BDE-RFM216-IN USER GUIDE

Introduction

This user guide is for BDE-RFM216-IN, a Wireless Module based on TI CC1312R.
It is a quick start guide for how to connect the module with the evaluation board BDE-EVB07 or with the TI launchpad, and how to build the first application. It also shows a demo for how BDE-RFM216-IN receives a data packet that is sent from another BDE-RFM216-IN.

Get Ready

The following tools are recommended to develop with BDE-RFM216-IN.

Hardware tools:

- Two modules of BDE-RFM216-IN (BDE-RFM216-IN-BDE Technology Inc. (bdecomm.com))
- Two BDE-ADP05 V1.0 (adaptor board)
- PC or Laptop
- Two BDE-EVB07 (BDE-EVB07-BDE Technology Inc. (bdecomm.com))

  or
- Two TI Launchpad (LAUNCHXL-CC13X2R1 Evaluation board | TI.com)
- USB cable for power supply and debugging

Software tools:

- Terminal software such as CCS, IAR.
- CCS download
- Software Development Kit (SDK)

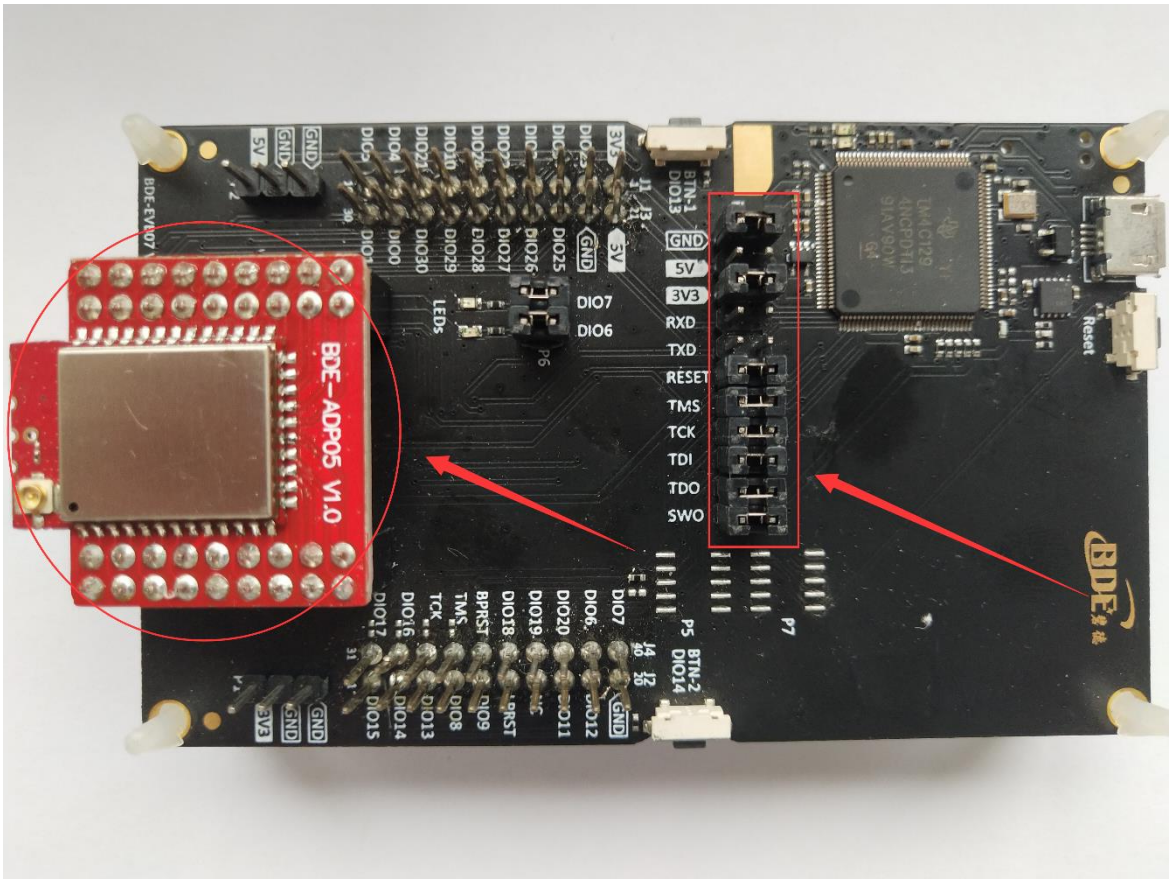
Build Your First Application

Once have the Hardware and Software tools in place, please following the following steps:

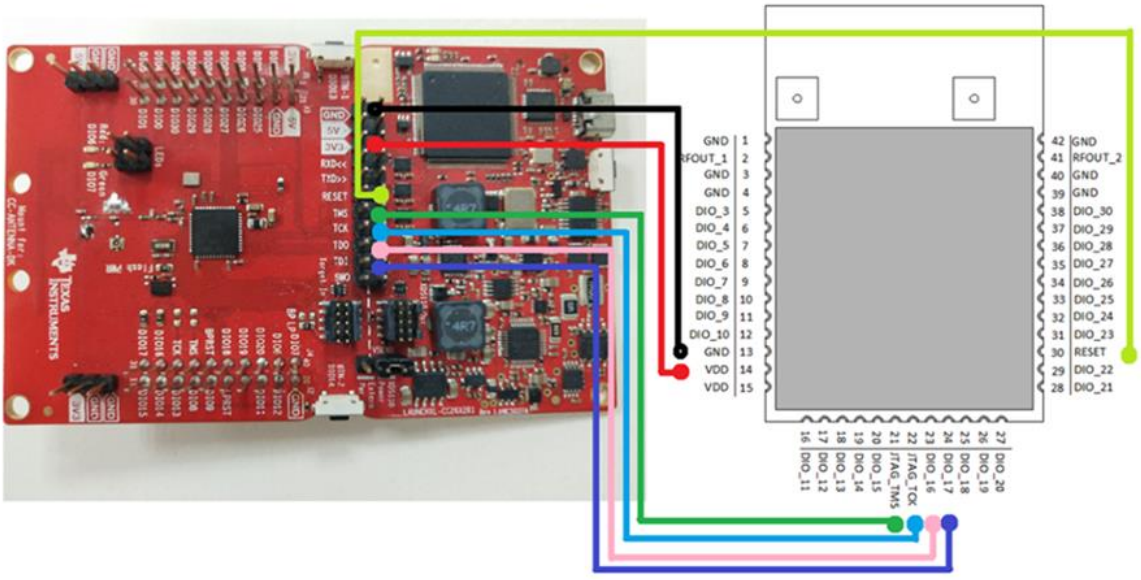
A. Connect the Hardware

If chose EVB07:

Use USB cable to connect EVB07 and PC or laptop. Plug BDE-RFM216-IN with the adaptor board into the dev board and connect all the pins with Jumpers as the following picture shows.



If chose TI Launchpad:
The connection is as following.



Connection Designator	BDE-RFM216-IN	LaunchPad Pin
3V3 Power	VDD	3V3
Ground	GND	GND
RST	RST	RESET
TMS	TMS	TMS
TCK	TCK	TCK
TDO	DIO16	TDO
TDI	DIO17	TDI

Optional: TDO，TDI，RXD，TXD

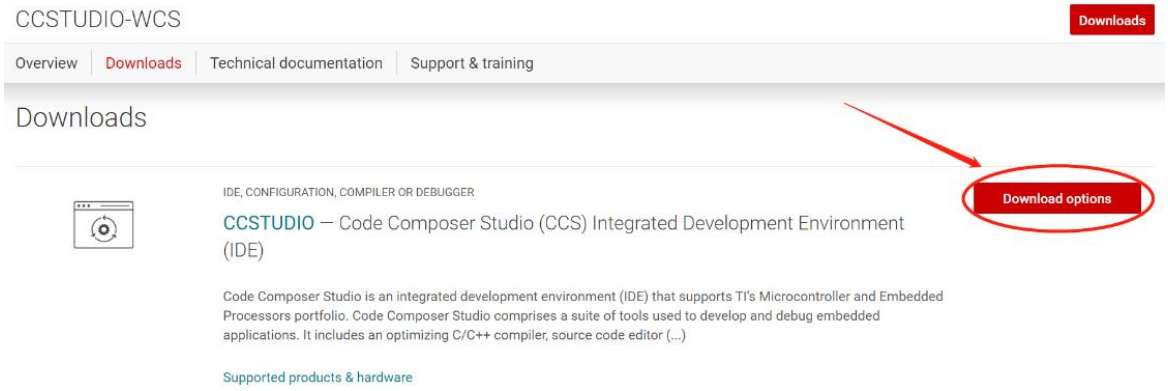
B. Build the Application

- **Download and install the CCS and SDK**

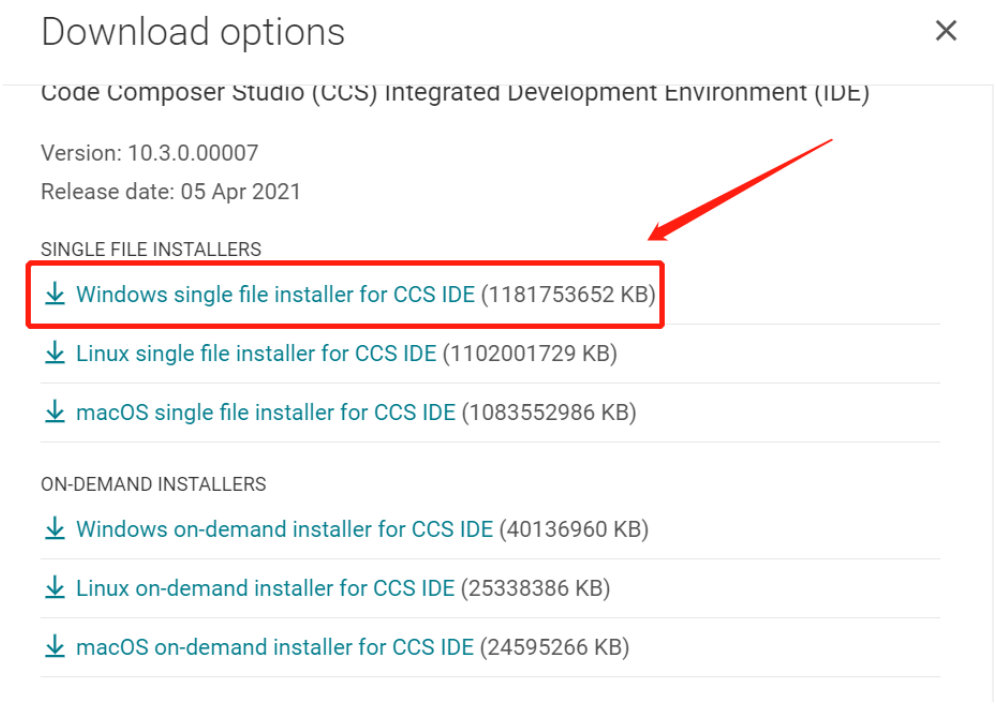
  From the above links, follow the instructions in the following steps to download and install the CCS and SDK.

- **CCS Installation**

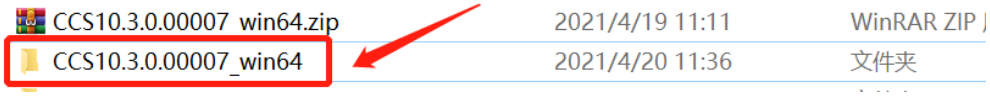
1. Click on this option



2. Select an option to download CCS

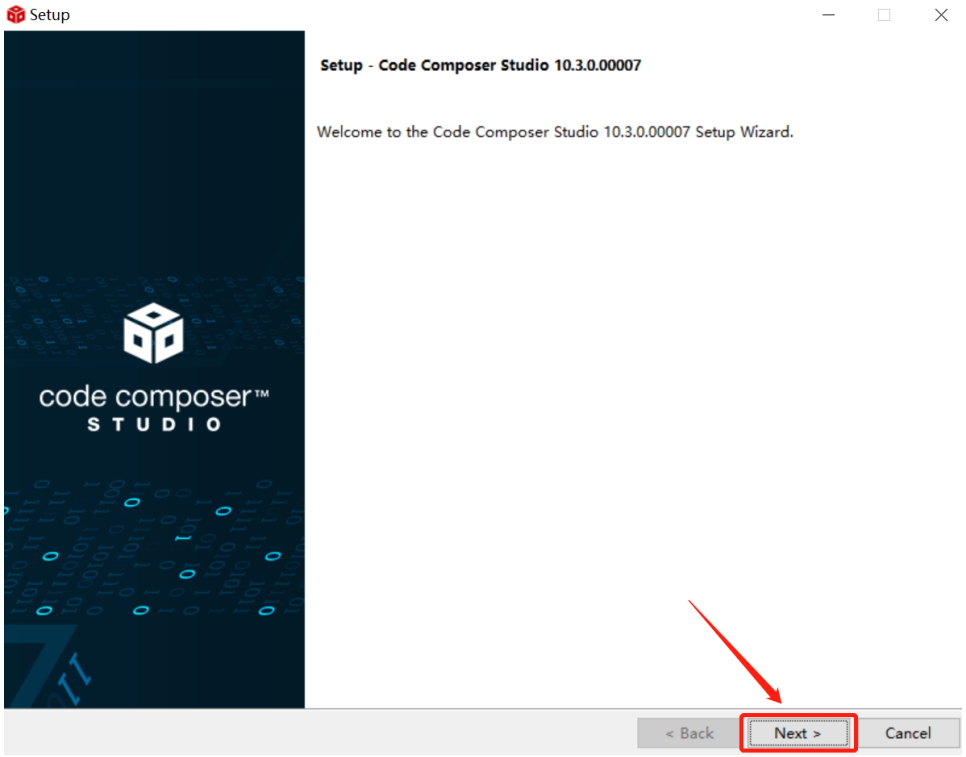


3. Unzip the package to a local disc

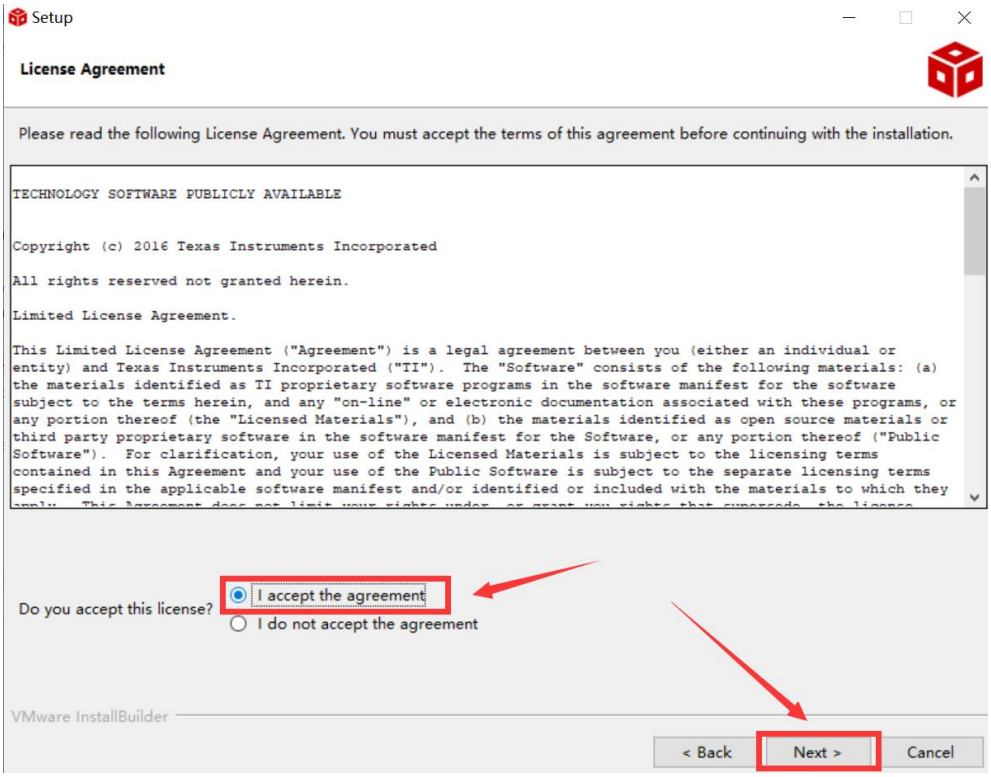


4. Click the setup of CCS

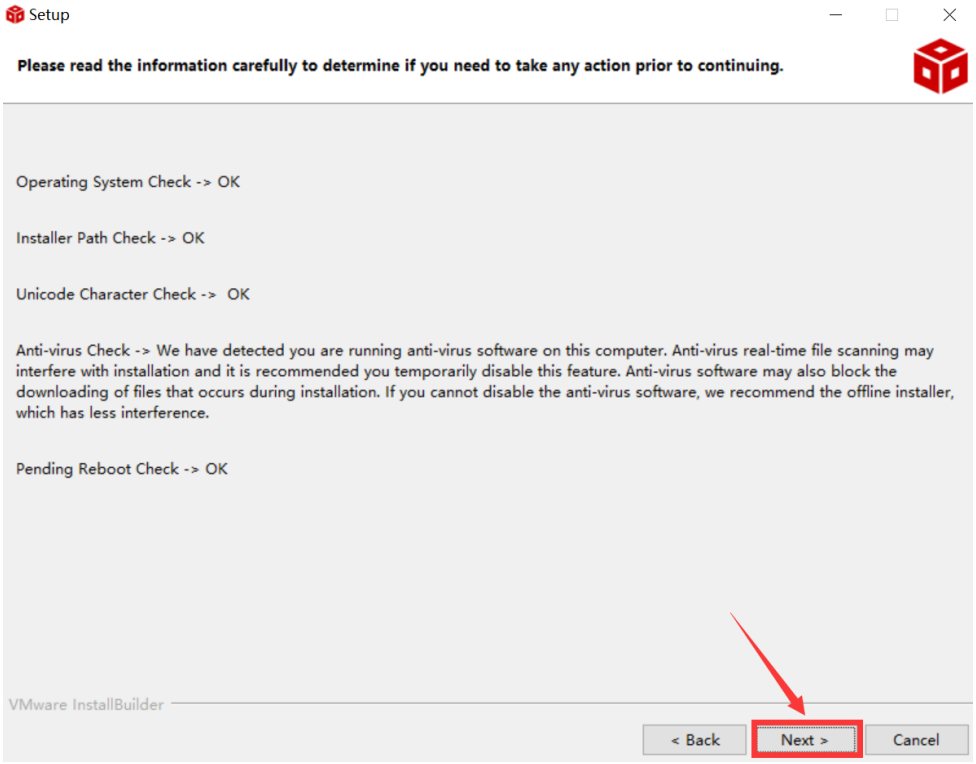
5. Click “Next”



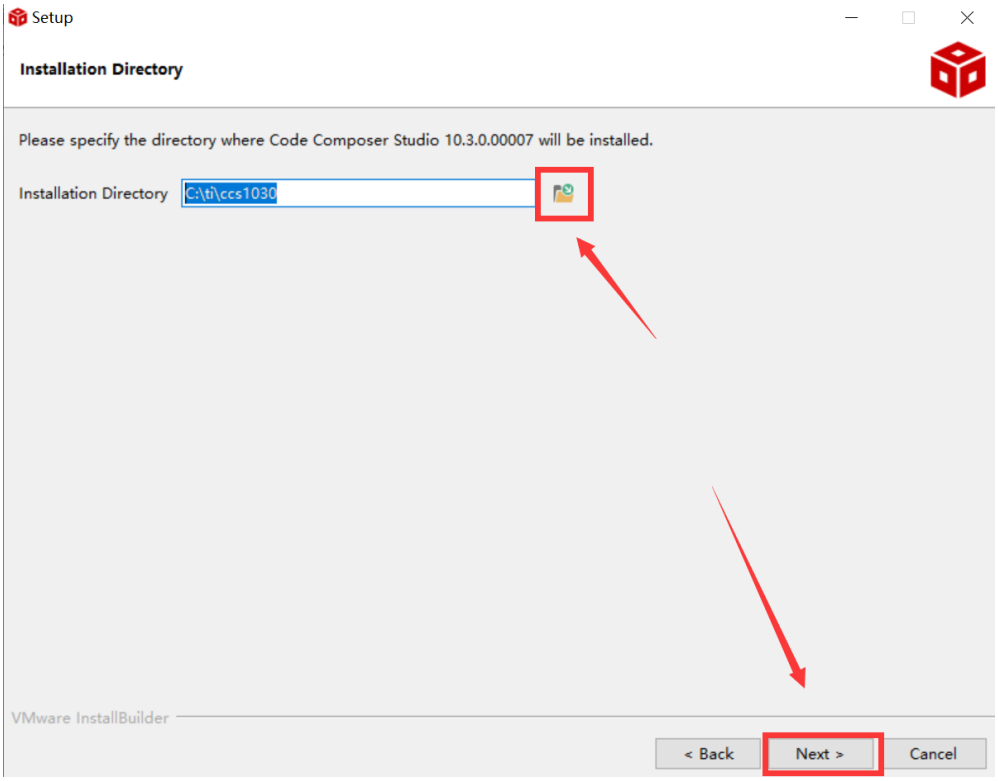
6. Select the default option



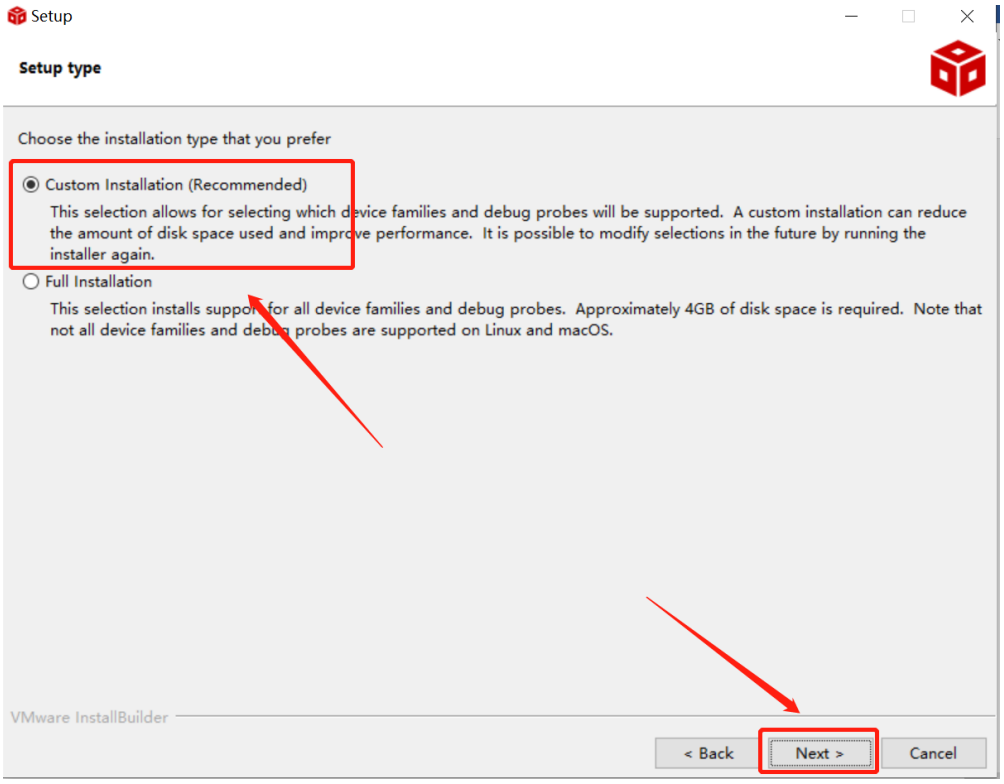
7. Click “Next”



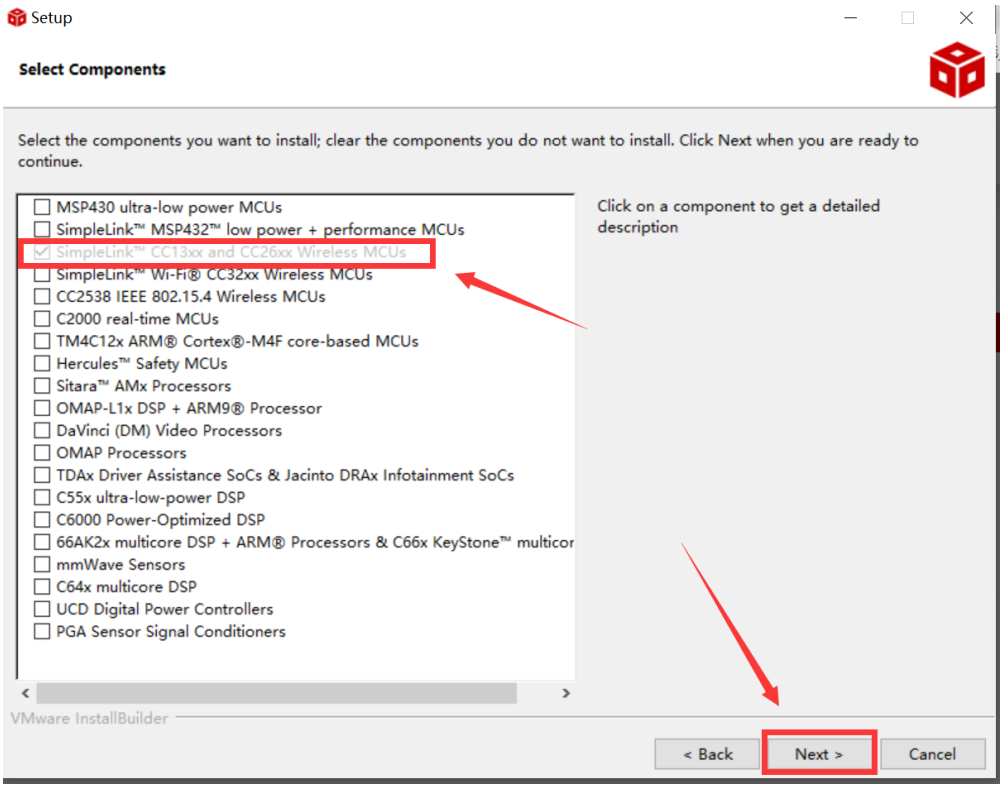
8. Select the Installation Directory



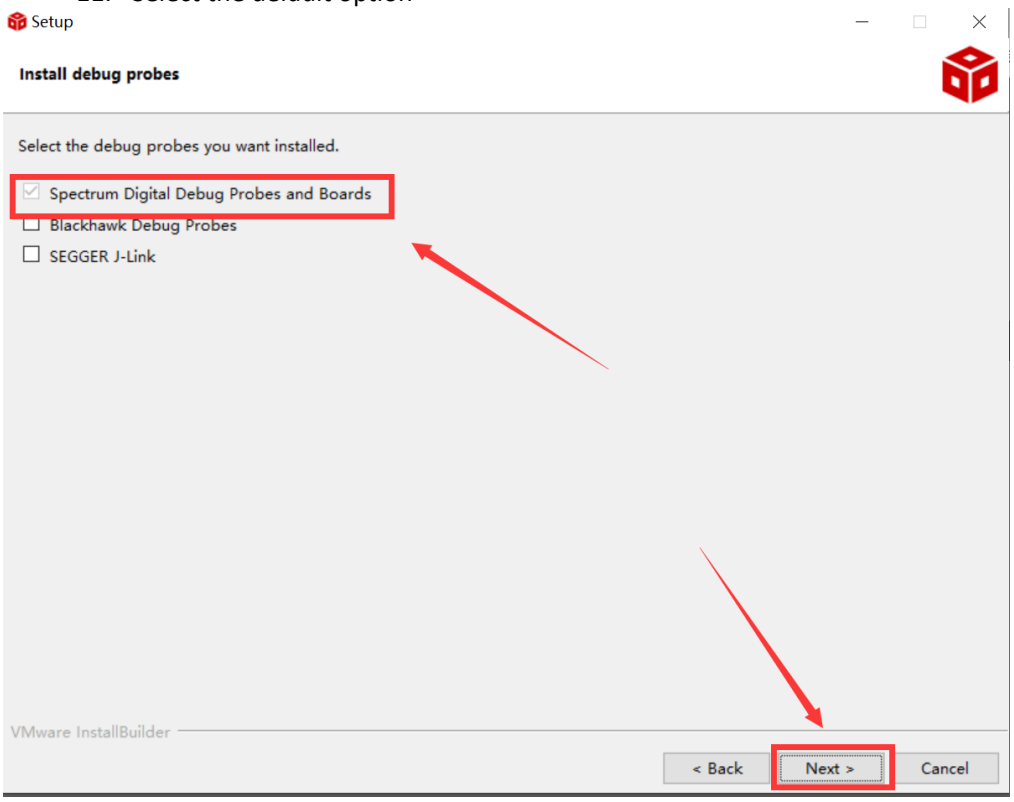
9. Select the default option



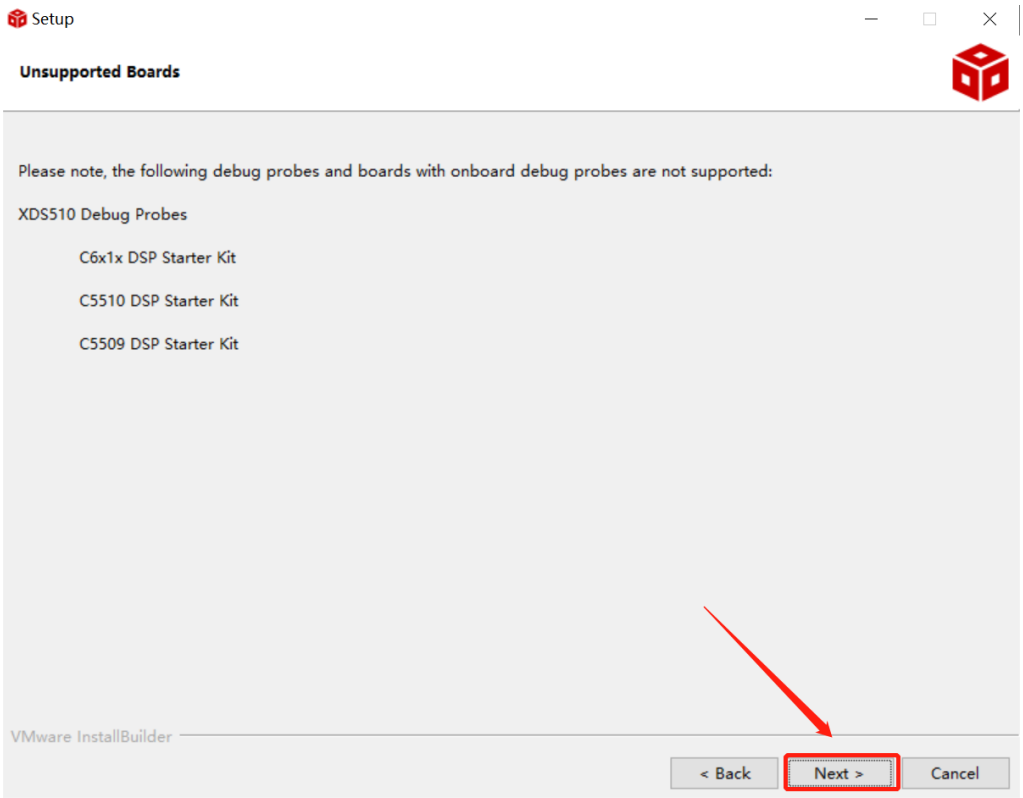
10. Select the component



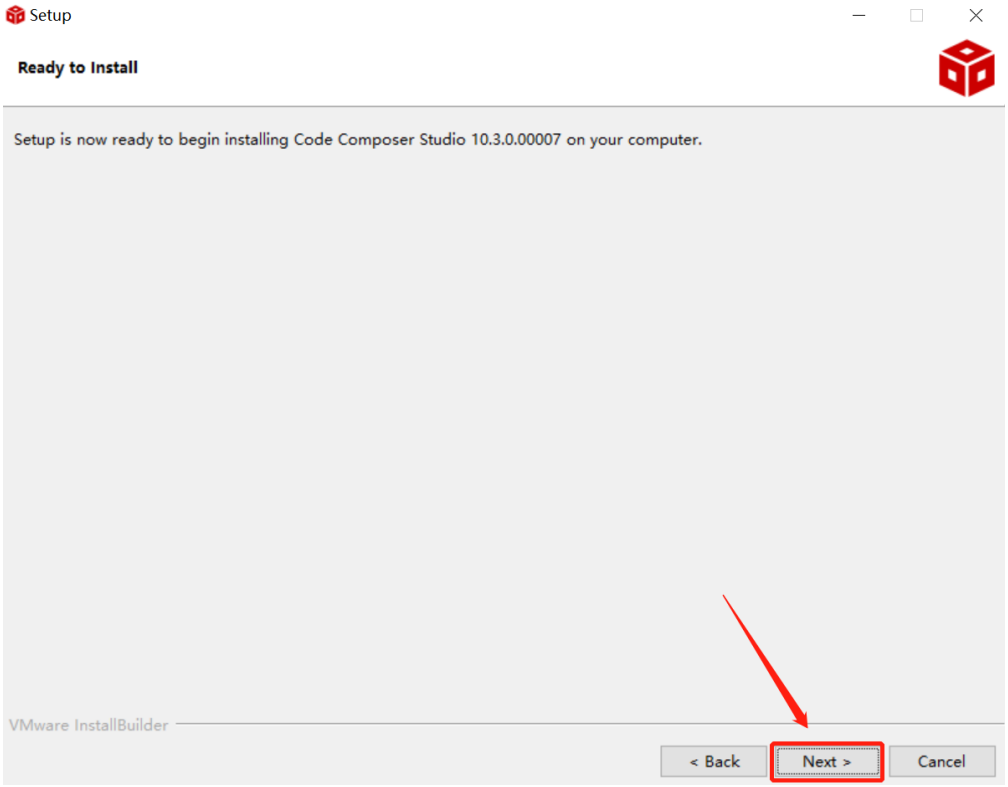
11. Select the default option



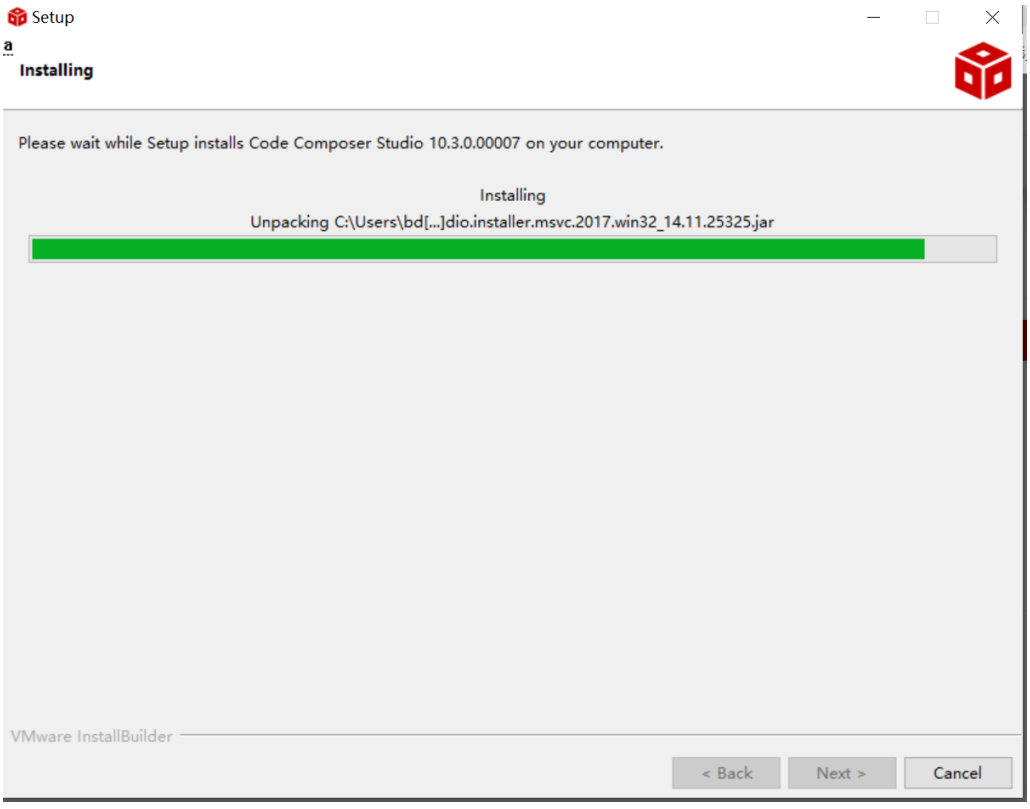
12. Click “Next”



13. Click “Next”

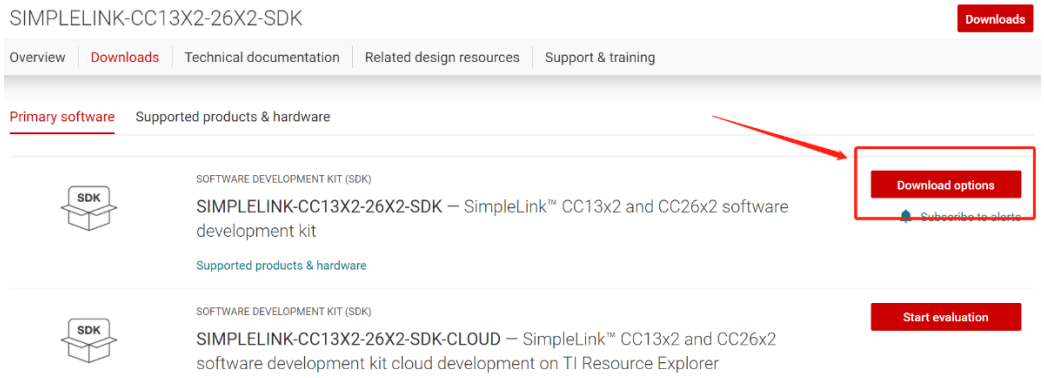


14. Waiting for installation to complete

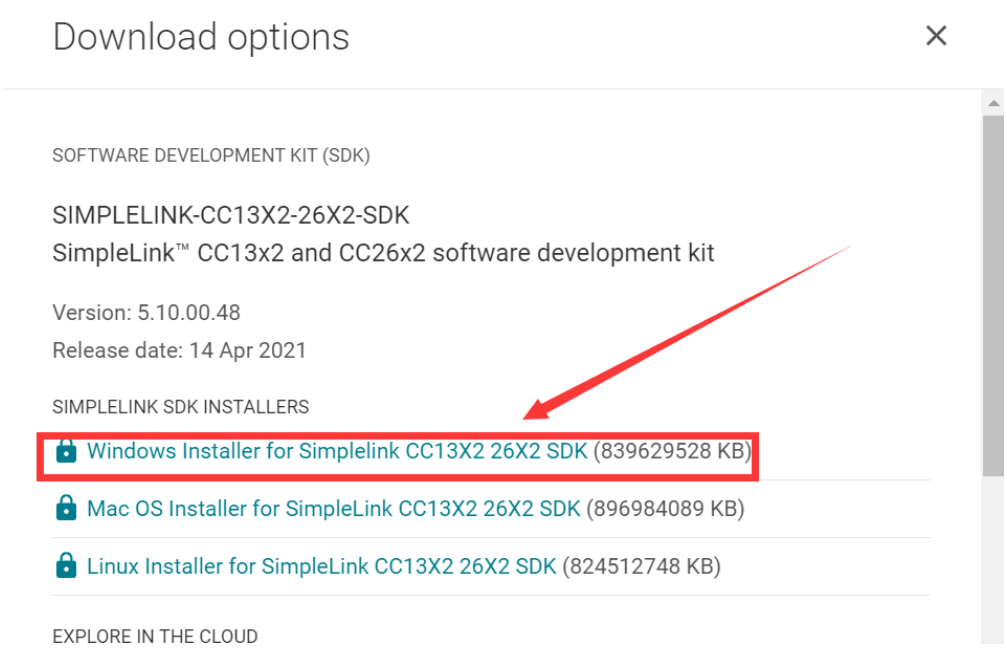


- **Software Development Kit (SDK) installation**

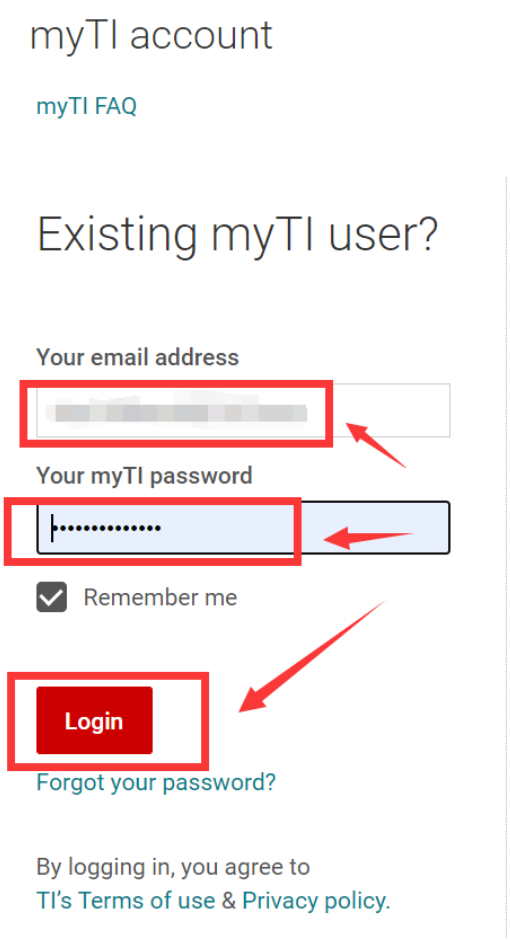
1. Click on this option



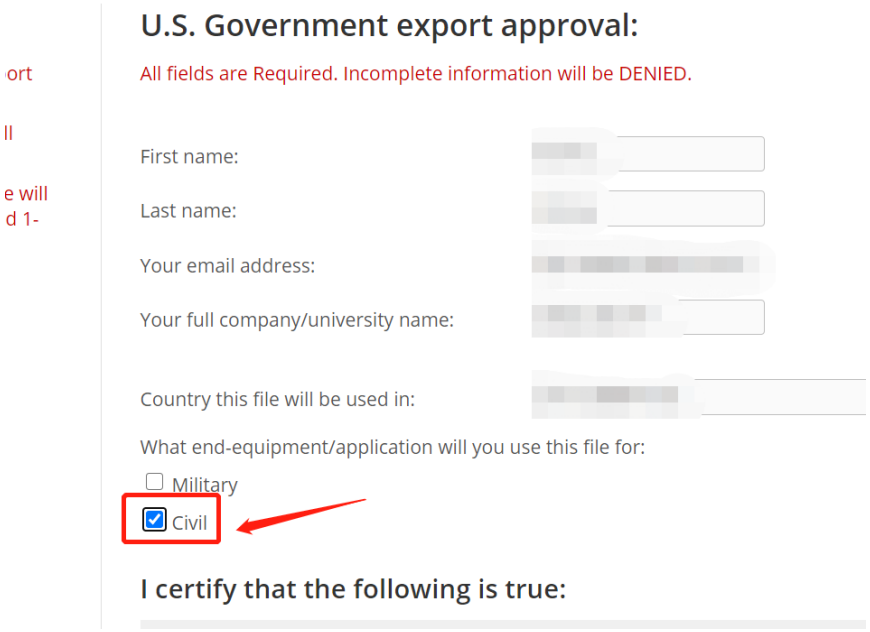
2. Select an option you need to download SDK



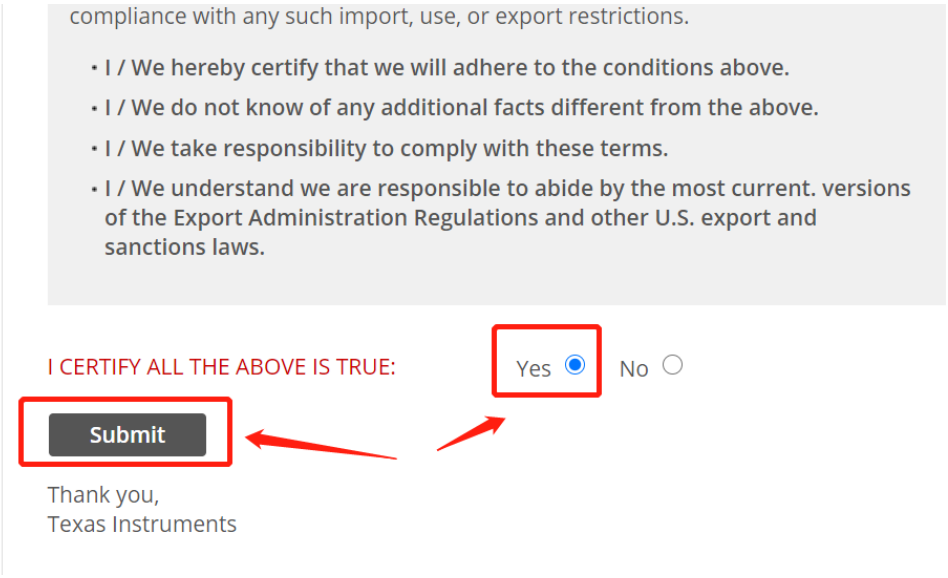
3. Log in to your TI account, if you are a new user, register a TI account first



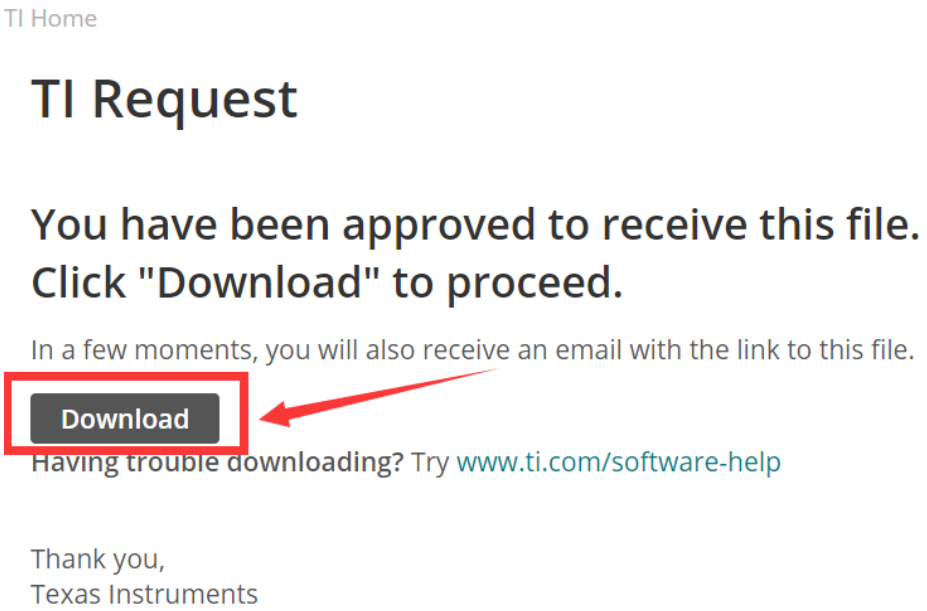
4. Select "civil" if your application is for civil use



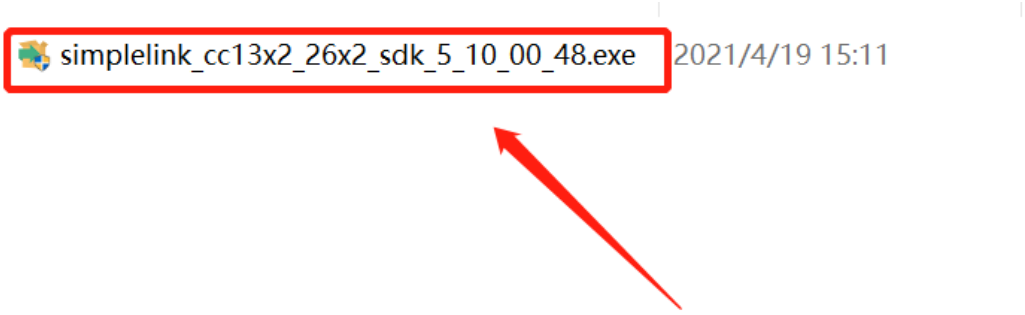
5. Select “Yes” and submit



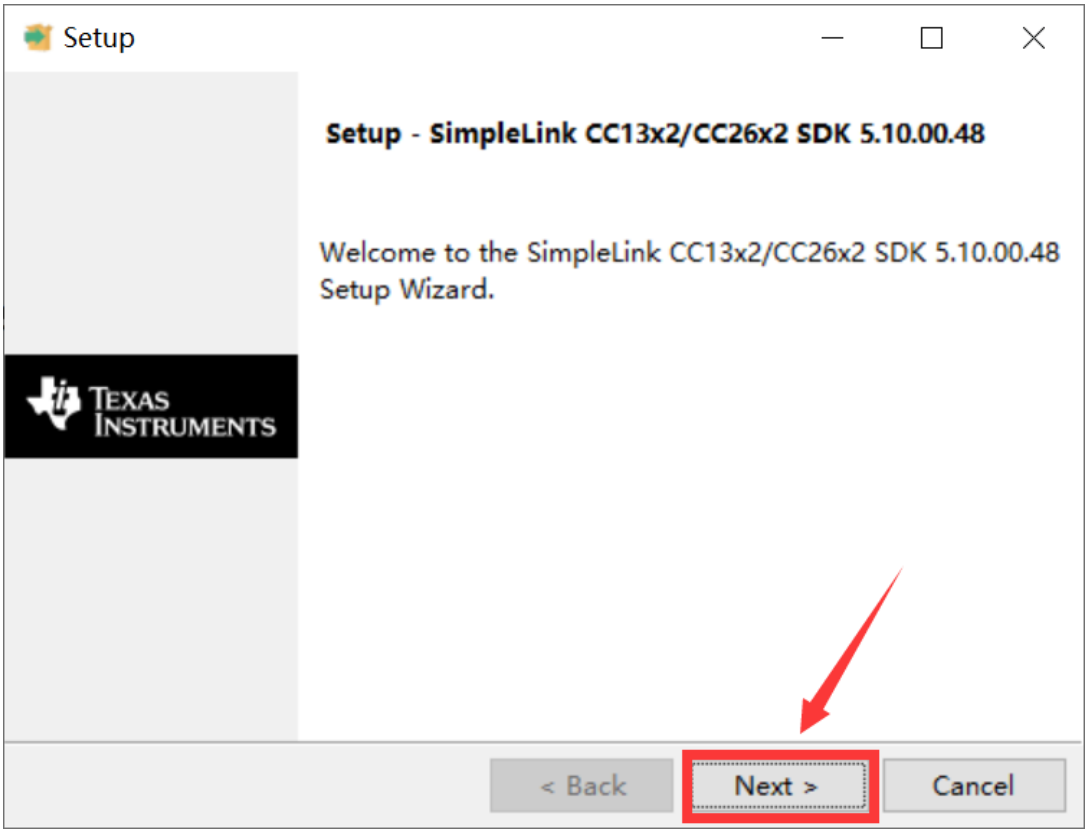
6. Download SDK



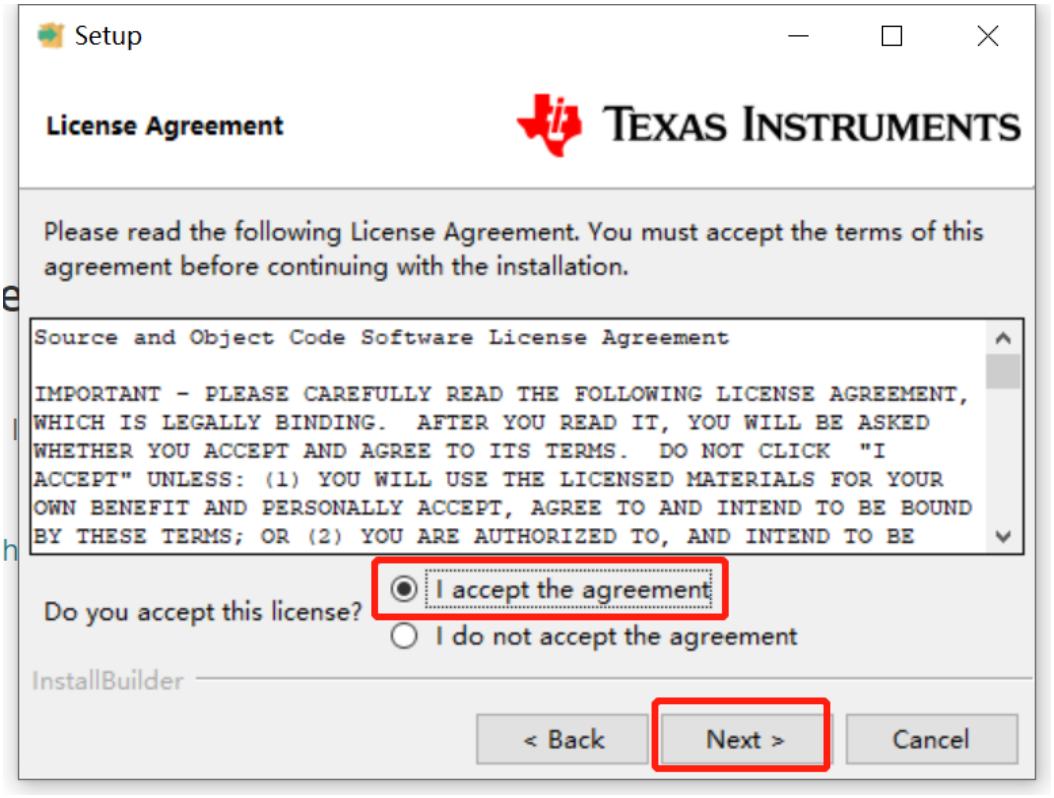
7. Installation



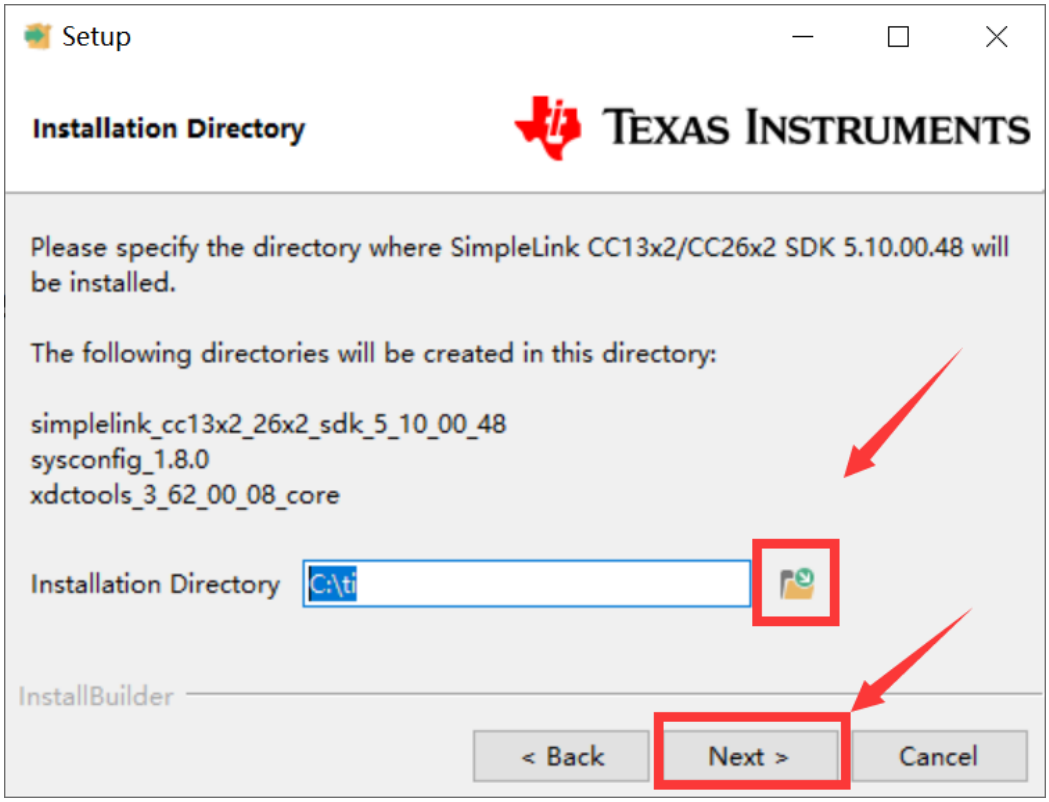
8. Click “Next”



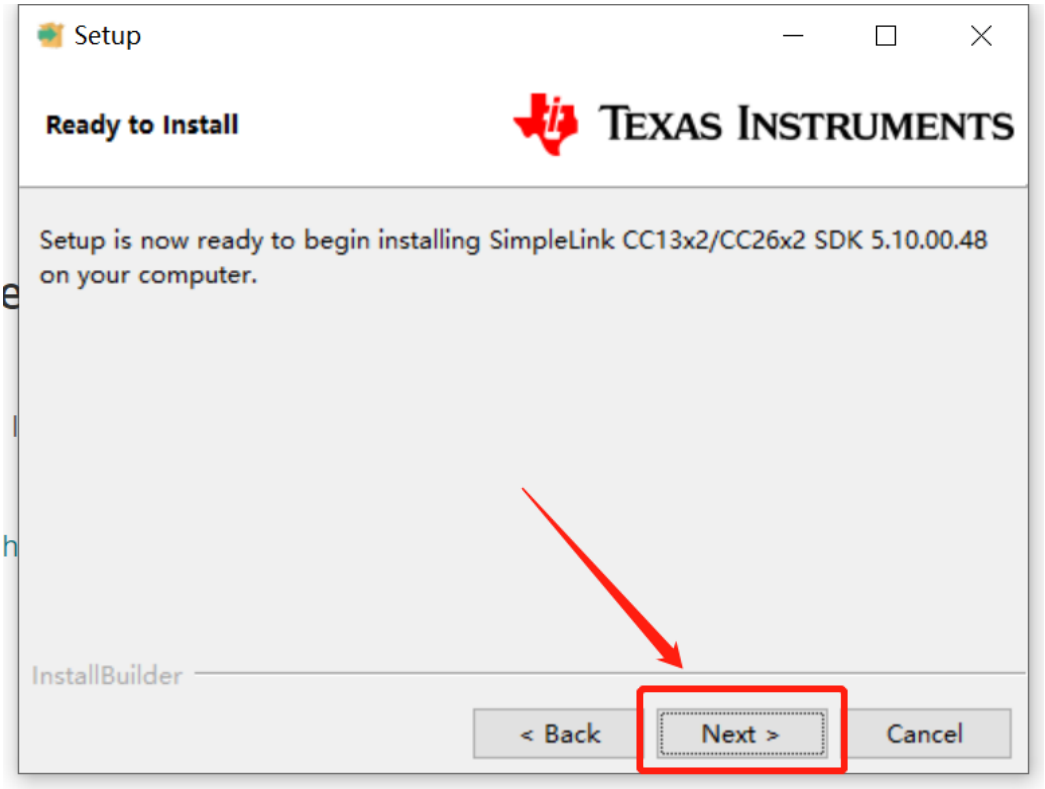
9. Select the default option



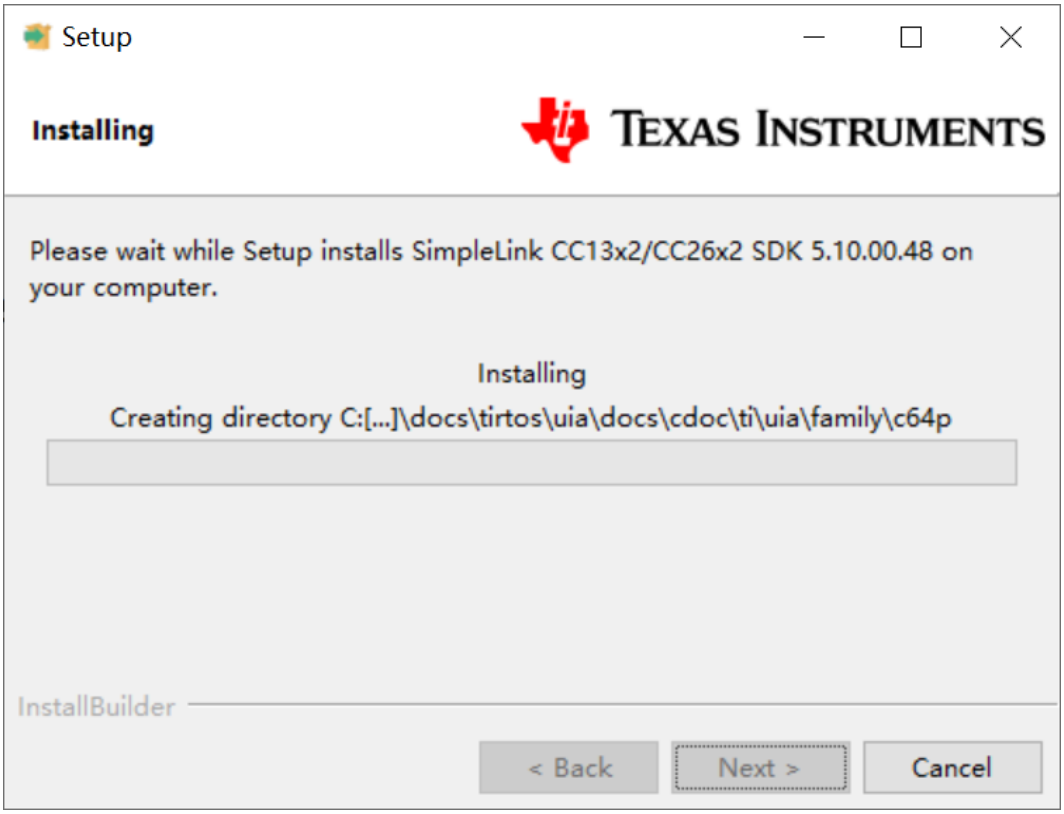
10. Select the Installation directory



11. Click “Next”

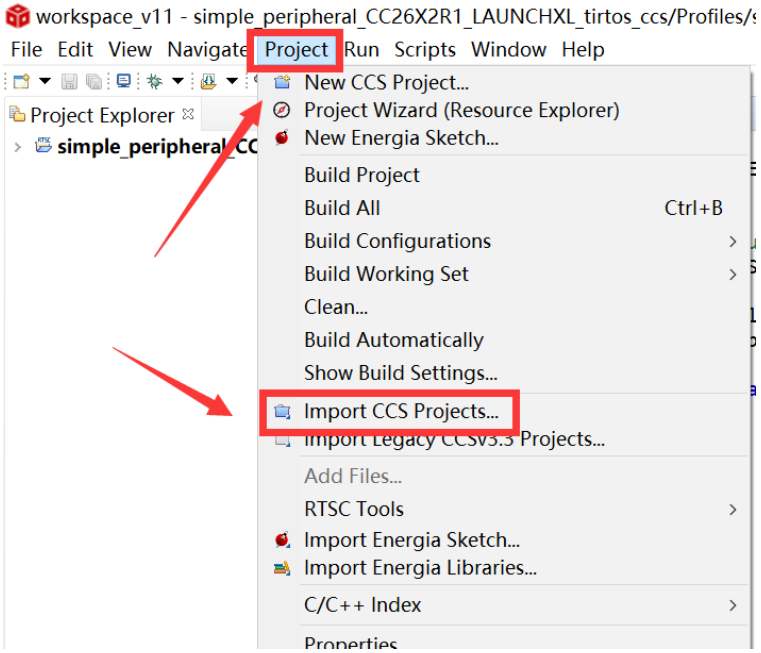


12. Waiting for installation to complete

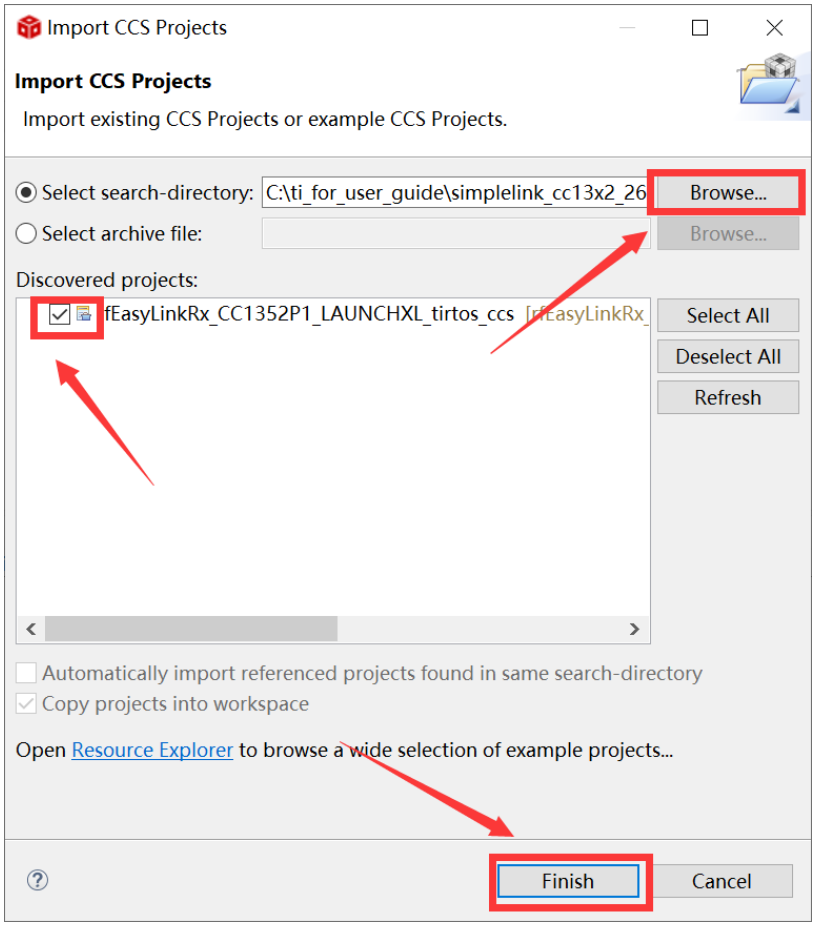


- Run an example/demo code

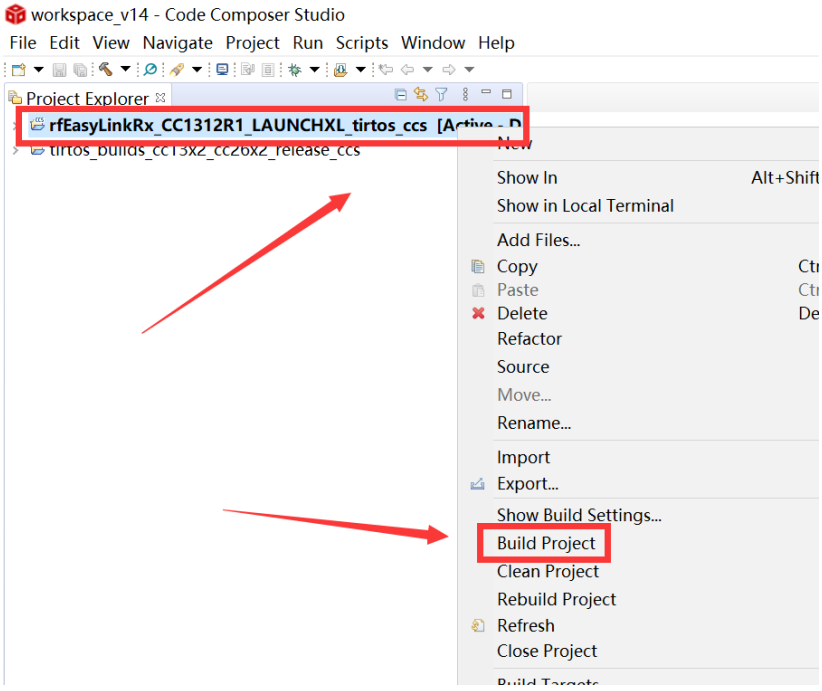
1. For the first module, find the option named “Import CCS project…”



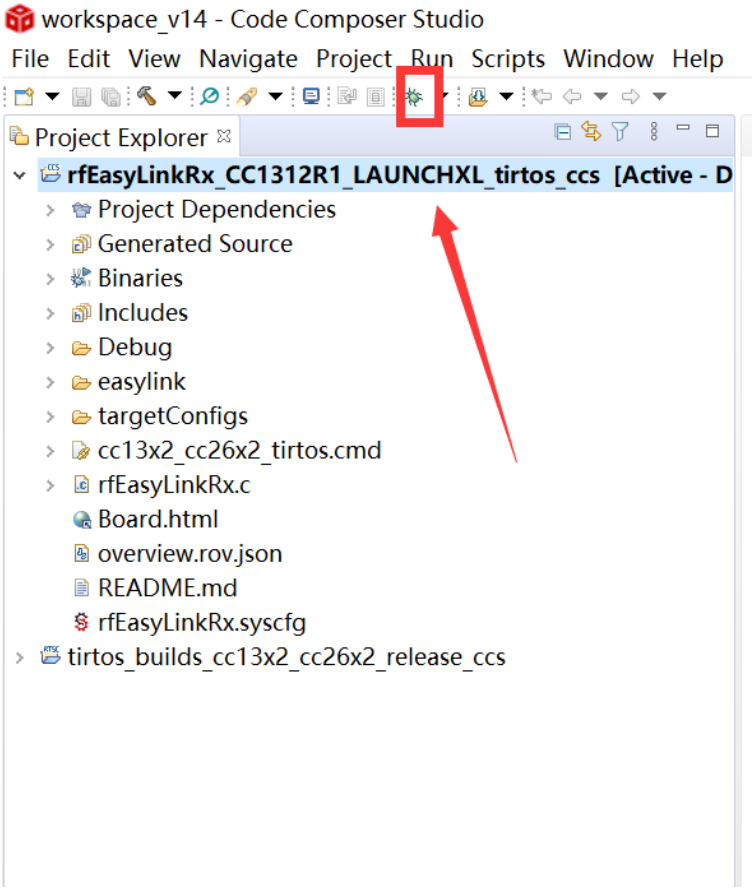
2. According to the following path to find the sending end project: ti\simplelink_cc13x2_26x2_sdk_5_10_00_48\examples\rtos\CC1312R1_LAUNCHXL\ easylink\ rfEasyLinkRx\tirtos\ccs



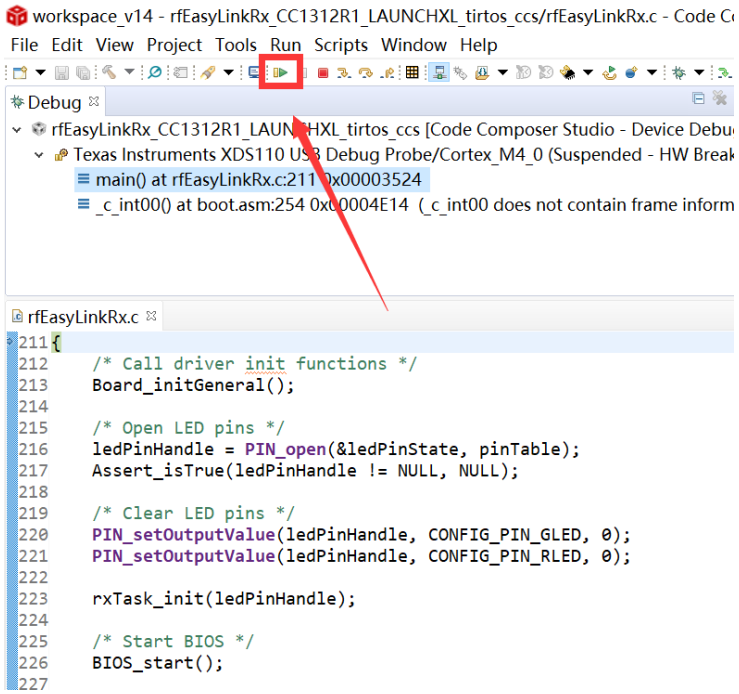
3. Right Click the project to build the receiving end project



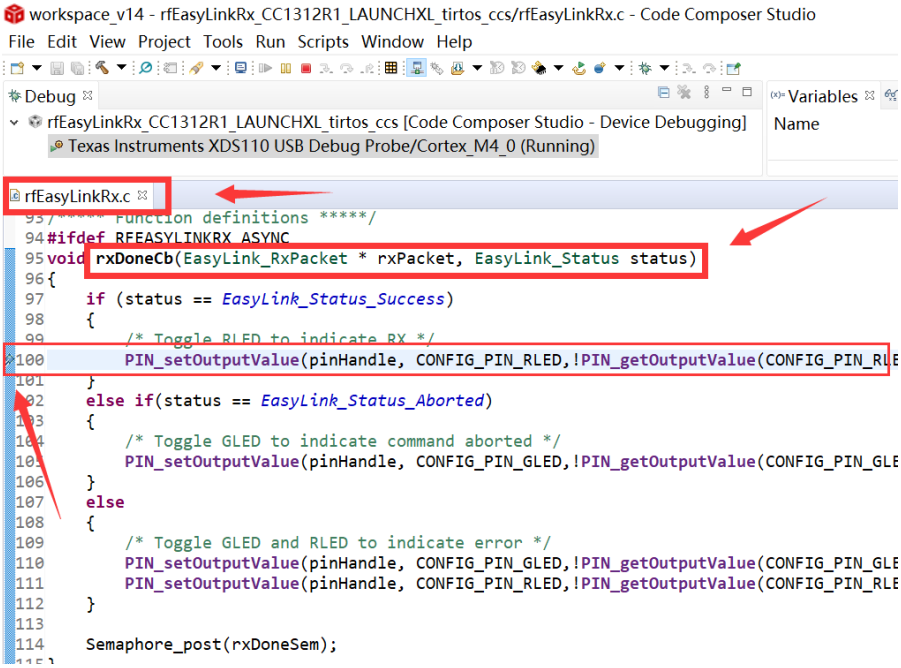
4. Click this bug icon (means download and debugging)



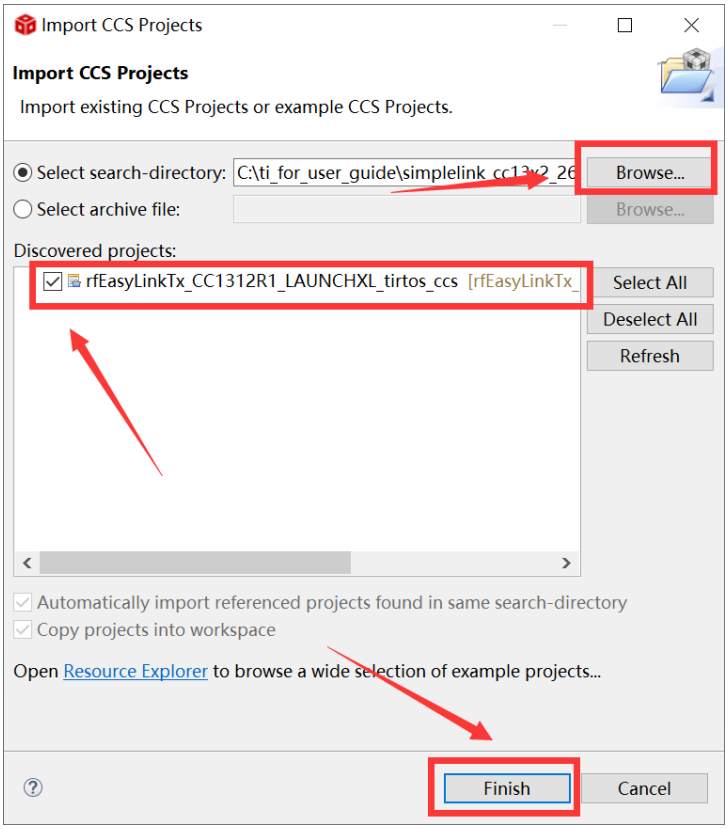
5. Click on this option to start debugging



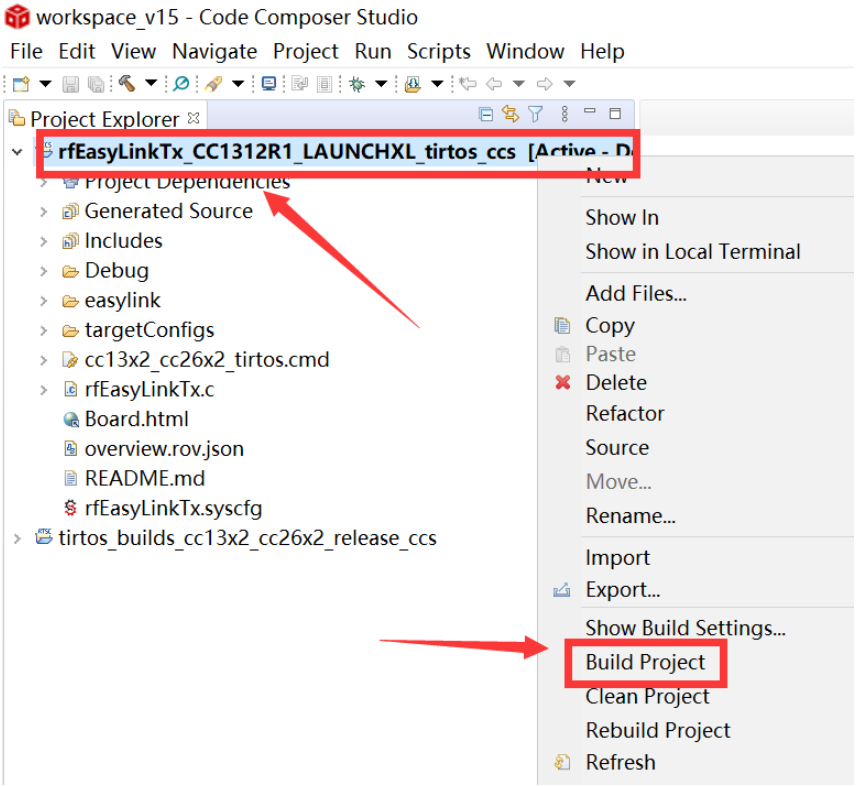
6. Find the file which is named “rfEasyLinkRx.c” and the function which is named “rxDoneCb”, and set a breakpoint at the line as the arrows shows



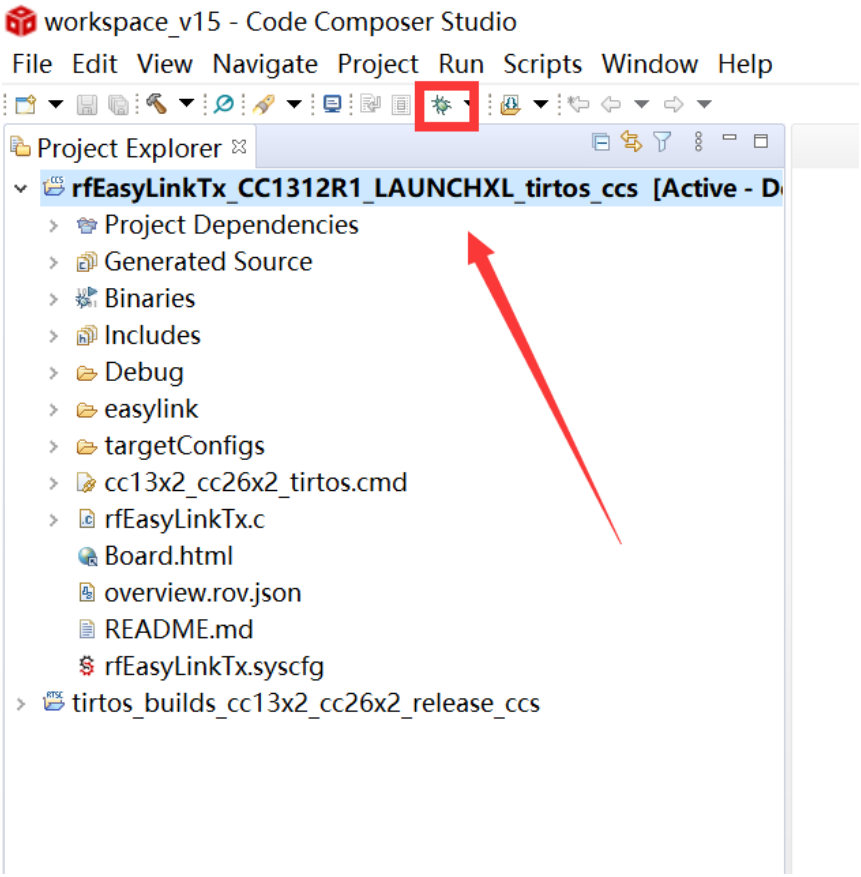
7. For another module, according to the following path to find the sending end project:
ti\simplelink_cc13x2_26x2_sdk_5_10_00_48\examples\rtos\ CC1312R1_LAUNCHXL\ easylink\ rfEasyLinkTx\tirtos\ccs



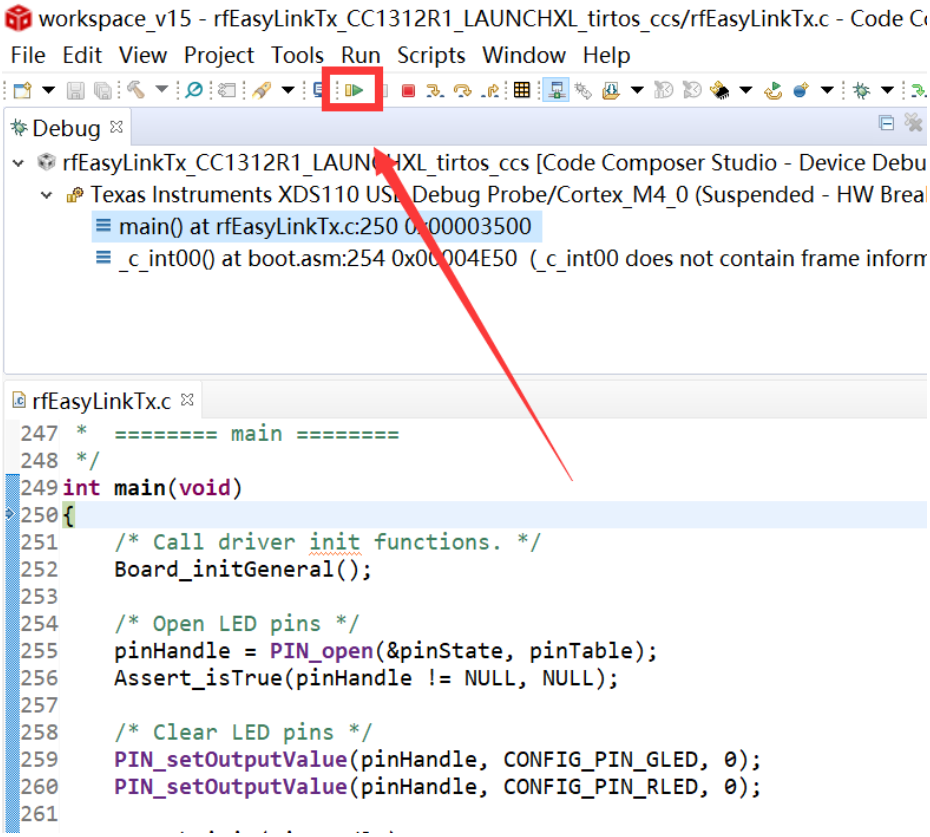
8. Right Click the project to build the sending end project



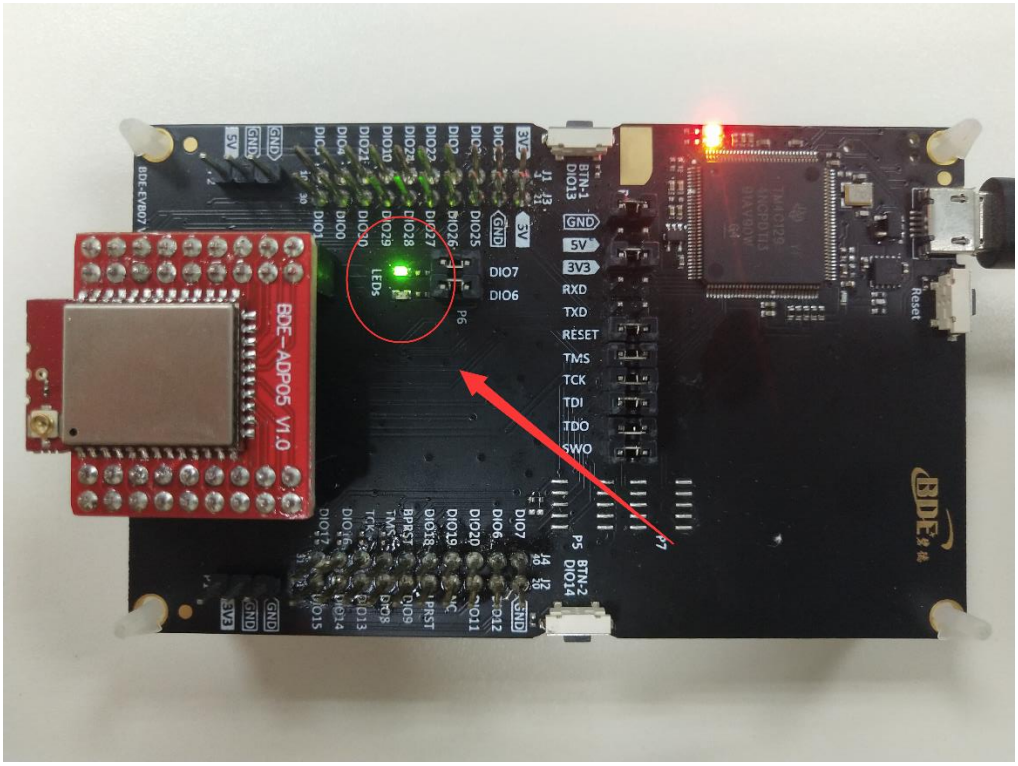
9. Click this bug icon (means download and debugging)



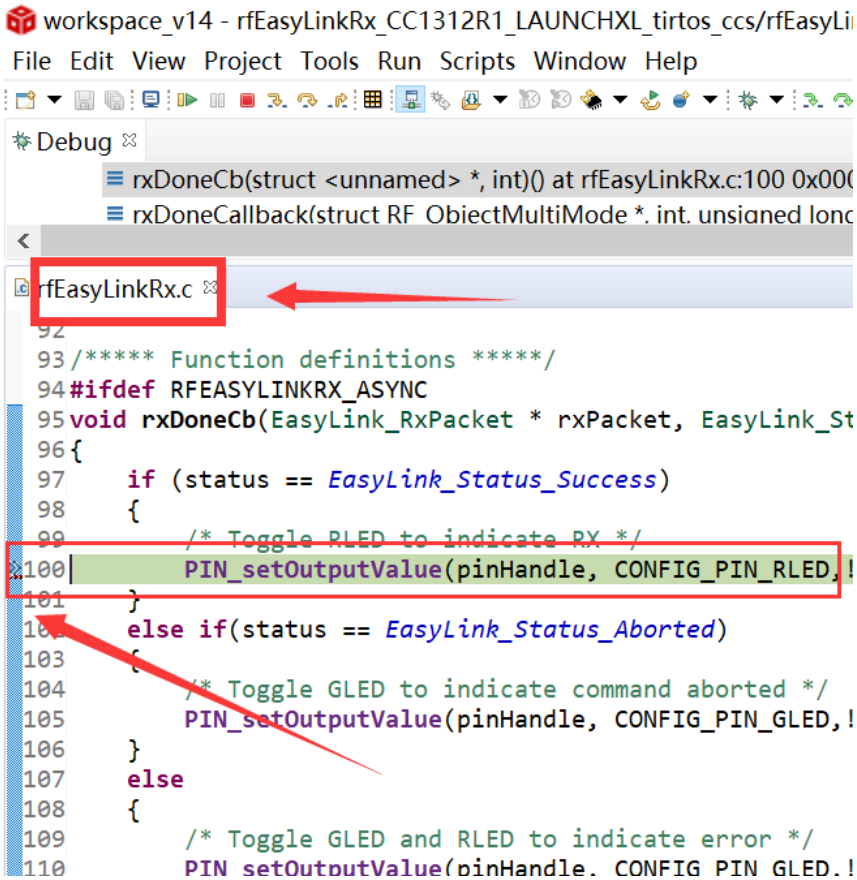
10. Click on this option to start debugging



11. You can see the lights flashing (means sending a data uninterruptedly)



12. The program stops at the breakpoint



By far you should've built your first application successfully.

For further development, please check out the CC1312R data sheet, product information and support | TI.com page and download the User guide (https://www.ti.com/lit/pdf/swcu185)

Other Resources

Mac OS Installer for SimpleLink CC13X2 26X2 SDK

Linux Installer for SimpleLink CC13X2 26X2 SDK

Mac OS Installer for Code Composer Studio IDE

Linux Installer for Code Composer Studio IDE

CC1312R SimpleLink™ High-Performance Sub-1 GHz Wireless MCU

Windows Installer for SmartRF Flash Programmer 2

More Questions:

Please search existing answers on TI E2E support forums

Contact your local TI sales representative.
Or
Contact BDE Technology, Inc.

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