

# **DESIGN KIT Energy Harvesting Solution To Go**



"Energy Harvesting Solution To Go" provides following benefits:

- Complete solution from harvesting of the energy, energy management and storage
- Easy transfer of this solution to your design
- Evaluation of the highest efficient components in the market

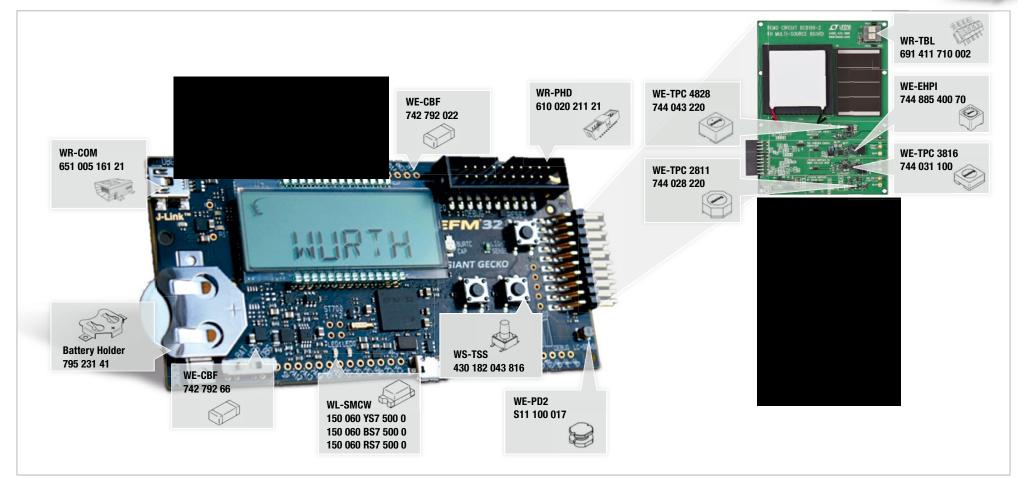
Order Code IC-744 885 Version 1.0

### **Energy Harvesting**









EMC COMPONENTS | INDUCTORS | TRANSFORMERS | RF COMPONENTS | CIRCUIT PROTECTION | EMC SHIELDING MATERIAL | CONNECTORS | SWITCHES | ASSEMBLY TECHNIQUE | POWER ELEMENTS

Important information: Würth Elektronik's design kits contain reference components. These components correspond with the current product development status on the day of supply. Exchange of the reference components with up-to-date product development status is not carried out automatically. No liability is taken for the use of these reference components. Therefore, please request new samples prior to releases for series production and product release.

Please check datasheets on www.we-online.com for specifications. Würth Elektronik eiSos GmbH & Co. KG, EMC & Inductive Solutions. © 2012

All products in stock!

### Silicon Labs' EFM32 Giant Gecko Starter Kit

### The EFM32GG-STK3700 provides

- Evaluation of the world's most energy friendly microcontroller EFM32 Gecko family
  - On board: EFM32GG990F1024 with ARM Cortex M3, 48 MHz, 1024 kB Flash, 128 kB RAM, LCD Controller, USB, Low Energy Sense, Backup Power Domain, etc.
  - 200  $\mu$ A/MHz in active mode and Deep Sleep Mode with 1.1  $\mu$ A with various functions running in this mode on 1  $\mu$ A level
- Debugging with a SEGGER J-Link debugger
- Energy Debugging with an integrated Advanced Energy Monitoring (AEM) and Voltage Monitoring



### Würth Elektronik – more than you expect

#### More of our smallest inductors:

- WE-TPC SMD Shielded Tiny Power Inductors (Size 2811, 2813, 2828 and 3510)
- WE-EHPI Energy Harvesting Power Inductor
- WE-PMI Power Multilayer Inductor



### More components designed for sensor network:

- WE-KI SMD Wire Wound Ceramic Inductor
- WE-MK Multilayer Ceramic SMD Inductor



### More LTCC components:

- WE-LPF Multilayer Chip Low-Pass Filter
- WE-BPF Multilayer Chip Band-Pass Filter
- WE-BAL Multilayer Chip Balun
- WE-MCA Multilayer Chip Antenna



### More chip bead ferrites:

WE-CBF Chip Bead Ferrites

### More connectors:

WERI Connectors





Würth Elektronik offers more complete solutions, such as sample kits with continuous free re-fills, EMC lab support, seminars, technical design books and much more!

Want more info about your kit? Please visit www.we-online.com/harvest



## **Energy Harvesting Solution To Go**

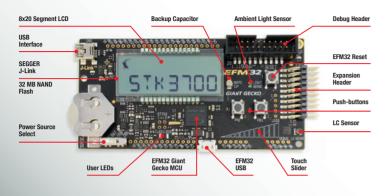


- Silicon Labs' EFM32
  Giant Gecko Starter Kit
- Linear Technology Multi-Source Energy Harvester
- Most efficient passive components





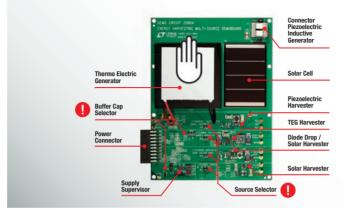
### Silicon Labs' EFM32 Giant Gecko Starter Kit



### To start your energy harvesting evaluation, please

- Download and install **Simplicity Studio** (www.silabs.com/simplicity-studio)
- Download and install the **ARM Cortex-M development tools** of your choice
- Simplicity Studio includes **all tools, drivers, code and documents** you need:
  - energyAware Commander MCU, kit and prototype programmer and updater
  - energyAware Profiler real-time energy debugger and current monitor
  - all the free application notes and software examples in one place
  - EFM32 datasheets, kit manuals, presentations and brochures

### Linear Technology Multi-Source Energy Harvester



#### Features:

- On-board solar cell and thermo electric generator
- Connector for optional inductive or piezoelectric generator
- Four harvesters for different energy source types

### **Getting Started:**

- Decide for your energy harvesting source
- Set the appropriate jumper JP1 to JP4 to feed the harvested source to the power connector

- Optionally set jumper JP9 to ON for an extended buffer capacitance for all harvesters OR set jumper JP10 to ON for an extended buffer capacitance for the TEG harvester
- Connect your application to the power connector

### Caution:

- Only one source selector MUST be set at a time
- Only one buffer cap selector MUST be set to ON at a time



### Solar Cell

LTC3105 - 400mA boost converter, MPP control, 250mV start-up LTC3459 + LTC2935 - Micropower monolithic booster www.linear.com/product/LTC3105



# 9

Thermal

Peltier Element – TEG

LTC3108 - Ultralow voltage boost converter and system manager
LTC3109 - Auto-polarity version of LTC3108 www.linear.com/product/LTC3108



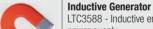


Piezo Element

LTC3588 - Piezoelectric energy harvesting power supply www.linear.com/product/LTC3588-1







LTC3588 - Inductive energy harvesting power supply www.linear.com/product/LTC3588-1



Magnetic

More information on www.we-online.com/harvest

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