

September 16, 2015

Datasheet Errata for the S6E2DH Series 32-bit ARM® Cortex®-M4F based Microcontroller

This document describes the errata for the S6E2DH Series 32-bit ARM® Cortex®-M4F based Microcontroller Datasheet. Compare this document to the device's data sheet for a complete functional description.

Contact your local Cypress Sales Representative, if you have questions.

Part Numbers Affected

Part Number
S6E2DH Series

Page	Item	Description
Original document code: DS709-00029-1v0-E		
Rev. 1.0 June 25, 2015		
64	9. Handling Devices	<p>"Sub Crystal Oscillator" should be added as indicated by the shading below.</p> <ul style="list-style-type: none"> ■ Surface mount type <ul style="list-style-type: none"> Size: More than 3.2 mm × 1.5 mm Load capacitance: Approximately 6 pF to 7 pF When the Standard setting (CCS/CCB=11001110) Load capacitance: Approximately 4 pF to 7 pF When the low power setting (CCS/CCB=00000100) ■ Lead type <ul style="list-style-type: none"> Load capacitance: Approximately 6 pF to 7 pF When the Standard setting (CCS/CCB=11001110) Load capacitance: Approximately 4 pF to 7 pF When the low power setting (CCS/CCB=00000100)

Page	Item	Description																																																																						
92	14.3.1 Current Rating	<p>Table 14-10 should be added as indicated by the shading below.</p> <p>Table 14-10 Typical and Maximum Current Consumption in Deep Standby Stop Mode, Deep Standby RTC Mode and VBAT</p> <table border="1"> <thead> <tr> <th rowspan="2">Parameter</th> <th rowspan="2">Symbol</th> <th rowspan="2">Pin Name</th> <th rowspan="2">Conditions</th> <th rowspan="2">Frequency (MHz)</th> <th colspan="2">Value</th> <th rowspan="2">Unit</th> <th rowspan="2">Remarks</th> </tr> <tr> <th>Typ</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td rowspan="9">Power supply current</td> <td rowspan="9">ICCVBAT</td> <td rowspan="9">VBAT</td> <td rowspan="3">RTC stop</td> <td rowspan="9">-</td> <td>0.009</td> <td>0.032</td> <td>μA</td> <td>*3, *4, *5 T_A=+25°C</td> </tr> <tr> <td>-</td> <td>0.994</td> <td>μA</td> <td>*3, *4, *5 T_A=+85°C</td> </tr> <tr> <td>-</td> <td>1.491</td> <td>μA</td> <td>*3, *4, *5 T_A=+105°C</td> </tr> <tr> <td>1.0</td> <td>1.636</td> <td>μA</td> <td>*3, *4 T_A=+25°C</td> </tr> <tr> <td>-</td> <td>2.828</td> <td>μA</td> <td>*3, *4 T_A=+85°C</td> </tr> <tr> <td>-</td> <td>4.242</td> <td>μA</td> <td>*3, *4 T_A=+105°C</td> </tr> <tr> <td>0.7</td> <td>1.153</td> <td>μA</td> <td>*3, *4 T_A=+25°C</td> </tr> <tr> <td>-</td> <td>2.277</td> <td>μA</td> <td>*3, *4 T_A=+85°C</td> </tr> <tr> <td>-</td> <td>3.416</td> <td>μA</td> <td>*3, *4 T_A=+105°C</td> </tr> <tr> <td></td> <td></td> <td></td> <td>RTC *6 operation</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>RTC *7 operation</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>*1: V_{CC}=3.3 V *2: V_{CC}=3.6 V *3: When all ports are fixed. *4: When LVD is OFF *5: When sub oscillation is OFF *6: When using the crystal oscillator of 32 kHz (including the current consumption of the oscillation circuit) When the Standard setting (CCS/CCB=11001110) *7: When using the crystal oscillator of 32 kHz (including the current consumption of the oscillation circuit) When the low power setting (CCS/CCB=00000100)</p>	Parameter	Symbol	Pin Name	Conditions	Frequency (MHz)	Value		Unit	Remarks	Typ	Max	Power supply current	ICCVBAT	VBAT	RTC stop	-	0.009	0.032	μA	*3, *4, *5 T _A =+25°C	-	0.994	μA	*3, *4, *5 T _A =+85°C	-	1.491	μA	*3, *4, *5 T _A =+105°C	1.0	1.636	μA	*3, *4 T _A =+25°C	-	2.828	μA	*3, *4 T _A =+85°C	-	4.242	μA	*3, *4 T _A =+105°C	0.7	1.153	μA	*3, *4 T _A =+25°C	-	2.277	μA	*3, *4 T _A =+85°C	-	3.416	μA	*3, *4 T _A =+105°C				RTC *6 operation									RTC *7 operation					
Parameter	Symbol	Pin Name						Conditions	Frequency (MHz)			Value							Unit	Remarks																																																				
			Typ	Max																																																																				
Power supply current	ICCVBAT	VBAT	RTC stop	-	0.009	0.032	μA	*3, *4, *5 T _A =+25°C																																																																
					-	0.994	μA	*3, *4, *5 T _A =+85°C																																																																
					-	1.491	μA	*3, *4, *5 T _A =+105°C																																																																
			1.0		1.636	μA	*3, *4 T _A =+25°C																																																																	
			-		2.828	μA	*3, *4 T _A =+85°C																																																																	
			-		4.242	μA	*3, *4 T _A =+105°C																																																																	
			0.7		1.153	μA	*3, *4 T _A =+25°C																																																																	
			-		2.277	μA	*3, *4 T _A =+85°C																																																																	
			-		3.416	μA	*3, *4 T _A =+105°C																																																																	
			RTC *6 operation																																																																					
			RTC *7 operation																																																																					

Page	Item	Description																						
178	15. Ordering Information	<p>Ordering Information should be corrected as indicated by the shading below.</p> <p>(Error)</p> <table border="1" data-bbox="537 386 1346 680"> <thead> <tr> <th data-bbox="537 386 839 428">Part Number</th> <th data-bbox="839 386 1346 428">Package</th> </tr> </thead> <tbody> <tr> <td data-bbox="537 428 839 462">S6E2DH5G0AGV20000</td> <td data-bbox="839 428 1346 495" rowspan="2">Plastic • LQFP (0.5 mm pitch), 120 pin (FPT-120P-M21)</td> </tr> <tr> <td data-bbox="537 462 839 495">S6E2DH5GJAMV20000</td> </tr> <tr> <td data-bbox="537 495 839 556">S6E2DH5J0AGV20000</td> <td data-bbox="839 495 1346 556">Plastic • LQFP (0.5 mm pitch), 176 pin (FPT-176P-M07)</td> </tr> <tr> <td data-bbox="537 556 839 617">S6E2DH5G0AGB30000</td> <td data-bbox="839 556 1346 617">Plastic • PFBGA (0.5 mm pitch), 161 pin (FDJ161)</td> </tr> <tr> <td data-bbox="537 617 839 680">S6E2DH5G0AGZ20000</td> <td data-bbox="839 617 1346 680">Plastic • Ex-LQFP (0.5 mm pitch), 120 pin (LEM120)</td> </tr> </tbody> </table> <p>(Correct)</p> <table border="1" data-bbox="537 743 1346 1039"> <thead> <tr> <th data-bbox="537 743 839 785">Part Number</th> <th data-bbox="839 743 1346 785">Package</th> </tr> </thead> <tbody> <tr> <td data-bbox="537 785 839 819">S6E2DH5G0AGV20000</td> <td data-bbox="839 785 1346 852" rowspan="2">Plastic • LQFP (0.5 mm pitch), 120 pin (FPT-120P-M21)</td> </tr> <tr> <td data-bbox="537 819 839 852">S6E2DH5GJAMV20000</td> </tr> <tr> <td data-bbox="537 852 839 913">S6E2DH5J0AGV20000</td> <td data-bbox="839 852 1346 913">Plastic • LQFP (0.5 mm pitch), 176 pin (FPT-176P-M07)</td> </tr> <tr> <td data-bbox="537 913 839 974">S6E2DH5G0AGB30000</td> <td data-bbox="839 913 1346 974">Plastic • PFBGA (0.5 mm pitch), 161 pin (FDJ161)</td> </tr> <tr> <td data-bbox="537 974 839 1039">S6E2DH5G0AGE20000</td> <td data-bbox="839 974 1346 1039">Plastic • Ex-LQFP (0.5 mm pitch), 120 pin (LEM120)</td> </tr> </tbody> </table>	Part Number	Package	S6E2DH5G0AGV20000	Plastic • LQFP (0.5 mm pitch), 120 pin (FPT-120P-M21)	S6E2DH5GJAMV20000	S6E2DH5J0AGV20000	Plastic • LQFP (0.5 mm pitch), 176 pin (FPT-176P-M07)	S6E2DH5G0AGB30000	Plastic • PFBGA (0.5 mm pitch), 161 pin (FDJ161)	S6E2DH5G0AGZ20000	Plastic • Ex-LQFP (0.5 mm pitch), 120 pin (LEM120)	Part Number	Package	S6E2DH5G0AGV20000	Plastic • LQFP (0.5 mm pitch), 120 pin (FPT-120P-M21)	S6E2DH5GJAMV20000	S6E2DH5J0AGV20000	Plastic • LQFP (0.5 mm pitch), 176 pin (FPT-176P-M07)	S6E2DH5G0AGB30000	Plastic • PFBGA (0.5 mm pitch), 161 pin (FDJ161)	S6E2DH5G0AGE20000	Plastic • Ex-LQFP (0.5 mm pitch), 120 pin (LEM120)
Part Number	Package																							
S6E2DH5G0AGV20000	Plastic • LQFP (0.5 mm pitch), 120 pin (FPT-120P-M21)																							
S6E2DH5GJAMV20000																								
S6E2DH5J0AGV20000	Plastic • LQFP (0.5 mm pitch), 176 pin (FPT-176P-M07)																							
S6E2DH5G0AGB30000	Plastic • PFBGA (0.5 mm pitch), 161 pin (FDJ161)																							
S6E2DH5G0AGZ20000	Plastic • Ex-LQFP (0.5 mm pitch), 120 pin (LEM120)																							
Part Number	Package																							
S6E2DH5G0AGV20000	Plastic • LQFP (0.5 mm pitch), 120 pin (FPT-120P-M21)																							
S6E2DH5GJAMV20000																								
S6E2DH5J0AGV20000	Plastic • LQFP (0.5 mm pitch), 176 pin (FPT-176P-M07)																							
S6E2DH5G0AGB30000	Plastic • PFBGA (0.5 mm pitch), 161 pin (FDJ161)																							
S6E2DH5G0AGE20000	Plastic • Ex-LQFP (0.5 mm pitch), 120 pin (LEM120)																							

Page	Item	Description																																																
11	2. Features	<p>Note should be added as indicated by the shading below.</p> <p>(Error)</p> <p>GDC Unit Controller for external graphics display Accelerator for 2D block image transfer (blit) operations Embedded SRAM video memory High-Speed Quad SPI (Serial Peripheral Interface for external memory extensions) SDRAM interface for external memory extensions HBI (Hyper Bus Interface) interface for external memory extensions Maximum core system clock frequency : 160 MHz</p> <p>(Correct)</p> <p>GDC Unit Controller for external graphics display Accelerator for 2D block image transfer (blit) operations Embedded SRAM video memory High-Speed Quad SPI (Serial Peripheral Interface for external memory extensions) SDRAM interface for external memory extensions HBI (Hyper Bus Interface) interface for external memory extensions Maximum core system clock frequency : 160 MHz</p> <p>Note:</p> <ul style="list-style-type: none"> - <i>User can leverage the internal VRAM and external HyperRAM as a graphics memory allowed to be written by GDC.</i> 																																																
15	4. Packages	<p>“Packages” should be corrected as indicated by the shading below.</p> <p>(Error)</p> <table border="1"> <thead> <tr> <th>Product Name</th> <th>S6E2DH5G0A</th> <th>S6E2DH5J0A</th> <th>S6E2DH5GJA</th> </tr> </thead> <tbody> <tr> <td>Package</td> <td></td> <td></td> <td></td> </tr> <tr> <td>LQFP: FPT-120P-M21 (0.5 mm pitch)</td> <td>○</td> <td>-</td> <td>○</td> </tr> <tr> <td>LQFP: FPT-176P-M07 (0.5 mm pitch)</td> <td>-</td> <td>○</td> <td>-</td> </tr> <tr> <td>PFBGA: FDJ161 (0.5 mm pitch)</td> <td>○</td> <td>-</td> <td>-</td> </tr> <tr> <td>Ex_LQFP(TEQFP): LEM120 (0.5 mm pitch)</td> <td>○</td> <td></td> <td></td> </tr> </tbody> </table> <p>○: Supported</p> <p>(Correct)</p> <table border="1"> <thead> <tr> <th>Product Name</th> <th>S6E2DH5G0A</th> <th>S6E2DH5J0A</th> <th>S6E2DH5GJA</th> </tr> </thead> <tbody> <tr> <td>Package</td> <td></td> <td></td> <td></td> </tr> <tr> <td>LQFP: FPT-120P-M21 (0.5 mm pitch)</td> <td>○</td> <td>-</td> <td>○</td> </tr> <tr> <td>LQFP: FPT-176P-M07 (0.5 mm pitch)</td> <td>-</td> <td>○</td> <td>-</td> </tr> <tr> <td>FPGA: FDJ161 (0.5 mm pitch)</td> <td>○</td> <td>-</td> <td>-</td> </tr> <tr> <td>Ex_LQFP(TEQFP): LEM120 (0.5 mm pitch)</td> <td>◻</td> <td>◻</td> <td>◻</td> </tr> </tbody> </table> <p>○: Supported ◻: In development</p>	Product Name	S6E2DH5G0A	S6E2DH5J0A	S6E2DH5GJA	Package				LQFP: FPT-120P-M21 (0.5 mm pitch)	○	-	○	LQFP: FPT-176P-M07 (0.5 mm pitch)	-	○	-	PFBGA: FDJ161 (0.5 mm pitch)	○	-	-	Ex_LQFP(TEQFP): LEM120 (0.5 mm pitch)	○			Product Name	S6E2DH5G0A	S6E2DH5J0A	S6E2DH5GJA	Package				LQFP: FPT-120P-M21 (0.5 mm pitch)	○	-	○	LQFP: FPT-176P-M07 (0.5 mm pitch)	-	○	-	FPGA : FDJ161 (0.5 mm pitch)	○	-	-	Ex_LQFP(TEQFP): LEM120 (0.5 mm pitch)	◻	◻	◻
Product Name	S6E2DH5G0A	S6E2DH5J0A	S6E2DH5GJA																																															
Package																																																		
LQFP: FPT-120P-M21 (0.5 mm pitch)	○	-	○																																															
LQFP: FPT-176P-M07 (0.5 mm pitch)	-	○	-																																															
PFBGA: FDJ161 (0.5 mm pitch)	○	-	-																																															
Ex_LQFP(TEQFP): LEM120 (0.5 mm pitch)	○																																																	
Product Name	S6E2DH5G0A	S6E2DH5J0A	S6E2DH5GJA																																															
Package																																																		
LQFP: FPT-120P-M21 (0.5 mm pitch)	○	-	○																																															
LQFP: FPT-176P-M07 (0.5 mm pitch)	-	○	-																																															
FPGA : FDJ161 (0.5 mm pitch)	○	-	-																																															
Ex_LQFP(TEQFP): LEM120 (0.5 mm pitch)	◻	◻	◻																																															

Page	Item	Description																																																																						
16, 18	5. Pin Assignment	Signal name should be corrected as below. (Error) GE_SPCSX_0 (Correct) GE_SPCSX0 (Error) GE_HBCSX_0 (Correct) GE_HBCSX0 (Error) GE_HBCSX_1 (Correct) GE_HBCSX1																																																																						
21, 23, 48	6. Pin Descriptions	Signal name should be corrected as below. (Error) GE_SPCSX_0 (Correct) GE_SPCSX0 (Error) GE_HBCSX_0 (Correct) GE_HBCSX0 (Error) GE_HBCSX_1 (Correct) GE_HBCSX1																																																																						
67	10. Block Diagram	Signal name should be corrected as below. (Error) GE_SPCSX_0 (Correct) GE_SPCSX0 (Error) GE_HBCSX_0/1 (Correct) GE_HBCSX0/1																																																																						
93	14.3 DC Characteristics	<p>“VFLASH memory Standby current” should be corrected as indicated by the shading below.</p> <p>(Error)</p> <table border="1"> <thead> <tr> <th rowspan="2">Parameter</th> <th rowspan="2">Symbol</th> <th rowspan="2">Pin name</th> <th rowspan="2">Conditions</th> <th colspan="3">Value</th> <th rowspan="2">Unit</th> <th rowspan="2">Remarks</th> </tr> <tr> <th>Min</th> <th>Typ</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>VFLASH memory Standby current</td> <td rowspan="3">I_{CCVFLASH}</td> <td rowspan="3">VCC</td> <td>At Standby</td> <td>-</td> <td>15</td> <td>25</td> <td>μA</td> <td></td> </tr> <tr> <td>VFLASH memory Read current</td> <td>At Read</td> <td>-</td> <td>9</td> <td>14</td> <td rowspan="2">mA</td> <td>40MHz</td> </tr> <tr> <td>VFLASH memory write/erase current</td> <td>At Write/Erase</td> <td>-</td> <td>20</td> <td>25</td> <td>mA</td> <td></td> </tr> </tbody> </table> <p>(Correct)</p> <table border="1"> <thead> <tr> <th rowspan="2">Parameter</th> <th rowspan="2">Symbol</th> <th rowspan="2">Pin name</th> <th rowspan="2">Conditions</th> <th colspan="3">Value</th> <th rowspan="2">Unit</th> <th rowspan="2">Remarks</th> </tr> <tr> <th>Min</th> <th>Typ</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>VFLASH memory Standby current</td> <td rowspan="3">I_{CCVFLASH}</td> <td rowspan="3">VCC</td> <td>At Standby</td> <td>-</td> <td>15</td> <td>35</td> <td>μA</td> <td></td> </tr> <tr> <td>VFLASH memory Read current</td> <td>At Read</td> <td>-</td> <td>9</td> <td>14</td> <td rowspan="2">mA</td> <td>40MHz</td> </tr> <tr> <td>VFLASH memory write/erase current</td> <td>At Write/Erase</td> <td>-</td> <td>20</td> <td>25</td> <td>mA</td> <td></td> </tr> </tbody> </table>	Parameter	Symbol	Pin name	Conditions	Value			Unit	Remarks	Min	Typ	Max	VFLASH memory Standby current	I _{CCVFLASH}	VCC	At Standby	-	15	25	μA		VFLASH memory Read current	At Read	-	9	14	mA	40MHz	VFLASH memory write/erase current	At Write/Erase	-	20	25	mA		Parameter	Symbol	Pin name	Conditions	Value			Unit	Remarks	Min	Typ	Max	VFLASH memory Standby current	I _{CCVFLASH}	VCC	At Standby	-	15	35	μA		VFLASH memory Read current	At Read	-	9	14	mA	40MHz	VFLASH memory write/erase current	At Write/Erase	-	20	25	mA	
Parameter	Symbol	Pin name					Conditions	Value				Unit	Remarks																																																											
			Min	Typ	Max																																																																			
VFLASH memory Standby current	I _{CCVFLASH}	VCC	At Standby	-	15	25	μA																																																																	
VFLASH memory Read current			At Read	-	9	14	mA	40MHz																																																																
VFLASH memory write/erase current			At Write/Erase	-	20	25		mA																																																																
Parameter	Symbol	Pin name	Conditions	Value			Unit	Remarks																																																																
				Min	Typ	Max																																																																		
VFLASH memory Standby current	I _{CCVFLASH}	VCC	At Standby	-	15	35	μA																																																																	
VFLASH memory Read current			At Read	-	9	14	mA	40MHz																																																																
VFLASH memory write/erase current			At Write/Erase	-	20	25		mA																																																																
162, 163, 164	14.4 AC Characteristics	Signal name should be corrected as below. (Error) GE_SPCSX_0 (Correct) GE_SPCSX0 (Error) GE_HBCSX_0 (Correct) GE_HBCSX0 (Error) GE_HBCSX_1 (Correct) GE_HBCSX1																																																																						

Document History Page

Document Title: Datasheet Errata for the S6E2DH Series 32-bit ARM® Cortex®-M4F based Microcontroller			
Document Number: 002-05039			
Rev.	ECN No.	Orig. of Change	Description of Change
**	—	AKIH	Initial release
*A	5037741	AKIH	Converted to Cypress format

All trademarks or registered trademarks referenced herein are the property of their respective owners.>

Cypress Semiconductor
 198 Champion Court
 San Jose, CA 95134-1709
 Phone: 408-943-2600
 Fax: 408-943-4730
<http://www.cypress.com>

© Cypress Semiconductor Corporation, 2015. The information contained herein is subject to change without notice. Cypress Semiconductor Corporation assumes no responsibility for the use of any circuitry other than circuitry embodied in a Cypress product. Nor does it convey or imply any license under patent or other rights. Cypress products are not warranted nor intended to be used for medical, life support, life saving, critical control or safety applications, unless pursuant to an express written agreement with Cypress. Furthermore, Cypress does not authorize its products for use as critical components in life-support systems where a malfunction or failure may reasonably be expected to result in significant injury to the user. The inclusion of Cypress products in life-support systems application implies that the manufacturer assumes all risk of such use and in doing so indemnifies Cypress against all charges.

This Source Code (software and/or firmware) is owned by Cypress Semiconductor Corporation (Cypress) and is protected by and subject to worldwide patent protection (United States and foreign), United States copyright laws and international treaty provisions. Cypress hereby grants to licensee a personal, non-exclusive, non-transferable license to copy, use, modify, create derivative works of, and compile the Cypress Source Code and derivative works for the sole purpose of creating custom software and or firmware in support of licensee product to be used only in conjunction with a Cypress integrated circuit as specified in the applicable agreement. Any reproduction, modification, translation, compilation, or representation of this Source Code except as specified above is prohibited without the express written permission of Cypress.

Disclaimer: CYPRESS MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARD TO THIS MATERIAL, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Cypress reserves the right to make changes without further notice to the materials described herein. Cypress does not assume any liability arising out of the application or use of any product or circuit described herein. Cypress does not authorize its products for use as critical components in life-support systems where a malfunction or failure may reasonably be expected to result in significant injury to the user. The inclusion of Cypress' product in a life-support systems application implies that the manufacturer assumes all risk of such use and in doing so indemnifies Cypress against all charges.

Use may be limited by and subject to the applicable Cypress software license agreement.