

Rockchip

RV1106

A high-performance AI vision processor SoC



Features

CPU

ARM Cortex-A7, 1.2GHz

MCU 300MHz

NPU

0.5TOPS, support INT4, INT8, INT16

Memory

16-bit DDR3/DDR3L/DDR4

RV1106G2 embedded 1Gb DDR design

Support eMMC 4.51, dual and quad SPI Flash

Multi-Media

5M ISP 3.x with 2F HDR(Line-based/Frame-based/DCG)

Support 2*MIPI CSI /LVDS/sub LVDS

DVP interface with BT.656/BT.1120

H.264/H.265 encoder capability:

3072*1728@25 + 1280*720@25 +
720*576@25 + 5FPS JPEG
2592*1944@25 + 1280*720@25 +
720*576@25 + 5FPS JPEG
2880*1620@25 + 1280*720@25 + 720*576@25
+ 5FPS JPEG
2560*1440@30 + 1280*720@30 +
720*576@30 + 5FPS JPEG

16M@30FPS JPEG snapshot

Six bit rate control modes (CBR, VBR, FIXQP,
AVBR, QPMAP, and CVBR)

Intelligent encoding mode

8-area OSD

Ultra-low delay encoding

Rockchip Intelligent Video Engine

Support 20+ IVE algorithms

Support rotation, x-mirror, y-

Support scale down/up

External Interface

RMII interface with TSO network acceleration
and Ethernet PHY

One USB 2.0 Host/Device

Dual SDIO 3.0 interface for Wi-Fi and SD card

2-channel ADC、12 PWM interfaces

I2C、SPI、and UART interfaces

Embedded Audio codec、RTC、POR

SDK

Linux-5.10 base SDK

Physical Specifications

Power Consumption

Typical power consumption at 5M30fps:
760mW

Operating Voltage

0.9V core voltage

3.3V I/O voltage

1.8V DDR2/1.5(1.35)V DDR3(L)/1.2V DDR4

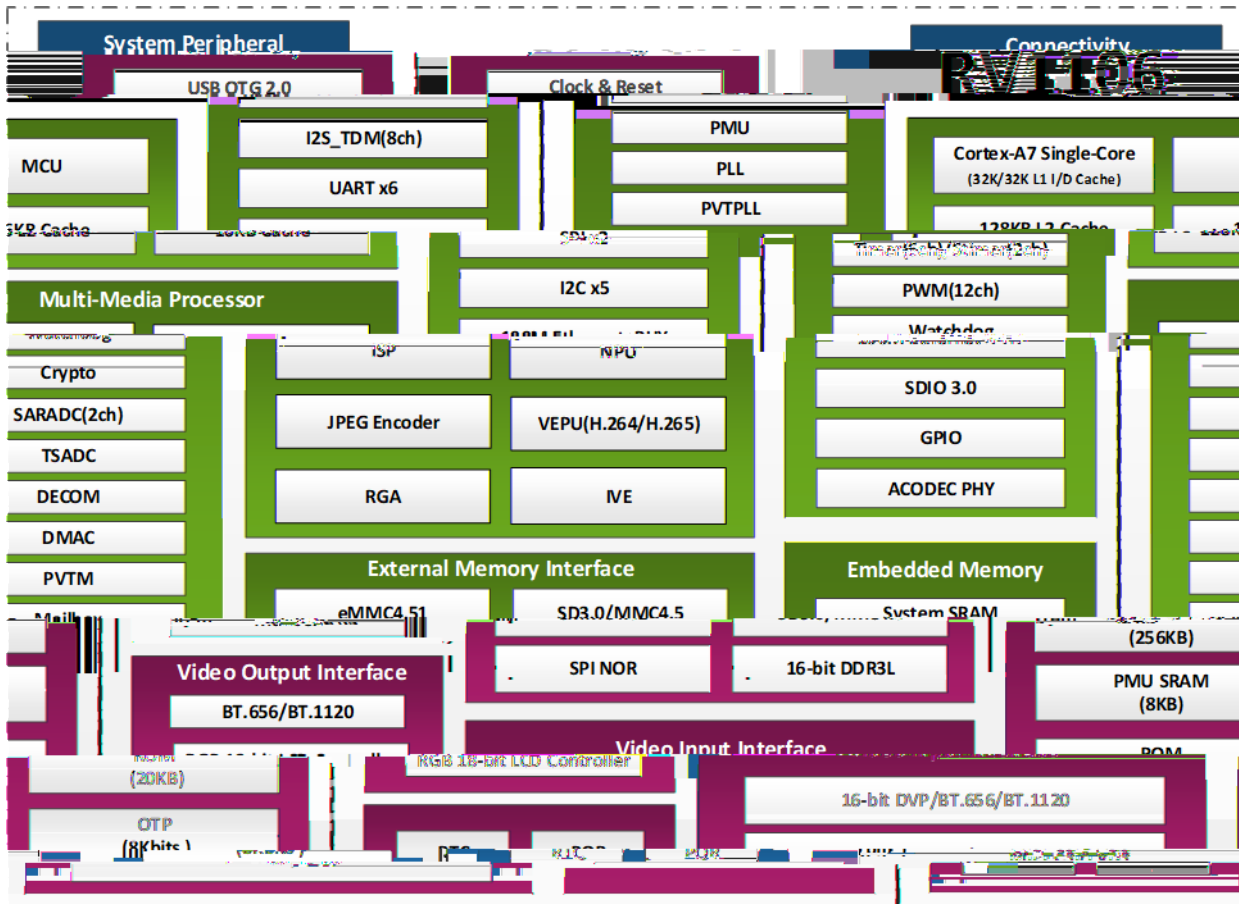
SDRAM interface voltage

Device Information

Package: QFN128
Body: 12.3mm x 12.3mm
Ball pitch: 0.35mm

AI Application
IPC

Block Diagram





AI Application
IPC

Application Typical Diagram – IPC

