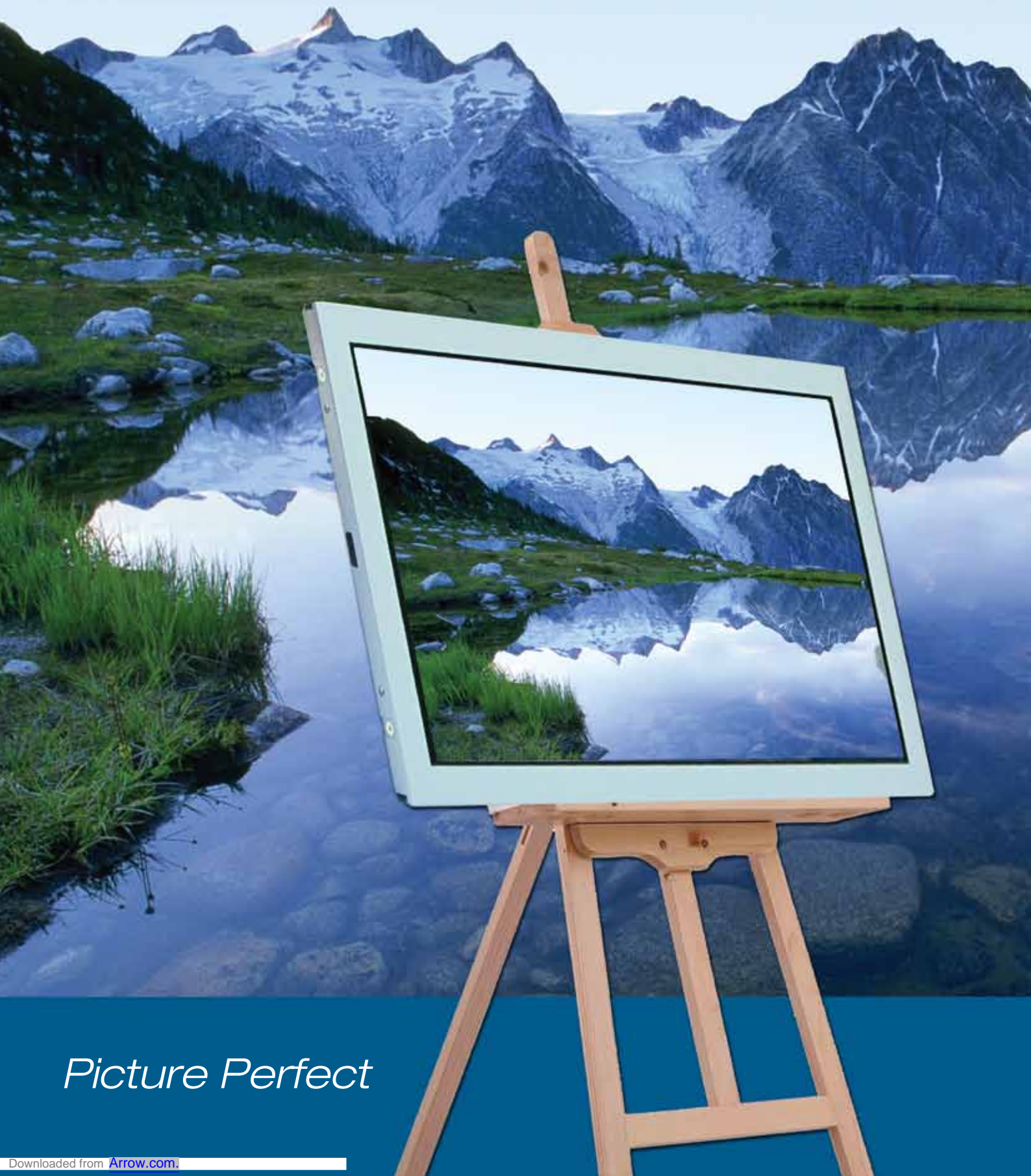


KOE

JDI Group



Picture Perfect

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Introduction

Kaohsiung Opto-Electronics (KOE), a wholly owned subsidiary of Japan Displays Inc (JDI), has been formed to advance the design, development and manufacture of market leading TFT LCD display modules previously established by Hitachi.

The creation of Japan Displays Inc has seen the merging of the display businesses of Hitachi, Sony and Toshiba to create the world's largest manufacturer of small to medium sized LCD modules. Business integration has resulted in the formation of Taiwan based Kaohsiung Opto-Electronics who continue to focus on the support and development of high quality, high performance TFT display modules for industrial and high reliability applications.

Kaohsiung Opto-Electronics can be justifiably proud of inheriting an established LCD heritage. Over 35 years ago, as an early pioneer of LCD technology, Hitachi developed and produced simple character and dot matrix displays. More recently the development and introduction of in-plane-switching (IPS) wide viewing angle technology reiterated Hitachi's commitment to providing display excellence. Continued investment in research and development will ensure that newly founded Kaohsiung Opto-Electronics stays at the forefront of evolving and ground breaking LCD technology.

Kaohsiung Opto-Electronics has its own dedicated manufacturing and production facilities in Taiwan. In house design, production and procurement of key components such as LCD glass, colour filters, LCD drivers and backlights, allows Kaohsiung Opto-Electronics to provide continual enhancement to an extensive range of high quality and performance optimised display solutions. Kaohsiung Opto-Electronics will also maintain a renowned Japanese dedication for the design and manufacture of high quality products.

Kaohsiung Opto-Electronics will supply and support a wide range of standard passive STN and colour TFTs from 3.5" to 21.3" providing inherent quality and exceptional optical performance. Specifications and interfaces are optimised for industrial markets and ease of integration.

As a global supplier of LCDs KOE will provide sales and technical support locally through the following sales offices:

KOE Europe Ltd.
KOE Americas Inc.
KOE Asia Pte. Ltd.



Kaohsiung Opto-Electronics Inc.

Continuously evolving LCD technology



Evolution of In-Plane-Switching (IPS)

Originally developed and released by Hitachi in 1996, IPS was the first LCD technology to provide outstanding picture quality particularly when viewed at any viewing angle. IPS technology enables exceptional colour saturation, colour stability, contrast and black levels with a 176° wide vertical and horizontal viewing angle.

IPS has been further enhanced and evolved into Super-IPS, Advanced-Super IPS and more recently IPS Pro. Kaohsiung Opto-Electronics will continue to develop and improve IPS technology to provide the best LCD solution that exceeds customer needs.

“IPS-Pro has a much higher and more stable image performance over viewing angle than any other TFT technology.”

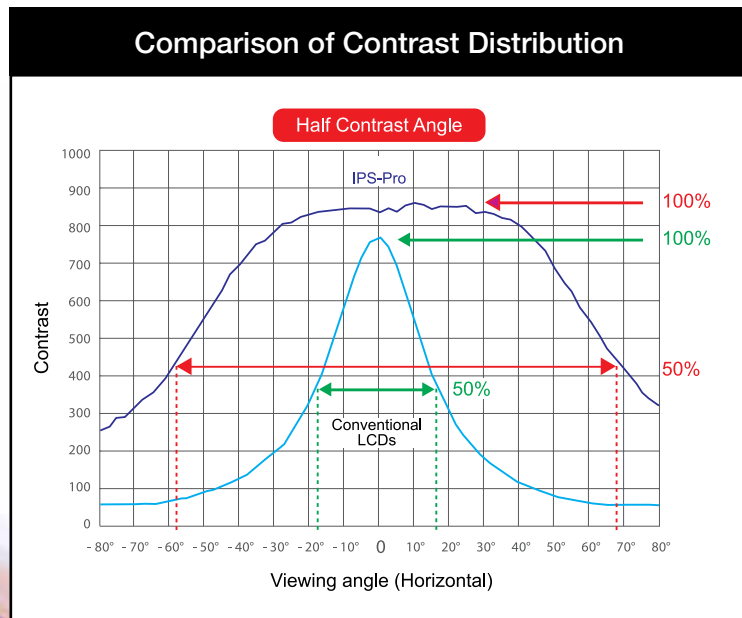
The main benefits of IPS technology:

- wider viewing angles
- deeper black levels
- higher brightness
- excellent contrast

IPS LCDs are extensively used by blue chip multi-national companies in the manufacture of high performance smart phones, tablets, monitors and televisions. Industrial markets can now also benefit from the features of in-plane-switching technology as new Kaohsiung Opto-Electronics IPS displays become widely available.

The diagram below illustrates the improved viewing angles of IPS Pro compared to alternative wide viewing angle technologies.

In particular it is important to note the viewing angles achievable at 50% contrast level. This is known as the Half Contrast Angle (HCA) which is a more realistic measurement of wide angle performance. The maximum contrast ratio is experienced when looking perpendicular to the screen.



Product features

Product Type	Screen size	Resolution	IPS	IPS NP	TFT	STN	Rugged +	Standard format (4:3)	Wide format	CFL backlight	LED backlight	Super High Bright	CMOS interface	LVDS interface	262K colours	16M colours	1B colours	-20° + 70°	-30° + 80°	Transmissive	Transflective	Touchpanel option
High End TFT																						
TX23D86	9.0"	1280 x 768		■						■	■			■		■		■		■		
TX26D12	10.4"	800 x 600	■					■			■			■		■		■		■		■
TX31D37	12.1"	800 x 600	■					■			■			■		■		■		■		
Wide Format TFT																						
TX11	4.3"	480 x 272			■				■		■		■			■		■		■		■
TX15	5.8"	400 x 240	■				■		■		■		■		■			■		■		■
TX18	7"	800 x 480	■		■		■		■		■	■	■	■	■			■	■	■		■
TX20	8"	800 x 480	■		■		■		■		■	■	■	■	■			■	■	■		■
TX23D38	9"	800 x 480	■						■		■			■	■			■		■		■
TX23D86	9.0"	1280 x 768		■					■		■			■		■		■		■		
TX26D13	10.2"	800 x 256			■				■		■		■		■			■		■		
TX31D38	12.3"	1280 x 480			■		■		■		■	■		■	■				■	■		
Standard TFT																						
TX09	3.5"	320 x 240			■		■	■			■		■		■			■	■	■		■
TX13	5.0"	640 x 480			■		■	■			■		■		■			■	■	■		■
TX14 (QVGA)	5.7"	320 x 240			■			■		■	■		■		■			■		■		■
TX14 (VGA)	5.7"	640 x 480			■			■		■	■		■	■	■			■		■		■
TX16D11	6.2"	640 x 240			■				■	■	■		■		■			■		■		■
TX17	6.5"	640 x 480			■			■			■	■	■	■	■			■		■		■
TX26D12	10.4"	800 x 600	■					■			■			■		■		■		■		■
TX26D14	10.4"	640 x 480			■			■			■	■		■		■		■		■		■
TX31D37	12.1"	800 x 600	■					■			■			■		■		■		■		
¼ VGA STN																						
SP10Q	3.8"	320 x 240				■		■			■		■					■		■	■	■
SP12Q	4.7"	320 x 240				■		■		■	■		■					■		■	■	
SP14Q	5.7"	320 x 240				■		■		■	■		■					■		■	■	■
Standard STN																						
SP12N	4.8"	256 x 64				■			■	■			■									
LMG7420	5.1"	240 x 128				■			■	■			■							■		
SP14N	5.1"	240 x 128				■			■	■			■					■		■	■	■
SP24V	9.4"	640 x 480				■		■		■			■							■		■
LMG7550	10.4"	640 x 480				■		■		■			■							■		

High-End TFT Displays for Medical and Broadcast Applications

Both medical and broadcast applications demand the best optical performance from a display. IPS Pro, the latest evolution of KOE's In-Plane-Switching technology, provides a highly stable colour image from any viewing angle. These display products offer excellent colour saturation with very high contrast ratios. The exceptional black levels combined with improved transmittance provide contrast ratios of up to 1350:1. These characteristics also mean that high brightness can be achieved without increasing the power consumption of the backlight.

TX23D86VM0BAA

- 9.0" WXGA 1280 x 768
- IPS Pro New Process
- 1-ch LVDS
- High Contrast



High-End TFT Displays

Size	Resolution	Part Number	Technology	Mode	Dimensions	Backlight	Touchscreen Version	Brightness cd/m²	Contrast	Features
9.0"	1280 x 768	TX23D86VM0BAA	IPS Pro NP	Transmissive	216 x 142 x 11.7	LED	n/a	350	1000:1	IPS Pro NP (176 degree viewing angle) LVDS
10.4	800 x 600	TX26D12VM0AAA	IPS Pro	Transmissive	243 x 185.1 x 11	LED	TX26D12VM0APA	450	800:1	IPS Pro (176 degree viewing angle) LVDS
12.1"	800 x 600	TX31D37VM0CAA	IPS Pro	Transmissive	280 x 210 x 12.58	LED	n/a	600	1000:1	IPS Pro (176 degree viewing angle) LVDS

TFT Displays for Extreme Environmental Conditions

All of KOE's Rugged+ displays are designed to function in challenging and harsh environmental conditions. Reliable and consistent operation under extreme temperature, mechanical shock and vibration is a necessity. The entire range of Rugged+ displays feature industrial environment operating specifications with high brightness, long-life LED backlights and will provide dependable operation between -30°C and +80°C.

Exceptional optical performance is maintained as many Rugged+ displays utilise KOE's IPS Pro technology, which delivers exceptional colour saturation, colour stability, contrast and black levels with a 176° wide vertical and horizontal viewing angle.

KOE's Rugged+ TFT displays are designed for high reliability medical, marine, aerospace, automotive and industrial applications.

TX13D04VM2CAA

- 5.0" VGA 640 x 480
- 70K hour LED B/L
- WTR -30°C to +80°C

TX18D35VM0AAB

- 7.0" WVGA 800 x 480
- IPS Pro
- 800 cd/m²
- WTR -30°C to +80°C

TX31D38VM2BAA

- 12.3" HSXGA
- 1000 cd/m²
- WTR -30°C to +80°C

RUGGED+



Rugged+ TFT Displays

Size	Resolution	Part Number	Technology	Mode	Dimensions	Backlight	Touchscreen Version	Brightness cd/m ²	Contrast	Features
3.5"	320 x 240	TX09D04VM3CAA	TN	Transmissive	85.9 x 71.7 x 13.9	LED	n/a	400	600:1	WTR -30 + 80, High Contrast
5.0"	640 x 480	TX13D04VM2CAA	TN	Transmissive	119.4 x 89.1 x 9.3	LED	TX13D04VM2CPA	600	500:1	WTR -30 + 80, High Contrast
5.8"	400 x 240	TX15D02VM0CAA	IPS Pro	Transmissive	145 x 89 x 12.5	LED	TX15D02VM0CPA	450	800:1	IPS Pro, WTR -30 + 80
7.0"	800 x 480	TX18D35VM0AAA	IPS Pro	Transmissive	165 x 104 x 12.8	LED	TX18D35VM0APA	450	600:1	IPS Pro, WTR -30 + 80
7.0"	800 x 480	TX18D35VM0AAB	IPS Pro	Transmissive	165 x 104 x 12.8	LED	TX18D35VM0APB	800	600:1	IPS Pro, WTR -30 + 80 High Bright
7.0"	800 x 480	TX18D37VM0AAA	IPS Pro	Transmissive	165 x 104 x 12.8	LED	TX18D37VM0APA	450	600:1	IPS Pro, WTR -30 + 80
8.0"	800 x 480	TX20D26VM0AAA	IPS Pro	Transmissive	190 x 120 x 12.8	LED	TX20D26VM0APA	600	600:1	IPS Pro, WTR -30 + 80
12.3"	1280 x 480	TX31D38VM2BAA	TN	Transmissive	320 x 130 x 12.8	LED	n/a	1000	800:1	WTR -30 + 80, High Brightness & Contrast
New for 2012										
4.8"	394 x 509	TX12D02VM0CAA	IPS	Transmissive	86.11 x 111.8 x 12	LED	TBD	600	1000:1	Available from June. Ask your distributor for more details.

TFT Display Solutions for Outdoor Applications

Applications such as ATMs, Kiosks, Point of Sale terminals and ticketing machines are often found in high brightness outdoor environments. To ensure that graphical user interfaces are clear, concise and readable under bright ambient light conditions, KOE has developed sunlight readable displays that utilise high brightness 1000cd/m² LED backlights and anti-reflective polariser coatings.

TX17D01VM2EAB

- 6.5" VGA 640 x 480
- 70K hour LED B/L
- 1000 cd/m²

TX26D14VM2EAA

- 10.4" VGA 640 x 480
- 70K hour LED B/L
- 1000 cd/m²

TX31D38VM2BAA

- 12.3" HSXGA 1280 x 480
- 1000 cd/m²
- WTR -30°C to +80°C



Added Value Display Solutions

KOE can offer added value solutions that enhance and improve display performance

Sunlight Readability – Glass Bonding

Developments in optical glass bonding techniques have now enabled KOE TFT LCD display modules to offer excellent readability in demanding ambient light conditions. The use of optical bonding technology coupled with an anti-reflection (AR) or anti-glare (AG) polariser can significantly improve the optical performance of the display. A TFT display featuring an optically bonded glass substrate and polariser coatings

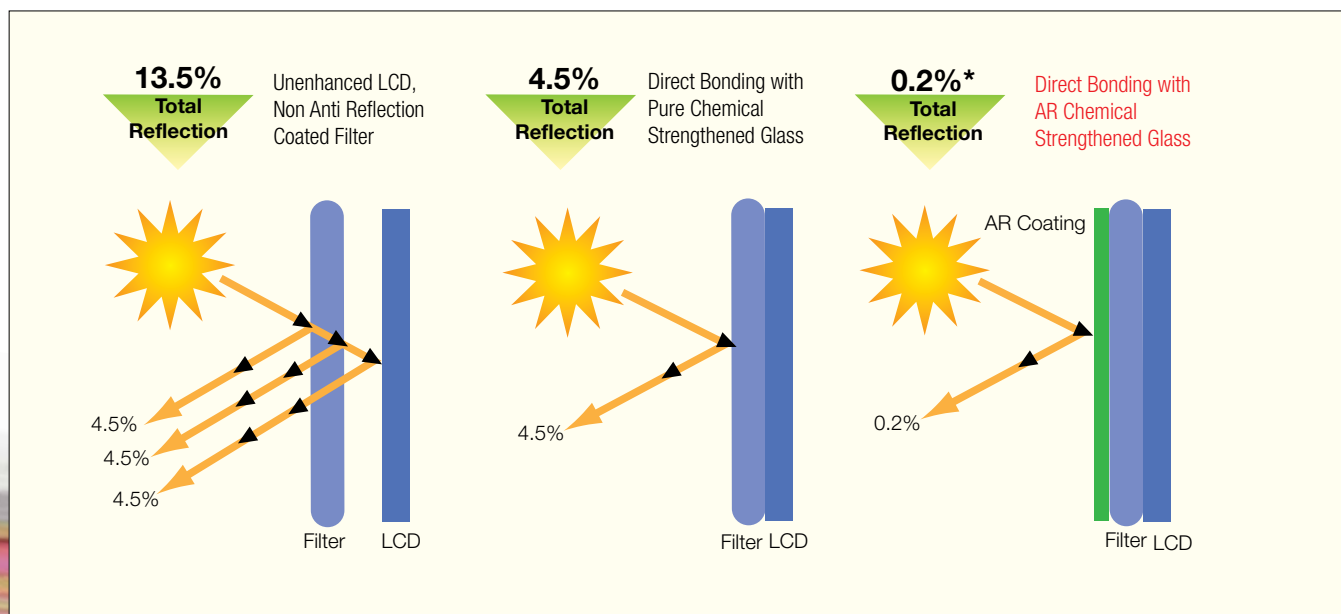
can reduce reflections to less than 0.2% by scattering and absorbing ambient light. Optical bonding technology has been successfully implemented on TFT displays used in challenging environments such as aerospace, marine, automotive, medical and industrial. It is also being viewed as a key display enhancement technology for facilitating the development of emerging products and designs.

User Interface – Touch Panel

Many applications and systems will require user inputs to be applied directly to the graphical interface via a touch panel. 4-wire resistive touch panels are available on KOE LCD display modules as standard user interface solutions. For applications requiring greater accuracy and reliability 5-wire resistive touch panel solutions are also available. A more recent and inspiring addition is capacitive touch panel technology. Projected

capacitive (p-cap) and surface capacitive (s-cap) touch panel solutions can be considered for applications which require a more robust interface solution offering highly accurate and more flexible gesture interface operations. KOE is able offer a variety of touch panel solutions to meet the needs and demands of specific application requirements.

Sunlight Readability – Glass Bonding



If you have interest in either of these added value solutions, please discuss your requirement with one of KOE's authorised distributors, who can advise you.

Wide Format TFT Displays

Traditional TFT technology and the migration of IPS technology to industrial and commercial displays enables KOE to offer an expanding portfolio of wide format aspect ratio TFT display solutions. Market leading optical performance, long term availability and continuity of supply can be ensured.

Applications

Wide format TFT displays will find use in many front panel, instrument console and control system designs and applications. The mechanical footprint of the wide format TFT displays is ideally suited for human machine interface applications. Information, data and graphics can be concisely represented and displayed.

TX15D02VM0CAA

- 5.8" WQVGA 400 x 240
- IPS Pro
- LED B/L
- WTR -30°C to +80°C

TX18D37VM0AAA

- 7.0" WVGA 800 x 480
- IPS Pro
- LED B/L
- LVDS I/F
- WTR -30°C to +80°C

TX26D13VM2BAA

- 10.2" HSVGA 800 x 256
- LED B/L
- LVDS I/F



Wide Format TFT Displays

Size	Resolution	Part Number	Technology	Mode	Dimensions	Backlight	Touchscreen Version	Brightness cd/m ²	Contrast	Features
4.3"	480 x 272	TX11D06VM2AAA	TN	Transmissive	105.5 x 67.2 x 2.9	LED	TX11D06VM2APA	500	500:1	24 bit RGB, Low Power Consumption
5.8"	400 x 240	TX15D02VM0CAA	IPS Pro	Transmissive	145 x 89 x 12.5	LED	TX15D02VM0CPA	450	800:1	IPS Pro (176 degree viewing angle), WTR
7.0"	800 x 480	TX18D44VM2BAA	TN	Transmissive	165 x 106 x 8	LED	TX18D44VM2BPA	400	600:1	Slim design, 40k hrs LED backlight
7.0"	800 x 480	TX18D35VM0AAA	IPS Pro	Transmissive	165 x 104 x 12.8	LED	TX18D35VM0APA	450	600:1	IPS Pro (176 degree viewing angle), WTR
7.0"	800 x 480	TX18D35VM0AAB	IPS Pro	Transmissive	165 x 104 x 12.8	LED	TX18D35VM0APB	800	600:1	IPS Pro, WTR -30 + 80 High Bright
7.0"	800 x 480	TX18D37VM0AAA	IPS Pro	Transmissive	165 x 104 x 12.8	LED	TX18D37VM0APA	450	600:1	IPS Pro, WTR, LVDS
8.0"	800 x 480	TX20D19VM2BAA	TN	Transmissive	189 x 120 x 7.5	LED	TX20D19VM2BPA	400	600:1	Compact dimensions, 40k hrs LED backlight
8.0"	800 x 480	TX20D28VM2BAA	TN	Transmissive	189 x 120 x 7.5	LED	TX20D28VM2BPA	400	600:1	Compact dimensions, 40k hrs LED B/L, LVDS
8.0"	800 x 480	TX20D28VM2BAB	TN	Transmissive	189 x 120 x 7.5	LED	n/a	550	600:1	Slim design, 40k hrs LED B/L, LVDS
8.0"	800 x 480	TX20D26VM0AAA	IPS Pro	Transmissive	190 x 120 x 12.8	LED	TX20D26VM0AQA	600	600:1	IPS Pro (176 degree viewing angle), WTR
9.0"	800 x 480	TX23D38VM0CAA	IPS Pro	Transmissive	218 x 135 x 10.5	LED	TX23D38VM0CPA	450	800:1	IPS Pro (176 degree viewing angle) LVDS
9.0"	1280 x 768	TX23D86VM0BAA	IPS Pro NP	Transmissive	216 x 142 x 11.7	LED	n/a	350	1000:1	IPS Pro NP (176 degree viewing angle) LVDS
10.2"	800 x 256	TX26D13VM2BAA	TN	Transmissive	260.2 x 96.2 x 10.55	LED	n/a	350	500:1	Slim design, 40k hrs LED B/L
12.3"	1280 x 480	TX31D38VM2BAA	TN	Transmissive	320 x 130 x 12.8	LED	n/a	1000	800:1	WTR -30 + 80, High Brightness & Contrast
New for 2012										
5.0"	800 x 480	TX13D06VM2BAA	TN	Transmissive	120 x 80.7 x 8	LED	TBD	1000	600:1	Available from June. Ask your distributor for more details.
8.0"	800 x 480	TX20D32VM2BAA	TN	Transmissive	189 x 120 x 7.5	LED	TBD	1000	600:1	Available from June. Ask your distributor for more details.

Applications

- passenger infotainment terminals
- building management systems
- measurement and monitoring
- industrial control
- instrumentation
- industrial PC
- automotive
- gaming
- marine



Standard Format TFT Displays

As a proven TFT technology leader KOE has been a major developer and manufacturer of colour TFT displays for almost 20 years. A wide range of standard colour TFTs from 3.5" to 21.3" provide inherent quality and exceptional optical performance. Specifications and interfaces are optimised for industrial markets and ease of integration.

Applications

A vast and wide range of applications are particularly suited to the use of KOE colour TFT displays. Small, low power displays are particularly suitable for compact, portable, battery powered equipment, media players and mobile navigation systems. Medium size colour TFTs provide ideal choices for security monitoring, portable terminals and process control while larger sizes are particularly suited for online terminals, monitors and epos applications.

TX14D22VM1BAA

- 5.7" QVGA 320 x 240
- 40K hour LED B/L
- Slim design

TX26D14VM2EAA

- 10.4" VGA 640 x 480
- 70K hour LED B/L
- 1000 cd/m²

TX17D02VM2CAA

- 6.5" VGA 640 x 480
- 70K hour LED B/L
- LVDS I/F

TX26D12VM0AAA

- 10.4" SVGA 800 x 600
- IPS Pro
- LVDS I/F

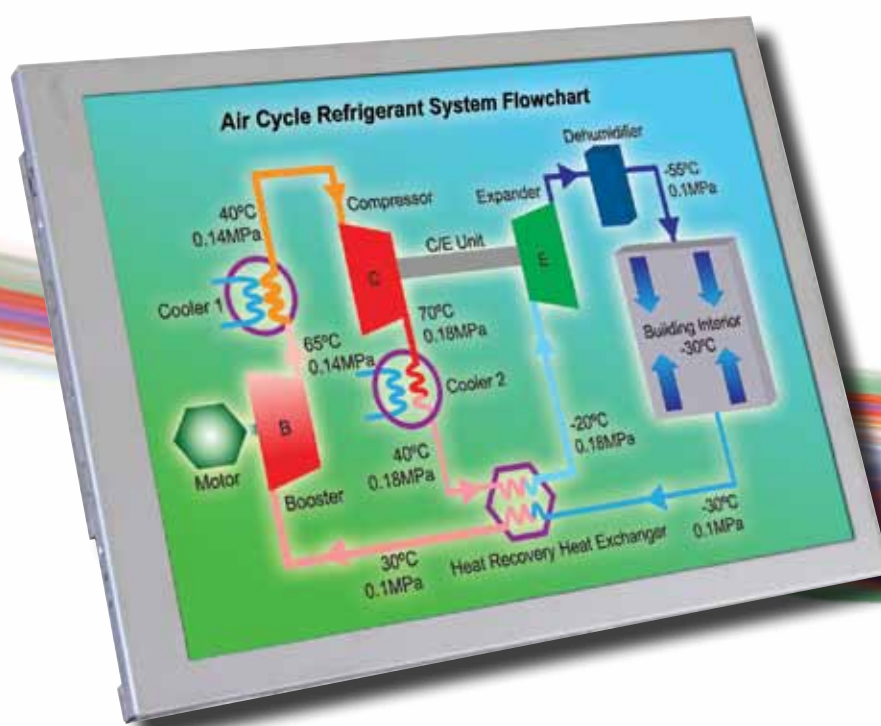


Applications

- navigation systems
- portable terminals
- home automation
- security systems
- online terminals
- process control
- feature phones
- media players
- epos

Standard Format TFT Displays

Size	Resolution	Part Number	Technology	Mode	Dimensions	Backlight	Touchscreen Version	Brightness cd/m ²	Contrast	Features
3.5"	240 x 320	TX09D40VM3CBA	TN	Transmissive	86 x 64 x 4	LED	TX09D40VM3CAA	430	300:1	High brightness, TMR, Timing Controller built in
3.5"	240 x 320	TX09D30VM1CDA	TN	Transmissive	64 x 86 x 6.7	LED	TX09D30VM1CCA	320	300:1	TMR, Timing Controller built in, On board voltage generation, 40K hour LED B/L
5.7"	320 x 240	TX14D11VM1CBD	TN	Transmissive	167 x 109 x 9.2	LED	TX14D11VM1CPD	400	350:1	40K hour LED, SP/SX14Q compatible
5.7"	320 x 240	TX14D12VM1CBC	TN	Transmissive	131 x 102 x 10.9	LED	TX14D12VM1CPC	350	350:1	40K hour LED, Compact mechanical outline
5.7"	320 x 240	TX14D22VM1BAA	TN	Transmissive	131 x 102 x 7.5	LED	TX14D22VM1BPA	400	350:1	70K hour LED, Super slim design
5.7"	640 x 480	TX14D17VM1BAB	TN	Transmissive	131 x 102.2 x 11.6	LED	TX14D17VM1BPB	350	350:1	40K hour LED, Compact mechanical outline
5.7"	640 x 480	TX14D10VM1BAA	TN	Transmissive	131 x 102.2 x 11.6	LED	TX14D10VM1BPA	350	350:1	40K hour LED, Compact mechanical outline, LVDS
6.2"	640 x 240	TX16D11VM2CAC	TN	Transmissive	173 x 70 x 7	LED	TX16D11VM2CQC	350	200:1	40K hour LED, Compact mechanical outline
6.5"	640 x 480	TX17D01VM2CAA	TN	Transmissive	153 x 118 x 9.1	LED	TX17D01VM2CPA	600	600:1	70K hour LED, Compact mechanical outline,
6.5"	640 x 480	TX17D01VM2EAB	TN	Transmissive	153 x 118 x 9.1	LED	TX17D01VM2CPB	1000	600:1	70K hour LED, Compact mechanical outline, super high brightness
6.5"	640 x 480	TX17D02VM2CAA	TN	Transmissive	153 x 118 x 9.1	LED	TX17D01VM2CPQ	600	600:1	70K hour LED, Compact mechanical outline, LVDS
10.4"	640 x 480	TX26D14VM2EAA	TN	Transmissive	243 x 185.1 x 11	LED	TX26D14VM2CPA	1000	800:1	70K hour LED, super high brightness & contrast
10.4"	800 x 600	TX26D12VM0AAA	IPS Pro	Transmissive	243 x 185.1 x 11	LED	TX26D12VM0APA	450	800:1	IPS Pro (176 degree viewing angle)
12.1"	800 x 600	TX31D37VM0CAA	IPS Pro	Transmissive	280 x 210 x 12.58	LED	n/a	600	1000:1	IPS Pro (176 degree viewing angle)
New for 2012										
10.4"	800 x 600	TX26D19VM2BAA	TN	Transmissive	243 x 185.1 x 9.5	LED	TBD	550	800:1	Available from June. Ask your distributor for more details.
15"	1024 x 768	TX38Dxx	TN	Transmissive	326.5 x 253.5 x 11.5	LED	n/a	1200	700:1	Available from June. Ask your distributor for more details.



Standard Industrial STN Products

¼ VGA STN Displays

KOE's ¼ VGA product families have been designed, developed and manufactured for over 20 years. Now a de-facto industry standard the ¼ VGA product line up is comprehensive and varied. Continuous and ongoing product enhancement ensures full backward compatibility, improved optical performance and reduced power requirements. KOE is also in the enviable position of being able to supply monochrome STN and colour TFT displays with the same mechanical footprint.

Applications

Products and applications can be designed and developed with the knowledge and confidence that a KOE ¼ VGA display will be available for the entire product lifetime. An extensive product family providing exceptional optical performance ensure a wide range of varied applications can use a KOE ¼ VGA display solution.

Standard STN Displays

KOE's LCD heritage has been established on the foundations of providing displays that provide high quality, exceptional reliability and longevity. These traditional values are as true today as they were 35 years ago when the first Hitachi STN displays were designed and manufactured. Today, KOE STN LCDs can provide simple, easy to use and cost effective display solutions.

Applications

The KOE range of standard STN displays is effective and simple to use. Simple graphical user interfaces for instrumentation, process control, security systems and measurement equipment can be designed and implemented. Some displays feature integrated display controllers and memory which allow 8-bit microcontrollers to be used to enable cost effective user interfaces and systems to be designed.

SP14Q011-A1

- 5.7" QVGA 320 x 240
- Monochrome STN
- White LED backlight
- 'Compact' mechanical footprint
- Mechanically compatible with 5.7" 'Compact' TFT range

SP14Q003-A

- 5.7" QVGA 320 x 240
- Blue mode STN
- White LED backlight
- 'Classic' mechanical footprint
- Mechanically compatible with 5.7" 'Classic' TFT range

SP14Q006

- 5.7" QVGA 320 x 240
- Monochrome STN
- White LED backlight
- 'Classic' mechanical footprint
- Mechanically compatible with 5.7" 'Compact' TFT range

Applications

- industrial process control
- measurement equipment
- building automation
- domestic appliance
- epos

SP12N002

- 4.8" 256 x 64
- Monochrome STN
- Integrated display controller

SP14N01L6VLCZ

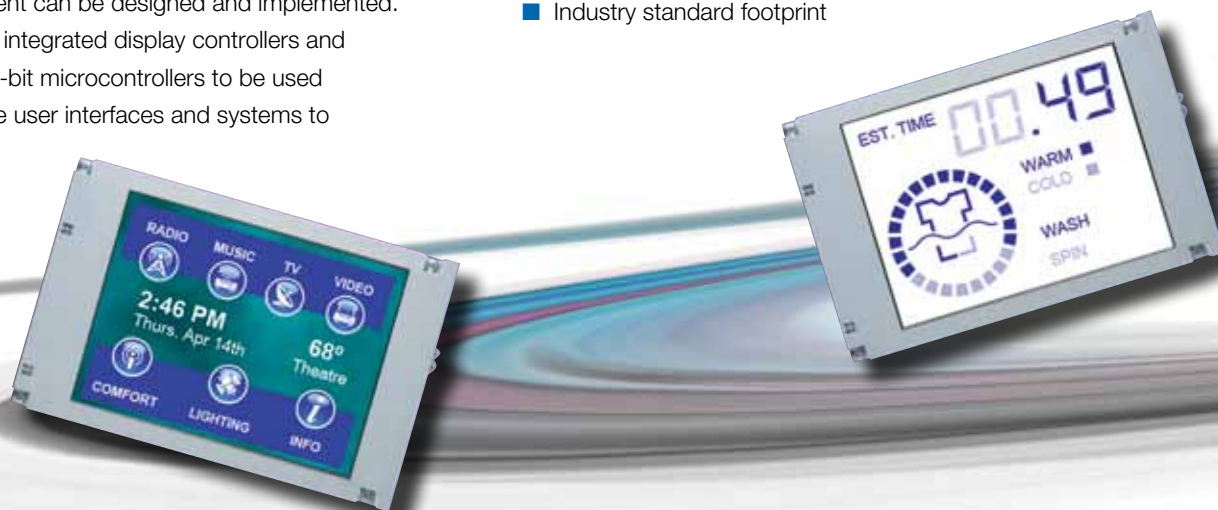
- 5.1" 240 x 128
- White LED backlight
- DC/DC converter on board
- Integrated display controller

SP24V001

- 9.4" VGA 640 x 480
- Monochrome STN
- 50K hour CFL
- Industry standard footprint

Applications

- graphical user interface
- information terminals
- ticketing systems
- security systems
- instrumentation
- process control
- data loggers
- front panels
- epos



¼ VGA STN Displays

Size	Resolution	Part Number	Technology	Mode	Dimensions	Backlight	Touchscreen Version	Brightness cd/m²	Contrast	Features
3.8"	320 x 240	SP10Q010	Black/White Film STN	Transmissive	94.7 x 73.3 x 5.5	White LED	SP10Q010-ZZA	110	20:1	White LED, High brightness, WTR,
4.7"	320 x 240	LMG7520RPFC	Black/White Film STN	Transmissive	129.6 x 92.6 x 7.5	CFL	n/a	100	20:1	
4.7"	320 x 240	LMG7525RPFF	Black/White Film STN	Transflective	129.6 x 92.6 x 7.5	CFL	n/a	25	5:1	Sunlight readable
4.7"	320 x 240	SP12Q01L6ALZZ	Black/White Film STN	Transmissive	129.6 x 92.6 x 7.5	White LED	On request	60	20:1	LMG7520RPFC compatible
4.7"	320 x 240	ST12Q01L6ALZZ	Black/White Film STN	Transflective	129.6 x 92.6 x 7.5	White LED	On request	60	5:1	Sunlight readable, LMG7525RPFF compatible
5.7"	320 x 240	SP14Q003-A	Blue/White STN	Transmissive	167 x 109 x 10	White LED	SP14Q003-AZA	200	To follow	WTR
5.7"	320 x 240	SP14Q003-C1	Blue/White STN	Transmissive	167 x 109 x 10	CFL	SP14Q003-C1A	100	To follow	50K hour CFL, Blue mode, WTR
5.7"	320 x 240	SP14Q005	Black/White Film STN	Transmissive	167 x 109 x 10	CFL	SP14Q005-ZZA	220	25:1	50K hour CFL, High brightness, WTR
5.7"	320 x 240	SP14Q006	Black/White Film STN	Transmissive	167 x 109 x 10	White LED	SP14Q006-ZZA	150	25:1	White LED, High brightness, WTR
5.7"	320 x 240	SP14Q006-T	Black/White Film STN	Transflective	167 x 109 x 10	White LED	SP14Q006-TZA	60	5:1	White LED, Sunlight readable, WTR
5.7"	320 x 240	SP14Q011-A1	Black/White Film STN	Transmissive	131 x 102 x 10	White LED	SP14Q011-A1A	220	25:1	40K hour LED, Compact outline
5.7"	320 x 240	SP14Q011-T	Black/White Film STN	Transflective	131 x 102 x 10	White LED	SP14Q011-T1A	60	5:1	40K hour LED, Compact outline, Sunlight readable

Standard STN Displays

Size	Resolution	Part Number	Technology	Mode	Dimensions	Backlight	Touchscreen Version	Brightness cd/m²	Contrast	Features
4.8"	256 x 64	SP12N001-T	Blue/Grey STN	Transflective	160 x 68 x 9.5	EL	n/a	10	3:1	Sanyo LC7981, LMG6381QHGE replacement
4.8"	256 x 64	SP12N002	Black/White Film STN	Transmissive	160 x 68 x 12	CFL	n/a	90	20:1	Toshiba T6963C, LMG7380QHFC replacement
5.1"	240 x 128	LMG7420PLFC-X	Black/White Film STN	Transmissive	159.4 x 101 x 11	CFL	n/a	90	20:1	Toshiba T6963C, 50K hour CFL
5.1"	240 x 128	SP14N001	Black/White Film STN	Transmissive	159.4 x 101 x 11	CFL	SP14N001-ZZA	150	20:1	Toshiba T6963C, 50K hour CFL, DC/DC
5.1"	240 x 128	SP14N001-Z1	Black/White Film STN	Transmissive	159.4 x 101 x 11	CFL	SP14N001-Z1A	150	20:1	Toshiba T6963C, 50K hour CFL
5.1"	240 x 128	SP14N002	Black/White Film STN	Transmissive	159.4 x 101 x 11	CFL	n/a	150	20:1	Sanyo LC7981, LMG7400PLFC replacement
5.1"	240 x 128	SP14N003	Blue/White STN	Transmissive	159.4 x 101 x 11	CFL	n/a	90	7:1	Sanyo LC7981, LMG7401PLBC replacement
5.1"	240 x 128	SP14N01L6ALCZ	Black/White Film STN	Transmissive	159.4 x 101 x 11	White LED	SP14N01L6ALCA	150	20:1	Toshiba T6963C, LMG7420PLFC-X compatible
5.1"	240 x 128	SP14N01L6VLCZ	Black/White Film STN	Transmissive	159.4 x 101 x 11	White LED	SP14N01L6VLCZ	150	20:1	Toshiba T6963C, DC/DC
9.4"	640 x 480	SP24V001	Black/White Film STN	Transmissive	257.5 x 174 x 7	CFL	n/a	110	20:1	50K hour CFL, LMG5278XUFC compatible
9.4"	640 x 480	SP24V001-A	Black/White Film STN	Transmissive	257.5 x 174 x 7	CFL	n/a	110	20:1	50K hour CFL, Sharp LM64P83L compatible
10.4"	640 x 480	LMG7550XUFC	Black/White Film STN	Transmissive	264 x 183 x 9	CFL	n/a	100	18:1	



Enhanced and versatile STN capability

KOE can offer a highly flexible approach to STN display module customisation. This service affords the application designer greater scope for product differentiation. Whether the requirement is for a simple character or segment display or a more complex graphics display module, KOE is able to design, develop and manufacture bespoke display solutions.



Kaohsiung Opto-Electronics Inc.

2, East 13th St. K.E.P.Z
Kaohsiung 806, Taiwan.

Tel: +886-7-821-1101

Fax: +886-7-821-6311

Email: support@koe.j-display.com

www.koe.j-display.com

KOE Americas Inc.

1000 Hurricane Shoals Rd.,
Suite D-100 Lawrenceville,
GA 30043

Tel: (770)-409-3000

Fax: (770)-409-3028

www.koe-americas.com

KOE Asia Pte Ltd.

7 Tampines Grande,
#02-03 HITACHI Square,
Singapore 528736

Tel: +65-6636-2374

Fax: +65-6783-5768

Email: support@koe.j-display.com

www.koe.j-display.com

KOE Europe Ltd.

Whitebrook Park
Lower Cookham Road
Maidenhead, Berkshire
SL6 8YA

Tel: +44 (0) 1628 585333

Fax: +44-1628 585030

Email: support@koe-europe.com

www.koe-europe.com