

Cost-Effective Multimedia Platform

Overview

The F102MX-XXX is an advanced application processor designed specifically for video decoding market, integrating a domestic RISC-V CPU instruction architecture.

Multiple Decoding formats

This advanced SoC supports a wide range of decoding formats, including H.264, MPEG-1/2/4, JPEG, etc. Additionally, its independent hardware encoder can perform encoding in JPEG or MJPEG.

Rich Display and Audio Interfaces

This advanced SoC also supports rich display interfaces such as RGB, LVDS, and MIPI. Integrated multi-channel ADCs/DACs and audio interfaces (I2S/PCM/OWA) provide an excellent voice interaction solution.

Broad Application

The F102MX-XXX can be used in network video players, digital photo frames, smart vision transmission screen , and so on.

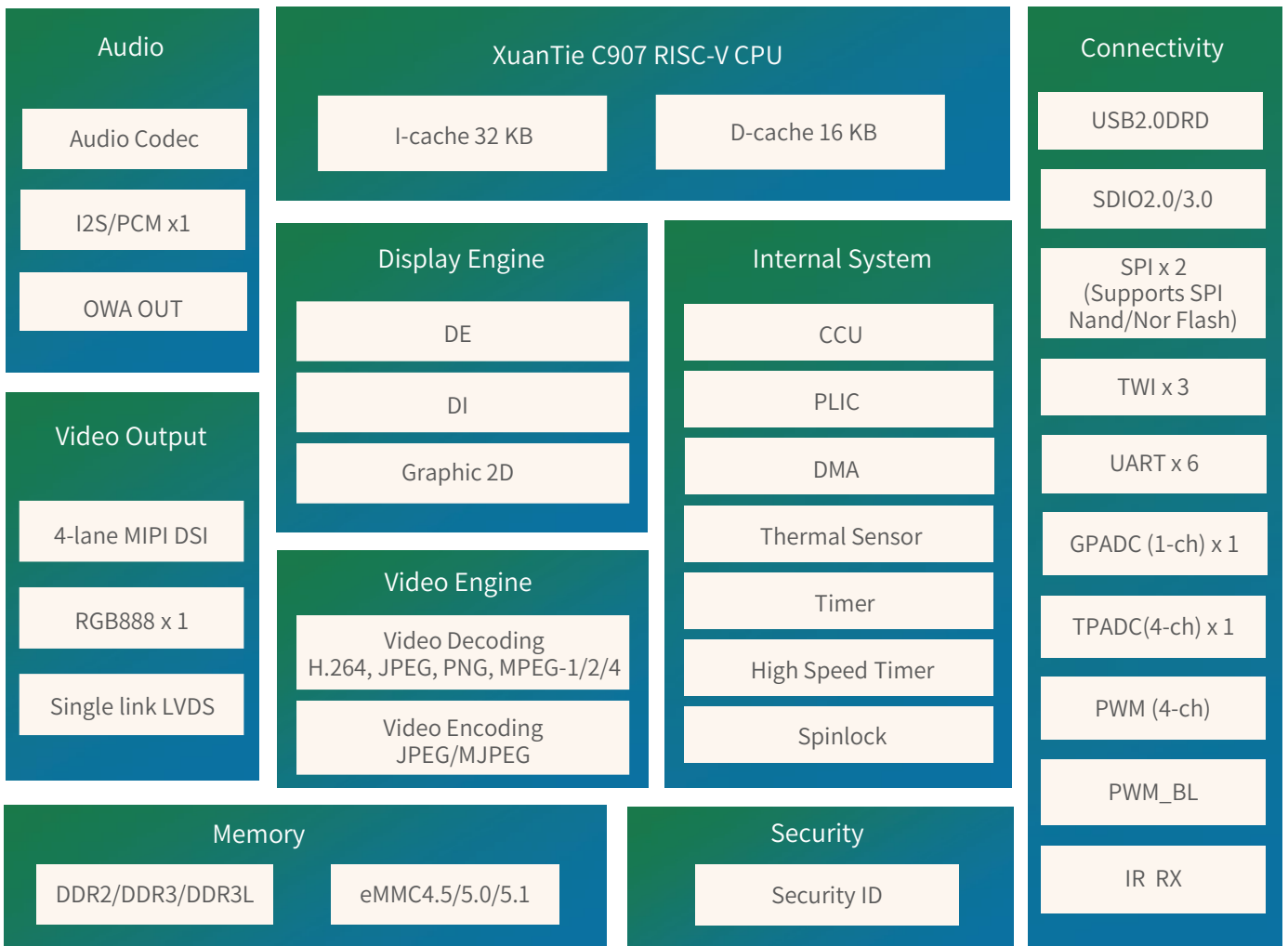
Features

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| CPU | <ul style="list-style-type: none"> XuanTie C907 RISC-V CPU 32 KB I-cache + 16 KB D-cache |
| Memory | <ul style="list-style-type: none"> DDR2/DDR3/DDR3L, up to 256MB eMMC4.5/5.0/5.1 |
| Video Engine | <ul style="list-style-type: none"> Video decoding <ul style="list-style-type: none"> -H.264 up to 1080p@30fps -MPEG-1/2/4, up to 1080p@30fps Image decoding <ul style="list-style-type: none"> -JPEG, Maximum resolution: 16384x16384 -PNG, Maximum resolution: 2048x2048 Video encoding <ul style="list-style-type: none"> - JPEG/MJPEG up to 720p@30fps - Maximum resolution: 8192x8192 |
| Display Engine | <ul style="list-style-type: none"> Allwinner Awonder1.1 Lite post processing for an excellent display experience Supports de-interlace (DI) up to 720p@60fps Supports G2D hardware accelerator including rotate and mixer functions |

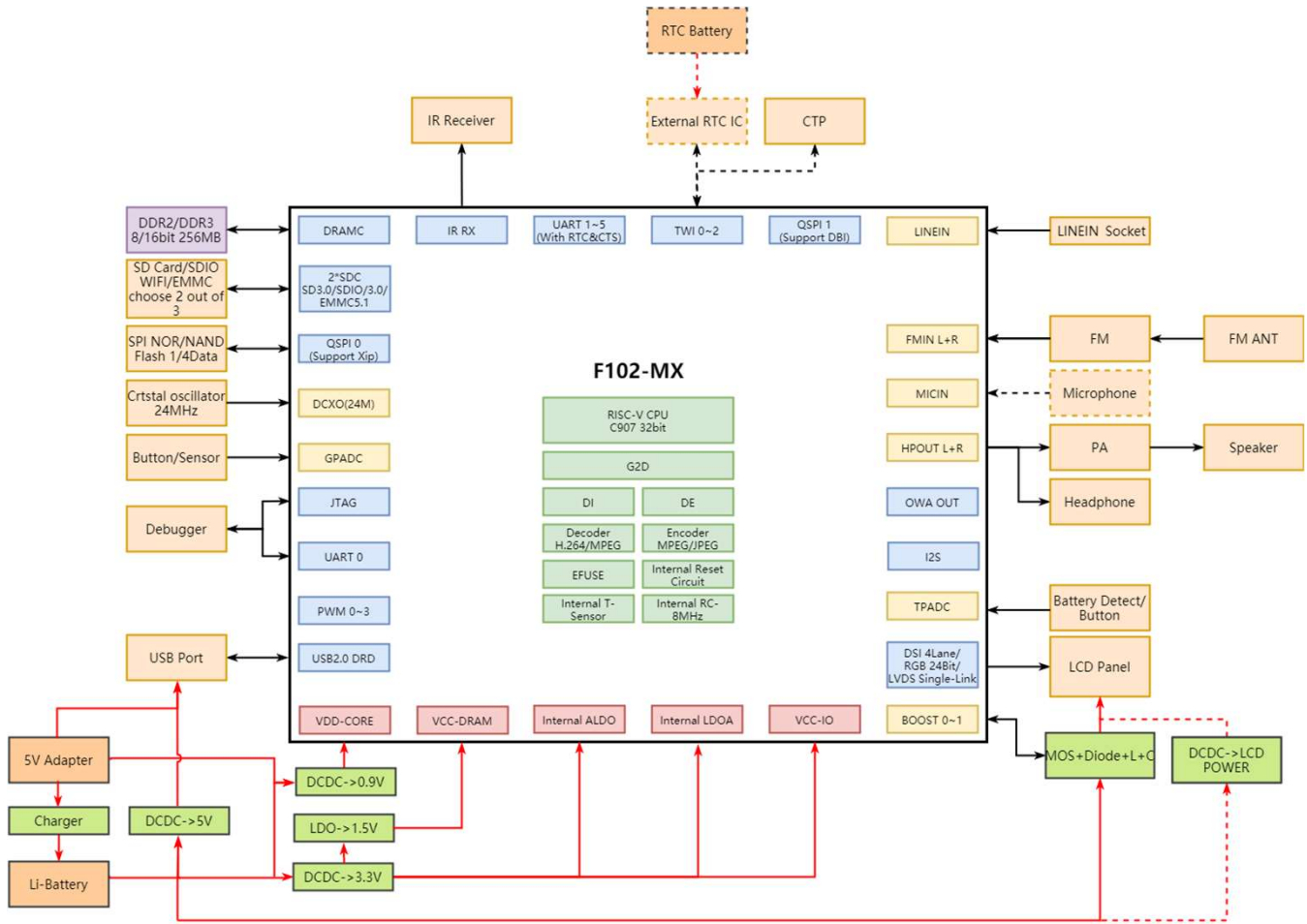
Features

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| Video Output | <ul style="list-style-type: none"> 1 x RGB888 output interface up to 1280x720@60fps Single link LVDS interface up to 1366x768@60fps 4-lane MIPI DSI interface up to 1280x800@60fps |
| Audio | <ul style="list-style-type: none"> 2x DACs and 1x ADC Analog audio interfaces: MICIN, LINEIN, FMIN, HPOUTL/R Digital audio interfaces: I2S/PCM, OWA OUT |
| Security | <ul style="list-style-type: none"> Integrated 512 bits eFuse storage space |
| Connectivity | <ul style="list-style-type: none"> USB2.0 DRD x 1, SDIO2.0/3.0 SPI x 2, UART x 6, TWI x 3 4-ch PWM x 1, PWM_BL x 2, IR_RX x 1 1-ch GPADC x 1, 4-ch TPADC x 1 |
| Package | <ul style="list-style-type: none"> QFN128, 12.3mm x 12.3mm |

Block Diagram



Application Diagram



ABOUT ALLWINNER

Allwinner Technology, founded in 2007, is a outstanding designer dedicated to intelligent application SoC, high performance analog component and wireless connectivity IC. It is headquartered in Zhuhai China, with other R&D centers and offices in Shenzhen, HongKong, Xi'an, Beijing and Shanghai. Listed on the GEM of the Shenzhen Stock Exchange in 2015, with the stock code 300458.

Motivated by customer-oriented strategy, Allwinner aligns remarkable R&D teams with long-term core-technology investment in UHD video processing, high-performance multi-core CPU/GPU integration with AI and advanced manufacturing process in terms of high integration, ultra-low power consumption and full-stack integration platform, providing competitive turnkey solutions with considerate services. The products powered by Allwinner spread across from smart hardware, smart home, consumer electronics, HD media, smart video, connected car, industry control, wireless communication to analog products.

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