

SLAM/VSLAM intelligent robot sweeper solution

The high-performance multi-functional robot sweeper chip

Overview

The MR133 integrates a quad-core ARM Cortex™-A7 CPU that operates at speed up to 1.8GHz. The MR133 supports SLAM and VSLAM, which meets requirements in robot sweeper applications. It also integrates H.264 1080p@60fps encoder, and rich interfaces such as MIPI CSI, DVP camera interface, UART, PWM, LRADC, Codec, etc. Besides, the MR133 can support TINA OS. The MR133 is qualified to industrial standard in white electricity industry.

Highlights



Powerful Camera Functions

The MR133 integrates MIPI CSI, DVP, 13M ISP, and H.264 1080p@60fps encoder, these features help the MR133 implement on-line video monitoring, image identification function.



Rich Peripheral Interfaces

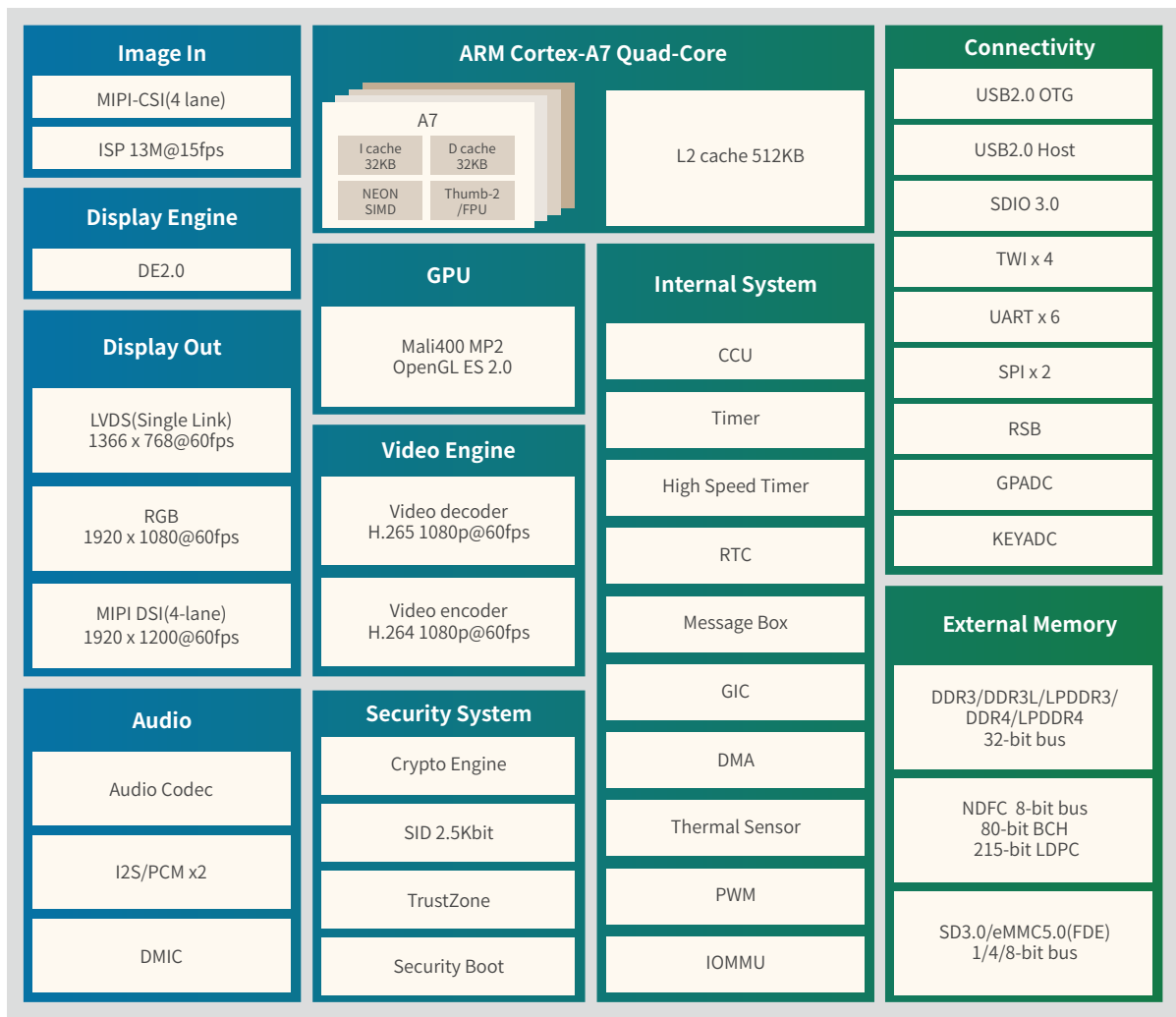
The MR133 supports rich peripheral interfaces, such as 2xUSB2.0, 2xSPI, 4xTWI, 6xUART, 3xPWM, KEYADC, GPADC, SDIO3.0, etc

Features

CPU	<ul style="list-style-type: none"> • Quad-core ARM Cortex™-A7@1.8GHz • 32KB L1 I-cache + 32KB L1 D-cache per core • 512KB L2 cache • Low-power CoolFlex™ power management architecture
GPU	<ul style="list-style-type: none"> • Mali400 MP2 • Supports OpenGL ES 2.0/1.1, Direct3D 11.1, OpenVG 1.1

Memory	<ul style="list-style-type: none"> • Supports 32-bit DDR4/DDR3/DDR3L/LPDDR3/LPDDR4 • Supports eMMC 5.0, compatible with eMMC 5.1, support Full Disk Encryption(FDE) • Supports 8-bit TLC/MLC/SLC/EF NAND flash, supports FDE • Supports LDPC/80-bit BCH/1024bytes
Video Engine	<ul style="list-style-type: none"> • Supports H264 HP encoder 1080P@60fps • Supports 3-bit rate control: CBR, VBR, FIXQP • Supports JPEG encoder 4096 x 4096
Video Input	<ul style="list-style-type: none"> • Compliant with MIPI-CSI2 V1.00 and MIPI DPHY V1.00.00 • 1/2/3/4 Data Lanes Configuration and up to 1Gbps per Lane in HS Transmission • Maximum to 13M@15fps, or 8M@30fps with 4 data lane • Supports format: YUV422-8bit/10bit, YUV420-8bit, RAW-8, RAW-10, RAW-12, RGB888, RGB565
ISP	<ul style="list-style-type: none"> • Maximum picture resolution of 4224x3168 • Adjustable 3A functions, including automatic exposure(AE), automatic white balance(AWB) and automatic focus (AF) • Supports spatial(2D) de-noise filter • Supports contrast enhance and sharpening • Supports chrominance noise reduction • Supports defect pixel correction
Memory	<ul style="list-style-type: none"> • Supports two audio DAC and one audio ADC • Supports Three analog audio inputs and one analog audio outputs • Capless stereo headphone driver • Up to two I2S/PCM controllers for connecting Bluetooth and external audio codec • Integrated digital microphone, supports maximum 8 digital microphones
Security Engine	<ul style="list-style-type: none"> • Supports Symmetrical algorithm: AES,DES,3DES,XTS • Supports Hash algorithm: MD5,SHA,HMAC • Supports Pubic Key algorithm: RSA, ECC • Supports 160-bit hardware PRNG with 175-bit seed • Supports 256-bit hardware TRNG • Supports 2.5K-bit EFUSE for chip ID and security application
Connectivity	<ul style="list-style-type: none"> • USB Host, USB 2.0 OTG • SDIO 3.0, RSB • 4 x TWI, 2 x SPI • 6 x UART, 3 x PWM • GPADC, KEYADC
WIFI	<ul style="list-style-type: none"> • XR829 or others
OS	<ul style="list-style-type: none"> • Tina. Android 8.1 or above
PMIC	<ul style="list-style-type: none"> • PMU AXP2585 • BMU AXP15060
Package	<ul style="list-style-type: none"> • FBGA 413balls • 12.3mm x 12.8mm size,0.5 ball pitch,0.3 ball size
Process	<ul style="list-style-type: none"> • 28nm HPC

Block 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.

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