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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	45
Program Memory Size	36KB (36K x 8)
Program Memory Type	FLASH
EEPROM Size	-
RAM Size	1K 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	48-LQFP
Supplier Device Package	48-LQFP (7x7)
Purchase URL	https://www.e-xfl.com/product-detail/infineon-technologies/mb95f696knpmc-g-107-sne2

Automotive MCU Family

TRAVEO FAMILY

The Cypress Traveo™ family expands the company's automotive application coverage, scalability and high performance into one line-up and at the same time adds new features to fulfill the latest requirements of the automotive industry. Based on the powerful ARM® Cortex®-R5 and R5F core in single and dual core operations, it offers state-of-the-art real-time performance, safety and security features.

The family supports the latest in-car networks and offers high performance graphics engines optimized for a minimum memory footprint and embeds dedicated features to increase data security in the car.

High-level Traveo Features

- ARM Cortex-R5 core
- Dual core
- Embedded twin-motor control with internal R/D converter
- Embedded 2D and 3D graphics engines
- High performance embedded flash memory
- Cypress HyperBus™: High speed serial interfaces to connect external memory
- Qualified for automotive use (AEC-Q100)
- Software support for Autosar, graphics drivers and more

FR FAMILY

Cypress 32bit MCU families have been designed in close co-operation with major automotive customers worldwide and inherit the high-performance core of Cypress's proprietary FR MCU architecture. They support communication interfaces such as CAN, FlexRay and LIN as well as up to 2MB on-chip memory capacity. The latest members (MB915xx) also include a single precision Floating Point Unit (FPU) providing additional computing power required by complex control algorithms.

This high computing performance combined with powerful peripheral functions such as on-chip graphics controller and motor control macros, offers a higher grade of flexibility and lower cost for automotive as well as industrial applications.

Many devices offer an external bus interface which can be connected to Cypress's stand alone FlexRay controller or to the latest generation of graphics controllers in order to build full-featured dashboards, driver information systems or advanced body systems.

FCR4 FAMILY

The FCR4 family has been specifically designed to offer an innovative, scalable solution for hybrid instrument clusters, which combine traditional meters and graphical displays. The devices offer a powerful architecture based on the ARM Cortex-R4 core and Cypress's 2D graphics engine.

High-level FCR4 Features

- ARM Cortex-R4 core
- Embedded 2D graphics engine
- 2MB flash, 64KB E2Flash
- Up to 208KB RAM
- Features including real-time clock/auto calibration, sound generator and I2S

F2MC-16FX FAMILY

Cypress 16-bit flexible microcontroller series offers a scalable family concept approach to a variety of automotive and industrial applications. The scalable flash/ROM/RAM sizes with different mixtures of peripherals saves development time and costs. CAN and LIN support, on-chip LCD controller, SMC (stepper motor controller), I²C bus interface, analog input channels, external bus interface, selectable port levels for CMOS, TTL and Automotive Levels are some of the enhanced features. A security feature is incorporated, preventing unauthorized reading of the contents of the flash memory.



FM4 Family – 32bit Microcontrollers

FM4 Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub-Clock	Memory Type	ROM [bytes]	RAM [bytes]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch/unit]	12bit AD Converter [ch/unit]	DAConverter [bit x ch]	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Timer	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I²C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	Communication	LD Controller [seg x com]	Three-phase inverter	Note	Evaluation Device
S6E2GH	S6E2GH8H0A	180	LQFP-144	2.7 to 5.5	✓	Main Flash	1024K	192K	-	8	32	✓	121 153 121 153	-	24 (3) 32 (3) 24 (3) 32 (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, DSTCx256ch, Tiny I2S, Smart Card I/F, SDC	On-Chip Debug (SWJ-DP/ ETM)													
	S6E2GH8J0A		LQFP-176																																			
	S6E2GH6H0A		LQFP-144																																			
	S6E2GH6J0A		LQFP-176																																			
S6E2G3	S6E2G38H0A	180	LQFP-144	2.7 to 5.5	✓	Main Flash	1024K	192K	-	8	32	✓	121 153 121 153	-	24 (3) 32 (3) 24 (3) 32 (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, DSTCx256ch, Tiny I2S, Smart Card I/F	On-Chip Debug (SWJ-DP/ ETM)													
	S6E2G38J0A		LQFP-176																																			
	S6E2G36H0A		LQFP-144																																			
	S6E2G36J0A		LQFP-176																																			
S6E2G2 w/security	S6E2G28HHA	180	LQFP-144	2.7 to 5.5	✓	Main Flash	1024K	192K	-	8	32	✓	121 153 121 153	-	24 (3) 32 (3) 24 (3) 32 (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, DSTCx256ch, Tiny I2S, Smart Card I/F, ETH, Chipher	On-Chip Debug (SWJ-DP/ ETM)													
	S6E2G28JHA		LQFP-176																																			
	S6E2G26HHA		LQFP-144																																			
	S6E2G26JHA		LQFP-176																																			
S6E2G2	S6E2G28H0A	180	LQFP-144	2.7 to 5.5	✓	Main Flash	1024K	192K	-	8	32	✓	121 153 121 153	-	24 (3) 32 (3) 24 (3) 32 (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, DSTCx256ch, Tiny I2S, Smart Card I/F, ETH, Chipher	On-Chip Debug (SWJ-DP/ ETM)													
	S6E2G28J0A		LQFP-176																																			
	S6E2G26H0A		LQFP-144																																			
	S6E2G26J0A		LQFP-176																																			
S6E2DH	S6E2DH5G0A	160	LQFP-120	2.7-3.6	✓	Main Flash	384K	36K	-	8	16	✓	98 90 154	-	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	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)																																			
	S6E2DH5J0A		LQFP-176																																			
S6E2DF	S6E2DF5G0A	160	LQFP-120	2.7-3.6	✓	Main Flash	384K	36K	-	8	16	✓	98 90 154	-	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	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, I2S 2ch, High Speed Quad SPI x1, Hyper Bus x1, GDC	On-Chip Debug (SWJ-DP/ETM)													
	S6E2DF5GJA		LQFP-120 (SIP)																																			
	S6E2DF5J0A		LQFP-176																																			
S6E2D5	S6E2D55G0A	160	LQFP-120	2.7-3.6	✓	Main Flash	384K	36K	-	8	16	✓	98 90 154	-	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	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, SDC I2S 2ch, High Speed Quad SPI x1, Hyper Bus x1, GDC	On-Chip Debug (SWJ-DP/ETM)													
	S6E2D55GJA		LQFP-120 (SIP)																																			
	S6E2D55J0A		LQFP-176																																			
S6E2D3	S6E2D35G0A	160	LQFP-120	2.7-3.6	✓	Main Flash	384K	36K	-	8	16	✓	98 90 154	-	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	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, I2S 2ch, High Speed Quad SPI x1, Hyper Bus x1, GDC	On-Chip Debug (SWJ-DP/ETM)													
	S6E2D35GJA		LQFP-120 (SIP)																																			
	S6E2D35J0A		LQFP-176																																			

FM4 Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub-Clock	Memory Type	ROM [bytes]	RAM [bytes]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch/unit]	DAConverter [bit x ch]	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Timer	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I²C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x col]	Three-phase inverter	Note	Evaluation Device
S6E2C1-E	S6E2C10H2A	200	LQFP-144	2.7 to 5.5	✓	-	0M	256K	-	8	32	✓	120	-	24 (3)	12 x 2	Multi-Function Timer x 3units (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, Chipher	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																																	
	MB9BF566R		LQFP-120 BGA-144																																	
	MB9BF567M		LQFP-80																																	
	MB9BF567N		LQFP-100 QFP-100 BGA-112																																	
	MB9BF567R		LQFP-120 BGA-144																																	
	MB9BF568M		LQFP-80																																	
	MB9BF568N		LQFP-100 QFP-100 BGA-112																																	
	MB9BF568R		LQFP-120 BGA-144																																	
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	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)									
	MB9BF466N		LQFP-100 QFP-100 BGA-112																																	
	MB9BF466R		LQFP-120 BGA-144																																	
	MB9BF467M		LQFP-80																																	
	MB9BF467N		LQFP-100 QFP-100 BGA-112																																	
	MB9BF467R		LQFP-120 BGA-144																																	
	MB9BF468M		LQFP-80																																	
MB9B360R	MB9BF468N	160	LQFP-100 QFP-100 BGA-112	2.7 to 5.5	✓	Main Flash +Work Flash	768K +32K	96K	-	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)									
	MB9BF366N		LQFP-100 QFP-100 BGA-112																																	
	MB9BF366R		LQFP-120 BGA-144																																	
	MB9BF367M		LQFP-80																																	
	MB9BF367N		LQFP-100 QFP-100 BGA-112																																	
	MB9BF367R		LQFP-120 BGA-144																																	
	MB9BF368M		LQFP-80																																	
	MB9BF368N		LQFP-100 QFP-100 BGA-112																																	
	MB9BF368R		LQFP-120 BGA-144																																	

FM4 Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub-Clock	Memory Type	ROM [bytes]	RAM [bytes]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch/unit]	12bit AD Converter [ch/unit]	DAConverter [bit x ch]	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I²C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg. com]	Three-phase inverter	Note	Evaluation Device
MB9B160R	MB9BF166M	160	LQFP-80	2.7 to 5.5	✓	Main Flash + Work Flash	512K +32K	64K					63	16(3)	24(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)	-	-	-	-	-	Dual Timer, Real Time Clock, DSTC x 128ch, Unique ID, SD Card I/F	On-chip Debug (SWJ-DP/ETM)								
	MB9BF166N		LQFP-100																																	
	MB9BF166R		QFP-100																																	
	MB9BF167M		BGA-112																																	
	MB9BF167N		LQFP-80																																	
	MB9BF167R		QFP-100																																	
	MB9BF168M		BGA-144																																	
	MB9BF168N		LQFP-80																																	
	MB9BF168R		QFP-100																																	
	MB9BF168R		BGA-112																																	
MB9B560L	MB9BF564K	160	LQFP-48	2.7 to 5.5	✓	Main Flash + Work Flash	256K +32K	32K					15	33	8(2)	12 x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1	1	Multi Function Serial x 6ch (UART/CSIO/I²C/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																																	
	MB9BF565K		LQFP-48																																	
	MB9BF565L		LQFP-64																																	
	MB9BF566K		LQFP-48																																	
	MB9BF566L		LQFP-64																																	

FM4 Family – 32bit Microcontrollers

FM3 Family – 32bit Microcontrollers

FM3 Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VDD [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAc [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit ADC Converter [ch/unit]	12bit AD Converter [ch/unit]	DA Converter [bit x ch]	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I²C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
BASIC GROUP																																			
MB9B320M	MB9BF321K	72	LQFP-48 QFN-48 LQFP-64 QFN-64 LQFP-80 BGA-96 LQFP-48 QFN-48 LQFP-64 QFN-64 LQFP-80 BGA-96 LQFP-48 QFN-48 LQFP-64 QFN-64 LQFP-80 BGA-96	2.7 to 5.5	✓	Dual Op. Flash (Main area + Work area)	64K +32K 128K +32K 256K +32K	16K -	8	14 19 23 14 19 23 14 19 23	35 50 65 35 50 65 35 50 65	14(2) 23(2) 26(2) 14(2) 23(2) 26(2) 14(2) 23(2) 26(2)	10bit x 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)	1	QPRC x 1 QPRC x 2 QPRC x 1 QPRC x 2 QPRC x 1 QPRC x 2 QPRC x 1 QPRC x 2	Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable) Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable) Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable) Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable) Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable) Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Unique ID, Real Time Clock	On-chip Debug (SWJ-DP)											
	MB9BF321L																																		
	MB9BF321M																																		
	MB9BF322K																																		
	MB9BF322L																																		
	MB9BF322M																																		
	MB9BF324K																																		
	MB9BF324L																																		
	MB9BF324M																																		
MB9B120M	MB9BF121K	72	LQFP-48 QFN-48 LQFP-64 QFN-64 LQFP-80 BGA-96 LQFP-48 QFN-48 LQFP-64 QFN-64 LQFP-80 BGA-96 LQFP-48 QFN-48 LQFP-64 QFN-64 LQFP-80 BGA-96	2.7 to 5.5	✓	Dual Op. Flash (Main area + Work area)	64K +32K 128K +32K 256K +32K	16K -	8	14 19 23 14 19 23 14 19 23	35 50 65 35 50 65 35 50 65	14(2) 23(2) 26(2) 14(2) 23(2) 26(2) 14(2) 23(2) 26(2)	10bit x 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)	1	QPRC x 1 QPRC x 2 QPRC x 1 QPRC x 2 QPRC x 1 QPRC x 2 QPRC x 1 QPRC x 2	Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable) Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable) Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable) Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable) Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable) Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Unique ID, Real Time Clock	On-chip Debug (SWJ-DP)											
	MB9BF121L																																		
	MB9BF121M																																		
	MB9BF122K																																		
	MB9BF122L																																		
	MB9BF122M																																		
	MB9BF124K																																		
	MB9BF124L																																		
	MB9BF124M																																		
MB9B120J	MB9BF121J	72	LQFP-32 QFN-32	2.7 to 5.5	✓	FLASH	64K	8K	-	4	7	-	23	-	8(1)	-	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 1	1	Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable)	-	-	-	-	-	✓	Dual Timer, Real Time Clock, Unique ID	On-chip Debug (SW-DP)						
MB9B520T	MB9BF528S*	60	LQFP-144 LQFP-176 BGA-192 LQFP-144 LQFP-176 BGA-192	2.7 to 5.5	✓	Dual Op. Flash (Main area + Work area)	1M +64K 1.5M +64K	160K 192K	-	8	32	✓	122 154 122 154	-	24(2) <td data-kind="parent" data-rs="4">10bit x 2</td> <td data-kind="parent" data-rs="4">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)</td> <td data-kind="parent" data-rs="4">Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)</td> <td data-kind="parent" data-rs="4">QPRC x 1 QPRC x 2 QPRC x 1 QPRC x 2</td> <td data-kind="parent" data-rs="4">1</td> <td data-kind="parent" data-rs="4">Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)</td> <td data-kind="parent" data-rs="4">1ch (USB-Host/ USB-Function Selectable)</td> <td data-kind="parent" data-rs="4">-</td> <td data-kind="parent" data-rs="4">✓</td> <td data-kind="parent" data-rs="4">CAN: 32Msg-buffer, Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID</td> <td data-kind="parent" data-rs="4">On-chip Debug (SWJ-DP/ETM)</td>	10bit x 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 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1 QPRC x 2 QPRC x 1 QPRC x 2	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	1ch (USB-Host/ USB-Function Selectable)	-	✓	CAN: 32Msg-buffer, Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP/ETM)									
	MB9BF528T*																																		
	MB9BF529S*																																		
	MB9BF529T*																																		
MB9B420T	MB9BF428S*	60	LQFP-144 LQFP-176 BGA-192 LQFP-144 LQFP-176 BGA-192	2.7 to 5.5	✓	Dual Op. Flash (Main area + Work area)	1M +64K 1.5M +64K	160K 192K	-	8	32	✓	122 154 122 154	-	24(2) <td data-kind="parent" data-rs="4">10bit x 2</td> <td data-kind="parent" data-rs="4">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)</td> <td data-kind="parent" data-rs="4">Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)</td> <td data-kind="parent" data-rs="4">QPRC x 1 QPRC x 2 QPRC x 1 QPRC x 2</td> <td data-kind="parent" data-rs="4">1</td> <td data-kind="parent" data-rs="4">Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)</td> <td data-kind="parent" data-rs="4">1ch (USB-Host/ USB-Function Selectable)</td> <td data-kind="parent" data-rs="4">-</td> <td data-kind="parent" data-rs="4">✓</td> <td data-kind="parent" data-rs="4">CAN: 32Msg-buffer, Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID</td> <td data-kind="parent" data-rs="4">On-chip Debug (SWJ-DP/ETM)</td>	10bit x 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 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1 QPRC x 2 QPRC x 1 QPRC x 2	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	1ch (USB-Host/ USB-Function Selectable)	-	✓	CAN: 32Msg-buffer, Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP/ETM)									
	MB9BF428T*																																		
	MB9BF429S*																																		
	MB9BF429T*																																		

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]	DMA C [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [bit/(unit)]	12bit AD Converter [bit/(unit)]	DA Converter [bit x ch]	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LINUART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg com]	Three-phase Inverter	Note	Evaluation Device
BASIC GROUP																																			
MB9B320T	MB9BF328S*	60	LQFP-144	2.7 to 5.5	✓	Dual Op. Flash (Main area + Work area)	1M +64K	160K	-	8	32	✓	122	154	-	24(2)	10bit x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1 QPRC x 2 QPRC x 1 QPRC x 2	1	Multi Function Serial x 16ch (UART/CSIO/I ² C/LIN Selectable)	- 1ch (USB-Host/ USB-Function Selectable)	- ✓	Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP/ETM)									
	MB9BF328T*												122	154	-	24(2)	10bit x 2																		
	MB9BF329S*		LQFP-144	LQFP-176 BGA-192	1.5M +64K	192K	-	8	32	✓	122	122	-	24(2)	10bit x 2																				
	MB9BF329T*		LQFP-176 BGA-192								154	-	-	-	-																				
MB9B120T	MB9BF128S*	60	LQFP-144	2.7 to 5.5	✓	Dual Op. Flash (Main area + Work area)	1M +64K	160K	-	8	32	✓	122	154	-	24(2)	10bit x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1 QPRC x 2 QPRC x 1 QPRC x 2	1	Multi Function Serial x 16ch (UART/CSIO/I ² C/LIN Selectable)	- 1ch (USB-Host/ USB-Function Selectable)	- ✓	Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP/ETM)									
	MB9BF128T*												122	154	-	24(2)	10bit x 2																		
	MB9BF129S*		LQFP-144	LQFP-176 BGA-192	1.5M +64K	192K	-	8	32	✓	122	122	-	24(2)	10bit x 2																				
	MB9BF129T*		LQFP-176 BGA-192								154	-	-	-	-																				
MB9A420L	MB9AF421K	40	LQFP-48 LQFP-52 QFN-48	2.7 to 5.5	✓	FLASH	64K	4K	-	-	14	36	36	-	8(1)	10bit x 1	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 3ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	-	1	Multi Function Serial x 4ch (UART/CSIO/I ² C/LIN Selectable)	1 - - - - ✓	CAN: 32Msg-buffer, Dual Timer, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP)											
	MB9AF421L		LQFP-64 QFN-64								19		51		-	8(1)	10bit x 1																		
MB9A120L	MB9AF121K	40	LQFP-48 LQFP-52 QFN-48	2.7 to 5.5	✓	FLASH	64K	4K	-	-	14	36	36	-	8(1)	10bit x 1	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 3ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	-	1	Multi Function Serial x 4ch (UART/CSIO/I ² C/LIN Selectable)	- - - - ✓	Dual Timer, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP)											
	MB9AF121L		LQFP-64 QFN-64								19		51		-	8(1)	10bit x 1																		

FM3 Family – 32bit Microcontrollers

FMO + Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: V _C [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 [chnut]	12bit AD Converter [chnut]	DA Convert [bit x ch]	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWIC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LINUART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
S6E1A	S6E1A11B0A	40	LQFP-32 QFN-32	2.7 to 5.5	✓	Flash	56K	6K	-	2	8	-	23	37	-	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		LOFP-48 LOFP-52 QFN-48																																	
	S6E1A12B0A		LOFP-32 QFN-32																																	
	S6E1A12C0A		LOFP-48 LOFP-52 QFN-48																																	
S6E1B8 w/security	S6E1B86GHA	40	LQFP-120	1.65 to 3.6	✓	Main Flash +Work Flash	512K + 40K	64K	-	-	24	-	102	-	24	-	Multi-Function Timer x 1units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /PPG3ch/Waveform Generator 3ch /AD Activation Compare 6ch Selectable), PPG3ch	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	-	1	Multi Function Serial x 8ch (UART/CSIO/I ² C Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	40 SEG x 8 COM / 44 SEG x 4 COM 40 SEG x 8 COM / 36 SEG x 4 COM 32 SEG x 8 COM / 24 SEG x 4 COM	Dual Timer, Real Timer Clock, Unique ID, DSTC x 64ch, Tiny I2S, HDMI-CEC 2ch, CRC, Smart Card I/F, Cipher	On-Chip Debug (SW-JDP/ Boundary SCAN)										
	S6E1B84GHA																																			
	S6E1B86FHA																																			
	S6E1B84FHA																																			
	S6E1B86EHA																																			
	S6E1B84EHA																																			
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/I ² C Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	40 SEG x 8 COM / 44 SEG x 4 COM 32 SEG x 8 COM / 36 SEG x 4 COM 20 SEG x 8 COM / 24 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 (SW-JDP/ Boundary SCAN)										
	S6E1B84G0A																																			
	S6E1B86F0A																																			
	S6E1B84F0A																																			
	S6E1B86E0A																																			
	S6E1B84E0A																																			
S6E1B3	S6E1B36G0A	40	LQFP-120	1.65 to 3.6	✓	Main Flash +Work Flash	512K + 40K	64K	-	-	24	-	102	-	24	-	Multi-Function Timer x 1units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /PPG3ch/Waveform Generator 3ch /AD Activation Compare 6ch Selectable), PPG3ch	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	-	1	Multi Function Serial x 8ch (UART/CSIO/I ² C Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	40 SEG x 8 COM / 44 SEG x 4 COM 32 SEG x 8 COM / 36 SEG x 4 COM 20 SEG x 8 COM / 24 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 (SW-JDP/ Boundary SCAN)										
	S6E1B34G0A																																			
	S6E1B36F0A																																			
	S6E1B34F0A																																			
	S6E1B36E0A																																			
	S6E1B34E0A																																			
S6E1B1	S6E1B16G0A	40	LQFP-120	1.65 to 3.6	✓	Main Flash +Work Flash	512K + 40K	64K	-	-	24	-	102	-	24	-	Multi-Function Timer x 1units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /PPG3ch/Waveform Generator 3ch /AD Activation Compare 6ch Selectable), PPG3ch	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	-	1	Multi Function Serial x 8ch (UART/CSIO/I ² C Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	40 SEG x 8 COM / 44 SEG x 4 COM 32 SEG x 8 COM / 36 SEG x 4 COM 20 SEG x 8 COM / 24 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 (SW-JDP/ Boundary SCAN)										
	S6E1B14G0A																																			
	S6E1B16F0A																																			
	S6E1B14F0A																																			
	S6E1B16E0A																																			
	S6E1B14E0A																																			

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]	DMA[C [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]	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC/Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other Timers [ch]	I2C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
CAN/AUTOMOTIVE																																				
MB9D560	MB9DF564MA	200	TEQFP -208	1.1 to 1.3	Main Flash +Work Flash	(640K + 64K) x2	64K x2		16	8	-	(1152K + 64K) x2	128K x2	125	32(1)	8(2)	10bit x 2	32bitFree-Run Timer x 5ch 32bitInput Capture x 3unit 6ch 16bitFree-Run Timer x 20ch 16bit Input Capture x 8unit 15ch 16bitOutput Compare x 12unit 24ch Waveform Generator x 4unit 24ch	16bit Base Timer x 12ch (PWM/PPG/Reload/PWC Selectable)	4	-	Multi Function Serial x 5ch (LIN/UART/SIO Selectable)	3	-	-	-	-	✓	ARM Cortex-R5 CAN: 64msb, RDC x 2unit, Motor vector accelerato r x 2unit Models with A suffix on part number have no built-in FlexRay. Models with G suffix on part number have built-in FlexRay.	On-Chip Debug						
	MB9DF564MG					(896K + 64K) x2	96K x2																													
	MB9DF565MA					(1152K + 64K) x2	128K x2																													
	MB9DF565MG					(640K + 64K) x2	64K x 2																													
	MB9DF566MA					(896K + 64K) x2	96K x 2																													
	MB9DF566MG					(1152K + 64K) x2	128K x 2																													
	MB9DF564ML					(640K + 64K) x 2	64K x 2																													
	MB9DF564MQ					(896K + 64K) x 2	96K x 2																													
	MB9DF565ML					(1152K + 64K) x 2	128K x 2																													
	MB9DF565MQ					(640K + 64K) x 2	64K x 2																													
	MB9DF566ML		TEQFP -176			(896K + 64K) x 2	96K x 2																													
	MB9DF566MQ					(1152K + 64K) x 2	128K x 2																													
	MB9DF564LA					(640K + 64K) x 2	64K x 2																													
	MB9DF564LG					(896K + 64K) x 2	96K x 2																													
	MB9DF565LA					(1152K + 64K) x 2	128K x 2																													
	MB9DF565LG					(640K + 64K) x 2	64K x 2																													
	MB9DF566LA					(896K + 64K) x 2	96K x 2																													
	MB9DF566LG					(1152K + 64K) x 2	128K x 2																													
	MB9DF564LL					(896K + 64K) x 2	96K x 2																													
	MB9DF564LQ					(896K + 64K) x 2	96K x 2																													
	MB9DF565LL					(1152K + 64K) x 2	128K x 2																													
	MB9DF565LQ					(640K + 64K) x 2	64K x 2																													
	MB9DF566LL					(896K + 64K) x 2	96K x 2																													
	MB9DF566LQ					(1152K + 64K) x 2	128K x 2																													

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]	DMA[C [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]	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]	LINUART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
CAN/AUTOMOTIVE																																				
S6J3110	S6J3118HA	96	TEQFP -144	4.5 to 5.25	Main Flash + Work Flash	576K + 48K	TC-RAM: 32KB System - RAM: 16KB Backup - RAM: 8KB	116	Instruction: 16 Data: 16	56(2)	12	6	12	16bit Base Timer x 30ch (PWM/PPG/Reload/PWC Selectable)	RTC x 1ch	Multi Function Serial x 4ch (LINUART/SIO Selectable)	CAN - FD x 1ch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ARM Cortex-R5, SHE(Secure Hardware Extension),	On-Chip Debug		
	S6J3119HA					832K + 48K	TC-RAM: 48KB System - RAM: 16KB Backup - RAM: 8KB																													
	S6J311AHA					1088K + 48K	TC-RAM: 64KB System - RAM: 16KB Backup - RAM: 8KB																													
	S6J311BHA					1600K + 112K	192K																													
	S6J311CHA					2112K + 112K	256K																													
	S6J311DHA					3136K + 112K	320K																													
	S6J311EHA					4160K + 112K	TC-RAM: 64KB System - RAM: 256KB Backup - RAM: 64KB																													
	S6J311BJA					1600K + 112K	192K																													
	S6J311CJA					2112K + 112K	256K																													
	S6J311DJA					3136K + 112K	320K																													
	S6J311EJA					4160K + 112K	TC-RAM: 64KB System - RAM: 256KB Backup - RAM: 64KB																													

FCR4 Family – 32bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [bytes]	RAM [bytes]	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]	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]	LINUART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seq x com]	Three-phase Inverter	Note	Evaluation Device
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	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					FLASH	2176	208	16	8	32	-	110	50(1)	-	-	8	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); 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	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, 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	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					FLASH	2176	128	16	8	32	-	117	50(1)	-	-	8	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): 6 ch, Data Flash: 48KB, Windows Watchdog, Clock supervisor, Sound Generator, I2S: 2 ch, Quad SPI Flash Interface2 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	

FR Family – 32bit Microcontrollers

FR Family – 32bit Microcontrollers

F²MC-16FX – 16bit Microcontrollers

F²MC-16FX – 16bit Microcontrollers

F²MC-16FX – 16bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: V _{CC} [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					
AUTOMOTIVE																																			
MB96610	MB96F612A	32	LQFP-48	2.7 to 5.5	<input checked="" type="checkbox"/>	Dual Op. Flash	32.5K +32K	4K	10K	-	2	11	-	(Single clock) 37 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	-	-	-	-	-	1 1 1 1 1 1	Option without CAN	On-chip Debug		
	MB96F612R						64.5K +32K	10K		-	2	11	-	(Single clock) 35 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	-	-	-	-	-	1 1 1 1 1 1				
	MB96F613A						128.5K +32K	10K		-	2	11	-	(Single clock) 37 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	-	-	-	-	-	1 1 1 1 1 1				
	MB96F613R						128.5K +32K	10K		-	2	11	-	(Single clock) 37 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	-	-	-	-	-	1 1 1 1 1 1				
	MB96F615A						128.5K +32K	10K		-	2	11	-	(Single clock) 37 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	-	-	-	-	-	1 1 1 1 1 1				
	MB96F615R						128.5K +32K	10K		-	2	11	-	(Single clock) 37 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	-	-	-	-	-	1 1 1 1 1 1				
MB96620	MB96F622A	32	LQFP-64	2.7 to 5.5	<input checked="" type="checkbox"/>	Dual Op. Flash	32.5K +32K	4K	10K	-	2	13	-	(Single clock) 52 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	-	-	-	-	1 1 1 1 1 1	Option without CAN	On-chip Debug		
	MB96F622R						64.5K +32K	10K		-	2	13	-	(Single clock) 52 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	-	-	-	-	1 1 1 1 1 1				
	MB96F623A						128.5K +32K	10K		-	2	13	-	(Single clock) 52 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	-	-	-	-	1 1 1 1 1 1				
	MB96F623R						128.5K +32K	10K		-	2	13	-	(Single clock) 52 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	-	-	-	-	1 1 1 1 1 1				
	MB96F625A						128.5K +32K	10K		-	2	13	-	(Single clock) 52 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	-	-	-	-	1 1 1 1 1 1				
	MB96F625R						128.5K +32K	10K		-	2	13	-	(Single clock) 52 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	-	-	-	-	1 1 1 1 1 1				
MB96630	MB96F633A	32	LQFP-80	2.7 to 5.5	<input checked="" type="checkbox"/>	Dual Op. Flash	64.5K +32K	10K	16K	-	4	15	-	(Single clock) 64 66 (Dual clock)	21(1)	-	-	7	3	6 +1 (Dedicated for LIN)	3	-	-	8bit x 20 16bit x 15	QPRC x 2	2	-	-	-	5	1 1 1 1 1 1	Option without CAN	On-chip Debug		
	MB96F633R						128.5K +32K	10K		-	4	15	-	(Single clock) 64 66 (Dual clock)	21(1)	-	-	7	3	6 +1 (Dedicated for LIN)	3	-	-	8bit x 20 16bit x 15	QPRC x 2	2	-	-	-	5	1 1 1 1 1 1				
	MB96F635A						256.5K +32K	24K		-	4	15	-	(Single clock) 64 66 (Dual clock)	21(1)	-	-	7	3	6 +1 (Dedicated for LIN)	3	-	-	8bit x 20 16bit x 15	QPRC x 2	2	-	-	-	5	1 1 1 1 1 1				
	MB96F635R						384.5K +32K	28K		-	4	15	-	(Single clock) 64 66 (Dual clock)	21(1)	-	-	7	3	6 +1 (Dedicated for LIN)	3	-	-	8bit x 20 16bit x 15	QPRC x 2	2	-	-	-	5	1 1 1 1 1 1				
	MB96F636R						128.5K +32K	10K		-	4	16	-	(Single clock) 81 79 (Dual clock)	24(1)	-	-	7	3	6 +1 (Dedicated for LIN)	5	-	-	8bit x 24 16bit x 16	QPRC x 2	2	-	-	-	6	1 1 1 1 1 1				
	MB96F647R						256.5K +32K	24K		-	4	16	-	(Single clock) 81 79 (Dual clock)	24(1)	-	-	7	3	6 +1 (Dedicated for LIN)	5	-	-	8bit x 24 16bit x 16	QPRC x 2	2	-	-	-	6	1 1 1 1 1 1				
MB96650	MB96F653A	32	LQFP-120	2.7 to 5.5	<input checked="" type="checkbox"/>	Dual Op. Flash	64.5K +32K	10K	16K	-	4	16	-	(Single clock) 101 99 (Dual clock)	29(1)	-	-	7	3	6 +1 (Dedicated for LIN)	5	-	-	8bit x 32 16bit x 16	QPRC x 2	2	-	-	-	6	1 1 1 1 1 1	Option without CAN	On-chip Debug		
	MB96F653R						128.5K +32K	10K		-	4	16	-	(Single clock) 101 99 (Dual clock)	29(1)	-	-	7	3	6 +1 (Dedicated for LIN)	5	-	-	8bit x 32 16bit x 16	QPRC x 2	2	-	-	-	6	1 1 1 1 1 1				
	MB96F655A						256.5K +32K	24K		-	4	16	-	(Single clock) 101 99 (Dual clock)	29(1)	-	-	7	3	6 +1 (Dedicated for LIN)	5	-	-	8bit x 32 16bit x 16	QPRC x 2	2	-	-	-	6	1 1 1 1 1 1				
	MB96F656R						384.5K +32K	28K		-	4	16	-	(Single clock) 101 99 (Dual clock)	29(1)	-	-	7	3	6 +1 (Dedicated for LIN)	5	-	-	8bit x 32 16bit x 16	QPRC x 2	2	-	-	-	6	1 1 1 1 1 1				
	MB96F657R						128.5K +32K	10K		-	4	16	-	(Single clock) 101 99 (Dual clock)	29(1)	-	-	7	3	6 +1 (Dedicated for LIN)	5	-	-	8bit x 32 16bit x 16	QPRC x 2	2	-	-	-	6	1 1 1 1 1 1				
	MB96F673A						64.5K +32K	10K		-	2	7	-	(Single clock) 50 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
MB96670	MB96F673R	32	LQFP-64	2.7 to 5.5	<input checked="" type="checkbox"/>	Dual Op. Flash	128.5K +32K	10K	16K	-	2	7	-	(Single clock) 50 48 (Dual clock)	12(1)	-	-	2	4	3	-	-	-	8bit x 8 16bit x 4	-	-	1	-	2	-	-	-	24 x 4		
	MB96F675A						256.5K +32K	24K		-	2	7	-	(Single clock) 50 48 (Dual clock)	12(1)	-	-	2	4	3	-	-	-	8bit x 8 16bit x 4	-	-	1	-	2	-	-	-	24 x 4		
	MB96F675R						384.5K +32K	28K		-	2	7	-	(Single clock) 50 48 (Dual clock)	12(1)	-	-	2	4	3	-	-	-	8bit x 8 16bit x 4	-	-	1	-	2	-	-	-	24 x 4		
	MB96F683A						64.5K +32K	10K	4K	-	2	7	-	(Single clock) 65 63 (Dual clock)	14(1)	-	-	2	4	3	-	-	-	8bit x 8 16bit x 4	-	-	1	-	2	-	-	-	32 x 4	SMC x 2ch Sound generator Option without CAN	On-chip Debug
	MB96F683R						128.5K +32K	10K		-	2	7	-	(Single clock) 65 63 (Dual clock)	14(1)	-	-	2	4	3	-	-	-	8bit x 8 16bit x 4	-	-	1	-	2	-	-	-	32 x 4		
	MB96F685A						256.5K +32K	24K		-	2	7	-	(Single clock) 65 63 (Dual clock)	14(1)	-	-	2	4	3	-	-	-	8bit x 8 16bit x 4	-	-	1	-	2	-	-	-	32 x 4		
MB96690	MB96F693A	32	LQFP-100	2.7 to 5.5	<input checked="" type="checkbox"/>	Dual Op. Flash	64.5K +32K	8K	16K	-	4	16	-	(Single clock) 79 77 (Dual clock)	27(1)	-	-	4	2	6	5	-	-	8bit x 14 16bit x 10	-	-	1	-	5	-	-	-	36 x 4	SMC x 4ch Sound generator x 2ch Option without CAN	On-chip Debug
	MB96F693R						128.5K +32K	8K		-	4	16	-	(Single clock) 79 77 (Dual clock)	27(1)	-	-	4	2	6	5	-	-	8bit x 14 16bit x 10	-	-	1	-	5	-	-	-	36 x 4		
	MB96F695A						256.5K +32K	16K		-	4	16	-	(Single clock) 79 77 (Dual clock)	27(1)	-	-	4	2	6	5	-	-	8bit x 14 16bit x 10	-	-	1	-	5	-	-	-	36 x 4		
	MB96F695R						384.5K +																												



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