

Display Excellence



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Introduction



2010 truly marks a milestone for Hitachi, as we celebrate the 100th anniversary of the company's founding. During the past 100 years, under the corporate philosophy of "contributing to society through the development of superior, original technology," Hitachi has been dedicated to the design and manufacturing of the best quality products.

Hitachi is a leading global developer and manufacturer of liquid crystal displays. Hitachi is justifiably proud of an established LCD heritage. Over 30 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 has reiterated Hitachi's commitment to providing display excellence. An annual investment of \$130m in research and development will ensure that Hitachi remains at the forefront of evolving and ground breaking LCD technology.

Dedicated manufacturing and production facilities in Mobarra, Japan and Kaohsiung, Taiwan ensure that continuity of supply can be maintained during extreme market fluctuations. In house design, production and procurement of key components such as LCD glass, colour filters, LCD drivers and backlights, allows Hitachi to provide continual enhancement to an extensive range of high quality and performance optimised display solutions.

In 2007 Kaohsiung Hitachi Electronics (KHE) proudly celebrated 40 years of electronic components and LCD production. During which 30 years extensive knowledge and experience in designing and manufacturing LCD modules has been acquired.



European Headquarters,
Hitachi Europe Ltd.,
Maidenhead, Berkshire, UK



Kaohsiung,
Hitachi Electronics Co., Ltd.

Continuously evolving LCD technology

Evolution of In-Plane-Switching (IPS)

One of the many areas of innovation that Hitachi has been recognised for during the last 30 years is the evolution of In-Plane-Switching (IPS) technology. Developed and released by Hitachi Displays, Ltd. 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 since evolved into Super-IPS, Advanced-Super IPS and more recently IPS-Pro. Hitachi's continuous improvement of IPS LCD technology now provides the best LCD solution on the market for the requirements of professional, high end and multi-user imaging.

The main benefits of IPS technology:

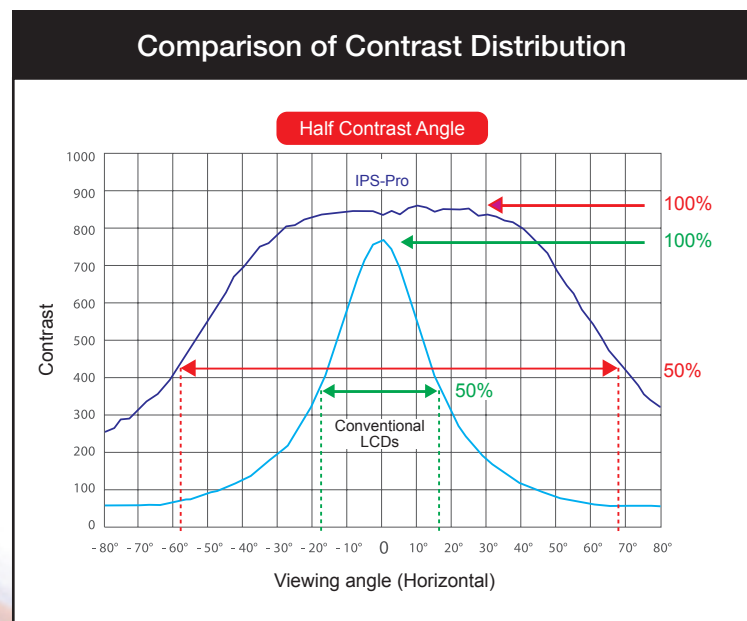
- wider viewing angles
- deeper black levels
- higher brightness
- excellent contrast

IPS LCDs are now being extensively used by blue chip multi-nationals in the manufacture of high performance mobile phones, monitors and televisions. Industrial markets and mainstream customers can now also benefit from the features of in-plane-switching technology as further Hitachi IPS displays become more 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.

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



Product features

Product Type	Screen size	Resolution	IPS	TFT	STN	Standard format	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																				
TX26D12	10.4"	800 x 600	■			■			■			■		■		■		■		■
TX31D58	12"	800 x 480	■				■	■			■			■		■		■		
TX42	16.52"	1920 x 1080	■				■	■				■			■			■		
TX43D55	17"	1280 x 768	■				■	■				■		■		■		■		
TX43D57	17"	1280 x 1024	■			■		■				■		■				■		
TX48D	19"	1680 x 1050	■				■	■				■		■				■		
TX54D13	21.3"	1600 x 1200	■			■		■				■		■				■		
TX54D32	21.3"	1600 x 1200	■			■		■		■		■		■				■		
TX54D71	21.2"	2048 x 1536	■			■		■				■			■			■		
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	■	■			■	■	■		■	■	■			■	■	■		■
TX23D12	9"	800 x 480	■				■	■	■		■	■	■			■		■		■
TX23D55	9"	800 x 480		■			■	■			■		■			■		■		
TX26D89	10.2"	800 x 256		■			■	■			■		■			■		■		
TX31D58	12"	800 x 480	■				■	■			■			■		■		■		
TX39	15.4"	1280 x 800		■			■	■				■	■			■		■		
TX42	16.52"	1920 x 1080	■				■	■				■			■			■		
TX43D55	17"	1280 x 768	■				■	■				■		■		■		■		
TX48D	19"	1680 x 1050	■				■	■				■		■				■		
Standard TFT																				
TX06	2.4"	240 x 320	■			■			■		■		■			■		■		
TX07	2.7"	240 x 320		■					■		■		■					■		
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		■			■	■	■		■		■			■		■		■
TX16D18	6.2"	800 x 300		■			■		■		■		■			■		■		■
TX17	6.5"	640 x 480		■		■			■	■	■	■	■			■		■		■
TX26	10.4"	640 x 480		■		■		■	■	■	■	■	■					■		
TX26D12	10.4"	800 x 600	■			■			■			■		■		■		■		■
TX26D14	10.4"	640 x 480		■		■			■	■		■		■		■		■		
TX31D36	12.1"	800 x 600		■		■			■	■		■		■		■		■		
¼ VGA STN																				
SP06Q	2.6"	320 x 240			■	■			■		■								■	■
SP10Q	3.8"	320 x 240			■	■			■		■					■		■	■	■
SP12Q	4.7"	320 x 240			■	■		■	■		■					■		■	■	
SP14Q	5.7"	320 x 240			■	■		■	■		■					■		■	■	■
SX14Q	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			■		■	■			■					■		■	■	■
SX16H	6.2"	640 x 240			■		■	■			■							■		
SP24V	9.4"	640 x 480			■	■		■			■							■		■
LMG7550	10.4"	640 x 480			■	■		■			■							■		

High-End TFT Displays for Medical and Broadcast Applications

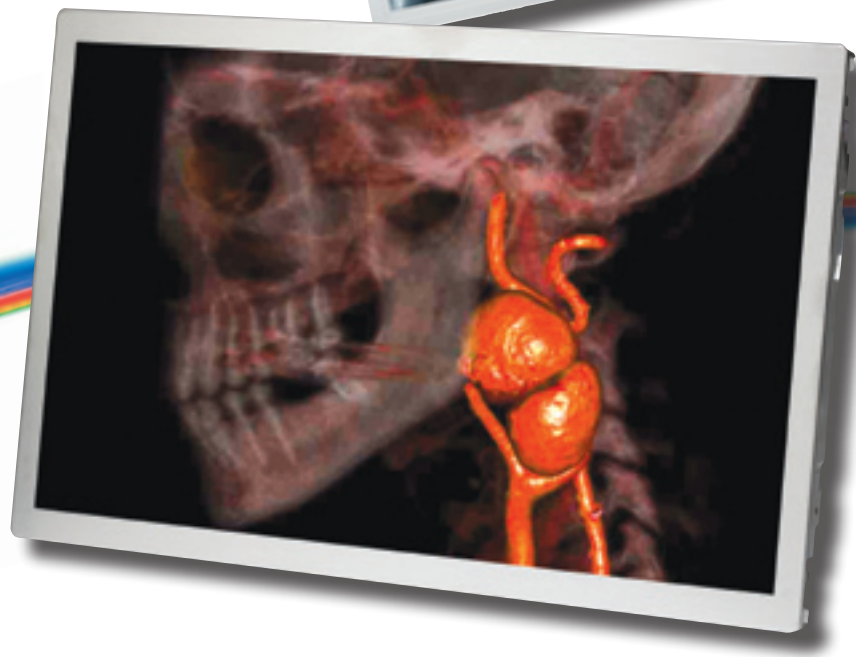
Both medical and broadcast applications demand the best optical performance from a display. IPS Pro, the latest evolution of Hitachi's In-Plane-Switching technology, provides a highly stable colour image from any viewing angle. These display products offer excellent colour saturation with very high contrast ratios. The exceptional black levels combined with improved transmittance provide contrast ratios of up to 1200:1. These characteristics also mean that high brightness can be achieved without increasing the power consumption of the backlight.

TX42D14VC0CAA

- 16.52" Full HD 1920 x 1080
- IPS-pro
- 4-ch LVDS I/F
- High Contrast

TX54D71VC0CAA

- 21.2" QXGA 2048 x 1536
- IPS-pro
- 4-ch LVDS I/F
- High Contrast



High end TFT displays

Size	Resolution	Part Number	Technology	Mode	Dimensions	Backlight	Touchscreen Version	Brightness cd/m ²	Contrast	Features
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"	800 x 480	TX31D58VM0CAA	IPS Pro	Transmissive	312.35 x 185.8 x 13	CFL	n/a	300	500:1	IPS Pro (176 degree viewing angle)
16.52"	1920 x 1080	TX42D14VC0CAA	IPS Pro	Transmissive	400 x 243 x 55	CFL	n/a	650	1000:1	IPS Pro (176 degree viewing angle)
17"	1280 x 768	TX43D55VM0BAA	IPS Pro	Transmissive	400 x 258 x 22	CFL	n/a	350	800:1	IPS Pro (176 degree viewing angle)
17"	1280 x 1024	TX43D57VC0CAA	IPS Pro	Transmissive	368 x 306 x 20.3	CFL	n/a	270	1000:1	IPS Pro (176 degree viewing angle)
19.0"	1680 x 1050	TX48D21VM0CAA	IPS Pro	Transmissive	444 x 300 x 24	CFL	n/a	300	800:1	IPS Pro (176 degree viewing angle)
21.3"	1600 x 1200	TX54D13VC0CAA	IPS Pro	Transmissive	460.6 x 362 x 25.0	CFL	n/a	300	1000:1	IPS Pro (176 degree viewing angle)
21.3"	1600 x 1200	TX54D32VC0CAA	IPS Pro	Transmissive	460.6 x 362 x 43.4	CFL	n/a	750	1100:1	IPS Pro (176 degree viewing angle)
21.2"	2048 x 1536	TX54D71VC0CAA	IPS Pro	Transmissive	460.6 x 359 x 43.4	CFL	n/a	900	1000:1	IPS Pro (176 degree viewing angle)

TFT Displays for Rugged Applications

All of Hitachi's industrial 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. Hitachi Displays has used experience gained in automotive and high reliability applications to develop and design a series of rugged TFT display modules. Specifically designed and developed to operate in demanding and exacting environmental conditions, these rugged TFT displays will provide dependable operation between -30°C and +80°C. Exceptional optical performance is maintained as many of these displays utilise Hitachi's IPS technology, which delivers exceptional contrast, wide viewing angles and vivid, stable colours.



TX09D04VM3CAA

- 3.5" QVGA 320 x 240
- LED B/L
- WTR -30 +80

TX15Dxx

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

TX18D37VM0AAA

- 7" WVGA 800 x 480
- IPS Pro, LED
- LVDS I/F
- WTR -30 +80

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
5.8"	400 x 240	TX15D	IPS Pro	Transmissive	145 x 89 x 12.5	LED	n/a	450	800:1	IPS Pro, WTR -30 + 80
7"	800 x 480	TX18D35VM0AAA	IPS Pro	Transmissive	165 x 104 x 12.8	LED	TX18D35VM0APA	450	600:1	IPS Pro, WTR -30 + 80
7"	800 x 480	TX18D37VM0AAA	IPS Pro	Transmissive	165 x 104 x 12.8	LED	TX18D37VM0APA	450	600:1	IPS Pro, WTR -30 + 80
8"	800 x 480	TX20D26VM0AAA	IPS Pro	Transmissive	190 x 120 x 12.8	LED	TX20D26VM0APA	600	600:1	IPS Pro, WTR -30 + 80

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, Hitachi 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
- 70KHr LED B/L
- 1000 cd/m²

TX26D14VM2EAA

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

TX31D36VM2EAA

- 12.1" SVGA 800 x 600
- 70KHr LED B/L
- 1000 cd/m²



Added Value Display Solutions

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

Sunlight Readability – Glass Bonding

Developments in optical glass bonding techniques have now enabled Hitachi 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

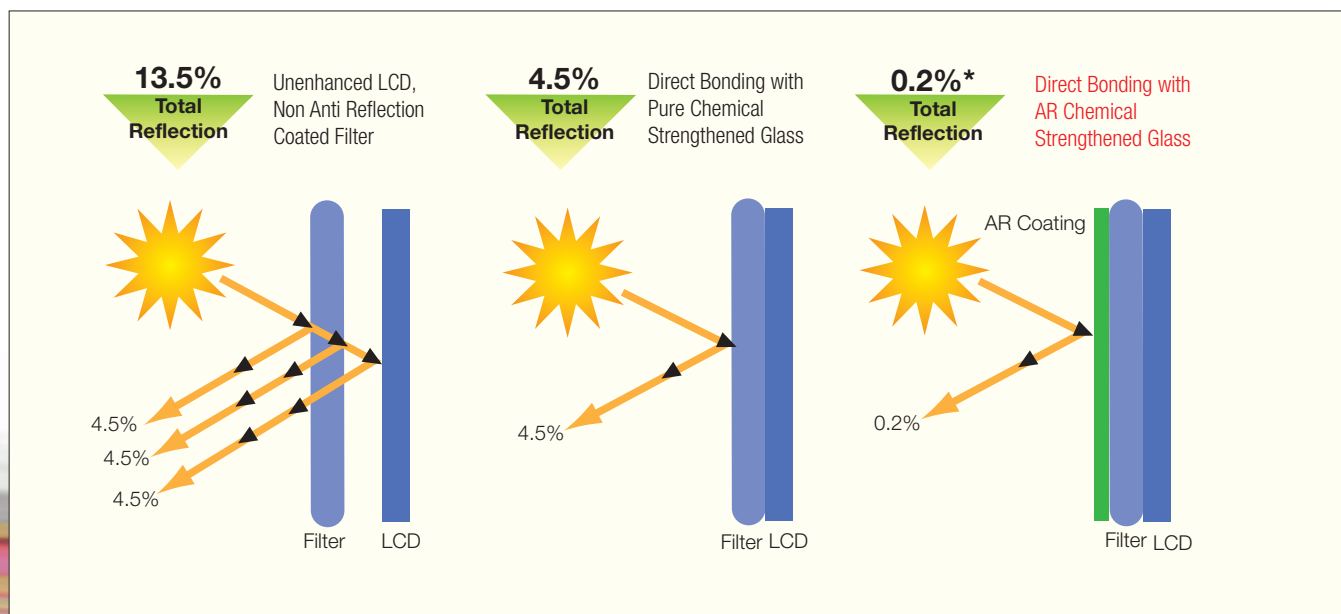
can reduce reflections to less than 0.2% by scattering and absorbing ambient light. Optical bonding technology has been successfully implemented on TFT displays used in challenging environments such as aerospace, marine, automotive, medical and industrial. It is also being viewed as a key display enhancement 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 Hitachi 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. Hitachi is able to 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 Hitachi's authorised distributors, who can advise you.

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www.hitachi-displays-eu.com

Wide Format TFT Displays

Traditional TFT technology and the continued migration of IPS technology to industrial and commercial displays enables Hitachi to offer an expanding portfolio of wide format TFT display solutions. Market leading optical performance, long term availability and continuity of supply are 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.

TX15Dxx

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

TX18D37VM0AAA

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

TX42D14VC0CAA

- 16.52" Full-HD 1920 x 1080
- IPS Pro
- LVDS, I/F
- High Contrast

TX48D21VM0CAA

- 19" WSXGA+ 1680 x 1050
- IPS Pro
- LVDS I/F
- High Contrast

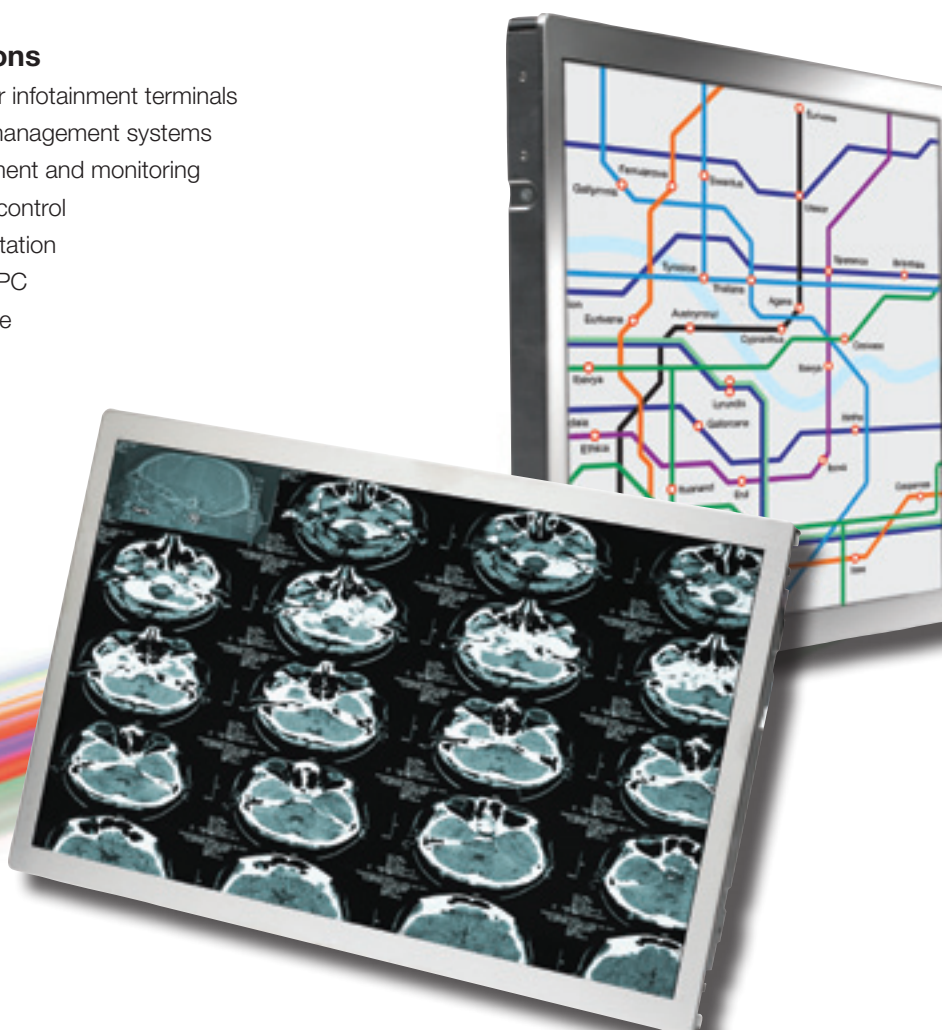


Wide format TFT displays

Size	Resolution	Part Number	Technology	Mode	Dimensions	Backlight	Touchscreen Version	Brightness cd/m ²	Contrast	Features
4.3"	480 x 272	TX11D04VM2AAA	TFT	Transmissive	105.5 x 67.2 x 2.9	LED	TX11D04VM2APA	350	550:1	24 bit RGB, Low Power Consumption
5.8"	400 x 240	TX15D	IPS Pro	Transmissive	145 x 89 x 12.5	LED	TBD	450	800:1	IPS Pro (176 degree viewing angle), WTR
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	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	TFT	Transmissive	189 x 120 x 7.5	LED	TX20D19VM2BPA	400	600:1	Compact dimensions, 40k hrs LED backlight
8.0"	800 x 480	TX20D28VM2BAA	TFT	Transmissive	189 x 120 x 7.5	LED	TX20D28VM2	400	600:1	Compact dimensions, 40k hrs LED B/L, LVDS
8.0"	800 x 480	TX20D26VM0AAA	IPS Pro	Transmissive	190 x 120 x 12.8	LED	TX20D26VM0APA	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
10.2"	800 x 256	TX26D89VM2BAA	TFT	Transmissive	260.2 x 96.2 x 10.55	CFL	n/a	350	500	Wide temp range (-20 to +70 degrees)
12"	800 x 480	TX31D58VM0CAA	IPS Pro	Transmissive	312.35 x 185.8 x 13	CFL	n/a	300	500:1	IPS Pro (176 degree viewing angle)
15.4"	1280 x 800	TX39D55VM1BAA	TFT	Transmissive	356.8 x 238 x 15	CFL	n/a	450	500:1	High brightness, LVDS interface, WTR
16.52"	1920 x 1080	TX42D14VC0CAA	IPS Pro	Transmissive	400 x 243 x 55	CFL	n/a	650	1000:1	IPS Pro (176 degree viewing angle)
17"	1280 x 768	TX43D55VM0BAA	IPS Pro	Transmissive	400 x 258 x 22	CFL	n/a	350	800:1	IPS Pro (176 degree viewing angle)
19.0"	1680 x 1050	TX48D21VM0CAA	IPS Pro	Transmissive	444 x 300 x 24	CFL	n/a	300	800:1	IPS Pro (176 degree viewing angle)

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 Hitachi has been a major developer and manufacturer of colour TFT displays for almost 20 years. A wide range of standard colour TFTs from 2.7" 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 Hitachi 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.

TX14D10VM1BAA

- 5.7" VGA 640 x 480
- 40Khr LED B/L
- LVDS I/F

TX17D02VM2CAA

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

TX26D12VM0AAA

- 10.4" SVGA 800 x 600
- 70Khr LED B/L
- LVDS I/F

TX26D14VM2EAA

- 10.4" VGA 640 x 480
- 70Khr LED B/L
- Ultra High Bright (1000cd/m²)

TX31D36VM2EAA

- 12.1" SVGA 800 x 600
- 70Khr LED B/L
- Ultra High Bright (1000cd/m²)

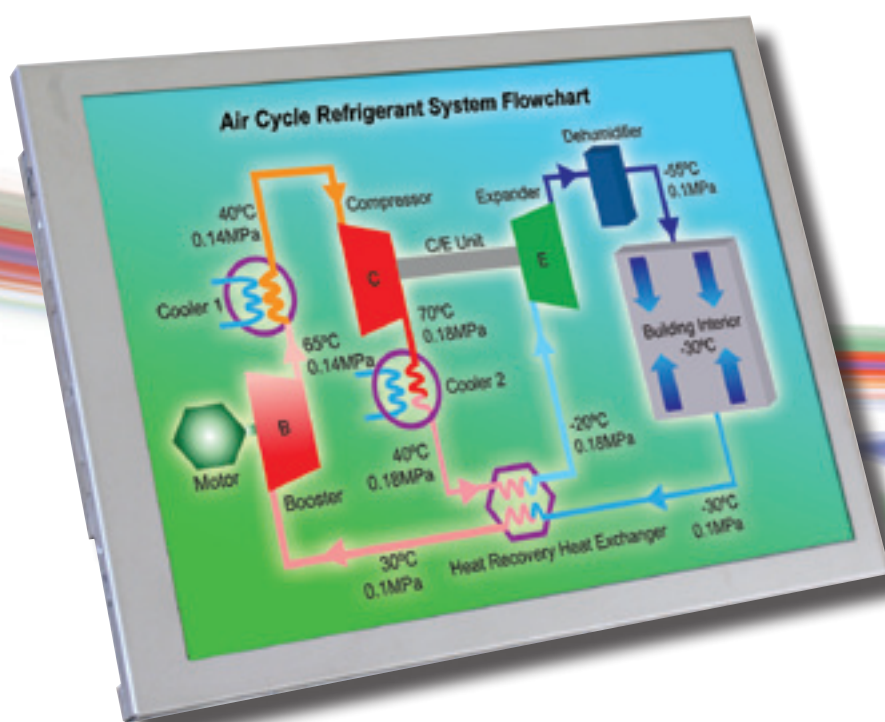


Standard format TFT displays

Size	Resolution	Part Number	Technology	Mode	Dimensions	Backlight	Touchscreen Version	Brightness cd/m ²	Contrast	Features
2.4"	240 x 320	TX06D126VM0AAA	IPS Pro	Transmissive	41.92 x 61.45 x 2.55	LED	n/a	250	400:1	IPS Pro, 18 bit CPU I/F
2.7"	240 x 320	TX07D09VM1CBB	TFT	Transmissive	50.5 x 68.6 x 2.6	LED	TX07D09VM1CAB	420	300:1	built in timing controller, high brightness
3.5"	240 x 320	TX09D40VM3CBA	TFT	Transmissive	86 x 64 x 4	LED	TX09D40VM3CAA	430	300:1	High brightness, TMR, Timing Controller built in
3.5"	240 x 320	TX09D30VM1CDA	TFT	Transmissive	64 x 86 x 6.7	LED	TBC	320	300:1	TMR, Timing Controller built in, On board voltage generation, 40K Hr LED B/L
3.5"	320 x 240	TX09D04VM3CAA	TFT	Transmissive	85.9 x 71.7 x 13.9	LED	n/a	400	600:1	WTR, Timing Controller built in, On board voltage generation
5.0"	640 x 480	TX13D03VM1CAA	TFT	Transmissive	119.4 x 89.1 x 8.8	LED	TX13D03VM1CPA	600	500:1	70K hour LED, Compact mechanical outline, super high brightness
5.7"	320 x 240	TX14D11VM1CBD	TFT	Transmissive	167 x 109 x 9.2	LED	TX14D11VM1CPD	400	350:1	40K hour LED, SP/SX14Q compatible
5.7"	320 x 240	TX14D12VM1CBC	TFT	Transmissive	131 x 102 x 10.9	LED	TX14D12VM1CPC	350	350:1	40K hour LED, Compact mechanical outline
5.7"	320 x 240	TX14D22VM1BAA	TFT	Transmissive	131 x 102 x 7.5	LED	TX14D22VM1BPA	400	350:1	70K hour LED, Super slim design
5.7"	640 x 480	TX14D17VM1BAB	TFT	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	TFT	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	TFT	Transmissive	173 x 70 x 7	LED	TX16D11VM2CQC	350	200:1	40K hour LED, Compact mechanical outline
6.2"	800 x 300	TX16D18VM2CAB	TFT	Transmissive	173 x 70 x 7	LED	TX16D18VM2CQB	350	200:1	40K hour LED, Compact mechanical outline
6.5"	640 x 480	TX17D01VM2CAA	TFT	Transmissive	153 x 118 x 9.1	LED	TX17D01VM2CPA	600	600:1	70K hour LED, Compact mechanical outline,
6.5"	640 x 480	TX17D01VM2EAB	TFT	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	TFT	Transmissive	153 x 118 x 9.1	LED	TX17D01VM2CPQ	600	600:1	70K hour LED, Compact mechanical outline, LVDS
10.4"	640 x 480	TX26D55VM1CAA	TFT	Transmissive	243 x 181.6 x 12.5	CFL	n/a	350	500:1	High brightness, Wide temperature range
10.4"	640 x 480	TX26D14VM2EAA	TFT	Transmissive	243 x 185.1 x 11	LED	n/a	1000	800:1	Ultra high bright, WTR
12.1"	800 x 600	TX31D36VM2EAA	TFT	Transmissive	280 x 210 x 11	LED	n/a	1000	800:1	Ultra high bright, WTR

Applications

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



Standard Industrial STN Products

1/4 VGA STN Displays

Hitachi's 1/4 VGA product families have been designed, developed and manufactured for over 20 years. Now a de-facto industry standard the 1/4 VGA product line up is comprehensive and varied. Continuous and ongoing product enhancement ensures full backward compatibility, improved optical performance and reduced power requirements. Hitachi 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 Hitachi 1/4 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 Hitachi 1/4 VGA display solution.

Standard STN Displays

Hitachi'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 and they were 30 years ago when the first Hitachi STN displays were designed and manufactured. Hitachi STN LCDs can provide simple, easy to use and cost effective display solutions.

Applications

The Hitachi 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" 1/4 VGA 320 x 240
- Monochrome STN
- White LED backlight
- 'Compact' mechanical footprint
- Mechanically compatible with colour TFT

Applications

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

SP14Q003-A

- 5.7" 1/4 VGA 320 x 240
- Blue mode STN
- White LED backlight
- 'Classic' mechanical footprint
- Mechanically compatible with colour STN and colour TFT

SX14Q009

- 5.7" 1/4 VGA 320 x 240
- Colour STN
- White LED backlight
- 'Classic' mechanical footprint
- Mechanically compatible with monochrome STN and colour TFT

SP12N002

- 4.8" 256 x 64
- Monochrome STN
- Integrated Toshiba T6963C display controller

Applications

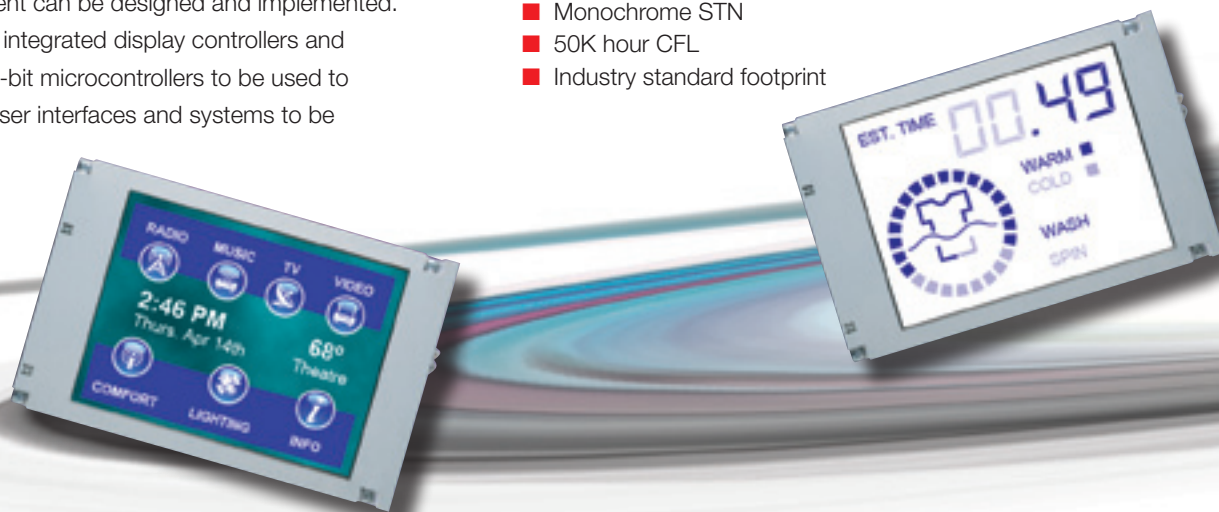
- graphical user interface
- information terminals
- ticketing systems
- security systems
- instrumentation
- process control
- data loggers
- front panels
- epos

SP14N01L6VLCZ

- 5.1" 240 x 128
- White LED backlight
- DC/DC converter on board
- Integrated Toshiba T6963C display controller

SP24V001

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



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	20:01	White LED, High brightness, WTR,
3.8"	320 x 240	SP10Q010-T	Black/White Film STN	Transflective	94.7 x 73.3 x 5.5	White LED	SP10Q010-TZA	60	5:01	White LED, Sunlight readable, WTR
4.7"	320 x 240	LMG7520RPFC	Black/White Film STN	Transmissive	129.6 x 92.6 x 7.5	CFL	n/a	100	20:01	
4.7"	320 x 240	LMG7525RPFF	Black/White Film STN	Transflective	129.6 x 92.6 x 7.5	CFL	n/a	25	5:01	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	20:01	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	5:01	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	25:01:00	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	25:01:00	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	5:01	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	Contrast 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	Contrast 5:1	40K hour LED, Compact outline, Sunlight readable
5.7"	320 x 240	SX14Q004	Colour STN	Transmissive	167 x 109 x 10	CFL	SX14Q004-ZZA	200	40:01:00	50K hour CFL, DC/DC, wide viewing angle
5.7"	320 x 240	SX14Q009	Colour STN	Transmissive	167 x 109 x 10	White LED	SX14Q009-ZZA	200	40:01:00	40K hour LED, Wide viewing angle

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	3:01	Sanyo LC7981, LMG6381QHGE replacement
4.8"	256 x 64	SP12N002	Black/White Film STN	Transmissive	160 x 68 x 12	CFL	n/a	90	20:01	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	20:01	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	20:01	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	20:01	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	20:01	Sanyo LC7981, LMG7400PLFC replacement
5.1"	240 x 128	SP14N003	Blue/White STN	Transmissive	159.4 x 101 x 11	CFL	n/a	90	7:01	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	20:01	Toshiba T6963C, LMG7420PLFC-X compatible
5.1"	240 x 128	SP14N01L6VLCZ	Black/White Film STN	Transmissive	159.4 x 101 x 11	White LED	SP14N01L6VLCA	150	20:01	Toshiba T6963, DC/DC
9.4"	640 x 480	SP24V001	Black/White Film STN	Transmissive	257.5 x 174 x 7	CFL	n/a	110	20:01	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	20:01	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	18:01	





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