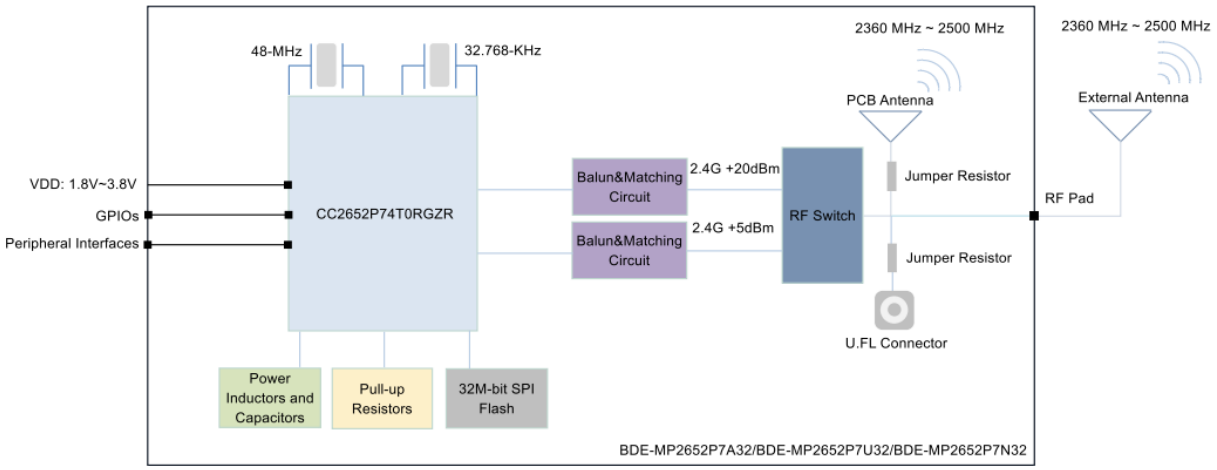
# BDE-MP2652P7 USER GUIDE

## Introduction

This user guide is for BDE-MP2652P7, a Wireless Module based on TI CC2652P7.
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-MP2652P7 receives a data packet that is sent from the mobile terminial.

## Hardware Diagram

A. Block Diagram




B. RF Switch True Table

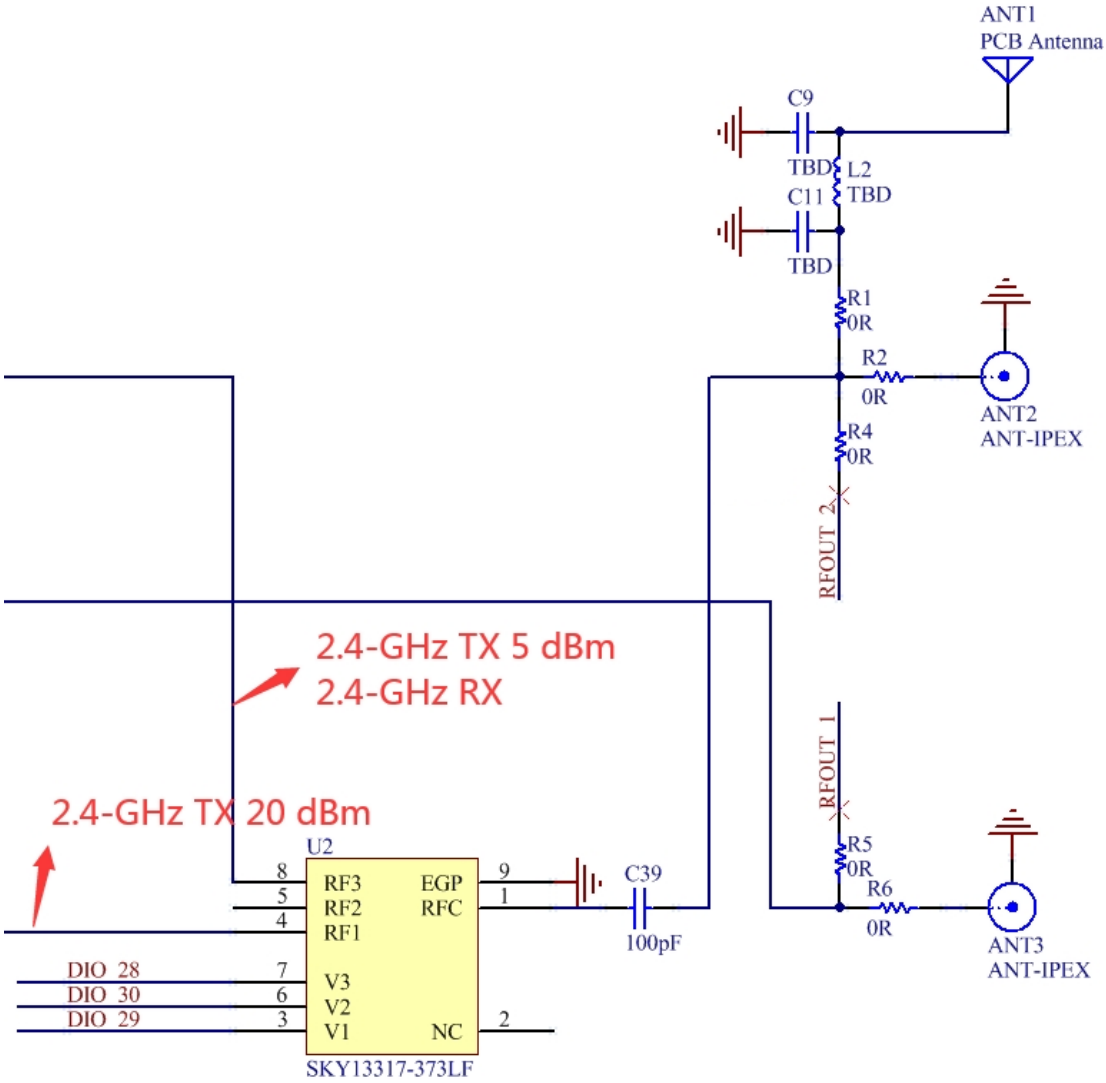
**Table 4. SKY13317-373LF Truth Table**

| Low Insertion Loss Path | V1 (Pin 3) | V2 (Pin 6) | V3 (Pin 7) |
|---|---|---|---|
| RFC to RF1 | High | Low | Low |
| RFC to RF2 | Low | High | Low |
| RFC to RF3 | Low | Low | High |

**Note**: "High" = 1.8 to 5.0 V. "Low" = 0 to 0.25 V. Any state other than described in this Table places the switch into an undefined state. An undefined state will not damage the device.

C. Antenna Selection Schematic

The module is using the switch to select 5 dBm or 20 dBm TX power and also the RX path for the 2.4-GHz band. Sub-1GHz band is standalone for having its own antenna.




## Get Ready

The following tools are recommended to develop with BDE-MP2652P7.

Hardware tools:

- BDE-MP2652P7 BDE-MP2652P7-BDE Technology Inc. (bdecomm.com))
- Two BDE-ADP208 V1.0 (adaptor board)
- PC or Laptop
- A BDE-EVB07 ( BDE-EVB07-BDE Technology Inc. (bdecomm.com))
- USB cable for power supply and debugging

Software tools:

- Terminal software such as CCS, IAR.

- CCS download
- Software Development Kit (SDK)
- Lightblue

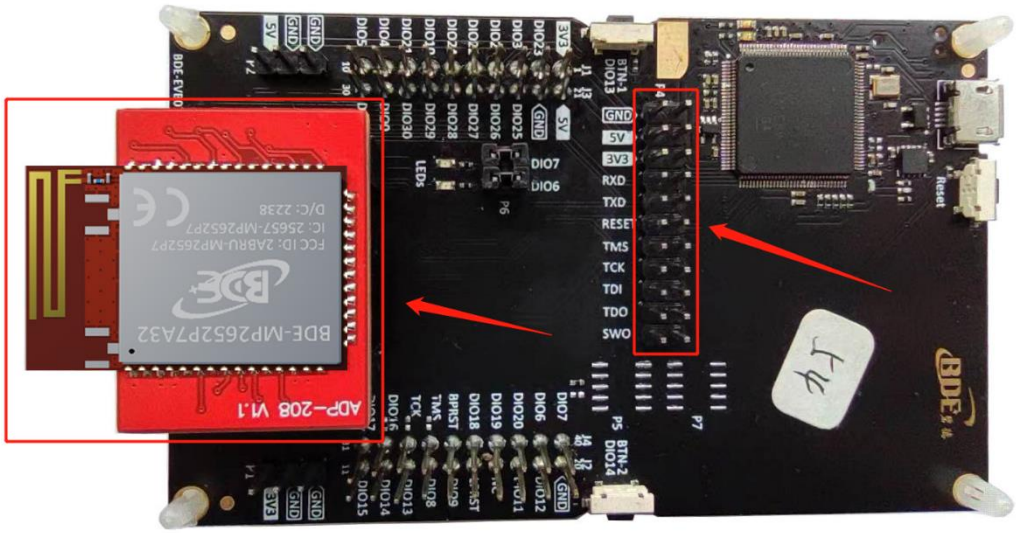
## Build Your First Application

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-MP2652P7 with the adaptor board into the dev board and connect all the pins with Jumpers as the following picture shows.



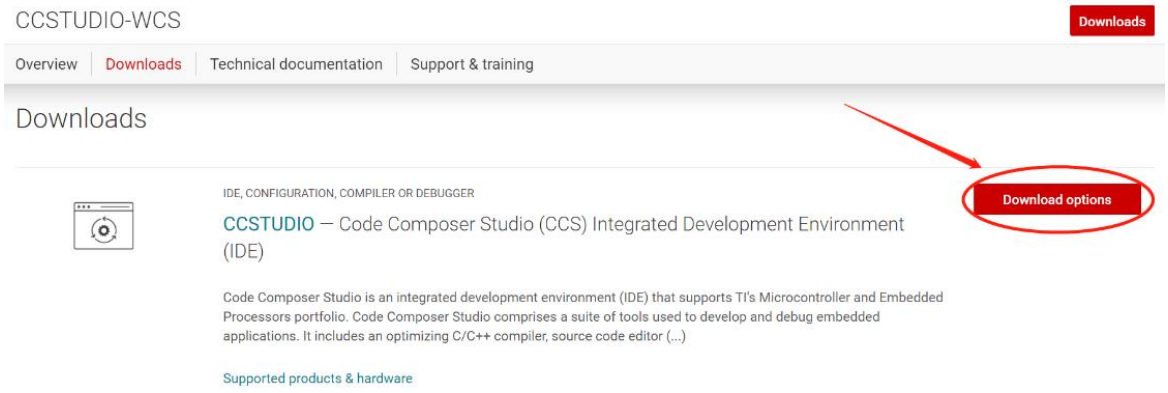

B. Build the Application

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

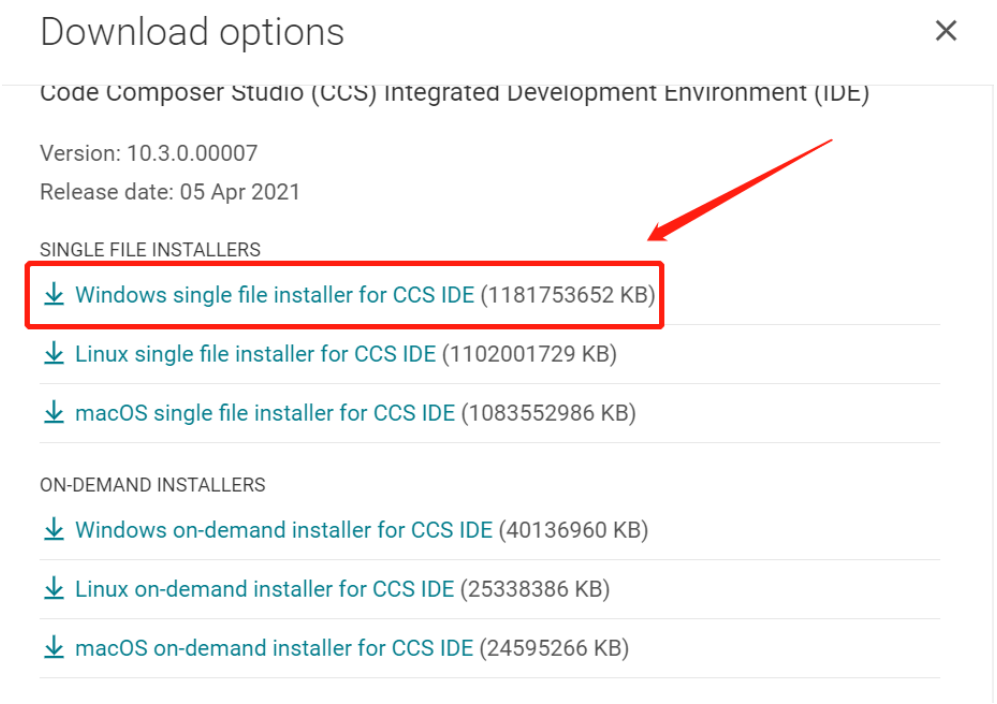
From the above links, follow the instructions in the following steps to download and install the CCS and SDK.

- **CCS Installation**

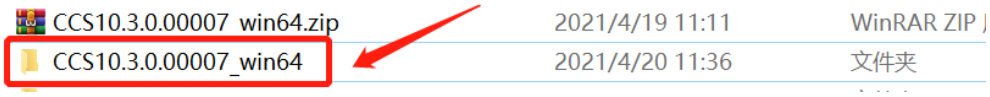
1. Click on this option




2. Select an option to download CCS

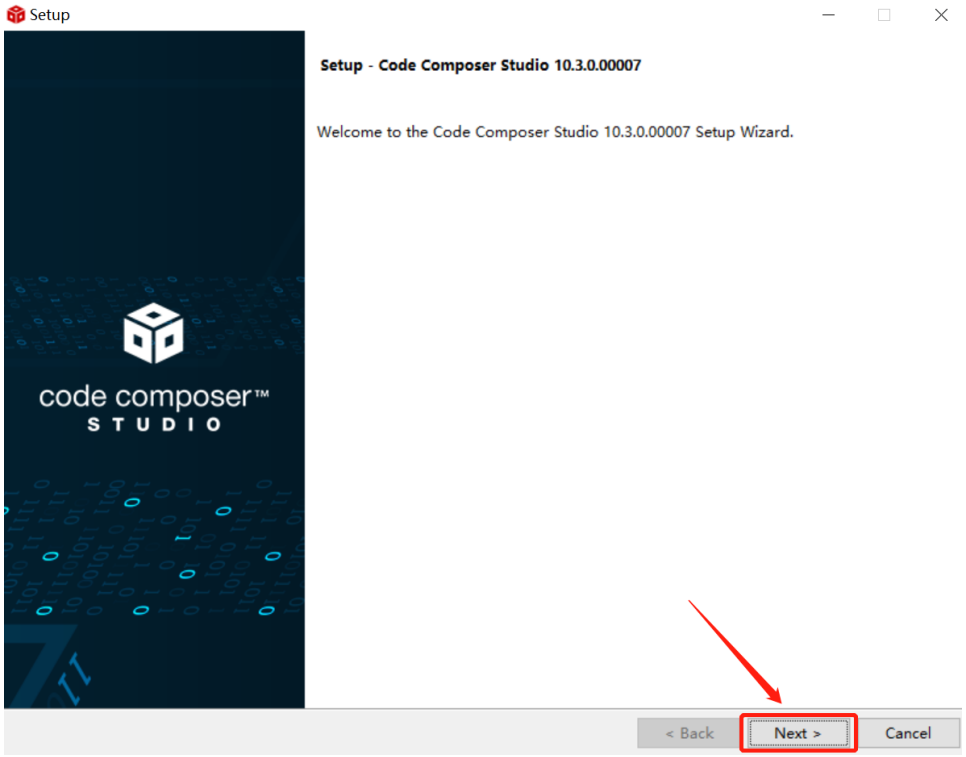



3. Unzip the package to a local disc

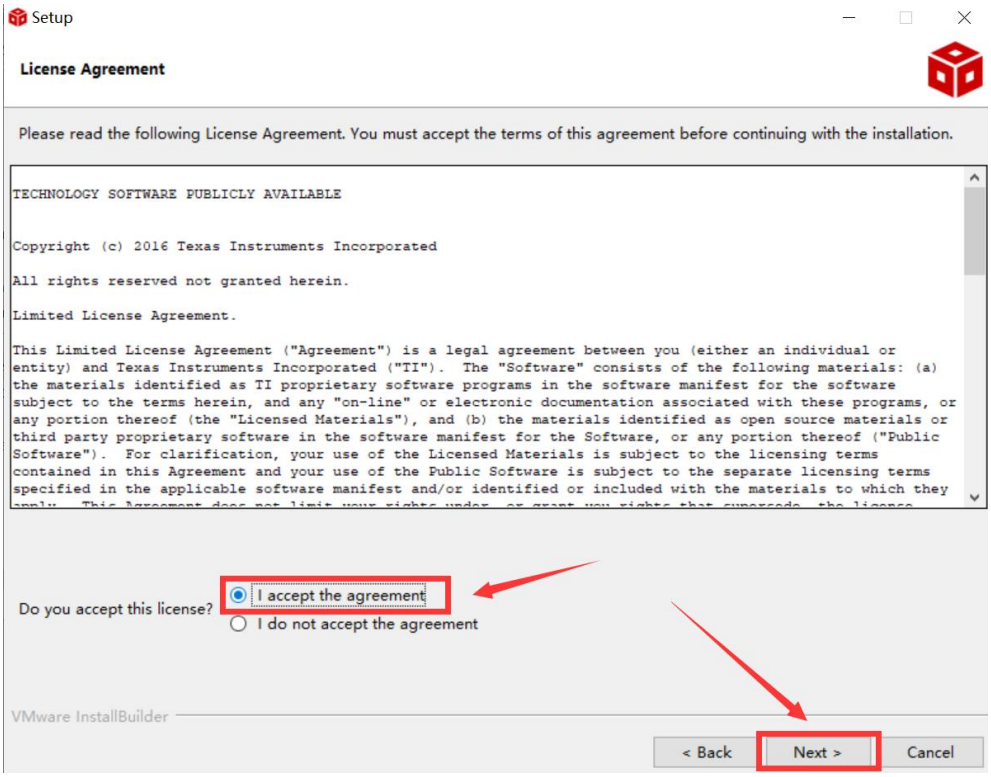



4. Click the setup of CCS

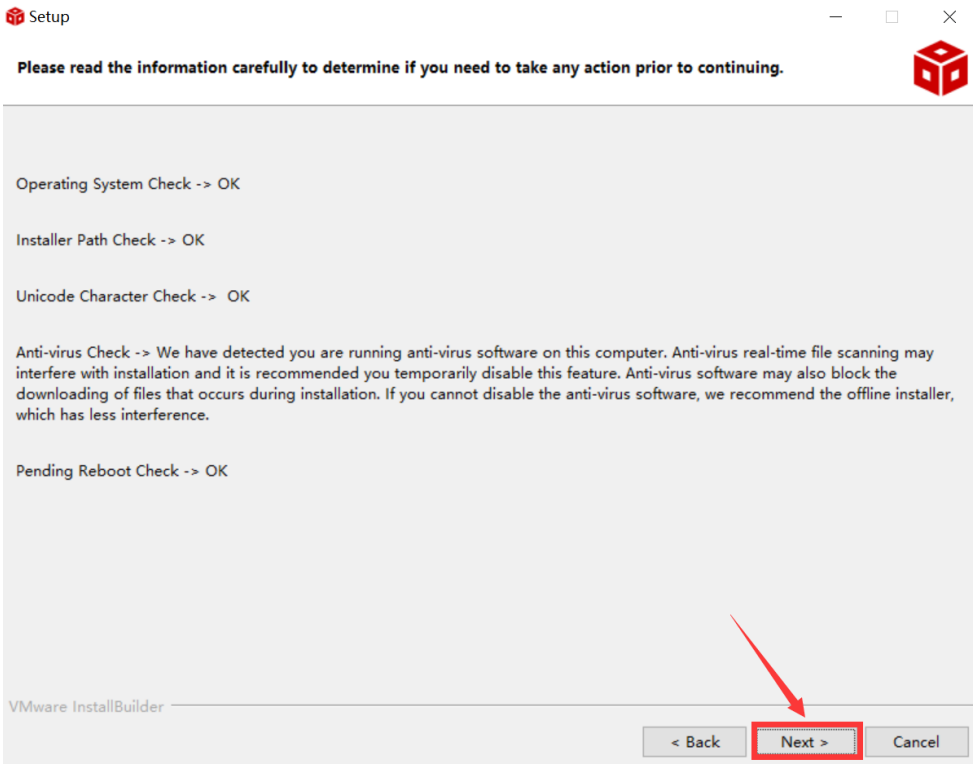

5. Click “Next”



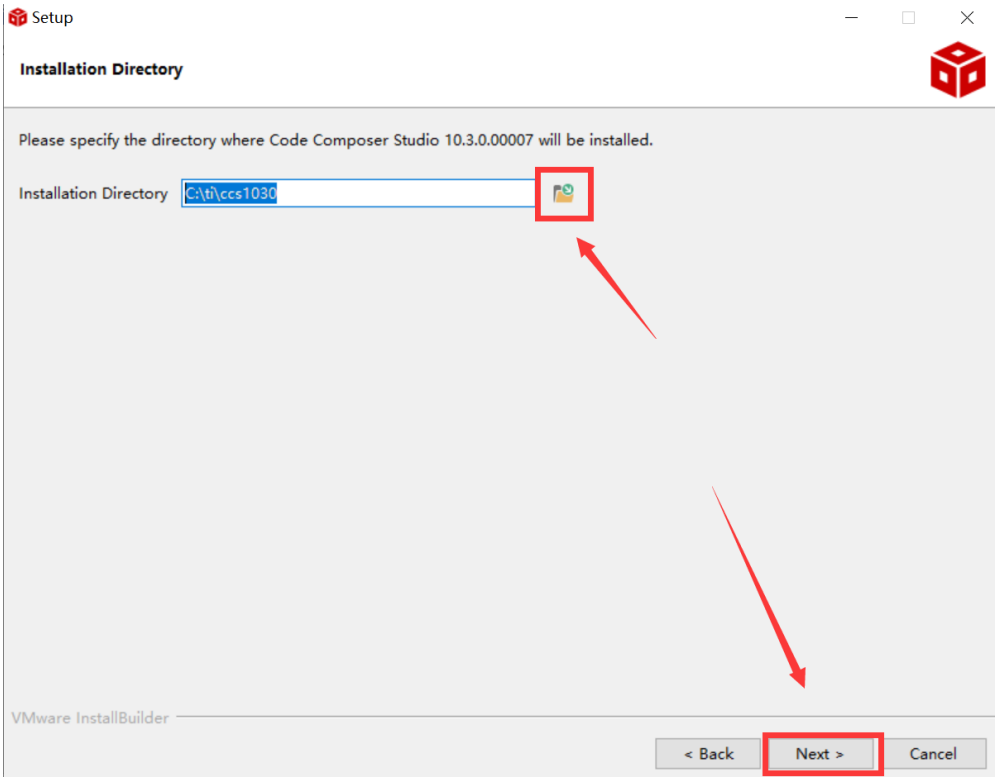

6. Select the default option


Setup
License Agreement
Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.
TECHNOLOGY SOFTWARE PUBLICLY AVAILABLE
Copyright (c) 2016 Texas Instruments Incorporated
All rights reserved not granted herein.
Limited License Agreement.
This Limited License Agreement ("Agreement") is a legal agreement between you (either an individual or entity) and Texas Instruments Incorporated ("TI"). The "Software" consists of the following materials: (a) the materials identified as TI proprietary software programs in the software manifest for the software subject to the terms herein, and any "on-line" or electronic documentation associated with these programs, or any portion thereof (the "Licensed Materials"), and (b) the materials identified as open source materials or third party proprietary software in the software manifest for the Software, or any portion thereof ("Public Software"). For clarification, your use of the Licensed Materials is subject to the licensing terms contained in this Agreement and your use of the Public Software is subject to the separate licensing terms specified in the applicable software manifest and/or identified or included with the materials to which they
Do you accept this license?
I accept the agreement
I do not accept the agreement
VMware InstallBuilder
< Back
Next >
Cancel

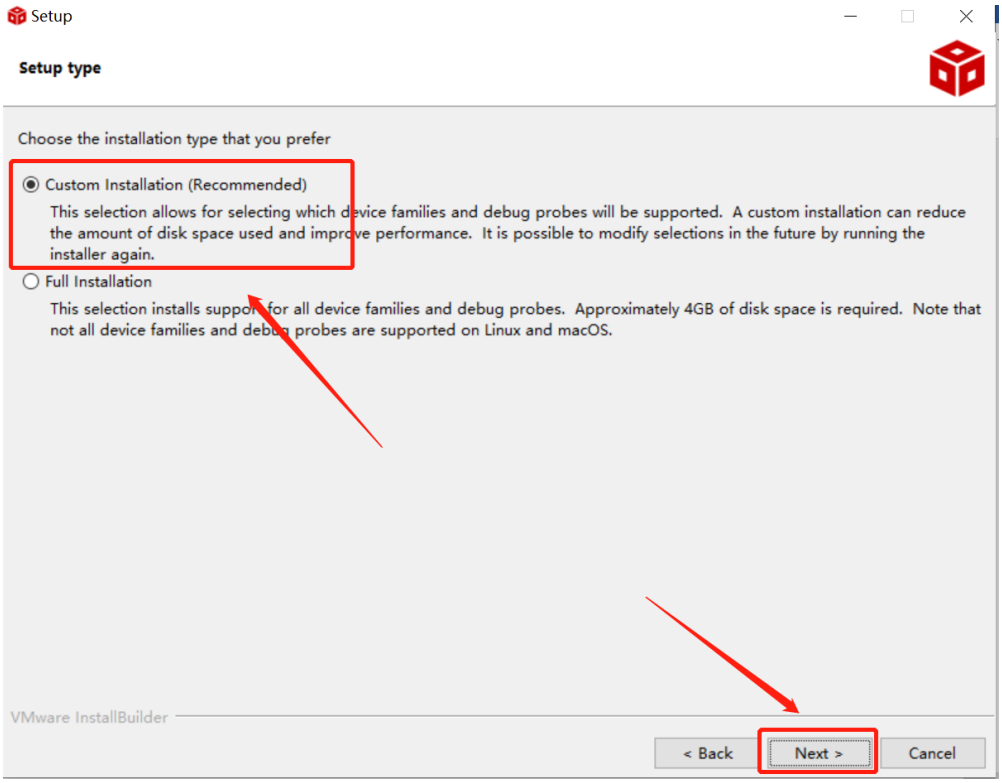
7. Click “Next”


Setup
Please read the information carefully to determine if you need to take any action prior to continuing.
Operating System Check -> OK
Installer Path Check -> OK
Unicode Character Check -> OK
Anti-virus Check -> We have detected you are running anti-virus software on this computer. Anti-virus real-time file scanning may interfere with installation and it is recommended you temporarily disable this feature. Anti-virus software may also block the downloading of files that occurs during installation. If you cannot disable the anti-virus software, we recommend the offline installer, which has less interference.
Pending Reboot Check -> OK
VMware InstallBuilder
< Back
Next >
Cancel

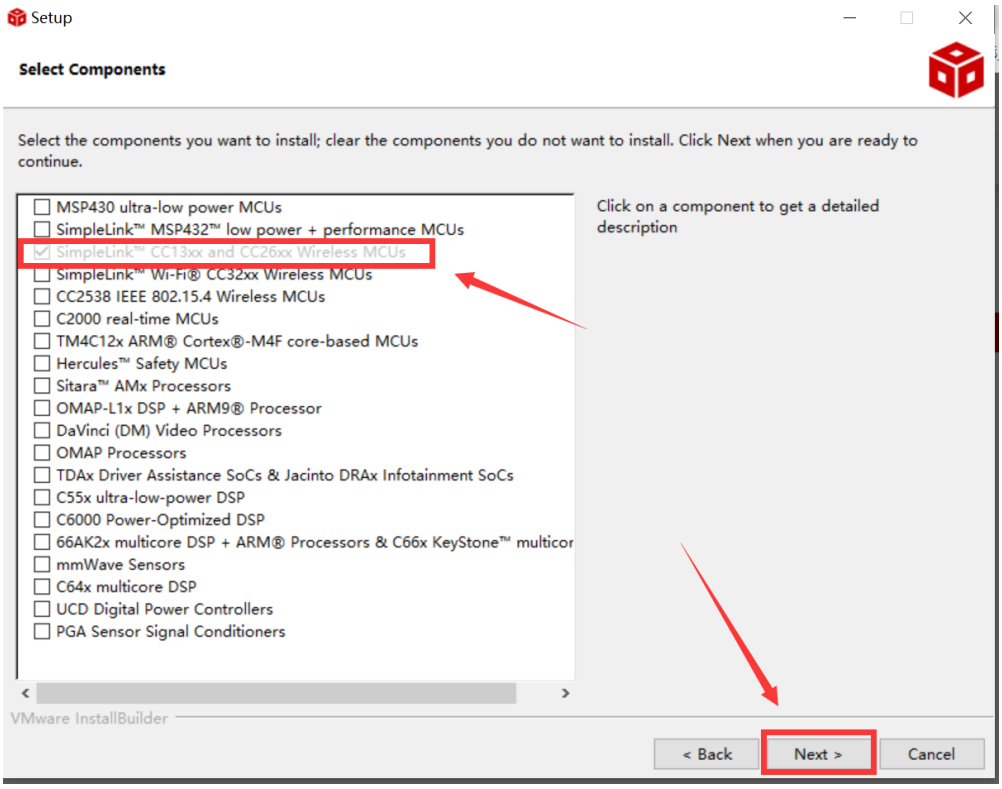
8. Select the Installation Directory



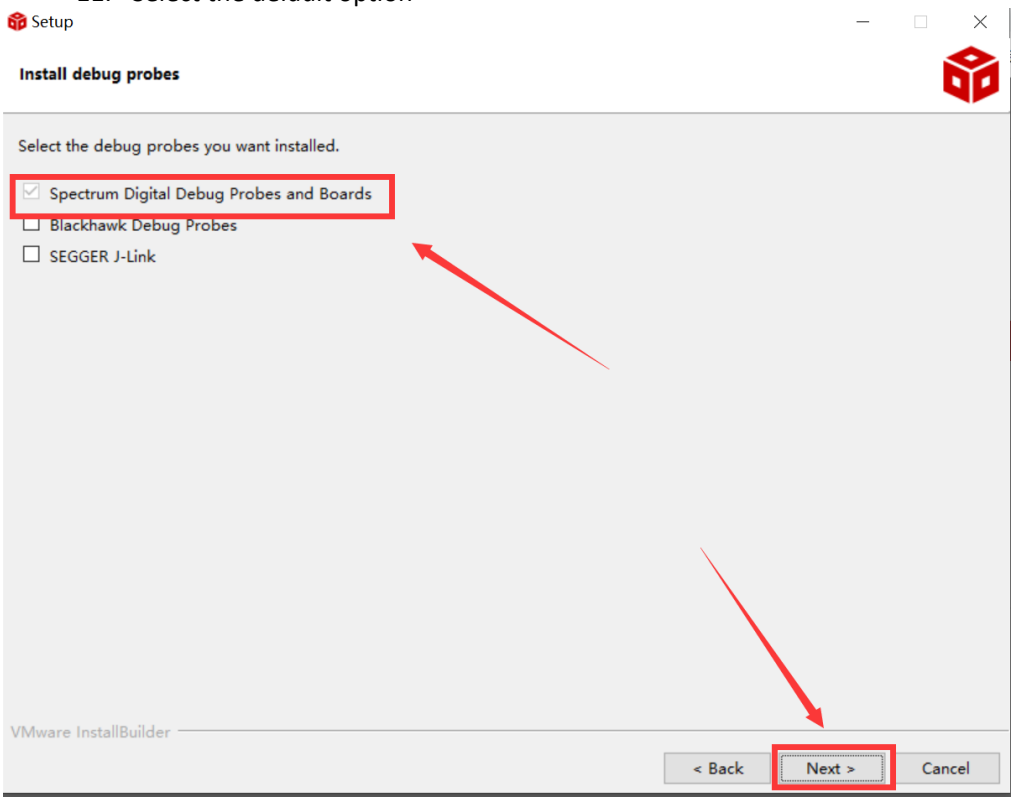

9. Select the default option



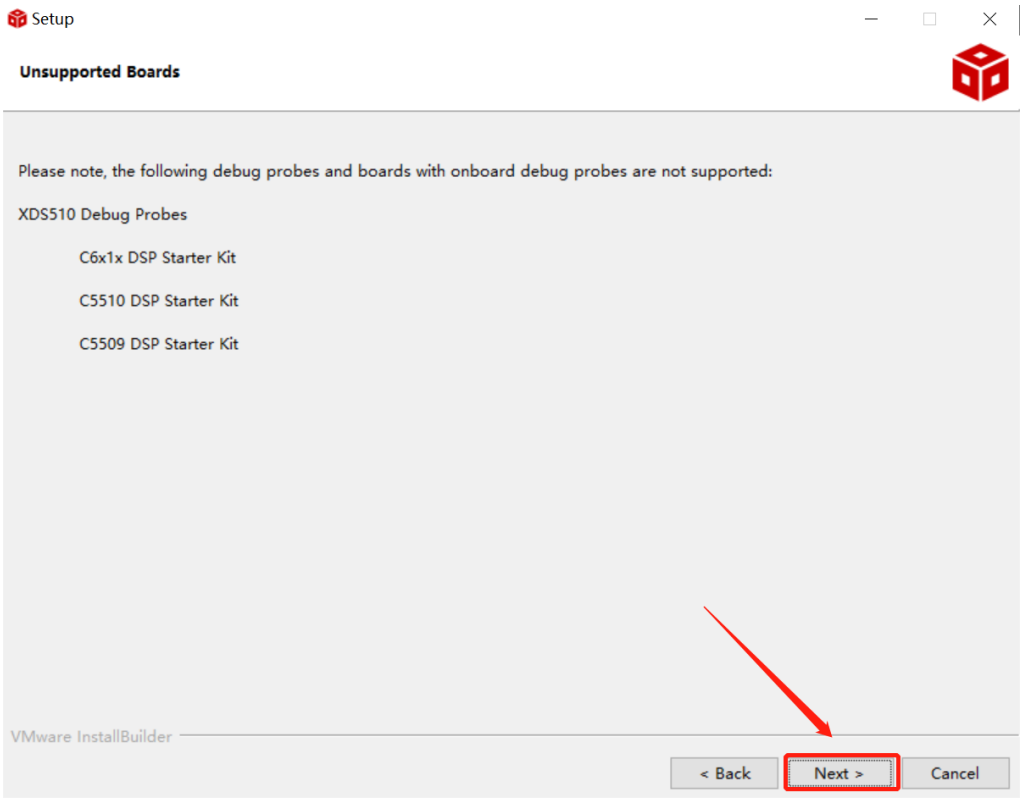
10. Select the component



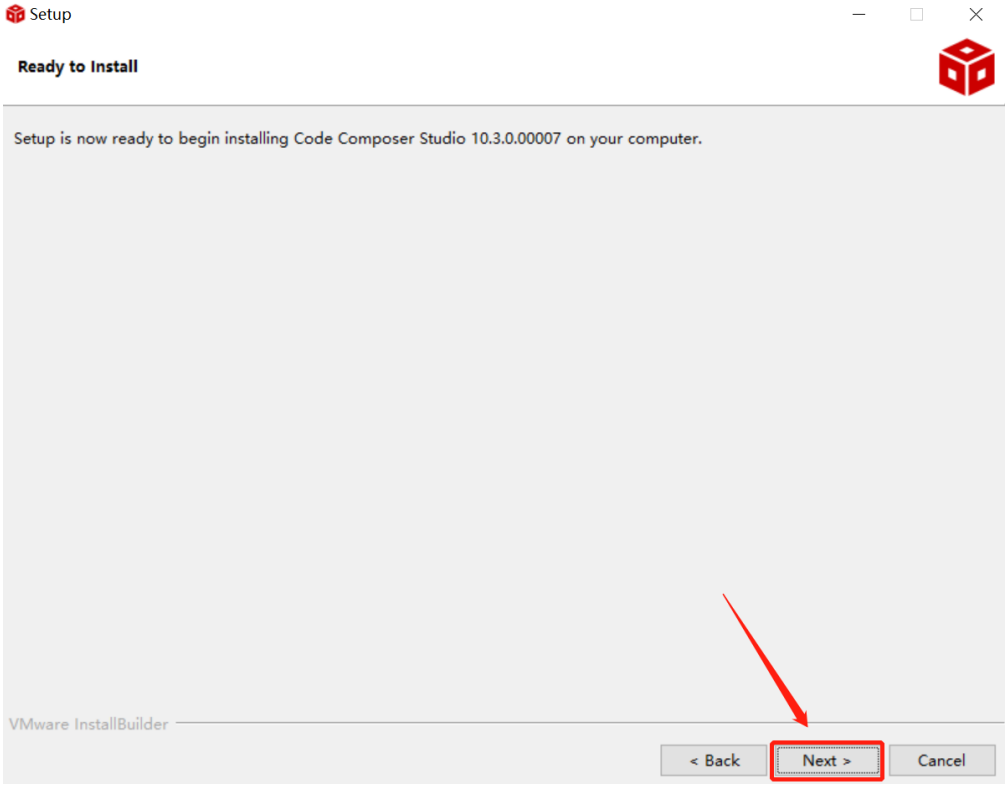

11. Select the default option



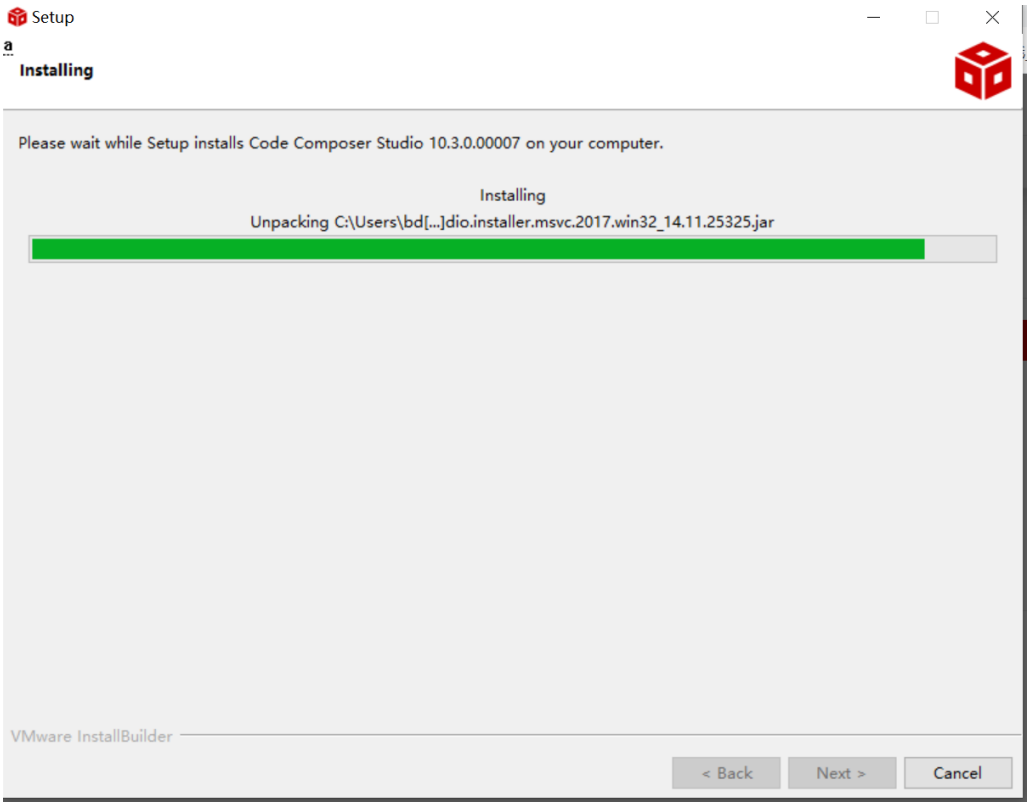
12. Click “Next”




13. Click “Next”

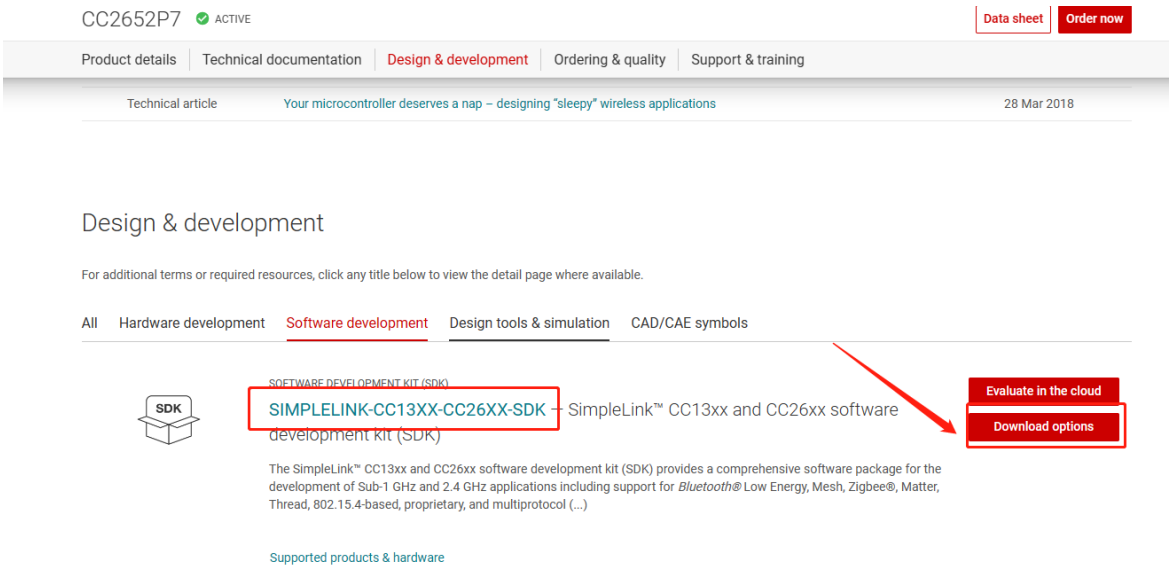


14. Waiting for installation to complete

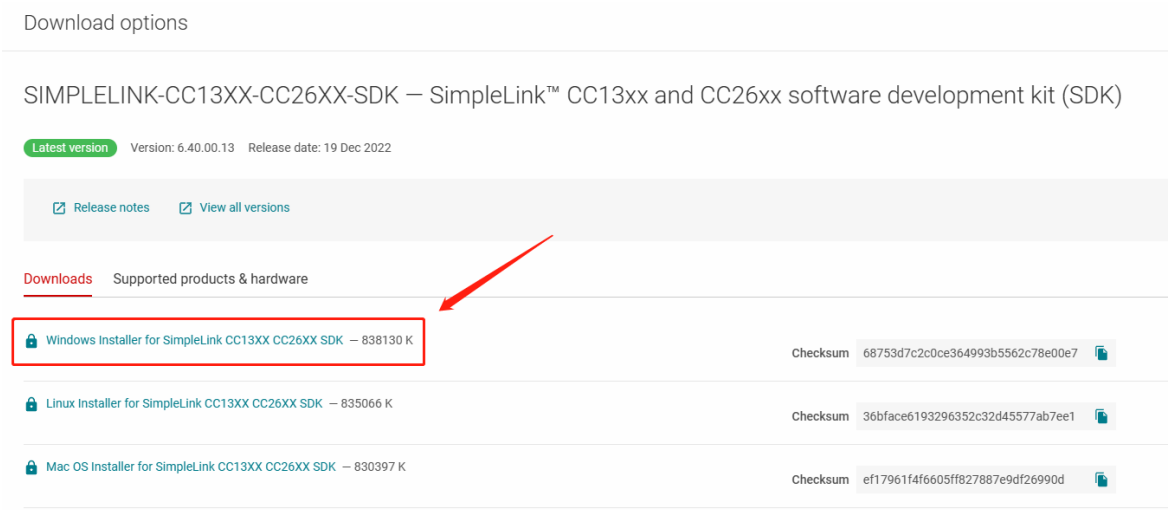



- **Software Development Kit (SDK) installation**

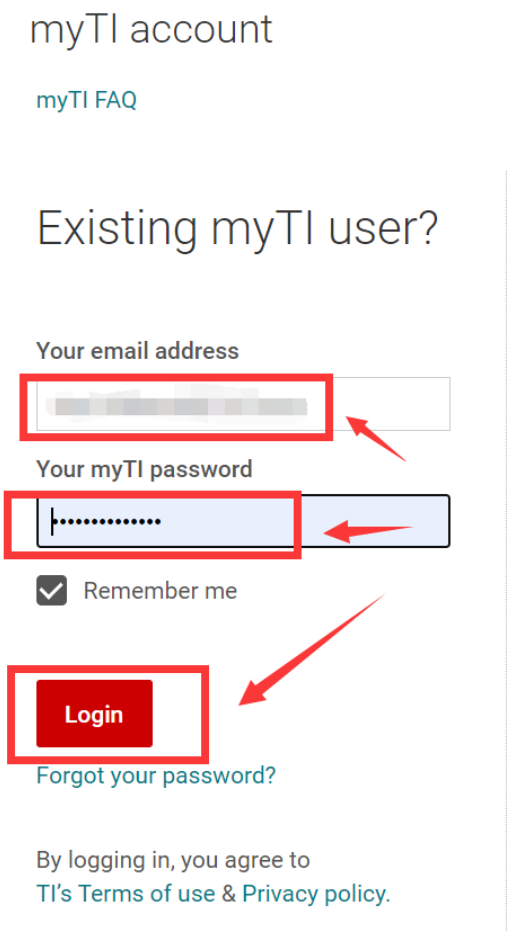
1. Click on this option



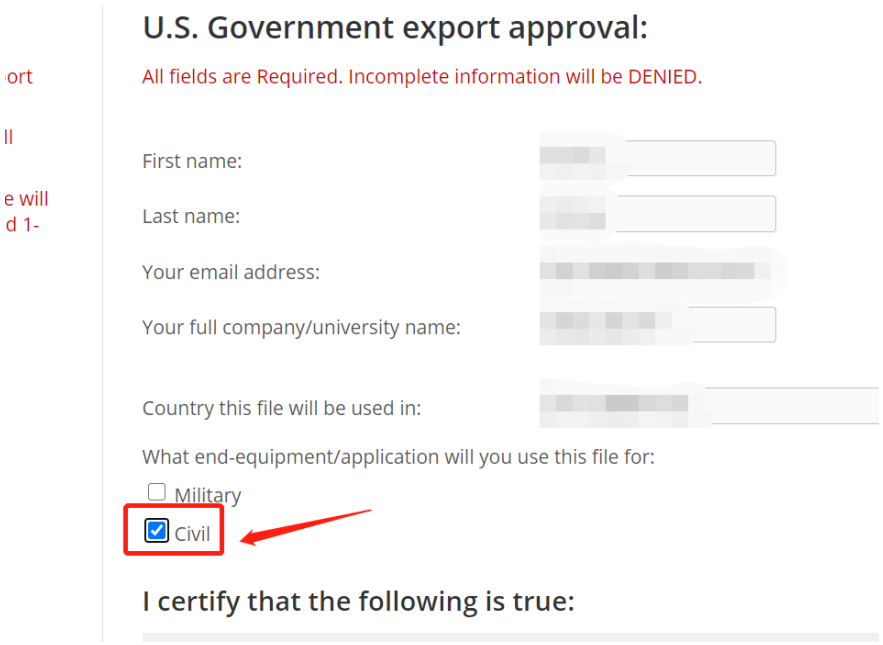
2. Select an option you need to download SDK



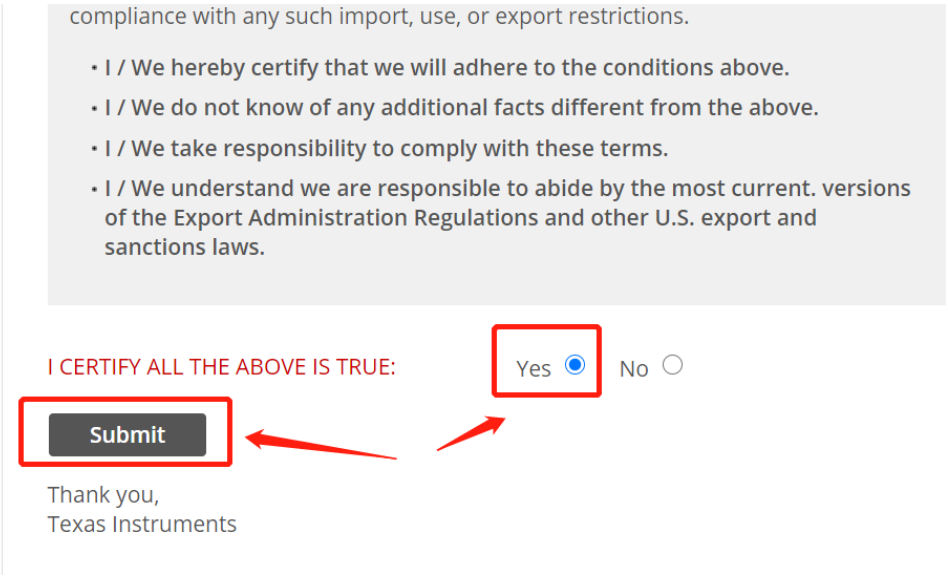

3. Log in to your TI account, if you are a new user, register a TI account first



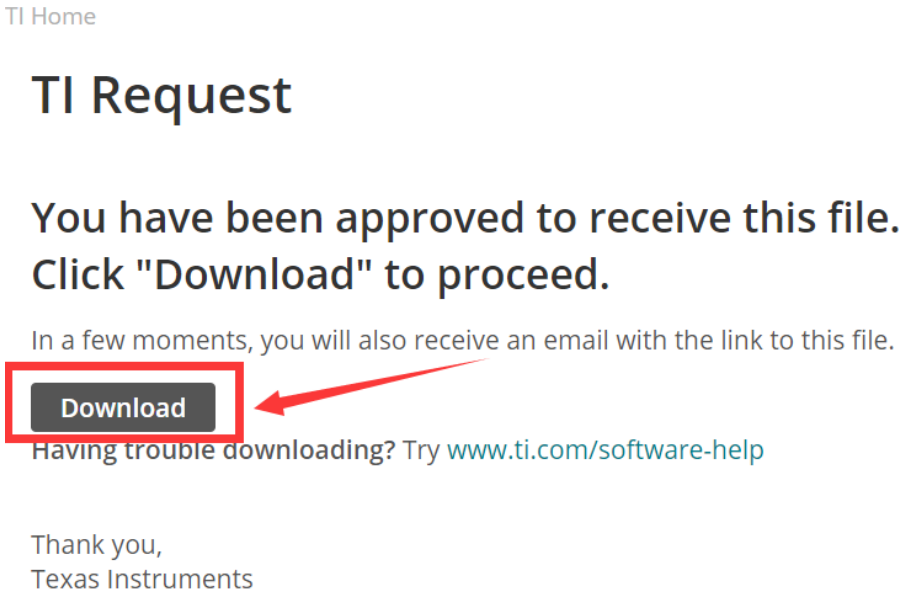
4. Select “civil” if your application is for civil use



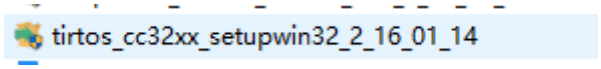

5. Select “Yes” and submit



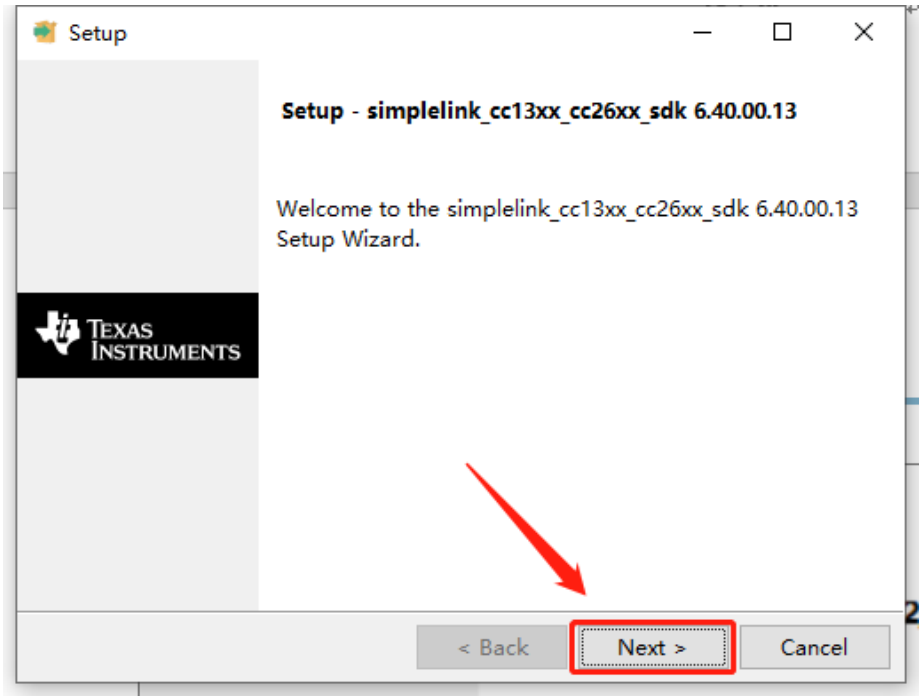

6. Download SDK



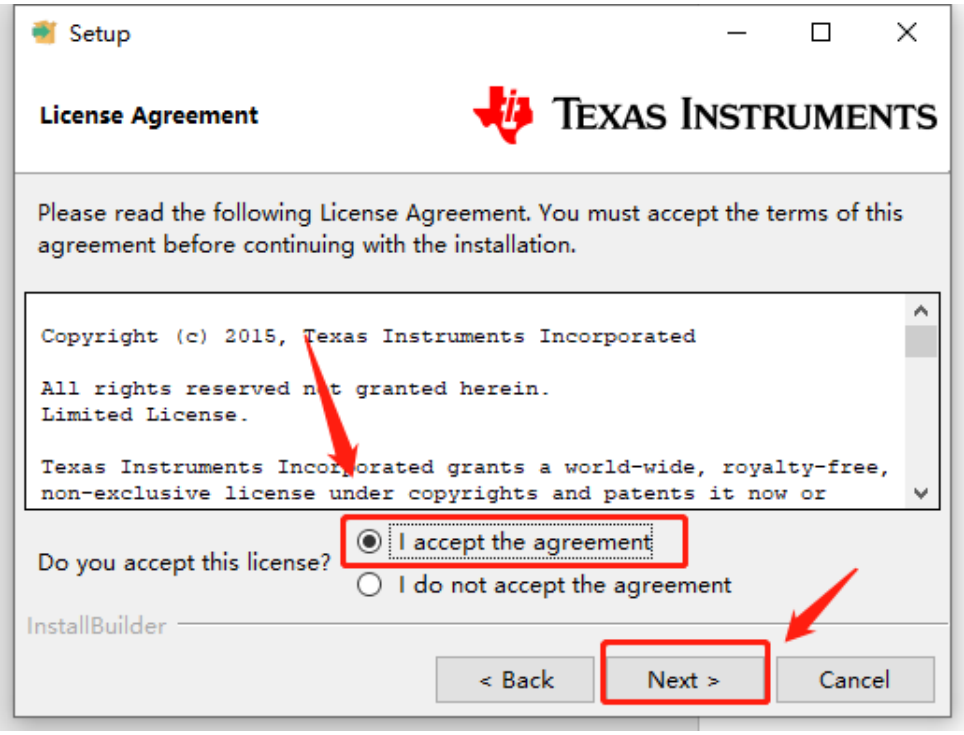

7. Installation



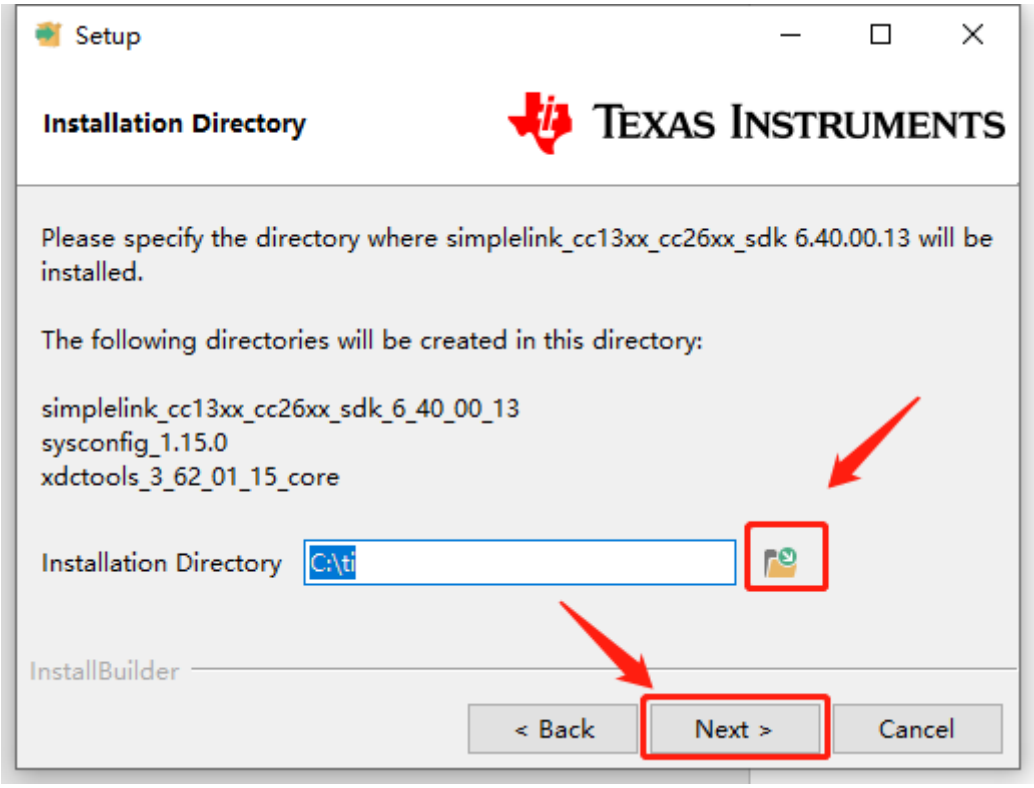

8. Click “Next”



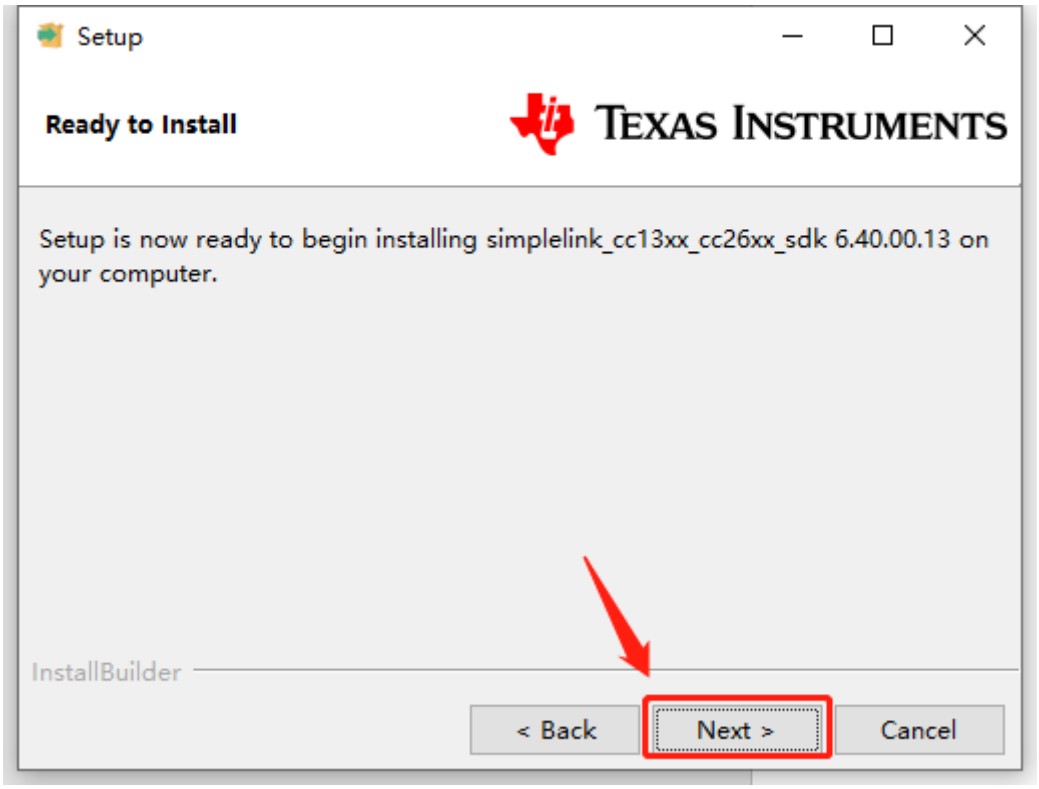
9. Select the default option



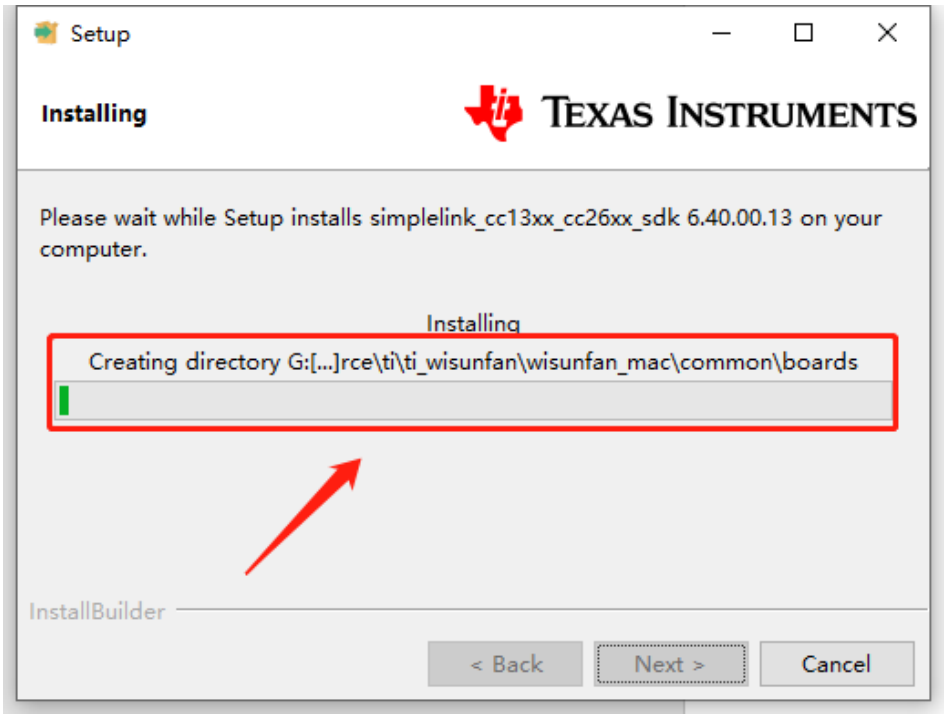

10. Select the Installation directory




11. Click “Next”

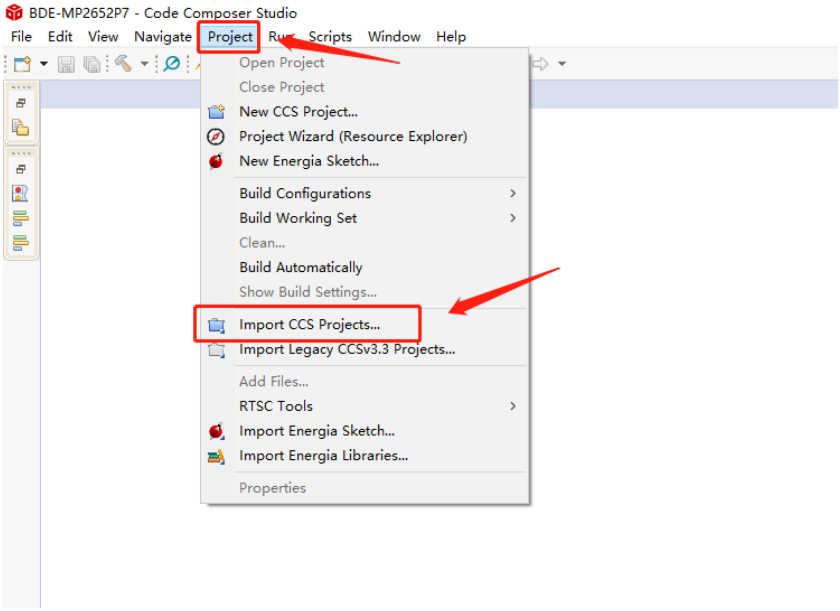



12. Waiting for installation to complete

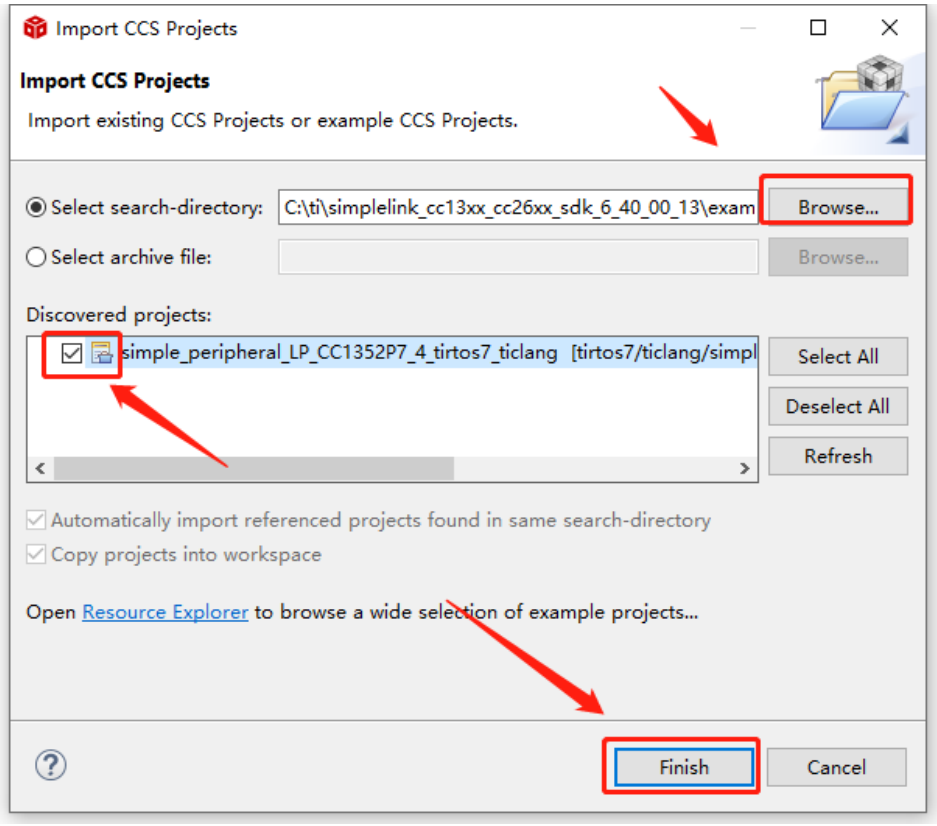


- Run an example/demo code

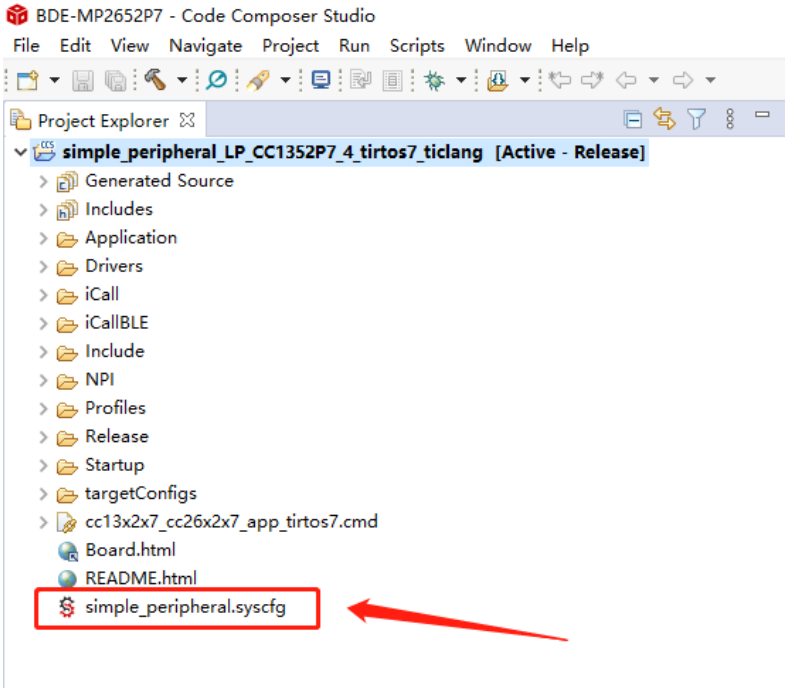
1. For the first module, find the option named “Import CCS project…”



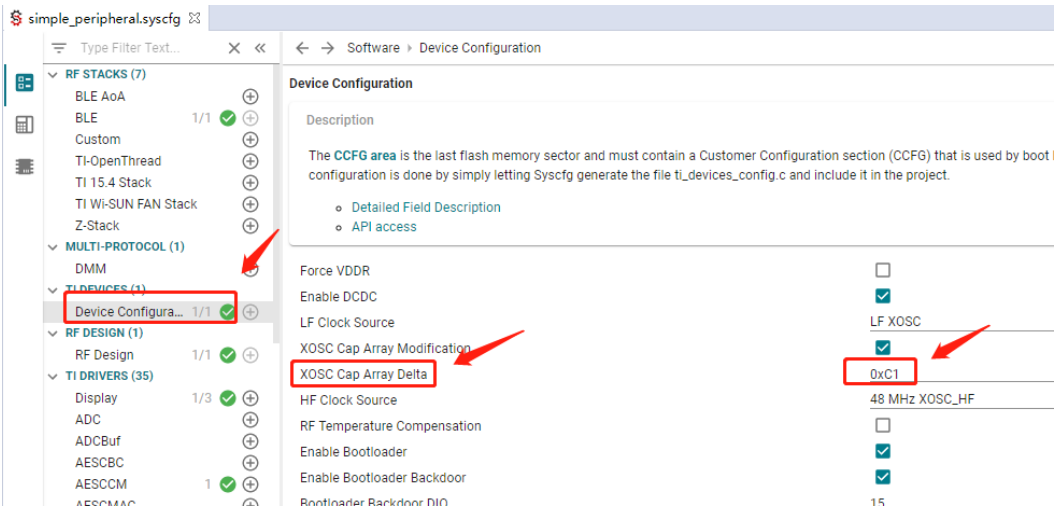

2. According to the following path to find the sending end project: ti\simplelink_cc13xx_cc26xx_sdk_6_40_00_13\examples\rtos\LP_CC1352P7_4\ble5stack\simple_peripheral
(Since TI does not have a dedicated SDK for CC2652P7, we use LP_CC1352P7_4 instead, which can also run normally on CC2652P7 devices)



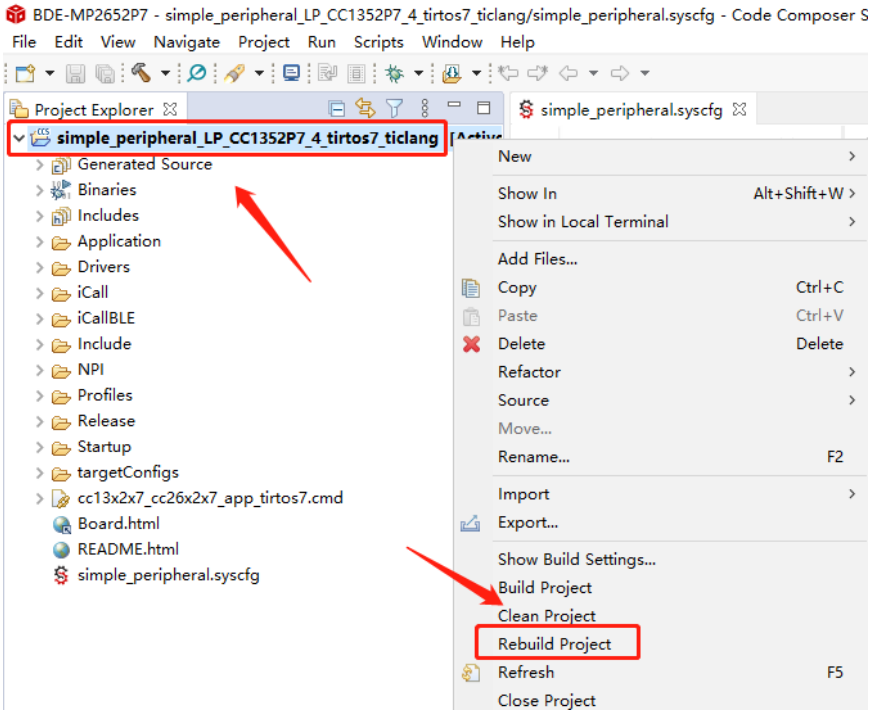
3. Open the file: simple_peripheral.syscfg



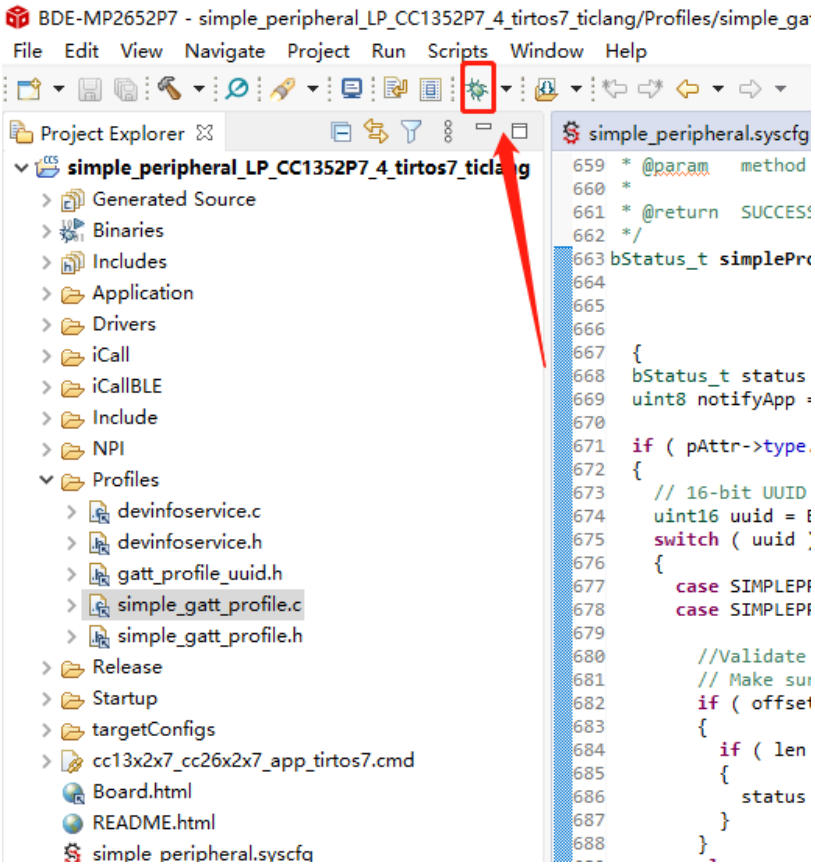

4. Chang the “0xC1” to “0x00”.



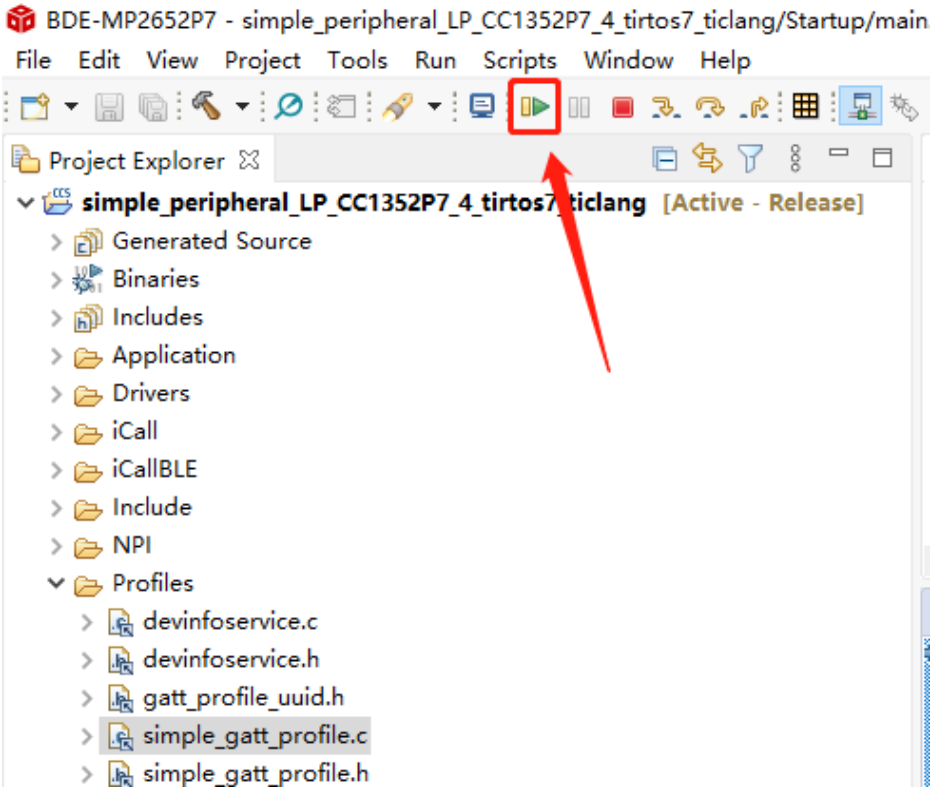

5. Right Click the project to build the receiving end project




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

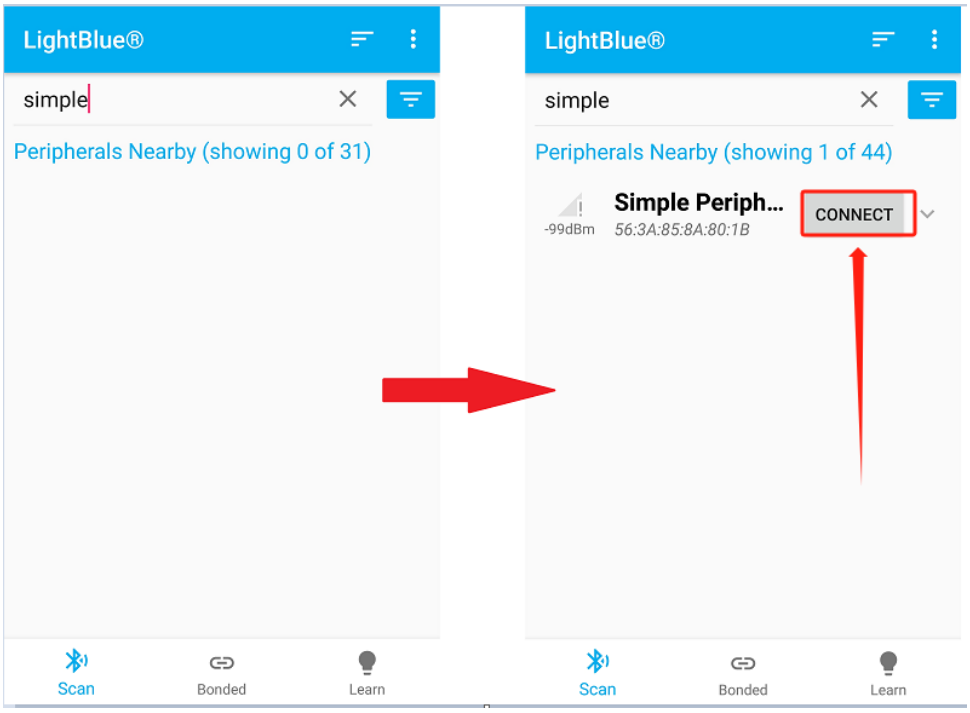


7. Click on this option to start debugging

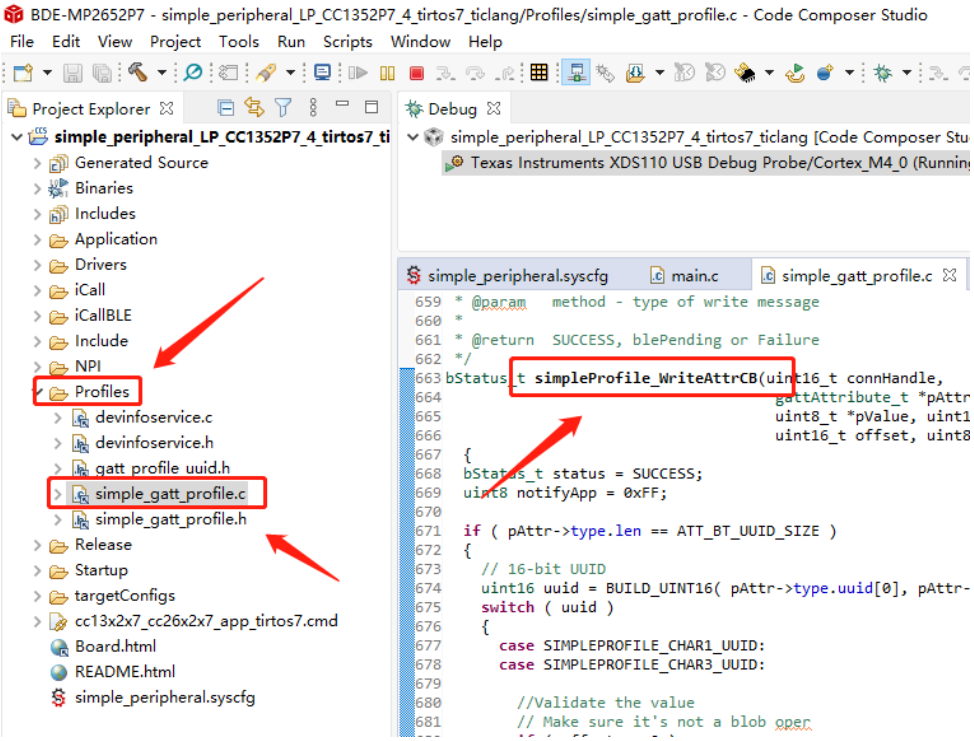



8. Download and start Lightblue (an APP on your mobile device)

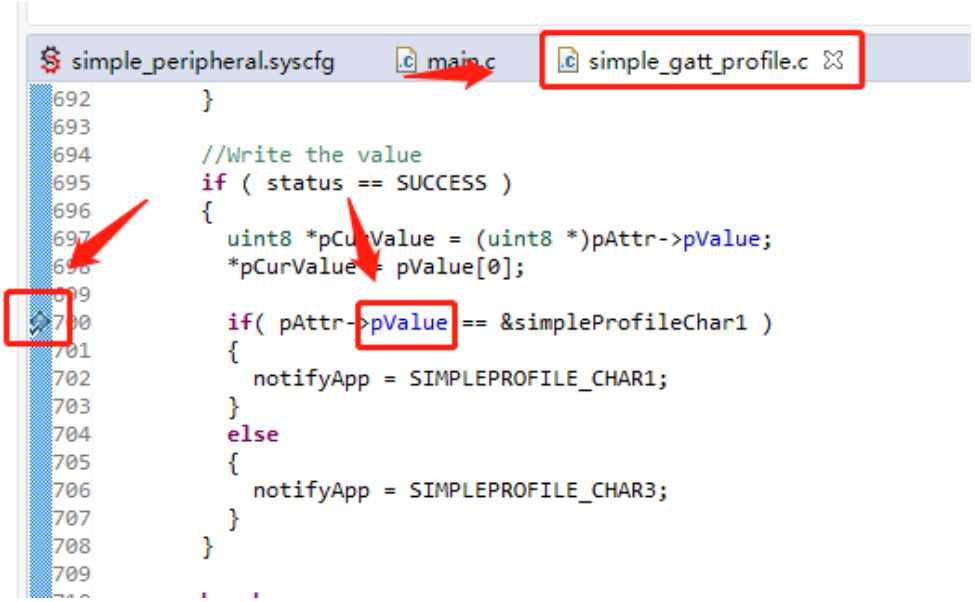
9. BDE-MP2652P7 is advertising, you can receive the signal on Lightblue, then click “connect” to connect the mobile phone and the BDE-MP2652P7.



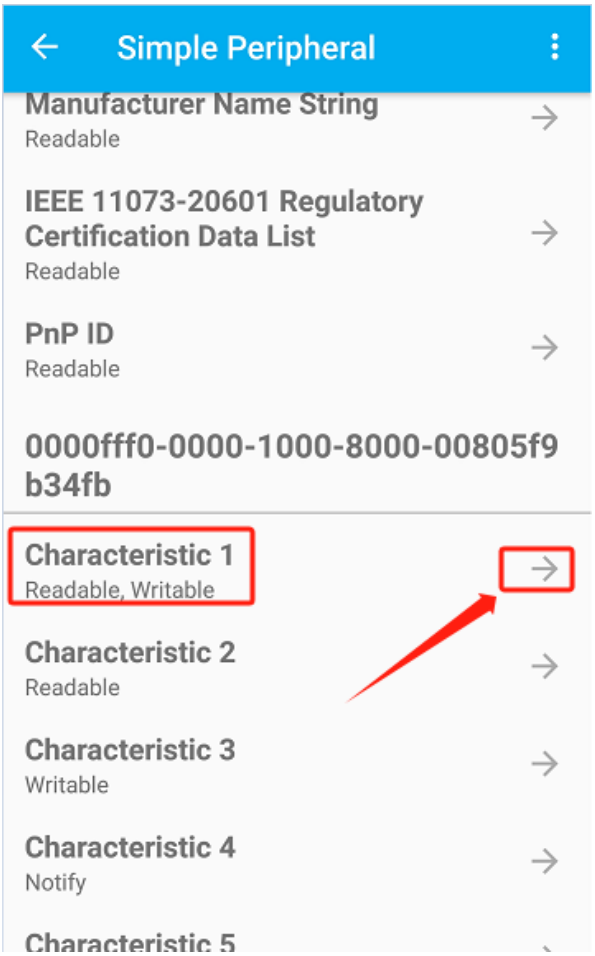

10. Find the file which is named “simple_gatt_profile.c” and the function which is named “simpleProfile_WriteAttrCB”



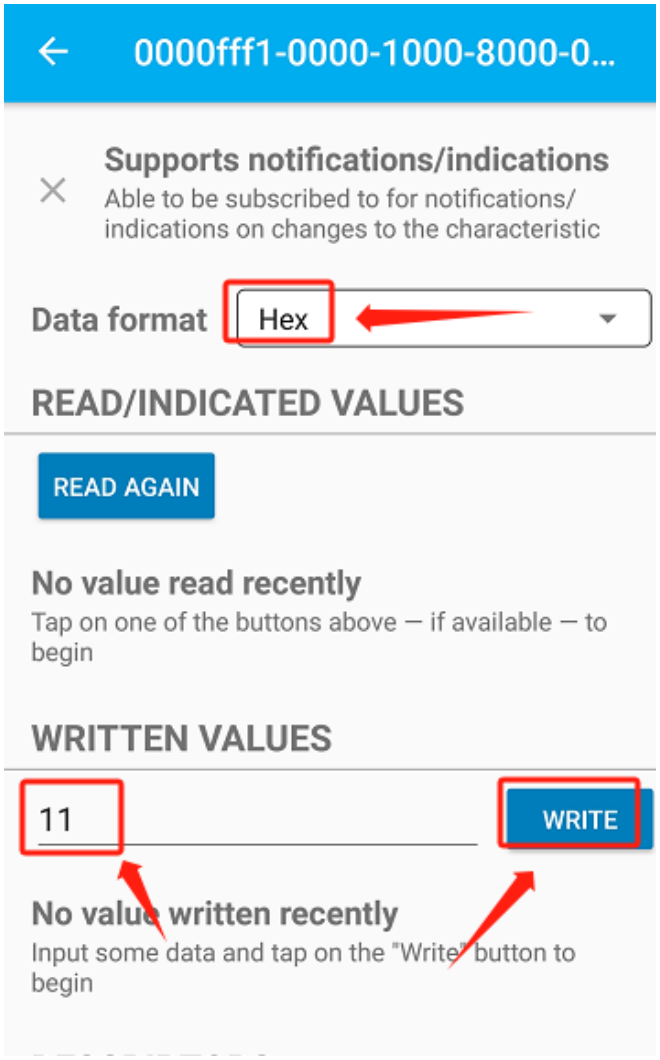

11. Find “pValue” in the function and set a breakpoint at the same line



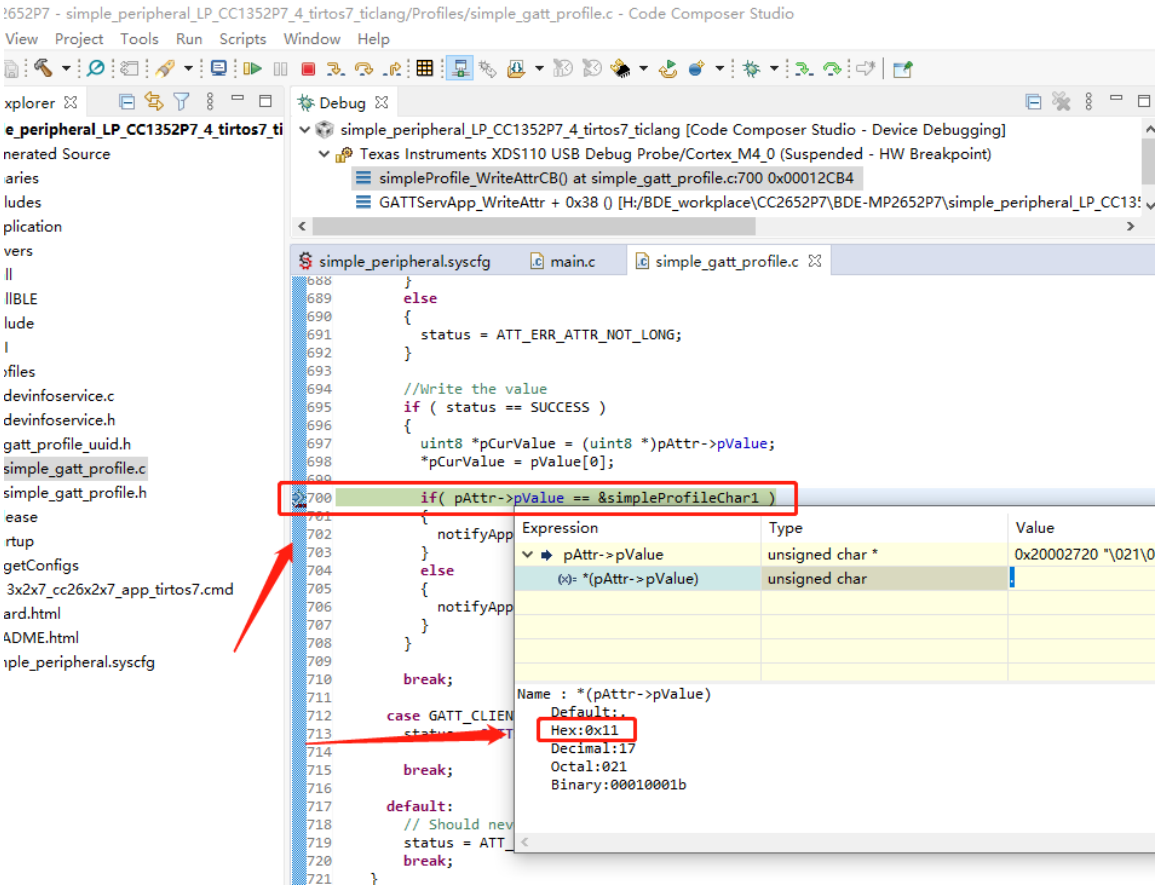

12. Click the up arrow to send a message to the BDE-MP2652P7




13. Send 0x11 to the BDE-MP2652P7




14. The program stops at the breakpoint, the value received is 0x11




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

For further development, please check out the CC2652P7 datasheet, product information and support | TI.com page and download the User guide

## Other Resources

Windows Installer for SimpleLink CC13XX CC26XX SDK

Linux Installer for SimpleLink CC13XX CC26XX SDK

Mac OS Installer for Code Composer Studio IDE

Linux Installer for Code Composer Studio IDE

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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Tel: +86-020-28065335
Website: http://www.bdecomm.com/cn/ Email: shu@bdecomm.com

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67 E Madison St, #1603A, Chicago, IL 60603
Tel: +1-312-379-9589
Website: http://www.bdecomm.com/ Email: info@bdecomm.com