Running the LabVIEW Host Example

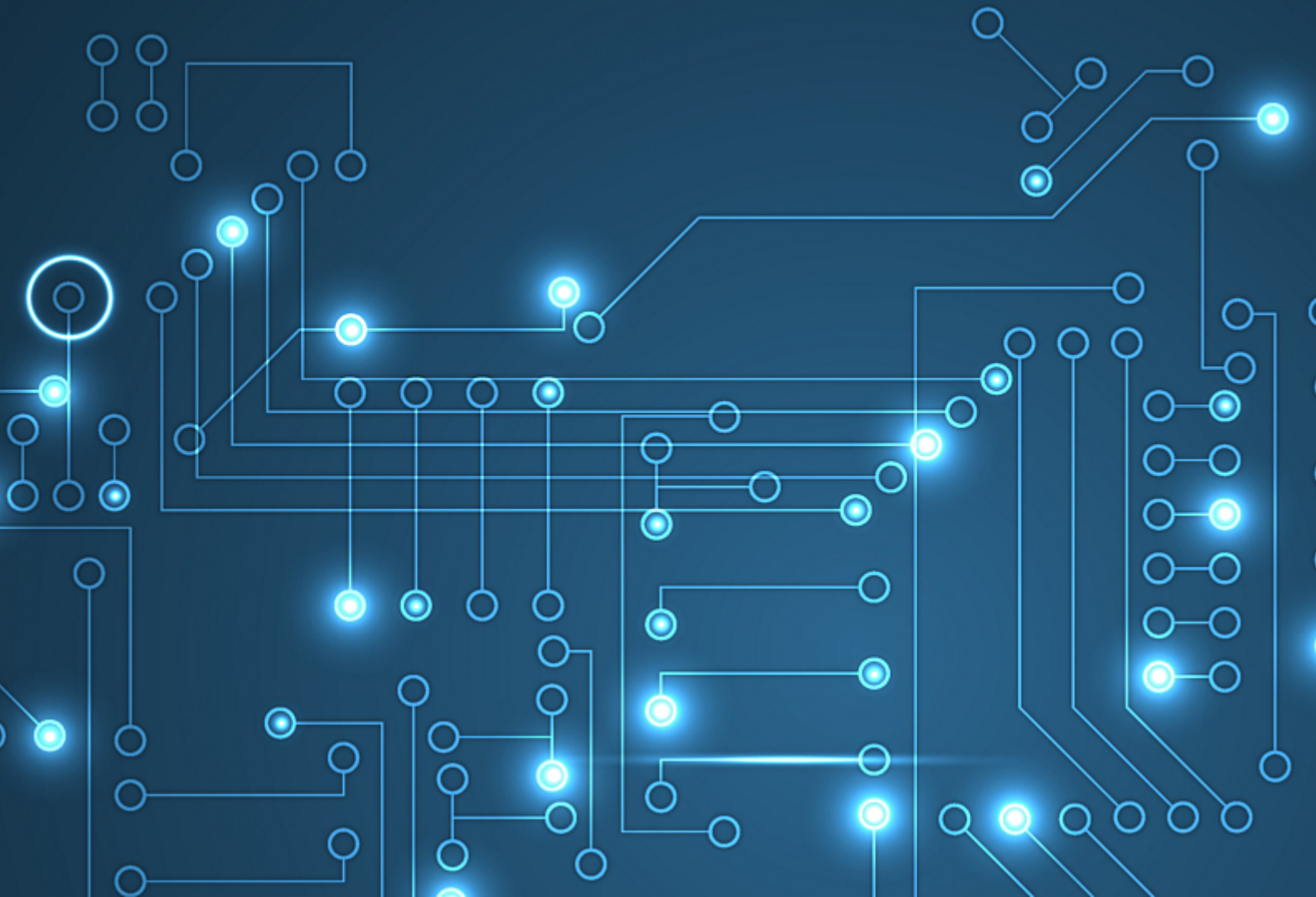
A companion guide to the text book:

A Practical Introduction to the Xilinx Zynq-7000 Adaptive SoC

Author: Derek Murray

Version: 1.0

Date: 29/8/21



Revision History

Version	Date	Comment
1.0	29/8/21	First version

Table 1. Revision History

Limit of Liability/Disclaimer of Warranty: The author makes no representation or warranty with respect to the accuracy or completeness of the contents of this work and specifically disclaims all warranties, including without limitation warranties of fitness for a particular purpose. No warranty may be created or extended by sales or promotional materials. The advice and strategies contained herein may not be suitable for every situation. If improperly wired, circuits described in this work may possibly cause damage to the device and physical injury. The author shall not be liable for damages arising herefrom. The fact that an organisation or website is referred to in this work as a citation and/or a potential source of further information does not mean that the author endorses the information the organisation or website may provide or recommendations it may make. Further, readers should be aware that Internet websites listed in this work may have changed or disappeared between when this work was written and when it is read.

1 Introduction

This document describes how to run the LabVIEW host application developed in Chapter 15 of the book "A Practical Introduction to the Xilinx Zynq-7000 Adaptive SoC". The LabVIEW package is called ***dm_lib_dm_zynq_a.b.c.d.vip*** (where _a.b.c.d is the version number), and can be found on the authors GitHub site (see also Figure 1):

https://github.com/der-mur/host_apps/labview

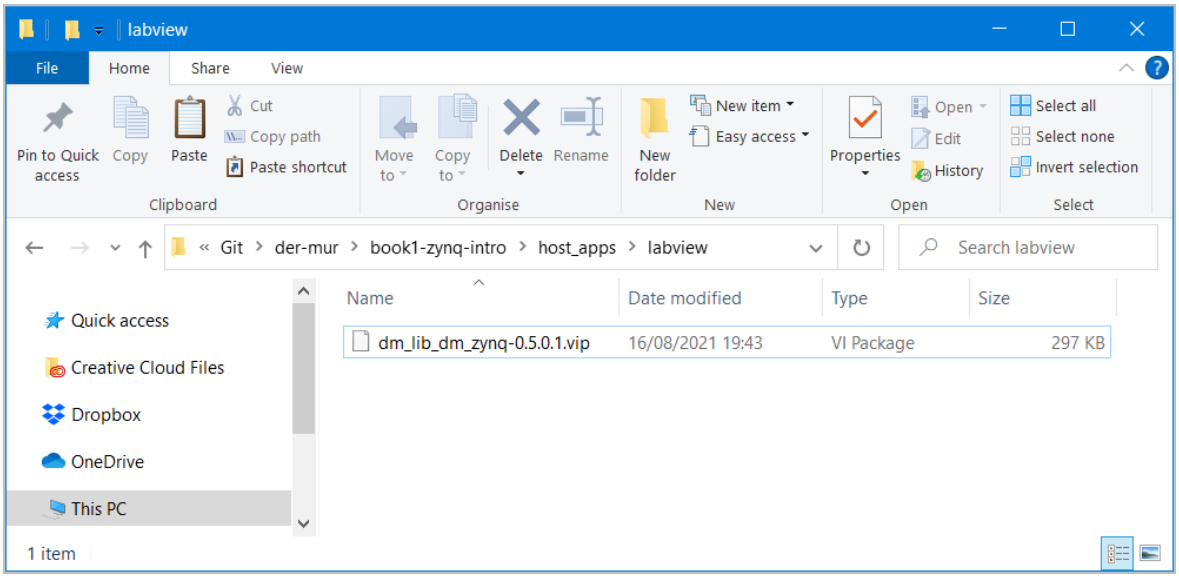


Figure 1. The VI package can be found on GitHub. (

2 Required Software

LabVIEW Community Edition is used to create the host application, and it can be downloaded from the following link (Figure 2):

https://www.ni.com/en-ie/shop/labview/select-edition/labview-community-edition.html

Usually, VIPM Package Manager will be installed when LabVIEW is installed. If not, go to the following link and download and install it (see also Figure 3):

https://www.vipm.io/download/

VIPM Free is used in this guide, although the Community version may also work. (The Community version has not been tested by the author.)

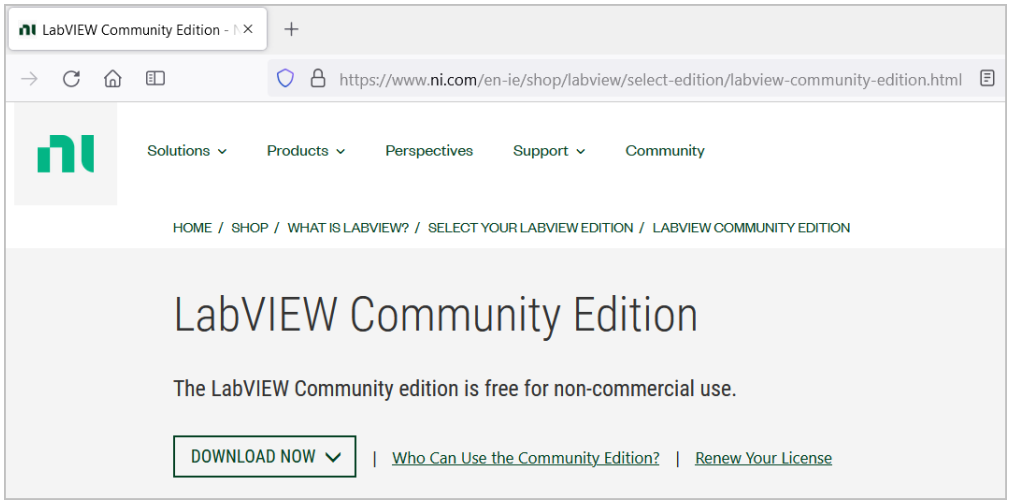


Figure 2. Download Install LabVIEW Community Edition

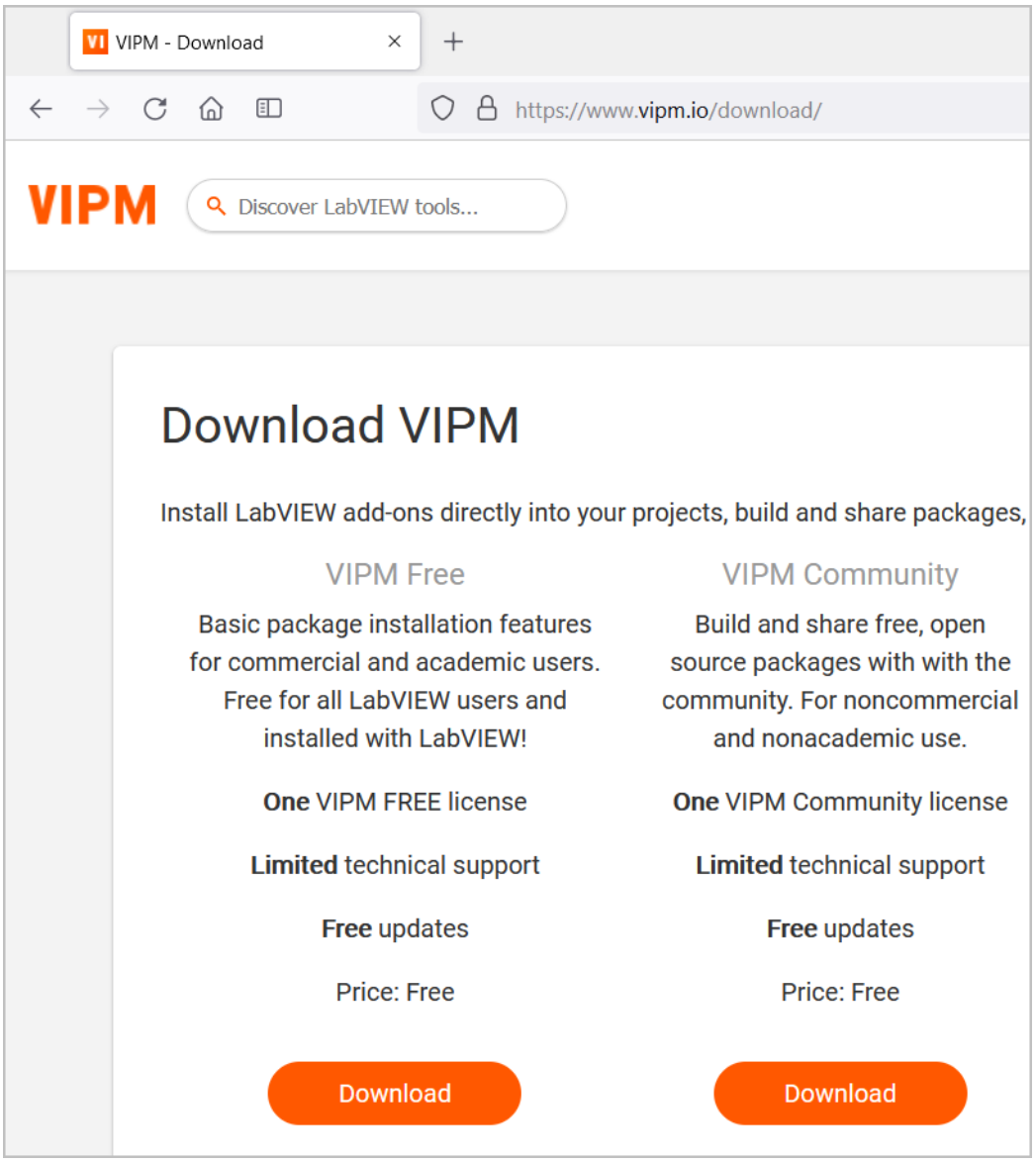


Figure 3. Download and Install VIPM (IF it is not installed with LabVIEW!)

3 Procedure

Start by installing LabVIEW Community Edition and VIPM (if necessary) from the links above. Next, either clone the GitHub repository, or download the VIP file. Once all of these preliminary steps are carried out, launch VIPM, and select *File -> Open Package File(s)* (Figure 4).

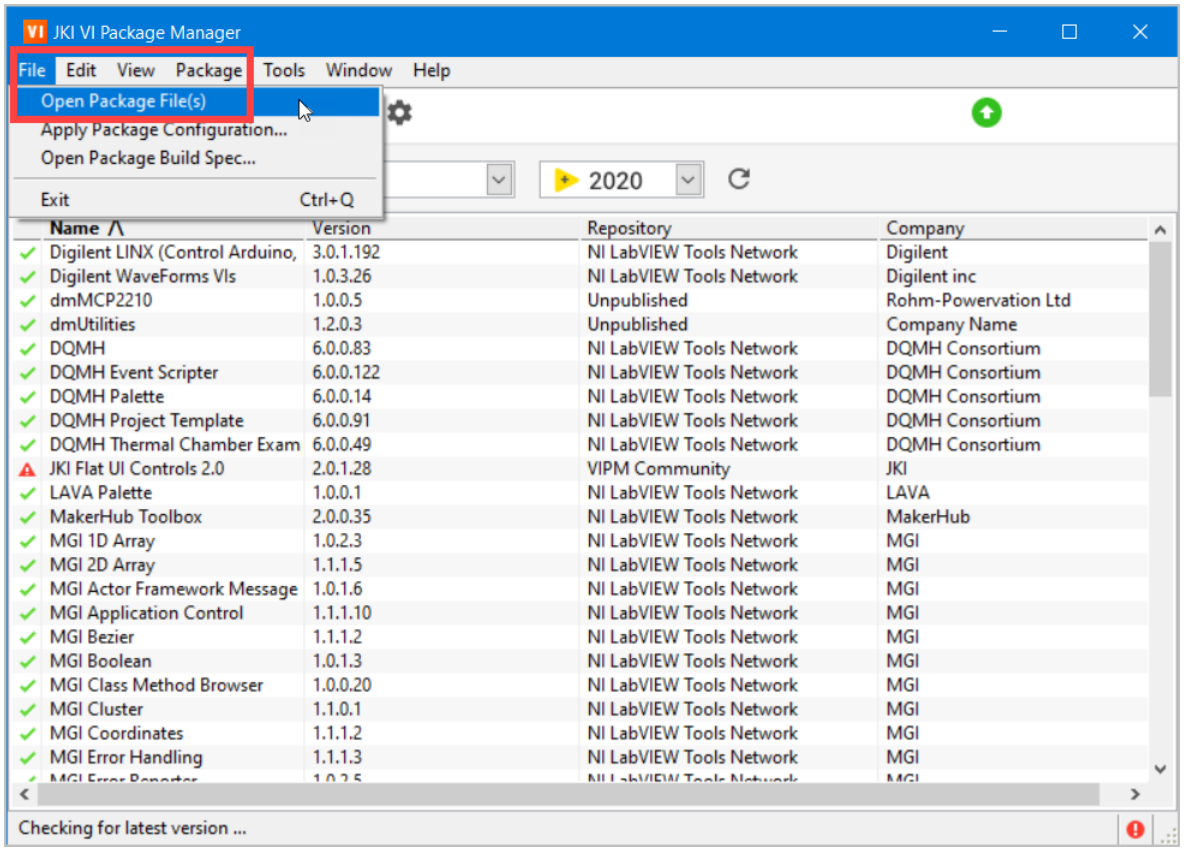


Figure 4. Launch VIPM, and select *File -> Open Package File(s)*

Navigate to the VIP package (cloned or downloaded from GitHub) and select it (Figure 5).

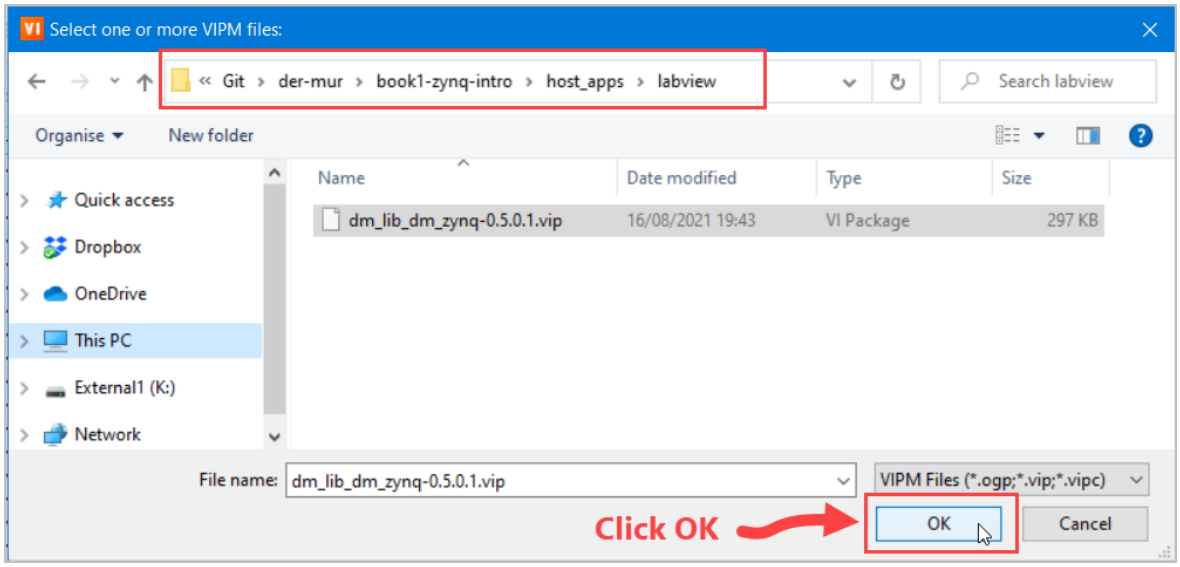


Figure 5. Navigate to the LabVIEW package and click OK

Select Add to Library & Install (Figure 6):

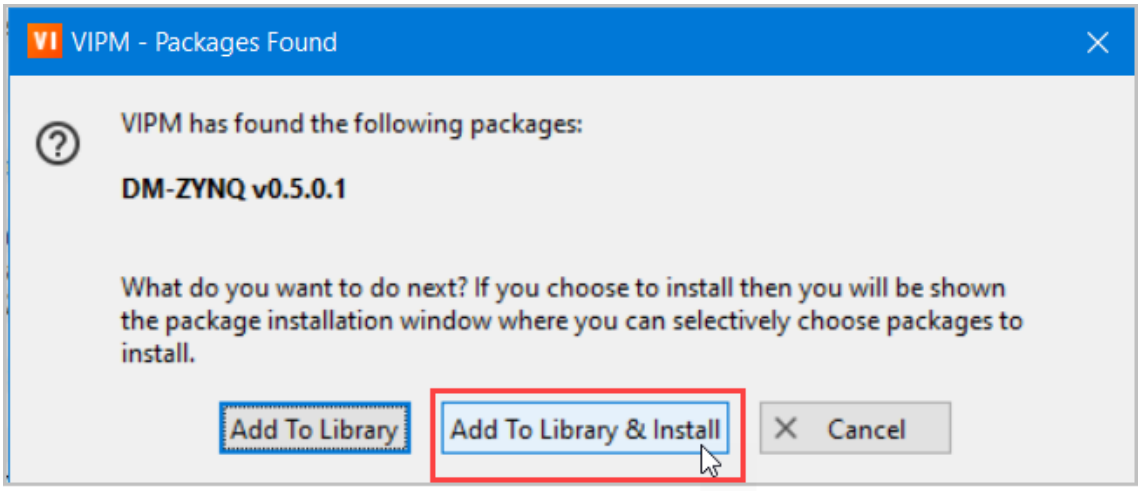


Figure 6. Click Add to Library and Install

The package will be installed. Note that LabVIEW will open in the background during the installation process, and it should not be closed during this time. When the package is installed, click *Finish* (Figure 7).

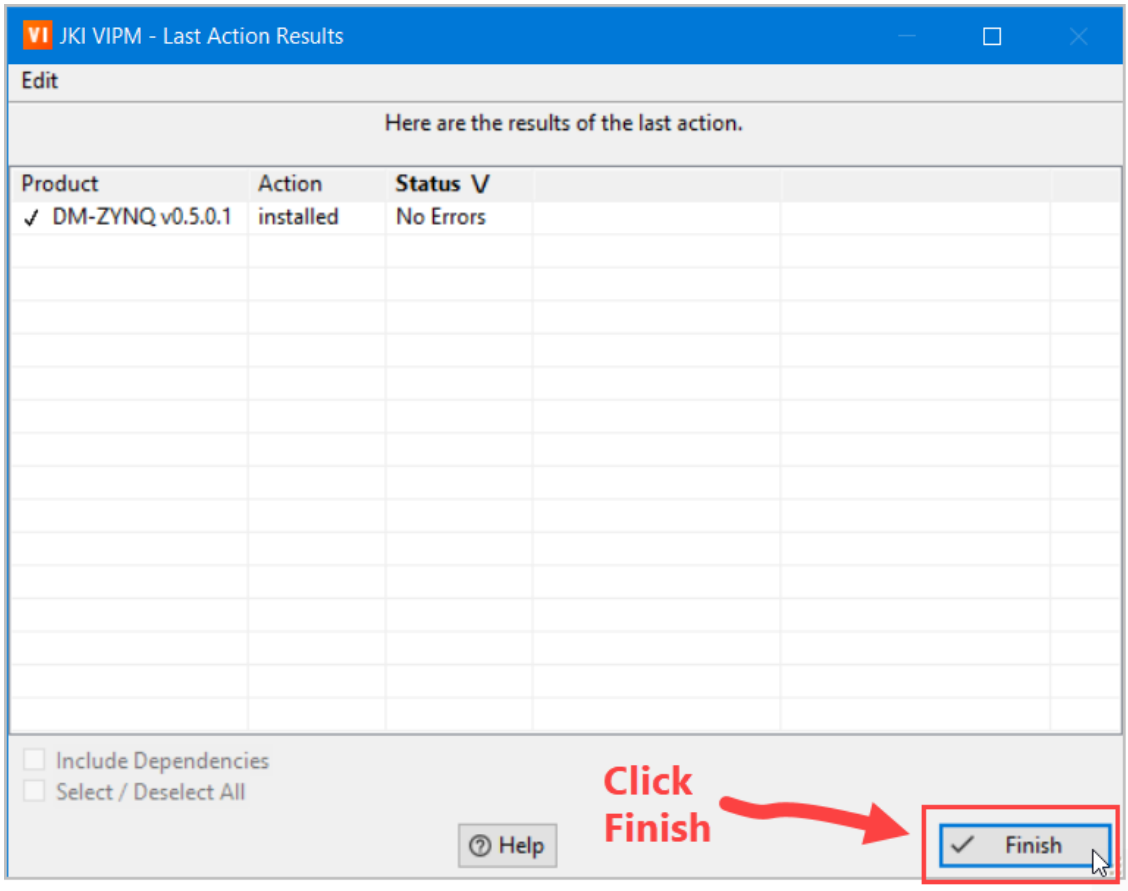


Figure 7. A dialog should appear indicating that the package has been installed with no errors.

In VIPM, verify that the package (DM-ZYNQ) can be seen in the list of installed packages, and double-click to open it (Figure 8):

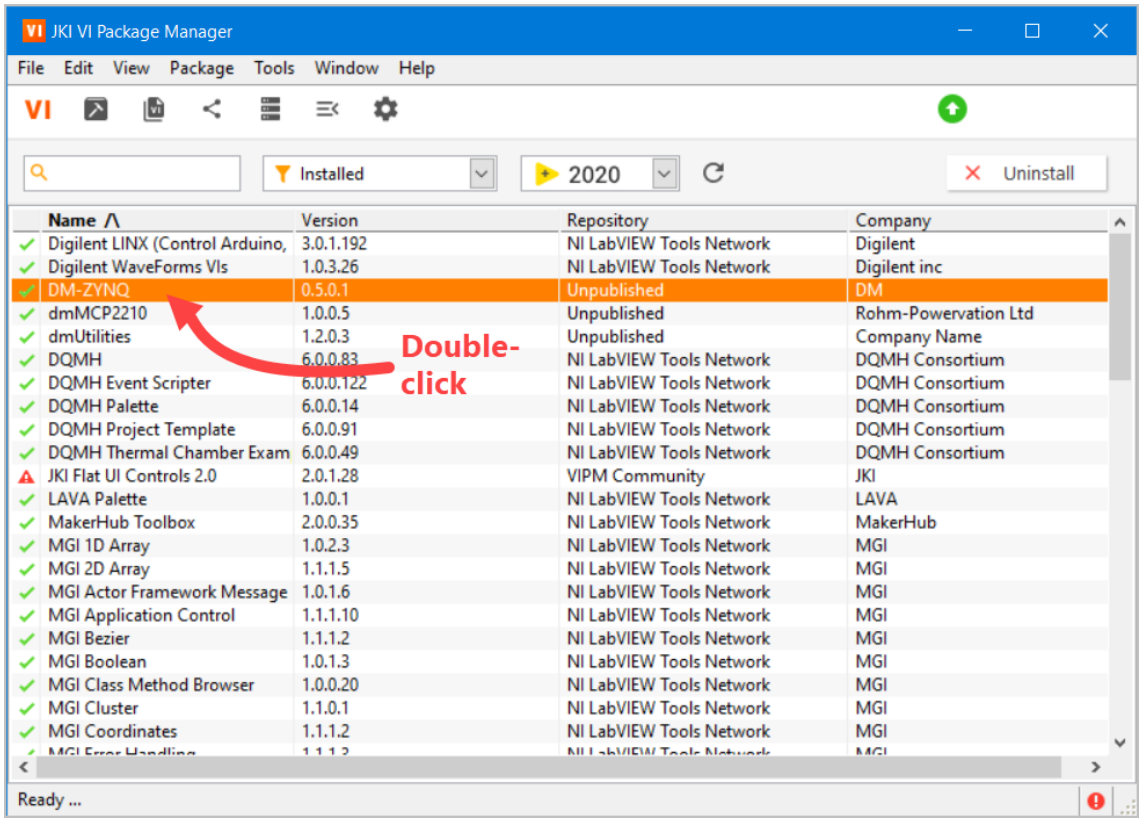


Figure 8. Verify that the DM-ZYNQ package is visible in the package manager, and double-click to open.

Click in *Show Examples* when the package opens (Figure 9):

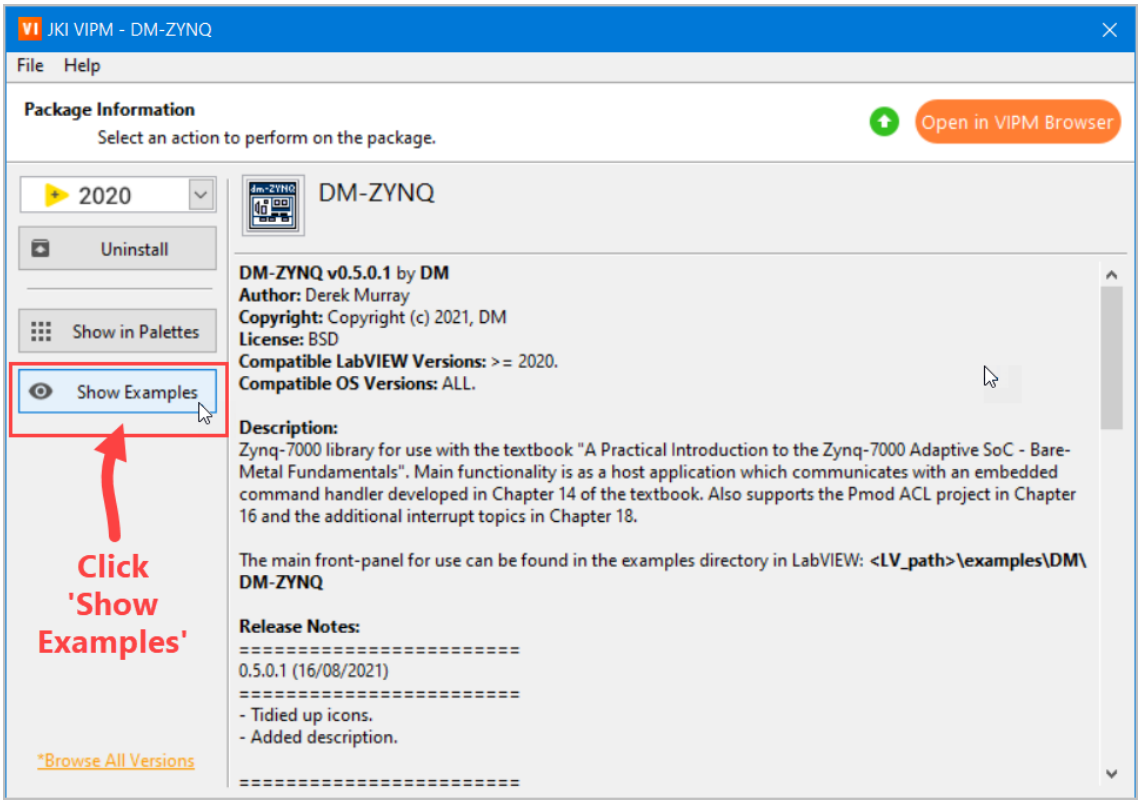


Figure 9. Click on Show Examples

The main example file should open up in Windows Explorer. Double-click it to open it (Figure 10):

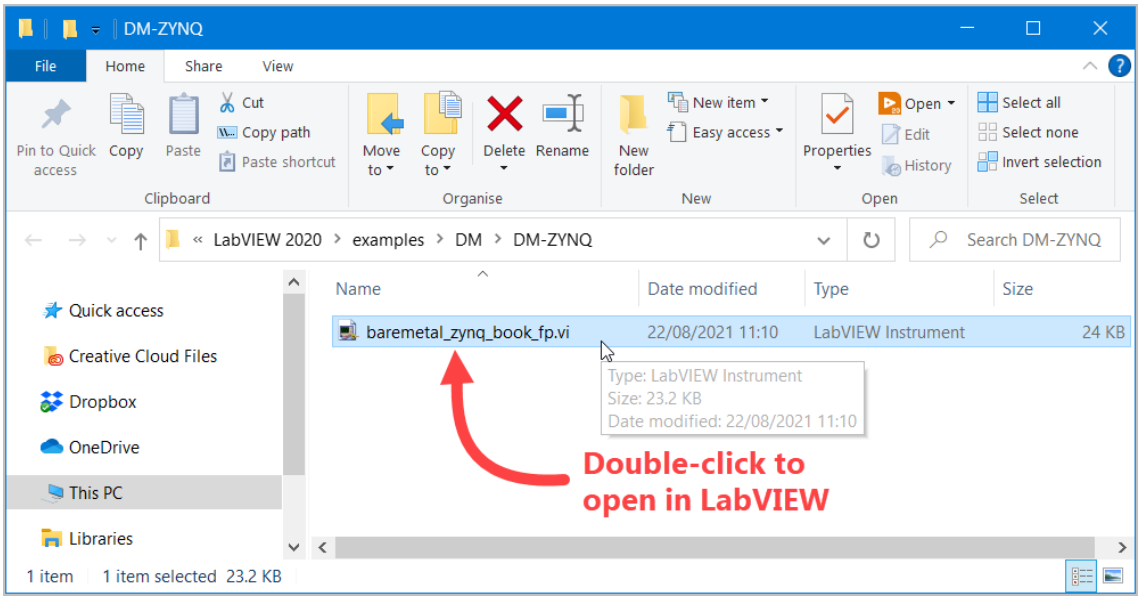


Figure 10. Double-click to open the example

When the example loads up, select the correct COM port for the development platform. (The COM port will be system-dependent.) The Baud rate and time-out can be left at their default values (Figure 11).

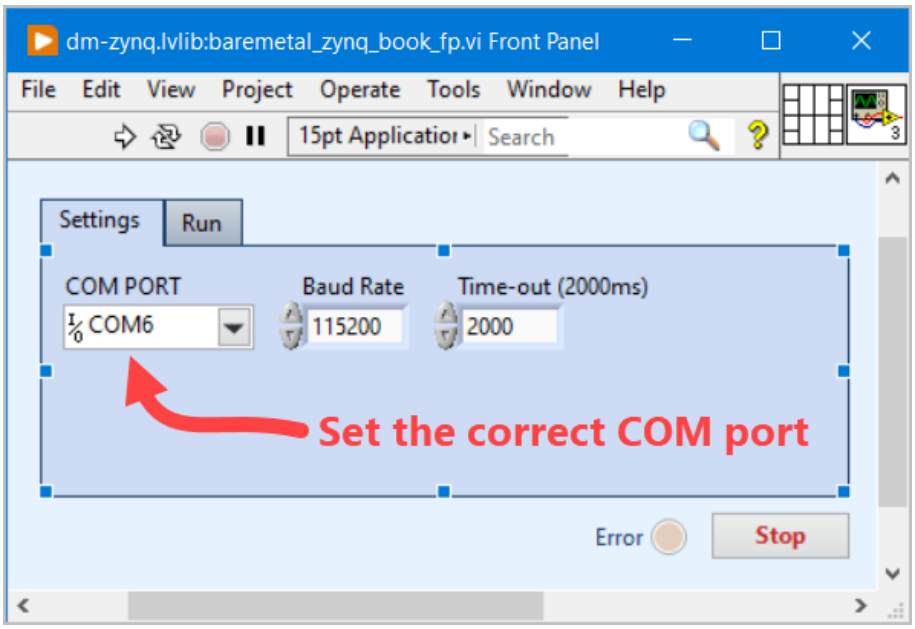


Figure 11. Set the correct COM Port

Switch to the Run tab to launch the program. Refer to the textbook for use cases (Figure 12):

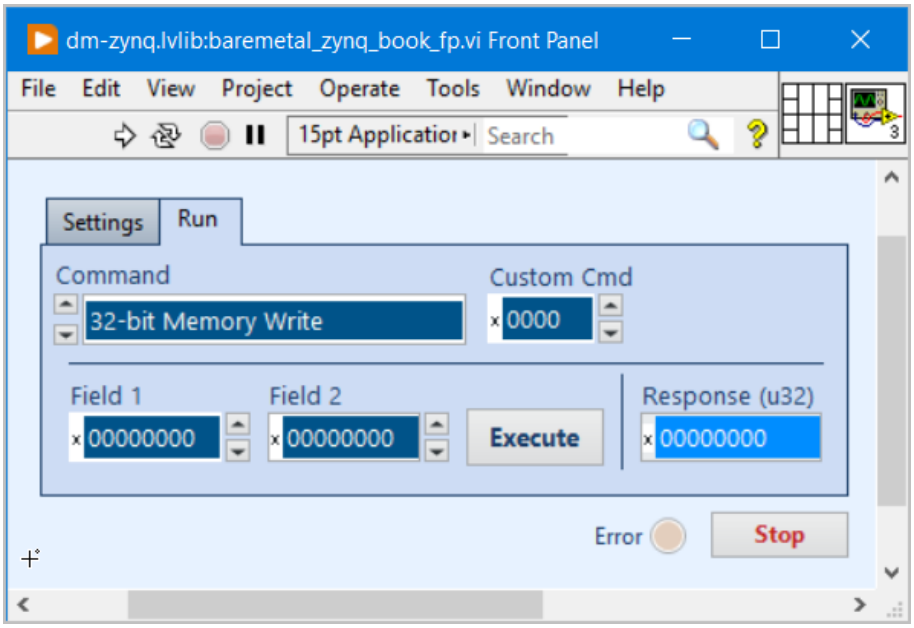


Figure 12. Run the application, as detailed in the textbook

To view the low-level package sub-vi's, right-click on any block diagram, and select DM-ZYNQ (Figure 13).

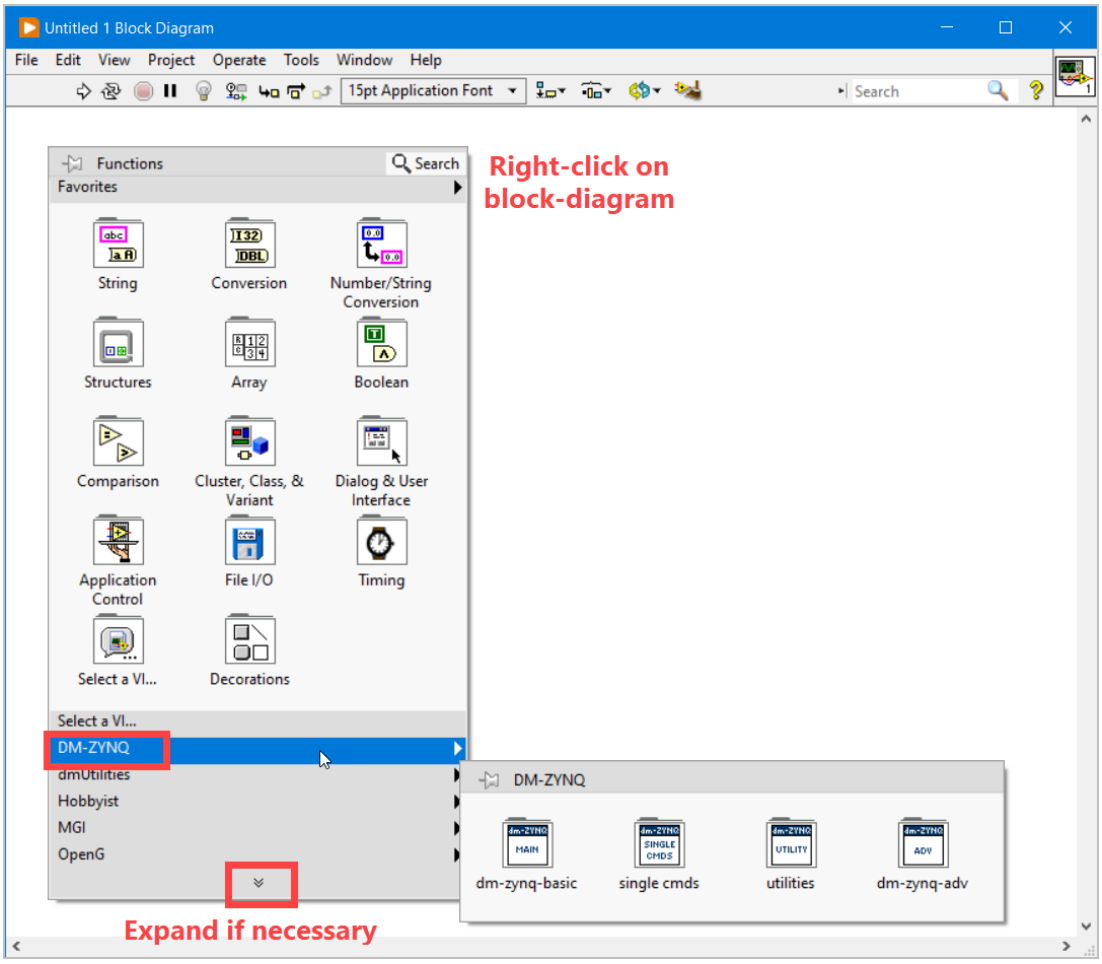


Figure 13. The related sub-vi's can be found in the DM-ZYNQ palette