EC2650QI 6A Voltage Divider

High Efficiency 12V to 6V (33W) Intermediate Bus Converter
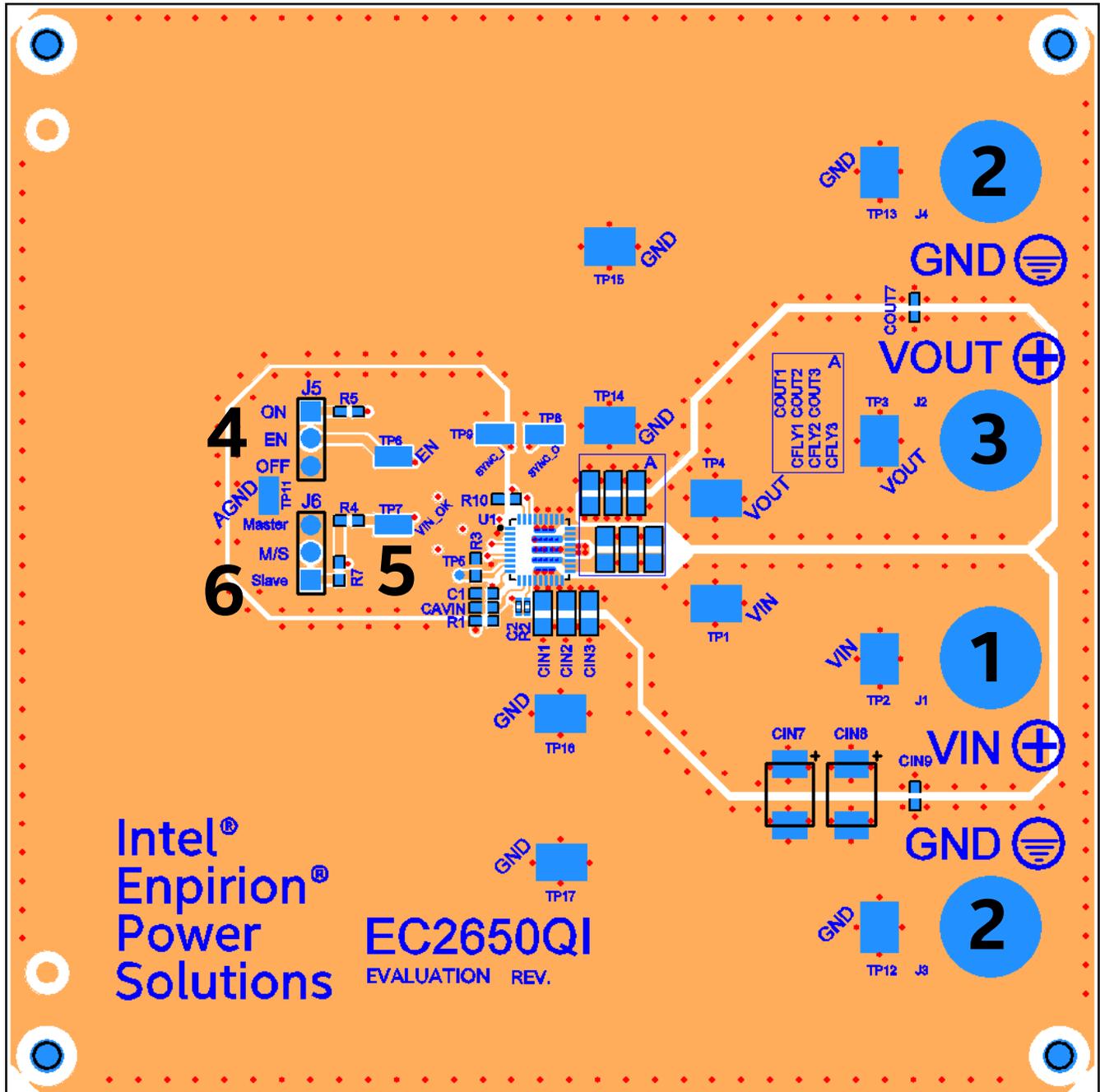
EVALUATION BOARD OVERVIEW

Figure 1: Evaluation Board (DIB) Features (Top View)

NOTE A: The EC2650QI Evaluation Board is shown in Figure 1 with the important features numbered.

NOTE B: The following instructions will directly correlate with the numbers shown in Figure 1.

EVALUATION BOARD INSTRUCTIONS

1) Input Supply (VIN) – Connect 8V to 13.2V supply on VIN (J1, J3). Pay attention to input polarity and do not turn on until everything is connected correctly.

2) Ground (GND) – Connect the ground to GND (J3, J4).

3) Output Voltage (VOUT) – Connect the load to VOUT (J2). The output voltage connections may be used to drive the inputs of downstream converters.

4) ENABLE (EN) – The ENABLE is pulled high to VIN through an external 10kΩ resistor (R5). An external signal may be applied to EN (TP6) to enable (>2.02V) or disable (<1.2V) the device. If the instructions were followed up to this point, the device may be powered on.

5) Input Power OK (VIN_OK) – This is the open drain Power OK flag for the input voltage (TP7), which is pulled high to V3P3 externally by a 100kΩ resistor (R4). When VIN is greater than 9V nominally, POK will be pulled high to V3P3.

6) Master/Slave Operation (M/S) – The EC2650QI may be configured to Master or Slave mode operation in order to parallel more devices and provide higher power. The board may be configured to be in Master or Slave mode using the three-prong terminal (J6). To configure to Master mode, add a jumper to pull the M/S pin towards Master (Ground). To configure the device to Slave mode, add a jumper to pull M/S pin toward Slave (V3P3). For Parallel Operation, connect the SYNC_O (TP8) of the Master to the SYNC_I (TP9) of each Slave

device. One Master device can control all Slave devices are shown in Figure 2. There is no limit to how many EC2650QI may be used in parallel, but since the devices do not actively current balance, the current distribution depends on board layout. Be sure the PVIN, GND and VOUT connections between all devices have as low impedance as possible, especially when more than 4 devices are used in parallel operation.
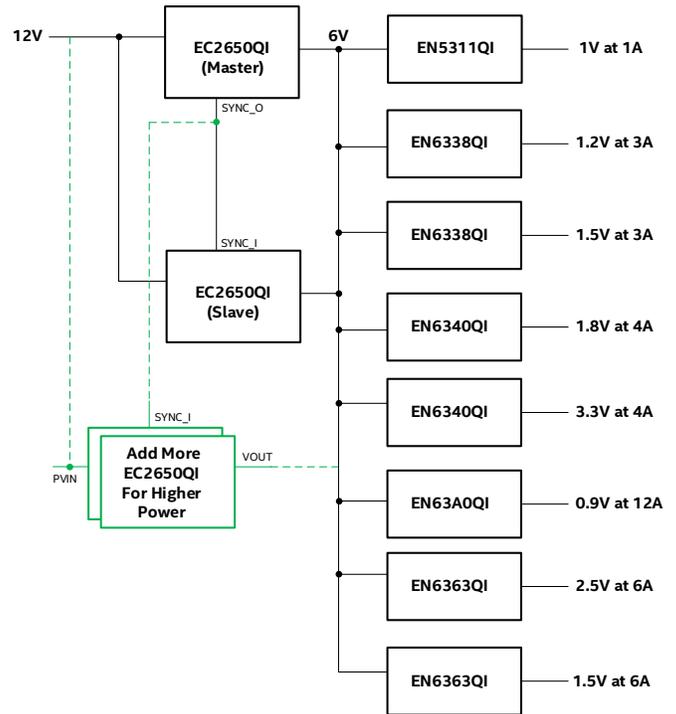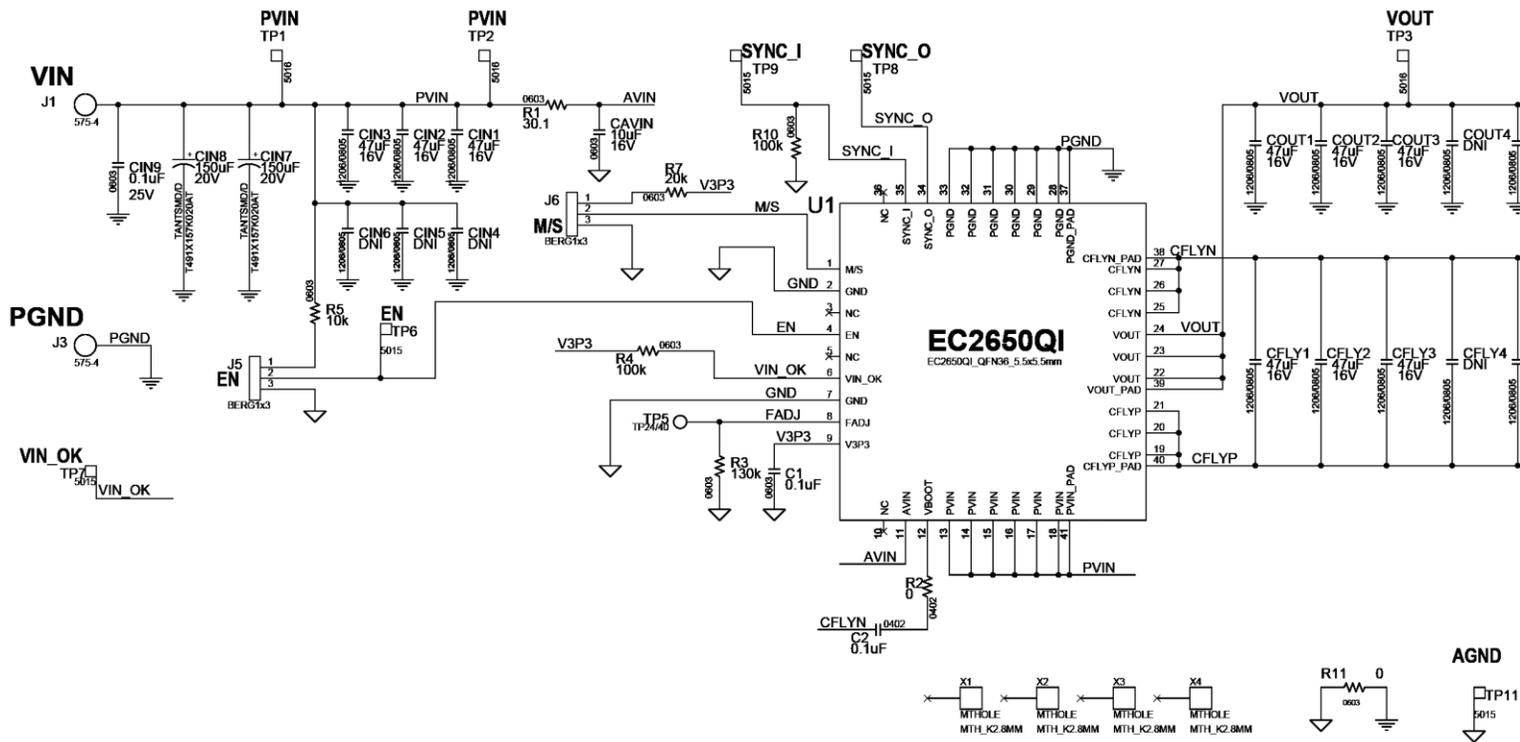

Figure 2: Parallel Operation with Master/Slave Mode

EVALUATION BOARD SCHEMATIC

BILL OF MATERIALS (B.O.M.)

Quantity	Reference	Value	Manufacturer	Part Number	PCB Footprint	Voltage	Toler
1	CAVIN	10uF	SAMSUNG	CL10A106MO8NQNC	0603	16V	±1
9	COUT1,CIN1,CFLY1, COUT2,CIN2,CFLY2, COUT3,CIN3,CFLY3	47uF	TDK	C3216X5R1C476MTJ00N	1206/0805	16V	±2
2	CIN7,CIN8	150uF	AVX	TAJE157K020RNJV		20V	±1
3	C1,COUT7,CIN9	0.1uF	AVX	06033D104KAT2A	0603	25V	±1
1	C2	0.1uF	TDK	C1005X5R1E104M050BC	0402	25V	±2
1	R1	30.1	Yageo	RC0603FR-0730R1L	0603		±1
1	R2	0	Panasonic	ERJ-2GE0R00X	0402		
1	R3	130k	Panasonic	ERJ-3EKF1303V	0603		
2	R4,R10	100k	Panasonic	ERJ-3EKF1003V	0603		±1
1	R5	10k	Yageo	RC0603FR-0710KL	0603		±1
1	R7	20k	Panasonic	ERJ-3EKF2002V	0603		±1
1	R11	0	Yageo CORP.	RC0603JR-070RL	0603		
1	U1	EC2650QI	Intel	EC2650QI	EC2650QI_QFN 36_5.5x5.5mm		

Evaluation Board User Guide | Intel Enpirion® Power Solutions: EC2650QI

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