Freescale Semiconductor
User's Guide

KIT33879AEKEVBE Evaluation Board

Figure 1. KIT33879AEKEVEBE Evaluation Board

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1 Kit Contents / Packing List

- KIT33879AEKEVBE
- CD33879

2 Important Notice

Freescale provides the enclosed product(s) under the following conditions:

This evaluation kit is intended for use of ENGINEERING DEVELOPMENT OR EVALUATION PURPOSES ONLY. It is provided as a sample IC pre-soldered to a printed circuit board to make it easier to access inputs, outputs, and supply terminals. This EVB may be used with any development system or other source of I/O signals by simply connecting it to the host MCU or computer board via off-the-shelf cables. This EVB is not a Reference Design and is not intended to represent a final design recommendation for any particular application. Final device in an application will be heavily dependent on proper printed circuit board layout and heat sinking design as well as attention to supply filtering, transient suppression, and I/O signal quality.

The goods provided may not be complete in terms of required design, marketing, and or manufacturing related protective considerations, including product safety measures typically found in the end product incorporating the goods. Due to the open construction of the product, it is the user's responsibility to take any and all appropriate precautions with regard to electrostatic discharge. In order to minimize risks associated with the customers applications, adequate design and operating safeguards must be provided by the customer to minimize inherent or procedural hazards. For any safety concerns, contact Freescale sales and technical support services.

Should this evaluation kit not meet the specifications indicated in the kit, it may be returned within 30 days from the date of delivery and will be replaced by a new kit.

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3   Using the EVB

Warning: Always wear Safety Glasses when working around electronic modules and when soldering.

Note: The on-board 5V linear regulator is not reverse battery protected.

1. The KIT33879AEKEVBE Evaluation card allows the customer to quickly evaluate features of the device with a simple bench top setup.
2. Using a standard USB cable, the USB to SPI dongle board and the enclosed SPIGen SPI Driver software, you can use a personal computer to provide the Serial Peripheral Interface (SPI) communication with this EVB (see SETUP_EVB).
3. Connect power supply to the +12V and GND terminals on the EVB's power terminal block. Make sure the voltages provided are in accordance with the device data sheet and that the supply currents are sufficient to supply the output driver load conditions
4. With power applied to the KIT33879AEKEVBE evaluation card, the MCZ33879AEK device will be in NORMAL mode with a LED illuminated showing power is connected correctly. The MCZ33879AEK device is now ready to receive SPI commands or have PWM signals applied to IN5 and IN6.
5. To use SPIGen, Go to the Windows Start menu, then Programs, then SPIGen, and click on the SPIGen icon. The SPIGen "Generic SPI Generator" GUI will appear. Go to the File menu in the upper left hand corner of the GUI, and select Open, then browse the CD to find and select the 33879A_EVB_CONFIGURATION_FILE.spi. file for the KIT33879AEKEVBE. Click Open, and SPIGen will open a specifically configured SPI command generator for the KIT33879AEKEVBE. The configuration file will set all parameters for SPI signals from the PC and provide a list of commands that may be sent to the EVB.
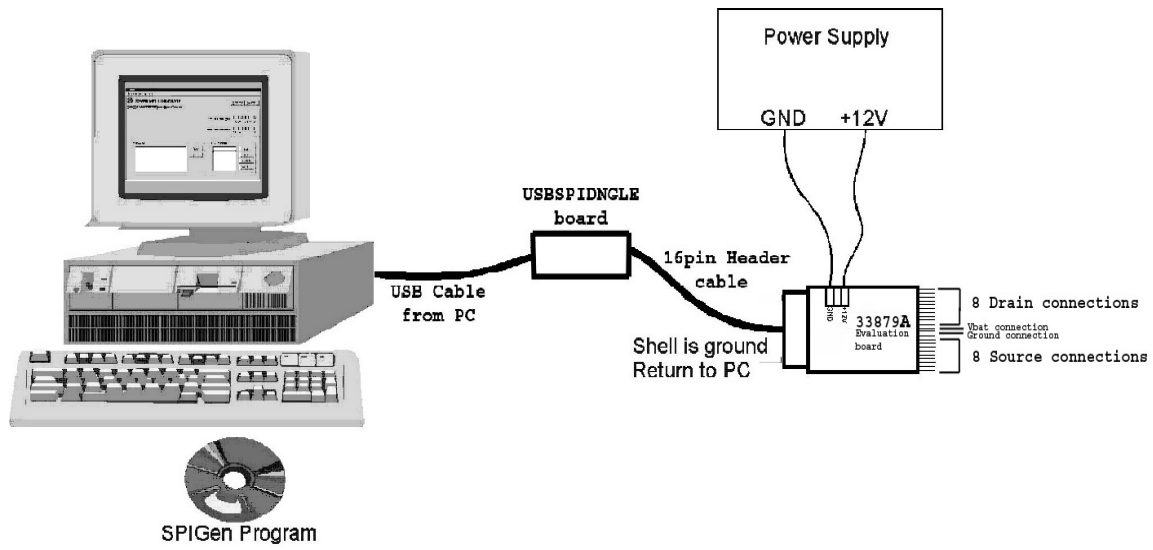
4 Hardware Setup

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Figure 5. KIT33879AEKEVBE Hardware Setup

6   Installing SPIGen Freeware on your Computer

There are two different versions of SPIGen. One is designed to run on Windows 95/98/Me, and the other is designed to run on Windows NT/2000/XP. Be sure to choose the appropriate installation program for your computer. The version number for SPIGen should be 5.0.1 or greater.

Each version of SPIGen includes a README.txt file which will describe the operating systems that the software should be installed on. Before you install the program, refer to the SPIGen README.txt file to check the compatibility of the installation program and your computer operating system.

To install the software from the CD-ROM, insert the CD-ROM into your CD drive. Click the Start button, and then click "Run…".

If you are running Windows 95, Windows 98, or Windows Me, type "D:\SPIGen_Win_95_98_Me\Setup.exe" in the box, and then click "OK".

If you are running Windows NT, Windows 2000, or Windows XP, type "D:\SPIGen_Win_NT_2000_XP\Setup.exe" in the box, and then click "OK".

Several temporary files will be copied to your computer, and then the Installation Wizard will guide you through the rest of the process.

To use SPIGen, Go to the Windows Start menu, then Programs, then SPIGen, and click on the SPIGen icon. The SPIGen "Generic SPI Generator" GUI will appear. Go to the File menu in the upper left hand corner of the GUI, and select Open, then browse the CD to find and select the SPIGen Configuration ".spi" file for the EVB you are using. Click Open, and SPIGen will open a specifically configured SPI command generator for your EVB.

7   KIT33879AEKEVBE Schematic

Figure 8. Schematic

9 KIT33879AEKEVBE Board Layout

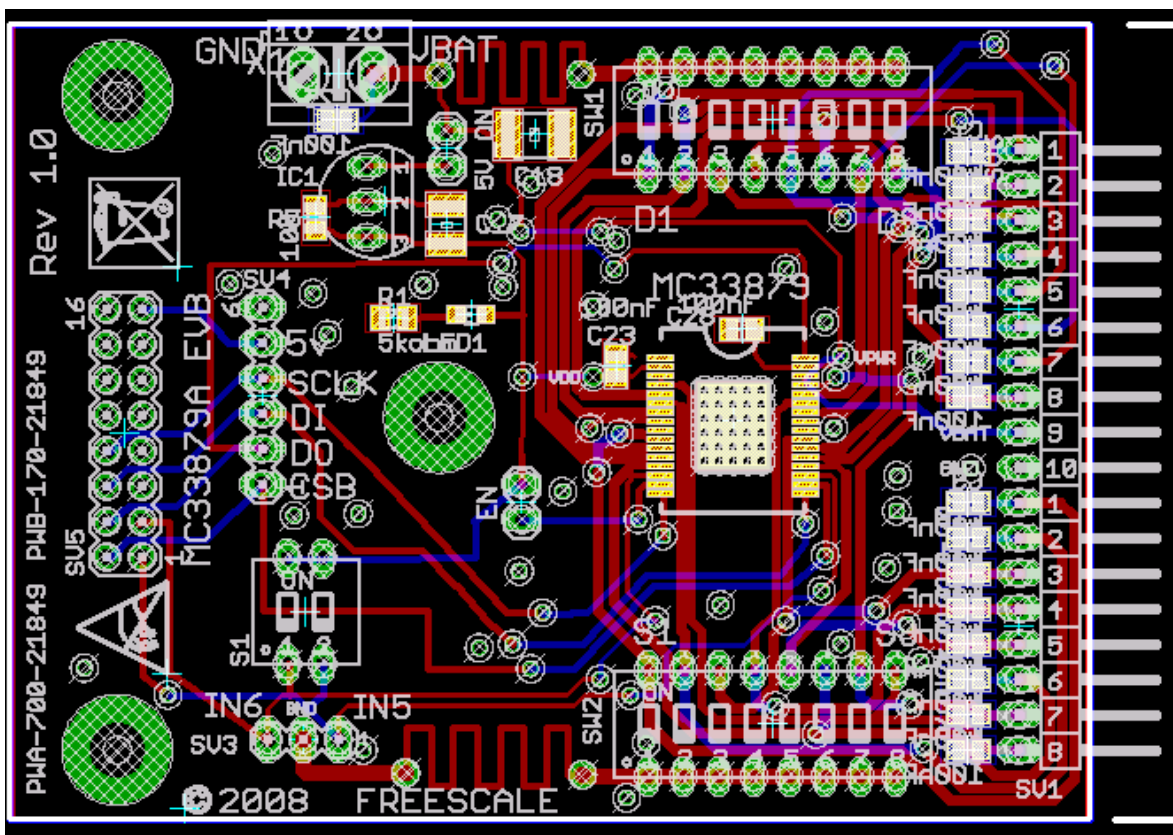## 9.1 Assembly Drawing

Figure 10. KIT33879AEKEVBE Assembly Layer Top
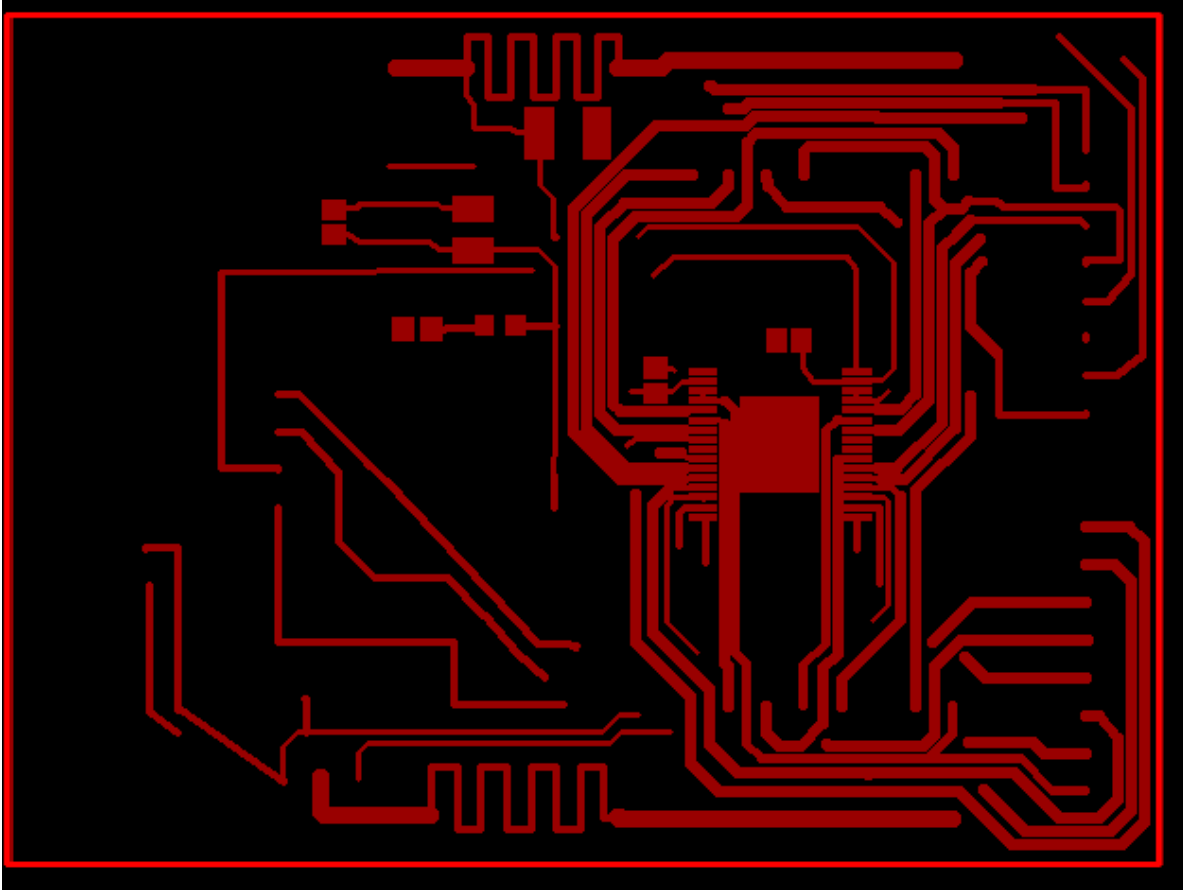
10.1　PCB Top

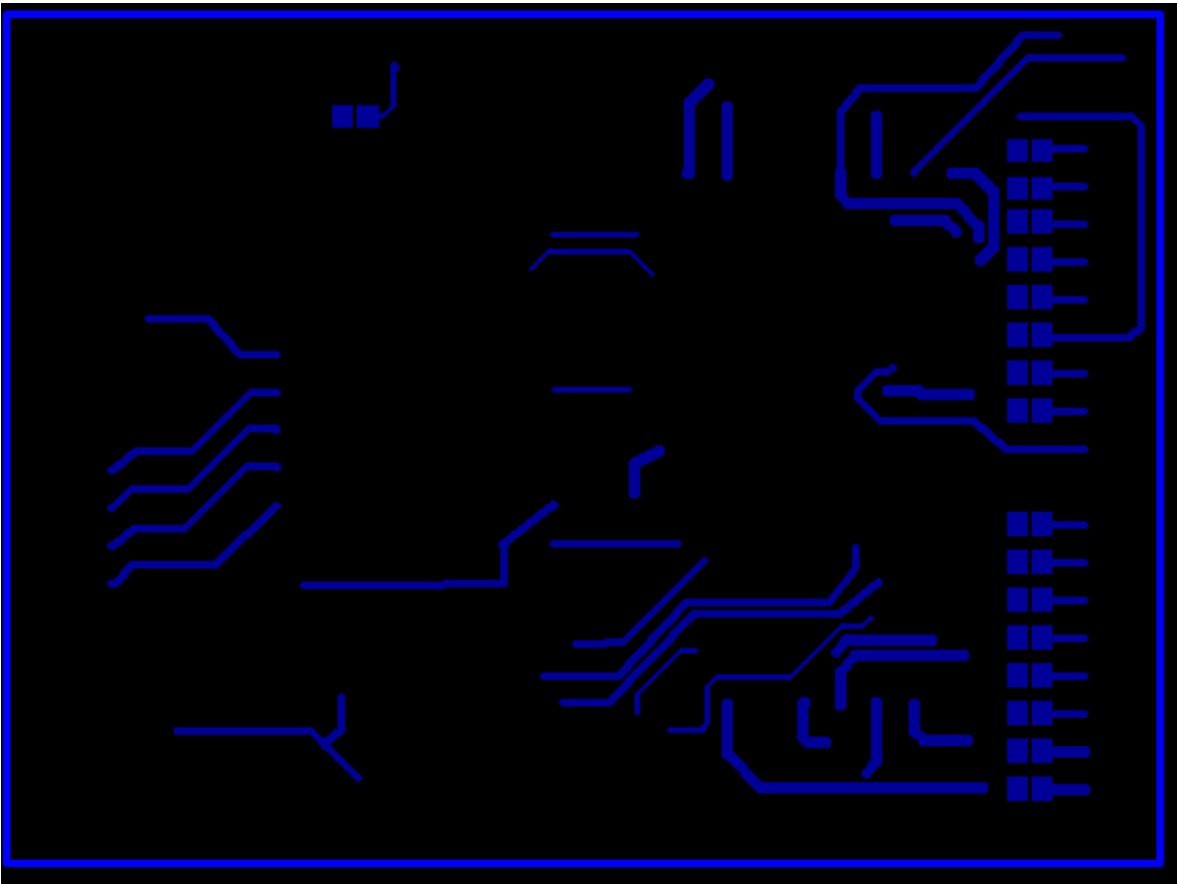**Figure 11. PCB Top**

11.1   PCB Bottom

Figure 12. PCB Bottom

13   Bill of Material

Qty	Part No.	Ref	Package	Description	Manufacturer
1	MC33879AEK	MC33879AEK	SO-32WB	Multiple Switch Detection Interface	Freescale Semiconductor
19		C1-16, C23, C25, C28	0805	100nF,50V,0805 X7R CAP	Any
1		C17	1210	100nF,50V,1210 X7R CAP	Any
1		C18	1812	100nF,50V,1812 X7R CAP	Any
1	LM2931AZLM 2931AZ	IC1	TO-92	5v Regulator	Any
1	LED-CHIP-LED0805	LED1	CHIP-LED0805	LED - color Green	Any
1	R-US_M0805	R1	R0805	5kohm resistor	Any
1	R-US_R0805	R5	R0805	10kohm resistor	Any
1	DIP02YL	S1	DIP02YL	2 DIP switch	Any
2	DIP08YL	SW1-2	DIP08YL	8 DIP switch	Any
2	1 x 2	JP1-2	1 x 2 pin header	1 x 2 Pin Header Straight	Any
1	1 x 3	SV3	1 x 3 pin header	1 x 3 Pin Header Straight	Any
1	1 x 6	SV4	1 x 6 pin header	1 x 6 Pin Header Straight	Any
1	1 x 8	SV1	1 x 8 pin header	1 x 8 Pin Header Straight	Any
1	1 x 10	SV6	1 x 10 pin header	1 x 10 Pin Header Straight	Any
1	2 x 8	SV5	2 x 8 pin header	2 x 8 Pin Header Straight	Any
1	AK500/2	x1	AK500/2	Power block	Any

14 References

Following are URLs where you can obtain information on other Freescale products and application solutions:

Description	URL
Data Sheet	www.freescale.com/files/analog/doc/data_sheet/MC33879.pdf
Freescale's Web Site	www.freescale.com
Freescale's Analog Web Site	www.freescale.com/analog
Freescale's Power Management Web Site	www.freescale.com/powermanagement
Freescale's Automotive Applications Web Site	www.freescale.com/automotive

15 Revision History

REVISION	DATE	DESCRIPTION OF CHANGES
1	11/2008	• Initial Release