Product/Process Change Notice - PCN 16_0137 Rev. A

Analog Devices, Inc. Three Technology Way Norwood, Massachusetts 02062-9106

*** * * * * * * * ATTENTION: THIS PCN IS BEING CANCELLED! * * * * * * * ***

This notice is to inform you of a change that will be made to certain ADI products (see Appendix A) that you may have purchased in the last 2 years. **Any inquiries or requests with this PCN (additional data or samples) must be sent to ADI within 30 days of publication date.** ADI contact information is listed below.

Note: Revised fields are indicated by a red field name. See Appendix B for revision history.

PCN Title: AD9557 and AD9558 die change

Publication Date: 01-Nov-2016

Effectivity Date: Effective upon publication.

Revision Description:

We have determined that a change in the register map is too impactful to many of our customers and will be revising the design to address that issue; another PCN will be issued when ready.

Description Of Change

1 New die revision in register 0x000A is 50H
2 Removed connection in spare gate cell to reduce current
3 APLL VCO design changed to allow more margin over temp with less jitter variation
4 A reset on the RF Divider was added to ensure that the RF Divider always powers up in a known state
5 VCO calibration fixes to prevent APLL calibration failure and enhance the accuracy of the calibration
6 APLL lock detector changed to avoid potential false "loss of lock" indication
7 Unintended connection between 1.8V and 3.3V supplies resulted in a current flow during power up. Logic changes and POR enhancements were added to address this
8 Added clock gating to prevent possible internal runt pulse
9 Reduced internal fan-out improving internal edge rates
10 Timer circuit to initiate change
11 Added another trigger for digital resets
12 Comb/Integrator structure removed from rate conversion circuit
13 Changed internal resets to be synchronous
14 Digital functionality added to ensure I/O update is functional after setup and updates
15 EEPROM flushing state
16 Ensure time-stamp generation is not performed until full cycle of calibration

Reason For Change

1 Done to help differentiate from the prior version
2 Excess static current was drawn in a spare gate
3 To enhance the robustness of the part over temperature and guarantee more consistent jitter performance.
4 The RF Divider was not functionally robust
5 The APLL calibration fails in a very small number of cases on existing silicon, requiring the user to reissue a calibration
6 Analysis of the APLL lock detector circuit revealed potential for declaration of false “unlock” events due to a metastable event.
7 The feed through caused the other supply to hold a non-zero voltage when it should have been at ground.
8 Eliminates a flaw which might have resulted in the device losing lock
9 Eliminates a state in which higher jitter would occur
10 If user set terminal value of timer to less than its present state, timer would have to roll over before triggering activity
11 Prevents a possible cause of lock-up
12 CCI had potential to induce an offset between the input and output
13 Asynchronous resets could cause some unpredictable behavior
14 Improve I/O update functionality
15 improve EEPROM readback interaction with reset
16 Improve accuracy of Time Stamp generation

Impact of the change (positive or negative) on fit, form, function & reliability

1 If customer reads the die id register, their software may need updating to reflect the new value stored therein
2 Approximately 25 uA less current should be needed to run the device
3 No Impact from this change
4 Reliability of the RF Divider has improved
5 No Impact from this change
6 No Impact from this change
7 No Impact from this change
8 Improves robustness
9 Improves jitter performance
10 Faster response times in certain conditions
11 Improves robustness
12 Improves performance
13 Improves reliability of functionality
14 More reliable performance
15 Eliminates a potential issue when using EEPROM
16 Eliminates potential for extended acquisition time of the DPLL

Product Identification *(this section will describe how to identify the changed material)*

New die revision in register 0x000A is 50H
Older revisions will have a value <50H in this register

Summary of Supporting Information

Qualification has been performed per Industry Standard Test Methods. See attached Qualification Results Summary.

Supporting Documents

Attachment 1: Type: Qualification Results Summary

ADI_PCN_16_0137_Rev_A_AD9557_Die_Revision_PCN_Qual_Table .pdf

For questions on this PCN, please send an email to the regional contacts below or contact your local ADI sales representatives.					
Americas:	PCN_Americas@analog.com	**Europe:**	PCN_Europe@analog.com	**Japan:**	PCN_Japan@analog.com
				Rest of Asia:	PCN_ROA@analog.com

Appendix A - Affected ADI Models				
Existing Parts - Product Family / Model Number (4)				
AD9557 / AD9557BCPZ	AD9557 / AD9557BCPZ-REEL7	AD9558 / AD9558BCPZ	AD9558 / AD9558BCPZ-REEL7	

Appendix B - Revision History			
Rev	**Publish Date**	**Effectivity Date**	**Rev Description**
Rev. -	04-Aug-2016	02-Nov-2016	Initial Release
Rev. A	01-Nov-2016	01-Nov-2016	We have determined that a change in the register map is too impactful to many of our customers and will be revising the design to address that issue; another PCN will be issued when ready.