ANALOG DEVICES

ADP1043A Daughter Card Evaluation Board

ADP1043ADC1-EVALZ PRD1274

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.

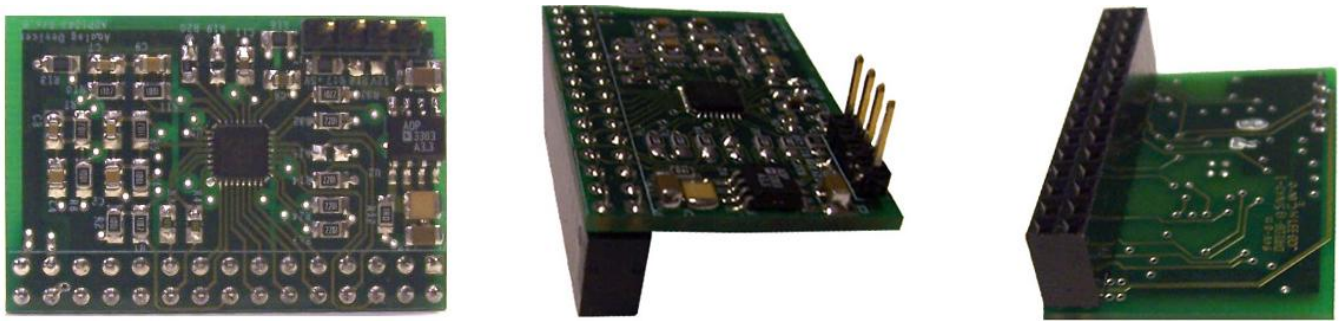

Figure 1 - Daughter card with pin outs of ADP1043A

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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

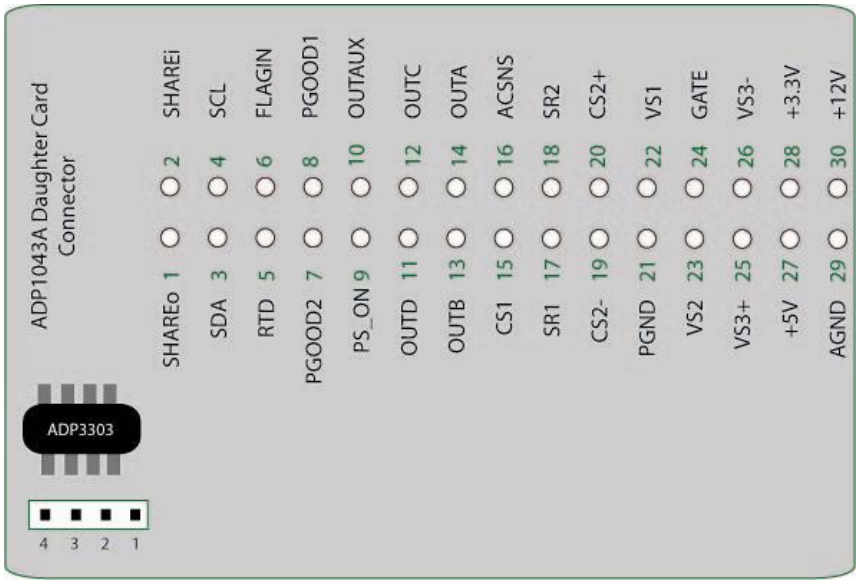

Figure 2 - Simplified Block Diagram

EVALUATION BOARD HARDWARE

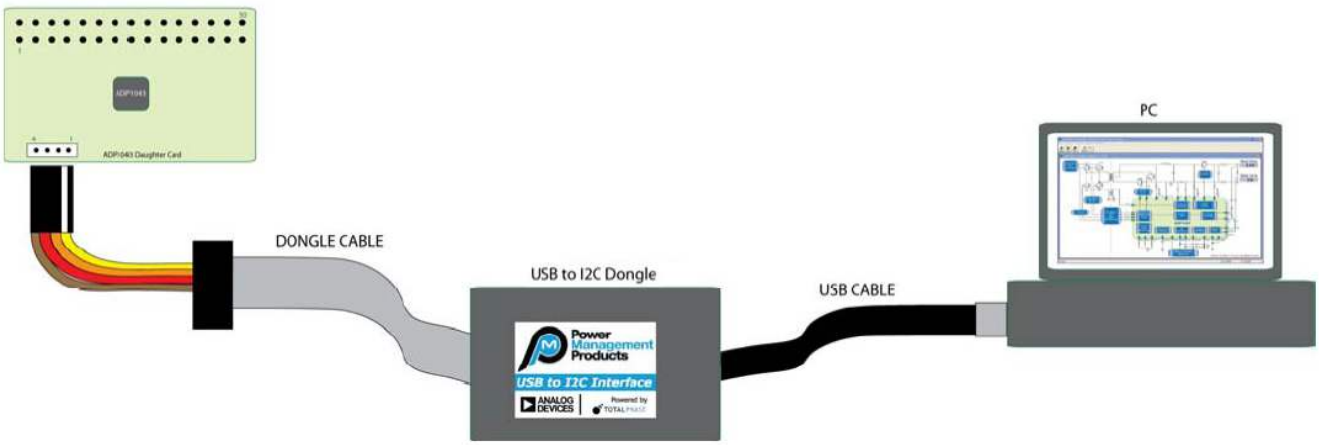

Figure 3 - Connection diagram of daughter card to PC via I2C interface (USB dongle)

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)

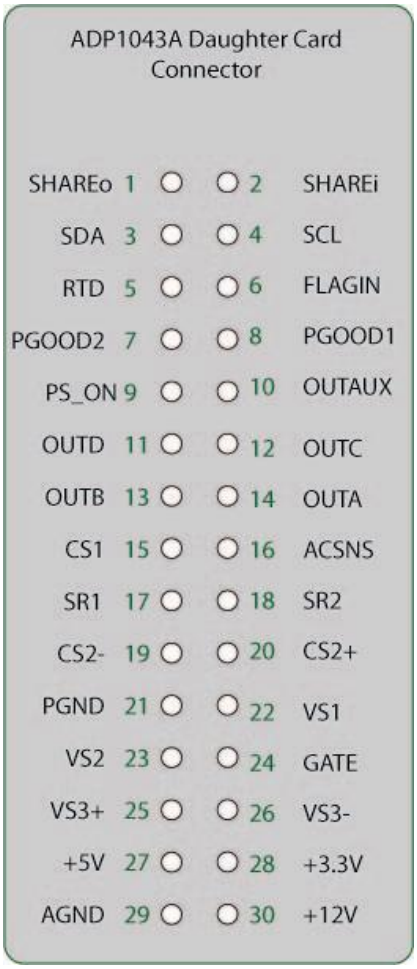

Figure 5 - Detailed description of pin outs

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