

YX2865-Bidirectional Buck-Boost Controller Demo Manual

1 Description and Features

This EVB is built to evaluate the performance of YX2865, which is a bidirectional buck-boost controller. It has wide input and output range, compatible to drive GaN or Si FET. This is extremely suitable for wide input voltage range system such as battery powered system and bidirectional USB PD system. The main features of YX2865 are listed in bellow and can be evaluated on the demo board:

- Wide V_{IN} : 4V to 65V, Wide V_{OUT} : 2V to 65V
- Programmable soft start time
- Adjustable switching frequency and dead time
- Programmable input and output current limits
- 5V Driver supply voltage for Si FET or GaN FET
- Bidirectional power path control

2 Board Specifications

The YX2865 EVB features a four-switch buck-boost converter based on YX2865 Wide VIN buck-boost controller. This converter is designed to operate at input voltage from 24 V to 33.6 V (8s Battery) and provide a 5V to 48V regulated output (PD port) with a load current of up to 5A in forward and reverse direction. The board specifications are listed in Table 1.

Table 1 Board specification

Parameter	Value	Unite
Input Voltage (Battery side)	12 to 58.8	V
Output Voltage(PD side)	5 to 48	V
Maximum Input Current (Charge)	5	A
Maximum Output Current(Discharge)	7	A
Maximum Output Power (Discharge)	100W	BAT<18V
	140W	BAT<24V
	240W	24V<BAT<58.8
Maximum Efficiency	96.9	%
Default Switching frequency	400	kHz
Board Size	65X80	mm

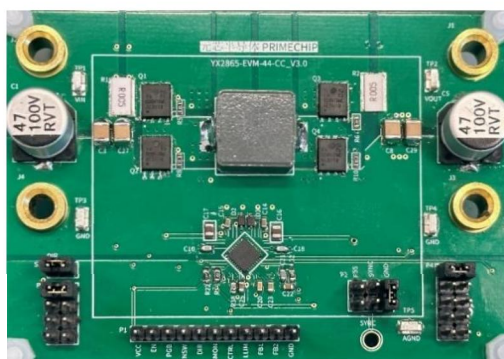


Figure 1 YX2865 Evaluation Board