T113i

Cost-effective Industrial SoC

Overview

T113-i is an advanced application processor designed for the Multi-Media decoding platform. T113-i integrates a 64-bit XuanTie C906 RISC-V CPU, a dual-core Cortex™- A7 CPU, and a HiFi4 DSP to provide the high-efficient computing power. It supports the full format decoding such as H.265, H.264, MPEG-1/2/4, JPEG, etc. The independent encoder can encode in JPEG or MJPEG. Integrated multi ADCs/DACs and I2S/PCM/DMIC/OWA audio interfaces can work seamlessly with the CPU to accelerate multimedia algorithms and improve the user experience. T113-i supports RGB/LVDS/MIPI DSI/CVBS OUT display output interfaces to meet the requirements of the different screen display. T113-i comes with extensive connectivity and interfaces, such as USB, SDIO, EMAC, TWI, UART, SPI, PWM, GPADC, LRADC, TPADC, IR TX&RX, etc. Besides, T113-i can connect with other different peripherals like Wi-Fi and BT via SDIO and UART.

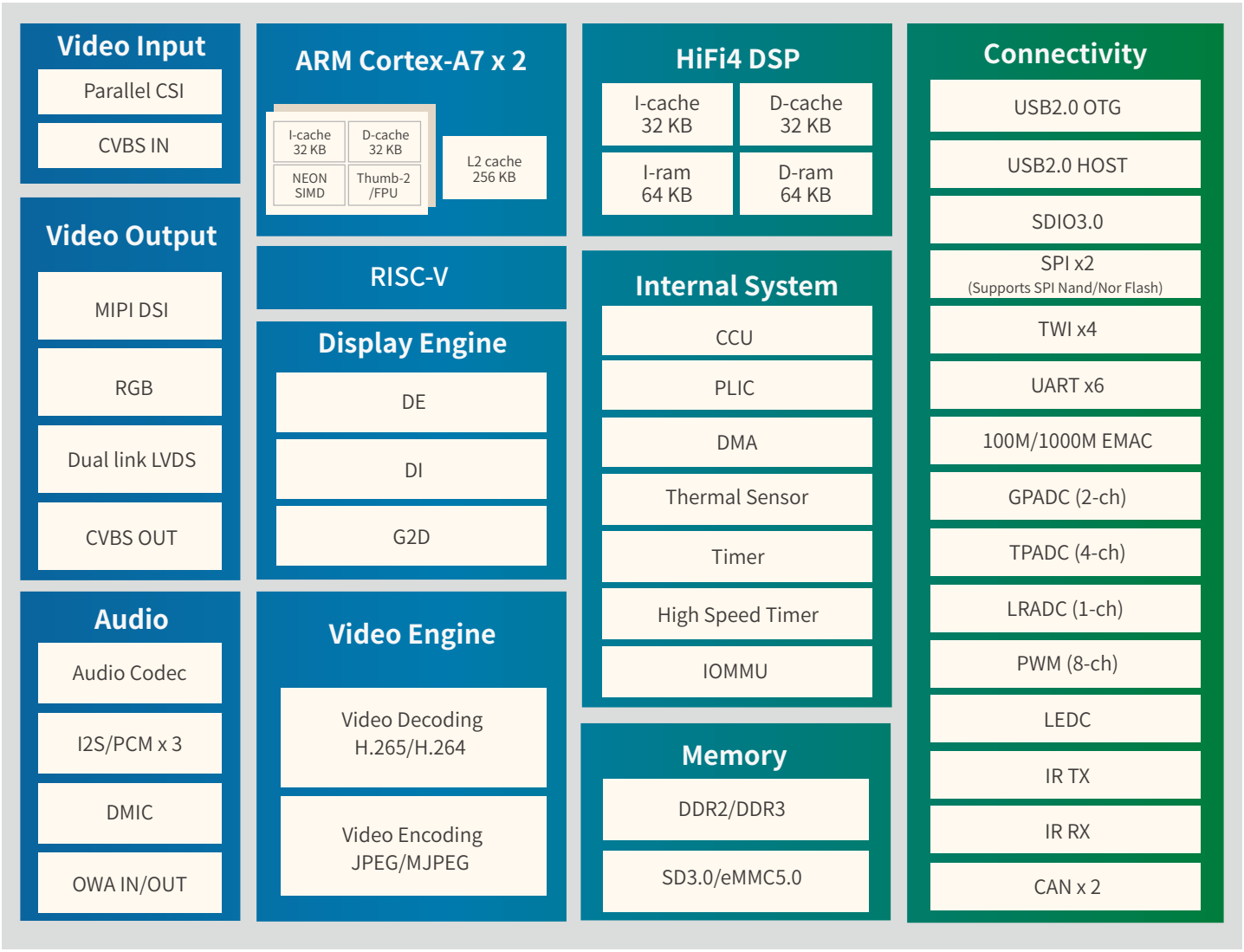
Highlights

- T113-i integrates a dual-core Cortex™ - A7 CPU to provide energy-efficient and stable computing power.
- T113-i integrates H.265/H.264 4K decoding and SmartColor2.0 post processing to deliver the perfect video entertainment experience.
- T113-i supports high performance 3 ADCs, 2 DACs, 3 I2S/PCM, 8 digital microphones to provide the perfect voice interaction solutions.
- Rich peripheral interfaces, such as RGB, LVDS, MIPI DSI, USB, SDIO, EMAC, TWI, CAN, UART, SPI, PWM, GPADC, LRADC, TPADC, IR TX&RX, and so on, greatly facilitate product expansion.
- The advanced process design with lower voltage and lower leakage, the power optimization design for typical scenes, and the enhanced heat dissipation package improve the heating experience of the product.
- Industrial level working temperature, 10-years chip life.

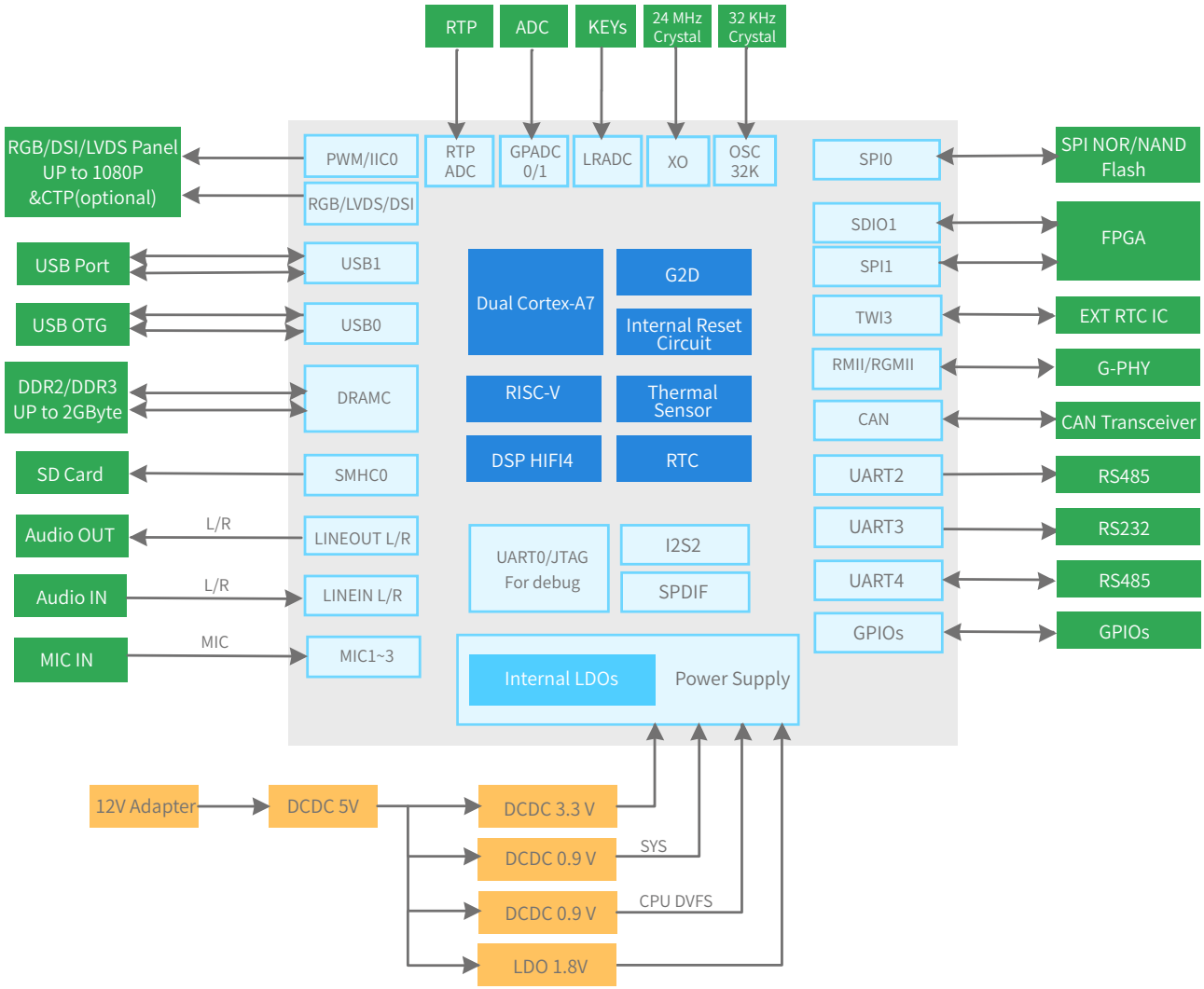
Features

CPU	• 64-bit Xuantie C906 RISC-V • Dual-core ARM Cortex™-A7 - 32 KB L1 I-cache + 32 KB L1 D-cache per core, and 256 KB L2 cache
DSP	• HiFi4 • 32 KB I-cache + 32 KB D-cache • 64 KB I-ram + 64 KB D-ram
Memory	• DDR2/DDR3, up to 2 GB • SD3.0/eMMC 5.0, SPI Nor/Nand Flash
Video Engine	• Video decoding - H.265 up to 4K@30fps - H.264 up to 4K@24fps -H.263, MPEG-1/2/4, JPEG, Xvid, Sorenson Spark, up to 1080p@60fps Video encoding - JPEG/MJPEG up to 1080p@60fps - Supports input picture scaler up/down
Display Engine	• Allwinner SmartColor2.0 post processing for an excellent display experience • Supports de-interlace (DI) up to 1080p@60fps • Supports G2D hardware accelerator including rotate, mixer, lbc decompression functions
Video OUT	• RGB LCD output interface up to 1920 x 1080@60fps • Dual link LVDS interface up to 1920 x 1080@60fps • 4-lane MIPI DSI interface up to 1920 x 1200@60fps • CVBS OUT interface, supporting NTSC and PAL format
Video IN	• 8-bit parallel CSI interface • CVBS IN interface, supporting NTSC and PAL format
Audio	• 2 DACs and 3 ADCs • Analog audio interfaces: MICIN1P/N, MICIN2P/N, MICIN3P/N, FMINL/R, LINEINL/R, LINEOUTLP/N, LINEOUTRP/N, HPOUTL/R • Digital audio interfaces: I2S/PCM, DMIC, OWA IN/OUT
Connectivity	• USB2.0 OTG, USB2.0 Host • CAN x 2 • SDIO 3.0, SPI x 2, UART x 6, TWI x 4 • PWM (8-ch), GPADC (2-ch), LRADC (1-ch), TPADC (4-ch), IR TX&RX • 10/100/1000M EMAC with RMII and RGMII interfaces
Package	• LFBGA 337 balls, 13 mm x 13 mm

Block Diagram



Application Diagram



ABOUT ALLWINNER

Allwinner Technology is a leading fabless design company dedicated to smart application processor SoCs and smart analog ICs. Its product line includes multi-core application processors for smart devices and smart power management ICs used by brands worldwide.

With its focus on cutting edge UHD video processing, high performance multi-core CPU/GPU integration, and ultra-low power consumption, Allwinner Technology is a mainstream solution provider for the global tablet, internet TV, smart home device, automotive in-dash device, smart power management, and mobile connected device markets. Allwinner Technology is headquartered in Zhuhai, China.

CONTACT US

For more product info, please contact service@allwinnertech.com, or scan the QR code to follow us on Wechat.