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What is "[Embedded - Microcontrollers](#)"?

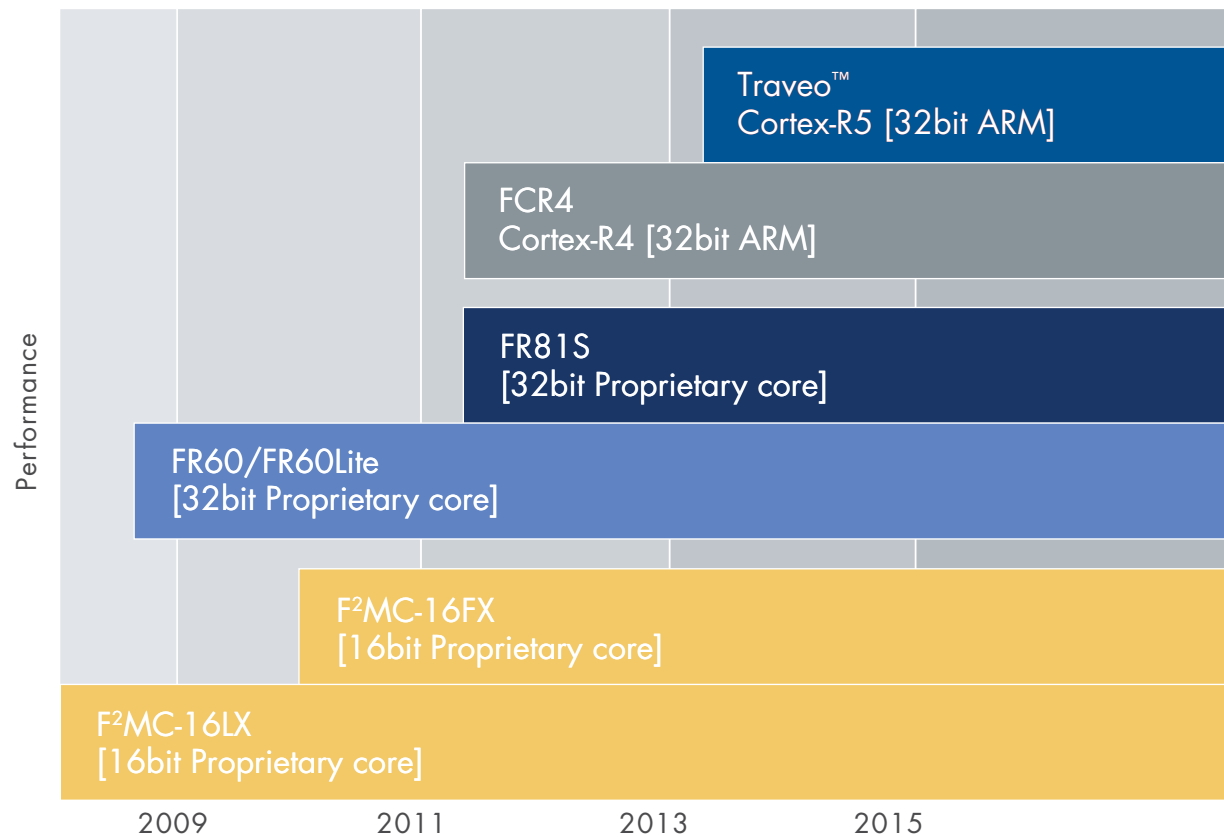
"[Embedded - Microcontrollers](#)" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" 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	F ² MC-16FX
Core Size	16-Bit
Speed	56MHz
Connectivity	CANbus, EBI/EMI, I ² C, LINbus, SCI, UART/USART
Peripherals	DMA, LCD, LVD, LVR, POR, PWM, WDT
Number of I/O	96
Program Memory Size	288KB (288K x 8)
Program Memory Type	FLASH
EEPROM Size	-
RAM Size	16K x 8
Voltage - Supply (Vcc/Vdd)	3V ~ 5.5V
Data Converters	A/D 16x10b
Oscillator Type	Internal
Operating Temperature	-40°C ~ 105°C (TA)
Mounting Type	Surface Mount
Package / Case	120-LQFP
Supplier Device Package	120-LQFP (16x16)
Purchase URL	https://www.e-xfl.com/product-detail/infineon-technologies/mb96f386rscpmc-gs-199e2

Automotive MCU Core Roadmap



Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch/unit]	12bit AD Converter [ch/unit]	DA Converter [bit x ch]	Timer								Serial				Communication			L O D Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
																	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]				
S6E2CC-V	S6E2CCAJGA	200	LQFP-176 BGA-192	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	-	8	32	✓	152	-	32 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	3 (2 x CAN + CAN FD)	2ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC×256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC, Eth1ch, Chipher, Voice	On-Chip Debug (SWJ-DP/ETM/ HTM)								
	1M		128K																																
	2M		256K																																
	1M		128K																																
S6E2CC w/ Security	S6E2CCAHHA	200	LQFP-144	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	-	8	32	✓	120	-	24 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	3 (2 x CAN + CAN FD)	2ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC, Eth1ch, Chipher	On-Chip Debug (SWJ-DP/ETM/ HTM)								
	S6E2CCAJHA		LQFP-176 BGA-192																									1.5M	192K	152	32 (3)	190	120	24 (3)	
	S6E2CCALHA		LQFP-216																																
	S6E2CC9HHA		LQFP-144																																
	S6E2CC9JHA		LQFP-176 BGA-192				1M	128K					152	32 (3)	190	120																			24 (3)
	S6E2CC9LHA		LQFP-216																																
	S6E2CC8HHA		LQFP-144																																
	S6E2CC8JHA		LQFP-176 BGA-192																																
S6E2CC8LHA	LQFP-216																																		
S6E2CC	S6E2CCAH0A	200	LQFP-144	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	-	8	32	✓	120	-	24 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	3 (2 x CAN + CAN FD)	2ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC, Eth1ch	On-Chip Debug (SWJ-DP/ETM/ HTM)								
	S6E2CCAJ0A		LQFP-176 BGA-192																									1.5M	196K	152	32 (3)	190	120	24 (3)	
	S6E2CCAL0A		LQFP-216																																
	S6E2CC9H0A		LQFP-144																																
	S6E2CC9J0A		LQFP-176 BGA-192				1M	128K					152	32 (3)	190	120																			24 (3)
	S6E2CC9L0A		LQFP-216																																
	S6E2CC8H0A		LQFP-144																																
	S6E2CC8J0A		LQFP-176 BGA-192																																
S6E2CC8L0A	LQFP-216																																		
S6E2C5	S6E2C5AH0A	200	LQFP-144	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	-	8	32	✓	120	-	24 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	3 (2 x CAN + CAN FD)	2ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC	On-Chip Debug (SWJ-DP/ETM/ HTM)								
	S6E2C5AJ0A		LQFP-176 BGA-192																									1.5M	192K	152	32 (3)	190	120	24 (3)	
	S6E2C5AL0A		LQFP-216																																
	S6E2C59H0A		LQFP-144																																
	S6E2C59J0A		LQFP-176 BGA-192				1M	128K					152	32 (3)	190	120																			24 (3)
	S6E2C59L0A		LQFP-216																																
	S6E2C58H0A		LQFP-144																																
	S6E2C58J0A		LQFP-176 BGA-192																																
S6E2C58L0A	LQFP-216																																		

FM4 Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	1bit AD Converter [ch](unit)	12bit AD Converter [ch](unit)	DA Converter [bit x ch]	Timer								Serial			Communication			Note	Evaluation Device		
																	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]			USB-Host [ch]	USB-Function [ch]
S6E2C4	S6E2C4AH0A	200	LQFP-144	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	-	8	32	✓	120	-	24 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	3 (2 x CAN + CAN FD)	-	-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC	On-Chip Debug (SWJ-DP/ETM/ HTM)							
	S6E2C4AJ0A		LQFP-176 BGA-192																									1M	128K	152	120	32 (3)		
	S6E2C4AL0A		LQFP-216																														190	24 (3)
	S6E2C49H0A		LQFP-144																															
	S6E2C49J0A		LQFP-176 BGA-192				152	120					32 (3)																					
	S6E2C49L0A		LQFP-216											190	24 (3)																			
	S6E2C48H0A		LQFP-144																									120	24 (3)					
	S6E2C48J0A		LQFP-176 BGA-192																											152	120	32 (3)		
S6E2C48L0A	LQFP-216	190	24 (3)																															
S6E2C3AH0A	LQFP-144			200	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	-	8	32	✓	120	-	24 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	-	2ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC						On-Chip Debug (SWJ-DP/ETM/ HTM)	
S6E2C3AJ0A	LQFP-176 BGA-192																											1M	128K					152
S6E2C3AL0A	LQFP-216																													190	24 (3)			
S6E2C39H0A	LQFP-144	120	24 (3)																															
S6E2C39J0A	LQFP-176 BGA-192							152	120					32 (3)																				
S6E2C39L0A	LQFP-216														190	24 (3)																		
S6E2C38H0A	LQFP-144																											120	24 (3)					
S6E2C38J0A	LQFP-176 BGA-192	152	120																											32 (3)				
S6E2C38L0A	LQFP-216			190	24 (3)																													
S6E2C2AHHA	LQFP-144					200	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	-	8	32	✓	120	-	24 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	-	2ch (USB-Host/ USB-Function Selectable)	-				✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC, Eth1ch, Chipher	On-Chip Debug (SWJ-DP/ETM/ HTM)	
S6E2C2AJHA	LQFP-176 BGA-192																											1M	128K					152
S6E2C2ALHA	LQFP-216	190	24 (3)																															
S6E2C29HHA	LQFP-144			120	24 (3)																													
S6E2C29JHA	LQFP-176 BGA-192									152	120					32 (3)																		
S6E2C29LHA	LQFP-216																190	24 (3)																
S6E2C28HHA	LQFP-144	120	24 (3)																															
S6E2C28JHA	LQFP-176 BGA-192			152	120																							32 (3)						
S6E2C28LHA	LQFP-216					190	24 (3)																											
S6E2C2AH0A	LQFP-144							200	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	-	8	32	✓	120	-	24 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	-		2ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC, Eth1ch	On-Chip Debug (SWJ-DP/ETM/ HTM)	
S6E2C2AJ0A	LQFP-176 BGA-192	1M	128K																															152
S6E2C2AL0A	LQFP-216			190	24 (3)																													
S6E2C29H0A	LQFP-144					120	24 (3)																											
S6E2C29J0A	LQFP-176 BGA-192											152	120					32 (3)																
S6E2C29L0A	LQFP-216	190	24 (3)																															
S6E2C28H0A	LQFP-144			120	24 (3)																													
S6E2C28J0A	LQFP-176 BGA-192					152	120												32 (3)															
S6E2C28L0A	LQFP-216							190	24 (3)																									
S6E2C1AH0A	LQFP-144	200	2.7 to 5.5							✓	Main Flash +Main Flash	2M	256K	-	8	32	✓	120		-	24 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	-	-	-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC	On-Chip Debug (SWJ-DP/ETM/ HTM)	
S6E2C1AJ0A	LQFP-176 BGA-192			1M	128K																													152
S6E2C1AL0A	LQFP-216					190	24 (3)																											
S6E2C19H0A	LQFP-144							120	24 (3)																									
S6E2C19J0A	LQFP-176 BGA-192											152	120					32 (3)																
S6E2C19L0A	LQFP-216			190	24 (3)																													
S6E2C18H0A	LQFP-144					120	24 (3)																											
S6E2C18J0A	LQFP-176 BGA-192							152	120										32 (3)															
S6E2C18L0A	LQFP-216	190	24 (3)																															

FM4 Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch](unit)	12bit AD Converter [ch](unit)	DA Converter [bit x ch]	Timer								Serial				Communication			LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
																	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I ² C [ch]	UART/ISI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]				
MB9B160R	MB9BF166M	160	LQFP-80	2.7 to 5.5	✓	Main Flash +Work Flash	512K +32K	64K	-	8	16	✓	63	-	16(3)	12 x 2	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I ² C/LIN Selectable)	-	-	-	-	✓	Dual Timer, Real Time Clock, DSTC x 128ch, Unique ID, SD Card I/F	On-chip Debug (SWJ-DP/ETM)							
	80		24(3)																																
	100		16(3)																																
	MB9BF166R		LQFP-120 BGA-144				63	16(3)																											
	MB9BF167M		LQFP-80				80	24(3)																											
	MB9BF167N		LQFP-100 QFP-100 BGA-112				100	16(3)																											
	MB9BF167R		LQFP-120 BGA-144				63	16(3)																											
	MB9BF168M		LQFP-80				80	24(3)																											
	MB9BF168N		LQFP-100 QFP-100 BGA-112				100	24(3)																											
MB9BF168R	LQFP-120 BGA-144																																		
MB9B560L	MB9BF564K	160	LQFP-48 QFN-48	2.7 to 5.5	✓	Main Flash +Work Flash	256K +32K	32K	-	8	15	-	33	-	8(2)	12 x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1	1	Multi Function Serial x 6ch (UART/CSIO/I ² C/LIN Selectable)	1	1ch (USB-Host/ USB-Function Selectable)	-	✓	CAN: 32Msg-buffer, Dual Timer, Real Time Clock, Unique ID, DSTC x 128ch	On-chip Debug (SWJ-DP)								
	MB9BF564L		LQFP-64 QFN-64														16											48	15(2)						
	MB9BF565K		LQFP-48 QFN-48				15	33			8(2)																								
	MB9BF565L		LQFP-64 QFN-64				16	48			15(2)																								
	MB9BF566K	160	LQFP-48 QFN-48	2.7 to 5.5	✓	Main Flash +Work Flash	512K +32K	64K	-	8	15	-	33	-	8(2)	12 x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1	1	Multi Function Serial x 6ch (UART/CSIO/I ² C/LIN Selectable)	1	1ch (USB-Host/ USB-Function Selectable)	-	✓	CAN: 32Msg-buffer, Dual Timer, Real Time Clock, Unique ID, DSTC x 128ch	On-chip Debug (SWJ-DP)								
	MB9BF566L		LQFP-64 QFN-64														16											48	15(2)						

FM4 Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch(unit)]	12bit AD Converter [ch(unit)]	DA Converter [bit x ch]	Timer									Serial				Communication			LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
																	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]				
MB9B460L	MB9BF464K	160	LQFP-48 QFN-48	2.7 to 5.5	✓	Main Flash +Work Flash	256K +32K	32K	-	8	-	-	-	-	12 x 2		Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1	1	Multi Function Serial x 6ch (UART/CSIO/I2C/LIN Selectable)	1	-	-	-	✓	CAN: 32Msg-buffer, Dual Timer, Real Time Clock, Unique ID, DSTC x 128ch	On-chip Debug (SWJ-DP)								
	MB9BF464L		LQFP-64 QFN-64																																	
	MB9BF465K		LQFP-48 QFN-48																																	
	MB9BF465L		LQFP-64 QFN-64																																	
	MB9BF466K		LQFP-48 QFN-48																																	
	MB9BF466L		LQFP-64 QFN-64																																	

FM4 Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch/unit]	12bit AD Converter [ch/unit]	DA Converter [bit x ch]	Timer								Serial				Communication			LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
																	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]				
MB9B360L	MB9BF364K	160	LQFP-48 QFN-48	2.7 to 5.5 2.7 to 5.5	✓	Main Flash +Work Flash	256K +32K	32K	-	8	-	-	-	12 x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)								Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1	1	Multi Function Serial x 6ch (UART/CSIO/I2C/LIN Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Real Time Clock, Unique ID, DSTC x 128ch	On-chip Debug (SWJ-DP)			
	MB9BF364L		LQFP-64 QFN-64												Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)																				
	MB9BF365K		LQFP-48 QFN-48												Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)																				
	MB9BF365L		LQFP-64 QFN-64				384K +32K	48K							Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)																				
	MB9BF366K		LQFP-48 QFN-48												Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)																				
	MB9BF366L		LQFP-64 QFN-64												Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)																				

FM3 Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [bit]	Ext. Interrupt [bit]	External Bus	Maximum I/O port [bit]	10bit AD Converter [bit(unit)]	12bit AD Converter [bit(unit)]	DA Converter [bit x bit]	Timer								Serial			Communication			Note	Evaluation Device
																	Output Compare [bit]	Free-Run Timer [bit]	Input Capture [bit]	Reload Timer [bit]	PWM Timer [bit]	PWC Timer [bit]	PPG Timer [bit]	Up/Down Counter [bit]	Other timers [bit]	I ² C [bit]	UART/ISI [bit]	SIO [bit]	LIN/UART/SIO [bit]	CAN [bit]		
HIGH-PERFORMANCE GROUP																																
MB9B500B	MB9BF504NB	80	LQFP-100 BGA-112	2.7 to 5.5	✓	FLASH	256K	32K	-	8	16	✓	80	-	16(3)	-	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	2	1ch (USB-Host/ USB-Function Selectable)	-	✓	CAN: 32Msg-buffer, Dual Timer	On-chip Debug (SWJ-DP/ETM)					
	MB9BF504RB		LQFP-120				100																									
	MB9BF505NB		LQFP-100 BGA-112				80																									
	MB9BF505RB		LQFP-120				100																									
	MB9BF506NB		LQFP-100 BGA-112				80																									
	MB9BF506RB		LQFP-120				100																									
MB9B400A	MB9BF404NA	80	LQFP-100 BGA-112	2.7 to 5.5	✓	FLASH	256K	32K	-	8	16	✓	80	-	16(3)	-	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	2	-	-	-	✓	CAN: 32Msg-buffer, Dual Timer	On-chip Debug (SWJ-DP/ETM)				
	MB9BF404RA		LQFP-120				100																									
	MB9BF405NA		LQFP-100 BGA-112				80																									
	MB9BF405RA		LQFP-120				100																									
	MB9BF406NA		LQFP-100 BGA-112				80																									
	MB9BF406RA		LQFP-120				100																									
MB9B300B	MB9BF304NB	80	LQFP-100 BGA-112	2.7 to 5.5	✓	FLASH	256K	32K	-	8	16	✓	80	-	16(3)	-	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer	On-chip Debug (SWJ-DP/ETM)					
	MB9BF304RB		LQFP-120				100																									
	MB9BF305NB		LQFP-100 BGA-112				80																									
	MB9BF305RB		LQFP-120				100																									
	MB9BF306NB		LQFP-100 BGA-112				80																									
	MB9BF306RB		LQFP-120				100																									
MB9B100A	MB9BF102NA	80	LQFP-100 BGA-112	2.7 to 5.5	✓	FLASH	128K	16K	-	8	16	✓	80	-	16(3)	-	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	-	-	-	-	✓	Dual Timer	On-chip Debug (SWJ-DP/ETM)				
	MB9BF102RA		LQFP-120				100																									
	MB9BF104NA		LQFP-100 BGA-112				80																									
	MB9BF104RA		LQFP-120				100																									
	MB9BF105NA		LQFP-100 BGA-112				80																									
	MB9BF105RA		LQFP-120				100																									
	MB9BF106NA		LQFP-100 BGA-112				80																									
	MB9BF106RA		LQFP-120				100																									
BASIC GROUP																																
MB9B520M	MB9BF521K	72	LQFP-48 QFN-48	2.7 to 5.5	✓	Dual Op. Flash (Main area + Work area)	64K +32K	16K	-	8	-	-	14	-	10bit x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1	1	Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable)	1	1ch (USB-Host/ USB-Function Selectable)	-	✓	CAN: 32Msg-buffer, Dual Timer, Unique ID, Real Time Clock	On-chip Debug (SWJ-DP)						
	MB9BF521L		LQFP-64 QFN-64										19					50		23(2)							QPRC x 2	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)				
	MB9BF521M		LQFP-80 BGA-96										23					65		26(2)							QPRC x 1	Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable)				
	MB9BF522K		LQFP-48 QFN-48										14					35		14(2)							QPRC x 2	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)				
	MB9BF522L		LQFP-64 QFN-64				19	50					23(2)					QPRC x 1		Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable)												
	MB9BF522M		LQFP-80 BGA-96				23	65					26(2)																			
	MB9BF524K		LQFP-48 QFN-48				14	35					14(2)																			
	MB9BF524L		LQFP-64 QFN-64				19	50					23(2)																			
	MB9BF524M		LQFP-80 BGA-96				23	65					26(2)																			

FM3 Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch/unit]	12bit AD Converter [ch/unit]	DA Converter [bit x ch]	Timer								Serial				Communication			LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
																	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]				
BASIC GROUP																																			
MB9B320T	MB9BF328S*	60	LQFP-144	2.7 to 5.5	✓	Dual Op. Flash (Main area + Work area)	1M +64K	160K	-	8	32	✓	-	24(2)	10bit x 2		Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1 QPRC x 2 QPRC x 1 QPRC x 2	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	-	1ch (USB-Host/ USB-Function Selectable)		-	✓	Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP/ETM)							
	MB9BF328T*		LQFP-176 BGA-192				1.5M +64K	192K																											
	MB9BF329S*		LQFP-144																																
	MB9BF329T*		LQFP-176 BGA-192																																
MB9B120T	MB9BF128S*	60	LQFP-144	2.7 to 5.5	✓	Dual Op. Flash (Main area + Work area)	1M +64K	160K	-	8	32	✓	-	24(2)	10bit x 2		Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1 QPRC x 2 QPRC x 1 QPRC x 2	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	-	-	-	-	-	✓	Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP/ETM)						
	MB9BF128T*		LQFP-176 BGA-192				1.5M +64K	192K																											
	MB9BF129S*		LQFP-144																																
	MB9BF129T*		LQFP-176 BGA-192																																
MB9A420L	MB9AF421K	40	LQFP-48 LQFP-52 QFN-48	2.7 to 5.5	✓	FLASH	64K	4K	-	-	14	-	-	8(1)	10bit x 1		Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 3ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	-	1	Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable)	1	-	-	-	-	✓	CAN: 32Msg-buffer, Dual Timer, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP)						
	MB9AF421L		LQFP-64 QFN-64								19																								
MB9A120L	MB9AF121K	40	LQFP-48 LQFP-52 QFN-48	2.7 to 5.5	✓	FLASH	64K	4K	-	-	14	-	-	8(1)	10bit x 1		Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 3ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	-	1	Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable)	-	-	-	-	-	✓	Dual Timer, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP)						
	MB9AF121L		LQFP-64 QFN-64								19																								

FM3 Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch(unit)]	12bit AD Converter [ch(unit)]	DA Converter [bit x ch]	Timer								Serial			Communication			LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
																	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]				
BASIC GROUP																																		
MB9A310A	MB9AF311LA	40	LQFP-64 QFN-64	2.7 to 5.5	✓	FLASH	-	8	-	51	9(2)	-	Multi-Function Timer x 1 unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)								Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer		On-chip Debug (SWJ-DP)			
	MB9AF311MA		LQFP-80										11	66	12(3)																			
	MB9AF311NA		LQFP-100 QFP-100 BGA-112										16	✓	83	16(3)																		
	MB9AF312LA		LQFP-64 QFN-64										8	-	51	9(2)																		
	MB9AF312MA		LQFP-80										11	66	12(3)																			
	MB9AF312NA		LQFP-100 QFP-100 BGA-112										16	✓	83	16(3)																		
	MB9AF314LA		LQFP-64 QFN-64										7	-	51	9(2)																		
	MB9AF314MA		LQFP-80										11	66	12(3)																			
	MB9AF314NA		LQFP-100 QFP-100 BGA-112										16	83	16(3)																			
	MB9AF315MA		LQFP-80										11	66	12(3)																			
	MB9AF315NA		LQFP-100 QFP-100 BGA-112**										16	✓	83	16(3)																		
	MB9AF316MA		LQFP-80										11	66	12(3)																			
MB9AF316NA	LQFP-100 QFP-100 BGA-112**	16	83	16(3)																														

FM3 Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch(unit)]	12bit AD Converter [ch(unit)]	DA Converter [bit x ch]	Timer								Serial			Communication			LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device																
																	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I ² C [ch]	UART/SI [ch]	SO [ch]	LIUART/SIO [ch]	CAN [ch]					USB-Host [ch]	USB-Function [ch]														
LOW-POWER GROUP																																																		
MB9A340NA	MB9AF341LB	40	LQFP-64 QFN-64	1.65 to 3.6	✓	Dual Op. Flash (Main area + Work area)	64K +32K	16K	-	8	-	51	-	12(2)	-	-	-	-	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	-	1	Multi Function Serial x 8ch (UART/CSIO/FC Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	-	-	HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP)																						
	MB9AF341MB		LQFP-80 BGA-96								11	66																	17(2)																					
	MB9AF341NB		LQFP-100 QFP-100 BGA-112								16	✓																	83	24(2)																				
	MB9AF342LB		LQFP-64 QFN-64								8	-																	51	12(2)																				
	MB9AF342MB		LQFP-80 BGA-96				128K +32K	32K			11	66	-	17(2)														-	-	-	-	24(2)	17(2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	On-chip Debug (SWJ-DP/ETM)		
	MB9AF342NB		LQFP-100 QFP-100 BGA-112				16				✓	83	24(2)																																					
	MB9AF344LB		LQFP-64 QFN-64				8				-	51	12(2)																																					
	MB9AF344MB		LQFP-80 BGA-96				11				66	17(2)																																						
MB9AF344NB	LQFP-100 QFP-100 BGA-112	16	✓	83	24(2)																																													
MB9A140NA	MB9AF141LB	40	LQFP-64 QFN-64	1.65 to 3.6	✓	Dual Op. Flash (Main area + Work area)	64K +32K	16K	-	8	-	51	-	12(2)	-	-	-	-	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	-	1	Multi Function Serial x 8ch (UART/CSIO/FC Selectable)	-	-	-	-	HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID																					On-chip Debug (SWJ-DP)		
	MB9AF141MB		LQFP-80 BGA-96								11	66																																					-	17(2)
	MB9AF141NB		LQFP-100 QFP-100 BGA-112								16	✓																																					83	24(2)
	MB9AF142LB		LQFP-64 QFN-64								8	-																51	12(2)																					
	MB9AF142MB		LQFP-80 BGA-96				128K +32K	32K			11	66	-	17(2)														-	-	-	-	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	-	1	Multi Function Serial x 8ch (UART/CSIO/FC Selectable)	-	-	-	-	-	-	-	-	-	-	HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP)			
	MB9AF142NB		LQFP-100 QFP-100 BGA-112				16				✓	83																																				24(2)		
	MB9AF144LB		LQFP-64 QFN-64				8				-	51																																				12(2)		
	MB9AF144MB		LQFP-80 BGA-96				11				66	17(2)																																						
	MB9AF144NB		LQFP-100 QFP-100 BGA-112				16	✓			83	24(2)																																						

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch/unit]	12bit AD Converter [ch/unit]	DA Converter [bit x ch]	Timer							Serial			Communication			LCD Controller [seg x cm]	Three-phase Inverter	Note	Evaluation Device
																	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]				
S6E1A	S6E1A11B0A	40	LQFP-32 QFN-32	2.7 to 5.5	✓	Flash	56K	6K	-	2	8	-	23	-	5(1)	-	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 4ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1	1	Multi Function Serial x 3ch (UART/CSIO/I ² C/LIN Selectable)	-	-	-	✓	Dual Timer, Real Time Clock, Unique ID, Fast I/O	On-chip Debug (SW-DP/MTB)						
	37		8(1)																														
	23		5(1)																														
	37		8(1)																														
S6E1B8 w/security	S6E1B86GHA	40	LQFP-120	1.65 to 3.6	✓	Main Flash +Work Flash	512K + 40K	64K	-	-	24	-	102	-	24	-	Multi-Function Timer x 1units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /PPG3ch/Waveform Generator 3ch /AD Activation Compare 6ch Selectable), PPG3ch	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	-	1	Multi Function Serial x 8ch (UART/CSIO/I ² C Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	40 SEG x 8 COM / 44 SEG x 4 COM	-	Dual Timer, Real Time Clock, Unique ID, DSTC x 64ch, Tiny I2S, HDMI-CEC 2ch, CRC, Smart Card I/F, Chipher	On-Chip Debug (SWJ-DP/ Boundary SCAN)						
	256K + 40K		32K				32 SEG x 8 COM / 36 SEG x 4 COM																										
	512K + 40K		64K				20 SEG x 8 COM / 24 SEG x 4 COM																										
	256K + 40K		32K																														
	512K + 40K		64K																														
	256K + 40K		32K																														
S6E1B8	S6E1B86G0A	40	LQFP-120	1.65 to 3.6	✓	Main Flash +Work Flash	512K + 40K	64K	-	-	24	-	102	-	24	-	Multi-Function Timer x 1 units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /PPG3ch/Waveform Generator 3ch /AD Activation Compare 6ch Selectable), PPG3ch	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	-	1	Multi Function Serial x 8ch (UART/CSIO/I ² C Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	40 SEG x 8 COM / 44 SEG x 4 COM	-	Dual Timer, Real Time Clock, Unique ID, DSTC x 64ch, Tiny I2S, HDMI-CEC 2ch, CRC, Smart Card I/F	On-Chip Debug (SWJ-DP/ Boundary SCAN)						
	256K + 40K		32K				32 SEG x 8 COM / 36 SEG x 4 COM																										
	512K + 40K		64K				20 SEG x 8 COM / 24 SEG x 4 COM																										
	256K + 40K		32K																														
	512K + 40K		64K																														
	256K + 40K		32K																														
S6E1B3	S6E1B36G0A	40	LQFP-120	1.65 to 3.6	✓	Main Flash +Work Flash	512K + 40K	64K	-	-	24	-	102	-	24	-	Multi-Function Timer x 1units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /PPG3ch/Waveform Generator 3ch /AD Activation Compare 6ch Selectable), PPG3ch	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	-	1	Multi Function Serial x 8ch (UART/CSIO/I ² C Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	-	-	Dual Timer, Real Time Clock, Unique ID, DSTC x 64ch, Tiny I2S, HDMI-CEC 2ch, CRC, Smart Card I/F	On-Chip Debug (SWJ-DP/ Boundary SCAN)						
	256K + 40K		32K				-																										
	512K + 40K		64K				-																										
	256K + 40K		32K				-																										
	512K + 40K		64K				-																										
	256K + 40K		32K				-																										
S6E1B1	S6E1B16G0A	40	LQFP-120	1.65 to 3.6	✓	Main Flash +Work Flash	512K + 40K	64K	-	-	24	-	102	-	24	-	Multi-Function Timer x 1units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /PPG3ch/Waveform Generator 3ch /AD Activation Compare 6ch Selectable), PPG3ch	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	-	1	Multi Function Serial x 8ch (UART/CSIO/I ² C Selectable)	-	-	-	-	Dual Timer, Real Time Clock, Unique ID, DSTC x 64ch, Tiny I2S, HDMI-CEC 2ch, CRC, Smart Card I/F	On-Chip Debug (SWJ-DP/ Boundary SCAN)						
	256K + 40K		32K				-																										
	512K + 40K		64K				-																										
	256K + 40K		32K				-																										
	512K + 40K		64K				-																										
	256K + 40K		32K				-																										

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch/unit]	12bit AD Converter [ch/unit]	DA Converter [bit x ch]	Timer								Serial			Communication			LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
																	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I ² C [ch]	UART/SIO [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]				
LCD CONTROLLERS																																		
MB95610H	MB95F613H	16	LQFP-80	2.4 to 5.5	✓	Dual Op. Flash	12K	512	-	-	8	-	40	4(1)	-	-	-	+ Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/ Input Capture Selectable)	2	-	-	1	2	-	-	-	-	-	52 x 4 or 48 x 8	-	Clock Supervisor		On-chip Debug	
	MB95F613K							Low-voltage Detection Reset, Clock Supervisor																										
	MB95F614H							Clock Supervisor																										
	MB95F614K							Low-voltage Detection Reset, Clock Supervisor																										
	MB95F616H							Clock Supervisor																										
MB95616K	MB95F616K	36K	1024	41	Low-voltage Detection Reset, Clock Supervisor																													
	MB95F714J	16	LQFP-80	1.8 to 5.5	✓	Dual Op. Flash	20K	512	-	-	8	-	75	-	8(1)	-	-	+ Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/ Input Capture Selectable)	2	-	-	1	3	-	-	-	-	40 x 4 or 36 x 8	-	Clock Supervisor		On-chip Debug		
	MB95F714M							Low-voltage Detection Reset, Clock Supervisor																										
	MB95F716J							Clock Supervisor																										
	MB95F716M							Low-voltage Detection Reset, Clock Supervisor																										
MB95F718J	Clock Supervisor																																	
MB95770M	MB95F718M	60K	2K	75	Low-voltage Detection Reset, Clock Supervisor																													
	MB95F774J	16	LQFP-64	1.8 to 5.5	✓	Dual Op. Flash	20K	512	-	-	8	-	59	-	8(1)	-	-	+ Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/ Input Capture Selectable)	2	-	-	1	3	-	-	-	-	32 x 4 or 28 x 8	-	Clock Supervisor		On-chip Debug		
	MB95F774M							Low-voltage Detection Reset, Clock Supervisor																										
	MB95F776J							Clock Supervisor																										
	MB95F776M							Low-voltage Detection Reset, Clock Supervisor																										
MB95F778J	Clock Supervisor																																	
MB95778M	MB95F778M	60K	2K	59	Low-voltage Detection Reset, Clock Supervisor																													
	MB95F632H	16	LQFP-32 SH-DIP-32 QFN-32	2.4 to 5.5	✓	Dual Op. Flash	8K	256	-	-	10	-	28	8(1)	-	-	-	+ Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/ Input Capture Selectable)	3	-	1	1	1	-	1	-	-	-	-	✓	Low-voltage Detection Reset, Multi-pulse Generator (Reload/PPG/Waveform Sequencer), Clock Supervisor		On-chip Debug	
	MB95F632K							Clock Supervisor																										
	MB95F633H							Low-voltage Detection Reset, Clock Supervisor																										
	MB95F633K							Clock Supervisor																										
MB95F634H	Low-voltage Detection Reset, Clock Supervisor																																	
MB95690K	MB95F634K	20K	1024	29	Low-voltage Detection Reset, Clock Supervisor																													
	MB95F636H	36K	1K	29	Low-voltage Detection Reset, Clock Supervisor																													
	MB95F636K	60K	2K	29	Low-voltage Detection Reset, Clock Supervisor																													
	MB95F694K	16	LQFP-44 LQFP-48 LQFP-52 QFN-48	2.88 to 5.5	✓	Dual Op. Flash	20K	512	-	-	8	-	45 LQFP44 only: 41	12(1) LQFP44 only: 8(1)	-	-	-	+ Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/ Input Capture Selectable)	3	-	1	1	1	-	1	-	-	-	-	✓	Low-voltage Detection Reset, Multi-pulse Generator (Reload/PPG/Waveform Sequencer), Clock Supervisor		On-chip Debug	
	MB95F696K							36K																							1K	Clock Supervisor		
MB95F698K	60K							2K																							Clock Supervisor			
STANDARD																																		
MB95560H	MB95F562H	16	SOP-20 TSSOP-20 QFN-32	2.4 to 5.5	✓	Dual Op. Flash	8K	240	-	-	6	-	16	6(1)	-	-	-	8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/ Input Capture Selectable)	-	-	-	-	-	-	1	-	-	-	-	-	-	Clock Supervisor		On-chip Debug
	MB95F562K							Low-voltage Detection Reset, Clock Supervisor																										
	MB95F563H							Clock Supervisor																										
	MB95F563K							Low-voltage Detection Reset, Clock Supervisor																										
	MB95F564H							Clock Supervisor																										
MB95570H	MB95F564K	20K	496	16	Low-voltage Detection Reset, Clock Supervisor																													
	MB95F572H	16	SOP-8	2.4 to 5.5	✓	Dual Op. Flash	8K	240	-	-	2	-	4	2(1)	-	-	-	8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/ Input Capture Selectable)	-	-</														

Traveo Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	12bit AD Converter [ch](unit)]	12bit AD Converter with 4ch sample & hold	DA Converter [bit x ch]	Timer										Serial			Communication			Note	Evaluation Device
																	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I2C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]		
CAN/AUTOMOTIVE																																		
S6J3110	S6J3118HA	96	TEQFP -144	4.5 to 5.25	-	Main Flash +Work Flash	576K + 48K	TC- RAM: 32KB System - RAM: 16KB Backup - RAM: 8KB	56(2)	Instruction: 16 Data: 16	16	16	-	116	-	-	12	6	12	16bit Base Timer x 30ch (PWM/PPG/Reload/PWC Selectable)	-	RTC x 1ch	Multi Function Serial x 4ch (LIN/UART/SIO Selectable)	CAN - FD x 1ch	-	-	-	-	ARM Cortex-R5, SHE(Secure Hardware Extension),	On-Chip Debug				
	S6J3119HA						832K + 48K	TC- RAM: 48KB System - RAM: 16KB Backup - RAM: 8KB																										
	S6J311AHA						1088K + 48K	TC- RAM: 64KB System - RAM: 16KB Backup - RAM: 8KB																										
	S6J311BHA	144	TEQFP -176				1600K + 112K	192K	64(2)					Multi Function Serial x 22ch (LIN/UART/SIO Selectable)									CAN - FD x 2ch											
	S6J311CHA						2112K + 112K	256K																										
	S6J311DHA						3136K + 112K	320K																										
	S6J311EHA	4160K + 112K	TC- RAM: 64KB System - RAM: 256KB Backup - RAM: 64KB				150																											
	S6J311BJA	1600K + 112K	192K																															
	S6J311CJA	2112K + 112K	256K																															
	S6J311DJA	3136K + 112K	320K																															
S6J311EJA	4160K + 112K	TC- RAM: 64KB System - RAM: 256KB Backup - RAM: 64KB																																

Traveo Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	12bit AD Converter [ch/unit]	12bit AD Converter with 4ch sample & hold	DA Converter [bit x ch]	Timer								Serial			Communication			LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
																	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPC Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I2C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]				
CAN/AUTOMOTIVE																																		
S6J3120	S6J3128HA	112	TEQFP -144	4.5 to 5.25	-	Main Flash +Work Flash	576K + 48K	TC-RAM: 32KB System - RAM: 16KB Backup - RAM: 8KB	Instruction: 16 Data: 16	16	16	A24/D16	112	50(2)	-	-	12	6	12	16bit Base Timer x 30ch (PWM/PPG/Reload/PWC Selectable)	2	RTC x 1ch	Multi Function Serial x 10ch (LIN/UART/SIO Selectable)	CAN - FD x 3ch	-	-	32 x 4	-	ARM Cortex-R5, SHE(Secure Hardware Extension), SMC x 4ch, Sound generator x 3ch	On-Chip Debug				
	832K + 48K						TC-RAM: 48KB System - RAM: 16KB Backup - RAM: 8KB																											
	1088K +112K						TC-RAM: 64KB System-RAM: 16KB Backup-RAM: 8KB																											
S6J3200	S6J32AAKS	160	TEQFP -208	1.1 to 1.3 3.0 to 3.6 4.5 to 5.5	✓	Main Flash +Work Flash	1088K + 112K	TC-RAM: 128KB System - RAM: 16KB Backup - RAM: 16KB VRAM: 1024KB	Instruction: 16 Data: 16	16	16	-	120	46(1)	-	-	24	12	24	Reload Timer x 14ch 16bit Base Timer x 24ch (PWM/PPG/Reload/PWC Selectable)	2	RTC x 1ch	Multi Function Serial x 12ch (LIN/UART/SIO/I2C Selectable)	CAN-FD x 4ch	-	-	30 x 4	-	ARM Cortex-R5, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D Graphic Engine, Display Output x 1ch	On-Chip Debug				
	S6J32AAKU												32 x 4																					
	S6J32AALS		TEQFP -216 (0.4mm pitch)										32 x 4																					
	S6J32AALU												30 x 4																					
	S6J32BAKS		TEQFP -208										32 x 4																					
	S6J32BAKU												32 x 4																					
	S6J32BALU		TEQFP -216 (0.4mm pitch)										32 x 4																					
	S6J32CAKS		TEQFP -208										30 x 4																					
	S6J32CAKU												32 x 4																					
	S6J32CALU		TEQFP -216 (0.4mm pitch)										32 x 4																					
	S6J32DAKS		TEQFP -208										30 x 4																					
	S6J32DAKU												32 x 4																					
	S6J32DALS												32 x 4																					
	S6J32DALU		TEQFP -216 (0.4mm pitch)										32 x 4																					

Traveo Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	12bit AD Converter [ch/unit]	12bit AD Converter with 4ch sample & hold	DA Converter [bit x ch]	Timer								Serial			Communication			LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
																	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I2C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]				
CAN/AUTOMOTIVE																																		
S6J3200	S6J323CKS	240	TEQFP -208	1.1 to 1.3 3.0 to 3.6 4.5 to 5.5	✓	Main Flash +Work Flash	2112K + 112K	TC-RAM: 128KB System - RAM: 128KB Backup - RAM: 16KB VRAM: 2048KB	Instruction: 16 Data: 16	16	16	-	120	46(1)	-	-	24	12	24	Reload Timer x 14ch 16bit Base Timer x 24ch (PWM/PPC/Reload/PWC Selectable)	2	RTC x 1ch	Multi Function Serial x 12ch (LIN/UART/SIO/I2C Selectable)	CAN-FD x 4ch	-	-	30 x 4	ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D Graphic Engine, Display Output x 2ch,	On-Chip Debug					
	S6J323CKU		TEQFP -216 (0.4mm pitch)																											32 x 4	2D Graphic Engine, Display Output x 2ch,			
	S6J323CLS		TEQFP -208																											30 x 4	ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D Graphic Engine, Display Output x 2ch, Sound system,			
	S6J324CLU		TEQFP -216 (0.4mm pitch)																											32 x 4	ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D Graphic Engine, Display Output x 2ch, Sound system,			
	S6J325CKS		TEQFP -208																											30 x 4	ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D+3D Graphic Engine, Display Output x 2ch,			
	S6J325CKU		TEQFP -216 (0.4mm pitch)																											32 x 4	ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D+3D Graphic Engine, Display Output x 2ch,			
	S6J325CLS		TEQFP -208																											30 x 4	ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D+3D Graphic Engine, Display Output x 2ch,			
	S6J326CLU		TEQFP -216 (0.4mm pitch)																											32 x 4	ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D+3D Graphic Engine, Display Output x 2ch, FPD-Link, Sound system,			
	S6J327CKS		TEQFP -208																											30 x 4	ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D Graphic Engine, Display Output x 2ch, Sound system			
	S6J327CKU		TEQFP -216 (0.4mm pitch)																											32 x 4	ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D Graphic Engine, Display Output x 2ch, Sound system			
	S6J327CLS		TEQFP -208																											30 x 4	ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D Graphic Engine, Display Output x 2ch, Sound system			
	S6J327CLU		TEQFP -216 (0.4mm pitch)																											32 x 4	ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D+3D Graphic Engine, Display Output x 2ch, FPD-Link, Sound system			
	S6J328CKS		TEQFP -208																											30 x 4	ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch,			
	S6J328CKU		TEQFP -216 (0.4mm pitch)																											32 x 4	ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D+3D Graphic Engine, Display Output x 2ch, FPD-Link, Sound system			
	S6J328CLS		TEQFP -216 (0.4mm pitch)																											32 x 4	ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D+3D Graphic Engine, Display Output x 2ch, FPD-Link, Sound system			

CYPRESS SEMICONDUCTOR | MICROCONTROLLER PRODUCT SELECTOR GUIDE

* In development; **Planning

F²MC-16FX – 16bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch/unit]	12bit AD Converter [ch/unit]	DA Converter [bit x ch]	Timer										Serial		Communication			Note	Evaluation Device																																																						
																	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]			USB-Function [ch]	LCD Controller [seg x cm]	Three-phase Inverter																																																			
AUTOMOTIVE																																																																																							
MB96340	MB96345RS	56	LQFP-100	3.0 to 5.5	-	MASK	160K	8K	-	6	16	✓	24(1)	-	-	8	2	8	4+1 (Dedicated for PPG)	-	16	-	-	2	-	-	7	2	-	-	-	-	Option without CAN	MB96V300C																																																					
	MB96345RW				✓		288K	16K																											80																																																				
	MB96346RS				-		82																																																																																
	MB96346RW	✓			80																																																																																		
	MB96F345DS	-			82																																																																																		
	MB96F345DW	✓			160K +64K		8K	80																																																																															
	MB96F346AS	-			288K	16K	-	6		16	✓	24(1)																							-	-	8	2	8	4+1 (Dedicated for PPG)	-	16	-	-	2	-	-	7	2	-	-	-	-	Option without CAN	MB96V300C																																
	MB96F346AW	✓																																																						80																															
	MB96F346RS	-																																																						82																															
	MB96F346RW	✓																																																						80																															
	MB96F347AS	-																																																						82																															
	MB96F347AW	✓																																																						80																															
	MB96F347RS	-	416K	24K	-	6		16	✓	24(1)	-		-	8	2	8	4+1 (Dedicated for PPG)	-	16	-	-	2	-	-	7	2	-	-	-	-	Option without CAN	MB96V300C																																																							
	MB96F347RW	✓																															80																																																						
	MB96F348AS	-																															82																																																						
	MB96F348AW	✓																															80																																																						
	MB96F348RS	-																															82																																																						
	MB96F348RW	✓																															80																																																						
	MB96F348HS	-	544K +32K	24K		-	6	16	✓			24(1)																					-	-	8	2	8	4+1 (Dedicated for PPG)	-	16	-	-	2	-	-	7	2	-	-	-	-	Option without CAN	MB96V300C																																		
	MB96F348RS	✓																																																				80																																	
MB96F348RW	✓	80																																																																																					
MB96F348HS	-	82																																																																																					
MB96F348HW	✓	80																																																																																					
MB96F348HW	✓	80																																																																																					
MB96350	MB96F353AS	56	LQFP-64	3.0 to 5.5	-		FLASH	96K	8K	-	4		13	✓	15(1)	-	-	4	4	6+3 (Dedicated for LIN)	4+1 (Dedicated for PPG)	-	-	20	-	-	1	-	-	4	1	-																						-	-	-	Option without CAN	MB96V300C																													
	MB96F353AW				✓			160K																																																			49																												
	MB96F353RS				-			51																																																																															
	MB96F353RW				✓			49																																																																															
	MB96F355AS				-			51																																																																															
	MB96F355AW				✓			49																																																																															
	MB96F355RS				-	51																																																																																	
	MB96F355RW				✓	49																																																																																	
	MB96F356AS				-	51																																																																																	
	MB96F356AW				✓	49																																																																																	
	MB96F356RS				-	51																																																																																	
	MB96F356RW				✓	49																																																																																	
	MB96F378HS				-	544K +32K		28K				-																					7	8	✓	22(1)	-	-	6	2	8	4+1 (Dedicated for PPG)	-	-	12	-	-	2	-	-	6	2	-						-	72 x 4	-	SMC x 6ch Sound generator x 2ch	MB96V300C																								
	MB96F378HW				✓	832K		32K																																																								118																							
MB96F379RS	-	120																																																																																					
MB96F379RW	✓	118																																																																																					
MB96380	MB96384RS	56	LQFP-120	3.0 to 5.5	-	MASK	128K	6K	-	7	8		✓	16(1)	-	-	4	2	8	4+1 (Dedicated for PPG)	5	-	8	-	-	1	-	-	5	1	-	-																						65 x 4	-	SMC x 5ch Sound generator x 2ch	MB96V300C																														
	MB96384RW				✓		160K	8K																																																		94																													
	MB96385RS				-		96																																																																																
	MB96385RW				✓		94																																																																																
	MB96F385RS				-		96																																																																																
	MB96F385RW				✓		94																																																																																
	MB96F386RS	-			288K	16K	-	7		8	✓		16(1)																																													-						-	4	2	8	4+1 (Dedicated for PPG)	5	-	8	-	-	1	-	-	5	1	-	-	65 x 4	-	SMC x 5ch Sound generator x 2ch	MB96V300C			
	MB96F386RW	✓																																																																																			160K	6K	94
	MB96F387RS	-																																																																																			96		
	MB96F387RW	✓																																																																																			94		
	MB96F388HS	-										96																																																																											
	MB96F388HW	✓										94																																																																											
	MB96F389RS	-	544K +32K	28K	-	7		8	✓	16(1)	-	-		4	2	8	4+1 (Dedicated for PPG)	5	-	8	-	-	1	-	-	5	1	-	-	65 x 4	-	SMC x 5ch Sound generator x 2ch	MB96V300C																																																						
	MB96F389RW	✓																																160K	32K	94																																																			
MB96F389RS	-	96																																																																																					
MB96F389RW	✓	94																																																																																					
MB96393RS	-	96K																																5K	-	-	-	8	-	11(1)	-	-	4	2	4	4+1 (Dedicated for PPG)	4	-	4	-	-	1	-	-	3	1	-		-	49 x 4	-	SMC x 4ch Sound generator x 1ch	MB96V300C																								
MB96393RW	✓	160K																																8K																																																			74		
MB96395RS	-	76																																																																																					
MB96395RW	✓	74																																																																																					
MB96F395RS	-	76																																																																																					
MB96F395RW	✓	74																																																																																					

F2MC-16FX – 16bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch (unit)]	12bit AD Converter [ch (unit)]	DA Converter [bit x ch]	Timer										Serial			Communication			LCD Controller [seg x con]	Three-phase Inverter	Note	Evaluation Device
																	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I ² C [ch]	UART/SSI [ch]	IO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]				
AUTOMOTIVE																																				
MB96610	MB96F612A	32	LQFP-48	2.7 to 5.5	✓	Dual Op. Flash	32.5K +32K	4K	-	2	11	-	37 (Single clock) 35 (Dual clock)	16(1)	-	-	5	4	4 +3 (Dedicated for LIN)	2 +1 (Dedicated for PPG)	-	-	8bit x 16 16bit x 8	-	QPRC x 2	-	-	-	3	-	-	-	-	-	Option without CAN	On-chip Debug
	MB96F612R						64.5K +32K																							1						
	MB96F613A						128.5K +32K																							1						
	MB96F615A						128.5K +32K																							1						
	MB96F615R						128.5K +32K																							1						
MB96620	MB96F622A	32	LQFP-64	2.7 to 5.5	✓	Dual Op. Flash	32.5K +32K	4K	-	2	13	-	52 (Single clock) 50 (Dual clock)	21(1)	-	-	6	4	6 +2 (Dedicated for LIN)	2 +1 (Dedicated for PPG)	-	-	8bit x 16 16bit x 8	-	QPRC x 2	1	-	-	3	-	-	-	-	-	Option without CAN	On-chip Debug
	MB96F622R						64.5K +32K																							1						
	MB96F623A						128.5K +32K																							1						
	MB96F623R						128.5K +32K																							1						
	MB96F625A						128.5K +32K																							1						
MB96630	MB96F633A	32	LQFP-80	2.7 to 5.5	✓	Dual Op. Flash	64.5K +32K	10K	-	4	15	-	64 (Single clock) 66 (Dual clock)	21(1)	-	-	7	3	6 +1 (Dedicated for LIN)	3	-	-	8bit x 20 16bit x 15	-	QPRC x 2	2	-	-	5	-	-	-	-	-	Option without CAN	On-chip Debug
	MB96F633R						128.5K +32K																							1						
	MB96F635A						256.5K +32K																							1						
	MB96F635R						384.5K +32K																							1						
	MB96F636R						384.5K +32K																							1						
MB96640	MB96F643A	32	LQFP-100	2.7 to 5.5	✓	Dual Op. Flash	64.5K +32K	10K	-	4	16	-	81 (Single clock) 79 (Dual clock)	24(1)	-	-	7	3	6 +1 (Dedicated for LIN)	5	-	-	8bit x 24 16bit x 16	-	QPRC x 2	2	-	-	6	-	-	-	-	-	Option without CAN	On-chip Debug
	MB96F643R						128.5K +32K																							1						
	MB96F645A						256.5K +32K																							1						
	MB96F645R						384.5K +32K																							1						
	MB96F646R						384.5K +32K																							1						
MB96650	MB96F653A	32	LQFP-120	2.7 to 5.5	✓	Dual Op. Flash	64.5K +32K	10K	-	4	16	-	101 (Single clock) 99 (Dual clock)	29(1)	-	-	7	3	6 +1 (Dedicated for LIN)	5	-	-	8bit x 32 16bit x 16	-	QPRC x 2	2	-	-	6	-	-	-	-	-	Option without CAN	On-chip Debug
	MB96F653R						128.5K +32K																							1						
	MB96F655A						256.5K +32K																							1						
	MB96F655R						384.5K +32K																							1						
	MB96F656R						384.5K +32K																							1						
MB96670	MB96F673A	32	LQFP-64	2.7 to 5.5	✓	Dual Op. Flash	64.5K +32K	4K	-	2	7	-	50 (Single clock) 48 (Dual clock)	12(1)	-	-	-	2	4	3	-	-	8bit x 8 16bit x 4	-	-	1	-	-	2	-	-	24 x 4	-	SMC x 2ch Sound generator Option without CAN	On-chip Debug	
	MB96F673R						128.5K +32K																							1						
	MB96F675A						128.5K +32K																							1						
	MB96F675R						128.5K +32K																							1						
MB96680	MB96F683A	32	LQFP-80	2.7 to 5.5	✓	Dual Op. Flash	64.5K +32K	4K	-	2	7	-	65 (Single clock) 63 (Dual clock)	14(1)	-	-	-	2	4	3	-	-	8bit x 8 16bit x 4	-	-	1	-	-	2	-	-	32 x 4	-	SMC x 2ch Sound generator Option without CAN	On-chip Debug	
	MB96F683R						128.5K +32K																							1						
	MB96F685A						128.5K +32K																							1						
	MB96F685R						128.5K +32K																							1						
MB96690	MB96F693A	32	LQFP-100	2.7 to 5.5	✓	Dual Op. Flash	64.5K +32K	8K	-	4	16	-	79 (Single clock) 77 (Dual clock)	27(1)	-	-	4	2	6	5	-	-	8bit x 14 16bit x 10	-	-	1	-	-	5	-	-	36 x 4	-	SMC x 4ch Sound generator x 2ch Option without CAN	On-chip Debug	
	MB96F693R						128.5K +32K																							1						
	MB96F695A						128.5K +32K																							1						
	MB96F695R						256.5K +32K																							1						
MB966A0	MB96F6A5A	32	LQFP-120	2.7 to 5.5	✓	Dual Op. Flash	128.5K +32K	8K	-	4	16	-	97 (Single clock) 95 (Dual clock)	32(1)	-	-	4	2	8	5	-	-	8bit x 24 16bit x 12	-	-	1	-	-	5	-	-	44 x 4	-	SMC x 5ch Sound generator x 2ch Option without CAN	On-chip Debug	
	MB96F6A5R						256.5K +32K																							1						
	MB96F6A6R						256.5K +32K																							1						
MB966B0	MB96F6B5A	32	LQFP-100	2.7 to 5.5	✓	Dual Op. Flash	128.5K +32K	8K	-	4	16	-	79 (Single clock) 77 (Dual clock)	27(1)	-	-	4	2	6	5	-	-	8bit x 16 16bit x 12	-	QPRC x 2	1	-	-	5	-	-	36 x 4	-	Sound generator x 2ch Option without CAN	On-chip Debug	
	MB96F6B5R						256.5K +32K																							1						
	MB96F6B6R						256.5K +32K																							1						
MB966C0	MB96F6C5A	32	LQFP-120	2.7 to 5.5	✓	Dual Op. Flash	128.5K +32K	8K	-	4	16	-	99 (Single clock) 97 (Dual clock)	32(1)	-	-	4	2	8	5	-	-	8bit x 24 16bit x 12	-	QPRC x 2	1	-	-	5	-	-	44 x 4	-	Sound generator x 2ch Option without CAN	On-chip Debug	
	MB96F6C5R						256.5K +32K																							1						
	MB96F6C6R						256.5K +32K																							1						



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