CASTLES TECHNOLOGY

VEGA3000 EFT-POS Terminal / Pinpad

Book 1

Getting Started

Confidential

Version1.1

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WARNING

Information in this document is subject to change without prior notice.

Revision History

Version	*Date*	*Descriptions*
1.0	May22, 2014	Initial creation.
1.1	Sep10, 2014	1. Extend the terminal part to terminal / pinpad of this document. 2. Add new illustration for installset.ini file in Installation.

Contents

1. Introduction

This document is target for software engineers, who are new to the Castles development environment.

In the following chapters, the document will guide you step by steps from setting up the SDK till running your first application in Castles VEGA3000 terminal / pinpad.

1.1. Castles DVS SDK

Castles DVS SDK is an integrated environment for application developers to develop application on Castles platform. It includes compiler toolchain, source code editor (Netbeans) and utilities (CAP Generator, Signing Tool and Loader). Sample codes are provided in SDK.

1.2. What You Need

- Castles VEGA3000Terminal / Pinpad
- Castles DVS SDK Installation Disc (or file)
- Data cable (USB or serial cable)
- Standard Ethernet cable (optional)
- PC/SC Smart Card Reader (optional)
- Castles VEGA3000 Keycard (optional)

2. Installation

i. Locate and execute installation file

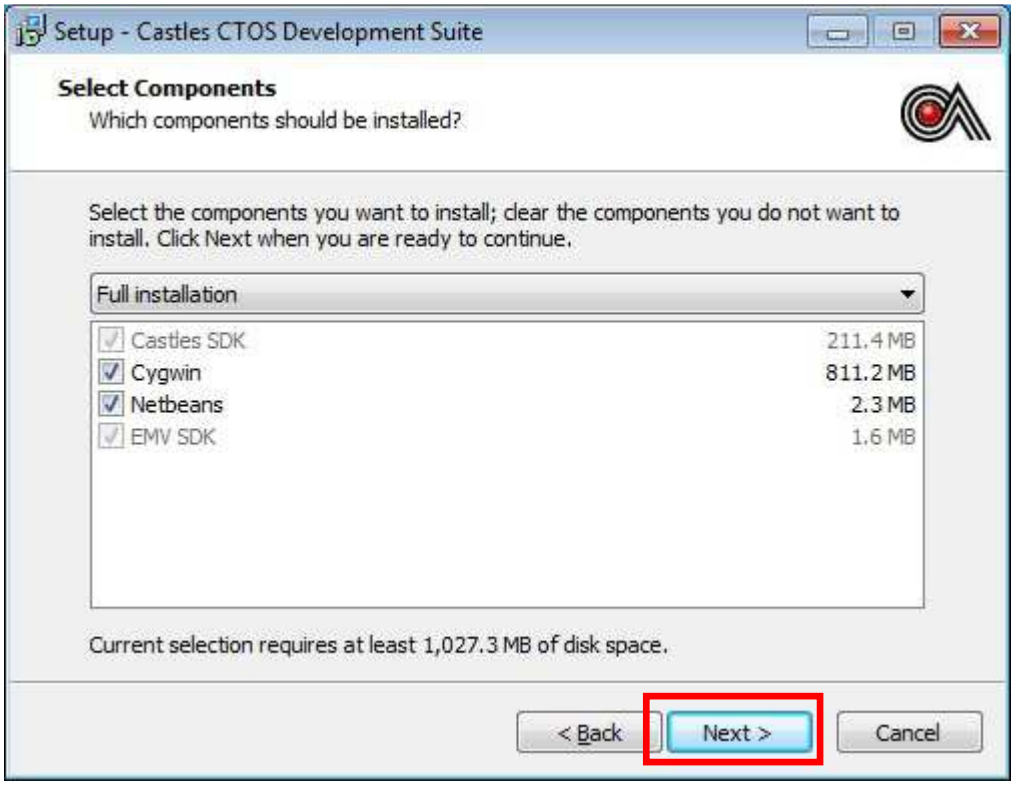
Please locate the installation file from SDK CD or downloaded from FTP and make sure that “installset.ini” file is in the same folder as the installation file does.

Double click to execute the installation file.

ii. Installation option - Components

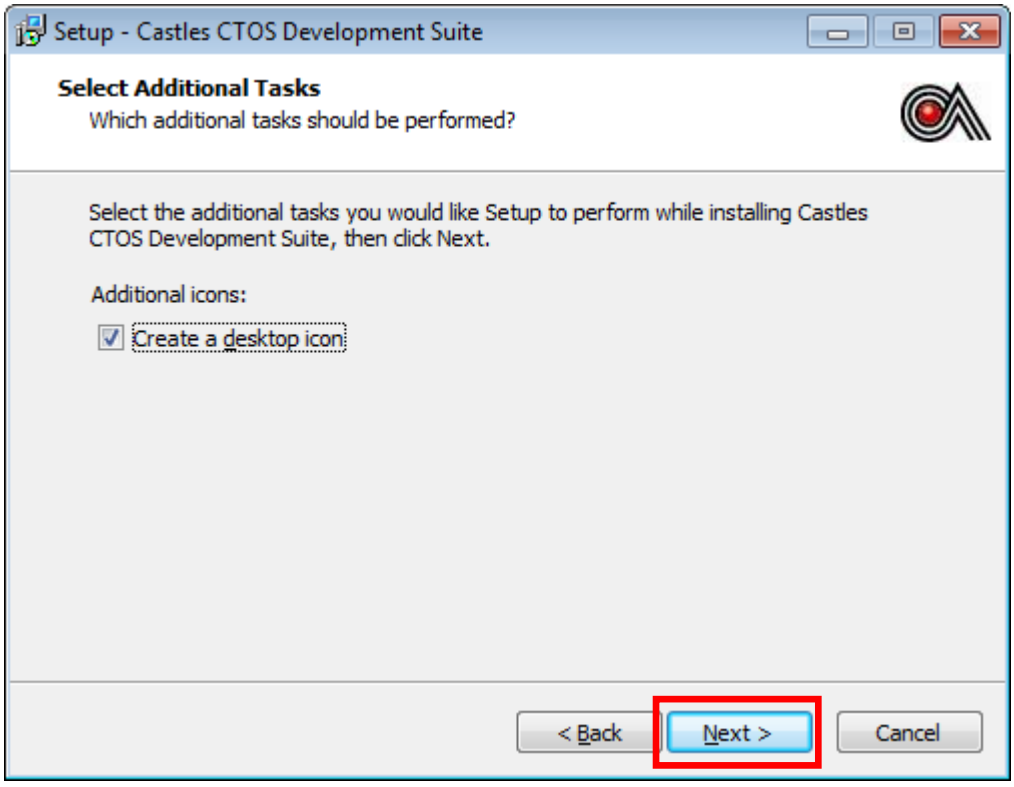
Please select “Full installation” if you are not sure.

Press “Next” to continue.



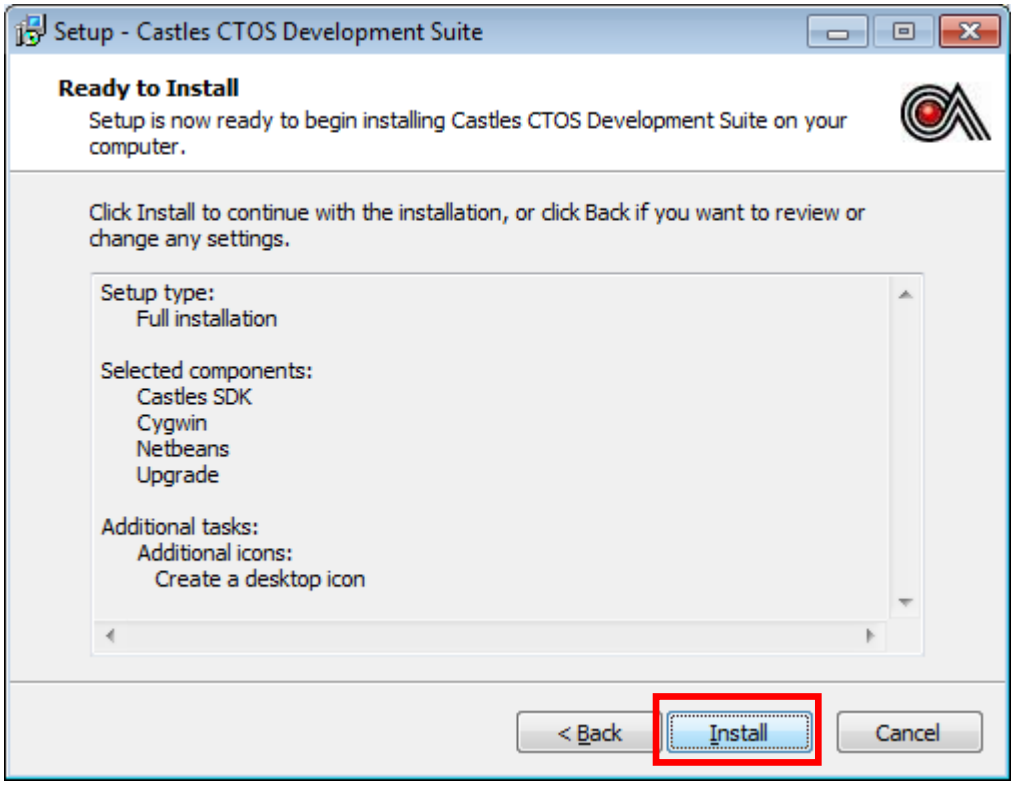
iii. Installation option – Additional Tasks

Press “Next” to continue.



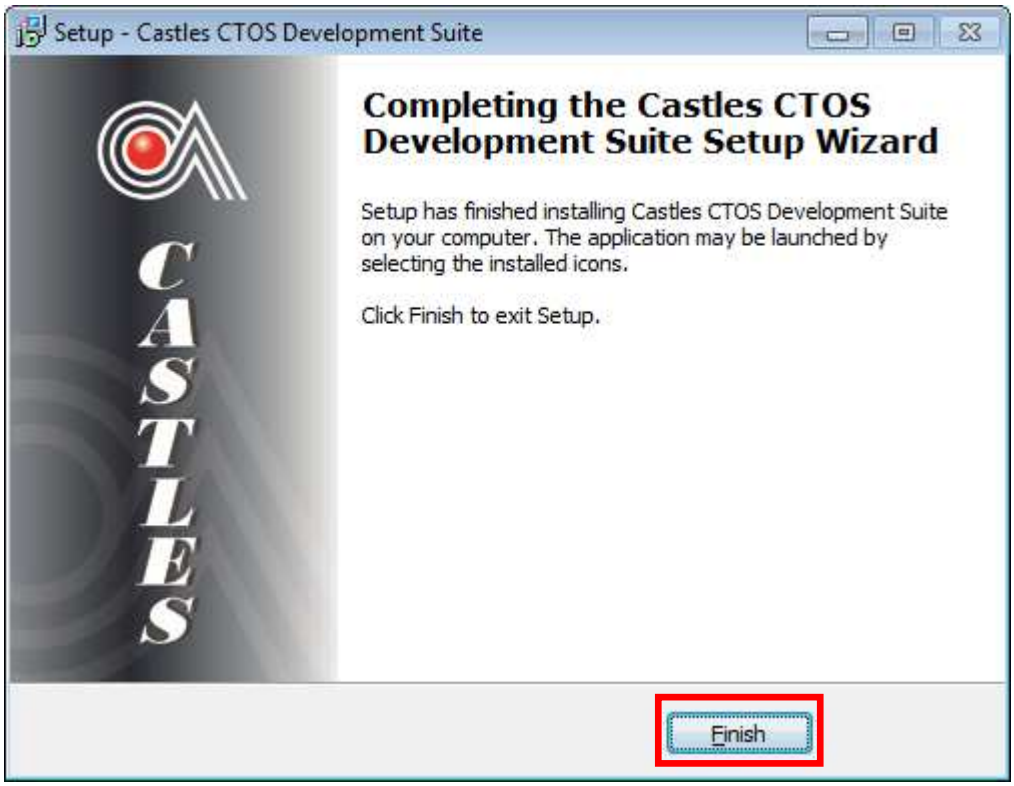
iv. Ready to install

Press “Install” to start the installation process.



v. Installation Complete

Press “Finish” to close the installation process.



If “Create a desktop icon” is selected, you will see icon below appear in your desktop.

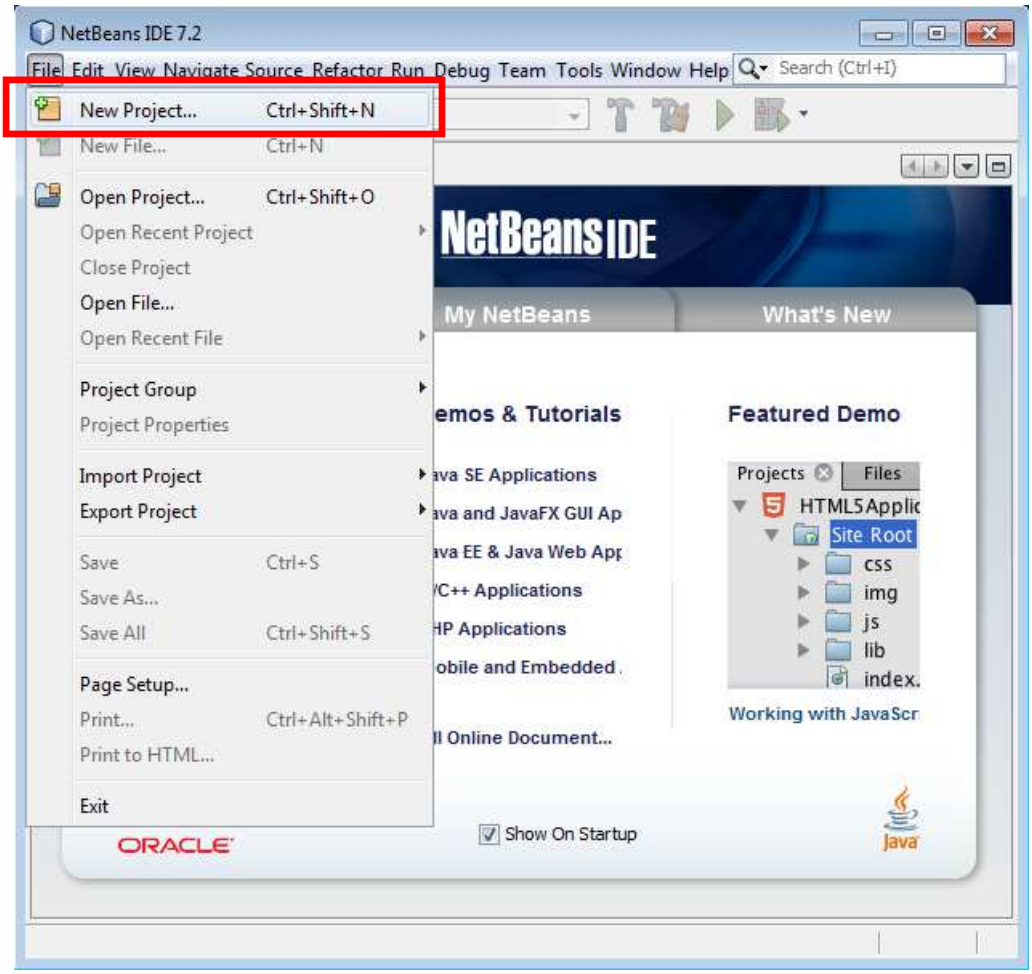
3. Building Your First Application

i. Execute Castles CTOS Development Suite

For example, double click icon below.

ii. Create a new project

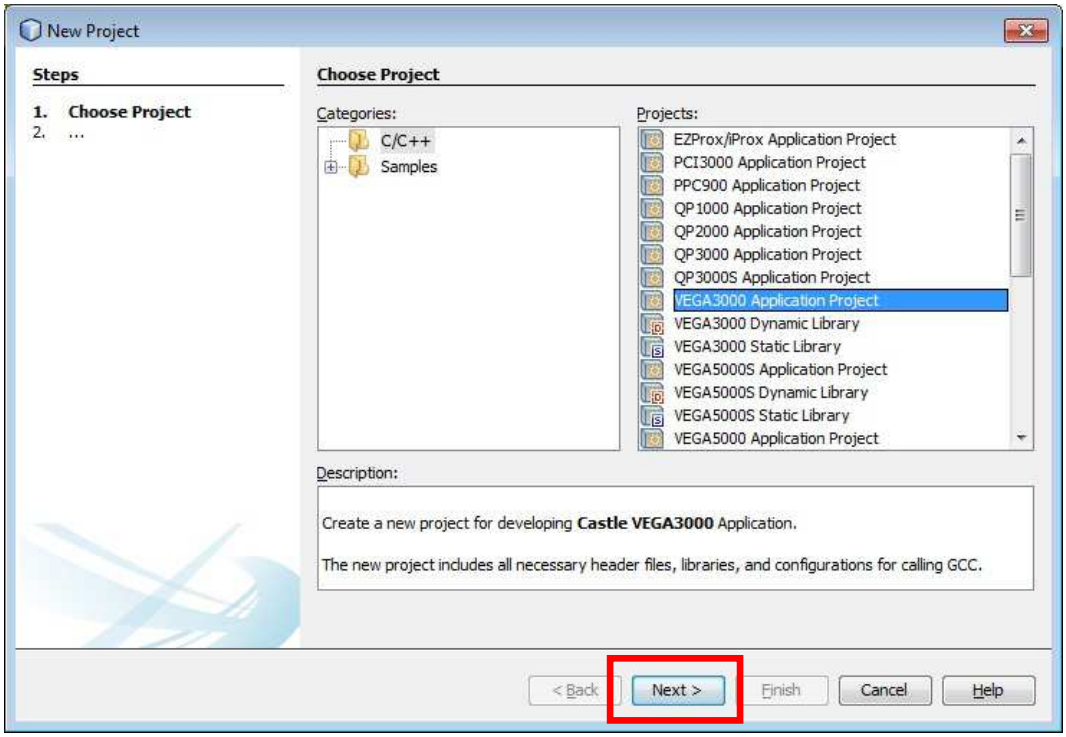
From “File”, select “New Project…”



iii. Select project type

For VEGA3000 terminal / pinpad, select “VEGA3000 Application Project”.

Click “Next” to continue.

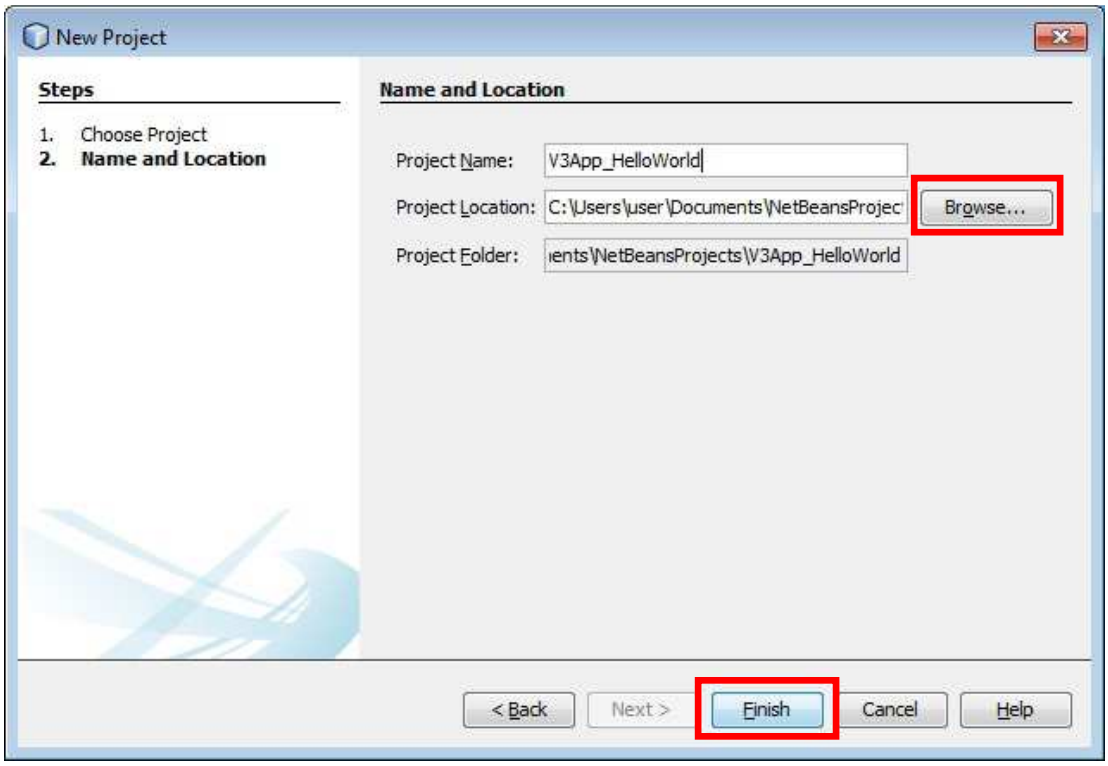


iv. Enter project details

Enter the project name that you preferred.

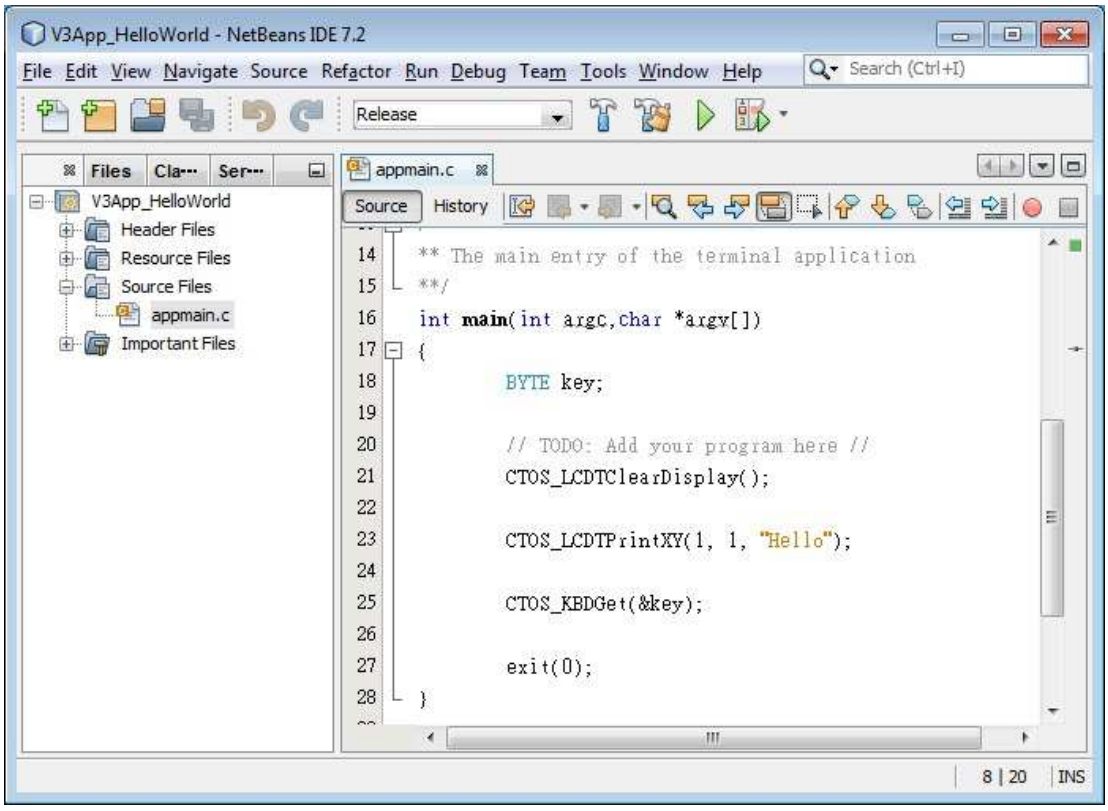
Click “Browse..“ button to change the project folder.

Click “Finish” button to complete the project configuration and create the project.



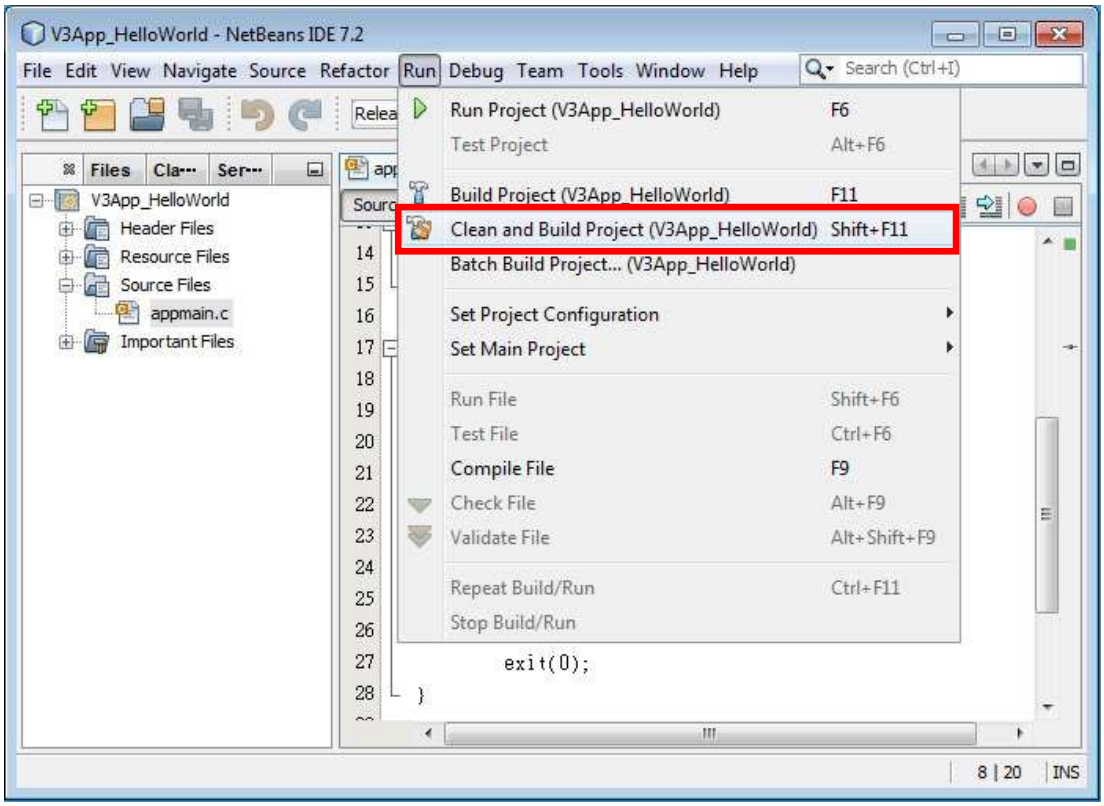
v. Project created

The newly created project consists ofsample code as below.



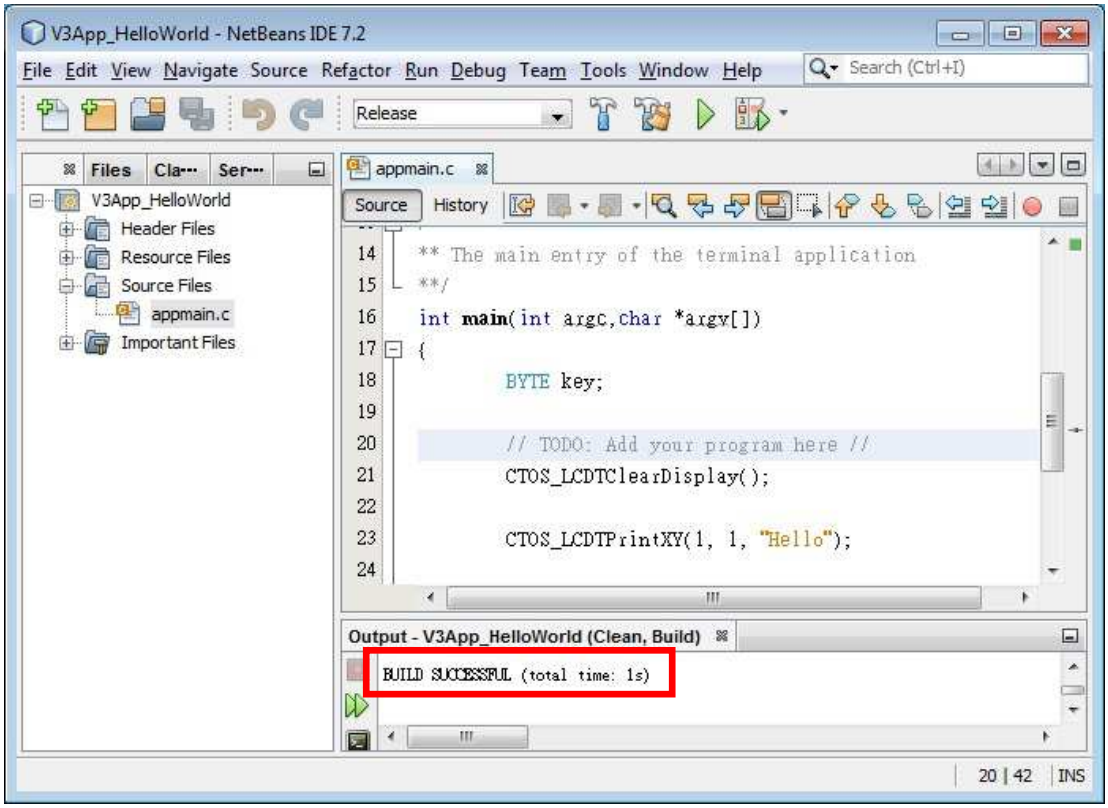
vi. Compiling the project

Select “Run” from menu, then select “Clean and Build Project” to compile the project.



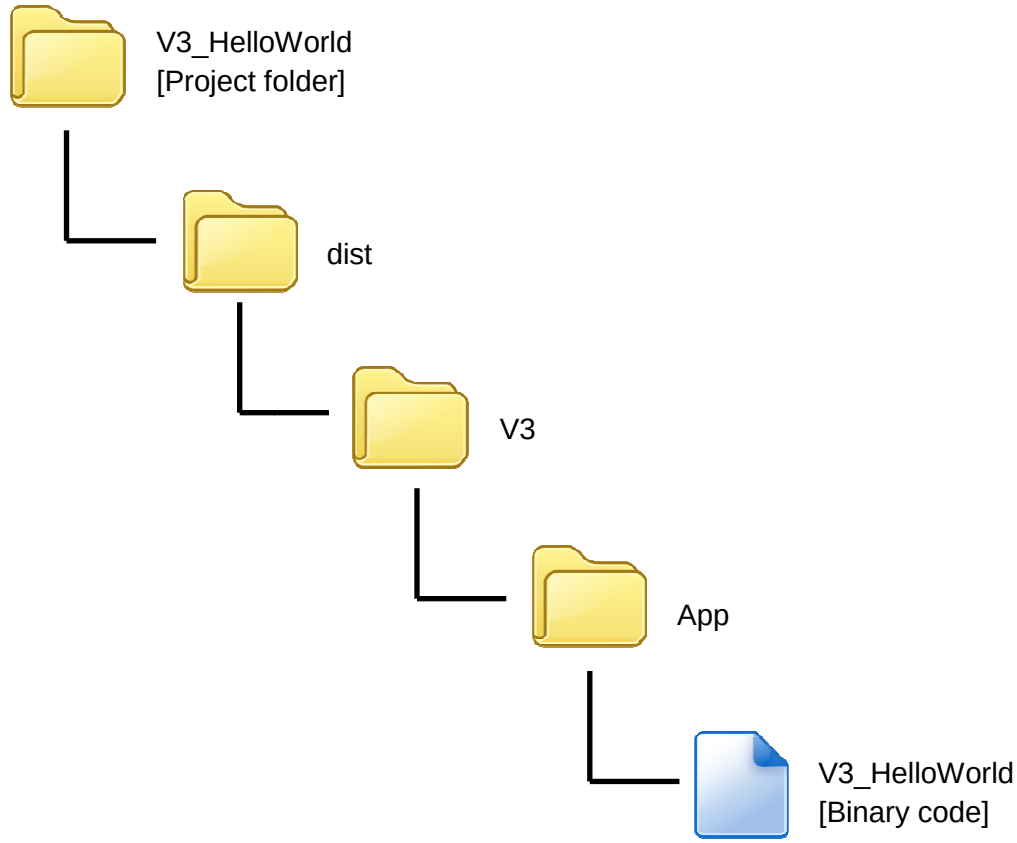
vii. Build result

If the project builds successful, in Output windows, message “BUILD SUCCESSFUL” will be showed. If failed, message “BUILD FAILED” will be showed.



4. Loading Application To Terminal / Pinpad

After successful compiling your source code, you will find the output binary code file at [Project folder] -> [dist] -> [V3] -> [App].



Note: The binary code file needs a signing process before being downloaded into terminal / pinpad.

4.1. Signing Application

The application binary code file must be signed before being downloaded into terminal / pinpad. The signing process will convert the binary code file into CAP file. CAP file format is defined by Castles to ensure the application data and codes confidentiality and integrity.

Castles provided a Windows program named CAP Generator (CAPG) to perform this signing process. There are two CAP Generator versions, evaluation version and keycard version. The evaluation version is for development purpose, it only works with terminal / pinpad with vendor default key. The keycard version is used for live deployment. For more details on CAP Generator, please refer to **Book 2 – User Manual**.

4.1.1. CAP Generator – Evaluation Version

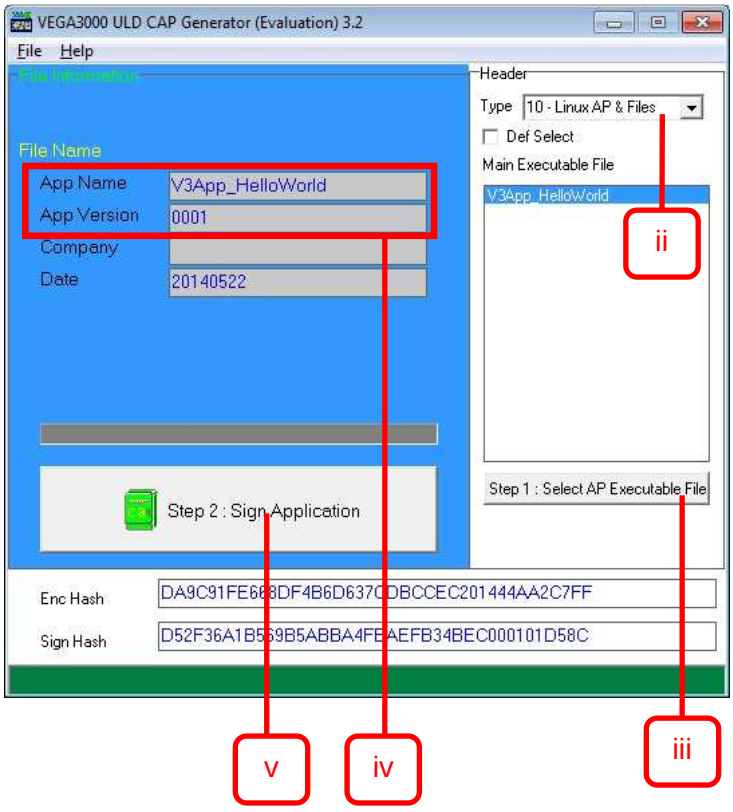
i. Execute CAP Generator (Evaluation version)), located in C:\Program Files\Castles\VEGA3000\tools\CAPG (Evaluation Version) for VEGA3000.

ii. Select Type as “10 – Linux AP & Files”

iii. Select file

iv. Enter App Name and App Version

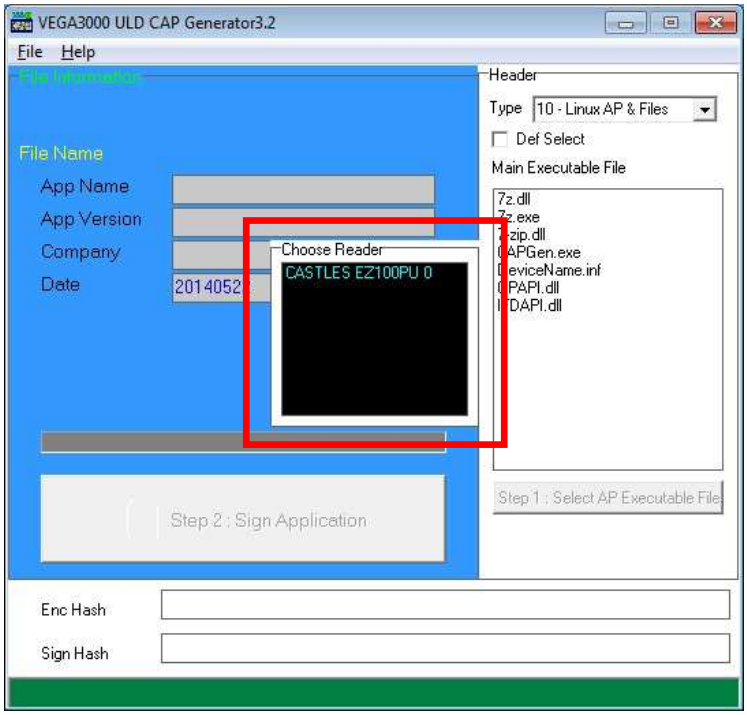
v. Sign file



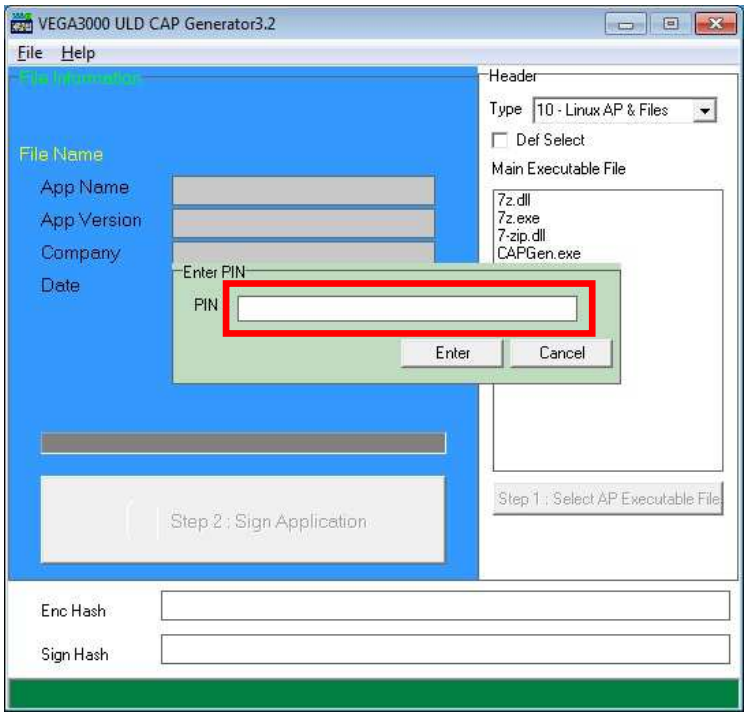
4.1.2. CAP Generator – Keycard Version

i. Execute CAP Generator (Keycard version), located in C:\Program Files\Castles\VEGA3000\tools\CAPG (Keycard) for VEGA3000.

ii. Insert Keycard and select smart card reader.



iii. Enter PIN, default PIN is “1234”.

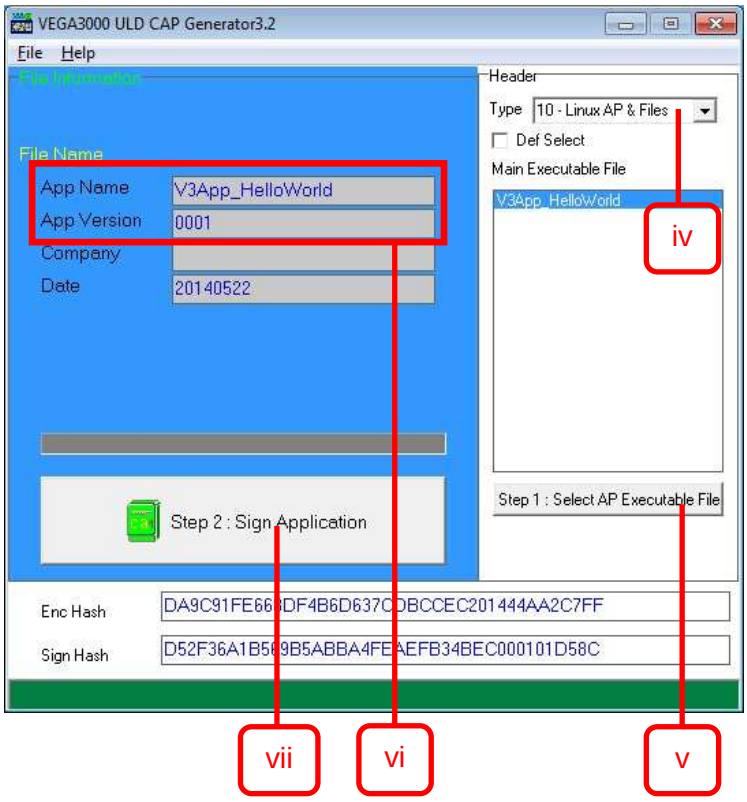


iv. Select Type as “10 – Linux AP & Files”.

v. Select file.

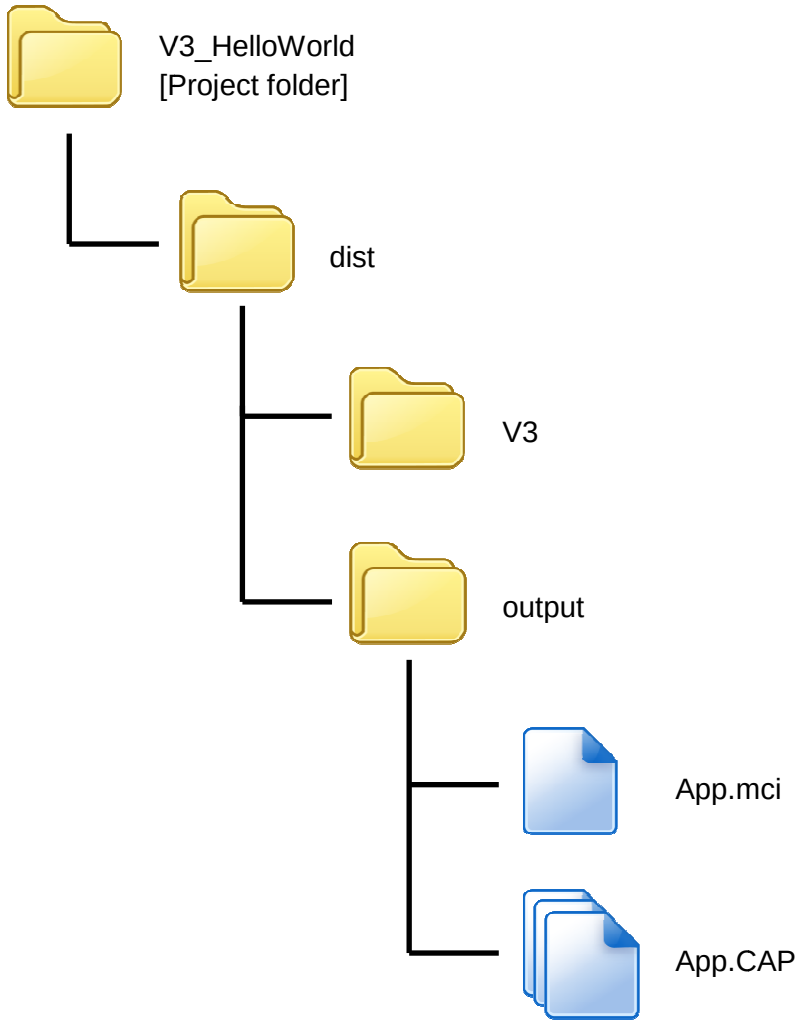
vi. Enter App Name and App Version.

vii. Sign file.



4.2. Download Application To Terminal / Pinpad

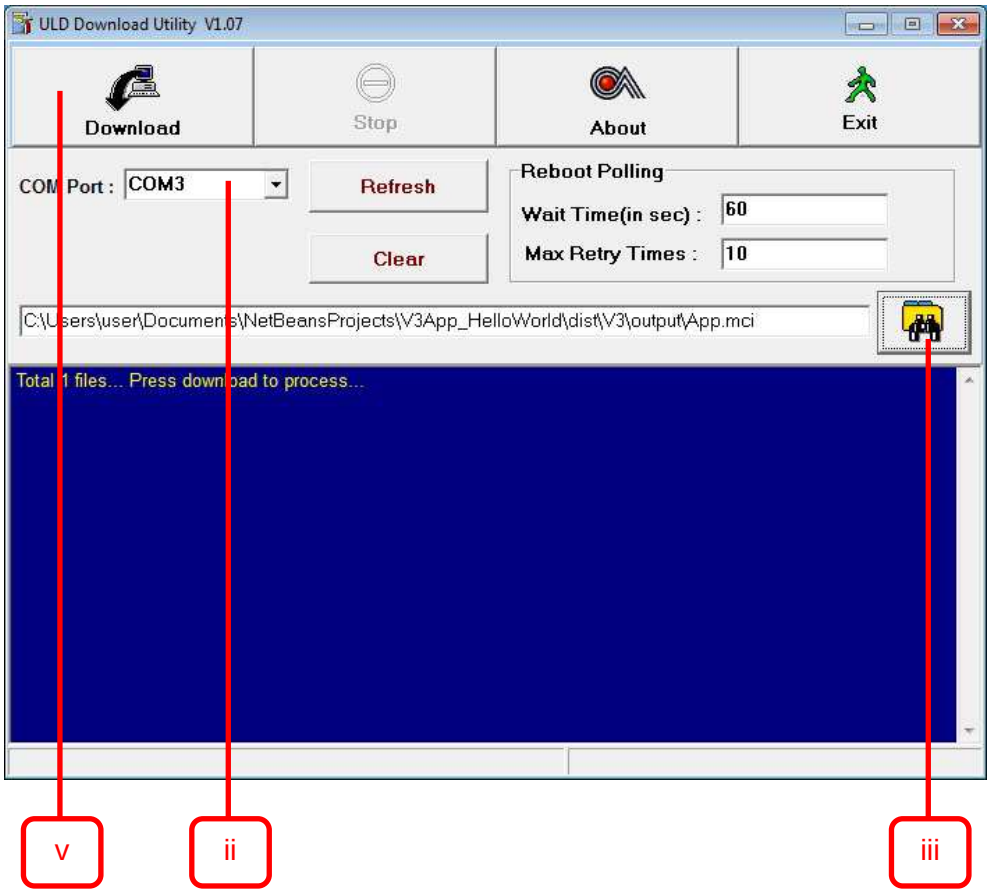
After the signing process, the CAP Generator will generate two files for downloading, mci file and CAP files. The mci file is the list of CAP files.



Castles provides a Windows program named ULD Download Utility to download CAP file to terminal / pinpad. For more details on ULD Download Utility, please refer to **Book 2 – User Manual**.

Steps:

i. Execute ULD Download Utility, located in C:\Program Files\Castles\VEGA3000\tools\Loader for VEGA3000.
ii. Select Com Port.
iii. Select file (mci).
iv. Terminal enter download mode.
    - Press button [0] in Program Manager (PM).
    - Press button [1] to select "1. Download AP".
    - Press button [1] again to select download via RS232 or USB.
v. Start download.

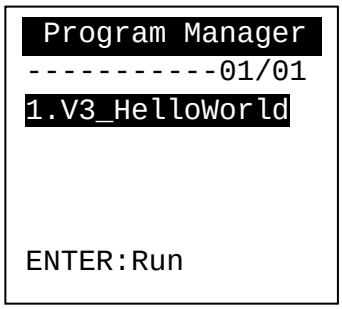


Note: To download using USB cable, terminal must enable CDC mode.
[PM] →0[System Menu] → [4. Sys Settings] → [USB CDC Mode:] → [Y]

4.3. Execute Application In Terminal / Pinpad

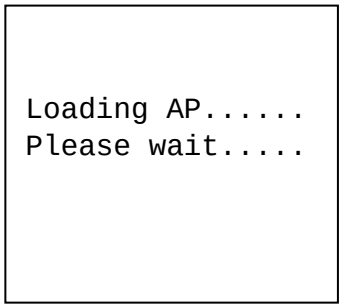
i. Select application in Program Manager

Press [‘↑’up / ’.’down] button to select. Selected application will be highlighted.

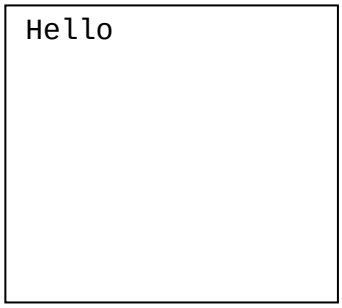


ii. Execute Application

Press Enter to execute application.



iii. Application executed



iv. Exit Application and return to PM

Press any key to return to PM.

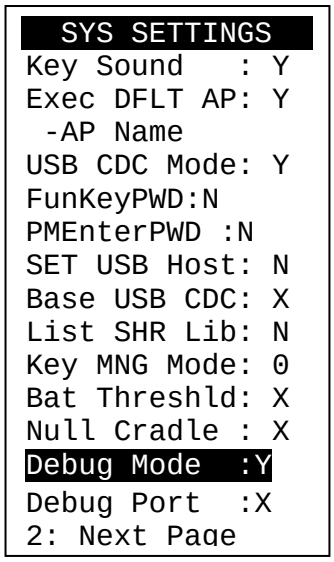
Note: To automatically run the application after terminal / pinpad power on, select AP in Program Manager, press [1] button to enable “Default Select”. To stop the default application execution, keeping pressed and released [X] button during “System Initializing” until enter Program Manager.

5. Console Debug

Console debug is a very useful tool during application development. It's used to dump messages out from terminal / pinpad in real time. The messages are dumped through serial port and can be captured by console application like Hyper Terminal, TeraTerm or Putty.

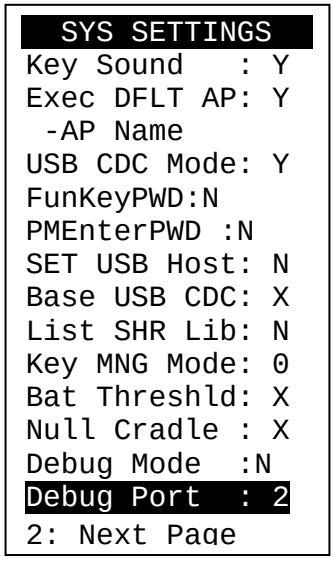
Terminal / Pinpad setup

In the Program Manager, press [0] button to menu follow by [4] button to "4.Sys Settings".



The Debug Mode is off by default.

- Press [OK] button to change debug mode.
- Press [←] button to toggle to [Y].
- The screen will display hint message.



Specify the serial port for output debug message.

- The Debug Port can be set to be serial COM or USB.
- Press [X] button to return, and can start to debug while running AP.

PC Setup

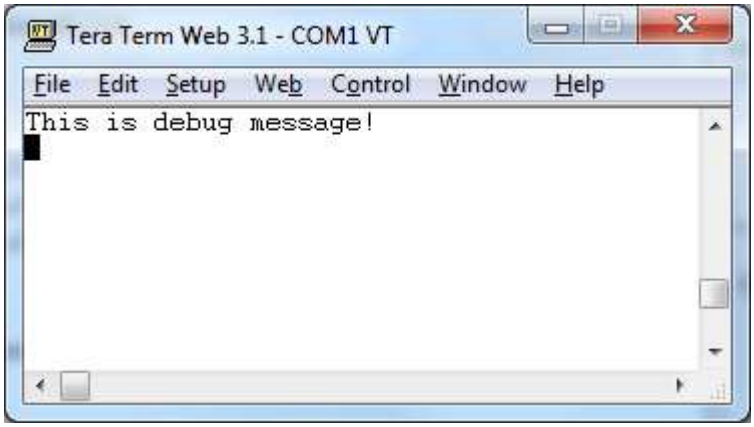
- Connect the RS232 cable to PC and the COM specified in Debug Port on terminal.
- Run console application (such as Hyper Terminal, TeraTerm or Putty)
- Set serial port to baudrate of 115200bps, none parity bit, 8 data bits, 1 stop bit.

Terminal / Pinpad Application

- Use printf() function to dump your debug messages.
  For example:

```
printf("This is debug message!\n");
```

Debug Message Output



~ END ~