RENESAS

Quick Start Guide Evaluation Kit RE01 256KB

User Switches
User LEDs
MIP-LCD (Parallel) Connector
Emulator Connector
Power LED
J-Link™ OB Connector
Reset Switch
USB to SERIAL Connector
Supercapacitor
Arduino UNO Interface
PMOD™ Connector
Solar Panel Interface
RE01 Header
MIP-LCD Expansion Board
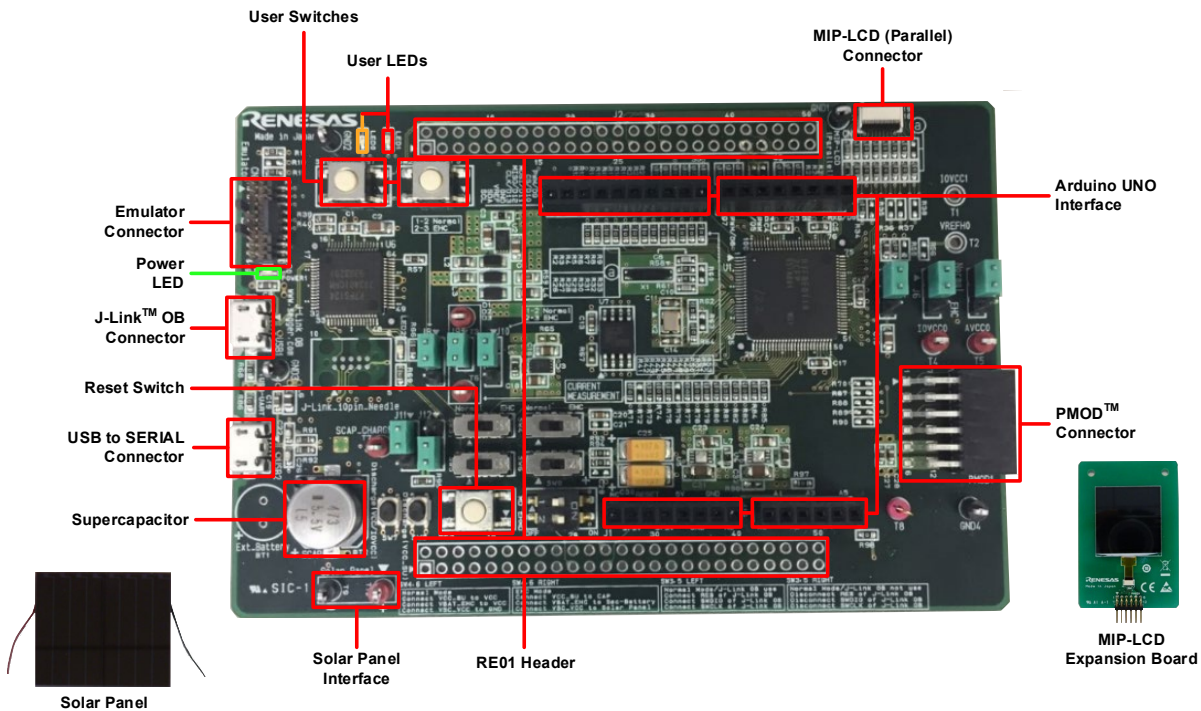Solar Panel

Note: The above image is a prototype.
An active internet connection is required for downloading IAR Embedded Workbench® and sample code.

1. Installation of IAR Embedded Workbench®

a. Free version of IAR Embedded Workbench® are available for download from the following Renesas website. There are time limited (30days) version and code size limited version. The sample code provided on the Renesas website can be run on a code size limited version.

https://www.renesas.com/re_tools

If you would like to purchase the full version, please contact us in the following URL.
https://www.iar.com/buy/

b. Run the downloaded installer. Follow the instructions to install IAR Embedded Workbench®. During installation, it is necessary to select the driver corresponding to the emulator to be used. Since J-Link OB is used this document, select the J-Link driver.

2. Download Sample Code

c. The sample code is available for download from the following URL. Download to the root of any drive on your PC. In this document, R_GDT driver sample code (Using CMSIS Driver Package) (R01AN4755EJ) is used as a representative example. Download the R_GDT driver sample code (Using CMSIS Driver Package) (R01AN4755EJ).

https://www.renesas.com/ek-re01-256kb

d. When the download is complete, unzip the file.

3. Connection

e. Ensure that the MIP-LCD expansion board is fitted to the connector marked 'PMOD1' on the main board.

Main Board   **MIP-LCD Expansion**
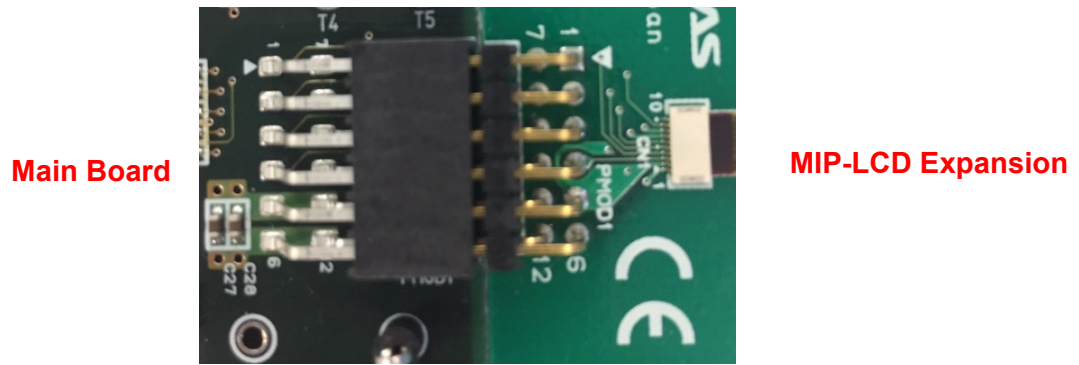
f. Connect the Micro USB connector end of supplied USB cable to the J-Link OB connector on the main board.

g. Connect the other end of the USB cable to the USB port on your PC. The main board power LED will turn on.

4. Importing Sample Code into IAR Embedded Workbench®

IAR Embedded Workbench® integrates various tools such as compiler, assembler, debugger and editor into a common graphical user interface.

h. Start IAR Embedded Workbench®:

Windows™ 7: Start Menu > All Programs > IAR EW for Arm X.XX.X > IAR EW for Arm X.XX.X

Windows™ 8.1 & 8: From Apps View ⊕, IAR EW for Arm X.XX.X > IAR EW for Arm X.XX.X

Windows™ 10: Start Menu > All Apps > IAR EW for Arm X.XX.X > IAR EW for Arm X.XX.X

X.XX.X shows the version.

i. Click the "Open Workspace..." from "File" in the menu. When the "Open Workspace" dialog is displayed, select a workspace file for sample code and click <Open>. For the R_GDT driver sample code (Using CMSIS Driver Package) (R01AN4755EJ), select the workspace file (an4755_hal_gdt_mono_re_256.eww) in the an4755_hal_gdt_mono_re_256 folder. Depending on the version of IAR Embedded Workbench used, there is a request to convert the workspace file. In that case, there is no problem in converting to the latest format.

5. Debug

j. Click the <Make> button.

k. Click the <Download and Debug> button to download the program to the target and start debugging.

l. After downloading the code, click the <Go> button.   The image is displayed on the MIP-LCD.

m. Pressing the user switch (one of SW1 to SW2) on the main board changes the image on the MIP-LCD. The following is the image after pressing SW1.

n. Click the <Break> button. The program will stop and show the line of code of the current program counter.

o. When debugging is complete, click the <Stop debugging> button.

6. Energy Harvesting

To use the energy harvesting function with this board, refer to the application note "Maintenance free power management by RE energy harvesting controller" (R01AN4837EJ). The following is the connection of the corresponding application note. To use the energy harvesting function, change the switch settings. The below image is a prototype.
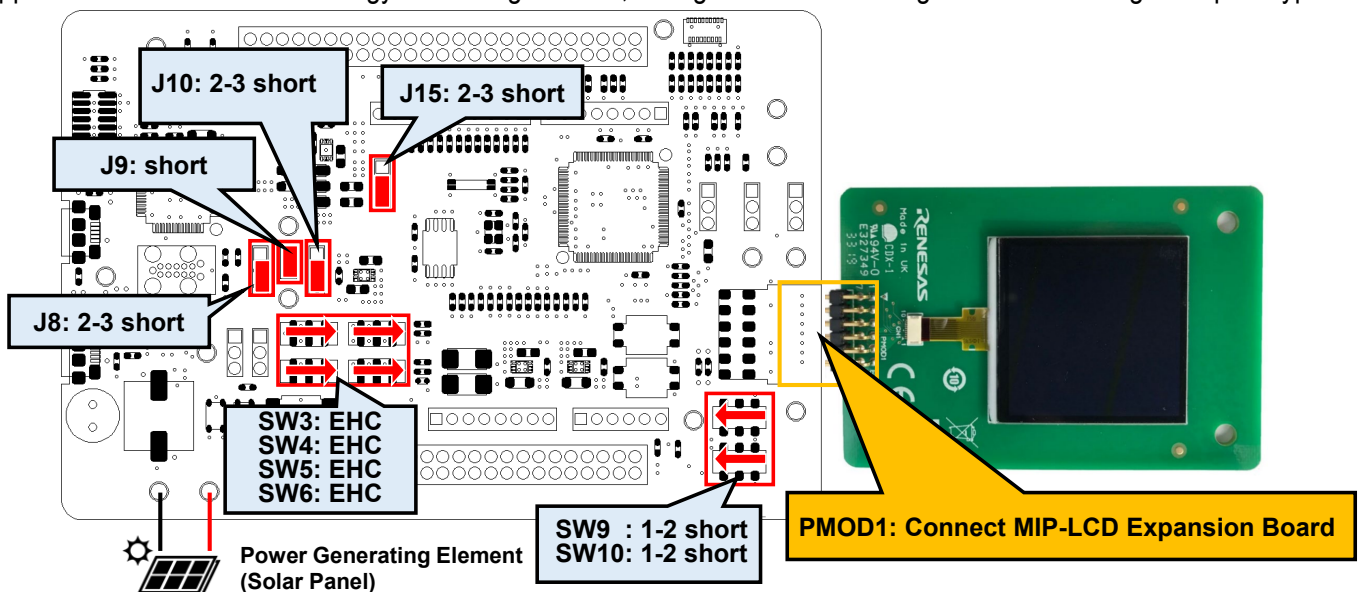
Light blue hatching is a switch to change when using the energy harvesting function.

7. Next Steps

Other sample codes and application notes are available on the Renesas website. It is available from the following URL.
https://www.renesas.com/ek-re01-256kb

The following is the examples of the sample codes and application notes.
- USART Asynchronous Communication Sample Code (Using CMSIS Driver Package) (R01AN4699EJ)
- I2C Single-Master Communication Sample Code (Using CMSIS Driver Package) (R01AN4697EJ)
- S14AD Scan Conversion Sample Code (Using CMSIS Driver Package) (R01AN4701EJ)
- RE01 256KB Group Low Power Mode Transition Example (R01AN5337EJ)
- DMAC Repeat Transfer Sample Code (Using CMSIS Driver Package) (R01AN4703EJ)
- DTC Normal Transfer Sample Code (Using CMSIS Driver Package) (R01AN4704EJ)

8. User Manuals

The user's manual of this product is available from the following URL.
https://www.renesas.com/ek-re01-256kb

- RE01 Group Products with 256-KB Flash Memory User's Manual: Hardware (R01UH0894EJ)
- Evaluation Kit RE01 256KB main board schematics (R20UT4802EJ)
- MIP-LCD expansion board schematics (R20UT4564EJ)
- Evaluation Kit RE01 256KB user's manual (R20UT4801EJ)

The manual for IAR Embedded Workbench® is available from the User guides for IAR Information Center for ARM®, which is displayed when IAR Embedded Workbench® is launched.
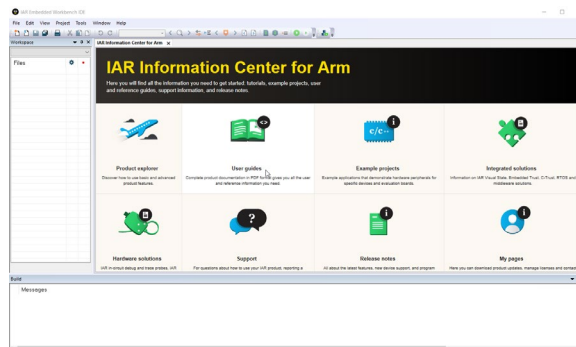
9. Support

Online technical support and information is available at: https://www.renesas.com/ek-re01-256kb

Technical Contact Details

America: techsupport.america@renesas.com
Europe: https://www.renesas.com/eu/en/support/contact.html
Global & Japan: https://www.renesas.com/support/contact.html

Technical support for IAR Embedded Workbench® can be accessed from the IAR Information Center Support for Arm®, which is displayed when IAR Embedded Workbench® is launched.

Website: https://www.renesas.com/