



ABSTRACT

This user's guide contains support documentation for the 5-8-NL-LOGIC-EVM 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-NL-LOGIC-EVM.

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1 Introduction

The 5-8-NL-LOGIC-EVM is a generic EVM developed to support non-leaded Logic and Translation devices in the DPW, DQE, DQM, DRY, DSF, DTM, DTQ, and DTT packages. This EVM can be used to evaluate any device in the package family and pin counts described in [Table 1-1](#). The PCB can be broken down into seven sections with each section supporting certain packages indicated on the board. This EVM provides the user flexibility when evaluating non-leaded Logic and Translation devices.

Table 1-1. Package and Pin Support Table

TI Package Name	Package Family	# of Pins
DPW	X2SON	5
DQE	X2SON	8
DQM	X2SON	8
DRY	USON	6
DSF	X2SON	6
DTM	X2SON	8
DTQ	X2SON	6
DTT	X1QFN	8

1.1 Kit Contents

Table 1-2. 5-8-NL-LOGIC-EVM Kit Contents

Item	Description	Quantity
5-8-NL-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-NL-LOGIC-EVM has the following features:

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

2 Hardware

2.1 PCB Overview

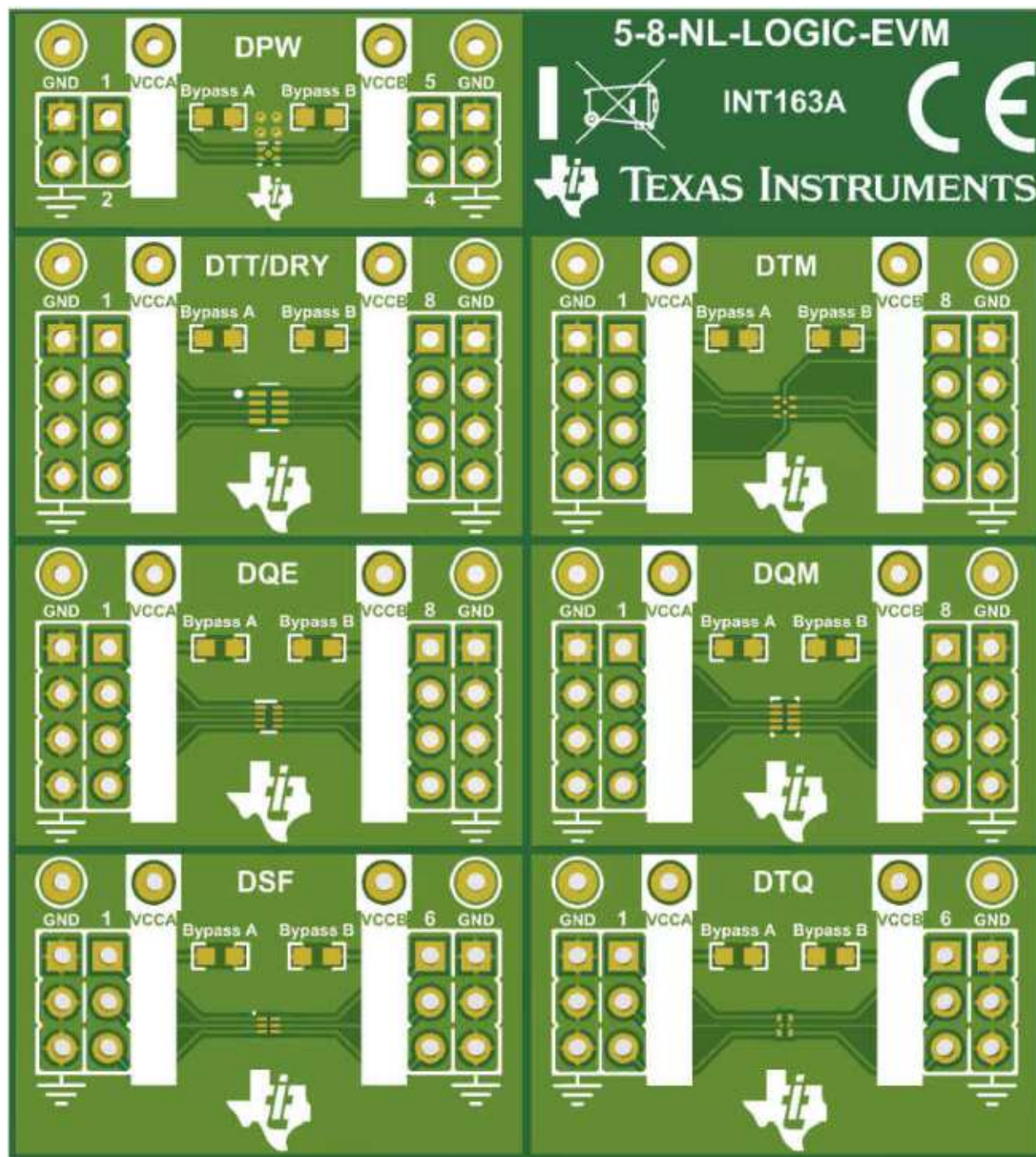


Figure 2-1. 5-8-NL-LOGIC-EVM PCB

The 5-8-NL-LOGIC-EVM PCB is designed to be straightforward for new users to begin evaluating non-leaded Logic and Translation 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

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 seven sections each of which supporting a non-leaded footprint. Break off the selected section (optional).
2. Solder down the device. Since this EVM supports small, non-leaded packages, this will likely require a hot air rework station. [Figure 2-2](#) illustrates an example of proper placement of a DRY device on the footprint that also supports the DTT package.

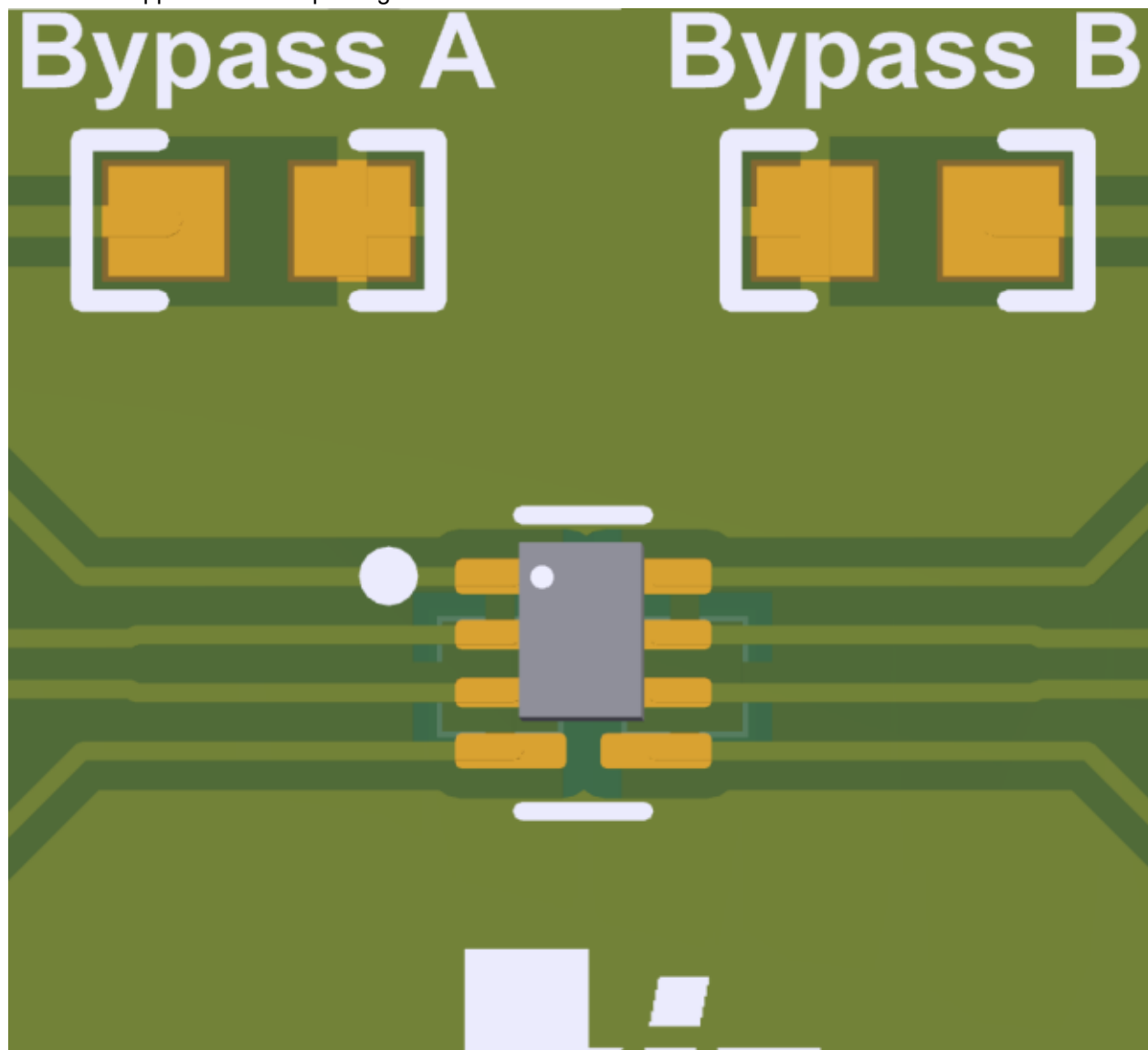


Figure 2-2. 6-pin DRY Placement

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 2-3](#) illustrates how this is done.

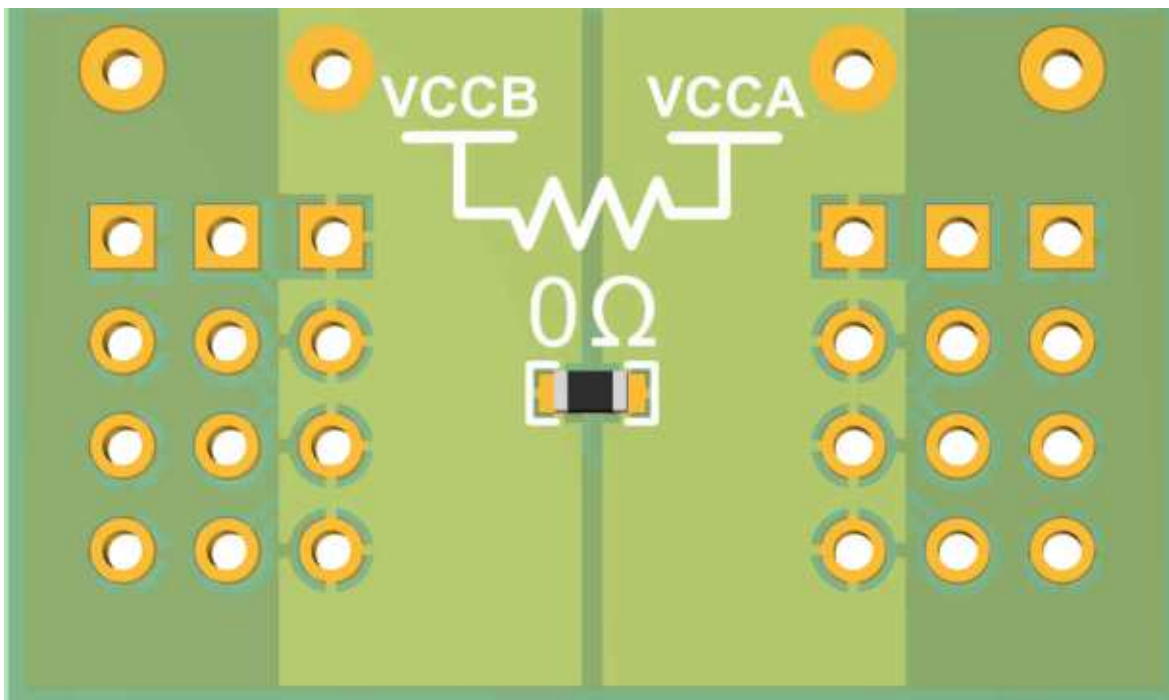


Figure 2-3. Single Supply Configuration

4. Interface with device pins. The kit includes twelve 4-pin headers and four supply test points. The headers can be cut to accommodate the 5-pin and 6-pin footprints. An example of this, with the addition of bypass capacitors for the supplies, can be seen in [Figure 2-4](#). *Note: The DPW section has the middle pad grounded to accommodate the pin-3 GND of DPW devices.*

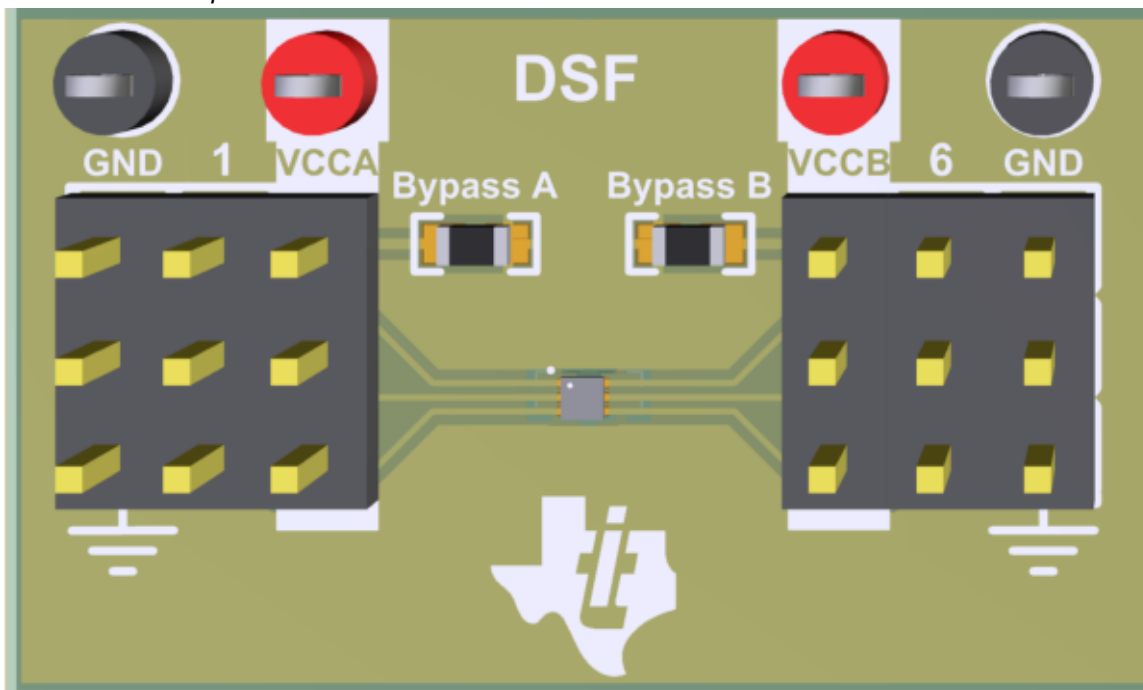


Figure 2-4. Fully Populated Section

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

3 Board Layout

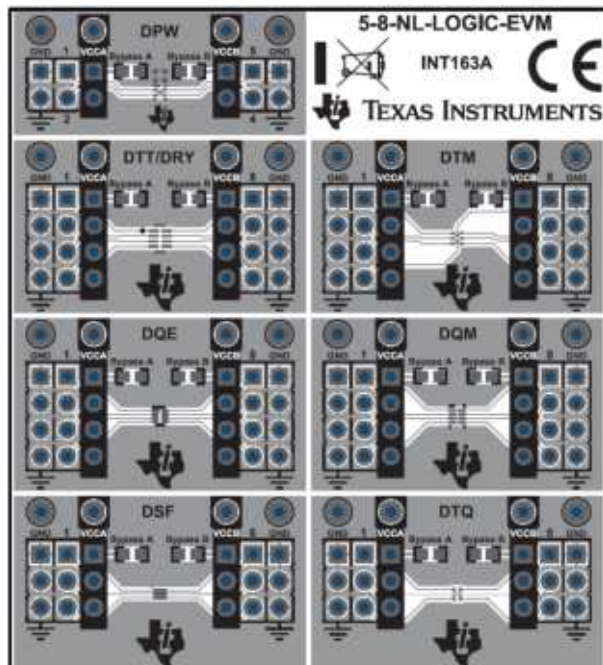


Figure 3-1. 5-8-NL-LOGIC-EVM Layout Top View

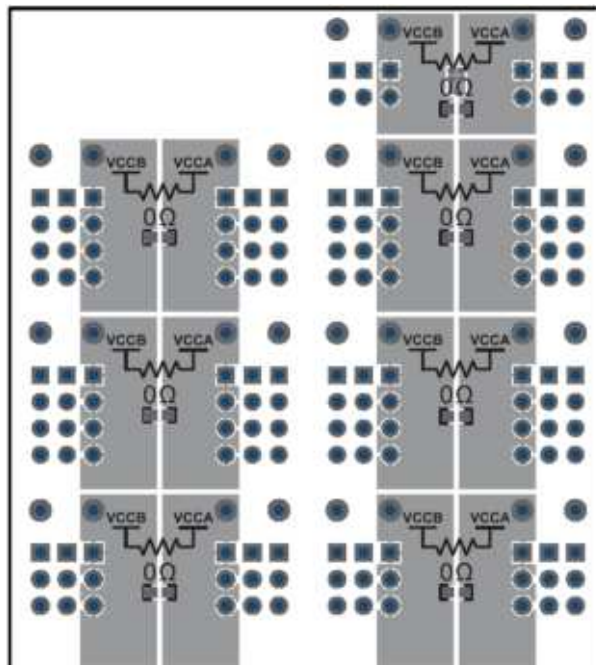


Figure 3-2. 5-8-NL-LOGIC-EVM Layout Bottom View

4 Bill of Materials

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

Table 4-1. Bill of Materials

Item	Description	Package Reference	Part Number	Manufacturer
Bypass Capacitor	CAP, CERM, 0.1 μ F, 25 V, $\pm$ 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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