



# **Hi3516C V500 Power Consumption Test Report**

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## About This Document

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### Related Versions

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

Product Name	Version
Hi3516C	V500

### 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 (2019-01-15)

This issue is the first draft release.



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# 1 Power Consumption Test Conclusions of Hi3516C V500

## 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	HI3516CV500DMEB board
Camera	IMX327
Temperature Measuring Device	Point-test thermometer
Heating Device	High- and low-temperature chamber. The test temperatures are the chip junction temperatures 50°C (122°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 IN services at full speed

#### Media Services

- Mode: VI online and VPSS offline
- VI: 1920 x 1080@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 (1920 x 1080@30+1024 x 576@30+720 x 480@30) + VPSS large streams rotated by 90° + NR enabled for the VPSS, overlaid with two mosaics. The VPSS sends image data to the VENC for encoding and to the VO for preview.
- VO: BT.656 preview (720 x 480@30) with the cursor overlaid
- VENC: 3-channel H.26x encoding (H.265 SmartP 1080 x 1920@30 fps 4 Mbit/s + H.264 NormalP 1024 x 576@30 fps 1 Mbit/s + H.264 NormalP 720 x 480@30 fps 512 kbit/s) + 1-channel JPEG encoding (1920 x 1080@2 fps) + Timestamp and channel ID overlaid on each channel
- 1-channel large stream VOD
- IVS MD: 720 x 480@15 fps
- 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 300, VIPROC 150, VPSS 150, VGS 300, JPGE 396, IVE 475, VDP 150, 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				
50°C <sup>Note 1</sup>	578	184	15	126	903
105°C <sup>Note 2</sup>	1386	219	19	132	1756



#### NOTE

- Note 1: Power consumption in normal illumination is described.
- Note 2: In low illumination, the DDR usage is about 72%, and the CPU usage is about 99%.