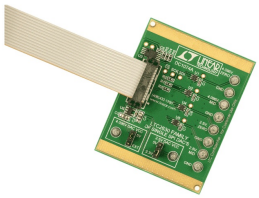
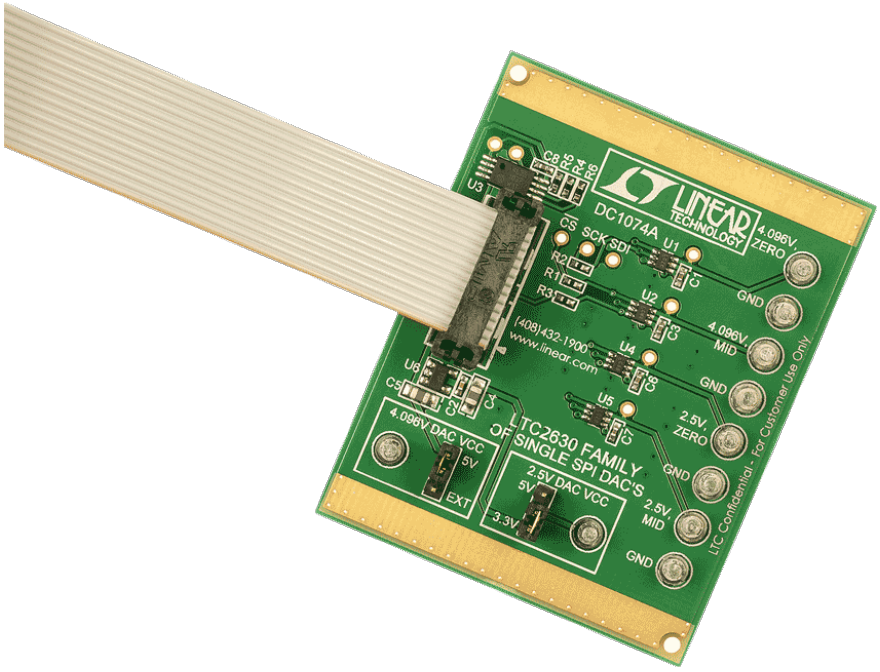


LINEAR TECHNOLOGY LTC2630 Demonstration Circuit User Guide

Contents

LINEAR TECHNOLOGY LTC2630 Demonstration Circuit



DESCRIPTION

Demonstration circuit 1074 features the LTC2630 family of 12 bit DACs. This device establishes a new benchmark for size and integration of 12 bit DACs and onboard reference. Four DACs are included:

- LTC2630HZ (4.096V reference, reset to zero)
- LTC2630HM (4.096V reference, reset to midscale)
- LTC2630LZ (2.5V reference, reset to zero)
- LTC2630LM (2.5V reference, reset to midscale)

DC1074 may be connected directly to the target application's analog signals while using the DC590 USB Serial Controller board and supplied software to measure performance. After evaluating with Linear Technology's software, the digital signals can be connected to the end application's processor/controller for the development of the serial interface.
Design files for this circuit board are available. Call the LTC factory.

Figure 1. Proper Measurement Equipment Setup

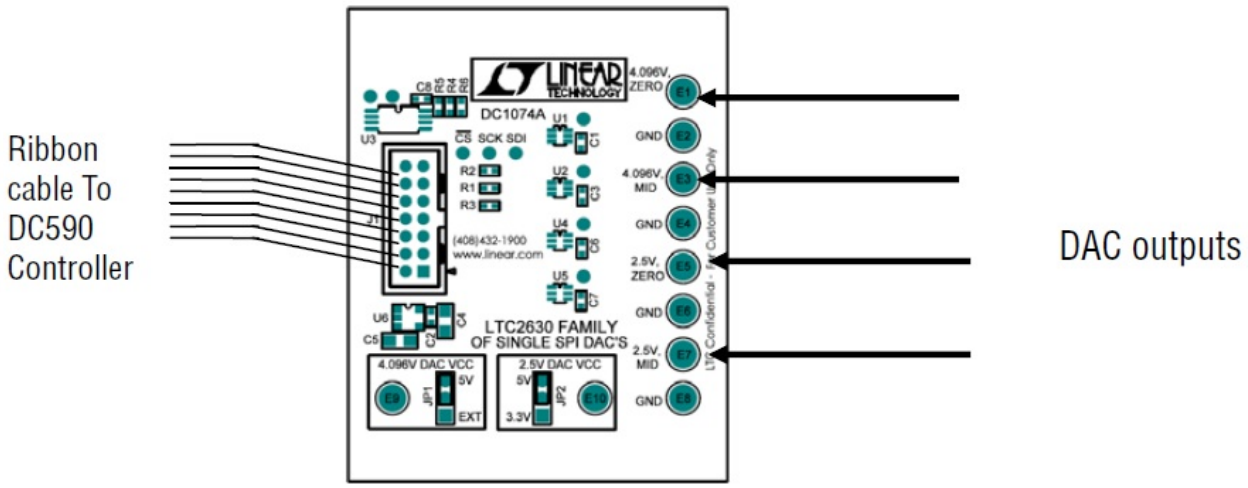


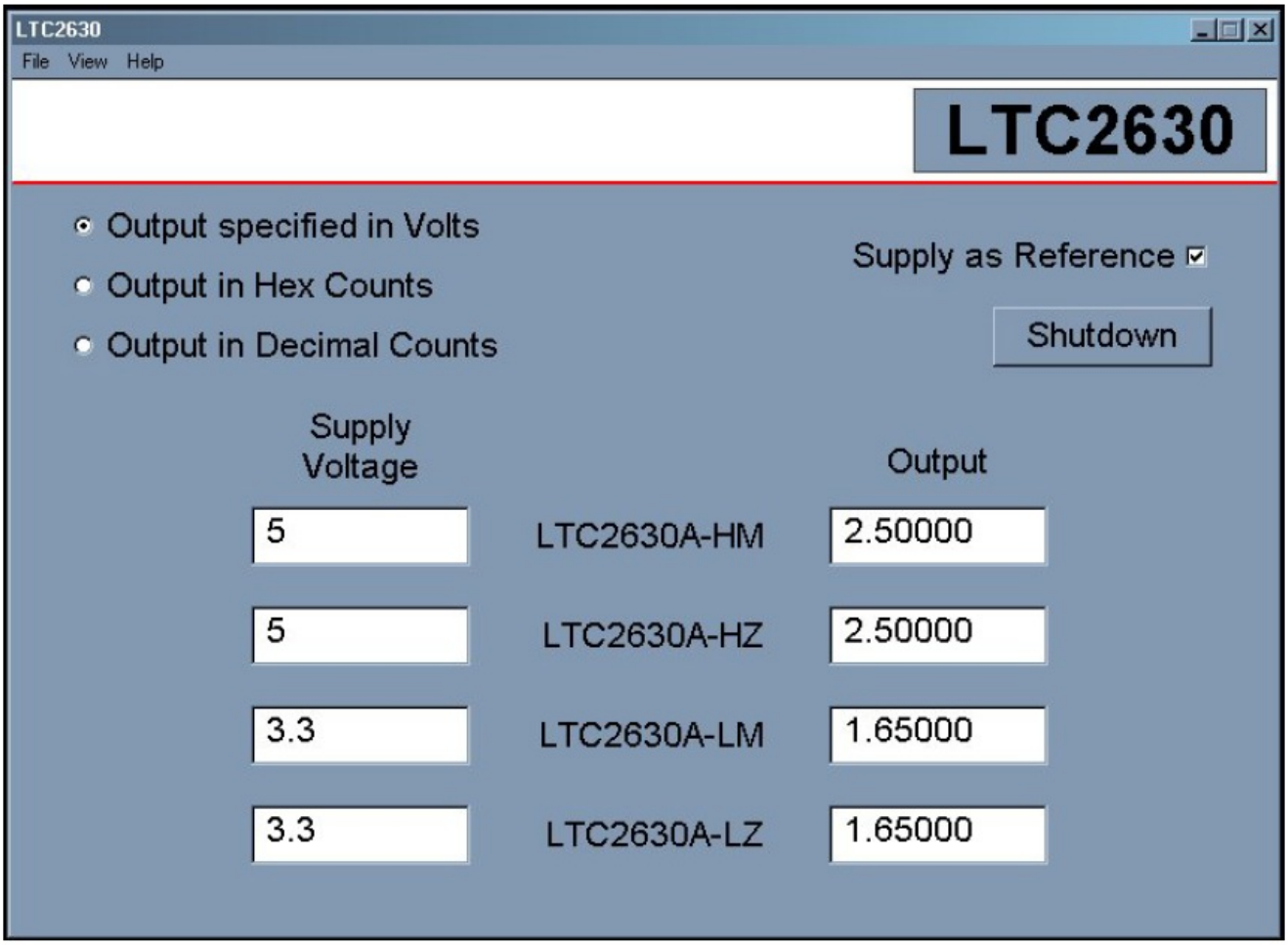
Table 1. LTC2630 Performance Summary, AHM / AHZ versions (Vfs = 4.096V)

PARAMETER	CONDITION	VALUE
Resolution		12 BITS
Monotonicity	Vcc = 5V, Vref = internal	12 BITS
Differential Nonlinearity	Vcc = 5V, Vref = internal	+/-1 LSB
Integral Nonlinearity	Vcc = 5V, Vref = internal	+/-0.5 LSB Typical
Load Regulation	Vout = Midscale, Iout = +/- 5 mA	0.1 LSB/mA

QUICK START PROCEDURE

Connect DC1074 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 evaluation software supplied with DC590 or download it from **www.linear.com**. The correct control panel will be loaded automatically. Options are available to display the DAC output in Voltage, hex code, or the decimal count. Additionally, the supply or internal reference voltage may be changed to reflect an actual measured value such that the output voltage matches the theoretical output voltage. The reference mode may be changed from internal reference to supply as reference.

Figure 2. Software Screenshot



HARDWARE SET-UP

JUMPERS

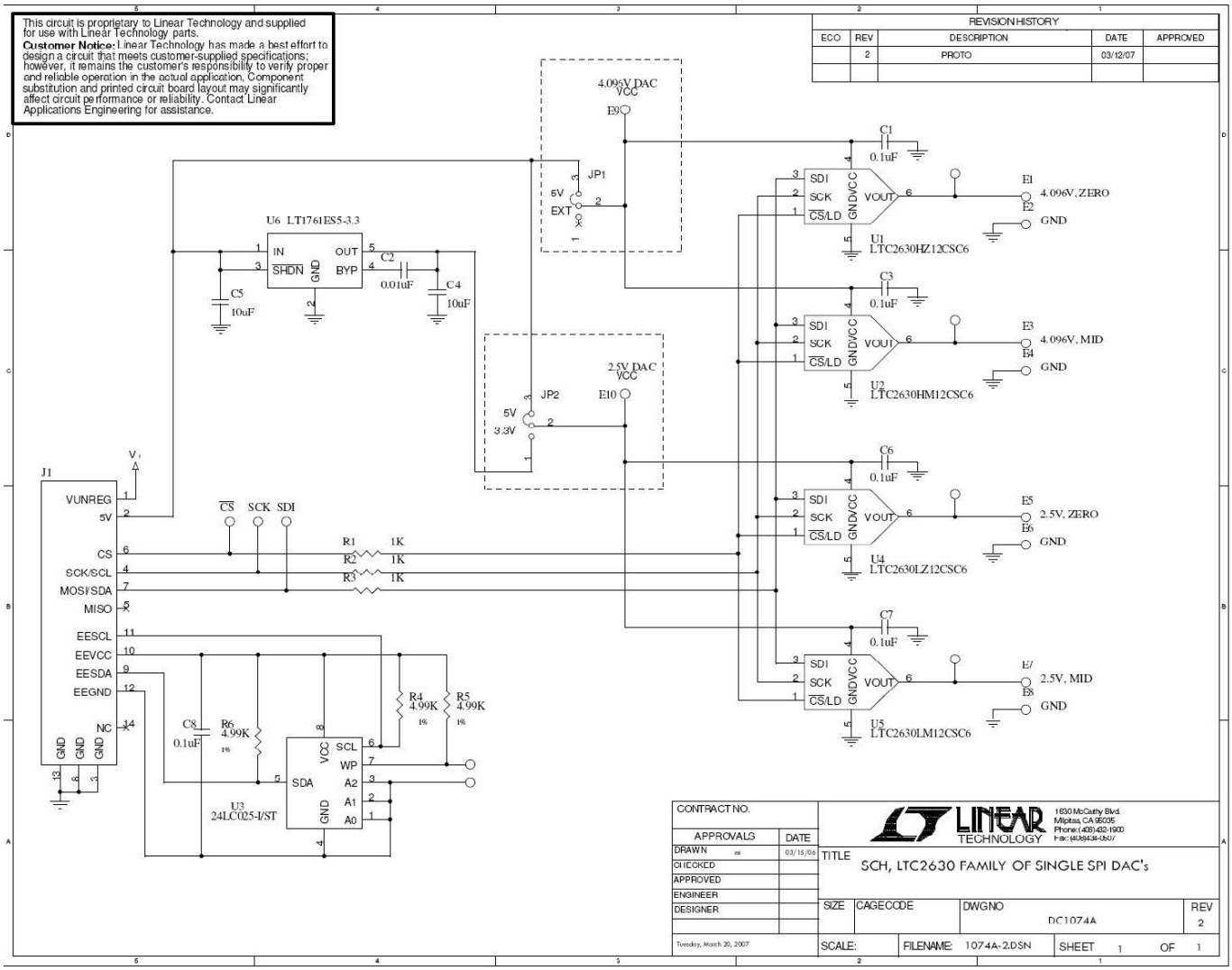
- **4.096V DAC VCC –** Select the supply for the H DACs, either 5V (default) or supplied externally to the turret post.
- **2.5V DAC VCC –** Select the supply for the L DACs, either 5V, 3.3V (default) or supplied externally to the turret post. (remove jumper.)

ANALOG CONNECTIONS

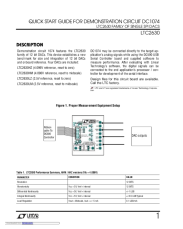
DAC outputs are provided on the row of turret posts at the edge of the board.

GROUNDING AND POWER CONNECTIONS

- **Power (Vcc) –** Normally DC1074 is powered by the DC590 controller. Vcc can be supplied to the 5V turret, however the power supply on DC590 must be disabled! Refer to DC590 Quick Start Guide for more details on this mode of operation.
- **Grounding –** Four ground posts are provided. Ex-posed ground planes at the edges of the board are also provided for optimum grounding to other cir-cuits.



Documents / Resources



LINEAR TECHNOLOGY LTC2630 Demonstration Circuit [pdf] User Guide
LTC2630, Demonstration Circuit, LTC2630 Demonstration Circuit, Circuit