



Arm[®] Core-Based Embedded Microprocessors

High Performance, Power Efficient, Secure, Easy to Use



Product	Core Sub-System				Memory										Connectivity					
	Core	VFPV/NEON/Trustzone	Clock Speed (MHz)	Core Operating Voltage	DDR2 SDRAM (MB)	LPDDR2 SDRAM (MB)	SRAM (KB)	L1 Cache Memory (KB) (Instruction/Data)	L2 Cache (KB)	QSPI Interface	DDR2/LPDDR/LPDDR2	DDR3/DDR3L/LPDDR3	NAND		UART	SPI	TWI (I ² C)	SSC and I ² S	CAN	Device Only
													SLC ECC (bit)	MLC ECC (bit)						
SAMA5D21	Cortex-A5	1/1/1	500	1.2V	-	-	128	2 x 32	128	2	1/1/1	1/1/1	32	32	9	6	6	4	-	-
SAMA5D22	Cortex-A5	1/1/1	500	1.2V	-	-	128	2 x 32	128	2	1/1/1	1/1/1	32	32	9	6	6	4	1	-
SAMA5D225C-D1M	Cortex-A5	1/1/1	500	1.2V	16	-	128	2 x 32	128	2	1/1/1	1/1/1	32	32	9	7	7	4	1	-
SAMA5D23	Cortex-A5	1/1/1	500	1.2V	-	-	128	2 x 32	128	2	1/1/1	1/1/1	32	32	9	6	6	4	1	-
SAMA5D24	Cortex-A5	1/1/1	500	1.2V	-	-	128	2 x 32	128	2	1/1/1	1/1/1	32	32	10	7	7	4	-	-
SAMA5D26	Cortex-A5	1/1/1	500	1.2V	-	-	128	2 x 32	128	2	1/1/1	1/1/1	32	32	10	7	7	4	-	-
SAMA5D27	Cortex-A5	1/1/1	500	1.2V	-	-	128	2 x 32	128	2	1/1/1	1/1/1	32	32	10	7	7	4	2	-
SAMA5D27C-D5M	Cortex-A5	1/1/1	500	1.2V	64	-	128	2 x 32	128	2	1/1/1	1/1/1	32	32	10	7	7	4	2	-
SAMA5D27C-D1G	Cortex-A5	1/1/1	500	1.2V	128	-	128	2 x 32	128	2	1/1/1	1/1/1	32	32	10	7	7	4	2	-
SAMA5D27C-LD1G	Cortex-A5	1/1/1	500	1.2V	-	128	128	2 x 32	128	2	1/1/1	1/1/1	32	32	10	7	7	4	2	-
SAMA5D27C-LD2G	Cortex-A5	1/1/1	500	1.2V	-	256	128	2 x 32	128	2	1/1/1	1/1/1	32	32	10	7	7	4	2	-
SAMA5D28	Cortex-A5	1/1/1	500	1.2V	-	-	128	2 x 32	128	2	1/1/1	1/1/1	32	32	10	7	7	4	2	-
SAMA5D28C-D1G	Cortex-A5	1/1/1	500	1.2V	128	-	128	2 x 32	128	2	1/1/1	1/1/1	32	32	10	7	7	4	2	-
SAMA5D28C-LD1G	Cortex-A5	1/1/1	500	1.2V	-	128	128	2 x 32	128	2	1/1/1	1/1/1	32	32	10	7	7	4	2	-
SAMA5D28C-LD2G	Cortex-A5	1/1/1	500	1.2V	-	256	128	2 x 32	128	2	1/1/1	1/1/1	32	32	10	7	7	4	2	-
SAMA5D31	Cortex-A5	1/-/-	536	1.2V	-	-	128	2 x 32	-	-	1/1/1	-	24	24	7	6	3	2	-	-
SAMA5D33	Cortex-A5	1/-/-	536	1.2V	-	-	128	2 x 32	-	-	1/1/1	-	24	24	5	6	3	2	-	-
SAMA5D34	Cortex-A5	1/-/-	536	1.2V	-	-	128	2 x 32	-	-	1/1/1	-	24	24	5	6	3	2	2	-
SAMA5D35	Cortex-A5	1/-/-	536	1.2V	-	-	128	2 x 32	-	-	1/1/1	-	24	24	7	6	3	2	2	-
SAMA5D36	Cortex-A5	1/1/1	536	1.2V	-	-	128	2 x 32	-	-	1/1/1	-	24	24	7	6	3	2	2	-
SAMA5D41	Cortex-A5	1/1/1	600	1.8V	-	-	128	2 x 32	128	-	1/1/1	-	24	24	8	8	4	2	-	-
SAMA5D42	Cortex-A5	1/1/1	600	1.8V	-	-	128	2 x 32	128	-	1/1/1	-	24	24	8	8	4	2	-	-
SAMA5D43	Cortex-A5	1/1/1	600	1.8V	-	-	128	2 x 32	128	-	1/1/1	-	24	24	8	8	4	2	-	-
SAMA5D44	Cortex-A5	1/1/1	600	1.8V	-	-	128	2 x 32	128	-	1/1/1	-	24	24	8	8	4	2	-	-

Temperature Range: -40°C to +85°C (ambient), except where indicated

UART: Support for RS485, ISO7816, IrDA®, LIN, 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.

Security level: Adv. = hardware encryption engine + on the fly DDR encryption/decryption + secure storage + tamper pin Med. = hardware encryption engine only

System on Module (SoM)

Product	MPU	Microchip Components
SAMA5D27-SOM1	System-In-Package (SAMA5D27C-D1G) including 500 MHz Arm® Cortex®-A5 Processor and 128 MByte DDR2 SDRAM	Power Management Unit (MIC2800-G1JJYML) 2 Kb Serial EEPROM with EUI-48™ Node Identity (24AA02E48T-I/OT) 64 Mb Serial Quad I/O Flash Memory (SST26VF064BT-104I/MF) 10Base-T/100Base-TX Ethernet PHY (KSZ8081RNAIA) Integrated Crystals and Internal Voltage Regulators
SAMA5D27-WLSOM1	System-In-Package (SAMA5D27C-LD2G) including 500 MHz Arm Cortex-A5 Processor and 256 MByte LPDDR2 SDRAM	Power Management Unit (MCP16502AC-E/S8B) IEEE 802.11 n/g/n Link Controller with integrated Bluetooth® 4.0 (ATWILC3000-MR110UA) CryptoAuthentication™ Device (ATECC608-TNGTLSU) 64 Mb Serial Quad I/O Flash Memory (SST26VF064BEUI-104I/MF) 10Base-T/100Base-TX Ethernet PHY (KSZ8081RNAIA) Analog Comparator (MIC842NYMT) Clock Oscillators and Internal Voltage Regulators

SAMA5 Arm Cortex-A5 MPUs

USB					User Interface						Security				Control			Max I/O Pins	Extended Temperature Range (-40 to 105°C Ambient)	Packages		
Device and Host	Host Only	10/100 Ethernet MAC	10/100/1000 MAC	IEEE 1588 Support	SD/eMMC	Graphic LCD	LCD Overlay	Resistive (R) and/or CAP (C) Touch	Hardware Video Decoder	Camera Interface	Class D/PDM/Audio PLL	Security Level	Secure Boot	Anti-Tamper Pins	Environmental Monitors	32-bit Timers	PWM Channels				10-bit ADC Channels	12-bit ADC Channels
1 HS	1 HS	1	-	Y	1	1	Y	R	-	1	1/1/1	Med.	Y	6	-	5	4	-	5	72	-	BGA 196, 11 x 11, 0.75 mm pitch
1 HS	1 HS	1	-	Y	1	1	Y	R, C	-	1	1/1/1	Adv.	Y	6	-	5	4	-	5	72	Y	BGA 196, 11 x 11, 0.75 mm pitch
1 HS	1 HS	1	-	Y	2	1	Y	R, C	-	1	1/1/1	Adv.	Y	6	-	5	4	-	5	90	-	BGA 196, 11 x 11, 0.75 mm pitch
1 HS	1 HS	1	-	Y	1	1	Y	R, C	-	1	1/1/1	PCI Pre-certified	Y	6	Y	5	4	-	5	72	Y	BGA 196, 11 x 11, 0.75 mm pitch
1 HS	1 HS, 1 HSIC	1	-	Y	2	1	Y	R, C	-	1	1/1/1	Adv.	Y	2	-	6	4	-	12	105	-	BGA 256, 8 x 8, 0.4 mm pitch
1 HS	1 HS	1	-	Y	2	1	Y	R	-	1	1/1/1	Med.	Y	8	-	6	4	-	12	128	Y	BGA 289, 14 x 14, 0.8 mm pitch
1 HS	1 HS, 1 HSIC	1	-	Y	2	1	Y	R, C	-	1	1/1/1	Adv.	Y	8	-	6	4	-	12	128	Y	BGA 289, 14 x 14, 0.8 mm pitch
1 HS	1 HS, 1 HSIC	1	-	Y	2	1	Y	R, C	-	1	1/1/1	Adv.	Y	8	-	6	4	-	12	128	-	BGA 289, 14 x 14, 0.8 mm pitch
1 HS	1 HS, 1 HSIC	1	-	Y	2	1	Y	R, C	-	1	1/1/1	Adv.	Y	8	-	6	4	-	12	128	-	BGA 289, 14 x 14, 0.8 mm pitch
1 HS	1 HS, 1 HSIC	1	-	Y	2	1	Y	R, C	-	1	1/1/1	Adv.	Y	8	-	6	4	-	12	128	-	BGA 361, 16 x 16, 0.8 mm pitch
1 HS	1 HS, 1 HSIC	1	-	Y	2	1	Y	R, C	-	1	1/1/1	Adv.	Y	8	-	6	4	-	12	128	-	BGA 361, 16 x 16, 0.8 mm pitch
1 HS	1 HS, 1 HSIC	1	-	Y	2	1	Y	R, C	-	1	1/1/1	PCI Pre-certified	Y	8	Y	6	4	-	12	128	Y	BGA 289, 14 x 14, 0.8 mm pitch
1 HS	1 HS, 1 HSIC	1	-	Y	2	1	Y	R, C	-	1	1/1/1	PCI Pre-certified	Y	8	Y	6	4	-	12	128	-	BGA 289, 14 x 14, 0.8 mm pitch
1 HS	1 HS, 1 HSIC	1	-	Y	2	1	Y	R, C	-	1	1/1/1	PCI Pre-certified	Y	8	Y	6	4	-	12	128	-	BGA 361, 16 x 16, 0.8 mm pitch
1 HS	1 HS, 1 HSIC	1	-	Y	2	1	Y	R, C	-	1	1/1/1	PCI Pre-certified	Y	8	Y	6	4	-	12	128	-	BGA 361, 16 x 16, 0.8 mm pitch
1 HS	2 HS	1	-	Y	3	1	Y	R	-	1	-	Med.	Y	-	-	5	4	-	12	160	-	BGA 324, 15 x 15, 0.8 mm pitch, BGA 324, 12 x 12, 0.5 mm pitch
1 HS	2 HS	-	1	Y	2	1	Y	R	-	1	-	Med.	Y	-	-	5	4	-	12	160	-	BGA 324, 15 x 15, 0.8 mm pitch
1 HS	2 HS	-	1	Y	3	1	Y	R	-	1	-	Med.	Y	-	-	5	4	-	12	160	-	BGA 324, 15 x 15, 0.8 mm pitch
1 HS	2 HS	1	1	Y	3	-	-	R	-	1	-	Med.	Y	-	-	6	4	-	12	160	Y	BGA 324, 15 x 15, 0.8 mm pitch
1 HS	2 HS	1	1	Y	3	1	Y	R	-	1	-	Med.	Y	-	-	6	4	-	12	160	Y	BGA 324, 15 x 15, 0.8 mm pitch
1 HS	2 HS	2	-	Y	2	1	Y	R	-	1	-	Adv.	Y	8	-	9	4	5	-	152	-	BGA 289, 14 x 14, 0.8 mm pitch
1 HS	2 HS	2	-	Y	2	1	Y	R	-	1	-	Adv.	Y	8	-	9	4	5	-	152	-	BGA 361, 16 x 16, 0.8 mm pitch
1 HS	2 HS	2	-	Y	2	1	Y	R	30 fps, 720p	1	-	Adv.	Y	8	-	9	4	5	-	152	-	BGA 289, 14 x 14, 0.8 mm pitch
1 HS	2 HS	2	-	Y	2	1	Y	R	30 fps, 720p	1	-	Adv.	Y	8	-	9	4	5	-	152	-	BGA 361, 16 x 16, 0.8 mm pitch

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 scaling, output is in YCbCr format; Raw Bayer is supported on the ATSAMA5D2 series.

Graphics LCD: 24-bit parallel interface; supports STN and TFT displays, up to 16-bits per pixel in STN color mode, up to 16M colors in TFT mode.

Video Decoder: Hardware video decoding and image post processing : H.264, MPEG4, H.263, MPEG2, JPEG, VP8.

eMMC™: V4.3 – MLC NandFlash supported through eMMC interface; V4.5 support for ATSAMA5D2 series.

USB: High speed (HS) or Full Speed (FS), High Speed Inter-Chip (HSIC)

Peripheral implementation varies among products. Consult individual product datasheets for a detailed description.

FLEXCOM: Flexible Serial Communication Controller that can be configured as USART, SPI or TWI.

PTC: Peripheral Touch Controller, built-in hardware for capacitive touch buttons, sliders and wheels.

SoM Interfaces	Dimensions (mm)	Number of Pins	IO Pins	Main Supply Voltage	Temperature Range	Connector Style	Metal Shield Ready	Optional Voltage Supplies
4 UARTS, 4 FLEXCOMs, 2 SPI, TWI, QSPI, SSC, I ² S, 6 PTC Buttons, 4 ADC, 2 CAN-FD, 3 HS-USB Host/Device and HSIC, 10 Base-100Base-TX Ethernet, 2 SD/MMC/eMMC/SDIO, 24-bit RGB, Camera - ISC, Mono PDMIC, Class D Stereo, 6 Tamper Pins, Shutdown and Reset control pins	38 x 40	176	103	3.3V	-40°C to +85°C	Single-sided, hand-solderable board	Yes	VDDBU, VDDSDHC, VDDISC
5 UARTS, 4 FLEXCOMs, 2 SPI, TWI, 2 QSPI, SSC, I ² S, Full PTC, 6 ADC, CAN-FD, 2 HS-USB Host/Device and HSIC, 10 Base-100Base-TX Ethernet, SD/MMC/eMMC, 18-bit RGB, Camera - ISC, Mono PDMIC, Class D Mono, 7 Tamper Pins, Start, Shutdown, Wake-Up and Reset control pins	40.8 x 40.8	188	94	5V	-40°C to +85°C	Single-sided, hand-solderable board	No	VDDBU, VDDSDHC, VDDISC, VDDFUSE, VDDANA

Product	Core Sub-System				Memory									Connectivity							
	Core	Clock Speed (MHz)	Core Operating Voltage	SDRAM (MB)	DDR2 SDRAM (MB)	SRAM (KB)	L1 Cache Memory (KB) (Instruction/Data)	LPDDR/SDRAM	QSPI Interface	External Bus Interface	DDR2/LPDDR/ LPDDR2	NAND		UART	SPI	TWI (I ² C)	SSC and I ² S	CAN	USB		
												SLC ECC (bit)	MLC ECC (bit)						Device Only	Device and Host	Host Only
SAM9X60	ARM926EJ-S	600	1.2V	-	-	64	2 × 32	1/1	1	1	1/1/-	24	24	13	6	13	2	2	-	1 HS	3 HS
SAM9X60D6K	ARM926EJ-S	600	1.2V	8	-	64	2 × 32	1/1	1	1	1/1/-	24	24	13	6	13	2	2	-	1 HS	3 HS
SAM9X60D5M	ARM926EJ-S	600	1.2V	-	64	64	2 × 32	1/1	1	1	1/1/-	24	24	13	6	13	2	2	-	1 HS	3 HS
SAM9X60D1G	ARM926EJ-S	600	1.2V	-	128	64	2 × 32	1/1	1	1	1/1/-	24	24	13	6	13	2	2	-	1 HS	3 HS
SAM9M10/M11	ARM926EJ-S	400	1.0V	-	-	64	2 × 32	1/1	-	2	1/1/-	1	-	5	6	2	2	-	-	1 HS	2 HS
SAM9G45/G46	ARM926EJ-S	400	1.0V	-	-	64	2 × 32	1/1	-	2	1/1/-	1	-	5	6	2	2	-	-	1 HS	2 HS
SAM9X35	ARM926EJ-S	400	1.0V	-	-	32	2 × 16	1/1	-	1	1/1/-	24	24	7	5	3	1	2	-	1 HS	1 HS, 1 FS
SAM9X25	ARM926EJ-S	400	1.0V	-	-	32	2 × 16	1/1	-	1	1/1/-	24	24	7	6	3	1	2	-	1 HS	1 HS, 1 FS
SAM9G35	ARM926EJ-S	400	1.0V	-	-	32	2 × 16	1/1	-	1	1/1/-	24	24	6	5	3	1	-	-	1 HS	1 HS, 1 FS
SAM9G25	ARM926EJ-S	400	1.0V	-	-	32	2 × 16	1/1	-	1	1/1/-	24	24	7	6	3	1	-	-	1 HS	1 HS, 1 FS
SAM9G15	ARM926EJ-S	400	1.0V	-	-	32	2 × 16	1/1	-	1	1/1/-	24	24	5	5	3	1	-	-	1 HS	1 HS, 1 FS
SAM9CN12	ARM926EJ-S	400	1.0V	-	-	32	2 × 16	1/1	-	1	1/1/-	24	24	7	6	2	1	-	1 FS	-	1 FS
SAM9CN11	ARM926EJ-S	400	1.0V	-	-	32	2 × 16	1/1	-	1	1/1/-	24	24	7	6	2	1	-	1 FS	-	1 FS
SAM9N12	ARM926EJ-S	400	1.0V	-	-	32	2 × 16	1/1	-	1	1/1/-	24	24	7	6	2	1	-	1 FS	-	1 FS
SAM9G20	ARM926EJ-S	400	1.0V	-	-	32	2 × 32	-/1	-	1	-	1	-	7	6	1	1	-	1 FS	-	2 FS
SAM9G10	ARM926EJ-S	266	1.2V	-	-	16	2 × 16	-/1	-	1	-	1	-	4	5	1	3	-	1 FS	-	2 FS
SAM9263	ARM926EJ-S	240	1.3V	-	-	96	2 × 16	-/1	-	2	-	1	-	4	5	1	2	1	1 FS	-	2 FS
SAM9261	ARM926EJ-S	190	1.2V	-	-	160	2 × 16	-/1	-	1	-	1	-	4	5	1	3	-	1 FS	-	2 FS
SAM9260	ARM926EJ-S	190	1.2V	-	-	8	2 × 8	-/1	-	1	-	1	-	7	6	1	1	-	1 FS	-	2 FS

Temperature Range: -40°C to +85°C (ambient)

UART: Support for RS485, ISO7816, IrDA®, LIN, 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.

Security level: Adv. = hardware encryption engine + on the fly DDR encryption/decryption + secure storage + tamper pin Med. = hardware encryption engine

ATSAM9 Arm9-Based MPUs

Ethernet		User Interface									Security			Control					Max I/O Pins	Extended Temperature Range (-40 to 105°C Ambient)	Packages	
10/100 Ethernet MAC		SD/eMMC	Soft Modem	Graphic LCD	LCD Overlay	Resistive Touchscreen	Hardware Video Decoder	2D Graphics	Camera Interface	Class D	Security Level	Secure Boot	Anti-Tamper Pins	16-bit Timers	32-bit Timers	64-bit Timers	PWM Channels	10-bit ADC Channels				12-bit ADC Channels
2		2	-	1	Y	Y	-	Y	1	1	Adv.	Y	8	-	6	1	4	-	12	112	Y	BGA 228, 11 × 11, 0.65 mm pitch
2		2	-	1	Y	Y	-	Y	1	1	Adv.	Y	8	-	6	1	4	-	12	112	-	BGA 196, 11 × 11, 0.65 mm pitch
2		2	-	1	Y	Y	-	Y	1	1	Adv.	Y	8	-	6	1	4	-	12	112	-	BGA 233, 14 × 14, 0.8 mm pitch
2		2	-	1	Y	Y	-	Y	1	1	Adv.	Y	8	-	6	1	4	-	12	112	-	BGA 233, 14 × 14, 0.8 mm pitch
1		2	-	1	Y	Y	30 fps, D1	-	1	-	Med. (M11)	-	-	6	-	-	4	8	-	160	-	BGA 324, 15 × 15, 0.8 mm pitch
1		2	-	1	-	Y	-	-	1	-	Med. (G46)	-	-	6	-	-	4	8	-	160	-	BGA 324, 15 × 15, 0.8 mm pitch
1		2	Y	1	Y	Y	-	-	-	-	-	-	-	6	-	4	12	-	105	-	BGA 217, 15 × 15, 0.8 mm pitch	
2		2	Y	-	-	-	-	-	-	-	-	-	-	6	-	4	12	-	105	-	BGA 217, 15 × 15, 0.8 mm pitch	
1		2	Y	1	Y	Y	-	-	-	-	-	-	-	6	-	4	12	-	105	-	BGA 217, 15 × 15, 0.8 mm pitch	
1		2	Y	-	-	-	-	-	1	-	-	-	-	6	-	4	12	-	105	-	BGA 217, 15 × 15, 0.8 mm pitch, BGA 247, 10 × 10, 0.5 mm pitch	
-		2	Y	1	Y	Y	-	-	-	-	-	-	-	6	-	4	12	-	105	-	BGA 217, 15 × 15, 0.8 mm pitch	
-		1	-	1	-	Y	-	-	-	-	Med.	Y	-	6	-	-	4	12	-	105	-	BGA 217, 15 × 15, 0.8 mm pitch, BGA 247, 10 × 10, 0.5 mm pitch
-		1	-	1	-	Y	-	-	-	-	-	-	-	6	-	-	4	12	-	105	-	BGA 217, 15 × 15, 0.8 mm pitch, BGA 247, 10 × 10, 0.5 mm pitch
-		1	-	1	-	Y	-	-	-	-	-	-	-	6	-	-	4	12	-	105	-	BGA 217, 15 × 15, 0.8 mm pitch, BGA 247, 10 × 10, 0.5 mm pitch
1		1	-	-	-	-	-	-	Y	-	-	-	-	6	-	-	-	4	-	96	-	BGA 217, 15 × 15, 0.8 mm pitch
-		1	-	1	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	96	-	BGA 217, 15 × 15, 0.8 mm pitch
1		2	-	1	-	-	-	-	Y	-	-	-	-	3	-	-	4	-	-	160	-	BGA 324, 15 × 15, 0.8 mm pitch
-		1	-	1	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	96	-	BGA 217, 15 × 15, 0.8 mm pitch
1		1	-	-	-	-	-	-	Y	-	-	-	-	6	-	-	-	4	-	96	-	BGA 217, 15 × 15, 0.8 mm pitch, QFP 208, 28 × 28, 0.5 mm pitch

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 ; Raw Bayer support with ATSAMA5D2 series












Graphics LCD: 24-bit parallel interface; supports STN and TFT displays, up to 16-bits per pixel in STN color mode, up to 16M colors in TFT mode.






Hardware Video Decoder: Hardware video decoding and image post processing : H.264, MPEG4, H.263, MPEG2, JPEG, VP8.

2D Graphics: 2D Graphics Engine supporting fill BLT, copy BLT, transparent BLT, blend/alpha BLT, ROP4 BLT (Raster Operations) and command ring buffer.

eMMC: V4.3 – MLC NandFlash supported through MMC interface; V4.5 support for ATSAMA5D2 series.

USB: High speed (HS) or Full Speed (FS).

Ordering Code	Supported Devices	Image
SAM9X60-EK	SAM9X60	
ATSAMA5D27-WLSOM1-EK1	SAMA5D2-Series LPDDR2 SiP and Wireless SOM included	
ATSAMA5D27-SOM1-EK1	SAMA5D2-Series DDR2 SiP and SOM included	
DM320108-BNDL	Bundle ATSAMA5D2-PTC-EK + QT1-XPRO	
ATSAMA5D2C-XULT	SAMA5D2 Series	
ATSAMA5D4-XULT	SAMA5D4 Series	
ATSAMA5D3-XPLD	SAM5D3 Series	
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www.at91.com/linux4sam
- FreeRTOS
www.freertos.org

Bare Metal

- MPLAB® Harmony v3
<https://github.com/Microchip-MPLAB-Harmony/Microchip-MPLAB-Harmony.github.io/wiki>
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<https://github.com/atmelcorp/atmel-software-package/releases>

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- Cross-build environments for Linux OS users
www.at91.com/linux4sam
- MPLAB X Integrated Development Environment
www.microchip.com/mplab/mplab-x-ide
- IAR Embedded Workbench for Arm® processors (EWARM)
www.iar.com/iar-embedded-workbench/partners/microchip/
- GNU Toolchain Bare Metal and RTOS-Based Systems Learning
developer.arm.com/tools-and-software/open-source-software/developer-tools/gnu-toolchain
- J-32 Debug Probe
www.microchip.com/DevelopmentTools/ProductDetails/DV164232
- SAM-BA In-System Programmer
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