PRODUCT INFORMATION LETTER

PIL APG-MID/14/8431
Dated 21 Apr 2014

BOLERO FAMILY : ERRATA SHEET Update

Sales Type/product family label	SPC560B/C/Dxx, SPC56ECxx, SPC564Bxx
Type of change	Product electrical spec. change
Reason for change	ERRATA SHEET UPDATE
Description	Please be informed that Errata Sheet for Bolero Family has been updated.
Forecasted date of implementation	30-Apr-2014
Forecasted date of samples for customer	14-Apr-2014
Forecasted date for **STMicroelectronics** change Qualification Plan results availability	30-Apr-2014
Involved ST facilities	NA

DOCUMENT APPROVAL

Name	Function
Duncan, Martin Russell	Marketing Manager
Brambilla, Daniele Alfred	Product Manager
Mervic, Alberto	Q.A. Manager

BOLERO FAMILY : ERRATA SHEET Update

WHAT:

Please be informed that Errata Sheet for Bolero Family has been updated.

HOW:

See attached **ERR004146**.

WHO:

All The products belonging to BOLERO Family:

- SPC560B/C/Dxx
- SPC56ECxx
- SPC564Bxx

ERR004146: When an ADC conversion is injected, the aborted channel is not restored under certain conditions

Description:

When triggered conversions interrupt the ADC, it is possible that the aborted conversiondoes not get restored to the ADC and is not converted during the chain. Vulnerable configurations are:

- Injected chain over a normal chain
- CTU trigger over a normal chain
- CTU trigger over an injected chain

When any of these triggers arrive whilst the ADC is in the conversion stage of the sample and conversion, the sample is discarded and is not restored. This means that the channel data register will not show the channel as being valid and the CEOCFRx field will not indicate a pending conversion. The sample that was aborted is lost.

When the trigger arrives during the final channel in a normal or injected chain, the same failure mode can cause two ECH/JECH interrupts to be raised.

If the trigger arrives during the sampling phase of the last channel in the chain, an ECH is triggered immediately, the trigger is processed and the channel is restored and after sampling/conversion, a second ECH interrupt occurs.

In scan mode, the second ECH does not occur if the trigger arrives during the conversion phase. In one-shot mode, the trigger arriving during the conversion phase of the last channel restarts the whole conversion chain and the next ECH occurs at completion of thatchain.

Workaround:

It is suggested that the application check for valid data using the CDR status bits or the CEOCFRx registers to ensure all expected channels have converted. This can be tested by running a bitwise AND and an XOR with either the JCMRx or NCMRx registers and the CEOCFRx registers during the ECH of JECH handler. Any non-zero value for (xCMRx & (xCMRx CEOCFRx)) indicates that a channel has been missed and conversion should be requested again.

Spurious ECH/JECH interrupts can be detected by checking the NSTART/JSTART flags in the ADC Module Status Registers – if the flag remains set during an ECH/JECH interrupt then another interrupt will follow after the restored channel or chain has been sampled and converted.

The spurious ECH/JECH workaround above applies to single-shot conversions. In singleshot mode, NSTART changes from 1 to 0. Therefore, the user can rely on checking the NSTART bit to confirm if a spurious ECH has occurred. However, for scan mode, the NSTART bit will remain set during normal operation, so it cannot be relied upon to check for the spurious ECH/JECH issue. Consequently, if CTU is being used in trigger mode, the conversions must be single-shot and not scan mode.

Please Read Carefully:

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries(‘‘ST’’) reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST’s terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

UNLESS OTHERWISE SET FORTH IN ST’S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND / OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

ST PRODUCTS ARE NOT DESIGNED OR AUTHORIZED FOR USE IN: (A) SAFETY CRITICAL APPLICATIONS SUCH AS LIFE SUPPORTING, ACTIVE IMPLANTED DEVICES OR SYSTEMS WITH PRODUCT FUNCTIONAL SAFETY REQUIREMENTS; (B) AERONAUTIC APPLICATIONS; (C) AUTOMOTIVE APPLICATIONS OR ENVIRONMENTS, AND/OR (D) AEROSPACE APPLICATIONS OR ENVIRONMENTS. WHERE ST PRODUCTS ARE NOT DESIGNED FOR SUCH USE, THE PURCHASER SHALL USE PRODUCTS AT PURCHASER’S SOLE RISK, EVEN IF ST HAS BEEN INFORMED IN WRITING OF SUCH USAGE, UNLESS A PRODUCT IS EXPRESSLY DESIGNATED BY ST AS BEING INTENDED FOR ‘‘AUTOMOTIVE, AUTOMOTIVE SAFETY OR MEDICAL’’ INDUSTRY DOMAINS ACCORDING TO ST PRODUCT DESIGN SPECIFICATIONS. PRODUCTS FORMALLY ESCC, QML OR JAN QUALIFIED ARE DEEMED SUITABLE FOR USE IN AEROSPACE BY THE CORRESPONDING GOVERNMENTAL AGENCY.

RESTRICTIONS OF USE AND CONFIDENTIALITY OBLIGATIONS:

THIS DOCUMENT AND ITS ANNEXES CONTAIN ST PROPRIETARY AND CONFIDENTIAL INFORMATION. THE DISCLOSURE, DISTRIBUTION, PUBLICATION OF WHATSOEVER NATURE OR USE FOR ANY OTHER PURPOSE THAN PROVIDED IN THIS DOCUMENT OF ANY INFORMATION CONTAINED IN THIS DOCUMENT AND ITS ANNEXES IS SUBMITTED TO ST PRIOR EXPRESS AUTHORIZATION. ANY UNAUTHORIZED REVIEW, USE, DISCLOSURE OR DISTRIBUTION OF SUCH INFORMATION IS EXPRESSLY PROHIBITED.

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Philippines - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com