The R6 integrates ARM9 architecture that operates at speed up to 600MHz. A 32MB DDR is embedded in the R6. It realizes complete voice function under limited cost, and supports mixed interaction between off-line local command word recognition and on-line cloud ASR recognition. The R6 includes rich interfaces such as ADC, DAC, I2S/PCM, USB OTG, SD/MMC, UART, SPI, TWI, etc. Besides, the R6 supports TINA OS. The R6 is qualified to industrial standard in white electricity industry.

Overview

The R6 integrates ADC, DAC, and I2S/TDM interface, which meets the basic computing rate requirements of dual-mic noise reduction, AEC, wake-up, local command word algorithm and cloud ASR, IOT interaction. The R6 is an ideal choice of middle-near field voice interaction solution.

Highlights

Dual-mic middle-near field intelligent voice interaction
The R6 integrates ADC, DAC, and I2S/TDM interface, which meets the basic computing rate requirements of dual-mic noise reduction, AEC, wake-up, local command word algorithm and cloud ASR, IOT interaction. The R6 is an ideal choice of middle-near field voice interaction solution.

Low cost, low power consumption, easy to develop
The chip is highly integrated, the BOM development cost is low, and the development is simple.

Features

<table>
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<th>Feature</th>
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| CPU       | • ARM9 CPU architecture  
• 16KByte D-Cache  
• 32KByte I-Cache |
| Memory    | • SIP 32MB DDR  
• SD2.0, eMMC 4.41 |
| Video     | • H.264 1280x720@30fps decoding  
• MPEG1/2/4 1280x720@30fps decoding  
• MJPEG 1280x720@30fps encoding  
• JPEG encode size up to 8192x8192 |
| Camera    | • 8-bit CMOS-sensor interface, supports CCIR656 protocol for NTSC and PAL  
• TV CVBS input, supports NTSC/PAL |
### Integrated analog audio codec
- With two DAC channels and one ADC channel
- Maximum 192kHz DAC sample rate and 48kHz ADC sample rate
- One I2S/PCM interface

### Display
- LCD RGB interface up to 1280x720@60fps
- TV CVBS output, supports NTSC/PAL, with auto plug detecting

### Connectivity
- USB OTG, SDIO, IR, 3 x TWI, 2 x SPI, 3 x UART

### OS
- Linux OS

### Package
- QFN88, 10mmx10mm

### Process
- 40nm

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**Block Diagram**

![Block Diagram](image)

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**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@allwinntech.com, or scan the QR code to follow us on Wechat.

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