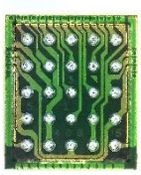


RNSS01E1

1M-pixel CMOS image sensor suitable for chip-on-the-tip endoscopes

The RNSS01E1 is an exact 1 million pixel CMOS image sensor capable of 30fps output via long transmission cable. The recommended recording pixels are 1000 x 1000. The RNSS01E1 is packaged by TSV-CSP. The image data are packed into RGB raw10 format and output via a single subLVDS port with embedded clock by 8B10B conversion through long transmission cable without any buffering chip.

The RNSS01E1 can work in slave mode in which each frame output is triggered by External signal VSYNC, as well as in master mode in which each frame output is triggered by the timing of the sensor itself. Hereby, the RNSS01E1 has a function for multiple-camera.

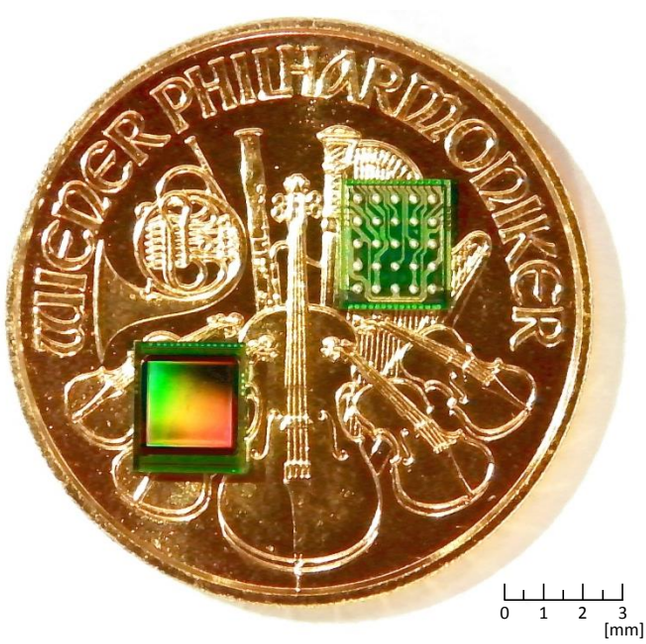
The RNSS01E1 is designed for chip-on-the-tip endoscopes. Minimum wire connection necessity, low power and high NIR sensitivity are also its attractive features for endoscopes.

Captured image

- 730 lux
- M12lens/F2.8
- Amber light(2850K)
- Macbeth judge
- 30fps
- Minimum gain
- AWG42 4m cable

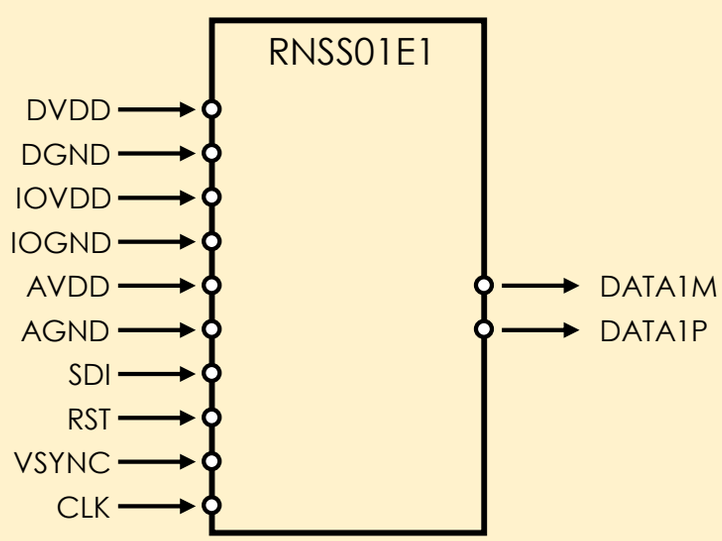
RNSS01E1 [1M-pixel CMOS image sensor *suitable for chip-on-the-tip endoscopes*]

Item	Spec	Remarks
Optical size	1/5.8''	
Color filter	RGB Bayer mosaic	
Total pixels	1032 x 1032 pixels	
Effective pixels	1016 x 1016 pixels	
Recommended recording pixels	1000 x 1000 pixels	
Pixel size	2.2 µm x 2.2 µm	
Image area size	2.2 mm x 2.2 mm	Recommended recording pixel area
Chip size	3.0(H) mm × 3.5(V) mm	After dicing
Package	TSV-CSP (5×5 BGA)	570µm thick excluding 130µm height ball
Wire connection count	12 wires	Recommended minimum
Maximum frame rate	30 fps @ 1000x1000 (Full pixels) 30 fps @ 768x768 (ROI) 60 fps @ 600x600 (ROI)	Recommended recording pixel number
Input clock (CLK)	27 MHz	
Miscellaneous functions	ADC Resolution : 10bit Analog Gain : 1x ~ 32x (*1) RGB raw10 Format ROI (768x768 / 600x600) 1H-step Shutter control Readout trigger mode option Vertical flip / Horizontal flip	*1: Recommended max gain is 24x
Command I/F	2-wire communication	
Output signal	8B10B-encoded bit serial data output at 432Mbps via one-channel subLVDS port	No need to care crosstalk between channels (a single chip usage case)
S/N max	37 dB	
Chief Ray Angle	25°	At corner pixel
Power Supply	2.8 / 1.8 / 1.2V	
Power Consumption	<99mW (typ.)	
Reference cable length	4m	AWG42, 9 Ω/m, 42 pF/m



1/10 oz Vienna Philharmonic Gold Coins

Recommended wire connections



Rosnes also supports your custom CIS development. Rosnes offers best solution to you based on our CIS design expertise and production experiences.

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