

## **DP838367 RGMII EVM**

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### **ABSTRACT**

This document is a getting started reference guide for the DP83867 RGMII EVM. This will help the user to get familiar with the EVM and quickly get it in the desired mode of operation.

### **1 Introduction**

The DP83867ERGZ RGMII EVM (DP83867ERGZ-R-EVM) supports 1000/100/10 Mb/s and is compliant with the IEEE 802.3 standard. This reference design supports RGMII interfaces.

The DP83867 EVM includes three onboard status LEDs, 5-V connectors with onboard LDO, and is JTAG accessible. The DP83867 EVM is capable of providing a 125-MHz reference clock from an onboard 25-MHz crystal. Serial management interface, MDIO/MDC, is supported and can be used to access PHY registers for additional features. There are 4-level straps, which allow for system configurations without the need to directly access PHY registers. External power supplies can be connected to each specified voltage rail for additional system evaluation. The DP83867 EVM supports Wake-on-LAN, Start-of-Frame Detect IEEE 1588 Time Stamp, and configurable I/O voltages.

[Figure 1](#) illustrates the EVM components.

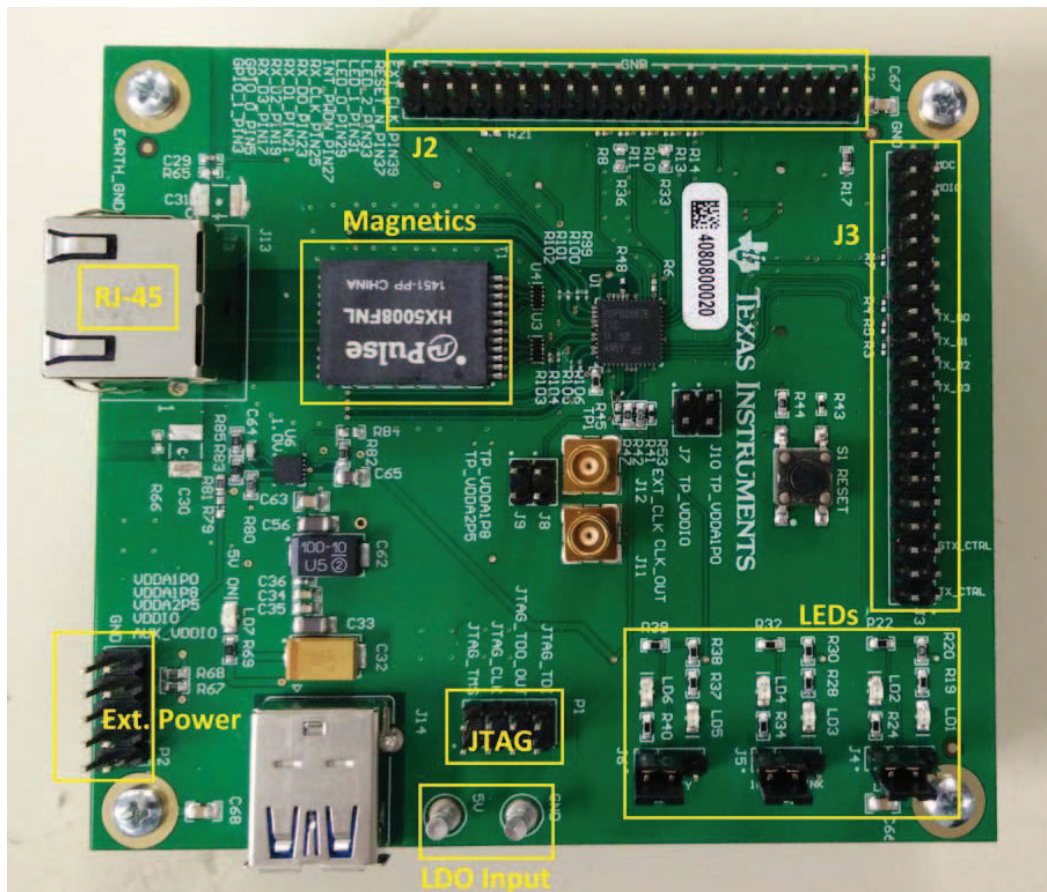


Figure 1. DP83867ERGZ RGMII EVM

## 2 EVM Components

### 2.1 Power

#### Internal LDO

The PHY can be powered up through internal LDO and requires a 5-V DC input through the '5V' and 'GND' pins or through the USB port.

#### External Supplies

The EVM has headers for connecting external supplies to power the PHY. Refer the user's guide ([SNLU190](#)) for more information on how to configure the EVM for external power supplies.

### 2.2 LED

The EVM has 3 LED configurations for indicating LINK, 1000M LINK, and ACTIVITY. Depending on the current state of the PHY, respective LEDs will turn ON.

**LINK:** Turns ON if the PHY successfully links with a Link partner for 10M, 100M, or 1000M speeds.

**1000M LINK:** Turns ON only if 1000M link is establish.

**ACTIVITY:** Turns ON if there is activity on Media Dependent Interface.

### 2.3 I/Os

The input/output pins of the PHY are routed to J2 and J3 connectors. Refer the user's guide ([SNLU190](#)) for more information regarding the I/O pins.

### 2.4 JTAG

Header for connecting JTAG pins.

## 3 Powering Up

Use the following list for EVM power up:

- Ensure that the jumpers position on LED pins is as shown in [Figure 1](#).
- Connect a 5V DC supply with current limit at 400 mA to the '5V' and 'GND' pins on the EVM and turn on the supply. Power can also be provided through USB port. This should turn on the Power LED.
- Connect the EVM to a Gigabit link partner with auto-negotiation ability using a Cat5e cable.
- After auto-negotiation is completed, the LINK and 1000M LINK LEDs should be ON.
- If the Link Partner had the ability to send packet traffic to DP83867EVM, then start packet transmission. At this point the ACTIVITY LED should turn ON.
- Disconnecting the Cat5e cable should turn off all Status LEDs.

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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.

### 3.2 Canada

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

##### **Concerning EVMs Including Radio Transmitters:**

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

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[http://www.tij.co.jp/lstds/ti\\_ja/general/eStore/notice\\_01.page](http://www.tij.co.jp/lstds/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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Industrial	<a href="http://www.ti.com/industrial">www.ti.com/industrial</a>
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