PCN Number:	20220208002.0	PCN Date:	February 17, 2022
Title:	TPS6594-Q1 Firmware and Datasheet change		
Customer Contact:	PCN Manager	Dept:	Quality Services

Change Type:					
☐	Assembly Site	☐	Assembly Process	☐	Assembly Materials
☒	Design	☒	Electrical Specification	☐	Mechanical Specification
☐	Test Site	☐	Packing/Shipping/Labeling	☐	Test Process
☐	Wafer Bump Site	☐	Wafer Bump Material	☐	Wafer Bump Process
☐	Wafer Fab Site	☐	Wafer Fab Materials	☐	Wafer Fab Process
		☐	Part number change		

PCN Details

Description of Change:

This notification is to communicate and update to the NVM configuration for the TPS6594-Q1 family of devices. Affected devices are listed in the Product Affected section of this document.

The change is to extend voltage monitoring (VMON) masking time after Analog Built-In Self-Test (ABIST). The Register value in the datasheet, NVM_CODE_2, is changing from 10b to 11b.

The product datasheet(s) is being updated as summarized below.

Changes from Revision A (April 2021) to Revision B (February 2022) **Page**

- Section 8.8 Specifications - BUCK1, BUCK2, BUCK3, BUCK4 and BUCK5 Regulators: Change typical value for parameter 4.112 (from 300-mA to 420-mA), parameter 4.113 (from 200-mA to 100-mA), parameter 4.122 (from 250-mA to 370-mA), parameter 4.123 (from 150-mA to 30-mA), parameter 4.131 (from 400-mA to 310-mA), parameter 4.132 (from 170-mA to 290-mA), parameter 4.133 (from 230-mA to 20-mA), parameter 4.151 (from 335-mA to 290-mA), parameter 4.152 (from 150-mA to 230-mA), parameter 4.153 (from 185-mA to 50-mA) 18
- Added description about OVGDRV - VSYSSENSE relation 47
- BUCK Regulator Overview: added Current Limit and Short-to-Ground Detection on SW_Bx pins 49
- Added section: BUCK Regulator Current Limit 58
- Added section: SW_Bx Short-to-Ground Detection 58
- Added LDO1, LDO2, LDO3 Current Limit description 61
- Added LDO4 Current Limit description 62
- Added note about unmasking the UV/OV right before the release of the nRSTOUT resp. nRSTOUT_SoC pins. 65
- Added note which explains the required voltage accuracy for external supply rails (including VCCA input supply) that are monitored by the TPS6594-Q1 in order to pass the ABIST 65
- Added explanation on how to use Voltage Monitors of unused BUCK and LDO regulators 65
- Corrected Watchdog Reference Answer Calculation figure 94
- Added note which explains necessary system-software steps for using RUNTIME_BIST 121
- Added BOOT_BIST and RUNTIME_BIST 121
- Changed all instances of legacy terminology into "controller" and "target", also in all sub-sections 146
- For I2C, changed all instances of legacy terminology into "controller" and "target". For SPI, changed all instances of legacy terminology into "controller" and "peripheral". For the CRC, changed all instances of legacy terminology into "CRC on received data (R_CRC)", and "CRC on transmitted data" (T_CRC). These changes also applies to all sub-sections. 154
- Corrected figure on Calculation of 8-Bit Controller CRC (R_CRC) Output, corrected figure on Calculation of 8-Bit Target CRC (T_CRC) Input 154
- Added note about missing R_CRC after am I2C write 157
- Added note which describes a device erratum related to COMM_FRM_ERR_INT bit 159

- Added note which explains the I²C addresses for each register map page on the I²C bus. Added note which explains how each register map page is addressed when using SPI. 161
- Added note about writing to RESERVED bits causing a Register Map CRC error 162
- Corrected description of register DEV_REV 163
- Updated PDN example figure, and updated the table with the Local and POL Capacitors used for Buck Use Case Validation 368
- Updated the recommendations for the Digital Signal Connections 371
- Updated Layout Guidelines with respect to output capacitor on VOUT_LDOVINT pin 383
- Updated Layout Example figure 385

The datasheet number will be changing.

	Current	New
Product Family	**Datasheet Number**	**Datasheet Number**
TPS6594-Q1	SLVSEA7A	SLVSEA7B

These changes may be reviewed at the datasheet links provided:
http://www.ti.com/product/TPS6594-Q1

Reason for Change:

Improved device functionality

Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):

None.

Product Affected:

Group 1 – Firmware and Datasheet updates:

TPS65941111RWERQ1	TPS65941212RWERQ1

Group 2 - Datasheet update only:

TPS65941213RWERQ1

For questions regarding this notice, e-mails can be sent to the contacts shown below or your local Field Sales Representative.

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