

# RICOH

## RB5C633 (JPEG2000Coder)



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*RF5C633 Specification*  
Ver. 0.01 02/06/18

## 1 . Abstrcut

The RB5C633 is an one chip decoder which is fully compliant with the ISO/IEC 15444-1 standard JPEG2000, and performs wavelet transform, entropy coding, quantization, packet header coding and decoding and generate and perse code stream. The RB5C633 has also image and code interface required for all operation of JPEG2000. Maximum tile size is 1024x1024. Sampling rate is 15Msample/s (YcbCr4:2:2). The RB5C633 can perform the real time coding / decoding operation in VGA size. Furthermore, The RB5C633 has a rate control function, and it can output the code of user defined size, with minimising the image distortion.

## 2 . Specification

### [Image Interface]

- 8 bit / sample
- format
  1. YC b Cr 4:2:2 (H2V1)
  2. YC b Cr 4:2:0
  3. YC b Cr 4:0:0 (Grayscale)
- tilesize MAX1024 × 1024

### [wavelet filter]

- R5:3、 IR9:7

### [code stream]

- rate control

### [packet header]

- coding and decoding the main header, tile header and packet header

### [perfomance]

- 15Msample/s
- Operate the 30 frame/s for 720x480 (VGA size YcbCr 4:2:2)

**[Interface]****1. Image data Interface**

Two images interface is selectable

- Input/Output data are synchronized to /VSYNC、/HSYNC、 FIELD signals
- simple clock synchronous

**2. Code data Interface**

Two images interface is selectable

- simple clock synchronous (16bit width)
- PCI bus ( target access only )

**3. Local data Interface**

If simple clock synchronous is choose, 8-bit local bus is used to access to internal register

**4. SDRAM I/F**

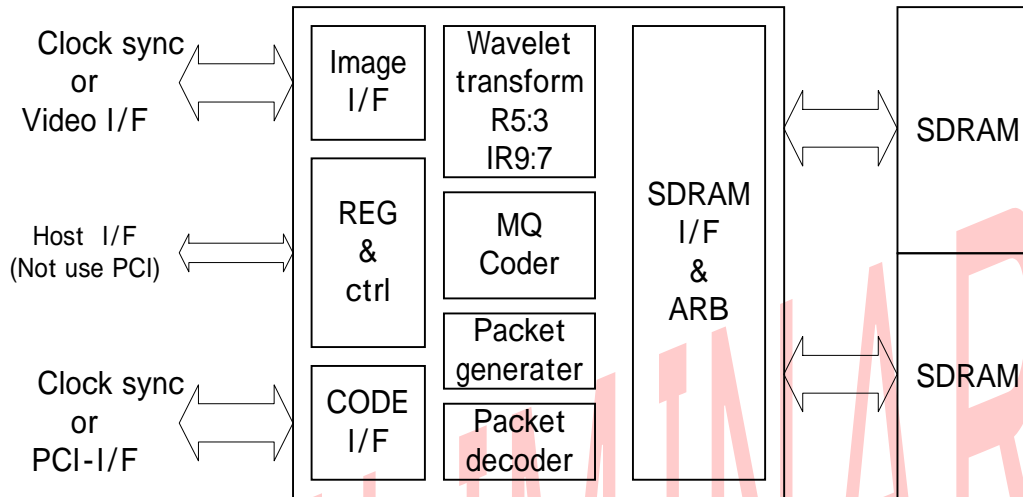
Two sets of SDRAM interface

**[others]**

- Image clock rate MAX 33MHz
- SDRAM clock trate MAX 66MHz
- PCI or code and local data clock rate MAX 33MHz
- Supply voltage I/O 3.3V、 Internal 1.8V
- 420pinBGA (35mmX35mm)

### 3 . Exsamples

#### 3-1 . Block diagram

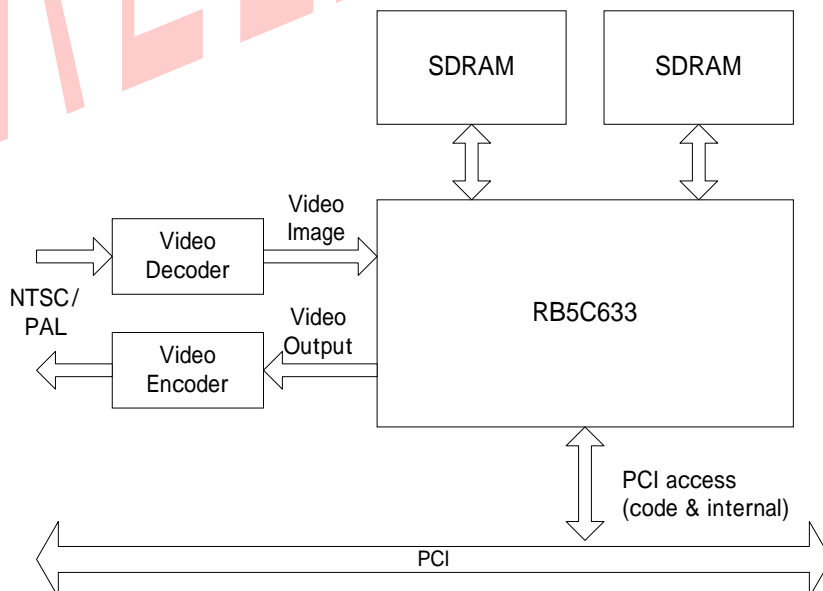


#### 3-2 . System

(1) . case 1

Image: Video

Code & Internal: P C I

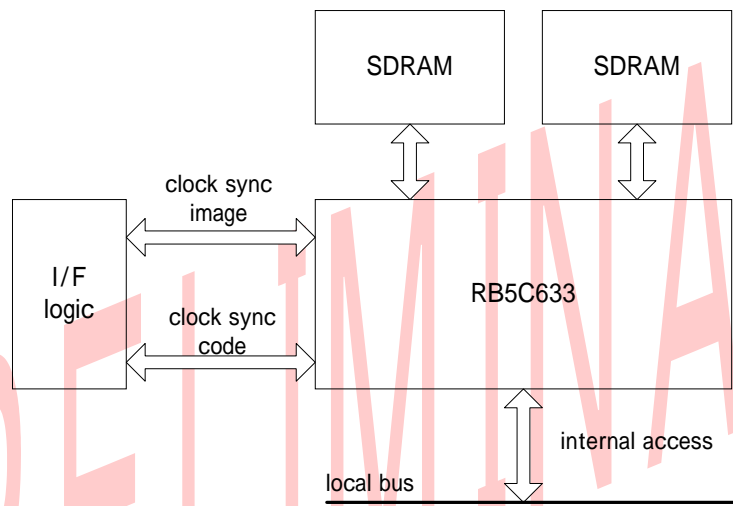


(2) case 2

image: clock sync

code: clock sync

internal: local bus



PRELIMINARY