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<th>Board Function</th>
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**Revision History**

- **Rev.** A00  **Description**: Initial release
- **Rev.** A01  **Description**: Changed to rev B of EFM32
User Pushbuttons

Touch Pads

Memory LCD-TFT Display & Multiplexer

Relative Humidity & Temperature Sensor

The EFM32 always controls ownership of the display using the EFM_DISP_ENABLE signal.
Power Select Switch: AEM/BAT

<table>
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<tr>
<th>SWITCH POS</th>
<th>MODE DESCRIPTION</th>
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<tr>
<td>AEM</td>
<td>AEM Enabled, VMCU sourced from external 3.3V LDO powered by BC USB 5V supply</td>
</tr>
<tr>
<td>BAT</td>
<td>AEM Disabled, VMCU sourced from coin-cell battery or external power supply</td>
</tr>
</tbody>
</table>
High Frequency Clock  
Low Frequency Clock  

EFM32 PG MCU
MCU power regulator

AEM Calibration

MCU current sense

MCU Voltage Sense

/HB1
MCU STK Platform

Schematic Title
EFM32PG12 Pearl Gecko Starter Kit

Page Title
Advanced Energy Monitor

Document number
BRD2501A

Design Created Date:
Monday, May 13, 2014

Sheet Created Date:
Wednesday, May 15, 2014

Sheet Modified Date:
Thursday, December 15, 2016

Revision
A01

Sheet 1 of 10
Debug out J-Link Status Indicators:

- **Bootloader**
- **Halt pin**

Place these TPs close to USB header:

- **BC_DAC_OUT**
- **CTRLMCU_I2S_MCK**
- **CTRLMCU_SPI_MOSI**
- **CTRLMCU_SPI_SCK**
- **CTRLMCU_SPI_CS**
- **EXP_ID_SDA**
- **EXP_ID_SCL**
- **UIF_PB0**
- **UIF_PB1**
- **BC_IO[11..0]**
- **3V3**

- **BC_UART_TXD**
- **BC_UART_RXD**
- **BC_UART_RTS**
- **BC_UART_CTS**
- **CTRLMCU_SPI_MOSI**
- **CTRLMCU_SPI_SCK**
- **CTRLMCU_SPI_CS**
- **CTRLMCU_SPI_CSV**
- **CTRLMCU_SPI_MSK**
- **CTRLMCU_SPI_MSK**
- **CTRLMCU_SPI_MSK**
- **CTRLMCU_SPI_MSK**

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- **CTRLMCU_SPI_MSK**
Virtual COM Port Interface

Isolation

Level Shift

TPJ606

R682 1K

TPJ607

U660 74LVC2G125

VCC

GND

3.6V

USB_VBUS

VMCU_SENSE

Power Supply for Analog Switches

The USB VBUS voltage is used to bias these transistors, turning the P-Channel MOSFETs (Q700) off, and the N-Channel MOSFETs (Q701) on.

J-Link USB Cable

PMOS State

VMCU_BUF

Disconnected

ON

OFF

VMCU

Connected

ON

3.6V

VMCU_Isolated

Connector for external reference designs boards

/HS1

MCU STK Platform

Schematic Title

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Power & Misc

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Power & Misc

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ADC reference voltage

CTRLMCU SERIAL FLASH

POWER SENSE

/MB1/C MCU1
Control MCU