ORTUS TECHNOLOGY

- Commitment to environmental preservation

ISO14001

■ ORTUS TECHNOLOGY KOCHI Factory: Certificated in 1998

■ ORTUSTECH (MALAYSIA) SDN.BHD.: Certificated in 2014

Prevention of Global Warming

■ Reduction of Greenhouse Effect Gases

·CFC substitutes have been eliminated from the parts cleaning process at all the production facilities, including our associated factories (2004).

■ Energy Saving Efforts

·ORTUS TECHNOLOGY succeeded in the attempt to substitute cleaning gas and etching gas with gas of warming potential 1, then is committed to continuously reducing CO2 emissions.

Recycling Society and the Recycling of Resources

Promotion of waste reduction and the recycling of materials

·ORTUS TECHNOLOGY continues to promote the zero-emission initiative (100% achieved by 2004).

*At ORTUS TECHNOLOGY, the zero-emission initiative is defined as limiting landfill waste to less than 1% of total waste.

Environmental Conservation

■ Preventing Air Pollution and Protecting the Ozone Layer

·NF3 (nitrogen trifluoride) used in manufacturing processes of TFT-LCD display has been completely eliminated, also, replacing etching gas SF6 (sulfur hexafluoride)

First in the world to implement COF2 (carbonyl fluoride), which has an effect on prevention for global warming. (2005).

·ORTUS TECHNOLOGY received jury special award from the Ninth Ozone Layer Protection/Global Warming Prevention Grand Prix (2006).

■ Preventing Water and Land Contamination

·The water used in manufacturing processes is treated to make it safe for drinking and then discharged into local rivers.





As responsible members of international society, we who work within the Toppan Group strive to realize a sustainable society through forward looking corporate activities with consideration for the conservation of the global environment.

Basic Principles

- 1. We observe all laws, regulations and in-company rules relating to the environment.
 2. For the future of the Earth, we strive for the effective utilization of limited
- resources and the reduction of all types of environmental burden.

 3. With foresight, we promote the development and widespread use of products that show consideration for the environment, and contribute to the environmental activities of customers
- We engage in communication related to the environment with a wide range of peoples both inside and outside the company, and strive for mutual
- 5. We also take a proactive approach to environmental conservation in corporate

Established in April 1992 Revised in April 2009

Business Location

Sales and Design Offices

ISO9001 Certificated

TEL:+81-42-514-0700







191-0065, Japan

Midosuji Daiwa Building, 3-6-8 Kyutaro-machi, Chuo-ku, Osaka-shi, Osaka 541-0056, Japan TEL:+81-6-6243-6245 FAX:+81-6-6243-6860

Taiwan Liaison Office (Resident Office)

Marketing, Sales and Product Planning Group

TEL:+81-42-514-0760 FAX:+81-42-514-0880

% TOPPAN ELECTRONICS (TAIWAN) CO.,LTD. 10F, No.109, Sec.3, Min Sheng East Road, Taipei, Taiwan 10544. TEL: +886-2-2719-0065 Ext: 217,222

Production Facilities

ORTUS TECHNOLOGY Main Plant: KOCHI Plant

IS09001/14001 Certificated







2420 Kureda, Nankoku-shi, Kochi 783-0062, Japan TEL:+81-88-862-1000

ORTUSTECH (MALAYSIA) SDN. BHD.

IS09001/14001 Certificated









Lot 760, Jalan Haji Sirat Kiang 42100, Selangor Darul Ehsan, Malaysia TFI:+60-3-3291-0233

Customer Service Center

ORTUS TECHNOLOGY KOCHI plant. **Quality Assurance Division**

2420 Kureda, Nankoku-shi, Kochi 783-0062, Japan

Taiwan Device CS Center

% TOPPAN ELECTRONICS (TAIWAN) CO.,LTD. 10F, No.109, Sec.3, Min Sheng East Road, Taipei, Taiwan 10544. TEL: +886-2-2719-0065 Ext: 217,222 FAX: +886-2-2719-0067

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ORTUSTECH

ORTUS TECHNOLOGY CO., LTD.

Product information

http://www.ortustech.co.jp/english/

ORTUS TECHNOLOGY CO., LTD. Tokyo Main office





ORTUSTECH

ORTUS TECHNOLOGY **Liquid Crystal Display**



We are Small-to-medium size display specialist.

Outdoor readability and Low power consumption

ORTUSTECH correspond to various needs and applications by full line-up products of excellent outdoor readability and low power consumption.

Production suit to small volume demand

ORTUSTECH flexibly respond to the customers with small volume size.

Flexible and Quick support system

ORTUSTECH is always aware of market needs and provide flexible and quick support to customer demand.

Long-term stable supply

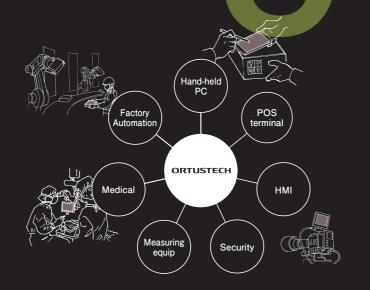
ORTUSTECH provide long-term continuous available products to support customer's long-life products.

Full in-house Production

ORTUSTECH establish an integrated production system from TFT array and color filter to final module assembly.

Specialized to Small-to-medium size TFT-LCD

ORTUSTECH focus on unique and high quality small-to-medium size display creation.



New-Blanview LCD

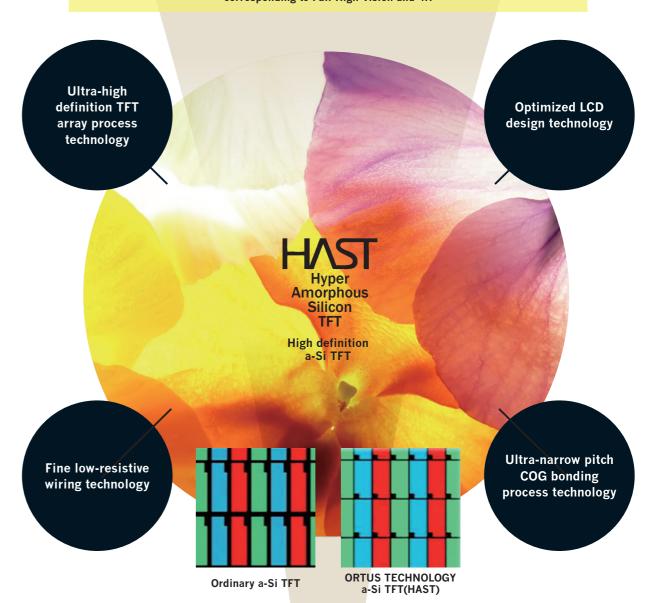
High-pixel, high-definition and low power consumption TFT LCD with furter improved color purity, reflectance and transmittance

Blanview LCD

Low power TFT-LCD with superior outdoor readability under any light condition

Ultra-high definition LCD

Ultra-high definition TFT-LCD with high definition and high transmittance in corresponding to Full-High-Vision and 4K



ORTUSTECH's small-to-medium size liquid crystal display is ubiquitous in a wide variety of industrial electronics applications worldwide.

By combining CASIO's unique display technologies and TOPPAN's cutting-edge printing technologies, ORTUSTECH offers high-performance, high-quality and low power small-to-medium size display products for industrial electronics market worldwide.

1



Improve transmittance!

A beautiful display is realized even under direct sun light and even in indoors with ultra low power consumption..

New-Blanview further evolve Blanview with excellent performance for outdoor readability. And, enable both more beautiful display and lower power consumption

with original technology.

Original high reflectance performance

> Excellent outdoor readability

Overwhelming ultra low power consumption

COM40H4M66

New-Blanview Advantages

◆Sunlight Readable ◆Ultra-Low Power

New-Blanview (2nd Gen. Blanview technology) enables sunlight readable functionality and ultra-low power consumption together, by an optimized panel and optical design which can make full use of backlight and incoming sunlight.



Image comparison under direct sun light (100,000lux)

Not only improve color purity, reflectance, and outdoor readability but enable product with a large number of pixels and high-definition. "Evolving" energy-saving display

Traditional transmissive TFT backlight ON

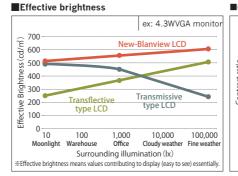


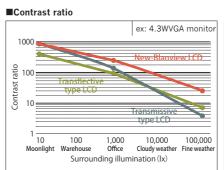


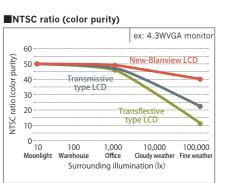
New-Blanview TFT backlight ON

Optical characteristic by surrounding condition

New-Blanview display performance is less dependent on surrounding luminous environment, compared to transmissive and transflective type displays.







Hybrid Blanview

Segment and Color Graphic "Hybrid" display Display mode switchable to suit conditions



Very good under direct sun light

+81-42-514-0760

Beautiful Full color display

Full color Blanview mode Power consumption: 55mW

Blanview, the combination of high transmittance panel with HAST technology and optimized optical design to make use of incident lights, realizes superior outdoor readability and low power consumption together.

Blanview

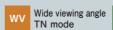
Color purity, reflectance and transmittance improvements enables to further upgrade outdoor readability, large number of pixels and ultra low power functionality.

New-Blanview extend Blanview product family to high resolution/high definition display field.

Line up 6.0" 2.4" 3.2" 3.5" 4.0" 4.1" 4.3" 4.8" 5.0" 5.7" HD New-Blanview 720xRGBx1280 COM43H4N09 Blanview New-Blanview New-Blanview New-Blanview **WVGA** 480xRGBx800 COM43H4M85 New-Blanview New-Blanview Blanview Blanview **VGA** n LED 70,000h 480xRGBx640 640xRGBx480 Blanview **HVGA** Blanview 640xRGBx240 All in One **WQVGA Blanview** 480xRGBx272 New-Blanview New-Blanview **New-Blanview** New-Blanview 240 x RGB 320 Blanview New-Blanview **QVGA** 320 x RGB **Blanview Blanview Blanview** 240 L WV L WV L















New-Blanview

	2.2"	2.4"	2.	.7"	3.5"		4.0"		4.3"		4.8"
	QVGA	QVGA	QVGA	QVGA	QVGA	VGA	WVGA	WVGA	WVGA	WVGA	HD
Screen size		NEW	NEW	NEW	NEW	NEW					
Model name	COM22H2P16	COM24H2P39	COM27H2P37	COM27H2P40	COM35H3P17	C0M35H3N82	COM40H4M66	COM43H4N09	COM43H4N10	COM43H4M85	COM48H4N22
Resolution	240xRGBxX320	240xRGBx320	240xRGBx320	240xRGBx320	240xRGBx320	480xRGBx640	480xRGBx800	480xRGBx800	480xRGBx800	480xRGBx800	720xRGBx1280
Interface	CPU	CPU	RGB 6bit	CPU	RGB 6bit	MIPI	MIPI	MIPI	MIPI	RGB 6bit	MIPI
Number of colors	262,144	262,144	262,144	262,144	262,144	16,777,216	16,777,216	16,777,216	16,777,216	262,144	16,777,216
Brightness (cd/m²)	400 (at 6mA)	300 (at 7.5mA)	350 (at 7mA)	350 (at 7mA)	250 (at 6.5mA)	900 (at 20mA)	350 (at 10mA)	340 (at 7mA)	300 (at 7mA)	400 (at 10mA)	300 (at 10mA)
Contrast	800	800	800	800	800	900	600	600	600	600	700
Viewing angle (U/D/L/R)	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°
Power supply voltage	2.8V	2.7V	3.0V	2.7V	3.0V	2.8V/1.8V	3.3V/1.8V	3.3V/1.8V	3.3V/1.8V	3.0V/1.8V	2.9V/1.9V
Operating temperature	-20~70℃	-20∼70℃	-20∼70°C	-20~70°C	-20~70℃	-20~70℃	-20~70℃	-20~70℃	-20∼70℃	-20∼70℃	-20~70℃
Storage temperature	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30∼80℃	-30~80℃
External dimensions (mm: w x h)	38.64x53.72	42.5x58.5	47.0x66.0	47.0x66.0	63.5x85.0	61.00x81.75	57.20x95.83	61.2x103.0	61.2x103.0	63.0x105.3	63.68x115.51
Tchickness (mm)	2.35	2.55	2.89	2.89	3.03	2.60	1.55	1.80	1.80	2.90	1.67
Main features	P VA	P VA NTSC 50	P VA NTSC 50	P VA NTSC 50	P VA NTSC 50	P VA MIPI NTSC 50	P VA	P VA	P NTSC 50 VA MIPI	PVA	P VA
			Option: Touch screen	Option: Touch screen	Option: Touch screen					Option: Touch screen	

Wide viewing angle TN mode VA Wide viewing angle High image quality VA mode

L Landscape

	•
	lanview
	IALIVIEW
	141171677

Long-life LED 70kH





	2.4"	3.5"	3.7"	3.2"	3.5"	4.1"	5.0"	5.7"	4.3"	6.0"
Screen size	QVGA	VGA	VGA	WVGA	QVGA	QVGA	QVGA	VGA	WQVGA	HVGA
Model name	COM24H2P29	COM35H3P08	COM37H3N83	COM32H3N89	COM35H3P04	COM41H4N08	COM50H5M81	COM57H5M64	COM43H4N02	COM60H6M10
Resolution	240xRGBx320	480xRGBx640	480xRGBx640	480xRGBx800	320xRGBx240	320xRGBx240	320xRGBx240	640xRGBx480	480xRGBx272	640xRGBx240
Interface	RGB 6bit	RGB 6/8bit	RGB 6bit	RGB 8bit	RGB 6/8bit	RGB 6/8bit	RGB 6/8bit	RGB 6bit	RGB 8bit	RGB 6bit
Number of colors	262,144	262,144	262,144	16,777,216	262,144/16,777,216	262,144/16,777,216	262,144/16,777,216	262,144	16,777,216	262,144
Brightness (cd/m²)	300 (at 7.5mA)	250 (at 7.1mA)	320 (at 8.0mA)	380 (at 8.5mA)	300 (at 7.1mA)	350 (at 6.5mA)	450 (at 7.1mA)	400 (at 30mA)	450 (at 6.5mA)	500
Contrast	400	600	600	1000	400	400	400	700	400	300
Viewing angle (U/D/L/R)	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°	60°/65°/80°/80°	80°/80°/80°/80°	15°/60°/35°/35°
Power supply voltage	3.0V	3.0V/1.8V	3.0V/1.8V	2.7V/1.8V	3.0V	3.0V	3.0V	3.3V	3.3V	3.3V/12V
Operating temperature	-20~70℃	-20∼70℃	-20∼70℃	-20∼70℃	-20~70℃	-20~70℃	-20∼70℃	-30~80℃	-20~70℃	-20∼70℃
Storage temperature	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃
External dimensions (mm: w x h)	42.5x58.5	63.5x85.0	65.0x89.0	46.66x78.55	76.9x63.9	90.31x74.62	108.30x87.55	130.32x101.20	105.5x67.2	156.49x69.98
Tchickness (mm)	2.55	3.03	3.0	1.75	3.13	3.13	3.0	5.13	2.90	8.81
Main features	PWV	P VA	P VA	P VA	LWV	LWV	L WV	LED All in One	L WV	L All in One

Option: Touch screen

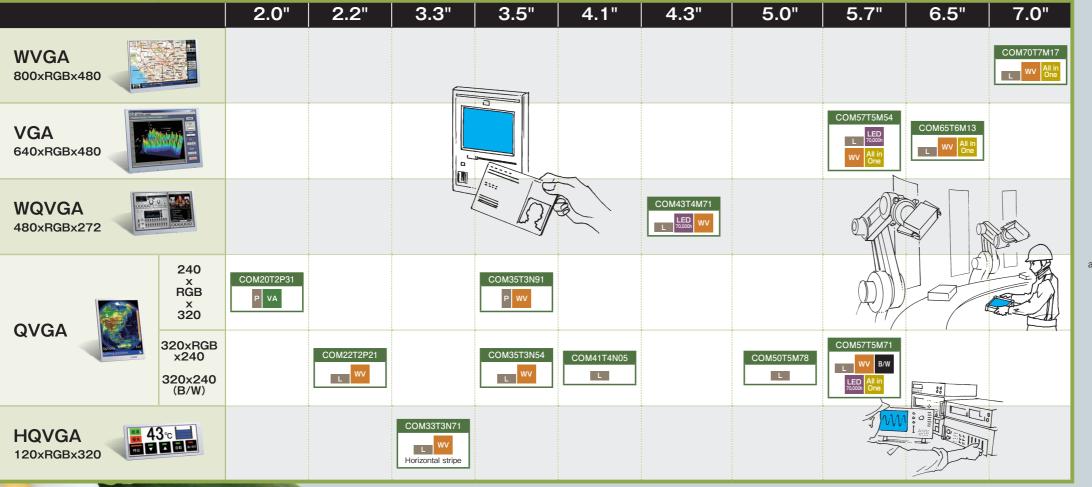
Option: Touch screen

Option: Touch screen

Option: Touch screen

Standard product (Transmissive type)

Line up



By HAST technology, our lineup of standard product features display sizes and resolutions ideal for industrial applications.

The products we provide help to satisfy various

needs of our customers.

Line up



By our original HAST technology, ORTUS TECHNOLOGY realized high definition and an adequate aperture ratio, and, by optimizing the design and manufacturing processes,
ORTUS TECHNOLOGY balanced high resolution and high transmittance.

2.0" QHD World's highest class definition (546ppi)

Ultra-high definition

direct-view TFT-LCD Corresponding to high quality still image

and moving picture

●Possible to downsize 4K Ultra-high definition/8K Super-Hi-Vision camera monitor

9.6inch size 4K panel

9.6" 4K

●4K resolution (3840x2160) with 9.6"

9.6"

COM96T9M02

3840xRGBx2160

2ch LVDS/8bitx4

16,777,216

500

700

80°/80°/80°/80°

5.0V (Excluding backlight part)

0~60℃

-10~70℃



2.0"

COM20T2N52

960xRGBx540

RGB 8bit

16,777,216

250

200

45°/45°/45°/45°

3.3V/1.8V

-20~70°C

-30~80℃

Product specification

	2.0"	3.5"	2.2"	3.3"	3.5"	4.1"	4.3"	5.0"	5.	7"	6.5"	7.0"
Screen size	QVGA	QVGA	QVGA	HQVGA	QVGA	QVGA	WQVGA	QVGA	QVGA	VGA	VGA	WVGA
Model name	COM20T2P31	COM35T3N91	COM22T2P21	COM33T3N71	COM35T3N54	COM41T4N05	COM43T4M71	COM50T5M78	COM57T5M71	COM57T5M54	COM65T6M13	COM70T7M17
Resolution	240xRGBx320	240xRGBx320	320xRGBx240	120xRGBx320	320xRGBx240	320xRGBx240	480xRGBx272	320xRGBx240	320x240	640xRGBx480	640xRGBx480	800xRGBx480
Interface	RGB 6bit/CPU	RGB 6bit	RGB 6/8bit	Data 18/16bit RGB interface Command: SPI interface	RGB 6/8bit	RGB 6/8bit	RGB 8bit	RGB 6/8 bit	6bit	RGB 6bit	RGB 6bit	RGB 6bit
Number of colors	262,144	262,144	262,144/16,777,216	262,144/65,536	262,144/16,777,216	262,144/16,777,216	16,777,216	262,144/16,777,216	64 gray-scale (Monochrome)	262,144	262,144	262,144
Brightness (cd/m²)	450	500	500	625	500	450	450	500	350	440	400	530
Contrast	800	400	400	300	400	200	400	200	400	700	400	400
Viewing angle (U/D/L/R)	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°	20°/50°/35°/35°	80°/80°/80°/80°	20°/50°/35°/35°	60°/80°/80°/80°	55°/80°/80°/80°	80°/80°/80°/80°	80°/80°/80°/80°
Power supply voltage	3.0V	3.0V	3.0V	3.3V	3.0V	3.0V	3.3V	3.0V	3.3V	3.3V	3.3V/12V	3.3V
Operating temperature	-20~70°C	-20~70°C	-20~70℃	-20~70°C	-20~70℃	-20~70℃	-20~70°C	-20~70℃	-20~70℃	-20~70℃	-20~70℃	-20~70℃
Storage temperature	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃	-30~80℃
External dimensions (mm: w x h)	35.50x50.55	63.5x85.0	49.96x42.95	38.5x90.0	76.9x63.9	90.31x74.62	105.5x67.2	108.30x87.55	130.32x101.20	130.32x101.20	152.0x117.0	165.0x105.8
Tchickness (mm)	2.38	3.03	2.92	4.5	3.13	3.13	5.2	3.0	5.13	5.13	8.0	3.35
Main features	P VA	PWV	L WV	L WV Horizontal stripe	L WV	L	L WV	L	L B/W LED All in One	L LED 70,000h WV All in One	L WV All in One	All in One

Option: Touch screen	Option: Touch screen

55.04x39.07 287.4x146.6 9.78 23.4

Option: Touch screen

Option: Touch screen

Option: Touch screen Option: Touch screen

Long-life LED

Option: Touch screen

Wide viewing angle

High image quality

L Landscape

Standard product
(Transmissive type)