

Quick Start

Renesas Demonstration Kit for RX62N

NO-RTOS

Do not connect the J-Link USB port on the RDK until the installation software has been installed!

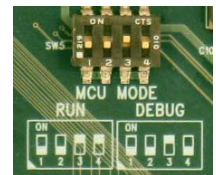
- This Quick Start Guide gets you started with the YRDKRX62N using the Renesas Toolchain. The example projects **DO NOT** use an RTOS!
- We recommend you use the latest installer located at www.Renesas.com/rdkRX62Ninstall. If for some reason you cannot do this download right now, you can use the CD – but be aware that the latest Installer, application notes and application programs are kept updated at www.Renesas.com/rdkRX62N.
- This board comes pre-installed with a Demo Program (Exosite/Micrium Demo 4). During this quick start guide, we will load Renesas Compiler based demo projects. Should you want to return the board to factory new condition simply load Exosite/Micrium Demo 4 into the board using a procedure similar to the one detailed in the YRDKRX62N_Micrium_Based_Quick_Start_Guide.pdf.
- For basic operation – the RDKRX62N only needs USB power – the Aux Power Jack J4 (+5v Regulated input) is only necessary in high current operation.
- The single install contains the following components:
 - a. HEW (High Performance Embedded Workshop) – IDE
 - b. RX Toolchain (C/C++ compiler, assembler, linker, with demonstration projects)
 - c. GNU Toolchain (C/C++ compiler, assembler, linker)
 - d. Segger J-Link Lite Debugger
 - e. Micrium Files including Example files, Port for RX62N, and μ C/Probe
 - f. Manual Navigator with the following documents loaded: Schematics, Gerbers, RX62N Hardware Manual, RX Software Manual, YRDKRX62N Users Manual, YRDKRX62N Quick Start Guide, all the RDK Partner Datasheets.

Software Download and Installation

1. Open your favorite browser and surf to www.Renesas.com/rdkRX62Ninstall. If no internet connection is present go to step 3 to install from the included CD.
2. Click on "Download installation CD for the RX62N RDK" and download the file to your hard drive. Execute the file to extract the CD files to your computer. Locate the file "Setup.exe" in the CD files. Double Click on this file to start installation. Follow the on screen directions to install the required software. (We recommend you install ALL the software!) Proceed to step 4.
3. If you cannot download the most up to date installer, insert the enclosed CD into your CD or DVD drive. The program "Setup.exe" should auto-start and install the required software. IF the program does not auto-start, surf to the CD or DVD drive and double-click on "Setup.exe". Follow the prompts to install all the software components.

Connection

4. On the RDK, ensure the MCU Mode DIP switch, SW5, is set to "DEBUG" (OFF, OFF, ON, OFF) as shown on the right.
5. Connect one end of the included USB cable to your computer and the other end to J14 of the RDK (USB port to the left of the LED Ring). This is the debug interface and where we power the board from.
6. The 'Found New Hardware' Wizard may appear. Please follow the steps below to install the drivers. Note that administrator privileges are required for a Windows™ 2000/XP/Vista/Win7 machines.



Windows™ 2000/XP

- a. Select option 'No, not this time' in "Found New Hardware" Wizard dialog, and click <Next> button.
- b. Verify the "Recommended" option is selected and click <Next>.
- c. If using Windows XP, go to step 'e'; otherwise, click <Next>.
- d. Click <Next> to install the driver.
- e. Click <Finish> to close the wizard.

Windows Vista / Windows 7 (32 or 64)

- a. Select "Locate and install driver software (recommended)".
- b. "User Account Control" dialog box will appear. If applicable, enter administrator password and click <OK>.
- c. Driver installation will start. After couple of minutes a "Windows security" dialog box will appear, select "install this driver software anyway".
- d. "Device driver software installed successfully" pop-up will appear in the windows toolbar and installation will complete.

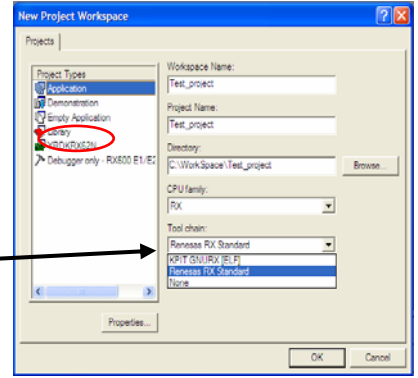
RDK Validation

Before we program the board, let's verify the board is working when you received it.

7. If you have an Ethernet cable and a switch, hub, or router to plug it into, plug one end into the RDK and the other into your hub/switch/router.
8. Press the "RESET" button, located above the SEGGER logo.
 - Two LEDs should light and rotate around the LED ring. One Green and one Red.
 - The LCD display will show the progress of acquiring a Network Address (MAC & IP Addresses, Subnet Mask, Gateway) and the status of the connection to Exosite's Cloud.
 - Finally, the desired and actual frequency of the Simulated Motor Control Loop will be displayed. To change the desired frequency, adjust the potentiometer located below the display.

HEW Workspace and Demonstration Programs

HEW integrates various tools such as compiler, assembler, debugger and editor into a common graphical user interface. To learn more on how to use HEW, open the HEW manual installed on your computer (Start Menu > All Programs > Renesas > High-performance Embedded Workshop > Manual Navigator)


9. Launch **"High-performance Embedded Workshop"** from the Start Menu (All Programs > Renesas > High-performance Embedded Workshop).
10. In the "Welcome" dialog box, select "Create a new project workspace" and click <OK>
11. Name the workspace in the "Workspace Name:" box. We suggest "Tutorial".
12. Under the "Tool Chain:" pull down – select "Renesas RX Standard" 
13. Select **YRDKRX62N RPD Demo2** from the "Project Types" window at the left of the dialog. Click <OK>
14. In the next dialog box, keep "Easy Projects" selected and click Next>Then select **ADC Oneshot**, click Finish and click OK.

NOTE: On the screen where we selected **ADC Oneshot** you could have selected from a number of example projects that show off how to use this device.

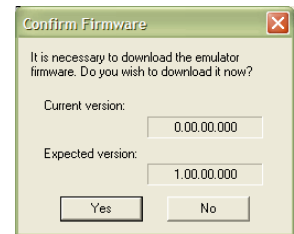
Build the Project

15. From the top menu bar, select **Build**, then **Build**. (HEW Menu Bar > **B**uild > **B**uild). (The "Build All" process will likely take over 1 minute.)

Connect to the Renesas Demonstration Kit


16. Change if needed the Debug Session to "JLink". (In your toolbars you will see two pull down boxes (next to each other) with the one on the right stating "DefaultSession". Click in this box and change it to "JLink")
- If asked to save the Default Session, click <No>
17. Connect to the target using the **Debug** pull down menu and selecting **Connect**.
18. In the Initial Settings Dialog box, Click <OK>
 - When the Segger Control Panel shows up, minimize it.
19. In the Configuration Properties Dialog box, click <OK>

NOTE: The first time you connect to the RDK, the J-Link debugger MAY need to update its firmware. If the "Confirm Firmware" window on the right appears, click <Yes>.



20. You should see a brief connection dialog followed by the words "Connected" in the Debug tab at the bottom of the screen.

Download and Go!

21. (step 21 can be skipped with "Easy Projects") From the top menu bar, select **Debug**, then **Download Modules**, finally **All Download Modules**
- Note:** The "Downloading" window will show the progress of the download, once completed it will disappear. This may be VERY fast.
22. Click the <Reset – Go> icon. 

- Initially, the LCD Display will show "ADC One Shot"
- Press SW3 and the last line of the display will show the converted ADC value.
- Rotating the VR1 pot and pressing SW3 will provide new values.

23. Click the <Stop> icon, , to stop code execution. HEW will display the source code at the current program counter.

Note: Consult the YRDKRX62N_Micrium_Based_Quick_Start_Guide.pdf for information on loading and running Micrium uCOS-III based projects.

Compilers

The demonstration code is built using the Renesas compiler. This compiler is fully functional but time limited. You have 60 days to evaluate the full product before the compiler will limit the linker to 128k bytes (this limit includes both Flash and SRAM output from the linker). Full licensed RX compiler versions are available from your Renesas supplier.

Support

Support Forums for this RDK: www.RenesasRulz.com/rdkRX62N

Online training for RX and other products and tools is available at: www.RenesasInteractive.com

Website for this RDK: www.renesas.com/rdkRX62N

To obtain the Companion Book from Micrium – either use the complete book in .pdf format (Start->Programs->Micrium) (non-printable) or for a hardcopy go to: <http://micrium.com/page/products/books/os-iii-books/os-iii-renesas-rx62n>

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