BDE Technology BDE-MP2652P7 Wireless Module User Guide

Contents

BDE Technology BDE-MP2652P7 Wireless Module

USER GUIDE

Introduction

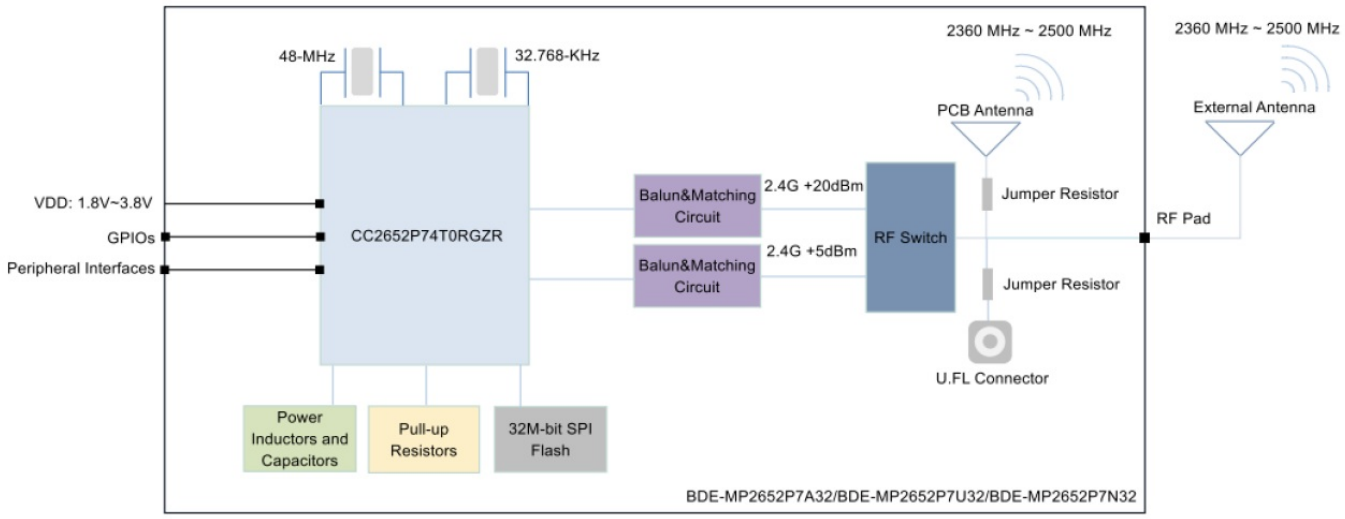
This user guide is for BDE-MP2652P7, a Wireless Module based on TI CC2652P7. It is a quick start guide for how to connect the module with the evaluation board BDE-EVB07 or with the TI launchpad, and how to build the first application. It also shows a demo for how BDE-MP2652P7 receives a data packet that is sent from the mobile terminial.

Specifications

- Product Name: BDE-MP2652P7
- Wireless Module based on TI CC2652P7
- TX Power: 5 dBm or 20 dBm
- Frequency Band: 2.4 GHz (RX and TX), Sub-1GHz (RX only)
- Antenna Selection: Switch-based

Hardware Diagram

A. Block Diagram



B. RF Switch True Table

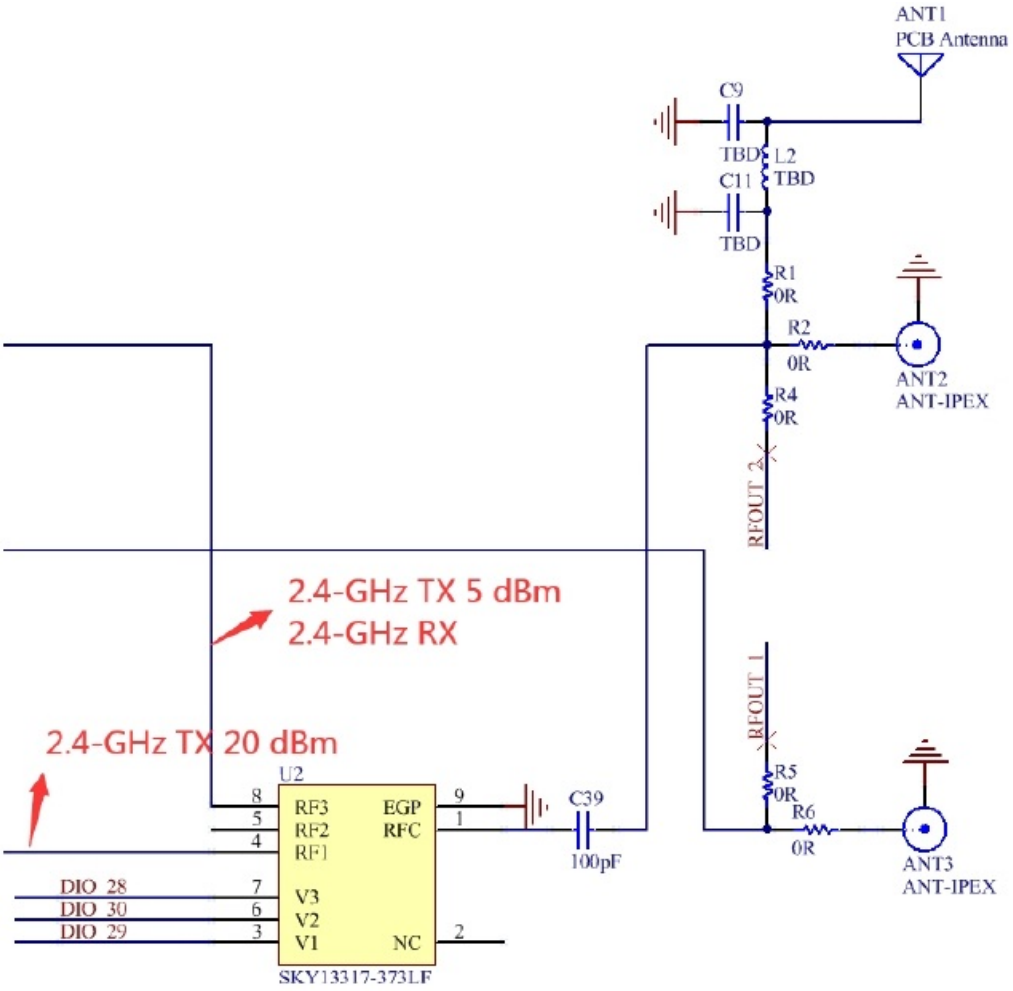
Table 4. SKY13317-373LF Truth Table

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.

Wireless Module

BDE Technology Inc. info@bdecomm.com

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

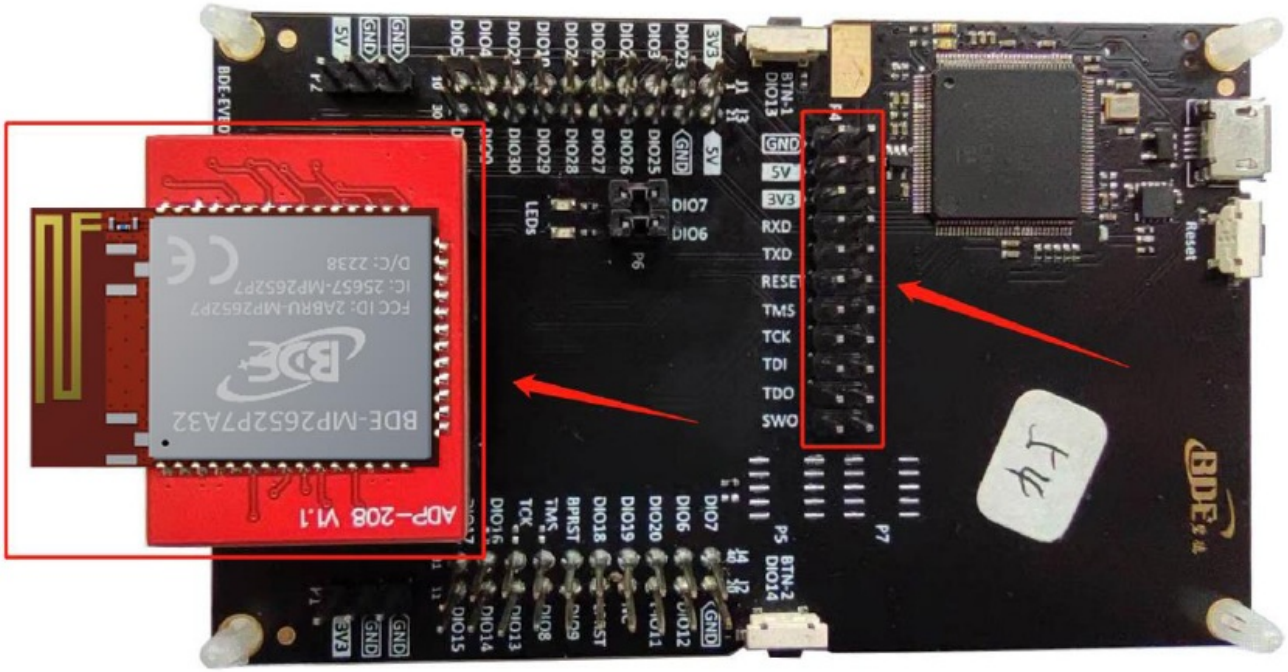
Build Your First Application

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

A. Connect the Hardware

If chose EVB07:

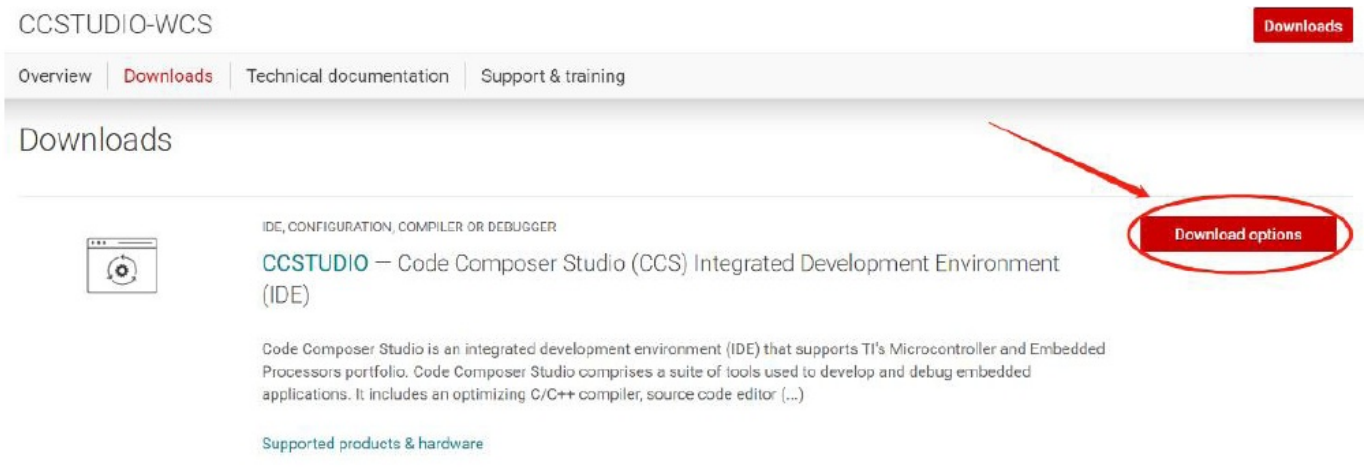
Use USB cable to connect EVB07 and PC or laptop. Plug BDE-MP2652P7 with the adaptor board into the dev board and connect all the pins with Jumpers as the following picture shows.



B. Build the Application

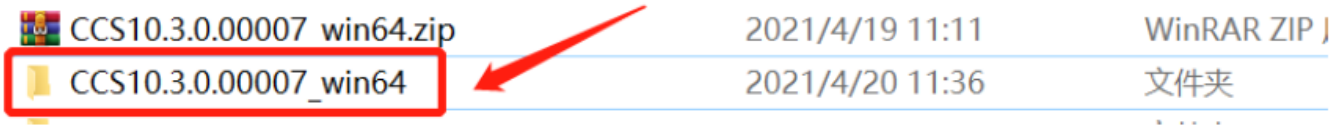
- Download and install the CCS and SDK From the above links, follow the instructions in the following steps to download and install the CCS and SDK.
- CCS Installation

1. Click on this option

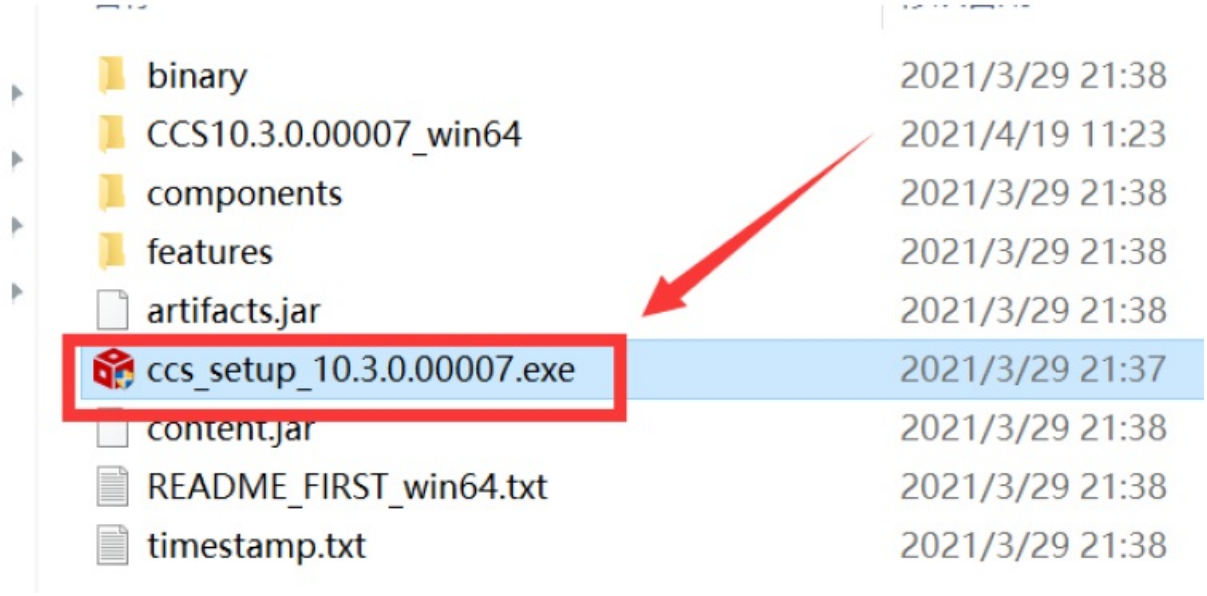


2. Select an option to download CCS

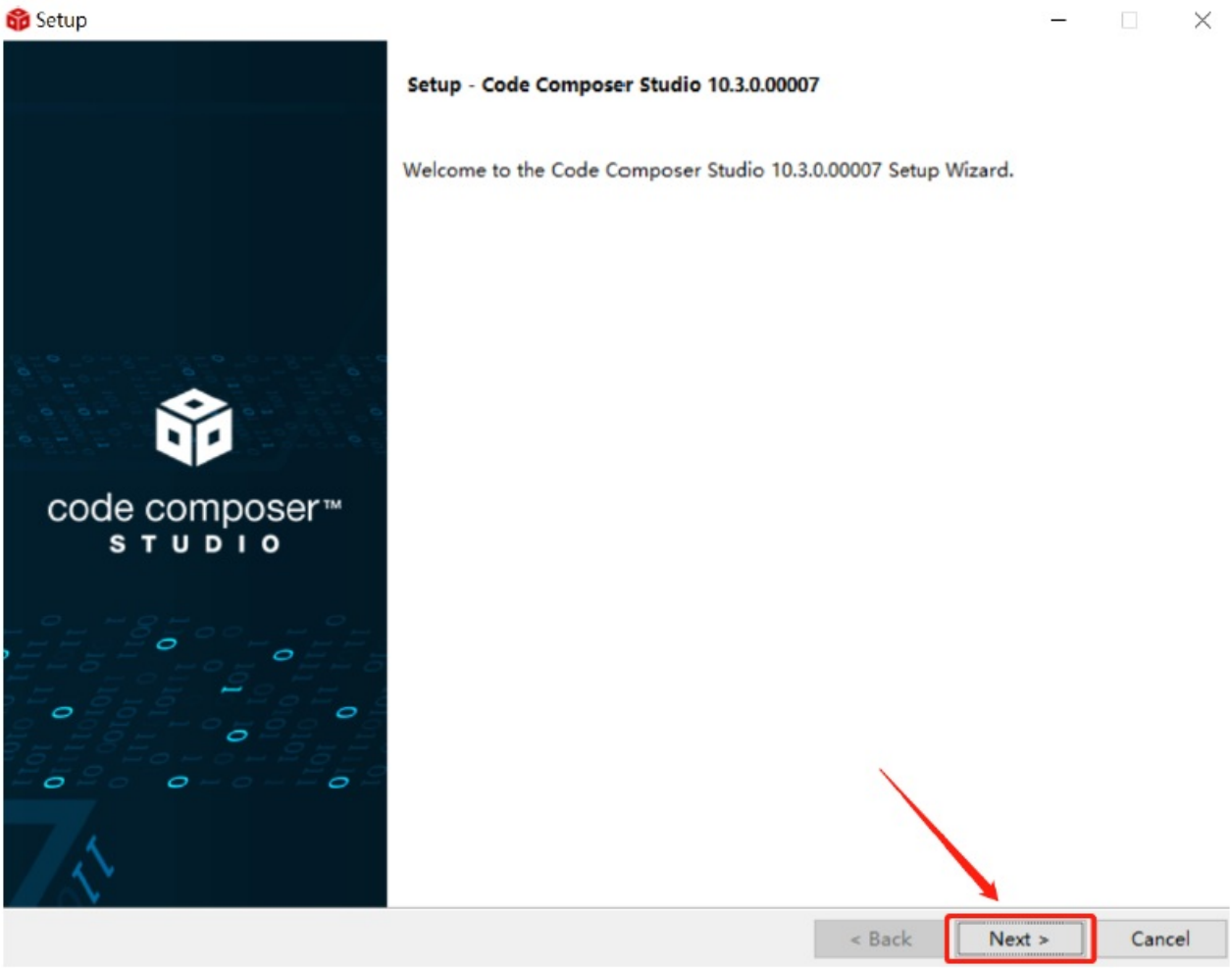
3. Unzip the package to a local disc



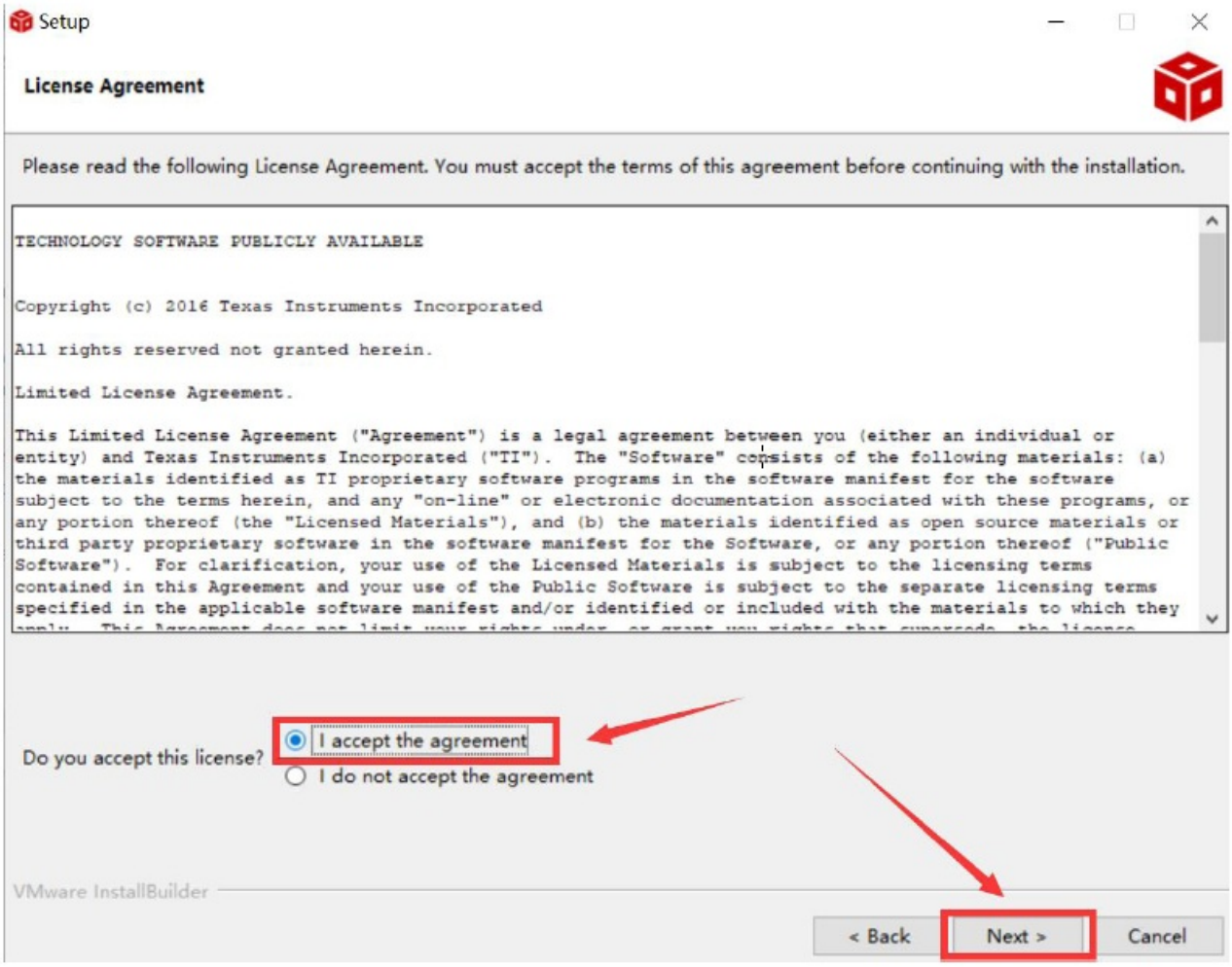
4. Click the setup of CCS



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.
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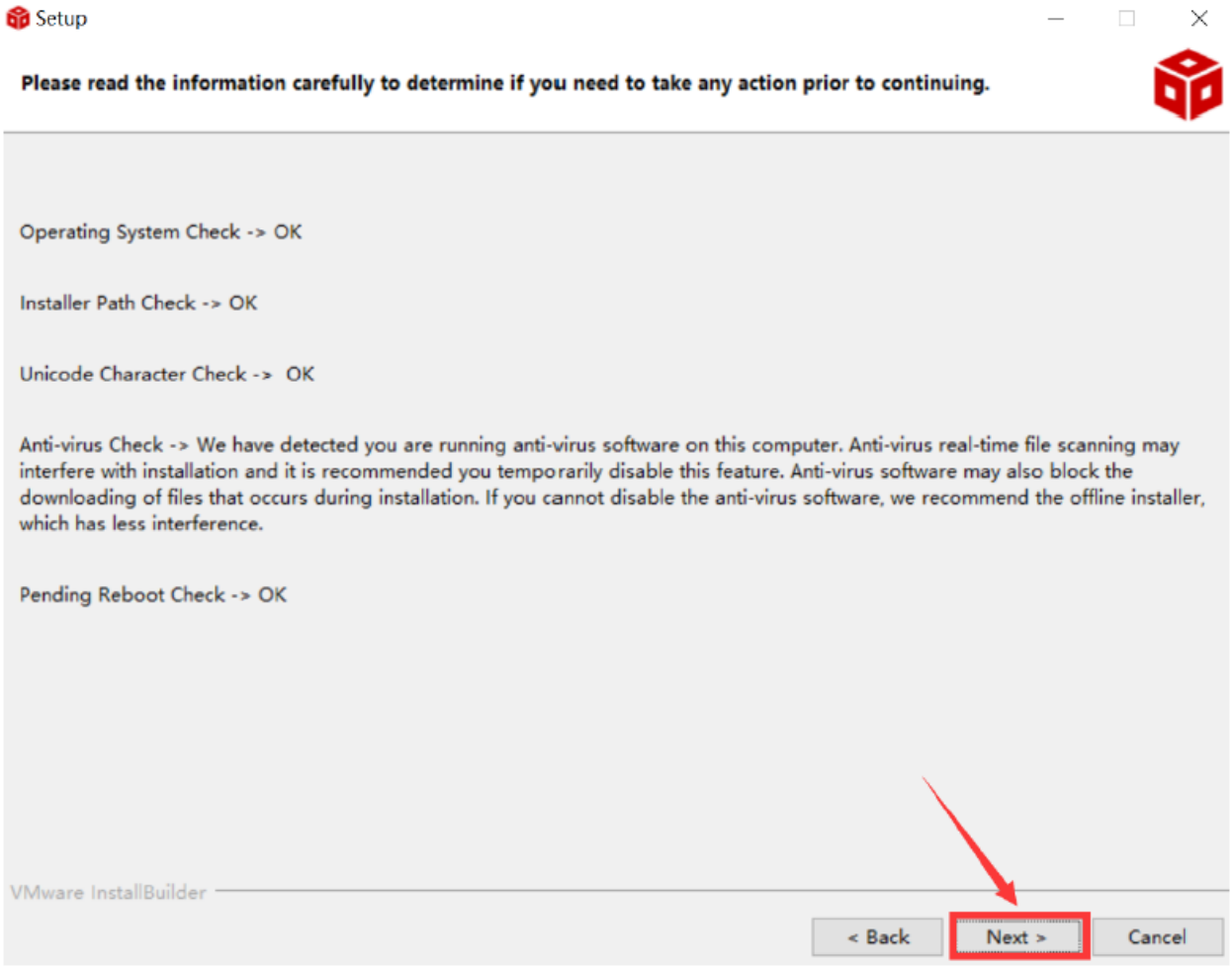
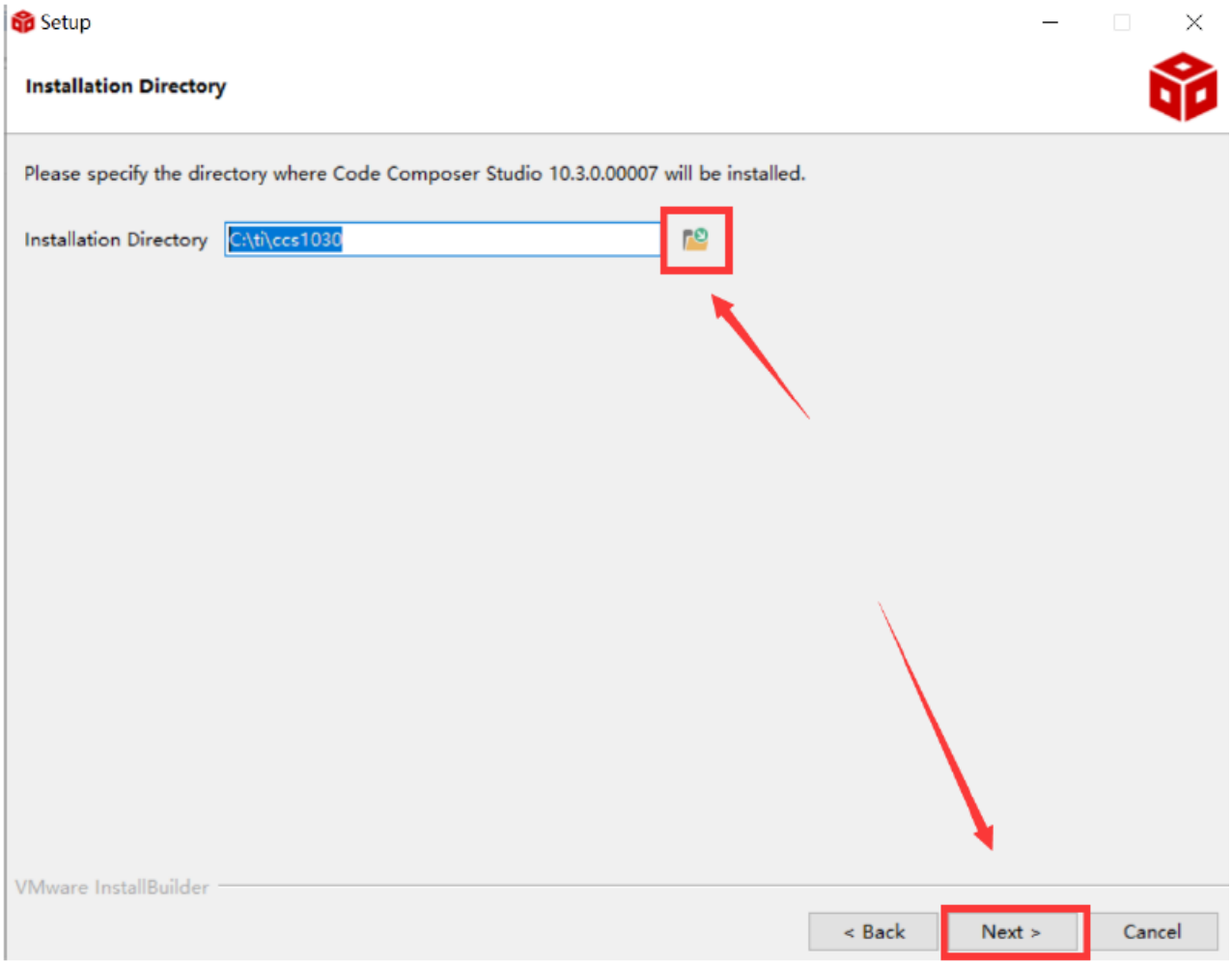
Do you accept this license?
I accept the agreement
I do not accept the agreement
VMware InstallBuilder
< Back
Next >
Cancel

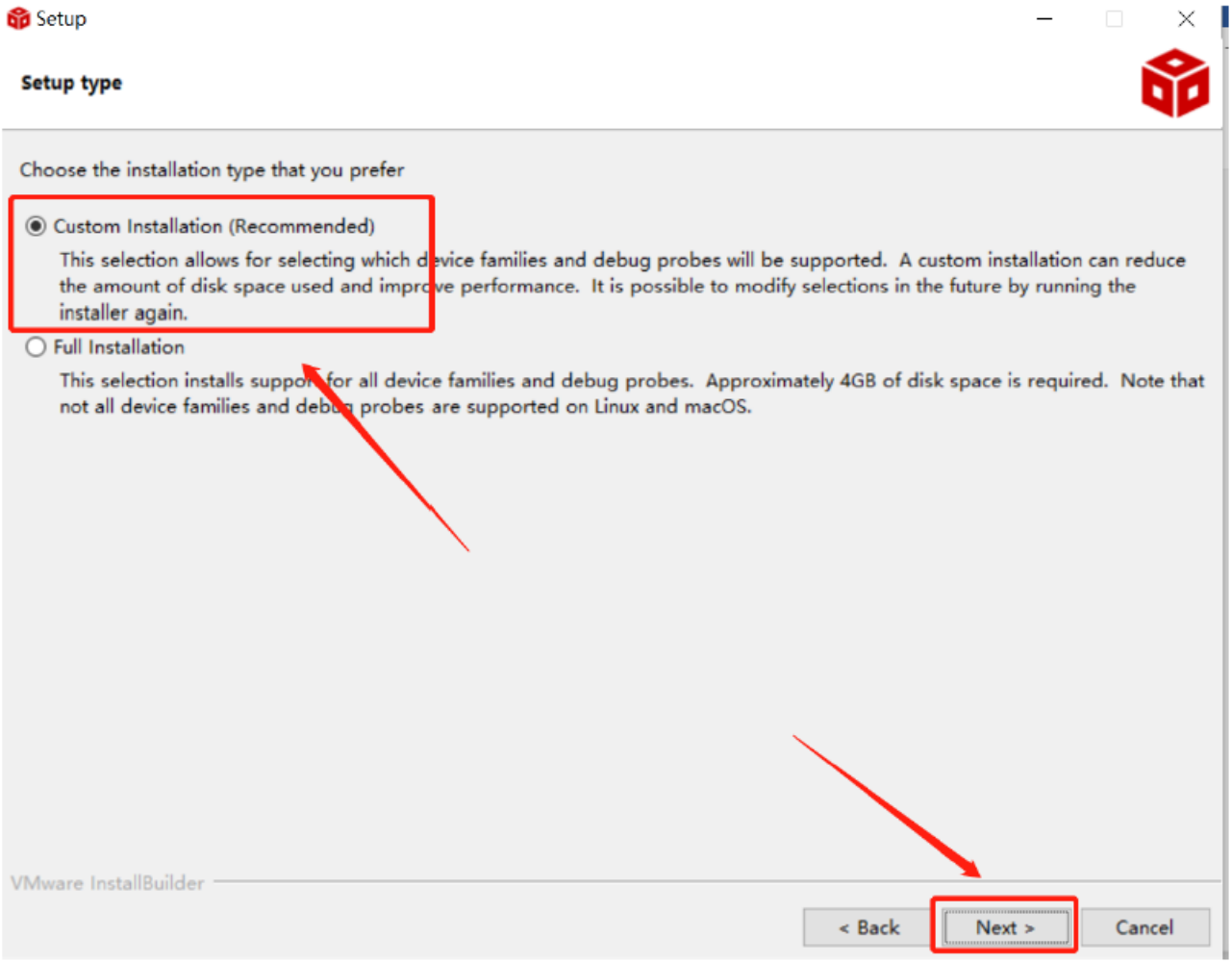
7. Click “Next”



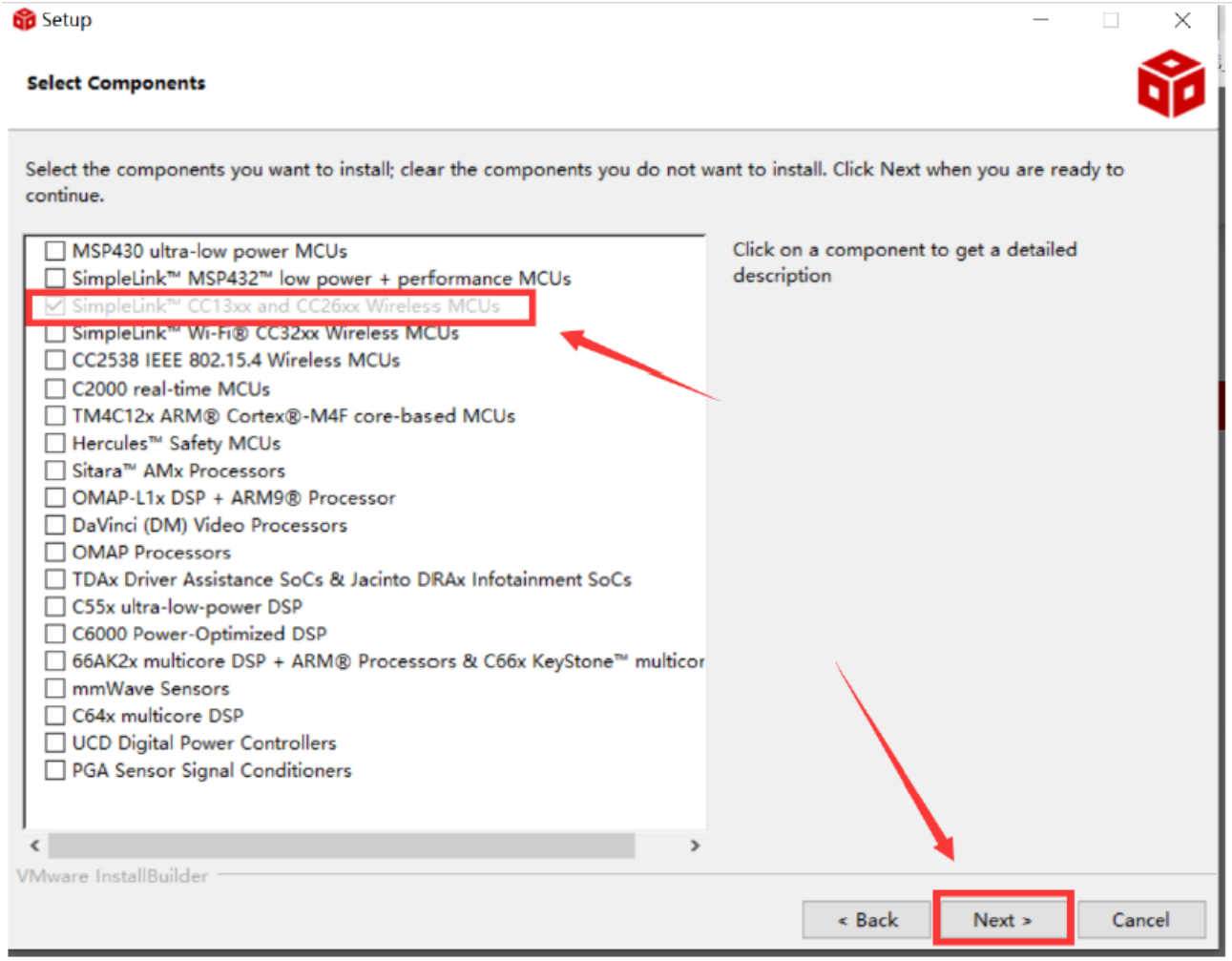
8. Select the Installation Directory



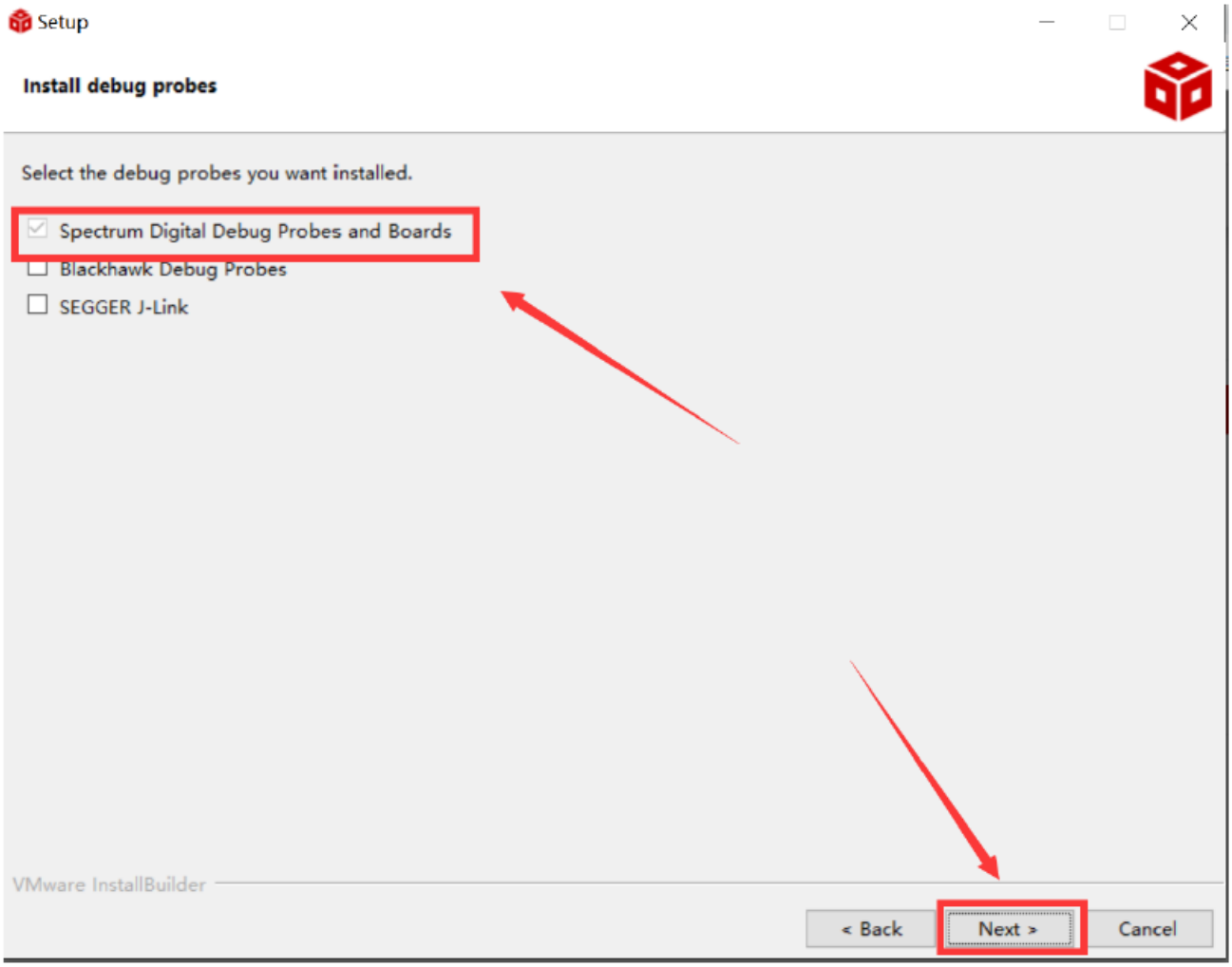
9. Select the default option



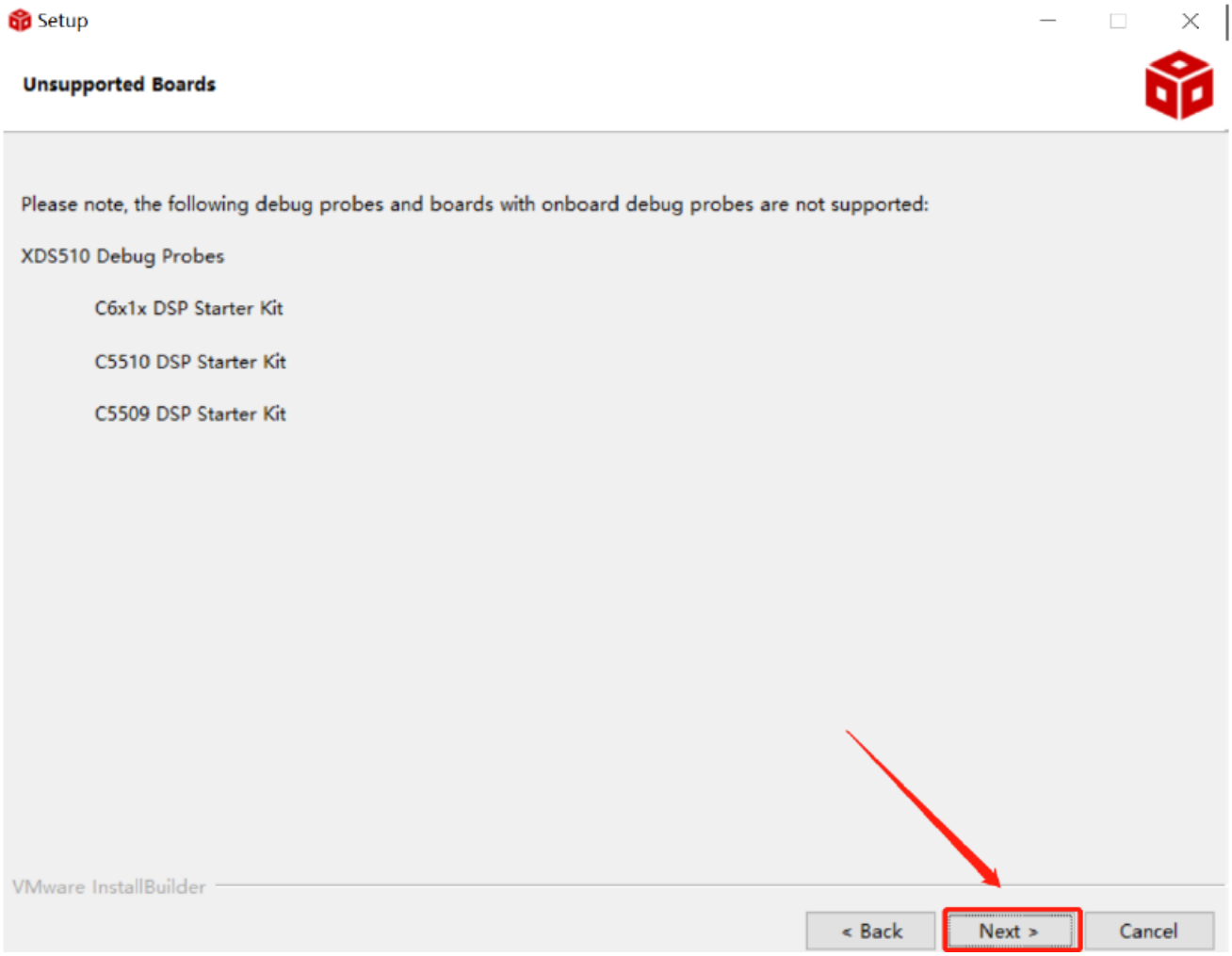
10. Select the component



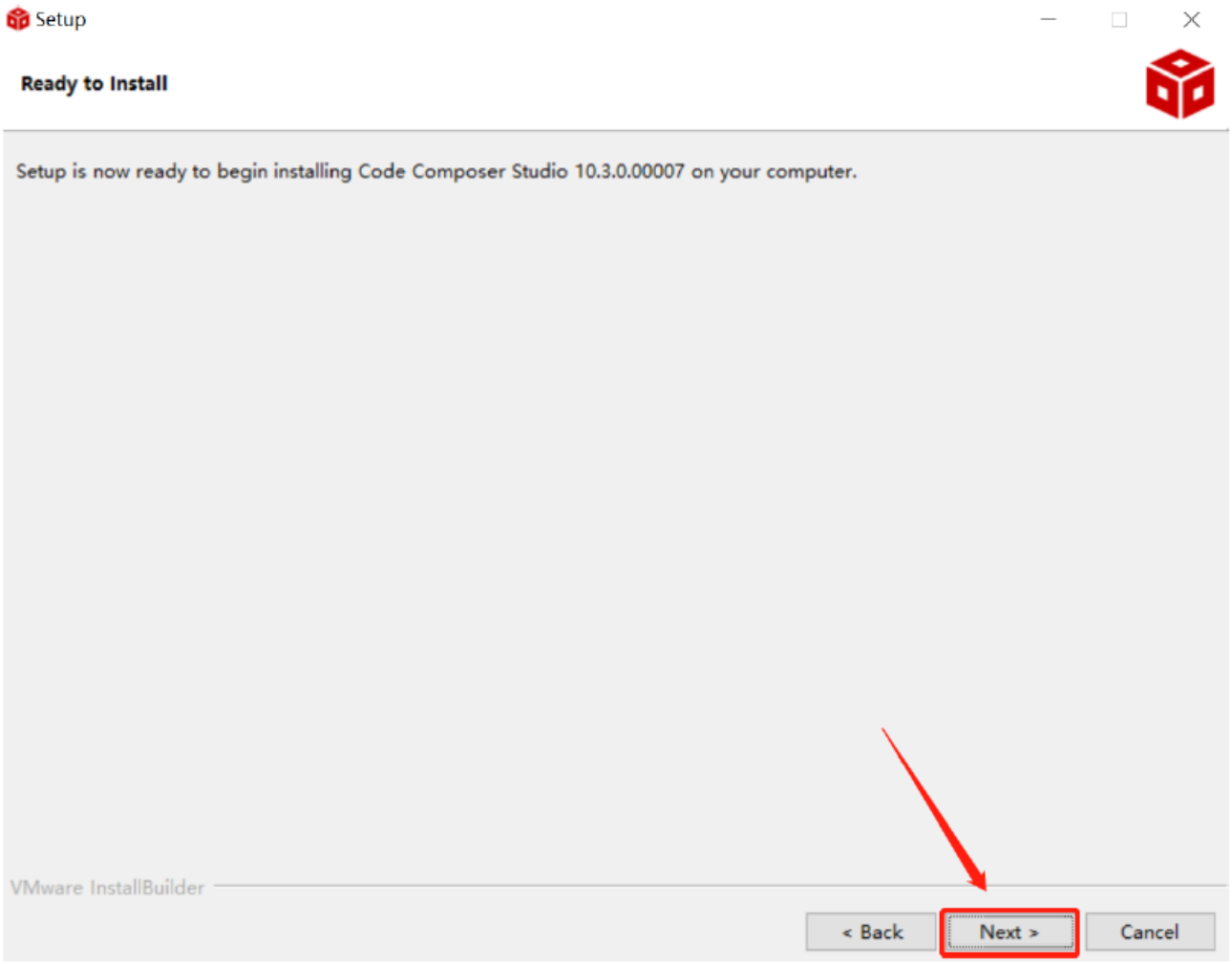
11. Select the default option



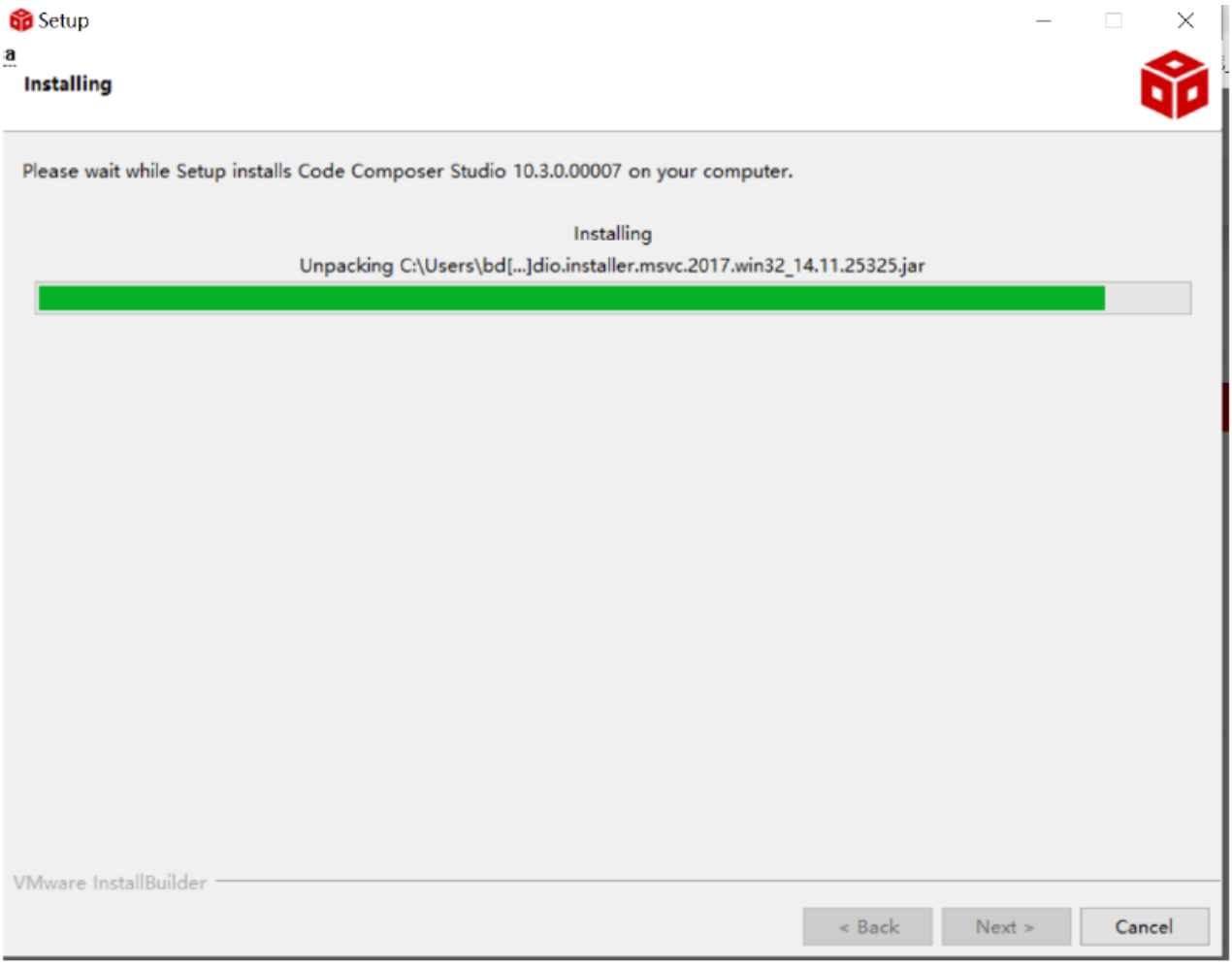
12. Click “Next”



13. Click “Next”

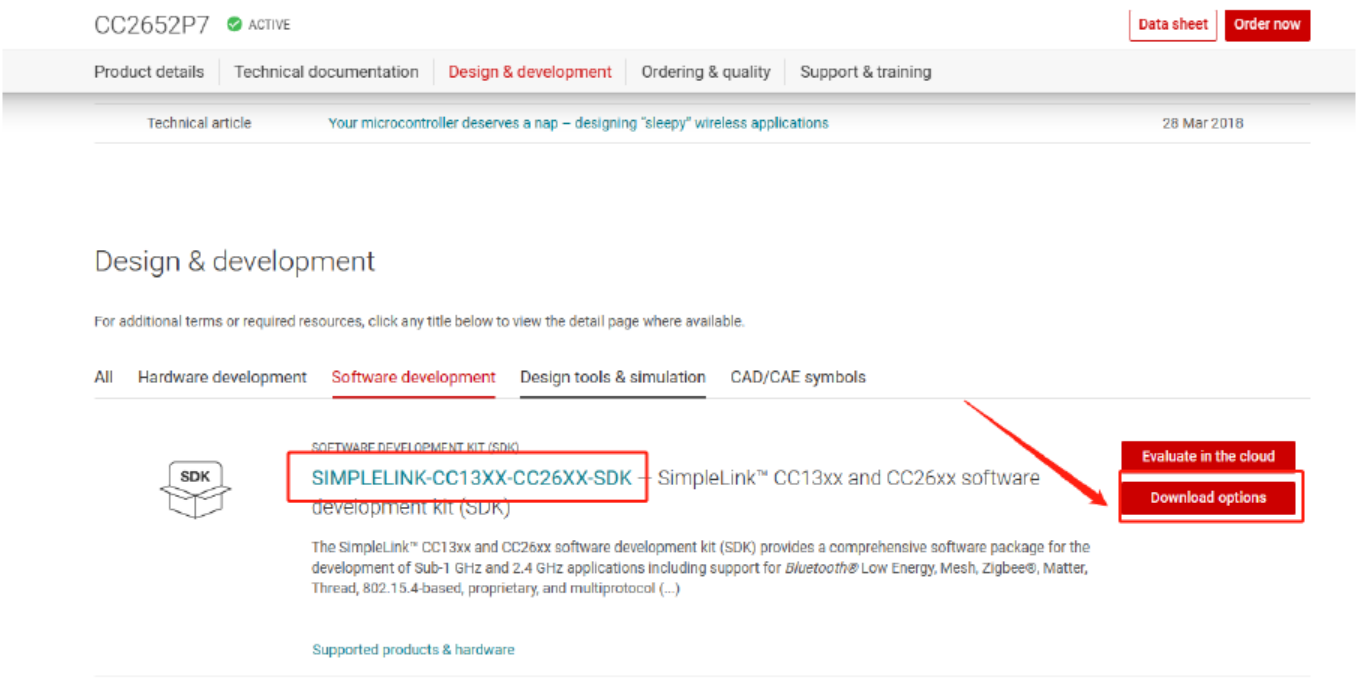


14. Waiting for installation to complete

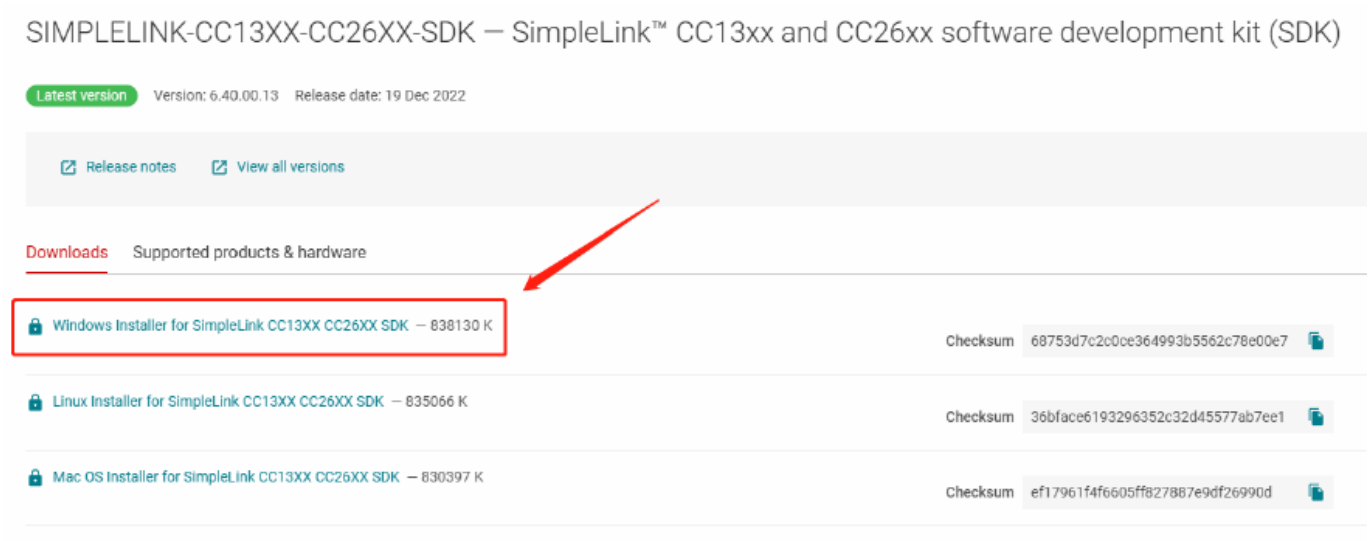


Software Development Kit (SDK) installation

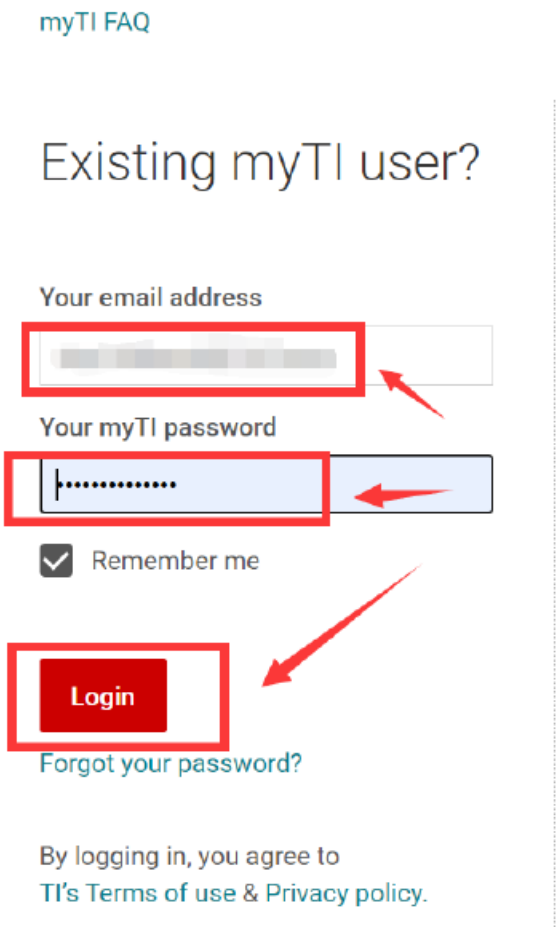
1. Click on this option



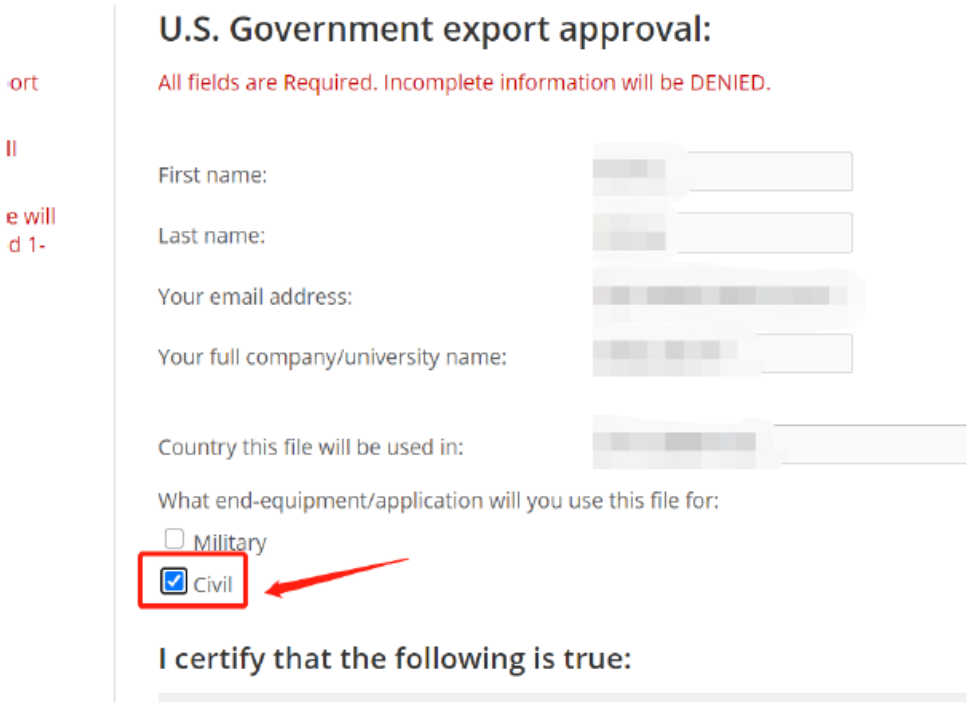
2. Select an option you need to download SDK



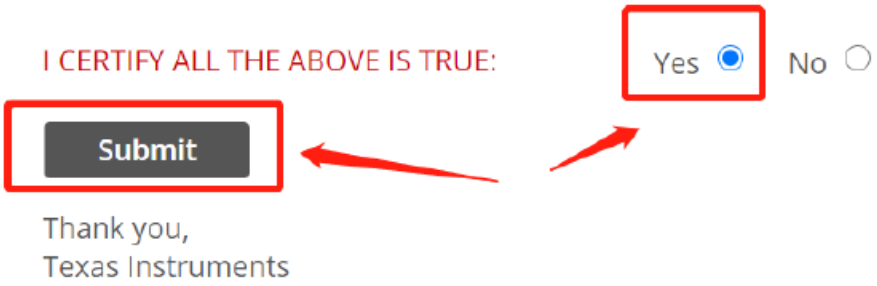
3. Log in to your TI account, if you are a new user, register a TI account first



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



5. Select “Yes” and submit



6. Download SDK

TI Home

TI Request

You have been approved to receive this file. Click "Download" to proceed.

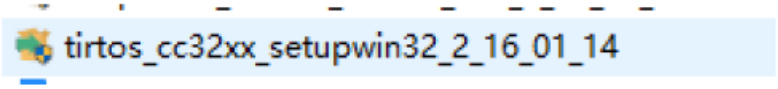
In a few moments, you will also receive an email with the link to this file.

Download

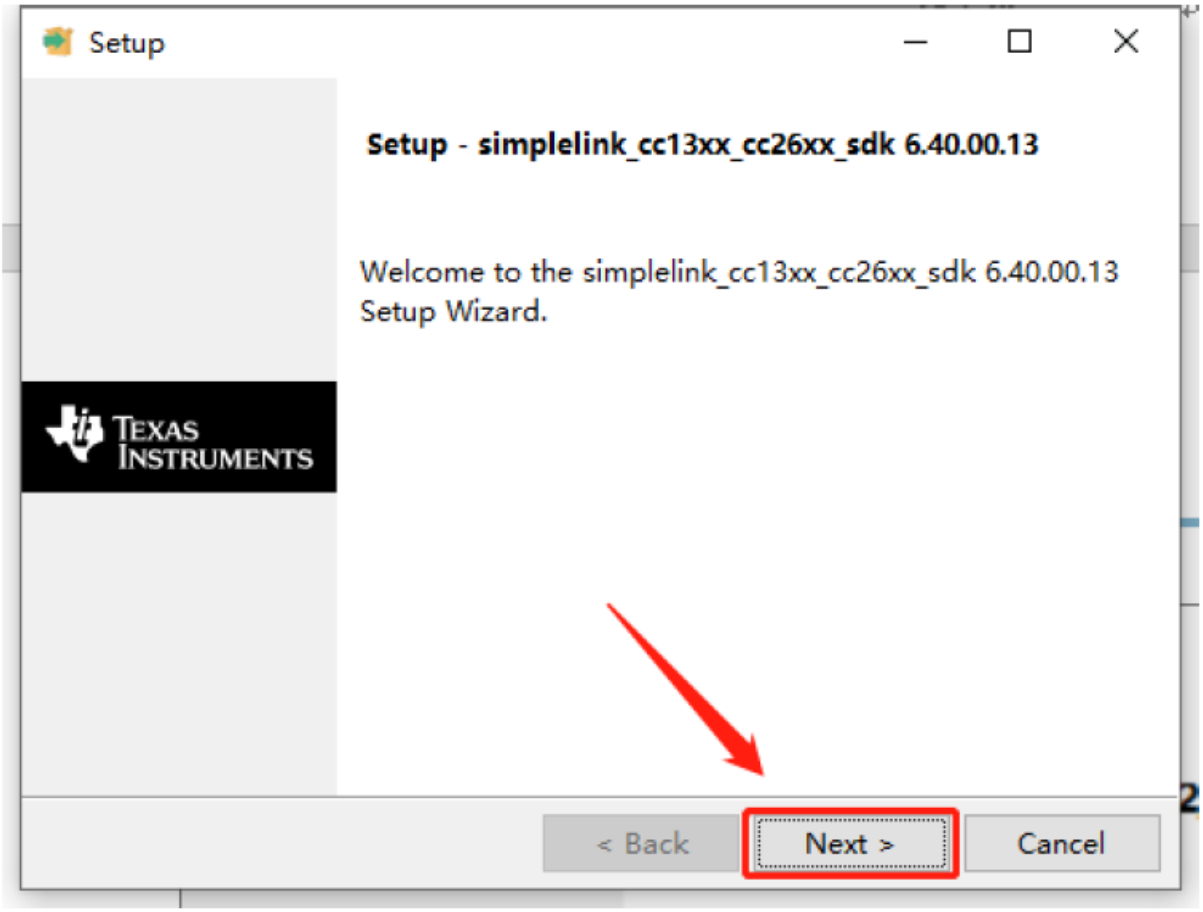
Having trouble downloading? Try www.ti.com/software-help

Thank you,
Texas Instruments

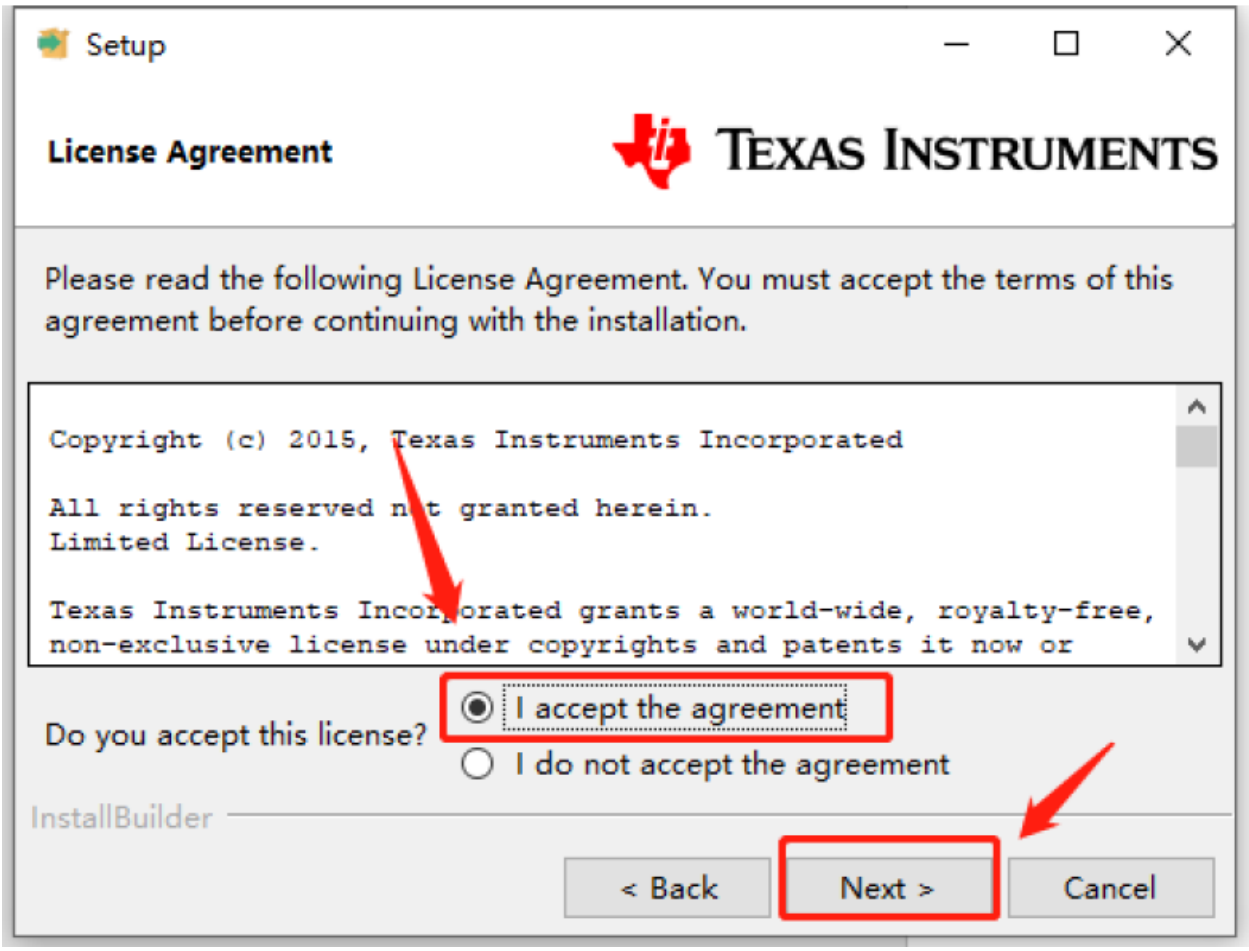
7. Installation



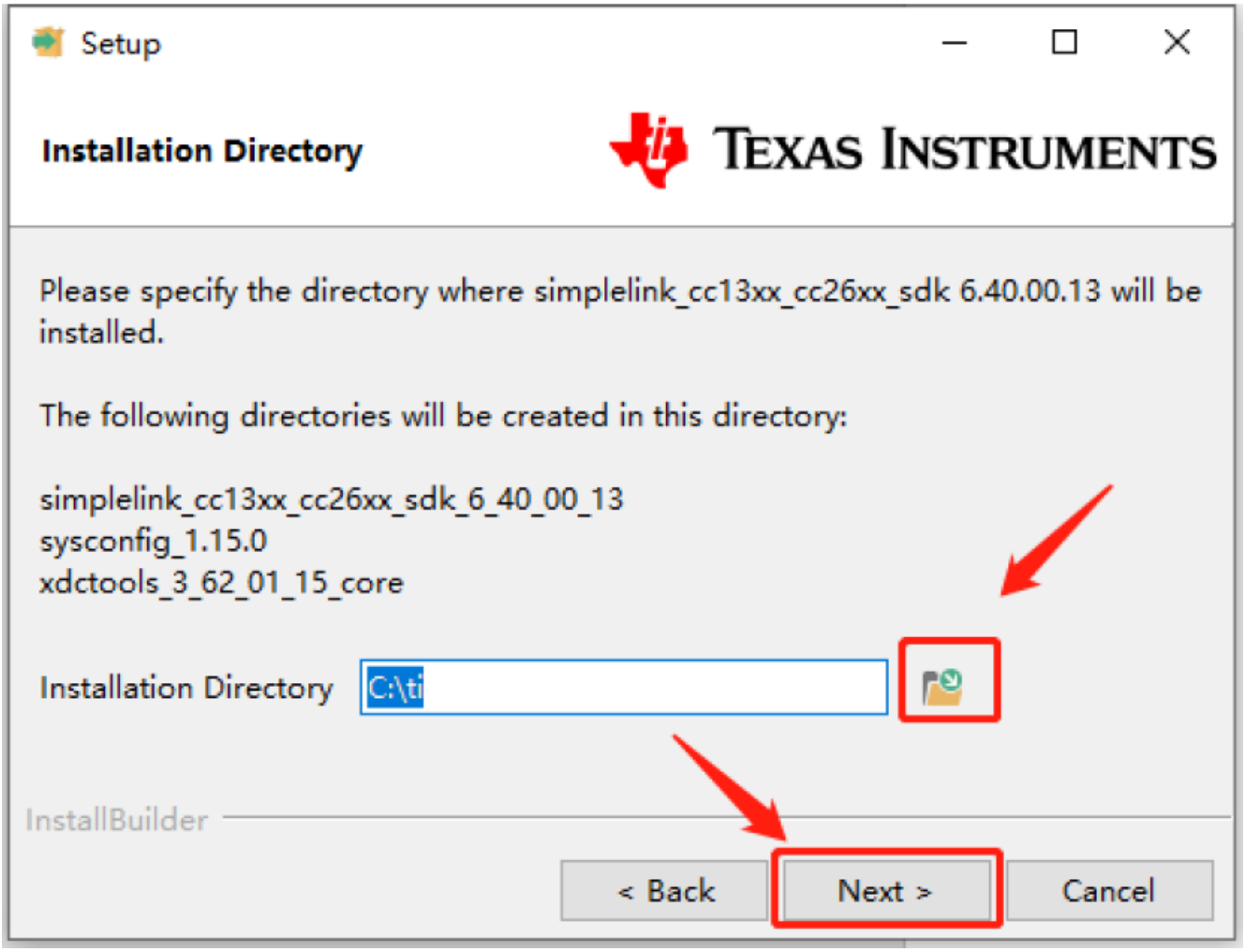
8. Click “Next”



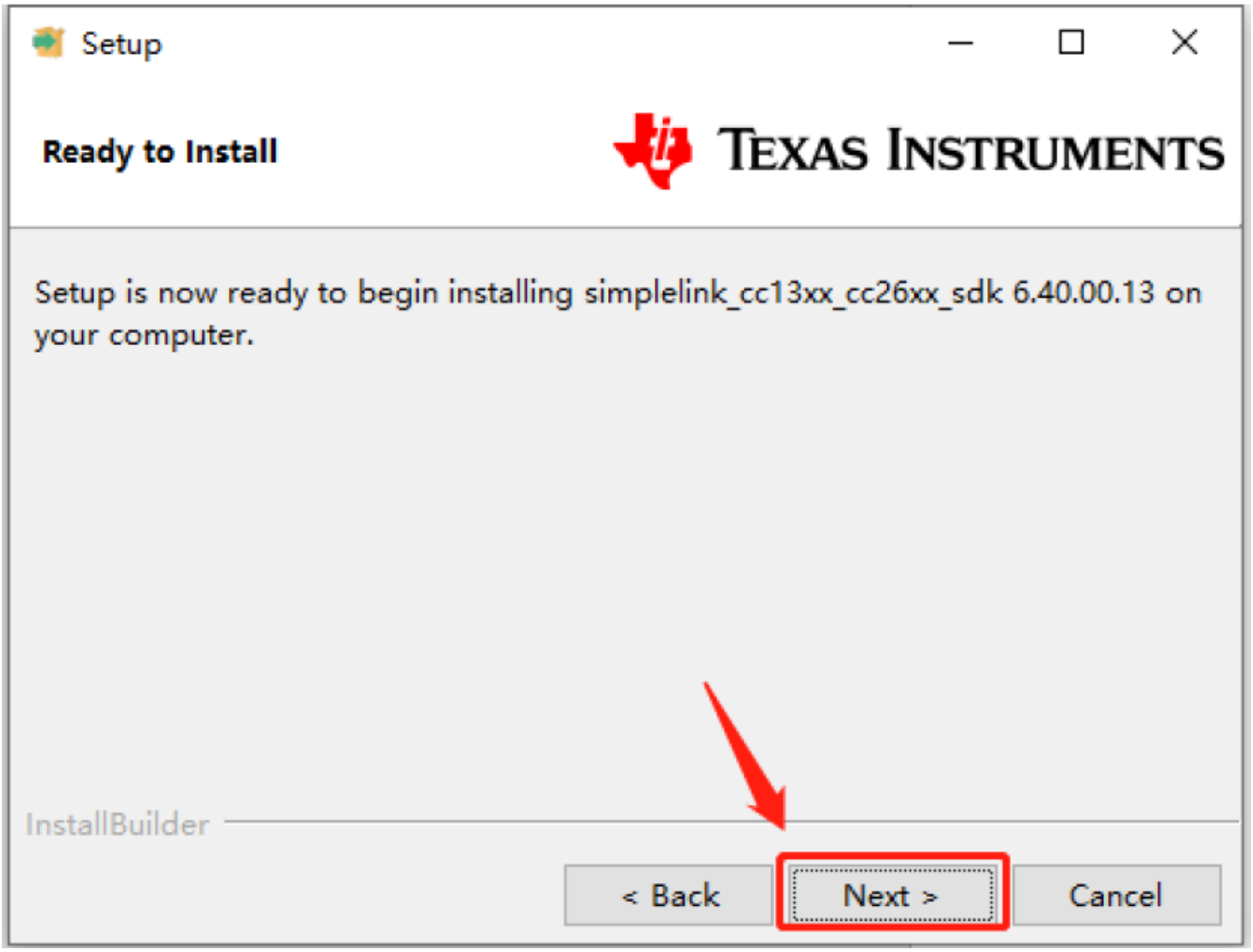
9. Select the default option



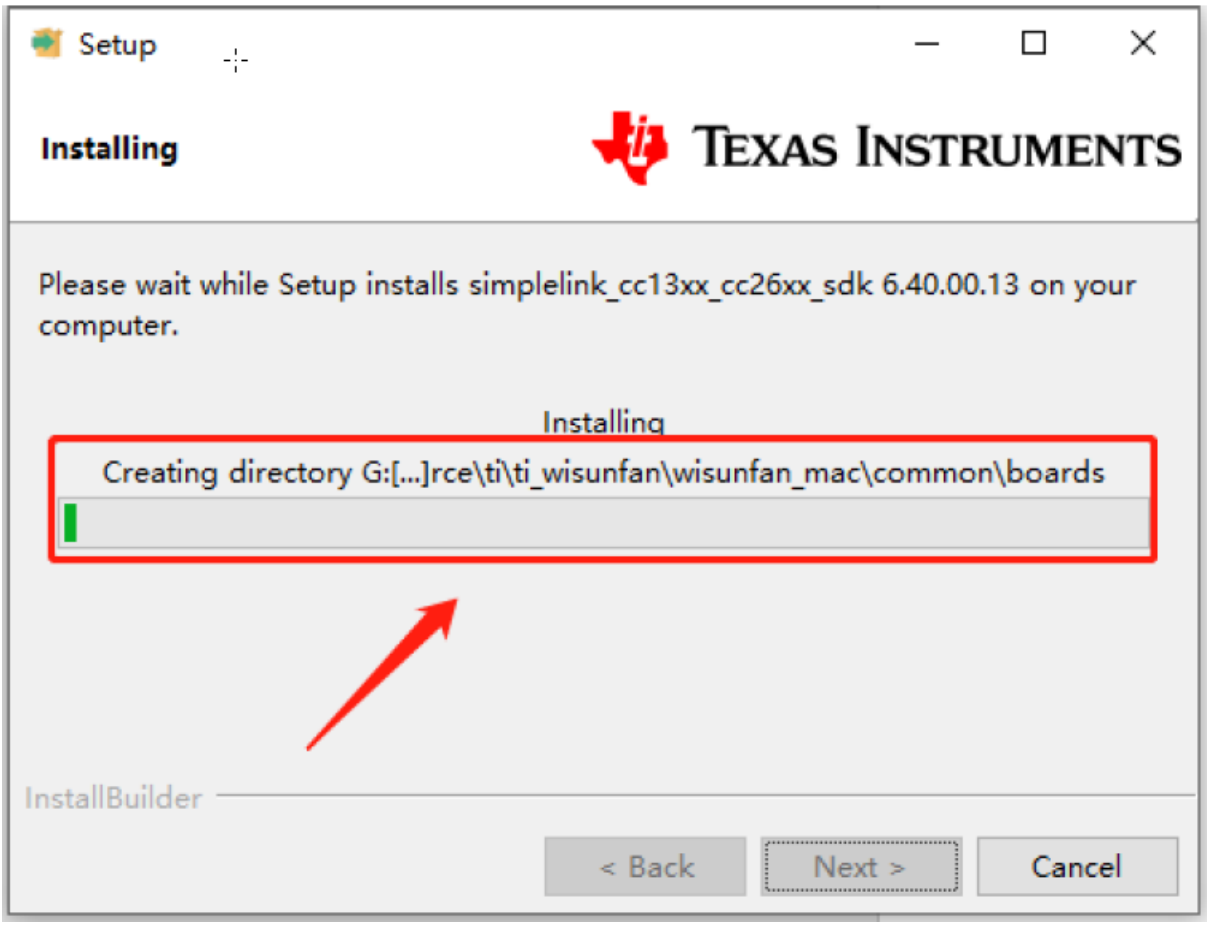
10. Select the Installation directory



11. Click “Next”

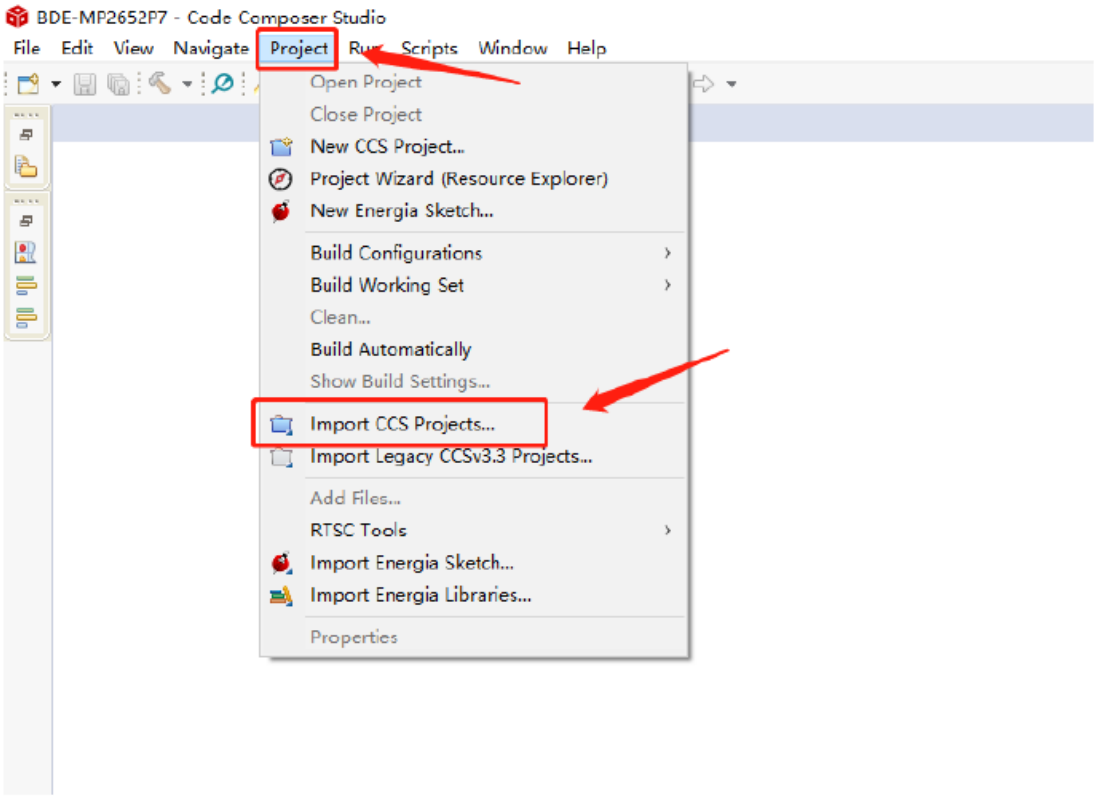


12. Waiting for installation to complete

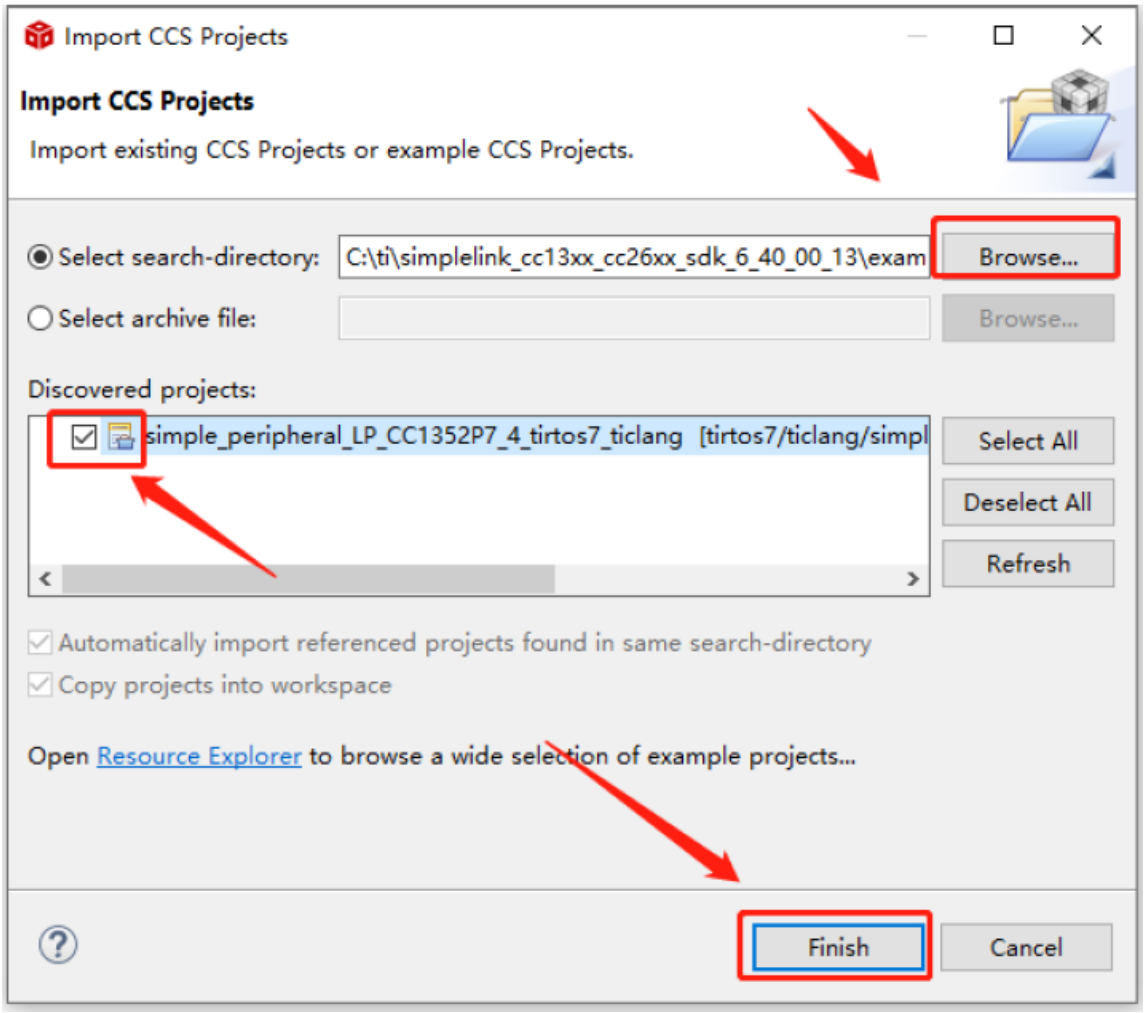


Run an example/demo code

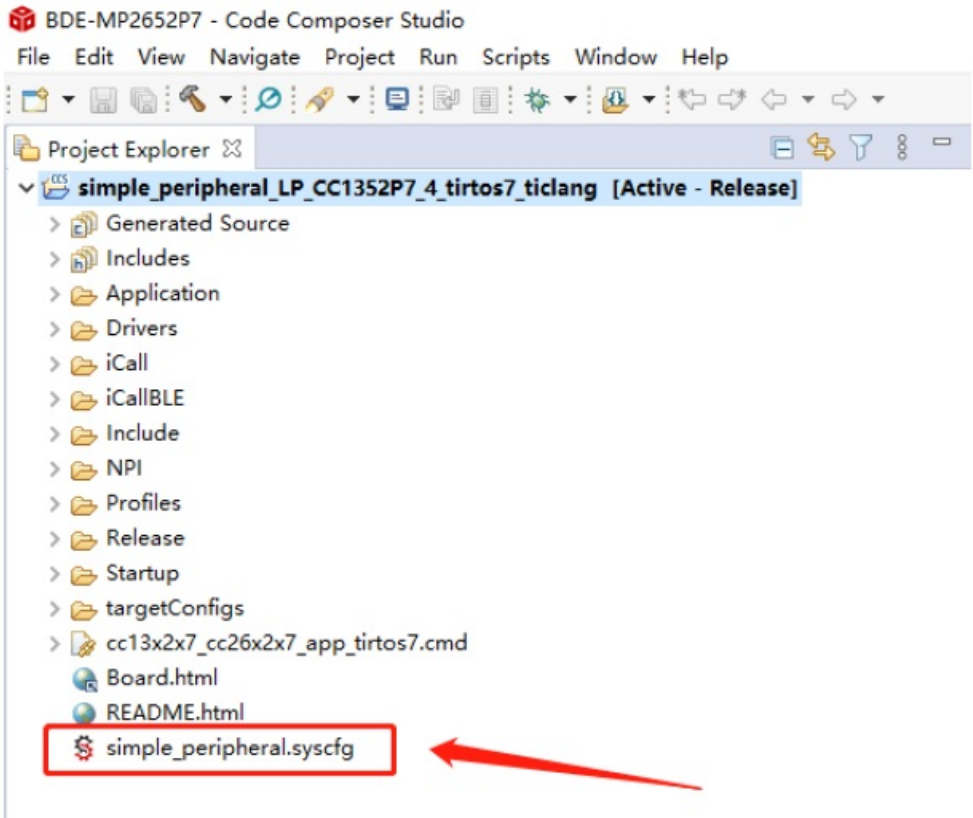
1. For the first module, find the option named “Import CCS project…”



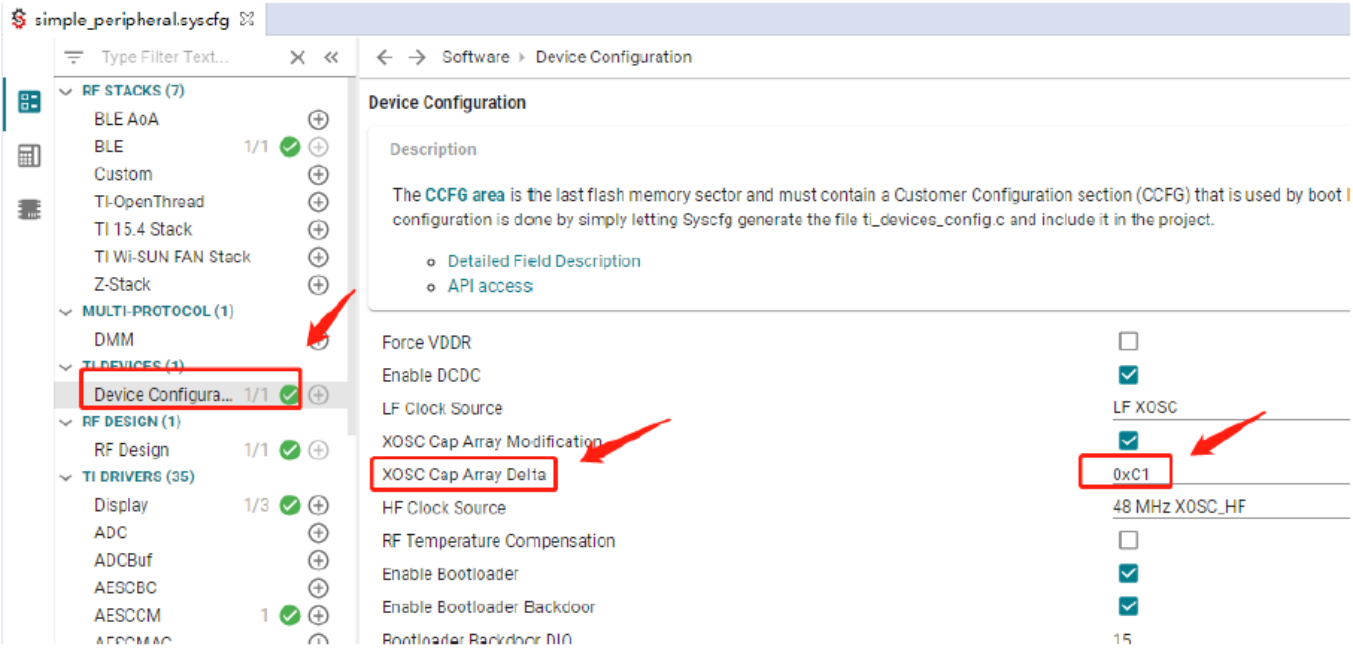
2. According to the following path to find the sending end project:
ti\simplelink_cc13xx_cc26xx_sdk_6_40_00_13\examples\rtos\LP_CC1352P7_4\ble5stack\simple_peripheral
(Since TI does not have a dedicated SDK for CC2652P7, we use LP_CC1352P7_4 instead, which can also run normally on CC2652P7 devices)



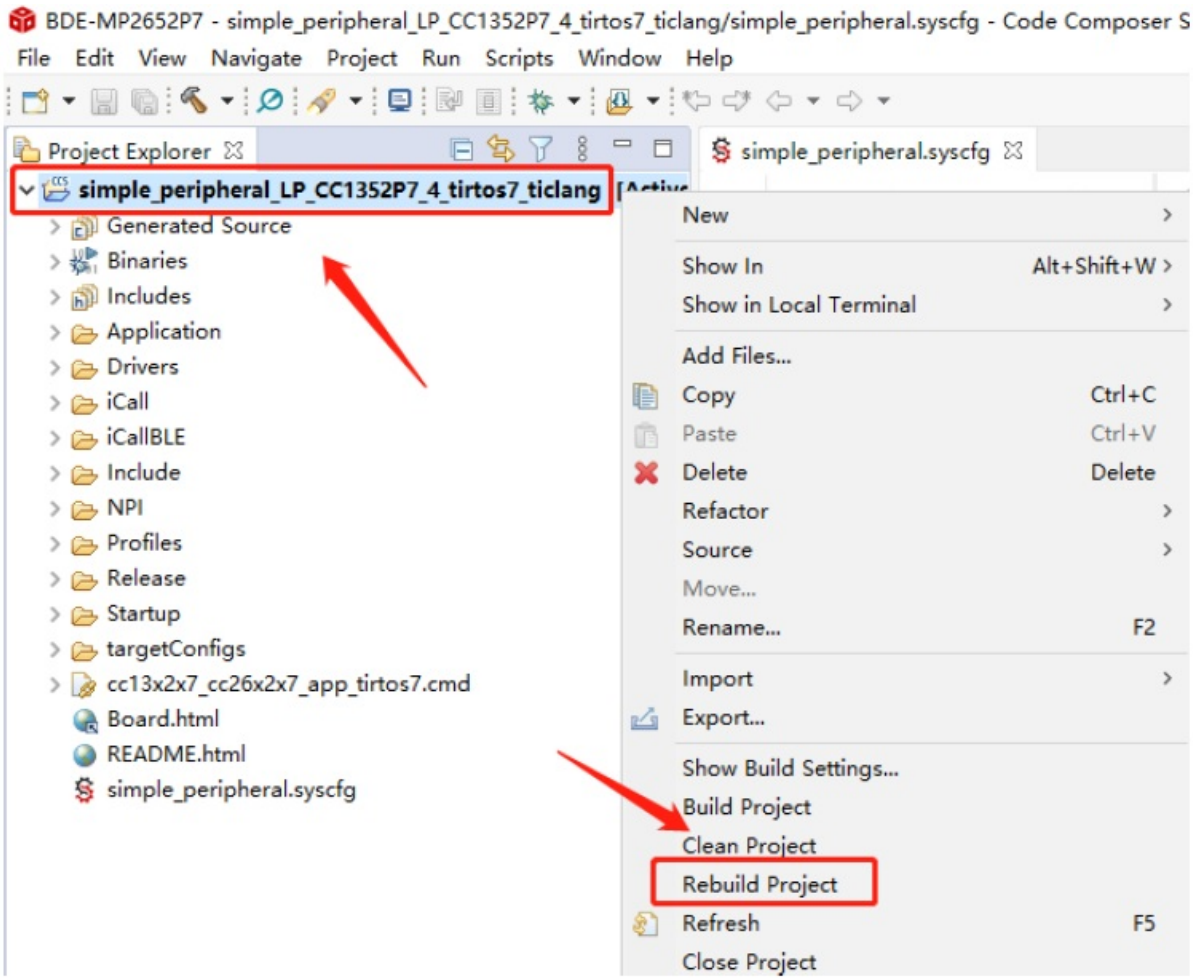
3. Open the file: simple_peripheral.syscfg



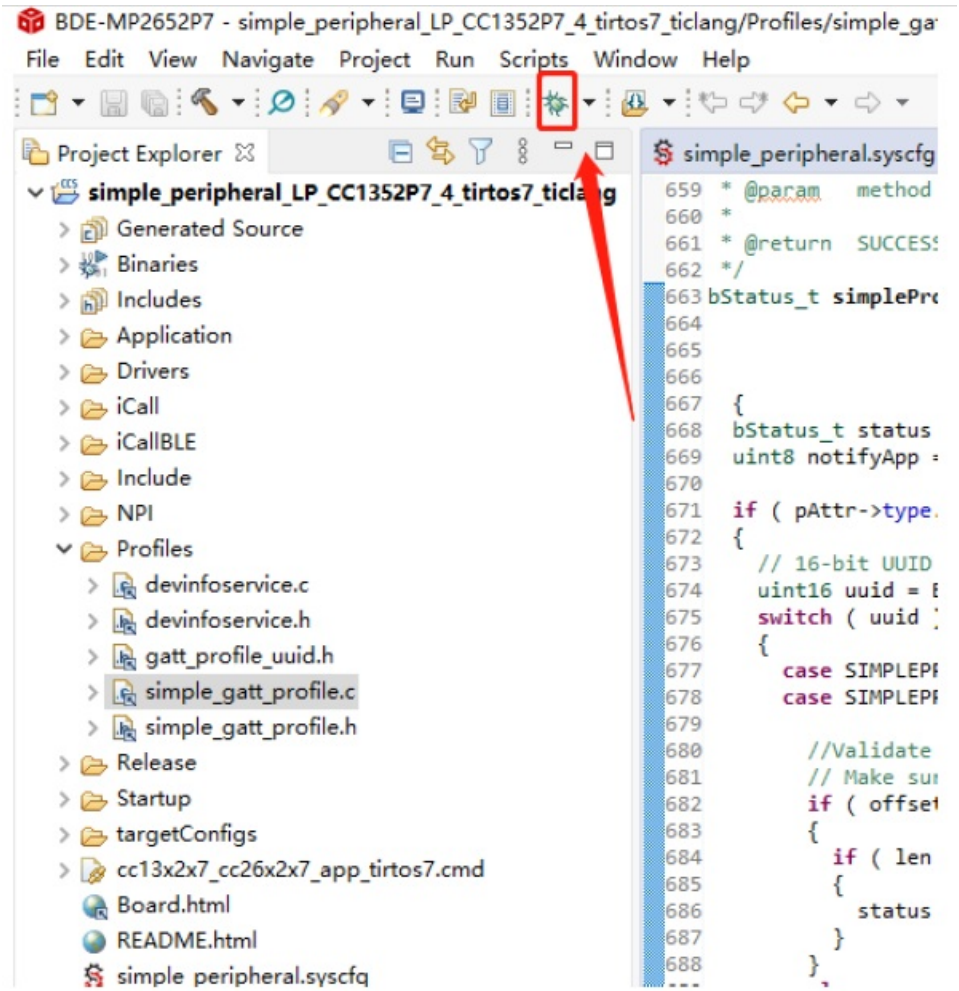
4. Chang the “0xC1” to “0x00”.



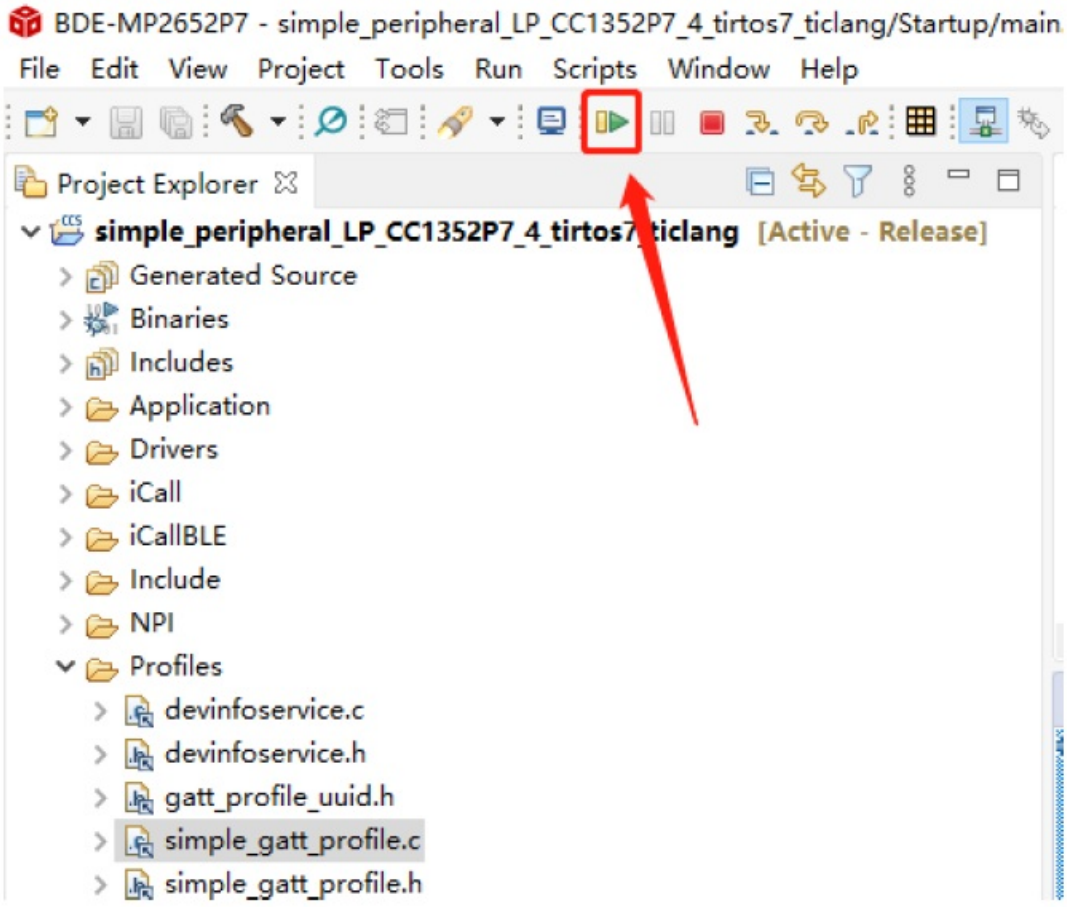
5. Right Click the project to build the receiving end project



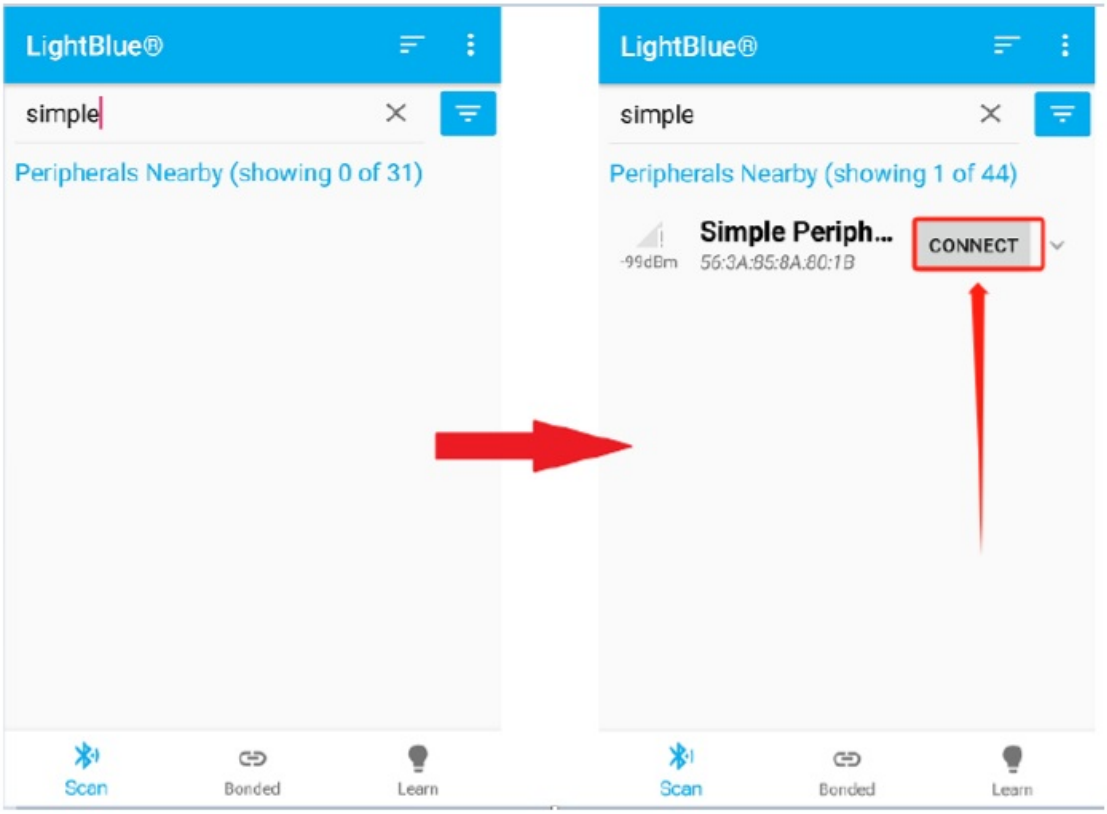
6. Click this bug icon (means download and debugging)



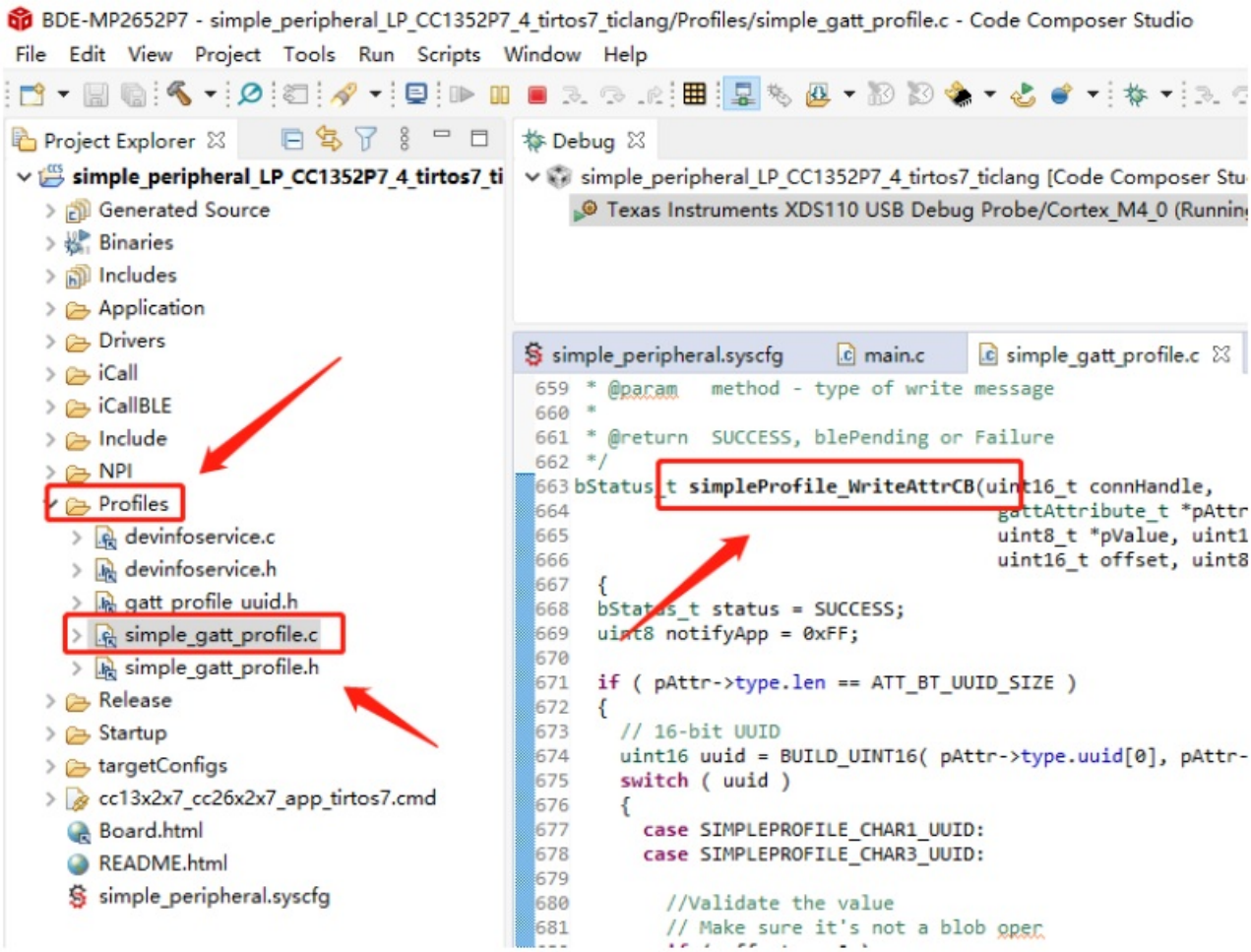
7. C lick on this option to start debugging



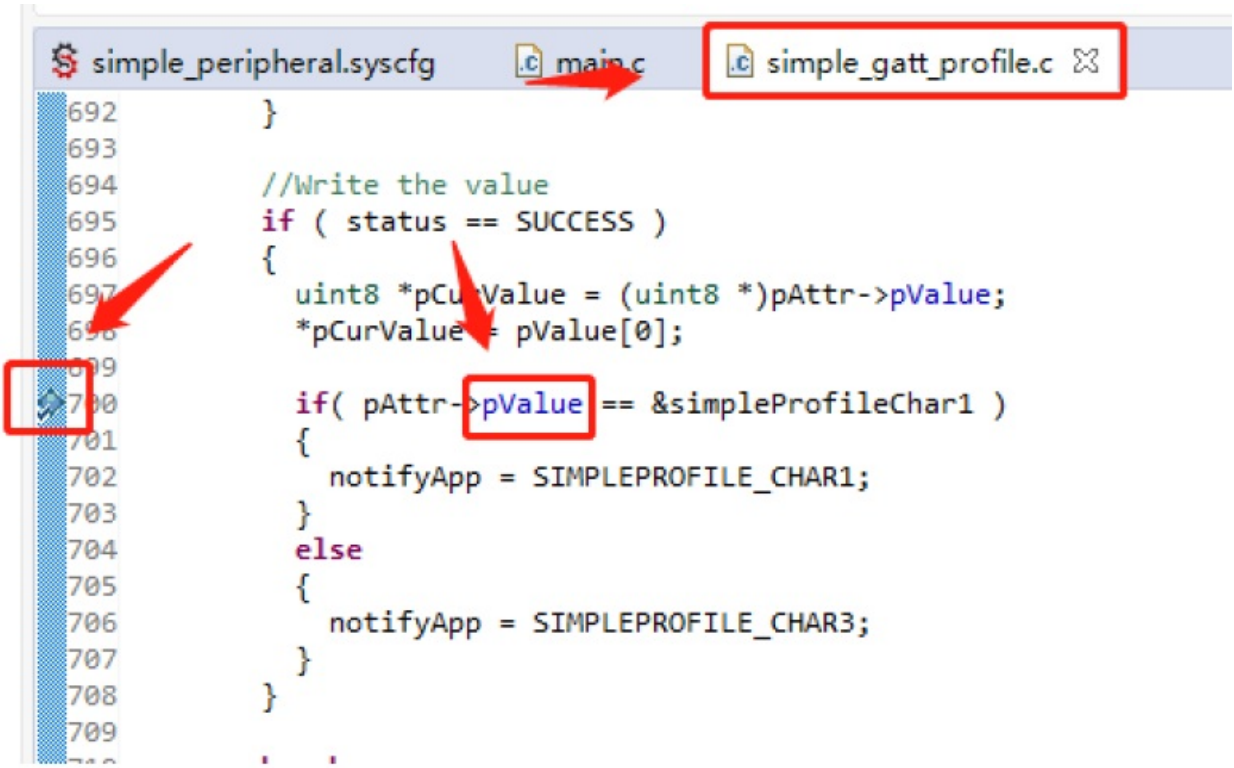
8. **Download and start Lightblue** (an APP on your mobile device)
9. BDE-MP2652P7 is advertising, you can receive the signal on Lightblue, then click “**connect**” to connect the mobile phone and the BDE-MP2652P7.



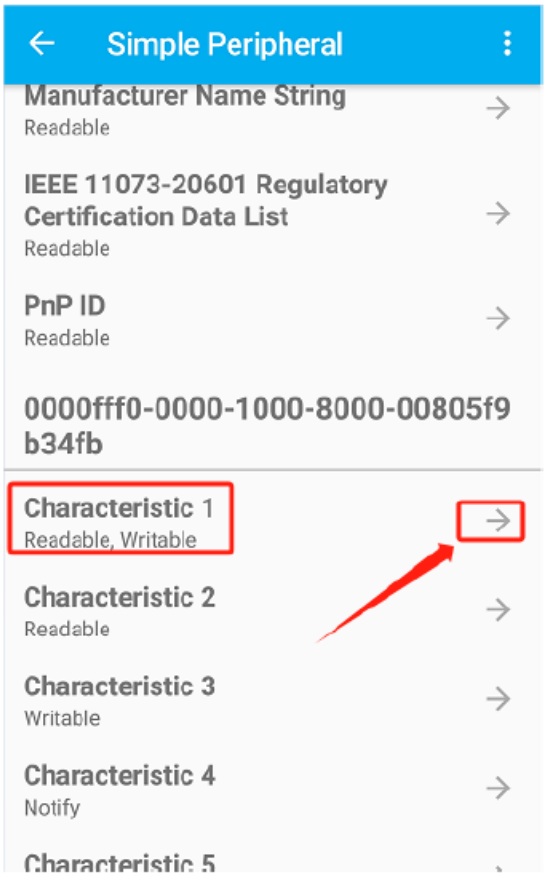
10. Find the file which is named **“simple_gatt_profile.c”** and the function which is named “**simpleProfile_WriteAttrCB**”



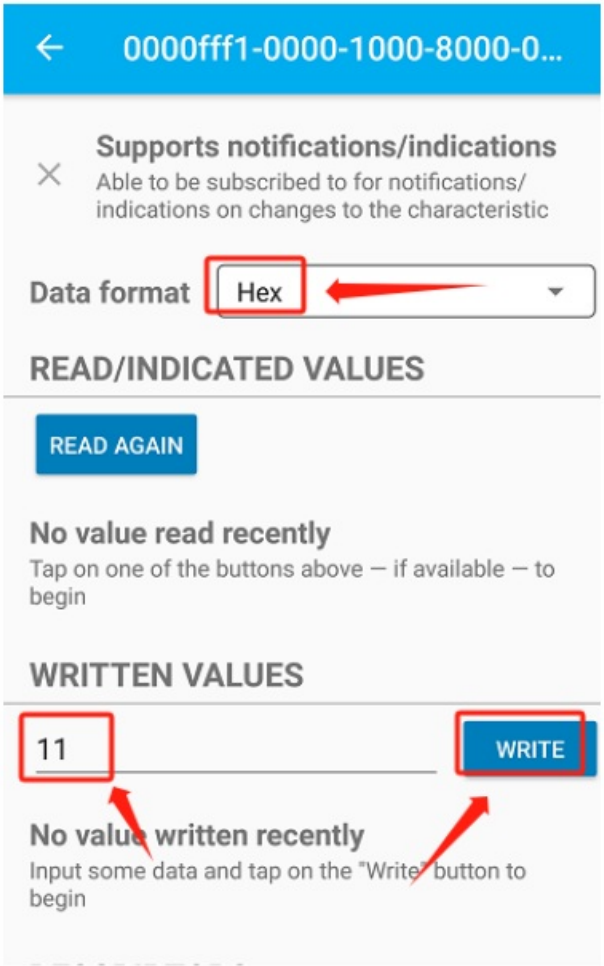
11. Find “**pValue**” in the function and set a breakpoint at the same line



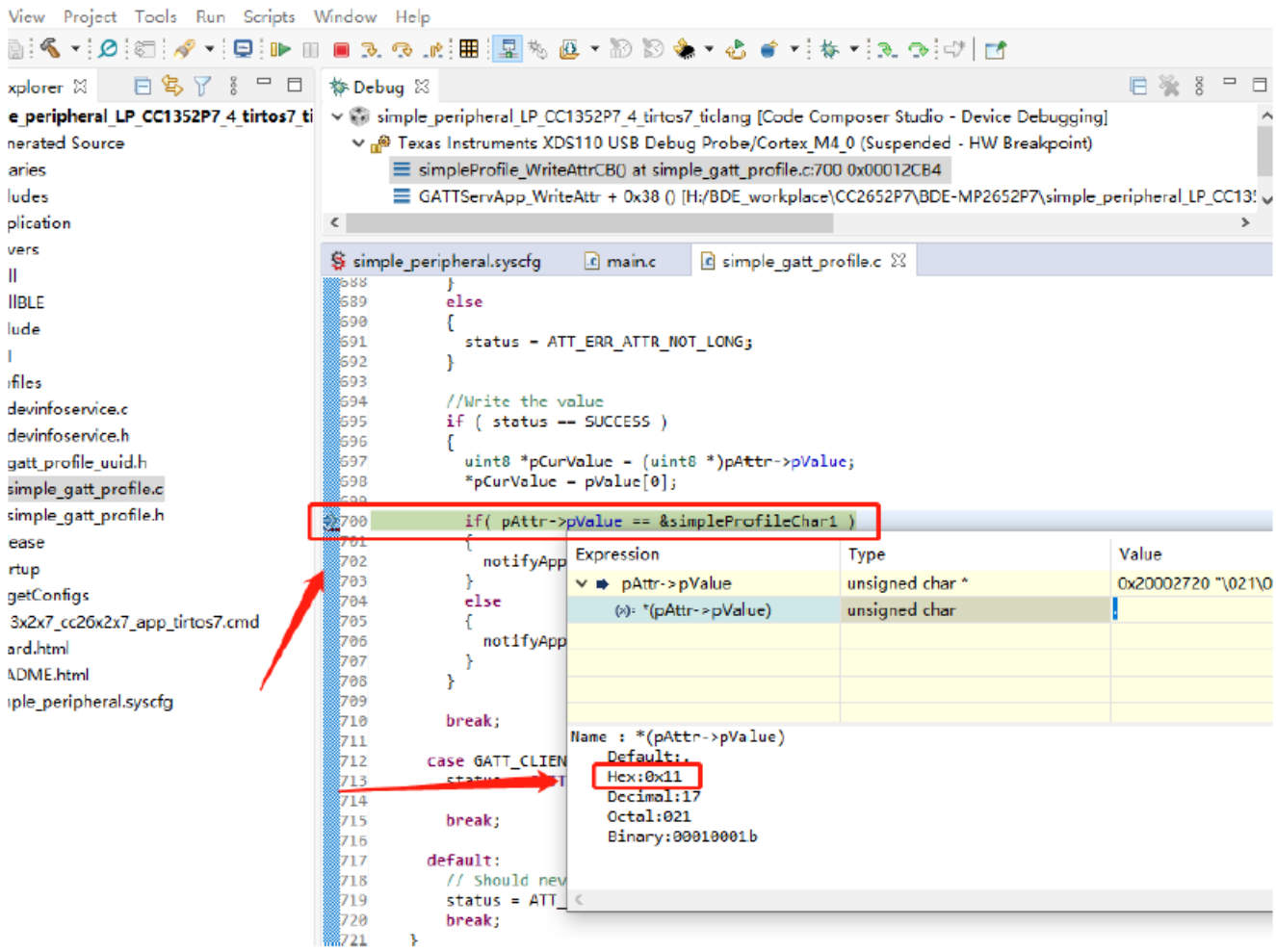
12. Click the up arrow to send a message to the BDE-MP2652P7



13. Send 0x11 to the BDE-MP2652P 7



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.
China:
B2-403, 162 Science Ave, Huangpu District, Guangzhou, 510663
Tel: +86-020-28065335
Website: http://www.bdecomm.com/cn/ Email: shu@bdecomm.com
USA:
67 E Madison St, #1603A, Chicago, IL 60603
Tel: +1-312-379-9589
Website: http://www.bdecomm.com/ Email: info@bdecomm.com

FAQ

Q: What is the recommended power supply for BDE-MP2652P7?

A: A USB cable can be used for power supply and debugging.

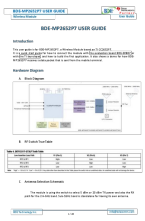
Q: Can BDE-MP2652P7 communicate on both 2.4 GHz and Sub-1GHz bands?

A: Yes, BDE-MP2652P7 can communicate on both frequency bands.
The 2.4 GHz band is used for both transmission and reception, while the Sub-1GHz band is only used for reception.

Q: What software tools are recommended for developing with BDE-MP2652P7?

A: Terminal software such as CCS or IAR, CCS download, Software Development Kit (SDK), and Lightblue are recommended software tools for developing with BDE-MP2652P7.

Documents / Resources

	BDE Technology BDE-MP2652P7 Wireless Module [pdf] User Guide BDE-MP2652P7 Wireless Module, BDE-MP2652P7, Wireless Module, Module

References

- TI E2E support forums
- CCSTUDIO IDE, configuration, compiler or debugger | TI.com
- User Manual