KOE

JDI Group

Display Excellence

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Introduction

Established in 2012, Kaohsiung Opto-Electronics (KOE), a wholly owned subsidiary of Japan Display Inc (JDI), is a specialist display supplier committed to the development and supply of high performance displays designed for industrial and high reliability applications.

Inheriting a strong LCD heritage from Japanese manufacturers Hitachi, Toshiba and Sony, KOE is able to exploit the extensive technical resource of JDI to aid and assist efforts in display development, ensuring KOE remains at the forefront of evolving LCD technology.

Operating autonomously, KOE maintains a strong relationship and co-operation with its larger, consumer focused parent organisation that empowers technology transfer, material sourcing and manufacturing expertise.

Supplying displays manufactured with the ethos of high quality, effective design and efficient engineering, KOE has its own dedicated manufacturing and production facilities in Taiwan which supports design, development and procurement. Employing these principles has enabled KOE to continually develop and enhance an extensive range of high quality, performance optimised display solutions.

An expanding range of value added services and products such as glass bonding, projected capacitive touch, high brightness backlights, open frame monitors, and custom and semi-custom display development are supported. Strong partnerships with local suppliers endorses KOE's design engineers when sourcing display components, materials and sub-assemblies.

Global customer engagement is supported by KOE Europe, KOE Americas and KOE Asia. Each regional business focuses on sales and marketing enterprise, and supports customers with local sales teams, design focused distributors and sales representatives.

KOE: delivering Display Excellence

Kaohsuing Opto-Electronics Ltd

Evolving LCD technology

Developing cost effective display solutions, enhancing mature technology with new and compatible products, improving LCD optical design, introducing high reliability modules for industrial applications are just some of the challenges that KOE are undertaking to continually evolve and develop LCD technology in the 21st century. KOE's established knowledge and experience of LCD design and development are enabling LCD technologies to progress and migrate to new and exciting display modules.

RUGGED+

Developed using automotive display experience, KOE's Rugged+ display modules are intended for use in demanding industrial and harsh environmental conditions. KOE Rugged+ modules are capable of providing reliable and consistent operation under the severe and rigorous conditions found in some industrial applications while still providing exceptional optical performance.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.

Rugged+

- Strong optical performance
- Highly resistant to ESD, mechanical shock and vibration
- WTR -30°C to +80°C

Lite+

The new range of Lite+ display panels offer cost effective LCD solutions that feature industry standard screen sizes, display resolutions and data interfaces but without any compromise in display optical performance. KOE's Lite+ TFT display modules feature high brightness, long-life LED backlights and high contrast ratios to provide strong optical performance and display images that are bright, colourful and concise.

Lite+

- High brightness and contrast
- Industry standard sizes and resolutions
- Cost effective

In Plane Switching

IPS was the first LCD technology to provide exceptional colour saturation and colour stability, excellent contrast and deep black levels with a 176° wide vertical and horizontal viewing angles.
IPS has been further developed and evolved with Advanced-Super IPS, IPS Pro and most recently IPS NP (New Process). IPS NP has a much higher and more stable image performance over viewing angle than any other TFT technology. KOE will continue to develop and improve IPS technology to provide the best wide angle viewing TFT display solution.

IPS

- Cutting-edge optical performance
- Exceptional colour stability and saturation
- 176° wide viewing angle

Full HD 1080

KOE introduces Full HD TFT display for industrial applications

KOE are one of the first LCD manufacturers to introduce a compact, Full HD (1920 x 1080) display module developed specifically for industrial applications. The TX18D200VM0EAA features a pixel pitch of 0.081mm (w) x 0.081mm (h), equivalent to 314ppi (pixels per inch), Advanced IPS, 20-pin LVDS data interface, long-life LED backlight and wide operating temperature range.
The 7.0-inch Full HD display module is the first in a series of high resolution displays to be introduced by KOE (see page 11).

Product features

Product Type	Screen size	Resolution	IPS	IPS Like	TN TFT	Mono TFT	STN	FHD	Rugged+	Lite+	Standard format (4:3)	Wide format	LED backlight	Super High Bright	CMOS interface	LVDS interface	262K colours	16M colours	-20° +70°	-30° +80°	-30° +85°	Transmissive	Transflective	Touchpanel option
Wide Format TFT																								
TX11	4.3"	480 x 272			■							■	■		■			■	■			■		■
TX13	5.0"	800 x 480		■	■					■		■	■	■	■		■		■			■		■
TX16	6.2"	640 x 240		■	■							■	■		■	■	■		■			■		■
TX17	6.5"	800 x 480	■						■			■	■	■		■	■				■	■		■
TX18	7.0"	800 x 480	■	■	■				■			■	■	■	■	■	■		■	■	■	■		■
TX18	7.0"	1920 x 1080	■					■				■	■			■		■	■			■		
TX20	8.0"	800 x 480	■	■	■				■	■		■	■	■	■	■	■		■	■	■	■		■
TX23	9.0"	800 x 480	■						■			■	■	■		■		■		■	■	■		■
TX26	10.1"	1920 x 1200	■					■				■	■			■		■		■		■		
TX26	10.2"	800 x 256			■							■	■		■		■		■			■		
TX31	12.3"	1280 x 480	■		■				■			■	■	■		■	■			■	■	■		
TX38	14.9"	1280 x 242	■									■	■			■	■		■			■		
Standard TFT																								
TX09	3.5"	240 x 320	■		■				■		■		■		■		■	■	■	■	■	■		■
TX13	5.0"	640 x 480		■	■				■		■		■		■	■	■			■		■		■
TX14	5.7"	320 x 240			■					■	■		■	■	■		■		■			■		■
TX14	5.7"	640 x 480		■	■					■	■		■	■	■	■	■		■			■		■
TX14	5.7"	320 x 240				■					■		■		■					■		■		
TX17	6.5"	640 x 480		■	■						■		■	■	■	■	■		■			■		■
TX26	10.4"	800 x 600	■	■	■					■	■		■	■		■		■	■			■		■
TX26	10.4"	1024 x 768			■					■	■		■	■		■	■		■			■		
TX31	12.1"	1024 x 768			■					■	■		■	■		■		■	■			■		
TX38	15.0"	1024 x 768			■					■	■		■	■		■		■		■		■		
QVGA STN																								
SP10Q	3.8"	320 x 240					■				■		■		■				■			■	■	■
SP12Q	4.7"	320 x 240					■				■		■		■				■			■	■	
SP14Q	5.7"	320 x 240					■				■		■		■				■			■	■	■
Standard STN																								
SP12N01	4.8"	256 x 64					■					■	■		■							■		
SP14N02	5.1"	240 x 128					■					■	■		■							■		
SP24V01	9.4"	640 x 480					■				■		■		■							■		

RUGGED+

Name
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Rugged+ TFT Displays for Extreme Environmental Conditions

RUGGED+

All of KOE's Rugged+ displays are designed to function in challenging and harsh environmental conditions. The entire range of Rugged+ displays feature industrial environment operating specifications with high brightness, long-life LED backlights and will ensure reliable operation between -30°C and +85°C.

Exceptional optical performance is ensured 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 targeted for use in high reliability industrial, medical, marine, automotive and aerospace applications where consistent and guaranteed operation under extreme temperature, mechanical shock and vibration is a necessity.

TX09D200VM0BAA
- 3.5" QVGA 240 x 320
- IPS
- 600 cd/m²
- WTR -30°C to +85°C

TX17D200VM0BAA
- 6.5" WVGA 800 x 480
- IPS
- 700 cd/m²
- WTR -30°C to +85°C

TX31D200VM0BAA
- 12.3" HSXGA 1280 x 480
- IPS
- 1000 cd/m²
- WTR -30°C to +85°C

Rugged+ TFT Displays

Size	Resolution	Part Number	Technology	Mode	Dimensions	Backlight	Touchscreen Version	Brightness cd/m²	Contrast	Features
3.5"	320 x 240	TX09D200VM0BAA	IPS	Transmissive	65.68 x 88.8 x 9.95	LED	TX09D200VM0BPA	600	900:1	IPS, 70Khr LED, WTR -30 +85, 24-bit I/F
6.5"	800 x 480	TX17D200VM0BAA	IPS	Transmissive	154.8 x 92.7 x 10.2	LED	n/a	700	600:1	IPS, 70Khr LED, WTR -30 +85
7.0"	800 x 480	TX18D35VM0AAA	IPS	Transmissive	165 x 104 x 12.8	LED	TX18D35VM0APA	450	600:1	IPS, 70Khr LED, WTR -30 +85
7.0"	800 x 480	TX18D35VM0AAB	IPS	Transmissive	165 x 104 x 12.8	LED	TX18D35VM0APB	800	600:1	IPS, 70Khr LED, WTR -30 +85
7.0"	800 x 480	TX18D37VM0AAA	IPS	Transmissive	165 x 104 x 12.8	LED	TX18D37VM0APA	450	600:1	IPS, 70Khr LED, WTR -30 +85
7.0"	800 x 480	TX18D37VM0AAB	IPS	Transmissive	165 x 104 x 12.8	LED	TX18D37VM0APB	800	600:1	IPS, 70Khr LED, WTR -30 +85
8.0"	800 x 480	TX20D26VM0AAA	IPS	Transmissive	190 x 120 x 12.8	LED	TX20D26VM0AQA	600	600:1	IPS, 70Khr LED, WTR -30 +85
9.0"	800 x 480	TX23D201VM0BAA	IPS	Transmissive	218 x 135 x 11.15	LED	TX23D201VM0BPA	1000	800:1	IPS, 70Khr LED, WTR -30 +85
12.3"	1280 x 480	TX31D200VM0BAA	IPS	Transmissive	320 x 130 x 12.1	LED	n/a	1000	800:1	IPS, 50Khr LED, WTR -30 +85
New for 2015										
7.0"	800 x 480	TX18DxxxVM0xxx	IPS	Transmissive	TBC	LED	TBC	>600	TBC	MP Q2/15, IPS, WTR -40 +85, 70Khr LED
8.0"	800 x 480	TX20DxxxVM0xxx	IPS	Transmissive	TBC	LED	TBC	>600	TBC	MP TBC, IPS, WTR -40 +85, 70Khr LED
9.0"	800 x 480	TX23DxxxVM0xxx	IPS	Transmissive	TBC	LED	TBC	>600	TBC	MP TBC, IPS, WTR -40 +85, 70Khr LED

Lite+

Lite+ TFT Displays for High Brightness

KOE's Lite+ modules offer cost effective LCD solutions that feature industry standard screen sizes, display resolutions and data interfaces but without any compromise in display optical performance. Lite+ display modules offer high brightness display characteristics and are suitable for use in high brightness environments.

Applications such as ticketing machines, point of sale terminals and public information kiosks are often found in high brightness outdoor environments. The Lite+ product line-up feature high brightness, long-life LED backlights and high contrast ratios to provide strong optical performance and display images that are clear, concise and able to be viewed under bright ambient light conditions.

KOE's Lite+ TFT displays are also suitable for medical, marine, process control, gaming and industrial applications.

Lite+ TFT Displays

Size	Resolution	Part Number	Technology	Mode	Dimensions	Backlight	Touchscreen Version	Brightness cd/m²	Contrast	Features
5.0"	800 x 480	TX13D06VM2BAA	TN	Transmissive	120 x 80.7 x 8	LED	TX13D06VM2BPA	1000	600:1	Lite+, 50Khr LED, Compact outline
5.0"	800 x 480	TX13D06VM5BAA	TN	Transmissive	120 x 80.7 x 8	LED	TX13D06VM5BPA	800	600:1	Lite+, IPS Like, 50Khr LED, Compact outline
5.7"	320 x 240	TX14D26VM1BAA	TN	Transmissive	131 x 102.2 x 7.1	LED	TX14D26VM1BPA	800	800:1	Lite+, 40Khr LED, Super slim design
5.7"	640 x 480	TX14D23VM5BAA	TN	Transmissive	131 x 102.2 x 7.6	LED	TX14D23VM5BPA	800	400:1	Lite+, IPS Like, 40Khr LED
7.0"	800 x 480	TX18D203VM2BAA	TN	Transmissive	165 x 113 x 7.5	LED	TX18D203VM2BPA	1500	600:1	Lite+, Super High Brightness, 40Khr LED, WTR
8.0"	800 x 480	TX20D34VM2BAB	TN	Transmissive	189 x 120 x 7.5	LED	TX20D34VM2BPB	600	600:1	Lite+, Slim design, 50Khr LED, LVDS, Over-drive to achieve 1000 cd/m²
8.0"	800 x 480	TX20D200VM5BAA	TN	Transmissive	189 x 122 x 10.2	LED	TX20D200VM2BPA	1000	400:1	Lite+, IPS Like, 70Khr LED, LVDS
8.0"	800 x 480	TX20D200VM2BAB	TN	Transmissive	189 x 122 x 10.2	LED	TX20D200VM2BPB	1500	800:1	70Khr LED, Super High Brightness & contrast, WTR
10.4"	800 x 600	TX26D19VM2BAA	TN	Transmissive	243 x 185.1 x 10	LED	TX26D19VM2BPA	550	800:1	Lite+, 50Khr LED, Over-drive to achieve 1000 cd/m²
10.4"	800 x 600	TX26D200VM5BAA	TN	Transmissive	230 x 180.2 x 10.1	LED	TX26D200VM5BPA	1000	400:1	Lite+, IPS Like, 70Khr LED, LVDS
10.4"	800 x 600	TX26D200VM2BAB	TN	Transmissive	230 x 180.2 x 10.1	LED	TX26D200VM2BPB	1500	800:1	70Khr LED, Super High Brightness & contrast, WTR
15.0"	1024 x 768	TX38D18VM2BAA	TN	Transmissive	326.5 x 253.5 x 11.5	LED	n/a	1200	700:1	Lite+, 50Khr LED, WTR -30 +80
New for 2015										
5.7"	640 x 480	TX14D23VM2xxx	TN	Transmissive	131 x 102.2 x 7.6	LED	TX14D23VM2xPx	1000	800:1	MP TBC, High Brightness
10.4"	1024 x 768	TX26DxxxVMxxxx	TN	Transmissive	TBD	LED	On request	1200	900:1	MP TBC, High Brightness, 18/24-bit I/F
12.1"	1024 x 768	TX31DxxxVMxxxx	TN	Transmissive	TBD	LED	On request	1000	800:1	MP TBC, High Brightness, 24-bit /I/F

TX18D203VM2BAA

- 7.0" WVGA 800 x 480
- SHB 1500 cd/m²
- WTR -30°C to +80°C

TX20D200VM2BAB

- 8.0" WVGA 800 x 200
- SHB 1500 cd/m²
- 70K hour LED backlight

TX26D200VM2BAB

- 10.4" SVGA 800 x 600
- SHB 1500 cd/m²
- 70K hour LED backlight

Added Value Display Solutions

An expanding range of value added services and products including projected capacitive touch screens, glass bonding, analogue to digital video cards, high brightness backlights, and semi-custom and custom display development are supported.

With the addition of a touch panel through to the development of a fully integrated open frame monitor, all display solutions can be realised to aid and enhance the user experience.

Projected Capacitive Touch screens and protective cover glass

Optical bonding technology provides a platform for the implementation of projected capacitive touch screens and protective cover glass.
Projected capacitive (P-Cap) touch panel solutions can be considered for applications which require a robust user interface solution offering highly accurate and flexible gesture interactions.

Glass bonding coupled with an anti-reflection (AR) or anti-glare (AG) surface finish can enable improvements in optical performance.
A TFT display featuring a cover glass and surface coating can reduce reflections to less than 0.2% by scattering and absorbing ambient light

Analogue to digital boards

KOE's compact, embedded video driver boards enable a cost-effective and easy-to-use display enhancement.
The fully integrated analogue to digital video circuitry supports multiple interface options including VGA, DVI-D, HDMI and DisplayPort.
On-board software provides on-screen display functions for backlight dimming, image scaling and optical adjustments.

'IPS Like' UWVA (Ultra Wide Viewing Angle)

KOE's ultra wide viewing angle LCD modules are based on traditional TN (twisted nematic) TFT technology with enhancements to the optical design of the LCD cell. Many embedded, medical and industrial applications demand colour homogeneity of the display image. KOE's UWVA displays enable 'IPS like' optical performance to provide stable colour uniformity over a wide viewing angle of 80 degrees in all directions (up/down, left/right).

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.

Wide Format TFT Displays

Size	Resolution	Part Number	Technology	Mode	Dimensions	Backlight	Touchscreen Version	Brightness cd/m²	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
5.0"	800 x 480	TX13D06VM2BAA	TN	Transmissive	120 x 80.7 x 8	LED	TX13D06VM2BPA	1000	600:1	Lite+, 50Khr LED, Compact outline
5.0"	800 x 480	TX13D06VM5BAA	TN	Transmissive	120 x 80.7 x 8	LED	TX13D06VM5BPA	800	600:1	Lite+, IPS Like, 50Khr LED, Compact outline
6.2"	640 x 240	TX16D20VM5BAA	TN	Transmissive	173 x 70 x 7	LED	TX16D20VM5BQA	400	400:1	IPS Like WVA, 40Khr LED, Compact outline
6.5"	800 x 480	TX17D200VM0BAA	IPS	Transmissive	154.8 x 92.7 x 10.2	LED	n/a	700	600:1	IPS, 70Khr LED, WTR -30 +85
7.0"	800 x 480	TX18D44VM2BAA	TN	Transmissive	165 x 106 x 8	LED	TX18D44VM2BPA	400	600:1	Slim design, 40Khr LED
7.0"	800 x 480	TX18D45VM5BAA	TN	Transmissive	165 x 106 x 8	LED	TX18D45VM5BPA	600	350:1	IPS Like, 40Khr LED, WTR -30 +80
7.0"	800 x 480	TX18D46VM2BAA	TN	Transmissive	165 x 106 x 8	LED	TX18D46VM2BPA	400	600:1	Slim design, 40Khr LED, LVDS
7.0"	800 x 480	TX18D203VM2BAA	TN	Transmissive	165 x 113 x 7.5	LED	TX18D203VM2BPA	1500	600:1	Lite+, Super High Brightness, 40Khr LED, WTR
7.0"	800 x 480	TX18D35VM0AAA	IPS	Transmissive	165 x 104 x 12.8	LED	TX18D35VM0APA	450	600:1	IPS, 70Khr LED, WTR -30 + 85
7.0"	800 x 480	TX18D35VM0AAB	IPS	Transmissive	165 x 104 x 12.8	LED	TX18D35VM0APB	800	600:1	IPS, 70Khr LED, WTR -30 + 85
7.0"	800 x 480	TX18D37VM0AAA	IPS	Transmissive	165 x 104 x 12.8	LED	TX18D37VM0APA	450	600:1	IPS, 70Khr LED, WTR -30 + 85
7.0"	800 x 480	TX18D37VM0AAB	IPS	Transmissive	165 x 104 x 12.8	LED	TX18D37VM0APB	800	600:1	IPS, 70Khr LED, WTR -30 + 85
7.0"	1920 x 1080	TX18D200VM0EAA	IPS	Transmissive	169 x 104 x10	LED	TX18D200VM0EPA	700	800:1	IPS, Full HD
7.0"	1920 x 1080	TX18D204VM0BAA	IPS	Transmissive	169 x 103 x 7	LED	TX18D204VM0BPA	600	800:1	IPS, Full HD, slim design, 24-bit
8.0"	800 x 480	TX20D33VM2BAA	TN	Transmissive	189 x 120 x 7.5	LED	TX20D33VM2BPA	400	600:1	Slim design, 50Khr LED
8.0"	800 x 480	TX20D34VM2BAB	TN	Transmissive	189 x 120 x 7.5	LED	TX20D34VM2BPB	600	600:1	Lite+, Slim design, 50Khr LED, LVDS, Over-drive to achieve 1000 cd/m²
8.0"	800 x 480	TX20D200VM5BAB	TN	Transmissive	189 x 120 x 10.2	LED	TX20D200VM5BPB	1000	400:1	Lite+, IPS Like, 70Khr LED, LVDS
8.0"	800 x 480	TX20D200VM2BAB	TN	Transmissive	189 x 122 x 10.2	LED	TX20D200VM2BPB	1500	800:1	70Khr LED, Super High Brightness & contrast, WTR
8.0"	800 x 480	TX20D26VM0AAA	IPS	Transmissive	190 x 120 x 12.8	LED	TX20D26VM0AQA	600	600:1	IPS, 70Khr LED, WTR -30 + 85
9.0"	800 x 480	TX23D201VM0BAA	IPS	Transmissive	218 x 135 x 11.15	LED	TX23D201VM0BPA	1000	800:1	IPS, 70Khr LED, WTR -30 +85
10.1"	1920 x 1200	TX26D202VM0BAA	IPS	Transmissive	232 x 153.0 x 4.7	LED	TX26D202VM0BPA	800	800:1	IPS, WTR -30 +80, 24-bit I/F
10.2"	800 x 256	TX26D25VM2BAA	TN	Transmissive	260.2 x 96.2 x 10.55	LED	n/a	350	500:1	Slim design, 40Khr LED
12.3"	1280 x 480	TX31D200VM0BAA	IPS	Transmissive	320 x 130 x 12.1	LED	n/a	1000	800:1	WTR -30 + 85, 50Khr LED
14.9"	1280 x 242	TX38D25VM0CAA	IPS	Transmissive	386.82 x 85.57 x 13.06	LED	n/a	450	800:1	IPS, 70Khr LED, 16:3 Wide Format

TX13D06VM2BAA

- 5.0" WVGA 800 x 480
- 1000 cd/m²
- 50K hour LED backlight

TX18D204VM0BAA

- 7.0" FHD 1920 x 1080
- IPS
- 24-bit I/F

TX20D200VM5BAA

- 7.0" WVGA 800 x 480
- IPS Like
- 70K hour LED backlight

TX38D25VM0CAA

- 14.9" HSXGA 1280 x 242
- IPS NP
- 70K hour LED backlight

Applications

- passenger infotainment terminals
- building management systems
- measurement and monitoring
- industrial control
- instrumentation
- automotive
- 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 15” 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.

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/m²	Contrast	Features
3.5	240 x 320	TX09D40VM3CBA	TN	Transmissive	86 x 64 x 3.12	LED	TX09D40VM3CAA	430	300:1	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, 40Khr LED
3.5"	320 x 240	TX09D200VM0BAA	IPS	Transmissive	65.68 x 88.8 x 9.95	LED	n/a	600	900:1	IPS, 70Khr LED, WTR -30 +85, 24-bit I/F
5.0"	640 x 480	TX13D200VM5BAA	TN	Transmissive	119.4 x 89.1 x 9.3	LED	TX13D200VM5BPA	600	370:1	IPS Like, 70Khr LED, WTR -30 +80
5.0"	640 x 480	TX13D202VM5BAA	TN	Transmissive	119.4 x 89.1 x 9.3	LED	TX13D202VM5BPA	600	370:1	IPS Like, 70Khr LED, WTR -30 +80, LVDS
5.7"	320 x 240	TX14D24VM1BAA	TN	Transmissive	167 x 109 x 9.2	LED	TX14D24VM1BPA	450	600:1	50Khr LED, SP/SX14Q compatible
5.7"	320 x 240	TX14D25VM1BAA	TN	Transmissive	131 x 102.2 x 10.9	LED	TX14D25VM1BPA	400	600:1	50Khr LED, Compact mechanical outline
5.7"	320 x 240	TX14D26VM1BAA	TN	Transmissive	131 x 102.2 x 7.1	LED	TX14D26VM1BPA	800	800:1	Lite+, 40Khr LED, Super slim design
5.7"	640 x 480	TX14D23VM5BAA	TN	Transmissive	131 x 102.2 x 7.6	LED	TX14D23VM5BPA	800	400:1	Lite+, IPS Like, 40Khr LED
5.7"	640 x 480	TX14D28VM5BAA	TN	Transmissive	131 x 102.2 x 7.6	LED	TX14D28VM5BPA	800	400:1	Lite+, IPS Like, 40Khr LED, LVDS
6.5"	640 x 480	TX17D01VM2CAA	TN	Transmissive	153 x 118 x 9.1	LED	TX17D01VM2CPA	600	600:1	70Khr LED, Compact mechanical outline
6.5"	640 x 480	TX17D01VM2EAB	TN	Transmissive	153 x 118 x 9.1	LED	TX17D01VM2CPB	1000	600:1	70Khr LED, Compact mechanical outline, Super High Brightness, AR polariser
6.5"	640 x 480	TX17D01VM5BAA	TN	Transmissive	153 x 118 x 9.1	LED	TX17D01VM5BPA	800	350:1	IPS Like, 70Khr LED, Compact outline
6.5"	640 x 480	TX17D02VM2CAA	TN	Transmissive	153 x 118 x 9.1	LED	TX17D02VM2CPA	600	600:1	70Khr LED, Compact mechanical outline, LVDS
10.4"	800 x 600	TX26D12VM0AAA	IPS	Transmissive	243 x 185.1 x 11	LED	TX26D12VM0APA	450	800:1	IPS, 70Khr LED
10.4"	800 x 600	TX26D19VM2BAA	TN	Transmissive	243 x 185.1 x 10	LED	TX26D19VM2BPA	550	800:1	Lite+, 50Khr LED, Over-drive to achieve 1000 cd/m²
10.4"	800 x 600	TX26D200VM5BAA	TN	Transmissive	230 x 180.2 x 10.1	LED	TX26D200VM5BPA	1000	400:1	Lite+, IPS Like, 70Khr LED, LVDS
10.4"	800 x 600	TX26D200VM2BAB	TN	Transmissive	230 x 180.2 x 10.1	LED	TX26D200VM2BPB	1500	800:1	70Khr LED,Super High Brightness & contrast, WTR
15.0"	1024 x 768	TX38D18VM2BAA	TN	Transmissive	326.5 x 253.5 x 11.5	LED	n/a	1200	700:1	Lite+, 50Khr LED, WTR -30 +80
New for 2015										
5.7"	320 x 240	TX14DxxxVMxxxx	Mono TFT	Transmissive	131 x 104.2 x 7.8	LED	TBC	1000	800:1	Spl Q2, B/W TFT, WTR -30 +80, 8-bit CPU

TX14D23VM5BAA
- 5.7” VGA 640 x 4800
- IPS Like
- WTR

TX17D02VM2CAA
- 6.5” VGA 640 x 480
- 70K hour LED backlight
- LVDS interface

TX26D200VM5BAB
- 10.4” SVGA 800 x 600
- IPS Like
- 70K hour LED backlight

TX38D18VM2BAA
- 15" XGA 1024 x 768
- 1200 cd/m²
- WTR

Standard Industrial STN Products

QVGA STN Displays

KOE's QVGA product families have been designed, developed and manufactured for over 20 years. Now a de-facto industry standard the KOE QVGA 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, colour 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 QVGA 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 QVGA display solution.

SP12Q01L6ALZZ

- 4.7" QVGA 320 x 240
- Monochrome STN
- White LED backlight
- 'Compact' mechanical footprint

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" 'Classic' TFT range

Applications

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

QVGA 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	LED	SP10Q010-ZZA	110	20:1	White LED, WTR,
4.7"	320 x 240	SP12Q01L6ALZZ	Black/White Film STN	Transmissive	129.6 x 92.6 x 7.5	LED	On request	200	20:1	LMG7520RPFC compatible
4.7"	320 x 240	ST12Q01L6ALZZ	Black/White Film STN	Transflective	129.6 x 92.6 x 7.5	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	LED	SP14Q003-AZA	200	6:1	40Khrs White LED, WTR
5.7"	320 x 240	SP14Q006	Black/White Film STN	Transmissive	167 x 109 x 10	LED	SP14Q006-ZZA	150	25:1	40Khrs White LED, WTR
5.7"	320 x 240	SP14Q006-T	Black/White Film STN	Transflective	167 x 109 x 10	LED	SP14Q006-TZA	60	5:1	White LED, Sunlight readable, WTR

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 STN displays were designed and manufactured. Today, KOE STN LCDs 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.

SP12N01L6ALCZ
- 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

SP24V01L0ALZZ
- 9.4" VGA 640 x 480
- Monochrome STN
- White LED backlight
- Industry standard footprint

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

Standard STN Displays

Size	Resolution	Part Number	Technology	Mode	Dimensions	Backlight	Touchscreen Version	Brightness cd/m²	Contrast	Features
4.8"	256 x 64	SP12N01L6ALCZ	Black/White Film STN	Transmissive	160 x 68 x 12	LED	n/a	90	20:1	RAIO RA6963, SP12N002 replacement
5.1"	240 x 128	SP14N02L6ALCZ	Black/White Film STN	Transmissive	159.4 x 101 x 11	LED	n/a	150	20:1	RAIO RA6963, 50Khr LED, LMG7420 replacement
5.1"	240 x 128	SP14N01L6ALCZ	Black/White Film STN	Transmissive	159.4 x 101 x 11	LED	SP14N01L6ALCA	150	20:1	RAIO RA6963, LMG7420PLFC-X compatible
5.1"	240 x 128	SP14N01L6VLCZ	Black/White Film STN	Transmissive	159.4 x 101 x 11	LED	SP14N01L6VLCA	150	20:1	RAIO RA6963, DC/DC
9.4"	640 x 480	SP24V01L0ALZZ	Black/White Film STN	Transmissive	257.5 x 174 x 7	LED	n/a	110	20:1	50Khr LED, SP24V001 replacement

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.

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