Desk Top Lab

# How to setup CubeSuite+ for ICS

RL78 series on CubeSuite+ Version 2.01.00

RX series CubeSuite+ Version 2.01.00

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## Preface

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ICS is a product of RENESAS electronics. Desk Top Laboratories Inc performs ICS related support business, such as the directions for ICS and a library.

In order to use ICS in RL78 series, it is necessary to do the three following work.

A) To include ICS library to your source code.

B) To setup variable generation tool to your project.

C) To keep the DTC vector table area, if library needs the DTC.

ICS software on the PC side needs to know the type information and the address of a variable in the user program. For this purpose it is necessary to carry out three operations. This chapter explains how to incorporate the variable information generation tool in the case of using RL78 series by CubeSuite+Version 2.01.00.

## To generate map file

You can setup your project on CubeSuite+ in order to generate a map file. Please right-click the “build tool” in the project tree of the left-hand side on the screen. And choose “Property” in Fig 1　Main menu

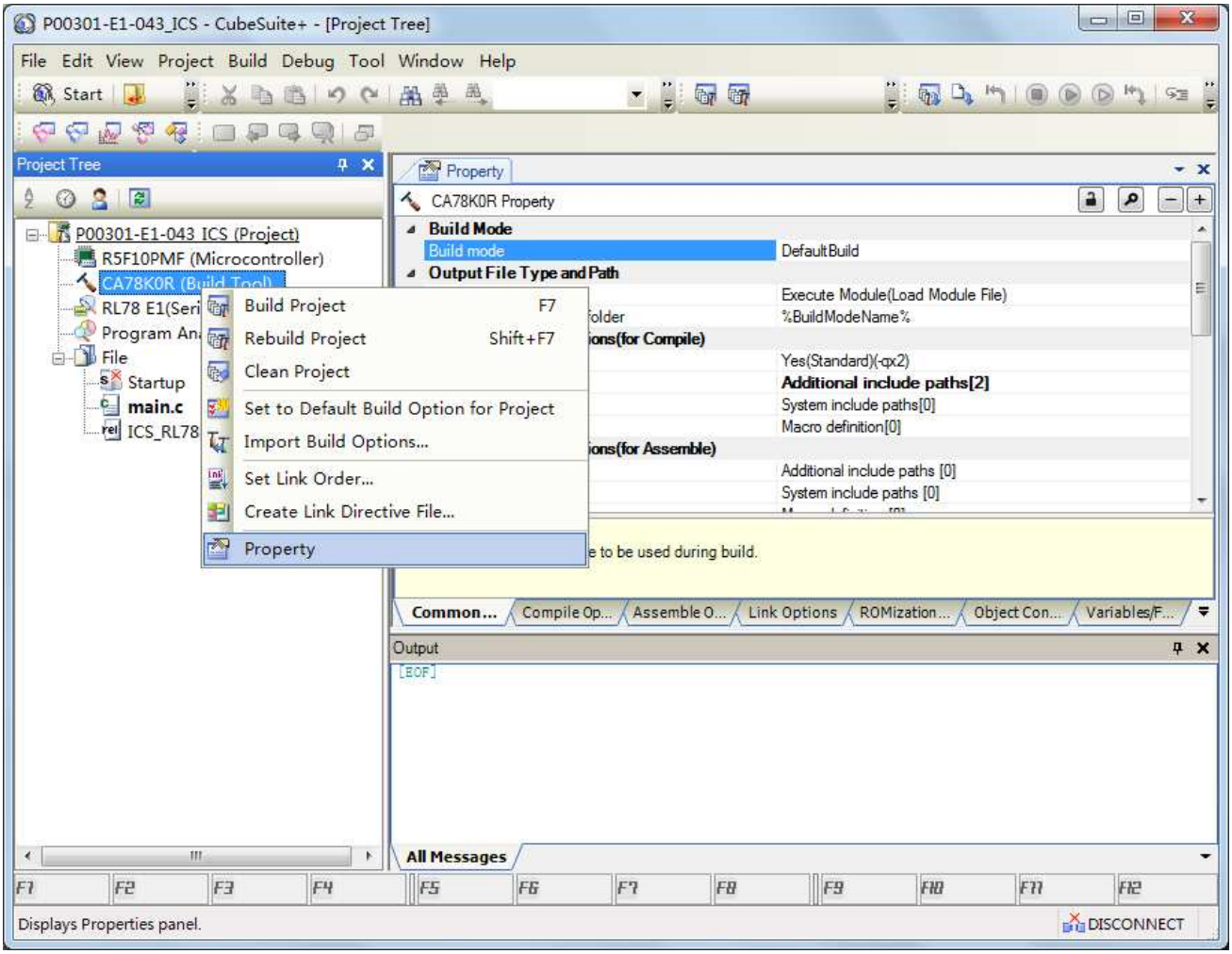


**Fig 1　Main menu screen**

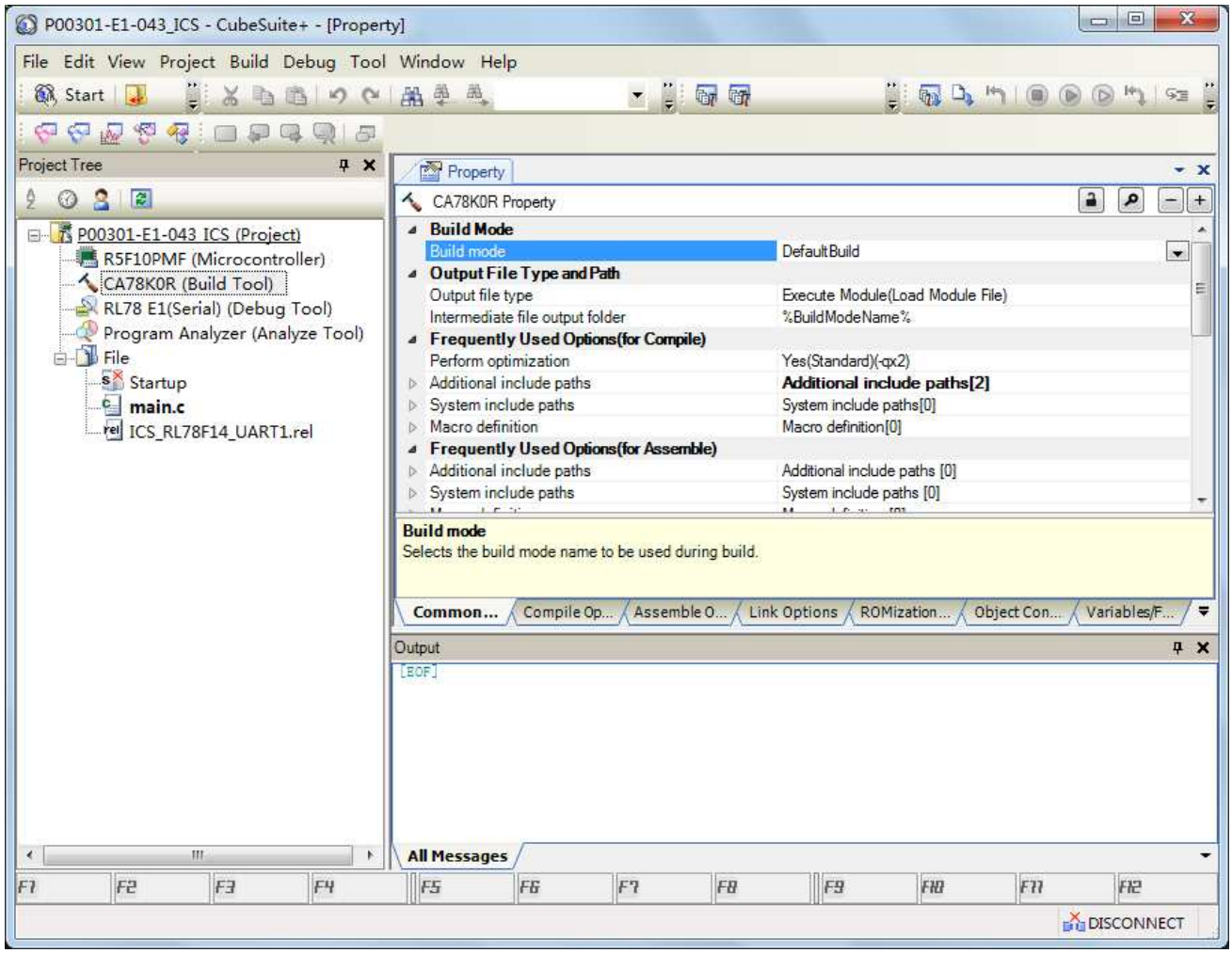


Fig 2 Build tool screen

Since it will become a screen like Fig 2 if “Property” is chosen, please choose the tab currently displayed as the "link option" of the right-hand side screen.

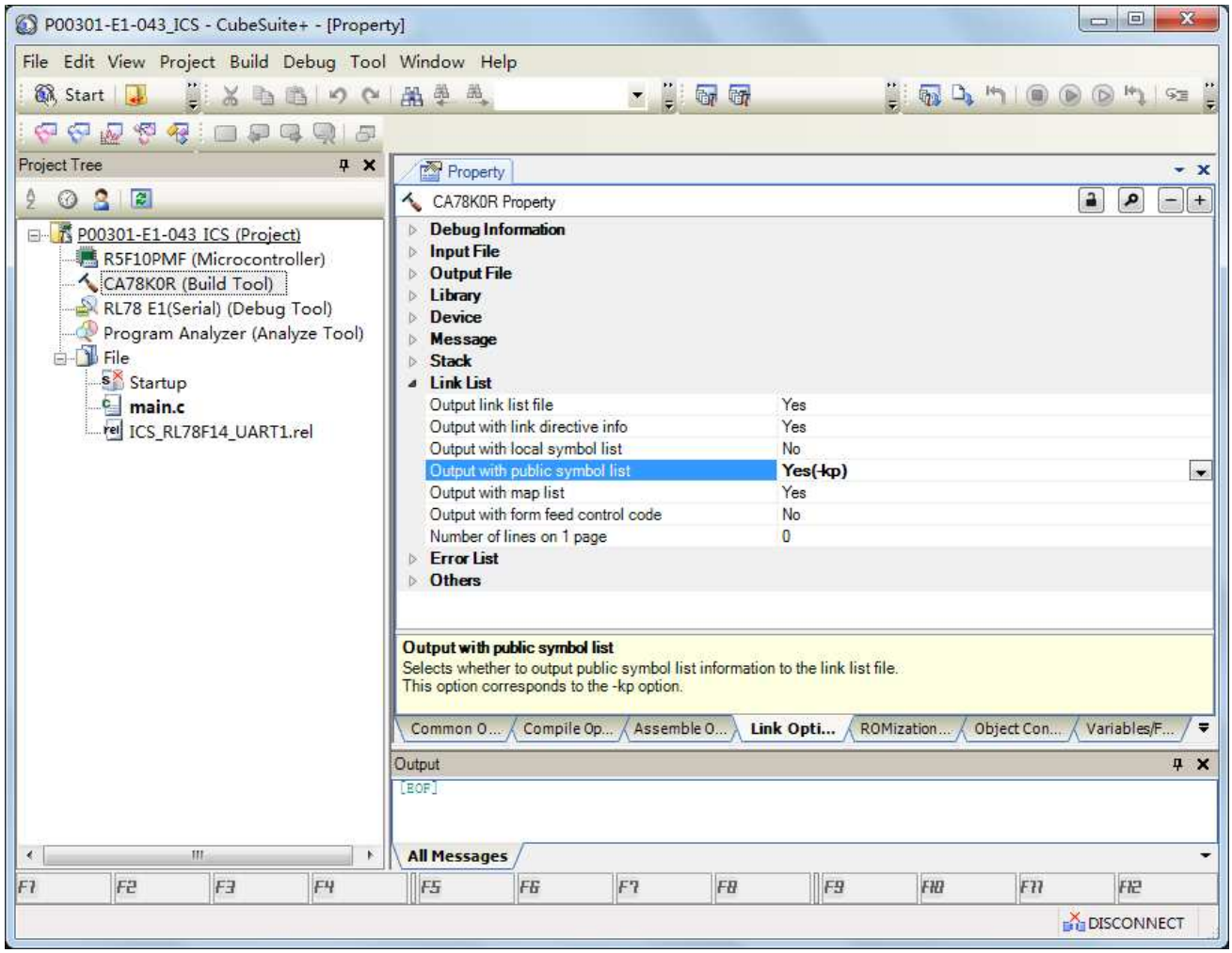


**Fig 3　Link option screen**

It will become a screen like Fig 3 if　"Link Option" tab in the "Property" is chosen.

Please change to "Yes" in the [Link Option] -> [Link List] -> [Output with public symbol list] in Fig 3. Then, the map file will be generated at the time of build.

After previous page operation, please click the [Link Option] -> [Others] -> [Commands executed after link processing]. The following screen is displayed.

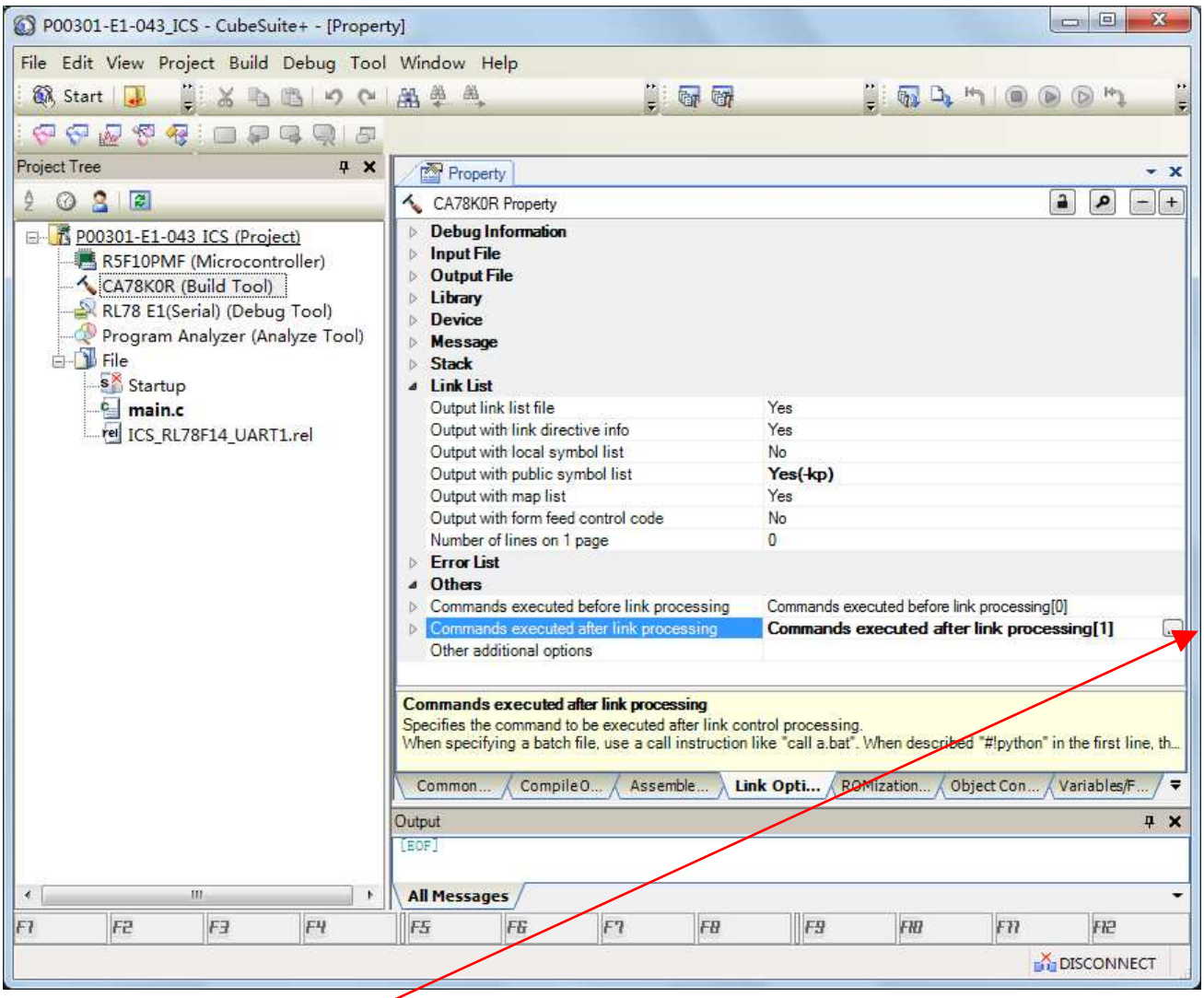


Fig 4 Link Option screen 2

Please click […] part at the [Link Option]->[Others]->[Commands executed after link processing]. The following screen like Fig 5 Input screen of [Command Fig 5 will be displayed.

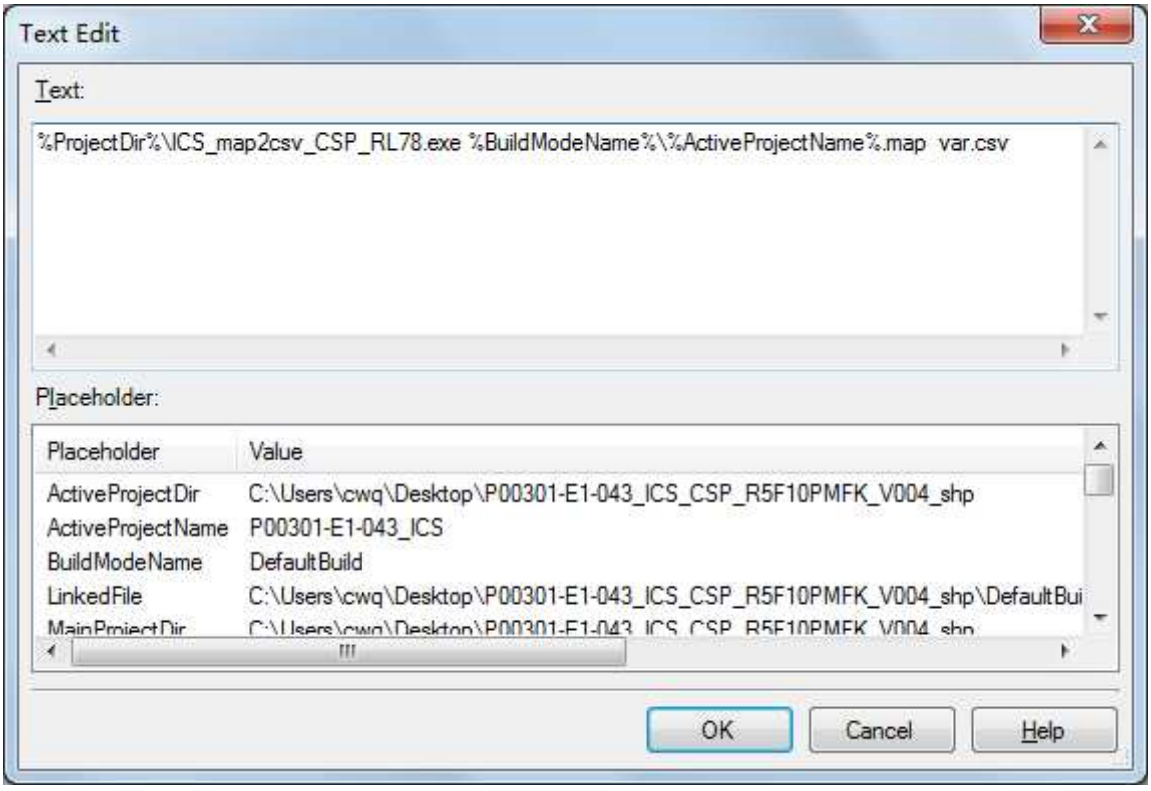


**Fig 5　Input screen of [Command executed after link processing]**

Please input the following character string into the upper TEXT portion by one line on this screen. Here, it divided into three lines for convenience. And you can choose filename freely, but the extension must be csv.

ICS_map2csv_CSP_RL78.exe

%BuildModeName%¥%ActiveProjectName%.map

var.csv

Please copy “ICS_map2csv_CSP_RL78.exe” file to the holder where there is a <project_name>.mtpj.

In the case of the sample project, it is as follows.

Installation is an end above.

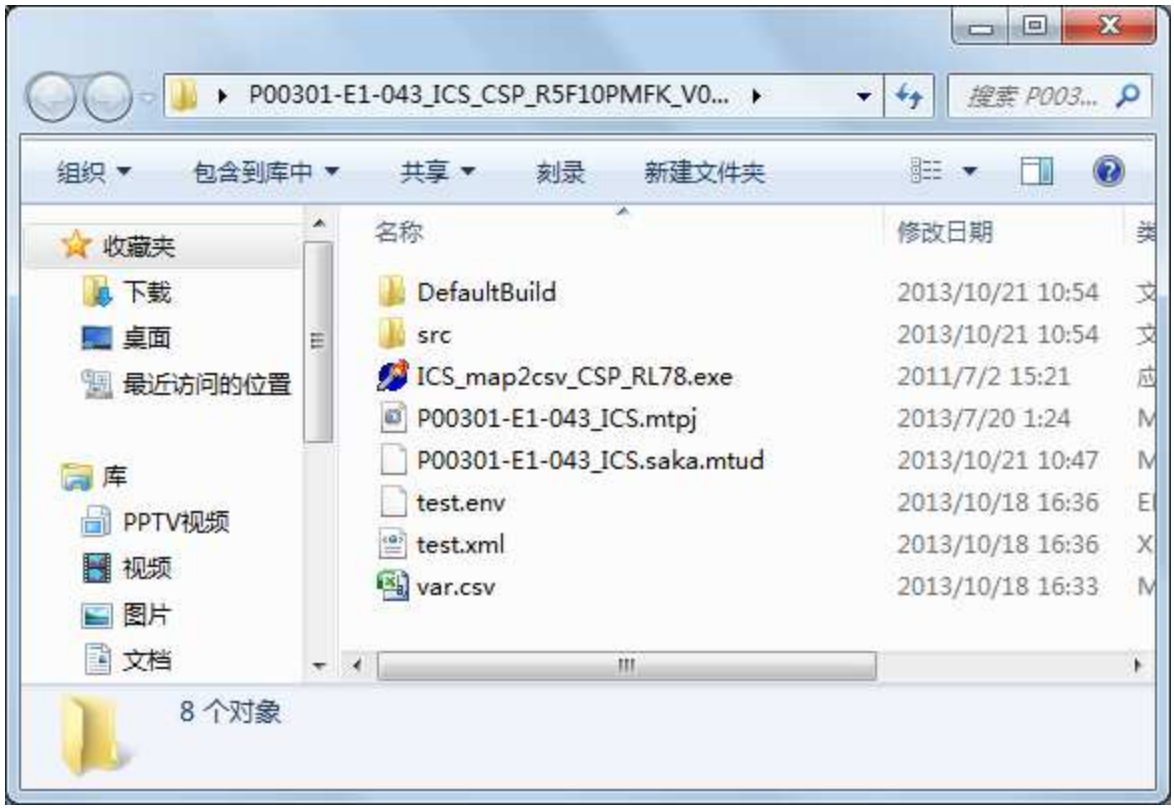


**Fig 6　Project holder after installation**

In Fig.7, this holder is the place where there is a sample project.

1) Please remember the time stamp of the var.csv file.
2) Please double click *.mtpj file to open the project.
   If you do so, development environment will start up.

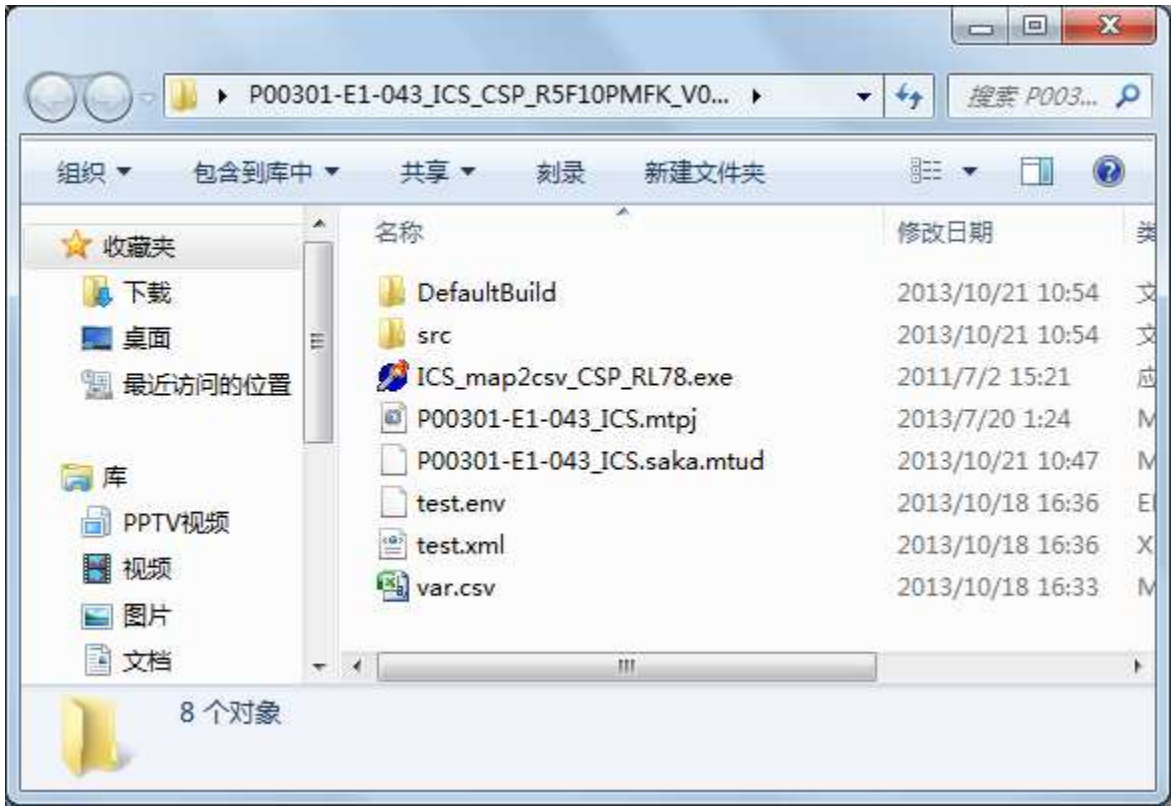


Fig 7　A holder where there is *.mtpj file

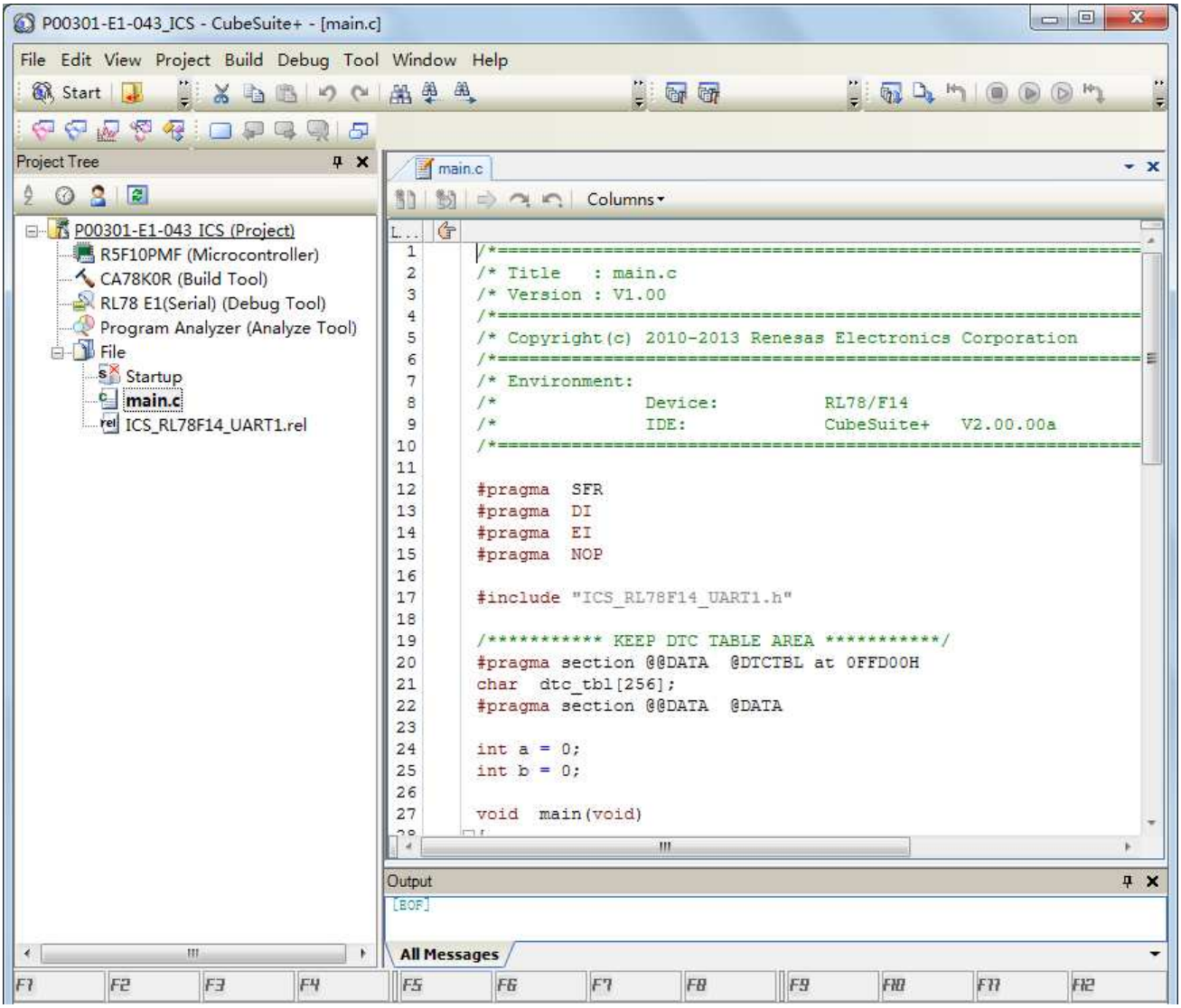


Fig 8 CubeSuite+ start up screen

From the menu bar, please click [Builld] -> [Rebuild project]. After executed the rebuild, file var.csv's time stamp is updated, then the installation is complete.

This is sample variable information file in Fig.9

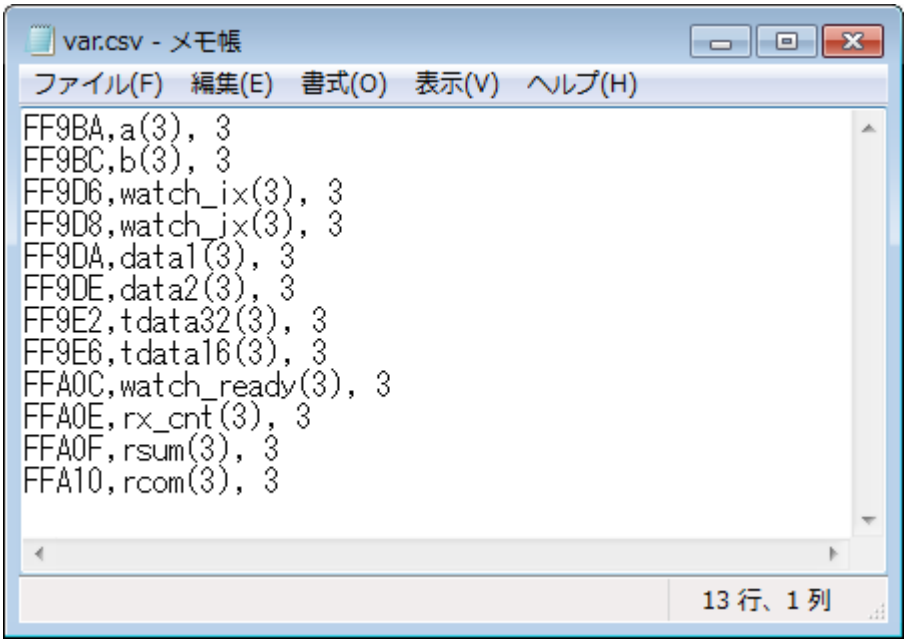


**Fig 9　variable information file**

As a form, they are an address, a variable identifier(number), and the form of "0"

The numbers in the parentheses of each line is the type of the variable. This number takes a value of up to 0-6,
0: unsigned 8bit variable
1: singed 8bit variable
2: unsigned 16bit variable
3: signed 16bit variable
4: unsigned 32bit variable
5: signed 32bit variable
6: IEEE754 floating point variable
Type 6 IEEE754 is not supported the standard RL series library.

The current variable generation tool "ICS_map2csv_CSP_RL78.exe" generates all variables as 16bit variable is type 3,
The current variable generation tool generates the variable information according to this rule. So the generated information may not match the type in the C source code. Please fix the variable information file by hand in case of wrong data is generated.

In order to use ICS in RX series, it is necessary to do the three following work.

A) To include ICS library to your source code.

B) To setup variable generation tool to your project.

C) To keep the DTC vector table area, if library needs the DTC.

ICS software on the PC side needs to know the type information and the address of a variable in the user program. For this purpose it is necessary to carry out three operations. This chapter explains how to incorporate the variable information generation tool in the case of using RX series by CubeSuite+Version 2.01.00.

## To generate map file

You can setup your project on CubeSuite+ in order to generate a map file. Please right-click the “build tool” in the project tree of the left-hand side on the screen. And choose “Property” in Fig 10.

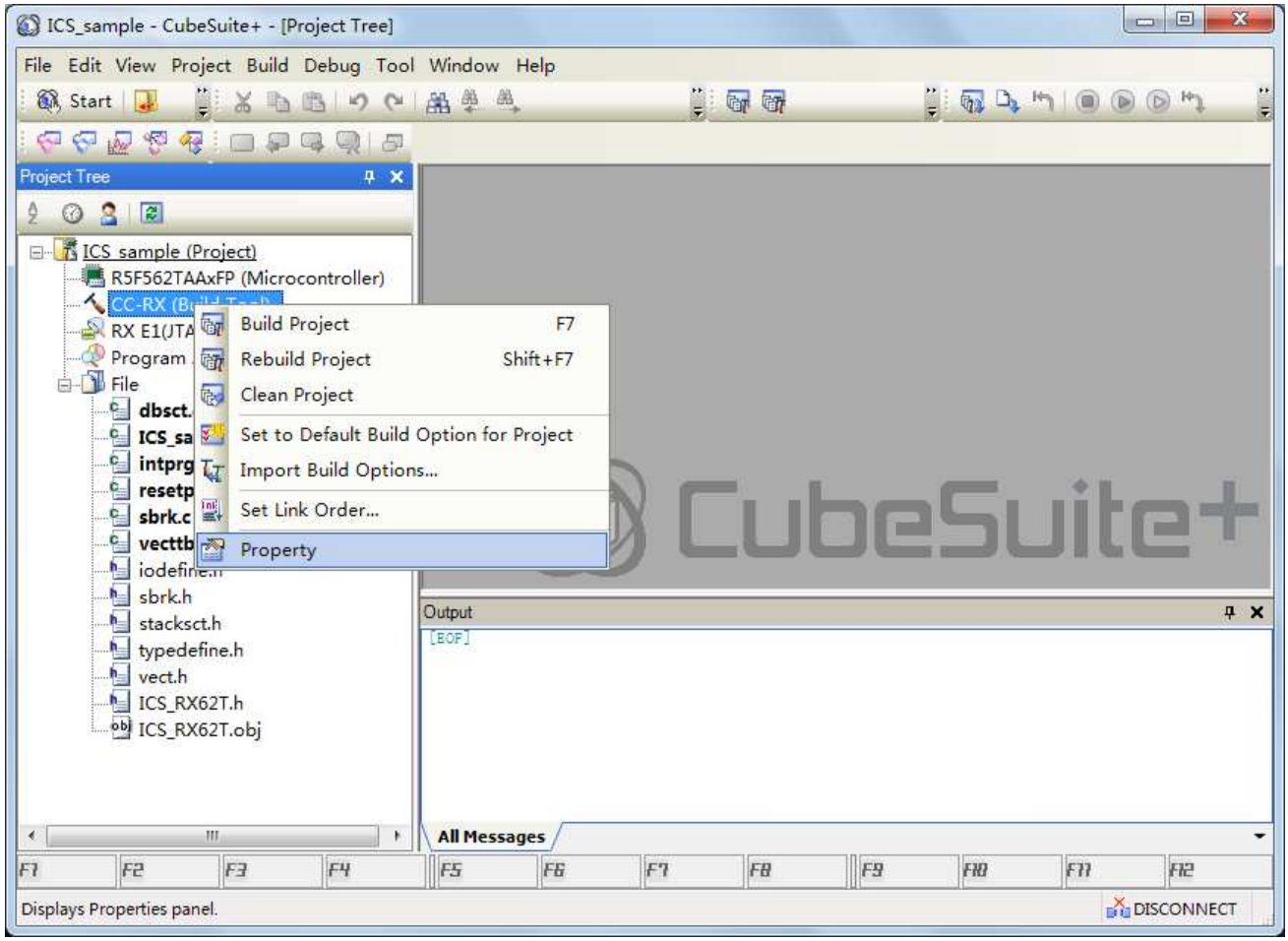


**Fig 10 Main menu screen**

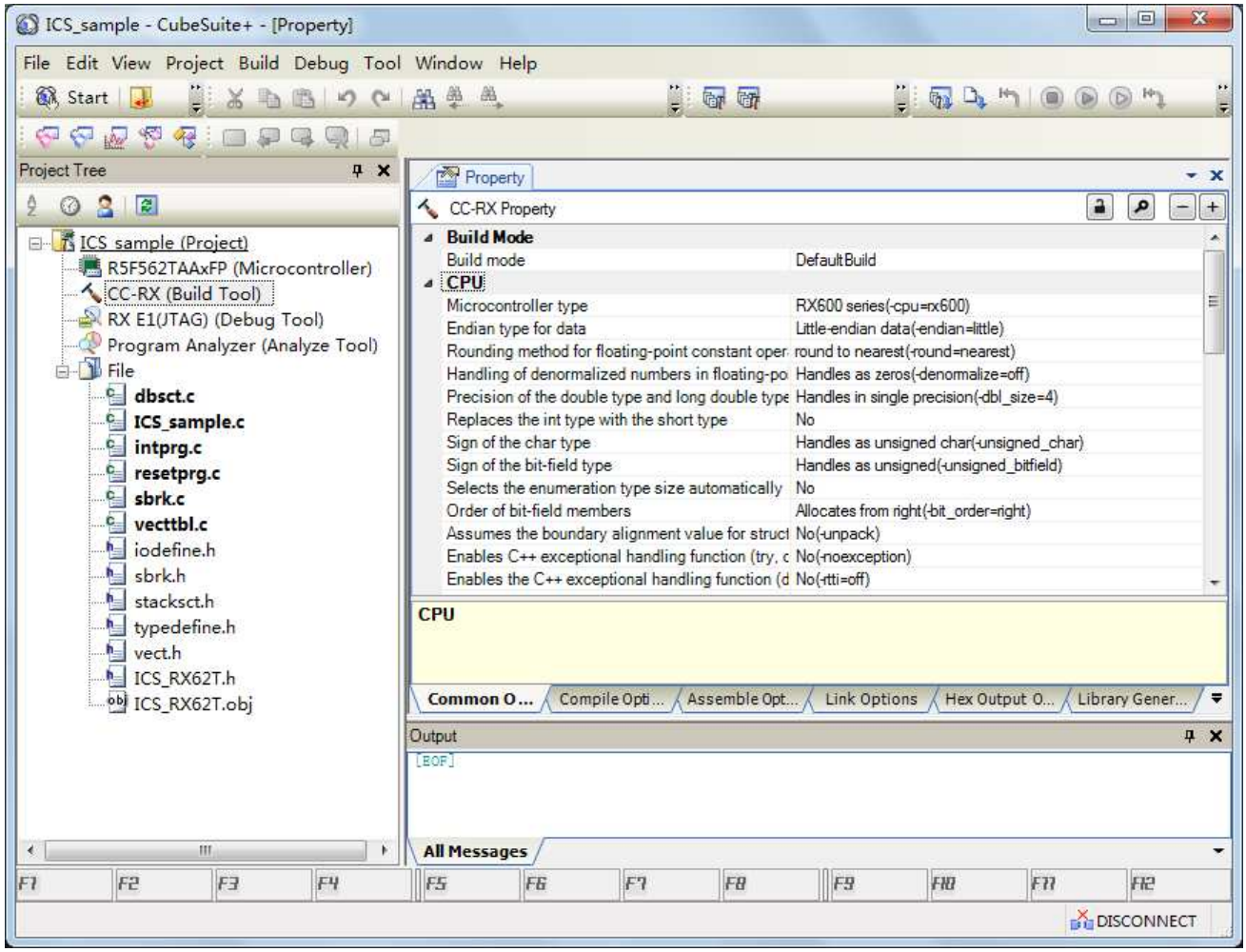


Fig 11 Build tool screen

Since it will become a screen like Fig 11 if “Property” is chosen, please choose the tab currently displayed as the "link option" of the right-hand side screen.

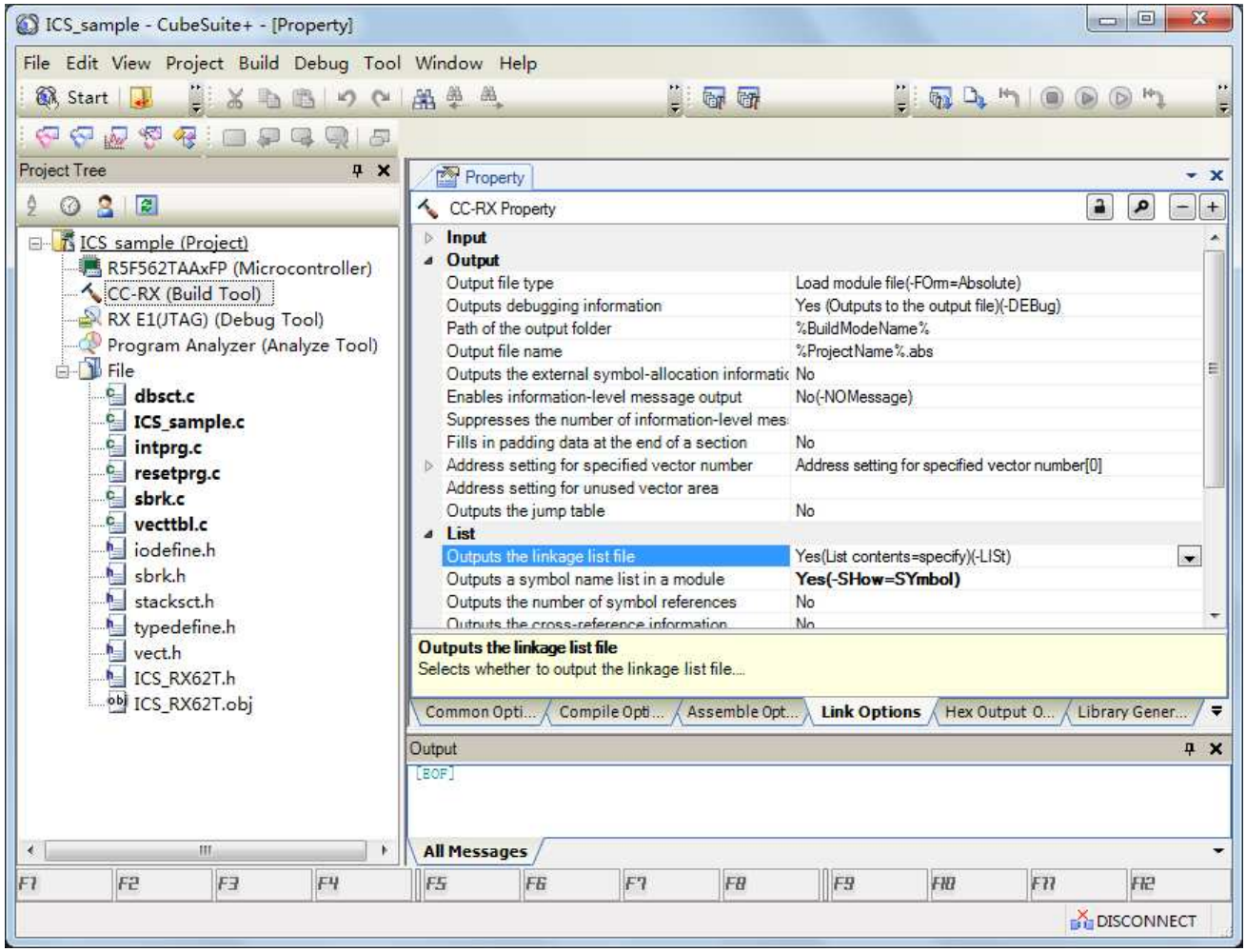


**Fig 12　Link option screen**

It will become a screen link Fig 12, if "Link Option" tab in the "Property" is clicked.

Please change to "Yes" in the [Link Option] -> [List] -> [Outputs the linkage list file] in Fig 12. Then, the map file will be generated at the time of build.

After previous page operation, please double click the [Link Option] -> [Others]. Many options will be displayed under the [Others] option on the screen.

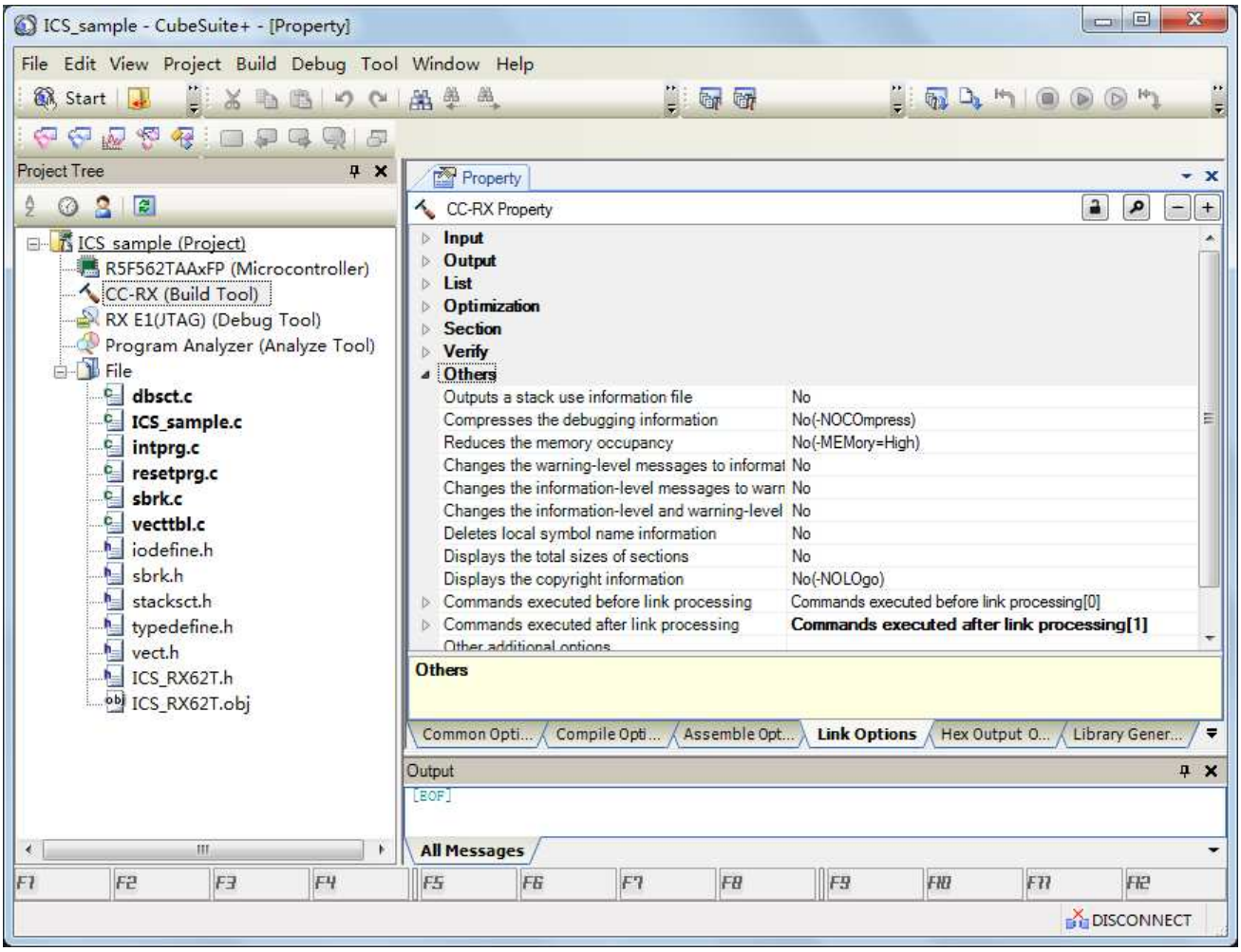


Fig 13 Link Option screen 2

And click [Others] -> [Commands executed after link processing]. Then following screen like Fig 14 will be displayed.

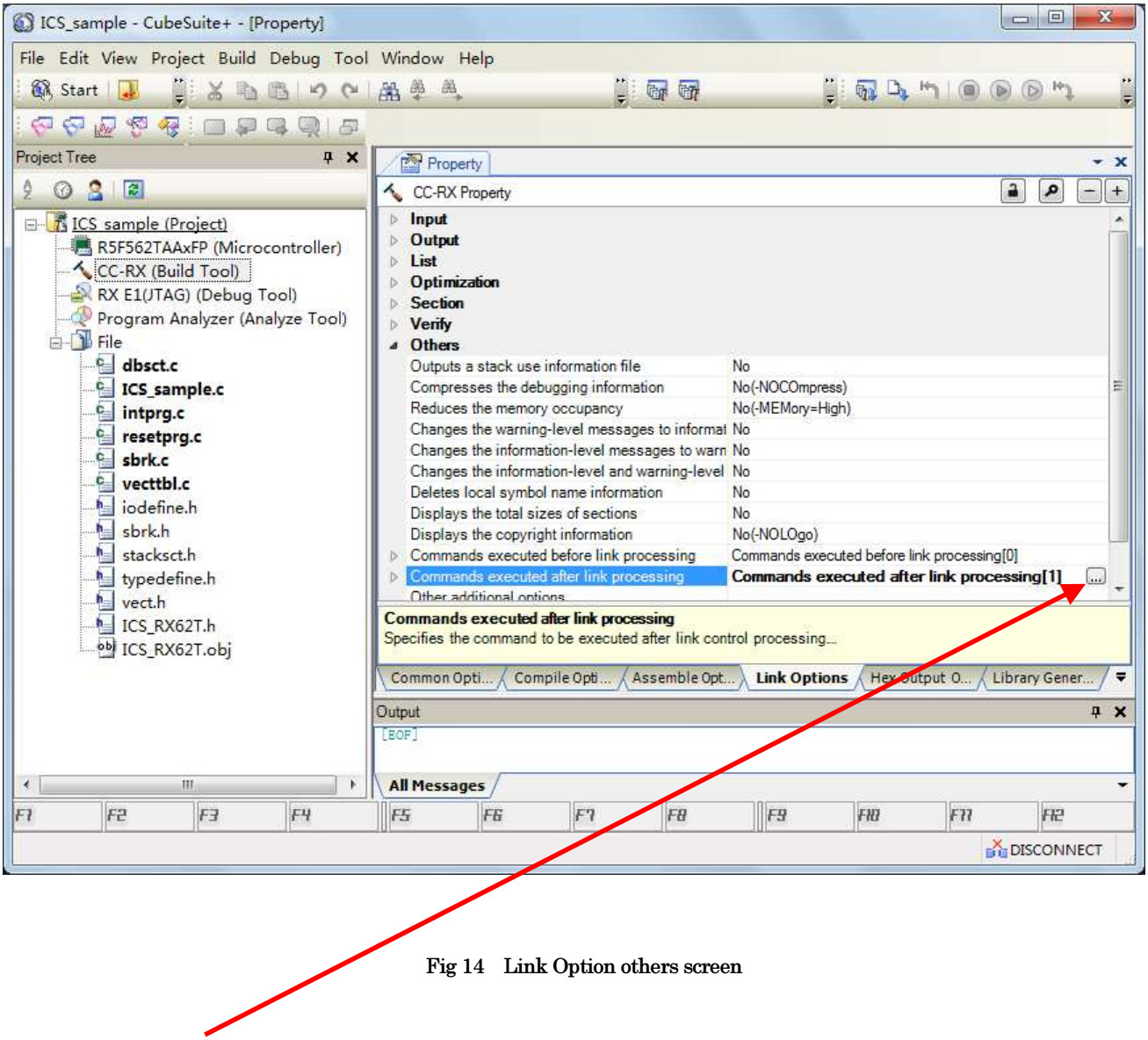


Fig 14　Link Option others screen

Please click […] part at the [Link Option]->[Others]->[Commands executed after link processing].
The following screen like Fig 5　Input screen of [Command Fig 15 will be displayed.

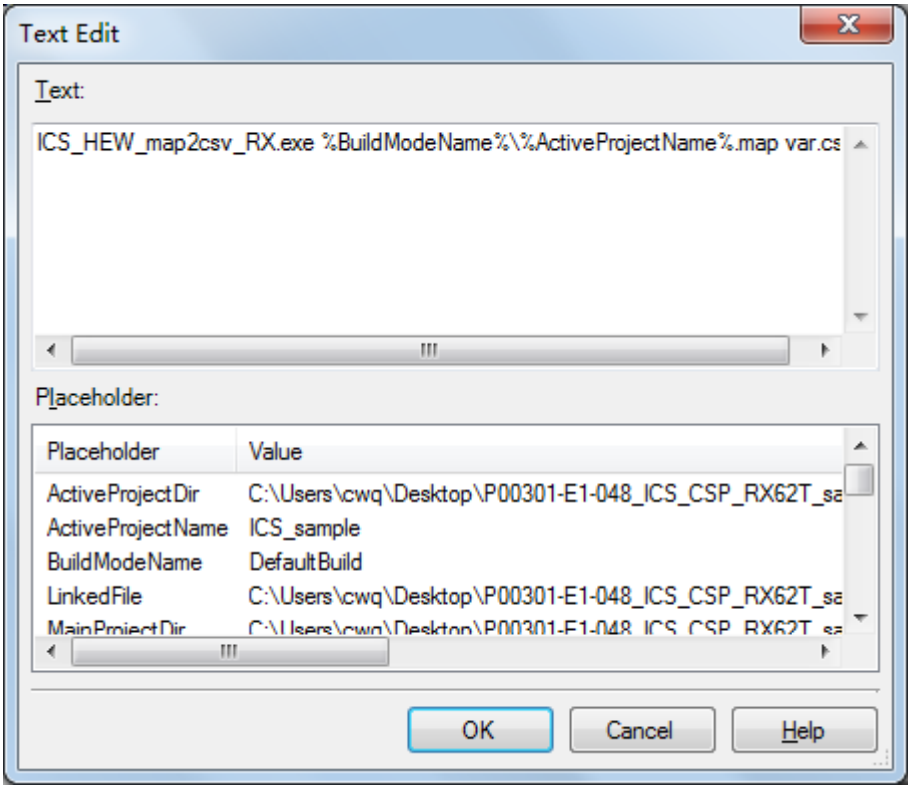


**Fig 15　Input screen of [Command executed after link processing]**

Please input the following character string into the upper TEXT portion by one line on this screen. Here, it divided into three lines for convenience. And you can choose filename freely, but the extension must be csv.

ics_HEW_map2csv_RX.exe

%BuildModeName%¥%ActiveProjectName%.map

var.csv

In case of using RX111, please use ics_Hew_map2csv_RXI.exe instead of ics_HEW_map2csv_RX.exe

Please copy “ICS_map2csv_CSP_RL78.exe” file to the holder where there is a <project_name>.mtpj.

In the case of the sample project, it is as follows. Installation is an end above.

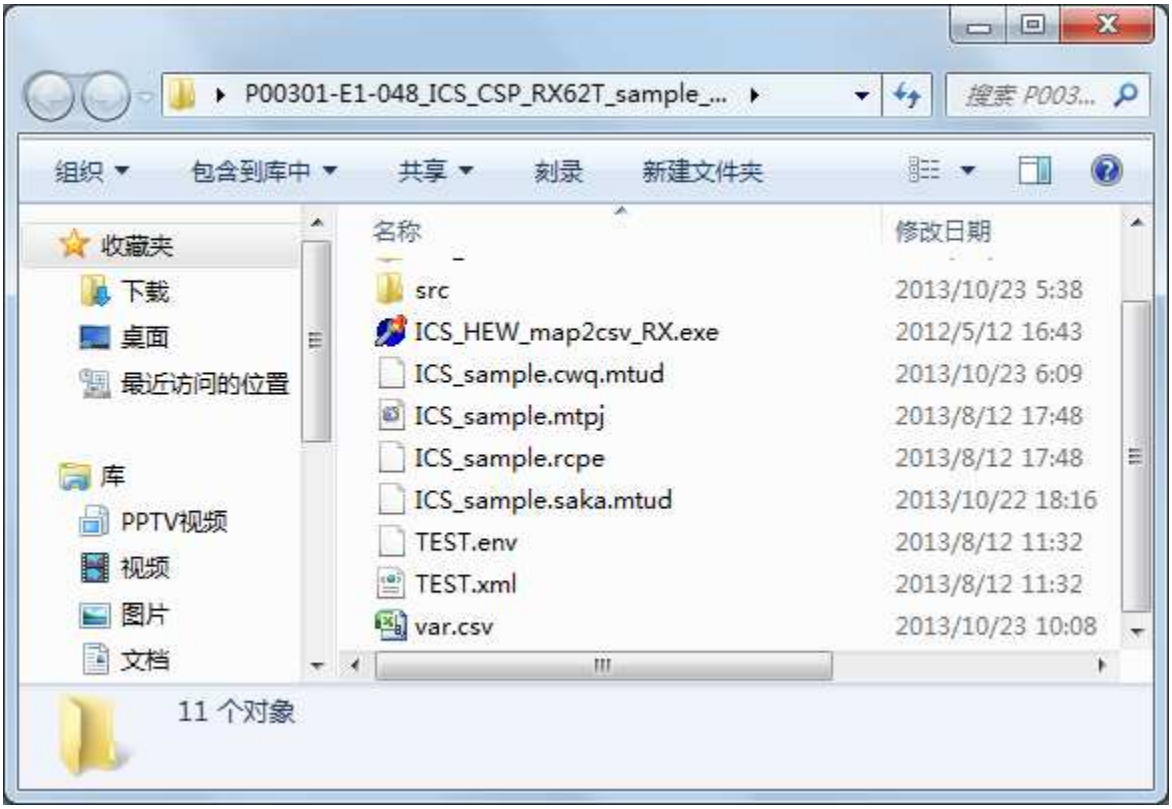


**Fig 16　Project holder**

Fig 17, this holder is the place where there is a sample project.

1) Please remember the time stamp of the var.csv file.
2) Please double click *.mtpj file to open the project.
   If you do so, development environment will start up.

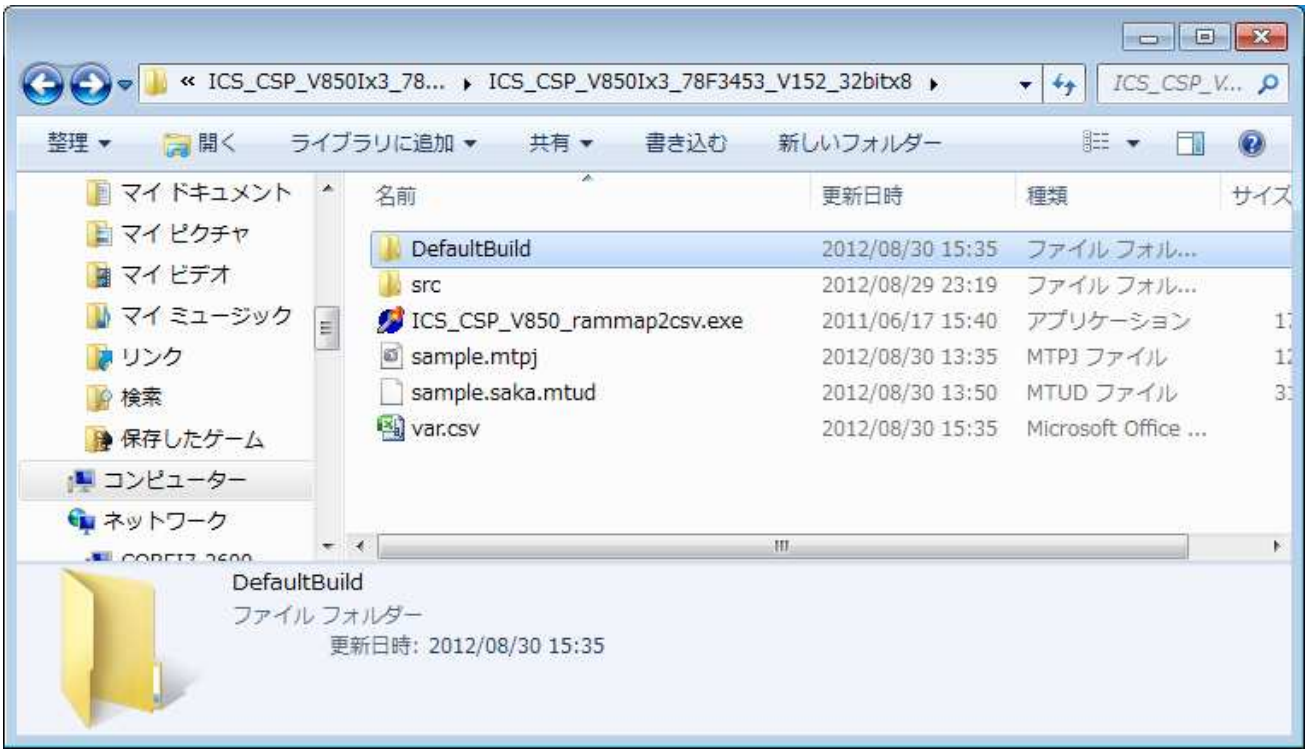


**Fig 17 A holder where there is *.mtpj file**

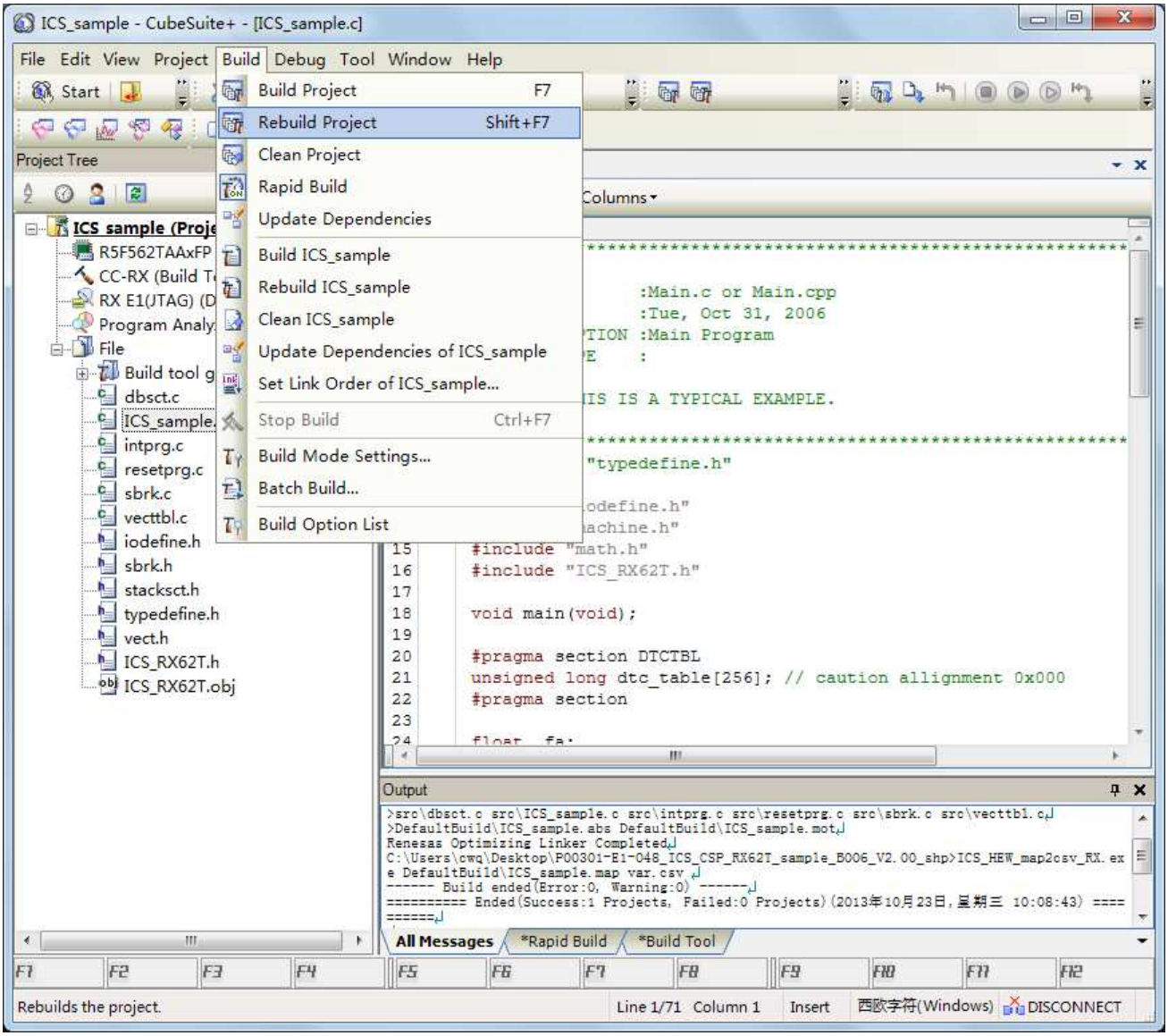


Fig 18 CubeSuite+ start up screen

From the menu bar, please click [Builld] -> [Rebuild project]. After executed the rebuild, file var.csv's time stamp is updated, then the installation is complete.

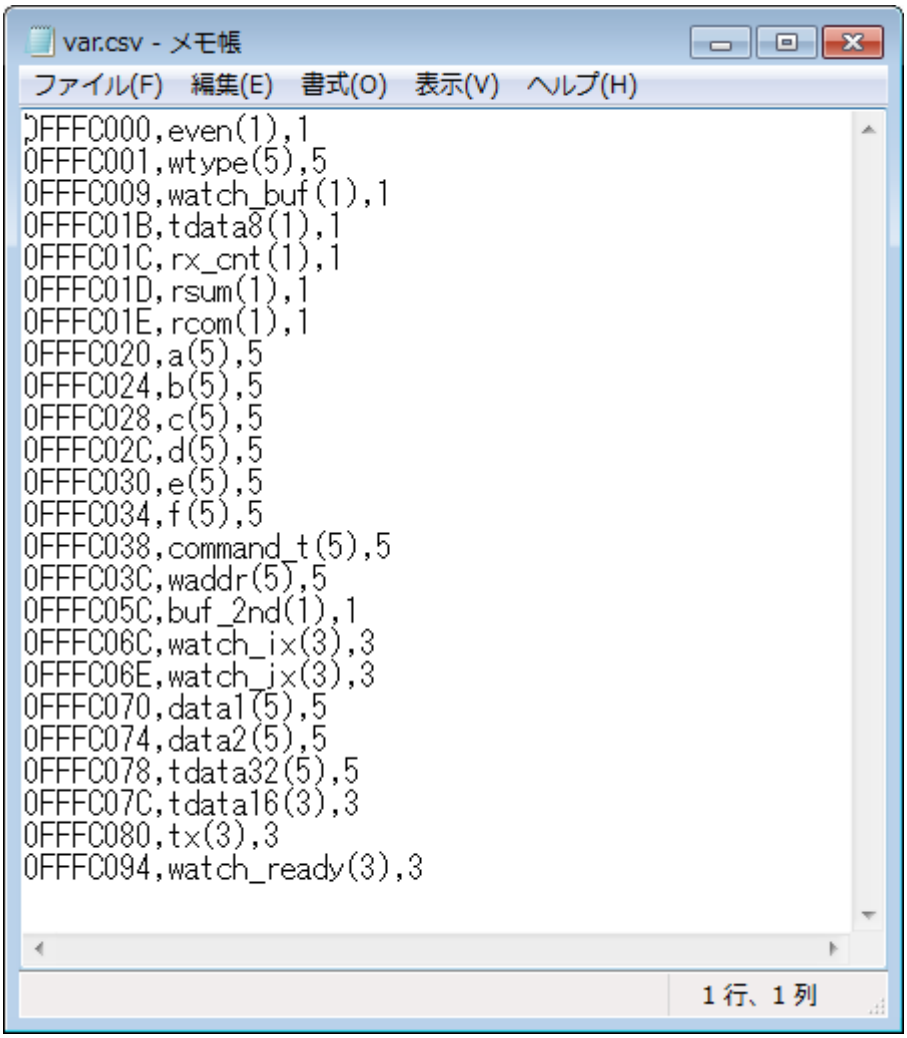


**Fig 19　variable information file**

As a form, they are an address, a variable identifier(number), and the form of "0"

The numbers in the parentheses of each line is the type of the variable. This number takes a value of up to 0-6,
0: unsigned 8bit variable
1: singed 8bit variable
2: unsigned 16bit variable
3: signed 16bit variable
4: unsigned 32bit variable
5: signed 32bit variable
6: IEEE754 floating point variable
Type 6 IEEE754 is not supported the standard RL series library.

The current variable generation tool “ICS_HEW_map2csv_RX.exe” generates as
8bit variable is type 0,
16bit variable is type 3,
32bit variable is type 6 (float)

The current variable generation tool “ICS_HEW_map2csv_RXI.exe” generates as
8bit variable is type 0,
16bit variable is type 3,
32bit variable is type 5 (signed int)

The current variable generation tool generates the variable information according to this rule. So the generated information may not match the type in the C source code. Please fix the variable information file by hand in case of wrong data is generated.

## Revision history

| Version | | Date |
|---|---|---|
| 1.05 | First release for English versoin | 2013-10-23 |
| 1.07 | | 2014-02-01 |
| | | |
| | | |