SensorRF-GEVK

SensorRF-GEVK Evaluation Board User's Manual

SensorRF-GEVK IoT Development Platform: Getting Started Guide

Introduction

Thank you for purchasing the SensorRF-GEVK IoT Development Platform. SensorRF-GEVK enables exploration and development of applications using battery-free wireless sensors built around the Magnus[®]-S chip. The system includes:

- System Motherboard with LCD Touchscreen, BeagleBone Single-board Linux Computer, and Wireless Communication Board
- DC Power Supply and Cable
- Directional Antenna
- Coaxial Antenna Cable

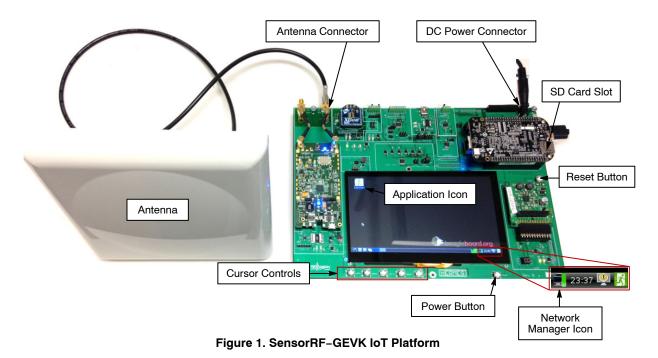


ON Semiconductor®

www.onsemi.com

EVAL BOARD USER'S MANUAL

- SD Card for System Restore
- USB Cable for Connecting Peripherals to the BeagleBone
- 5 Temperature-sensing Tags
- 5 Moisture-sensing Tags



SensorRF-GEVK

System Setup

Remove the SensorRF-GEVK motherboard from the cardboard shipping base by unscrewing the plastic fasteners. Screw the antenna cable to the connector on the motherboard (indicated in the figure above). Make sure the connection is snug but avoid overtightening. Use an 8 in-lb torque wrench if available. Hand-tighten the other end of the cable to the port on the back of the antenna. Avoid sharp bends in the antenna cable.

Turning SensorRF-GEVK On and Off

To start SensorRF-GEVK, simply connect the DC power plug (shown in the figure above). The system will start automatically. To turn SensorRF-GEVK off, press the Power button once and wait for the system to fully shut down before unplugging the power connector. If the system is turned off but still plugged in, it can be restarted by pressing the power button.

CAUTION: Do not unplug the power connector before shutting down to prevent damage to the

system.

Running a Sensor Demonstration

Place a sensor tag about 50 cm from the antenna and aim the antenna at the tag; avoid placing metal objects between the two. After the system boots and the LCD touch screen displays the desktop, launch the SensorRF–GEVK Demonstration Software by tapping the icon in the upper left. Select a Temperature or Moisture demonstration at the main screen. Click Start to begin reading the sensor and plotting results.

For More Information

Full documentation and source code to the demonstration application can be found at www.onsemi.com

Magnus is a registered trademark of RFMicron. All other brand names and product names appearing in this document are registered trademarks or trademarks of their respective holders.

onsemi, ONSEMI, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "onsemi" or its affiliates and/or subsidiaries in the United States and/or other countries. onsemi owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of onsemi's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. onsemi is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

The evaluation board/kit (research and development board/kit) (hereinafter the "board") is not a finished product and is not available for sale to consumers. The board is only intended for research, development, demonstration and evaluation purposes and will only be used in laboratory/development areas by persons with an engineering/technical training and familiar with the risks associated with handling electrical/mechanical components, systems and subsystems. This person assumes full responsibility/liability for proper and safe handling. Any other use, resale or redistribution for any other purpose is strictly prohibited.

THE BOARD IS PROVIDED BY ONSEMI TO YOU "AS IS" AND WITHOUT ANY REPRESENTATIONS OR WARRANTIES WHATSOEVER. WITHOUT LIMITING THE FOREGOING, ONSEMI (AND ITS LICENSORS/SUPPLIERS) HEREBY DISCLAIMS ANY AND ALL REPRESENTATIONS AND WARRANTIES IN RELATION TO THE BOARD, ANY MODIFICATIONS, OR THIS AGREEMENT, WHETHER EXPRESS, IMPLIED, STATUTORY OR OTHERWISE, INCLUDING WITHOUT LIMITATION ANY AND ALL REPRESENTATIONS AND WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, NON-INFRINGEMENT, AND THOSE ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE CUSTOM OR TRADE PRACTICE.

onsemi reserves the right to make changes without further notice to any board.

You are responsible for determining whether the board will be suitable for your intended use or application or will achieve your intended results. Prior to using or distributing any systems that have been evaluated, designed or tested using the board, you agree to test and validate your design to confirm the functionality for your application. Any technical, applications or design information or advice, quality characterization, reliability data or other services provided by **onsemi** shall not constitute any representation or warranty by **onsemi**, and no additional obligations or liabilities shall arise from **onsemi** having provided such information or services.

onsemi products including the boards are not designed, intended, or authorized for use in life support systems, or any FDA Class 3 medical devices or medical devices with a similar or equivalent classification in a foreign jurisdiction, or any devices intended for implantation in the human body. You agree to indemnify, defend and hold harmless onsemi, its directors, officers, employees, representatives, agents, subsidiaries, affiliates, distributors, and assigns, against any and all liabilities, losses, costs, damages, judgments, and expenses, arising out of any claim, demand, investigation, lawsuit, regulatory action or cause of action arising out of or associated with any unauthorized use, even if such claim alleges that onsemi was negligent regarding the design or manufacture of any products and/or the board.

This evaluation board/kit does not fall within the scope of the European Union directives regarding electromagnetic compatibility, restricted substances (RoHS), recycling (WEEE), FCC, CE or UL, and may not meet the technical requirements of these or other related directives.

FCC WARNING – This evaluation board/kit is intended for use for engineering development, demonstration, or evaluation purposes only and is not considered by **onsemi** to be a finished end product fit for general consumer use. It may generate, use, or radiate radio frequency energy and has not been tested for compliance with the limits of computing devices pursuant to part 15 of FCC rules, which are designed to provide reasonable protection against radio frequency interference. Operation of this equipment may cause interference with radio communications, in which case the user shall be responsible, at its expense, to take whatever measures may be required to correct this interference.

onsemi does not convey any license under its patent rights nor the rights of others.

LIMITATIONS OF LIABILITY: **onsemi** shall not be liable for any special, consequential, incidental, indirect or punitive damages, including, but not limited to the costs of requalification, delay, loss of profits or goodwill, arising out of or in connection with the board, even if **onsemi** is advised of the possibility of such damages. In no event shall **onsemi**'s aggregate liability from any obligation arising out of or in connection with the board, under any theory of liability, exceed the purchase price paid for the board, if any.

The board is provided to you subject to the license and other terms per **onsemi**'s standard terms and conditions of sale. For more information and documentation, please visit www.onsemi.com.

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:

Technical Library: www.onsemi.com/design/resources/technical-documentation onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support

For additional information, please contact your local Sales Representative at www.onsemi.com/support/sales