

DISPLAYS & EMBEDDED SYSTEMS



Innovative Products for Intelligent Applications

endrich ... represents

DLOGIC™

FS Elektronik
Systeme

CAT
CHUNGHWAPICTURE TUBES.,LTD.

SGD®
Display the World

MI *Multi-Inno*
Technology Co., Ltd

RAYSTAR
OLED Display Provider

RIT RITEK GROUP
display Corporation

LOGIC
TECHNOLOGIES

faytech

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1. TOUCH DISPLAY COMPUTER



1.1 TOUCH-PC

DLOGIC™

DLOGIC, GmbH®, headquartered in Baar, Switzerland, designs and manufactures state of the art industrial touch display computers for wide range of applications, from the ground up. Built on Western business principles the owners, management and staff are of German, Swiss, Norwegian, English and Chinese native backgrounds.



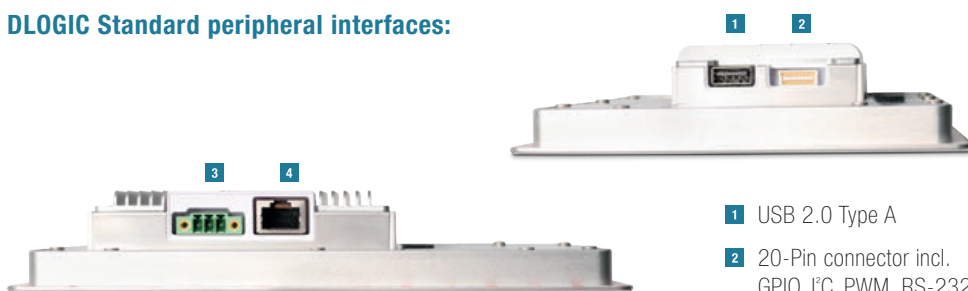
DL-DM700x-SGF-IO:
Customized Multi-Purpose Interfaces

DL-DM1210x-SGR:
Rear Mounting with 4mm protruded safety glass

Formed in 2008, we saw the success of the original iPhone and figured this would lead to a demand for sophisticated touch based graphical user interface devices across many markets and applications.

Since then, a wide portfolio of standard touch-enabled display products, along with custom solutions for an array of OEM customers was developed and shipped. The extensive knowledge and vast experience allows DLOGIC's engineering team to work closely with customers to meet the unique requirements for the most demanding applications. The product realization services combine customized touch display computing technologies into a fully integrated and tested turnkey product.

DLOGIC Standard peripheral interfaces:



- 1 USB 2.0 Type A
- 2 20-Pin connector incl. GPIO, I²C, PWM, RS-232

- 3 3-Pin Phoenix Power Supply 9-38VDC
- 4 Gigabit Ethernet RJ45



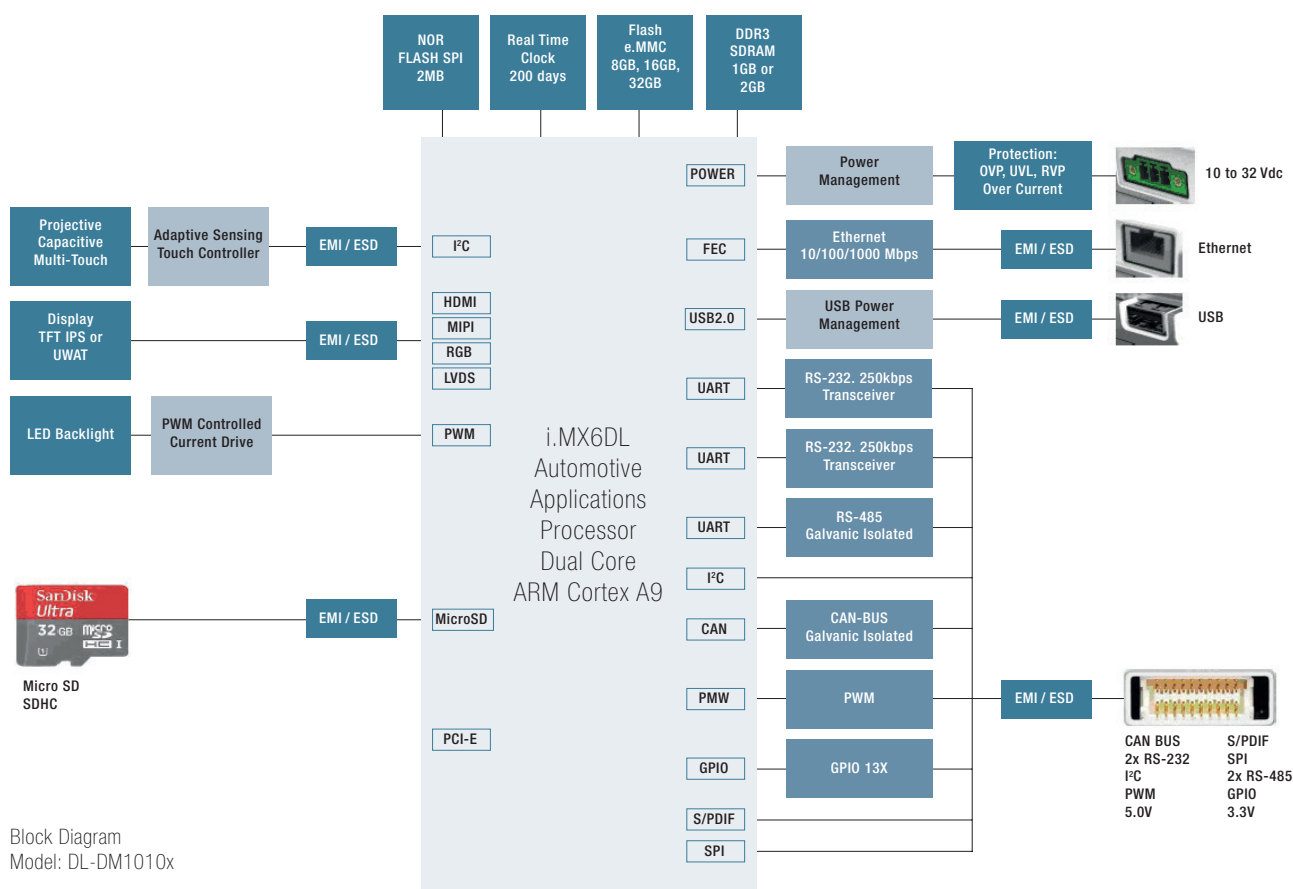
DLOGIC touch display computers are slim attractive all-in-one human interface solutions ready for use in your application. They are designed for rapid implementation into industrial equipment, appliances, vending-machines, marine, tracking and healthcare and are suitable for use in indoor, outdoor and harsh environments.

It integrates a color display, a projected capacitive touch sensor and an embedded computer into a stainless-steel housing with an aluminum frame creating a solid rugged assembly protecting the sensitive parts. They come with many standard interfaces and are configured with Linux ready for loading and running your applications. They provide a cost effective and fast track to equip your product with state of the art touch-based user interfaces and enhanced embedded computing power.

Overview of the advantages of DLOGIC Touch-PC:

- Touch display computers ready for integration
- IPS display with high brightness LED backlight, 550 nits
- Optically bonded projected capacitive multi-touch screen
- Slim metal housing with a range of high reliability standard interfaces
- Software board support package, HTML5, JAVA, QT, 2D, 3D graphics and video playback
- Tailored mechanical mounting and integration solutions
- Simple addition of custom interface extensions
- Optional optically bonded 4 mm safety glass solutions, UL751 S46B
- Stainless steel 316L housing option
- Supported by a highly skilled engineering team

1.1 TOUCH-PC



SERIES	SIZE	DISPLAY RESOLUTION	PROCESSING MODULE	OPTICAL BONDING	STAINLESS STEEL HOUSING*	4MM SAFETY GLASS FRONT MOUNT*	4MM SAFETY GLASS REAR MOUNT*
GENERAL PARAMETERS							
DL-DM430x	4.3"	480 x 272	i.MX6DL			■	
DL-DM430i	4.3"	480 x 272	i.MX6ULL			■	
DL-DM500x	5.0"	800 x 480	i.MX6DL			■	■
DL-DM500i	5.0"	800 x 480	i.MX6ULL			■	■
DL-DM500x	5.0"	1280 x 720	i.MX6DL	■	■		■
DL-DM700x	7.0"	800 x 480	i.MX6DL		■	■	■
DL-DM700i	7.0"	800 x 480	i.MX6ULL			■	■
DL-DM700x	7.0"	1024 x 600	i.MX6DL	■	■	■	■
DL-DM900x	9.0"	800 x 480	i.MX6DL		■	■	■
DL-DM900i	9.0"	800 x 480	i.MX6ULL			■	■
DL-DM1010x	10.1"	1280 x 800	i.MX6DL	■	■	■	■
DL-DM1210x	12.1"	1024 x 768	i.MX6DL	■	■	■	■
DL-DM1560x	15.6"	1920 x 1080	i.MX6DL	■			■

*Options – available on request

DLOGICs high performance Projected Capacitive Touch Monitors are designed to interface to any 3rd party LVDS or HDMI embedded PC or computer solution, and suitable for a wide range of applications.



DL-DM1210-HDMI:
Touch Monitor with HDMI + USB interface for front mounting



DL-DM700-LVDS-SGR:
LVDS-Touch Monitor with protruded 4mm safety glass

SERIES	SIZE	DISPLAY RESOLUTION	LVDS	HDMI + USB	OPTICAL BONDING	4MM SAFETY GLASS FRONT MOUNT*	4MM SAFETY GLASS REAR MOUNT*
GENERAL PARAMETERS							
DL-DM700	7.0"	800 x 480	■			■	■
DL-DM700	7.0"	1024 x 600	■	■	■	■	■
DL-DM900	9.0"	800 x 480	■			■	■
DL-DM1010	10.1"	1280 x 800	■	■	■	■	■
DL-DM1210	12.1"	1024 x 768	■	■	■	■	■

*Options – available on request

Connection Types:

- Unified LVDS: integrating LVDS video, touch control and backlight voltage
- HDMI + USB: Standard HDMI 1.3 for video, USB 2.0 Type-C for touch, 3-pin power supply 10-32 VDC



DL-DM1210-HDMI:
Screwable HDMI-, USB-Type C- and 3-pin Phoenix interfaces

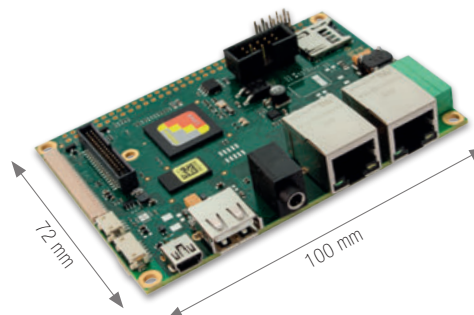
2. EMBEDDED BOARDS



2.1 SINGLE BOARD COMPUTER (SBC)



F&S Elektronik Systeme GmbH is a German company which is specialized in Embedded Boards with WindowsCE and Linux. The ARM – based embedded modules from F&S are available as computer-on-module-boards in different form factors as well as single-board computers in the form factor PicoITX. The boards enable to connect simple and cost-optimized displays from QVGA up to FullHD. A minimum availability of 10 years can be guaranteed by the used NXP CPUs (Cortex-A5/-A7/-A9) from market launch. Also F&S has their own assembly production, produced with modern production facilities in Stuttgart, Germany. Furthermore, many years of experience in the Embedded Market result in innovative and up to date customer solutions, completed by an extensive soft- and hardware support.



PARAMETERS

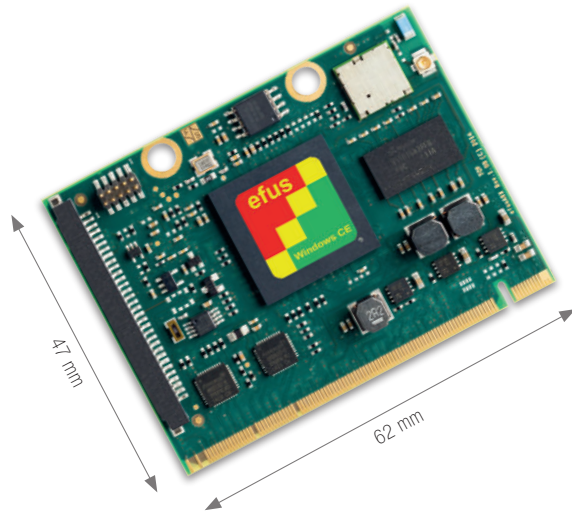
armStone™A5

armStone™A9

armStone™A9r2

SINGLE BOARD COMPUTER (SBC)				
Processing power		++	++++	++++
CPU	Typ	NXP Vybrid	NXP i.MX 6	NXP i.MX 6
	No. of cores	Single / Dual-Core	Solo / Dual / Quad-Core	Single / DualLite / QuadPlus
	Cores	ARM Cortex-A5 & -M4 (max. 500 & 167 MHz)	ARM Cortex-A9 (max. 1.2 GHz)	ARM Cortex-A9 (max. 1 GHz)
GPU		NEON	3D, 2D, Open VG, Open GL	3D, 2D, Open VG, Open GL
Windows/Linux		WCE 6.0, WEC 7, WEC 2013 / Linux	WEC 7, WEC 2013 / Linux	WEC 2013 / Linux
Flash (max)		1 GB*	1 GB*	1 GB SLC + 32 GB eMMC*
RAM (max)		512 MB	4 GB	4 GB
µSD Card		1x on-board	1x on-board	1x on-board
Ethernet		2 x 10 / 100 Mb	1x 10 / 100 / 1000 Mb	1x 10 / 100 / 1000 Mb
USB Host/Device		1-2x / 1x	4x / 1x	4x / 1x
CAN / UART		1-2x / 3x	1x / 3x	2x / 5x
I²C / SPI		1-2x / 1x	1x / 1x	1x / 2x
Audio		Line In / Out / Mic	Line In / Out / Mic	Line In / Out / Mic
Touch Panel		4-wire analog resistive PCAP-Touch via I²C	4-wire analog resistive PCAP-Touch via I²C	4-wire analog resistive PCAP-Touch via I²C
SATA/PCIe			1x / 1x	1x / 1x
RGB/LVDS		18 bit / 18 bit	18 bit / 2x 18 / 24 bit	- / 2x 18 / 24 bit
Temperature range		0°C ... +70°C (-25°C ... +85°C)*	0°C ... +70°C (-25°C ... +85°C)*	0°C ... +70°C (-25°C ... +85°C)*
Specials				Camera digital, Wi-Fi®, Bluetooth®
Minimal availability		2023	2029	2029

* Optional expandable



Short description of efus (CoM-Board)

- Single Voltage 5 V
- RGB / LVDS
- MXM2 Goldfinger Connector, 230 Pins, 0,5 mm
- Camera, PCIe, SATA
- Wi-Fi®, Bluetooth®

PARAMETERS

efus™A9

efus™A9X

efus™A7UL

COMPUTER ON MODULE (COM)-BOARDS

Processing power	+++	++	+
CPU	Typ	NXP i.MX 6	NXP i.MX 6
	No. of cores	Solo/DualLite/Quad-Core	SoloX
	Cores	ARM Cortex-A9 (max. 1.2 GHz)	ARM Cortex-A9 & -M4 (max. 1 GHz/200 MHz)
GPU		3D, 2D, Open VG, Open GL	Neon, FPU, Open GL / ES
Windows/Linux		WEC 7, WEC 2013 / Linux	WEC 2013 / Linux
Flash (max)		1 GB + 32 GB eMMC*	1 GB + 32 GB eMMC*
RAM (max)		2 GB	2 GB
µSD Card		2x external	2x external
Ethernet		1x 10 / 100 / 1000 Mb	2x 10 / 100 / 1000 Mb
USB Host/Device		1x / 1x	1x / 1x
CAN / UART		2x / 4x	2x / 4x
I²C / SPI		2x / 2x	2x / 2x
Audio		I²S	I²S
Touch Panel		external via I²C	external via I²C
SATA/PCIe		1x / 1x	- / 1x
RGB/LVDS		18 bit / 2x 24 bit	18 bit / 24 bit
Temperature range		0°C ... +70°C (-20°C ... +85°C)*	0°C ... +70°C (-20°C ... +85°C)*
Specials		Camera digital	Camera analog/dig., Wi-Fi®, Bluetooth®
Minimal availability		2027	2030

* Optional expandable

2.2 COMPUTER ON MODULE (COM)-BOARDS



Short description of PicoCore (CoM-Board)

- Single Voltage 5V / 4.2V Battery
- MIPI DSI / RGB
- 2x 80 Pin Connectors
- Wi-Fi®, Bluetooth®
- Maße: 34 x 40 mm

PARAMETERS

PicoCore™ MX7ULP

PicoCore™ MX6SX

PicoCore™ MX6UL

COMPUTER ON MODULE (COM)-BOARDS			
Processing power	+	++	+
CPU Typ	NXP i.MX 7ULP	NXP i.MX 6 SoloX	NXP i.MX 6UL
CPU No. of cores	Dual-Core	SoloX	ULL
CPU Cores	ARM Cortex-A7 + Cortex-M4 (max. 720MHz / 200MHz)	ARM Cortex-A9 + Cortex-M4 (max. 1 GHz / 200 MHz)	ARM Cortex-A7 (max. 900MHz)
GPU	3D, 2D, Neon	Neon, FPU, Open GL / ES	Neon Security
Windows/Linux	Linux	Linux	Linux / WEC 2013
Flash (max)	64MB QSPI + 32 GB eMMC	512 MB or 32 GB eMMC*	512 MB or 32 GB eMMC*
RAM (max)	4 GB DDR3	1 GB	1 GB DDRBL
µSD Card	1x	1x	2x
Ethernet	-	1x 1000 Mb	2x 10 / 100 Mb
USB Host/Device	1x OTG	1x / 1x	1x / 1x
CAN/UART	4x / 5x	1x / 2x	1x / 2x
I²C/SPI	3x / 1x	1x / 1x	1x / 2x
Audio	Line In / Out / Mic / HP	Line In / Out	Line In / Out / Mic / HP
Touch Panel	external via I²C	external via I²C	-
SATA/PCIe	- / -	- / -	- / -
RGB/MIPI-DSI	- / 2Lane	24 bit / -	24 bit / -
Temperature range	0°C ... +70°C (-20°C ... +85°C)*	-20°C ... +85°C	0°C ... +70°C (-20°C/-40°C ... +85°C)*
Specials	Wi-Fi®, Bluetooth®		
Minimal availability	2028	2025	2030

* Optional expandable

3. TFT-DISPLAYS



3.1 TFT-DISPLAYS – STANDARD



Chunghwa Picture Tubes Ltd (CPT) was founded 1971 in Taiwan and is specialized in TFT-modules as well as in the development of new TFT technologies. The product portfolio of the world biggest TFT-manufacturer CPT ranges from 4.3" up to 27.6". A big feature of CPT is the excellent quality of its products. 11,000 employees in 6 production locations are responsible for the continuous development of new technologies like the HFFS-technology (improved wide viewing angle). This offers a high value of the CPT products.

Overview of the advantages of CPT:

- Own TFT-Glass, Color-Filter and Backlight Manufacturing
- Extended operating temperature -30°C ... +85°C
- Extended viewing angle by the HFFS-technology
- Automotive TFT-production line – ISO/TS16949 certificated
- Special sizes available

SIZE	PART NUMBER	DISPLAY RESOLUTION	BRIGHTNESS [cd/m²]	INTERFACE	OPERATING TEMPERATURE [°C]	MIN. BACKLIGHT LIFETIME [H]	TYPE
TFT-DISPLAYS – STANDARD 5.7" - 19.0"							
5.7"	057VC01	640 x 480	220	TTL	-30 ... 85	30k	TN
8.0"	080XA12	1024 x 768	300	LVDS	-10 ... 50	20k	TN
10.4"	104EA03	960 x 1280	800	LVDS	-30 ... 85	52k	HFFS
	104VB02	640 x 480	450	LVDS	-20 ... 70	30k	TN
	104XA02	1024 x 768	400	LVDS	-20 ... 70	30k	TN
12.1"	121MR02	800 x 600	450	LVDS	-30 ... 80	50k	TN
	121XA01	1024 x 768	600	LVDS	-20 ... 70	50k	TN
	121XA02	1024 x 768	600	LVDS	-30 ... 80	50k	TN
15.0"	150XQ01	1024 x 768	450	LVDS	-30 ... 80	50k	TN
	150XR01	1024 x 768	450	LVDS	-30 ... 80	50k	TN
17.0"	170EC01	1280 x 1024	450	LVDS	-20 ... 70	50k	TN
19.0"	190EB01	1280 x 1024	450	LVDS	-30 ... 80	50k	TN

3.1 TFT-DISPLAYS – STANDARD

		SIZE	PART NUMBER	DISPLAY RESOLUTION	BRIGHTNESS [cd/m²]	INTERFACE	OPERATING TEMPERATURE [°C]	MIN. BACKLIGHT LIFETIME [H]	TYPE
TFT-DISPLAYS – STANDARD 4.3" - 15.6"									
4.3"	043JE02	480 x 272	500	TTL	-20 ... 70°C	15k	TN		
	043JE03	480 x 272	500	TTL	-20 ... 70°C	15k	TN		
5.0"	050LA0A	800 x 480	500	TTL	-20 ... 70°C	10k	TN		
	050LA0B	800 x 480	500	TTL	-20 ... 70°C	30k	TN		
	050LW01	800 x 480	1.200	LVDS	-40 ... 85°C	50k	HFFS		
7.0"	070LD0D	800 x 480	500	TTL	-30 ... 85°C	30k	TN		
	070LFA1	800 x 480	450	TTL	-30 ... 85°C	30k	TN		
	070LF0B	800 x 480	450	TTL	-20 ... 70°C	30k	TN		
	070LFA5	800 x 480	450	TTL	-20 ... 70°C	30k	TN		
	070LFA6	800 x 480	680	TTL	-20 ... 70°C	30k	TN		
	070LQ05	800 x 480	600	LVDS	-20 ... 70°C	50k	HFFS		
	070LQ06	800 x 480	600	TTL	-20 ... 70°C	50k	HFFS		
	070NJ05	1024 x 600	500	LVDS	-20 ... 70°C	30k	TN		
	070NQ08	1024 x 600	600	LVDS	-20 ... 70°C	30k	HFFS		
	070WP0F	800 x 1280	450	LVDS	-20 ... 70°C	50k	HFFS		
8.0"	080LJ01	800 x 480	450	TTL	-20 ... 70°C	30k	TN		
	080LJA1	800 x 480	600	TTL	-30 ... 85°C	20k	TN		
	080NA73	1024 x 600	600	LVDS	-20 ... 70°C	30k	TN		
	080WK0A	1280 x 720	600	LVDS	-30 ... 85°C	50k	HFFS		
	080WQ05 V1	800 x 1280	350	MIPI	-20 ... 60°C	15k	HFFS		
9"	090NA06	1024 x 600	500	LVDS	-20 ... 70°C	30k	TN		
	090WK05	1280 x 720	500	LVDS	-20 ... 70°C	20k	HFFS		
10.1"	101ND06	1024 x 600	500	LVDS	-20 ... 70°C	30k	TN		
	101WH32	1280 x 800	450	LVDS	-20 ... 70°C	15k	TN		
	101WN01	1280 x 800	500	LVDS	-20 ... 70°C	15k	HFFS		
	101WM01	1280 x 720	550	LVDS	-20 ... 70°C	30k	HFFS		
	101FP0A	1920 x 1200	700	LVDS	-20 ... 50°C	15k	HFFS		
	101FP0H	1920 x 1200	400	eDP 1.2	0 ... 60°C	15k	HFFS		
	101FP0J	1920 x 1200	1.200	eDP 1.2	0 ... 60°C	15k	HFFS		
	101FP0K	1920 x 1200	700	LVDS	-20 ... 70°C	15k	HFFS		
10.2"	102ND01	1024 x 600	400	LVDS	-20 ... 70°C	15k	TN		
11.4"	114NA13	1024 x 600	500	LVDS	-20 ... 70°C	30k	TN		
12.8"	128FA61	1920 x 1080	700	LVDS	-30 ... 85°C	50k	HFFS		
15.6"	156FA01	1920 x 1080	850	LVDS	-30 ... 85°C	50k	HFFS		

3.2 TFT-DISPLAYS – AUTOMOTIVE



SIZE	PART NUMBER	DISPLAY RESOLUTION	BRIGHTNESS [cd/m ²]	MIN. BACKLIGHT LIFETIME [H]	INTERFACE	OPERATING TEMPERATURE [°C]	REMARKS
TFT-DISPLAYS – AUTOMOTIVE 4.3" - 7.0"							
4.3"	043JD02	480 x 272	600	30k	RGB	-20 ... +70	TN
5.0"	050LA0A	800 x 480	500	30k	RGB	-20 ... +70	TN
6.1"	061LA0Q	800 x 480	500	30k	RGB	-30 ... +85	TN
	061LA0M	800 x 480	500	30k	RGB	-20 ... +70	TN
6.2"	062LA01	800 x 480	500	30k	RGB	-20 ... +70	TN
	062LA11	800 x 480	500	30k	RGB	-20 ... +70	TN
6.94"	069LR01	840 x 480	550	30k	LVDS	-20 ... +70	TN
6.95"	069LA0A	840 x 480	500	30k	RGB	-30 ... +85	TN
	069LA0T	840 x 480	500	30k	RGB	-20 ... +70	TN
	069LD01	840 x 480	500	30k	RGB	-30 ... +85	HFFS
	069NA01	1024 x 600	500	30k	LVDS	-20 ... +70	TN
7.0"	070LD0D	800 x 480	500	30k	RGB	-30 ... +85	TN
	070LF0B	800 x 480	450	30k	RGB	-20 ... +70	TN
	070LFA1	800 x 480	450	30k	RGB	-30 ... +85	TN
	070LM01	800 x 480	600	30k	RGB	-30 ... +85	HFFS
	070LQ01	800 x 480	760	30k	LVDS	-30 ... +85	HFFS
	070NJ05	1024 x 600	500	30k	LVDS	-20 ... +70	TN
	070NJ07	1024 x 600	600	30k	LVDS	-20 ... +70	TN
	070NQ08	1024 x 600	600	30k	LVDS	-20 ... +70	HFFS

3.2 TFT-DISPLAYS – AUTOMOTIVE

TFT-DISPLAYS – AUTOMOTIVE 8.0" - 12.3"							
SIZE	PART NUMBER	DISPLAY RESOLUTION	BRIGHTNESS [cd/m ²]	MIN. BACKLIGHT LIFETIME [H]	INTERFACE	OPERATING TEMPERATURE [°C]	REMARKS
8.0"	080LG02	800 x 480	550	30k	RGB	-30 ... +85	TN
	080LJ01	800 x 480	450	30k	RGB	-20 ... +70	TN
	080LJA1	800 x 480	600	30k	RGB	-30 ... +85	TN
	080LQ01	800 x 480	1.000	30k	RGB	-30 ... +85	HFFS
	080NA12	1024 x 600	600	30k	LVDS	-20 ... +70	TN
	080NA32	1024 x 600	600	30k	LVDS	-20 ... +70	TN
	080NA23	1024 x 600	670	30k	LVDS	-30 ... +85	TN
	080WK03	1280 x 720	600	30k	LVDS	-30 ... +85	HFFS
	080WK05	1280 x 720	500	30k	LVDS	-20 ... +70	HFFS
	080WK07	1280 x 720	600	30k	LVDS	-30 ... +85	HFFS
	080WM01	1280 x 720	765	30k	LVDS	-30 ... +85	HFFS
	080WN01	1280 x 720	550	30k	LVDS	-30 ... +85	TN
	080WN02	1280 x 720	550	30k	LVDS	-30 ... +85	TN
8.8"	088WA01	1280 x 800	500	30k	LVDS	-20 ... +70	HFFS
9.0"	090LC41	800 x 480	450	30k	RGB	-30 ... +85	TN
	090LC51	800 x 480	450	30k	RGB	-30 ... +85	TN
	090LN01	800 x 480	500	30k	RGB	-30 ... +85	TN
	090NA06	1024 x 600	500	30k	LVDS	-20 ... +70	TN
	090NB16	1024 x 600	500	30k	LVDS	-30 ... +85	TN
	090WB01	1280 x 720	500	30k	LVDS	-30 ... +85	HFFS
	090WK05	1280 x 720	500	30k	LVDS	-20 ... +70	HFFS
10.1"	101ND06	1024 x 600	500	30k	LVDS	-20 ... +70	TN
	101WL01	1280 x 720	500	30k	LVDS	-20 ... +70	TN
	101WK01	1280 x 720	600	30k	LVDS	-30 ... +85	HFFS
	101WK05	1280 x 720	500	30k	LVDS	-20 ... +70	HFFS
	101WM01	1280 x 720	550	30k	LVDS	-20 ... +70	HFFS
10.2"	102NDA1	1024 x 600	600	30k	LVDS	-30 ... +85	TN
10.3"	103WA01	1280 x 800	600	30k	LVDS	-20 ... +70	HFFS
	103WA02	1280 x 800	700	30k	LVDS	-30 ... +85	HFFS
10.4"	104EA01	960 x 1280	765	30k	LVDS	-30 ... +85	HFFS
	104XA12	1024 x 768	400	30k	LVDS	-20 ... +70	TN
11.4"	114NA13	1024 x 600	500	30k	LVDS	-20 ... +70	TN
12.1"	121XA02	1024 x 768	600	30k	LVDS	-30 ... +85	TN
12.3"	123PA01	1440 x 540	800	30k	LVDS	-30 ... +85	TN
	123FBA1	1920 x 720	700	30k	LVDS	-30 ... +85	HFFS

3.3 TFT-DISPLAYS – SUNLIGHT READABLE



Solomon Goldentek Display (SGD) started up more than 20 years ago as a subsidiary of the Taiwan semiconductor group Solomon Technology Corporation. SGD specialises in extremely high-quality TFT modules in the range 3.5 to 15.0" inches which are particularly suitable for industrial applications.

A further strength of SGD are sunlight readable TFT modules in the range 3.5 to 15.0 inches. The displays have a high bright backlight up to 1.500 cd/m². Furthermore, an additional Low-Reflection Polarizer can be assembled, which reduces the reflection rate significantly.

Overview of the advantages of Solomon Goldentek Display (SGD) TFT modules:

- Modules available in high bright and super high bright versions
- Minimum backlight lifetime of up to 50.000 hours
- Extended operating temperature range -30°C ... +85°C
- **5-year operational guarantee on workmanship and interface**

		SIZE	PART NUMBER	DISPLAY RESOLUTION	BRIGHTNESS [cd/m ²]	MIN. BACKLIGHT LIFETIME [h]	INTERFACE TTL RGB	OPERATING TEMPERATURE [°C]	RESISTIVE TOUCH PANEL	CAPACITIVE TOUCH PANEL (PCAP)	OPTIONS
TFT-DISPLAYS – SUNLIGHT READABLE 3.5" - 4.3"											
3.5"	GVTQ35SNAD1E0	320 x 240	800	50k	■	-20...+70					Option CPU interface, O-Film (all-view)
	GVTQ35SPAD2R0	320 x 240	640	50k	■	-20...+70	■				Option CPU interface, O-Film (all-view)
	GVTQ35SCAD1C0	320 x 240	700	50k	■	-20...+70			■		Option CPU interface, O-Film (all-view)
	GVTQ35TNAD1E1	320 x 240	1.100	50k	■	-30...+85					Option CPU interface
	GVTQ35TPAD2R1	320 x 240	850	50k	■	-30...+85	■				Option CPU interface
	GVTQ35TCHF1C0	320 x 240	900	50k	■	-30...+85			■		Option CPU interface
4.3"	GKCY43SNAH2E0	480 x 272	1.000	50k	■	-20...+70					Option CPU interface, O-Film (all-view)
	GKCY43SPA1R0	480 x 272	800	50k	■	-20...+70	■				Option CPU interface, O-Film (all-view)
	GKCY43SCAH2C0	480 x 272	880	50k	■	-20...+70			■		Option CPU interface, O-Film (all-view)
	GVCY43TNAH2E0	480 x 272	1.000	50k	■	-30...+85					
	GVCY43TPA1R0	480 x 272	800	50k	■	-30...+85	■				
	GKCY43TDAH2S0	480 x 272	850	50k	■	-30...+85			■		PCAP interface I ² C

3.3 TFT-DISPLAYS – SUNLIGHT READABLE

TFT-DISPLAYS – SUNLIGHT READABLE 5.0" - 7.0"									
		SIZE	PART NUMBER	DISPLAY RESOLUTION	BRIGHTNESS [cd/m²]	MIN. BACKLIGHT LIFETIME [h]	INTERFACE TTL RGB	OPERATING TEMPERATURE [°C]	RESISTIVE TOUCH PANEL CAPACITIVE TOUCH PANEL (PCAP) OPTIONS
5.0"	GVTW50SNAL3E0	800 x 480	700	50k	■	-20...+70			Option LVDS interface, O-Film (all-view)
	GVTW50SPBC3R0	800 x 480	600	50k	■	-20...+70	■		Option LVDS interface, O-Film (all-view)
	GVTW50SCAL3C0	800 x 480	600	50k	■	-20...+70		■	Option LVDS interface, O-Film (all-view)
	GVTW50TNFB3E0	800 x 480	500	50k	■	-30...+85			Option LVDS interface
	GVTW50TPFB3R0	800 x 480	400	50k	■	-30...+85	■		Option LVDS interface
	GVTW50TCFB1C0	800 x 480	850	50k	■	-30...+85		■	Option LVDS interface
5.7"	GVTV57SNAF1E0	640 x 480	900	30k*	■	-20...+70			Option LVDS interface, O-Film (all-view)
	GVTV57SPAF2R0	640 x 480	700	30k*	■	-20...+70	■		Option LVDS interface, O-Film (all-view)
	GVTV57SCAF1C0	640 x 480	800	30k*	■	-20...+70		■	Option LVDS interface, O-Film (all-view)
	GVTV57TNAF1E0	640 x 480	900	50k	■	-30...+80			Option LVDS interface
	GVTV57TPAF2R0	640 x 480	700	50k	■	-30...+80	■		Option LVDS interface, 5-wire RTP
	GVTV57TCAF1C0	640 x 480	900	50k	■	-30...+80		■	PCAP interface I²C
7.0"	GVTW70SNAG1E0	800 x 480	1.000	40k	■	-20...+70			Option LVDS interface, O-Film (all-view)
	GVTW70SPAH1R0	800 x 480	800	40k	■	-20...+70	■		Option LVDS interface, O-Film (all-view), 5-wire RTP
	GVTW70BNAG1E0	800 x 480	700	50k	■	-20...+70			Option LVDS interface, O-Film (all-view)
	GVTW70SCAG1C0	800 x 480	800	50k	■	-20...+70		■	PCAP interface I²C, Option LVDS interface, O-Film (all-view)
	GVTW70TNAG1E0	800 x 480	1.000	40k	■	-30...+85			Option LVDS interface
	GVTW70TPAH1R0	800 x 480	800	40k	■	-30...+85	■		Option LVDS interface, 5-wire RTP
	GVTW70TPAH2R0	800 x 480	800	40k	LVDS	-30...+85	■		
	GVIF70MNHJ2E0	1.024 x 600	1.200	50k	LVDS	-20...+70			IPS (all-view)
	GVIF70MPHJ2R0	1.024 x 600	960	50k	LVDS	-20...+70	■		IPS (all-view)
	GVIF70MCHJ2C0	1.024 x 600	1.080	50k	LVDS	-20...+70		■	IPS (all-view), PCAP interface I²C
	GVIF70MCHJ2C1	1.024 x 600	1.080	50k	LVDS	-20...+70		■	IPS (all-view), PCAP interface I²C + USB
	GVIF70MCHJ2C2	1.024 x 600	1.080	50k	LVDS	-20...+70		■	IPS (all-view), PCAP interface USB

* 50k available for a purchase quantity of 1.000 pieces.

3.3 TFT-DISPLAYS – SUNLIGHT READABLE

		SIZE PART NUMBER	DISPLAY RESOLUTION	BRIGHTNESS [cd/m²]	MIN. BACKLIGHT LIFETIME [h]	INTERFACE TTL RGB	OPERATING TEMPERATURE [°C]	RESISTIVE TOUCH PANEL	CAPACITIVE TOUCH PANEL (PCAP)	OPTIONS
TFT-DISPLAYS – SUNLIGHT READABLE 8.0" - 15.0"										
8.0"		GVTS80SNHJ3E0	800 x 480	1.300	50k	LVDS	-20...+70			
		GVTS80SPHJ3R0	800 x 480	1.040	50k	LVDS	-20...+70	■		
		GVTS80SCHJ3C2	800 x 480	1.200	50k	LVDS	-20...+70		■	PCAP interface USB
		GVIX80MNHJ8E0	1.024 x 768	1.100	50k	LVDS	-20...+70			IPS (all-view), Option LED driver
		GVIX80MNHJ8R0	1.024 x 768	880	50k	LVDS	-20...+70	■		IPS (all-view), Option LED driver
		GVIX80MCHJ8C2	1.024 x 768	950	50k	LVDS	-20...+70		■	IPS (allview), PCAP interface USB, Option LED driver
8.4"		GNTS84SNGH1E0	800 x 600	1.000	50k	LVDS	-20...+70			Option LED driver
		GNTS84SDGH1E0	800 x 600	800	50k	LVDS	-20...+70		■	PCAP interface I2C, Option LED driver
10.1"		GATGA1SNGG1E0	1.280 x 800	1.000	50k	LVDS	-20...+70			
		GATGA1SNGG2E0	1.280 x 800	1.500	50k	LVDS	-20...+70			
		GVIGA1MNHJ2F0	1.280 x 800	1.000	50k	LVDS	-20...+70			IPS (all-view)
		GVIGA1MCHJ2C1	1.280 x 800	900	50k	LVDS	-20...+70		■	IPS (all-view), PCAP interface USB
		GKIGA1VNGE1E0	1.280 x 800	1.300	50k	LVDS	-30...+85			IPS (all-view)
		GKIGA1VDGE1S0	1.280 x 800	1.100	50k	LVDS	-30...+85		■	IPS (all-view), PCAP interface USB
		GKIGA1VDGE1S1	1.280 x 800	1.100	50k	LVDS	-30...+85		■	IPS (all-view), PCAP interface I2C
10.4"		GV TSA4TNBL4E0	800 x 600	1.500	50k	LVDS	-20...+70			
		GV TSA4TPBL5R0	800 x 600	1.200	50k	LVDS	-20...+70	■		Option 5-wire RTP
		GK TSA4TPBL4S0	800 x 600	1.200	50k	LVDS	-20...+70		■	PCAP interface USB
		GK TSA4TPBL4S1	800 x 600	1.200	50k	LVDS	-20...+70		■	PCAP interface I2C
12.1"		GKVGC1MNDK2A0	1.280 x 800	1.300	30k	LVDS	-20...+70			MVA (all-view)
		GKVGC1MDDK2A0	1.280 x 800	1.000	30k	LVDS	-20...+70		■	MVA (all-view), PCAP interface USB
15.0"		GKTXFOVNID1E0	1.024 x 768	500	50k	LVDS	-30...+80			MVA (all-view)

3.4 TFT-DISPLAYS



Multi-Inno Technology Co., Ltd is a company specialising in TFT modules, which are produced in China. A high priority in the production of these models is the cost optimization with extremely high quality standards.

Multi-Inno has setup up a new generation of industrial TFT modules which are also available with Projected Capacitive Touch Panel (PCAP).

		SIZE	PART NUMBER	DISPLAY RESOLUTION	BRIGHTNESS [cd/m²]	MIN. BACKLIGHT LIFETIME [h]	INTERFACE TTL RGB	OPERATING TEMPERATURE [°C]	RESISTIVE TOUCH PANEL	CAPACITIVE TOUCH PANEL (PCAP)	REMARKS
TFT-DISPLAYS 2.4" - 2.83"											
2.4"	MI0240AFT-4	240 x 320	350	30k	CPU	-20...+70			IPS (all-view)		
	MI0240AFT-4RP	240 x 320	250	30k	CPU	-20...+70	■		IPS (all-view)		
	MI0240S1T-1	240 x 320	310	30k	CPU	-20...+70			06:00		
	MI0240S1T	240 x 320	250	30k	CPU	-20...+70	■		06:00		
2.83"	MI0283AAT-4	240 x 320	500	30k	■	-20...+70			CPU, SPI interface		
	MI0283AAT-4RP	240 x 320	375	30k	■	-20...+70	■		CPU, SPI interface		
	MI0283QT-13	240 x 320	300	30k	■	-20...+70			CPU, SPI interface		
	MI0283QT-11	240 x 320	240	30k	■	-20...+70			CPU, SPI interface		
	MI0283QT-13CP9	240 x 320	255	30k	■	-20...+70		■			
	MI0283QT-17	240 x 320	650	30k	■	-20...+70			CPU, SPI interface		
	MI0283QT-18	240 x 320	520	30k	■	-20...+70	■		CPU, SPI interface		
	MI0283QT-17CP1	240 x 320	550	30k	■	-20...+70		■	CPU, SPI interface		

3.4 TFT-DISPLAYS

SIZE		PART NUMBER	DISPLAY RESOLUTION	BRIGHTNESS [cd/m ²]	MIN. BACKLIGHT LIFETIME [h]	INTERFACE TTL RGB	OPERATING TEMPERATURE [°C]	RESISTIVE TOUCH PANEL	CAPACITIVE TOUCH PANEL (PCAP)	REMARKS
TFT-DISPLAYS 3.5" - 10.1"										
3.5"	MI0350ADT-5	320x240	450	30k	CPU	-20...+70				
	MI0350ADT-4	320x240	350	30k	CPU	-20...+70	■			
	MI0350ADT-5CP3	320x240	380	30k	CPU	-20...+70		■		
	MI0350AGT-1	320x240	300	30k	■	-20...+70				
	MI0350AGT	320x240	240	30k	■	-20...+70	■			
	MI0350AGT-1CP1	320x240	255	30k	■	-20...+70		■		
4.3"	MI0430H5T-2	480x272	550	30k	■	-20...+70				
	MI0430H5T-2RP	480x272	440	30k	■	-20...+70	■			
	MI0430H5T-2CP3	480x272	460	50k	■	-20...+70		■		
5.0"	MI0500PT-7	800x480	600	30k	■	-20...+70				
	MI0500PT-6	800x480	480	30k	■	-20...+70	■			
	MI0500PT-7CP1	800x480	500	30k	■	-20...+70		■		
7.0"	MI0700S4T-5	800x480	400	30k	■	-20...+70				
	MI0700S4T-6	800x480	320	30k	■	-20...+70	■			
	MI0700S4T-5CP2	800x480	340	30k	■	-20...+70		■		
	MI0700S4T-5CP6	800x480	340	30k	■	-20...+70		■		
10.1"	MI1010AAT-1	1,280x800	250	30k	LVDS	-20...+60				IPS (all-view)
	MI1010AAT-1RP	1,280x800	200	30k	LVDS	-20...+60	■			IPS (all-view)
	MI1010AAT-1CP1	1,280x800	210	30k	LVDS	-20...+60		■		IPS (all-view)

4. DISPLAYS – TFT / OLED / LCD



4.1 OLED-DISPLAYS



Established in 2007, **Raystar Optronics., Inc.** is the leading manufacturer of TFT-Displays, pmOLED (Passive Matrix OLED) and modules in Central Taiwan Science Park, Taiwan.

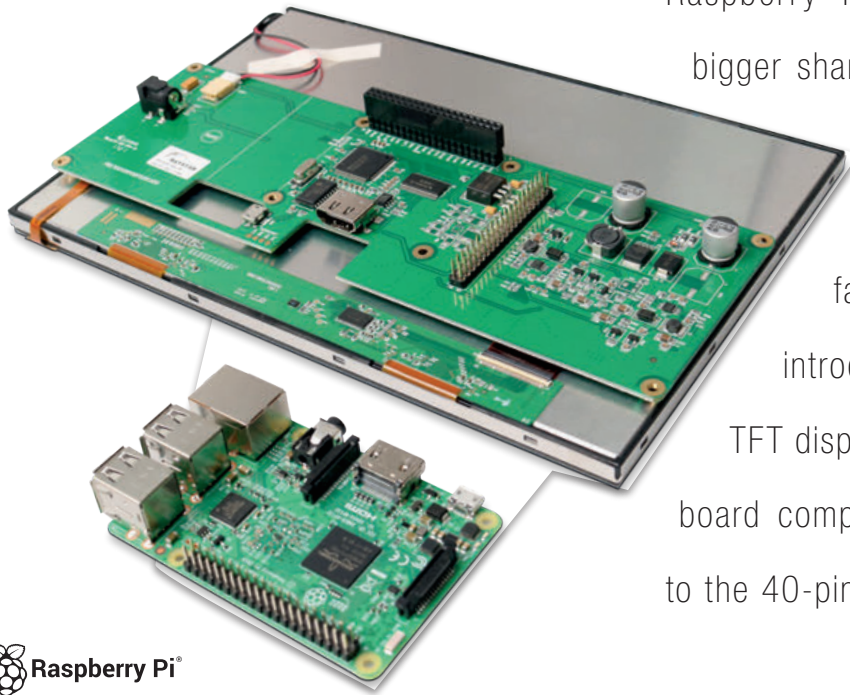
Raystar built its reputation by offering advanced technology, design services and manufacturing efficiency in Character OLED modules, Graphic OLED modules, TFT LCM display modules, Monochrome Character LCD modules, Graphic LCM display modules products. Our products are for small and medium sizes and covered in industrial and consumer applications.

OLED-DISPLAYS														
SIZE	PART NUMBER	DISPLAY RESOLUTION	EMITTING COLOR						MODULE SIZE - B x H [mm]	ACTIVE AREA - B x H [mm]	BONDING	CONNECTION	REMARKS	
			yellow	white	green	blue	red	sky blue						
2.26"	REX001602C	16 x 2	■	■	■		■	■	68.50 x 17.50	56.22 x 13.52	COG	hot bar	alphanumeric	
2.93"	REX002002A	20 x 2	■	■	■			■	84.50 x 19.28	75.52 x 13.52	COG	hot bar	alphanumeric	
2.89"	REX002004C	20 x 4	■	■	■				84.50 x 27.50	70.42 x 20.82	COG	hot bar	alphanumeric	
0.49"	REX006432A	64 x 32	■	■				■	14.50 x 11.60	11.18 x 5.58	COG	hot bar		
	REA006432A	64 x 32		■					14.85 x 16.60	11.18 x 5.58	COG	Plug-in connector	incl. PCB	
0.66"	REX006448A	64 x 48	■	■				■	18.46 x 18.10	13.42 x 10.06	COG	hot bar		
	REA006448A	64 x 48		■					19.90 x 23.1	13.42 x 10.06	COG	Plug-in connector	incl. PCB	
0.71"	REX004864A	48 x 64	■	■				■	13.90 x 22.00	10.54 x 14.70	COG	hot bar		
	REA004864A	48 x 64		■					15.90 x 27.00	10.54 x 14.70	COG	Plug-in connector	incl. PCB	

4.1 OLED-DISPLAYS

SIZE PART NUMBER		DISPLAY RESOLUTION		EMITTING COLOR		MODULE SIZE - B × H [mm]		ACTIVE AREA - B × H [mm]		BONDING	CONNECTION	REMARKS	
OLED-DISPLAYS, GRAPHIC													
			yellow	white	green	blue	red	sky blue					
0.84"	REX009616A	96 x 16	■	■				■	29.10 x 9.20	21.104 x 3.504	COG	hot bar	
	REA009616A	96 x 16		■					33.00 x 10.00	21.104 x 3.504	COG	Plug-in connector	incl. PCB
0.91"	REX012832D	128 x 32	■	■				■	30.00 x 11.50	22.384 x 5.584	COG	hot bar	Option ZIF
	REA012832D	128 x 32		■					32.50 x 20.50	22.384 x 5.584	COG	Plug-in connector	incl. PCB
	REX012832F	128 x 32	■	■				■	30.00 x 11.50	22.384 x 5.584	COG	hot bar	
0.96"	REX012864D	128 x 64	■	■	■	■			26.70 x 19.26	21.74 x 10.86	COG	hot bar	Option ZIF
	REA012864D-01	128 x 64	■	■					38.50 x 28.50	21.74 x 10.86	COG	Plug-in connector	incl. PCB
	REA012864D-03	128 x 64	■	■					27.30 x 27.30	21.74 x 10.86	COG	Plug-in connector	incl. PCB
	REX012864M	128 x 64							38.00 x 28.50	21.744 x 11.204	COG	hot bar	blue/yellow
1.04"	REX012832E	128 x 32	■	■				■	33.40 x 14.50	25.58 x 6.38	COG	hot bar	
	REA012832E	128 x 32		■					35.40 x 23.50	25.58 x 6.38	COG	Plug-in connector	incl. PCB
1.1"	REX009664B	96 x 64	■						29.00 x 22.50	22.53 x 15.01	COG	hot bar	Option ZIF
1.18"	REX128128B	128 x 128	■	■				■	36.98 x 41.23	30.00 x 30.00	COG	ZIF	round shape
1.28"	REX012864L	128 x 64	■	■				■	34.50 x 23.00	29.42 x 14.20	COG	lötbar	
1.5"	REX128128A	128 x 128	■	■				■	33.80 x 36.50	26.86×26.86	COG	ZIF	
1.54"	REX012864A	128 x 64	■	■				■	42.04 x 27.22	35.05 x 17.51	COG	ZIF	
1.6"	REX012864F	128 x 64	■	■	■			■	41.80 x 27.90	36.45 x 18.21	COG	ZIF	
1.71"	REX012832G	128 x 32		■					50.50 x 15.75	42.22 x 10.54	COG	ZIF	Option Orange
1.92"	REX160128A	160 x 160		■					34.50 x 48.80	28.908 x 39.340	COG	ZIF	
2.0"	REX012832K	128 x 32		■					59.00 x 18.86	50.535 x 10.695	COG	hot bar	
2.23"	REX012832A	128 x 32	■	■	■	■		■	62.00 x 24.00	55.018 x 13.098	COG	ZIF	
	REP012832A	128 x 32		■					66.50 x 35.00	55.018 x 13.098	COG	Plug-in connector	incl. PCB
	REP012832A-CTP	128 x 32		■					66.50 x 35.00	55.018 x 13.098	COG	Plug-in connector	incl. PCB / PCAP
2.42"	REX012864G	128 x 64	■	■	■			■	60.50 x 37.00	55.01 x 27.49	COG	ZIF	31 PIN / Option 22 PIN
	REX012864G-CTP	128 x 64	■	■					60.50 x 37.00	55.01 x 27.49	COG	ZIF	PCAP
	REX012864H	128 x 64	■	■	■			■	60.50 x 37.00	55.01 x 27.49	COG	hot bar	
	REX012864J	128 x 64	■	■	■			■	75.00 x 52.70	55.01 x 27.49	COG	Plug-in connector	incl. PCB
2.7"	REX012864K	128 x 64	■	■	■			■	73.00 x 41.86	61.41 x 30.69	COG	ZIF	SSD13069 31 PIN / Option 22 PIN
	REX012864Q	128 x 64	■	■				■	73.00 x 41.86	61.41 x 30.69	COG	ZIF	SSD1309 30 PIN
	REH012864Q	128 x 64	■	■				■	89.70 x 47.20	61.41 x 30.69	COG	ZIF	SSD1309 30 PIN incl. Frame
	REX012864U	128 x 64	■	■					73.00 x 41.86	61.41 x 30.69	COG	ZIF	SSD1357 30 PIN / 16 grey scale
	REH012864U	128 x 64	■	■					89.70 x 47.20	61.41 x 30.69	COG	ZIF	SSD1357 30 PIN / 16 grey scale incl. Frame
2.8"	RET025664A	256 x 64	■	■	■	■		■	84.00 x 25.80	69.098 x 17.258	COF	ZIF	
3.12"	RET025664B	256 x 64	■	■	■			■	88.00 x 27.80	76.778 x 19.178	COF	ZIF	
5.5"	RET025664D	256 x 64	■		■				146.00 x 45.00	135.65 x 33.89	COF	ZIF	

4.2 TFT DISPLAYS – HDMI RASPBERRY PI



TFT module compatible to Raspberry Pi 3

This TFT display series is available in the sizes 5.7", 7.0" (with two different resolutions) and 10.1". You can simply use this TFT display with your Raspberry Pi, or also you can use it as computer display with any device which has an HDMI output. Additional to the HDMI plug the TFTs are equipped with the standard 40 pin Raspberry Pi GPIOs for easy plug and play. There is a single 5V power input required only, to drive the backlight, touch panel, TFT-display and the Raspberry Pi. With high brightness backlights the readability is extraordinary good.

For enhanced embedded computing applications the capacitive touch modules are the perfectly fitting solution. They are designed to make Raspberry Pi usage become easy. You only have to integrate it into your application.

Raspberry Pi computer modules gain bigger shares on the industrial market.

To simplify the integration in human machine interfaces, Raystar Optronics Ltd. introduced a special series of TFT displays. The Raspberry Pi single board computer can be easily attached to the 40-pin GPIO header.

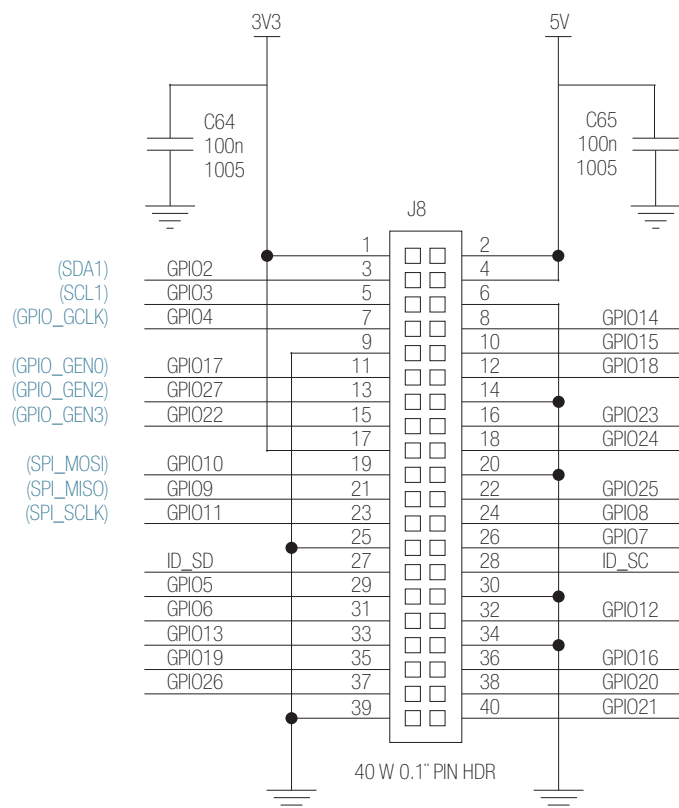
Overview of the advantages of HDMI Raspberry Pi:

- Single voltage input of 5V for touch panel, backlight, TFT-display and Raspberry Pi
- Raspberry Pi 40 pin header to support GPIOs
- Standard HDMI connector to use with any device
- Supports resistive / capacitive touch panels over USB interface
- LED lifetime up to 50 k hours
- Operating temperature up to -20 °C to +70 °C



Compact and secure assembly of TFT-module and Raspberry Pi 3

4.2 TFT DISPLAYS – HDMI RASPBERRY PI



ID_SD and ID_SC PINS:

These pins are reserved for HAT ID EEPROM.

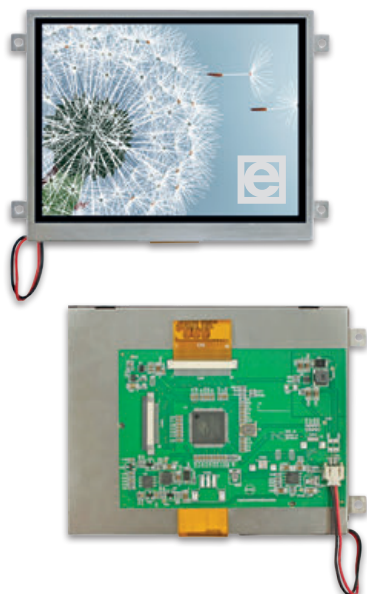
At boot time this I2C interface will be interrogated to look for an EEPROM that identifies the attached board and allows automatic setup of the GPIOs (and optionally, Linux drivers).

DO NOT USE these pins for anything other than attaching an I2C ID EEPROM. Leave unconnected if ID EEPROM not required.

Pin-Out 40-pin GPIO header

SIZE	PART NUMBER	DISPLAY RESOLUTION	MIN. BRIGHTNESS [CD/M ²]	MIN. BACKLIGHT LIFETIME [H]	INTERFACE HDMI / RASPBERRY PI	OPERATING TEMPERATURE [°C]	RESISTIVE TOUCH PANEL (RTP)	CAPACITIVE TOUCH PANEL (PCAP)	REMARKS
TFT Displays – HDMI Raspberry Pi									
5.0"	RFF50XB-1IW-DHN	800 x 480	400	30k	■	-20...+70			
	RFF50XB-1IW-DHS	800 x 480	250	30k	■	-20...+70	■		
	RFF50XB-1IW-DHG	800 x 480	300	30k	■	-20...+70		■	
7.0"	RFF70XG-1IW-DHN	800 x 480	350	30k	■	-20...+70			
	RFF70XG-1IW-DHS	800 x 480	240	30k	■	-20...+70	■		
	RFF70XG-1IW-DHG	800 x 480	250	30k	■	-20...+70		■	
	RFH70XB-1IW-LHN	1.024 x 600	500	30k	■	-20...+70			
	RFH70XB-1IW-LHS	1.024 x 600	350	30k	■	-20...+70	■		
	RFH70XB-1IW-LHG	1.024 x 600	400	30k	■	-20...+70		■	
10.1"	RFK101XF-1YH-LHN	1.280 x 800	1.000	30k	■	-20...+70			IPS (all-view)
	RFK101XF-1YH-LHS	1.280 x 800	700	30k	■	-20...+70	■		IPS (all-view)
	RFK101XF-1YH-LHG	1.280 x 800	800	30k	■	-20...+70		■	IPS (all-view)

4.3 TFT-DISPLAYS – Q-SERIES



PIN	All function
1	GND
2	VDD (3V)
3	BL_E
4	RS
5	WR
6	RD
7 ... 22	DB0 ... DB15
23	NC / TE
24	NC/ For CTP
25	CS
26	RESET
27	NC(UD)
28	NC(LR)
29 ... 32	For TP function CTP & RTP
33-34	B/L power (Gnd)
35-36	B/L power (VCC)

The Q-series of RAYSTAR Optronics is a unified 36-pin standard MCU interface. All modules include the Solomon Systech controller SSD1963, which can be driven by 8 or 16bit. Due to the unified interface, there's no need to change the board layout to drive the TFT of 3.5" up to 10.2".

Overview of the Q-series advantages:

- All Q-series modules built-in SSD1963 controller
- 36-pin connector on board and all connectors are in the same direction
- All TFT Q-series are both fit for 8 and 16 bit interface
- Built-in Backlight driver
- Resistive and capacitive Touch are available for all Q-series modules

SIZE	PART NUMBER	DISPLAY RESOLUTION	BRIGHTNESS [cd/m²]	TYP. BACKLIGHT LIFETIME [h]	INTERFACE 16 BIT MCU	OPERATING TEMPERATURE [°C]	RESISTIVE TOUCH PANEL	CAPACITIVE TOUCH PANEL (PCAP)
TFT-DISPLAYS – Q-SERIES								
3.5"	RFC350Q-EIW-DBN	320 x 240	420	50k	■	-20...+70		
	RFC350Q-EIW-DBS	320 x 240	300	50k	■	-20...+70	■	
	RFC350Q-EIW-DBC	320 x 240	340	50k	■	-20...+70		■
4.3"	RFE430Q-EIW-DBN	480 x 272	500	50k	■	-20...+70		
	RFE430Q-EIW-DBS	480 x 272	300	50k	■	-20...+70	■	
	RFE430Q-EIW-DBC	480 x 272	340	50k	■	-20...+70		■
5.0"	RFF50YQ-1IW-DBN	800 x 480	450	20k	■	-20...+70		
	RFF50YQ-1IW-DBS	800 x 480	300	20k	■	-20...+70	■	
5.7"	RFC570Q-EIW-DBN	320 x 240	500	50k	■	-20...+70		
	RFC570Q-EIW-DBS	320 x 240	350	50k	■	-20...+70	■	
	RFC570Q-EIW-DBG	320 x 240	400	50k	■	-20...+70		■
7.0"	RFF700Q-1IW-DBN	800 x 480	450	50k	■	-20...+70		
	RFF700Q-1IW-DBS	800 x 480	300	50k	■	-20...+70	■	
	RFF700Q-1IW-DBG	800 x 480	380	50k	■	-20...+70		■
8.0"	RFF800Q-1IW-DBN	800 x 480	450	20k	■	-20...+70		
	RFF800Q-1IW-DBS	800 x 480	320	20k	■	-20...+70	■	
	RFF800Q-1IW-DBC	800 x 480	360	20k	■	-20...+70		■
10.2"	RFF1020Q-1IW-DBN	800 x 480	350	20k	■	-20...+70		
	RFF1020Q-1IW-DBS	800 x 480	250	20k	■	-20...+70	■	
	RFF1020Q-1IW-DBG	800 x 480	280	20k	■	-20...+70		■

4.4 LC-DISPLAYS – ALPHANUMERIC (COB)

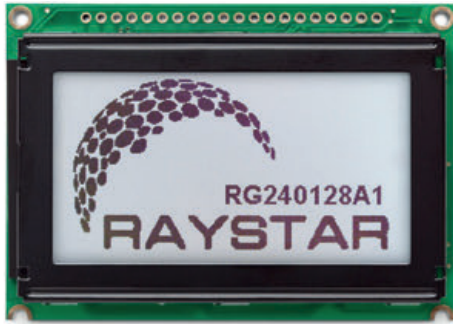


Standard alphanumeric LCD displays are used in many Industrial applications. Our portfolio of the manufacturer Raystar Optronics supports a wide range of flexibility: size, resolution, and backlight color can be collected for each single display.

DISPLAY RESOLUTION	PART NUMBER	MODULE SIZE B x H [mm]	VISIBLE AREA B x H [mm]	LCD COLOR							BACKLIGHT	INTERFACE
LC-DISPLAYS – ALPHANUMERIC (COB)												
				TN	STN grey	STN Y-G	STN blue	FSTN	None	LED		
8 x 2	RC0802A1	58.0 x 32.0	38.0 x 16.0	■	■	■	■	■	■	■	6800	
12 x 2	RC1202A	55.7 x 32.0	46.0 x 14.5	■	■	■	■	■	■	■	6800	
16 x 1	RC1601A	80.0 x 36.0	66.0 x 16.0	■	■	■	■	■	■	■	6800	
	RC1601B	85.0 x 28.0	66.0 x 16.0	■	■	■	■	■	■	■	6800	
	RC1601C	122.0 x 33.0	99.0 x 13.0	■	■	■	■	■	■	■	6800	
16 x 2	RC1602B	80.0 x 36.0	66.0 x 16.0	■	■	■	■	■	■	■	6800	
	RC1602A	84.0 x 44.0	66.0 x 16.0	■	■	■	■	■	■	■	6800	
	RC1602B1	80.0 x 36.0	66.0 x 16.0	■	■	■	■	■	■	■	6800	
	RC1602B4	80.0 x 36.0	66.0 x 16.0	■	■	■	■		■	■	SPI	
	RC1602B5	80.0 x 36.0	66.0 x 16.0	■	■	■	■		■	■	I2C	
	RC1602C	85.0 x 36.0	66.0 x 16.0	■	■	■	■	■	■	■	6800	
	RC1602D	85.0 x 30.0	66.0 x 16.0	■	■	■	■	■	■	■	6800	
	RC1602E	122.0 x 44.0	99.0 x 24.0	■	■	■	■	■	■	■	6800	
	RC1602F	85.0 x 32.6	66.0 x 16.0	■	■	■	■	■	■	■	6800	
	RC1602G	85.0 x 25.2	66.0 x 16.0	■	■	■	■	■	■	■	6800	
	RC1602G1	85.0 x 25.2	66.0 x 16.0	■	■	■	■	■	■	■	6800	
	RC1602H	59.0 x 29.3	52.0 x 15.0	■	■	■	■	■	■	■	6800	
	RC1602I	65.4 x 28.2	54.8 x 19.0	■	■	■	■	■	■	■	6800	
	RC1602M2	66.7 x 23.3	61.0 x 15.9	■	■	■	■	■	■	■	6800	
	RC1602O	80.0 x 36.0	66.0 x 16.0	■	■	■	■	■	■	■	6800	
16 x 4	RC1604A	87.0 x 60.0	62.0 x 26.0	■	■	■	■	■	■	■	6800	
	RC1604A1	87.0 x 60.0	62.0 x 26.0	■	■	■	■	■	■	■	6800	
	RC1604B	70.6 x 60.0	60.0 x 32.6	■	■	■	■	■	■	■	6800	
20 x 1	RC2001A	180.0 x 40.2	149.0 x 23.0	■	■	■	■	■	■	■	6800	
20 x 2	RC2002A	116.0 x 37.0	85.0 x 18.6	■	■	■	■	■	■	■	6800	
	RC2002B	89.0 x 21.5	75.0 x 15.0		■	■		■		■	6800	
	RC2002C	180.0 x 40.0	149.0 x 23.0	■	■	■	■	■	■	■	6800	
	RC2002D	146.0 x 43.0	123.0 x 23.0	■	■	■	■	■	■	■	6800	
20 x 4	RC2004A	98.0 x 60.0	77.0 x 25.2	■	■	■	■	■	■	■	6800	
	RC2004B	77.0 x 47.0	60.0 x 22.0	■	■	■	■	■	■	■	6800	
	RC2004C	146.0 x 62.5	123.5 x 43.0	■	■	■	■	■	■	■	6800	
	RC2004D	87.0 x 58.0	74.4 x 24.8		■					■	6800	
	RC2004E	87.0 x 58.0	74.4 x 24.8		■					■	6800	
24 x 2	RC2402A	118.0 x 36.0	94.5 x 16.0	■	■	■	■	■	■	■	6800	
40 x 2	RC4002A	182.0 x 33.5	154.4 x 16.5	■	■	■	■	■	■	■	6800	
40 x 4	RC4004A	190.0 x 54.0	147.0 x 29.5	■	■	■	■	■	■	■	6800	



4.5 LC-DISPLAYS – GRAPHIC (COB)



Raystar Optronics also offers a wide range of standard graphical LCDs. Size, resolution, Backlight color and LCD technology can also be collected for each display.

LC-DISPLAYS – GRAPHIC (COB)										
DISPLAY RESOLUTION	PART NUMBER	MODULE SIZE B x H [mm]	VISIBLE AREA B x H [mm]	LCD COLOR						BACKLIGHT
				STN Grey	STN Y-G	STN Blue	FSTN	None	LED	INTERFACE
122 x 32	RG12232A/A1	84.0 x 44.0	60.0 x 18.0	■	■	■	■	■	■	6800/8080
	RG12232A2	84.0 x 44.0	60.0 x 18.0	■	■	■	■	■	■	6800/SPI
	RG12232B	65.4 x 28.2	54.8 x 19.0	■	■			■	■	6800/8080
	RG12232B1	65.4 x 28.2	54.8 x 19.0	■	■			■	■	6800/8080
	RG12232B2	65.4 x 28.2	54.8 x 19.0	■	■			■	■	6800/8080
	RG12232B3	65.4 x 28.2	54.8 x 19.0	■	■		■	■		6800/SPI
	RG12232C/C4	59.0 x 29.3	52.0 x 15.0	■	■		■	■	■	6800/8080
	RG12232C1	59.0 x 29.3	52.0 x 15.0	■	■		■	■		6800/8080
	RG12232C2	59.0 x 32.1	52.0 x 15.0	■	■		■	■	■	6800/8080
	RG12232C3	59.0 x 29.3	52.0 x 15.0	■	■		■	■	■	6800
	RG12232D	77.8 x 27.2	60.0 x 18.0	■	■		■	■	■	6800/8080
	RG12232E	80.0 x 36.0	60.0 x 18.0	■	■	■	■	■	■	6800/8080
	RG12232E1	80.0 x 36.0	60.0 x 18.0	■	■	■	■	■	■	6800/8080
	RG12232P	80.0 x 36.5	64.0 x 17.9		■		■		■	6800/8080
128 x 64	RG12864A	93.0 x 70.0	72.0 x 40.0	■	■	■	■	■	■	6800
	RG12864A2	93.0 x 70.0	72.0 x 40.0	■	■	■	■	■	■	
	RG12864B	75.0 x 52.7	58.8 x 31.4	■	■	■	■	■	■	6800
	RG12864B2	75.0 x 52.7	60.0 x 32.6	■	■	■	■	■	■	
	RG12864C	78.0 x 70.0	62.0 x 44.0	■	■	■		■	■	6800
	RG12864C1	78.0 x 70.0	62.0 x 44.0	■	■	■	■	■	■	
	RG12864C4	78.0 x 70.0	62.0 x 44.0	■	■	■	■	■	■	8080
	RG12864C5	78.0 x 70.0	62.0 x 44.0	■	■	■	■	■	■	8080
	RG12864D	80.0 x 70.0	72.0 x 40.0	■	■	■	■	■	■	6800
	RG12864E	113.0 x 53.0	72.0 x 40.0	■	■	■	■	■	■	6800
	RG12864F	95.5 x 50.2	72.0 x 40.0	■	■	■	■	■	■	6800
	RG12864G1	89.0 x 70.0	72.0 x 40.0	■	■	■		■	■	8080
	RG12864H/H1	54.0 x 50.0	43.5 x 29.0	■	■		■	■		6800
	RG12864J	83.0 x 52.7	60.0 x 32.6	■				■	■	6800/SPI
	RG12864K	93.0 x 70.0	72.0 x 40.0	■	■	■	■	■	■	6800/SPI
	RG12864L	93.0 x 70.0	72.0 x 40.0	■	■	■	■	■	■	6800/SPI
128 x 128	RG128128A	85.0 x 100.0	62.0 x 62.0	■	■	■	■		■	8080
	RG128128B	72.5 x 69.9	50.0 x 49.0	■	■	■		■	■	6800
	RG128128B1	65.5 x 70.0	50.0 x 49.0	■	■	■		■	■	8080



4.5 LC-DISPLAYS – GRAPHIC (COB)

DISPLAY RESOLUTION	PART NUMBER	MODULE SIZE B x H [mm]	VISIBLE AREA B x H [mm]	LCD COLOR					BACKLIGHT	INTERFACE
LC-DISPLAYS – GRAPHIC (COB)										
				STN Grey	STN Y-G	STN Blue	FSTN B/W	None	LED	
128 x 128	RG128128H	92.0 x 106.0	73.0 x 73.0			■			■	8080
	RG128128I	72.5 x 69.9	50.0 x 49.0	■	■	■	■		■	8080
144 x 32	RG14432A	85.0 x 36.0	66.0 x 16.0	■	■	■	■	■	■	6800/SPI
	RG14432B	80.0 x 36.0	66.0 x 16.0	■	■	■	■	■	■	6800
	RG14432C	84.0 x 44.0	66.0 x 16.0	■	■	■	■	■	■	6800/SPI
	RG14432D	85.5 x 30.0	66.0 x 16.0	■	■	■	■	■	■	6800/SPI
	RG14432E	80.0 x 36.0	66.0 x 16.0	■	■	■	■	■	■	6800/SPI
160 x 32	RG16032A	85.2 x 55.0	74.00 x 22.0	■	■	■		■	■	6800/8080
	RG16032B	85.2 x 55.0	74.0 x 22.0	■	■	■		■	■	6800/SPI
	RG16032C	85.2 x 55.0	72.0 x 22.0	■	■	■	■		■	6800/8080
	RG16032E	122.0 x 44.0	99.0 x 24.0	■	■	■	■		■	6800/SPI
	RG16080B	100.0 x 55.0	72.0 x 40.0	■	■	■	■	■	■	6800
160 x 80	RG16080B1	100.0 x 54.0	72.0 x 40.0		■	■	■		■	8080
	RG16080C	93.0 x 70.0	72.0 x 40.0	■	■	■	■	■	■	6800
	RG16080D	93.0 x 70.0	72.0 x 40.0				■		■	8080
160 x 128	RG160128A	129.0 x 102.0	101.0 x 82.0	■	■	■	■	■	■	8080
	RG160128A1	129.0 x 102.0	101.0 x 82.0	■	■	■	■		■	8080
	RG160128B	150.0 x 112.0	101.0 x 82.0	■	■	■	■		■	8080
160 x 160	RG160160A	89.2 x 85.0	62.0 x 62.0	■	■	■	■	■	■	
	RG160160B	85.0 x 100.0	62.0 x 62.0	■	■	■	■	■	■	6800
	RG160160D	85.0 x 100.0	62.0 x 62.0	■	■	■	■	■	■	6800/8080
192 x 32	RG19232A	116.0 x 37.0	85.0 x 18.6	■	■	■	■	■	■	6800/SPI
	RG19232A1	116.0 x 37.0	85.0 x 18.6	■	■	■	■	■	■	6800/SPI
192 x 64	RG19264A	120.0 x 62.0	102.0 x 39.0	■	■	■	■	■	■	6800
	RG19264A1	130.0 x 65.0	102.0 x 39.0	■	■	■	■	■	■	6800
	RG19264B	150.0 x 62.5	123.5 x 43.0	■	■	■	■	■	■	6800
	RG19264C	100.0 x 60.0	84.0 x 31.0	■	■	■	■	■	■	6800
	RG19264D	100.0 x 60.0	84.0 x 31.0		■	■	■		■	6800
192 x 128	RG192128A	102.3 x 86.0	78.5 x 55.0	■	■		■	■	■	6800
	RG192128B	98.0 x 86.0	78.5 x 55.0	■	■	■	■	■	■	6800
	RG192128C	102.3 x 86.0	78.5 x 55.0		■		■		■	8080
	RG192128D	98.0 x 86.0	78.5 x 55.0		■		■		■	8080
202 x 32	RG20232A	146.0 x 43.0	123.0 x 23.0	■	■	■	■	■	■	6800/8080
	RG20232A1	146.0 x 43.0	123.0 x 23.0	■	■	■	■	■	■	6800/SPI
240 x 64	RG24064A	180.0 x 65.0	133.0 x 39.0	■	■	■	■	■	■	8080
	RG24064A1	180.0 x 65.0	133.0 x 39.0	■	■	■	■	■	■	6800
	RG24064A2	180.0 x 65.0	133.0 x 39.0	■	■	■	■	■	■	8080
	RG24064A3	180.0 x 65.0	133.0 x 39.0	■	■	■	■	■	■	6800/8080
	RG24064A4	180.0 x 65.0	132.6 x 39.0	■	■	■	■	■	■	8080
	RG24064A5	180.0 x 65.0	133.0 x 39.0	■	■	■	■	■	■	
	RG24064B	180.0 x 72.0	133.0 x 39.0	■	■	■	■	■	■	8080
240 x 128	RG240128A	170.0 x 103.5	132.0 x 76.0	■	■	■	■	■	■	8080
	RG240128A1	170.0 x 93.6	128.0 x 75.0	■	■	■	■	■	■	
	RG240128B	144.0 x 104.0	114.0 x 64.0	■	■	■	■	■	■	8080
	RG240128B1	144.0 x 104.0	114.0 x 64.0	■	■	■	■	■	■	8080
	RG240128B2	144.0 x 104.0	114.0 x 64.0	■	■	■	■	■	■	6800
	RG240128F	140.0 x 82.0	114.0 x 64.0	■	■	■	■	■	■	6800/8080
	RGZ240128B	144.0 x 104.0	114.0 x 64.0	■					■	

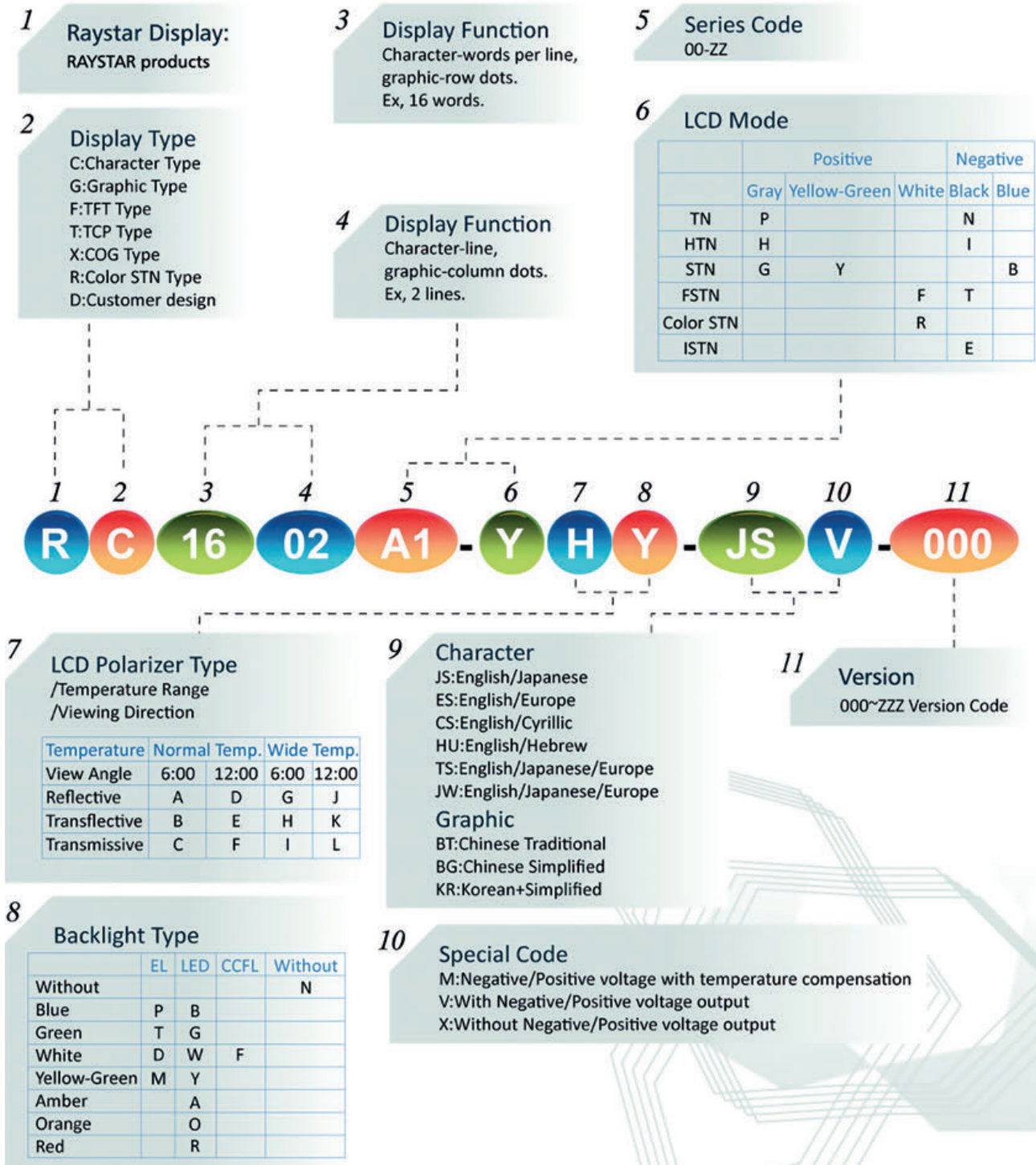


4.6 LC-DISPLAYS – GRAPHIC (COG)

DISPLAY RESOLUTION	PART NUMBER	MODULE SIZE B x H [mm]	VISIBLE AREA B x H [mm]	LCD COLOR	BACKLIGHT	INTERFACE				
LC-DISPLAYS – GRAPHIC (COG)										
				STN Grey	STN Y-G	STN Blue	FSTN B/W	None	LED	
16 x 2	RX1602A1	72.1 x 29.6	61.0 x 15.1	■	■				■	
	RX1602A2	72.1 x 29.6	61.0 x 15.1	■	■	■	■	■	■	6800 / SPI
	RX1602A3	74.2 x 25.5	61.0 x 15.1	■	■	■	■	■	■	I2C
	RX1602A4	62.8 x 23.0	51.5 x 12.2	■	■	■	■	■	■	I2C
	RX1602A5	51.2 x 20.7	40.0 x 10.0	■	■	■	■	■	■	I2C
	RX1602B	85.0 x 30.0	76.0 x 18.0	■	■		■		■	I2C
20 x 2	RX2002A	74.2 x 25.2	61.0 x 15.1	■	■	■	■	■	■	I2C
20 x 4	RX2004A	74.3 x 36.4	60.5 x 22.18	■	■	■	■	■	■	I2C
24 x 2	RX2402A	86.2 x 24.7	72.3 x 11.84	■	■	■	■	■	■	I2C
128 x 64	RX12864A1	60.1 x 44.5	54.6 x 32.0	■	■	■	■	■	■	6800 / 8080 / SPI
	RX12864B	89.7 x 49.8	69.0 x 36.5	■	■	■	■		■	6800 / 8080 / SPI
	RX12864C2	55.2 x 39.8	45.2 x 27.0	■	■	■	■		■	6800 / 8080 / SPI
	RX12864D2	90.0 x 52.8	70.7 x 38.8	■	■	■	■	■	■	6800 / 8080 / SPI
	RX12864D3	80.0 x 54.0	70.7 x 38.8	■	■	■	■		■	6800 / 8080 / SPI
	RX12864H	80.0 x 54.0	70.7 x 38.8	■	■	■	■	■	■	6800 / 8080 / SPI
144 x 64	RX14464A5	80.0 x 54.0	70.7 x 38.8			■			■	6800 / 8080 / SPI / I2C
160 x 160	RX160160A	83.8 x 76.5	60.0 x 60.0	■	■	■	■		■	6800 / 8080
	RX160160B	82.2 x 77.5	60.0 x 60.0	■	■	■	■		■	6800 / 8080
240 x 64	RX24064A1	142.5 x 51.7	130.2 x 37.6			■	■	■	■	6800 / 8080 / SPI
	RX24064B	142.5 x 51.7	129.0 x 37.6			■	■		■	6800 / 8080 / SPI
	RX24064C	111.4 x 45.5	106.2 x 31.2			■	■		■	6800 / 8080 / SPI
	RX24064D	86.2 x 39.3	80.8 x 24.8			■	■		■	6800 / 8080 / SPI
240 x 128	RX240128A	98.7 x 67.7	92.0 x 53.0	■	■	■	■	■	■	6800 / 8080 / SPI
240 x 160	RX240160A	93.0 x 64.2	78.5 x 47.5	■	■		■		■	6800 / 8080
320 x 240	RX320240A	160.0 x 109.0	120.0 x 90.0	■		■	■	■	■	



4.7 CODING SYSTEM – LCD



5. OLED-DISPLAYS



5.1 OLED-DISPLAYS



In the past 10 years **RiTdisplay Corp.** has grown to a world market leader for passive OLED displays. The spectrum of these products extends from monochrome to full color OLEDs. Special optical qualities of the OLED displays are an extremely high contrast of 2000:1 and an unusually wide viewing angle of 160°. Most of the displays have in addition to the 8-bit parallel interface an SPI and I²C interface.

SIZE	PART NUMBER	DISPLAY RESOLUTION	EMITTED COLOR YELLOW	EMITTED COLOR WHITE	MODULE SIZE - B × H [mm]	ACTIVE AREA - B × H [mm]	BONDING	FPC	REMARKS
OLED-DISPLAYS 0.42" - 0.96"									
0.42"	P34101	72 x 40	■	12.00 x 11.00	9.20 x 5.18	COG	hot bar		
0.48"	P24701	72 x 32	■	14.90 x 11.29	11.21 x 4.97	COG	hot bar		
0.49"	P30003	64 x 32	■	14.50 x 11.60	11.18 x 5.58	COG	hot bar		
0.66"	P28707	64 x 48	■	18.46 x 18.10	13.42 x 10.06	COG	hot bar		
0.68"	P35303	96 x 32	■	19.3 x 11.63	16.3 x 5.42	COG	ZIF		
0.69"	P29106	96 x 16	■	26.30 x 8.00	17.26 x 3.18	COG	ZIF		
0.71"	P32401	96 x 16	■	24.00 x 7.44	17.64 x 3.26	COG	hot bar		
	P32402	48 x 64	■	13.90 x 22.00	10.54 x 14.70	COG	hot bar		
0.8"	P23302	96 x 32	■	28.50 x 11.50	19.18 x 6.38	COG	hot bar		
0.86"	P31103	96 x 32	■	29.10 x 9.20	21.10 x 6.06	COG	hot bar		
0.91"	P24803	128 x 32	■	30.00 x 11.50	22.38 x 5.58	COG	ZIF		
0.96"	P24003	96 x 96	■	24.00 x 25.70	17.26 x 17.26	COG	hot bar		
	P35701	128 x 64	■	24.74 x 16.90	21.74 x 10.86	COG	hot bar		
	P35707	128 x 64	■	24.74 x 16.90	21.74 x 10.86	COG	ZIF		
	P25317	128 x 64	■	26.70 x 19.26	21.74 x 10.86	COG	hot bar		
	P25314	128 x 64	■	26.70 x 19.26	21.74 x 10.86	COG	ZIF		
	P35701	128 x 64	■	24.74 x 16.90	21.74 x 10.86	COG	hot bar		
	P27601	128 x 64		26.70 x 19.26	21.74 x 10.86	COG	hot bar		blue/yellow

5.1 OLED-DISPLAYS



SIZE	PART NUMBER	DISPLAY RESOLUTION	EMITTED COLOR YELLOW	EMITTED COLOR WHITE	MODULE SIZE - B × H [mm]	ACTIVE AREA - B × H [mm]	BONDING	FPC	REMARKS
OLED-DISPLAYS 1.01" - 1.8"									
1.01"	P24503	128 x 64	■		27.60 x 18.90	23.02 x 11.50	COG	hot bar	
1.12"	P27902	96 x 96	■		27.00 x 27.00	20.14 x 20.14	COG	hot bar	
1.29"	P36701	128 x 64	■		34.42 x 21.36	29.42 x 14.70	COG	hot bar	
1.32"	P27201	128 x 96	■		32.50 x 29.20	26.86 x 20.14	COG	hot bar	
1.5"	P22101	128 x 128	■		33.80 x 36.5	26.86×26.86	COG	hot bar	
	P22102	128 x 128	■		33.80 x 36.5	26.86×26.86	COG	hot bar	
	P22108	128 x 128	■		33.80 x 36.5	26.86×26.86	COG	ZIF	
1.54"	P30803	128 x 64	■		42.04 x 27.22	35.05 x 17.52	COG	ZIF	
1.6"	P19401	128 x 64	■		41.90 x 28.00	36.45 x 18.21	COG	ZIF	
	P19407	128 x 64	■		41.90 x 28.00	36.45 x 18.21	COG	ZIF	
1.83"	P31601	256 x 32	■		52.00 x 11.50	46.06 x 5.74	COF	ZIF	
2.23"	P25704	128 x 32	■		62.00 x 24.00	55.02 x 13.10	COG	ZIF	Option amber
2.4"	P27705	128 x 64	■		60.50 x 37.00	55.01 x 27.49	COG	ZIF	
	P27706	128 x 64	■		60.50 x 37.00	55.01 x 27.49	COG	ZIF	
2.7"	P35801	128 x 64	■		64.61 x 37.00	61.41 x 30.69	COG	ZIF	22 PIN
3.2"	P21302	256 x 64	■		88.0 x 27.8	76.778 x 19.178	COF	ZIF	
	P21301	256 x 64	■		88.0 x 27.8	76.778 x 19.178	COF	ZIF	
0.96"	P35502	64 x 128	262k Full Colors		14.86 x 28.40	10.86 x 21.74	COG	ZIF	
1.12"	P27801	96 x 96	262k Full Colors		25.80 x 30.10	20.14 x 20.14	COG	ZIF	
1.29"	P22201	128 x 96	262k Full Colors		33.00 x 25.80	26.28 x 19.71	COF	hot bar	
	P22202	128 x 96	262k Full Colors		33.00 x 25.80	26.28 x 19.71	COF	ZIF	
1.31"	P37701	160 x 160	262k Full Colors		28.70 x 30.63	23.50 x 23.50	COG	ZIF	
1.37"	P29701	128 x 128	262k Full Colors		31.20 x 33.80	24.55 x 24.56	COG	hot bar	
1.46"	P23903	128 x 128	262k Full Colors		33.50 x 33.50	26.28 x 26.28	COF	hot bar	
	P23905	128 x 128	262k Full Colors		33.50 x 33.50	26.28 x 26.28	COF	ZIF	
1.8"	P16807	160 x 128	262k Full Colors		42.70 x 33.40	35.02 x 28.01	COF	hot bar	
	P16803	160 x 128	262k Full Colors		42.70 x 33.40	35.02 x 28.01	COF	ZIF	

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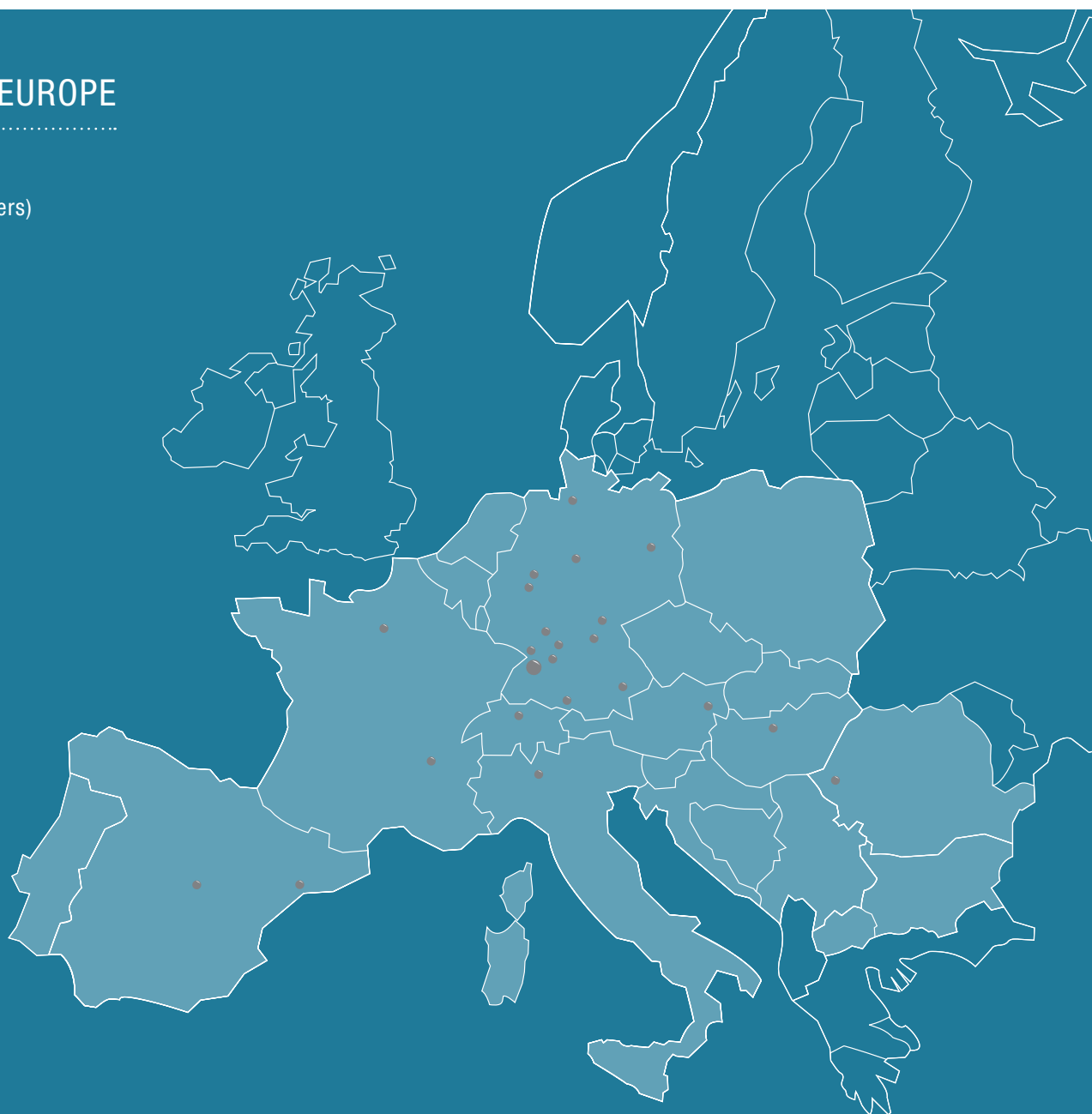
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