

Reference design for 4K and High-speed AF camera

Outline

*PDAF : Phase Detection Auto Focus

Renesas released the 4K CMOS Image Sensor with the PDAF* function for surveillance camera application. We propose a reference design to make your camera development easy. The camera function including matching with ISP has been confirmed in the reference design.

Features

- Renesas CMOS Image sensor RAA462113FYL#AC2 enables 4K high resolution and High-speed AF with Hybrid AF(PDAF & Contrast AF).
(Proposal of customer system differentiation with PDAF sensor in surveillance market)
- Proposing easy design by reference design that matches Novatek ISP and YTOT zoom lens.

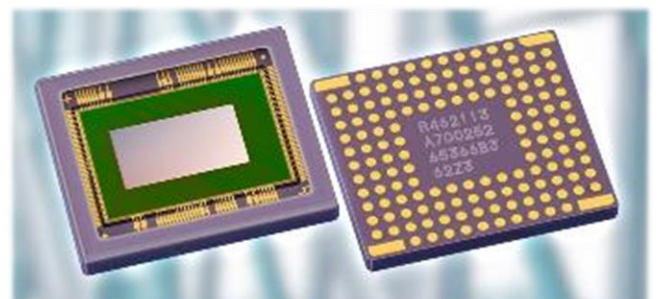
Deliverables of Reference design and Renesas products

- This reference design include some deliverables shown in the table below left.
- Reference design kit can be purchased from the Systemtec Corporation Limited website below.
<https://systemtec.com.hk/product/surveillance-camera-with-cmos-sensor/?lang=en>
- SDK and GUI control tool will be offered to customers which purchased Reference design kit.
- When you need Renesas products shown in the table below right, please contact our sales.

Deliverables	Renesas products	Parts name
Reference design kit	8Mpixels CIS	RAA462113FYL#AC2
SDK	step-down DC/DC regulator	ISL8022
GUI control tool	LDO	ISL80505
Board design information (Schematic, Board Pattern, Component list)	step-down DC/DC regulator	ISL85009
	LDO	ISL9005A
	PMIC	ISL9307
	step-down DC/DC converters	ISL8018
	Transceivers	ISL3170E



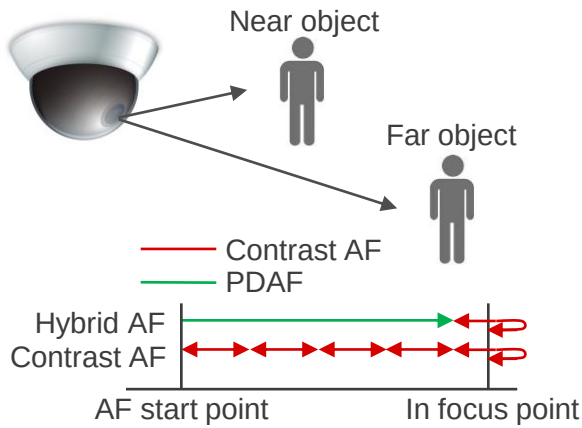
Reference design kit outlook



RAA462113FYL#AC2 outlook

High-speed AF function(Hybrid AF)

Hybrid AF can focus quickly even if the distance to the object changes suddenly.



- Hybrid AF
Hybrid AF moves the lens to near the in-focus position by PDAF, and then makes fine adjustments by contrast AF.
- Contrast AF
Contrast AF takes time to search in focus point because the lens is moved many times.

Specification

Image sensor		1/1.9 inch CMOS image sensor (Rolling shutter)		
Output resolution		4K@30fps		
ISP		NT96685T		
Output interface		USB / HDMI / Ether / Wi-Fi		
Video output format		H.265 / H.264		
HDR(High Dynamic Range)		Manual(Off / On), 4K@30fps(Max)		
AF function		Hybrid AF(PDAF + Contrast AF)		
Lens	Name	YT50011DB		
	Zoom control	Optical zoom 2.7x (10.9mm ~ 29mm)		
	F Number	1.7		
	FOV	Horizontal	Vertical	Diagonal
		42°(Wide) - 15°(Tele)	22.8°(Wide) - 8.4°(Tele)	48.7°(Wide) - 17.1°(Tele)

Performance

Achieves high resolution of 4K and ensures high visibility even for small objects.



Image by reference design kit

Please contact us when you need the demo of image quality or AF speed.