

TUSB319 Evaluation Module

This document describes how to use TUSB319EVM.

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Trademarks

USB Type-C is a trademark of USB Implementers Forum, Inc..

Figure 1 provides a functional block diagram of the TUSB319EVM.

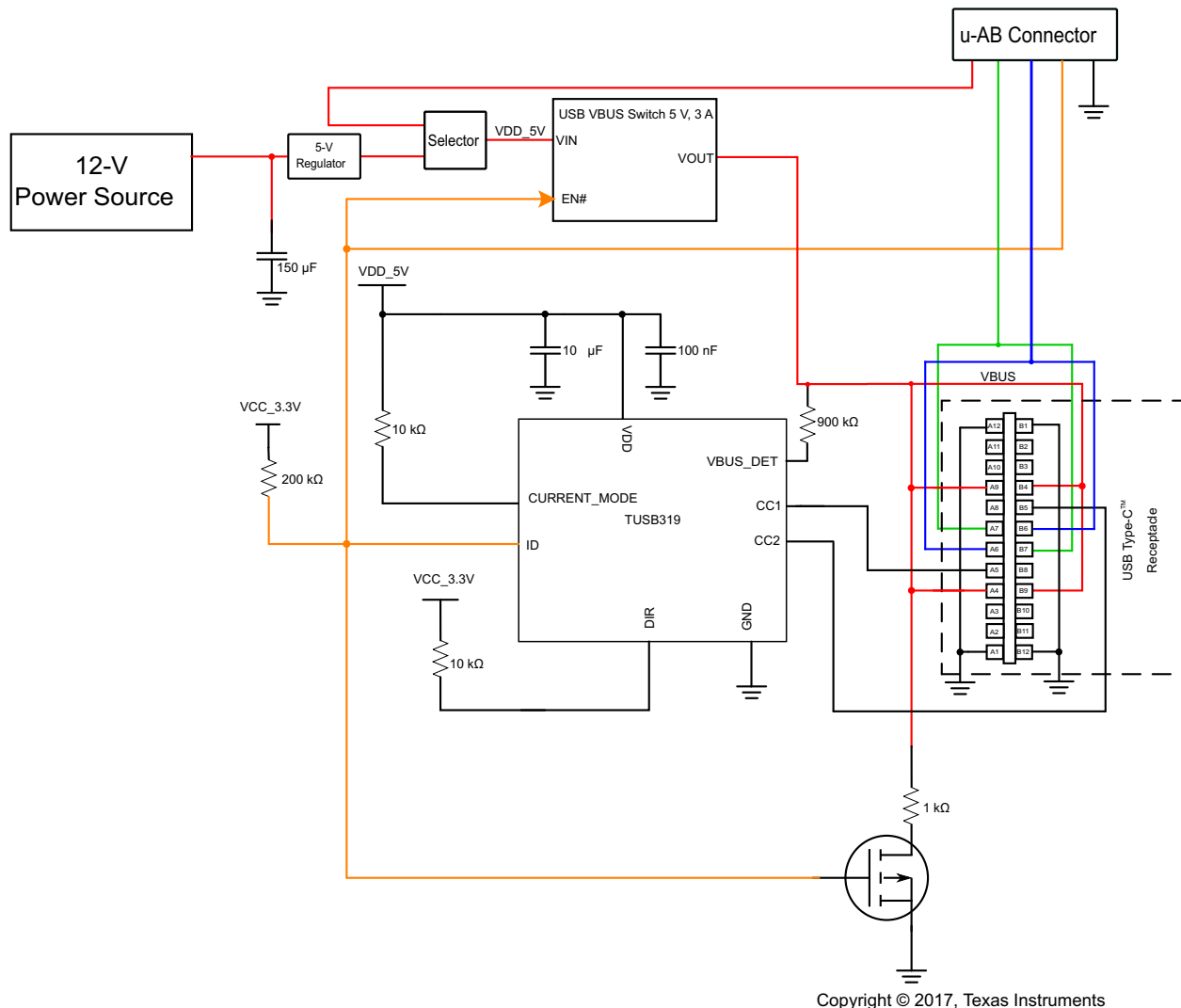


Figure 1. TUSB319EVM Functional Block Diagram

The TUSB319 EVM is designed to evaluate TUSB319 devices, specifically for a DFP charging implementation. This EVM can also be used as a hardware reference design for a wall charger using the TUSB319 with a USB Type-C™ connector. PCB design files can be provided, upon request, to aid PCB design with the TUSB319. The layout files can be used as a guideline to implement the TUSB319 with illustrations of the routing and placement rules. Please note that the EVM design may include test components for evaluation purposes not applicable for production. The EVM includes on-board USB micro-AB plug to connect to legacy USB systems and provide an optional USB2 data path.

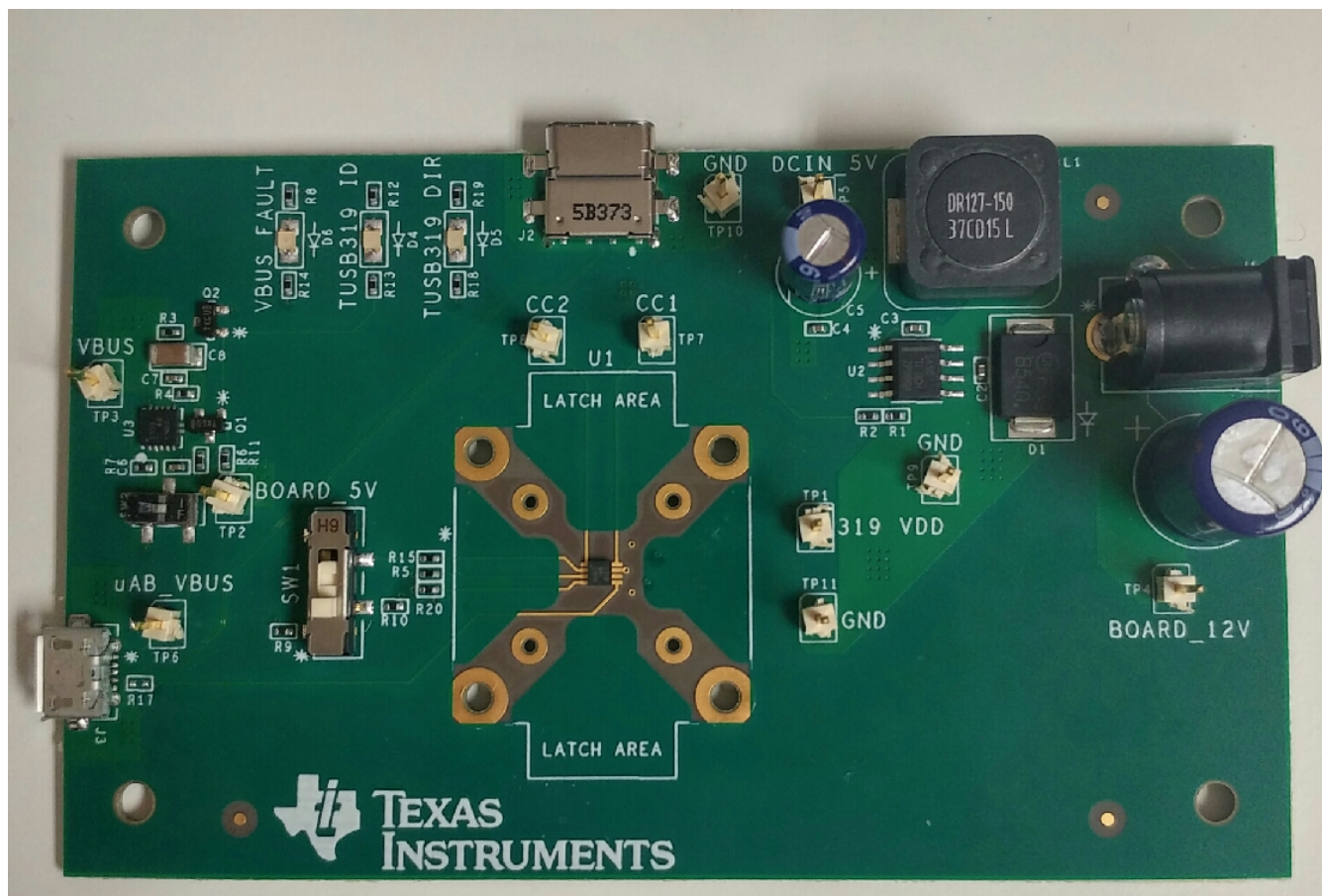


Figure 2. TUSB319EVM

2 TUSB319EVM

2.1 Power

The TUSB319EVM can be powered either using a 12-V DC power supply or via USB thru the integrated micro AB USB connector. This evaluation board is capable to provide up to 3 A at 5 V DC to the USB Type-C connector (VBUS).

2.2 Connectors

The EVM has a USB micro-AB and a USB Type-C receptacle. The micro-AB connector can be connected to a USB legacy host or OGT device. A USB Type-C device can be connected to the USB Type-C receptacle provided on the EVM for charging or an optional high-speed connection.

2.3 USB Type-C™ Current Advertisement

The TUSB319EVM is capable to advertise three different current modes: USB standard current (500 mA and 900 mA), medium level (1.5 A) and high level (3 A); the switch SW1 controls the advertised current, selecting the levels from High to Low with the positions 1 to 3, respectively.

2.4 Data Path

There is an optional USB2 data path; it is a direct high-speed trace between the micro-AB connector and the USB Type-C receptacle.

2.5 LEDs

LEDs are provided to indicate the connection status of the TUSB319EVM. LEDs are described in [Table 1](#).

Table 1. LED Descriptions

Ref Designator	LED_COLOR	LED Status Description
D2	LED_RED	Illuminates when an overcurrent condition has occurred
D3	LED_GRN	Advertises the USB Type-C cable orientation
D4	LED_GRN	Illuminates when the TUSB319 has detected a UFP device and the ID pin is active

3 TUSB319 EVM Quick Start Guide

3.1 12-V DC Power Supply

Use the following directions for accessing 12-V DC power supply:

1. Connect the TUSB319EVM to a 12 V DC power supply using the J1 jack.
2. Configure the SW1 switch in position 1.
3. Connect a UFP device on the USB Type-C connector.
4. Verify that LED D4 is ON and LED D3 is either way ON or OFF.
5. Disconnect the USB Type-C cable.
6. Verify that LEDs D4 and D3 are OFF.
7. Flip and connect the USB Type-C cable.
8. Verify that LED D4 is ON and LED D3 has the opposite state as in step 4.

3.2 USB Power Supply

Use the following directions for accessing USB power supply:

1. Connect the TUSB319EVM to a USB host via the micro-AB USB connector.
2. Configure the SW1 switch in position 2.
3. Connect a UFP device on the USB Type-C connector.
4. Verify that LED D4 is ON and LED D3 is either way ON or OFF.
5. Disconnect the USB Type-C cable.
6. Verify that LEDs D4 and D3 are OFF.
7. Flip and connect the USB Type-C cable.
8. Verify that LED D4 is ON and LED D3 has the opposite state as in step 4.

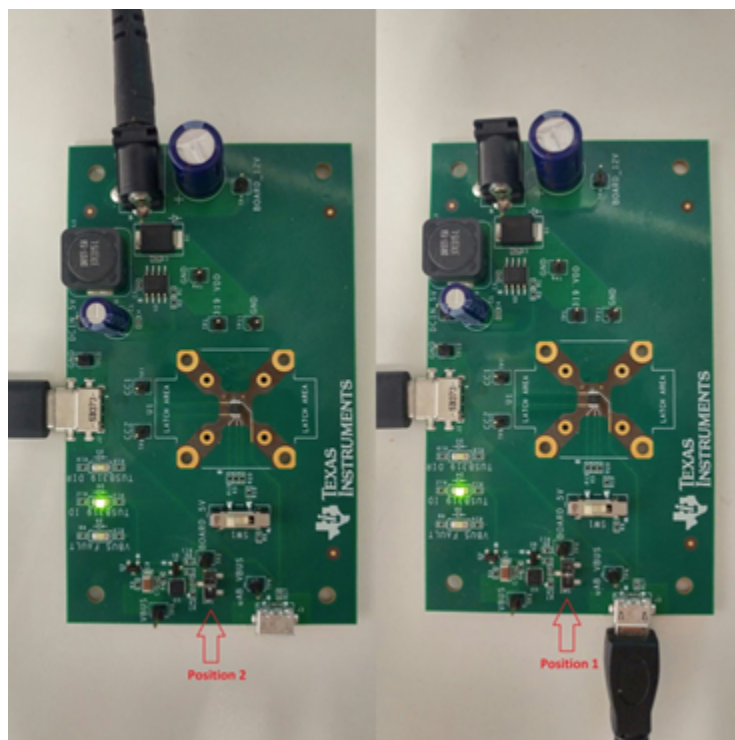


Figure 3. TUSB319EVM Power Configurations

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This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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- *Reorient or relocate the receiving antenna.*
- *Increase the separation between the equipment and receiver.*
- *Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- *Consult the dealer or an experienced radio/TV technician for help.*

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3.2.1 For EVMs issued with an Industry Canada Certificate of Conformance to RSS-210 or RSS-247

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http://www.tij.co.jp/lsds/ti_ja/general/eStore/notice_01.page

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2. Use EVMs only after User obtains the license of Test Radio Station as provided in Radio Law of Japan with respect to EVMs, or
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