

# **TUSB319 Evaluation Module**

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This document describes how to use TUSB319EVM.

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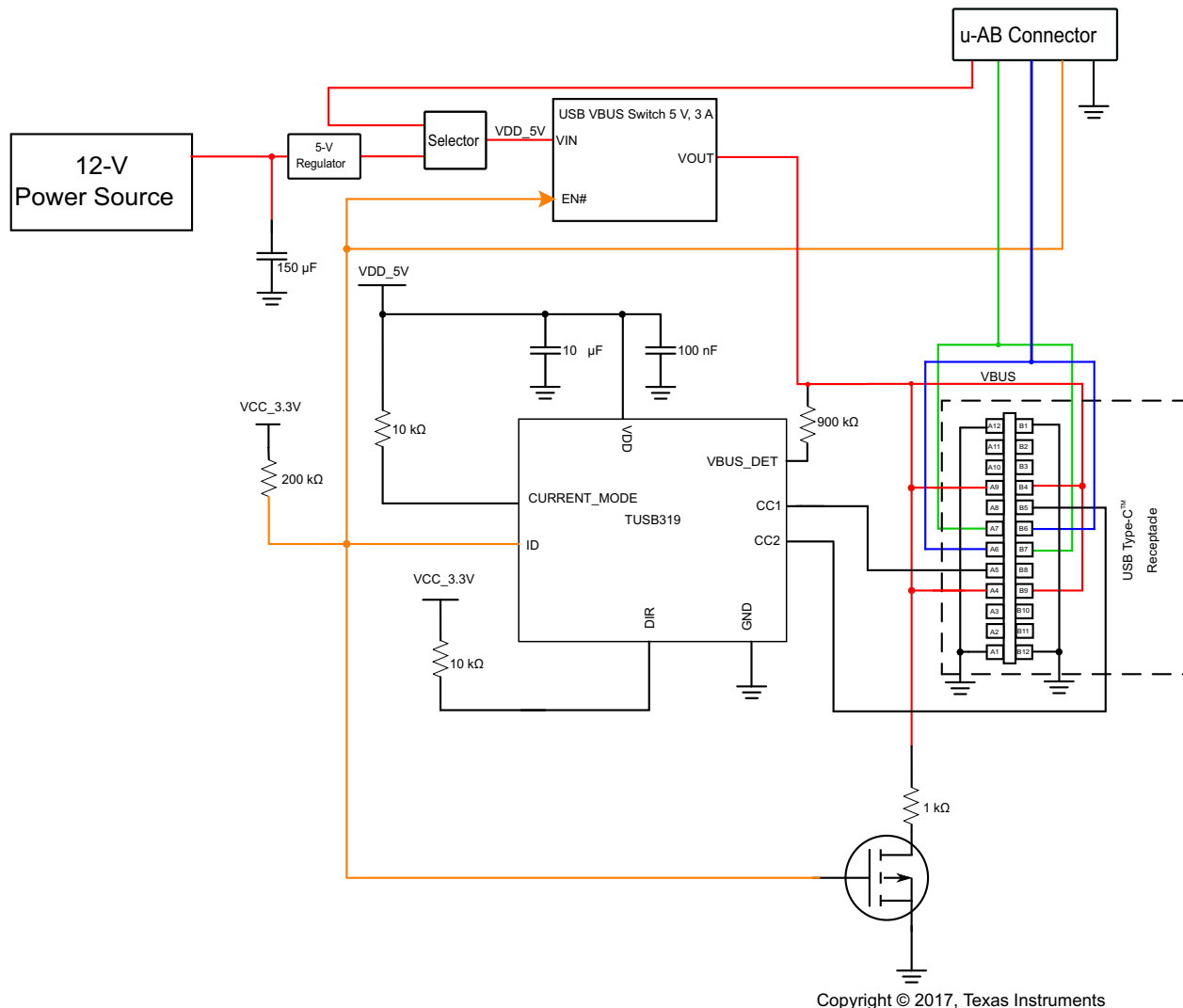
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USB Type-C is a trademark of USB Implementers Forum, Inc..

## 1 What is TUSB319EVM?

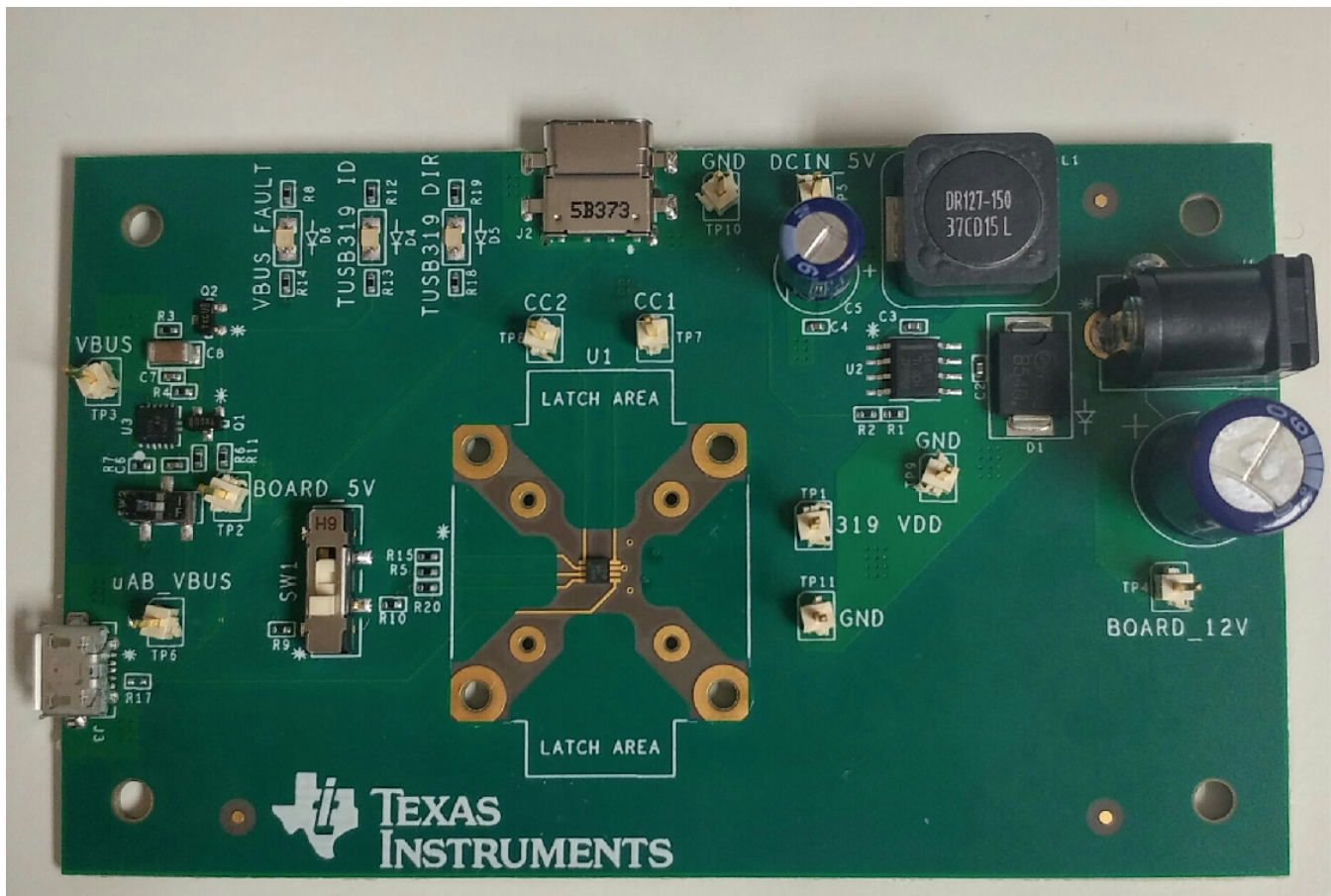
Figure 1 provides a functional block diagram of the TUSB319EVM.



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**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.

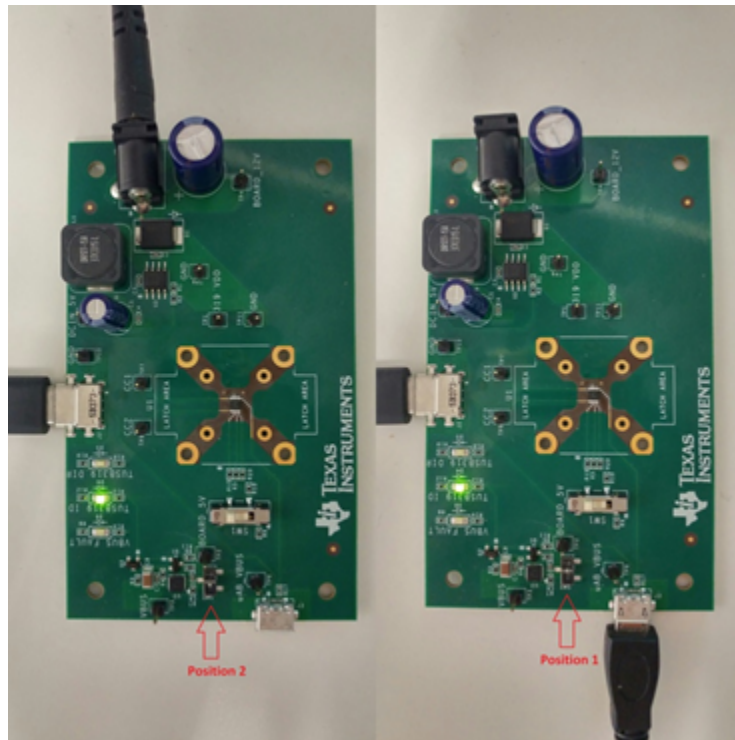


Figure 3. TUSB319EVM Power Configurations

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- 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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Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication. This radio transmitter has been approved by Industry Canada to operate with the antenna types listed in the user guide with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

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Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante. Le présent émetteur radio a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés dans le manuel d'usage et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

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