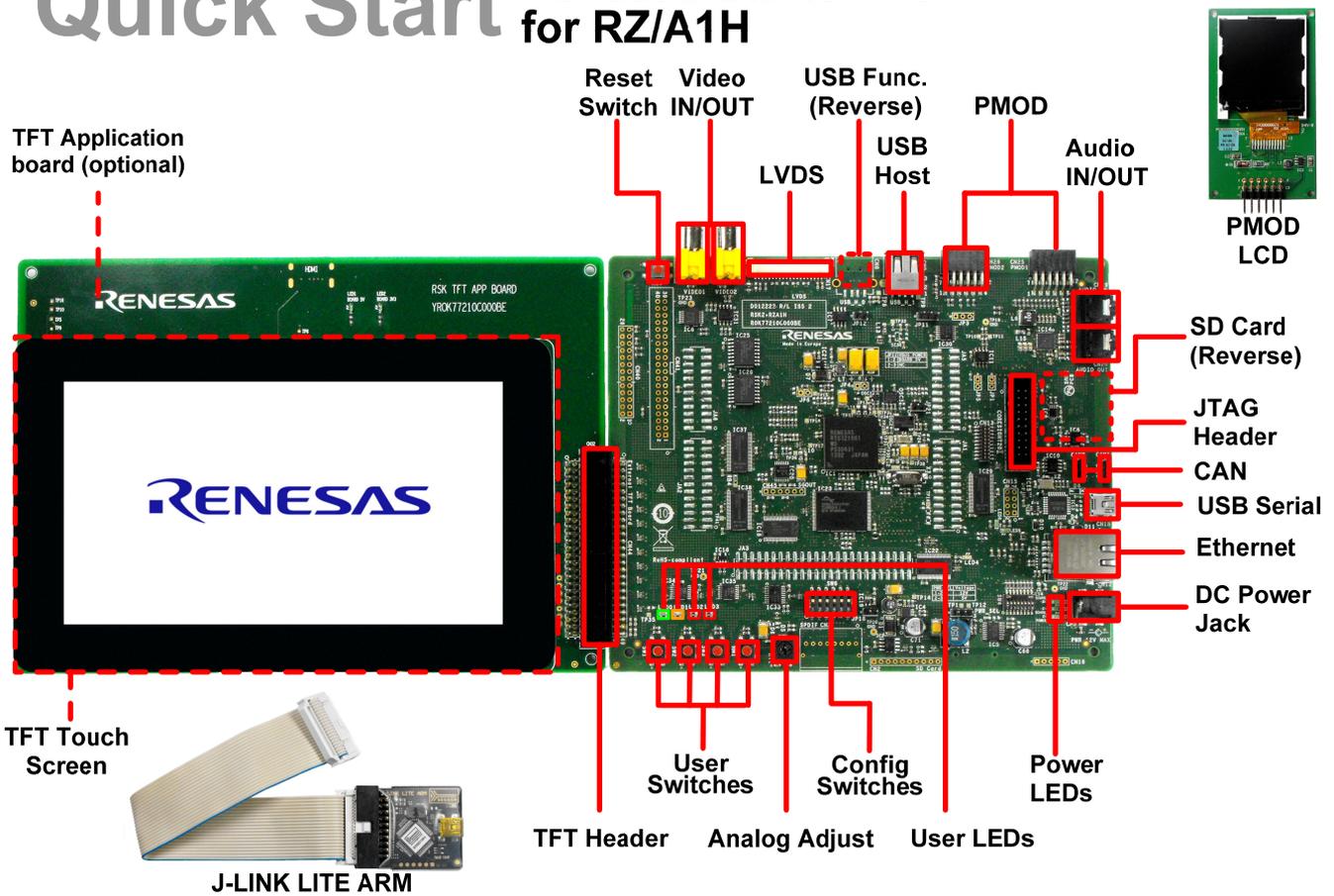


Quick Start Renesas Starter Kit+ for RZ/A1H



RENESAS

NOTE: This Quick Start Guide covers installation of the DS-5 DVD.

1. Installation

Do not connect the JLINK LITE ARM debugger module until the software support has been installed.

1. Insert the DVD into your computer's DVD-ROM drive. The DVD should automatically run the installation program. If the installer does not start, browse to the DVD root folder and double click on 'setup.exe'.
2. Windows™ 7/ 8 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 RSK software. This process will take several minutes.

Note:

You will be prompted to obtain a product activation code by logging onto the My Renesas website. Please follow the on screen instructions.

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.

Select the option to update the ARM DS-5 dll if prompted by the SEGGERJ-LINK DLL Updater.

2. Connection

4. Connect the JLINK LITE ARM debugger module to the connector marked 'CN14 ARM JTAG 20' on the diagram using the ribbon cable.
5. Connect the JLINK LITE ARM debugger module to a spare USB port of your PC. The green LED on the debugger will flash.
6. Please follow the steps below to install the drivers. Note that administrator privileges are required to install the drivers.

Windows™ 7 / 8

- Windows™ 7: A "Device driver software installed successfully" pop-up will appear in the Windows™ toolbar and installation will complete.
 - Windows™ 8: An icon will appear in the Windows™ toolbar and installation will complete.
7. The green LED on the JLINK LITE ARM debugger will illuminate.
 8. Ensure that SW6.1 and SW6.3 are set to the OFF position.
 9. Connect a centre-positive +5V power supply to the connector marked PWR and apply the power.



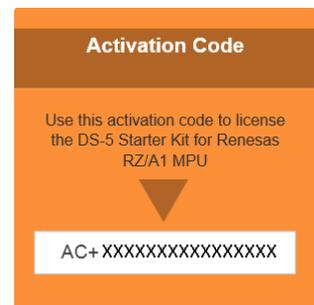
3. Adding Sample Code into DS-5

An ARM developer account (see <https://login.arm.com/register.php>) is required to complete these steps. DS-5 integrates various tools such as compiler, assembler, debugger and editor into a common graphical user interface and requires a working internet connection for license activation. Start DS-5 from the start menu:

Start > All Programs > ARM DS-5 -> Eclipse for DS-5

Note: Proxy settings in DS5 under 'Window > Preferences > General > Network Connections' may need to be configured when accessing the license server. Set the Active Provider to 'Manual' and configure the 'Proxy entries' and 'Proxy bypass' before clicking 'OK'.

10. The first time DS-5 is started you will be asked to obtain a licence. Click 'Ignore'. Go to <http://ds.arm.com/renesas/rza-starter-kit/> to get the activation code. Scroll down and copy the activation code from the orange area. (xxxxxxxxxxxxxxxx represents a unique number).
11. From the DS-5 'Help' menu, select 'ARM License Manager'. In the 'View and edit licenses' dialog, click 'Add License'. In the "Obtain a new license" dialog, for the entry "Enter a serial number or activation code:" paste the activation code. Click Next.
12. In the "Choose Host ID" dialog the data is automatically filled. Click Next.
13. In the "Developer Accounts Details" dialog enter the user name and password and click Next.
14. Click 'Close'. In the 'Confirm Restart Eclipse' dialog click 'Restart Eclipse'.
15. In the 'Select a workspace' folder that appears, browse a suitable location and folder name to save your new workspace.
16. In the DS-5 welcome screen, click 'Go to the workbench', which is the last item under the 'DS-5 Resources' heading.
17. Right-click in the Project Explorer window, and select 'Import'.
18. Under 'Import Source' select General > Existing Projects into Workspace, and click 'Next'.
19. Click the 'Browse...' button, and locate the following root project directory:
'C:\Renesas\Workspace\RSK\RSK+RZA1_V02'
20. Ensure the 'Copy projects into workspace' option is ticked and then click 'Finish'.



4. Adding GNU Toolchain Support for DS-5

21. From the DS-5 'Help' menu, select 'Install New Software...'.- 22. From the Install dialog, select 'Add...'.- 23. Click the 'Archive...' button and browse to C:\Renesas\Workspace\RSK\RSK+RZA1_V02\Renesas_ARM-RZ_Update.zip. Click 'OK'.- 24. Back in the 'Install' dialog, ensure that the tick box 'Renesas ARM-RZ Update' is selected, then click 'Next'.- 25. An 'Install Details' dialog appears. Review the licenses. Click 'Next'.- 26. The Install dialog will appear, select the option "I accept the terms of the license agreement". Click 'Finish'.- 27. A security dialog will appear. Click 'OK'. The toolchain will then be installed into DS-5

28. After installation has completed it will be necessary to restart DS-5. In the dialog click 'Restart Now'.
29. Once DS-5 has restarted, go to the 'Help' menu and select 'Integrate Toolchain'.
30. In the 'Preferences' dialog, under 'C/C++ -> Renesas -> Renesas Toolchain Management', ensure the tick-box is checked, then click 'OK'.

5. Programming and Debug

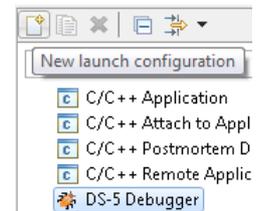
31. Left-click the Tutorial project to select it, then click the arrow next to the build button (hammer icon),



32. DS-5 will now build the project. Once this is complete, debugging can be started by clicking the arrow next to the debug button (bug icon), and selecting 'Debug Configurations...'



33. Select the 'DS-5 Debugger' icon in the left pane and click the 'New launch configuration' button.



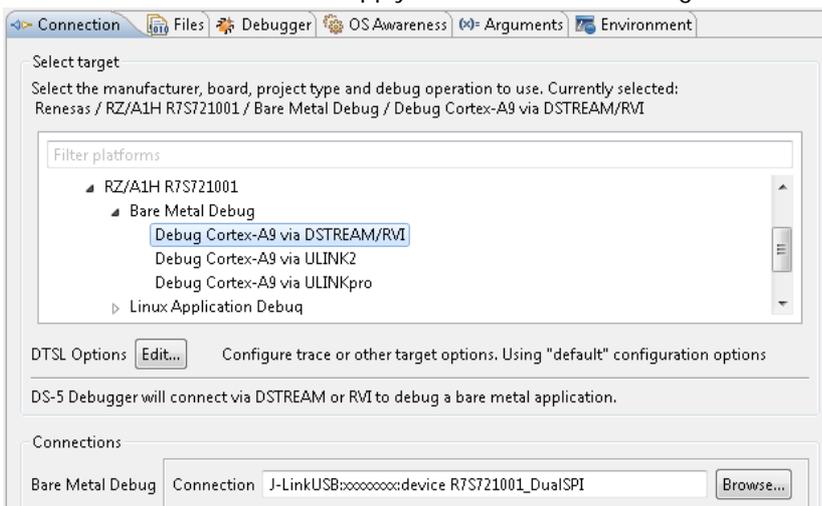
34. The debug configurations control page will then be created. In the 'Connection' tab, rename the configuration 'Tutorial Debug'.
35. In the 'Select Target' tree control, ensure that 'Renesas -> RZ/A1H R7S721001 -> Bare Metal Debug -> Debug Cortex-A9 via DSTREAM/RVI' is selected.

36. In 'Connections', click the 'Browse...' button.

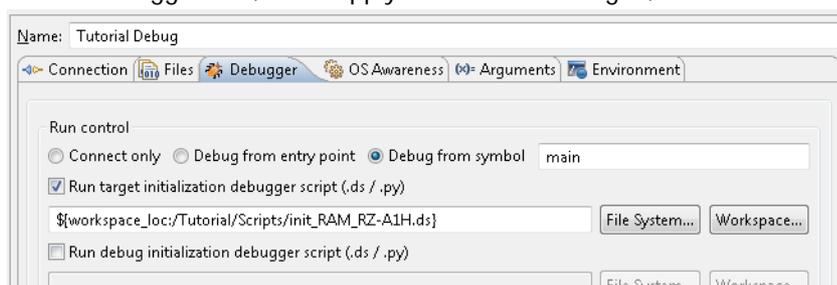
37. A firewall warning may be displayed for 'eclipse.exe'. Check the 'Private networks, such as my home or work network' box and click 'Allow access'.

38. In the 'Select Debug Hardware' dialog, select 'J-LinkUSB:xxxxxxx'. Click OK.

39. In the 'Connection' tab click 'Apply', then review the settings listed in the screenshot below.



40. Append ":device R7S721001_DualSPI" to the connection serial number string as shown above.
41. Select the 'Files' tab. Under 'Target Configuration -> Application on host to download', click the 'Workspace' button. Browse to 'RZ_A1H_Tutorial_RSK -> Debug -> RZ_A1H_Tutorial_RSK.x' and click OK.
42. Click 'Apply' to save the changes, then select the 'Debugger' tab.
43. In the 'Debugger' tab, under 'Run control', ensure that 'Debug from symbol main' is selected.
44. Select the 'Run target initialization debugger script (.ds / .py)' tick box and click 'Workspace'. In the 'Open' dialog, browse to 'RZ_A1H_Tutorial_RSK -> scripts -> init_RAM_RZ-A1H.ds' and click OK.
45. In the 'Debugger' tab, click 'Apply' to save the changes, then review the settings listed in the screenshot below



Note: Untick the 'Run target...' option when downloading the Release application file.

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

47. A user account control dialog may be displayed. Enter the administrator password and click <Yes>.
48. DS-5 will ask you to change to the 'Debug Perspective', click 'Yes'.
49. There may be a 'J-Link v4.84b Firmware Update' dialog on first connection. Click OK to update the firmware.
50. Once the code has been downloaded, the debugger will stop at the first line of the main() function. Click the 'Continue' button to run the target through the code. 
51. Refer to the LCD display. Press SW1, SW2 or SW3. The text 'STATIC' will appear near the bottom of the LCD panel, before being replaced with 'TESTTEST' one character at a time.
52. Rotate the Analog Adjust control (RV1). The rate of flashing of LED0 will vary.
53. Click the 'Interrupt' button. The program will stop and the source code will be opened at the current program counter 

6. Running the TFT Touchscreen Sample Program

54. Disconnect the debugger using the 'Disconnect from Target' button; remove the debugger from CN14 and power down the RSK+. 
55. The TFT Touchscreen sample is programmed into the RSK+ NOR FLASH. To run the program from NOR FLASH, first ensure that all SW6 switches are set to the ON position. 
56. Connect the RSK TFT App Board to the RSK on CN44.
57. Connect a USB cable between the USB Serial connector (CN18) and an available USB port on the host PC.
58. Open a serial terminal (e.g. HyperTerminal), select the appropriate COM port and set the baud-rate to 115200 bps.
59. Re-apply power to the RSK+.
60. The program responds to up to 5 simultaneous finger presses on the touchscreen, by colouring the screen in the touch locations in various colours. The co-ordinates of all 5 concurrent touches are displayed in the serial terminal.

7. Next Step

After you have completed this quick start procedure, please review the tutorial code and sample code that came with the kit. You can review the other samples using the sub-projects in the Project Explorer. The Tutorial Manual will help you understand the device and the development process using ARM Development Tools.

The Hardware Manual supplied with this RSK is current at the time of publication. Please check for any updates and additional content from the Renesas internet site at: <http://www.renesas.com/rsk+rza1h>

8. Compiler Support

The version of the compiler provided with this RSK is fully functional GNU compiler with a size-limited ARM licence, but requires registration before it can be used.

9. User Manuals

User manuals can found in the Windows™ 7 Start Menu. (Start Menu > All Programs > Renesas Electronics Tools > RSK+RZA1 DS-5 > Manuals).

For Windows™ 8, click the down arrow in the Start page. The user manuals are available in Apps > Renesas Electronics Tools.

10. Support

Online technical support and information is available at: <http://www.renesas.com/rsk+rza1h>

Technical Contact Details

America: techsupport.america@renesas.com

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

Japan: csc@renesas.com

Support for the GNU RZ Compiler is available from <http://www.kpitgnutools.com>

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