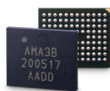
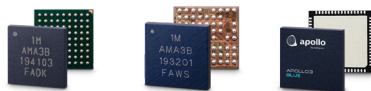


Available
1Q2025

	Apollo2	Apollo3	Apollo4 Lite	Apollo4 Plus	Apollo510
SoC Frequency	48 MHz	48 MHz 96 MHz turboSPOT®	96 MHz 192 MHz turboSPOT	96 MHz 192 MHz turboSPOT	96 MHz 250 MHz turboSPOT
SoC	32-bit Arm Cortex-M4F	32-bit Arm Cortex-M4F, DMA	32-bit Arm Cortex-M4F, DMA	32-bit Arm Cortex-M4F, DMA	32-bit Arm Cortex-M55 with Helium, DMA
SoC CoreMark® Power Efficiency	39 µW/MHz	33 µW/MHz	38 µW/MHz	29 µW/MHz	Contact Ambiq
NVM	1MB	1MB	2MB	2MB	4MB
SRAM	256KB	384KB	1.4MB	2.75MB	3.75MB
Voltage	1.755-3.63 V	1.755-3.63 V	1.71-2.2 V	1.71-2.2 V	1.71-2.2 V
ADC	14-bit, 15-channel, up to 2.67 MS/s Sampling Rate ADC	14-bit, 15-channel, up to 2.67 MS/s Sampling Rate ADC	12-bit, 11-channel, up to 2.8 MS/s Sampling Rate ADC	12-bit, 11-channel, up to 2.8 MS/s Sampling Rate ADC	12-bit, 11-channel, up to 2.8 MS/s Sampling Rate ADC
UART	2	2	4	4	4
I/O	I ² C/SPI Master (6x)	I ² C/SPI Master (6x) I ² C/SPI Slave	I ² C/SPI Master (8x) I ² C/SPI Slave SDIO v3.0/eMMC (1x)	I ² C/SPI Master (8x) I ² C/SPI Slave USB 2.0 FS/HS SDIO v3.0/eMMC (1x)	I ² C/SPI Master (8x) 1x full-duplex/1x half-duplex I ² C/SPI Slave USB 2.0 FS/HS SDIO v3.0/eMMC (2x) Support for multiple I/O voltages ranging 1.14 to 3.63V
MSPI Master	--	1/2/4/8-bit wide up to 48 MT/s (SDR) ISO7816 Master	1/2/4/8-bit wide (2x) 1/2/4/8/16-bit wide up to 96 MT/s (SDR/DDR)	1/2/4/8-bit wide (2x) 1/2/4/8/16-bit wide up to 96 MT/s (SDR/DDR)	1/2/4/8-bit wide (2x) up to 96 MT/s (SDR/DDR) 1/2/4/8/16-bit wide (2x) up to 250 MT/s (SDR/DDR)
I²S	I ² S Slave for PDM Audio Pass-through	I ² S Slave for PDM Audio Pass-through	I ² S Master/Slave (2x) full-duplex	I ² S Master/Slave (2x) full-duplex with ASRC	I ² S Master/Slave (2x) full-duplex, with ASRC (1x)
Audio	PDM stereo DMIC interface (1x)	PDM stereo DMIC interface (1x)	PDM stereo DMIC interface (1x)	PDM stereo DMIC interface (4x) Low Power Stereo Audio ADC (1x)	PDM stereo DMIC interface (1x) Low Power Audio ADC (1x) PLL for Precision Audio
Display	--	SPI 3-wire/4-wire	SPI 3-wire/4-wire Dual/QuadSPI	SPI 3-wire/4-wire Dual/QuadSPI MIPI DSI at 500 Mbps (2 lanes) 4-layer Display Controller	SPI 3-wire/4-wire Dual/QuadSPI MIPI DSI at 1.5 Gbps (2 lanes) 4-layer Display Controller Memory in Pixel (MiP) Interface
Graphics	--	--	2D/2.5D GPU with anti-aliasing, and dithering	2D/2.5D GPU with anti-aliasing, dithering, and vector graphics assist	2D/2.5D GPU with anti-aliasing, dithering, and vector graphics acceleration
Security	--	secureSPOT®	secureSPOT 2.0 Secure Boot, Root of Trust	secureSPOT 2.0 Secure Boot, Root of Trust	secureSPOT 3.0 Arm TrustZone®
Packages	<ul style="list-style-type: none"> 4.5 x 4.5 mm, BGA-64 w/ 50 GPIO 2.6 x 2.6 x 0.51 mm, CSP-49 w/ 34 GPIO 2.6 x 2.6 x 0.33 mm, CSP-49 w/ 34 GPIO (Thin) 	<ul style="list-style-type: none"> 5 x 5 mm, BGA-81 w/ 50 GPIO 3.25 x 3.37 mm, CSP-66 w/ 37 GPIO 	<ul style="list-style-type: none"> 5 x 5 mm, BGA-146 w/ 84 GPIO 	<ul style="list-style-type: none"> 5 x 5 mm, BGA-146 w/ 105 GPIO 	<ul style="list-style-type: none"> 6.6 x 6.6 mm, BGA w/ 183 GPIO 4.9 x 4.7 mm, CSP w/ 144 GPIO
Ordering Information	<ul style="list-style-type: none"> AMAPH1KK-KBR (BGA) AMAPH1KK-KCR (CSP) AMAPH1KK-KCR-TB (Thin CSP) AMAPHEVB (EVB) 	<ul style="list-style-type: none"> AMAP31KK-KBR (BGA) AMAP31KK-KCR (CSP) AMA3BEVB 	<ul style="list-style-type: none"> AMAP42KL-KBR (BGA) AMAP4LEVB (EVB) 	<ul style="list-style-type: none"> AMAP42KP-KBR (BGA) AMAP4PEVB (EVB) AMAP4PDISP (Display Kit) 	<ul style="list-style-type: none"> AP510NFA-CBR (BGA) AP510NFA-CCR (CSP)



	Apollo3 Blue	Apollo3 Blue Plus	Apollo4 Blue Lite	Apollo4 Blue Plus
SoC Frequency	48 MHz, 96 MHz turboSPOT	48 MHz, 96 MHz turboSPOT	96 MHz, 192 MHz turboSPOT	96 MHz, 192 MHz turboSPOT
SoC	32-bit Arm Cortex-M4F, DMA, Arm Cortex-M0 for Bluetooth Low Energy	32-bit Arm Cortex-M4F, DMA, Arm Cortex-M0 for Bluetooth Low Energy	32-bit Arm Cortex-M4F, DMA, Arm Cortex-M0 for Bluetooth Low Energy	32-bit Arm Cortex-M4F, DMA, Arm Cortex-M0 for Bluetooth Low Energy
SoC CoreMark Power Efficiency	33 μ W/MHz	33 μ W/MHz	38 μ W/MHz	29 μ W/MHz
NVM	1MB	2MB	2MB	2MB
SRAM	384KB	768KB	1.4MB	2.75MB
Voltage	1.755-3.63 V	1.755-3.63 V	1.71-2.2 V	1.71-2.2 V
ADC	14-bit, 15-channel, up to 2.67 MS/s Sampling Rate ADC	14-bit, 15-channel, up to 2.67 MS/s Sampling Rate ADC	12-bit, 11-channel, up to 2.8 MS/s Sampling Rate ADC	12-bit, 11-channel, up to 2.8 MS/s Sampling Rate ADC
UART	2	2	4	4
I/O	I ² C/SPI Master (6x) I ² C/SPI Slave	I ² C/SPI Master (6x)	I ² C/SPI Master (7x) I ² C/SPI Slave SDIO v3.0/eMMC (1x)	I ² C/SPI Master (7x) I ² C/SPI Slave USB 2.0 FS/HS SDIO v3.0/eMMC (1x)
MSPI Master	1/2/4/8-bit wide up to 48 MT/s (SDR) ISO7816 Master	1/2/4/8-bit wide (3x) up to 48 MT/s (SDR) ISO7816 Master	1/2/4/8-bit wide (2x) 1/2/4/8/16-bit wide up to 96 MT/s (SDR/DDR)	1/2/4/8-bit wide (2x) 1/2/4/8/16-bit wide (KXR pkg only) up to 96 MT/s (SDR/DDR)
I²S	I ² S Slave for PDM, Audio Pass-through	I ² S Slave for PDM, Audio Pass-through	I ² S Master/Slave, full-duplex	I ² S Master/Slave (2x), full-duplex with ASRC
Audio	PDM stereo DMIC interface (1x)	PDM stereo DMIC interface (1x)	PDM stereo DMIC interface (1x)	PDM stereo DMIC interface (4x) Low Power Stereo Audio ADC (1x)
Display	SPI 3-wire/4-wire	SPI 3-wire/4-wire, Dual/QuadSPI	SPI 3-wire/4-wire Dual/QuadSPI	SPI 3-wire/4-wire Dual/QuadSPI MIPI DSI at 500 Mbps (1 lane) 4-layer Display Controller
Graphics	--	--	2D/2.5D GPU with anti-aliasing and dithering	2D/2.5D GPU with anti-aliasing, dithering, and vector graphics assist
Security	secureSPOT	secureSPOT w/ Secure Boot	secureSPOT 2.0 Secure Boot, Root of Trust	secureSPOT 2.0 Secure Boot, Root of Trust
Connectivity	Bluetooth® Low Energy 5	Bluetooth Low Energy 5	Bluetooth Low Energy 5.4	Bluetooth Low Energy 5.4
RF Sensitivity	-93 dBm (typical)	-93 dBm	-95 dBm	-95 dBm
Tx Output Power	Up to +3 dBm	Up to +3 dBm	Up to +6 dBm	Up to +6 dBm
Packages	<ul style="list-style-type: none"> 5 x 5 mm, BGA-81 w/ 50 GPIO 3.25 x 3.37 x 0.51 mm, CSP-66 w/ 37 GPIO 3.25 x 3.37 x 0.34 mm, CSP-66 w/ 37 GPIO (Thin) 8 x 8 mm, QFN-64 w/ 38 GPIO 	<ul style="list-style-type: none"> 5.3 x 4.3 x 0.8 mm, BGA-108 w/ 74 GPIO 	<ul style="list-style-type: none"> 4.7 x 4.7 mm, BGA-131 w/ 75 GPIO 	<ul style="list-style-type: none"> 4.7 x 4.7 mm, BGA-131 w/ 81 GPIO
Ordering Information	<ul style="list-style-type: none"> AMA3B1KK-KBR-B0 (BGA) AMA3B1KK-KCR-B0 (CSP) AMA3B1KK-KCR-TB (Thin CSP) AMA3B1KK-KQR-B0 (QFN) AMA3BEVB (EVB) 	<ul style="list-style-type: none"> AMA3B2KK-KBR (BGA) AMA3B2EVV (EVB) 	<ul style="list-style-type: none"> AMA4B2KL-KXR (BGA) AMA4BLEVB (EVB) 	<ul style="list-style-type: none"> AMA4B2KP-KXR (BGA) AMA4B2KP-KBR (BGA) AMAP4BPXEVB (EVB)