

FEATURES

- Fully Assembled and Tested PCB
- Allows Simple Evaluation of the ACT8847
- Probe Points for Easy Measurement

GENERAL DESCRIPTION

The ACT8847EV contains a fully assembled and tested circuit board designed to demonstrate all the features of the ACT8847. The ACT8847EV includes a variety of test points and jumpers as necessary to configure and evaluate the ACT8847's functionality.

QUICK START GUIDE

Recommended Equipment

- 1) Variable Power Supply
- 2) DMM and Oscilloscope
- 3) *ActivePMU™* Dongle and Cable
- 4) Load Resistors or Electronic Load

Quick Start Operating Procedure

The following procedure should be used when operating the ACT8847EV for the first time to verify correct operation.

- 1) Do not turn the power supply on until all connections have been made.
- 2) Connect jumper J4_0 (V_I/O) to J5_0 (VIN).
- 3) Connect jumper J11_3 to J10 to set VSEL to a logic low.
- 4) Connect jumper J8_0 to J7 to set GPIO1 to a logic low.
- 5) Connect jumper J8_1 to J7 to set GPIO2 to a logic low.
- 6) Connect power supply positive lead to the VIN pin connector.
- 7) Connect power supply negative lead to the GND pin connector.
- 8) Connect dongle to the computer which has the ACT8847 GUI Software installed.
- 9) Set the power supply to 3.6V.
- 10) Turn on the power supply.

System start up/verify REGx operation on EV Board

The following procedure must be followed to evaluate the IC operation.

- 1) Pressed push-button S2 (nPBIN) to enable system (turn IC on). Connect J11_1 pin (PWRHLD) and J11_2 pin (PWREN) to J12 (V_I/O) to hold system operation before nPBIN released.
- 2) Released push-button when PWRHLD pin and PWREN pin has already connected to V_I/O.
- 3) Verify REGx (REG1, REG2, REG3, REG4, REG5, REG6, REG7, REG8, REG9, REG10, REG11, REG12 and REG13) output voltage using multimeters, scopes, electric load.
- 4) For the sequencing procedure, refer to the ACT8847 datasheet for more details.

Figure 2:
PCB Layout – Top Metal Layer

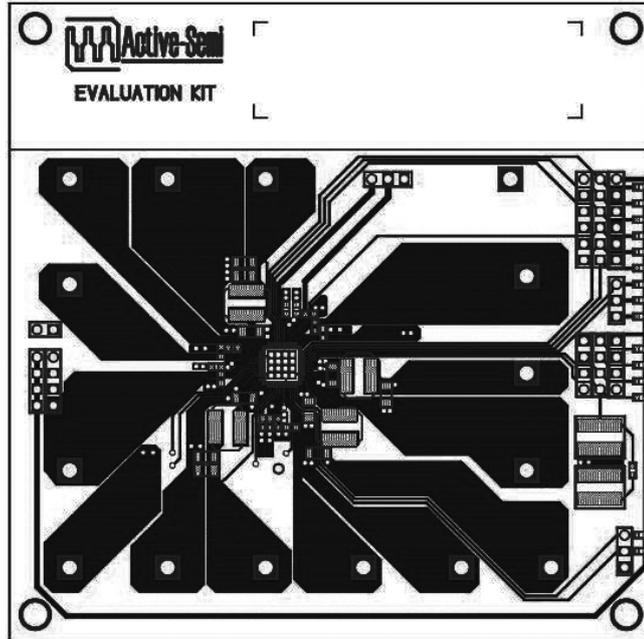


Figure 3:
PCB Layout – Middle 1 GND

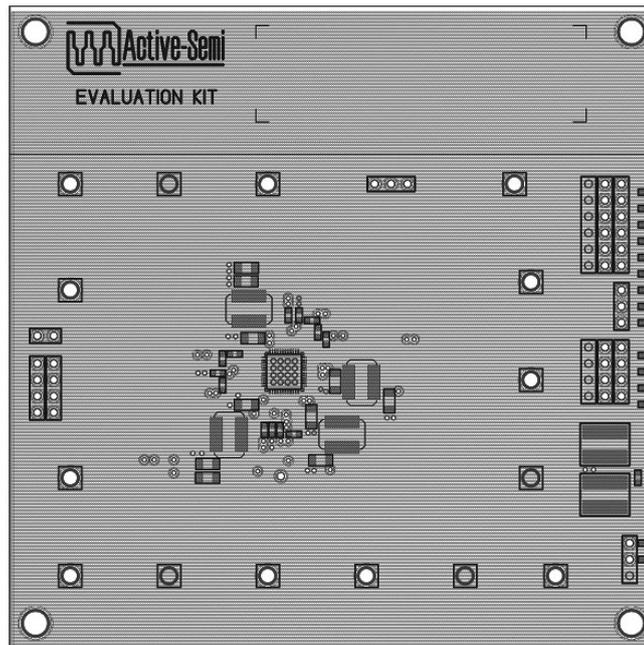


Figure 4:
PCB Layout – Middle 2 VIN

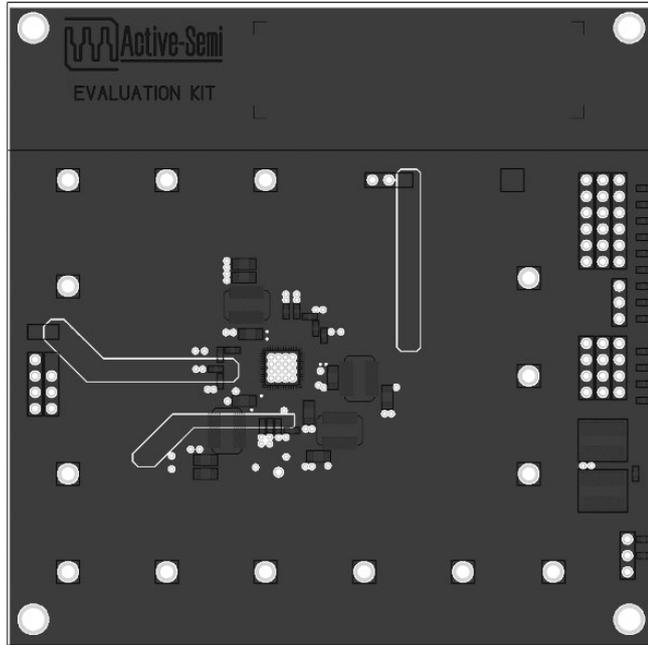


Figure 5:
PCB Layout – Bottom Layer

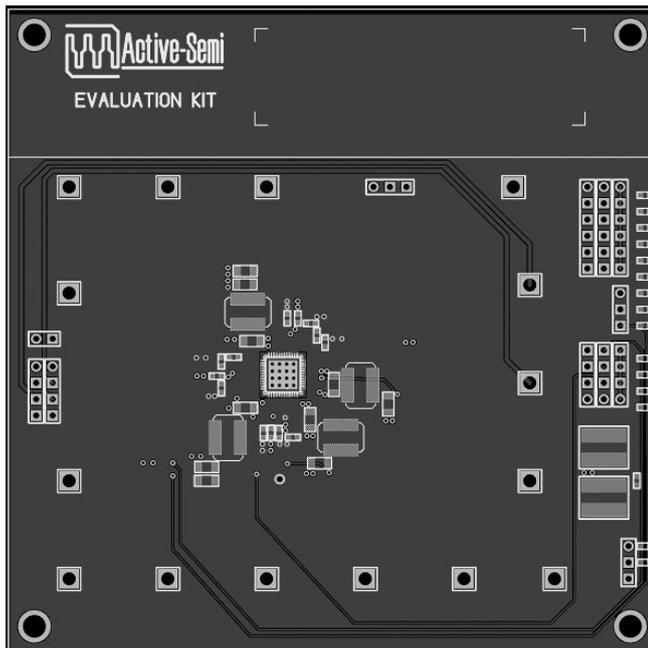
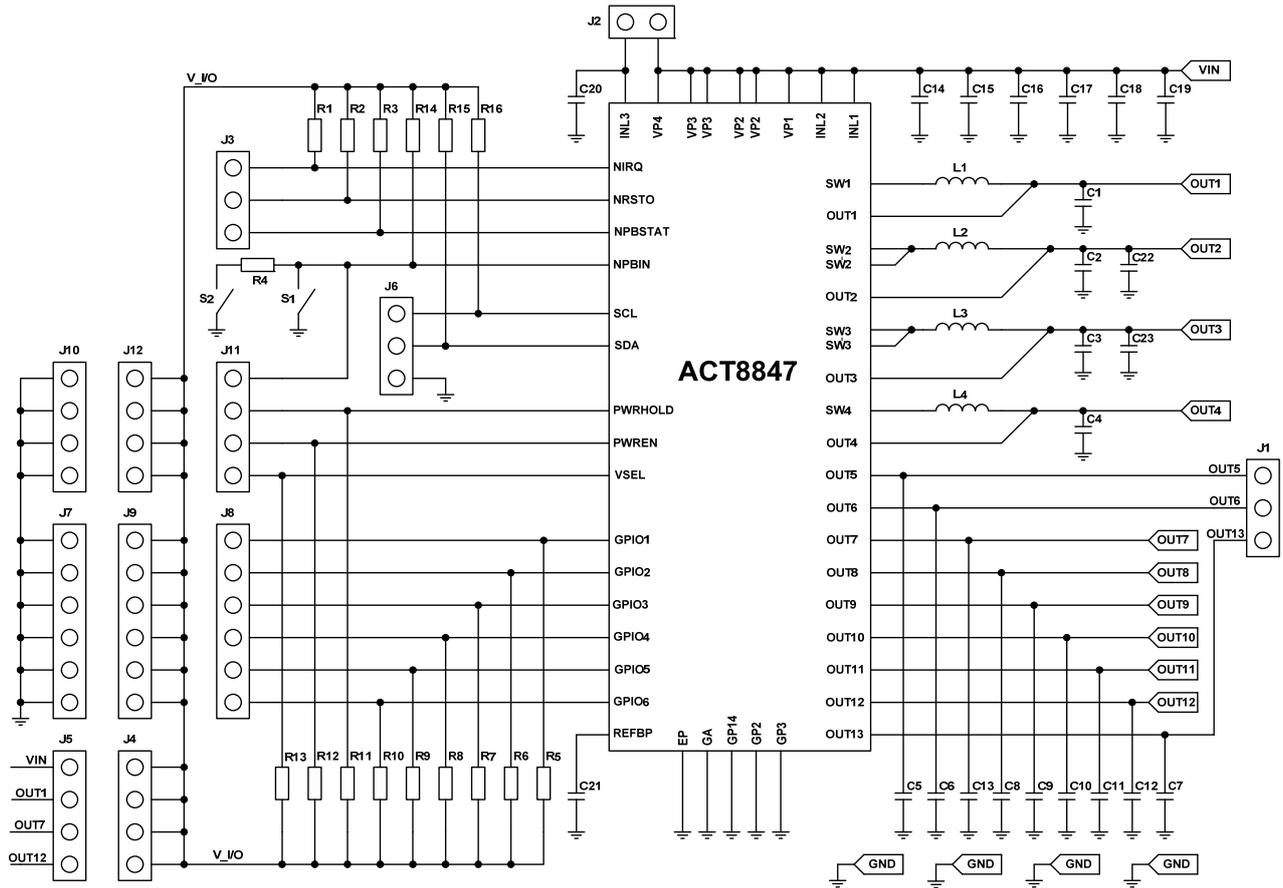


Figure 6:
ACT8847EV Kit Schematic



Jumper Function

Table 1:
Jumper J8 Setting

DESIGNATOR	DESCRIPTION	DEFAULT SETTING
J8_0	GPIO1	J7 (GND)
J8_1	GPIO2	J7 (GND)
J8_2	GPIO3	J7 (GND)
J8_3	GPIO4	J7 (GND)
J8_4	GPIO5	J7 (GND)
J8_5	GPIO6	J7 (GND)

Table 2:
Jumper J11 Setting

DESIGNATOR	DESCRIPTION	DEFAULT SETTING
J11_0	nPBIN	Floating
J11_1	PWRHOLD	J12 (V_I/O)
J11_2	PWREN	J12 (V_I/O)
J11_3	VSEL	J13 (GND)

Table 3:
I/O Jumper Relation/Setting

NAME	JUMPER	DESCRIPTIONS
OUT5	J1_0	REG5 LDO Output Voltage.
OUT6	J1_1	REG6 LDO Output Voltage.
OUT13	J1_2	REG13 LDO Output Voltage.
nIRQ	J3_0	Open-drain Interrupt Output. Refer to the datasheet for details.
nRSTO	J3_1	Open-drain Interrupt Output. Refer to the datasheet for details.
nPBSTAT	J3_2	Push-Button Status Indicator.
SDA	J6_0	I ² C Data Connector Pin.
SCL	J6_1	I ² C Clock Connector Pin.

Table 4:
ACT8847EV Bill of Materials

ITEM	DESCRIPTION	MANUFACTURER	QTY	REFERENCE
1	Resistor, 10kΩ, 5%, SMT, 0603	FengHua, Neohm, Yageo	3	R1, R2, R3
2	Resistor, 10kΩ, 5%, SMT, 0603	FengHua, Neohm, Yageo	12	R5 (NP), R6 (NP), R7 (NP), R8 (NP), R9 (NP), R10 (NP), R11 (NP), R12 (NP), R13 (NP), R14 (NP), R15 (NP), R16 (NP)
3	Resistor, 51kΩ, 5%, SMT, 0603	FengHua, Neohm, Yageo	1	R4
4	Capacitor, Ceramic, 47nF/6.3V, X5R/X7R, SMT, 0603	Panasonic, Kemet, Murata, TDK, FengHua, Taiyo Yuden	1	C21
5	Capacitor, Ceramic, 1μF/6.3V, X5R/X7R, SMT, 0603	Panasonic, Kemet, Murata, TDK, FengHua, Taiyo Yuden	4	C7, C18, C19, C20
6	Capacitor, Ceramic, 2.2μF/6.3V, X5R/X7R, SMT, 0603	Panasonic, Kemet, Murata, TDK, FengHua, Taiyo Yuden	8	C5, C6, C8, C9, C10, C11, C12, C13
7	Capacitor, Ceramic, 4.7μF/6.3V, X5R/X7R, SMT, 0805	Panasonic, Kemet, Murata, TDK, FengHua, Taiyo Yuden	2	C14, C17
8	Capacitor, Ceramic, 10μF/6.3V, X5R/X7R, SMT, 0805	Panasonic, Kemet, Murata, TDK, FengHua, Taiyo Yuden	2	C15, C16
9	Capacitor, Ceramic, 22μF/6.3V, X5R/X7R, SMT, 0805	Panasonic, Kemet, Murata, TDK, FengHua, Taiyo Yuden	4	C2, C3, C22, C23
10	Capacitor, Ceramic, 33μF/6.3V, X5R/X7R, SMT, 0805	Panasonic, Kemet, Murata, TDK, FengHua, Taiyo Yuden	2	C1, C4
11	Inductor, 2.2μH, SMT Sumida CDRH4D28NP-2R2N Sunlord SWPA4020 S2R2NT	Sumida, Sunlord	2	L1, L4
12	Inductor, 1.0μH, SMT Sunlord SWPA4020 S1R0NT Bourns SRP4020-1R0M	Sunlord, Bourns	2	L2, L3
13	IC, PMU, ACT8847	Active-Semi	1	U1
14	PIN	Molex, Hirose	15	GND (4), OUT1, OUT2, OUT3, OUT4, OUT7, OUT8, OUT9, OUT10, OUT11, OUT12, VIN
15	2.54mm, 2PIN	Molex, Hirose	1	J2
16	2.54mm, 3PIN	Molex, Hirose	3	J1, J3, J6
17	2.54mm, 4PIN	Molex, Hirose	5	J4, J5, J10, J11, J12
18	2.54mm, 6PIN	Molex, Hirose	3	J7, J8, J9
19	Pushbutton Switch	Nikkai, Omron	2	S1, S2