



## RTL8735B Series

### System and Platform

- Real-M500 CPU:
  - Arm v8M compatible, clock frequency up to 500MHz
  - I-Cache 32KB/D-Cache 32KB
- CNN AI Engine:
  - 0.4T@INT8/INT16(NPU) computing power
- Memory:
  - Embedded 64MB/128MB/ 256MB DDR2/3 memory/clock speed 533MHz
  - Internal 768KB ROM/clock speed 250MHz
  - Internal 512KB SRAM/clock speed 250MHz
  - Supports SPI interface NOR Flash or NAND Flash
- RF Features:
  - Wi-Fi 802.11a/b/g/n 1x1 2.4GHz/5GHz
  - Supports antenna diversity
  - Bluetooth Low Energy, BLE 5.1

### Security

- Supports Secure boot
- Supports Arm Trust-Zone
- True random number generator (TRNG)
- Hardware encryption engine, supports AES and SHA algorithms
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- ECDSA/EdDSA/RSA engine
- Full or partial Flash encryption
- JTAG/SWD debug port password protection

### Video/ISP Features

- Multi-stream real-time H.265/H.264/JPEG encoding
- Supports 5-megapixel (2592x1944) sensor
- 1080p@45fps; 2K@24fps
- Supports 12bit Bayer pattern input and 8bit YUY2 input from CMOS sensor
- Supports MIPI CSI-2 four data lane
- CBR/VBR/CVBR/FIXQP/AVBR rate control, ROI/GDR, rotation/cropping
- Supports Auto Banding, Auto Exposure, Auto White Balance
- Advanced temporal and spatial noise reduction(3DNR)
- Lens shading compensation/ Black level compensation and dead pixel cancellation/ horizontal lens distortion correction/ High dynamic range fusion and tone mapping for HDR sensor input
- Programmable gamma table
- Digital WDR
- Image enhancement(brightness, contrast, saturation, hue and sharpness)
- ISP tool for easy image quality tuning

### Peripheral Interface

- Flexible design of GPIO configuration
- Multiple communication interfaces, supporting up to :
  - 4\* UART, baud rate up to 4MHz, all interfaces can be configured as log UART
  - 4\* I2C, max. clock 400Kbps
  - 2\* SPI, master clock up to 25Mbps/slave clock up to 31.25Mbps
  - 12\* PWM, configurable duration and duty cycle from 0 ~ 100%
  - \* ADC channels, 12-bit mode with max. 31.5KHz
  - 59 programmable GPIOs
- 2 GDMA, up to 6 channels each
- Support USB 2.0 Device/Host mode
- Support SD Card (Version 1.0-3.0)/4-bit, up to 2TB card capacity
- Integrated Audio Codec: One output, one input AMIC or 2 DMIC. Up to 96 kHz sampling frequency and 24-bit data width