DEMO MANUAL DC2347A

LTC2937 Programming Board

DESCRIPTION

The DC2347A contains only those functions necessary to safely program and verify the LTC2937 configuration EEPROM. It serves no other purpose. The DC2347A holds the LTC2937 in a clamshell socket for convenient access and replacement of parts. The LTpowerPlay™ GUI software, running on a PC, provides a simple interface to program and verify the EEPROM with a user supplied configuration.

What Can You Do with The DC2347A

- Program the contents of the EEPROM with your project or HEX file.
- Verify the contents of the EEPROM against your project or HEX file.
- Verify the contents of the EEPROM against factory defaults.

Demo System Hardware Required

- Microsoft Windows PC
- DC1613 USB to I²C/SMBus/PMBus Controller
- DC2347A Programming Board

Demo System Software Required

- LTpowerPlay (GUI)

The LTpowerPlay software can be downloaded from:

http://www.linear.com/ltpowerplay

To access technical support documents for LTC Power System Management Products visit "Help -> View Online Help" in the LTpowerPlay menu.

Design files for this circuit board are available at http://www.linear.com/demo/DC2347A

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FEATURES

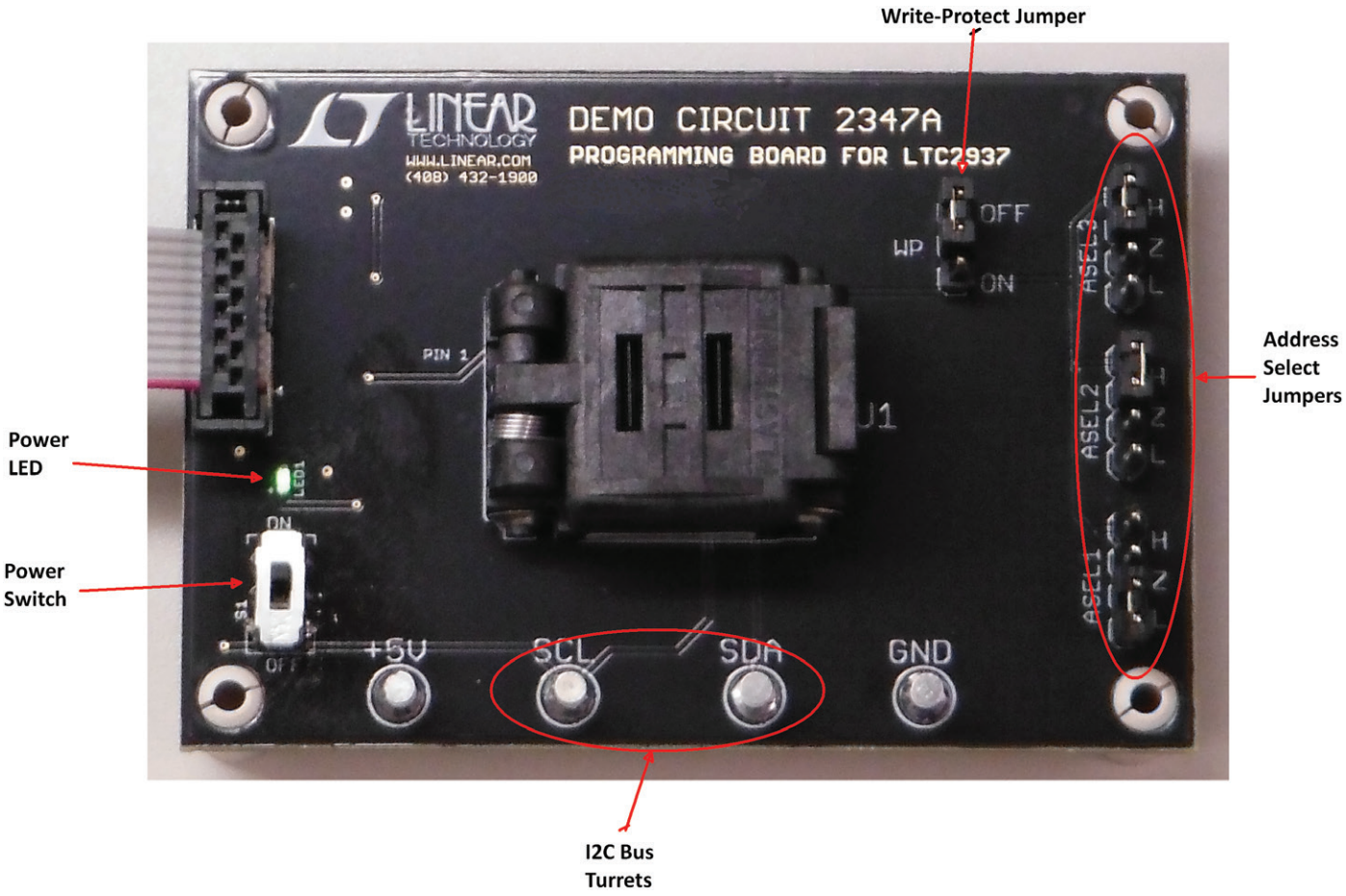
DC2347A

- Program and Verify EEPROM for the LTC2937
- Easily Change Parts with the Clamshell Socket
- Simple Interface to the PC Using LTpowerPlay
- Powered by the USB Connection

LTC2937

- Time and Event-Based Power Supply Sequencing
- 12 Programmable Undervoltage and Overvoltage Comparators with 0.75% Accuracy
- Stalled Power Supply Detection
- Single Wire Synchronization Allows Controller Expansion to 50 Devices (300 Power Supplies)
- Configuration and Fault Logging in EEPROM
- EEPROM Rated to 85°C, 10k writes, 20 year Retention
- Supported by LTpowerPlay GUI
- Fault and System Status Registers
- Reset Output with Programmable Delay
- I²C/SMBus Interface
- Wide Input Supply Voltage Range: 2.9V to 16.5V
- 28-Pin QFN (5mm × 6mm) Package

BOARD PHOTO


Write-Protect Jumper
DEMO CIRCUIT 2347A
PROGRAMMING BOARD FOR LTC2937
LINEAR TECHNOLOGY
WWW.LINEAR.COM
(408) 432-1900
WP
OFF
ON
ASEL3
ASEL2
ASEL1
H
Z
L
Address Select Jumpers
PIN 1
J1
LED1
Power LED
ON
S1
OFF
Power Switch
+5V
SCL
SDA
GND
I2C Bus Turrets

QUICK START PROCEDURE

The DC2347A system makes it easy to program and verify the contents of the LTC2937.

1. Download and install the LTpowerPlay GUI:

   http://www.linear.com/ltpowerplay

2. Remove the DC2347A board from the ESD protective bag and place it on a level surface. Connect the DC1613 I^2C/SMBus/PMBus Controller to the DC2347A board using the 12-pin ribbon cable.

   Set the jumpers ASEL1, ASEL2, and ASEL3 for the desired device I^2C address. Note that each project file contains a fixed device address, which must match the ASEL jumper settings on the board. See the LTC2937 data sheet for a discussion of device addressing.

   Set the WP jumper to OFF.

   Set the POWER switch to OFF.

3. Connect the USB-to-I^2C/SMBus/PMBus Controller to a USB port on your PC.

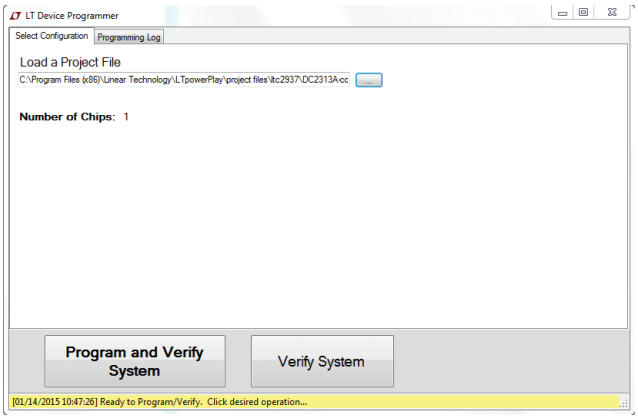
4. Insert an LTC2937 part into the clamshell socket and verify that it is upright and not upside-down in the socket. Close the lid; it will snap shut. Only remove and replace ICs in the socket when the POWER switch is OFF.

5. Apply power to the device by sliding the POWER switch to ON. When the part receives power it powers-up its 3.3V VDD pin, and LED1 will illuminate green. If no part is installed in the socket, or if the part is up-side down, the LED will not illuminate, and programming is not possible.

6. Launch the LTpowerPlay GUI. The GUI automatically identifies the DC2347A and launches the appropriate interface protocol.

7. If the Programming Utility does not launch automatically, select LTpowerPlay→Utilities→Programming Utility from the menu.

8. Click "…" and select a project file to program the device. Ensure that the ASEL jumpers match the device address in the project file.



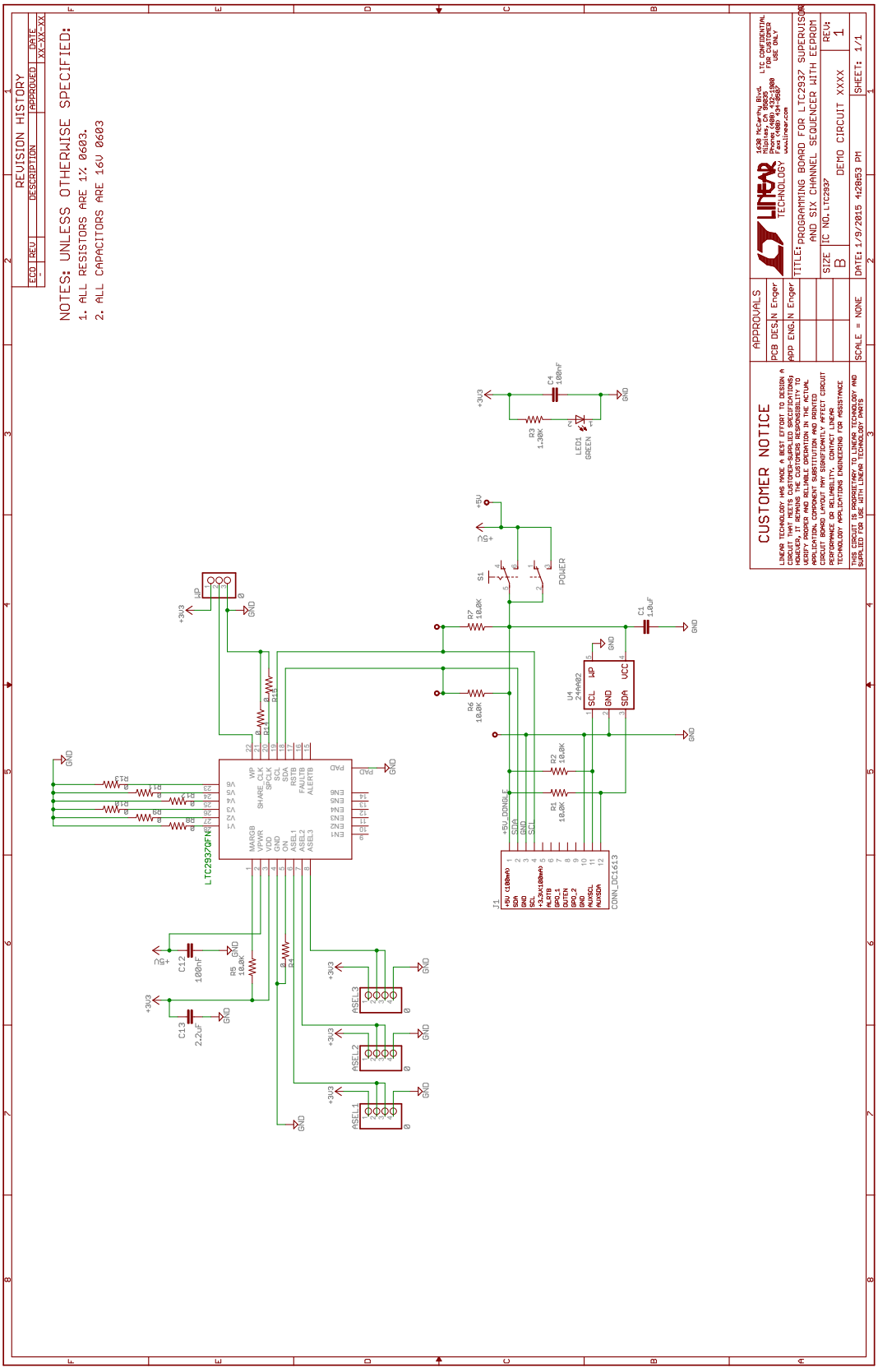
9. Click "Program and Verify System" to program the device. Upon success, the status bar at the bottom will turn from yellow to green and indicate "Successfully Programmed and Verified System!"

10. After programming the LTC2937, set the POWER switch to OFF and remove the part from the socket. Repeat steps 4 to 9 with additional LTC2937 parts as necessary.

PARTS LIST

ITEM	QTY	REFERENCE	PART DESCRIPTION	MANUFACTURER/PART NUMBER
Required Circuit Components				
1	3	C4, C12	CAP, CER, 100nF, X5R, 16V, 10%, 0603	MURATA, GRM188R61C104KA01D
2	1	C13	CAP, CER, 2.2µF, X5R, 16V, 10%, 0603	MURATA, GRM188R61C225KE15D
3	1	C1	CAP, CER, 1µF, X5R, 16V, 10%, 0603	MURATA, GRM188R61C105KA93D
4	1	R3	RES, 1.3k, 1/10W, 1%, 0603	VISHAY, CRCW06031K30FKEA
5	5	R1, R2, R5, R6, R7	RES, 10k, 1/16W, 1%, 0603	VISHAY, CRCW060310K0FKED
6	9	R4, R8, R9, R10, R11, R12, R13, R14, R15	RES, 0.0Ω, 1/10W, 0603	VISHAY, CRCW06030000Z0EA
7	1	LED1	LED, GREEN, 0603	PANASONIC, LNJ326W83RA
8	4	TP1, TP2, TP3, TP4	TEST POINT TURRET, 0.094"	MILL-MAX, 2501-2-00-80-00-00-07-0
9	3	ASEL1, ASEL2, ASEL3	CONN, HEADER, 1x4, 0.1"	SULLINS, PRPC004SAAN-RC
10	1	WP	CONN, HEADER, 1x3, 0.1"	SULLINS, PRPC003SAAN-RC
11	4	WP, ASEL1, ASEL2, ASEL3	SHUNT JUMPER, 0.1"	3M, 969002-0000-DA
12	1	J1	CONN, HEADER, 2x6, 2MM	FCI, 98414-G06-12ULF
13	1	U4	IC SERIAL EEPROM, SOT-23-5	MICROCHIP, 24AA02T-I/OT
14	1	U1	SOCKET, CLAMSHELL, QFN	PLASTRONICS, 28QN50S16050-A
15	1	S1	SW SLIDE DPDT 6VDC 0.3A PCMNT	C&K COMPONENTS, JS202011CQN
16	4		STANDOFF, NYLON, SNAP-ON, 0.25" TALL	KEYSTONE, 8831

SCHEMATIC DIAGRAM



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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.

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