TEXAS INSTRUMENTS

TUSB3410 Errata September 2005

1. **Problem:** The SUSPEND output terminal is sometimes asserted high after power is applied. In bus-powered applications, where SUSPEND is connected to the VREGEN- terminal, the voltage regulator is shut down to meet the USB suspend power requirements. If the external crystal has not had enough time to begin oscillating, the TUSB3410 will not initialize correctly.
   Work Around: See figure 1 for workaround circuit. More details are provided in the TUSB3410 data sheet located at http://focus.ti.com/lit/ds/symlink/tusb3410.pdf . The added components are R2 and D1.
   Exceptions: Self powered applications would probably not see this problem because the VREGEN- terminal would most likely be pulled low, enabling the 1.8-V regulator at all times. Also, applications using an external 1.8-V output oscillator (versus a crystal) would not see this issue.

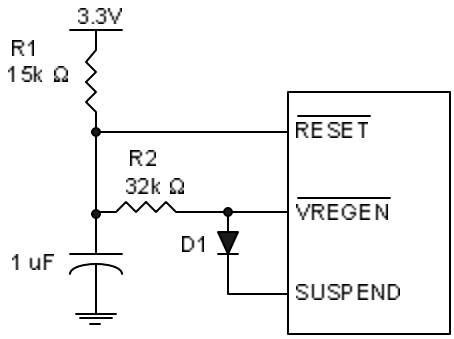

Figure 1. Suspend circuit

2. **Problem:** The TUSB3410 can not read a 16 kbit I2C EEPROM.
   Work Around: A different size I2C EEPROM should be used.

3. **Problem:** The TUSB3410 data manual indicates that there are two modes for downloading firmware from the EEPROM over the I2C interface: "binary" and "autoexec binary". However, TUSB3410 does not support the "binary" function. With "binary", the bootcode was supposed to simply flag the existence of the firmware during the header parsing process, enumerate on the host, then transfer control to the firmware. In "autoexec binary", the bootcode downloads the entire firmware block when it is encountered during the parsing process; it then transfers control to the firmware, and the firmware handles enumeration with the host. Autoexec binary firmware is described in section 11.6.3 in the data sheet located at http://focus.ti.com/lit/ds/symlink/tusb3410.pdf

   Work Around: If storing firmware in the EEPROM, use the 'autoexec binary' mode. This works well in any application. Header Generator *.cfg templates already direct the user to use autoexec. Another alternative is to download firmware from the host, using the EEPROM only to store device/string descriptors. For more information on the tradeoffs between downloading firmware from the host or storing in EEPROM, see section 3.2 of the application note "USB/Serial Applications Using TUSB3410/5052 and the VCP Software" (slla170b) (http://focus.ti.com/docs/apps/catalog/resources/appnoteabstract.jhtml?abstractName=slla170b)

4. **Problem:** The TUSB3410 bootcode does not read the device's SERNUM7 – SERNUM0 (die ID) registers. The devices' die ID Is not used as the serial number as described in section 5.1.7 of the data sheet located at http://focus.ti.com/lit/ds/symlink/tusb3410.pdf.
   Work Around:

1) If the virtual communication port (VCP) firmware is used, store the VCP firmware in EEPROM. When the bootcode detects the presence of the EEPROM, the stored firmware is executed. The firmware reads the SERNUM7 – SERNUM0 (die ID) registers. This unique number is stored as the device's serial number.
2) If custom firmware is used, include reading the SERNUM7 – SERNUM0 registers. Store the custom firmware in EEPROM. When the bootcode detects the presence of the EEPROM, the stored firmware is executed. The SERNUM7 – SERNUM0 registers are read and this unique number is stored as the device's serial number.
3) A unique serial number can be stored in EEPROM as part of the USB device descriptor information. After the EEPROM is detected, the serial number found in the descriptor in EEPROM is saved.

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