

Milbeaut® Image Processor : MBG967 360 degree spherical USB camera solution

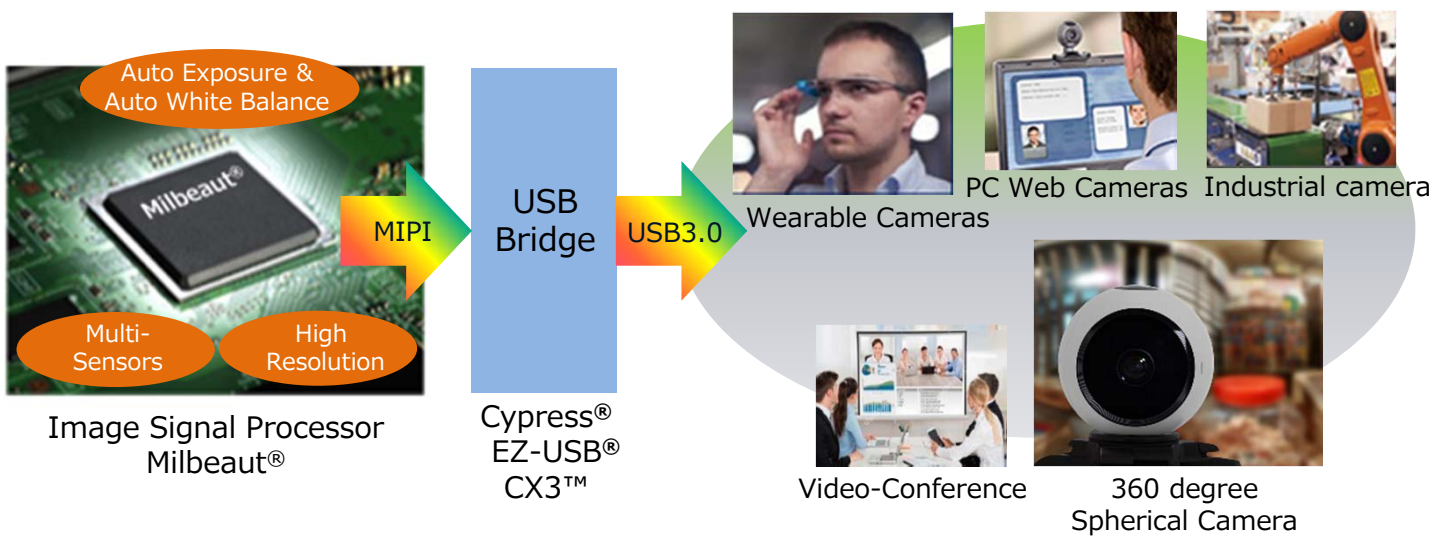


Overview

Nowadays, such high image quality is also required to virtual reality experience consumer cameras, 360 degree cameras, wearable cameras, etc.

Socionext is preparing Dual sensor 360 degree spherical camera solution by Milbeaut® ISP combination with Cypress® EZ-USB® CX3™ bridge chip and ImmerVision technology to fulfill such market requirement.

[360 degree spherical USB camera solution]



"EZ-USB® CX3™" is a registered trademark of Cypress Semiconductor Corporation.



Panomorph optics and image processing technology by ImmerVision

■ Functions

- Up to 21Mpixel sensor with 4-lane MIPI CSI-2 interface
- High Image Quality & 4K video / 8K image output
- USB3.0 / USB2.0 supporting USB Video Class by Cypress® EZ-USB® CX3™

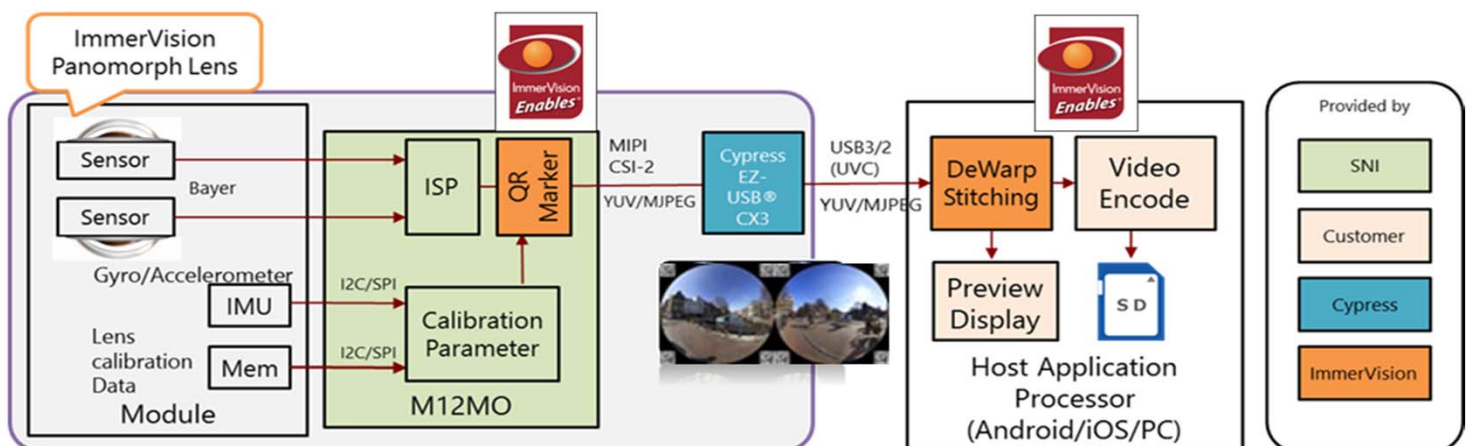
■ Specifications

USB Resolution	8M RGB Sensor x 2		13M RGB Sensor x 2		16M RGB Sensor x 2		21M RGB Sensor x 2		Bayer Scaler Supported Sensor x 2	
	JPEG	YUV422	JPEG	YUV422	JPEG	YUV422	JPEG	YUV422	JPEG	YUV422
1920x960 (FHD) (JPEG 400KB/frame)	60*	60*	60*	60*	60*	60*	37*	37*	60	60
2880x1440 (3K) (JPEG 400KB/frame)	30	26	30*	26*	30*	26*	30*	26*	30	26
3840x1920 (4K) (JPEG 2MB/frame)	15	15	15	15	12	12	24*	15*	24	15
5376x2688 (6K) (JPEG 2MB/frame)	-	-	13	7.5	12	7.5	9	7.5	13	7.5
7680x3840 (8K) (JPEG 4MB/frame)	-	-	-	-	-	-	6	3	6	3
Power Consumption ISP including DDR +Flash ROM	600mW to 850mW									

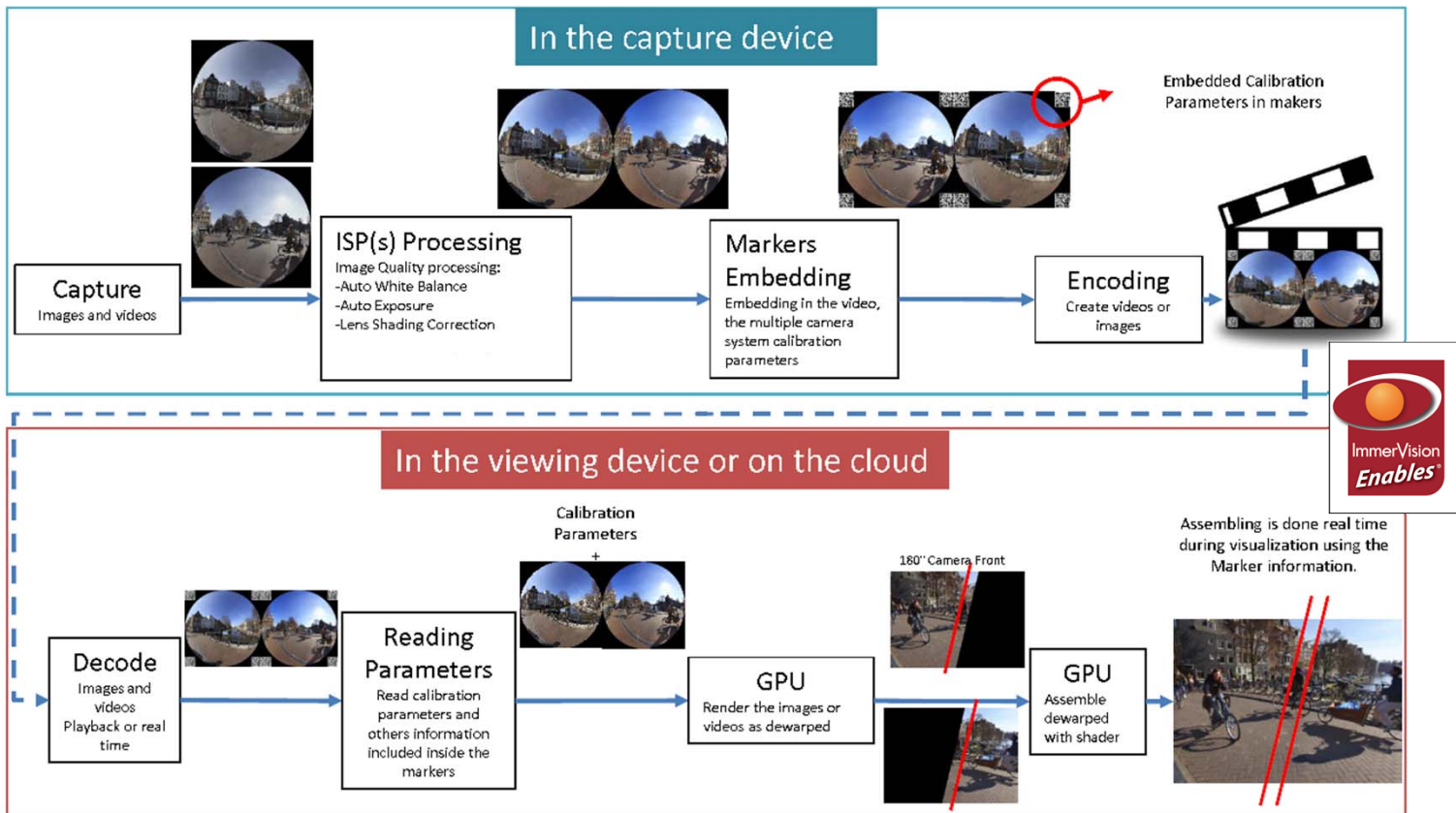
- Output image resolution and frame rate[fps] via USB3.0: *Sensor 2x2 binning mode
- Output image interface: YUY2(YUV422), JPEG
- Auto Exposure/ Manual Exposure support
- Auto White Balance/Manual White Balance support
- Quick camera boot up (< 500 msec)
- Supporting Panamorph lenses and ImmerVision Enables 2.0 Dewarp/Stitching/EIS(Electronic Image Stabilization)

[Note]
Dual 16Mp 360 deg. Spherical camera reference design board will be available.
(Other Sensor solutions need to be discussed.)

■ System Configuration [360 degree spherical USB camera]

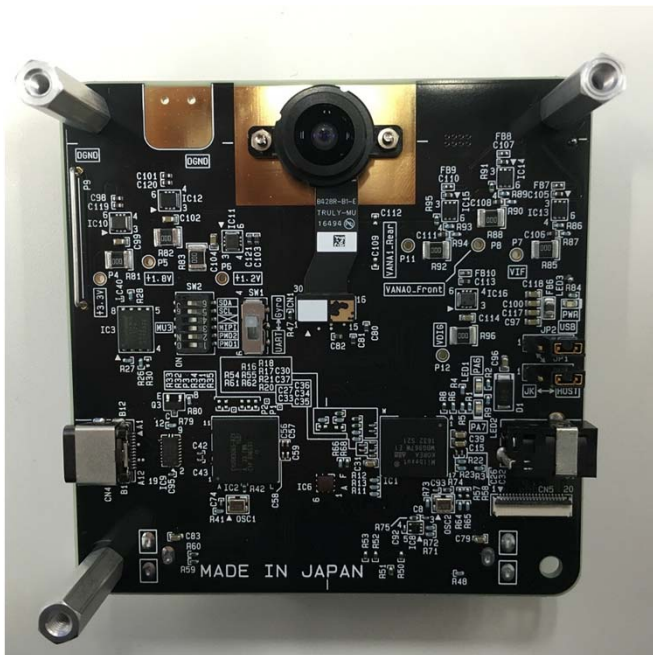


■ A Simple Example of Real-time 360 degree/VR Computing



■ Reference design board

8cm x 8cm, 16Mpixel sensor x 2



Front side



Back side

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