



Apollo and Apollo Blue Processor Family

	Apollo	Apollo2	Apollo2 Blue	Apollo3 Blue	Apollo3 Blue Plus
MCU Frequency	24MHz	48 MHz	48MHz	48 MHz 96 MHz TurboSPOT™	48 MHz 96 MHz TurboSPOT™
MCU	32-bit ARM Cortex-M4F	32-bit ARM Cortex-M4F	32-bit ARM Cortex-M4F Dedicated BLE Core	32-bit ARM Cortex-M4F, DMA ARM Cortex-M0 for BLE	32-bit ARM Cortex-M4F, DMA ARM Cortex-M0 for BLE
MCU Power Efficiency	34 uA/MHz	10uA/MHz	10uA/MHz	6uA/MHz	6uA/MHz
Flash	512KB	1MB	1MB	1MB	2MB
SRAM	64KB	256KB	256KB	384KB	768KB
Voltage	2.2 - 3.8V	1.8 - 3.6V	1.95 - 3.6V	1.8 – 3.6V	1.8 – 3.6V
ADC	10 bit, 13-channel, up to 800 kSps ADC	14 bit, 15-channel, up to 1.2 MSps	14 bit, 15-channel, up to 1.2 MSps	14 bit, 15-channel, up to 1.2 MSps	14 bit, 15-channel, up to 1.2 MSps
UART	1	2	2	2	2
I/O	I ² C /SPI master I ² C /SPI slave	I ² C /SPI master (6x) I ² C /SPI slave	I ² C /SPI masters (4x) 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
MSPI	-	-	-	Quad/Octal SPI Master (1x) 48MHz SDR	Quad/Octal SPI Master (3x) 48MHz SDR 24MHz DDR
I ² S	-	I2S slave for PDM Audio Pass-through	I2S slave for PDM Audio Pass-through	I2S slave for PDM Audio Pass-through	I2S slave for PDM Audio Pass-through
PDM	-	Dual Interface for Mono and Stereo Audio Microphones	Dual Interface for Mono and Stereo Audio Microphones	Dual Interface for Mono and Stereo Audio Microphones	Dual Interface for Mono and Stereo Audio Microphones
Connectivity	-	-	BLE 5	BLE 5	BLE 5
RF Sensitivity	-	-	-95dBm	-95dBm	-95dBm
RF TX Max	-	-	+5dBm	+4dBm	+4dBm
RX current	-	-	3.5mA	3mA	3mA
TX current	-	-	5.05mA @ 0dBm 8mA @ +5dBm	3mA @ 0dBm	3mA @ 0dBm
Packages	- 2.49 x 2.90 mm 41-pin CSP w/ 27 GPIO - 4.5 x 4.5 mm 64-pin BGA w/ 50 GPIO	- 2.5 x 2.5 mm 49-pin CSP w/ 34 GPIO - 4.5 x 4.5 mm 64-pin BGA w/ 50 GPIO	4 x 4 x 0.9 mm 64-pin LGA w/ up to 31 GPIO	3.3 x 3.2 mm 65-pin CSP w/ 37 GPIO 5 x 5 mm 81-pin BGA w/ 50 GPIO	5.3 x 4.3mm 104-pin BGA w/74 GPIO

Kaga FEI Electronics (Shanghai) Co., Ltd

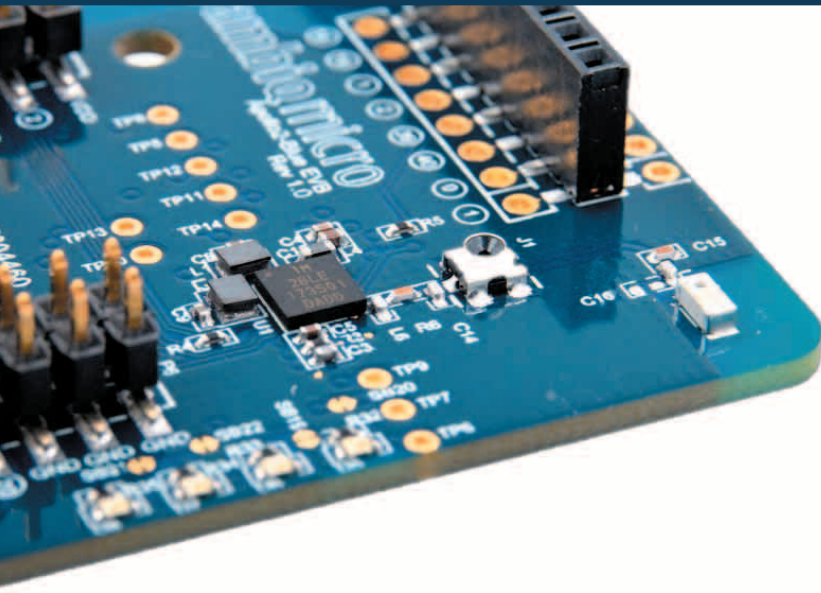
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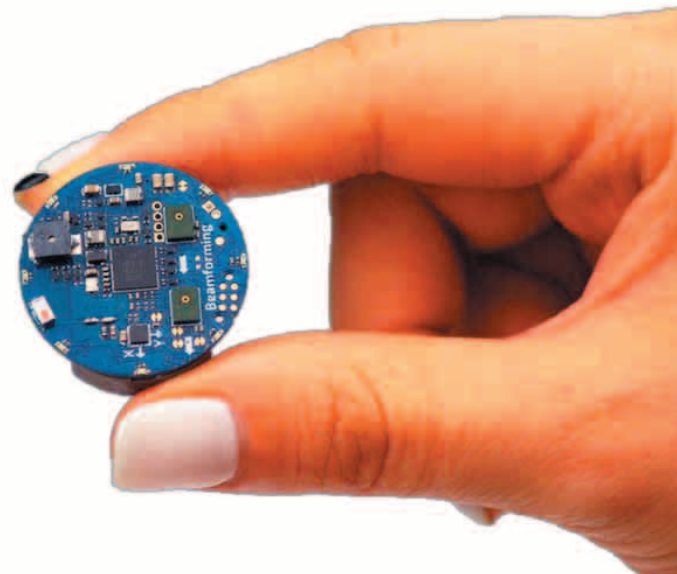
Ambiq Micro is the leader in ultra-low power design with the Apollo and Apollo Blue family of microcontrollers and wireless SoCs providing the most energy efficient sensor processing solutions in the market. At the heart of each device is Ambiq Micro's patented Subthreshold Power Optimized Technology (SPOT™) platform, which dramatically reduces energy consumption without compromising performance, quality, or functionality.

Ambiq Micro's SPOT™-based processors are also breaking new ground in bringing neural

network-based technologies to battery and energy harvesting powered edge devices with always-on/hands-free wake word recognition, voice assistant command & control, complex sleep and hear rate analysis, and contextually-aware sensor processing. Tens of millions of hearables, wearables, medical monitors, IoT devices, and remote wireless sensors are benefiting from Apollo and Apollo Blue microcontrollers by gaining the flexibility to dramatically increase battery life, add more complex intelligent processing, and use smaller batteries or unique power supplies.

All Apollo microcontrollers include a standard ARM Cortex-M4F core, generous amounts of Flash and SRAM, and a broad suite of interfaces to enable multiple sensors, microphones, or displays. The Apollo Blue microcontroller family integrates an energy-efficient Bluetooth 5 low-energy radio combined with improved communication features to enable always-connected, ultra-low power designs. The Apollo Blue family also provides a dedicated second core providing superior RF throughput and leaving plenty of resources available for user applications.

The newly released Apollo3 Blue and Apollo3 Blue Plus includes updated peripherals, additional memory, an advanced DMA engine, TurboSPOT™ which increases the computational capabilities of the ARM Cortex M4F core to 96MHz, and active power consumption reaching as low as 6uA/MHz.



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