BRV0200 / BRV0201

1/2.7” 1080p High Dynamic Range (HDR) Image Sensor

The BRV0200 / BRV0201 is a high-performance, 1/2.7”, 2k1k resolution, digital-output color CMOS image sensor, which is suitable for 1080p IP camera and any surveillance applications. It offers an excellent image quality with the excellent pixel performance and Brillnics H^3 DR^{TR} technology, where two dynamic range enhancement schemes, one is Brillnics’ proprietary single exposure HDR (SE HDR) scheme and the other is a multiple exposure HDR (ME HDR) scheme using 2, 3, or 4 exposures, are implemented. The SE HDR scheme provides no motion artifacts for moving objects with max 87 dB HDR and the ME HDR allows max 120 dB HDR.

Features

- **Single- Exposure HDR**
  - Free from motion artifacts* with a proprietary single exposure HDR scheme
    * Motion artifacts can be seen in the conventional multi-frame exposure HDR mode
  - 16 bit single-exposure HDR output
- **Multiple Exposure HDR options**
  - 2, 3, 4 multiple exposure HDR
- **A variety of Functions**
  - 120 fps full image output (BRV0201)
  - 60 fps single-exposure HDR mode
    16 bit linear (BRV0201), 12 bit compressed (BRV0201)
  - 60 fps full image output mode with the lower power version (BRV0200)
  - 30 fps single-exposure HDR mode with the lower power version (BRV0200)
- **Output Modes**
  - 16 bit linear mode with an on-chip linearization (HDR)
  - 12 bit compression mode (HDR)
  - 12 bit linear mode, 10 bit compression mode (Normal)
  - 10 bit non-compression mode (Normal)
- **High Image Quality BSI structure**
  - 3.0 μm pixel with optimized BSI technology
- **Low Noise Signal Chain**
  - Noise floor < 1.0 e
- **Applications**
  - 1080p IP camera, Car drive recorder, Home security, Sports Cam

Key Specification			BRV0200	BRV0201
			2k1k, 60fps	2k1k, 120fps
Optical format			1/2.7”	
Active pixels		H x V	1920 x 1080	
Pixel size		μm	3.0 (BSI)	
Shutter scheme			Rolling	
Max Fame Rate	Normal mode	fps	60	120
	HDR mode	fps	30	60
HDR	(a) HDR Single exposure		Single exposure within a frame	
	Dynamic range	dB	87	
	(b) HDR Multiple exposure		2, 3, or 4 multiple exposures within a frame	
	Dynamic range	dB	120	
Digital Out	Normal mode	bit	12 Linear / 10 compressed 10 non-compressed	
	(a) HDR Single exposure	bit	16 linear/ 12 compressed mode	
	(b) HDR Multiple exposure	bit	12 Linear / 10 compressed 10 non-compressed	
Interface			4 lane MIPI, SLVS	
Max data rate		Mbps /lane	432	864
Max Power		mW	178(30fpsHDR)	280 (60fpsHDR)
Package			PLCC	PLCC

Block diagram

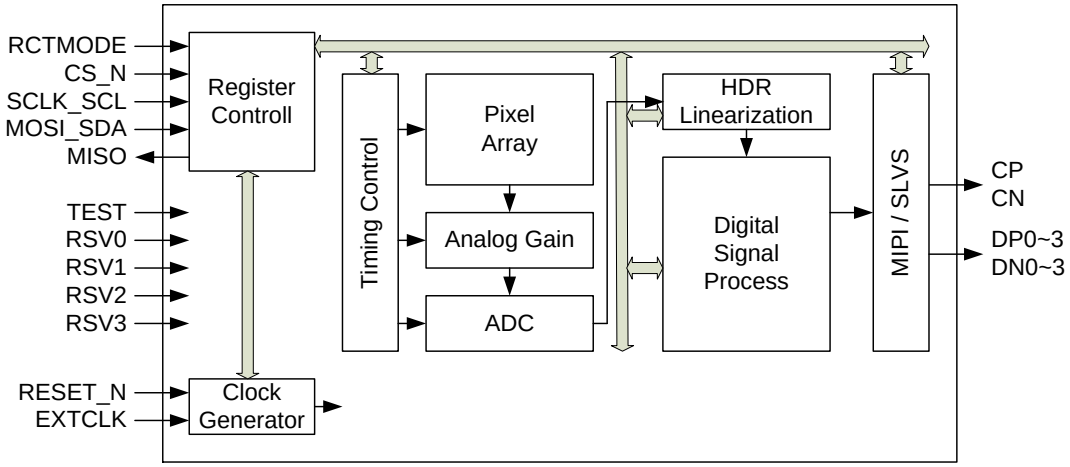
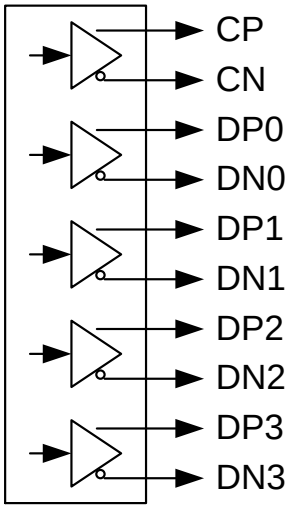


Figure 1 Top Architecture



DP0,DN0 ~ DP3,DN3 are synchronized to CP,CN.

Figure 2 Video Output

- DC

  Digital, PLL/PHY; 1.2V

  IO ; 1.8V

  VAA, VAAPIX ; 2.8V

Brillnics Japan Inc.

Omori Prime Bldg.7F

6-21-12 Minami-Oi, Shinagawa-ku, Tokyo, 140-0013 Japan

TEL+81-3-6404-8801

FAX +81-3-5767-5568