

Update: This LTC2000 issue was corrected beginning with product date code 1536.

ISSUE DESCRIPTION

In some LTC[®]2000 devices the clock synchronizer and dynamic linearization circuits may not start-up correctly after supply voltages are first applied. This issue may be diagnosed by reading SPI address 0x05. If these circuits fail to start-up, bit 3 of address 0x05 will read back high. This issue may result in corruption of the data received at the LVDS input ports, resulting in large errors at the DAC output. The issue may further prevent the dynamic linearization circuits from operating, resulting in increased harmonic distortion at the DAC output. Suggested workarounds are described in the following section. The LTC2000 is being revised to correct this issue.

WORKAROUNDS

It is possible to work around this issue by using a modified version of the sample start-up sequence provided on page 34 of the LTC2000 data sheet. The modified start-up sequence powers down the part after valid supply voltages have been applied, using either the $\overline{\text{PD}}$ pin or the FULL_PD bit in SPI register 0x01.

Modified Start-Up Sequence using $\overline{\text{PD}}$ pin:

- 1a. Apply valid supply voltages to $\text{AV}_{\text{DD}33}$, $\text{DV}_{\text{DD}33}$, $\text{AV}_{\text{DD}18}$, $\text{DV}_{\text{DD}18}$, and SV_{DD} .
- 1b. Set the $\overline{\text{PD}}$ pin low to power down the LTC2000.
- 1c. Set the $\overline{\text{PD}}$ pin high to power up the LTC2000.
2. Write 0x01 to address 0x01 to perform a software reset.
3. Follow steps 3 through 10 of the startup sequence on page 34 of the LTC2000 data sheet.

Modified Start-Up Sequence using SPI:

- 1a. Apply valid supply voltages to $\text{AV}_{\text{DD}33}$, $\text{DV}_{\text{DD}33}$, $\text{AV}_{\text{DD}18}$, $\text{DV}_{\text{DD}18}$, and SV_{DD} .
- 1b. Write 0x04 to address 0x01 to set FULL_PD=1.
2. Write 0x01 to address 0x01 to perform a software reset.
3. Follow steps 3 through 10 of the startup sequence on page 34 of the LTC2000 data sheet.

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