V66
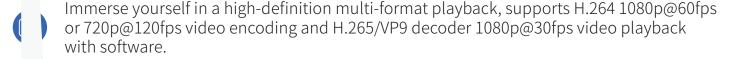
Octa-Core Processor
of Smart Rearview Mirror

Overview

The Allwinner V66 is an octa-core ARM Cortex™-A7 processor targeted at the smart rearview mirror market. Supports two independent video channels, which assures the front-facing camera up to 2304*1296P@30fps and the rear camera up to 720P@30fps work at the same time.

Highlights

Based on an octa-core ARM Cortex™-A7 CPU architecture and SGX 544 MP1 GPU, which providing the powerful processing and display performance.

Supports the multiple DRAM types as well as the dynamic frequency adjustment, a variety of automotive application scenario bandwidth and power consumption requirements.

Immerse yourself in a high-definition multi-format playback, supports H.264 1080p@60fps or 720p@120fps video encoding and H.265/VP9 decoder 1080p@30fps video playback with software.

Supports the multiple output interface, according to satisfy the display demand of RGB/LVDS/MIPI DSI etc.

Features

CPU	• Octa-Core Cortex™-A7 CPU up to 2.0GHz • Low-power CoolFlex™ power management architecture
GPU	SGX544 GPU up to 700MHz OpenGL ES 2.0/1.1, DX 9.3
Mem	
Video	

Display	• Support two independent display channels • Support RGB(24bits) up to 1920x1200@ 60Hz resolution • Support RGB666/656 ditcher function • Support LVDS up to 1366x768@ 60Hz resolution • Support 4-lane MIPI DSI(V1.0) up to 1920x1200@ 60Hz resolution • Support HDMI V1.4 output with HDCP1.2 up to 1920x1080@ 60Hz resolution
Camera	• Integrated 5MP parallel CMOS sensor • Integrated 8MP MIPI CSI controller • Integrated 8MISP • Support 720P 30fps USB camera UVC
Audio	• Supports 24bit/192KHz audio playback • Supports two I2S/PCM interfaces up to 384KHz sample rate, and 16 channel TDM with 32bit sample resolution • Supports DSD interface with 2 channels, 64/128/256-bit sample mode • Supports DMIC interface with 8 channels, maximum 48KHz sample rate • Supports SPDIF OUT and IN interface
Wi-Fi	• Supports 802.11 b/g/n protocol • Full security support: WPS, WPA, WPA2, WEP, TKIP
PMIC	• Customized AXP818 PMIC
Package	• FCBGA 345 • 14mm x 14mm size

Block Diagram

Display in
- CSI 5M/10bit
- MIPI CSI 4 lanes
- ISP 8M

Display out
- DE2.0 Dual Display
- MIPI DSI 4 lanes 1920× 1200@ 60fps
- LVDS 1366× 768@ 60fps
- LCD RGB 1920× 1200@ 60fps
- HDMI 1.4 with HDCP1.2 1920× 1080@ 60fps

Audio
- I2S/PCM× 2

A7×8
- 256KB L1 cache
- 256KB L1 cache
- 512KB L2 cache
- 512KB L2 cache

SGX544MP1
- Video Decoder 1080P@ 60fps H.264
- Video Encoder 1080P@ 60fps H.264

Memory
- DDR3/DDR3L/ LPDDR2/LPDDR3
- 1CH NDFC 8bits 64-bits ECC
- SDMMC× 3 SD2.0/eMMC4.41

System
- CCU
- CLOCK 24MHz
- DMA
- Timer
- PWM
- Thermal Sensor
- GPIO

Security
- Security Boot
- TrustZone
- Security Engine
- Efuse

Connectivity
- USB2.0OTG× 1
- USB HOST× 1 OHCI/EHCI
- USB HSIC× 1 USB2.0
- TWI× 4
- EMAC
- CIR Out
- SPI× 2
- UART× 6
- RSB× 1
- LRADC