RZ Ecosystem Partner Solution
TMC DRP compliant H.264 Codec

RENESAS RZ
READY

Solution Summary

- TMC's H.264 codec based on its original algorithm "DMNA" features high image quality and low CPU load, and it has been adopted in various camera systems, media players, etc.
- TMC has successfully developed an H264 encoder / decoder compliant to DRP which realized a half of the CPU load of the conventional one.
- TMC's DRP compliant H.264 Codec achieves low load, low latency, and high quality images.
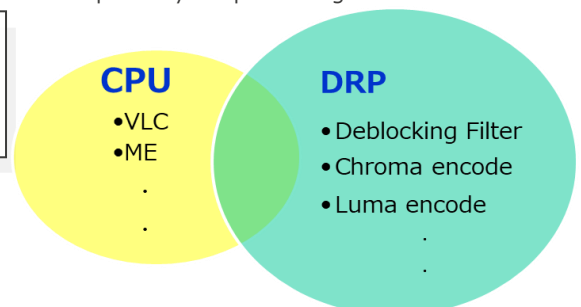
Features/Benefits

- Supporting H.264 codec (encoder / decoder) on ARM Cortex-A9 / Neon and DRP (Dynamically Reconfigurable Processor)
- Compliant to H.264 / AVC baseline profile (levels 1-3)
- Bit rate: up to 8Mbps
- Frame rate: up to 30fps
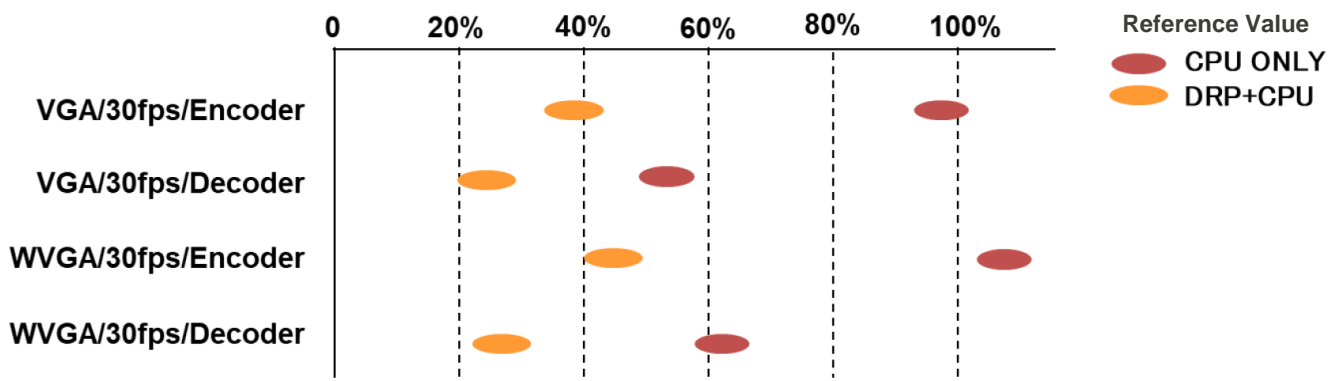- Video format: YUV 4:2:2 (WVGA QVGA, VGA, ⋯)

Graphics/ Diagrams

H.264 WVGA 30fps encoder with DRP-compliant realizes **less than 50% CPU load !**
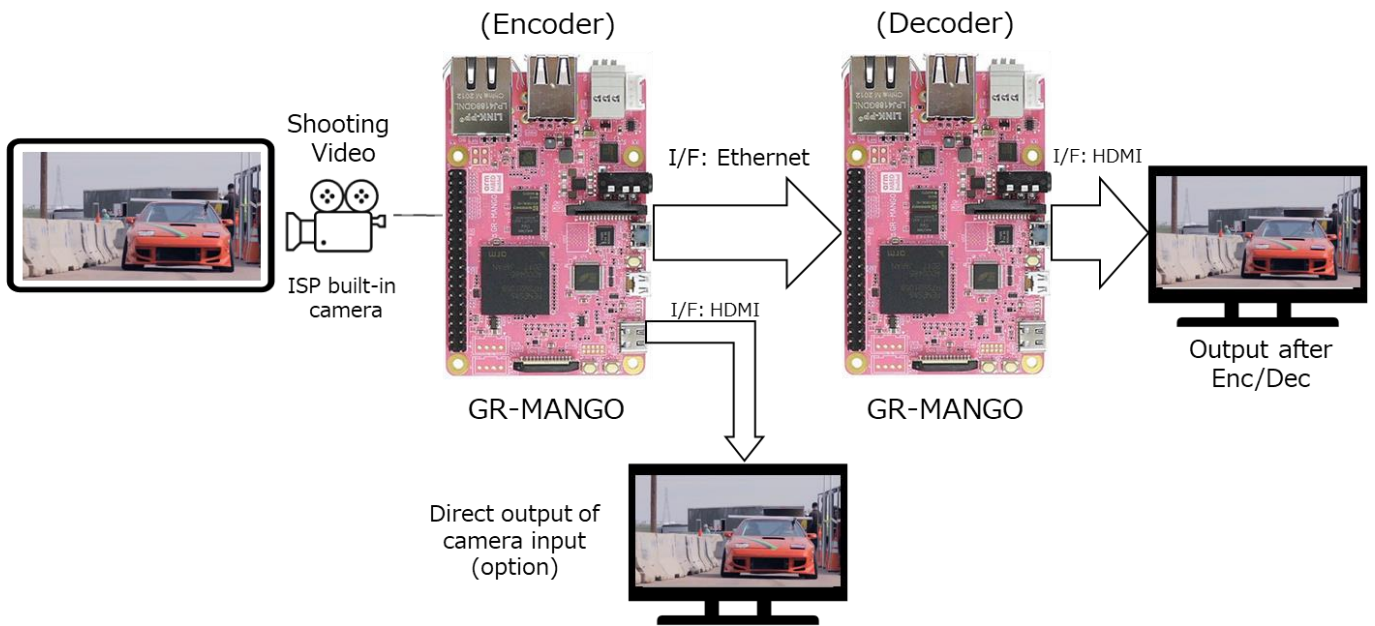
Example of hybrid processing: H.264 Encoder

CPU
- VLC
- ME
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.

DRP
- Deblocking Filter
- Chroma encode
- Luma encode
.
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RZ/A2M CPU Load

Reference Value
- CPU ONLY
- DRP+CPU

Target Markets and Applications

- Home Appliance
- Home Security
- Door Phone

https://www.tmath.co.jp/index_en.html

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H264 with DRP Demo on GR-MANGO

(Encoder)　　　　　(Decoder)

Shooting Video

ISP built-in camera

GR-MANGO

GR-MANGO

I/F: Ethernet

I/F: HDMI

I/F: HDMI

Output after Enc/Dec

Direct output of camera input (option)

Ram usage with picture size WVGA (800×480)

	Encoder(Kbyte)		Decoder(Kbyte)	
Built-in RAM 4Mbyte	Work area	1634	Work area	315
	Camera buffer	1598	Frame buffer	1536
	Bit stream buffer	250	Bit stream buffer	250
	Total	3482	Total	2101

※All numbers are taken when CPU + DRP are used together

- **Realizes H264 WVGA/30fps encoding with less than 50% CPU load**
- **Low-latency of 0.1 sec.**
- **Clear and smooth image**

Demonstration kit to be loaned

Features

– Compact (85 x 56 mm) size and convenient to carry makes easy demonstrated

– Simple connection setup for demonstration, without troublesome settings, since the software is already installed.

– CE certified kit, can be used globally

Item list for the loaner kit

- GR-MANGO encoder / decoder 1 ea. (SW installed)
- FPC for camera 1 piece
- HDMI conversion adapter 1 piece

- Camera   1 unit
- LAN cable (cross)   1 piece
- Manual   1 piece

Contact

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