

KIT33879AEKEVBE Evaluation Board

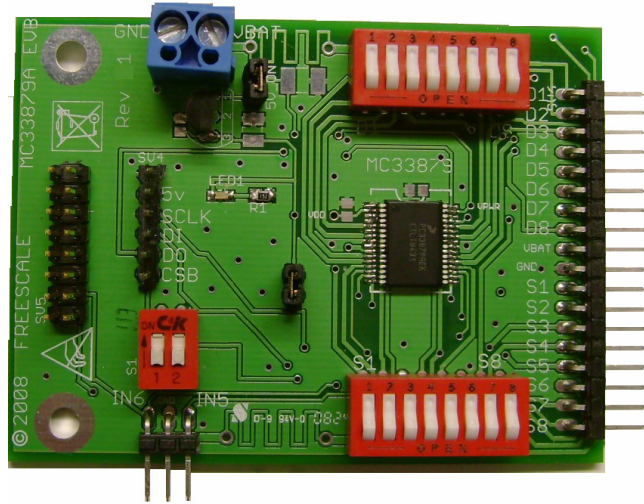


Figure 1. KIT33879AEKEVBE Evaluation Board

Table of Contents

1	Kit Contents / Packing List	2
2	Important Notice	3
3	Using the EVB	4
4	Hardware Setup	5
6	Installing SPIGen Freeware on your Computer	6
7	KIT33879AEKEVBE Schematic	7
9	KIT33879AEKEVBE Board Layout	8
13	Bill of Material	11
14	References	12
15	Revision History	13

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.

Freescale reserves the right to make changes without further notice to any products herein. Freescale makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Freescale assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typical", must be validated for each customer application by customer's technical experts.

Freescale does not convey any license under its patent rights nor the rights of others. Freescale products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Freescale product could create a situation where personal injury or death may occur.

Should Buyer purchase or use Freescale products for any such unintended or unauthorized application, Buyer shall indemnify and hold Freescale and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Freescale was negligent regarding the design or manufacture of the part. Freescale™ and the Freescale logo are trademarks of Freescale Semiconductor, Inc. All other product or service names are the property of their respective owners. © Freescale Semiconductor, Inc. 2008

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

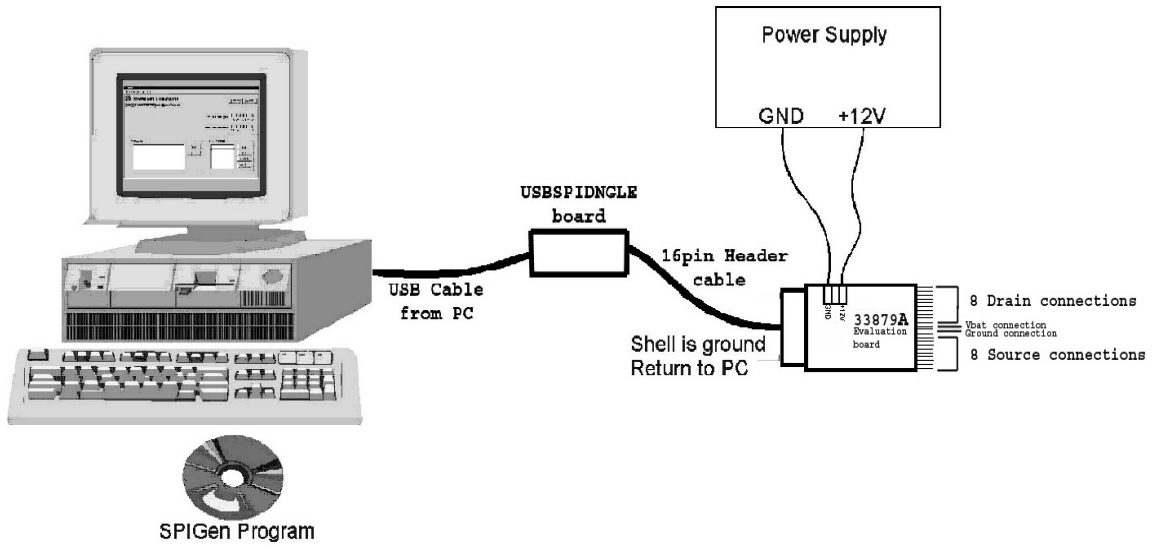


Figure 5. KIT33879AEKEVBE Hardware Setup

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

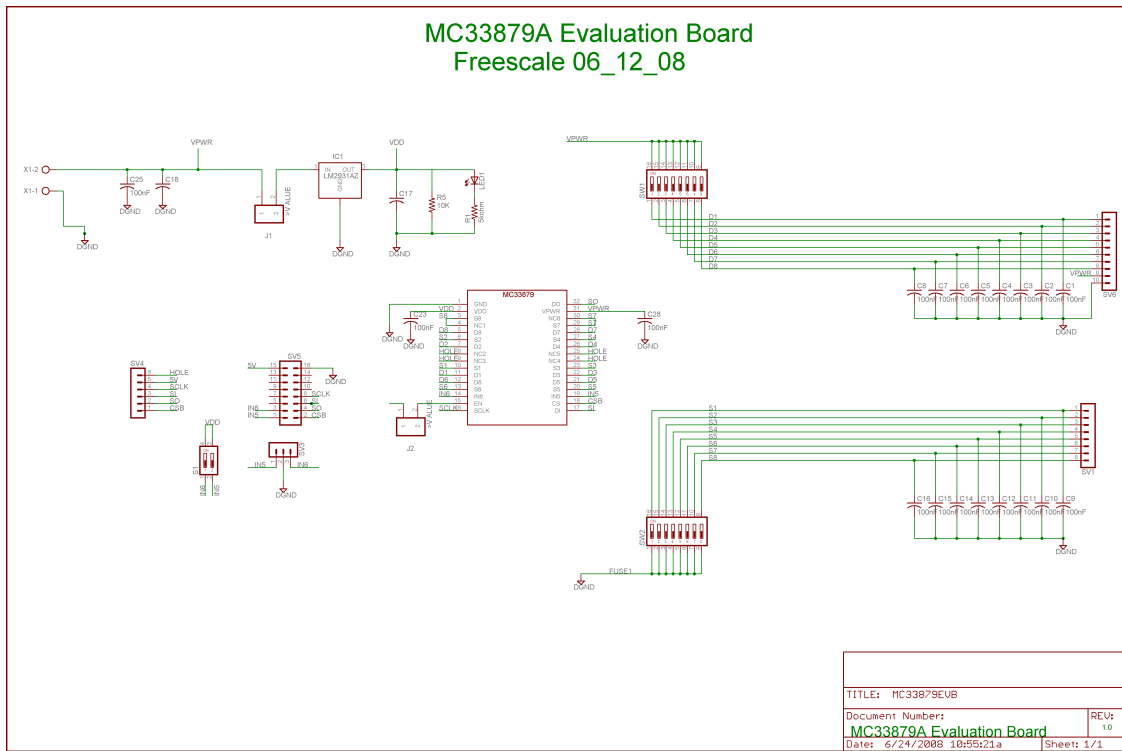


Figure 8. Schematic

9 KIT33879AEKEVBE Board Layout

9.1 Assembly Drawing

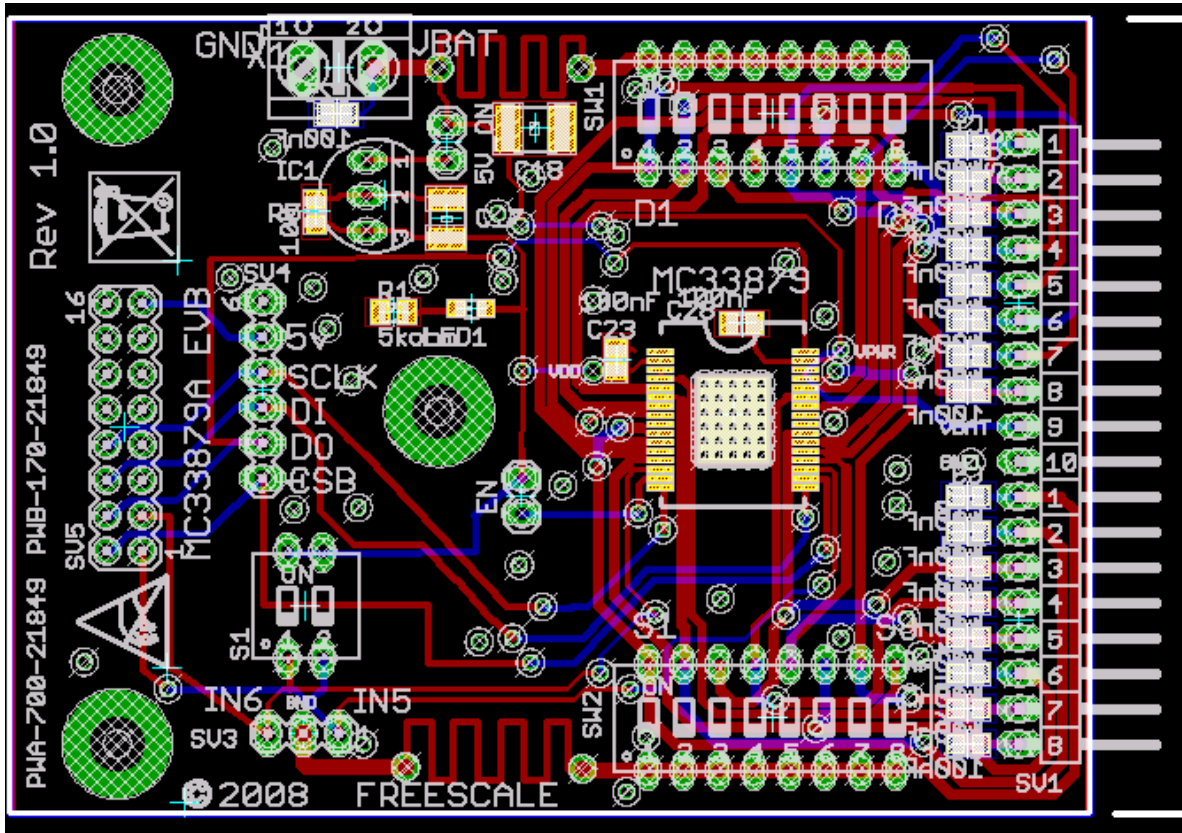


Figure 10. KIT33879AEKEVBE Assembly Layer Top

10.1 PCB Top

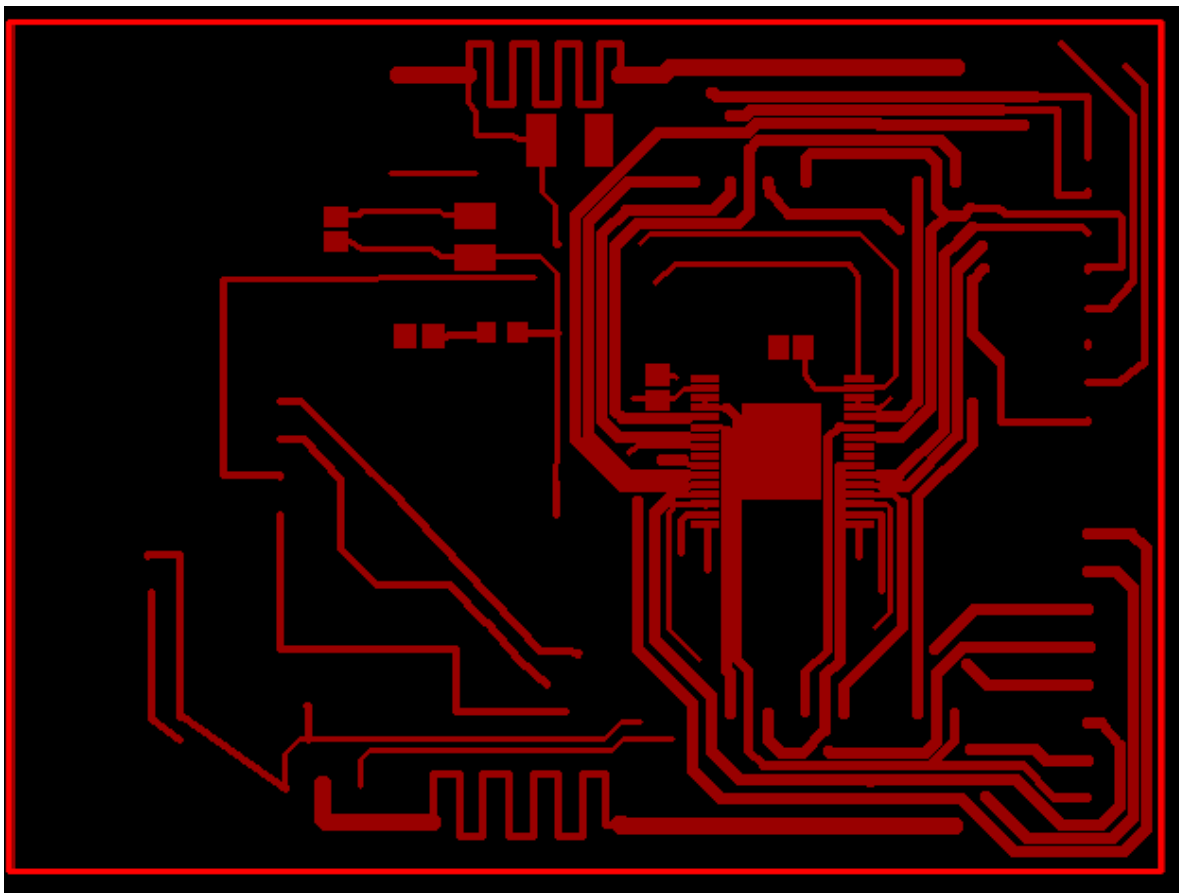


Figure 11. PCB Top

11.1 PCB Bottom

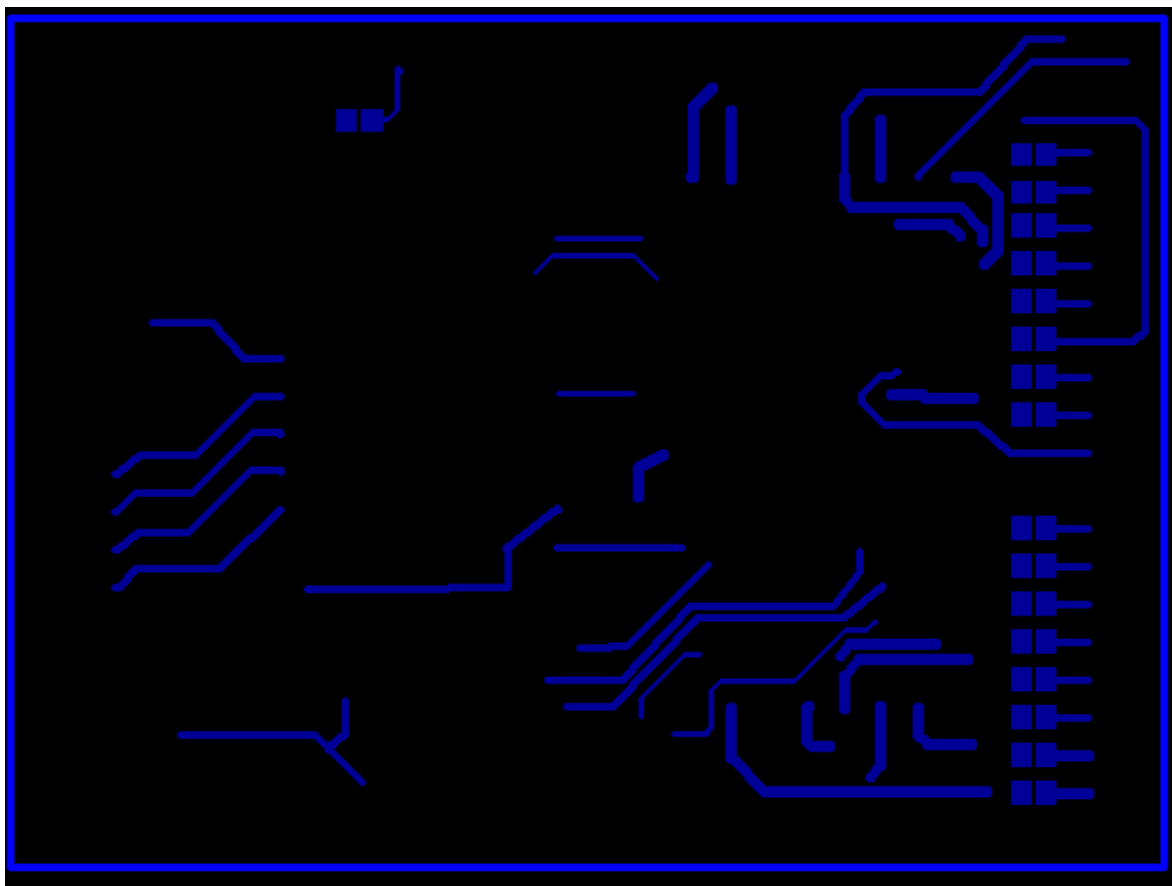


Figure 12. PCB Bottom

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-LED080 5	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

How to Reach Us:

Home Page:

www.freescale.com

Web Support:

<http://www.freescale.com/support>

USA/Europe or Locations Not Listed:

Freescale Semiconductor, Inc.
Technical Information Center, EL516
2100 East Elliot Road
Tempe, Arizona 85284
+1-800-521-6274 or +1-480-768-2130
www.freescale.com/support

Europe, Middle East, and Africa:

Freescale Halbleiter Deutschland GmbH
Technical Information Center
Schatzbogen 7
81829 Muenchen, Germany
+44 1296 380 456 (English)
+46 8 52200080 (English)
+49 89 92103 559 (German)
+33 1 69 35 48 48 (French)
www.freescale.com/support

Japan:

Freescale Semiconductor Japan Ltd.
Headquarters
ARCO Tower 15F
1-8-1, Shimo-Meguro, Meguro-ku,
Tokyo 153-0064
Japan
0120 191014 or +81 3 5437 9125
support.japan@freescale.com

Asia/Pacific:

Freescale Semiconductor China Ltd.
Exchange Building 23F
No. 118 Jianguo Road
Chaoyang District
Beijing 100022
China
+86 10 5879 8000
support.asia@freescale.com

For Literature Requests Only:

Freescale Semiconductor Literature Distribution Center
P.O. Box 5405
Denver, Colorado 80217
1-800-441-2447 or 303-675-2140
Fax: 303-675-2150
LDCForFreescaleSemiconductor@hibbertgroup.com

Information in this document is provided solely to enable system and software implementers to use Freescale Semiconductor products. There are no express or implied copyright licenses granted hereunder to design or fabricate any integrated circuits or integrated circuits based on the information in this document.

Freescale Semiconductor reserves the right to make changes without further notice to any products herein. Freescale Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Freescale Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters that may be provided in Freescale Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals", must be validated for each customer application by customer's technical experts. Freescale Semiconductor does not convey any license under its patent rights nor the rights of others. Freescale Semiconductor products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Freescale Semiconductor product could create a situation where personal injury or death may occur. Should Buyer purchase or use Freescale Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold Freescale Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Freescale Semiconductor was negligent regarding the design or manufacture of the part.

Freescale™ and the Freescale logo are trademarks of Freescale Semiconductor, Inc. All other product or service names are the property of their respective owners.

© Freescale Semiconductor, Inc., 2008. All rights reserved.