



# RK2108D Smart Watch Solution

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# Features of RK2108D

- M4F max frequency 400MHz, and DSP max frequency 600MHz, it's computing power can meet the Smart Watch applications.
- Support display interfaces: MIPI/MCU/SPI, hardware VOP supports up to 2048x4096 output and 3 UI layers, dynamic clock and cool UI, up to 60fps display
- Support Power off mode, system can power on and display out <100ms
- Support MIC array, AEC audio processing and off-line speech recognition algorithm
- 1.5MB large capacity SRAM, support PSRAM expansion



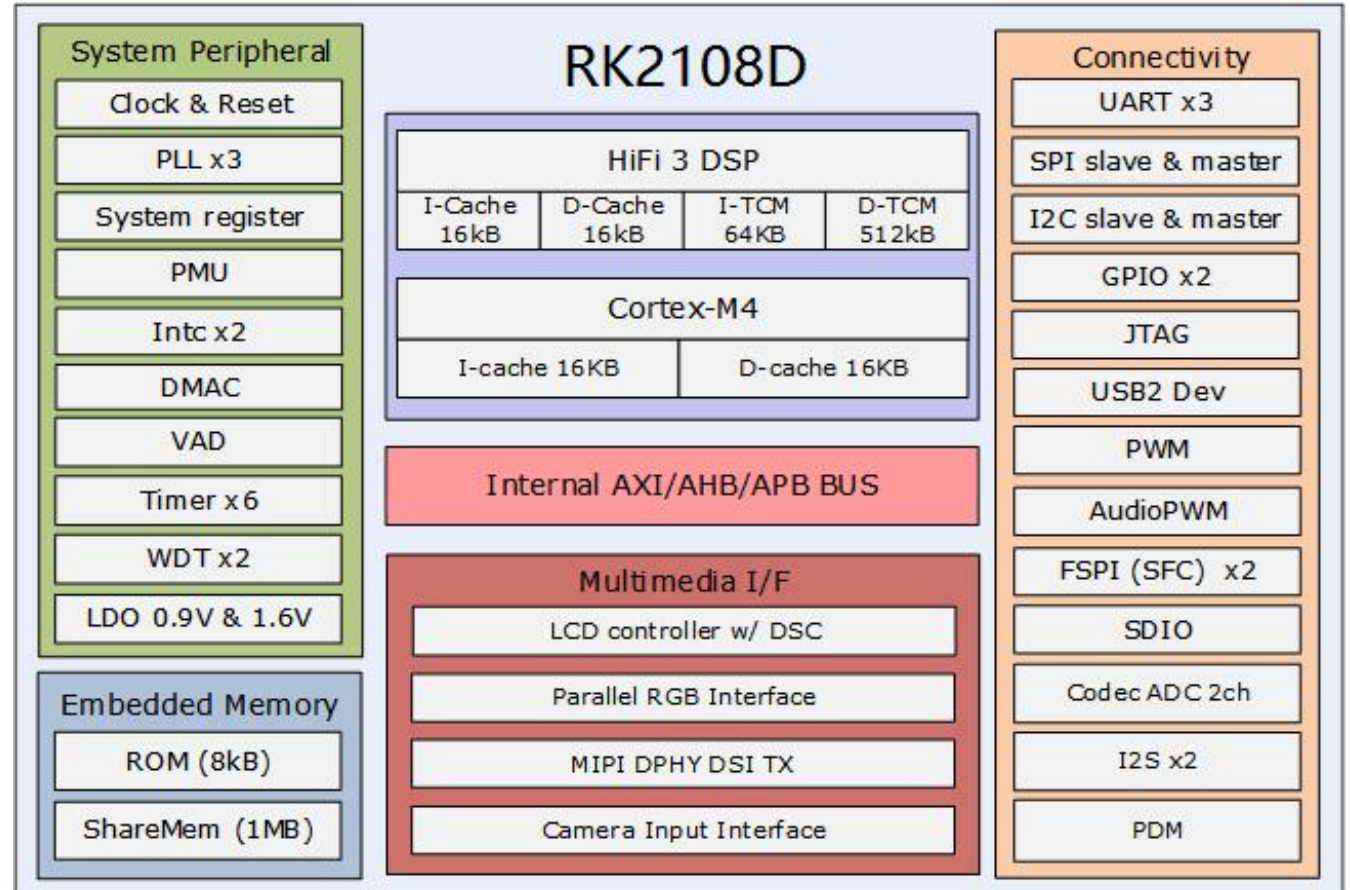
# Features of the Solution

- Support Power off mode, when the watch is in the standby, RK2108 power consumption has industry-leading level.
- 28nm manufacturing process, ultra-low power consumption.
- Support MIPI display interface, on-chip large-capacity SRAM to ensure high-resolution and smooth display.
- Respond quickly to functions such as raising the wrist to turn on the screen, notifications, etc., 100ms fast boot display.
- High-performance DSP, providing high-quality voice signal processing capabilities and 2D rendering operator acceleration capabilities

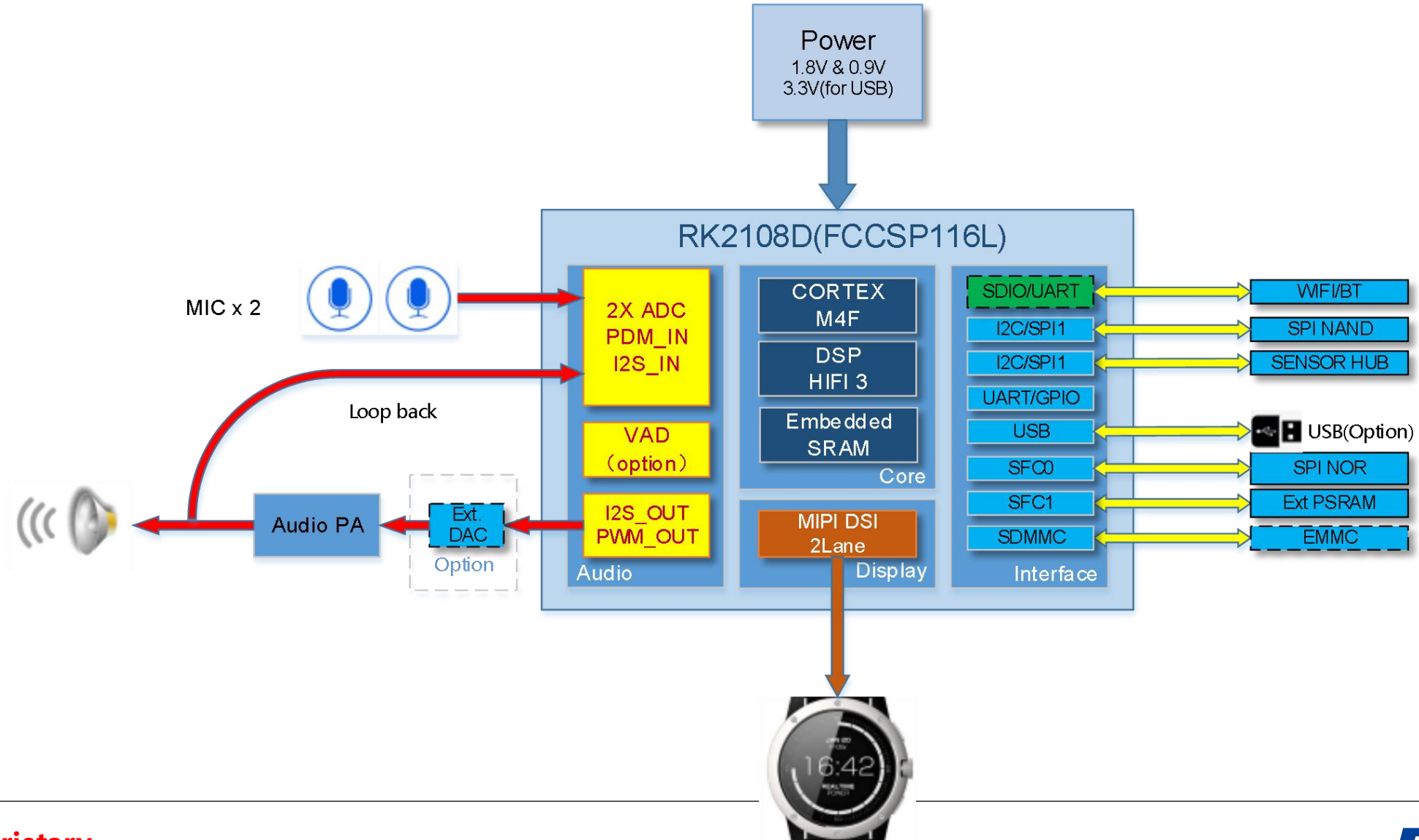


# RK2108D Specifications

- ARM Cortex-M4F
- Cadence Tensilica HiFi3 Audio DSP
- Embedded 1.5MB SRAM+DTCM
- Embedded LDOs
- SPI Nor FLASH,
- SD/MMC 3.0 SDIO 3.0
- MIPI DPHY DSI 2Lane
- Digital Audio Interface
  - 4CH RX, 2CH TX I2S/PDM/PCM
  - 6CH RX, 2CH TX I2S
- Acodec
  - 2x ADC for MIC IN and LINE IN
- Connectivity
  - USB 2.0 Device
  - MIPI DSI / MCU LCD interface
  - 12bit DVP camera interface
  - UART, SPI, I2C, PWM
- Package FCCSP116L 3.8\*4.5



# RK2108D Smart Watch Block Diagram for Reference



# Operating Power Consumption of RK2108D

Scenes	Chip-side Power Consumption	Remarks
Deep Standby (Shutdown)	~0 ( Power Off )	Support fast power on and display
Standby	1.73mW	Support GPIO or interrupt wake-up
720p display 1fp/min	5.8mW	Simple digital clock, refreshed once a minute
720p display 1fp	6.94mW	Clock with secondhand, refreshed every second
720p display 25fps	18.5mW	Dynamic background clock or other animated screensavers, etc.
Voice Activation	10.4mW	M4 sleeps, DSP runs algorithm of dual MIC voice wake-up

# Thank you!



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