

**Renesas Integrated  
Development Environment  
Installation Manual  
(RMC-RX62T board Version)**

Version 1.00 [ANDTR100]  
April 2014  
Renesas Micom Car Rally Secretariat

# Important Notice (Revision 1.2)

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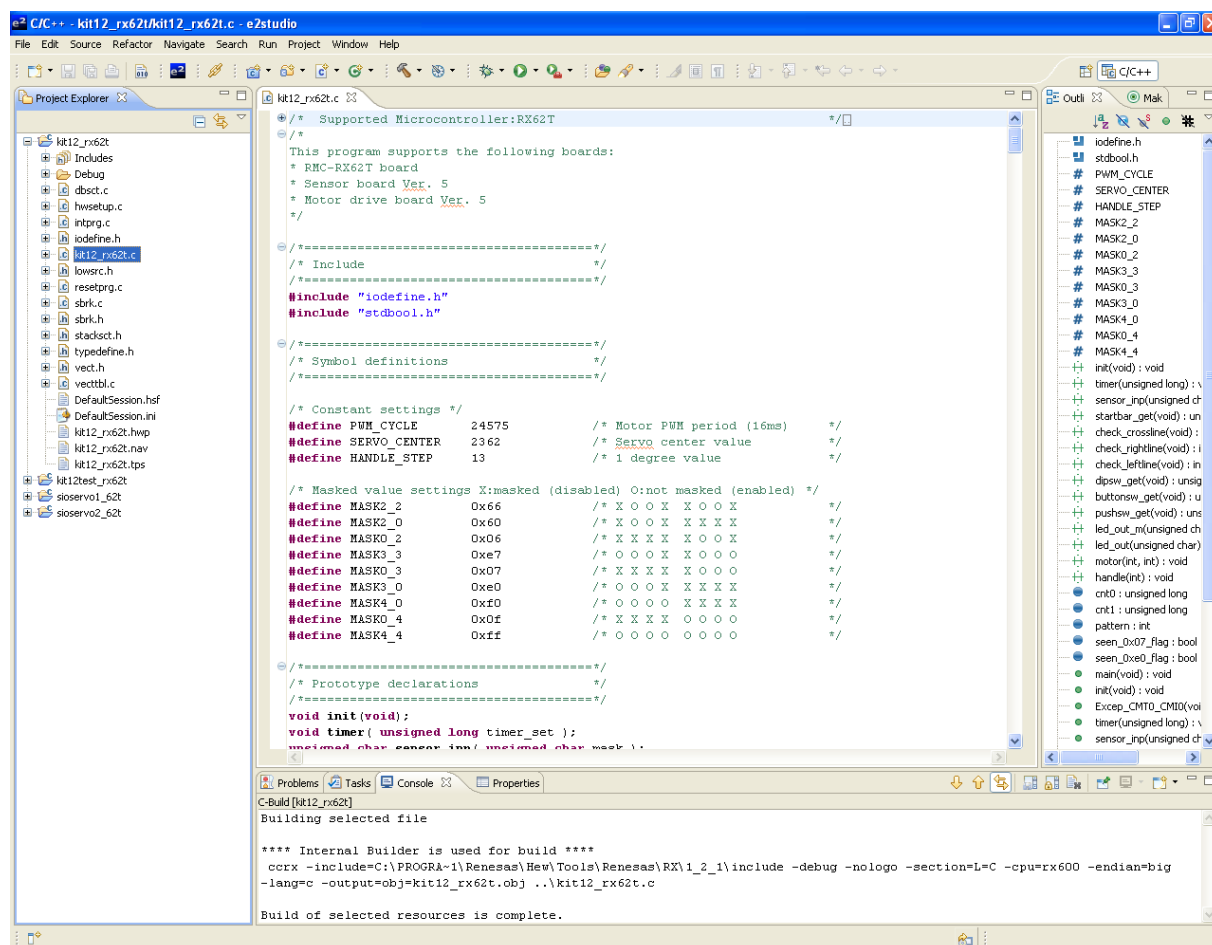
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# 1. What is the Renesas Integrated Development Environment

Renesas eclipse embedded studio (e<sup>2</sup> studio) is a complete development & debug environment based on the popular Eclipse CDT project. Essentially open-source, the Eclipse CDT covers build (editor, compiler and linker control) as well as debug phase based on an extended GDB interface.

e<sup>2</sup> studio is required to edit, compile & build the code for your MCU Car Rally kit. A free evaluation version of the tool can be downloaded from the Renesas website, or you can install from the MCR Start-up Kit – the MCRResources.zip folder downloadable from [mcurally.com](http://mcurally.com).



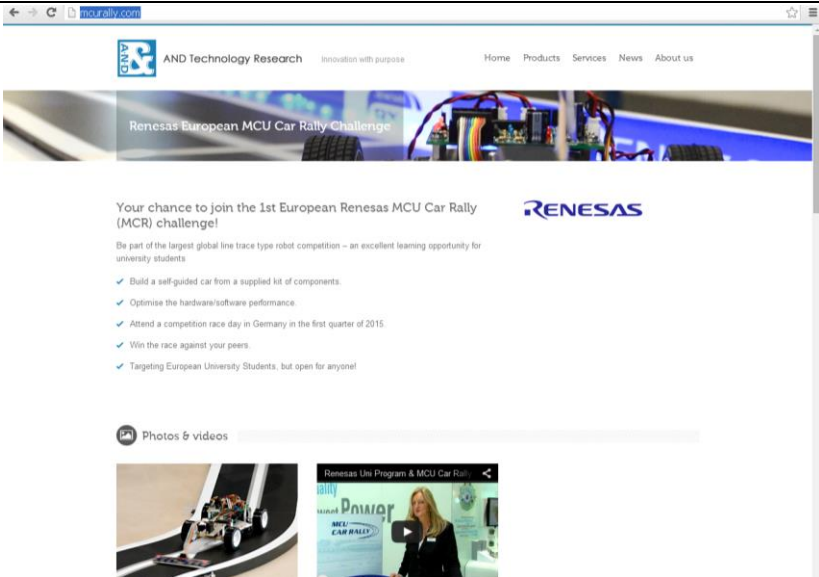
▲ Renesas integrated development environment e2 Studio

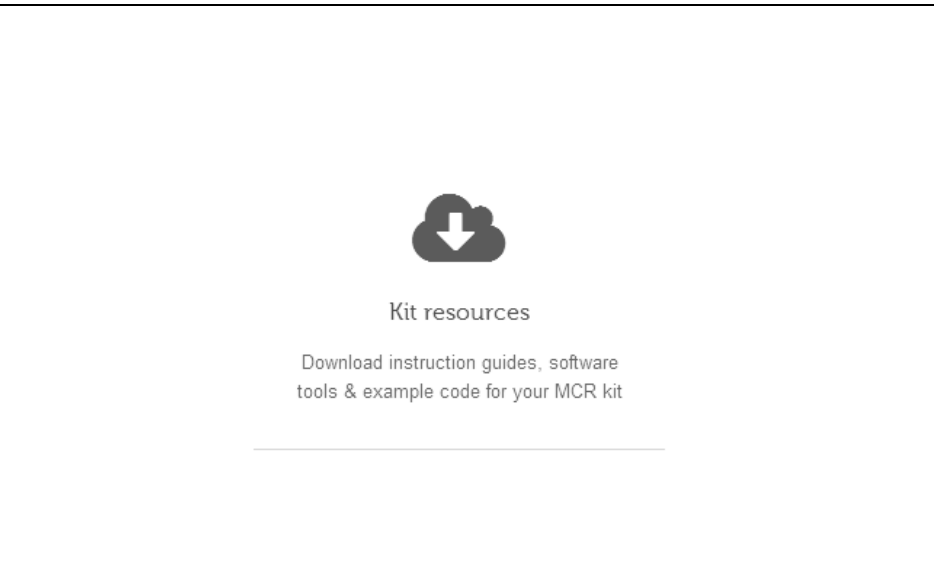
Item	Description
Operating environment	<p>IBM PC/AT compatibles</p> <p>Windows® 8 (32-bit, 64-bit)</p> <p>Windows® 7 (32-bit, 64-bit)</p> <p>Windows® XP (32-bit)</p> <p>Processor: 1 GHz or higher (must support hyper-threading, multi-core CPUs)</p> <p>Memory capacity: 2 GB or more recommended. Minimum requirement is 1 GB or more (64-bit Windows requires 2 GB or more)</p> <p>Hard disk capacity: 1 GB or more spare capacity</p> <p>Display: 1024 x 768 or higher resolution, 65,536 or more colors</p> <p>Interface: USB 2.0</p>

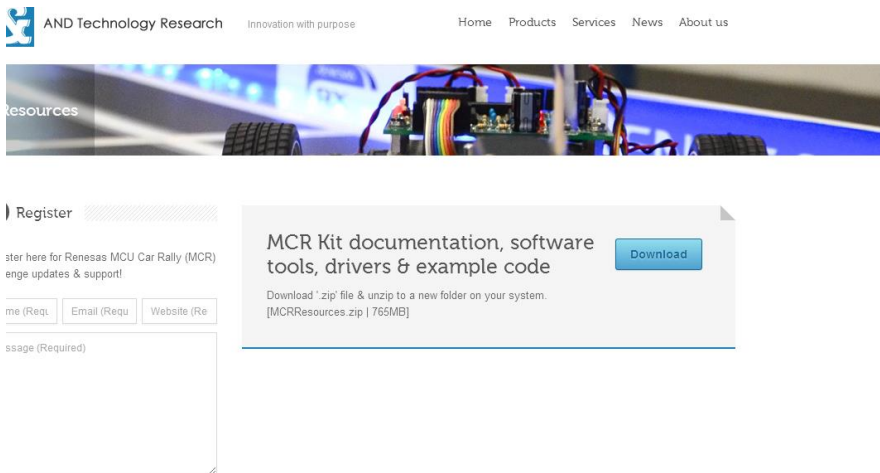
<b>Target Devices</b>	<p>e<sup>2</sup> studio has been developed to support the key promotion families of Renesas controllers:</p> <p>RL78 Family RX Family RH850 Family* SuperH Family (SH-2 and SH-2A)</p>
<b>Main features</b>	<p>Renesas eclipse embedded studio, known as e<sup>2</sup> studio, is a complete development and debug environment based on the popular Eclipse CDT project. Essentially open source, the Eclipse CDT covers build (editor, compiler and linker control) as well as debug phase based on an extended GDB interface.</p> <p>A wide range of compilers can be integrated into e<sup>2</sup> studio to ensure customer has the choice of tools to match their project requirements. When combined with the extremely powerful editor functionality and project management tools automatically built into Eclipse CDT, e<sup>2</sup> studio offers a state of the art coding environment for Renesas embedded controllers.</p> <p>To complete the development cycle, Renesas has developed a range of GDB debuggers to interface between the coding environment and a range of on-chip and in-circuit emulators.</p>
<b>Limitation of free evaluation version</b>	<ul style="list-style-type: none"> <li>•The linker is limited to 128KB Code &amp; Data after the initial unlimited 60 day period.</li> <li>•Supplied without technical support.</li> </ul>

## 2. Downloading the MCR Start-up Kit from the MCU Rally site

Downloading and installing the software from the MCR Start-up Kit is advantageous as everything is located in one place.

1		Open the MCU Rally page: <a href="http://mcurally.com/">http://mcurally.com/</a>
---	--	---

2		Scroll down to the 'Kit Resources' icon and click the link.
---	---	---

<p>3</p>		<p>Click 'Download' to get the kit – the file is called 'MCRResources.zip' and is 765MB in size.</p> <p>It may take some time to download but will provide you with everything you need to modify and program in your car's software code.</p> <p>Once this has downloaded <b>skip ahead to section 'Installing the Renesas RX Toolchains'.</b></p>
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### 3. Downloading the Renesas IDE (e<sup>2</sup> Studio) and supporting RX Toolchains

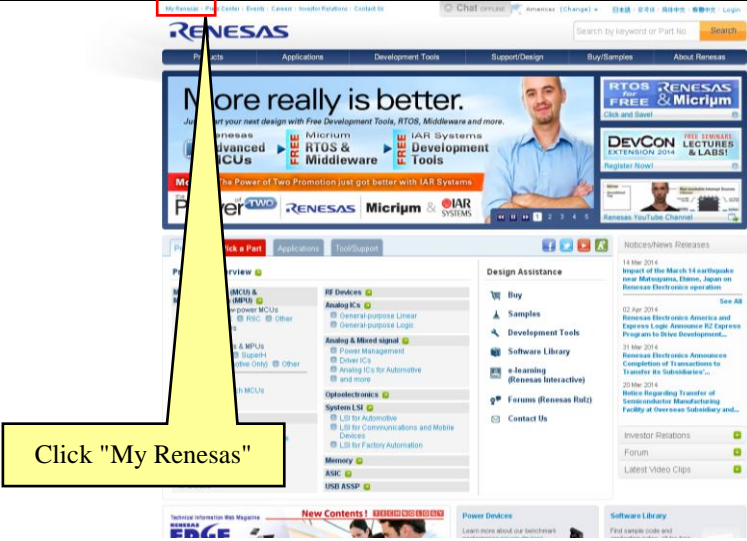
The IDE and supporting Toolchains can be downloaded through the Renesas website, or can be loaded from the 'MCR Kit Software Tools & Drivers' folder in the MCR Start-up Kit.

To download the IDE and Toolchains from the Renesas website follow the steps below, or if you have the MCR Start-up Kit, skip ahead to section 'Installing the Renesas RX Toolchains'.

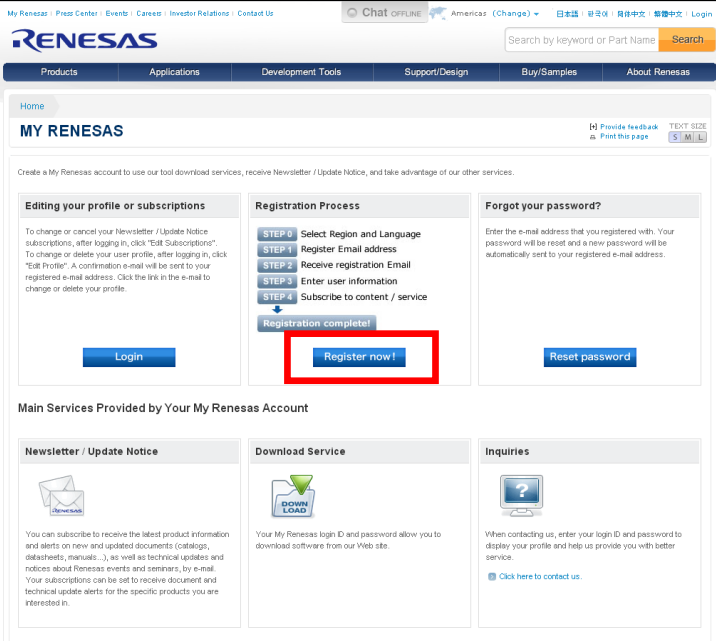
#### 3.1 Preliminary to download from the Renesas home page (User registration of MY Renesas)

To download items from the Renesas site, you will need to register a My Renesas account. It is free to register, and needs your e-mail address.

Advance to "Download of Renesas RX Toolchains" if you are already registered.

<p>1</p>		<p>Renesas Electronics  <a href="http://www.renesas.eu">http://www.renesas.eu</a></p> <p>Click My Renesas.</p>
----------	---	--

2

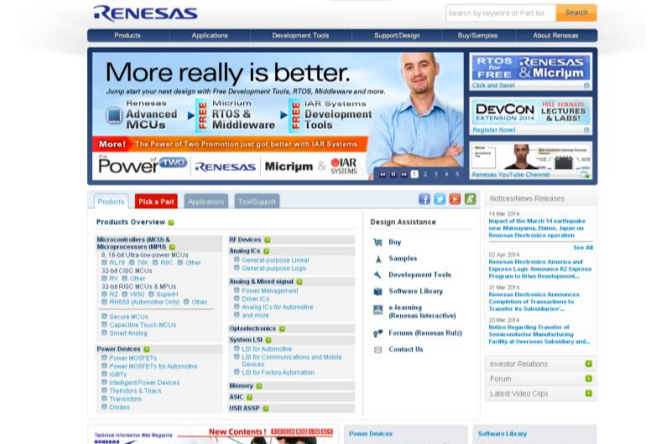
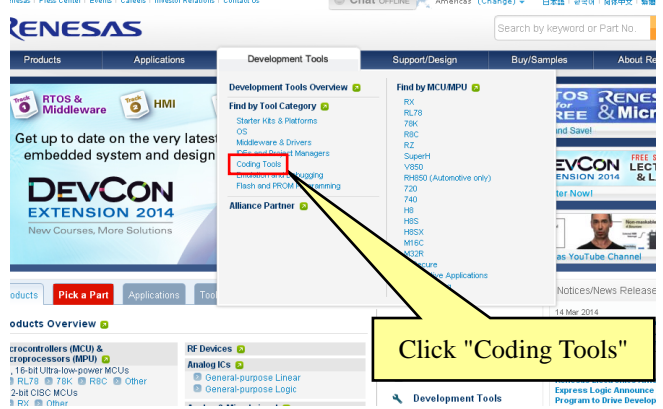
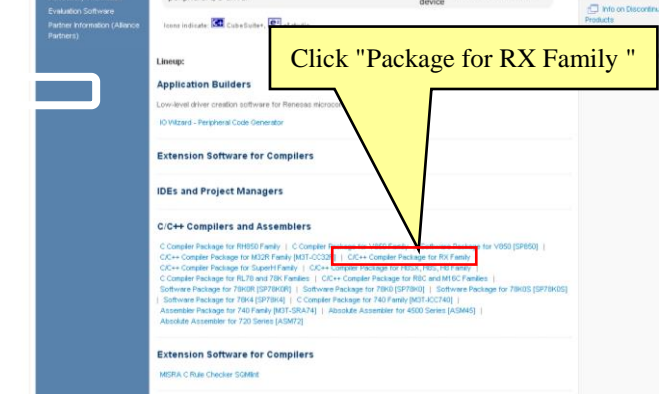


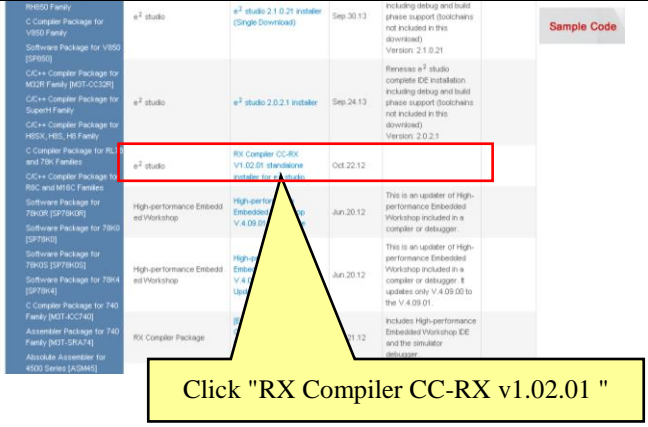

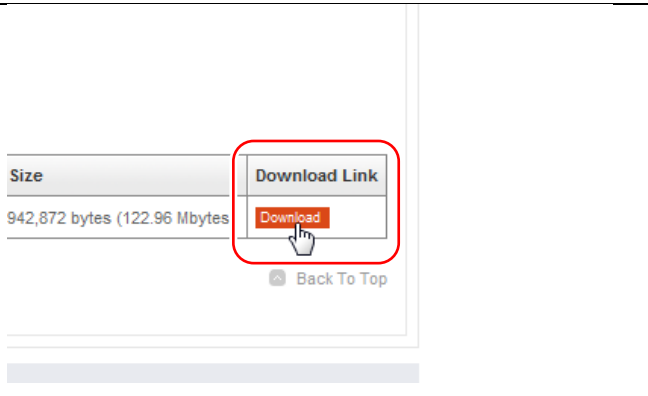
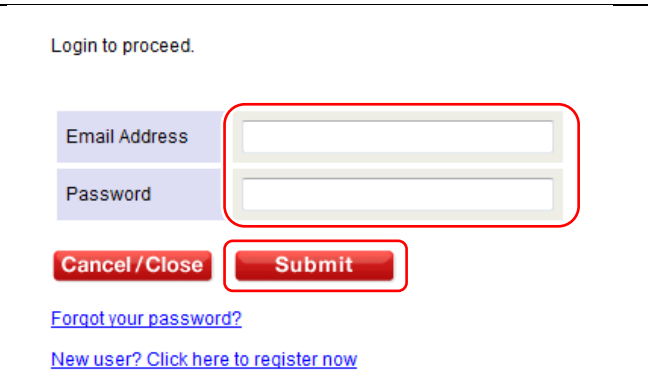
The screenshot shows the 'MY RENESAS' page. The 'Registration Process' section lists four steps: STEP 1 Select Region and Language, STEP 2 Register Email address, STEP 3 Receive registration Email, and STEP 4 Enter user information. Below these steps is a 'Register now!' button, which is highlighted with a red rectangular box. Other sections include 'Editing your profile or subscriptions', 'Forgot your password?', 'Main Services Provided by Your My Renesas Account', 'Newsletter / Update Notice', 'Download Service', and 'Inquiries'.

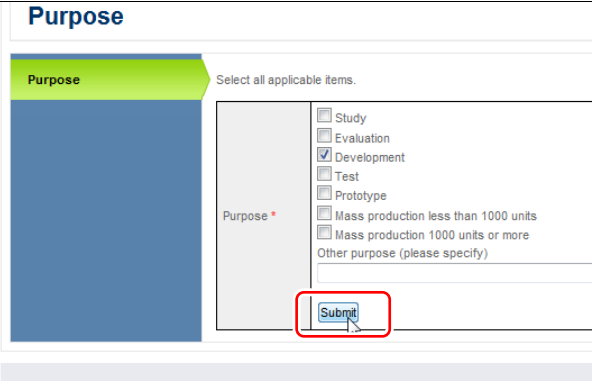

Click **Register now!**, and proceed with registration.

**Note:**  
Remember which email and password you use here as they will be needed when downloading the software.


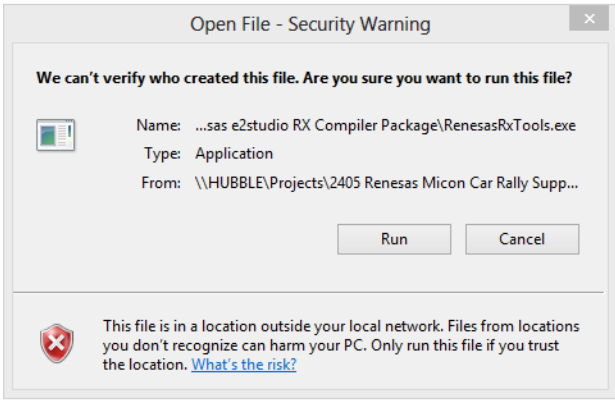

## 3.2 Download of Renesas RX Toolchains

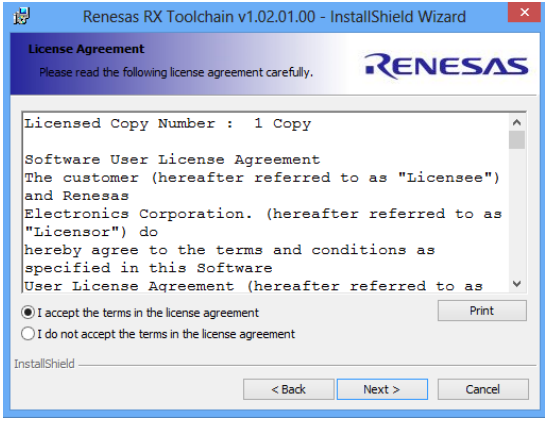
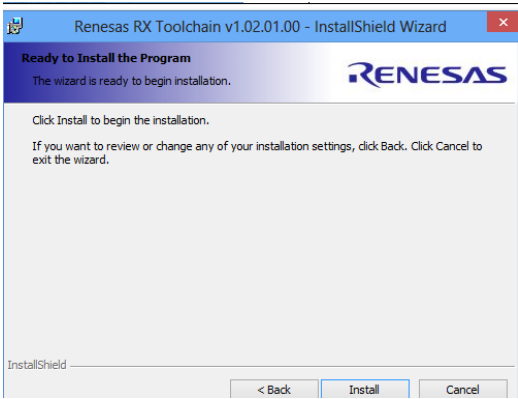
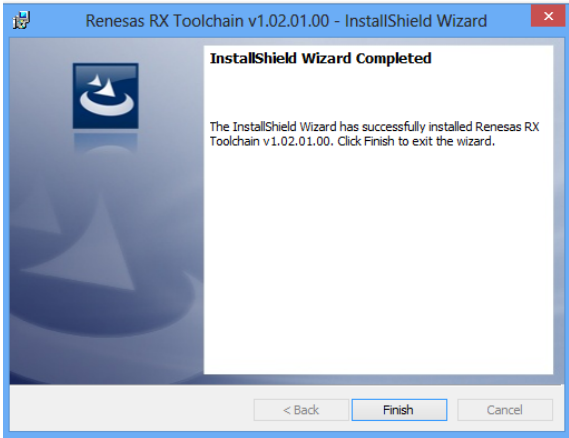
<p>1</p>		<p>Get the RX Toolchains from the Renesas site.</p> <p>Renesas Electronics  <a href="http://www.renesas.eu">http://www.renesas.eu</a></p>
<p>2</p>		<p>Under Development Tools, click Coding Tools.</p>
<p>3</p>		<p>Scroll down to the section labelled C/C++ Compilers and Assemblers and select C/C++ Compiler Package for RX Family.</p>

4		<p>Click the Downloads tab, then on the second page of results, select RX Compiler CC-RX V1.02.01 standalone installer for e2 studio</p>
5		<p>Click <b>Agree</b> after reading the AGREEMENT.</p>
6		<p>Click <b>Download</b>.</p>
7		<p>If you do not have a My Renesas account, please register for a new account first. A My Renesas account is required in order to download this software.</p> <p>If you have a My Renesas account, login by entering your e-mail address and password, and clicking Submit.</p>

8		<p>Check your purpose, and click <b>Submit</b>.</p> <p>Save the file to your PC.</p>
9		<p>Downloading of RX Toolchains is complete.</p>

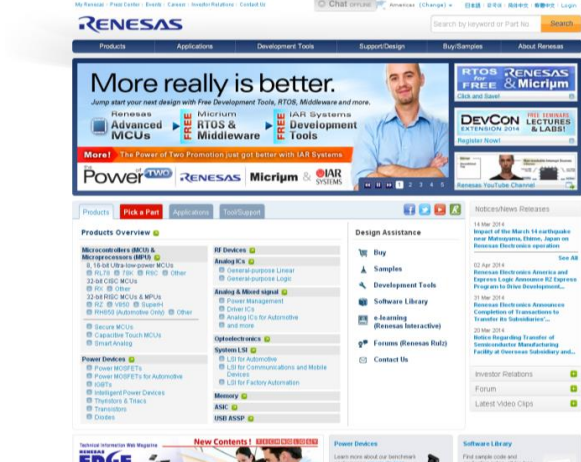

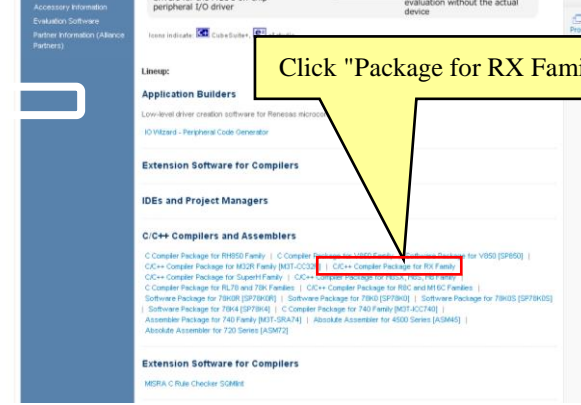
### 3.3 Installing the Renesas RX Toolchains

1		<p>Run the downloaded file ccrxv102r01_ev.exe for the 'Renesas RX Toolchains' from where you saved it, or run the <b>RenesasRxTools.exe</b> file from the MCR Start-up Kit (it is located inside the 'Resources' folder, then 'MCR Kit Software Tools &amp; Drivers', then 'Renesas e2studio RX Compiler Package').</p>
2		<p>Click <b>Run</b>.</p>
3		<p>Click <b>Next &gt;</b>.</p>

4		<p>Read the the license agreement and check the 'I accept the terms in the license agreement' option. Click <b>Next &gt;</b>.</p>
5		<p>Click <b>Install</b>.</p>
6		<p>Click <b>Finish</b> to complete the installation of the RX Toolchains. Later we will register the toolchains with the Renesas IDE e2 Studio the first time we load the program.</p>

## 3.4 Download of Renesas Integrated Development Environment

To download the IDE from the Renesas website follow the steps below, or if you have the MCR Start-up Kit, skip ahead to section 'Installing the Renesas integrated development environment'.

1		<p>Get the IDE (Integrated Development Environment) from the Renesas site.</p> <p>Renesas Electronics  <a href="http://www.renesas.eu">http://www.renesas.eu</a></p>
2		<p>Under the Developmet tools tab, click <b>Coding Tools</b>.</p>
3		<p>Scroll down to the section labelled C/C++ Compilers and Assemblers and select C/C++ Compiler Package for RX Family.</p>



4

Click the Downloads tab, select 'E2 Studio 1.1.0.30'

5

Click **Agree** after reading the AGREEMENT.

6

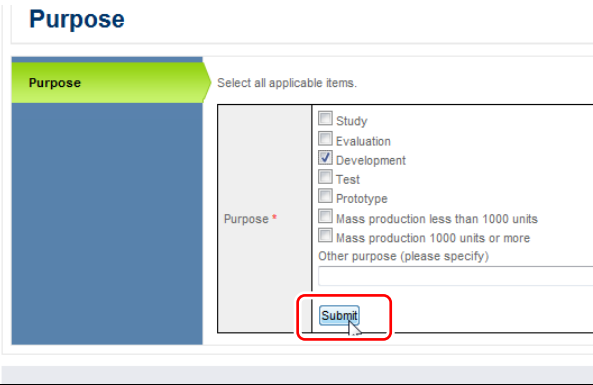
Click **Download**.

7


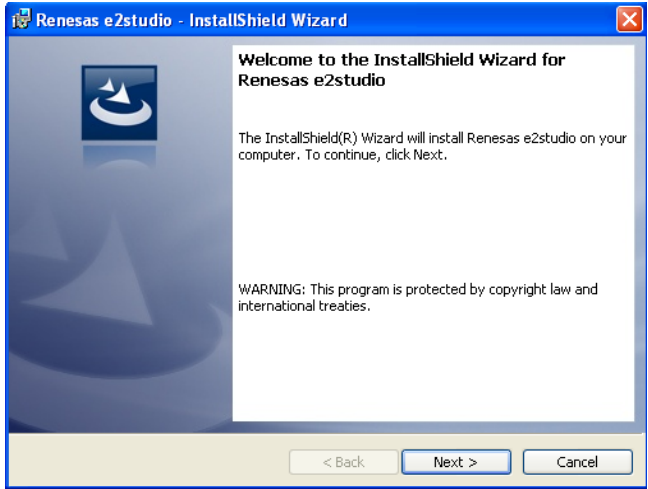
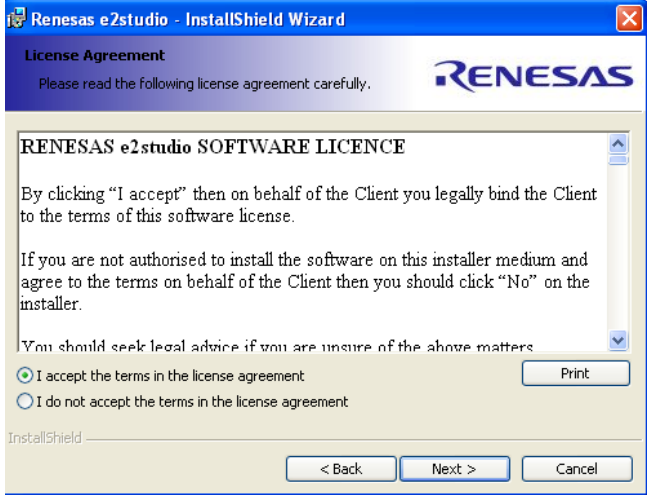
If you do not have a My Renesas account, please register for a new account first.

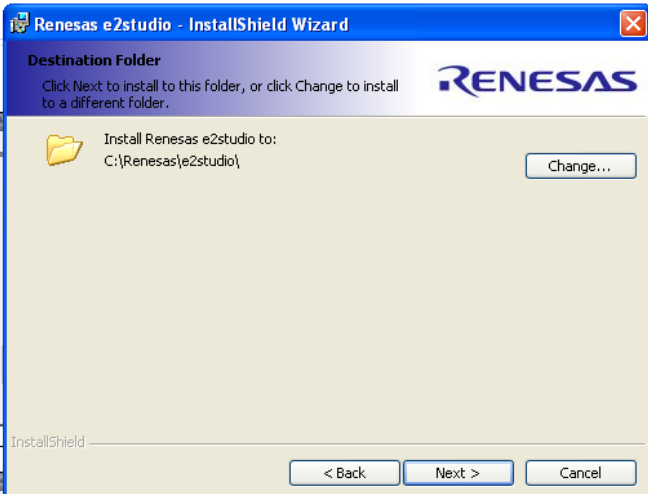
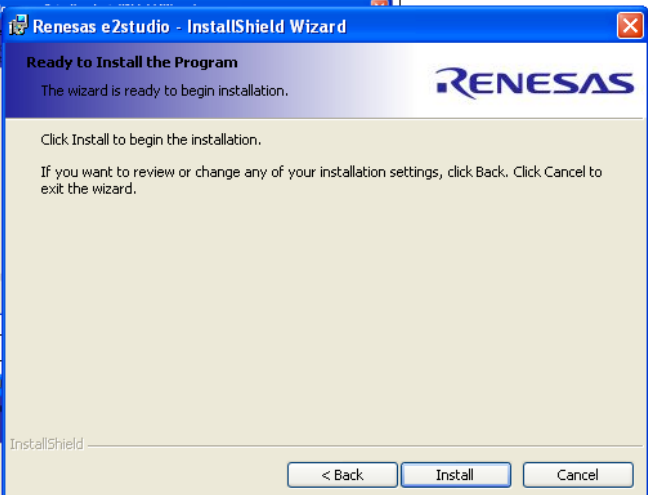
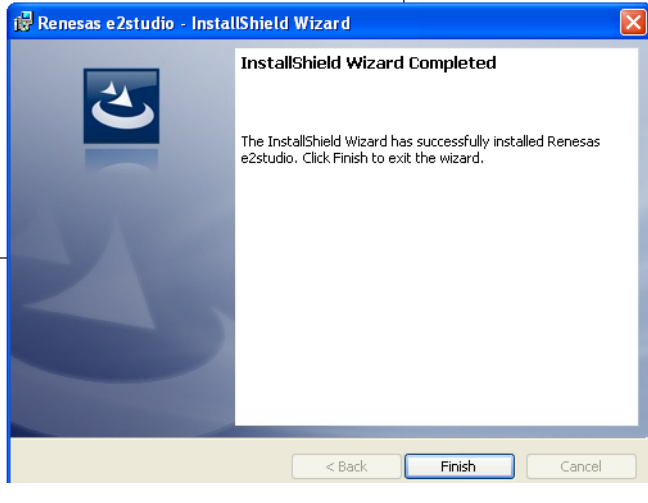
A My Renesas account is required in order to download this software.

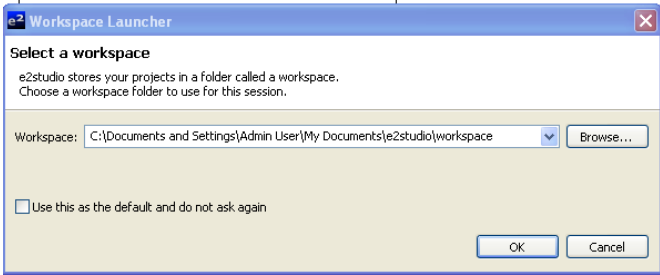
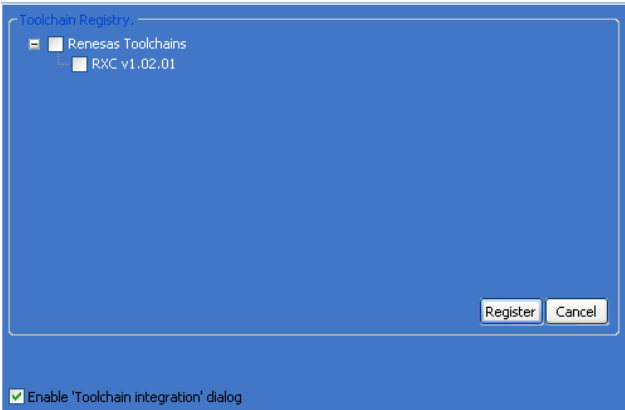
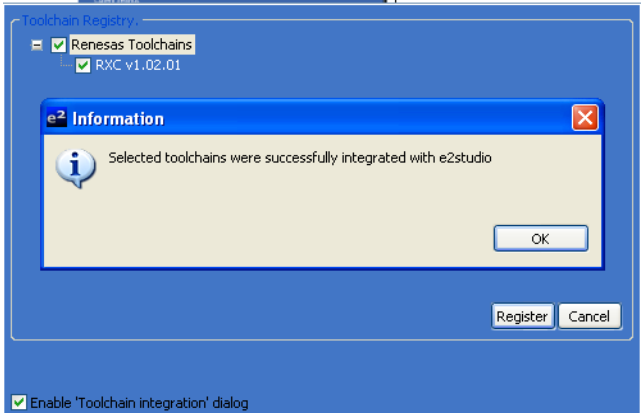
If you have a My Renesas account, login by entering your e-mail address and password, and clicking Submit.


8		<p>Check your purpose, and click <b>Submit</b>.</p> <p>Save the file to your PC.</p>
9		<p>Downloading of Renesas integrated development environment has completed.</p>

### 3.5 Installing the Renesas integrated development environment

1		<p>Run the downloaded file of the Renesas integrated development environment from where you saved it from the web, or run the <b>setup.exe</b> file from the MCR Start-up Kit (it is located inside the 'Resources' folder, then 'MCR Kit Software Tools &amp; Drivers', then 'Renesas e2studio').</p> <p>This will load the install wizard.</p> <p><b>Note: It is important to install this version of the Renesas integrated development environment even if other versions are already present.</b></p>
2		<p>Once the wizard has set up, click <b>Next &gt;</b>.</p>
3		<p>Read the license agreement, check the 'I accept' option, and click <b>Next &gt;</b>.</p>

4		Click <b>Next</b> .
5		Click <b>Install</b> .
6		After the wizard has completed the install, click <b>Finish</b> .


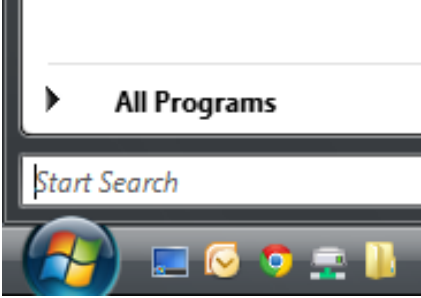
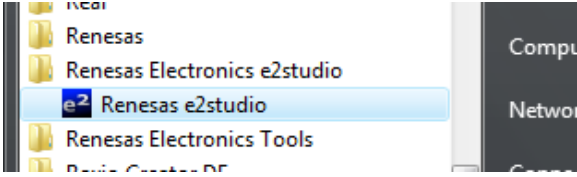
7		<p>Go to programs &gt; Renesas Electronics e2studio &gt; Renesas e2studio and open your newly installed program. Choose a location to open a new workspace and click <b>OK</b>.</p>
8		<p>Select the toolchains and click <b>Register</b>.</p>
9		<p>Click <b>Ok</b> to open the e2 Studio IDE</p>

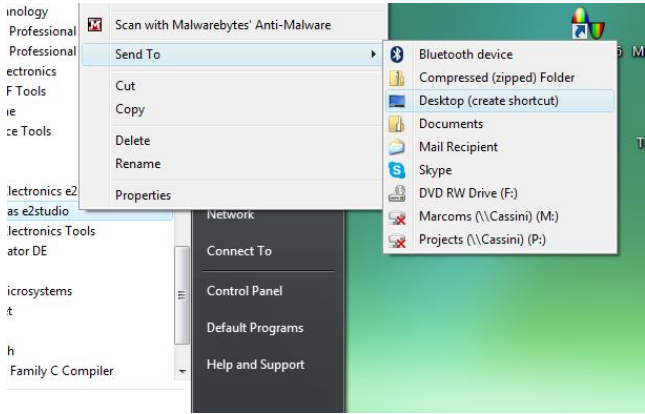

10		Click <b>Finish</b> .
11		This is the welcome screen. To learn more details about e2, explore using the icons. When you are ready to begin, select the arrow icon which takes you to the Workbench.
12		A blank Workspace looks like this; later we will load the sample code.

\* The linker is limited to 128KB code & data after the initial unlimited 60 day period. The evaluation version of e2studio is provided without technical support.

## 3.6 Create the shortcut icon

For running the "e2 Studio" easily, create a shortcut icon on your desktop.

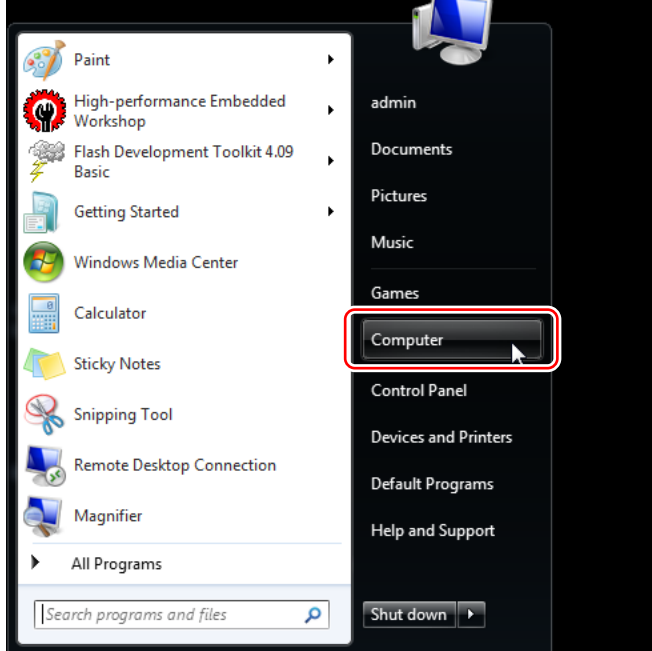
1		Click <b>Start</b> .
2		Click <b>All Programs</b> .
3		Open folder <b>Renesas Electronics e2studio</b> .

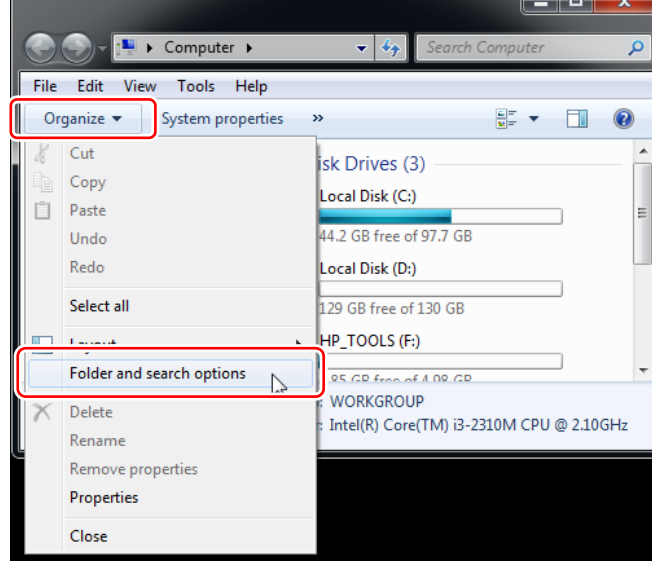
4		<p>[1]Right-click the mouse button on <b>Renesas e2studio</b>.</p> <p>[2]Click <b>Send to</b>.</p> <p>[3]Click <b>Desktop (create shortcut)</b>.</p>
6		<p>Shortcut was created on the desktop.</p>

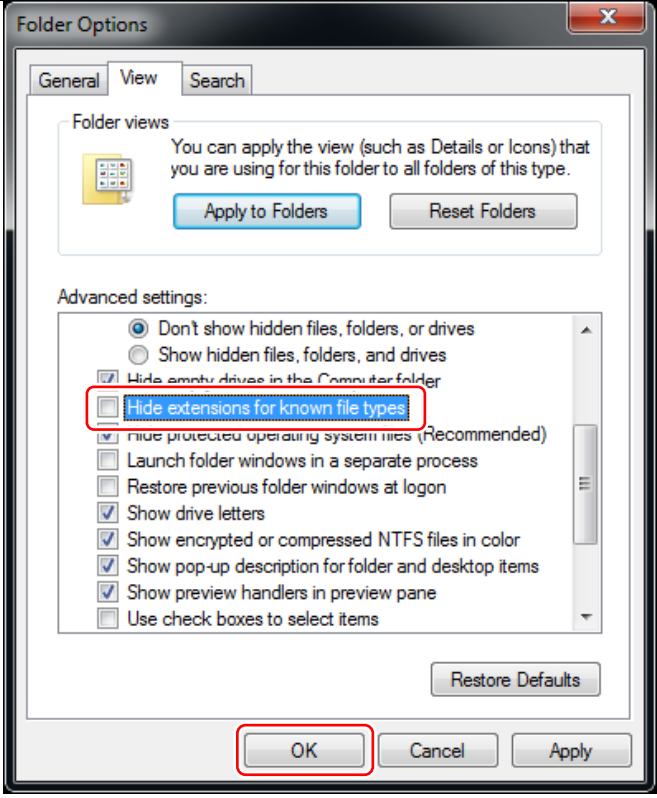


### 3.7 Display of the extensions

There are many files only differentiated by their extension such as "kit12\_rx62t.c", "kit12\_rx62t.obj" and "kit12\_rx62t.mot", used by the Renesas software. Therefore, we would confuse the files if the "Hide file extensions for known file types" Windows setting was selected. Change the default setting to display extension here.

1		<p>[1]Click <b>Start</b>.</p> <p>[2]Click <b>Computer</b>.</p>
---	--	--

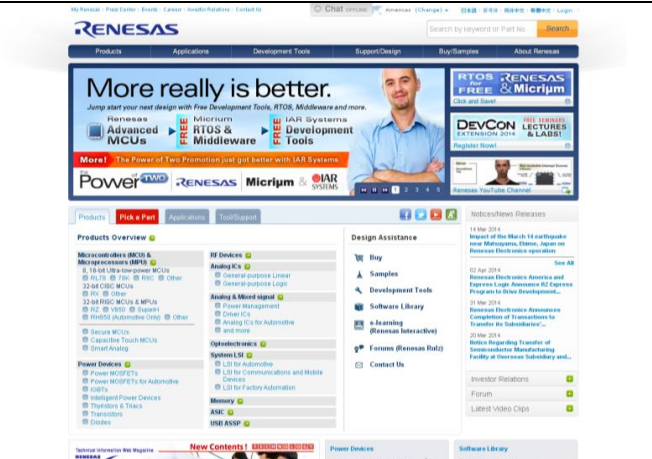
2		<p>[1]Click <b>Organize</b>.</p> <p>[2]Click <b>Folder and search options</b>.</p>
---	---	--

3		<p>[1] Open the <b>View</b> tab.</p> <p>[2] Move scroll bar below of <b>Advanced settings</b>.</p> <p>[3] Uncheck <b>Hide extensions for known file types</b>.</p> <p>[4] Click <b>OK</b>.</p>
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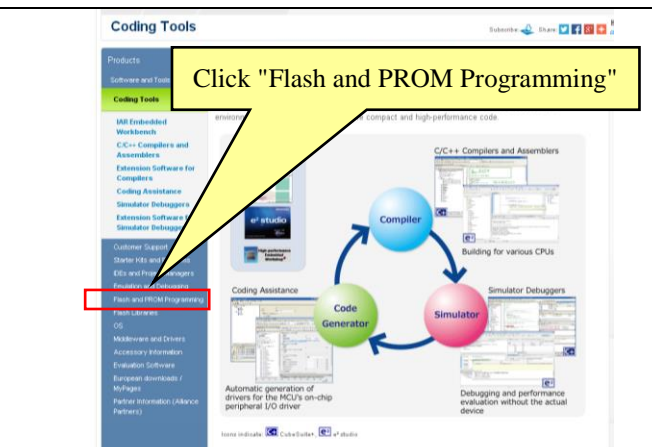
## 4 Preparation for Writing Program to MCU

### 4.1 Download of FDT (Flash Development Toolkit)

Advance to "Install of FDT (Flash Development Toolkit)" if you are using the the MCR Start-up Kit.

1		<p>Get the FDT (Flash Development Toolkit) from the Renesas site.</p> <p>Renesas Electronics <a href="http://www.renesas.eu">http://www.renesas.eu</a></p>
---	---	--

2		<p>Under the Developmet tools tab, click <b>Coding Tools</b>.</p>
---	--	---


3		<p>In the left hand panel, select 'Flash and PROM Programming'.</p>
---	---	---

4



Scroll down and select ‘Flash Development Toolkit [Programming software]’.

5



Under the downloads tab, select ‘**[Evaluation Software] Flash Development Toolkit V.4.09 Release 02**’.

6




Click **Agree** after reading the AGREEMENT.

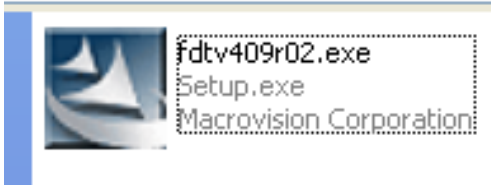
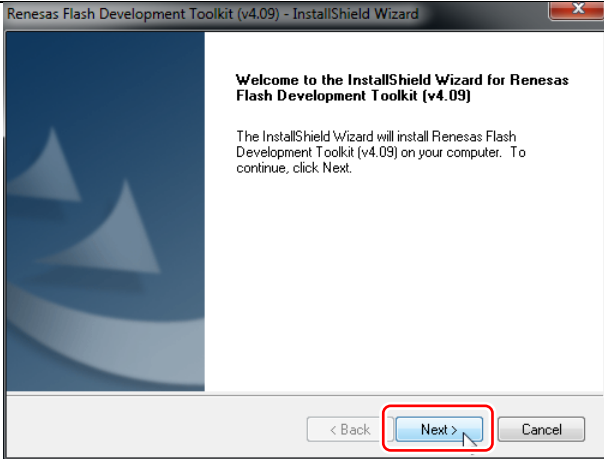
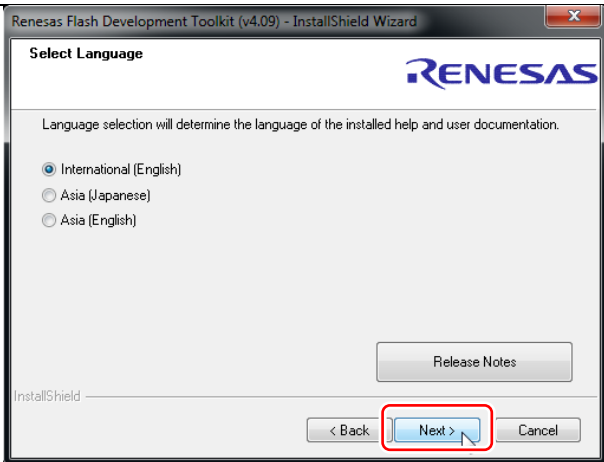
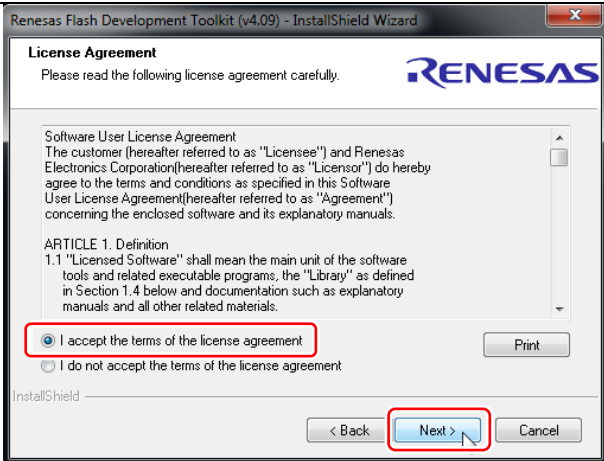
7



Click **Download**.

8	<p>Login to proceed.</p> <div data-bbox="300 248 858 456"> <div>Email Address <input type="text"/></div> <div>Password <input type="password"/></div> <div> <input type="button" value="Cancel /Close"/> <input type="button" value="Submit"/> </div> </div> <p><a href="#">Forgot your password?</a></p> <p><a href="#">New user? Click here to register now</a></p>	<p>If you do not have a My Renesas account, please register for a new account first. A My Renesas account is required in order to download this software.</p> <p>If you have a My Renesas account, login by entering your e-mail address and password, and clicking Submit.</p> <p>Save the file to your PC.</p>
9		<p>Downloading of FDT (Flash Development Toolkit) has completed.</p> <p>The installed file is <b>fdtv409r02.exe</b>.</p>

## 4.2 Install of FDT (Flash Development Toolkit)

1		Run the <b>fdtv409r02.exe</b> file of the "FDT (Flash Development Toolkit)" you downloaded from the web, or run it from the run the setup.exe file from the the MCR Start-up Kit (it is located inside the 'Resources' folder, then 'MCR Kit Software Tools & Drivers', then 'Renesas FDT').
2		Click <b>Next &gt;</b> .
3		After select the language, Click <b>Next &gt;</b> .
4		Select <b>"I accept"</b> after reading the AGREEMENT. Click <b>Next &gt;</b> .

5

Renesas Flash Development Toolkit (v4.09) - InstallShield Wizard

Select Features

Select the features setup will install.

FDT Application

☒ Kernels: Protocol B & C

☒ Kernels: Protocol D

☒ USB Drivers

Description

Flash Development Toolkit application.

89.12 MB of space required on the C drive  
47144.06 MB of space available on the C drive

InstallShield

< Back

Next >

Cancel

Click **Next >**.

6

Renesas Flash Development Toolkit (v4.09) - InstallShield Wizard

Select Options

Setup requires you to make the following choices:

☐ Clean up old settings. This option removes any existing settings before installing.

Associate data files. Data files will open in FDT.

☒ .a20

☒ .fpr

☒ .a37

☒ .mot

☒ .bin

☒ .rec

☒ .cde

☒ .s2

☒ .ddi

< Back

Next >

Cancel

Click **Next >**.

7

Renesas Flash Development Toolkit (v4.09) - InstallShield Wizard

Choose Destination Location

Select folder where setup will install files.

Setup will install Renesas Flash Development Toolkit (v4.09) in the following folder.

To install to this folder, click Next. To install to a different folder, click Browse and select another folder.

Destination Folder

C:\Program Files (x86)\Renesas\FDT4.09

Browse...

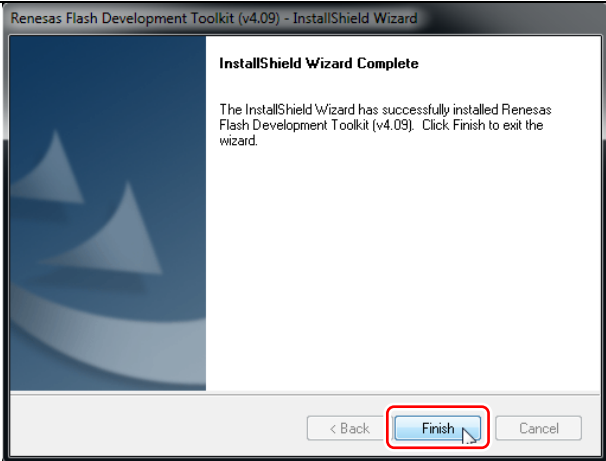
InstallShield

< Back

Next >

Cancel

Click **Next >**.


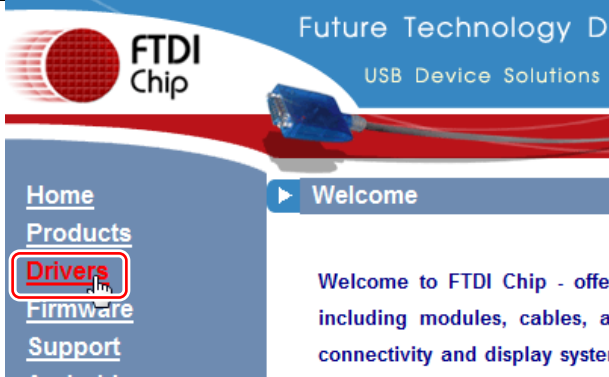
8		Click <b>Install</b> .
9		Click <b>Finish</b> to complete installation.
10		For your convenience, a shortcut icon for Flash Development Toolkit 4.09 Basic is created on your desktop.



## 4.3 Download of USB Drivers

To write programs to the RMC-RX62T MCU board, the USB Serial Converter and USB Serial Port Driver are needed. You can get these drivers from the FTDI (Future Technology Devices International Ltd.) site.

**Note: Advance to "Install of USB Drivers" if you are using the the MCR Start-up Kit.**

1		Open the FTDI site. FTDI site: <a href="http://www.ftdichip.com/">http://www.ftdichip.com/</a>
2		Click <b>Drivers</b> .
3		Click <b>D2XX Drivers</b> .

4

No Longer Supported		Processor Architecture							Previous Certified Release
Operating System	Release Date	x86 (32 bit)	x64 (64 bit)	PPC	ARM	MIPS	MIPS64	SH	
Windows 8.1	2013-10-21	2.08.30	2.08.30	-	-	-	-	-	2.08.30 WHQL Certified for Windows 8.1 <a href="#">Download as setup executable</a>
Windows*	2013-08-01	2.08.30	2.08.30	-	-	-	-	-	2.08.30 WHQL Certified for Windows 7 <a href="#">Download as setup executable</a>
Windows 2000	2000-10-22	2.08.30	-	-	-	-	-	-	2.08.30 WHQL Certified for Windows 2000 <a href="#">Download as setup executable</a> Release notes <a href="#">Readfile</a> Requires Mac OS X 10.3 (Panther) or later

64-bit download link

32-bit download link


Choose D2XX Drivers according to your PC system.

**For 64-bit version** select ‘setup executable’ link in the row for the Windows 8.1 2.08.30 drivers.

**For 32-bit version** select ‘setup executable’ link in the row for the Windows 2.08.30 drivers.

D2XX Drivers contain the USB Serial Converter and USB Serial Port Driver.

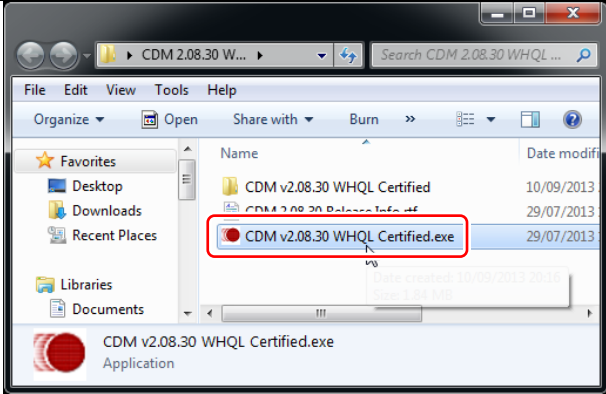
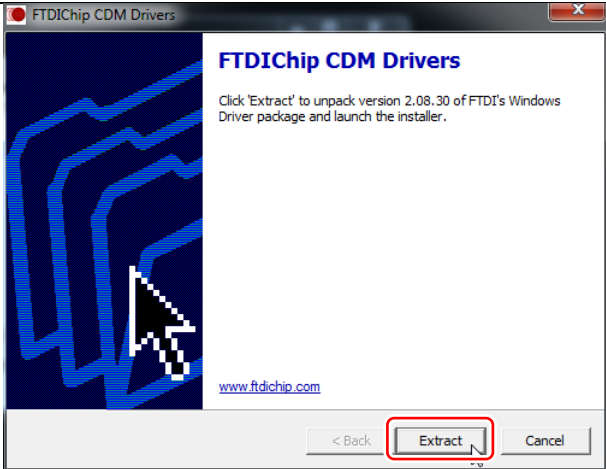
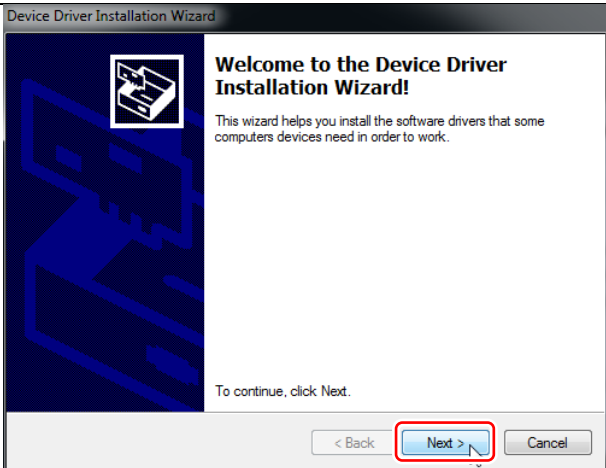
5

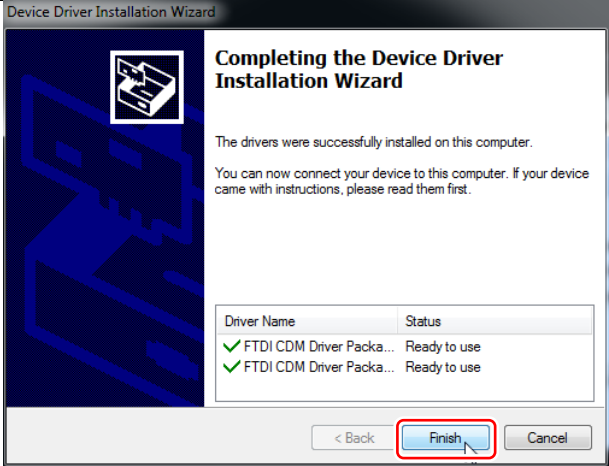
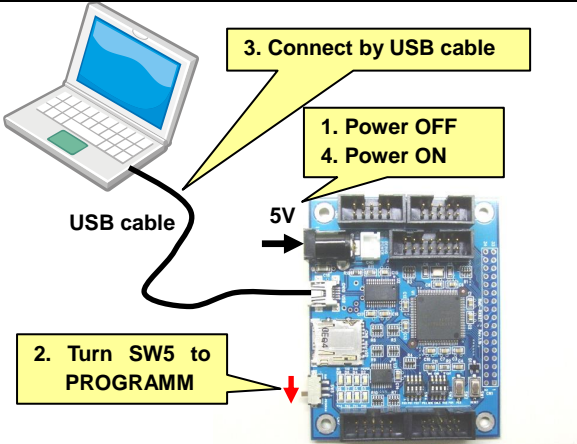
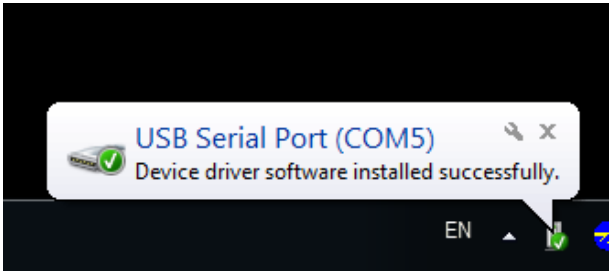


CDM v2.08.30 WHQL Certified.exe

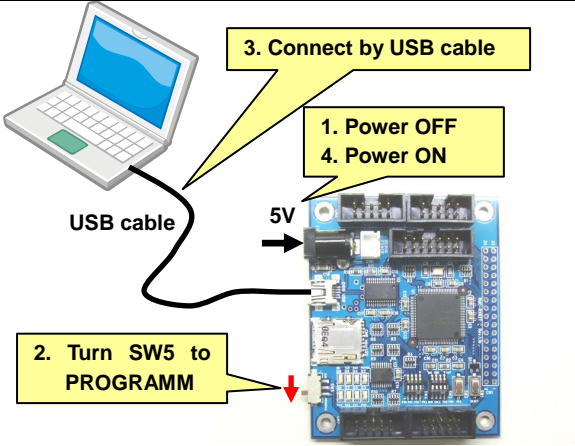
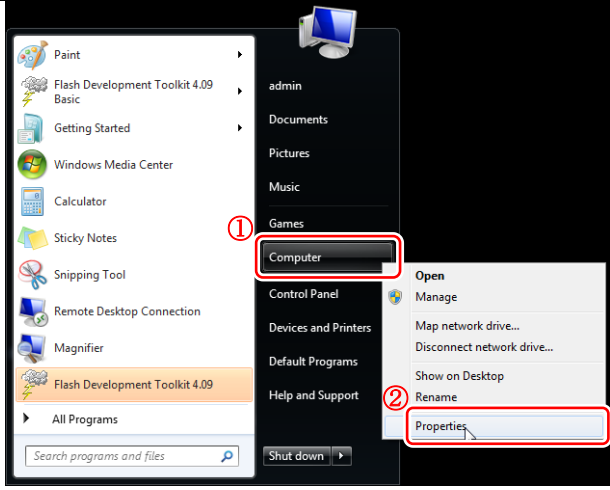
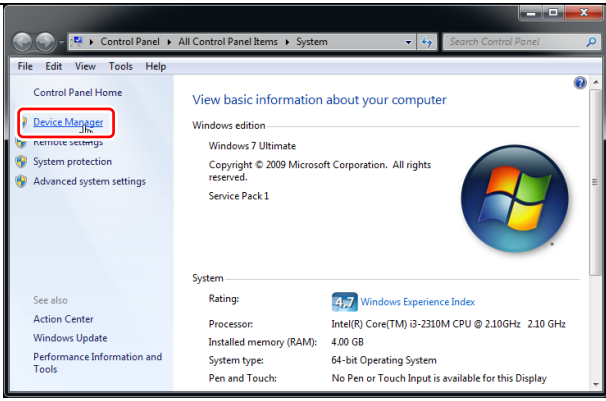
Save the downloaded executable file.

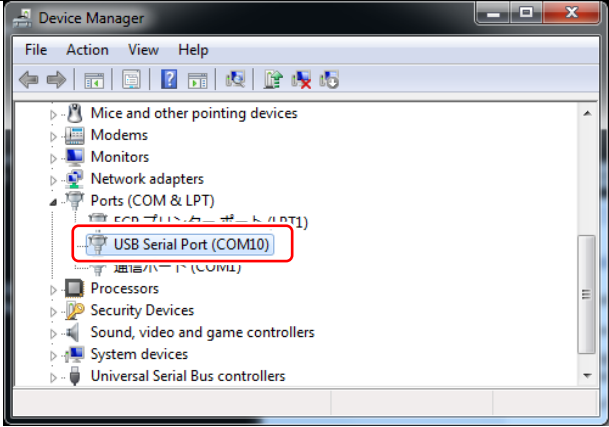
## 4.4 Install of USB Drivers and connecting the car

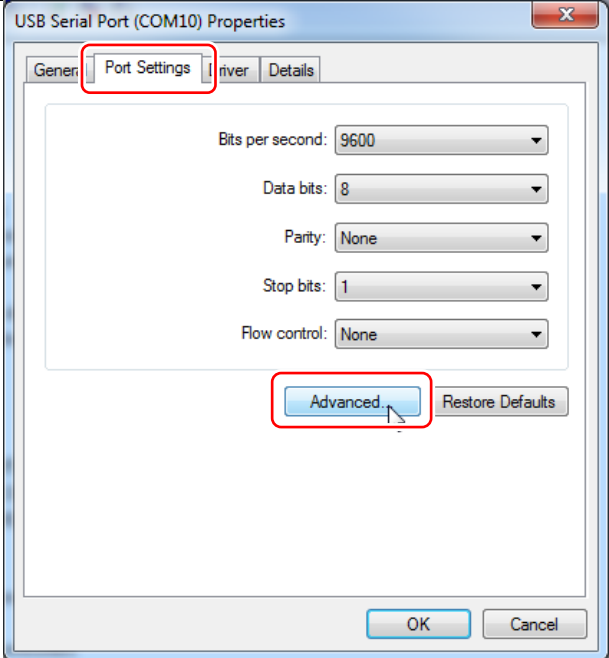
1		Run the downloaded file <b>CDM v2.08.30 WHQL Certified.exe</b> you downloaded from the web, or or run the file from the the MCR Start-up Kit (it is located inside the 'Resources' folder, then 'MCR Kit Software Tools & Drivers', then 'FTDI Drivers' – then you have the option to choose either 64- or 32-bit depending on your machine).
2		Click <b>Extract</b>
3		Click <b>Next &gt;</b>

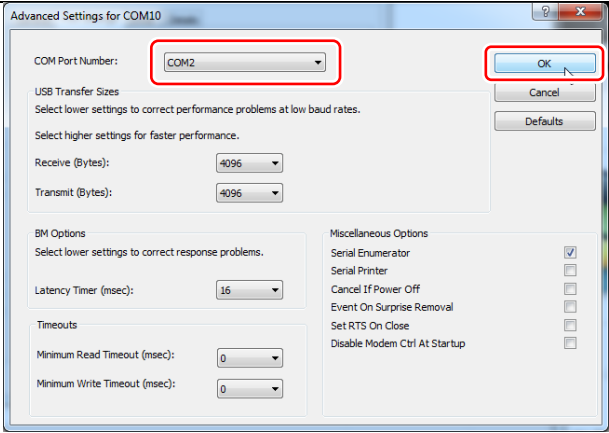
4		<p>Click <b>Finish</b></p>
5		<p>Connect the PC and MCU board on the car using a USB cable. The procedure is as follows.</p> <ul style="list-style-type: none"> <li>[1] Power off the MCU board.</li> <li>[2] Turn the SW5 of the MCU board to PROGRAM.</li> <li>[3] Connect the PC and MCU board using a USB cable.</li> <li>[4] Power on the MCU board.</li> </ul>
6		<p>If "Serial Com Port (COMXX)" is displayed, installation is complete.</p> <p><b>Note:</b> If "Serial Com Port (COMXX)" is not displayed, refer to "<b>Confirmation of COM Port</b>" and please confirm it.</p>

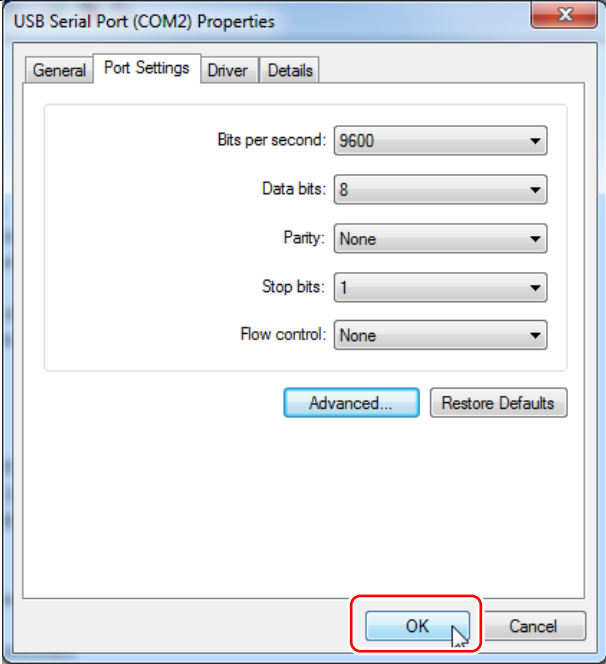
## 4.5 Confirmation of COM Port

1		<p>Connect the PC and MCU board using a USB cable.</p> <p>The procedure is as follows.</p> <p>[1] Power off the MCU board.</p> <p>[2] Turn the SW5 of the MCU board to PROGRAM.</p> <p>[3] Connect the PC and MCU board using a USB cable.</p> <p>[4] Power on the MCU board.</p>
2		<p>To confirm the COM port number for the USB serial port, open Properties in My Computer.</p>
3		<p>Click <b>Device Manager</b>.</p>

4		<p>Confirm the number of the USB Serial Port (COMxx) under Ports (COM and LPT).</p> <p>In this example, the port number is COM10. The COM number here must be between COM1 and COM9. If your COM number is something other than COM1 to COM9, change the COM number according to the following procedure.</p> <p>Open the <b>properties</b> of USB Serial Port (COM10).</p>
---	---	---

5		<p>Open the <b>Port Settings</b> tab.</p> <p>Click <b>Advanced</b>.</p>
---	--	---

6		<p>Set a COM port number between COM1 and COM9.</p> <p>Click <b>OK</b>.</p>
---	---	---


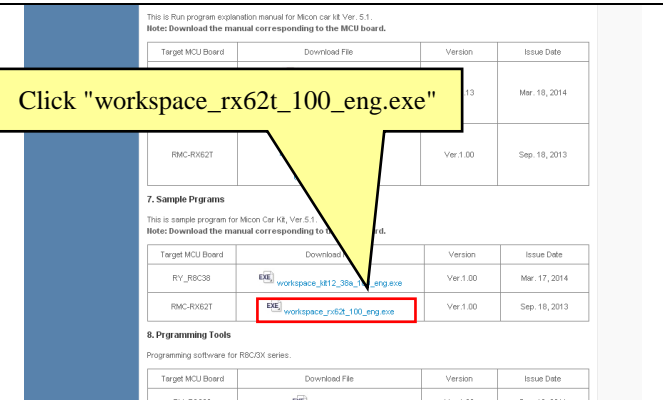
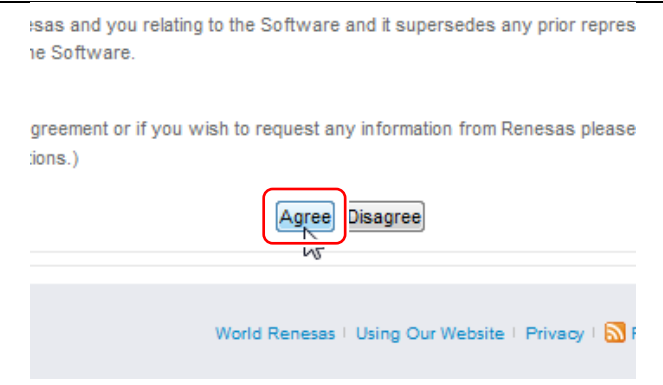
7	 <p>The screenshot shows the 'USB Serial Port (COM2) Properties' dialog box with the 'Port Settings' tab selected. The settings are: Bits per second: 9600, Data bits: 8, Parity: None, Stop bits: 1, and Flow control: None. The 'OK' button at the bottom right is highlighted with a red rectangle.</p>	<p>Click <b>OK</b> to finish setting the COM number.</p>
---	---	--

## 4.6 Download sample code


Renesas provides a sample code which allows you to test the car is operating correctly (refer to Operation Test Manual) and begin running the car around a track (refer to Program Explanation Manual). The main code can then be used as a starting point for optimising the car – you can create your own code from scratch or continuously modify the basic code supplied.

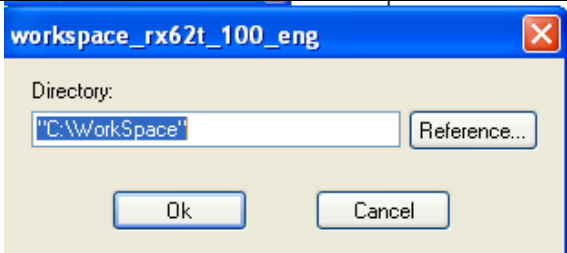
**Note:** Advance to "Access Sample Code from the MCR Start-up Kit" if you are using the MCR Start-up Kit.

## 4.7 Access Sample Code from the Web

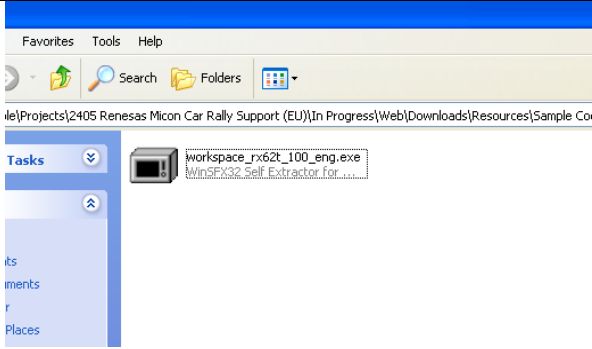
1		<p>The sample code is found at the following web address:</p> <p><a href="http://am.renesas.com/company_info/carrally/download/index.jsp">http://am.renesas.com/company_info/carrally/download/index.jsp</a></p>
2		<p>Under the 'Micon Car Kit, Ver 5.1' banner, scroll down to '7. Sample Programs' and click on <a href="#">workspace_rx62t_100_eng.exe</a></p>
3		<p>Click <b>Agree</b> after reading the AGREEMENT.</p>




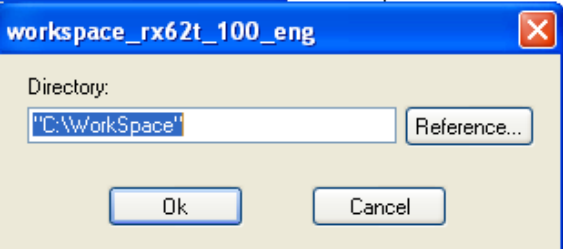
4		Click <b>Run</b> .
---	---	--------------------

5		Select a location to save the sample code and click <b>Ok</b> .
---	---	---

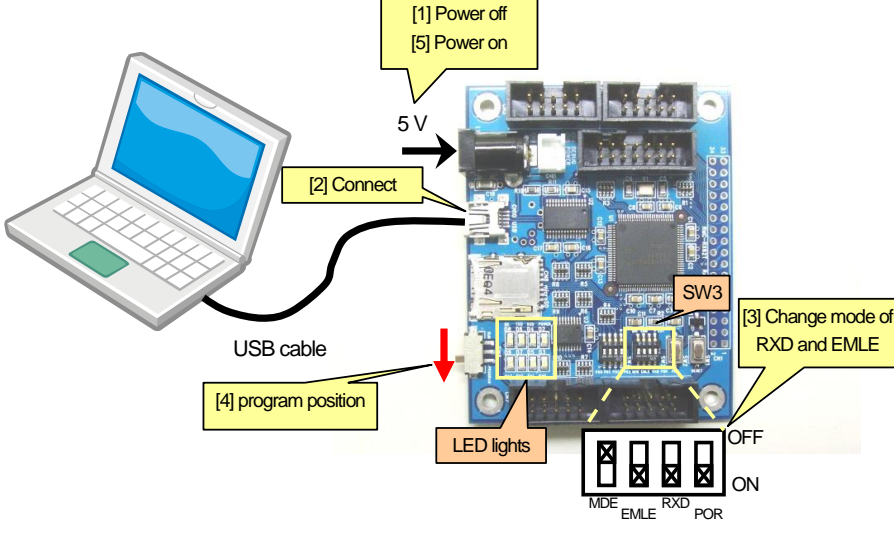
## 4.6 Access Sample Code from the MCR Start-up Kit

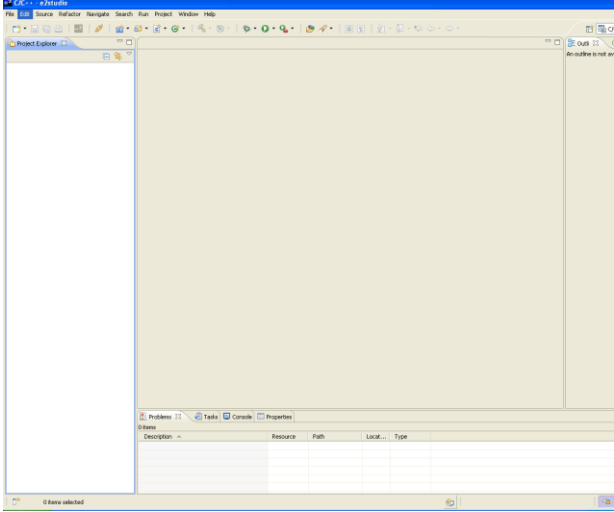
1		Open the the MCR Start-up Kit folder then go into 'Resources', then 'Sample Code'. Open the file 'workspace_rx62t_100_eng.exe'.
---	---	---

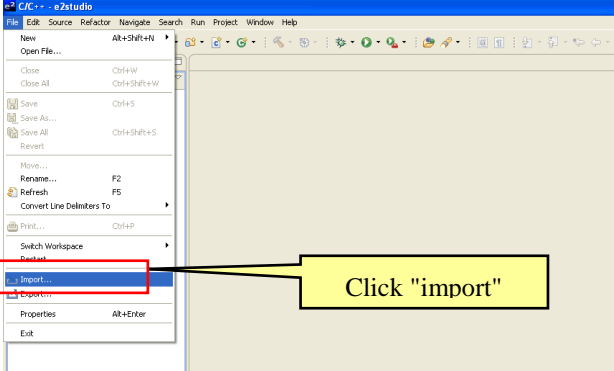
2	 An "Open File - Security Warning" dialog box. The title bar is blue with the text "Open File - Security Warning" and a close button. The main area has a yellow background. It contains the text: "The publisher could not be verified. Are you sure you want to run this software?". Below this is a small icon of a document with a red 'X'. To the right of the icon, the following information is displayed: "Name: workspace_rx62t_100_eng (13).exe", "Publisher: <b>Unknown Publisher</b> ", "Type: Application", and "From: C:\Documents and Settings\Admin User\My Docum...". At the bottom of this section are "Run" and "Cancel" buttons. Below the buttons is a checkbox labeled "Always ask before opening this file" which is checked. At the very bottom, there is a red shield icon with a white 'X' and the text: "This file does not have a valid digital signature that verifies its publisher. You should only run software from publishers you trust. <a href="#">How can I decide what software to run?</a> ".	Click <b>Run</b> .
---	---	--------------------

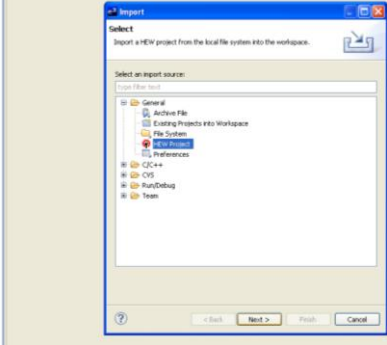
3	 A "workspace_rx62t_100_eng" dialog box. The title bar is blue with the text "workspace_rx62t_100_eng" and a close button. The main area has a yellow background. It contains the text "Directory:". Below this is a text box containing the path "C:\WorkSpace". To the right of the text box is a "Reference..." button. At the bottom are "Ok" and "Cancel" buttons.	Select a location to save the sample code and click <b>Ok</b> .
---	--	---

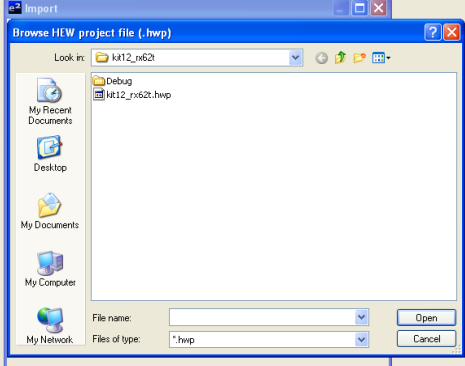
## 4.7 Programming Procedure

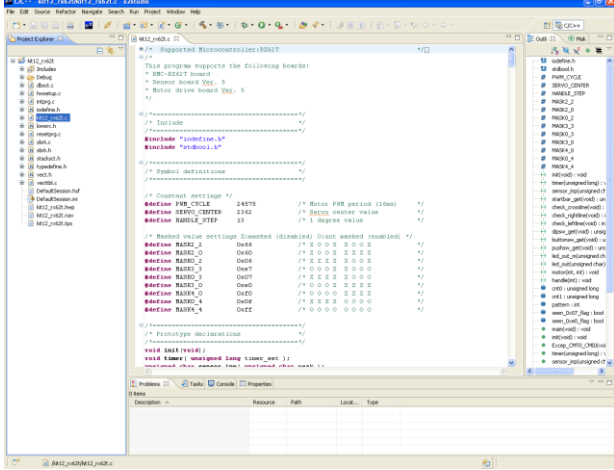
1	 <p>[1] Power off [5] Power on</p> <p>[2] Connect</p> <p>5V</p> <p>USB cable</p> <p>[4] program position</p> <p>LED lights</p> <p>SW3</p> <p>[3] Change mode of RXD and EMLE</p> <p>OFF ON</p> <p>MDE EMLE RXD POR</p>	<p>[1] Power off [2] Connect PC and MCU board by USB cable. [3] Turn on RXD and EMLE of SW3. [4] Turn SW5 to PROGRAM. SW5 must change states while the power is off. [5] Power on</p> <p>The LEDs on the MCU board should light at this time.</p>
---	--	---

2		<p>Open e2 Studio and go to the Workbench</p>
---	--	---

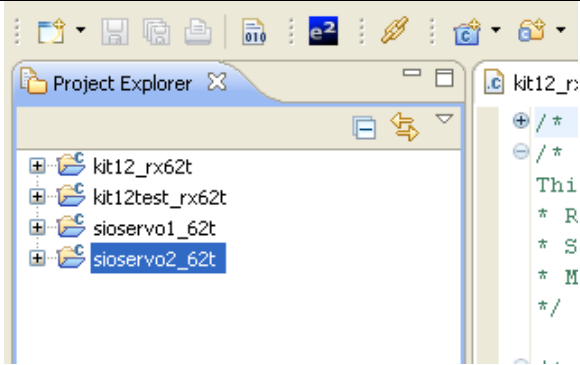
3	 <p>Click "import"</p>	<p>Under the file tab at the top, select 'import'.</p>
---	---	--

4		<p>Expand the folder labelled 'General', then select 'HEW Project' and click <b>Next &gt;</b></p>
---	---	---

5		<p>Click 'browse' and locate the sample code folder you saved earlier. Opening this takes you to a folder labelled 'kit12_rx62t'. Inside this are four folders named 'kit12_rx62t', 'kit12test_rx62t', 'sioservo1_62t' and 'sioservo2_62t'.</p> <p>You will need to load each file in turn. Firstly, go into the folder 'kit12_rx62t' and select the file 'kit12_rx62t.hwp'</p> <p>Then click <b>Finish</b></p>
---	--	---

6		<p>This opens the main running sample code for the car. You can double click on 'kit12_rx62t.c' in the left hand Project Explorer panel which opens the C file in the main window as shown.</p> <p>It is the .c file with the same name as the project that contains the main code for each of the car's programs – e.g. the main code for the project sioservo1_62t is found in the file sioservo1_62t.c.</p>
---	---	--

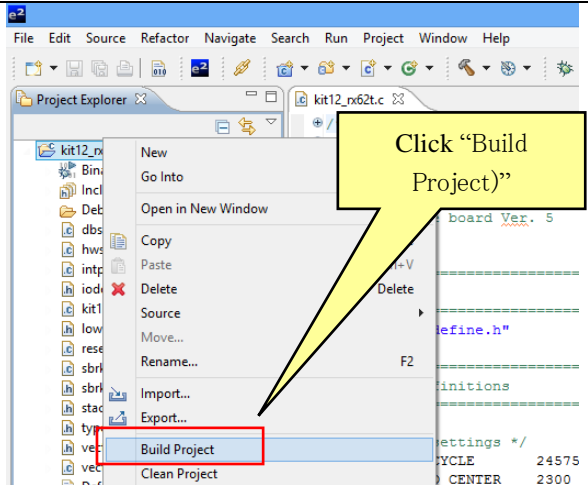
7



Repeat steps 3-5 three times to open the other three .hwp files - 'kit12test\_rx62t.hwp', 'sioservo1\_62t.hwp' and 'sioservo2\_62t.hwp'.

Once you have done this you should see them all together in your Project Explorer panel on the left.

8



Execute a BUILD.

Select project from the Project Explorer panel. Choose the corresponding project for the program you wish to program to the car; main running code, test code, servo adjust 1 or servo adjust 2.

For now we will load the kit12\_rx62t.c main running code but the process is the same for each file.

Right click on the project title and select 'Build Project' – this generates a .mot file in the debug folder of the chosen project where you originally saved your sample code.

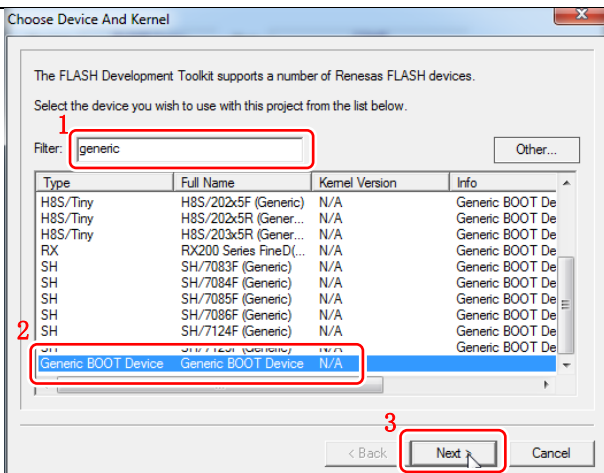
9



Start up **Flash Development Toolkit 4.09 Basic**.

Click its shortcut icon on the desktop.

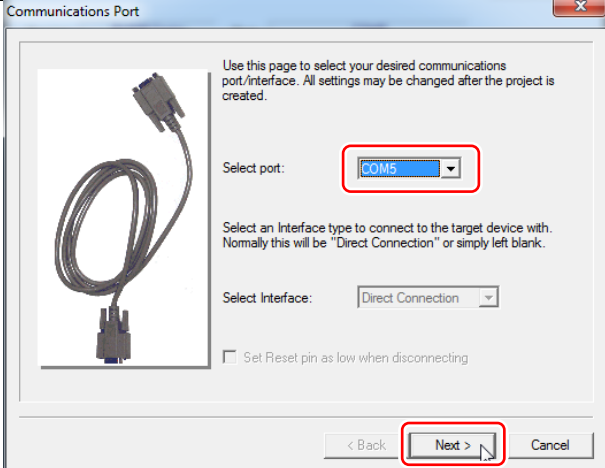
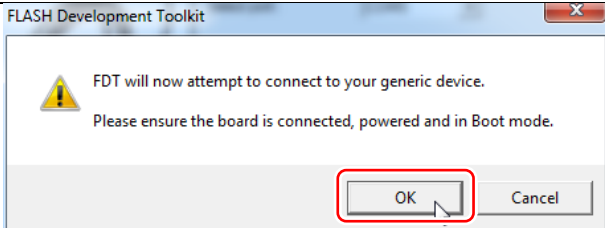
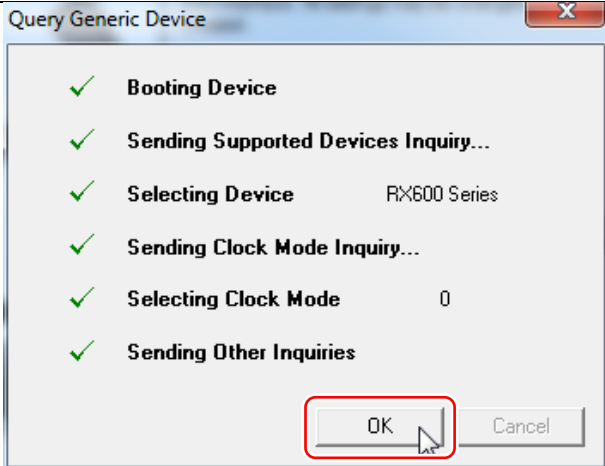
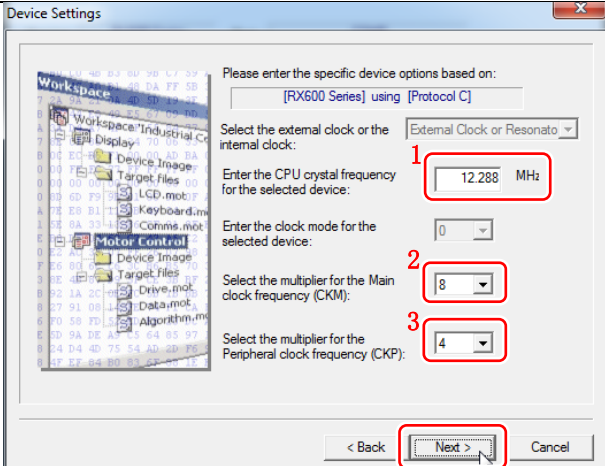
10



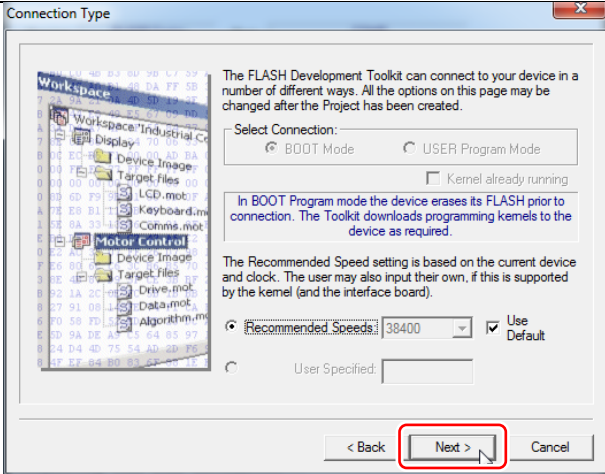
Write "generic" in the Filter field.

Then choose **Generic BOOT Device**.

Click **Next >**.

11		<p>Choose the COM number.</p> <p>Click <b>Next &gt;</b>.</p>
12		<p>Click <b>OK</b>.</p>
13		<p>Click <b>OK</b>.</p> <p>If an error occurs, please try again.</p>
14		<p>[1] Write 12.288 for CPU crystal frequency.</p> <p>[2] Choose 8 for CKM.</p> <p>[3] Choose 4 for CKP.</p> <p>Click <b>Next &gt;</b>.</p>

15



The FLASH Development Toolkit can connect to your device in a number of different ways. All the options on this page may be changed after the Project has been created.

Select Connection:

☒ BOOT Mode    ☐ USER Program Mode

☐ Kernel already running

In BOOT Program mode the device erases its FLASH prior to connection. The Toolkit downloads programming kernels to the device as required.

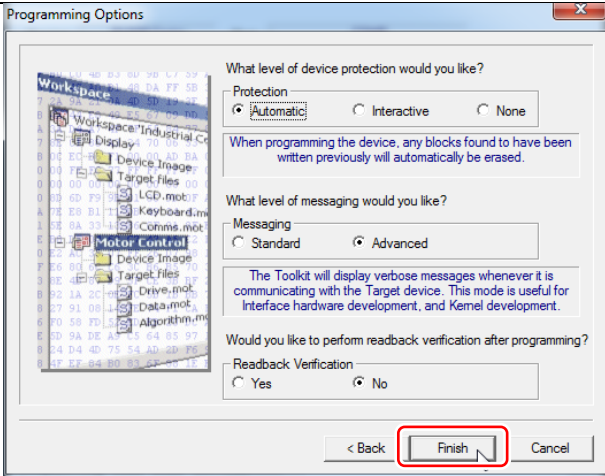
The Recommended Speed setting is based on the current device and clock. The user may also input their own, if this is supported by the kernel (and the interface board).

☒ Recommended Speeds: 38400    ☒ Use Default

☐ User Specified:

Click Next >.

16



What level of device protection would you like?

Protection

☒ Automatic    ☐ Interactive    ☐ None

When programming the device, any blocks found to have been written previously will automatically be erased.

What level of messaging would you like?

Messaging

☐ Standard    ☒ Advanced

The Toolkit will display verbose messages whenever it is communicating with the Target device. This mode is useful for Interface hardware development, and Kernel development.

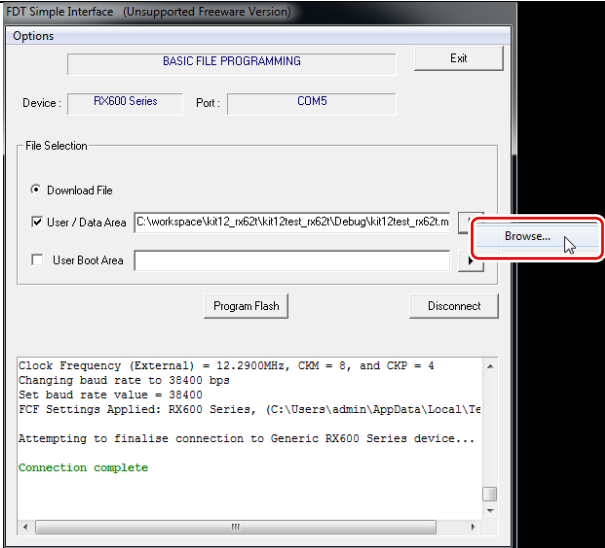
Would you like to perform readback verification after programming?

Readback Verification

☐ Yes    ☒ No

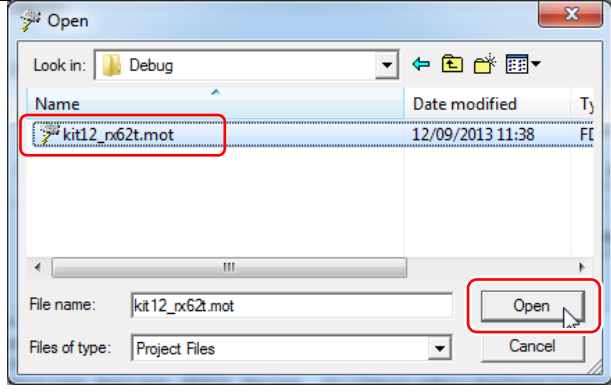
Click Finish.

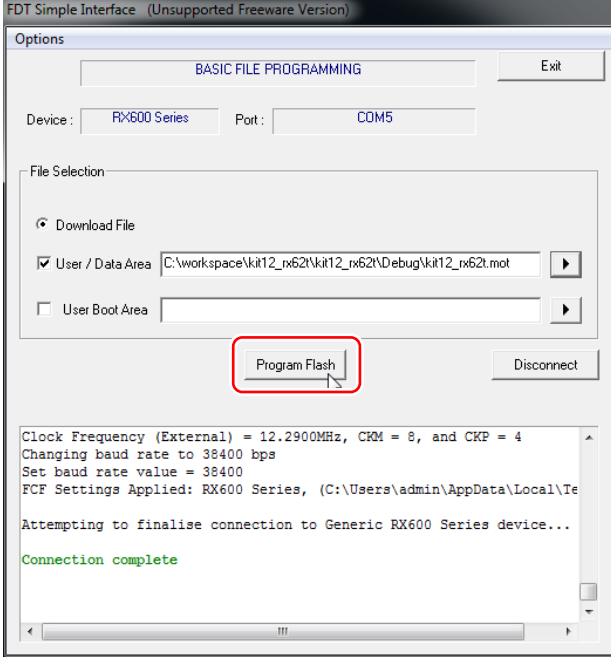
17

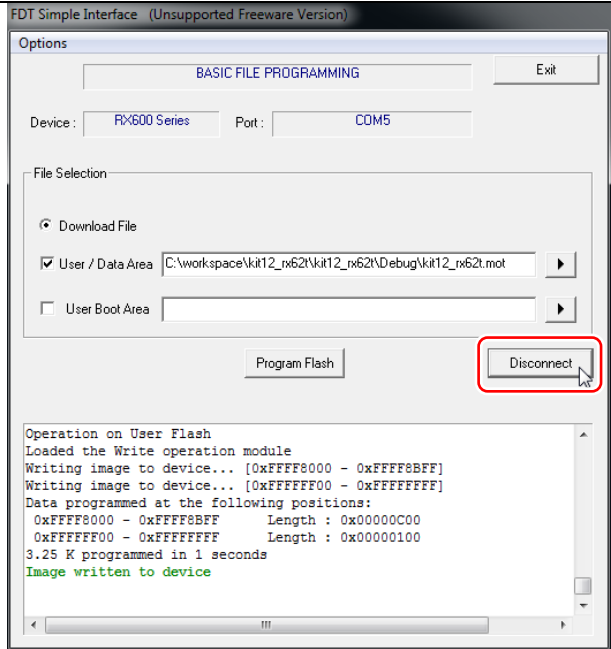


**Check User/Data Area.**

Then click the triangle on the far right and click **Browse**.

18		<p>Open the <b>kit12_rx62t.mot</b> file.</p> <p>The <b>kit12_rx62t.mot</b> file is found in the debug folder inside the folder kit12_rx62t where you saved your sample code.</p> <p>Click <b>Open</b>.</p>
----	---	--

19		<p>Click <b>Program Flash</b>.</p> <p>Then program writing will begin.</p>
----	--	--

20		<p>After programming has finished, click <b>Disconnect</b>.</p>
----	---	---



