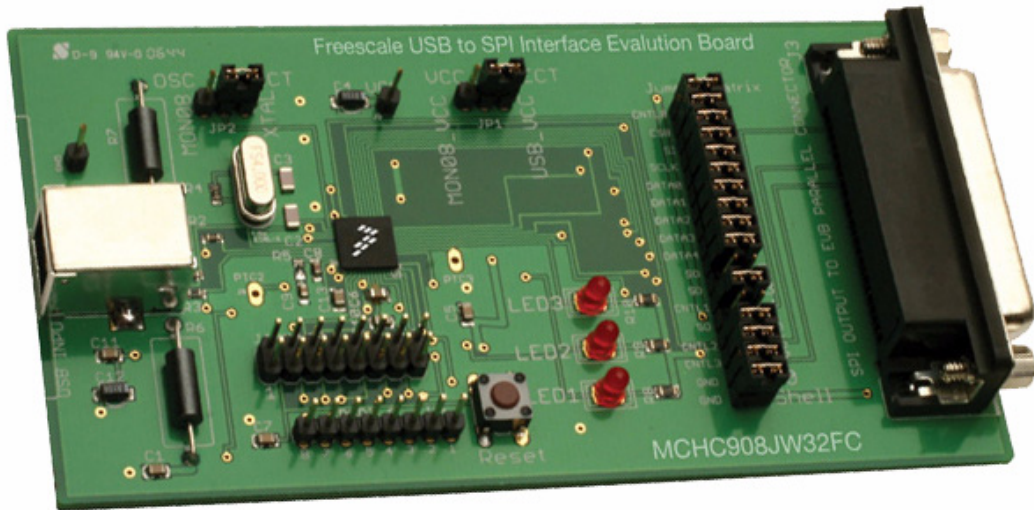


## KITUSBSPIEVME Evaluation Board



**Figure 1. USBSPIEVME Board**

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# 1 Kit Contents / Packing List

- 770-20595: Hardware Doc CD, CDUSBSPi
- 700-20595: PWA, KITUSBSPiEVME
- 600-75489, Cable, 6 FT. USB2.0 A-M TO B-M
- 920-90570-00: Technical Information Center Freescale Semiconductor , Inc. , BR1530
- 920-75133: Warranty Card, Freescale

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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 customer 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.

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### 3 Using the EVB

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

See file MCHC908JW32 Demo Board.doc or MCHC908JW32 Demo Board.pdf on this CD for Instructions

## 4 Board Layout

### 4.1 Top Copper

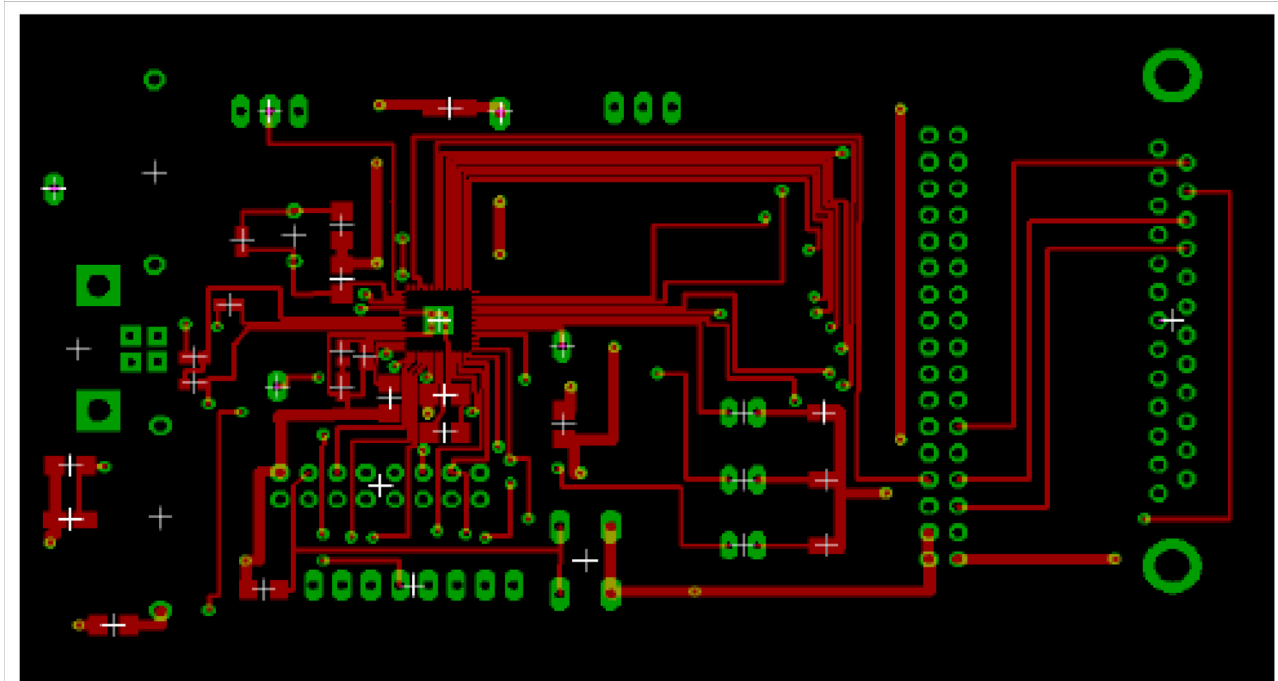


Figure 1. Top Copper Layer

## 4.2 Bottom Copper

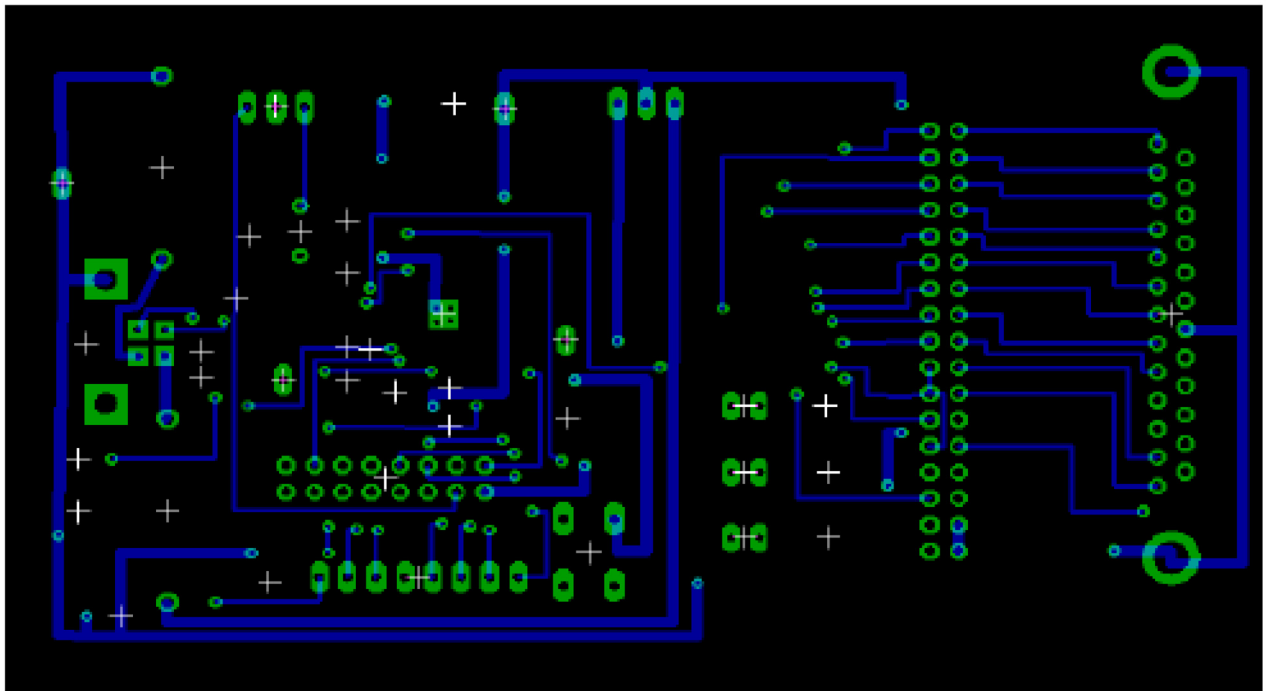


Figure 2. Bottom Copper Layer (as seen thru board looking from the top)

# 5 Schematic

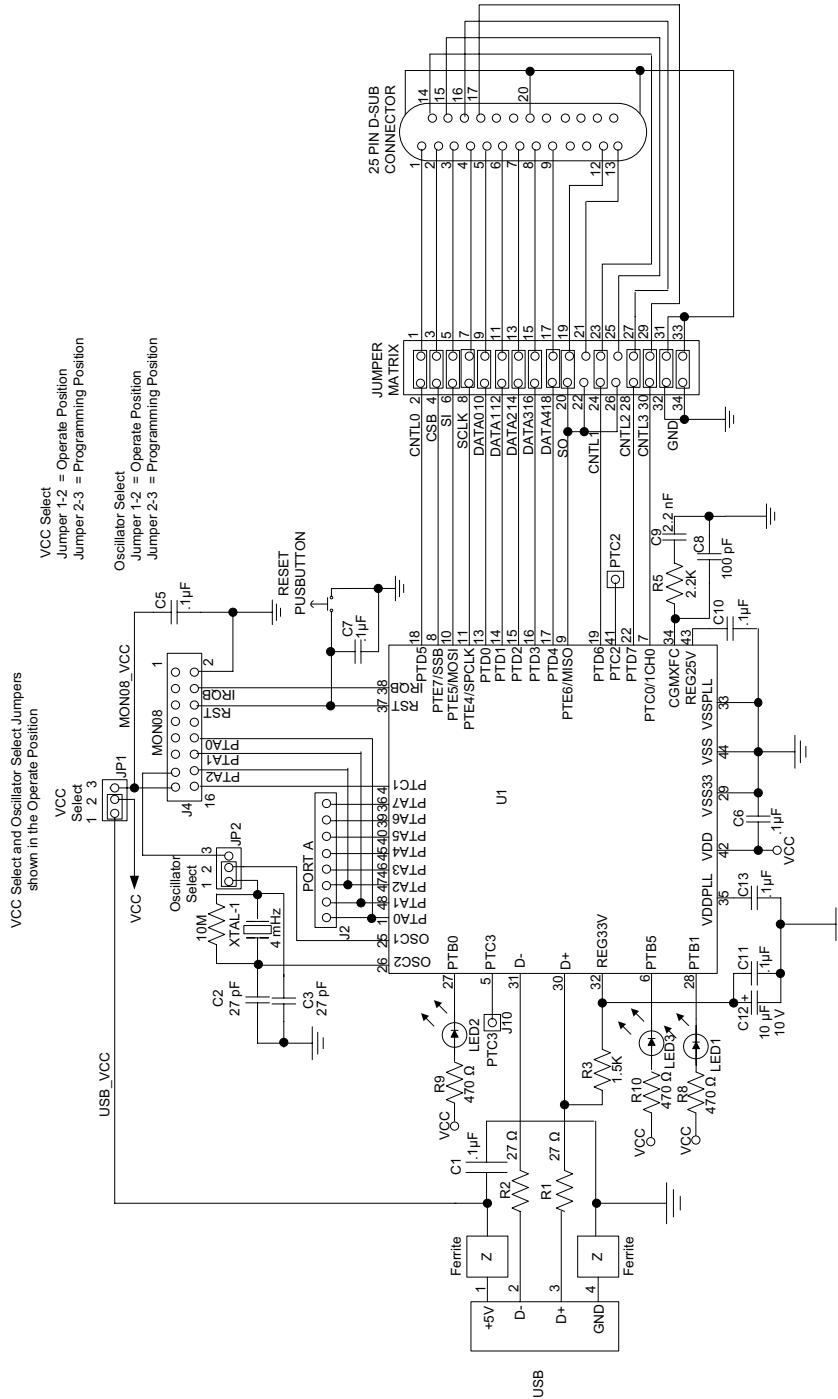


Figure 3. Schematic Drawing

## 6 Bill of Material

Device or Signal Name	Part Type	Agile Number	Description	Mfr	PN	Digi-Key PN
USB_VCC	CC1206	151-00102-00	CAP CER 0.1 $\mu$ F 50 V 20% Z5U CC1206 ROHS COMPLIANT	KEMET	C1206C10 4K5RAC	399-1249-1 -ND
OSC2	CC1206	150-75042	CAP CER 27 PF 50 V 5% C0G CC1206	KEMET	C1206C27 0J5GAC	399-1198-1 -ND
OSC1	CC1206	150-75042	CAP CER 27 PF 50 V 5% C0G CC1206	KEMET	C1206C27 0J5GAC	399-1198-1 -ND
VBAT	CC1206	151-00102-00	CAP CER 0.1 $\mu$ F 50 V 20% Z5U CC1206 ROHS COMPLIANT	KEMET	C1206C10 4K5RAC	399-1249-1 -ND
MON08_VCC	CC1206	151-00102-00	CAP CER 0.1 $\mu$ F 50 V 20% Z5U CC1206 ROHS COMPLIANT	KEMET	C1206C10 4K5RAC	399-1249-1 -ND
VCC	CC1206	151-00102-00	CAP CER 0.1 $\mu$ F 50 V 20% Z5U CC1206 ROHS COMPLIANT	KEMET	C1206C10 4K5RAC	399-1249-1 -ND
VOSC	CC1206	151-00102-00	CAP CER 0.1 $\mu$ F 50 V 20% Z5U CC1206 ROHS COMPLIANT	KEMET	C1206C10 4K5RAC	399-1249-1 -ND
CGMXFC	CC1206	150-30014	CAP CER 100 PF 50 V 10% COG 0603 ROHS	AVX	06035A101 KAT2A	478-1175-1 -ND
CGMXFC	CC1206	150-75368	CAP CER 0.022 $\mu$ F 25 V 10% X7R CC0603	AVX	06033C223 KAT2A	NA
REG2.5V	CC1206	151-00102-00	CAP CER 0.1 $\mu$ F 50 V 20% Z5U CC1206 ROHS COMPLIANT	KEMET	C1206C10 4K5RAC	399-1249-1 -ND
REG3.3V	CC1206	151-00102-00	CAP CER 0.1 $\mu$ F 50 V 20% Z5U CC1206 ROHS COMPLIANT	KEMET	C1206C10 4K5RAC	399-1249-1 -ND
REG3.3V	Case A	150-30020	CAP TANT 10 $\mu$ F 10 V 10% -- CASE_A ROHS	VISHAY INTERTECHNOL OGY	293D106X 9010A2TE 3	NA
VDD_PLL	CC1206	151-00102-00	CAP CER 0.1 $\mu$ F 50 V 20% Z5U CC1206 ROHS COMPLIANT	KEMET	C1206C10 4K5RAC	399-1249-1 -ND
VR_OUT	Case A	150-30020	CAP TANT 10 $\mu$ F 10 V 10% -- CASE_A ROHS	VISHAY INTERTECHNOL OGY	293D106X 9010A2TE 3	NA
D-	RC0603	470-75510	RES TF 27 1/10 W 1% RC0603 ROHS COMPLIANT	BOURNS	CR0402JW 270GLF	NA
D+	RC0603	470-75510	RES TF 27 1/10 W 1% RC0603 ROHS COMPLIANT	BOURNS	CR0402JW 270GLF	NA
D-	RC0603	470-76044	RES TF 1.50 K 1/10 W 1% RC0603 ROHS COMPLIANT	BOURNS	CR0603FX 1501ELF	NA
OSC1 OSC2	RC0603	470-75553	RES TF 10 M 1/10 W 5% RC0603 ROHS COMPLIANT	BOURNS	CR0603JW 106ELF	NA
CGMXFC	RC0603	470-75399	RES TF 2.2 K 1/10 W 5% RC0603 ROHS COMPLIANT	BOURNS	CR0603JW 222ELF	NA
USB_VCC		NA	JUMPER WIRE WITH FERRITE BEAD 28L0138-40R-10	STEWART	28L0138-4 0R-10	240-2439-2 -ND
GND		NA	JUMPER WIRE WITH FERRITE BEAD 28L0138-40R-10	STEWART	28L0138-4 0R-10	240-2439-2 -ND
LED1 PU	RC0805	470-75575	RES TF 470 1/8 W 5% RC0805 ROHS COMPLIANT	BOURNS	CR0805JW 471ELF	NA



Device or Signal Name	Part Type	Agile Number	Description	Mfr	PN	Digi-Key PN
LED2 PU	RC0805	470-75575	RES TF 470 1/8 W 5% RC0805 ROHS COMPLIANT	BOURNS	CR0805JW471ELF	NA
LED3 PU	RC0805	470-75575	RES TF 470 1/8 W 5% RC0805 ROHS COMPLIANT	BOURNS	CR0805JW471ELF	NA
VCC SELECT		210-75662	3 pin HDR 1X10 100 MIL CTR LOW PROFILE BREAKAWAY ROHS COMPLIANT	TYCO ELECTRONICS	1-826629-0	
OSC SELECT		210-75662	3 pin HDR 1X10 100 MIL CTR LOW PROFILE BREAKAWAY ROHS COMPLIANT	TYCO ELECTRONICS	1-826629-0	
USB		NA	USB B PC MOUNT FEMALE CONNECTOR ROHS COMPLIANT	MOLEX/WALDOM ELECTRONICS	67068-8000	WM17113-ND
PORT A		210-75662	8 pin HDR 1X10 100 MIL CTR LOW PROFILE BREAKAWAY ROHS COMPLIANT	TYCO ELECTRONICS	1-826629-0	
PARALLEL PORT		210-75750	CON 25 DB RA SKT TH -- AU BRDLK ROHS COMPLIANT	TYCO ELECTRONICS	5747846-6	
MON08		210-75662	16 pin HDR 2X8 100 MIL CTR LOW PROFILE BREAKAWAY ROHS COMPLIANT	TYCO ELECTRONICS	1-826629-0	
VCC		210-75662	1 pin HDR 1X1 100 MIL CTR LOW PROFILE BREAKAWAY ROHS COMPLIANT	TYCO ELECTRONICS	1-826629-0	
JUMPER MATRIX		210-75662	34 pin HDR 2X17 100 MIL CTR LOW PROFILE BREAKAWAY ROHS COMPLIANT	TYCO ELECTRONICS	1-826629-0	
GND		210-75662	1 pin HDR 1X1 100 MIL CTR LOW PROFILE BREAKAWAY ROHS COMPLIANT	TYCO ELECTRONICS	1-826629-0	
PORT D		210-75662	8 pin HDR 1X9 100 MIL CTR LOW PROFILE BREAKAWAY ROHS COMPLIANT	TYCO ELECTRONICS	1-826629-0	
PTC2		210-75662	1 pin HDR 1X1 100 MIL CTR LOW PROFILE BREAKAWAY ROHS COMPLIANT	TYCO ELECTRONICS	1-826629-0	
PTC3		210-75662	1 pin HDR 1X1 100 MIL CTR LOW PROFILE BREAKAWAY ROHS COMPLIANT	TYCO ELECTRONICS	1-826629-0	
MICRO	QFN-48	NA	MCHC908JW32FC 8 bit USB/SPI microcontroller ROHS COMPLIANT	FREESCALE SEMICONDUCTOR	MC68HC908JW32	
LED	PCB Vertical 5 mm	NA	LED 5 mm VERT LOW CUR RED PC MNT	DIALIGHT	561-1101-060	561-1101-060-ND
LED	PCB Vertical 5 mm	NA	LED 5 mm VERT LOW CUR RED PC MNT	DIALIGHT	561-1101-060	561-1101-060-ND
LED	PCB Vertical 5 mm	NA	LED 5 mm VERT LOW CUR RED PC MNT	DIALIGHT	561-1101-060	561-1101-060-ND
RESET PB		NA	SW PB MOM SMT	OMRON ELECTRONICS	B3F-1000S	B3F-1000S-ND

Device or Signal Name	Part Type	Agile Number	Description	Mfr	PN	Digi-Key PN
OSC1 OSC2	HC49/S	230-75423	XTAL 4.0 MHZ RSN 50 PPM TH CL=10 PF ROHS	FOX ELECTRONICS	FOXSLF/0 40	
Cable			USB A to USB B cable 6 foot			

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## 7 References

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

Description	URL
<b>Reference Web Sites</b>	<b>Reference URL Locations</b>
<a href="http://www.freescale.com/">Freescale Web Site</a>	<a href="http://www.freescale.com/">http://www.freescale.com/</a>
<a href="http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=MC33811">MC33811 Product Summary Page</a>	<a href="http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=MC33811">http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=MC33811</a>
<a href="http://www.freescale.com/files/analog/doc/data_sheet/MC33811.pdf">MC33811 Datasheet</a>	<a href="http://www.freescale.com/files/analog/doc/data_sheet/MC33811.pdf">http://www.freescale.com/files/analog/doc/data_sheet/MC33811.pdf</a>
<a href="http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=MC33810">MC33810 Product Summary Page</a>	<a href="http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=MC33810">http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=MC33810</a>
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<a href="http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=KITUSBSPIDGLEVME">KITUSBSPIDNGLEVME Summary Page</a>	<a href="http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=KITUSBSPIDGLEVME">http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=KITUSBSPIDGLEVME</a>

## 8 Revision History

Revision	Date	Description of Changes
1.0	2/2008	Initial Release
2.0	12/2009	Converted to new format

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