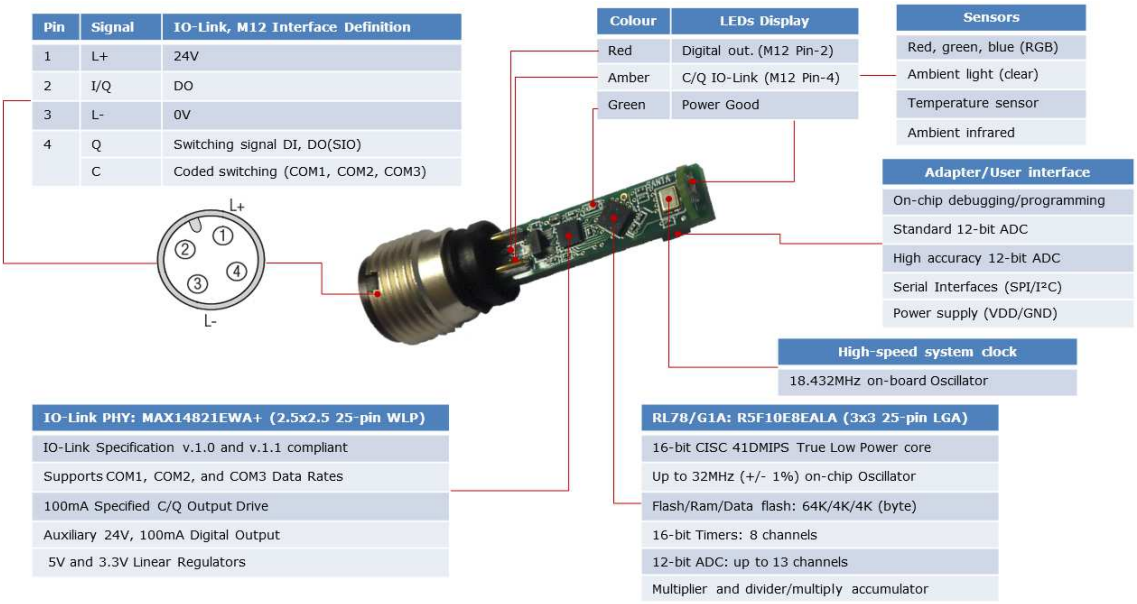
Quick Start IO-Link Device Starter Kit for RL78



Starter Kit Board: YRL78IOLINKMAX

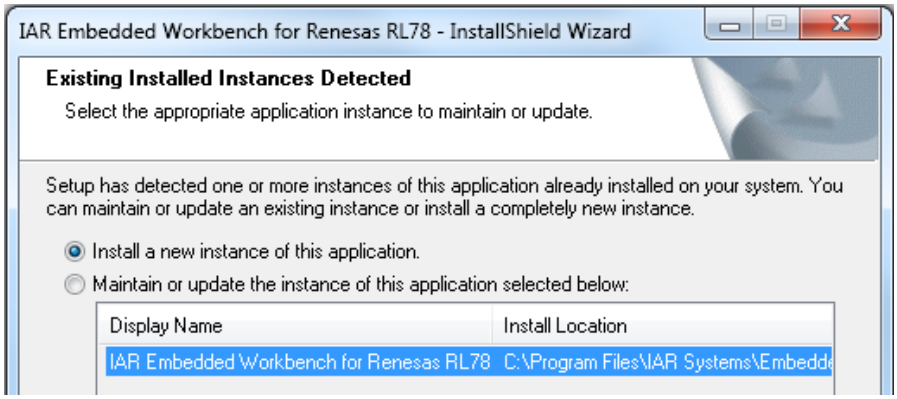
1. Installation

Do not connect the board or E1 emulator to the HostPC until the software support has been installed.

1. Extract the Starter kit Installer downloaded from the internet onto your computer.
2. Browse to the Starter kit Installer's root folder and double click on 'setup.exe'.
3. Windows™ Vista and Windows 7 users may see "User Account Control" dialog box. If applicable, enter the administrator password and click <OK>.
4. The installer will open the Installation Wizard dialog. Click <Next>.
5. The License Agreement will be shown, read and accept the license agreement. Click <Next>.
6. The Installation wizard will list all options to be installed. Select the features to install or Click <Next>.
7. The "Ready to Install the Program" dialog will appear. Click <Install>.

Installation of IAR tools

8. The InstallShield Wizard will extract the IAR installation files and the "IAR Embedded Workbench for Renesas RL78" dialog will appear.
9. Click <Install IAR Embedded Workbench> to begin the installation.
10. **An "Existing Installed Instances Detected" dialog will appear if there is an existing instance of IAR Embedded workbench for RL78 installed on the HostPC**.



11. Select the option “Install a new instance of this application” as shown above. Click <Next>.
12. A dialog with a progress bar will appear followed by a “Welcome to…” dialog. Click <Next>.
13. The License Agreement will be shown, read and accept the license agreement. Click <Next>.
14. Select the setup type “Complete”. Click <Next>.
15. If necessary choose the destination location by Clicking on “Change”, else Click <Next>.
16. Click <Next> on the next dialog.
17. Click <Install> on the “Ready to Install the Program” dialog. Setup may take a few minutes to complete
18. The InstallShield Wizard will display a warning message about installing the USB dongle drivers. Read the instructions on screen and Click <Yes>.
19. The installer will configure Microsoft Visual C++2005 and C++2008 Redistributables if not detected.
20. The Renesas Emulator Driver dialog will appear over the InstallShield Wizard Complete dialog. Return to the InstallShield Wizard dialog; **uncheck the options “View the release notes” and “Launch IAR Embedded Workbench”. Click <Finish>.**
21. Click <Exit> in the “IAR Embedded Workbench for Renesas RL78” dialog.
22. The InstallShield Wizard will extract the Renesas Flash Programmer installation files and the “Renesas Electronics Microcontroller Development Tools Installer” dialog will appear.
23. Return to the Renesas Emulator Driver dialog.

Installation of Drivers

24. Click <Next> on the Renesas Emulator Drivers Installation dialog that will appear.
    Windows XP users will see a compatibility issue dialog. Click <Continue Anyway>.
    Windows 7 and Windows Vista may need to accept and trust security dialogs before clicking <install>.
25. Click <Finish> on the dialog that follows to complete the driver installation.

Installation of Renesas Flash Programmer software

26. Return to the “Renesas Electronics Microcontroller Development Tools Installer” dialog.
27. Click <Next> on the Renesas Flash Programmer V2.04.01 dialog.
28. The License Agreement will be shown, read and accept the license agreement. Click <Next>.
29. Click <Next> on the next dialog.
30. Click <Install> on the next dialog.
31. The install Status dialog shows: “The installation was completed”. Click <Next>.
32. Click <Finish> on the dialog that follows to complete the Renesas Flash Programmer installation.
33. The InstallShield Wizard Complete will open. Click <Finish> to complete the full YRL78IOLINKMAX installation.

Installation of software files and documentation

IAR Workbench Sample programs, User Manual, Demo firmware, Documentations, and IODD files are automatically installed in the <C:\Renesas\Workspace\YRL78IOLINKMAX\..> Repository folder on the HostPC.

34. If a dialog appears prompting for Microsoft.NET Framework 3.5 to be installed, click <Install>. The <install> button will turn grey during the installation. This may take a few minutes to install. Users may be prompted to reboot the PC. Click <Yes>. The YRL78IOLINKMAX installation will restart after the reboot.
    a. The InstallShield Wizard for Renesas YRL78IOLINKMAX will start with a welcome dialog. Click <Next>.
    b. The License Agreement will be shown, read and Click <Yes>.
    c. Click <Next> on the “Start copying files’ dialog to begin copying the files.
    d. A progress status will be shown. On completion of the YRL78IOLINKMAX installation, click <Finish>.
    e. The InstallShield Wizard Complete will open. Click <Finish to complete the YRL78IOLINKMAX installation.

2. YRL78IOLINKMAX Colour-Ambient light sensor Demo

The YRL78IOLINKMAX board is preloaded with a colour ambient light sensor demo.

35. **Refer to Tutorial Manual for detailed information on how to setup and use the demo.**

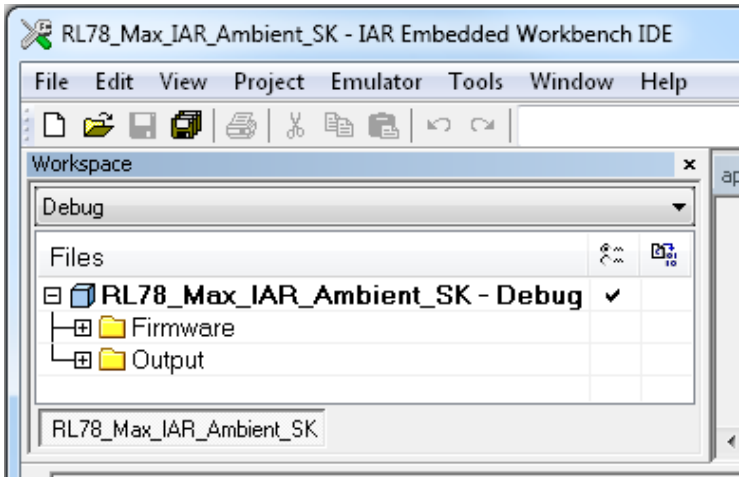
    The kit Tutorial Manual is installed on your computer (Start Menu → All Programs → Renesas Electronics Tools → YRL78IOLINKMAX → Manuals → Tutorial Manual.

36. When prompted, import the IODD file from the <C:\Renesas\Workspace\YRL78IOLINKMAX\ Demo Sample Device\IODD > subfolder to your IO-Link Device tool catalog.

3. Using the IAR Embedded Workbench tools

IAR Embedded Workbench (EW) integrates various tools such as compiler, assembler, linker, debugger and editor into a common graphical user interface. To learn more on how to use IAR Embedded Workbench, refer to the IAR Embedded Workbench Help manual from the menu bar (Help > Content).

37. Launch IAR Embedded Workbench from the Windows Start Menu. (Start Menu → All Programs → IAR Systems → IAR Embedded Workbench for Renesas RL78 1.40 →IAR Embedded Workbench).
38. From the IAR Embedded Workbench IDE, click (File → Open → Workspace).
39. Navigate to C:\Renesas\Workspace\YRL78IOLINKMAX\SampleProgram\.
40. Select “RL78_Max_IAR_Ambient_SK.eww” and click <Open>.



4. Programming and Debug

41. The project options are preconfigured. From the menu bar select Project>Options.
42. Select Debugger from the Category pane.
43. Verify that E1 is selected as the driver.
44. Click <OK> to close the dialog.
45. To view the options for setting up the E1 emulator hardware, please refer to the YRL78IOLINKMAX User’s Manual, in Chapter 6 and Chapter 8 for setting up the compiler accordingly.
46. Connect the YRL78IOLINKMAX board to the HostPC using the E1 debugger and the provided Programming/debugging adapter board.
47. Click the “Download and Debug” button. To rebuild the project and starts the debug session.
48. Click the <Go> button .
49. Follow the instruction in the Ambient light sensor tutorial (Chapter 9 in the User’s Manual) to use the board with the IO-Link Device Tool.
50. You can now perform debugging as described in the IAR User’s Manual.
51. Click the <Break> button The code will stop and the source will be opened at the current program counter.
52. To terminate the debugging session, click the <Exit> button.

5. Renesas Flash Programmer

Renesas Flash Programmer is a programming application for Renesas Electronics microcontrollers with flash memory. It provides operations and functions specific to programming. To learn more on how to use this tool, open the User's Manual installed on your computer (Start Menu → All Programs → Renesas Electronics Utilities → Programming Tools → Renesas Flash … V2.04 → Renesas Flash Programmers User's Manual).

53. Launch the Renesas Flash Programmer from the Windows Start Menu (Start Menu → All Programs → Renesas Electronics Utilities → Programming Tools →Renesas Flash Programmer V2.04 → Renesas Flash Programmer V2.04.01).
54. Refer to Chapter 5 in the kit's User's Manual for detailed information on how to use the tool with the YRL78IOLINKMAX board.

    The kit User's Manual is installed on your computer (Start Menu → All Programs → Renesas Electronics Tools → YRL78IOLINKMAX → Manuals → User Manual.

6. Next Step

After you have completed this quick start procedure, please review the documentation that came with the kit. The sample code project contains all you need to get started developing your own projects.

7. IAR EWRL78 Compiler for Renesas

The version of the compiler provided with the Starter Kit is fully functional with no time limits. The code limit is set to 16K bytes. Fully licensed RL78 compiler versions are available with the full edition of IAR Embedded Workbench.

8. Support

Online technical support and information is available at: http://www.renesas.eu/contact/

Technical Contact Details:

Please visit: http://www.renesas.eu/ibg-kitsupport

Website: www.renesas.eu