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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-8FX
Core Size	8-Bit
Speed	16MHz
Connectivity	I ² C, LINbus, SIO, UART/USART
Peripherals	LVD, POR, PWM, WDT
Number of I/O	58
Program Memory Size	60KB (60K x 8)
Program Memory Type	FLASH
EEPROM Size	-
RAM Size	2K x 8
Voltage - Supply (Vcc/Vdd)	2.88V ~ 5.5V
Data Converters	A/D 12x8/10b
Oscillator Type	External
Operating Temperature	-40°C ~ 85°C (TA)
Mounting Type	Surface Mount
Package / Case	64-LQFP
Supplier Device Package	64-LQFP (10x10)
Purchase URL	https://www.e-xfl.com/product-detail/infiniteon-technologies/mb95f818knpmc1-g-sne2

Consumer and Industrial MCU Family



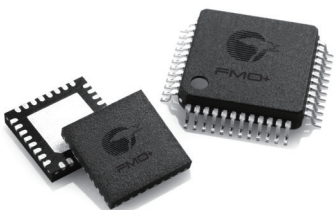
FM4 FAMILY

Cypress ARM® Cortex®-M4F microcontroller family is a high range line providing maximum CPU frequency of 200MHz, a high speed flash memory with DSP and FPU hardware instructions. Customers can select the best fitting device from a range of products, coming in packages from 48 pin to 216 pin and flash memory densities between 256KB and 2MB. The wide operation supply voltage range up to 5.5V which improves the signal to noise ratio, results in a robust design and is unique among Cortex-M4F microcontroller families. The MCUs are designed for applications that require advanced, high-speed computing performance such as general-purpose inverters, servomotors, PLCs and other industrial equipment, as well as inverter-based home appliances such as washing machines and air conditioners.



FM3 FAMILY

Cypress ARM Cortex-M3 microcontroller family is a scalable platform for many industrial applications. Customers can select the best fitting device from a range of products, coming in packages from 32 pin to 176 pin and flash memory densities between 32KB and 1MB. With a maximum CPU frequency of 144MHz and high speed flash memory, FM3 supports the fastest ARM Cortex-M3 devices on the market. The wide operation supply voltage range up to 5.5V, which improves the signal to noise ratio, results in a robust design and is quite unique among Cortex-M3 microcontroller families. The FM3 MCU family is split into four groups: high performance, basic, low power and ultra low leakage groups. The main differences between the groups are CPU operation frequency and supply voltage. All products are based on the same architecture (software compatible), use the same peripherals and are pin compatible in most cases. The ultra low leakage line products are based on an optimized low leakage process technology. Development tools and evaluation boards are offered from different vendors and Cypress.



FM0+ FAMILY

The Cypress FM0+ family, which is based on the ARM Cortex-M0+ core, is designed for low power and cost-sensitive applications such as white goods, sensors, meters, HMI systems, power tools and Internet of Things (IoT) battery powered or energy harvesting wearable devices. These microcontrollers can be easily embedded into systems adopting 8-, 16- or 32-bit MCUs, accelerating product development and reducing development costs. The FM0+ family includes two groups for ultra-low-power and cost-effective applications. The devices in the ultra-low-power group have an operating voltage range of 1.65V to 3.6V, and a maximum CPU clock frequency of 40MHz, a RUN mode current of 70 μ A/MHz, an RTC mode current of 0.7 μ A and wake-up time of approximately 40 μ s.

8FX FAMILY

Cypress 8FX MCU family is a high-performance 8-bit microcontroller utilizing a different embedded flash memory size. This series uses the F2MC-8FX CISC CPU, which offers industry leading class performance of an 8-bit microcontroller unit enabling more instructions to be executed per cycle. On top of delivering industry class performance MCUs, the 8FX family also delivers low power efficient MCU products for the customer's usage. This series also features a variety of on-chip timers, A/D converters, analog and digital peripheral and communication interfaces such as LIN-UART (Local Interconnect Network Universal Asynchronous Receiver-Transmitter), CAN (controller area network) and I2C (Inter-Integrated Circuit) interface for various application usages. For easy development, the 8FX family also employs a 1-line on-chip debug that uses only one pin on the microcontroller, thereby minimizing the number of pins used for debugging in product development. Cypress also provides easy to use and cost competitive development starter kits and development environments for this MCU series.

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]	DMA0 [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]	LIN/UART/SIO [ch]				
S6E2HG	S6E2HG6E0A	160	LQFP-80	2.7 to 5.5	✓	Main Flash +Work Flash	512K + 32K	64K	-	8	16	✓	63	-	16 (3)	-	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	2	-	-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC	On-Chip Debug (SWJ-DP/ ETM)						
	LQFP-100		80										24 (3)																				
	S6E2HG6G0A		LQFP-120 BGA-121										100																				
	S6E2HG4E0A	160	LQFP-80	2.7 to 5.5	Main Flash +Work Flash	256K + 32K	32K	-	8	16	✓	63	-	16 (3)	-																		
	S6E2HG4F0A		LQFP-100									80		24 (3)																			
S6E2HG4G0A	LQFP-120 BGA-121		100																														
S6E2HE	S6E2HE6E0A	160	LQFP-80	2.7 to 5.5	✓	Main Flash +Work Flash	512K + 32K	64K	-	8	16	✓	63	-	16 (3)	-	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	-	-	-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC	On-Chip Debug (SWJ-DP/ ETM)						
	S6E2HE6F0A		LQFP-100										80		24 (3)																		
	S6E2HE6G0A		LQFP-120 BGA-121										100																				
	S6E2HE4E0A	160	LQFP-80	2.7 to 5.5	Main Flash +Work Flash	256K + 32K	32K	-	8	16	✓	63	-	16 (3)	-																		
	S6E2HE4F0A		LQFP-100									80		24 (3)																			
S6E2HE4G0A	LQFP-120 BGA-121		100																														
S6E2H4	S6E2H46E0A	160	LQFP-80	2.7 to 5.5	✓	Main Flash +Work Flash	512K + 32K	64K	-	8	16	✓	63	-	16 (3)	-	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	2	-	-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch	On-Chip Debug (SWJ-DP/ ETM)						
	S6E2H46F0A		LQFP-100										80		24 (3)																		
	S6E2H46G0A		LQFP-120 BGA-121										100																				
	S6E2H44E0A	160	LQFP-80	2.7 to 5.5	Main Flash +Work Flash	256K + 32K	32K	-	8	16	✓	63	-	16 (3)	-																		
	S6E2H44F0A		LQFP-100									80		24 (3)																			
S6E2H44G0A	LQFP-120 BGA-121		100																														
S6E2H1	S6E2H16E0A	160	LQFP-80	2.7 to 5.5	✓	Main Flash +Work Flash	512K + 32K	64K	-	8	16	✓	63	-	16 (3)	-	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	-	-	-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch	On-Chip Debug (SWJ-DP/ ETM)						
	S6E2H16F0A		LQFP-100										80		24 (3)																		
	S6E2H16G0A		LQFP-120 BGA-121										100																				
	S6E2H14E0A	160	LQFP-80	2.7 to 5.5	Main Flash +Work Flash	256K + 32K	32K	-	8	16	✓	63	-	16 (3)	-																		
	S6E2H14F0A		LQFP-100									80		24 (3)																			
S6E2H14G0A	LQFP-120 BGA-121		100																														
S6E2GM w/security	S6E2GM8HHA	180	LQFP-144	2.7 to 5.5	✓	Main Flash	1024K	192K	-	8	32	✓	121	-	24 (3)	-	Multi-Function Timer x2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 6ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	-	Multi Function Serial x 10ch (UART/CSIO/I2C/LIN Selectable)	1	2ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, Tiny I2S, Smart Card I/F, ETH, SDC, Chipher	On-Chip Debug (SWJ-DP/ ETM)						
	S6E2GM8JHA		LQFP-176										153		32 (3)																		
	S6E2GM6HHA		LQFP-144				121	24 (3)																									
	S6E2GM6JHA		LQFP-176				153	32 (3)																									
S6E2GM	S6E2GM8H0A	180	LQFP-144	2.7 to 5.5	✓	Main Flash	1024K	192K	-	8	32	✓	121	-	24 (3)	-	Multi-Function Timer x2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 6ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	-	Multi Function Serial x 10ch (UART/CSIO/I2C/LIN Selectable)	1	2ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, Tiny I2S, Smart Card I/F, ETH, SDC	On-Chip Debug (SWJ-DP/ ETM)						
	S6E2GM8J0A		LQFP-176										153		32 (3)																		
	S6E2GM6H0A		LQFP-144				121	24 (3)																									
	S6E2GM6J0A		LQFP-176				153	32 (3)																									
S6E2GK w/security	S6E2GK8HHA	180	LQFP-144	2.7 to 5.5	✓	Main Flash	1024K	192K	-	8	32	✓	121	-	24 (3)	-	Multi-Function Timer x2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 6ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	-	Multi Function Serial x 10ch (UART/CSIO/I2C/LIN Selectable)	-	2ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, Tiny I2S, Smart Card I/F, ETH, SDC, Chipher	On-Chip Debug (SWJ-DP/ ETM)						
	S6E2GK8JHA		LQFP-176										153		32 (3)																		
	S6E2GK6HHA		LQFP-144				121	24 (3)																									
	S6E2GK6JHA		LQFP-176				153	32 (3)																									
S6E2GK	S6E2GK8H0A	180	LQFP-144	2.7 to 5.5	✓	Main Flash	1024K	192K	-	8	32	✓	121	-	24 (3)	-	Multi-Function Timer x2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 6ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	-	Multi Function Serial x 10ch (UART/CSIO/I2C/LIN Selectable)	-	2ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, Tiny I2S, Smart Card I/F, ETH, SDC	On-Chip Debug (SWJ-DP/ ETM)						
	S6E2GK8J0A		LQFP-176										153		32 (3)																		
	S6E2GK6H0A		LQFP-144				121	24 (3)																									
	S6E2GK6J0A		LQFP-176				153	32 (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/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]					USB-Host [ch]	USB-Function [ch]								
S6E2GH	S6E2GH8H0A	180	LQFP-144	2.7 to 5.5	✓	Main Flash	1024K	192K	-	8	32	✓	121	-	24 (3)	-	Multi-Function Timer x2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 6ch				Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 4				Multi Function Serial x 10ch (UART/CSIO/I2C/LIN Selectable)				1	2ch (USB-Host/ USB-Function Selectable)		-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC*256ch, Tiny I2S, Smart Card I/F, SDC	On-Chip Debug (SWJ-DP/ ETM)					
	S6E2GH8J0A		LQFP-176																																									
	S6E2GH6H0A		LQFP-144				512K	128K						121	-	24 (3)																												
	S6E2GH6J0A		LQFP-176																																									
S6E2G3	S6E2G38H0A	180	LQFP-144	2.7 to 5.5	✓	Main Flash	1024K	192K	-	8	32	✓	121	-	24 (3)	-	Multi-Function Timer x2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 6ch				Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 4				Multi Function Serial x 10ch (UART/CSIO/I2C/LIN Selectable)				-	2ch (USB-Host/ USB-Function Selectable)		-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC*256ch, Tiny I2S, Smart Card I/F	On-Chip Debug (SWJ-DP/ ETM)					
	S6E2G38J0A		LQFP-176																																									
	S6E2G36H0A		LQFP-144				512K	128K						121	-	24 (3)																												
	S6E2G36J0A		LQFP-176																																									
S6E2G2 w/security	S6E2G28HHA	180	LQFP-144	2.7 to 5.5	✓	Main Flash	1024K	192K	-	8	32	✓	121	-	24 (3)	-	Multi-Function Timer x2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 6ch				Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 4				Multi Function Serial x 10ch (UART/CSIO/I2C/LIN Selectable)				-	2ch (USB-Host/ USB-Function Selectable)		-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC*256ch, Tiny I2S, Smart Card I/F, ETH, Chipper	On-Chip Debug (SWJ-DP/ ETM)					
	S6E2G28JHA		LQFP-176																																									
	S6E2G26HHA		LQFP-144				512K	128K						121	-	24 (3)																												
	S6E2G26JHA		LQFP-176																																									
S6E2G2	S6E2G28H0A	180	LQFP-144	2.7 to 5.5	✓	Main Flash	1024K	192K	-	8	32	✓	121	-	24 (3)	-	Multi-Function Timer x2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 6ch				Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 4				Multi Function Serial x 10ch (UART/CSIO/I2C/LIN Selectable)				-	2ch (USB-Host/ USB-Function Selectable)		-	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC*256ch, Tiny I2S, Smart Card I/F, ETH	On-Chip Debug (SWJ-DP/ ETM)					
	S6E2G28J0A		LQFP-176																																									
	S6E2G26H0A		LQFP-144				512K	128K						121	-	24 (3)																												
	S6E2G26J0A		LQFP-176																																									
S6E2DH	S6E2DH5G0A	160	LQFP-120 TEQFP-120 BGA-161	2.7-3.6	✓	Main Flash	384K	36K	-	8	16	✓	98	-	24 (3)	-	Multi-Function Timer x 3units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG6ch				Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)				QPRC x 1	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)				1	1ch (USB-Host/ USB-Function Selectable)		-	-	Dual Timer, Real Timer Clock, Unique ID, DSTC x128ch, CAN-FD 1ch, SDC, I2S 2ch, High Speed Quad SPI x1, Hyper Bus x1, GDC	On-Chip Debug (SWJ-DP/ETM)							
	S6E2DH5GJA		LQFP-120 (SiP)										90																															
	S6E2DH5J0A		LQFP-176										154																															
S6E2DF	S6E2DF5G0A	160	LQFP-120 TEQFP-120 BGA-161	2.7-3.6	✓	Main Flash	384K	36K	-	8	16	✓	98	-	24 (3)	-	Multi-Function Timer x 3units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG6ch				Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)				QPRC x 1	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)				1	1ch (USB-Host/ USB-Function Selectable)		-	-	Dual Timer, Real Timer Clock, Unique ID, DSTC x128ch, CAN-FD 1ch, SDC, I2S 2ch, High Speed Quad SPI x1, Hyper Bus x1, GDC	On-Chip Debug (SWJ-DP/ETM)							
	S6E2DF5GJA		LQFP-120 (SiP)										90																															
	S6E2DF5J0A		LQFP-176										154																															
S6E2D5	S6E2D55G0A	160	LQFP-120 TEQFP-120 BGA-161	2.7-3.6	✓	Main Flash	384K	36K	-	8	16	✓	98	-	24 (3)	-	Multi-Function Timer x 3units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG6ch				Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)				QPRC x 1	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)				-	1ch (USB-Host/ USB-Function Selectable)		-	-	Dual Timer, Real Timer Clock, Unique ID, DSTC x128ch, SDC, I2S 2ch, High Speed Quad SPI x1, Hyper Bus x1, GDC	On-Chip Debug (SWJ-DP/ETM)							
	S6E2D55GJA		LQFP-120 (SiP)										90																															
	S6E2D55J0A		LQFP-176										154																															
S6E2D3	S6E2D35G0A	160	LQFP-120 TEQFP-120 BGA-161	2.7-3.6	✓	Main Flash	384K	36K	-	8	16	✓	98	-	24 (3)	-	Multi-Function Timer x 3units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG6ch				Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)				QPRC x 1	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)				-	1ch (USB-Host/ USB-Function Selectable)		-	-	Dual Timer, Real Timer Clock, Unique ID, DSTC x128ch, I2S 2ch, High Speed Quad SPI x1, Hyper Bus x1, GDC	On-Chip Debug (SWJ-DP/ETM)							
	S6E2D35GJA		LQFP-120 (SiP)										90																															
	S6E2D35J0A		LQFP-176										154																															

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]	DAC 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]		
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)						
	LQFP-176 BGA-192																															
	LQFP-216																															
	LQFP-144																															
	S6E2C4A9J0A		LQFP-176 BGA-192				1M	128K					LQFP-176 BGA-192																			
	S6E2C49L0A		LQFP-216										LQFP-176 BGA-192																			
	S6E2C48H0A		LQFP-144										LQFP-216																			
	S6E2C48J0A		LQFP-176 BGA-192										LQFP-216																			
S6E2C3	S6E2C3AH0A	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)	-	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)						
	LQFP-176 BGA-192																															
	LQFP-216																															
	LQFP-144																															
	S6E2C39J0A		LQFP-176 BGA-192				1M	128K					LQFP-176 BGA-192																			
	S6E2C39L0A		LQFP-216										LQFP-176 BGA-192																			
	S6E2C38H0A		LQFP-144										LQFP-216																			
	S6E2C38J0A		LQFP-176 BGA-192										LQFP-216																			
S6E2C2 w/ Security	S6E2C2AHHA	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)	-	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)						
	LQFP-176 BGA-192																															
	LQFP-216																															
	LQFP-144																															
	S6E2C29JHA		LQFP-176 BGA-192				1M	128K					LQFP-176 BGA-192																			
	S6E2C29LHA		LQFP-216										LQFP-176 BGA-192																			
	S6E2C28HHA		LQFP-144										LQFP-216																			
	S6E2C28JHA		LQFP-176 BGA-192										LQFP-216																			
S6E2C2	S6E2C2AH0A	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)	-	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)						
	LQFP-176 BGA-192																															
	LQFP-216																															
	LQFP-144																															
	S6E2C29J0A		LQFP-176 BGA-192				1M	128K					LQFP-176 BGA-192																			
	S6E2C29L0A		LQFP-216										LQFP-176 BGA-192																			
	S6E2C28H0A		LQFP-144										LQFP-216																			
	S6E2C28J0A		LQFP-176 BGA-192										LQFP-216																			
S6E2C1	S6E2C1AH0A	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)	-	-	-	✓	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)						
	LQFP-176 BGA-192																															
	LQFP-216																															
	LQFP-144																															
	S6E2C19J0A		LQFP-176 BGA-192				1M	128K					LQFP-176 BGA-192																			
	S6E2C19L0A		LQFP-216										LQFP-176 BGA-192																			
	S6E2C18H0A		LQFP-144										LQFP-216																			
	S6E2C18J0A		LQFP-176 BGA-192										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]	10bit AD Converter [ch/unit]	12bit AD Converter [ch/unit]	DAC Converter [bit x ch]	Timer								Serial				Communication				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]			
S6E2C1-E	S6E2C10H2A	200	LQFP-144	2.7 to 5.5	✓	-	0M	256K	-	8	32	✓	120	-	152	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 Time Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC, Chipper	On-Chip Debug (SWJ-DP/ETM/ HTM)								
	S6E2C10J2A		LQFP-176 BGA-192																																
	S6E2C10L2A		LQFP-216																																
MB9B560R	MB9BF566M	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/I2C/LIN Selectable)	2	1ch (USB-Host/ USB-Function Selectable)	-	✓	CAN: 32Msg-buffer, Dual Timer, Real Time Clock, DSTC x 128ch, Unique ID, SD Card I/F	On-chip Debug (SWJ-DP/ETM)									
	MB9BF566N		LQFP-100 QFP-100 BGA-112																								80	24(3)							
	MB9BF566R		LQFP-120 BGA-144																								100	16(3)							
	MB9BF567M		LQFP-80				63	16(3)					80	24(3)			100	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, Real Time Clock, DSTC x 128ch, Unique ID, SD Card I/F	On-chip Debug (SWJ-DP/ETM)									
	MB9BF567N		LQFP-100 QFP-100 BGA-112				63	16(3)																											
	MB9BF567R		LQFP-120 BGA-144				100	24(3)																											
	MB9BF568M		LQFP-80				63	16(3)					80	24(3)			100	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, Real Time Clock, DSTC x 128ch, Unique ID, SD Card I/F	On-chip Debug (SWJ-DP/ETM)									
	MB9BF568N		LQFP-100 QFP-100 BGA-112				63	16(3)																											
	MB9BF568R		LQFP-120 BGA-144				100	24(3)																											
MB9B460R	MB9BF466M	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/I2C/LIN Selectable)	2	-	-	-	✓	CAN: 32Msg-buffer, Dual Timer, Real Time Clock, DSTC x 128ch, Unique ID, SD Card I/F	On-chip Debug (SWJ-DP/ETM)								
	MB9BF466N		LQFP-100 QFP-100 BGA-112																									80	24(3)						
	MB9BF466R		LQFP-120 BGA-144																									100	16(3)						
	MB9BF467M		LQFP-80				63	24(3)																											
	MB9BF467N	LQFP-100 QFP-100 BGA-112	80	24(3)	80	24(3)	100	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	2	-	-	-	✓	CAN: 32Msg-buffer, Dual Timer, Real Time Clock, DSTC x 128ch, Unique ID, SD Card I/F	On-chip Debug (SWJ-DP/ETM)																		
	MB9BF467R	LQFP-120 BGA-144	100	24(3)																															
	MB9BF468M	LQFP-80	63	16(3)														80	24(3)	100	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	2	-	-	-	✓	CAN: 32Msg-buffer, Dual Timer, Real Time Clock, DSTC x 128ch, Unique ID, SD Card I/F	On-chip Debug (SWJ-DP/ETM)					
	MB9BF468N	LQFP-100 QFP-100 BGA-112	80	24(3)																															
MB9BF468R	LQFP-120 BGA-144	100	24(3)																																
MB9B360R	MB9BF366M	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)	-	1ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Real Time Clock, Unique ID, SD Card I/F	On-chip Debug (SWJ-DP/ETM)									
	MB9BF366N		LQFP-100 QFP-100 BGA-112																								80	24(3)							
	MB9BF366R		LQFP-120 BGA-144																								100	16(3)							
	MB9BF367M		LQFP-80				63	16(3)					80	24(3)			100	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I ² C/LIN Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Real Time Clock, Unique ID, SD Card I/F	On-chip Debug (SWJ-DP/ETM)									
	MB9BF367N		LQFP-100 QFP-100 BGA-112				63	16(3)																											
	MB9BF367R		LQFP-120 BGA-144				100	24(3)																											
	MB9BF368M		LQFP-80				63	16(3)					80	24(3)			100	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I ² C/LIN Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Real Time Clock, Unique ID, SD Card I/F	On-chip Debug (SWJ-DP/ETM)									
	MB9BF368N		LQFP-100 QFP-100 BGA-112				63	16(3)																											
	MB9BF368R		LQFP-120 BGA-144				100	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			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																																
	63		16(3)																														
	MB9BF167M		LQFP-80				768K +32K	96K					63		16(3)																		
	MB9BF167N		LQFP-100 QFP-100 BGA-112										80		24(3)																		
	MB9BF167R		LQFP-120 BGA-144										100																				
	MB9BF168M		LQFP-80										63		16(3)																		
	MB9BF168N		LQFP-100 QFP-100 BGA-112				1024K +32K	128K					80		24(3)																		
MB9BF168R	LQFP-120 BGA-144	100																															
MB9B560L	MB9BF564K	160	LQFP-48 QFN-48	2.7 to 5.5	✓	Main Flash +Work Flash	256K +32K	32K	-	8	-	-	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										48		15(2)																		
	MB9BF565K		LQFP-48 QFN-48										33		8(2)																		
	MB9BF565L		LQFP-64 QFN-64										48		15(2)																		
	MB9BF566K	160	LQFP-48 QFN-48	2.7 to 5.5	✓	Main Flash +Work Flash	512K +32K	64K	-	8	-	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											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]																																
MB9B160L	MB9BF164K	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)	-	-	-	-	✓	Dual Timer, Real Time Clock, Unique ID, DSTC x 128ch	On-chip Debug (SWJ-DP)																																								
	MB9BF164L		LQFP-64 QFN-64																																																																	
	MB9BF165K		LQFP-48 QFN-48				384K +32K	48K																					-	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)	-	-	-	-	✓	Dual Timer, Real Time Clock, Unique ID, DSTC x 128ch	On-chip Debug (SWJ-DP)																					
	MB9BF165L		LQFP-64 QFN-64																																																																	
	MB9BF166K		LQFP-48 QFN-48																																													512K +32K	64K	-	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)	-	-	-	-	✓	Dual Timer, Real Time Clock, Unique ID, DSTC x 128ch	On-chip Debug (SWJ-DP)
	MB9BF166L		LQFP-64 QFN-64																																																																	

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		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 [bit]	i²C [bit]	UART/SIO [ch]	SIO [ch]	LIN/UART/SIO [ch]				
HIGH-PERFORMANCE GROUP																																	
MB9BD10T	MB9BFD16T	144	LQFP-176 BGA-192	2.7 to 5.5	✓	FLASH	512K	64K	-	8	32	✓	154	32(3)	-	Multi-Function Timer x 3units (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 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	2	2ch (USB-Host/ USB-Function Selectable)	-	✓	CAN: 32Msg-buffer, Dual Timer, Ethernet-MAC x 2ch	On-chip Debu (SWJ-DP/ETM)							
	MB9BFD16S		LQFP-144				122	24(3)																									
	MB9BFD17T		LQFP-176 BGA-192				154	32(3)																									
	MB9BFD17S		LQFP-144				122	24(3)																									
	MB9BFD18T		LQFP-176 BGA-192				154	32(3)																									
	MB9BFD18S		LQFP-144				122	24(3)																									
MB9B610T	MB9BF616T	144	LQFP-176 BGA-192	2.7 to 5.5	✓	FLASH	512K	64K	-	8	32	✓	154	32(3)	-	Multi-Function Timer x 3units (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 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	-	2ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Ethernet-MAC x 2ch	On-chip Debu (SWJ-DP/ETM)							
	MB9BF616S		LQFP-144				122	24(3)																									
	MB9BF617T		LQFP-176 BGA-192				154	32(3)																									
	MB9BF617S		LQFP-144				122	24(3)																									
	MB9BF618T		LQFP-176 BGA-192				154	32(3)																									
	MB9BF618S		LQFP-144				122	24(3)																									
MB9B510T	MB9BF516T	144	LQFP-176 BGA-192	2.7 to 5.5	✓	FLASH	512K	64K	-	8	32	✓	154	32(3)	-	Multi-Function Timer x 3units (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 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	2	2ch (USB-Host/ USB-Function Selectable)	-	✓	CAN: 32Msg-buffer, Dual Timer	On-chip Debu (SWJ-DP/ETM)							
	MB9BF516S		LQFP-144				122	24(3)																									
	MB9BF517T		LQFP-176 BGA-192				154	32(3)																									
	MB9BF517S		LQFP-144				122	24(3)																									
	MB9BF518T		LQFP-176 BGA-192				154	32(3)																									
	MB9BF518S		LQFP-144				122	24(3)																									
MB9B410T	MB9BF416T	144	LQFP-176 BGA-192	2.7 to 5.5	✓	FLASH	512K	64K	-	8	32	✓	154	32(3)	-	Multi-Function Timer x 3units (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 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	2	-	-	-	✓	CAN: 32Msg-buffer, Dual Timer	On-chip Debu (SWJ-DP/ETM)						
	MB9BF416S		LQFP-144				122	24(3)																									
	MB9BF417T		LQFP-176 BGA-192				154	32(3)																									
	MB9BF417S		LQFP-144				122	24(3)																									
	MB9BF418T		LQFP-176 BGA-192				154	32(3)																									
MB9B310T	MB9BF316T	144	LQFP-176 BGA-192	2.7 to 5.5	✓	FLASH	512K	64K	-	8	32	✓	154	32(3)	-	Multi-Function Timer x 3units (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 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	-	2ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer	On-chip Debu (SWJ-DP/ETM)							
	MB9BF316S		LQFP-144				122	24(3)																									
	MB9BF317T		LQFP-176 BGA-192				154	32(3)																									
	MB9BF317S		LQFP-144				122	24(3)																									
	MB9BF318T		LQFP-176 BGA-192				154	32(3)																									
	MB9BF318S		LQFP-144				122	24(3)																									
MB9B210T	MB9BF216T	144	LQFP-176 BGA-192	2.7 to 5.5	✓	FLASH	512K	64K	-	8	32	✓	154	32(3)	-	Multi-Function Timer x 3units (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 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	-	2ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Ethernet-MAC x 1ch	On-chip Debu (SWJ-DP/ETM)							
	MB9BF216S		LQFP-144				122	24(3)																									
	MB9BF217T		LQFP-176 BGA-192				154	32(3)																									
	MB9BF217S		LQFP-144				122	24(3)																									
	MB9BF218T		LQFP-176 BGA-192				154	32(3)																									
	MB9BF218S		LQFP-144				122	24(3)																									
MB9B110T	MB9BF116T	144	LQFP-176 BGA-192	2.7 to 5.5	✓	FLASH	512K	64K	-	8	32	✓	154	32(3)	-	Multi-Function Timer x 3units (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 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	-	-	-	-	✓	Dual Timer	On-chip Debu (SWJ-DP/ETM)						
	MB9BF116S		LQFP-144				122	24(3)																									
	MB9BF117T		LQFP-176 BGA-192				154	32(3)																									
	MB9BF117S		LQFP-144				122	24(3)																									
	MB9BF118T		LQFP-176 BGA-192				154	32(3)																									
	MB9BF118S		LQFP-144				122	24(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]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]					USB-Host [ch]	USB-Function [ch]			
BASIC GROUP																																							
MB9A310A	MB9AF311LA	40	LQFP-64 QFN-64	2.7 to 5.5	✓	FLASH	64K	16K	-	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				256K	32K		7	-	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)	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	On-chip Debug (SWJ-DP)				
	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]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]					USB-Host [ch]	USB-Function [ch]												
BASIC GROUP																																																
MB9A110A	MB9AF111LA	40	LQFP-64 QFN-64	2.7 to 5.5	✓	FLASH	64K	16K	-	8	-	51	-	9(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 2	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	-	-	-	-	✓	Dual Timer	On-chip Debug (SWJ-DP)																				
	MB9AF111MA		LQFP-80								11						66											12(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)	On-chip Debug (SWJ-DP/ETM)																		
	MB9AF111NA		LQFP-100 QFP-100 BGA-112								16						✓											83	16(3)	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	On-chip Debug (SWJ-DP)																	
	MB9AF112LA	40	LQFP-64 QFN-64				128K	16K	-	8	-	51	-	9(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 2	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	-	-	-	-	✓	Dual Timer	On-chip Debug (SWJ-DP)										
	MB9AF112MA		LQFP-80				11				66	12(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)	On-chip Debug (SWJ-DP)																																		
	MB9AF112NA		LQFP-100 QFP-100 BGA-112				16				✓	83	16(3)	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)			On-chip Debug (SWJ-DP/ETM)																															
	MB9AF114LA	40	LQFP-64 QFN-64				256K	32K	-	8	-	51	-	9(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 2	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	-	-	-	-	✓	Dual Timer	On-chip Debug (SWJ-DP)
	MB9AF114MA		LQFP-80								11	66		12(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)																															On-chip Debug (SWJ-DP/ETM)
	MB9AF114NA		LQFP-100 QFP-100 BGA-112								16	83	16(3)	On-chip Debug (SWJ-DP)																																		
	MB9AF115MA		LQFP-80				11				66	12(3)	On-chip Debug (SWJ-DP)																																			
	MB9AF115NA		LQFP-100 QFP-100 BGA-112**				16				✓	83	16(3)	On-chip Debug (SWJ-DP/ETM)																																		
	MB9AF116MA		LQFP-80				11				66	12(3)	On-chip Debug (SWJ-DP)																																			
	MB9AF116NA		LQFP-100 QFP-100 BGA-112**				16				83	16(3)	On-chip Debug (SWJ-DP/ETM)																																			
MB9A310K	MB9AF311K	40	LQFP-48 QFN-52 QFN-48	2.7 to 5.5	✓	Main Flash +Work Flash	64K +32K	16K	-	4	6	-	36	-	8(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)	-	1ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Real Time Clock																					On-chip Debug (SWJ-DP)
	MB9AF312K		128K +32K				Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)											On-chip Debug (SWJ-DP)																														
MB9A110K	MB9AF111K	40	LQFP-48 LQFP-52 QFN-48	2.7 to 5.5	✓	Main Flash +Work Flash	64K+ 32K	16K	-	4	6	-	36	-	8(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)	-	-	-	✓	Dual Timer, Real Time Clock																					On-chip Debug (SWJ-DP)

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 ² [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]					USB-Host [ch]	USB-Function [ch]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
LOW-POWER GROUP																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
MB9A150R	MB9AF154MA	40	LQFP-80 BGA-96	1.65 to 3.6	✓	Dual Op. Flash (Main area + Work area)	256K +32K	32K	-	8	23	66	-	17(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)	QPRC x 2	1	Base Timer x 15ch (Reload/PPG/PWM/ PWC 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 [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)														-	-	-	-	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/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	8	-	51	-	12(2)	-	-	-	-	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	-	1	Multi Function Serial x 8ch (UART/CSIO/FC Selectable)	-	-	-	-														Dual Timer, 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)	-	-	-	-	-	Dual Timer, 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)																															

FM0 + 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/S ¹ [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [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)							
	S6E1A11C0A		LQFP-48 QFN-52				37						8(1)																					
	S6E1A12B0A		LQFP-32 QFN-32				23						5(1)																					
	S6E1A12C0A		LQFP-48 QFN-52				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/I2C Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	40 SEG x 8 COM / 44 SEG x 4 COM	-	Dual Timer, Real Timer Clock, Unique ID, DSTC x 64ch, Tiny I2S, HDMI-CEC 2ch, CRC, Smart Card I/F, Chipper	On-Chip Debug (SWJ-DP/ Boundary SCAN)							
	S6E1B84GHA		256K + 40K				32K	32 SEG x 8 COM / 36 SEG x 4 COM																										
	S6E1B86FHA		512K + 40K				64K	20 SEG x 8 COM / 24 SEG x 4 COM																										
	S6E1B84FHA		256K + 40K				32K	20 SEG x 8 COM / 24 SEG x 4 COM																										
	S6E1B86EHA		BGA-96/ LQFP-80/ WLCSP-80				512K + 40K	64K					20 SEG x 8 COM / 24 SEG x 4 COM																					
	S6E1B84EHA						256K + 40K	32K					20 SEG x 8 COM / 24 SEG x 4 COM																					
S6E1B8	S6E1B86G0A	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/I2C Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	40 SEG x 8 COM / 44 SEG x 4 COM	-	Dual Timer, Real Timer Clock, Unique ID, DSTC x 64ch, Tiny I2S, HDMI-CEC 2ch, CRC, Smart Card I/F	On-Chip Debug (SWJ-DP/ Boundary SCAN)							
	S6E1B84G0A		256K + 40K				32K	32 SEG x 8 COM / 36 SEG x 4 COM																										
	S6E1B86F0A		512K + 40K				64K	20 SEG x 8 COM / 24 SEG x 4 COM																										
	S6E1B84F0A		256K + 40K				32K	20 SEG x 8 COM / 24 SEG x 4 COM																										
	S6E1B86E0A		BGA-96/ LQFP-80/ WLCSP-80				512K + 40K	64K					20 SEG x 8 COM / 24 SEG x 4 COM																					
	S6E1B84E0A						256K + 40K	32K					20 SEG x 8 COM / 24 SEG x 4 COM																					
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/I2C Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	-	-	Dual Timer, Real Timer Clock, Unique ID, DSTC x 64ch, Tiny I2S, HDMI-CEC 2ch, CRC, Smart Card I/F	On-Chip Debug (SWJ-DP/ Boundary SCAN)							
	S6E1B34G0A		256K + 40K				32K	-																										
	S6E1B36F0A		512K + 40K				64K	-																										
	S6E1B34F0A		256K + 40K				32K	-																										
	S6E1B36E0A		BGA-96/ LQFP-80/ WLCSP-80				512K + 40K	64K					-																					
	S6E1B34E0A						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/I2C Selectable)	-	-	-	-	Dual Timer, Real Timer Clock, Unique ID, DSTC x 64ch, Tiny I2S, HDMI-CEC 2ch, CRC, Smart Card I/F	On-Chip Debug (SWJ-DP/ Boundary SCAN)							
	S6E1B14G0A		256K + 40K				32K	-																										
	S6E1B16F0A		512K + 40K				64K	-																										
	S6E1B14F0A		256K + 40K				32K	-																										
	S6E1B16E0A		LQFP-80				512K + 40K	64K					-																					
	S6E1B14E0A						256K + 40K	32K					-																					

FM0 + 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			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]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
S6E1C3	S6E1C32D0A	40	LQFP-64	1.65 to 3.6	✓	Main Flash	128K	16K	-	-	12	-	54	-	8	-	-	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	-	1	Multi Function Serial x 6ch (UART/CSIO/I2C Selectable)	-	1ch (USB-Host/USB-Function Selectable)	-	-	Dual Timer, Real Timer Clock, Unique ID, DSTC x 64ch, Tiny I2S, Wakeup I2C, HDMI-CEC 2ch, CRC, Smart Card I/F	On-Chip Debug (SWJ-DP)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	64K						12K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
	S6E1C32C0A		LQFP-48				128K	16K										9										38	6	Base Timer x 5ch (Reload/PPG/PWM/PWC Selectable)	Multi Function Serial x 4ch (UART/CSIO/I2C Selectable)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	S6E1C31C0A						64K	12K										5										20	4	Base Timer x 3ch (Reload/PPG/PWM/PWC Selectable)	Multi Function Serial x 2ch (UART/CSIO/I2C Selectable)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	S6E1C32B0A		WLCSP-26				128K	16K										7										24	6	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	Multi Function Serial x 6ch (UART/CSIO/I2C Selectable)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	S6E1C31B0A		LQFP-32				64K	12K										12										54	8	Base Timer x 5ch (Reload/PPG/PWM/PWC Selectable)	Multi Function Serial x 4ch (UART/CSIO/I2C Selectable)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	S6E1C32D0A		QFN-64				128K	16K										9										38	6	Base Timer x 3ch (Reload/PPG/PWM/PWC Selectable)	Multi Function Serial x 2ch (UART/CSIO/I2C Selectable)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	S6E1C31D0A						64K	12K										7										24	4	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	Multi Function Serial x 6ch (UART/CSIO/I2C Selectable)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	S6E1C32C0A		QFN-48				128K	16K										12										54	8	Base Timer x 5ch (Reload/PPG/PWM/PWC Selectable)	Multi Function Serial x 4ch (UART/CSIO/I2C Selectable)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	S6E1C31C0A						64K	12K										9										38	6	Base Timer x 3ch (Reload/PPG/PWM/PWC Selectable)	Multi Function Serial x 2ch (UART/CSIO/I2C Selectable)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
S6E1C32B0A	QFN-32	128K	16K	7	24	4	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	Multi Function Serial x 6ch (UART/CSIO/I2C Selectable)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
S6E1C31B0A		64K	12K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

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	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,			
	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,			
	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 -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, FPD-Link, Sound system,			
	S6J325CLS		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,			
	S6J326CKS		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, FPD-Link, Sound system,			
	S6J326CKU		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, FPD-Link, Sound system,			
	S6J326CLS		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,			
	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+3D Graphic Engine, Display Output x 2ch, FPD-Link, Sound system,			
	S6J327CKU		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, FPD-Link, Sound system,			
	S6J327CLS		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			
	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 Graphic Engine, Display Output x 2ch, 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, 2D+3D Graphic Engine, Display Output x 2ch, FPD-Link, Sound system			
S6J328CKU	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, 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																															
S6J328CLU	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																															

FCR4 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]	I2C [ch]	UART/S [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]					USB-Function [ch]
HYBRID AUTOMOTIVE INSTRUMENTS CLUSTER																																				
MB9DF125	MB9DF125PMC	128	LQFP-176	1.1 to 1.3 3.0 to 5.5	✓	FLASH	1088	128	8	8	32	-	123	50(1)	-	-	8	8	8	10	-	-	24	2	-	1	2	3	2	2	-	-	-	ARM Cortex R4, SHE (Secure Hardware Extension), Real Time Clock, Stepper Motor Controller (SMC): 4 ch, Data Flash: 48KB, Windows Watchdog, Clock supervisor, Sound Generator, I2S: 2 ch, Quad SPI Flash Interface: 1 ch, NMI (intern/extern): 32/1 ch, CRC Hardware Module: 1 ch, Protection Unit: MPU, PPU, TPU, various Power Down modes	On-chip Debug	
	MB9DF125EPMC																																ARM Cortex R4, SHE (Secure Hardware Extension), Real Time Clock, Stepper Motor Controller (SMC): 6 ch, Data Flash: 48KB, Windows Watchdog, Clock supervisor, Sound Generator, I2S: 2 ch, Quad SPI Flash Interface: 1 ch, NMI (intern/extern): 32/1 ch, CRC Hardware Module: 1 ch, Protection Unit: MPU, PPU, TPU, various Power Down modes	On-chip Debug		
MB9DF126	MB9DF126BPMC	128	LQFP-176	1.1 to 1.3 3.0 to 5.5	✓	FLASH	2176	208	16	8	32	-	110	50(1)	-	-	8	8	8	10	-	-	24	2	-	1	2	3	2	3	-	-	-	ARM Cortex R4, APIX Remote handler with 2 ch AIC (APIX Inter Connect), APIX1 Phy: 1 ch, Real Time Clock, Stepper Motor Controller (SMC): 6 ch, Data Flash: 64KB, Windows Watchdog, Clock supervisor, Sound Generator, I2S: 2 ch, Quad SPI Flash Interface: 1 ch, NMI (intern/extern): 32/1 ch, CRC Hardware Module: 1 ch, Protection Unit: MPU, PPU, TPU, various Power Down modes	On-chip Debug	
MB9EF226	MB9EF226PMC	128	LQFP-176	1.1 to 1.3 3.0 to 5.5	✓	FLASH	2176	128	16	8	32	-	117	50(1)	-	-	8	8	8	10	-	-	24	2	-	1	2	3	2	2	-	-	-	-	ARM Cortex R4, 2D Graphics Engine: scaler, color palette, gamma correction, blending, raster operation, various alpha blending modes, run-length decoding, hor/ver flip and rotation, affine transformations, Embedded Video-RAM: 1MB, TFT Output Interface: RGB888/RSDS Output, SHE (Secure Hardware Extension), Real Time Clock, Stepper Motor Controller (SMC): 4 ch, Data Flash: 48KB, Windows Watchdog, Clock supervisor, Sound Generator, I2S: 2 ch, Quad SPI Flash Interface: 2 ch(1 ch for MCU and 1 ch for Graphic), NMI (intern/extern): 32/1 ch, MediaLB (3 wire): 1 ch, CRC Hardware Module: 1 ch, Protection Unit: MPU, PPU, TPU, various Power Down modes	On-chip Debug
	MB9EF226EPMC																																			

CYPRESS SEMICONDUCTOR | MICROCONTROLLER PRODUCT SELECTOR GUIDE

* In development; **Planning

FR 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(unt)]	12bit AD Converter [ch(unt)]	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]				
CAN/AUTOMOTIVE																																		
MB91590	MB91F591B	80	LQFP-208	3.0 to 3.6 4.5 to 5.5 (2 power supplies)	Main Flash +Work Flash	Dedicated for GDC External Memory	576K +64K	48K	-	16	16	32(1)	-	-	4	2	6	Reload Timer x 4ch + PPG Timer x 24ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)	-	Multi Function Serial x 2ch (LIN/UART/ SIO/I2C Selectable)	6	3	-	-	-	-	CAN: 32/64Mseg-buffer, LIN, FPU, MPU, Sound generator, SMC x 6ch, From among the RAM, 8KB can be used as BackUpRAM, Built-in 2D GDC	On-chip Debug						
	MB91F591BS																																	
	MB91F591BH																																	
	MB91F591BHS																																	
	MB91F592B																																	
	MB91F592BS																																	
	MB91F592BH																																	
	MB91F592BHS																																	
	MB91F594B	1088K +64K	72K				-	16							16	32(1)	-	-	4	8	12	Reload Timer x 8ch + PPG Timer x 24ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)	3	Multi Function Serial x 6ch (LIN/UART SIO/I2C Selectable. However, I2C only supports ch0/ ch1)	6	3			-	-	-	-	For models with H suffix on part number, the initial status of the clock supervisor is off	
	MB91F594BS																																	
	MB91F594BH																																	
	MB91F594BHS																																	
	MB91F59AC																																	
	MB91F59ACS																																	
	MB91F59ACH																																	
	MB91F59ACHS																																	
MB91F59BC	2112K +64K	264K	-	16	16	32(1)	-	-	4	8	12	Reload Timer x 8ch + PPG Timer x 24ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)	3	Multi Function Serial x 6ch (LIN/UART SIO/I2C Selectable. However, I2C only supports ch0/ ch1)	6	3	-	-	-	-	For models with H suffix on part number, the initial status of the clock supervisor is off													
MB91F59BCS																																		
MB91F59BCH																																		
MB91F59BCHS																																		
MB91F599B																																		
MB91F599BS																																		
MB91F599BH																																		
MB91F599BHS																																		

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 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]	LIN/UART/SIO [ch]	CAN [ch]					USB-Host [ch]	USB-Function [ch]
AUTOMOTIVE																																				
MB96310	MB96F313AS	56	LQFP-48	3.0 to 5.5	FLASH	96K	8K	-	4	11	-	36	12(1)	-	-	2	4	4 +3 (Dedicated for LIN)	4 +1 (Dedicated for PPG)	-	-	14	-	-	-	-	-	-	3	-	-	-	-	LVD, built-in CR Option without CAN	MB96V300C	
	✓																													34						1
	-																													36						-
	✓																													34						-
	MB96F313AW					✓																								36						-
	MB96F313RS					✓																								34						-
	MB96F313RW					✓																								36						-
	MB96F315AS					✓																								34						-
MB96320	MB96F326AS	56	LQFP-80	3.0 to 5.5	FLASH	288K	12K	-	4	15	✓	66	18(1)	-	-	6	4	12	4 +1 (Dedicated for PPG)	-	-	20	-	-	1	-	-	4	-	-	-	-	LVD, built-in CR Option without CAN	MB96V300C		
	✓											64																	-							
	MB96F326AW											✓																	66						2	
	MB96F326RS											✓																	64						-	
	MB96F326RW											✓																	66						-	
	MB96F336US											-																	124						36(1)	-
MB96F336UW	✓	122	-																																	
MB96F338RS	✓	124	3	1ch (USB-Host/ USB-Function Selectable)																																
MB96F338RW	✓	122																																		
MB96F338US	-	120																																		
MB96F338UW	✓	118	36(1)																																	

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 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]
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						1																													
	MB96F613A						1																													
	MB96F613R						1																													
	MB96F615A						-																													
	MB96F615R						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	1	-	-	-	-	Option without CAN	On-chip Debug
	MB96F622R						-																													
	MB96F623A						1																													
	MB96F623R						1																													
	MB96F625A						-																													
	MB96F625R						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						-																													
	MB96F635A						1																													
	MB96F635R						-																													
	MB96F636R						1																													
	MB96F637R						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						1																													
	MB96F645A						-																													
	MB96F645R						1																													
	MB96F646R						1																													
	MB96F647R						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						1																													
	MB96F655A						-																													
	MB96F655R						1																													
	MB96F656R						1																													
	MB96F657R						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						1																													
	MB96F675A						-																													
	MB96F675R						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						1																													
	MB96F685A						-																													
	MB96F685R						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						1																													
	MB96F695A						-																													
	MB96F695R						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						1																													
	MB96F6A6R						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						1																													
	MB96F6B6R						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
	MB96F6C6R						1																													



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