Atmel

Atmel ARM® Core-based Embedded Microprocessors

High Performance, Power Efficient, Easy to Use

Atmel ARM® Core-based Embedded Microprocessors

Device Name	Performance			Memory					NAND		Connectivity							
	Core	Clock Speed (MHz)*	Core Operating Voltage	SRAM (KB)	Cache Memory (KB) (Instruction/Data)	External Bus Interface	LPSDR/SDRAM	LPDDR/DDR2	SLC ECC (bits)	MLC ECC (bits)	UART	SPI	TWI (I²C)	SSC (I²S)	CAN	LIN	USB Device (Full/High Speed)	USB Host (Full/High Speed)
SAMA5D35	Cortex-A5	536	1.2V	128	2x32	1	1/1	1/1	24	24	7	6	3	2	2	4	HS	2 HS
SAMA5D34	Cortex-A5	536	1.2V	128	2x32	1	1/1	1/1	24	24	5	6	3	2	2	4	HS	2 HS
SAMA5D33	Cortex-A5	536	1.2V	128	2x32	1	1/1	1/1	24	24	5	6	3	2	--	4	HS	2 HS
SAMA5D31	Cortex-A5	536	1.2V	128	2x32	1	1/1	1/1	24	24	7	6	3	2	--	4	HS	2 HS
SAM9M11	ARM926EJ-S	400	1.0V	64	2x32	2	1/1	1/1	1	--	5	6	2	2	--	4	HS	2 HS
SAM9M10	ARM926EJ-S	400	1.0V	64	2x32	2	1/1	1/1	1	--	5	6	2	2	--	4	HS	2 HS
SAM9G46	ARM926EJ-S	400	1.0V	64	2x32	2	1/1	1/1	1	--	5	6	2	2	--	4	HS	2 HS
SAM9G45	ARM926EJ-S	400	1.0V	64	2x32	2	1/1	1/1	1	--	5	6	2	2	--	4	HS	2 HS
SAM9X35	ARM926EJ-S	400	1.0V	32	2x16	1	1/1	1/1	24	24	7	5	3	1	2	3	HS	1 HS, 1 FS
SAM9X25	ARM926EJ-S	400	1.0V	32	2x16	1	1/1	1/1	24	24	7	6	3	1	2	4	HS	1 HS, 1 FS
SAM9G35	ARM926EJ-S	400	1.0V	32	2x16	1	1/1	1/1	24	24	6	5	3	1	--	3	HS	1 HS, 1 FS
SAM9G25	ARM926EJ-S	400	1.0V	32	2x16	1	1/1	1/1	24	24	7	6	3	1	--	4	HS	1 HS, 1 FS
SAM9G15	ARM926EJ-S	400	1.0V	32	2x16	1	1/1	1/1	24	24	5	5	3	1	--	3	HS	1 HS, 1 FS
SAM9CN12	ARM926EJ-S	400	1.0V	32	2x16	1	1/1	1/1	24	24	7	6	2	1	--	--	FS	2 FS
SAM9CN11	ARM926EJ-S	400	1.0V	32	2x16	1	1/1	1/1	24	24	7	6	2	1	--	--	FS	2 FS
SAM9N12	ARM926EJ-S	400	1.0V	32	2x16	1	1/1	1/1	24	24	7	6	2	1	--	--	FS	2 FS
SAM9G20	ARM926EJ-S	400	1.0V	32	2x16	1	-/1	--	1	--	7	6	1	1	--	--	FS	2 FS
SAM9G10	ARM926EJ-S	266	1.2V	16	2x16	1	-/1	--	1	--	4	5	1	3	--	--	FS	2 FS
SAM9RL64	ARM926EJ-S	240	1.2V	64	2x4	1	-/1	--	1	--	5	5	2	2	--	--	HS	--
SAM9R64	ARM926EJ-S	240	1.2V	64	2x4	1	-/1	--	1	--	5	5	1	1	--	--	HS	--
SAM9263	ARM926EJ-S	200	1.08V	96	2x16	2	-/1	--	1	--	4	5	1	2	1	--	FS	2 FS
SAM9261	ARM926EJ-S	190	1.2V	160	2x16	1	-/1	--	1	--	4	5	1	3	--	--	FS	2 FS
SAM9260	ARM926EJ-S	210	1.8V	8	2x8	1	-/1	--	1	--	7	6	1	1	--	--	FS	2 FS
SAM9XE512	ARM926EJ-S	180	1.8V	32	16+8	1	-/1	--	1	--	7	6	2	1	--	--	FS	2 FS
SAM9XE256	ARM926EJ-S	180	1.8V	32	16+8	1	-/1	--	1	--	7	6	2	1	--	--	FS	2 FS
SAM9XE128	ARM926EJ-S	180	1.8V	16	16+8	1	-/1	--	1	--	5	6	2	1	--	--	FS	2 FS

Clock Speed: Max clock speed @ +85°C.

Temperature Range: –40°C to +85°C (Ambient)
UART: Support for RS485, ISO7816, IrDA, modem control lines and SPI on selected UARTs.
TWI: Two Wire Interface, interconnects components on a two-wire bus.
SSC: Serial Synchronous Controller, supports many serial synchronous communications protocols used in audio and telecom applications such as I2S, short or long frame sync.
16-bit and 32-bit Timers: Capture/Compare, Waveform generation and PWM modes.
ECC: Error Corrected Code controller.

10/100 Ethernet MAC	10/100/1000 EMAC w/ IEEE1588 Support	SD / eMMC	Soft Modem	Max I/O Pins	User Interface					Security		Control					Packages
					Graphic LCD	LCD Overlay	Resistive Touchscreen	Video Decoder	Camera Interface	Crypto Engine	Secure Boot	16-bit Timers	32-bit Timers	PWM Channels	10-bit ADC Channels	12-bit ADC Channels	
1	1	3	Yes	160	--	--	Yes	--	Yes	TDES/SHA AES/TRNG	Yes	--	6	4	--	12	BGA 324, 15x15, 0.8mm pitch
--	1	3	Yes	160	Yes	Yes	Yes	--	Yes	TDES/SHA AES/TRNG	Yes	--	5	4	--	12	BGA 324, 15x15, 0.8mm pitch
--	1	2	Yes	160	Yes	Yes	Yes	--	Yes	TDES/SHA AES/TRNG	Yes	--	5	4	--	12	BGA 324, 15x15, 0.8mm pitch
1	--	3	Yes	160	Yes	Yes	Yes	--	Yes	TDES/SHA AES/TRNG	Yes	--	5	4	--	12	BGA 324, 15x15, 0.8mm pitch
1	--	2	--	160	Yes	Yes	Yes	30fps, D1	Yes	TDES/SHA AES/TRNG	--	6	--	4	8	--	BGA 324, 15x15, 0.8mm pitch
1	--	2	--	160	Yes	Yes	Yes	30fps, D1	Yes	--	--	6	--	4	8	--	BGA 324, 15x15, 0.8mm pitch
1	--	2	--	160	Yes	--	Yes	--	Yes	TDES/SHA AES/TRNG	--	6	--	4	8	--	BGA 324, 15x15, 0.8mm pitch
1	--	2	--	160	Yes	--	Yes	--	Yes	--	--	6	--	4	8	--	BGA 324, 15x15, 0.8mm pitch
1	--	2	Yes	105	Yes	Yes	Yes	--	--	--	--	--	6	4	12	--	BGA 217, 15x15, 0.8mm pitch
2	--	2	Yes	105	--	--	--	--	--	--	--	--	6	4	12	--	BGA 217, 15x15, 0.8mm pitch
1	--	2	Yes	105	Yes	Yes	Yes	--	--	--	--	--	6	4	12	--	BGA 217, 15x15, 0.8mm pitch
1	--	2	Yes	105	--	--	--	--	Yes	--	--	--	6	4	12	--	BGA 217, 15x15, 0.8mm pitch BGA 247, 10x10, 0.5mm pitch
--	--	2	Yes	105	Yes	Yes	Yes	--	--	--	--	--	6	4	12	--	BGA 217, 10x10, 0.8mm pitch
--	--	--	--	105	Yes	--	Yes	--	--	SHA/AES/TRNG	Yes	--	6	4	12	--	BGA 217, 15x15, 0.8mm pitch BGA 247, 10x10, 0.5mm pitch
--	--	--	--	105	Yes	--	Yes	--	--	SHA/AES/TRNG	--	--	6	4	12	--	BGA 217, 10x10, 0.8mm pitch
--	--	1	--	105	Yes	--	Yes	--	--	--	--	--	6	4	12	--	BGA 217, 15x15, 0.8mm pitch
1	--	1	--	96	--	--	--	--	Yes	--	--	6	--	--	4	--	BGA 217, 10x10, 0.8mm pitch BGA 247, 10x10, 0.5mm pitch
--	--	1	--	96	Yes	Yes	--	--	--	--	--	3	--	--	--	--	BGA 217, 15x15, 0.8mm pitch
--	--	1	--	118	Yes	--	Yes	--	--	--	--	3	--	4	6	--	BGA 217, 10x10, 0.8mm pitch
--	--	1	--	49	--	--	--	--	--	--	--	3	--	3	3	--	BGA 144, 10x10, 0.8mm pitch
1	--	2	--	160	Yes	--	--	--	Yes	--	--	3	--	4	--	--	BGA 324, 15x15, 0.8mm pitch
	--	1	--	96	Yes	--	--	--	--	--	--	3	--	--	--	--	BGA 217, 15x15, 0.8mm pitch
1	--	1	--	96	--	--	--	--	Yes	--	--	6	--	--	4	--	BGA 217, 15x15, 0.8mm pitch QFP 208, 28x28, 0.5mm pitch
1	--	1	--	96	--	--	--	--	Yes	--	--	6	--	--	4	--	BGA 217, 15x15, 0.8mm pitch QFP 208, 28x28, 0.5mm pitch
1	--	1	--	96	--	--	--	--	Yes	--	--	6	--	--	4	--	BGA 217, 15x15, 0.8mm pitch QFP 208, 28x28, 0.5mm pitch
1	--	1	--	96	--	--	--	--	Yes	--	--	6	--	--	4	--	BGA 217, 15x15, 0.8mm pitch QFP 208, 28x28, 0.5mm pitch

Peripheral implementation may vary among products, please consult individual product datasheet for detailed description

Camera Interface: For CMOS-type image sensor, ITU-R BT. 601/656 external interface, programmable frame capture rate, up to 12-bit data interface, SAV and EAV synchronization, preview path with scaler, YCbCr format.
Soft Modem: Partnership with Conexant. Offers a cost-effective solution for modem implementation
Graphics LCD: Supports STN & TFT displays, up to 16-bits per pixel in STN color mode, up to 16M colors in TFT mode.
Video Decoder: Hardware video decoding & image post processing : H.264, MPEG4, H.263, MPEG2, JPEG.
eMMC™: MLC NandFlash supported through MMC interface.

Evaluation Kits

Ordering Code	Supported Device	
ATSAMA5D35-EK	SAMA5D35	
ATSAMA5D34-EK	SAMA5D34	
ATSAMA5D33-EK	SAMA5D33	
ATSAMA5D31-EK	SAMA5D31	
AT91SAM9M10-G45-EK	SAM9M10, SAM9G45	
AT91SAM9X35-EK	SAM9X35	
AT91SAM9X25-EK	SAM9X25	
AT91SAM9G35-EK	SAM9G35	
AT91SAM9G25-EK	SAM9G25	
AT91SAM9G15-EK	SAM9G15	
AT91SAM9CN11-EK	SAM9CN11, SAM9CN12	
AT91SAM9N12-EK	SAM9N12	
AT91SAM9G20-EK	SAM9G20	
AT91SAM9260-EK	SAM9260	
AT91SAM9G10-EK	SAM9G10	
AT91SAM9261-EK	SAM9261	
AT91SAM9263-EK	SAM9263	
AT91SAM9RL-EK	SAM9RL64, SAM9R64	
AT91SAM9XE-EK	SAM9XE128, SAM9XE256, SAM9XE512	
AT91SAM-ICE	All products	

Evaluation kits listed here are delivered with free Board Support Packages (BSP) for Linux®, Android™ and Microsoft® Windows®.

For more details

Linux4SAM

Android4SAM

Windows4SAM

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