

ISLUSBEVAL1Z

User's Manual: USB to PMBus™ Adapter

Core Power Solutions

All information contained in these materials, including products and product specifications, represents information on the product at the time of publication and is subject to change by Renesas Electronics Corp. without notice. Please review the latest information published by Renesas Electronics Corp. through various means, including the Renesas Electronics Corp. website (<http://www.renesas.com>).

ISLUSBEVAL1Z

USB to PMBus™ Adapter

1. Overview

The Renesas USB to PMBus Adapter (often referred to as a “dongle”) is used to connect a demonstration board with a PMBus interface to a PC. The USB to PMBus adapter is powered from the USB output of the host PC. The USB interface utilizes the USB Mini format, and the output uses a standard 2 row, 6 pin header on 0.100 inch centers. The PMBus command set is accessed by using the [PowerNavigator™](#) evaluation software from a PC running Microsoft Windows. PowerNavigator software is downloaded from the Renesas [website](#).

1.1 Key Features

- Compatible with [PowerNavigator](#)
- Compatible with the Power Configuration Tool
- Supports Multi-Master PMBus systems

1.2 Specifications

- USB Mini format
- Output: Standard 2 row, 6 pin header on 0.100 inch centers
- Compatible with 32-bit or 64-bit Windows Vista, Windows 7, Windows 8 or Windows 10

1.3 Ordering Information

Part Number	Description
ISLUSBEVAL1Z	USB to PMBus Adapter and Cable

1.4 Related Literature

For a full list of related documents, visit our website:

- [ISLUSBEVAL1Z](#) product page

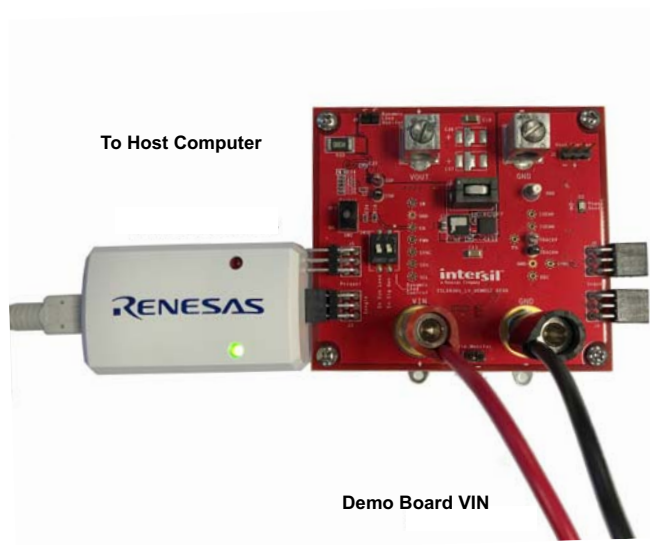


Figure 1. USB to PMBus Typical Set-Up

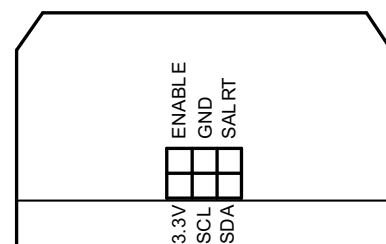


Figure 2. Pin Configuration

2. Functional Description

The Renesas USB to PMBus Adapter is used to connect a demonstration board with a PMBus interface to a PC.

2.1 Quick Start Guide

- Connect the USB Mini provided between the host computer and the USB to PMBus adapter.
- Connect USB to PMBus adapter to demonstration board to test or evaluate.
- Apply input power (labeled VIN) to the demonstration board.
- Download PowerNavigator from the [Renesas website](#).
- Follow the instructions on the website.
- When PowerNavigator is installed, double-click on the PowerNavigator icon and follow the software's instructions.

2.3 Bill of Materials

Qty	Reference Designator	Description	Mfr	Manufacturer Part Number
1		PWB-PCB, ISLUSBEVAL1Z, REVA, ROHS	Imagineering Inc.	ISLUSBEVAL1ZREVAPCB
1	C4	CAP, SMD, 0402, 0.01 μ F, 16V, 10%, X7R, ROHS	TDK	C1005X7R1C103K
3	C3, C6, C9	CAP, SMD, 0402, 0.1 μ F, 16V, 10%, X7R, ROHS	Venkel	C0402X7R160-104KNE
3	C1, C2, C8	CAP, SMD, 0603, 1 μ F, 16V, 10%, X5R, ROHS	Murata	GRM188R61C105KA12D
1	C5	CAP, SMD, 0603, 2.2 μ F, 10V, 10%, X7R, ROHS	Murate	GRM188R71A225KE15D
1	C7	CAP, SMD, 0805, 10 μ F, 10V, 10%, X5R, ROHS	Murata	GRM21BR61A106KE19L(Pb FREE)
1	J2	CONN-USB MINI-B RECEPTACLE, TH, 5CIRCUIT, R/A, ROHS	Molex	54819-0519
1	J1	CONN-HEADER, 2X5, BRKAWY-2X36, 2.54mm, ROHS	Berg/FCI	67996-272HLF
1	J3	CONN-SOCKET STRIP, TH, 2X3, 2.54mm, TIN, R/A, ROHS	Samtec	SSQ-103-02-T-D-RA
1	D2 (See Document #1)	LED, TH, T-1, GRN DIFFUSED, 2.2V, 20mA, 9.0mcd, 535nm, ROHS	Everlight Electronics	MV5474C
1	D1 (See Document #1)	LED, TH, T-1, RED DIFFUSED, 2V, 20mA, 9.0mcd, 635nm, ROHS	Everlight Electronics	MV5774C
1	U2	IC-PROGRAMMED 3.2 FIRMWARE USB MCU, 32P, LQFP, 10BIT, ROHS	Silicon Laboratories	C8051F381-GQ
1	U1	IC-ADJ.V, 1A LDO REGULATOR, 10P, DFN, 3X3, ROHS	Intersil	ISL80101IRAJZ
3	R3, R4, R13	RES, SMD, 0402, 0 Ω , 1/16W, 5%, TF, ROHS	Venkel	CR0402-16W-00T
5	R1, R2, R5, R10, R15	RES, SMD, 0402, 1K, 1/16W, 1%, TF, ROHS	Venkel	CR0402-16W-1001FT
1	R11	RES, SMD, 0402, 10K, 1/16W, 1%, TF, ROHS	Panasonic	ERJ-2RKF1002X
1	R14	RES, SMD, 0402, 178 Ω , 1/16W, 1%, TF, ROHS	Yageo	RC0402FR-07178RL
2	R7, R12	RES, SMD, 0402, 300 Ω , 1/16W, 1%, TF, ROHS	Vishay/Dale	RC0402FR-07178RL
3	R6, R8, R9	RES, SMD, 0402, 4.7K, 1/16W, 1%, TF, ROHS	Venkel	CR0402-16W-4701FT
1	Bag & Ship W/Brd (Cable)	CABLE-USB 2.0, TYPE A MALE/TYPE MINI-B MALE, 1.8M, WHT, ROHS	Molex	88732-8800
1	Place assy in bag	BAG, STATIC, 3X5, ZIP LOC	Intersil Common Stock	D810 (212403-012)
1	D1, D2 - LED Placement Assy Photo	See attached document for manual or visual instruction.	Intersil	Document #1
1	Affix to Back of PCB	LABEL-DATE CODE_LINE 1: YRWK/REV#, LINE 2: BOM NAME	Renesas Electronics America	LABEL-DATE CODE
1	PCB Encapsulation Case	CASE-ISLUSBE1Z DONGLE ENCLOSURE, 2inch, WHT/BLUE INK, ROHS	New Age Enclosures	S1A-201209-INT13029

3. Revision History

Rev.	Date	Description
1.00	Mar.1.19	Initial release

Notice

1. Descriptions of circuits, software and other related information in this document are provided only to illustrate the operation of semiconductor products and application examples. You are fully responsible for the incorporation or any other use of the circuits, software, and information in the design of your product or system. Renesas Electronics disclaims any and all liability for any losses and damages incurred by you or third parties arising from the use of these circuits, software, or information.
2. Renesas Electronics hereby expressly disclaims any warranties against and liability for infringement or any other claims involving patents, copyrights, or other intellectual property rights of third parties, by or arising from the use of Renesas Electronics products or technical information described in this document, including but not limited to, the product data, drawings, charts, programs, algorithms, and application examples.
3. No license, express, implied or otherwise, is granted hereby under any patents, copyrights or other intellectual property rights of Renesas Electronics or others.
4. You shall not alter, modify, copy, or reverse engineer any Renesas Electronics product, whether in whole or in part. Renesas Electronics disclaims any and all liability for any losses or damages incurred by you or third parties arising from such alteration, modification, copying or reverse engineering.
5. Renesas Electronics products are classified according to the following two quality grades: "Standard" and "High Quality". The intended applications for each Renesas Electronics product depends on the product's quality grade, as indicated below.
 - "Standard": Computers; office equipment; communications equipment; test and measurement equipment; audio and visual equipment; home electronic appliances; machine tools; personal electronic equipment; industrial robots; etc.
 - "High Quality": Transportation equipment (automobiles, trains, ships, etc.); traffic control (traffic lights); large-scale communication equipment; key financial terminal systems; safety control equipment; etc.Unless expressly designated as a high reliability product or a product for harsh environments in a Renesas Electronics data sheet or other Renesas Electronics document, Renesas Electronics products are not intended or authorized for use in products or systems that may pose a direct threat to human life or bodily injury (artificial life support devices or systems; surgical implantations; etc.), or may cause serious property damage (space system; undersea repeaters; nuclear power control systems; aircraft control systems; key plant systems; military equipment; etc.). Renesas Electronics disclaims any and all liability for any damages or losses incurred by you or any third parties arising from the use of any Renesas Electronics product that is inconsistent with any Renesas Electronics data sheet, user's manual or other Renesas Electronics document.
6. When using Renesas Electronics products, refer to the latest product information (data sheets, user's manuals, application notes, "General Notes for Handling and Using Semiconductor Devices" in the reliability handbook, etc.), and ensure that usage conditions are within the ranges specified by Renesas Electronics with respect to maximum ratings, operating power supply voltage range, heat dissipation characteristics, installation, etc. Renesas Electronics disclaims any and all liability for any malfunctions, failure or accident arising out of the use of Renesas Electronics products outside of such specified ranges.
7. Although Renesas Electronics endeavors to improve the quality and reliability of Renesas Electronics products, semiconductor products have specific characteristics, such as the occurrence of failure at a certain rate and malfunctions under certain use conditions. Unless designated as a high reliability product or a product for harsh environments in a Renesas Electronics data sheet or other Renesas Electronics document, Renesas Electronics products are not subject to radiation resistance design. You are responsible for implementing safety measures to guard against the possibility of bodily injury, injury or damage caused by fire, and/or danger to the public in the event of a failure or malfunction of Renesas Electronics products, such as safety design for hardware and software, including but not limited to redundancy, fire control and malfunction prevention, appropriate treatment for aging degradation or any other appropriate measures. Because the evaluation of microcomputer software alone is very difficult and impractical, you are responsible for evaluating the safety of the final products or systems manufactured by you.
8. Please contact a Renesas Electronics sales office for details as to environmental matters such as the environmental compatibility of each Renesas Electronics product. You are responsible for carefully and sufficiently investigating applicable laws and regulations that regulate the inclusion or use of controlled substances, including without limitation, the EU RoHS Directive, and using Renesas Electronics products in compliance with all these applicable laws and regulations. Renesas Electronics disclaims any and all liability for damages or losses occurring as a result of your noncompliance with applicable laws and regulations.
9. Renesas Electronics products and technologies shall not be used for or incorporated into any products or systems whose manufacture, use, or sale is prohibited under any applicable domestic or foreign laws or regulations. You shall comply with any applicable export control laws and regulations promulgated and administered by the governments of any countries asserting jurisdiction over the parties or transactions.
10. It is the responsibility of the buyer or distributor of Renesas Electronics products, or any other party who distributes, disposes of, or otherwise sells or transfers the product to a third party, to notify such third party in advance of the contents and conditions set forth in this document.
11. This document shall not be reprinted, reproduced or duplicated in any form, in whole or in part, without prior written consent of Renesas Electronics.
12. Please contact a Renesas Electronics sales office if you have any questions regarding the information contained in this document or Renesas Electronics products.

(Note1) "Renesas Electronics" as used in this document means Renesas Electronics Corporation and also includes its directly or indirectly controlled subsidiaries.

(Note2) "Renesas Electronics product(s)" means any product developed or manufactured by or for Renesas Electronics.

(Rev.4.0-1 November 2017)

Corporate Headquarters

TOYOSU FORESIA, 3-2-24 Toyosu,
Koto-ku, Tokyo 135-0061, Japan
www.renesas.com

Contact Information

For further information on a product, technology, the most up-to-date version of a document, or your nearest sales office, please visit:
www.renesas.com/contact/

Trademarks

Renesas and the Renesas logo are trademarks of Renesas Electronics Corporation. All trademarks and registered trademarks are the property of their respective owners.

ISLUSBEVAL1Z