

Security Class: Top-Secret () Secret () Internal () Public (☒)

RK3399_SDK_Multimedia_Performance _Guide

(Technical Department, Key Algorithm R&D Center)

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Revision History

Version no.	Author	Revision Date	Revision description	Remark
V1.0	Chen Xin	2018.01.09	Initial version release	

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1 Overview

This document introduces RK3399 multimedia performance indicator.

2 Decoding performance

- Linux platform

RK3399 Centos7.0

Test condition: Use native mpp to decode the local bitstream file in Linux

Resolution and bitrate of test source	Test type	Test channel	Average frame rate per channel
1080p 6M	decode	6	62
1080p 8M	decode	6	54
1080p 6M	decode	8	48
1080p 8M	decode	8	43
1080p 6M	decode	10	34
1080p 8M	decode	10	37

- Android platform

JNI Native

Test condition: Use JNI call mpp to decode the local bitstream file in Android

Resolution and bitrate of test source	Test type	Test channel	Average frame rate per channel
1080p 6M	decode	6	51
1080p 8M	decode	6	47
1080p 6M	decode	8	41
1080p 8M	decode	8	36
1080p 6M	decode	10	32

1080p 8M	decode	10	30
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Summary: The decoding performance of RK3399 Linux is basically the same as that of Android. Due to the extra resource occupied by Android, the decoding efficiency is slightly lower than that of Linux. In ideal cases the decoding capability should be up to 10 channels 1080P 30fps.

Note: the result above is the pure decoding performance evaluation, not including multiplexing and display. The overall performance of the system needs to be analyzed based on the specific scenarios.

3 Encoding performance

Test condition: Use JNI call mpp to encode the local bitstream file in Android

Test source	Test type	Test channel	Average frame rate per channel
720p	encode	1	60
720p	encode	2	52
1080p	encode	1	32
1080p	encode	2	29

RK3399 max encoding resolution is 1080P, and it can achieve nearly 2 channels 1080p@30fps encoding performance with DDR frequency at 800M.