

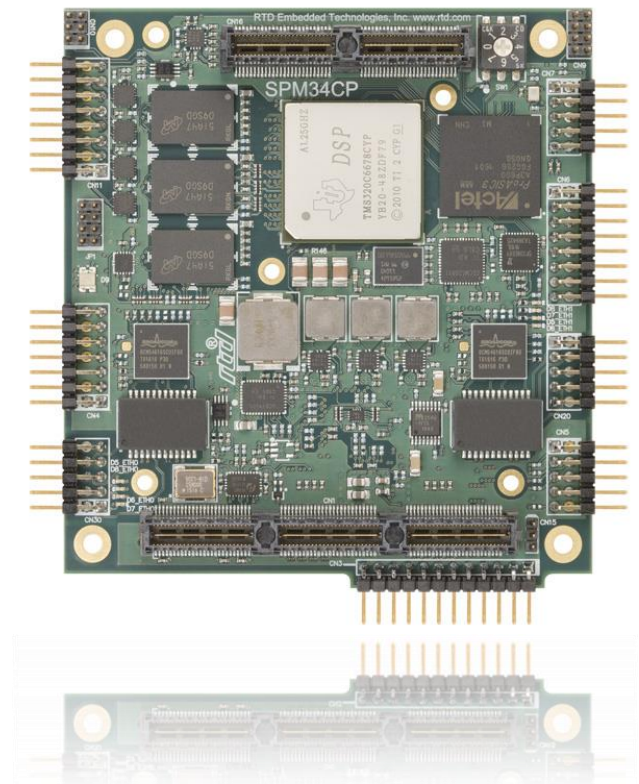


# SPM34CP, SPM35CP

*Installing and Working with Code Composer Studio*

User's Manual

SWM-640030026 Rev. B



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# Revision History

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Rev A	Initial Release
Rev B	Added section 2.1.3 for setting up XDC

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# Table of Contents

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<b>1</b>	<b>Introduction</b>	<b>5</b>
1.1	Product Overview.....	5
<b>2</b>	<b>Installation</b>	<b>6</b>
2.1	Installation of Code Composer Studio for Windows .....	6
2.1.1	Install Code Composer Studio 6.2.0.0050 .....	6
2.1.2	Install BIOS-MCSDK v2.1.2.6 .....	7
2.1.3	Setup XDC .....	7
2.1.4	Setup Code Composer Studio .....	7
2.2	Installing Code Composer Studio for Linux .....	8
2.2.1	Dependencies for different Linux Systems .....	8
2.2.2	Editing files to allows MCSDK to install on Linux .....	9
<b>3</b>	<b>Building SPM3xCP Projects</b>	<b>10</b>
3.1	Importing and Building Projects .....	10
3.2	Loading Projects onto the SPM3xCP .....	11
<b>4</b>	<b>Limited Warranty</b>	<b>12</b>

# Table of Figures

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Figure 1: Keystone I Support Window .....	6
Figure 2: MCSDK Installation Window.....	7
Figure 3: Discovering Installable Products .....	8
Figure 4: Installing C6000 Compiler .....	8
Figure 5: Importing Examples.....	10
Figure 6: Adding Variable Paths .....	11

# 1 Introduction

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## 1.1 Product Overview

The SPM3xCP dspModule is delivered with example programs that can be loaded in from a host computer using a JTAG emulator that plugs into CN4 of the DSP board and USB of the host CPU. The software used on the host computer to facilitate this operation is Texas Instruments Code Composer Studio. In addition to DSP programming CCS includes a set of tools which may be used to develop and debug applications for the SPM3xCXP dspModule. This document will explain the proper way to setup CCS for Windows and Linux, and will give a brief overview of using CCS to build projects and load them onto the DSP.

## 2 Installation

### 2.1 Installation of Code Composer Studio for Windows

#### 2.1.1 INSTALL CODE COMPOSER STUDIO 6.2.0.0050

Navigate to the following page: [http://processors.wiki.ti.com/index.php/Download\\_CCS#Code\\_Composer\\_Studio\\_Version\\_6\\_Downloads](http://processors.wiki.ti.com/index.php/Download_CCS#Code_Composer_Studio_Version_6_Downloads).

Navigate to version 6.2.0.0050, and download it. Older version might work for this board, except installation screens may vary. Select defaults throughout the installation with the following exception: for Processor Support, select Keystone 1 Device Support.

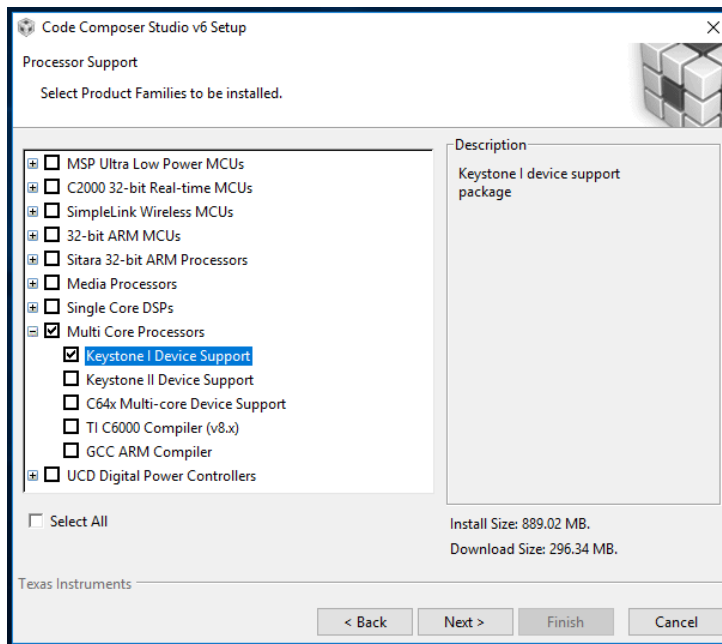
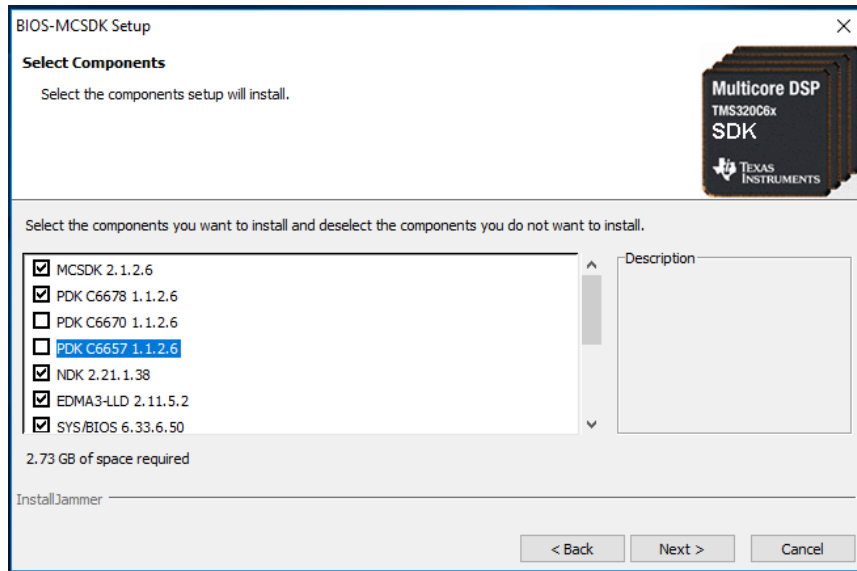


Figure 1: Keystone I Support Window

## 2.1.2 INSTALL BIOS-MCSDK V2.1.2.6

Navigate to the following page: [http://software-dl.ti.com/sdoemb/sdoemb\\_public\\_sw/bios\\_mcsdk/latest/index\\_FDS.html](http://software-dl.ti.com/sdoemb/sdoemb_public_sw/bios_mcsdk/latest/index_FDS.html).

Download the MCSDK Windows 32 executable alongside the Windows patch executable. Run the Windows installation executable and stick to the defaults with the following exception: For Select Components to Install, deselect PDK C6670 and PDK C6657. After this is complete run the patch installation.



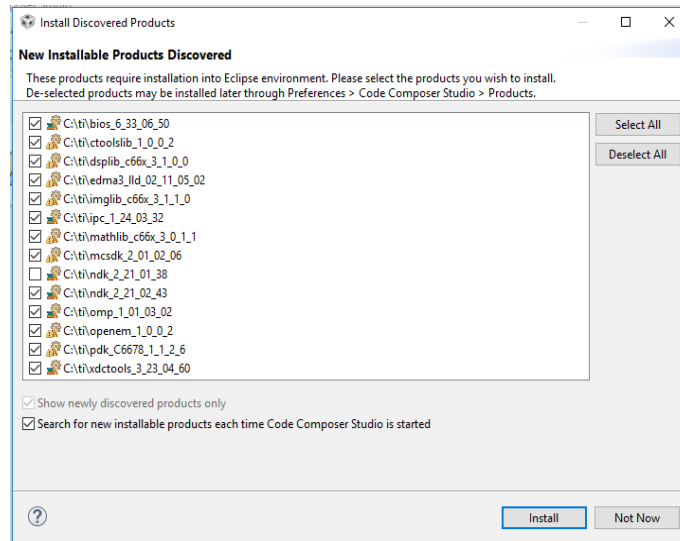
**Figure 2: MCSDK Installation Window**

## 2.1.3 SETUP XDC

In a terminal, navigate to the location `Common/packages/rt/platforms/spm3xcp`. In this folder call the package builder tool by using the absolute path to `ti/xdctools_3_23_04_60/xdc`. Change to the directory `platforms/spm3xcp` and call the package builder tool. Change to the directory `packages/ti/transport/ndk` and call the package builder tool. The XDC platform packages are now built.

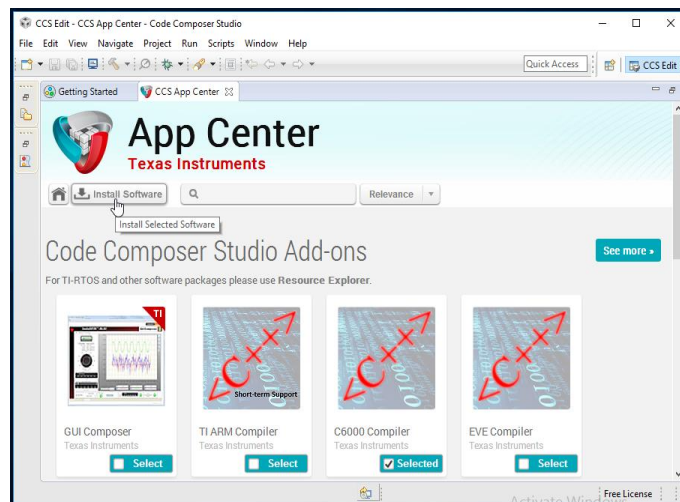
## 2.1.4 SETUP CODE COMPOSER STUDIO

Start Code Composer Studio and accept the default workspace. There should be a window that appears for Installing Discovered Products. If it does not appear, go to `Window->Preferences->Code Composer Studio->Products` and click the discover button. Select every installable product except for `NDK 2.21.01.38`, then restart CCS. If you receive an NDK error, delete the `NDK_2_21_01_38` in its stated directory, then repeat the previous steps.



**Figure 3: Discovering Installable Products**

Go to Help->App Center. Select C6000 Compiler, and then click “Install Software”. Restart Code Composer Studio.



**Figure 4: Installing C6000 Compiler**

## 2.2 Installing Code Composer Studio for Linux

Setup for Linux follows the same steps as Windows for the most part, so section 2.1 of the manual will be the basis for this section. Instead of detailing all steps, this section will detail extra steps that need to be taken to install Code Composer Studio.

### 2.2.1 DEPENDENCIES FOR DIFFERENT LINUX SYSTEMS

These will need to be installed before running the installation for CCS on Linux. The installer will not run without them.

This website details extra installations and packages you will need depending on which Linux System you are running.  
[http://processors.wiki.ti.com/index.php/Linux\\_Host\\_Support\\_CCSv6](http://processors.wiki.ti.com/index.php/Linux_Host_Support_CCSv6)



## 2.2.2 EDITING FILES TO ALLOW MCSDK TO INSTALL ON LINUX

After MCSDK package is installed, it will probably have several package discrepancies which will not let it install. Edit the following files and delete any lines which have ws="win32" in them. They should all be installed into the relative CCS directory you created while installing.

- ./pdk\_C6678\_1\_1\_2\_6/eclipse/features/com.ti.biosmcsdk.pdk.C6678L/feature.xml
- ./pdk\_C6678\_1\_1\_2\_6/eclipse/features/com.ti.biosmcsdk.pdk.C6678L.p2/feature.xml
- ./pdk\_C6678\_1\_1\_2\_6/eclipse/plugins/com.ti.biosmcsdk.pdk.C6678L\_1.1.2.6/plugin.xml
- ./pdk\_C6678\_1\_1\_2\_6/eclipse/plugins/com.ti.biosmcsdk.pdk.C6678L.p2\_1.1.2.6/plugin.xml
- ./mcsdk\_2\_01\_02\_06/eclipse/features/com.ti.biosmcsdk/feature.xml
- ./mcsdk\_2\_01\_02\_06/eclipse/features/com.ti.biosmcsdk.mcsdk/feature.xml
- ./mcsdk\_2\_01\_02\_06/eclipse/plugins/com.ti.biosmcsdk.mcsdk\_2.1.2.6/plugin.xml
- ./mcsdk\_2\_01\_02\_06/eclipse/plugins/com.ti.biosmcsdk\_2.1.2.6/plugin.xml

## 3 Building SPM3xCP Projects

### 3.1 Importing and Building Projects

When the workspace is opened, accept the default workspace, then navigate to Project->Import CCS Projects. RTD's SPM3xCP example programs require a couple specific projects to be built first, so those will be imported first. Browse to the SPM3xCP archive you installed and go into Common/packages. Hit ok and two projects should show up, platform\_lib\_spm3xcp and nimu\_eth\_spm3xcp. Repeat the steps above but browse to the examples folder, and install the projects for each of the examples that are discovered.

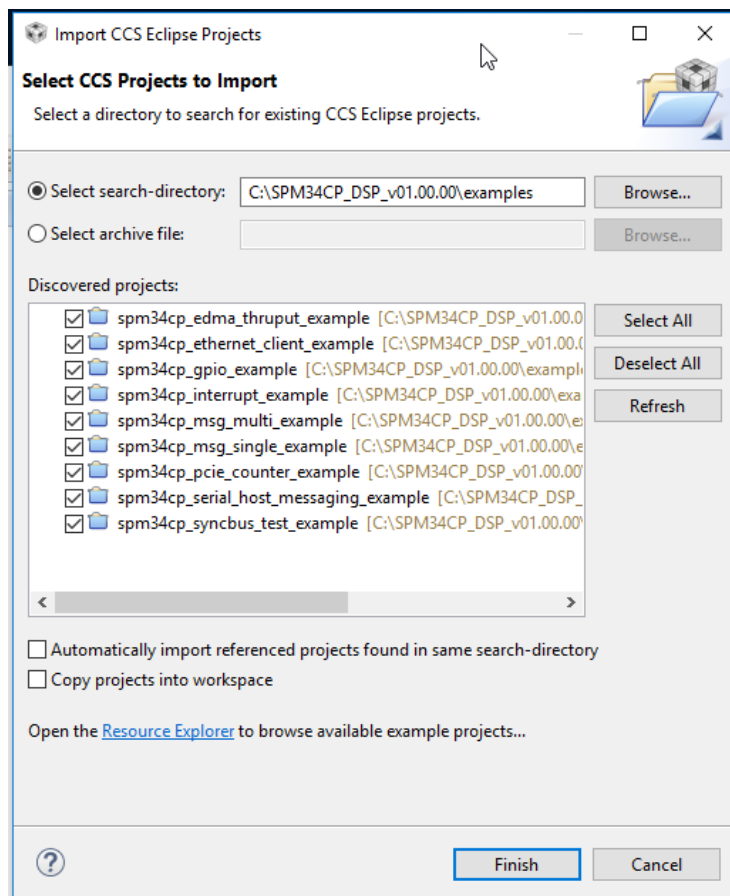
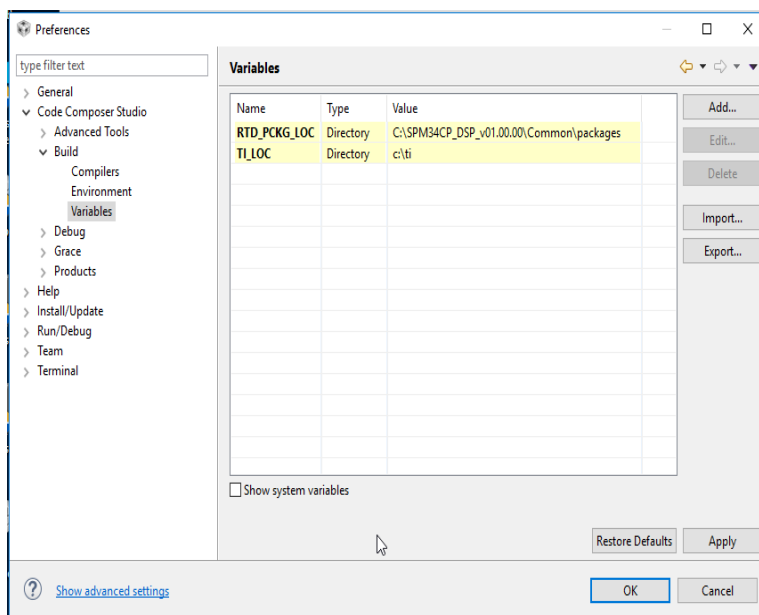


Figure 5: Importing Examples

Select Window->Preferences->Code Composer Studio->Build->Variables, and add the following two variables. TI\_LOC with the path to your Code Composer install, usually "c:\ti". RTD\_PCKG\_LOC: path to the Common\packages directory in your SPM3xCP package.



**Figure 6: Adding Variable Paths**

Right click on the platform\_lib\_spm3xcp project and select Rebuild Project. Repeat this for num\_eth\_spm3xcp, and finally, for the remainder of the examples. Doing this should create a .out file for the given example program project that can be loaded onto the SPM3xCP.

## 3.2 Loading Projects onto the SPM3xCP

The following steps use the Texas Instruments (SD) XDS100v2 JTAG programmer. Other programmers might require different target configuration. The following steps assume you have used the previous steps to build the "Blink LEDs" project.

1. Connect the programmer to the DSP at CN4, and to the Code Composer PC via USB. In Code Composer Studio
2. Select Windows->Show View->Target Configurations.
3. Expand the projects tree to spm3xcp\_led\_blink. Right click on xds100\_v2.ccxml and select Launch Selected Configuration.
4. Right click on "Probe0/C66xx\_0" and select "Connect Target". If connecting to the target fails, go back to the xds100\_v2.ccxml file, and instead of right clicking it, double click it. Then click "test connection" to verify that the connection to the DSP is working.
5. When core says "(Suspended)", go to the CCS main menu and choose Run->Load->Load Program. Select any .out file, or in this case the spm3xcp\_led\_blink.out file, and click OK, then OK again.
6. Finally, with the program loaded onto the DSP, select Run->Resume from the CCS menu. The program should execute, and in most cases will come with a debugging window on the CCS Console.

## 4 Limited Warranty

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RTD Embedded Technologies, Inc. warrants the hardware and software products it manufactures and produces to be free from defects in materials and workmanship for one year following the date of shipment from RTD Embedded Technologies, Inc. This warranty is limited to the original purchaser of product and is not transferable.

During the one year warranty period, RTD Embedded Technologies will repair or replace, at its option, any defective products or parts at no additional charge, provided that the product is returned, shipping prepaid, to RTD Embedded Technologies. All replaced parts and products become the property of RTD Embedded Technologies. Before returning any product for repair, customers are required to contact the factory for a Return Material Authorization (RMA) number.

This limited warranty does not extend to any products which have been damaged as a result of accident, misuse, abuse (such as: use of incorrect input voltages, improper or insufficient ventilation, failure to follow the operating instructions that are provided by RTD Embedded Technologies, "acts of God" or other contingencies beyond the control of RTD Embedded Technologies), or as a result of service or modification by anyone other than RTD Embedded Technologies. Except as expressly set forth above, no other warranties are expressed or implied, including, but not limited to, any implied warranties of merchantability and fitness for a particular purpose, and RTD Embedded Technologies expressly disclaims all warranties not stated herein. All implied warranties, including implied warranties for merchantability and fitness for a particular purpose, are limited to the duration of this warranty. In the event the product is not free from defects as warranted above, the purchaser's sole remedy shall be repair or replacement as provided above. Under no circumstances will RTD Embedded Technologies be liable to the purchaser or any user for any damages, including any incidental or consequential damages, expenses, lost profits, lost savings, or other damages arising out of the use or inability to use the product.

Some states do not allow the exclusion or limitation of incidental or consequential damages for consumer products, and some states do not allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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