Hi3516A V300 Power Consumption Test Report

Issue 00B01

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About This Document

Related Versions

The following table lists the product versions related to this document.

Product Name	Version
Hi3516D	V300

Intended Audience

This document is intended for:

- Technical support engineers
- Board hardware development engineers

Change History

Changes between document issues are cumulative. Therefore, the latest document issue contains all changes made in previous issues.

Issue 00B01 (2019-06-03)

This issue is the first draft release.

Contents

1 Power Consumption Test Conclusions of Hi3516A V300

NOTICE

In this test report, the tested data is only provided for reference based on the tested samples and environment, and may not apply to products with other specifications, functions, and performance. For details, see the data sheet.

1.1 Test Environment

Test Object	HI3516AV300DMEB board
Camera	IMX334
Temperature Measuring Device	Point-test thermometer
Heating Device	High- and low-temperature chamber. The test temperatures are the chip junction temperatures 65°C (149°F) and 105°C (221°F).
Heat Dissipation Mode of the Master Chip	The board is placed in the temperature chamber, and the produced heat is dissipated through the surfaces of the printed circuit board (PCB) and chip.

1.2 Test Scenarios and Power Consumption Data

1.2.1 Scenario 1: Intelligent Services + Media Services

Intelligent Services

VGG16 NNIE intelligent services at full speed

Media Services

- Mode: VI online and VPSS offline
- VI: 3840 x 2160@30 fps input + 2-to-1 line WDR mode + line compression enabled for the pipe and segment compression enabled for the channel + DE enabled for the ISP. The VI sends image data to the VPSS.
- VPSS: 3-channel non-compressed output (3840 x 2160@30 fps+1024 x 576@20 fps +720 x 480@20 fps), with compressed output from channel 0 and uncompressed output from channels 1–2 + NR-enabled VPSS with data sent for encoding and VO preview, and for IVSMD (720 x 576@10 fps)
- VO: preview at the HDMI timing
- VEDU: 3-channel H.26*x* encoding (H.265 SmartP 3840 x 2160@20 fps at 40 Mbit/s + H.264 NormalP 1024 x 576@20 fps at 1 Mbit/s + H.264 NormalP 640 x 360@20 fps at 512 kbit/s) + 1-channel JPEG encoding (3840 x 2160@2 fps) main streams saved in the SD card + JPEG snapshots saved in the SD card
- 2-channel main stream VOD + 2-channel medium stream VOD
- Audio: 1-channel 16-bit audio sampled at 32 kbit/s, complying with the AAC protocol, with AAGC, ANR, and AEC enabled
- Frequency (MHz): CPU 900, VICAP 396, VIPROC 300, VPSS 300, VGS 475, VEDU 300, JPGE 396, NNIE 550, IVE 475, VDP 300, DDR 900

Table 1-1 Power consumption data of scenario 1 at different temperature nodes

Chip Junction Temperature	Core Power Consumption (mW)	VDDIO_DDR (mW)	DVDD18 (mW)	DVDD33 (mW)	Total Power Consumption (mW)
	DVDD				
66°C	1032	398	18	144	1592
105°C	1670	424	26	145	2265

NOTE
The DDR usage is about 70%, and the CPU usage is about 95%.