

## 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 I<sup>2</sup>C/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

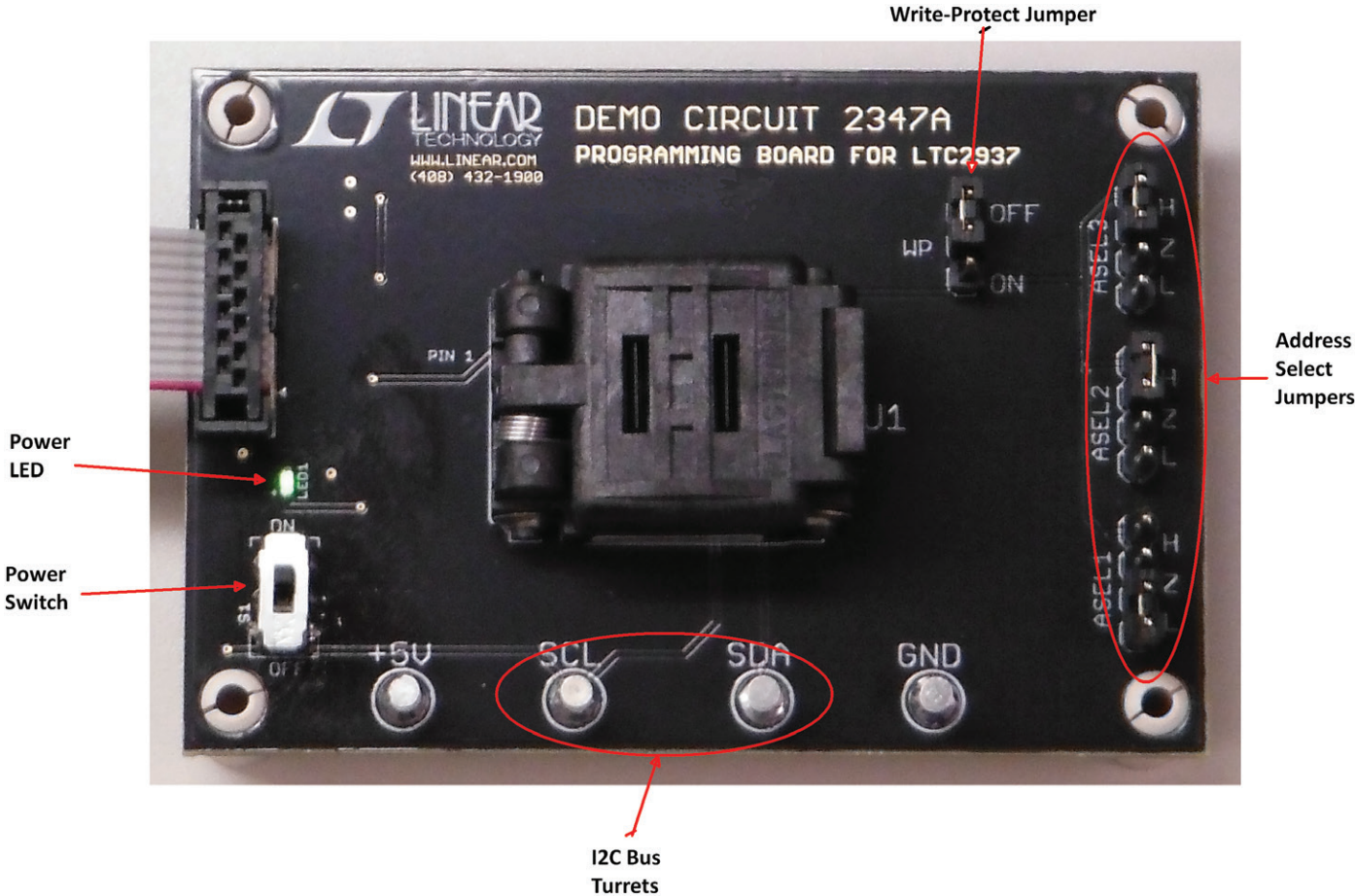
- Program and Verify EEPROM for the LTC2937
- Easily Change Parts with the Clamshell Socket
- Simple Interface to the PC Using LTpowerPlay
- Powered by the USB Connection

### 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
- I<sup>2</sup>C/SMBus Interface
- Wide Input Supply Voltage Range: 2.9V to 16.5V
- 28-Pin QFN (5mm × 6mm) Package

**BOARD PHOTO**



## 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<sup>2</sup>C/SMBus/PMBus Controller to the DC2347A board using the 12-pin ribbon cable.

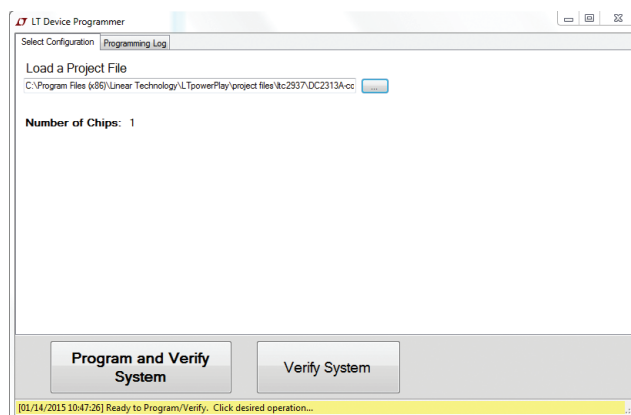
Set the jumpers ASEL1, ASEL2, and ASEL3 for the desired device I<sup>2</sup>C address. Note that each project file contains a fixed device address, which must match the ASEL jumper settings on the board. See the LTC2937 data sheet for a discussion of device addressing.

Set the WP jumper to OFF.

Set the POWER switch to OFF.

3. Connect the USB-to-I<sup>2</sup>C/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.



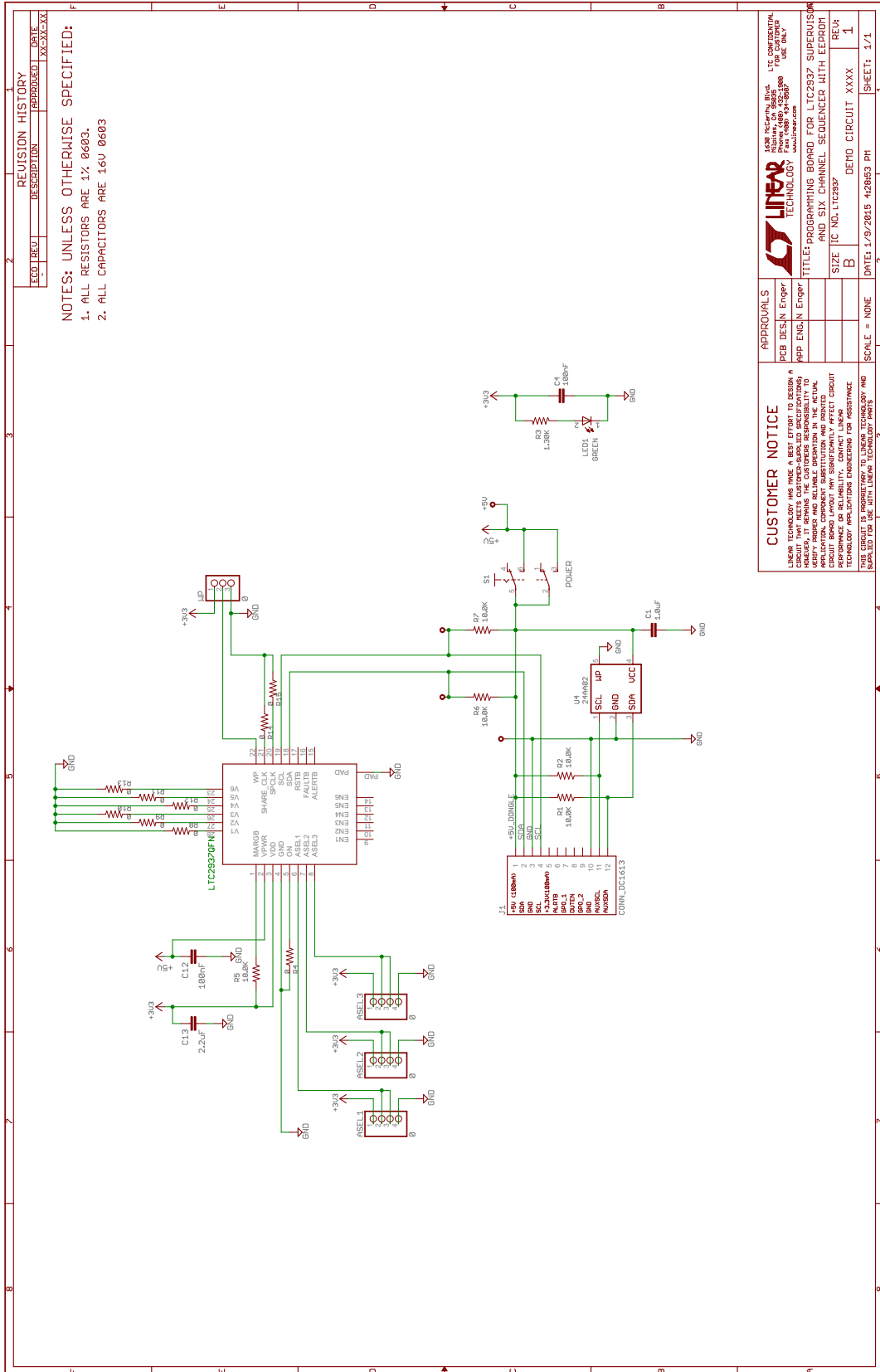
9. Click “Program and Verify System” to program the device. Upon success, the status bar at the bottom will turn from yellow to green and indicate “Successfully Programmed and Verified System!”
10. After programming the LTC2937, set the POWER switch to OFF and remove the part from the socket. Repeat steps 4 to 9 with additional LTC2937 parts as necessary.

# DEMO MANUAL DC2347A

## PARTS LIST

ITEM	QTY	REFERENCE	PART DESCRIPTION	MANUFACTURER/PART NUMBER
<b>Required Circuit Components</b>				
1	3	C4, C12	CAP, CER, 100nF, X5R, 16V, 10%, 0603	MURATA, GRM188R61C104KA01D
2	1	C13	CAP, CER, 2.2 $\mu$ F, X5R, 16V, 10%, 0603	MURATA, GRM188R61C225KE15D
3	1	C1	CAP, CER, 1 $\mu$ F, 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, 0.0 $\Omega$ , 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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# DEMO MANUAL DC2347A

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Mailing Address:

Linear Technology  
1630 McCarthy Blvd.  
Milpitas, CA 95035

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### Наши контакты:

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331