



# Lime Suite Software

## *- Compilation guide -*



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|---|---|
| Document version: | 1.00 |
| Document revision: | 07 |
| Last modified: | 6-19-2018 10:06:44 AM |

# Contents

# Revision History

**Version v01r01**
*Started: 3 Apr, 2015*
Initial version

**Version v01r02**
*Started: 3 Jul, 2015*
Changed linux command line for compiling lms7suite

**Version v01r03**
*Started: 11 April, 2016*
Updated compilation instructions

**Version v01r04**
*Started: 12 April, 2016*
Detailed/fixed compilation commands

**Version v01r05**
*Started: 18 April, 2016*
Add run instructions

**Version v01r06**
*Started: 23 August, 2016*
Updated compilation instructions

**Version v01r07**
*Started: 23 January, 2017*
Changed naming form 'LMS7 Suite' to 'Lime Suite'
Updated compilation instructions

**Version v01r07**
*Started: 19 June, 2018*
Updated compilation instructions

# 1

# Introduction

The scope of this document is compilation of the Lime Suite using CMake under MS Windows OS and Linux OS. Because wxWidgets library is used for user interface, wxWidgets library set-up and compilation is discussed first. Then detailed procedure of Lime Suite compilation is provided.

When compiling LMS API library only (without GUI application) wxWidgets library is not required. If Cmake is not able to find wxWidgets library, LimeSuiteGUI application will not be compiled when compiling Lime Suite.

wxWidgets 3.0.4 library is used in this description (wxWidgets-3.0.4.zip).

# 2

# Windows OS

This chapter contains instructions for installation and compilation of WxWidgets library, installation of Cypress USB SDK and compiling Lime Suite on Windows operating system. Compiling is done using Microsoft Visual Studio 2015.

## 2.1 wxWidgets installation

Step by step instructions of how to install, prepare and compile wxWidgets library are provided bellow:

1. Go to http://wxwidgets.org/downloads/ and download source code for Windows.
2. Install wxWidgets library to the 'C:\wxWidgets-3.0.4\' directory. You can choose another install directory but instructions in this guide assumes wxWidgets to be installed in 'C:\wxWidgets-3.0.4\'.
3. Go to 'C:\wxWidgets-3.0.4\build\msw' directory and open 'wx_vc12.sln' project file.
4. Change project configuration to Release as shown in Figure 1

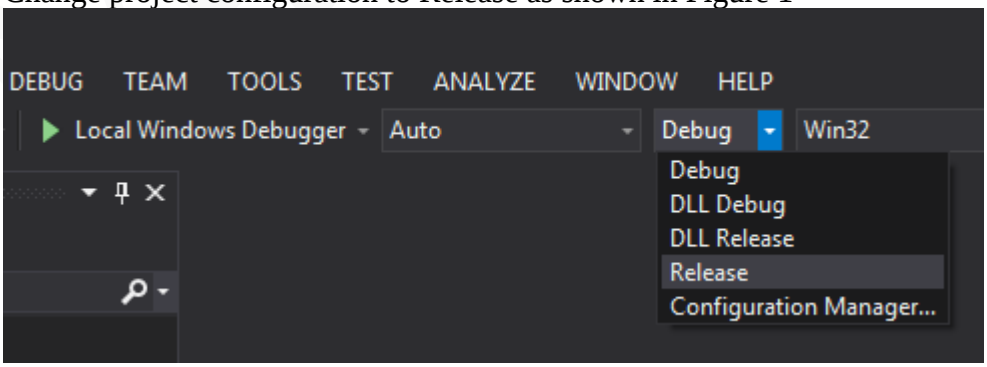


Figure 1 wxWidgets build configuration

5. In Visual Studio top menu select BUILD->Build Solution as shown in Figure 2.

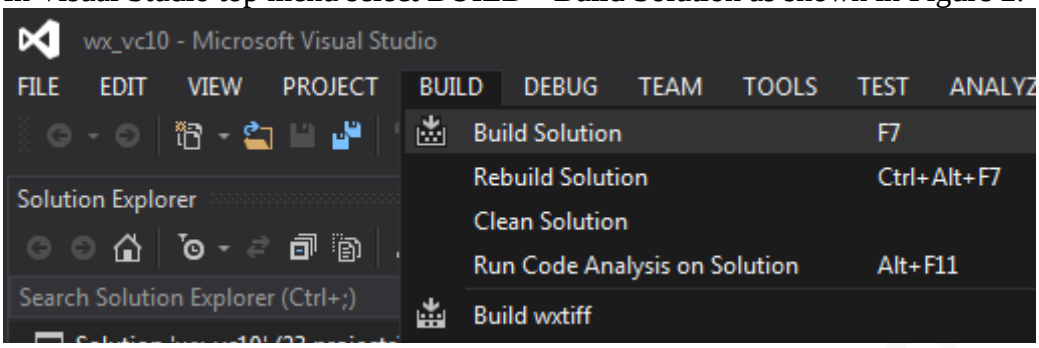


Figure 2 Compiling wxWidgets

6. Compilation process will start right now. It will take some time to compile the library wait until this process is complete, please.

## 2.2 Cypress EZ-USB FX3 SDK installation

1. Go to http://www.cypress.com/?rID=57990 and download EZ-USB FX3 SDK for Windows.
2. Install SDK into desired directory.

## 2.3 Compiling Lime Suite

The steps 1 and 2 can be skipped if you already have Lime Suite package and this document came together with it. If you only have this document then proceed with steps 1 and 2 to obtain Lime Suite package.

1. If Git is not already installed on your PC, download it from https://git-scm.com/download/win and install using default setting.
2. Obtain source code from git repository. Open Git Bash (right-click in file explorer and choose “Git Bash Here”) and type the following:

   git clone https://github.com/myriadrf/LimeSuite
3. Launch CMake-gui.
4. Browse where the source code is located, and create directory inside where to build binaries as shown in Figure 3.

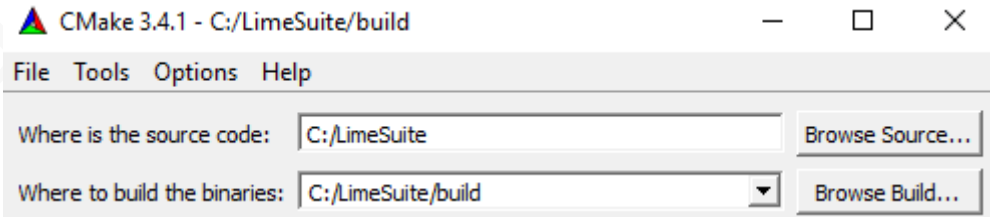


Figure 3 Selecting project source

5. Click Configure button
6. If wxWidgets installation directory is not detected CMake configuration will contain entries as shown in Figure 4. If you do not intend to compile LimeSuiteGUI you can ignore this and skip steps 6.1 and 6.2 to compile Lime Suite without GUI application.

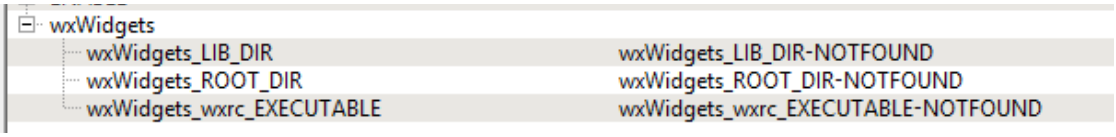


Figure 4 CMake can't find wxWidgets

6.1 . Select and replace wxWidgets_ROOT_DIR-NOTFOUND value with path to your wxWidgets installation directory (e.g. 'C:/wxWidgets-3.0.4')

6.2 . Click Configure button again

7. Click Generate button
8. Go to 'C:\LimeSuite\build\' directory and open 'LimeSuite.sln' project file.
9. Change project configuration to Release as shown in Figure 5.

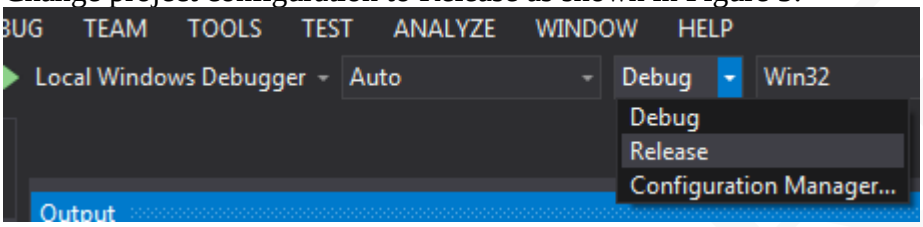


Figure 5 Lime Suite build configurations

10. In Visual Studio top menu select BUILD->Build Solution.
11. Compilation process will start right now. It will take some time to compile the software, please wait until this process is complete.
12. Lime Suite binary files can be found in 'C:/LimeSuite/build/bin/Release' directory.

## 2.4 Running Lime Suite

1. Navigate to 'C:/LimeSuite/build/bin/Release' directory
2. Launch "LimeSuiteGUI.exe"
3. From menu bar select: 'Options->ConnectionSettings' (Figure 6)

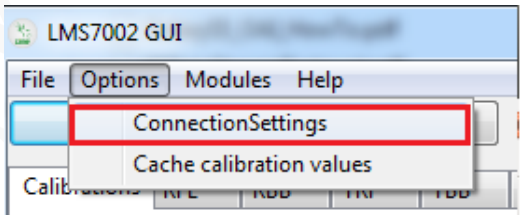


Figure 6 Opening connection settings

4. Select the device to connect to and click "Connect" button (Figure 7).

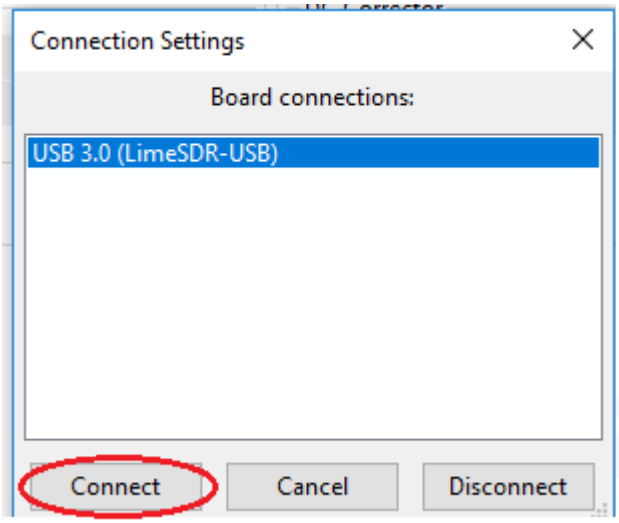


Figure 7 Connecting to device

# 3

# Linux OS (Ubuntu)

This chapter contains instructions for installation and compilation of WxWidgets library and compiling Lime Suite on Ubuntu operating systems (tested on Ubuntu 16.04 LTS). Compiling is done using CMake (v3.1.3+ required) and GCC tools.

## 3.1 Required libraries and tools

Compilation of base LimeSuite library with USB boards suppport requires some tools and libusb library to be installed on the system. To install required packages run:

```
sudo apt-get install git g++ cmake libusb-1.0-0-dev
```

LimeSuiteGUI additionally requires wxWidgets library. It can be installed from source or from packages. Instalation from source instruction can be found in 3.2. To install wxWidgets from packages (on Ubuntu 16.04) run:

```
sudo apt-get install libwxgtk3.0-dev
```

If compilation of SoapySDR plugin is rdesired then SopySDR library and headers needs ti be installed. To do that run:

```
sudo add-apt-repository -y ppa:myriadrf/drivers
sudo apt-get update
sudo apt-get install libsoapysdr-dev
```

## 3.2 wxWidgets compilations on Linux (optional)

Step by step instruction how to install wxWidgets library from source is provided bellow. In this example the user home directory will be used as '/home/linuxuser'

1. Install the rewuired packages:
   ```
   sudo apt-get install ibgtk2.0-dev freeglut3-dev
   ```
2. Download wxWidgets source code from http://wxwidgets.org/downloads/ (wxWidgets-3.0.4.tar.bz2)
3. Extract wxWidgets-3.0.4 archive
4. Open terminal and navigate to wxWidgets-3.0.4 directory
5. Execute the following commands:
   ```
   ./configure –with-opengl
   make
   ```
6. Compilation process will start right now. It will take some time to compile the library, please wait until this process is complete.
7. Once compilation completes, execute the following commands commands:
   ```
   sudo make install
   sudo ldconfig
   ```
   This command will install and configure library paths.
8. Now wxWidgets are installed and can be used for Lime Suite project.

## 3.3 Compiling Lime Suite

The first step can be skipped if you already have Lime Suite package and this document came together with it. If you only have this document then start from step 1 to obtain Lime Suite package.

1. Obtain source code from git repository:
   ```
   git clone https://github.com/myriadrf/LimeSuite
   ```
2. Go to 'LimeSuite/build' directory:
   ```
   cd LimeSuite/build
   ```
3. Inside the 'build' directory execute the following commands:
   ```
   cmake ..
   make
   ```
4. Wait for the compilation process to complete
5. To install Lime Suite on your system execute:
   ```
   sudo make install
   sudo ldconfig
   cd ../udev-rules/
   sudo sh install.sh
   ```

## 3.4 Running LimeSuiteGUI

1. After installing LimeSuite o the system, LimeSuiteGUI can be run by typing in terminal:

```
LimeSuiteGUI
```

2. To connect to a device, from menu bar select: 'Options->ConnectionSettings' (Figure 8)

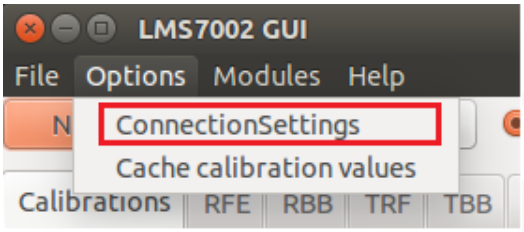


Figure 8 Opening connection settings

3. Select the device to connect to and click 'Connect' button (Figure 9).

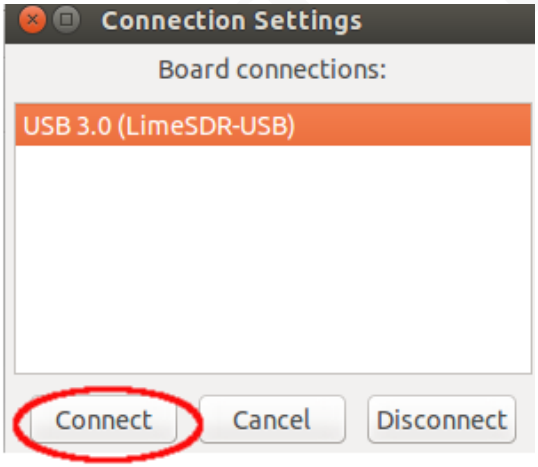


Figure 9 Connecting to device