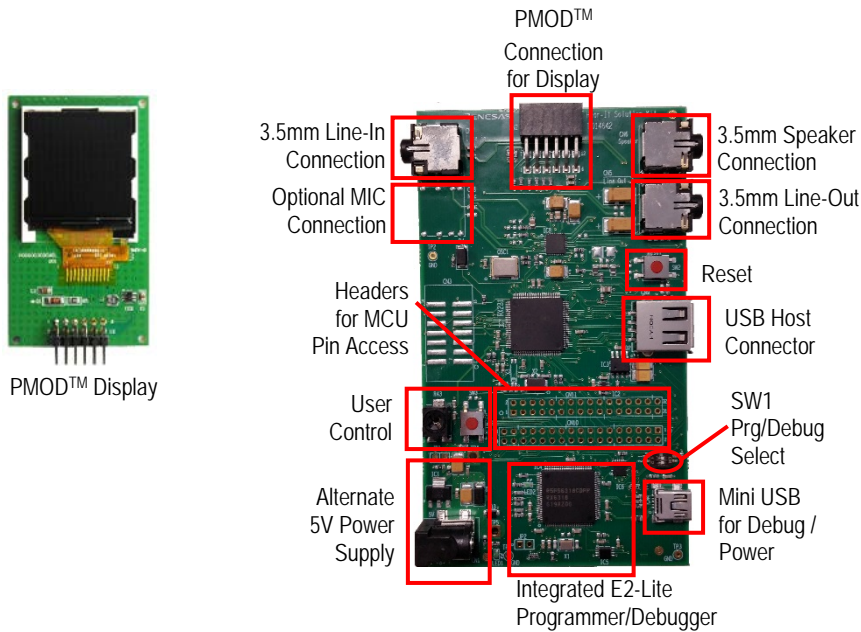


# Quick Start Hear-it! Solution Kit for RX231



RENESAS

NOTE: This Quick Start Guide covers installation of the e<sup>2</sup> studio DVD .

## 1. Installation of Software Support onto PC

**Do not connect the Hear-it! Solution Kit to the PC until the software support has been installed.**

1. Insert the DVD into your computer's DVD-ROM drive. The DVD should run the installation program automatically. If the installer does not start, browse to the 'e2studio' folder and double click on 'setup.exe'.
2. Windows™ 10 / 8 / 7 users may see "User Account Control" dialog box. If applicable, enter the administrator password and click 'Yes'.
3. The installer welcome screen will open. Follow the on-screen instructions to install the software. This process will take several minutes.


Note:


When prompted to specify a different location for installing any of the tools, it is recommended that default entries are accepted.

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

## 2. Importing Sample Code into e<sup>2</sup> studio

e<sup>2</sup> studio integrates various tools such as compiler, assembler, debugger and editor into a common graphical user interface.

4. Start e<sup>2</sup> studio:
  - Windows™ 7: Start Menu > All Programs > Renesas Electronics e2 studio > e2 studio
  - Windows™ 10 / 8: From Apps View , click 'e2 studio' icon
5. In the 'Select a workspace' folder that appears, select a suitable location and folder name to save your new workspace to. Click OK to continue.
6. In the 'Toolchain Integration' dialog select Renesas CCRX and ensure that 'CC-RX v2.06.00' is selected. Click 'Register'. A dialog will appear "Selected Toolchains were successfully integrated with e2 studio". Click 'OK'.
7. A 'Code Generator Registration' dialog may appear. If so, click 'OK'

8. Windows™ 10 / 8 / 7 users may see the “User Account Control” dialog box. If applicable, enter the administrator password and click ‘Yes’.
9. A ‘Code Generator COM component registration’ message box may appear with the text “Please restart e2 studio to use Code Generator”. If so, click ‘OK’.
10. A ‘Restart e2 studio’ message box may appear. If so, click ‘OK’. e2 studio will then be restarted due to first-time registration of the Code Generator COM component.
11. If e2 studio has restarted, the ‘Select a workspace’ window appears again. If so, click ‘OK’.
12. In the e2 studio welcome screen, click the ‘Go to workbench’ arrow icon, on the far right. 
13. Right click in the project explorer window, and select ‘Import’.
14. In the import source type, select General > Existing Projects into Workspace, and click ‘Next’.
15. Click the ‘Select archive file:’ radio button, then the highlighted ‘Browse’ button on the right. Locate the following directory ‘C:\Renesas\Workspace\Y-HEAR-IT-RX231’.
16. Select the file ‘rx231\_dsp\_demo.zip’ and click ‘Open’. Ensure that both projects are selected, then click ‘Finish’.
17. During the import process an information dialogue may report ‘Toolchain path has been modified for the project...’, Click ‘OK’.

### 3. Connection

18. Fit the PMOD™ Display module to the connector marked ‘CN2’ on the Hear-it! board. Ensure all the pins of the connector are correctly inserted in the socket.
19. Connect input source to 3.5mm audio jack Line-In CN7 using 3.5mm audio cable.
20. Connect headphones to 3.5mm audio jack CN5 or a speaker to 3.5mm audio jack CN6.

**Caution:**

Headphones should be connected to the 3.5mm line-out connector CN5. Connector CN6 is designed to connect to a speaker only. It is not recommended to attach headphones to speaker connection CN6, as damage to the headphones may occur.

21. Ensure that both switches in switch SW1, as shown on the illustration are set to “ON”.



22. Connect USB Mini connector CN4 to the PC. The Green LED LED2 on the Hear-it! Board will flash.
23. The debugger drivers will now be installed. Note that, this may take up to a minute and administrator privileges will be required.

**Windows™ 7**


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

**Windows™ 10 / 8**

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

24. The green LED LED2 on the Hear-it! Board will flash approximately once per second

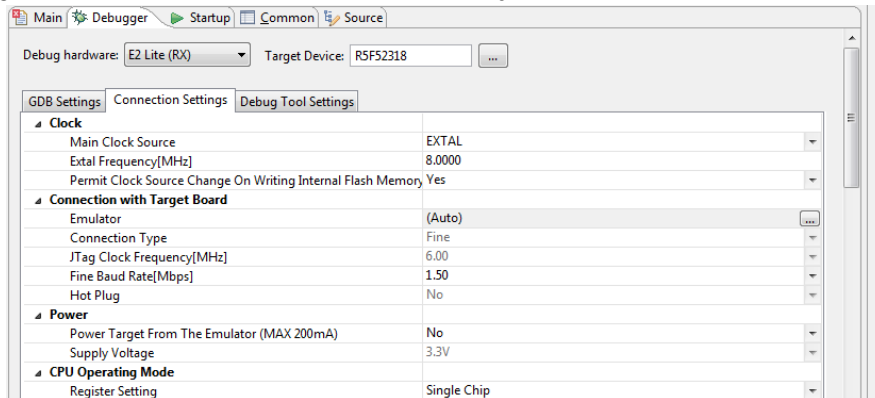
## 4. Programming and Debug

25. Select the "rx231\_dsp\_demo" or "rx231\_usb\_playback\_demo" project by left clicking on it. Click the arrow next to build button (hammer icon), and select 'HardwareDebug' from the drop down menu. 

26. 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'. 

27. Click the symbol next to the entry 'Renesas GDB Hardware Debugging' to expand the list and click on 'rx231\_dsp\_demo HardwareDebug' (or 'rx231\_usb\_playback\_demo HardwareDebug').

28. Click the 'Debugger' tab, then the 'Connection Settings' secondary tab. Review the settings listed in the screenshot below and modify if different.





29. Click the 'Debug' button to download the code to the target, and begin debugging.


30. 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'.

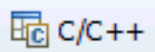
31. A User Account Control (UAC) dialog may be displayed. Enter the administrator password and click 'Yes'.

32. e2 studio may ask you to change to the 'Renesas Debug Perspective', click 'Yes'.

33. Once the code has been downloaded, click the 'Resume' button to run the code up to the first line of the main function.   
Click 'Resume' again to run the target through the rest of the code.

34. Click the 'Suspend' button. The program will stop and the source code will be opened at the current program counter. 

35. To disconnect from the target board, click the 'Disconnect' button on the toolbar: 

36. Select the C/C++ perspective (at the top right) to return to the editor view. 

## 5. Standalone Operation

37. The Hear-it! Solution kit can be run in standalone mode without the programmer/debugger. In order to do this, disconnect the USB connection at CN4, and switch both switches at position SW1 to 'OFF', then re-connect the USB connection to CN4. The Sample application will now run automatically.



## 6. Next Step

38. After you have completed this quick start procedure, please review the sample code in conjunction with the Hear-it! Solution Kit User's Manual (R12UZ0012EG). The rx231\_dsp\_demo and rx231\_usb\_playback\_demo projects will help to understand the device and development process using Renesas Development Tools.

The Hardware manual supplied with this development board is current at the time of publication. Please check for any updates to the device manual from the Renesas internet site at

<https://www.renesas.com/en-eu/products/microcontrollers-microprocessors/rx/rx200/rx231.html>

To learn more on how to use e<sup>2</sup> studio, open the program's help files by using Help > Help Contents.

## 7. Renesas RX Compiler

The version of the compiler provided with the Hear-it! Solution Kit 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 licensed copy of the tools.

## 8. User Manual

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

Windows™ 7:

Start > All Programs > Renesas Electronics Tools > Y-HEAR-IT-RX231 > Manuals

Windows™ 10 / 8:

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

## 9. Support

Online technical support and information is available at [www.renesas.com/rxhearit](http://www.renesas.com/rxhearit)

Technical Contact Details

America: [techsupport.america@renesas.com](mailto:techsupport.america@renesas.com)

Europe: <https://www.renesas.com/en-eu/support/contact.html>

Japan: <https://www.renesas.com/support/contact.html>

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