

FEATURES

ADP1043A Daughter Card with I2C interface
Retrofit controller to any topology or existing design
Software GUI
Low component count

ADP1043A EVALUATION BOARD OVERVIEW

The daughter card evaluation board allows the ADP1043A to be quickly evaluated in any existing switching power supply application. Using the daughter card and its accompanying software, the IC can be interfaced to any PC running Windows 2000/NT/XP/Vista via the computers USB port.

The daughter card can be connected to any existing ADP1043A evaluation board or reference design.

It can also be connected to any power supply as a replacement for the existing controller. The daughter card has a connector through which the pin outs of the ADP1043A can be probed. The software GUI allows control and read/write functionality of the ADP1043 internal registers to modify, for example, the PWM settings or over current protection limits.

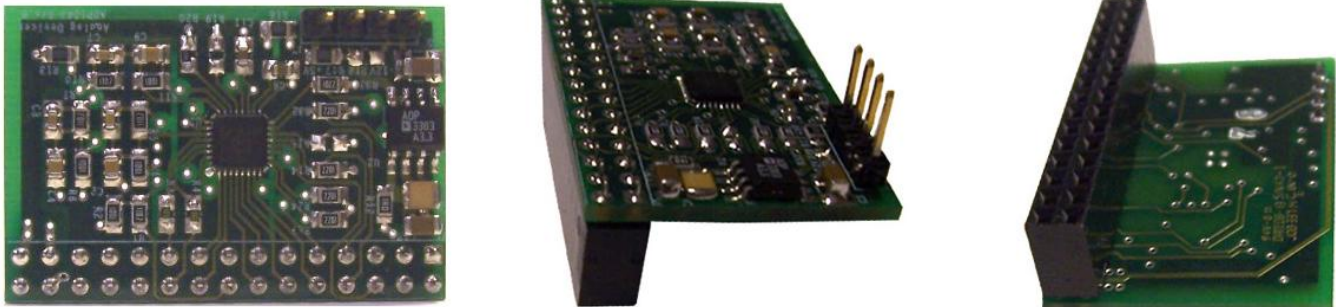


Figure 1 - Daughter card with pin outs of ADP1043A

Rev. 1.0

Reference designs are as supplied "as is" and without warranty, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose. No license is granted by implication or otherwise under any patents or other intellectual property by application or use of reference designs. Information furnished by Analog Devices is believed to be accurate and reliable. However, no responsibility is assumed by Analog Devices for its use, nor for any infringements of patents or other rights of third parties that may result from its use. Analog Devices reserves the right to change devices or specifications at any time without notice. Trademarks and registered trademarks are the property of their respective owners. Reference designs are not authorized to be used in life support devices or systems.

TABLE OF CONTENTS

Features 1
EVALUATION BOARD HARDWARE.....3
CONNECTORS.....4
REFURNISHING AND EXISTING DESIGN WITH ADP1043A DAUGHTER CARD.....5
Additional key points and checklist:.....7
 SCHEMATIC.....8
LAYOUT9
BILL OF MATERIALS12
Notes.....13

REVISION HISTORY

- 09/15/2010 - Revision 1.0: SPM**
- 09/21/2010 - Revision 2.0: SPM with MS feedback**
- 10/04/2010 - Revision 3.0: MS feedback implemented**

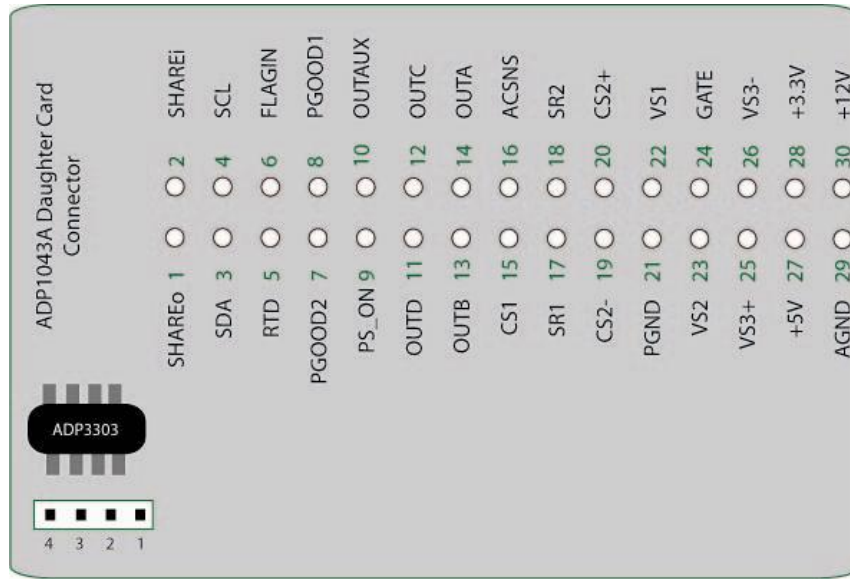


Figure2 - Simplified Block Diagram

EVALUATION BOARD HARDWARE

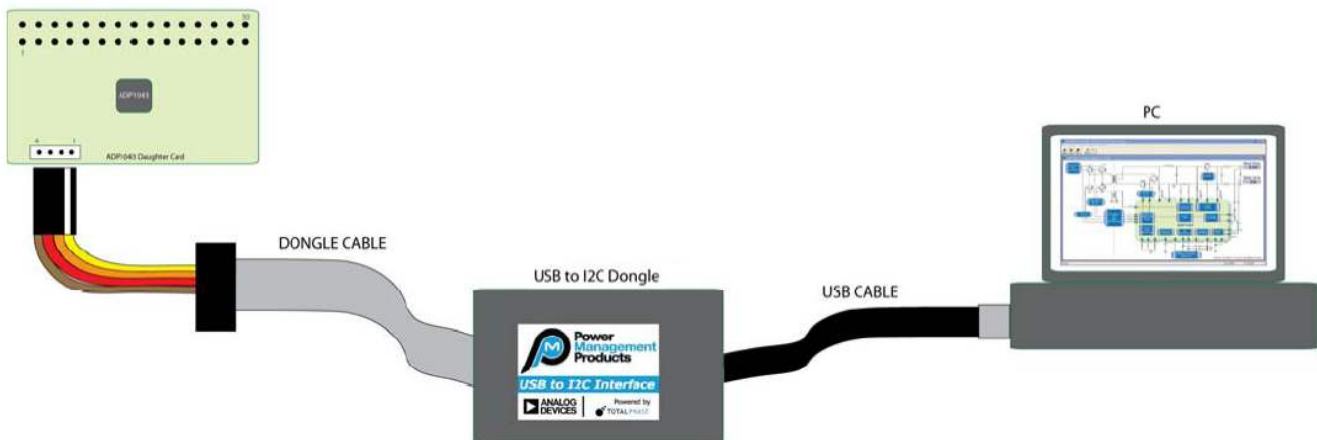
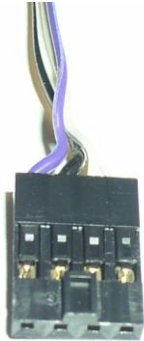


Figure 3 - Connection diagram of daughter card to PC via I2C interface (USB dongle)

CONNECTORS

The pin outs of the USB dongle are given below:



Pin	Evaluation Board Function
1	5V
2	SCL
3	SDA
4	Ground

Table 1 - I2C connector pin out descriptions

Figure 4 - I2C connector (pin1 on left)

ADP1043A Daughter Card Connector			
SHAREo	1	2	SHAREi
SDA	3	4	SCL
RTD	5	6	FLAGIN
PGOOD2	7	8	PGOOD1
PS_ON	9	10	OUTAUX
OUTD	11	12	OUTC
OUTB	13	14	OUTA
CS1	15	16	ACSNS
SR1	17	18	SR2
CS2-	19	20	CS2+
PGND	21	22	VS1
VS2	23	24	GATE
VS3+	25	26	VS3-
+5V	27	28	+3.3V
AGND	29	30	+12V

Figure 5 - Detailed description of pin outs

REFURNISHING AND EXISTING DESIGN WITH ADP1043A DAUGHTER CARD

To evaluate the IC with an existing power supply, a jumper cable can be used. Figure 6 and Figure 7 demonstrate how a jumper cable is connected on one end to the daughter card and the other end to the respective function of the pin on the power supply.

Care must be taken to ensure that the traces/wires that are connected at their respective sensing points are short and are not routed through any high frequency traces (switching nodes) of the power stage that would result in poor signal integrity due to noise injection or EMI. A spread of wires must definitely be avoided as this increases the probability of injected noise due to bigger loop areas and common impedance coupling between the power ground and the analog and digital grounds.

Note: The ADP1043A provides control and logic signals for the power switches. External drivers need to be used to turn on/off the switches in the power stage of the design.



Figure

