested and the Python wrapper is currently not functioning.

### Dependencies

This library uses asio from boost to communicate across the USB VCP port. This library also uses ws2\_32 to support asio on Windows.

### User Guide

The library is divided into two major groups, being the API and Connection files. The API class includes the API, API\_HID, API\_VCP, and Extension. The API holds the main Graphiti\_API class which handles the device calls. API\_VCP and API\_HID are classes that were made with the intention of separating the creation of the calls to and from the API for VCP and HID calls. The current library does not use these and is only made for VCP right now. Methods in API\_VCP and API\_HID currently do essentially the same thing as in Connection\_VCP.

Connection\_VCP and Connection\_HID were made with the intention of separating libraries that handle these kinds of connections with the device. Connection\_VCP is intended to use asio while Connection\_HID was made with the intention of using hidapi.

The Extension class was made with methods to allow the library to be more easily used by using the Connection class and API class to reduce calls to set up a program while also having some extra methods that help with using the library.

The library also comes with a test harness used for testing the functions with the device. Many of the tests are functionality tests implying that their ability to pass or fail is determined by the user of the test. The passed and failed tests txt files hold all the past and failed tests of any given run.

The API uses ThreadSafeQueue objects to store the events sent by the Graphiti which also has getNext() calls to take the latest kind of event out of that queue. To start listening to device responses call the methods startResponseThread() after setting up the connection. The Extension class and example code show this clearly.

### License

This project is licensed under the GNU General Public License v3.0 (GPL-3.0).

See the LICENSE file for full details.

This library incorporates and builds upon work by Ken Perry in the original Graphiti Python API library, which is also licensed under the GNU GPL.

### Acknowledgements

Big thanks to Ken Perry for their Graphiti API library and support.