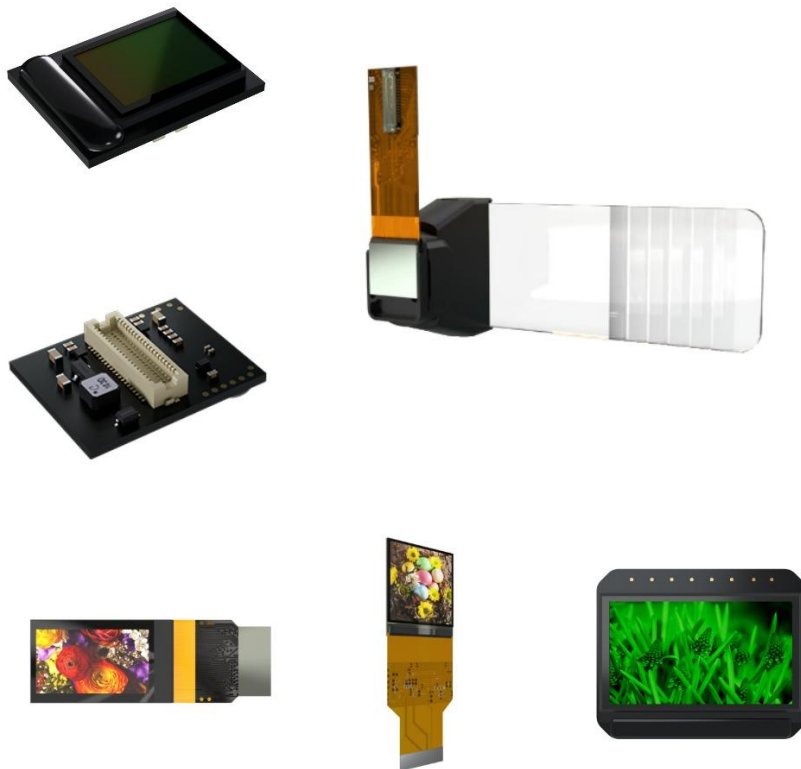


AR/VR Roadmap

The company has been continuously increasing its investment in research and development in the AR and VR fields and has launched a variety of AR and VR silicon-based OLED micro-displays of different sizes, with high resolution and high brightness, bringing breakthrough visual experiences to this industry.



ET020VGA series silicon-based OLED micro-display

The ET020 VGA series products have a resolution of 640x480, a display size of 0.20 ", a pixel size of 6.3 μ m, and a variety of display types such as ordinary color, high highlight color, and high highlight single green, which are mainly used in the field of AR.



Product series	ET020VGAHW01C	ET020VGAHW02C	ET020VGAHW01G
Features	High performance full color	High brightness full color	High brightness mono green
Resolution	640×480		
Pixel size	6.3 μ m×6.3 μ m		
Display size	4.03mm×3.02mm(0.2 inch diagonally)		
Pixel arrangement	RGB hexagon		
Brightness uniformity	≥ 90%		
Contrast	10000:1		
Grayscale	Level 256		
Refresh rate	25Hz~120Hz		
Video interface	Quad SPI, MIPI (2lane), D-PHY v1.2 1.0Gbps/lane		
Maximum brightness	400nit	5000nit	10000nit
Typical brightness	200nit	5000nit	5000nit
Typical power consumption	50mW	100mW	110mW
Supply voltage	VAN	+5.5V	
	VDD	+1.8V	
	VEE	-4.5V	
Operating temperature	-20°C~+65°C		

ET030HD series silicon-based OLED micro-display

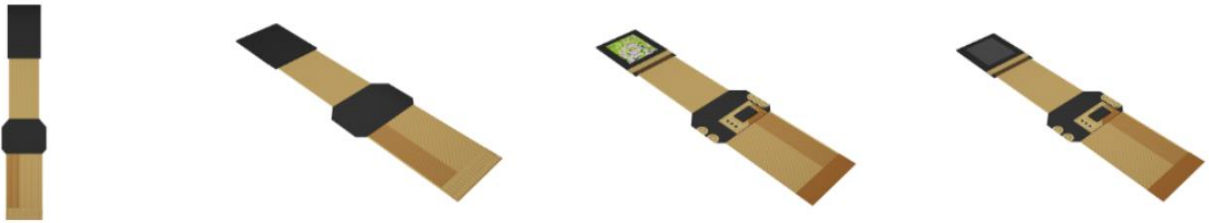
The resolution of ET030HD series products is 1280×720, the display size is 0.30", the pixel size is 5.22μm. It has the characteristics of high brightness, wide color gamut, low power consumption, etc, and HD030 is a star product of our company in the AR field.



Product Series		ET030HDPCC01
Design	COF-encapsulated color display	
Resolution	1280×720 (2/3 SPR)	
Pixel Size	5.22 μm × 5.22 μm	
Display Size	0.30" (6.68 mm × 3.76 mm)	
Pixel Arrangement	RGB Hexagonal layout	
Brightness Uniformity	≥90%	
Contrast Ratio	10000:1	
Gray Scale	256	
Refresh Rate	30 Hz ~ 120 Hz	
Video Interface	MIPI (4lane) , D-PHY v1.2 1.0Gbps/lane	
Peak Brightness	10000 nits	
Typical Brightness	10000 nits	
Typical Power Consumption	160 mW	
Power Supply Voltage	Analog Voltage	+5.0 V
	Digital Voltage	+1.8 V
	Negative Voltage	-5.0 V
Operating Temperature	-20°C~+65°C	

ET037SXGA series silicon-based OLED micro-display

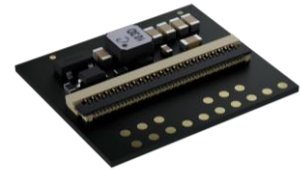
The resolution of ET037SXGA series products is 1280×1024, with 0.37 inch display size and 5.67μm pixel size, COB and COF two chip packaging ways, diverse series including normal brightness full color and high brightness mono green, which are mainly applied in the civilian viewing field.



Product series	ET037SXGAHW01C	ET037SXGAHW02C	ET037SXGAHW01G
Features	COF packaging color	COB packaging color	High brightness mono green
Resolution		1280×1024	
Pixel size		5.67μm×5.67μm	
Display size		7.26mm×5.81mm(0.37 inch diagonally)	
Pixel arrangement		RGB hexagon	
Brightness uniformity		≥ 90%	
Contrast		10000:1	
Gray scale		Level 256	
Refresh rate		25Hz~120Hz	
Video interface		MIPI (4lane) , D-PHY v1.2 1.0Gbps/lane	
Maximum brightness	600nit	600nit	10000nit
Typical brightness	300nit	300nit	5000nit
Typical power consumption	130mW	130mW	150mW
Supply voltage	VAN	+5.5V	
	VDD	+1.8V	
	VEE	-4.5V	
Operating temperature		-20°C~+65°C	

ET039XGA series silicon-based OLED micro-display

The ET039XGA series products have the resolution of 1024×768, with 0.39 inch display size and 7.8μm display size. diverse series including Low power consumption full color, high performance full color, Ultra brightness mono green and Ultra brightness full color. There series are mainly applied in the night vision, thermal imaging, HDM, Digital sight, EVF, FPV and other scenarios.



Product / Series	ET039XGAHW08C	ET039XGAHW06C	ET039XGAHW03G	ET039XGAHW13C
Features	Low Power Consumption full color	High performance full color	Ultra brightness mono green	Ultra brightness full color
Resolution	1024×768			
Pixel size	7.8μm×7.8μm			
Display Size	8.14mm×6.15mm(0.39 inch diagonally)			
Pixel arrangement	RGB Hexagon			
Brightness Uniformity	≥90%			
Contrast	10000:1			
Grayscale	Level 256			
Refresh rate	25Hz~75Hz			
Video interface	24bit-RGB, 8/16bit-YCbCr, ITU-RBT.656			
Max brightness	200nit	400nit	8000nit	4000nit
Typical brightness	150nit	200nit	4000nit	4000nit
Typical power consumption	150mW	120mW	130mW	270mW
Supply Voltage	Analog	+3.3V	+5V	
	Digital	+1.8V	+1.8V	
Operating Temperature	-20°C~+65°C			

ET060SVGA series silicon-based OLED micro-display

The resolution of ET060SVGA series products is 800×600, the display size is 0.6", and the pixel size is 15μ m. It has various display types such as basic full color, high-brightness full color, and high-brightness single green. It is the company's entry-level flagship in the high-end observation, sighting and other fields.



Product series	ET060SVGAHW01C	ET060SVGAHW02C	ET060SVGAHW02G	ET060SVGAHW03C
Features	Low power consumption full color	High brightness full color	Ultra brightness Mono green	Ultra brightness full color
Resolution	800×600(808×608 reserved)			
Pixel size	15μm×15μm			
Display size	12.0mm×9.0mm(0.6 inch diagonally)			
Pixel arrangement	RGB bar			
Brightness uniformity	≥ 90%			
Contrast	10000:1			
Grayscale	Level 256			
Refresh rate	25Hz~75Hz			
Video interface	24bit-RGB , 8/16/24bit-YUV , ITU-R BT.656			
Maximum brightness	300nit	800nit	10000nit	4000nit
Typical brightness	100nit	800nit	5000nit	4000nit
Typical power consumption	40mW@25Hz	300mW	150mW	360mW
Supply voltage	Analog	+3.3V	+5V	
	Digital	+1.8V	+1.8V	
Operating temperature	-45°C~+65°C			

ET060SXGA series silicon-based OLED micro-display

ET060SXGA series products have the resolution of 1280×1024, with the 0.6 inch display size and 9.3μm pixel size. They have various series including normal brightness color, high brightness color, and high brightness mono green. It is the our high performance products applied in the field of high-end viewing, digital sight etc.



Product Series	ET060SXGAHW01C	ET060SXGAHW01G	ET060SXGAHW02C
Features	Low power consumption full color	Ultra brightness mono green	Ultra brightness full color
Resolution	1280×1024		
pixel size	9.3μm×9.3μm		
Display size	11.9mm×9.5mm (0.60 inch diagonally)		
pixel arrangement	RGB vertical stripe		
Brightness uniformity	≥ 90%		
Contrast	10000:1		
grayscale	Level 256		
refresh rate	25Hz~75Hz		
video interface	24bit-RGB, 16bit-YCbCr, ITU-R BT.656, BT.1120		
maximum brightness	300nit	12000nit	4000nit
Typical brightness	100nit	12000nit	4000nit
Typical power consumption	70mW@25Hz	280mW	390mW
Supply voltage	VDN	+5V	
	VDD	+1.8V	
Operating temperature	-45°C~+65°C		

ET061XGA series silicon-based OLED micro-display

The resolution of ET061XGA series products is 1024×768, with 0.61 inch display size and 12μm pixel size. Diverse series including normal brightness full color, high brightness full color, and high brightness mono green. these series are mainly applied in the fields of high end observation.



Product series	ETXGA061XGAHW02C	ET061XGAHW02G
Features	Low power consumption full color	Ultra brightness single green
Resolution	1024×768	
Pixel size	12μm×12μm	
Display size	12.3mm×9.2mm(0.61 inch diagonally)	
Pixel arrangement	RGB vertical bar	
Brightness uniformity	≥ 90%	
Contrast	10000:1	
Grayscale	Level 256	
Refresh rate	25Hz~75Hz	
Video interface	24bit-RGB, 8/16bit-YCbCr, ITU-R BT.656	
Maximum brightness	300nit	10000nit
Typical brightness	100nit	5000nit
Typical power consumption	60mW@25Hz	170mW
Supply voltage	Analog	+5V
	Digital	+1.8V
Operating temperature	-45°C~+65°C	

ET065QHD series silicon-based OLED micro-display

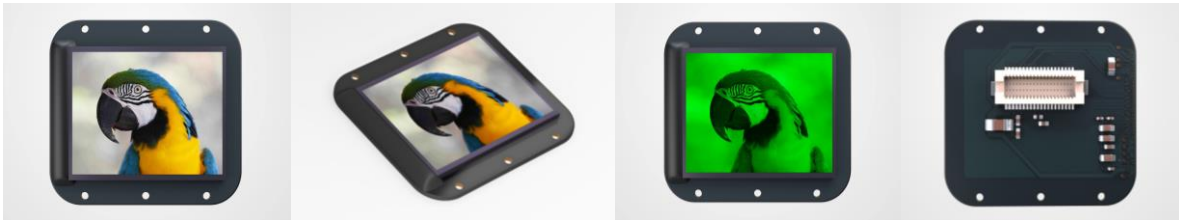
The ET065QHD series products have a resolution of 2560×1440, a display size of 0.65", and a pixel size of 5.67μm. They feature high-brightness color, high color gamut, and low power consumption, making them a large-field-angle and high-resolution product for the company in the AR, VR field.



Product Series	ET065QHDPKC01	ET065QHDPKC02	ET065QHDPKG01
Features	Low-power color	Highlight color red	Highlight single green
Resolution	2560 × 1440		
Pixel Size	5.67 μm × 5.67 μm		
Display Size	0.65" (14.515 mm × 8.164 mm)		
Pixel Arrangement	RGB Hexagonal Layout		
Brightness Uniformity	≥ 90%		
Contrast	10000:1		
Grayscale	256		
Refresh Rate	30 Hz ~ 120 Hz		
Video Interface	MIPI (4 lane), D-PHY v1.2, 1.0 Gbps/lane		
Max. Brightness	1000 nits	6000 nits	12000 nits
Typ. Brightness	1000 nits	6000 nits	12000 nits
Typ. Power Consumption	260 mW		
Supply Voltage	VAN	+5.0 V	
	VDD	+1.8 V	
	VEE	-5.0 V	
Operating Temperature	-45°C ~ +65°C		

ET096SXGA+ series silicon-based OLED micro-display

The ET096SXGA+ series has the resolution of 1400×1050 with 0.96 inch display size and 14μm pixel size, diverse series including High performance full color and high brightness mono green, this series are mainly applied in the AR/VR head-mounted products and other near-eye display devices



Product / Series	ET096SXGA+HW01C	ET096SXGA+HW03G
Type	High performance full color	High brightness mono green
Resolution	1400×1050	
Pixel arrangement	RGB Hexagon	RGB Vertical Bar
Pixel size	14μm×14μm	
Display area	19.6mm×14.7mm (0.96 inch diagonally)	
Refresh Rate	30Hz~75Hz	
Brightness Uniformity	≥90%	
Contrast	> 10000:1	
Video interface	Dual LVDS	
Gray Levels	Up to 256	
Maximum brightness	800nit	10000nit
Typical brightness	450nit	5000nit
Voltage	1.8V , 3.3V , 5V	
Operating Temperature	-45°C~+65°C	

ET120FHD series silicon-based OLED micro-display

The resolution of FHD120 series color products is 1920×1080, and the pixel size is 13.8μm. QFHD120 series green products have a resolution of 3840×2160, a pixel size of 6.9μm, and a display size of 1.2". It has a variety of display types, such as high-performance color, high brightness color, high brightness green, etc. Based on excellent brightness, color gamut and resolution, it is widely used in AR/VR head mounted products, all kinds of projection and other near-eye display devices.



Product Series	ET120FHDHW01C	ET120QFHDHW01G
Type	High performance Full Color	High brightness Mono Green
Resolution	1920×1080	3840×2160
Pixel size	13.8μm×13.8μm	6.9μm×6.9μm
Pixel arrangement	RGBW hexagon	
Display Area	26.5mm×14.9mm(1.2 inch diagonally)	
Brightness Uniformity	≥90%	
Contrast	> 10000:1	
Gray Levels	Up to 256	
Typical Refresh Rate	30Hz~75Hz	
Video interface	Dual LVDS	
Maximum brightness	800nit	10000 nit
Typical Brightness	450nit	5000nit
Typical power consumption	480mW	555mW
Voltage	1.8V,3.3V,5V	
Operating temperature	-45°C~+65°C	

ET1304KUHD series silicon-based OLED micro-display

The resolution of ET1304KUHD series products is 3552×3840, the display size is 1.3', the pixel size is 6.3μm , and the two-chip scheme is adopted, which are mainly used in the VR field.



Product series	ET1304KUHDPEC01	ET1304KUHDPEC02
Features	COF packaging color	COB package color
Resolution	3552×3840	
Pixel size	6.3μm×6.3μm	
Display size	1.3" (22.38mm×24.19mm)	
Pixel arrangement	RGB hexagon	
Brightness uniformity	≥ 90%	
Contrast	100000:1	
Grayscale	Level 256	
Refresh rate	30Hz~90Hz	
Video interface	4-lane/2port MIPI, DSI-2 1.0 D-PHY v1.1 DCS 1.3 3-lane/2port MIPI, DSI-2 1.0 C-PHY v1.1 DCS 1.3	
Maximum brightness	5000nit	5000nit
Power consumption@5000nit	1.5W	1.5W
Supply voltage	VAN	+3.3V
	VDD	+1.8V
	VEE	-5V
Operating temperature	-20°C~+65°C	

Full range of product driving modules (Micro-HDMI/Type-c interface)

For the company's full range of silicon-based OLED products, including ET036HD series, ET039XGA series and ET060SVGA, ET061XGA, ET060SXGA series, micro-HDMI interface drive module is provided, By adopting plug-and-play design, It is handy to use physical keys to light up, screen switching and other tests, based on reserving UART communication port, It is convenient for the direct interactive development between the upper computer and the micro display screen.

ET039XGA series

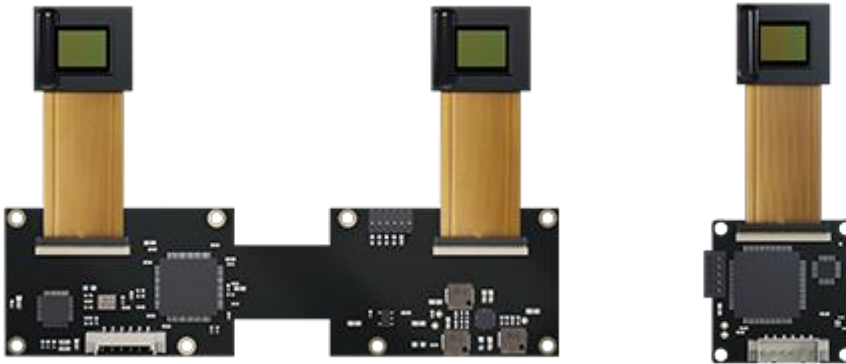


ET060SVGA, ET061XGA, ET060SXGA series



ET039XGA series driving module (PAL signal input)

Based on ET039XGA series of products, high performance drive module can be customized and developed for monocular or binocular display. The total power consumption is only about 500mW, which perfectly solves the problems of PAL signal automatic identification, automatic gain control, low refresh rate, interline scanning, screen scaling, sawing, tail and so on, presenting users with clear and smooth display effect.



ET060XGA series driving module (PAL signal input)

ET can customized and developed high performance drive modules for monocular or binocular display based on ET060SVGA series, the total power consumption is only about 300mW, which perfectly solves the problems of PAL signal automatic identification, automatic gain control, low refresh rate, interline scanning and so on, presenting users with clear and smooth display effect.



ETOM030MCC01

Based on the high brightness technology independently developed by Element Touch, the HD030 series array optical waveguide display module is developed jointly with optical manufacturers in the industry, and we strive to create AR products with smaller volume, lower power consumption and better display effect.

ETOM030MCC01 is an augmented reality (AR) optical module based on One-dimensional Expanding Waveguide. It adopts Micro-OLED + Waveguide technology solution to deliver high-contrast, high-definition, true-color display performance.



	Parameter	Value
Optical Characteristics	Field of view (FOV)	30°
	Resolution	1280x720
	Micro-display	0.30"Si-OLED
	Color	RGB
	Maximum luminance	≥1000 nits
	Eye-box	9x6 mm ²
	Eye-relief	15 mm
	Contrast Ratio	≥10000:1
	Transmittance	≥80%
	Brightness Uniformity	≥60%
Electrical Characteristics	Distortion	≤1%
	Input Video Signal Format	Single-lane MIPI
	Power Consumption @ Max Brightness	160mW
Others	Refresh Rate	30Hz~120HZ
	Total weight	≤13.4 g
	Operating Temperature	-10°C~+40°C
	Storage Temperature	-20°C~+30°C