

SIM900 Eclipse environment install Application Note_V1.00





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Revision history

Revision	Date	Description of change	Author
1.00	2013-01-11	Initial	MXN

SCOPE

This document describes how to use the IDE tool to develop user's own application. Examples are also given for reference. This document can be used for SIM900 serial modules, like SIM900, SIM900D, SIM900B and SIM900A.

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1 Introduction

SIMDevIDE is an IDE tool developed by SIMCom to integrate its core Embedded AT environment with customer's application development process. SIMDevIDE allows customers to edit, compile, link core libraries and download MOT file effortlessly. SIMDevIDE works with all versions of Windows. This document describes how to develop your project in Eclipse IDE.

2 Getting Started

Before installing SIMDevIDE tool, user should install arm complier tool first.

2.1 Install SimDevIde

Uncompress the rar file (e.g."1137B02V01SIM900A64_ST_EAT.rar"). Execute installation file (e.g. "SIM900ADevIDE V1.01 (1137B02V01SIM900A64_ST_EAT).exe") and follow the install instructions.

2.2 Install Java SE Development Kit

Gotothewebsitehttp://www.oracle.com/technetwork/java/javase/downloads/jdk7-downloads-1880260.htmltodownload the latest JDK.

2.3 Install Gcc compiler

Go to the website <u>http://www.yagarto.de/</u> to download <u>YAGARTO Tools</u> and <u>YAGARTO GNU</u> <u>ARM toolchain</u>. When the user has downloaded these two tools, please install them and note that these two tools must be only installed in the no-space and only English path.

2.4 Download Eclipse and its plug-in

Go to the website <u>http://www.eclipse.org/downloads/</u> to download Eclipse IDE for C/C++ Developers and go to the website <u>http://sourceforge.net/projects/gnuarmeclipse/</u> to download org.eclipse.cdt.cross.arm.gnu_0.5.4.201202210114.



2.5 Install Eclipse environment.

- 1. Uncompress the zip file (Eclipse IDE for C/C++ Developers) and click "eclipse.exe".
- 2. Then select your workspace as following, and then click OK and wait for eclipse initialization.

🖨 Vorkspace Launcher	
Select a workspace Eclipse stores your projects in a folder called a workspace. Choose a workspace folder to use for this session.	
Workspace: I:\EmbeddedAT	<u>B</u> rowse
<u>U</u> se this as the default and do not ask again	
	OK Cancel

3. The eclipse IDE will show as following:

€ C/C++ - Eclipse	
File Edit Source Refactor Mavigate Search Bun Project Mindow Help	
🔐 🚳 Welcome 🕱) 🗢 🗢 🖈 🖍 🔚 🗖 🖉



4. Install org.eclipse.cdt.cross.arm.gnu_0.5.4.201202210114. Please click "help->install new software", and it will show a dialog as following:

🖨 Install	
Available Software Select a site or enter the location of a site.	
<u>M</u> ork with: ⁰ type or select a site Find more softwa	▲dd re by working with the <u>"Available Software Sites"</u> preferences.
type filter text	[]
Name	Version
Select All Deselect All	
Details	
Show only the latest versions of available software	Hide items that are already installed
<u> </u>	What is <u>already installed</u> ?
Show only software applicable to target environment	
	red software
0	< Back Eack Cancel

5. Click "Add" and then it will show a dialog as following and click "OK":

	Type gnu here.
🖨 Add Repository	
Name: gnu Location: jar:file:/I:/GCC/org.	Local eclipse.cdt.cross.arm.gnu_0.5 Archive OK Cancel
	Click "Archive" to select org.eclipse.cdt.cross.arm.gnu_0.5.4.2 01202210114 location where you download in Char. 2.4.



6. Unselect "Group items by category" and select "GNU ARM C/C++ Development Support", and then click "Next".

🖨 Install	
Available Software Check the items that you wish to install.	
<pre>York with: gnu = jar:file:/I:/GCC/org.eclipse.cdt Find more s</pre>	. cross. arm. gnu_0.5.4.201202210114. zip!/ 💉 🛕dd oftware by working with the <u>"Available Software Sites"</u> preferences.
type filter text	
Name	Version
GNU ARM C/C++ Development Support	• Select this option.
Select All Deselect All 1 item selected	l
Details	Unselect this option.
Show only the latest versions of available softw	are Hide items that are already installed
Group items by category	What is <u>already installed</u> ?
Show only software applicable to target environm	ent
	required software
3	Kack Mext > Finish Cancel



7. Select "I accept the terms of the license agreement" and click "Finish".

🖨 Install				
Review Licenses Licenses must be reviewed and accepted before the so	oftware can be insta	illed.		
License <u>t</u> ext (for GNU ARM C/C++ Development Support (0. 5. 4. 201202210114):			
The "GNU ARM Eclipse Plug-in" is free software Permission is hereby granted, free of charge, to any copy of this software and associated documentation f "Software"), to deal in the Software without restric without limitation the rights to use, copy, modify, distribute, sublicense, and/or sell copies of the So permit persons to whom the Software is furnished to the following conditions:	person obtaining a files (the tion, including merge, publish, ftware, and to do so, subject to			
The above copyright notice and this permission notic in all copies or substantial portions of the Softwar THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANT O OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANT MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AN NONINFRINCEMENT. IN NO EVENT SHALL THE AUTHORS OR CO LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WH OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN TH	e shall be included e. F ANY KIND, EXPRESS IES OF D PYRIGHT HOLDERS BE ETHER IN AN ACTION OR IN CONNECTION E SOFTWARE.			
				<u>.</u>
I accept the terms of the license agreement				
\bigcirc I <u>d</u> o not accept the terms of the license agreemen	t			
•	< Back	<u>N</u> ext >	<u>F</u> inish	Cancel

8. Click "OK" when the following dialog is shown.

Security Varning
Warning: You are installing software that contains unsigned content. The authenticity or validity of this software cannot be established. Do you want to continue with the installation?
OK Cancel Details >>

9. Wait for install finished. And click "Yes" when the following dialog is shown and wait the eclipse restarts.



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10. Now we finish the eclipse gun arm plug-in installation.





2.6 Import a project

1. Copy **"EmbatSIM"** folder (which is in the SIMDevIDE tool root path) into eclipse workspace path. (In this document, the eclipse workspace path is "I:\EmbeddedAT")

2. Click "File->Import" and select "General-> Existing Projects into Workspace". And then click "Next".

🖨 Import	
Select Create new projects from an archive file or directory.	Ľ
<u>S</u> elect an import source:	
General General Fisisting Projects into Workspace File System Freferences C/C++ Git Git Famote Systems File Systems Fi	
	ancel



3. Click **"Browse"** to select the project location. The project is located in "SIMDevIDE tool root path\eclipse_example". And there are two projects in this folder. One is using SIMCom libraries (SampleUseSIMComLibs) instead of using GCC C standard running libraries. This project is that when the core firmware is changed, you must compile your app again. The other one is using GCC C standard running libraries (SampleWithGccLibs). This project is that when the core firmware is changed, you don't need to compile your app again.

Click "Finish".

🖨 Import	
Import Projects Select a directory to search for existing Eclipse projects.	
Select root directory: J:\SIM900DevIDE_DTMF_MultiTask_GCC\ecl Select archive file: Projects:	ij <u>Br</u> owse Browse
SampleUseSIMComLibs (J:\SIM900DevIDE_DTMF_MultiTask_GCC\ec	li <u>S</u> elect All Deselect All R <u>e</u> fresh
Select this option. Working sets Add project to working sets Yorking sets.] Sglect
(?) < <u>Back</u> Mext > <u>F</u> inish	Cancel

4. If you import "SampleWithGccLibs" project, you don't need to modify anything, just to compile it. Note that if you use this project and when the core is changed, you don't want to compile your app again, you must call the function point API instead of function API such as "eat_GetEvent". Please don't call "eat1_02GetEvent" function.

If you import "SampleUseSIMComLibs", you must modify the .x file path. The steps are as following:



a) Click the project which you want to modify. Here we select the project "SampleUseSIMComLibs".





b)Click **"Project->Properties"** and it will show a new dialog as following. Select **"C/C++ build->Settings->ARM Targets Windows GCC C Linker"**. And modify the ".x" file name. The ".x" file is located in "EmbatSIM\gsmos\coreSW\rvctcore" of the Eclipse workspace. Please find .x file and replace the file name.

and the second					- 6 🛛
type filter text	Settings				\$• \$ - •
 prove filter text Bacource Builders C/C+F build Biscovery Options Biscovery Options Biscovery Options Biscovery Options Settings Tool Kohin Ritor C/C+F General Troject References Nur/Dobug Settings Task Reportory YikaText 	Settings	Dinary Parsers 2 F Commad: un roster (f All antion: roster (f Commad Internet) (fgmos/c line pattern: ffgmos/c	<pre></pre>		
0			Modify this file to your Embedde	name according edAT firmware	ts Apply Cancel
Expert settings: Command line pattern: *\$	{build_project}//EmbatSIM/gsmo	os/coreSW/rvctc	ore/1137B01V01SIM900M128	_INTEL_DTMF_JD_EAT.x"	'\${build_

Note: Please don't delete fl_main, fl_ctr0.s, syscalls.c files. These files are the gcc environment boot files.

2.7 Compile your project

Click and select the project which you want to compile as following. Click Hammer icon to compile the project.

If the compilation is completed with no problem, the binary file, with a name of xxx.hex,

will be generated under the Release or Debug directory of the project directory, depending on which configuration mode you are currently working on.



13•866 ®•	S - 010 - X -	Click here	to compile	e the project.
🏠 Project Explorer 🕱	E 🕸 👉		E	
🕀 😂 SampleVseSIMComL 🗄 🔂 SampleWithGccLib	ibs	Select the	project	

The following is the compiler result:



2.8 Add a new file

Click **"File->New->Source File"** or **"File->New->Header File"**. It will show the dialog as following. Click **"Browse"** to select the path where you want to store the file. In **"Source file"** line, please input the file name which you want to add.



🖨 New Source File	
Source File Create a new source file.	C
Source fol <u>d</u> er: SampleWithGccLibs/code Source fil <u>e</u> : sms.c Template: Default C source template	<u>B</u> rowse ✓ Configure
Input the file name which you want to add.	Click "Browse" to select the path where you want to store the file.
	nish Cancel

2.9 Add an existing file

1. Click "File->Import" and select "General->File System", then click "Next".



🖨 Import	
Select Import resources from the local file system into an existing project.	è
Select an import source:	
<pre>type filter text General General</pre>	
 Hereing Hereing Hereing 	
A Back <u>Next > Finish</u>	Cancel

2. Click **"From Directory->Browse"** to select the file location and select the file which you want to import. And Click **"Into folder"** to select the folder which you want to put files into. At last,



click "Finish".

🖨 Import	
File system Import resources from the local file system.	
From directory: J:\eclipse\LPCXpresso_5.0.12_1083\workspace\Test_Yagarto_128M_G Image: code Image: code Image: code Image: code <tr< th=""><th>Click here to select the file location.</th></tr<>	Click here to select the file location.
Image: Structure of the st	Browse
 	Click here to select the folder which you want to put the files in.
() (Eack Next >	<u>Finish</u> Cancel

2.10 Download to SIMCom Module

1. Select "Build->Download" menu.

2. Configure the options as below. It is recommended to use the default value for the options



"Baud Rate" and "FileCount".

	🗞 SIL900 Series download Tools Customer 1.5 📃 🗌	Select module type
	SERIAL Download Target Port Baud Rate DownloadOption ReadBufferSi SIM900 COM9 460800 Embeddedf 2048 Download File	Confirm the serial port number in user's PC's Device Manager.
Note: This address should be 00400000.	Core File I:\EmbeddedAT\EmbatSIM\gsmos\coreSW\rvctcore\11 Time 2013-01-07, 16:45:25 00000000 Size 0x3FBC08 App File mpleUseSIMComLibs\Debug\SampleUseSIMComLibs.hex Time 2013-01-11, 19:47:00 00400000 Size 0xAA4 Erase Type: Erase User Data and Code	Select the core file in the path " \EmbatSIM\gsmos\ coreSW\rvctcore\".
	Flash Type Start Download Stop Download	Select the application file created in the path. Note that it is .hex file.
	0% Exit Refresh COM port	

Figure 11

3. Download user's application to the module by pressing "Start Download" button.

Note: If user only needs to download the application file, set the "DownloadOption" option to "NORMAL" and "Erase Type" to "Erase User Data and Code".



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