
Technical Bulletin: CS5463

Functional & Performance Improvements in Revision D

Reference CS5463 Data Sheet revision DS678F2 dated April 2008.

Determining the Silicon Revision of the Integrated Circuit

On the front of the integrated circuit, directly under the part number, is an alpha-numeric line. Characters 3 and 4 in this line represent the silicon revision of the chip. For example, this line indicates that the chip is a "DX" revision chip:

NADX**YYWW

This Errata is applicable only to the D revision of the chip.

Dynamic Range of Pulse Outputs (E1, E2, E3)

Revision D

The dynamic range of the pulse outputs has been improved in rev D. When using the pulse outputs to measure energy accuracy, the device now meets all specified typical accuracy levels listed in the Characteristics and Specifications section of the data sheet.

Programmable Pulse Widths

Revision C

Revision C of the CS5463 had only one fixed pulse width.

Revision D

A register named *PulseWidth* (Page 1, Address 0) has been added that defines the width of pulse outputs in units of 1 OWR sample. The range is from 1 to 838607. The default value is 1 to be compatible with the earlier revisions.

$$T_{PW} = PulseWidth \times \frac{1}{(MCLK/K)/1024}$$

Power Consumption

Revision C

Typical power consumption specification: $I_{A+} = 1.3 \text{ mA}$

Revision D

Typical power consumption specification: $I_{A+} = 1.1 \text{ mA}$

Temperature Sensor

Revision C

In revision C of the CS5463, the temperature sensor has a potential for failure in the low-temperature ranges. Additionally it showed linearity problems and chip-to-chip variations.

Revision D

In revision D of the CS5463, the temperature gain (T_{Gain}) and temperature offset (T_{Off}) register default values have been updated to the following values to improve the dynamic range and accuracy of the temperature sensor.

T_{Gain} (Page 1, Address 2) = 0x2F02C3

T_{Off} (Page 1, Address 3) = 0xF3D35A

IIR Filter Disable Bit

Revision C

In revision C of the CS5463 the IIR compensation filters enable bit (\overline{IIR} , Page 0, Address 18, Bit 4) could not be disabled.

Revision D

In revision D of the CS5463 this problem has been corrected.

$\overline{IIR} = 0$ = IIR Compensation Filters Enabled (default)

$\overline{IIR} = 1$ = IIR Compensation Filters Disabled

No Load Threshold

Revision C

Revision C of the CS5463 does not have a way to set the no load threshold.

Revision D

Revision D of the CS5463 has been modified to include the $LOAD_{Min}$ register (Page 1, Address 1). Use this register to set the no load threshold.

When the magnitude of the P_{active} register is less than $LOAD_{Min}$, the active energy pulse output will be disabled.

$LOAD_{Min}$ is a two's complement value in the range of $-1.0 \leq \text{value} < 1.0$, with the binary point to the right of the MSB. Negative values are not allowed.