



EV2695-Q-01A

I²C Controlled Single Cell Switching Charger

DESCRIPTION

The EV2695-Q-01A is an evaluation board for the MP2695, a high-integrated, flexible switch-mode battery charger.

The MP2695 integrates full feature battery charging profile by three phases: pre-charge, constant current and constant voltage charge. This device also manages input power source by input current limit regulation and minimum input voltage regulation.

All the parameters and control can be easily accessed via the I2C interface.

ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Units
Input Voltage	V _{IN}	4-11	V
Input Current Limit	I _{IN}	0.1-3.0 Programmable	A
Charge Voltage Regulation	V _{BATT_REG}	3.6-4.45 Programmable	V
Charge Current	I _{CC}	Up to 3.6 programmable	A

FEATURES

- 4.0V to 11V Operation Voltage Range
- Up to 16V Sustainable Input Voltage
- 500mA to 3.6A Programmable Charge Current
- 3.6V to 4.45V Programmable Charge Regulation Voltage
- 100mA to 3A Programmable Input Current Limit
- Minimum Input Voltage Loop for Maximum Adapter Power Tracking
- Comprehensive Safety Features
 - Fully-customizable JEITA Profile
 - Charge Safety Timer
 - Input Over-voltage Protection
 - Thermal Shutdown
- Analog Voltage Output IB pin for Battery Current Monitor
- Status and Fault Monitoring

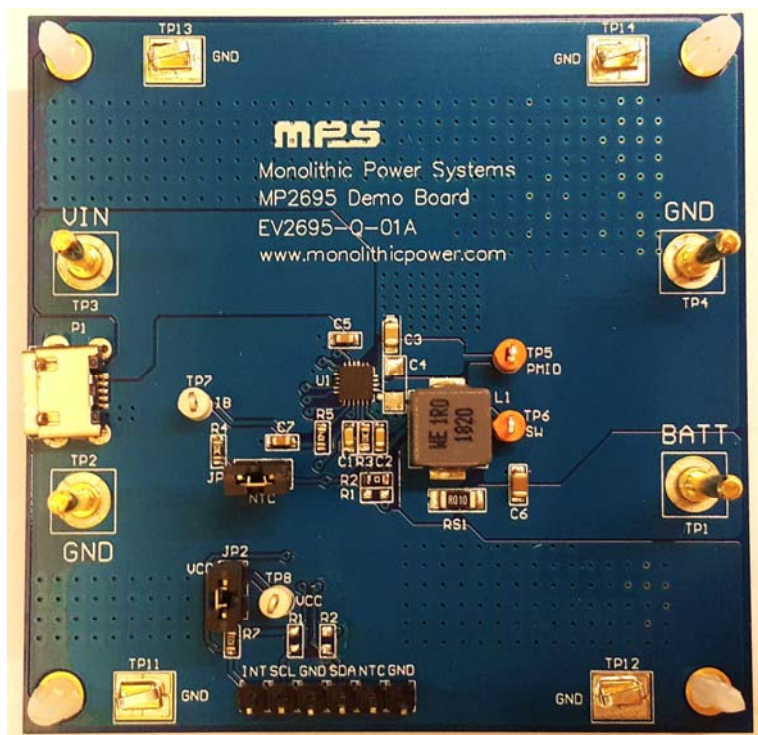
APPLICATIONS

- Sub-Battery Applications
- Power-Bank Application

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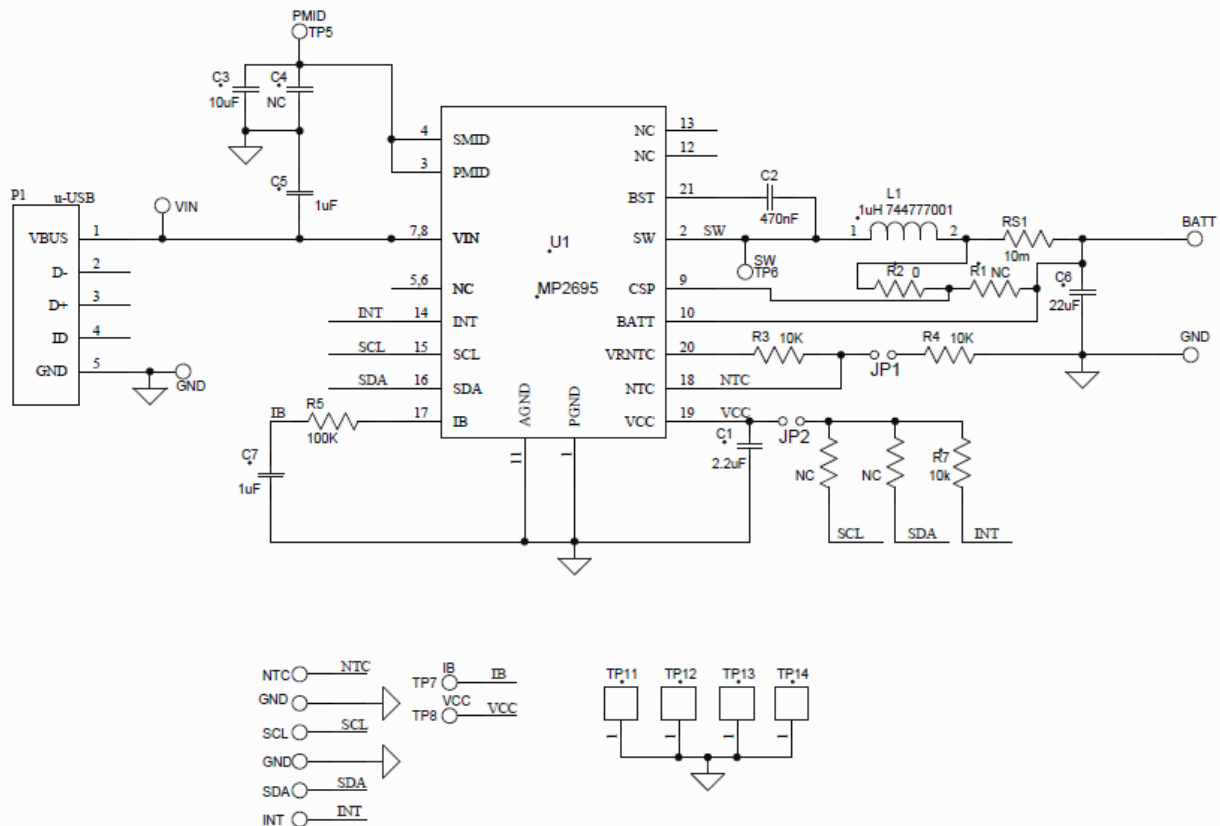
EV2695-Q-01A EVALUATION BOARD



(L x W x H) (6.35cm x 6.35cm x 1.2cm)

Board Number	MPS IC Number
EV2695-Q-01A	MP2695GQ-0000

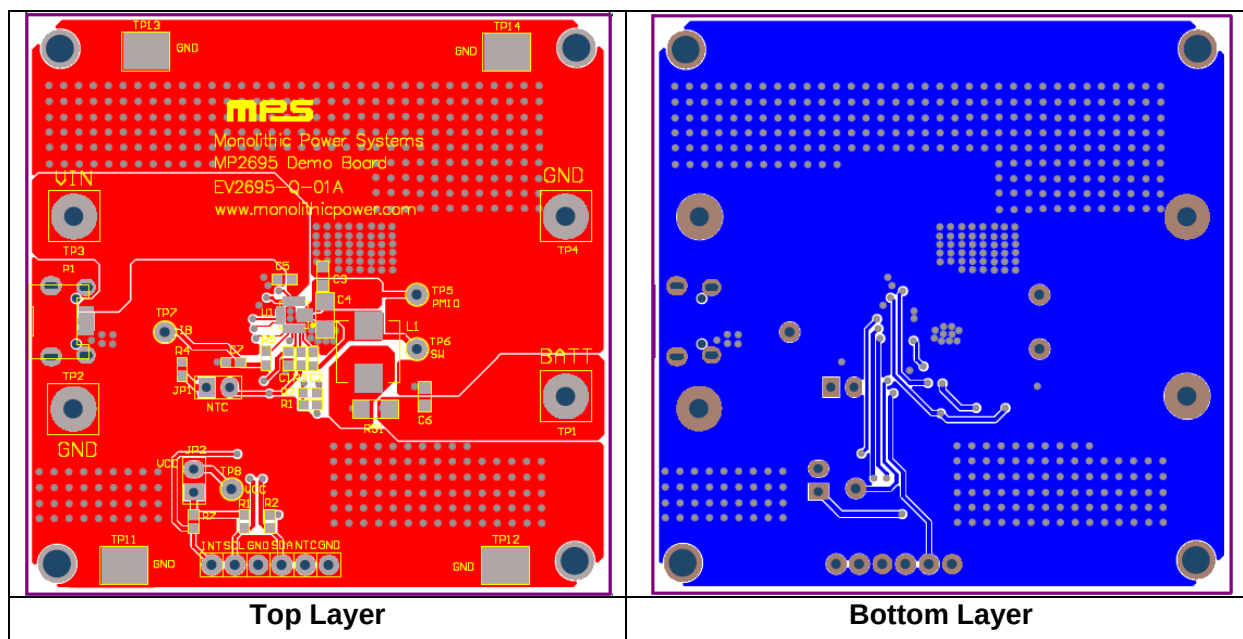
EVALUATION BOARD SCHEMATIC



EV2695-Q-01A BILL OF MATERIALS

Qty	RefDes	Value	Description	Package	Manufacture	Manufacture_P/N
1	C1	2.2μF	Ceramic Capacitor; 16V; X5R	0603	muRata	GRM188R61C225 KE15D
1	C2	470nF	Ceramic Capacitor; 25V; X7R	0603	TDK	C1608X7R1E474K
1	C3	10μF	Ceramic Capacitor; 16V; X5R	0805	muRata	GRM21BR61C106 KE15L
1	C4	NC	Ceramic Capacitor; 16V; X5R	0805	muRata	GRM21BR61C106 KE15L
2	C5, C7	1μF	Ceramic Capacitor; 25V; X7R	0603	muRata	GRM188R71E105K A12D
1	C6	22μF	Ceramic Capacitor; 10V; X7S	0603	TDK	C2012X7S1A226M
4	TP1, TP2, TP3, TP4		Connector; 2.0mm	DIP		
2	TP5, TP6		Test point, orange	DIP		
2	TP7, TP8		Test point, white	DIP		
6	SCL, SDA, GND, INT, NTC, GND		Connector;	DIP		
2	JP1, JP2		Jumper	DIP		
4	TP13, TP14, TP15, TP16		Connector, GND	SMT		
1	L1	1μH	Inductor; 1μH; 10A	SMD	Würth	74437349010
1	P1		Micro USB			
1	R1	NC				
2	R2	0	Film Resistor; 5%;	0603	Yageo	RC0603JR-070RL
2	R3, R4	10kΩ	Film Resistor; 1%;	0603	Yageo	RC0603FR-0710KL
1	R5	100kΩ	Film Resistor; 5%;	0603	Yageo	RC0603JR- 07100KL
1	R7	10kΩ	Film Resistor; 5%;	0603	Yageo	RC0603JR-0710K
1	RS1	10mΩ	Film Resistor; 1%; 1/4W	1206	Yageo	RL1206FR- 070R01L
1	U1		MP2695GQ-0000	QFN3*3	MPS	MP2695GQ-0000

PRINTED CIRCUIT BOARD LAYOUT



CONNECTIONS:

Table 1: Connectors

Connectors	Description
TP1/BATT	Connect to battery pack positive terminal
TP2/GND	Connect to battery pack negative terminal
TP3/VIN	Connect to input source positive terminal
TP4/GND	Connect to input source negative terminal
P1/micro USB power input	Connect to input power adaptor
SCL/SDA/GND/INT	I ² C connector
NTC	Connect to external thermistor

Table 2: Jumpers and Shunts

Jumpers	Description	I2C dongle mode Default
JP1	Connect on-board NTC divider	Install
JP2	Connect the pull up 10kΩ resistors to VCC, for INT.	Uninstall

QUICK START GUIDE

1, Please install USB dongle driver on the computer, and connect the dongle to the SCL/GND/SDA connector on the EVM

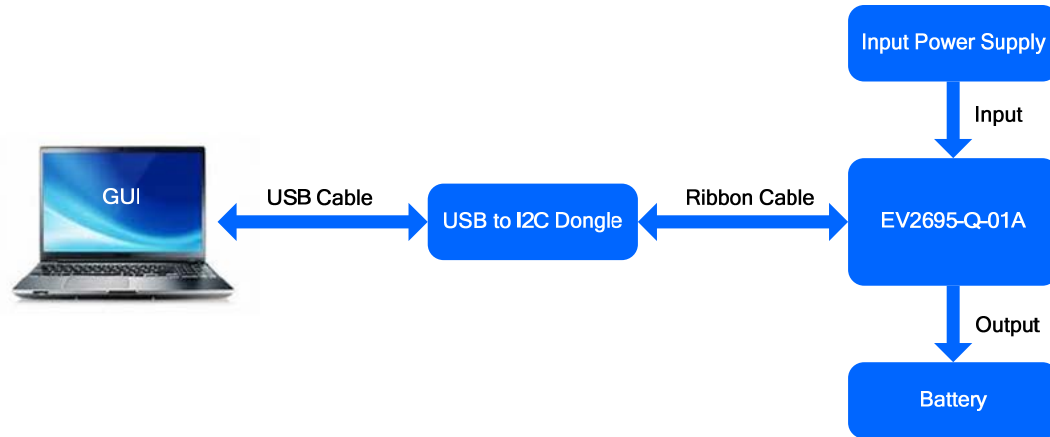
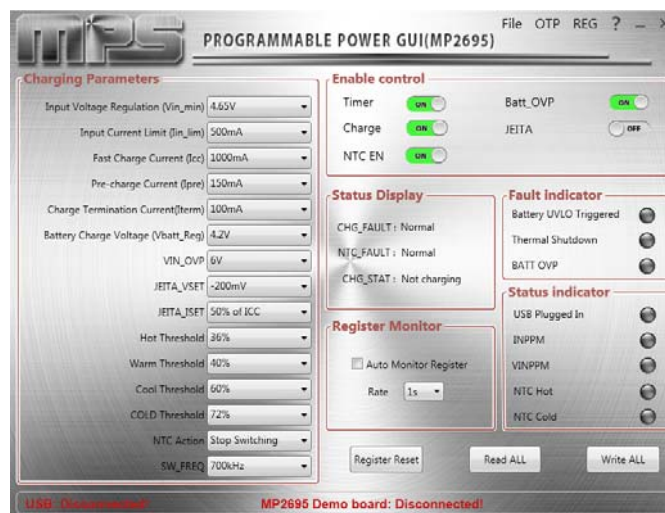


Figure 1: Setup

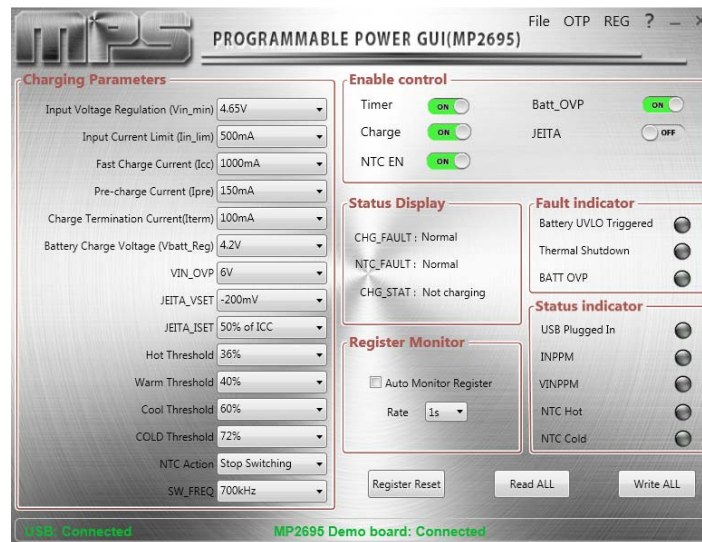
2, Connect the battery pack to TP1/BATT and TP2/GND connectors, take care of that the battery positive/negative terminal must be connected correctly.

3, If using a battery emulator, preset the battery emulator to 3.8V/5A and turn off the emulator, connect to TP1/BATT and TP2/GND, then turn on the emulator output.

4, Verify the USB dongle successfully connects the MP2695 to the computer (no warning shows on the top of the GUI).



(1) abnormal connected - warning in red



(2) normal connection

Figure 2: GUI Connection

5, Plug in the input adaptor to P1/micro USB port, or connect input power source 5V/3A to TP3/VIN and TP4/GND terminal. The EVM would start charging the battery.

6, Now the charging parameters can be controlled by the GUI interface.

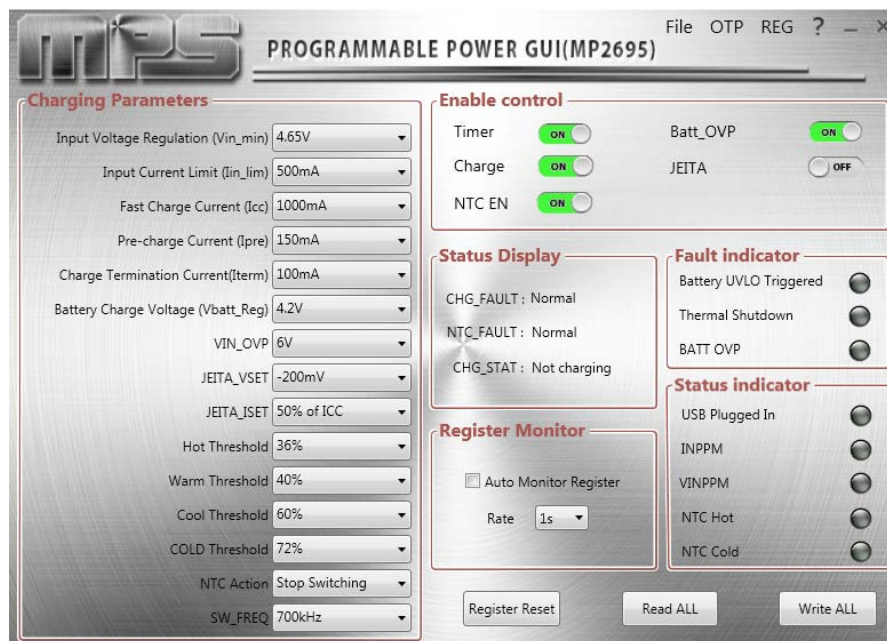


Figure 3: Charger Parameters Control Interface

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