DEMO MANUAL DC682A

LTC1859
8-Channel, 16-Bit, 100ksps SoftSpan ADC

DESCRIPTION

Demonstration circuit 682A features the LTC®1859 8-channel, 16-bit SoftSpan™ ADC. The LTC1859 can be software programmed for 0V to 5V, 0V to 10V, ±5V, or ±10V input spans while operating from a single 5V supply. The 8-channel multiplexer can be programmed for single-ended inputs or differential pairs or a combination of both. Also, the inputs are fault protected to ±25V. A fault condition on any channel will not affect readings on other channels.

Design files for this circuit board are available at http://www.linear.com/demo

BOARD PHOTO

Figure 1. DC682A Connection Diagram
QUICK START PROCEDURE

Connect DC682A to a DC590 USB serial controller using the supplied 14-conductor ribbon cable. Connect DC590 to a host PC with a standard USB A/B cable. Run the QuikEval™ evaluation software supplied with DC590 or download it from www.linear.com/software. The correct control panel will be loaded automatically. Click the COLLECT button to begin reading the ADC.

Change the channel and range by right-clicking over the channel or range indicator in the display.

Complete software documentation is available from the Help menu item, as features may be added periodically.

![DC682A Software Screenshot](image)

Figure 2. DC682A Software Screenshot
HARDWARE SETUP

Jumpers

JP1: Select connection for COM pin, either grounded or externally supplied through the COM turret.

JP2: Select reference, either internal or the onboard LT1019 reference.

Analog Connections (Turret Posts)

COM: LTC1859 COM pin. Make sure to select EXT on JP1 when supplying an external bias to this post.

CH0–CH7: Analog inputs to LTC1859. Each input is bypassed to ground with a 1000pF capacitor.

VREF: Reference pin on LTC1859. When JP2 is set to INT, the LTC1859 uses its internal reference, or an external reference can be connected to this pin, overdriving the internal reference. When JP2 is set to LT1019, this turret should only be used for monitoring the reference voltage.

Grounding and Power Connections

DC682A does not require any external power source when used with the DC590 USB controller board. However, an external 5V power source can be connected to the VCC and ground turrets if the power supply on DC590 has been disabled. Refer to the DC590 demo manual for more information.
# PARTS LIST

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<th>ITEM</th>
<th>QTY</th>
<th>REFERENCE</th>
<th>PART DESCRIPTION</th>
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DEMO MANUAL DC682A

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This notice contains important safety information about temperatures and voltages. For further safety concerns, please contact a LTC application engineer.

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