

High Accuracy 2.5A Low-Voltage AOT Synchronous Buck Regulator

EVAL Kit Physical Contents KTB8316EEAA-BD-ZX-MMEV01

Item #	Description	Included	Download
1	KTB8316 2MHz EVAL fully assembled PCB in Anti-static bag	1	
2	Hard copy for the Quick Start Guide, 1 page (A4 or US Letter)	1	
3	EVAL Kit box	1	
4	EVAL Kit Manual, available at clickable URL		1

QR Links for Documents

IC Datasheet	KTB8316EEAA-BD-ZX-MMEV01 Kit Landing Page
 https://www.kinet-ic.com/ktb8316/	 https://www.kinet-ic.com/ktb8316eeaa-bd-zx-mmev01/

User-Supplied Equipment

Required Equipment

1. Bench Power Supply for VIN: 0 to 5V, 3A minimum output range as needed for the intended application.
2. Digital Multimeter – used to measure input/output voltages and current. Two to four meters are required depending upon specific measurements.
3. Load – An Electronic Load (E-Load) is recommended for functional testing and power conversion efficiency measurements. Power resistors or an actual system load may also be used.

Optional Equipment

1. Oscilloscope and Voltage Probes – for dynamic testing and measurements of input/output and inductor (LX) switching voltage waveforms.
2. Additional Digital Multimeters

Quick Start Procedures

1. Check Jumpers P4, P8 and SW1 switch settings for default conditions.
 - a. Default Settings:
 - i. P4 = Jumper EN to VIN to enable the device
 - ii. P6 = MODE to GND for skip mode
 - iii. All SW1 switched set to “Off” for skip mode and nominal output voltage
2. Before connecting the EVAL Kit input supply test leads to the VIN bench power supply, turn the supply on and adjust the voltage as close to 0V as possible. Disable the power supply output or turn the supply off. While disabled or off, connect the VIN test leads to the bench power supply.
3. Connect the power supply positive test lead to VIN and negative test lead to GND on the evaluation board.
4. Connect the step-down (buck) regulator output to an electronic load, load resistor or system load. Connect VOUT to the positive load terminal and GND to the negative or ground terminal.

5. Enable or turn on the VIN bench power supply and very slowly ramp its voltage to the desired input voltage. While ramping VIN slowly, use the bench supply's output current indication (or a digital multimeter) to monitor the VIN current. If the current becomes high, reduce the VIN voltage quickly to prevent damage. Then inspect the setup for any wiring errors.
6. Regulator operation may be validated by observing the VOUT voltage level, this may be performed with or without an applied load. The output voltage is monitored by connecting multimeter across the KVOUT/GND P2 terminals.
7. To hardware shutdown the step-down (buck) regulator, move the P4 jumper to connect EN to GND.