LTC2637: Octal 12-Bit DAC with Internal Reference

DESCRIPTION

Demonstration circuit DC1534A features the LTC2637 Octal 12-bit DAC. This device has an integrated, high accuracy, low-drift reference. It has a rail-to-rail output buffer and is guaranteed monotonic. This DAC communicates through the simple I^2C compatible interface.

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

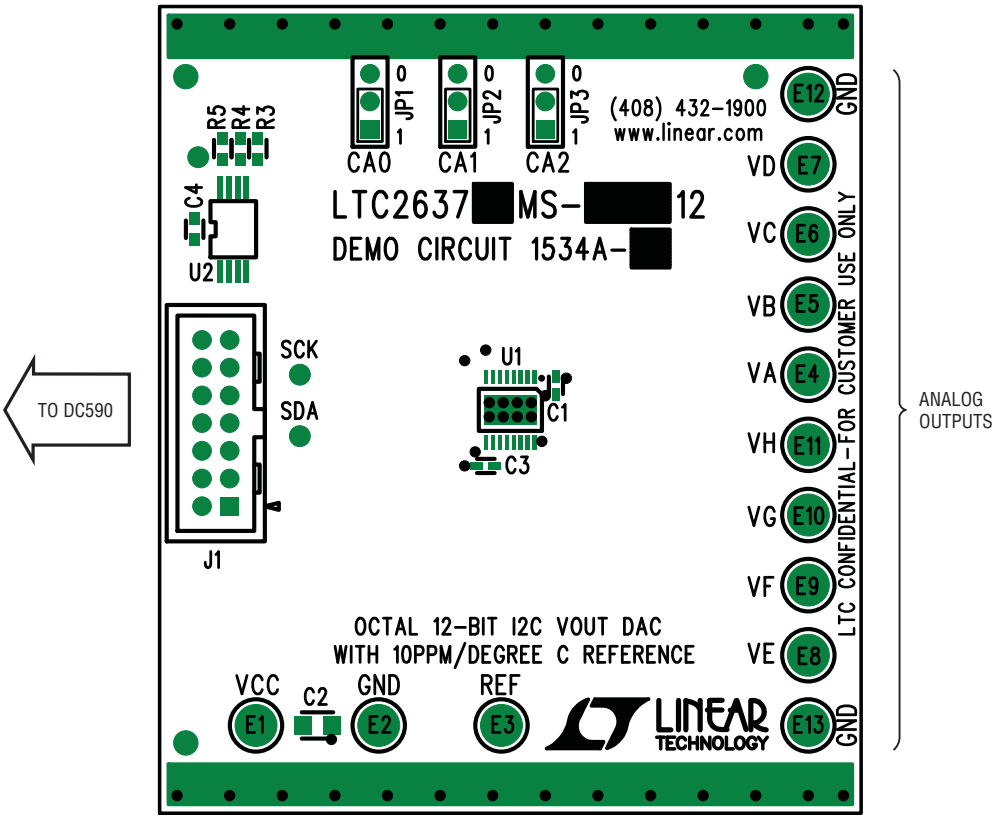


Figure 1.

DEMOBOARD ASSEMBLY	LTC2637 VARIATION	POWER UP	FULL-SCALE DAC OUTPUT (Int. Reference Mode)
DC1534A-A	LZ	Zero-Scale	2.5V
DC1534A-B	LMI	Mid-Scale	2.5V
DC1534A-C	HZ	Zero-Scale	4.096V
DC1534A-D	HMI	Mid-Scale	4.096V

QUICK START PROCEDURE

Connect DC1534A 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. Click the COLLECT button to begin outputting codes to the DACs.

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

HARDWARE SET-UP

Analog Connections

DAC outputs – The eight DAC outputs from the LTC2637 are brought out to turrets labeled V_{OUTA} through V_{OUTH}. These may be connected to external instruments or other circuitry.

NOTE: DAC outputs are not in alphabetical order on the circuit board.

V_{REF} – The REF turret is connected directly to the reference terminals of the LTC2637. When the integrated reference is being used, the reference voltage may be monitored at this point. An external reference may also be applied to this turret after changing the setting in the QuickEval software.

Grounding and Power Connections

Power (V_{CC}) – Normally DC1534A is powered by the DC590 controller. V_{CC} can be supplied to this 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 – Ground turrets as well as 2 grounding strips are provided.

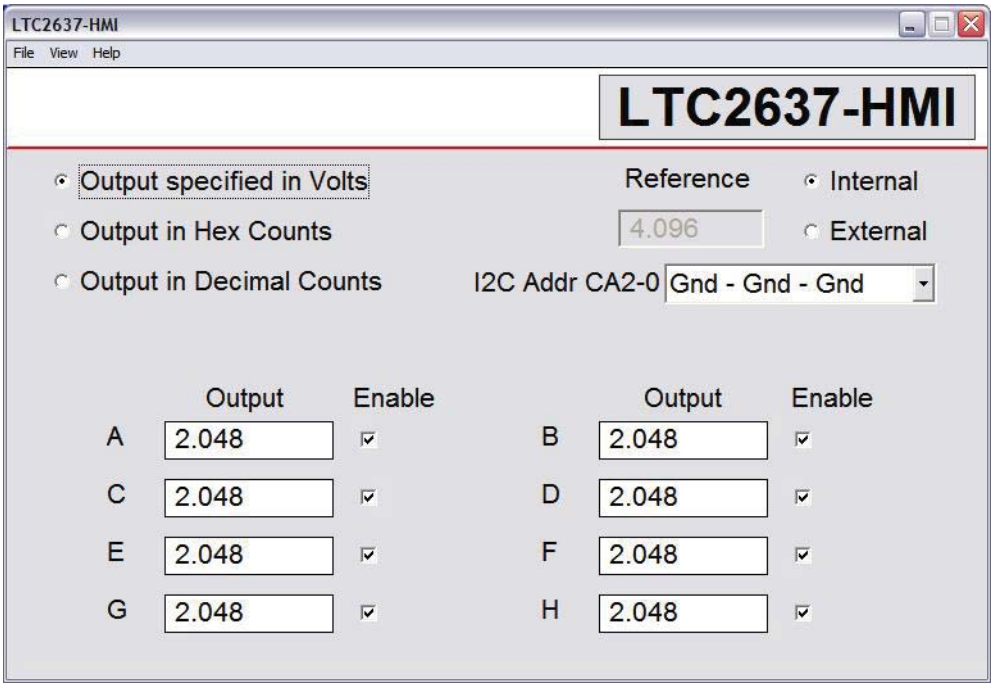
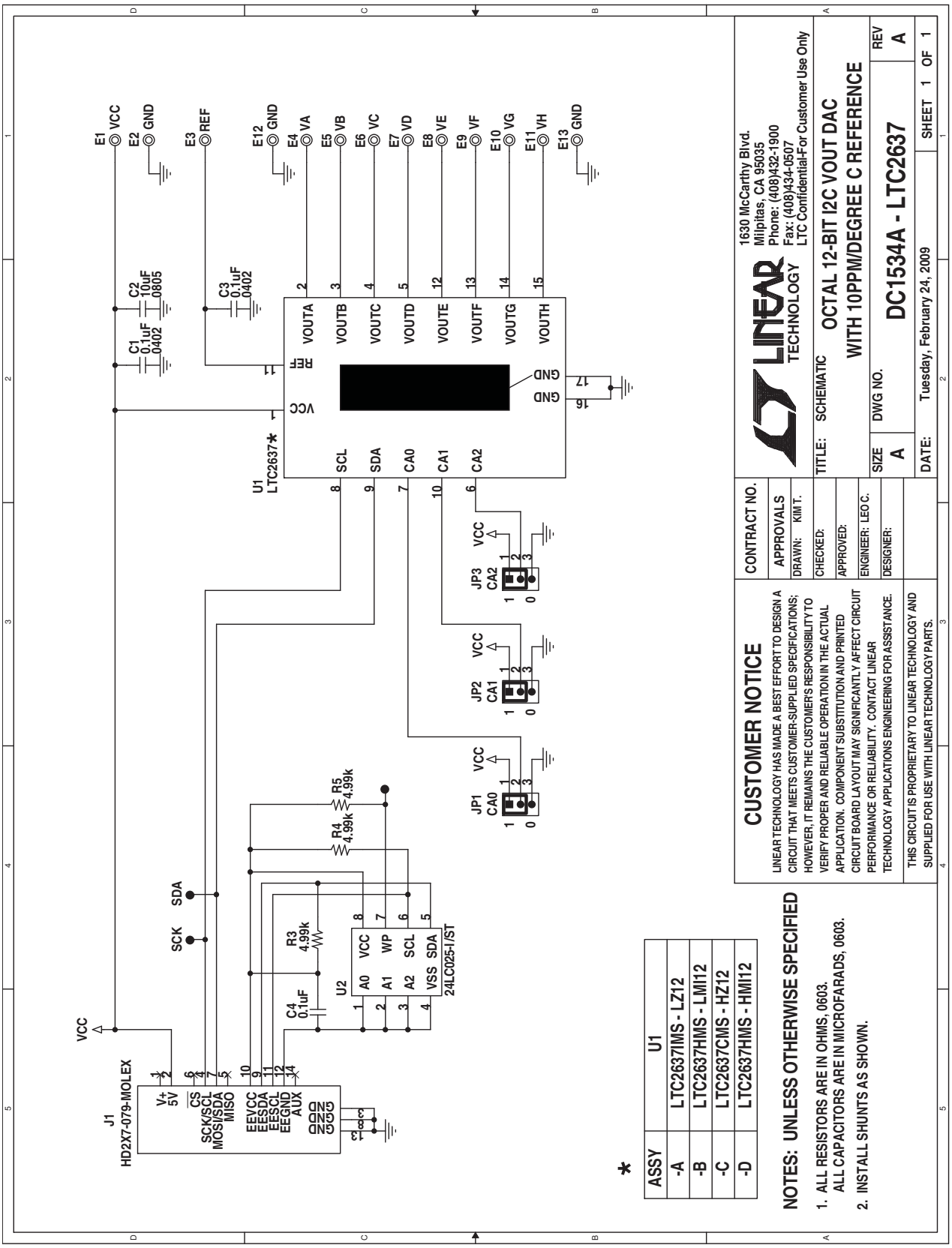


Figure 2.

SCHEMATIC DIAGRAM



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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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