Allwinner T8
High-End Smart Automotive in-Dash System Solution

Highlights

- High performance GPU for high-res, multi-window, and multi-layer applications
- Supports bandwidth-demanding background applications, like multi-tasking, voice recognition, and ADAS, etc
- High multimedia compatibility, 95+% format support
- 5mW standby power consumption (exclude standby power consumption of external devices)
- High definition, high frame rate video encoding, suitable for car DVR application
- Supports HD digital input, integrated HDR-capable ISP, supports round-the-clock driving monitoring

Block Diagram
# T8 Specifications

| **CPU** | 8-core Cortex-A7 @ 1.6GHz, up to 1.8GHz |
| **MCU** | Working frequency up to 200MHz |
| **GPU** | PowerVR SGX544MP1 GPU, Supports OpenGL ES1.1/2.0, OpenCL 1.1, Directx 9.3, Supports Renderscript |
| **Display** | Supports TTL up to 1920x1200@60fps, Supports LVDS up to 1366x768@60fps, Supports HDMI up to 1920x1080@60fps, Supports MIPI DSI up to 1920x1200@60fps |
| **Camera** | Supports parallel camera sensor up to 5M, supports video shot up to 720P@30fps, Supports MIPI camera sensor up to 8M, supports video shot up to 1080P@60fps, Integrated ISP |
| **Video Decoder** | Supports multi-format 1080P@60fps video decoding |
| **Memory** | Supports 32-bit DDR3(L) 800MHz, LPDDR2 533MHz, LPDDR3 667MHz, Supports memory capacity up to 2GB |

## Allwinner T8 Solution Features

- **HD Display Output**
  - Input layer size up to 2048x2048, and output size up to 2048x2048
  - Support RGB(24bits) up to 1920x1200@60Hz resolution
  - 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

- **HD Video Codec**
  - Support video playback up to 1080p@60fps
  - Support multi-format video playback
  - HEVC/H.265 decoder (software), main profile, 1080p@30fps
  - Support H.264 video encoding up to 1080p@60fps, 720p@120fps

- **FHD DVR**
  - **CSI**
    - Supports 10-bits parallel camera sensor
    - Supports up to 5M pixel camera sensor
    - Supports video shot up to 720p@30fps
  - **MIPI CSI**
    - Supports 4-lane MIPI CSI
    - Supports speed up to 8Mpixels@30fps
    - Supports video shot up to 1080p@60fps

- **ADAS**
● Multi-Tasking Processing
  Octa-core Cortex-A7 CPU
  · 32KB I-cache and 32KB D-cache per CPU
  · 2MB + 512KB L2 cache
  PowerVR SGX544MP1 GPU
  · Supports OpenGL ES 1.1/2.0, OpenCL 1.1, DirectX 9.3 standards
  · Geometry ability up to 133M/s
  · Effective pixel ability up to 5.33G/s

● Around View Parking System
  · Supports 4 channels H.264 720P@30fps USB camera
  · Integrated 100/1000 Mbps Ethernet Mac
  · Embedded distortion correction and seamless splicing algorithm

● Wireless Display
  · Supports four movable layers, each layer size up to 2048x2048 pixels
  · Supports input and output size up to 2048x2048 pixels
  · Supports multiple image input formats