

4.5V - 24V Input, 6A Synchronous Buck Regulator with I²C Interface

EVAL Kit Physical Contents KTB8375EUFB-MMEV01

Item #	Description	Included
1	KTB8375 EVAL kit fully assembled PCB	1
2	MCP2221A Board - General Purpose USB to GPIO I2C - Stemma QT / Qwiic	1
3	Stemma QT / Qwiic JST SH 4-pin Cable - 100mm Long	1
4	Anti-static bag	1
5	KTB8375 EVAL Kit Quick-Start Guide -- printed 1-page (A4 or US Letter)	1
6	EVAL Kit box	

Links for Documents

IC Datasheet	EVAL Kit Landing Page
 https://www.kinet-ic.com/ktb8375/	 https://www.kinet-ic.com/ktb8375eufb-mmev01/

User-Supplied Equipment

Required Equipment

1. Bench Power Supply for VIN – 12V/24V and 6A as needed for the intended application.
2. Digital Multimeter – used to measure input/output voltages and currents.
3. Load – either power resistors, an E-Load, or an actual system load.

Optional Equipment

1. Oscilloscope and Voltage Probes – for dynamic testing, measurements, and observe input/output voltages and currents waveforms.
2. Additional Digital Multimeters

Quick Start Procedures

1. Check the Jumpers for default setting.
2. Connect one pair of banana-to-banana cables to the connector of EVAL Kit at VIN and GND.
3. Before connecting the EVAL Kit to the VIN bench power supply, turn on the supply and adjust the voltage as close to 0V as possible. Then turn off the supply. While off, connect the banana cables to the VIN bench supply.
4. Turn on the VIN bench supply and very slowly ramp its voltage to an appropriate voltage, such as 12V. While ramping VIN slowly, use the bench supply 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. The VIN supply current should be less than 1mA.
5. To shutdown the buck regulator, simply use a jumper at P1 to connect EN to GND.
6. Connect a voltmeter between the output KVOUT and KGND test pins in order to measure the buck regulator output voltage. The output voltage is set by the on-board resistor divider R7/R8 to 3.3V in the default configuration. Please refer to the data sheet for more details on the resistor divider.