

LTC2634

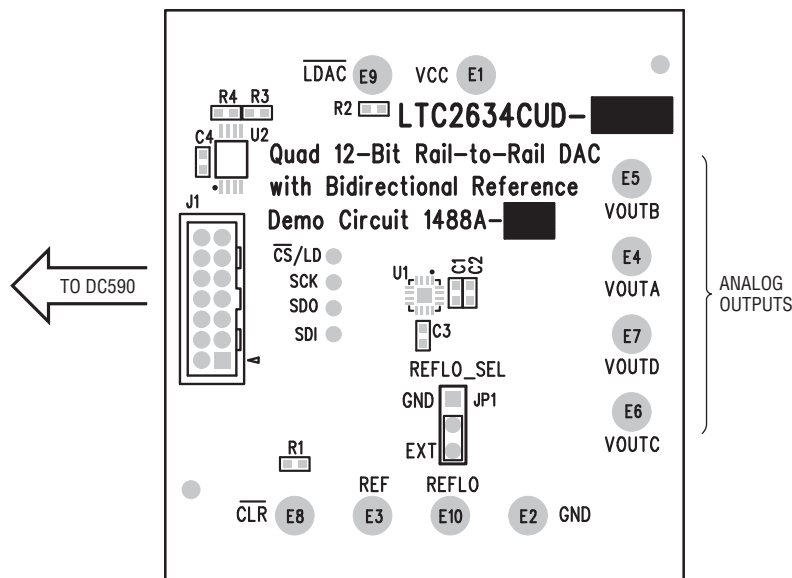
Quad 12-Bit SPI V_{OUT} DAC with Internal Reference

DESCRIPTION

Demonstration circuit 1488A features the LTC[®]2634 quad 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 SPI/MICROWIRE compatible interface.

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

LT, LT, LTC, LTM, Linear Technology and the Linear logo are registered trademarks and QuikEval is a trademark of Linear Technology Corporation. All other trademarks are the property of their respective owners.

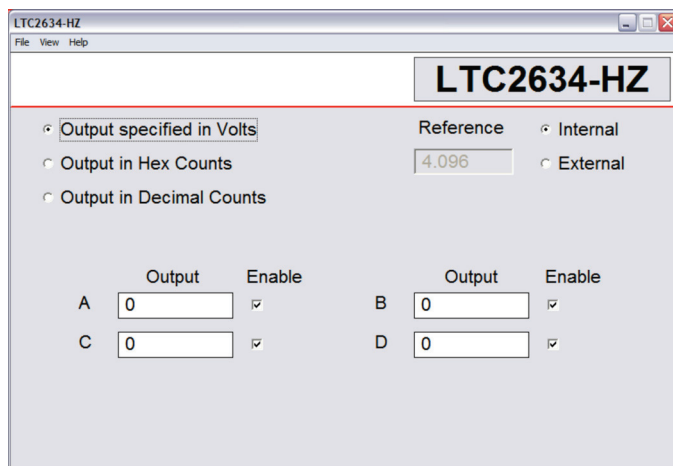


DEMOBOARD TYPE	LTC2634 VARIATION	POWER UP	FULL SCALE
DC1488A-A	LZ	Zero	2.5V
DC1488A-B	LMI	Mid-Scale	2.5V
DC1488A-C	HZ	Zero	4.096V
DC1488A-D	HMI	Mid-Scale	4.096V

QUICK START PROCEDURE

Connect DC1488A 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. To update DAC values, enter new value in corresponding output text box and press enter. Be sure the DAC is enabled.

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



HARDWARE SETUP

Analog Connections

DAC Outputs: The four DAC outputs from the LTC2634 are brought out to turrets labeled V_{OUTA} through V_{OUTD} . These may be connected to external instruments or other circuitry.

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

VREF: The REF turret is connected directly to the reference terminals of the LTC2634. 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 QuikEval™ software.

Grounding And Power Connections

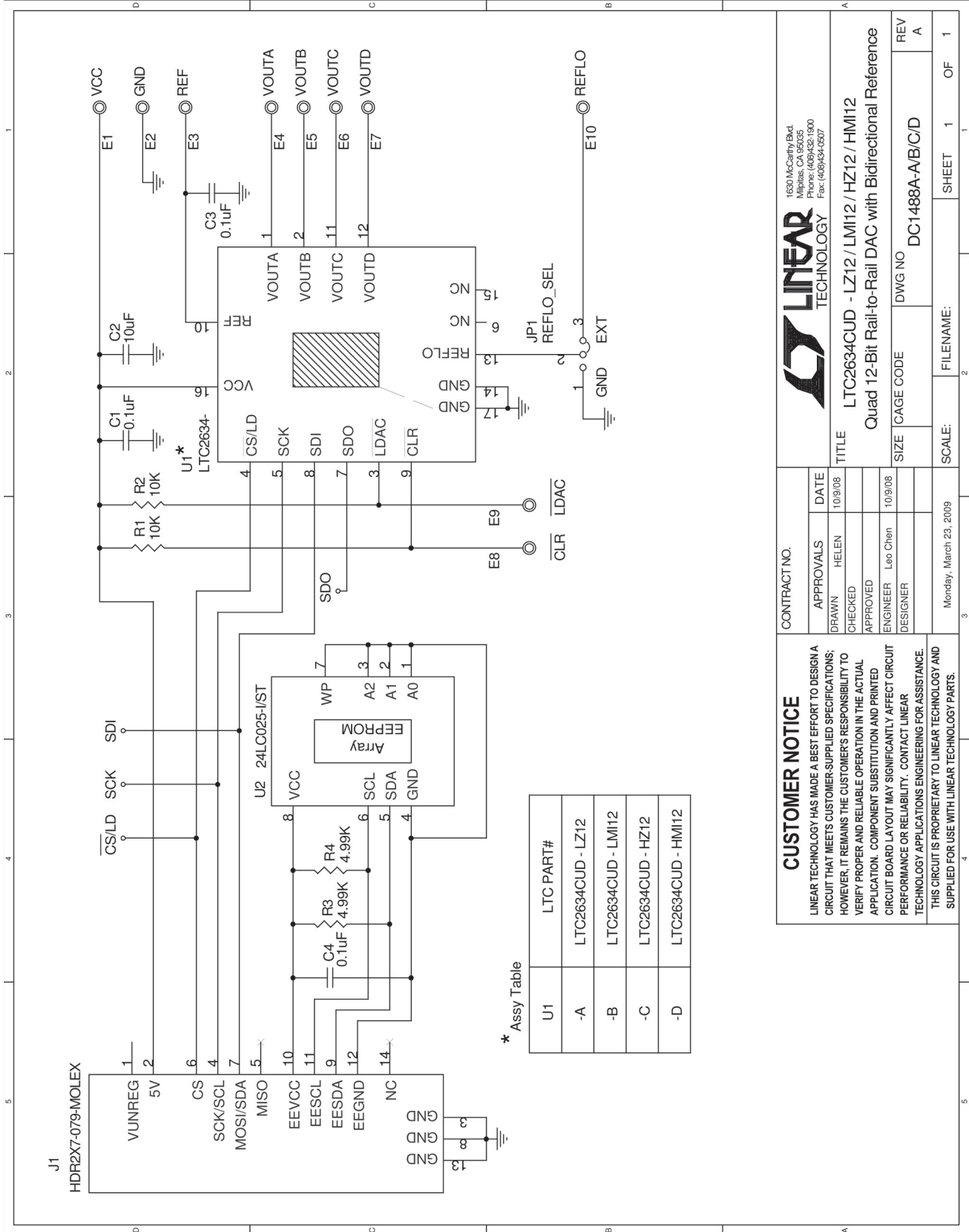
Power (VCC): Normally DC1488A is powered by the DC590 controller. VCC can be supplied to this turret, however the power supply on DC590 must be disabled! Refer to the DC590 Quick Start Guide for more details on this mode of operation.

Grounding: Ground turrets as well as 2 grounding strips are provided.

PARTS LIST

ITEM	QTY	REFERENCE	PART DESCRIPTION	MANUFACTURER/PART NUMBER
1	3	C1, C3, C4	CAP, X7R, 0.1µF, 16V, 10%, 0603	AVX, 0603YC104KAT
2	1	C2	CAP, X5R, 10µF, 6.3V, 20%, 0603	AVX, 06036D106MAT
3	10	E1-E10	TESTPOINT, TURRET, 0.095"	MILL-MAX, 2501-2-00-80-00-00-07-0
4	1	JP1	0.1" SINGLE ROW HEADER, 3-PIN	SAMTEC, TSW-103-07-L-S
5	1	JP1	SHUNT, 0.1" BLK	SAMTEC, SNT-100-BK-G
6	1	J1	HEADER, 2X7PIN, 0.079CC	MOLEX, 87831-1420
7	2	R1, R2	RES., CHIP, 10k, 1/16W, 1%, 0603	VISHAY, CRCW060310K0FKEA
8	2	R3, R4	RES., CHIP, 4.99k, 1/16W, 1%, 0603	VISHAY, CRCW06034K99FKEA
9	1	U2	IC, 24LC025-I/ST, TSSOP	MICROCHIP, 24LC025-I/ST

SCHEMATIC DIAGRAM



LINEAR TECHNOLOGY
 1630 McCarmy Blvd.
 Folsom, CA 95630
 Tel: (916) 451-0000
 Fax: (916) 451-0237

CONTRACT NO.
 APPROVALS
 DRAWN: HELEN
 CHECKED: []
 APPROVED: []
 ENGINEER: Leo Chen
 DESIGNER: []
 DATE: 10/9/08

CUSTOMER NOTICE
 LINEAR TECHNOLOGY HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; HOWEVER, IT REMAINS THE CUSTOMER'S RESPONSIBILITY TO VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT LINEAR TECHNOLOGY APPLICATIONS ENGINEERING FOR ASSISTANCE. THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS.

TITLE
 LTC2634CUD - LZ12 / LMI12 / HZ12 / HMI12
 Quad 12-Bit Rail-to-Rail DAC with Bidirectional Reference

SIZE CAGE CODE
 DWG NO DC1488A-A/B/C/D
 REV A

Monday, March 23, 2009
 SCALE: FILENAME: SHEET 1 OF 1



Information furnished by Linear Technology Corporation is believed to be accurate and reliable. However, no responsibility is assumed for its use. Linear Technology Corporation makes no representation that the interconnection of its circuits as described herein will not infringe on existing patent rights.

DEMO MANUAL DC1488A

DEMONSTRATION BOARD IMPORTANT NOTICE

Linear Technology Corporation (LTC) provides the enclosed product(s) under the following **AS IS** conditions:

This demonstration board (DEMO BOARD) kit being sold or provided by Linear Technology is intended for use for **ENGINEERING DEVELOPMENT OR EVALUATION PURPOSES ONLY** and is not provided by LTC for commercial use. As such, the DEMO BOARD herein may not be complete in terms of required design-, marketing-, and/or manufacturing-related protective considerations, including but not limited to product safety measures typically found in finished commercial goods. As a prototype, this product does not fall within the scope of the European Union directive on electromagnetic compatibility and therefore may or may not meet the technical requirements of the directive, or other regulations.

If this evaluation kit does not meet the specifications recited in the DEMO BOARD manual the kit may be returned within 30 days from the date of delivery for a full refund. **THE FOREGOING WARRANTY IS THE EXCLUSIVE WARRANTY MADE BY THE SELLER TO BUYER AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED, IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. EXCEPT TO THE EXTENT OF THIS INDEMNITY, NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.**

The user assumes all responsibility and liability for proper and safe handling of the goods. Further, the user releases LTC from all claims arising from the handling or use of the goods. Due to the open construction of the product, it is the user's responsibility to take any and all appropriate precautions with regard to electrostatic discharge. Also be aware that the products herein may not be regulatory compliant or agency certified (FCC, UL, CE, etc.).

No License is granted under any patent right or other intellectual property whatsoever. **LTC assumes no liability for applications assistance, customer product design, software performance, or infringement of patents or any other intellectual property rights of any kind.**

LTC currently services a variety of customers for products around the world, and therefore this transaction **is not exclusive**.

Please read the DEMO BOARD manual prior to handling the product. Persons handling this product must have electronics training and observe good laboratory practice standards. **Common sense is encouraged.**

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

Mailing Address:

Linear Technology
1630 McCarthy Blvd.
Milpitas, CA 95035

Copyright © 2004, Linear Technology Corporation