

The first release of the LF3320 Horizontal Filter, Revision A, forces a configuration register writing dependency not documented in the data sheet. While this ordering dependency may no longer be required for future revisions of the LF3320, full compatibility with future releases will be maintained.

Configuration Register Dependency

The LF3320 uses writable registers for configuration. The registers determine the various modes of operation for the device. Table 1 shows which registers are affected by the order dependency. The other configuration registers, as well as the coefficient registers, are not affected.

When configuring or re-configuring the LF3320, Configuration Register 5 must be written before writing either or both Configuration Register 1 and 3. Following

this, Configuration Register 6 (undocumented register – Address 206H) must be written to properly configure the device. Listed below are various set up scenarios and the proper sequence for writing these registers.

Configuration Register Setup

Configuration Register 5 determines the basic operation of the LF3320. It sets the cascade, single/dual, and input/output modes. Since this register determines whether the part is in single or dual filter mode, it must be set before loading the registers which set up the I/D registers (Configuration Register 1 and 3).

In single filter mode, writing to Configuration Register 1 will configure both filters A and B. In dual filter mode, Filter A is set up by writing to Configuration Register 1 and Filter B is set up by writing to Configuration Register 3.

As noted above, writing to either of these addresses should only take place after Configuration Register 5 has been written.

After writing Configuration Register 5, 1, and 3 (if needed), you must write to Configuration Register 6. This undocumented register location will force the device into the mode set up by the other registers. Note that the device treats a write to Configuration Register 6 like any other configuration register loading. A data word (2nd word) is expected following the address (1st word). This data word should be 000H. Figure 1 shows a sequence for properly configuring the LF3320.

Future revisions of the LF3320 won't require writing Configuration Register 6. A write to this location will still reset the I/D register lengths (maintaining current code compatibility).

Configuration Registers 0, 2, and 4 can be written at any time and in any order. A write to Configuration Register 6 is not required when writing to any or all of these three registers.

Please note, the above also applies when re-configuring Configuration Registers 1, 3, or 5.

| TABLE 1. AFFECTED CONFIGURATION REGISTERS | |
|---|---|
| REGISTERS | FUNCTIONAL DESCRIPTION |
| Config Reg 1 Address 201H | Filter A: Odd-tap Interleave, I/D Register Length, Even/Odd Taps, Data Reversal |
| Config Reg 3 Address 203H | Filter B: Odd-tap Interleave, I/D Register Length, Even/Odd Taps, Data Reversal |
| Config Reg 5 Address 205H | Cascaded Mode, Single/Dual Mode, Filter B Input, Output Adder Control |

