



Please note that Cypress is an Infineon Technologies Company.

The document following this cover page is marked as “Cypress” document as this is the company that originally developed the product. Please note that Infineon will continue to offer the product to new and existing customers as part of the Infineon product portfolio.

Continuity of document content

The fact that Infineon offers the following product as part of the Infineon product portfolio does not lead to any changes to this document. Future revisions will occur when appropriate, and any changes will be set out on the document history page.

Continuity of ordering part numbers

Infineon continues to support existing part numbers. Please continue to use the ordering part numbers listed in the datasheet for ordering.



The following document contains information on Cypress products. The document has the series name, product name, and ordering part numbering with the prefix “MB”. However, Cypress will offer these products to new and existing customers with the series name, product name, and ordering part number with the prefix “CY”.

How to Check the Ordering Part Number

1. Go to www.cypress.com/pcn.
2. Enter the keyword (for example, ordering part number) in the **SEARCH PCNS** field and click **Apply**.
3. Click the corresponding title from the search results.
4. Download the Affected Parts List file, which has details of all changes

For More Information

Please contact your local sales office for additional information about Cypress products and solutions.

About Cypress

Cypress is the leader in advanced embedded system solutions for the world's most innovative automotive, industrial, smart home appliances, consumer electronics and medical products. Cypress' microcontrollers, analog ICs, wireless and USB-based connectivity solutions and reliable, high-performance memories help engineers design differentiated products and get them to market first. Cypress is committed to providing customers with the best support and development resources on the planet enabling them to disrupt markets by creating new product categories in record time. To learn more, go to www.cypress.com.

September 24, 2015

Datasheet Errata for the MB9B360R Series 32-bit ARM® Cortex®-M4F based Microcontroller

This document describes the errata for the MB9B360R Series 32-bit ARM® Cortex®-M4F based Microcontroller. 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
MB9B360R Series

Page	Item	Description																							
Original document code: DS709-00003-1v0-E																									
Rev. 1.0 January 9, 2014																									
74	ELECTRICAL CHARACTERISTICS 2. Recommended Operating Conditions	<p>It should be corrected as indicated by the shading below.</p> <table border="1"> <thead> <tr> <th rowspan="2">Parameter</th> <th rowspan="2">Symbol</th> <th rowspan="2">Conditions</th> <th colspan="2">Value</th> <th rowspan="2">Unit</th> <th rowspan="2">Remarks</th> </tr> <tr> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>Power supply voltage</td> <td>VCC</td> <td>-</td> <td>2.7</td> <td>5.5</td> <td>V</td> <td></td> </tr> <tr> <td>Analog reference voltage</td> <td>AVRH</td> <td>-</td> <td>*4</td> <td>AV_{CC}</td> <td>V</td> <td></td> </tr> </tbody> </table> <p>*4 :The minimum value of Analog reference voltage depends on the value of compare clock cycle (T_{ck}). See "5. 12-bit A/D Converter" for the details.</p> <p>See the description of the same item on Rev. 2.0 (P.3).</p>	Parameter	Symbol	Conditions	Value		Unit	Remarks	Min	Max	Power supply voltage	VCC	-	2.7	5.5	V		Analog reference voltage	AVRH	-	*4	AV _{CC}	V	
Parameter	Symbol	Conditions				Value				Unit	Remarks														
			Min	Max																					
Power supply voltage	VCC	-	2.7	5.5	V																				
Analog reference voltage	AVRH	-	*4	AV _{CC}	V																				

Page	Item	Description																																										
146	ELECTRICAL CHARACTERISTICS 5. 12-bit A/D Converter	<p>“Electrical Characteristics for the A/D Converter” 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 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>Reference voltage</td> <td>-</td> <td>AVRH</td> <td>2.7</td> <td>-</td> <td>AV_{CC}</td> <td>V</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 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 rowspan="2">Reference voltage</td> <td rowspan="2">-</td> <td rowspan="2">AVRH</td> <td>4.5</td> <td>-</td> <td>AV_{CC}</td> <td rowspan="2">V</td> <td>T_{cck} < 50ns</td> </tr> <tr> <td>2.7</td> <td>-</td> <td>AV_{CC}</td> <td>T_{cck} ≥ 50ns</td> </tr> </tbody> </table>	Parameter	Symbol	Pin name	Value			Unit	Remarks	Min	Typ	Max	Reference voltage	-	AVRH	2.7	-	AV _{CC}	V		Parameter	Symbol	Pin name	Value			Unit	Remarks	Min	Typ	Max	Reference voltage	-	AVRH	4.5	-	AV _{CC}	V	T _{cck} < 50ns	2.7	-	AV _{CC}	T _{cck} ≥ 50ns
Parameter	Symbol	Pin name				Value					Unit	Remarks																																
			Min	Typ	Max																																							
Reference voltage	-	AVRH	2.7	-	AV _{CC}	V																																						
Parameter	Symbol	Pin name	Value			Unit	Remarks																																					
			Min	Typ	Max																																							
Reference voltage	-	AVRH	4.5	-	AV _{CC}	V	T _{cck} < 50ns																																					
			2.7	-	AV _{CC}		T _{cck} ≥ 50ns																																					
Rev. 2.0 April 25, 2014																																												
2	FEATURES	<p>•32-bit ARM Cortex-M4F Core “should be corrected as indicated by the shading below.</p> <p>(Error)</p> <ul style="list-style-type: none"> • Processor version: r2p1 <p>(Correct)</p> <ul style="list-style-type: none"> • Processor version: r0p1 																																										
49	I/O CIRCUIT TYPE	<p>It should be added as indicated by the shading below.</p> <table border="1"> <thead> <tr> <th>Type</th> <th>Circuit</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>I</td> <td> <p>The diagram shows a pull-up resistor R connected to a digital input and a digital output. The output is driven by a P-channel MOSFET and an N-channel MOSFET. A standby mode control signal is also shown.</p> </td> <td> <ul style="list-style-type: none"> • CMOS level output • CMOS level hysteresis input • 5V tolerant • With standby mode control • Pull-up resistor : Approximately 50kΩ • I_{OH} = -4mA, I_{OL} = 4mA • Available to control of PZR registers. </td> </tr> </tbody> </table>	Type	Circuit	Remarks	I	<p>The diagram shows a pull-up resistor R connected to a digital input and a digital output. The output is driven by a P-channel MOSFET and an N-channel MOSFET. A standby mode control signal is also shown.</p>	<ul style="list-style-type: none"> • CMOS level output • CMOS level hysteresis input • 5V tolerant • With standby mode control • Pull-up resistor : Approximately 50kΩ • I_{OH} = -4mA, I_{OL} = 4mA • Available to control of PZR registers. 																																				
Type	Circuit	Remarks																																										
I	<p>The diagram shows a pull-up resistor R connected to a digital input and a digital output. The output is driven by a P-channel MOSFET and an N-channel MOSFET. A standby mode control signal is also shown.</p>	<ul style="list-style-type: none"> • CMOS level output • CMOS level hysteresis input • 5V tolerant • With standby mode control • Pull-up resistor : Approximately 50kΩ • I_{OH} = -4mA, I_{OL} = 4mA • Available to control of PZR registers. 																																										

Page	Item	Description										
71	Pin Status	"List of VBAT Domain Pin Status" should be corrected as indicated by the shading below. (Error)										
		VBAT pin status type	Function group	INITX input state	Device internal reset state	TIMER mode, RTC mode, or STOP mode state				Deep standby RTC mode or Deep standby STOP mode state		Return from Deep standby mode state
				Power supply stable		Power supply stable		Power supply stable		Power supply stable		
				INITX=0	INITX=1	INITX=1		INITX=1		INITX=1		
				-	-	SPL=0	SPL=1	SPL=0	SPL=1	-		
		S	GPIO selected	Setting disabled	Setting disabled	Maintain previous state	Hi-Z / Internal input fixed at "0"	GPIO selected Internal input fixed at "0"	Hi-Z / Internal input fixed at "0"	GPIO selected		
		T	GPIO selected	Setting disabled	Setting disabled	Maintain previous state	Hi-Z / Internal input fixed at "0"	GPIO selected Internal input fixed at "0"	Hi-Z / Internal input fixed at "0"	GPIO selected		
			External sub clock input selected	Setting disabled	Setting disabled	Maintain previous state	Hi-Z / Internal input fixed at "0"	Maintain previous state	Hi-Z / Internal input fixed at "0"	Maintain previous state		
			Sub crystal oscillator output pin	Hi-Z / Internal input fixed at "0"	Hi-Z / Internal input fixed at "0"	Maintain previous state/When oscillation stops*, Hi-Z / Internal input fixed at "0"	Maintain previous state/When oscillation stops*, Hi-Z / Internal input fixed at "0"	Maintain previous state/When oscillation stops*, Hi-Z / Internal input fixed at "0"	Maintain previous state/When oscillation stops*, Hi-Z / Internal input fixed at "0"	Maintain previous state/When oscillation stops*, Hi-Z / Internal input fixed at "0"		
		*Oscillation is stopped at STOP mode and Deep standby STOP mode.										

Page	Item	Description																																																																
71	Pin Status	<p>(Correct)</p> <table border="1"> <thead> <tr> <th rowspan="4">VBAT pin status type</th> <th rowspan="4">Function group</th> <th>INITX input state</th> <th>Device internal reset state</th> <th colspan="2">TIMER mode, RTC mode, or STOP mode state</th> <th colspan="2">Deep standby RTC mode or Deep standby STOP mode state</th> <th>Return from Deep standby mode state</th> </tr> <tr> <td colspan="2">Power supply stable</td> <td colspan="2">Power supply stable</td> <td colspan="2">Power supply stable</td> <td>Power supply stable</td> </tr> <tr> <td>INITX=0</td> <td>INITX=1</td> <td colspan="2">INITX=1</td> <td colspan="2">INITX=1</td> <td>INITX=1</td> </tr> <tr> <td>-</td> <td>-</td> <td>SPL=0</td> <td>SPL=1</td> <td>SPL=0</td> <td>SPL=1</td> <td>-</td> </tr> </thead> <tbody> <tr> <td rowspan="2">S</td> <td>GPIO selected</td> <td>Maintain previous state</td> <td>Maintain previous state</td> <td>Maintain previous state</td> <td>Maintain previous state</td> <td>Maintain previous state</td> <td>Maintain previous state</td> <td>Maintain previous state</td> </tr> <tr> <td>GPIO selected</td> <td>Maintain previous state</td> <td>Maintain previous state</td> <td>Maintain previous state</td> <td>Maintain previous state</td> <td>Maintain previous state</td> <td>Maintain previous state</td> <td>Maintain previous state</td> </tr> <tr> <td rowspan="2">T</td> <td>External sub clock input selected</td> <td>Maintain previous state</td> <td>Maintain previous state</td> <td>Maintain previous state</td> <td>Maintain previous state</td> <td>Maintain previous state</td> <td>Maintain previous state</td> <td>Maintain previous state</td> </tr> <tr> <td>Sub crystal oscillator output pin</td> <td>Maintain previous state</td> <td>Maintain previous state</td> <td>Maintain previous state/When oscillation stops, Hi-Z*</td> <td>Maintain previous state/When oscillation stops, Hi-Z*</td> <td>Maintain previous state/When oscillation stops, Hi-Z*</td> <td>Maintain previous state/When oscillation stops, Hi-Z*</td> <td>Maintain previous state</td> </tr> </tbody> </table> <p>*When The SOSCNTL bit in the WTOSCCNT Register is "0", Sub crystal oscillator output pin is maintain previous state. When The SOSCNTL bit in the WTOSCCNT Register is "1", Oscillation is stopped at STOP mode and Deep standby STOP mode.</p>	VBAT pin status type	Function group	INITX input state	Device internal reset state	TIMER mode, RTC mode, or STOP mode state		Deep standby RTC mode or Deep standby STOP mode state		Return from Deep standby mode state	Power supply stable		Power supply stable		Power supply stable		Power supply stable	INITX=0	INITX=1	INITX=1		INITX=1		INITX=1	-	-	SPL=0	SPL=1	SPL=0	SPL=1	-	S	GPIO selected	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	GPIO selected	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	T	External sub clock input selected	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Sub crystal oscillator output pin	Maintain previous state	Maintain previous state	Maintain previous state/When oscillation stops, Hi-Z*	Maintain previous state/When oscillation stops, Hi-Z*	Maintain previous state/When oscillation stops, Hi-Z*	Maintain previous state/When oscillation stops, Hi-Z*	Maintain previous state
VBAT pin status type	Function group	INITX input state			Device internal reset state	TIMER mode, RTC mode, or STOP mode state		Deep standby RTC mode or Deep standby STOP mode state		Return from Deep standby mode state																																																								
		Power supply stable			Power supply stable		Power supply stable		Power supply stable																																																									
		INITX=0			INITX=1	INITX=1		INITX=1		INITX=1																																																								
		-	-	SPL=0	SPL=1	SPL=0	SPL=1	-																																																										
S	GPIO selected	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state																																																										
	GPIO selected	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state																																																										
T	External sub clock input selected	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state	Maintain previous state																																																										
	Sub crystal oscillator output pin	Maintain previous state	Maintain previous state	Maintain previous state/When oscillation stops, Hi-Z*	Maintain previous state/When oscillation stops, Hi-Z*	Maintain previous state/When oscillation stops, Hi-Z*	Maintain previous state/When oscillation stops, Hi-Z*	Maintain previous state																																																										
74	ELECTRICAL CHARACTERISTICS 2.Recommended Operating Conditions	<p>It should be corrected as indicated by the shading below.</p> <table border="1"> <thead> <tr> <th rowspan="2">Parameter</th> <th rowspan="2">Symbol</th> <th rowspan="2">Conditions</th> <th colspan="2">Value</th> <th rowspan="2">Unit</th> <th rowspan="2">Remarks</th> </tr> <tr> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>Power supply voltage</td> <td>VCC</td> <td>-</td> <td>2.7*5</td> <td>5.5</td> <td>V</td> <td></td> </tr> <tr> <td>Analog reference voltage</td> <td>AVRH</td> <td>-</td> <td>*4</td> <td>AV_{CC}</td> <td>V</td> <td></td> </tr> </tbody> </table> <p>*4 :The minimum value of Analog reference voltage depends on the value of compare clock cycle (T_{ck}). See "5. 12-bit A/D Converter" for the details. *5 : In between less than the minimum power supply voltage and low voltage reset/interrupt detection voltage or more, instruction execution and low voltage detection function by built-in High-speed CR(including Main PLL is used) or built-in Low-speed CR is possible to operate only.</p>	Parameter	Symbol	Conditions	Value		Unit	Remarks	Min	Max	Power supply voltage	VCC	-	2.7*5	5.5	V		Analog reference voltage	AVRH	-	*4	AV _{CC}	V																																										
Parameter	Symbol	Conditions				Value				Unit	Remarks																																																							
			Min	Max																																																														
Power supply voltage	VCC	-	2.7*5	5.5	V																																																													
Analog reference voltage	AVRH	-	*4	AV _{CC}	V																																																													

Page	Item	Description																																																																																									
87	ELECTRICAL CHARACTERISTICS 4. AC Characteristics	<p>“(3) Built-in CR Oscillation Characteristics” should be corrected as indicated by the shading below.</p> <ul style="list-style-type: none"> Built-in High-speed CR <p style="text-align: right;">(VCC = 2.7V to 5.5V, VSS = 0V)</p> <table border="1"> <thead> <tr> <th rowspan="2">Parameter</th> <th rowspan="2">Symbol</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 rowspan="2">Clock frequency</td> <td rowspan="2">F_{CRH}</td> <td>T_j = -20°C to +105°C</td> <td>3.92</td> <td>4</td> <td>4.08</td> <td rowspan="2">MHz</td> <td>When trimming*1</td> </tr> <tr> <td>T_j = -40°C to +125°C</td> <td>3.88</td> <td>4</td> <td>4.12</td> <td>When not trimming</td> </tr> <tr> <td>Clock frequency</td> <td>F_{CRH}</td> <td>T_j = -40°C to +125°C</td> <td>3</td> <td>4</td> <td>5</td> <td></td> <td></td> </tr> <tr> <td>Frequency stabilization time</td> <td>t_{CRWT}</td> <td>-</td> <td>-</td> <td>-</td> <td>30</td> <td>μS</td> <td>*2</td> </tr> </tbody> </table> <p>*1: In the case of using the values in CR trimming area of Flash memory at shipment for frequency/temperature trimming. *2: This is the time to stabilize the frequency of high-speed CR clock after setting trimming value. This period is able to use high-speed CR clock as source clock.</p>	Parameter	Symbol	Conditions	Value			Unit	Remarks	Min	Typ	Max	Clock frequency	F _{CRH}	T _j = -20°C to +105°C	3.92	4	4.08	MHz	When trimming*1	T _j = -40°C to +125°C	3.88	4	4.12	When not trimming	Clock frequency	F _{CRH}	T _j = -40°C to +125°C	3	4	5			Frequency stabilization time	t _{CRWT}	-	-	-	30	μS	*2																																																	
Parameter	Symbol	Conditions				Value					Unit	Remarks																																																																															
			Min	Typ	Max																																																																																						
Clock frequency	F _{CRH}	T _j = -20°C to +105°C	3.92	4	4.08	MHz	When trimming*1																																																																																				
		T _j = -40°C to +125°C	3.88	4	4.12		When not trimming																																																																																				
Clock frequency	F _{CRH}	T _j = -40°C to +125°C	3	4	5																																																																																						
Frequency stabilization time	t _{CRWT}	-	-	-	30	μS	*2																																																																																				
149	ELECTRICAL CHARACTERISTICS 6. 12-bit D/A Converter	<p>“Electrical Characteristics for the A/D Converter” should be added as indicated by the shading below.</p> <p style="text-align: right;">(VCC = AVCC = 2.7Vto5.5V, VSS = AVSS = 0V)</p> <table border="1"> <thead> <tr> <th rowspan="2">Parameter</th> <th rowspan="2">Symbol</th> <th rowspan="2">Pin name</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>Resolution</td> <td>-</td> <td rowspan="7">DAx</td> <td>-</td> <td>-</td> <td>12</td> <td>bit</td> <td></td> </tr> <tr> <td rowspan="2">Conversion time</td> <td>tc20</td> <td>0.56</td> <td>0.69</td> <td>0.81</td> <td>μs</td> <td>Load 20pF</td> </tr> <tr> <td>tc100</td> <td>2.79</td> <td>3.42</td> <td>4.06</td> <td>μs</td> <td>Load 100pF</td> </tr> <tr> <td>Integral Nonlinearity*</td> <td>INL</td> <td>- 16</td> <td>-</td> <td>+ 16</td> <td>LSB</td> <td></td> </tr> <tr> <td>Differential Nonlinearity*</td> <td>DNL</td> <td>- 0.98</td> <td>-</td> <td>+ 1.5</td> <td>LSB</td> <td></td> </tr> <tr> <td rowspan="2">Output voltage offset</td> <td rowspan="2">V_{OFF}</td> <td>-</td> <td>-</td> <td>10.0</td> <td>mV</td> <td>When setting 0x000</td> </tr> <tr> <td>- 20.0</td> <td>-</td> <td>+ 1.4</td> <td>mV</td> <td>When setting 0xFFF</td> </tr> <tr> <td rowspan="2">Analog output impedance</td> <td rowspan="2">R_O</td> <td>3.10</td> <td>3.80</td> <td>4.50</td> <td>kΩ</td> <td>D/A operation</td> </tr> <tr> <td>2.0</td> <td>-</td> <td>-</td> <td>MΩ</td> <td>When D/A stop</td> </tr> <tr> <td rowspan="3">Power supply current*</td> <td rowspan="2">IDDA</td> <td rowspan="3">AVCC</td> <td>260</td> <td>330</td> <td>410</td> <td>μA</td> <td>D/A operation AV_{CC}=3.3V</td> </tr> <tr> <td>400</td> <td>510</td> <td>620</td> <td>μA</td> <td>D/A operation AV_{CC}=5.0V</td> </tr> <tr> <td>IDSAs</td> <td>-</td> <td>-</td> <td>14</td> <td>μA</td> <td>When D/A stop</td> </tr> </tbody> </table> <p>*: During no load</p>	Parameter	Symbol	Pin name	Value			Unit	Remarks	Min	Typ	Max	Resolution	-	DAx	-	-	12	bit		Conversion time	tc20	0.56	0.69	0.81	μs	Load 20pF	tc100	2.79	3.42	4.06	μs	Load 100pF	Integral Nonlinearity*	INL	- 16	-	+ 16	LSB		Differential Nonlinearity*	DNL	- 0.98	-	+ 1.5	LSB		Output voltage offset	V _{OFF}	-	-	10.0	mV	When setting 0x000	- 20.0	-	+ 1.4	mV	When setting 0xFFF	Analog output impedance	R _O	3.10	3.80	4.50	kΩ	D/A operation	2.0	-	-	MΩ	When D/A stop	Power supply current*	IDDA	AVCC	260	330	410	μA	D/A operation AV _{CC} =3.3V	400	510	620	μA	D/A operation AV _{CC} =5.0V	IDSAs	-	-	14	μA	When D/A stop
Parameter	Symbol	Pin name				Value					Unit	Remarks																																																																															
			Min	Typ	Max																																																																																						
Resolution	-	DAx	-	-	12	bit																																																																																					
Conversion time	tc20		0.56	0.69	0.81	μs	Load 20pF																																																																																				
	tc100		2.79	3.42	4.06	μs	Load 100pF																																																																																				
Integral Nonlinearity*	INL		- 16	-	+ 16	LSB																																																																																					
Differential Nonlinearity*	DNL		- 0.98	-	+ 1.5	LSB																																																																																					
Output voltage offset	V _{OFF}		-	-	10.0	mV	When setting 0x000																																																																																				
			- 20.0	-	+ 1.4	mV	When setting 0xFFF																																																																																				
Analog output impedance	R _O	3.10	3.80	4.50	kΩ	D/A operation																																																																																					
		2.0	-	-	MΩ	When D/A stop																																																																																					
Power supply current*	IDDA	AVCC	260	330	410	μA	D/A operation AV _{CC} =3.3V																																																																																				
			400	510	620	μA	D/A operation AV _{CC} =5.0V																																																																																				
	IDSAs		-	-	14	μA	When D/A stop																																																																																				

Page	Item	Description																																																																		
156	ELECTRICAL CHARACTERISTICS 11. Standby Recovery Time	<p>“Recovery count time” of “(1) Recovery cause: Interrupt/WKUP” 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 colspan="2">Value</th> <th rowspan="2">Unit</th> <th rowspan="2">Remarks</th> </tr> <tr> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>Sub timer mode</td> <td rowspan="5">Ticnt</td> <td>881</td> <td>1136</td> <td>μs</td> <td></td> </tr> <tr> <td>RTC mode Stop mode (High-speed CR /Main/PLL run mode return)</td> <td>270</td> <td>581</td> <td>μs</td> <td></td> </tr> <tr> <td>RTC mode Stop mode (Low-speed CR/sub run mode return)</td> <td>240</td> <td>480</td> <td>μs</td> <td></td> </tr> <tr> <td rowspan="2">Deep standby RTC mode with RAM retention Deep standby stop mode with RAM retention</td> <td>308</td> <td>667</td> <td>μs</td> <td>without RAM retention</td> </tr> <tr> <td>308</td> <td>667</td> <td>μs</td> <td>with RAM retention</td> </tr> </tbody> </table> <p>(Correct)</p> <table border="1"> <thead> <tr> <th rowspan="2">Parameter</th> <th rowspan="2">Symbol</th> <th colspan="2">Value</th> <th rowspan="2">Unit</th> <th rowspan="2">Remarks</th> </tr> <tr> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>Sub timer mode</td> <td rowspan="5">Ticnt</td> <td>896</td> <td>1136</td> <td>μs</td> <td></td> </tr> <tr> <td>RTC mode Stop mode (High-speed CR /Main/PLL run mode return)</td> <td>316</td> <td>581</td> <td>μs</td> <td></td> </tr> <tr> <td>RTC mode Stop mode (Low-speed CR/sub run mode return)</td> <td>270</td> <td>540</td> <td>μs</td> <td></td> </tr> <tr> <td rowspan="2">Deep standby RTC mode with RAM retention Deep standby stop mode with RAM retention</td> <td>365</td> <td>667</td> <td>μs</td> <td>without RAM retention</td> </tr> <tr> <td>365</td> <td>667</td> <td>μs</td> <td>with RAM retention</td> </tr> </tbody> </table>	Parameter	Symbol	Value		Unit	Remarks	Min	Max	Sub timer mode	Ticnt	881	1136	μs		RTC mode Stop mode (High-speed CR /Main/PLL run mode return)	270	581	μs		RTC mode Stop mode (Low-speed CR/sub run mode return)	240	480	μs		Deep standby RTC mode with RAM retention Deep standby stop mode with RAM retention	308	667	μs	without RAM retention	308	667	μs	with RAM retention	Parameter	Symbol	Value		Unit	Remarks	Min	Max	Sub timer mode	Ticnt	896	1136	μs		RTC mode Stop mode (High-speed CR /Main/PLL run mode return)	316	581	μs		RTC mode Stop mode (Low-speed CR/sub run mode return)	270	540	μs		Deep standby RTC mode with RAM retention Deep standby stop mode with RAM retention	365	667	μs	without RAM retention	365	667	μs	with RAM retention
Parameter	Symbol	Value			Unit	Remarks																																																														
		Min	Max																																																																	
Sub timer mode	Ticnt	881	1136	μs																																																																
RTC mode Stop mode (High-speed CR /Main/PLL run mode return)		270	581	μs																																																																
RTC mode Stop mode (Low-speed CR/sub run mode return)		240	480	μs																																																																
Deep standby RTC mode with RAM retention Deep standby stop mode with RAM retention		308	667	μs	without RAM retention																																																															
		308	667	μs	with RAM retention																																																															
Parameter	Symbol	Value		Unit	Remarks																																																															
		Min	Max																																																																	
Sub timer mode	Ticnt	896	1136	μs																																																																
RTC mode Stop mode (High-speed CR /Main/PLL run mode return)		316	581	μs																																																																
RTC mode Stop mode (Low-speed CR/sub run mode return)		270	540	μs																																																																
Deep standby RTC mode with RAM retention Deep standby stop mode with RAM retention		365	667	μs	without RAM retention																																																															
		365	667	μs	with RAM retention																																																															

Page	Item	Description																																																																																		
158	ELECTRICAL CHARACTERISTICS 11. Standby Recovery Time	<p>“Recovery count time” of “(2) Recovery cause: Reset” 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 colspan="2">Value</th> <th rowspan="2">Unit</th> <th rowspan="2">Remarks</th> </tr> <tr> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>Sleep mode</td> <td rowspan="7">Trcnt</td> <td>111</td> <td>267</td> <td>μs</td> <td></td> </tr> <tr> <td>High-speed CR Timer mode Main Timer mode PLL Timer mode</td> <td>111</td> <td>267</td> <td>μs</td> <td></td> </tr> <tr> <td>Low-speed CR timer mode</td> <td>258</td> <td>569</td> <td>μs</td> <td></td> </tr> <tr> <td>Sub timer mode</td> <td>258</td> <td>569</td> <td>μs</td> <td></td> </tr> <tr> <td>RTC mode Stop mode</td> <td>258</td> <td>569</td> <td>μs</td> <td></td> </tr> <tr> <td rowspan="2">Deep standby RTC mode with RAM retention Deep standby stop mode with RAM retention</td> <td rowspan="2">308</td> <td rowspan="2">669</td> <td>μs</td> <td>without RAM retention</td> </tr> <tr> <td>μs</td> <td>with RAM retention</td> </tr> </tbody> </table> <p>(Correct)</p> <table border="1"> <thead> <tr> <th rowspan="2">Parameter</th> <th rowspan="2">Symbol</th> <th colspan="2">Value</th> <th rowspan="2">Unit</th> <th rowspan="2">Remarks</th> </tr> <tr> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>Sleep mode</td> <td rowspan="7">Trcnt</td> <td>155</td> <td>266</td> <td>μs</td> <td></td> </tr> <tr> <td>High-speed CR Timer mode Main Timer mode PLL Timer mode</td> <td>155</td> <td>266</td> <td>μs</td> <td></td> </tr> <tr> <td>Low-speed CR timer mode</td> <td>315</td> <td>567</td> <td>μs</td> <td></td> </tr> <tr> <td>Sub timer mode</td> <td>315</td> <td>567</td> <td>μs</td> <td></td> </tr> <tr> <td>RTC mode Stop mode</td> <td>315</td> <td>567</td> <td>μs</td> <td></td> </tr> <tr> <td rowspan="2">Deep standby RTC mode with RAM retention Deep standby stop mode with RAM retention</td> <td rowspan="2">336</td> <td rowspan="2">667</td> <td>μs</td> <td>without RAM retention</td> </tr> <tr> <td>μs</td> <td>with RAM retention</td> </tr> </tbody> </table>	Parameter	Symbol	Value		Unit	Remarks	Min	Max	Sleep mode	Trcnt	111	267	μs		High-speed CR Timer mode Main Timer mode PLL Timer mode	111	267	μs		Low-speed CR timer mode	258	569	μs		Sub timer mode	258	569	μs		RTC mode Stop mode	258	569	μs		Deep standby RTC mode with RAM retention Deep standby stop mode with RAM retention	308	669	μs	without RAM retention	μs	with RAM retention	Parameter	Symbol	Value		Unit	Remarks	Min	Max	Sleep mode	Trcnt	155	266	μs		High-speed CR Timer mode Main Timer mode PLL Timer mode	155	266	μs		Low-speed CR timer mode	315	567	μs		Sub timer mode	315	567	μs		RTC mode Stop mode	315	567	μs		Deep standby RTC mode with RAM retention Deep standby stop mode with RAM retention	336	667	μs	without RAM retention	μs	with RAM retention
Parameter	Symbol	Value			Unit	Remarks																																																																														
		Min	Max																																																																																	
Sleep mode	Trcnt	111	267	μs																																																																																
High-speed CR Timer mode Main Timer mode PLL Timer mode		111	267	μs																																																																																
Low-speed CR timer mode		258	569	μs																																																																																
Sub timer mode		258	569	μs																																																																																
RTC mode Stop mode		258	569	μs																																																																																
Deep standby RTC mode with RAM retention Deep standby stop mode with RAM retention		308	669	μs	without RAM retention																																																																															
				μs	with RAM retention																																																																															
Parameter	Symbol	Value		Unit	Remarks																																																																															
		Min	Max																																																																																	
Sleep mode	Trcnt	155	266	μs																																																																																
High-speed CR Timer mode Main Timer mode PLL Timer mode		155	266	μs																																																																																
Low-speed CR timer mode		315	567	μs																																																																																
Sub timer mode		315	567	μs																																																																																
RTC mode Stop mode		315	567	μs																																																																																
Deep standby RTC mode with RAM retention Deep standby stop mode with RAM retention		336	667	μs	without RAM retention																																																																															
				μs	with RAM retention																																																																															
Rev. 3.0 September 24, 2015																																																																																				

Page	Item	Description																																																																																				
157	14.5 12-bit A/D Converter	<p>Table (Sampling time, State transition time to operation permission) should be corrected as indicated by shading below. (Error)</p> <table border="1"> <thead> <tr> <th rowspan="2">Parameter</th> <th rowspan="2">Symbol</th> <th rowspan="2">Pin Name</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 rowspan="2">Sampling time</td> <td rowspan="2">t_s</td> <td rowspan="2">-</td> <td>*2</td> <td>-</td> <td rowspan="2">10</td> <td rowspan="2">μs</td> <td>$AV_{CC} \geq 4.5V$</td> </tr> <tr> <td>*2</td> <td>-</td> <td>$AV_{CC} < 4.5V$</td> </tr> <tr> <td rowspan="2">Compare clock cycle*3</td> <td rowspan="2">t_{CCK}</td> <td rowspan="2">-</td> <td>25</td> <td>-</td> <td>1000</td> <td rowspan="2">ns</td> <td>$AV_{CC} \geq 4.5V$</td> </tr> <tr> <td>50</td> <td>-</td> <td>1000</td> <td>$AV_{CC} < 4.5V$</td> </tr> <tr> <td>State transition time to operation permission</td> <td>t_{STT}</td> <td>-</td> <td>1.0</td> <td>-</td> <td>-</td> <td>μs</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 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 rowspan="2">Sampling time</td> <td rowspan="2">t_s</td> <td rowspan="2">-</td> <td>0.15</td> <td>-</td> <td rowspan="2">10</td> <td rowspan="2">μs</td> <td>$AV_{CC} \geq 4.5V$</td> </tr> <tr> <td>0.3</td> <td>-</td> <td>$AV_{CC} < 4.5V$</td> </tr> <tr> <td rowspan="2">Compare clock cycle*3</td> <td rowspan="2">t_{CCK}</td> <td rowspan="2">-</td> <td>25</td> <td>-</td> <td>1000</td> <td rowspan="2">ns</td> <td>$AV_{CC} \geq 4.5V$</td> </tr> <tr> <td>50</td> <td>-</td> <td>1000</td> <td>$AV_{CC} < 4.5V$</td> </tr> <tr> <td>State transition time to operation permission</td> <td>t_{STT}</td> <td>-</td> <td>-</td> <td>-</td> <td>1.0</td> <td>μs</td> <td></td> </tr> </tbody> </table>	Parameter	Symbol	Pin Name	Value			Unit	Remarks	Min	Typ	Max	Sampling time	t_s	-	*2	-	10	μs	$AV_{CC} \geq 4.5V$	*2	-	$AV_{CC} < 4.5V$	Compare clock cycle*3	t_{CCK}	-	25	-	1000	ns	$AV_{CC} \geq 4.5V$	50	-	1000	$AV_{CC} < 4.5V$	State transition time to operation permission	t_{STT}	-	1.0	-	-	μs		Parameter	Symbol	Pin Name	Value			Unit	Remarks	Min	Typ	Max	Sampling time	t_s	-	0.15	-	10	μs	$AV_{CC} \geq 4.5V$	0.3	-	$AV_{CC} < 4.5V$	Compare clock cycle*3	t_{CCK}	-	25	-	1000	ns	$AV_{CC} \geq 4.5V$	50	-	1000	$AV_{CC} < 4.5V$	State transition time to operation permission	t_{STT}	-	-	-	1.0	μs	
Parameter	Symbol	Pin Name				Value					Unit	Remarks																																																																										
			Min	Typ	Max																																																																																	
Sampling time	t_s	-	*2	-	10	μs	$AV_{CC} \geq 4.5V$																																																																															
			*2	-			$AV_{CC} < 4.5V$																																																																															
Compare clock cycle*3	t_{CCK}	-	25	-	1000	ns	$AV_{CC} \geq 4.5V$																																																																															
			50	-	1000		$AV_{CC} < 4.5V$																																																																															
State transition time to operation permission	t_{STT}	-	1.0	-	-	μs																																																																																
Parameter	Symbol	Pin Name	Value			Unit	Remarks																																																																															
			Min	Typ	Max																																																																																	
Sampling time	t_s	-	0.15	-	10	μs	$AV_{CC} \geq 4.5V$																																																																															
			0.3	-			$AV_{CC} < 4.5V$																																																																															
Compare clock cycle*3	t_{CCK}	-	25	-	1000	ns	$AV_{CC} \geq 4.5V$																																																																															
			50	-	1000		$AV_{CC} < 4.5V$																																																																															
State transition time to operation permission	t_{STT}	-	-	-	1.0	μs																																																																																

Document History Page

Document Title: Datasheet Errata for the MB9B360R Series 32-bit ARM® Cortex®-M4F based Microcontroller			
Document Number: 002-04873			
Rev.	ECN No.	Orig. of Change	Description of Change
**	—	AKIH	Initial release
*A	5155917	AKIH	Migrated to Cypress format

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 2014-2016. This document is the property of Cypress Semiconductor Corporation and its subsidiaries, including Spansion LLC ("Cypress"). This document, including any software or firmware included or referenced in this document ("Software"), is owned by Cypress under the intellectual property laws and treaties of the United States and other countries worldwide. Cypress reserves all rights under such laws and treaties and does not, except as specifically stated in this paragraph, grant any license under its patents, copyrights, trademarks, or other intellectual property rights. If the Software is not accompanied by a license agreement and you do not otherwise have a written agreement with Cypress governing the use of the Software, then Cypress hereby grants you under its copyright rights in the Software, a personal, non-exclusive, nontransferable license (without the right to sublicense) (a) for Software provided in source code form, to modify and reproduce the Software solely for use with Cypress hardware products, only internally within your organization, and (b) to distribute the Software in binary code form externally to end users (either directly or indirectly through resellers and distributors), solely for use on Cypress hardware product units. Cypress also grants you a personal, non-exclusive, nontransferable, license (without the right to sublicense) under those claims of Cypress's patents that are infringed by the Software (as provided by Cypress, unmodified) to make, use, distribute, and import the Software solely to the minimum extent that is necessary for you to exercise your rights under the copyright license granted in the previous sentence. Any other use, reproduction, modification, translation, or compilation of the Software is prohibited.

CYPRESS MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARD TO THIS DOCUMENT OR ANY SOFTWARE, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Cypress reserves the right to make changes to this document without further notice. Cypress does not assume any liability arising out of the application or use of any product or circuit described in this document. Any information provided in this document, including any sample design information or programming code, is provided only for reference purposes. It is the responsibility of the user of this document to properly design, program, and test the functionality and safety of any application made of this information and any resulting product. Cypress products are not designed, intended, or authorized for use as critical components in systems designed or intended for the operation of weapons, weapons systems, nuclear installations, life-support devices or systems, other medical devices or systems (including resuscitation equipment and surgical implants), pollution control or hazardous substances management, or other uses where the failure of the device or system could cause personal injury, death, or property damage ("Unintended Uses"). A critical component is any component of a device or system whose failure to perform can be reasonably expected to cause the failure of the device or system, or to affect its safety or effectiveness. Cypress is not liable, in whole or in part, and Company shall and hereby does release Cypress from any claim, damage, or other liability arising from or related to all Unintended Uses of Cypress products. Company shall indemnify and hold Cypress harmless from and against all claims, costs, damages, and other liabilities, including claims for personal injury or death, arising from or related to any Unintended Uses of Cypress products.

Cypress, the Cypress logo, Spansion, the Spansion logo, and combinations thereof, PSoC, CapSense, EZ-USB, F-RAM, and Traveo are trademarks or registered trademarks of Cypress in the United States and other countries. For a more complete list of Cypress trademarks, visit [cypress.com](http://www.cypress.com). Other names and brands may be claimed as property of their respective owners.