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SIMCom_SIM800H_EAT_User Manual_V1.01



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Version History

Data	Version	Description	Author
2013-11-27	V1.01	Created	Jack Sun

SCOPE

This document describes how to build and compile one project with embedded AT feature.

This document could be used for SIM800 series, for example SIM800H.

This document is subject to change without notice at any time.

1、 Tool and Code Structure

Compiler: RVCT, Version: ARM/Thumb C/C++ Compiler, RVCT3.1 [Build 569];

Environment: winmake, provided in the build folder;

Download Tool: SIMCom_Multiupdate_tool_for_MTK_platform

The structure is as follows:

 build	Compile configuration and makefile script
 core	Head files and library provided by SIMCom
 demo	Demo Source Code
 Doc	Documentations
 Src	Customer Source Code
 SIM800H32.bat	Compile script

2、 Compile

2.1、 Tool Installation

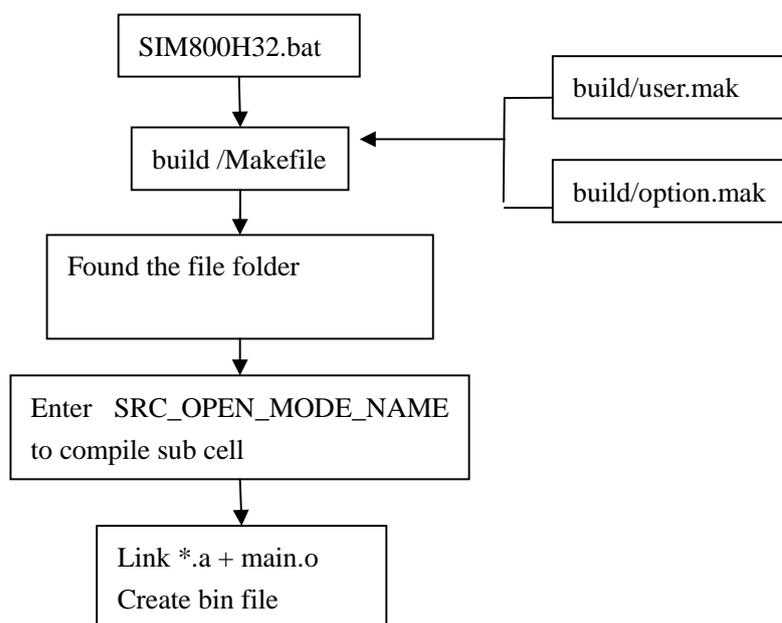
After you install the compiler successfully, there should be some output after you type “armcc” in cmd; the details please refer to the installation user guide;

```
Usage:      armcc [options] file1 file2 ... fileN
Main options:
--arm      Generate ARM code
--thumb    Generate Thumb code
--c90      Switch to C mode (default for .c files)
--cpp      Switch to C++ mode (default for .cpp files)
-O0        Minimum optimization
-O1        Restricted optimization for debugging
-O2        High optimization
-O3        Maximum optimization
-Ospace    Optimize for codesize
-Otime     Optimize for maximum performance
--cpu <cpu> Select CPU to generate code for (eg. ARM9E/ARM10E)
--cpu list Output a list of all the selectable CPUs
-o <file>  Name the final output file of the compilation
-c         Compile only, do not link
--asm      Output assembly code as well as object code
-S         Output assembly code instead of object code
--interleave Interleave source with disassembly (use with --asm or -S)
-E         Preprocess the C source code only
-D<symbol> Define <symbol> on entry to the compiler
-g         Generate tables for high-level debugging
-I<directory> Include <directory> on the #include search path
Software supplied by: mammoth//ZWTISO 2005
```

2.2、 Compiling Procedure

File	Description	Configured or Not
user.mak	Customer configuration file, configure the path、 folder、 file name..etc	Yes
Makefile	System Entry Makefile	No
option.mak	Configure compiling environment, system default	No
app_build.mak	Compile source code, system default	No

The compile procedure could show as follows:



2.3、 Customer Configuration

Basically, customer needs to modify the file “user.mak” according to his own configuration, open the file by Ultra-Edit; for example:

```

# RVCT 3.1 Root Directory
DIR_ARM = C:\RVCT_EAT //normally located in the system root
# Source Code Directory
SRC_DIR = demo //default setting
# Example Sample Name
SRC_OPEN_MODE_NAME = adc //the example sample which you want to implement
  
```

2.4、 Add file

If customer needs to add some source code, for example, add a test code for SMS application, the source code should contain: main.c, app_sms.c, app_sms.h.

Note: App source code must contain one main.c as the entrance;

Steps as follows:

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- 1) New a SMS folder in the Src;
- 2) The folder should contain main.c, app_sms.c, app_sms.h;
- 3) Copy the “makefile” from the demo/adc to current SMS folder; there are two ways to compile the source code;
 - a) compile all the “.c” files;


```
#First method#
S1 := $(wildcard *.c)
SOURCE:=$(S1)
```
 - b) compile the dedicated source code file


```
#Second method#
SOURCE := main.c\ app_sms.c
```
- 4) Modify user.mak file


```
# Directory of source code file
SRC_DIR = src
# the part need to be compiled
SRC_OPEN_MODE_NAME = sms
```
- 5) Run SIM800H32.bat to compile your file, it shows as follows

```
C:\SIM800H_EAT_app_131108\SIM800H_EAT_app_131108>rem CMD ,run "SIM800H32.bat all
" or "SIM800H32.bat clean"
mkdir C:\SIM800H_EAT_app_131108\SIM800H_EAT_app_131108\output
子目录或文件 C:\SIM800H_EAT_app_131108\SIM800H_EAT_app_131108\output 已经存在。
make: [copy] Error 1 (ignored)
mkdir C:\SIM800H_EAT_app_131108\SIM800H_EAT_app_131108\output\obj
子目录或文件 C:\SIM800H_EAT_app_131108\SIM800H_EAT_app_131108\output\obj 已经存
在。
make: [copy] Error 1 (ignored)
mkdir C:\SIM800H_EAT_app_131108\SIM800H_EAT_app_131108\output\log
子目录或文件 C:\SIM800H_EAT_app_131108\SIM800H_EAT_app_131108\output\log 已经存
在。
make: [copy] Error 1 (ignored)
cd demo/gpio && make PARAM=gpio
make[1]: Entering directory `C:/SIM800H_EAT_app_131108/SIM800H_EAT_app_131108/de
mo/gpio'
C:\RUCT_EAT\Programs\3.1\569\win_32-pentium/armcc -c --thumb --cpu ARM7EJ-S --li
ttleend -O3 --remove_unneeded_entities --split_sections -D_SIMCOM_PROJ_SIM800H
__ -D_USB_COM_PORT_ENABLE__ -DAPP_EXAMPLE -DAPP_EXAMPLE2 -IC:\SIM800H_EAT_
app_131108\SIM800H_EAT_app_131108\core/inc -IC:\SIM800H_EAT_app_131108\SIM800H_E
AT_app_131108/demo/gpio -I./ -o C:\SIM800H_EAT_app_131108\SIM800H_EAT_app_13110
8/output/obj/app_demo_gpio.o app_demo_gpio.c 1>&2 2>C:\SIM800H_EAT_app_131108\SI
M800H_EAT_app_131108/output/log/output.log
```

After you finished the compiling, it should create one folder named OUTPUT which contains the compiling result,

log	
obj	
app	4 KB
app.elf	958 KB
app.lis	2,222 KB
app.sym	637 KB

from the log file, you could find the result of your source code, warning or error...etc;

3、Download

SIM800H Application Notes

The target file contains two parts: one is core file provided by SIMCom, another one is the APP file which created by customers themselves;

Normally, the modules shipped to customers should contain the core file already (if order with EAT functionality, others need to upgrade), customer only needs to compile his app file and download it; the details please refer to “SIMCom_SIM800H_EAT_flash_tool_User Manual_V1.02”

Note:

- 1) If SIMCom releases new FW version, customer needs to update his core program correspondingly; meanwhile, the app code also need to be recompiled based on the new library;*
- 2) The download tool should be various according to different demands;*

Contact us:

Shanghai SIMCom Wireless Solutions Ltd.

Add: Building A, SIM Technology Building, No.633, Jinzhong Road, Changning District, Shanghai, P. R. China 200335

Tel: +86 21 3235 3300

Fax: +86 21 3235 3301

URL: www.sim.com/wm