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**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION # 20583**Generic Copy

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**Issue Date:** 16-Jul-2014**TITLE:** New version of the Ezairo 7110 hybrid**PROPOSED FIRST SHIP DATE:** 16-Oct-2014**AFFECTED CHANGE CATEGORY(S):** No impact on device specifications**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**Contact your local ON Semiconductor Sales Office or <[Christophe.WAELCHLI@onsemi.com](mailto:Christophe.WAELCHLI@onsemi.com)>**SAMPLES:** Contact your local ON Semiconductor Sales Office**ADDITIONAL RELIABILITY DATA:** AvailableContact your local ON Semiconductor Sales Office or <[Christophe.WAELCHLI@onsemi.com](mailto:Christophe.WAELCHLI@onsemi.com)>**NOTIFICATION TYPE:**

Final Product/Process Change Notification (FPCN)

Final change notification sent to customers. FPCNs are issued at least 90 days prior to implementation of the change.

ON Semiconductor will consider this change approved unless specific conditions of acceptance are provided in writing within 30 days of receipt of this notice. To do so, contact <[quality@onsemi.com](mailto:quality@onsemi.com)>.**DESCRIPTION AND PURPOSE:**

Two improvements are made to the Ezairo 7110 hybrid (OPN E7110-101A33-AG). These improvements are coming from the following changes on the Ezairo 7100 DSP IC, which is encompassed in the Ezairo 7110 hybrid:

**Increased immunity to ultrasonic sounds.**

The new MEMS microphones used in the hearing aid industry are showing an extended input frequency response (flat up to 25 KHz) compared to traditional microphones. As such, ultrasonic sounds can be captured by these microphones. In the Ezairo 7100's ADC structure, these sounds are not completely filtered today and can be rippled into the audio band, which makes them noticeable.

The proposed improvement strengthens the ADC structure and makes it immune to incoming ultrasonic sounds.

**ADC noise humps.**

Noise humps are generated by the ADC and can be noticeable with certain preamp gain conditions. These noise humps cannot be completely attenuated by a proper ADC offset calibration.

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The cause of the noise hump is the presence of unbalanced parasitic capacitors in Ezairo 7100's ADC circuitry. The presence of unbalanced parasitic capacitors is due to the inaccuracy of the silicon foundry's process specific simulation and extraction tools. The foundry has since upgraded its tools, which has allowed to correct parasitic capacitors and to balance the ADC structure on Ezairo 7100.

The proposed improvement strengthens the quality of the ADC structure, and removes undesired ADC noise humps.

Useful notes:

- These 2 improvements don't affect any specifications of the hybrid as per its datasheet.
- The developed firmware remains 100% code compatible.
- The hybrid is mechanically (die size and pad locations) 100% identical.
- The Chip ID is changing from 101 to 102.

A new part number for the Ezairo 7110 hybrid is defined: E7110-102A33-AG.

**RELIABILITY DATA SUMMARY:****Reliability Test Results:**

Test	Conditions	Results
No change in test	No changes on conditions	No impact on specifications

**ELECTRICAL CHARACTERISTIC SUMMARY:**

No changes in electrical characteristics.

**CHANGED PART IDENTIFICATION:**

Part number has changes:

Old OPN: E7110-101A33-AG  
New OPN: E7110-102A33-AG

Old Chip ID: 101  
New Chip ID: 102

**List of affected General Parts:**

E7110-101A33-AG