Infineon Technologies - MB91F526KWBPMC-GSK5E1 Datasheet

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What is "Embedded - Microcontrollers"?

"Embedded - Microcontrollers" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "Embedded - Microcontrollers"

Details	
Product Status	Obsolete
Core Processor	FR81S
Core Size	32-Bit Single-Core
Speed	80MHz
Connectivity	CANbus, CSIO, EBI/EMI, I²C, LINbus, SPI, UART/USART
Peripherals	DMA, LVD, POR, PWM, WDT
Number of I/O	120
Program Memory Size	1.0625MB (1.0625M x 8)
Program Memory Type	FLASH
EEPROM Size	64K x 8
RAM Size	136K x 8
Voltage - Supply (Vcc/Vdd)	2.7V ~ 5.5V
Data Converters	A/D 48x12b; D/A 2x8b
Oscillator Type	External
Operating Temperature	-40°C ~ 105°C (TA)
Mounting Type	Surface Mount
Package / Case	144-LQFP
Supplier Device Package	144-LQFP (20x20)
Purchase URL	https://www.e-xfl.com/product-detail/infineon-technologies/mb91f526kwbpmc-gsk5e1

MB91F52xJ

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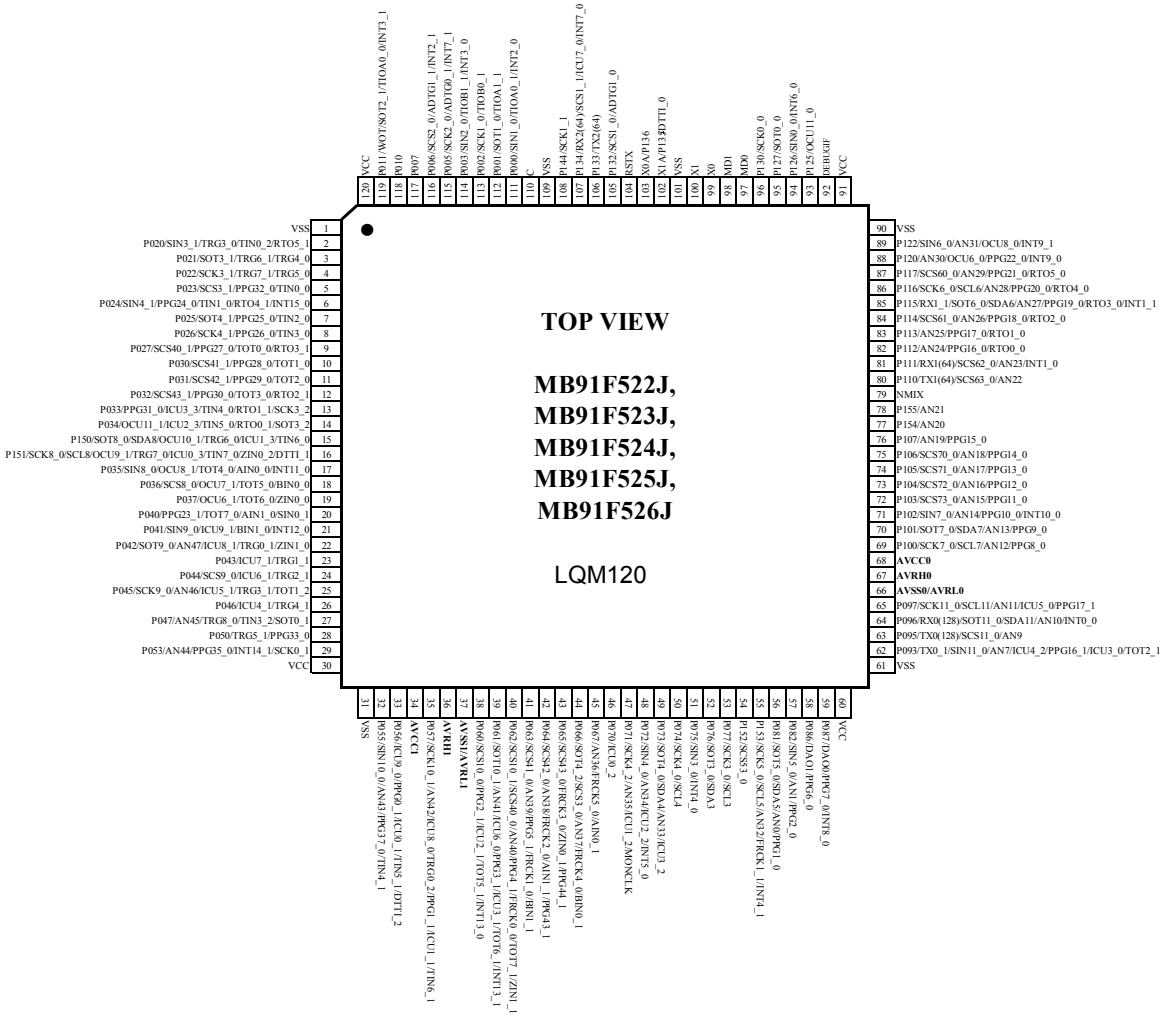
(TOP VIEW)



* In a single clock product, pin 102 and pin 103 are the general-purpose ports.

Pin no.						Pin Name	Polarity	I/O circuit types*8	Function*9
64	80	100	120	144	176				
-	48 *1	59	69	85	104	P100	-	G	General-purpose I/O port
						SCK7_0/ SCL7 *3	-		Multi-function serial ch.7 clock I/O (0)/ I^2C bus serial clock I/O
						AN12	-		ADC analog 12 input
						PPG8_0	-		PPG ch.8 output (0)
-	-	60	70	86	105	P101	-	G	General-purpose I/O port
						SOT7_0/ SDA7	-		Multi-function serial ch.7 serial data output (0)/I^2C bus serial data I/O
						AN13	-		ADC analog 13 input
						PPG9_0	-		PPG ch.9 output (0)
40 *1	49 *1	61	71	87	106	P102	-	G	General-purpose I/O port
						SIN7_0 *2, *3	-		Multi-function serial ch.7 serial data input (0)
						AN14	-		ADC analog 14 input
						PPG10_0	-		PPG ch.10 output (0)
						INT10_0	-		INT10 External interrupt input (0)
41 *1	50 *1	62	72	88	107	P103	-	H	General-purpose I/O port
						SCS73_0 *2, *3	-		Serial chip select 73 output (0)
						AN15	-		ADC analog 15 input
						PPG11_0	-		PPG ch.11 output (0)
42 *1	51 *1	63	73	89	108	P104	-	H	General-purpose I/O port
						SCS72_0 *2, *3	-		Serial chip select 72 output (0)
						AN16	-		ADC analog 16 input
						PPG12_0	-		PPG ch.12 output (0)
43 *1	52 *1	64	74	90	109	P105	-	H	General-purpose I/O port
						SCS71_0 *2, *3	-		Serial chip select 71 output (0)
						AN17	-		ADC analog 17 input
						PPG13_0	-		PPG ch.13 output (0)
-	-	65	75	91	110	P106	-	H	General-purpose I/O port
						SCS70_0	-		Serial chip select 70 I/O (0)
						AN18	-		ADC analog 18 input
						PPG14_0	-		PPG ch.14 output (0)
-	53	66	76	92	111	P107	-	B	General-purpose I/O port
						AN19	-		ADC analog 19 input
						PPG15_0	-		PPG ch.15 output (0)
-	-	-	-	-	112	P193	-	A	General-purpose I/O port
						PPG25_1	-		PPG ch.25 output (1)
-	-	-	77	93	113	P154	-	B	General-purpose I/O port
						AN20	-		ADC analog 20 input
-	-	-	78	94	114	P155	-	B	General-purpose I/O port
						AN21	-		ADC analog 21 input

Pin no.						Pin Name	Polarity	I/O circuit types*8	Function*9
64	80	100	120	144	176				
44	54	67	79	95	115	NMIX	N	M	Non-masking interrupt input
45	55	68	80	96	116	P110	-	B	General-purpose I/O port
						TX1(64)	-		CAN transmission data 1 output
						SCS63_0	-		Serial chip select 63 output (0)
						AN22	-		ADC analog 22 input
-	-	69	81	97	117	P111	-	G	General-purpose I/O port
						RX1(64)	-		CAN reception data 1 input
						SCS62_0	-		Serial chip select 62 output (0)
						AN23	-		ADC analog 23 input
						INT1_0	-		INT1 External interrupt input (0)
-	-	-	82	98	118	P112	-	B	General-purpose I/O port
						AN24	-		ADC analog 24 input
						PPG16_0	-		PPG ch.16 output (0)
						RTO0_0	-		Waveform generator ch. 0 output pin (0)
-	-	-	83	99	119	P113	-	B	General-purpose I/O port
						AN25	-		ADC analog 25 input
						PPG17_0	-		PPG ch.17 output (0)
						RTO1_0	-		Waveform generator ch. 1 output pin (0)
-	-	-	-	-	120	P194	-	A	General-purpose I/O port
						FRCK5_1	-		Free-run timer 5 clock input (1)
						PPG26_1	-		PPG ch.26 output (1)
-	-	-	-	-	121	P195	-	A	General-purpose I/O port
						FRCK4_1	-		Free-run timer 4 clock input (1)
						PPG27_1	-		PPG ch.27 output (1)
-	56	70	84	100	122	P114	-	B	General-purpose I/O port
						SCS61_0	-		Serial chip select 61 output (0)
						AN26	-		ADC analog 26 input
						PPG18_0	-		PPG ch.18 output (0)
						RTO2_0	-		Waveform generator ch.2 output pin (0)
46	57	71	85	101	123	P115	-	G	General-purpose I/O port
						RX1_1	-		CAN reception data 1 input (1)
						SOT6_0/ SDA6	-		Multi-function serial ch.6 serial data output (0)/I^2C bus serial data I/O
						AN27	-		ADC analog 27 input
						PPG19_0	-		PPG ch.19 output (0)
						RTO3_0	-		Waveform generator ch.3 output pin (0)
						INT1_1	-		INT1 External interrupt input (1)
47	58	72	86	102	124	P116	-	G	General-purpose I/O port
						SCK6_0/ SCL6	-		Multi-function serial ch.6 clock I/O (0)/ I^2C bus serial clock I/O
						AN28	-		ADC analog 28 input
						PPG20_0	-		PPG ch.20 output (0)
						RTO4_0	-		Waveform generator ch.4 output pin (0)

*1: There is a restriction of pin functions. See "Pin Name" of this table.
*2: not supported in 64pin
*3: not supported in 80pin
*4: not supported in 100pin
*5: not supported in 120pin
*6: not supported in 144pin
*7: not supported in 176pin
*8: For the I/O circuit types, see "I/O CIRCUIT TYPE".
*9: For switching, see "I/O Port" in HARDWARE MANUAL.

- Notes When Writing Data in a Register Having the Status Flag
  When writing data in the register that has a status flag (especially, an interrupt request flag) to control function, taking care not to clear its status flag erroneously must be followed.

  The program must be written not to clear the flag to the status bit, and then to set the control bits to have the desired value.

  Especially, if multiple control bits are used, the bit instruction cannot be used. (The bit instruction can access to a single bit only.) By the Byte, Half-word, or Word access, data is written to the control bits and status flag simultaneously. During this time, take care not to clear other bits (in this case, the bits of status flag) erroneously.

  Note: These points can be ignored because the bit instructions are already taken the points into consideration.

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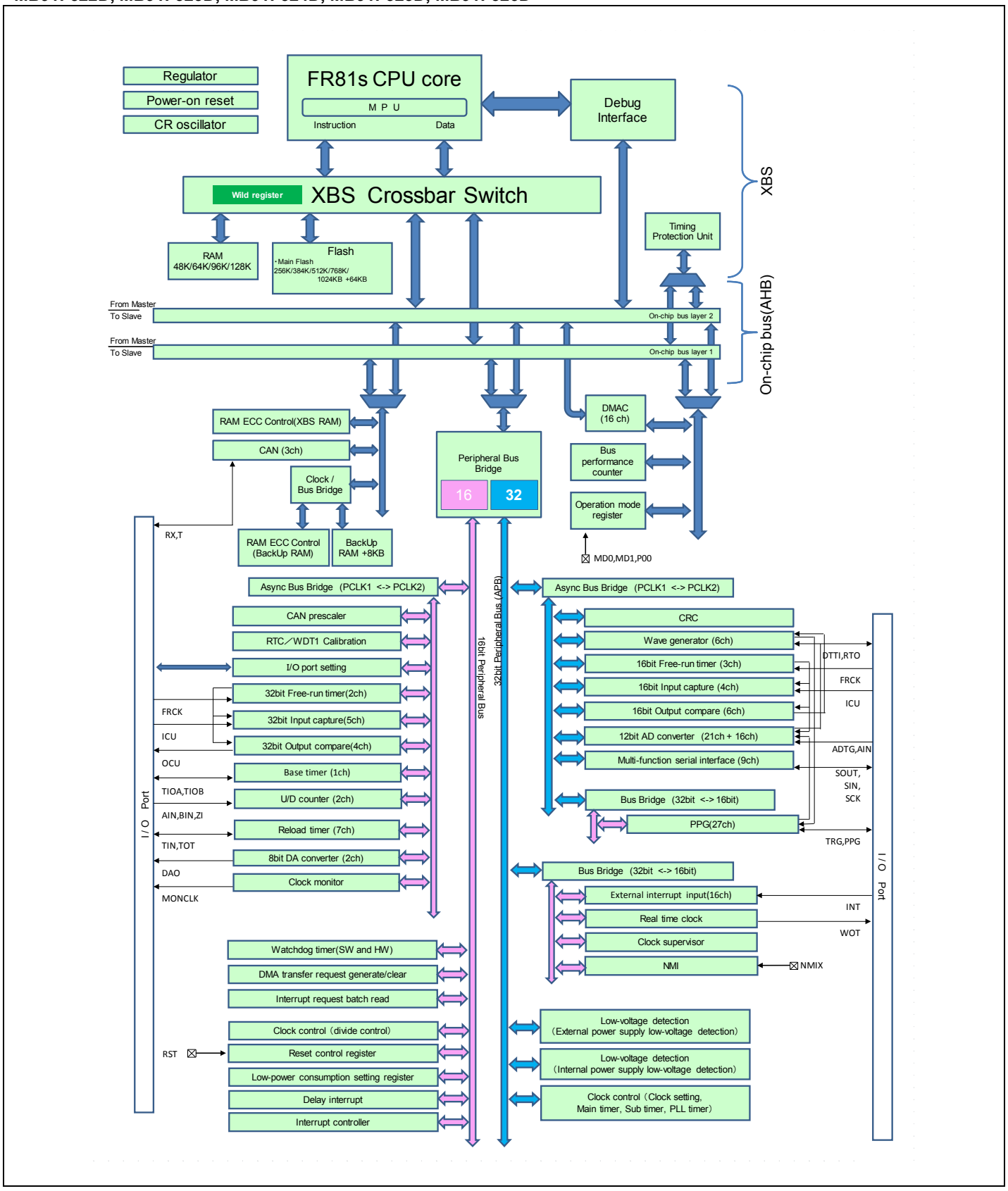

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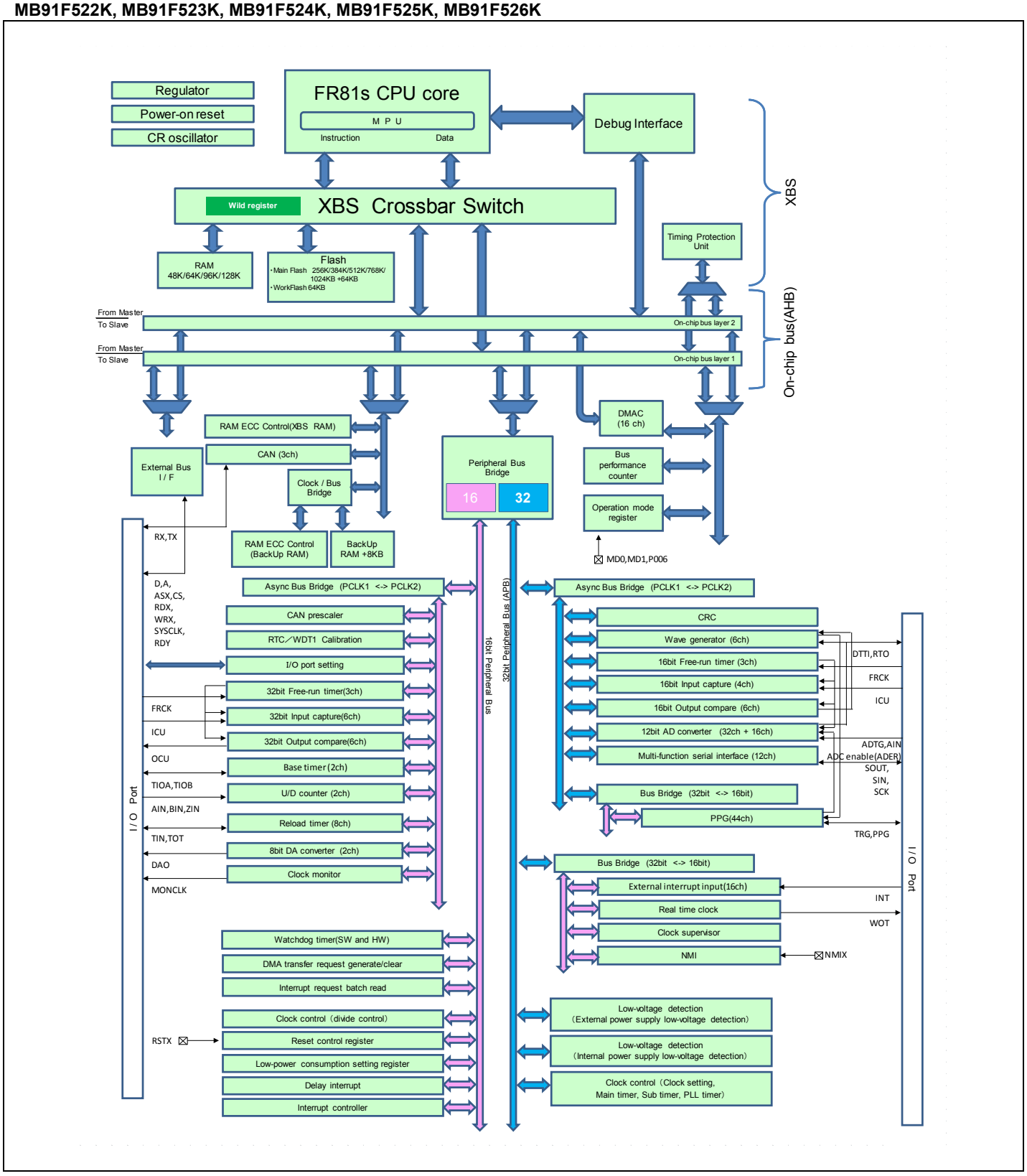


Address	Address offset value / Register name				Block
	+0	+1	+2	+3	
00049C$_H$	IORR12 [R/W] B,H,W -0000000	IORR13 [R/W] B,H,W -0000000	IORR14 [R/W] B,H,W -0000000	IORR15 [R/W] B,H,W -0000000	DMA request by peripheral [S]
0004A0$_H$	—	—	—	—	Reserved
0004A4$_H$	CANPRE [R/W] B,H,W ---00000	—	—	—	CAN prescaler
0004A8$_H$	—	—	CSCFG[R/W]B,H,W ---0----	CMCFG[R/W]B,H,W 00000000	Clock monitor control register
0004AC$_H$	ADERH0[R/W] B,H 11111111 11111111		ADERL0[R/W] B,H 11111111 11111111		Analog input control register 0
0004B0$_H$	—		ADERL1[R/W] B,H 11111111 11111111		Analog input control register 1
0004B4$_H$	—	—	—	—	Reserved
0004B8$_H$	CUCR0 [R/W] B,H,W -------- ---0--00		CUTD0 [R/W] B,H,W 10000000 00000000		RTC/WDT1 calibration
0004BC$_H$	CUTR0 [R] B,H,W -------- 00000000 00000000 00000000				
0004C0$_H$	—	—	—	—	
0004C4$_H$	CUCR1 [R/W] B,H,W -------- ---0--00		CUTD1 [R/W] B,H,W 11000011 01010000		
0004C8$_H$	CUTR1 [R] B,H,W -------- 00000000 00000000 00000000				
0004CC$_H$ to 00050C$_H$	—	—	—	—	Reserved
000510$_H$	CSELR [R/W] B,H,W 001---00	CMONR [R] B,H,W 001---00	MTMCR [R/W] B,H,W 00001111	STMCR [R/W] B,H,W 0000-111	Clock Control [S]
000514$_H$	PLLCR [R/W] B,H,W -------- 11110000		CSTBR [R/W] B,H,W -0000000	PTMCR [R/W] B,H,W 00------	
000518$_H$	—	—	CPUAR [R/W] B,H,W 0----XXX	—	Reset Control [S]
00051C$_H$	—	—	—	—	Reserved [S]
000520$_H$	CCPSSELR [R/W] B,H,W -------0	—	—	CCPSDIVR [R/W] B,H,W -000-000	Clock Control 2 [S]
000524$_H$	—	CCPLLFBR [R/W] B,H,W -0000000	CCSSFBR0 [R/W] B,H,W --000000	CCSSFBR1 [R/W] B,H,W ---00000	
000528$_H$	—	CCSSCCR0 [R/W] B,H,W ----0000	CCSSCCR1 [R/W] H,W 000----- --------		

Address	Address offset value / Register name				Block
	+0	+1	+2	+3	
00125C$_H$	OCCPB4/OCCP4 [R/W] H,W 00000000 00000000		OCCPB5/OCCP5 [R/W] H,W 00000000 00000000		16-bit Output compare 4/5
001260$_H$	OCS45 [R/W] B,H,W -110--00 00001100		—	OCMOD45 [R/W] B,H,W ------00	
001264$_H$ to 001278$_H$	—	—	—	—	Reserved
00127C$_H$	IPCP0 [R] H,W 00000000 00000000		IPCP1 [R] H,W 00000000 00000000		16-bit Input capture 0/1
001280$_H$	ICS01 [R/W] B,H,W ------00 00000000		—	LSYNS [R/W] B,H,W ----0000	
001284$_H$	IPCP2 [R] H,W 00000000 00000000		IPCP3 [R] H,W 00000000 00000000		16-bit Input capture 2/3
001288$_H$	ICS23 [R/W] B,H,W ------00 00000000		—	—	
00128C$_H$ to 001298$_H$	—	—	—	—	Reserved
00129C$_H$	—	—	—	—	Reserved
0012A0$_H$	TMRR0 [R/W] H,W 00000000 00000001		TMRR1 [R/W] H,W 00000000 00000001		Waveform generator 0/1/2
0012A4$_H$	TMRR2 [R/W] H,W 00000000 00000001		—	—	
0012A8$_H$	DTSCR0 [R/W] B,H,W 00000000	DTSCR1 [R/W] B,H,W 00000000	DTSCR2 [R/W] B,H,W 00000000	—	
0012AC$_H$	—	DTIR0 [R/W] B,H,W 000000--	—	DTMNS0 [R/W] B,H,W 00---000	
0012B0$_H$	—	SIGCR10 [R/W] B,H,W 00000000	—	SIGCR20 [R/W] B,H,W 000000-1	
0012B4$_H$	PICS0 [R/W] B,H,W 000000-- -------- -------- --------				
0012B8$_H$ to 0012CC$_H$	—	—	—	—	Reserved
0012D0$_H$	FRS5 [R/W] B,H,W --00--00 --00--00 --00--00 --00--00				16-bit Free-run timer selection A/D activation compare

Address	Address offset value / Register name				Block
	+0	+1	+2	+3	
001840$_H$	SCR6/(IBCR6) [R/W] B,H,W 0--00000	SMR6[R/W] B,H,W 000-00-0	SSR6[R/W] B,H,W 0-000011	ESCR6/(IBSR6)[R/W] B,H,W 00000000	Multi-UART6
001844$_H$	— /(RDR16/(TDR16))[R/W] B,H,W -------- -------- *3		RDR06/(TDR06)[R/W] B,H,W -------0 00000000 *1		Multi-UART6 *1: Byte access is possible only for access to lower 8 bits. *2: Reserved because I2C mode is not set immediately after reset. *3: Reserved because CSIO mode is not set immediately after reset. *4: Reserved because LIN2.1 mode is not set immediately after reset.
001848$_H$	SACSR6[R/W] B,H,W 0----000 00000000		STMR6[R] B,H,W 00000000 00000000		
00184C$_H$	STMCR6[R/W] B,H,W 00000000 00000000		— /(SCSCR6/SFUR6)[R/W] B,H,W -------- -------- *3 *4		
001850$_H$	— /(SCSTR36)/ (LAMSR6) [R/W] B,H,W -------- *3	— /(SCSTR26)/ (LAMCR6) [R/W] B,H,W -------- *3	— /(SCSTR16)/ (SFLR16) [R/W] B,H,W -------- *3	— /(SCSTR06)/ (SFLR06) [R/W] B,H,W -------- *3	
001854$_H$	—	— /(SCSFR26) [R/W] B,H,W -------- *3	— /(SCSFR16) [R/W] B,H,W -------- *3	— /(SCSFR06) [R/W] B,H,W -------- *3	
001858$_H$	—/(TBYTE36)/ (LAMESR6) [R/W] B,H,W -------- *3	—/(TBYTE26)/ (LAMERT6) [R/W] B,H,W -------- *3	—/(TBYTE16)/ (LAMIER6) [R/W] B,H,W -------- *3	TBYTE06/(LAMRID6) / (LAMTID6) [R/W] B,H,W 00000000	
00185C$_H$	BGR6[R/W] H, W 00000000 00000000		— /(ISMK6)[R/W] B,H,W -------- *2	— /(ISBA6)[R/W] B,H,W -------- *2	
001860$_H$	FCR16[R/W] B,H,W ---00100	FCR06[R/W] B,H,W -0000000	FBYTE6[R/W] B,H,W 00000000 00000000		
001864$_H$	FTICR6[R/W] B,H,W 00000000 00000000		—	—	
001868$_H$	SCR7/(IBCR7) [R/W] B,H,W 0--00000	SMR7[R/W] B,H,W 000-00-0	SSR7[R/W] B,H,W 0-000011	ESCR7/(IBSR7)[R/W] B,H,W 00000000	Multi-UART7 *1: Byte access is possible only for access to lower 8 bits. *2: Reserved because I^2C mode is not set immediately after reset.
00186C$_H$	— /(RDR17/(TDR17))[R/W] B,H,W -------- -------- *3		RDR07/(TDR07)[R/W] B,H,W -------0 00000000 *1		
001870$_H$	SACSR7[R/W] B,H,W 0----000 00000000		STMR7[R] B,H,W 00000000 00000000		
001874$_H$	STMCR7[R/W] B,H,W 00000000 00000000		— /(SCSCR7/SFUR7)[R/W] B,H,W -------- -------- *3 *4		

Address	Address offset value / Register name				Block
	+0	+1	+2	+3	
002300_H	DFCTLR [R/W] B,H,W -0------ --------		—	DFSTR [R/W] B,H,W -----001	WorkFlash
002304_H	—	—	—	—	
002308_H	FLIFCTLR [R/W] B,H,W ---0--00	—	FLIFFER1 [R/W] B,H,W --------	FLIFFER2 [R/W] B,H,W --------	Flash / WorkFlash
$00230C_H$ to $0023FC_H$	—				Reserved
002400_H	SEEARX [R] B,H,W -0000000 00000000		DEEARX [R] B,H,W -0000000 00000000		XBS RAM ECC control
002404_H	EECSRX [R/W] B,H,W ----00--	—	EFEARX [R/W] B,H,W -0000000 00000000		
002408_H	—	EFECRX [R/W] B,H,W -------0 00000000 00000000			
$00240C_H$ to $002FFC_H$	—				Reserved
003000_H	SEEARA [R] B,H,W -----000 00000000		DEEARA [R] B,H,W -----000 00000000		Backup RAM ECC control
003004_H	EECSRA [R/W] B,H,W ----00--	—	EFEARA [R/W] B,H,W -----000 00000000		
003008_H	—	EFECRA [R/W] B,H,W -------0 00000000 00000000			
$00300C_H$	TEAR0X[R] B,H,W 000----- -------- -0000000 00000000				RAM/ diagnosis XBS RAM
003010_H	TEAR1X[R] B,H,W 000----- -------- -0000000 00000000				
003014_H	TEAR2X[R] B,H,W 000----- -------- -0000000 00000000				
003018_H	TAEARX [R/W] B,H,W -1111111 11111111		TASARX [R/W] B,H,W -0000000 00000000		
$00301C_H$	TFECRX [R/W] B,H,W ----0000	TICRX [R/W] B,H,W ----0000	TTCRX [R/W] B,H,W ------00 00001100		
003020_H	TSRCRX [W] B,H,W 0-------	—	—	TKCCRX [R/W] B,H,W 00----00	
003024_H to $00302C_H$	—				Reserved

120 pins

Interrupt factor	Interrupt number		Interrupt level	Offset	Default address for TBR	RN
	Decimal	Hexadecimal				
Reset	0	0	-	$3FC_H$	$000FFFFC_H$	-
System reserved	1	1	-	$3F8_H$	$000FFFF8_H$	-
System reserved	2	2	-	$3F4_H$	$000FFFF4_H$	-
System reserved	3	3	-	$3F0_H$	$000FFFF0_H$	-
System reserved	4	4	-	$3EC_H$	$000FFFEC_H$	-
FPU exception	5	5	-	$3E8_H$	$000FFFE8_H$	-
Exception of instruction access protection violation	6	6	-	$3E4_H$	$000FFFE4_H$	-
Exception of data access protection violation	7	7	-	$3E0_H$	$000FFFE0_H$	-
Data access error interrupt	8	8	-	$3DC_H$	$000FFFDC_H$	-
INTE instruction	9	9	-	$3D8_H$	$000FFFD8_H$	-
Instruction break	10	0A	-	$3D4_H$	$000FFFD4_H$	-
System reserved	11	0B	-	$3D0_H$	$000FFFD0_H$	-
System reserved	12	0C	-	$3CC_H$	$000FFFCC_H$	-
System reserved	13	0D	-	$3C8_H$	$000FFFC8_H$	-
Exception of invalid instruction	14	0E	-	$3C4_H$	$000FFFC4_H$	-
NMI request Error generation during internal bus diagnosis XBS RAM double-bit error generation Backup RAM double-bit error generation TPU violation	15	0F	15 (F_H) Fixed	$3C0_H$	$000FFFC0_H$	-
External interrupt 0-7	16	10	ICR00	$3BC_H$	$000FFFBC_H$	0
External interrupt 8-15 External low-voltage detection interrupt	17	11	ICR01	$3B8_H$	$000FFFB8_H$	1*7
Reload timer 0/1/4/5	18	12	ICR02	$3B4_H$	$000FFFB4_H$	2*2
Reload timer 2/3/6/7	19	13	ICR03	$3B0_H$	$000FFFB0_H$	3*2
Multi-function serial interface ch.0 (reception completed) Multi-function serial interface ch.0 (status)	20	14	ICR04	$3AC_H$	$000FFFAC_H$	4*1
Multi-function serial interface ch.0 (transmission completed)	21	15	ICR05	$3A8_H$	$000FFFA8_H$	5*1
Multi-function serial interface ch.1 (reception completed) Multi-function serial interface ch.1 (status)	22	16	ICR06	$3A4_H$	$000FFFA4_H$	6*1
Multi-function serial interface ch.1 (transmission completed)	23	17	ICR07	$3A0_H$	$000FFFA0_H$	7*1
Multi-function serial interface ch.2 (reception completed) Multi-function serial interface ch.2 (status)	24	18	ICR08	$39C_H$	$000FFF9C_H$	8*1
Multi-function serial interface ch.2 (transmission completed)	25	19	ICR09	398_H	$000FFF98_H$	9*1
Multi-function serial interface ch.3 (reception completed) Multi-function serial interface ch.3 (status)	26	1A	ICR10	394_H	$000FFF94_H$	10*1

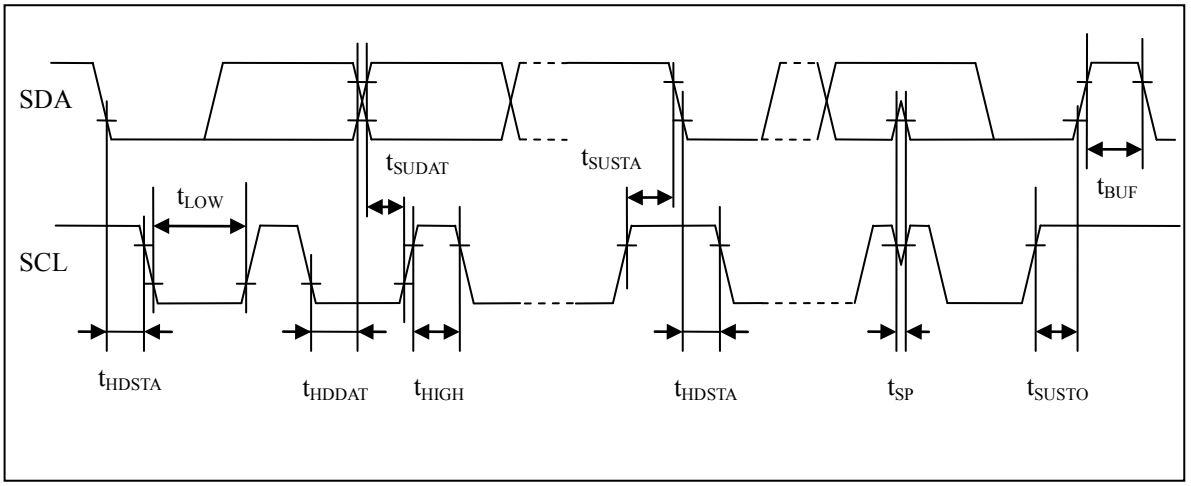
144 pins

Interrupt factor	Interrupt number		Interrupt level	Offset	Default address for TBR	RN
	Decimal	Hexa decimal				
Reset	0	0	-	$3FC_H$	$000FFFFC_H$	-
System reserved	1	1	-	$3F8_H$	$000FFFF8_H$	-
System reserved	2	2	-	$3F4_H$	$000FFFF4_H$	-
System reserved	3	3	-	$3F0_H$	$000FFFF0_H$	-
System reserved	4	4	-	$3EC_H$	$000FFFEC_H$	-
FPU exception	5	5	-	$3E8_H$	$000FFFE8_H$	-
Exception of instruction access protection violation	6	6	-	$3E4_H$	$000FFFE4_H$	-
Exception of data access protection violation	7	7	-	$3E0_H$	$000FFFE0_H$	-
Data access error interrupt	8	8	-	$3DC_H$	$000FFFDC_H$	-
INTE instruction	9	9	-	$3D8_H$	$000FFFD8_H$	-
Instruction break	10	0A	-	$3D4_H$	$000FFFD4_H$	-
System reserved	11	0B	-	$3D0_H$	$000FFFD0_H$	-
System reserved	12	0C	-	$3CC_H$	$000FFFCC_H$	-
System reserved	13	0D	-	$3C8_H$	$000FFFC8_H$	-
Exception of invalid instruction	14	0E	-	$3C4_H$	$000FFFC4_H$	-
NMI request Error generation during internal bus diagnosis XBS RAM double-bit error generation Backup RAM double-bit error generation TPU violation	15	0F	15 (F_H) Fixed	$3C0_H$	$000FFFC0_H$	-
External interrupt 0-7	16	10	ICR00	$3BC_H$	$000FFFBC_H$	0
External interrupt 8-15 External low-voltage detection interrupt	17	11	ICR01	$3B8_H$	$000FFFB8_H$	1*7
Reload timer 0/1/4/5	18	12	ICR02	$3B4_H$	$000FFFB4_H$	2*2
Reload timer 2/3/6/7	19	13	ICR03	$3B0_H$	$000FFFB0_H$	3*2
Multi-function serial interface ch.0 (reception completed) Multi-function serial interface ch.0 (status)	20	14	ICR04	$3AC_H$	$000FFFAC_H$	4*1
Multi-function serial interface ch.0 (transmission completed)	21	15	ICR05	$3A8_H$	$000FFFA8_H$	5*1
Multi-function serial interface ch.1 (reception completed) Multi-function serial interface ch.1 (status)	22	16	ICR06	$3A4_H$	$000FFFA4_H$	6*1
Multi-function serial interface ch.1 (transmission completed)	23	17	ICR07	$3A0_H$	$000FFFA0_H$	7*1
Multi-function serial interface ch.2 (reception completed) Multi-function serial interface ch.2 (status)	24	18	ICR08	$39C_H$	$000FFF9C_H$	8*1
Multi-function serial interface ch.2 (transmission completed)	25	19	ICR09	398_H	$000FFF98_H$	9*1
Multi-function serial interface ch.3 (reception completed) Multi-function serial interface ch.3 (status)	26	1A	ICR10	394_H	$000FFF94_H$	10*1

"t_{SUDAT} ≥ 250 ns".

*4: t_{CPP} is the peripheral clock cycle time. Adjust the clock of the bus in the surrounding to 8MHz or more when use I^2C.

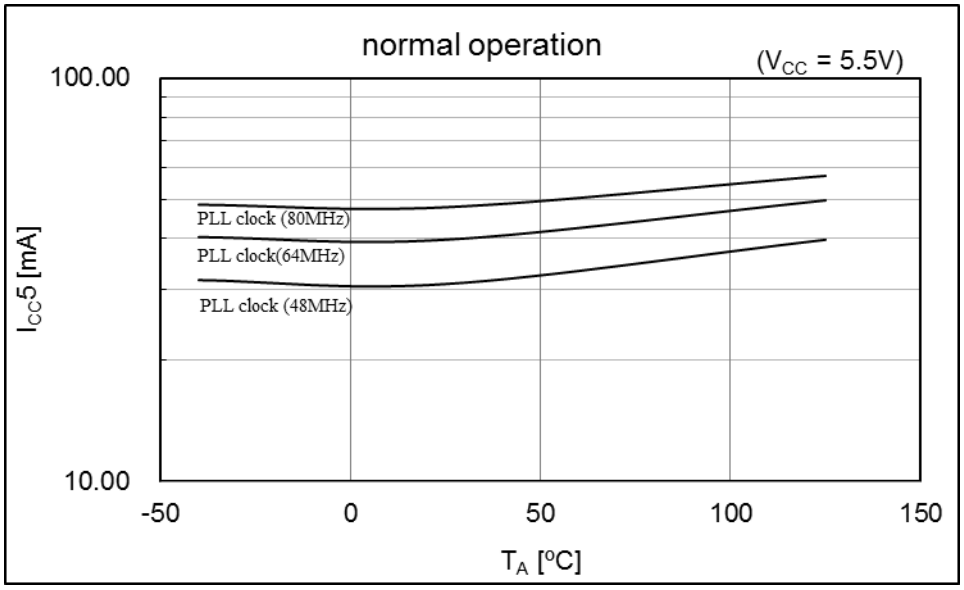
・ I^2C timing

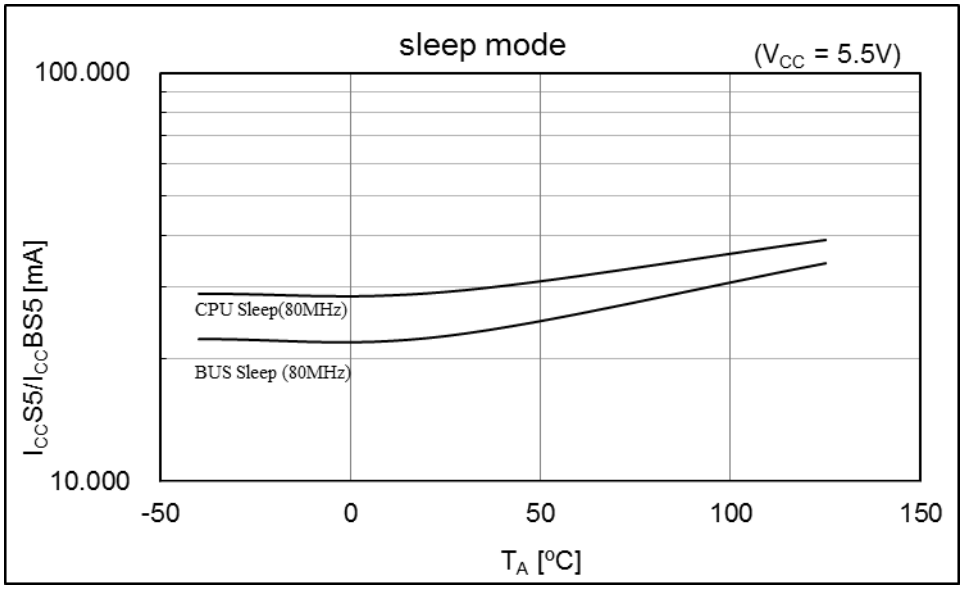


12. EXAMPLE CHARACTERISTICS

This characteristic is an actual value of the arbitrary sample. It is not the guaranteed value.

MB91F526





13. Ordering Information MB91F52xxxB[*1]

Part number	Sub clock	CSV Initial value	LVD Initial value	Package[*2]
MB91F526LWBPMC	Yes	ON	ON	LQP・176 pin, Plastic
MB91F526LYBPMC			OFF	
MB91F526LJBPMC		OFF	ON	
MB91F526LLBPMC			OFF	
MB91F525LWBPMC		ON	ON	
MB91F525LYBPMC			OFF	
MB91F525LJBPMC		OFF	ON	
MB91F525LLBPMC			OFF	
MB91F524LWBPMC		ON	ON	
MB91F524LYBPMC			OFF	
MB91F524LJBPMC		OFF	ON	
MB91F524LLBPMC			OFF	
MB91F523LWBPMC		ON	ON	
MB91F523LYBPMC			OFF	
MB91F523LJBPMC		OFF	ON	
MB91F523LLBPMC			OFF	
MB91F522LWBPMC		ON	ON	
MB91F522LYBPMC			OFF	
MB91F522LJBPMC		OFF	ON	
MB91F522LLBPMC			OFF	
MB91F526LSBPMC	None	ON	ON	
MB91F526LUBPMC			OFF	
MB91F526LHBPMC		OFF	ON	
MB91F526LKBPMC			OFF	
MB91F525LSBPMC		ON	ON	
MB91F525LUBPMC			OFF	
MB91F525LHBPMC		OFF	ON	
MB91F525LKBPMC			OFF	
MB91F524LSBPMC		ON	ON	
MB91F524LUBPMC			OFF	
MB91F524LHBPMC		OFF	ON	
MB91F524LKBPMC			OFF	
MB91F523LSBPMC		ON	ON	
MB91F523LUBPMC			OFF	
MB91F523LHBPMC		OFF	ON	
MB91F523LKBPMC			OFF	
MB91F522LSBPMC		ON	ON	
MB91F522LUBPMC			OFF	
MB91F522LHBPMC		OFF	ON	
MB91F522LKBPMC			OFF	

Part number	Sub clock	CSV Initial value	LVD Initial value	Package*
MB91F526KWDPMC1	Yes	ON	ON	LQN・144 pin, (Lead pitch 0.4mm) Plastic
MB91F526KJDPMC1		OFF	ON	
MB91F525KWDPMC1		ON	ON	
MB91F525KJDPMC1		OFF	ON	
MB91F524KWDPMC1		ON	ON	
MB91F524KJDPMC1		OFF	ON	
MB91F523KWDPMC1		ON	ON	
MB91F523KJDPMC1		OFF	ON	
MB91F522KWDPMC1		ON	ON	
MB91F522KJDPMC1		OFF	ON	
MB91F526KSDPMC1	None	ON	ON	
MB91F526KHDPMC1		OFF	ON	
MB91F525KSDPMC1		ON	ON	
MB91F525KHDPMC1		OFF	ON	
MB91F524KSDPMC1		ON	ON	
MB91F524KHDPMC1		OFF	ON	
MB91F523KSDPMC1		ON	ON	
MB91F523KHDPMC1		OFF	ON	
MB91F522KSDPMC1		ON	ON	
MB91F522KHDPMC1		OFF	ON	
MB91F526JWDPMC	Yes	ON	ON	LQM・120 pin, Plastic
MB91F526JJDPMC		OFF	ON	
MB91F525JWDPMC		ON	ON	
MB91F525JJDPMC		OFF	ON	
MB91F524JWDPMC		ON	ON	
MB91F524JJDPMC		OFF	ON	
MB91F523JWDPMC		ON	ON	
MB91F523JJDPMC		OFF	ON	
MB91F522JWDPMC		ON	ON	
MB91F522JJDPMC		OFF	ON	
MB91F526JSDPMC	None	ON	ON	
MB91F526JHDPMC		OFF	ON	
MB91F525JSDPMC		ON	ON	
MB91F525JHDPMC		OFF	ON	
MB91F524JSDPMC		ON	ON	
MB91F524JHDPMC		OFF	ON	
MB91F523JSDPMC		ON	ON	
MB91F523JHDPMC		OFF	ON	
MB91F522JSDPMC		ON	ON	
MB91F522JHDPMC		OFF	ON	

Part number	Sub clock	CSV Initial value	LVD Initial value	Package*
MB91F526FWDPMC	Yes	ON	ON	LQI・100 pin, Plastic
MB91F526FJDPMC		OFF	ON	
MB91F525FWDPMC		ON	ON	
MB91F525FJDPMC		OFF	ON	
MB91F524FWDPMC		ON	ON	
MB91F524FJDPMC		OFF	ON	
MB91F523FWDPMC		ON	ON	
MB91F523FJDPMC		OFF	ON	
MB91F522FWDPMC		ON	ON	
MB91F522FJDPMC		OFF	ON	
MB91F526FSDPMC	None	ON	ON	
MB91F526FHDPMC		OFF	ON	
MB91F525FSDPMC		ON	ON	
MB91F525FHDPMC		OFF	ON	
MB91F524FSDPMC		ON	ON	
MB91F524FHDPMC		OFF	ON	
MB91F523FSDPMC		ON	ON	
MB91F523FHDPMC		OFF	ON	
MB91F522FSDPMC		ON	ON	
MB91F522FHDPMC		OFF	ON	
MB91F526DWDPMC	Yes	ON	ON	LQH・80 pin, Plastic
MB91F526DJDPMC		OFF	ON	
MB91F525DWDPMC		ON	ON	
MB91F525DJDPMC		OFF	ON	
MB91F524DWDPMC		ON	ON	
MB91F524DJDPMC		OFF	ON	
MB91F523DWDPMC		ON	ON	
MB91F523DJDPMC		OFF	ON	
MB91F522DWDPMC		ON	ON	
MB91F522DJDPMC		OFF	ON	
MB91F526DSDPMC	None	ON	ON	
MB91F526DHDPMC		OFF	ON	
MB91F525DSDPMC		ON	ON	
MB91F525DHDPMC		OFF	ON	
MB91F524DSDPMC		ON	ON	
MB91F524DHDPMC		OFF	ON	
MB91F523DSDPMC		ON	ON	
MB91F523DHDPMC		OFF	ON	
MB91F522DSDPMC		ON	ON	
MB91F522DHDPMC		OFF	ON	

Page	Section	Change Results
184	■ELECTRICAL CHARACTERISTICS 5.A/D Converter (1) 12-bit A/D Converter Electrical Characteristics	Added the following description. Parameter : Power supply current I_A AVCC*3 *3: The power supply current described only current value on A/D converter. The total AVcc current value must be calculated the power supply current for A/D converter and D/A converter.
188	■ELECTRICAL CHARACTERISTICS 7.D/A Converter	Added the following description. Parameter : Power supply current *1 *1: The power supply current described only current value on D/A converter.The total Avcc current value must be calculated the power supply current for D/A converter and A/D converter.
187	■ELECTRICAL CHARACTERISTICS 6.Flash memory	Parameter: Erase cycle*2/Data retain time Deleted the following description. Remarks : "Temperature at writing/erasing Tj<+105°C"
188	■ELECTRICAL CHARACTERISTICS 7.D/A Converter	Corrected the following description. Parameter : Power supply current Symbol IA Pin name AV_{CC} Symbol IAH Pin name AV_{CC} ↓ Symbol IA Pin name AVCC Symbol IAH Pin name AVCC
190	■EXAMPLE CHARACTERISTICS	Corrected the following description. Watch mode
192	■ORDERING INFORMATION	Corrected the following description. ■ORDERING INFORMATION ↓ ■ORDERING INFORMATION MB91F52xxxB*1 Package ↓ Package*2
198	■ORDERING INFORMATION	Added the following description. *1: It is only supported for customers who have already adopted it now. We do not recommend adopting new products.
198	■ORDERING INFORMATION	Corrected the following description. For details of the package, see "■ PACKAGE DIMENSIONS ". ↓ *2: For details of the package, see "■ PACKAGE DIMENSIONS ".
199 to 205	■ORDERING INFORMATION	Added the following description. ■ORDERING INFORMATION MB91F52xxxC
-	-	Company name and layout design change

Page	Section	Change Results
8	■Product Lineup	Corrected the following description for Product lineup comparison(100 pin). Multi-Function Serial Interface: 12ch ↓ Multi-Function Serial Interface: 12ch*1
8	■Product Lineup	Added the following sentences under Product lineup comparison(100 pin) *1: Only channel 5, channel 6, channel 7, channel 8 and channel 11 support the I^2C (standard mode).
9	■Product Lineup	Corrected the following description for Product lineup comparison(120 pin). Multi-Function Serial Interface: 12ch ↓ Multi-Function Serial Interface: 12ch*1
9	■Product Lineup	Added the following sentences under Product lineup comparison(120 pin) *1: Only channel 3 and channel 4 support the I^2C (high-speed mode/standard mode). Only channel 5, channel 6, channel 7, channel 8 and channel 11 support the I^2C (standard mode).
10	■Product Lineup	Corrected the following description for Product lineup comparison(144 pin). Multi-Function Serial Interface: 12ch ↓ Multi-Function Serial Interface: 12ch*1
10	■Product Lineup	Added the following sentences under Product lineup comparison(144 pin) *1: Only channel 3 and channel 4 support the I^2C (high-speed mode/standard mode). Only channel 5, channel 6, channel 7, channel 8, channel 10 and channel 11 support the I^2C (standard mode).
11	■Product Lineup	Corrected the following description for Product lineup comparison(176 pin). Multi-Function Serial Interface: 12ch ↓ Multi-Function Serial Interface: 12ch*1
11	■Product Lineup	Added the following sentences under Product lineup comparison(176 pin) *1: Only channel 3 and channel 4 support the I^2C (high-speed mode/standard mode). Only channel 5, channel 6, channel 7, channel 8, channel 10 and channel 11 support the I^2C (standard mode).