

Global CMOS Image Sensor Fabless Company

ClairPixel, established in 2007, is a fabless semiconductor company and will be a leader in Security, Automotive and Bio-medical camera fields. We've developed a single chip 120dB WDR (Wide Dynamic Range) CMOS Image Sensor with a patented pixel architecture and a novel synthesis algorithm which does not need external frame buffer memories or back-end DSP.

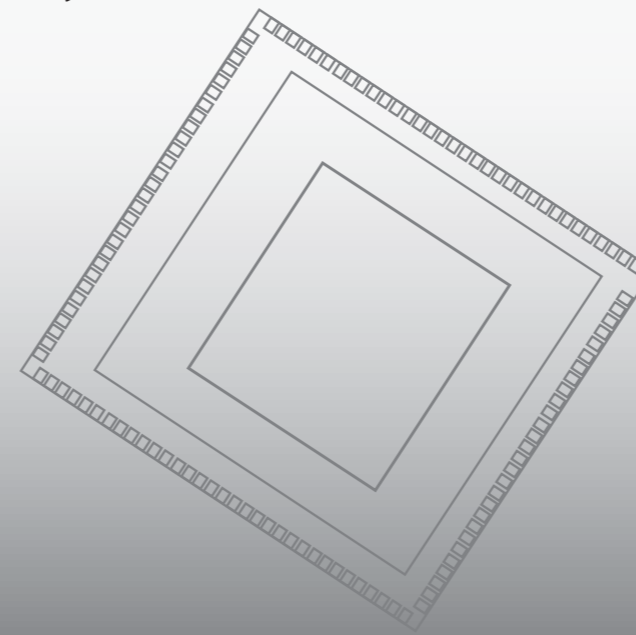
Business Scope

- Surveillance & Automotive CMOS Image Sensor
: CCTV, IP camera, Car Black Box, Video doorphone, Automotive Rearview camera, etc.
- ALPs (Ambient Light & Proximity Sensor)
- Specialized Image Sensor (R&D and Design Service)
: Color/NIR CIS, Color Temperature Sensor, Endoscope CIS, Thermal Imaging Sensor, etc.

Company History

- 2012**
- 3 Developed 1/3" D1 (720 x 576) WDR CIS (CP5104)
 - 2 Developed 1/4" VGA WDR CIS (CP5103)
- 2011**
- 12 Developed ALPs (Ambient Light Sensor & Proximity Sensor, CP5301)
 - 11 Invested by Corelogic Inc.
AEC-Q100 Certification for Automotive cameras (MV5103p)
 - 9 Invested by Hyundai Motor Company
Designated as 'INNO-BIZ' company (Grade A)
 - 8 Selected as Star Fab-less company by The Ministry of Knowledge & Economy
- 2010**
- 12 Began to supply VGA NTSC output CIS (MV5103i) to video phone
 - 8 Began to supply Lens distortion correction ASIC to Hyundai Mobis
- 2009**
- 4 ISO 9001:2000 Certification
 - 1 Began to supply MV5103p to Car Black Box camera, HoneyWell Korea
- 2008**
- 12 Won The Prime Minister Commendation at The 9th Korea Semiconductor Design Contest
 - 10 Developed the First WDR CMOS Image Sensor in Korea (MV5103)
 - 9 Invested by LG Venture Investment Inc.
 - 3 Registered 13 WDR CMOS Image Sensor Patents
- 2007**
- 10 Certified Venture Company from Korea Venture Capital Association
 - 8 Invested by Samsung Venture Investment Corp.
 - 2 ClairPixel Co., Ltd. founded (spin-off from MtekVision Co., Ltd.)

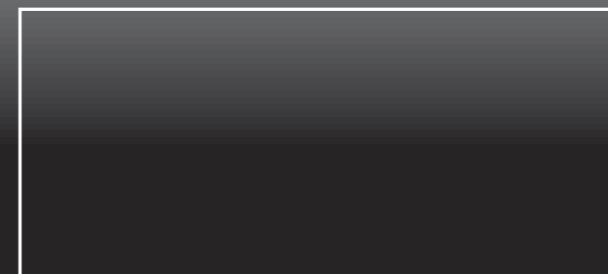
CLAIRPIXEL
Better than Human Eye



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ClairPixel Brochure V.2.1, 2012

CLAIRPIXEL
Better than Human Eye

WDR CMOS Image Sensor
WiDy™

Our technology

ClairPixel WDR CIS

Wide Dynamic Range (WDR) CMOS image sensor technology performs its unique ability to combine both low and high illumination in a singular image without any lost image data. Our WDR image sensor has overcome the pre-existing WDR image sensors' limits and is able to produce a superior image even in various lighting situations.



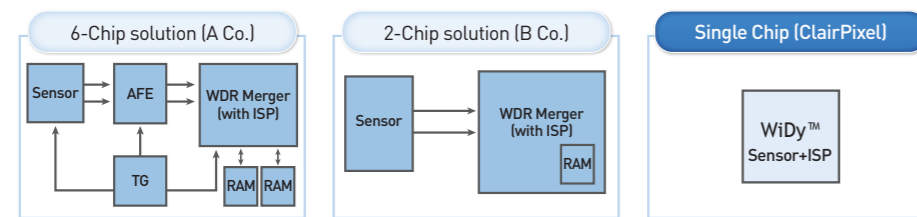
Normal Sensor

WiDy™ MV5103p

MV5103p @ +105°C
(Non-WDR)

MV5103p @ -40°C
(WDR)

WDR Single Chip Solution



Other WDR sensors are all multi-chip solution that needs WDR, Sensor, Memory but our products are based on a single-chip solution that has these all parts fabricated onto it to perform the full capabilities of a WDR.

Application



SURVEILLANCE



AUTOMOTIVE

WDR Performance



Our products



MV5103p
Digital 1/3" VGA

MV5103p is a 1/3 inch single-chip WDR CMOS image camera sensor designed for digital automotive or surveillance camera. It enables to take a natural picture or video without any image saturation at a counter-light environment in which extremely high and low lux illumination coexists.

The image array is 640 x 480 pixels and capable of operating at up to 30 frames per second. It enables to output various digital formats and also be programmable through a two-wire serial interface.

Application: Car Black Box
IP Camera
USB Camera

PARAMETER		TYPICAL VALUE
Optical Dimension	Optical Format	1/3 inch
	Pixel Size	7.5 μm x 7.5 μm
	Effective Resolution	640(H) x 480(V)
	Active Pixel Area	4.86mm(H) x 3.66mm(V)
Digital Output		RGB Bayer, YCbCr/YUV422, RGB565/555/444 Progressive, Parallel 30fps
Sensitivity		6.5 V / lux-sec
Dynamic Range		120 dB
Maximum Frame Rate		30fps at 27MHz
Supply Voltage	Pixel	2.8V ± 10%
	Analog	2.8V ± 10%
	Digital	1.5V ± 10%
	I/O	2.8V ± 10%
Power Consumption		Active 200mW
Operating Temperature		-40°C to +125°C
Package Type		CLCC, Wafer or Die



CP5103
Digital & Analog NTSC/PAL
1/4" VGA

CP5103 is a 1/4 inch single-chip WDR CMOS image camera sensor designed for analog & digital surveillance & automotive camera. It enables to take a natural picture or video without any image saturation at a counter-light environment in which extremely high and low lux illumination coexists.

The image array is 640 x 480 pixels and capable of operating at up to 30 frames per second. It enables to output various analog/digital formats and also programmable through a two-wire serial interface.

Application: Video Doorphone
Automotive Rearview Camera
Car Black Box
CCTV/IP Camera
USB Camera

PARAMETER		TYPICAL VALUE
Optical Dimension	Optical Format	1/4 inch
	Pixel Size	5.5 μm x 5.5 μm
	Effective Resolution	640(H) x 480(V)
	Active Pixel Area	3.56mm(H) x 2.68mm(V)
Digital Output		RGB Bayer, YCbCr422, RGB565, CCIR656
Analog Output		CVBS(NTSC,PAL) @ 27MHz
Sensitivity		5.0V / lux-sec
Maximum Frame Rate		30fps at 27MHz
Dynamic Range		120 dB
Supply Voltage	Pixel	3.3V ± 10%
	Analog	3.3V ± 10%
	Digital	1.5V ± 10%
	I/O	3.3V ± 10%
Power Consumption		Active 360mW (digital) Active 560mW (analog)
Operating Temperature		-40°C to +105°C
Package Type		CLCC, Wafer or Die

Our products



CP5104
Digital & Analog PAL
1/3" D1

CP5104 is a 1/3 inch single-chip WDR CMOS image camera sensor designed for analog & digital surveillance & automotive camera. It enables to take a natural picture or video without any image saturation at a counter-light environment in which extremely high and low lux. Illumination coexists.

The Image array is 720 x 576 pixels and capable of operating at up to 30 frames per second. It enables to output interlaced composite video (PAL only) and digital video formats such as CCIR656 and also programmable through a two-wire serial interface.

Application: CCTV/IP Camera
Car Black Box
USB Camera

PARAMETER		TYPICAL VALUE
Optical Dimension	Optical Format	1/3 inch
	Pixel Size	6.50 μm x 6.25 μm
	Effective Resolution	720(H) x 576(V)
	Active Pixel Area	4.73mm(H) x 3.65mm(V)
Digital Output		RGB Bayer, YCbCr422, RGB565/555, CCIR656
Analog Output		CVBS(PAL) @ 27MHz
Sensitivity		6.5 V / lux-sec
Maximum Frame Rate		720x480, 30fps @ 27MHz 720x576, 25fps @ 27MHz
Dynamic Range		120 dB
Supply Voltage	Pixel	3.3V ± 10%
	Analog	3.3V ± 10%
	Digital	1.5V ± 10%
	I/O	3.3V ± 10%
Power Consumption		Active 300mW (digital) Active 470mW (analog)
Operating Temperature		-40°C to +105°C
Package Type		CLCC, Wafer or Die



CP5113
Digital 1/3" 1.3Mp

CP5113 is a 1/3 inch single-chip WDR CMOS image camera sensor designed for digital automotive or surveillance camera. It enables to take a natural picture or video without any image saturation at a counter-light environment in which extremely high and low lux illumination coexists.

The image array is 1280 x 1024 pixels and capable of operating at up to 30 frames per second. It enables to output various digital formats and also be programmable through a two-wire serial interface.

Application: Car Black Box
IP Camera
Machine Vision
USB Camera

PARAMETER		TYPICAL VALUE
Optical Dimension	Optical Format	1/3 inch
	Pixel Size	3.65 μm x 3.65 μm
	Effective Resolution	1280(H) x 1024(V)
	Active Pixel Area	4.70mm(H) x 3.76mm(V)
Digital Output		RGB Bayer, YCbCr/YUV422, RGB565, Progressive, Parallel 30fps
Sensitivity		2.5 V / lux-sec
Dynamic Range		120 dB
Supply Voltage	Pixel	3.3V ± 10%
	Analog	3.3V ± 10%
	Digital	1.5V ± 10%
	I/O	1.5V or 3.3V ± 10%
Power Consumption		T.B.D
Operating Temperature		-40°C to +105°C
Package Type		CLCC, Wafer or Die