5-8-Logic-EVM User's Guide

This user's guide contains support documentation for the 5-8-Logic Evaluation Module (EVM). Included is a description of how to set up and configure the EVM, the printed circuit board (PCB) layout, and the bill of materials (BOM) of the 5-8-Logic-EVM.

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1 Introduction

The 5-8-Logic-EVM is a generic EVM developed to support leaded Logic devices in the DBV, DCK, DCT, DCU, and DRL packages. This EVM can be used to evaluate any device in the package family and pin counts described in Table 1. The PCB can be broken down into six sections with each section supporting certain packages indicated on the board. This EVM allows the user to have a great amount of flexibility when evaluating leaded Logic devices.

Table 1. Package and Pin Support Table

TI Package Name	Package Family	# of Pins
DCK	SC–70	5, 6
DBV	SOT–23	5, 6
DCU	VSSOP	8
DCT	SSOP	8
DRL	SOT-5X3	5, 6, 8

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1.1 Kit Contents

Table 2. 5-8-Logic-EVM Kit Contents

Item	Description	Quantity
5-8-Logic-EVM	PCB	1
Headers	4 position, 100-mil (2.54 mm), thru-hole	12
Red Test Points	Miniature, thru-hole, red test point	2
Black Test Points	Miniature, thru-hole, red test point	2

1.2 Features

The 5-8-Logic-EVM has the following features:

- Multiple package support
- Breadboard compatible
- Easy-to-use / Flexible evaluation
- Support for both single supply and dual supply devices
- Small form factor for system integration

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2 Hardware

2.1 PCB Overview

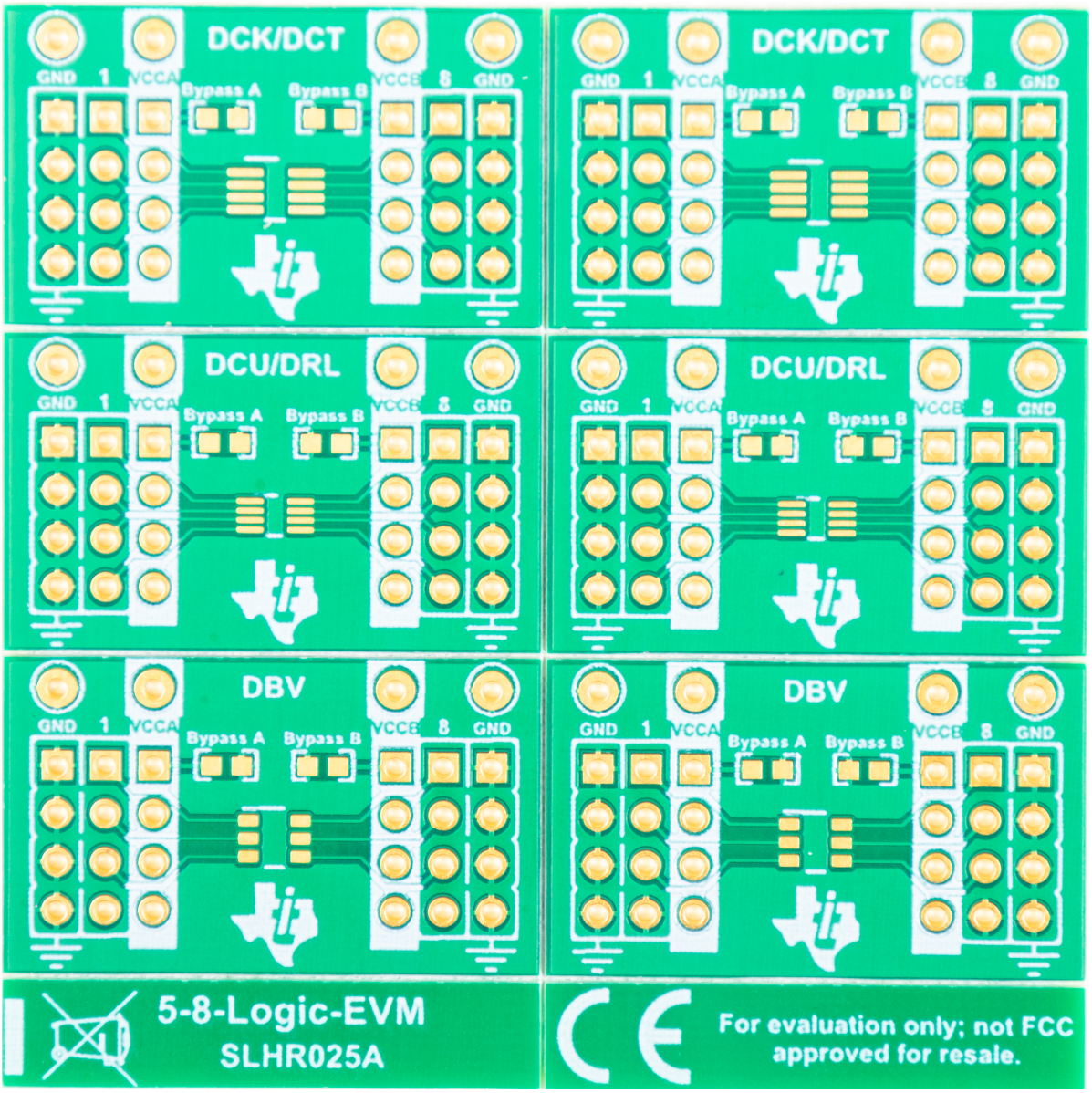

Figure 1. 5-8-Logic-EVM PCB

The 5-8-Logic-EVM PCB is designed to be straightforward for new users to begin evaluating leaded Logic devices. This section will highlight a few aspects of the PCB that are helpful to the user.

- Board breakable into smaller sections with the inclusion of v-scored grooves
- Each section has headers connected to device pins, V_{CCA}, V_{CCB}, and GND
- Designated supply inputs with included thru-hole test points
- Bypass capacitor footprints included for device supplies
- Option for single supply or dual supply evaluation with easy configuration

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2.2 Hardware Setup

This section will cover the six steps to take when evaluating a leaded Logic device using this EVM.

1. Identify the package you will be using for the device being evaluated. As stated previously, this EVM has six sections each of which contains a footprint in which a logic device can be placed. Break off the selected section (optional).
2. Solder down the device. Some sections support multiple packages so carefully solder down the device to make sure it is aligned properly. Figure 2 illustrates an example of proper placement..

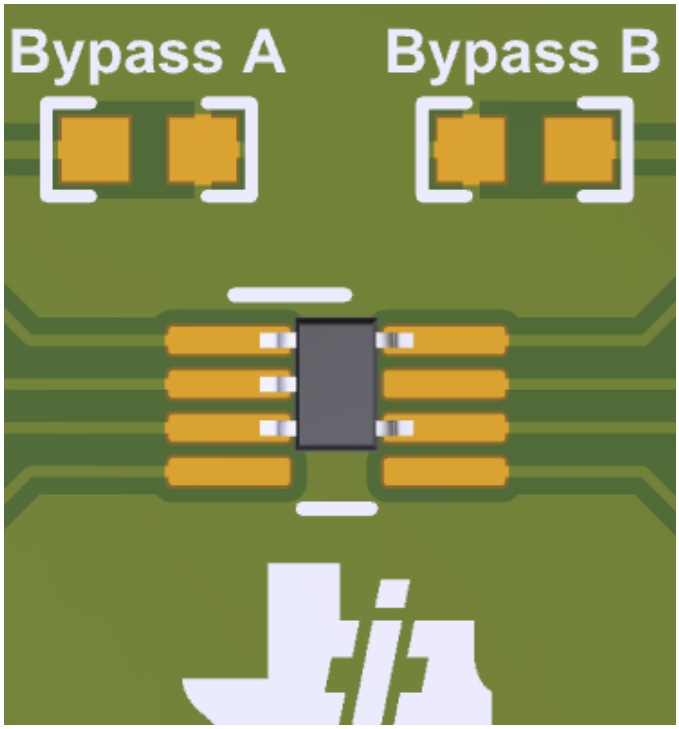

Figure 2. 5-pin DCK Placement

3. Ensure EVM is configured accordingly for dual supply or single supply device. EVM comes default configured for dual supply devices, but is easily configured using a 0-Ω resistor for single supply devices. Figure 3 illustrates how this is done.

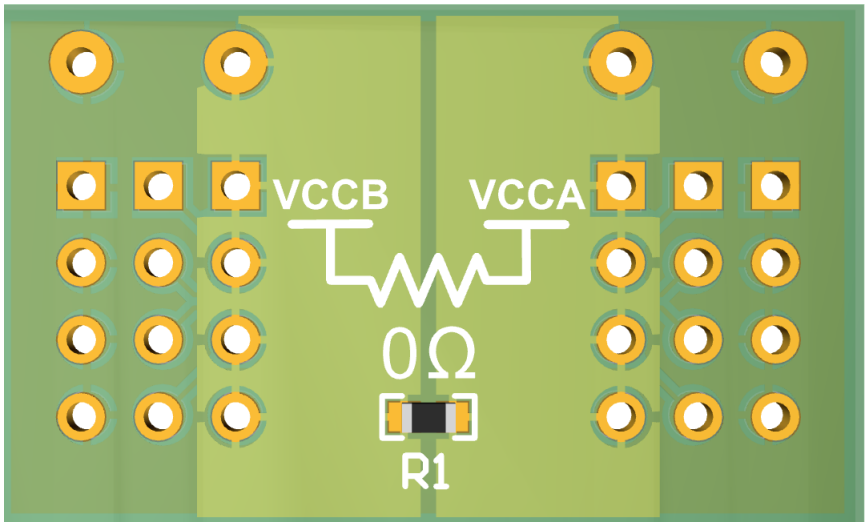

Figure 3. Single Supply Configuration

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4. Interface with device pins. The kit includes twelve 4-pin headers and four supply test points which will allow the user to fully populate two sections. An example of this, with the addition of bypass capacitors for the supplies, can be seen in Figure 4

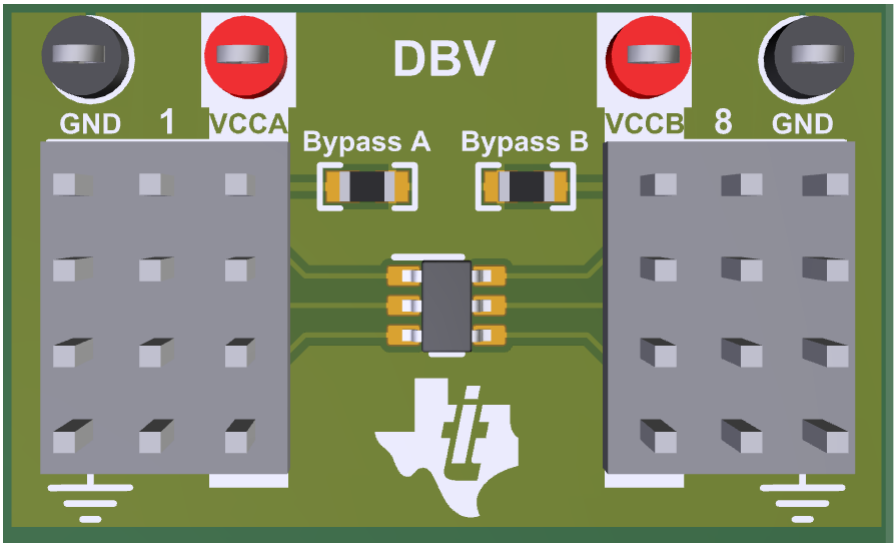

Figure 4. Fully Populated Section

5. Before applying power to the EVM, ensure the proper supply configuration is in place to avoid shorting two supplies together.

3 Board Layout

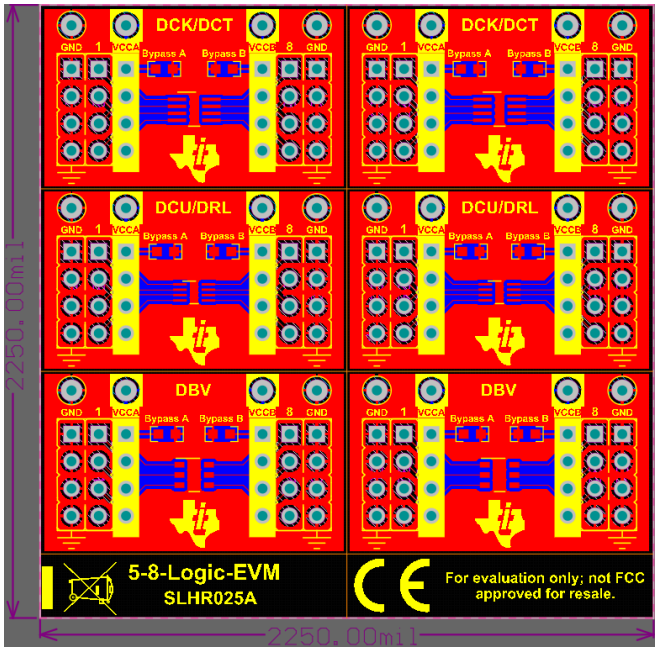

Figure 5. 5-8-Logic-EVM Layout Top View

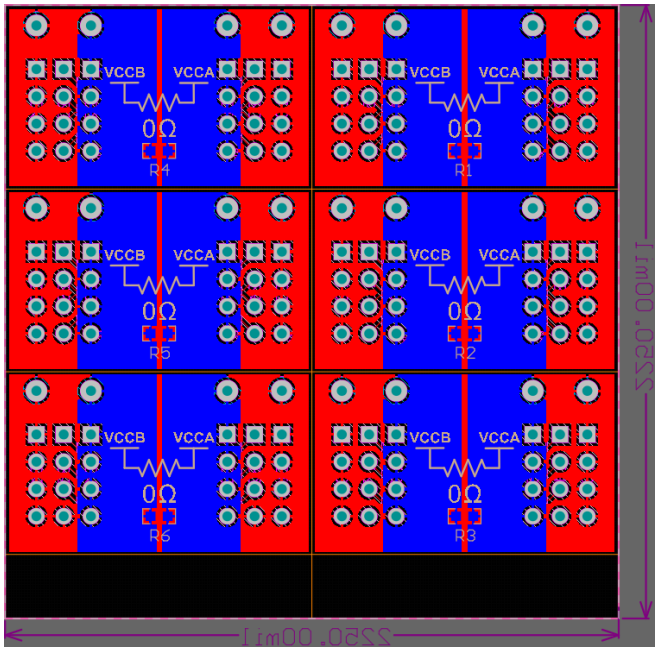

Figure 6. 5-8-Logic-EVM Layout Bottom View

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4 Bill of Materials

This section provides information on the components that can be used with the 5-8-Logic-EVM. Other components can be used as long as they are able to fit the provided plated holes and pads.

Table 3. Bill of Materials

Item	Description	Package Reference	Part Number	Manufacturer
Bypass Capacitor	CAP, CERM, 0.1 uF, 25 V, +/- 10%, X7R, 0603	0603	C1608X7R1E104K080AA	TDK
Header	Header, 100mil, 4x1, Tin, TH	Header, 4x1, 100mil, TH	PEC04SAAN	Sullins Connector Solutions
Red Test Point	Test Point, Miniature, Red, TH	Red Miniature Testpoint	5000	Keystone
Black Test Point	Test Point, Miniature, Black, TH	Black Miniature Testpoint	5001	Keystone

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