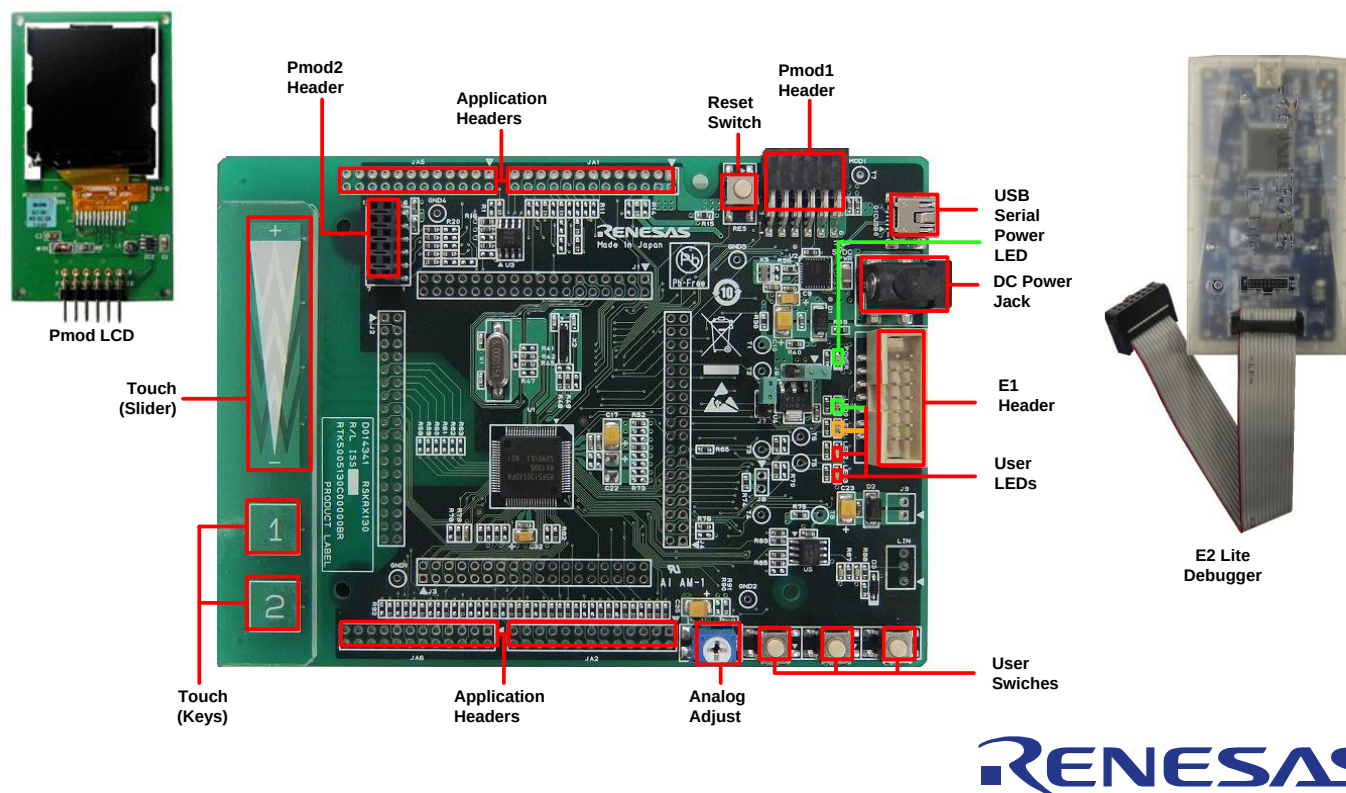


Quick Start **Renesas Starter Kit for RX130**



NOTE: This Quick Start Guide covers installation of the e² studio IDE. An active internet Connection is required for downloading the RSKRX130 installer.

1. Installation

Do not connect the E2 Lite debugger module until the software support has been installed.

Internet access is required for activation during the installation process.

1. Software for this Renesas kit is available for download from;

<http://www.renesas.com/rskrx130/install>

2. After download the installer will run and display the Welcome dialog. Follow the on-screen instructions to install the RSK software. This process will take several minutes.

Note:

Windows™ 8.1 / 8 / 7 / Vista users may see “User Account Control” dialog box. If applicable, enter the administrator password and click ‘Yes’.

The Windows™ driver signing dialog box may be displayed. Please accept the driver to continue.

2. Connection

3. Ensure the PMOD LCD is fitted to the connector marked 'PMOD1' on the RSK.
4. Connect the E2 Lite debugger module to the connector marked 'E1' on the RSK using the ribbon cable.
5. Connect the E2 Lite debugger module to a spare USB port of your PC. The green 'ACT' LED on the E2 Lite debugger will flash.
6. The E2 Lite debugger drivers will now be installed. Note that, this may take up to a minute and administrator privileges will be required.

Windows™ 7 / Vista

"Device driver software installed successfully" pop-up will appear in the Windows™ toolbar and installation will complete.

Windows™ 8.1 / 8

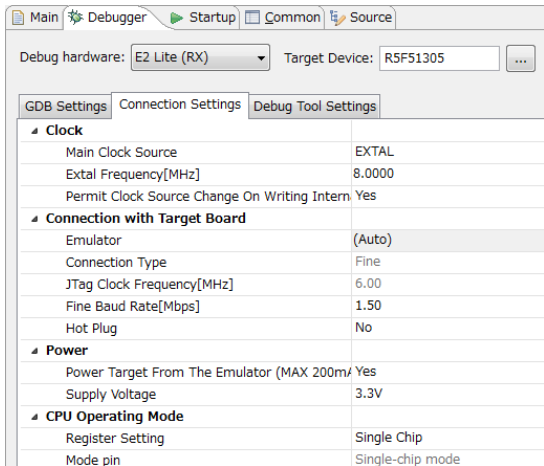
An icon will appear in the Windows™ toolbar and installation will complete.

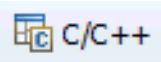
3. Importing Sample Code into e² studio

e² studio integrates various tools such as compiler, assembler, debugger and editor into a common graphical user interface.

7. Start e² studio:
Windows™ 7 & Vista: Start Menu > All Programs > Renesas Electronics e2studio > e2 studio
Windows™ 8.1 & 8: From Apps View , click 'Renesas e2 studio' icon
8. In the 'Select a workspace' folder that appears, browse a suitable location and folder name to save your new workspace to. Click OK to continue.
9. In the 'Toolchain Registry' dialog select Renesas Toolchains and ensure that 'CC-RX v2.04.01' is selected. Click 'Register'. A dialog will appear "Selected Toolchains were successfully integrated with e2 studio". Click 'OK'.
10. In the 'Code Generator Registration' dialog click 'OK'.
11. A 'Code Generator COM component register' dialog will pop-up with the text "Please restart e2 studio to use Code Generator". Click 'OK'.
12. In the 'Restart e2 studio' dialog click 'OK'. e² studio will be restarted due to first-time registration of the Code Generator COM component.
13. Once e² studio is restarted the 'Select a workspace' window appears again. Click 'OK'.
14. In the e² studio welcome screen, click the 'Go to the e2 studio workbench' arrow icon, on the far right. 
15. Right click in the project explorer window, and select 'Import'.
16. In the import source type, select General > Existing Projects into Workspace, and click 'Next'.
17. Click the 'Browse' button, and locate the following directory 'C:\Renesas\workspace\RSK\RSKRX130'.
18. Ensure the 'Copy projects into workspace' option is ticked, then click 'Finish'.
19. During the import process an information dialogue may report 'Toolchain path has been modified for the project...', Click 'OK'.

4. Programming and Debug

20. Select the "Tutorial" project by left clicking on it, then click the arrow next to build button (hammer icon), and select 'HardwareDebug' from the drop down menu. 
21. e² studio will now build the project. Once this is complete, debugging can be started by clicking the arrow next to debug button (bug icon), and selecting 'Debug Configurations'. 
22. The green 'ACT' LED on the E2 Lite debugger will illuminate constantly.
23. Click the symbol next to the entry 'Renesas GDB Hardware Debugging' to expand the list and click on 'Tutorial HardwareDebug'.
24. Click the 'Debugger' tab, then the 'Connection Settings' secondary tab. Review the settings listed in the screenshot below.


GDB Settings	
Main Clock Source: EXTAL	
Extal Frequency[MHz]: 8.0000	
Permit Clock Source Change On Writing Intern: Yes	
Connection with Target Board	
Emulator	(Auto)
Connection Type	Fine
JTag Clock Frequency[MHz]	6.00
Fine Baud Rate[Mbps]	1.50
Hot Plug	No
Power	
Power Target From The Emulator (MAX 200m)	Yes
Supply Voltage	3.3V
CPU Operating Mode	
Register Setting	Single Chip
Mode pin	Single-chip mode
25. Click the 'Debug' button to download the code to the target, and begin debugging.
26. A firewall warning may be displayed for 'e2-server-gdb.exe'. Select the check-box for 'Private networks, such as my home or work network', and click 'Allow access'.
27. A User Account Control (UAC) dialog may be displayed. Enter the administrator password and click 'Yes'.
28. e² studio may ask you to change to the 'Renesas Debug Perspective', click 'Yes'.
29. Once the code has been downloaded, click the 'Resume' button to run the code up to the first line of the main function, R_MAIN_UserInit().
Click 'Resume' again to run the target through the rest of the code. 
30. Press any switch (SW1, SW2 or SW3). An A/D conversion will be performed and the result will be displayed on the LCD panel.
31. Rotate the Analog Adjust Control and press any switch again. A new A/D conversion will be performed and the count of A/D conversions will be displayed in binary form using LEDs 0-3.
32. Click the 'Suspend' button. The program will stop and the source code will be opened at the current program counter. 
33. To disconnect from the target board, click the 'Disconnect' button on the toolbar. 
34. Select the C/C++ perspective (at the top right) to return to the editor view. 

5. Next Step

After you have completed this quick start procedure, please review the tutorial and sample code that came with the kit. The tutorial project will help you understand the device and development process using Renesas Development Tools.

Please refer to “description.txt” in each sample project for sample code specification and operating procedure.

The Hardware manual supplied with this RSK is current at the time of publication. Please check for any updates to the device manual from the Renesas internet site at <http://www.renesas.com/rskrx130>

To learn more on how to use e² studio, open the program’s help files by using Help > Help Contents.

6. Touch Demonstration Project

The RSKRX130 includes a simple demonstration project to showcase the touch functionality of the RX130 device. As a customer touch project is dependant not only on the embedded code, but also on a PC tuning application that is specific to the selected compiler and IDE, please find more detail from:

Americas/Europe

http://am.renesas.com/applications/key_technology/human_interface/touch_sensor_system_2gen/index.jsp

Japan/Asia

http://www.renesas.com/applications/key_technology/human_interface/touch_sensor_system_2gen/index.jsp

7. Renesas RX Compiler

The version of the compiler provided with this RSK is fully functional for 60 days and then code size limited to 128kbytes of Code and Data. This restriction can be removed by purchasing a licenced copy of the tools.

8. User Manuals

The user manuals for this product can be found at the following locations:

Windows™7 & Vista:

Start Menu > All Programs > Renesas Electronics Tools > RSKRX130 e2 studio > Manuals

Windows™8.1 & 8:

From the Apps View (⬇), all the manuals are located in “Renesas Electronics Tools”.

9. Support

Online technical support and information is available at <http://www.renesas.com/rskrx130>.

Technical Contact Details

America: techsupport.america@renesas.com

Europe: <http://www.renesas.eu/ibg-kitsupport>

Japan: csc@renesas.com

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Website: <http://www.renesas.com>

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