



# Quick Start Guide for the KIT33816FRDMEVM

Rev. 2.0

Nov. 13. 2014



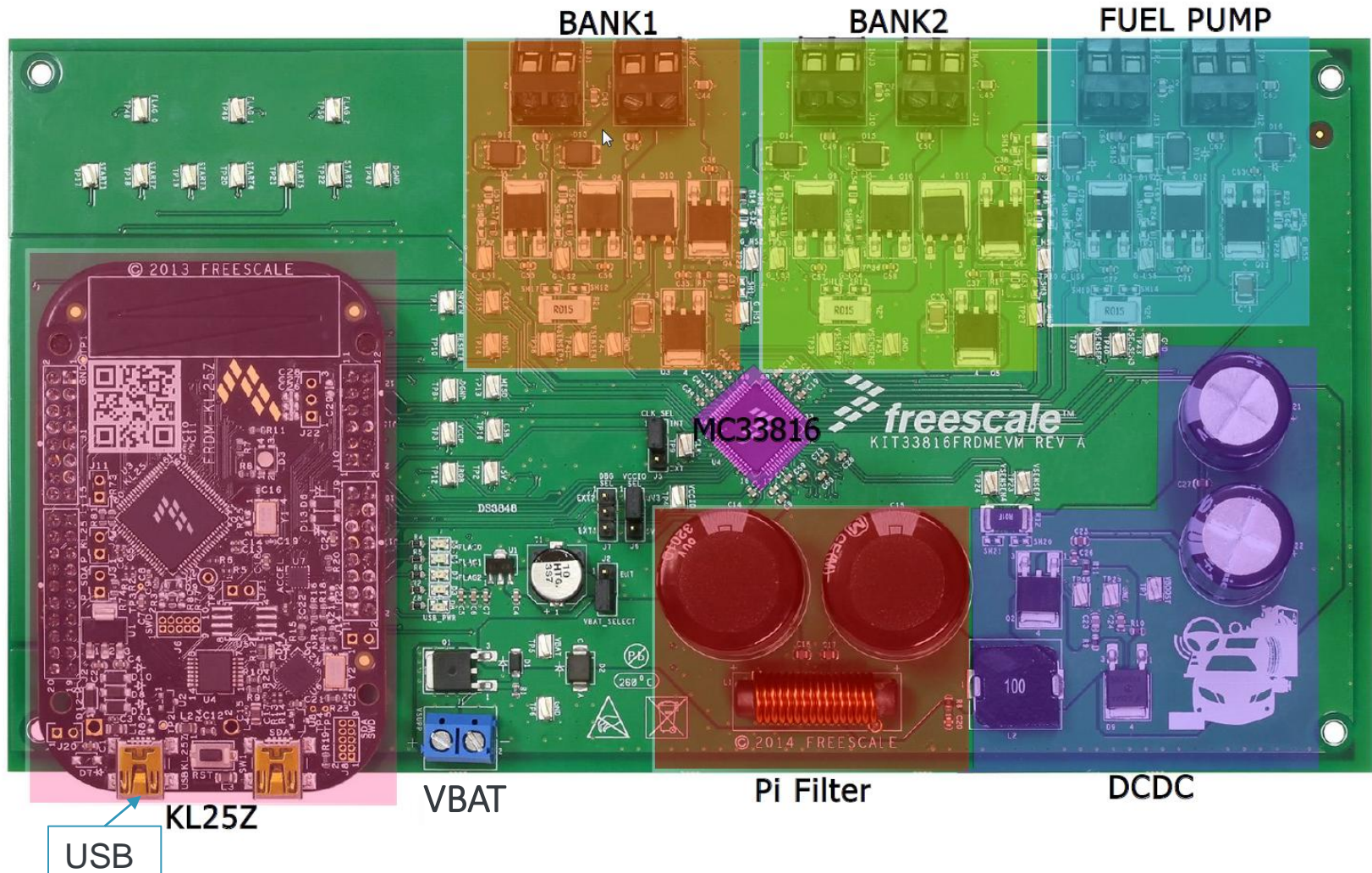
External Use



# Agenda

- Getting to Know the KIT33816FRDMEVM
- Getting Started Out of the Box
- MC33816 Development tools
- Explore Further

# Getting to Know the KIT33816FRDMEVM



# Getting to Know the KIT33816FRDMEVM

- MC33816 direct injection pre-driver integrated circuit
- USB-to-SPI dongle interface using the FRDM-KL25Z
- External MOSFETs controlling 4 injectors and 2 fuel pumps
- Power-conditioning circuitry
- +12 V VSUPP provides the power to the MC33816 and the loads



# Getting Started Out of the Box

- Installing and Running the Out of the Box Demo

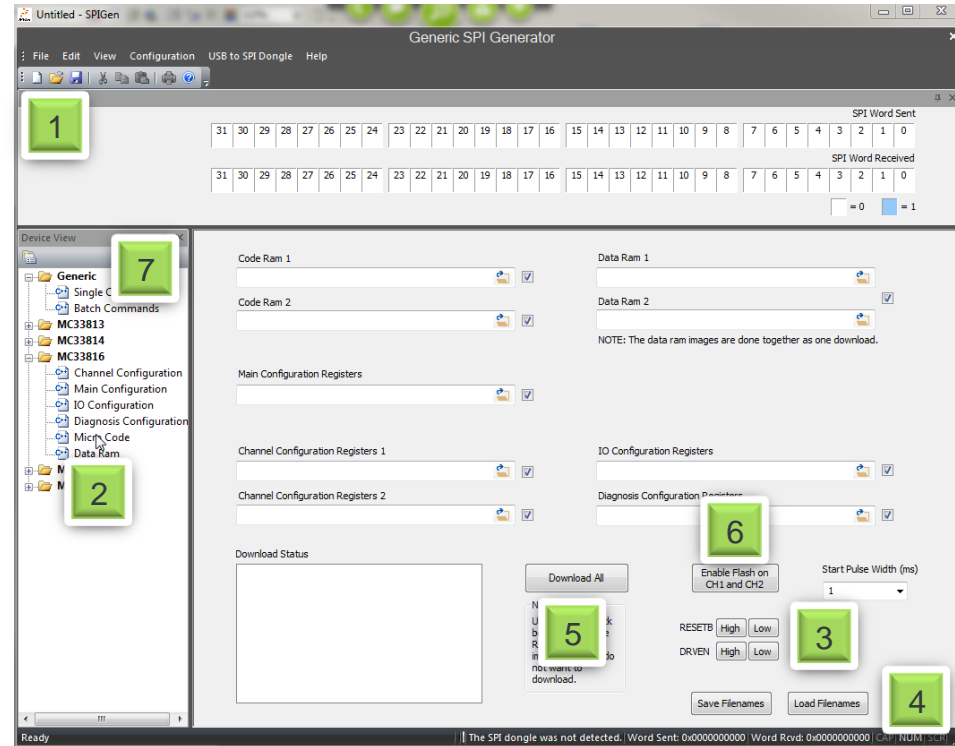
- 1 Download and Install SPIGEN 7.x from <http://www.freescale.com/SPIGEN>
- 2 Plug in a USB cable from a USB host to the KL25Z\_USB. The FRDM-KL25Z will be powered by this USB connection.
- 3 Run SPIGEN 7.1 (or latest). LED on KL25Z turns blue
- 4 Connect 14 V / 2.0 A power supply to VBAT connector
- 5 Download and unzip KIT33816-SPIGEN.spi and KIT33816FRDM-SBCH.zip



# Getting Started Out of the Box

## • Program MC33816 with SPIGEN 7.x

- 1 Click on Open and load the configuration file KIT33816AESW\_Rev2.0.spi
- 2 Select Micro Code from left tab
- 3 Set RSTB and DRVEN to High
- 4 Click on Load Filenames and select the SPIGen33816Files.txt file from the KIT33816SW
- 5 Click on Download All, a pop up Download complete window appears.
- 6 Click on Enable Flash on CH1 and CH2
- 7 Go to tab "Batch Command" and send Startx High and Low control signal to turn the injectors On/Off





# MC33816 Development Tools

## MC33816 IDE

- Edit and compile source code
- Create register configurations
- Generate C files arrays\*

OR

## PSC Simulator

- Edit, compile, and **debug** source code
- Supports single step code execution, **breakpoints** without the need for hardware
- Provides graphical output of digital and analog (load) waveforms

.bin Files

.bin Files

## SPIGEN

- SPI software to control MC33816
- Download all configuration, DRAM, CRAM
- Generate Start file command

USB

## KIT33816FRDMEVM

## KL25Z

SPI

## MC33816

- 4 cylinders + Fuel Pump control
- DCDC control
- USB/SPI interface (KL25Z)
- 1MHz CLK
- Pi Filter

\* Dedicated for MCU coding



## Explore Further



Now that you are familiar with the KIT33816FRDMEVM and SPIGEN, it's time to explore the additional software and user guide available on [www.freescale.com](http://www.freescale.com). Select your next path from the links in the **Jump Start Your Design** section.



# Revision History

Revision	Date	Description of Changes
1.0	10/2014	<ul style="list-style-type: none"><li>• Initial release</li></ul>
2.0	11/2014	<ul style="list-style-type: none"><li>• Updated the filename in step 5 on page 4</li></ul>



[www.Freescale.com](http://www.Freescale.com)