H264 RATE CONTROL

User Guide
Rev.: 1.0
Issue Date: October 2014

REVISION HISTORY

H264 Rate Control User Guide

Date	Rev.	From	To
Oct. 2014	1.0	-	Original

Printed in Taiwan 2014

Grain Media, Inc.
5F, No. 5, Li-Hsin Road III, Hsinchu Science Park, Hsinchu City, Taiwan 300, R.O.C.

Grain Media's home page can be found at:
http://www.grain-media.com

TABLE OF CONTENTS

Chapter 1

Rate Control Driver Module

This chapter contains the following sections:

1.1 Overview

The H264 rate control provides four rate control methods, CBR, VBR, ECBR, and EVBR.

- CBR: Constant bitrate. Driver will limit the bitrate by the target bitrate.
- VBR: Variable bitrate or constant quality. Driver will use the same quality to encode the frame, so the bitrate will be various depending on the complexity of the image content.
- ECBR: Enhanced constant bitrate. Driver will limit the bitrate by setting the target bitrate, but allow the bitrate to be suddenly overflown.
- EVBR: Enhanced variable bitrate. Driver will use the same quality to encode the frame while the bitrate is not over the maximal bitrate setting. When the bitrate is over the maximal bitrate, the driver will limit the bitrate to the maximal bitrate.

1.2 Driver Module

The H264 rate control module contains the following part:

- favc_rc.ko
  This is the H264 rate control core. It includes the H264 rate control algorithm and H264 encoder communication layer.

The following example shows the operation procedure.

```
/ # insmod favc_rc.ko
H264 rate control version: 1.1.9, built @ Oct 16 2014 15:00:56
```

1.3 Module Parameter

There is one module parameter in the H264 rate control driver.

1.3.1 rc_converge_method

This module parameter will influence the algorithm of limiting bitrate.

0: Original algorithm (Default value)

1: Strictly limit bitrate

Chapter 2

Rate Control Proc Node

This chapter contains the following sections:

The rate control module provides several proc nodes. Users can read the information of the rate control through the nodes.

2.1 /proc/videograph/favce_rc/info

Users can use /proc/videograph/favce_rc/info to get the rate control parameters and driver version of each channel.

Usage:

- Get the rate control parameters and the driver version of each channel
  cat /proc/videograph/favce_rc/info

```
H264 rate control version: 1.1.10
 chn       mode       fps      bitrate   max.br   init.q   min.q   max.q      qp      I.qp
====     ====     ======     =====     ====     ===      ====    ====     ===    ===
  0        CBR       30/1      1024       0       25       15      51       23     21
…
```

2.2 /proc/videograph/favce_rc/level

Users can use /proc/videograph/favce_rc/level to set the debug level. Higher debug level will dump more information to the background log.

Usage:

- Get the debug level
  cat /proc/videograph/favce_rc/level

```
Log level = 2 (0: emergy, 1: error, 2: warning, 3: debug, 4: info)
```

- Set the debug level

  Echo [level] /proc/videograph/favce_rc/level

  [level]:

  0: Emergency message

  1: Error message

  2: Warning message

  3: Debug message

  4: Information

For example, if the current debug level is 2, the driver will dump the emergency message, error message, and warning message.