

JLQ Technology LTE Smartphone SoC - JR510

JR510 is an Qcta-core LTE Smartphone SoC launched by JLQ Technology with balanced performance and power consumption. It has powerful image and AI processing performance, which can meet the needs of diverse applications in the mobile era and enable mobile intelligent terminal products to benefit more users and scenarios.



01 JR510 Device Description

CPU

- ARM Cortex-A55 Octa-Core, 64-bit
- 4x A55 @ 2.0GHz + 4x A55 @ 1.5GHz

HW AI

- Up to 1.23 TOPS
- Support frameworks: Caffe/TensorFlow/TF-Lite/ONNX-/Darknet/Pytorch, etc.

Vision DSP

- Integrated vision DSP, Up to 800MHz
- Support OpenCL, Hailde, OpenVx Graphic

ISP

- 3 x ISP, 4-lane CSIs (4/4/4 or 4/4/2/1)
- MIPI combination D-PHY 1.2 and C-PHY 1.0
- Triple cameras: (13MP + 13MP + 5MP) @30fps
- Single camera: 25MP @30fps

GPU

- Mali G52 @800MHz
- OpenCL 2.0 Full Profile
- OpenGL ES 1.1/2.0/3.2, Vulkan 1.0/1.1
- Support AFBC1.2

Display

- Up to FHD+(21:9, 2520*1080) @60fps
- Up to HD+(21:9, 1680*720) @90fps
- Supporting 10bpc; Display enhancement
- Support AFBC1.2

Video

- Enc: H.265/H.264 1080P@60fps
- Dec: H.265/H.264/H.263/VP8/VP9/MPEG4/VC-1
Up to 4K (3840*2160) @30fps, or 1080P@120fps
- Support AFBC1.2

Audio/Voice

- Integrated low power island for VAD
- Low power KWS solution (AI)
- Voice enhancement: AEC, ANR, ALC
- Noise Suppressor
- Dual-Mic (AI solution and traditional solution)

Modem

- LTE (FDD-LTE / TD-LTE), WCDMA, GSM
- DL Cat7 / UL Cat13 or DL Cat4 / UL Cat5
- DSDS, support Dual-LTE

WCN

- 802.11 a/b/g/n/ac
- Bluetooth 4.2/5.0; FM Rx, RDS, RBDS
- GPS/GLONASS/BDS/Galileo/QZSS/SBAS

Sensor Hub

- Integrated ARM Cortex-M4 with FPU

Security Engine

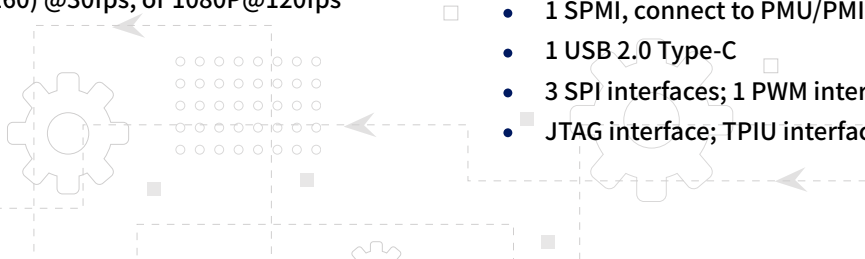
- Hardware based crypto engines
- Inline crypto engine for FBE
- TEE, based on OP-TEE, TrustZone

Memory Interfaces

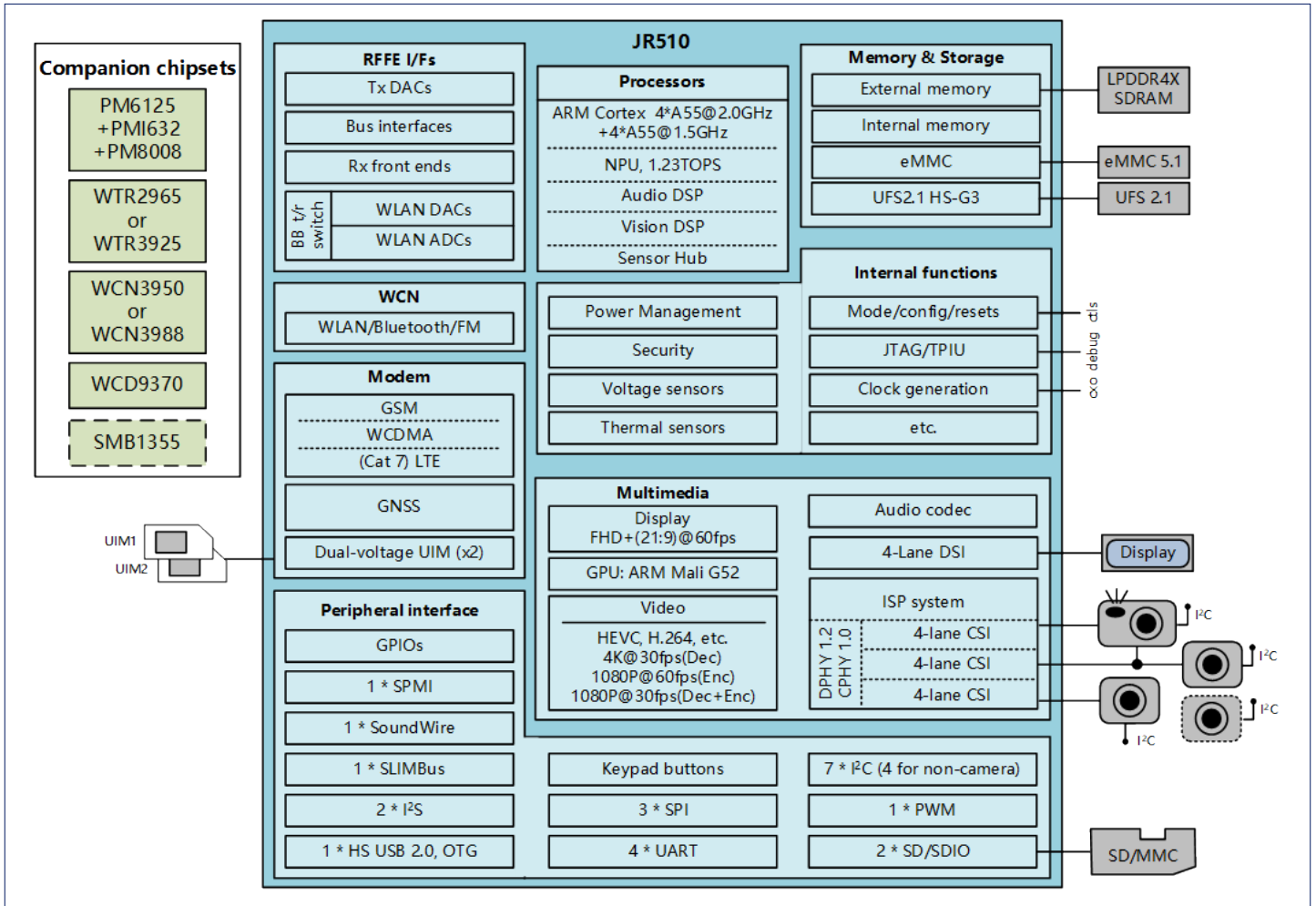
- LPDDR4x 1866MHz, 6GB
- eMMC 5.1, UFS2.1
- Micro SD: MAX 256GB

Peripheral Interfaces

- 4 UART interfaces; 2 UIM interfaces
- 7 I2C ports, including 3 for Camera sensors
- 2 SD 3.0/SDIO 3.0 interfaces
- 1 SPMI, connect to PMU/PMI
- 1 USB 2.0 Type-C
- 3 SPI interfaces; 1 PWM interfaces
- JTAG interface; TPIU interface



02 Functional Block Diagram



03 Package

- Advanced 12.6*11.8 mm FC-CSP package.

