


Notification Number:	20230110001.0	Notification Date:	January 10, 2023
Title:	Datasheet for TMS320F28004x		
Customer Contact:	Notification Manager	Dept:	Quality Services
Change Type: Electrical Specification			
Description of Change:			
<p>Texas Instruments Incorporated is announcing an information only notification. The product datasheet(s) is being updated as summarized below. The following change history provides further details.</p>			
			
<p>TMS320F280049C-Q1, TMS320F280048C-Q1, TMS320F280041C-Q1, TMS320F280040C-Q1 TMS320F280049C, TMS320F280041C, TMS320F280049-Q1, TMS320F280048-Q1 TMS320F280041-Q1, TMS320F280040-Q1, TMS320F280049, TMS320F280045, TMS320F280041</p> <p>SPRS945G – JANUARY 2017 – REVISED JANUARY 2023</p>			
Changes from February 1, 2021 to January 9, 2023			
			Page
<ul style="list-style-type: none"> • This Revision History lists the changes from SPRS945F to SPRS945G. 1 • Global: Updated devices in data sheet header..... 1 • Global: Changed title of Technical Reference Manual to <i>TMS320F28004x Real-Time Microcontrollers Technical Reference Manual</i>. Changed title of data sheet to <i>TMS320F28004x Real-Time Microcontrollers</i>. Changed title of errata to <i>TMS320F28004x Real-Time MCUs Silicon Errata</i>..... 1 • Global: Updated description of ERRORSTS..... 1 • Section 1, Features: Added "UART-Compatible" to "Two Serial Communication Interfaces (SCIs) (pin-bootable)" feature. Added "UART-Compatible" to "One Local Interconnect Network (LIN)" feature. Added "Functional Safety-Compliant" feature. Added "Safety-related certification" feature..... 1 • Section 3, Description: Updated section..... 2 • Device Information: Updated table..... 2 • Table 3-1, Functional Safety-Compliant Part Numbers: Added table..... 2 • Figure 3-1, Functional Block Diagram: Added "Secure memories are shown in red" note..... 5 • Table 5-1, Device Comparison: Removed F280048, F280048C, F280040, and F280040C from table header. Updated device numbers for Configurable Logic Block (CLB). Updated device numbers for InstaSPIN-FOC™. Added ADC channels (from PGA). Changed "SDFM channels – Type 1" of 64-pin PM from 3 to 2. Changed "SDFM channels – Type 1" of 56-pin RSH from 3 to 2. Added "(UART-compatible)" to "SCI – Type 0". Added "(UART-compatible)" to "LIN – Type 1". Updated PACKAGE OPTIONS, TEMPERATURE, AND QUALIFICATION section..... 9 • Section 5.1, Related Products: Updated section..... 11 • Table 6-1, Pin Attributes: Updated DESCRIPTION of GPIO22_VFBSW, GPIO23_VSW, and ERRORSTS. Added "When DCDCEN = 1 the respective bits in AMSEL register are <i>don't cares</i>" footnote..... 16 • Table 6-3, Digital Signals: Updated DESCRIPTION of ERRORSTS..... 35 • Digital Signals by GPIO table: Updated DESCRIPTION of ERRORSTS..... 42 • Section 7.1, Absolute Maximum Ratings: Changed description of Input clamp current from "Digital/analog input (per pin)" to "Digital input (per pin)". 57 • Section 7.2, ESD Ratings – Commercial: Updated device numbers. Added Charged-device model (CDM) value for corner pins for 100-pin PZ package and 64-pin PM package..... 57 • Section 7.3, ESD Ratings – Automotive: Updated device numbers..... 58 • Section 7.4, Recommended Operating Conditions: Updated SR_{SUPPLY} and its associated footnote..... 58 • Section 7.6, Electrical Characteristics: Moved "150" from TYP column to MIN column for V_{HYSTERESIS}..... 66 • Power Management Module (PMM) section: Updated section..... 70 • Figure 7-12, Reset Circuit: Updated figure..... 81 • Figure 7-13, Power-on Reset: Added t_{boot-flash} to "CPU Execution Phase" waveform..... 82 • Section 7.9.3, Clock Specifications: Removed <i>Crystal Oscillator</i> section. Added <i>Crystal (XTAL) Oscillator</i> section..... 83 			

- [Table 7-9, Minimum Required Flash Wait States \(FRDCNTL\[RWAIT\]\) at Different CPUCLK Frequencies: Changed Minimum Required Flash Wait States with Different Clock Sources and Frequencies table to Minimum Required Flash Wait States \(FRDCNTL\[RWAIT\]\) at Different CPUCLK Frequencies table.](#) Updated table..... 95
- [Table 7-10, Flash Parameters: Changed "N_{wec} Write/Erase Cycles" to "N_{wec} Write/Erase Cycles per sector". Added "N_{wec} Write/Erase Cycles for entire Flash \(combined all sectors\)" and associated footnote.....](#) 95
- [Figure 7-26, Connecting to the 14-Pin JTAG Header: Changed TMS pullup resistance from 4.7 kΩ to 2.2 kΩ.](#) 97
- [Figure 7-27, Connecting to the 20-Pin JTAG Header: Changed TMS pullup resistance from 4.7 kΩ to 2.2 kΩ.](#) 97
- [Section 7.10.1.1, Result Register Mapping: Added section.....](#) 120
- [Section 7.10.1.3.3, ADC Input Model: Added references to the Charge-Sharing Driving Circuits for C2000 ADCs application report and the ADC Input Circuit Evaluation for C2000 MCUs application report.....](#) 124
- [Section 7.10.2.1.2, PGA Characteristics: Added R_{FILT}. Updated Bandwidth. Added "The DNL/INL of the PGA is within the DNL/INL tolerance of the ADC and therefore not shown separately" footnote.....](#) 129
- [Section 7.12.2.1.1, I2C Timing Requirements: Changed MIN, MAX, and UNIT of Parameter T10 \[t_{w\(SP\)}\] in Standard mode and in Fast mode.....](#) 171
- [Figure 7-82, SCI Block Diagram: Updated figure.....](#) 176
- [Figure 8-1, Functional Block Diagram: Added "Secure memories are shown in red" note.....](#) 202
- [Table 8-3, Addresses of Flash Sectors for F280049, F280048, and F280045: Updated table. Added ECC addresses.](#) 204
- [Table 8-4, Addresses of Flash Sectors for F280041 and F280040: Updated table. Added ECC addresses.](#) 204
- [Section 8.12, Configurable Logic Block \(CLB\): Updated section.....](#) 225
- [Section 8.13, Functional Safety: Added section.....](#) 227
- [Section 9, Applications, Implementation, and Layout: Updated section.....](#) 228
- [Section 10.1, Device and Development Support Tool Nomenclature: Updated section.....](#) 244
- [Section 10.3, Tools and Software: Add "C2000 Third-party search tool" to Software Tools section.....](#) 246
- [Section 10.4, Documentation Support: Updated Tools Guides section. Added Migration Guides section. Added The Essential Guide for Developing With C2000™ Real-Time Microcontrollers.....](#) 248

The datasheet number will be changing.

Device Family	Change From:	Change To:
TMS320F28004x	SPRS945F	SPRS945G

These changes may be reviewed at the datasheet links provided.

<http://www.ti.com/product/TMS320F280049C>

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Reason for Change:

To accurately reflect device characteristics.

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

No anticipated impact. This is a specification change announcement only. There are no changes to the actual device.

Changes to product identification resulting from this notification:

None.

Product Affected:

F280040CPMQR	F280041PZQR	F280045RSHSR	F280049CRSHSR
F280040PMQR	F280041PZS	F280047PZQR	F280049PMS
F280041CPMS	F280041PZSR	F280048CPMQR	F280049PMSR
F280041CPZQR	F280041RSHSR	F280048PMQR	F280049PZQ
F280041CPZS	F280045PMS	F280049CPMS	F280049PZQR
F280041CRSHSR	F280045PMSR	F280049CPMSR	F280049PZS
F280041PMS	F280045PZS	F280049CPZQR	F280049PZSR
F280041PMSR	F280045PZSR	F280049CPZS	F280049RSHSR

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