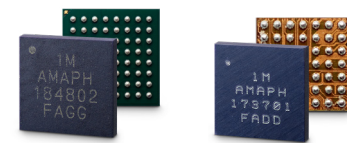
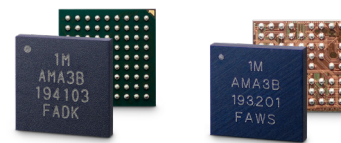


Apollo



Apollo2



Apollo3

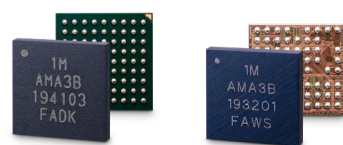


Apollo4 Lite

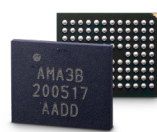


Apollo4 Plus

	Apollo	Apollo2	Apollo3	Apollo4 Lite	Apollo4 Plus
SoC Frequency	24 MHz	48 MHz	48 MHz 96 MHz turboSPOT®	96 MHz 192 MHz turboSPOT	96 MHz 192 MHz turboSPOT
SoC	32-bit Arm® Cortex®-M4F	32-bit Arm Cortex-M4F	32-bit Arm Cortex-M4F, DMA	32-bit Arm Cortex-M4F, DMA	32-bit Arm Cortex-M4F, DMA
SoC Power Efficiency	34 µA/MHz	10 µA/MHz	6 µA/MHz	4 µA/MHz	4 µA/MHz
NVM	512KB Flash	1MB Flash	1MB Flash	2MB MRAM	2MB Flash
SRAM	64KB	256KB	384KB	1.4MB	2.75MB
Voltage	2.2-3.8 V	1.755-3.63 V	1.755-3.63 V	1.71-2.2 V	1.71-2.2 V
ADC	10-bit, 13-channel, up to 800 kSps Sampling Rate 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	1	2	2	4	4
I/O	I ² C/SPI Master (2x) I ² C/SPI Slave	I ² C/SPI Master (6x) I ² C/SPI Slave	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 FS/HS SDIO v3.0/eMMC (1x)
MSPI	--	--	Dual/Quad/Octal-SPI Master 48 MHz SDR ISO7816 Master	Dual/Quad/Octal-SPI Master (2x) QSPI/OSPI/HexSPI 96 MHz SDR 48 MHz DDR	Dual/Quad/Octal-SPI Master (2x) QSPI/OSPI/HexSPI 96 MHz SDR 48 MHz 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 (1x) full-duplex	I ² S Master/Slave (2x) full-duplex with ASRC
Audio	--	Dual Interface PDM for Mono and Stereo Audio Microphones	Dual Interface PDM for Mono and Stereo Audio Microphones	Stereo PDM Interfaces (1x)	Stereo PDM Interfaces (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 MIPI DSI x2 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
Security	--	--	secureSPOT®	secureSPOT 2.0	secureSPOT 2.0
Connectivity	--	--	--	--	--
RF Sensitivity	--	--	--	--	--
Tx Output Power	--	--	--	--	--
Packages	<ul style="list-style-type: none"> 4.5 mm x 4.5 mm, 64-pin BGA with 50 GPIO 2.49 mm x 2.90 mm, 41-pin WLCSP with 27 GPIO 	<ul style="list-style-type: none"> 4.5 mm x 4.5 mm, 64-pin BGA with 50 GPIO 2.5 mm x 2.5 mm, 49-pin WLCSP with 34 GPIO 2.5 mm x 2.5 mm, 49-pin WLCSP with 300um with backside coating (Thin) 	<ul style="list-style-type: none"> 5 mm x 5 mm, 81-pin BGA with 50 GPIO 3.25 mm x 3.37 mm, 66-pin WLCSP with 37 GPIO 	<ul style="list-style-type: none"> 5 mm x 5 mm, 146-pin BGA with 84 GPIO 	<ul style="list-style-type: none"> 5 mm x 5 mm, 146-pin BGA with 105 GPIO
Ordering Information	<ul style="list-style-type: none"> APOLLO512-KBR (BGA) APOLLO512-KCR (WLCSP) AMAP1EVB (EVB) 	<ul style="list-style-type: none"> AMAPH1KK-KBR (BGA) AMAPH1KK-KCR (WLCSP) AMAPH1KK-KCR-TB (Thin) AMAPHEVB (EVB) 	<ul style="list-style-type: none"> AMAP31KK-KBR (BGA) AMAP31KK-KCR (WLCSP) 	<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)



Apollo3 Blue



Apollo3 Blue Plus



Apollo4 Blue Lite



Apollo4 Blue Plus

	Apollo3 Blue	Apollo3 Blue Plus	Apollo4 Blue Lite	Apollo4 Blue Plus
MCU Frequency	48 MHz 96 MHz turboSPOT	48 MHz 96 MHz turboSPOT	96 MHz 192 MHz turboSPOT	96 MHz 192 MHz turboSPOT
MCU	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
MCU Power Efficiency	6 µA/MHz	6 µA/MHz	4 µA/MHz	4 µA/MHz
NVM	1MB Flash	2MB Flash	2MB MRAM	2MB MRAM
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 Master (6x) I ² C/SPI Slave	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 FS/HS SDIO v3.0/eMMC (1x)
MSPI	Dual/Quad/Octal-SPI Master 48 MHz SDR ISO7816 Master	Dual/Quad/Octal-SPI Master (3x) 48 MHz SDR ISO7816 Master	Dual/Quad/Octal-SPI Master (2x) QSPI/OSPI/HexSPI 96 MHz SDR 48 MHz DDR	Dual/Quad/Octal-SPI Master (2x) QSPI/OSPI/HexSPI (KXR package only) 96 MHz SDR 48 MHz 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	Dual Interface PDM for Mono and Stereo Audio Microphones	Dual Interface PDM for Mono and Stereo Audio Microphones	Stereo PDM (1x)	Stereo PDM (4x) LP Analog Microphone with PGA (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 x2 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
Security	secureSPOT	secureSPOT	secureSPOT 2.0	secureSPOT 2.0
Connectivity	Bluetooth® Low Energy 5	Bluetooth Low Energy 5	Bluetooth Low Energy 5.1	Bluetooth Low Energy 5.1
RF Sensitivity	-93 dBm	-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 mm x 5 mm, 81-pin BGA with 50 GPIO 3.25 mm x 3.37 mm, 66-pin WLCSP with 37 GPIO 3.25 mm x 3.37 mm, 66-pin WLCSP 300um with backside coating (Thin) 	<ul style="list-style-type: none"> 5.3 mm x 4.3 mm x 0.8 mm, 108-pin BGA with 74 GPIO 	<ul style="list-style-type: none"> 4.7 mm x 4.7 mm, 131-pin BGA with 75 GPIO 	<ul style="list-style-type: none"> 4.7 mm x 4.7 mm, 131-pin BGA with 81 GPIO
Ordering Information	<ul style="list-style-type: none"> AMA3B1KK-KBR-B0 (BGA) AMA3B1KK-KCR-B0 (WLCSP) AMA3B1KK-KCR-TB (Thin) AMA3BEVB (EVB) 	<ul style="list-style-type: none"> AMA3B2KK-KBR (BGA) AMA3B2EVB (EVB) 	<ul style="list-style-type: none"> AMA4B2KL-KXR (BGA) EVB Coming Soon 	<ul style="list-style-type: none"> AMA4B2KP-KXR (BGA) AMA4B2KP-KBR (BGA) AMA4BPEVB (EVB) AMA4BPXEVB (EVB)