

RL78/L1A

APPLICATION NOTE

Promotion Board Sample Code for IAR

R01AN4253EG0100 Rev.1.00 Mar 15, 2018

Introduction

Renesas Promotion Boards (RPB) are low cost demonstration systems for the selected microcontroller. The kit includes an evaluation board, on-board debugger, and demo sample code.

Target Device

RL78/L1A

Development Environment

IDE: IAR Embedded Workbench for RL78 Compiler: IAR EWRL78 v3.10.1 Hardware: RL78/G11 Promotion Board (YRPBRL78L1A)

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1. Opening the sample code workspace

The IAR Embedded Workbench for RL78 (IAR EWRL78) IDE should already be installed on the user's personal computer (PC). The sample code is supplied as an IAR workspace.

Inside the application note zip package 'an-r01an4253eg0100-r17811a-apl.zip' downloaded from the Renesas website locate the 'Workspace' folder. The contents of this folder should be extracted to the IAR EWRL78 installation location as follows;

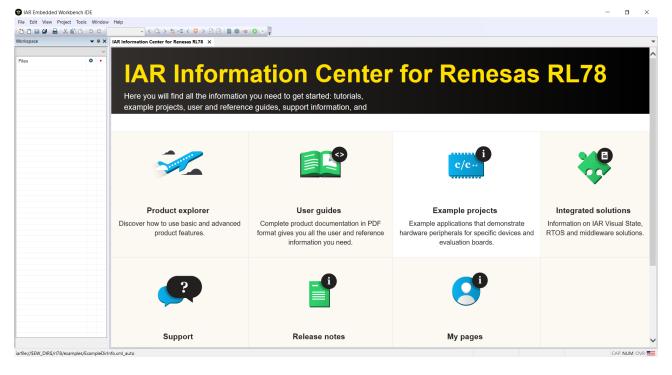
<EWRL78 Folder>\rl78\examples\RL78 promotion kits\YRPBRL78L1A

For example;

C:\Program Files (x86)\IAR Systems\Embedded Workbench 8.0\rl78\examples\RL78 promotion kits\YRPBRL78L1A

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lame	Date modified	Туре	Size			
YRPBRL78G11	09/03/2018 11:28	File folder				
YRPBRL78G13	27/02/2018 15:40	File folder				
YRPBRL78G14	27/02/2018 15:40	File folder				
YRPBRL78L1A	27/02/2018 15:40	File folder				
YRPBRL78L12	27/02/2018 15:40	File folder				
ExampleDirInfo.ENU.xml	20/06/2017 14:04	XML Document	1 KB			
ExampleDirInfo.JPN.xml	20/06/2017 14:04	XML Document	1 KB			

Once extracted from the zip file open IAR EWRL78 and select 'Example projects' from the IAR information Centre;

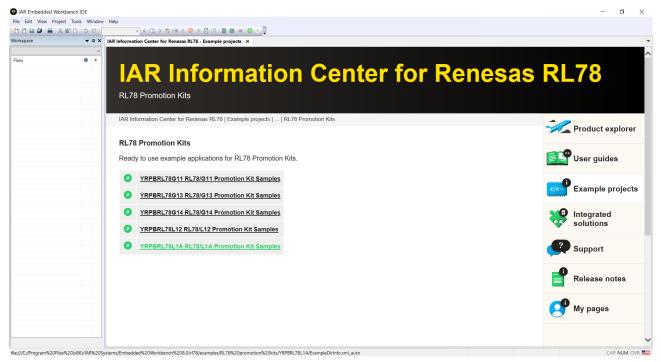




Choose 'RL78 Promotion Kits' from the list of Example Projects;

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		RL78 Starter Kits RL78 E1 Targetboards	Integrated solutions
		 RTOS example downloads Simulator 	Support Release notes
			My pages
file:///C:/Program%20Files%20(xl	36)/IAR%20S	stems/Embedded%20Workbench%208.0/n78/examples/RL78%20promotion%20kits/ExampleDirInfo.xml_auto	CAP NUM OVR

Select 'YRPBRL78L1A RL78/G11 Promotion Kit Samples' from the list of RL78 Promotion Kits;





You will see the Promotion Board Sample Code;

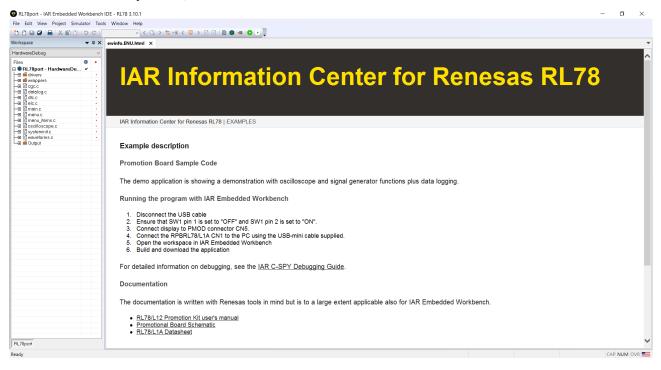
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		Ready	to use e	xample applications for the	RL78/L1A Promotion Kit.		User guides
		Info	Open project	Name	Description		c/c- Example projects
		0	•	Promotion Board Sample Code	Demonstration with oscilloscope and signal generator functions		
							solutions
							Support
							Release notes
							My pages
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Click on the 'Open project' icon 📀 . You will be prompted to choose a destination folder. Select a suitable working folder for you project;

Choose destination	ation folder			×
Look in:	IAR Embedded Workbench	· · · · · · · · · · · · · · · · · · ·	G 🤌 📂 🛄 🗸	
Quick access	Name	No items match you	Date modified Ir search.	Туре
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			Choose	Cancel



The workspace will open with information about the sample code in IAR Information Centre. Links to supporting documentation are also provided;



2. Opening Sample Code and Source Files

Once the workspace has been opened, the source code and all dependent files can be opened in the editor by expanding the folders in the Workspace tree and double clicking the files listed. All files have been grouped according to their file type. Each source file can be expanded to reveal dependent files.

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BL78port - HardwareDe		 Discuring This software is supplied by Renesas ectronics Corporation and is only 			
He idnivers	•	* intended for use with Renesas products. No other uses are authorized. This			
- I wrappers		* software is owned by Renesas Electronics Corporation and is protected under			
He Cogac		* all applicable laws, including copyright laws.			
He datalog.c	1.1	* THIS SOFTWARE IS PROVIDED "AS IS" AND RENESAS MAKES NO WARRANTIES REGARDING			
He dtc.c		* THIS SOFTWARE, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING BUT NOT			
Helc.c		 LIMITED TO WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR FURPOSE 			
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He coscilloscope.c	•	 ANY REASON RELATED TO THIS SOFTWARE, SVEN IF REMEAS OR ITS AFFILIATES HAVE 			
He C systeminit.c		* BEEN ADVISED OF THE POSSIBILITY OF SUCH DAWAGES.			
He waveforms.c		* Renesas reserves the right, without notice, to make changes to this software			
Le Cutput		* and to discontinue the availability of this software. By using this software,			
		* you agree to the additional terms and conditions found by accessing the			
		* following link:			
		* http://www.renesas.com/disclaimer			
		* Copyright (C) 2016 Remeses Electronics Corporation. All rights reserved.			
		file Name : psin.g			
		* Version : 1.0			
		* Device(s) : RSELIMPG			
		* Target Board : RPBRL7811A			
		* Tool-Chain : CCRL v1.03			
		* Description : This file implements the main function.			
		* Operation : 1. Compile and download sample code. Click "Reset Go"			
		to start the software. 2. Use Path Set to			
		 2. Use Pot R43 and switch SW4 to avoid the manual switch SW4 to 			
		* havigate menu.			
		* History : DD.NM.YYYY Version Description			
		* : 10.08.2016			
		Includes			
		μ L			
		findlude (intrinsics.h)			
		<pre>finclude catrinates.n> finclude catring.h></pre>			
		<pre>#include <bring.n> #include "Bit.h"</bring.n></pre>			
		finctude coc.h"			
		<pre>incluse doc.h" incluse "doc.h"</pre>			
		<pre>#include "macrodriver.h"</pre>			
		#include "userdefine.h"			
		<pre>#include "waveforms.h"</pre>			
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3. Source Code Functionality

The project is specifically written to run on the appropriate RPB. However the source code can be useful as an example of peripheral initialization even without the hardware.

Each sample project will contain a C source file "main.c" which includes the C function main().



Website and Support

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

Inquiries

https://www.renesas.com/contact

Support

https://www.renesas.com/en-eu/solutions/key-technology/human-interface/rl78-l1a.html

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Revision History

		Descript	ion	
Rev.	Date	Page	Summary	
1.00	Mar 15, 2018	All	First issue.	

General Precautions in the Handling of Microprocessing Unit and Microcontroller Unit Products

The following usage notes are applicable to all Microprocessing unit and Microcontroller unit products from Renesas. For detailed usage notes on the products covered by this document, refer to the relevant sections of the document as well as any technical updates that have been issued for the products.

1. Handling of Unused Pins

Handle unused pins in accordance with the directions given under Handling of Unused Pins in the manual.

— The input pins of CMOS products are generally in the high-impedance state. In operation with an unused pin in the open-circuit state, extra electromagnetic noise is induced in the vicinity of LSI, an associated shoot-through current flows internally, and malfunctions occur due to the false recognition of the pin state as an input signal become possible. Unused pins should be handled as described under Handling of Unused Pins in the manual.

2. Processing at Power-on

The state of the product is undefined at the moment when power is supplied.

 The states of internal circuits in the LSI are indeterminate and the states of register settings and pins are undefined at the moment when power is supplied.

In a finished product where the reset signal is applied to the external reset pin, the states of pins are not guaranteed from the moment when power is supplied until the reset process is completed.

In a similar way, the states of pins in a product that is reset by an on-chip power-on reset function are not guaranteed from the moment when power is supplied until the power reaches the level at which resetting has been specified.

3. Prohibition of Access to Reserved Addresses

Access to reserved addresses is prohibited.

The reserved addresses are provided for the possible future expansion of functions. Do not
access these addresses; the correct operation of LSI is not guaranteed if they are accessed.

4. Clock Signals

After applying a reset, only release the reset line after the operating clock signal has become stable. When switching the clock signal during program execution, wait until the target clock signal has stabilized.

- When the clock signal is generated with an external resonator (or from an external oscillator) during a reset, ensure that the reset line is only released after full stabilization of the clock signal. Moreover, when switching to a clock signal produced with an external resonator (or by an external oscillator) while program execution is in progress, wait until the target clock signal is stable.
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Before changing from one product to another, i.e. to a product with a different part number, confirm that the change will not lead to problems.

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