

## Large Industrial TFT Displays

- Sizes 21.5 to 24"
- SmartLED Converter
- **VACUBOND**<sup>®</sup> Optical Bonding Service
- Embedded





## 21.5" TFT Displays

Panel	<a href="#">G215HVN01.0</a>	<a href="#">P215HAN02.0</a>	<a href="#">LM215WF3-SLC1</a>	<a href="#">G215HVN01(S03)-V559</a>
<b>Manufacturer</b>	AUO	AUO	LG	DDG
<b>Type</b>	AMVA	AHVA	IPS	AMVA
<b>Viewing angle (v/h)</b>	178°/178°	178°/178°	178°/178°	178°/178°
<b>Resolution</b>	FHD 1920x1080	FHD 1920x1080	FHD 1920x1080	FHD 1920x1080
<b>Input</b>	LVDS	LVDS	LVDS	LVDS
<b>BLU/Converter integrated</b>	LED/YES	LED/NO*	LED/NO*	LED/NO*
<b>Brightness (cd/m<sup>2</sup>)</b>	300	1500	250	850
<b>Temperature operating (°C)</b>	0...+60	0...+50	0...+50	0...+60
		<i>* SmartLED Converter available</i>		
	<b>Touch Screen</b>			
<b>Analog Resistive Touch Sensor</b>	✓	✓	✓	✓
<b>Projected Capacitive Touch Sensor</b>	✓	✓	✓	✓
	<b>Industrial TFT-Controller</b>			
<a href="#">Serial stand alone GUI TFT-Controller</a>				
<a href="#">USB-Client to LVDS TFT-Controller</a>	✓	✓	✓	✓
<a href="#">RGB/DVI to LVDS TFT-Controller</a>	✓	✓	✓	✓
<b>Options: HDMI, DP, Video, Audio</b>	✓	✓	✓	✓

Large Industrial TFTs

your specialist for flat screen solutions



# 23 & 24" TFT Displays

Panel	<a href="#">LM230WF3-SLD1</a>	<a href="#">G240HW01V0 (S03)</a>	<a href="#">G240UAN01.1</a>	<a href="#">AL240FHL01-N</a>
<b>Manufacturer</b>	LG	AUO	AUO	AMOLED
<b>Type / size</b>	IPS / <b>23"</b>	AHVA / <b>24"</b>	AHVA / <b>24"</b>	VA / <b>24"</b>
<b>Viewing angle (v/h)</b>	178°/178°	178°/178°	178°/178°	178°/178°
<b>Resolution</b>	FHD 1920x1080	FHD 1920x1080	WUXGA 1920x1200	FHD 1920x1080
<b>Input</b>	LVDS	LVDS	LVDS	LVDS
<b>BLU/Converter integrated</b>	LED/NO*	LED/NO*	LED/YES	LED/NO*
<b>Brightness (cd/m<sup>2</sup>)</b>	350	300	750	1000
<b>Temperature operating (°C)</b>	0...+50	-20...+70	0...+40	-20...+70
	<i>* SmartLED Converter available</i>			
	<b>Touch Screen</b>			
<b>Analog Resistive Touch Sensor</b>	✓	✓	✓	✓
<b>Projected Capacitive Touch Sensor</b>	✓	✓	✓	✓
	<b>Industrial TFT-Controller</b>			
<a href="#">Serial stand alone GUI TFT-Controller</a>				
<a href="#">USB-Client to LVDS TFT-Controller</a>	✓	✓	✓	✓
<a href="#">RGB/DVI to LVDS TFT-Controller</a>	✓	✓	✓	✓
<b>Options: HDMI, DP, Video, Audio</b>	✓	✓	✓	✓

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# SmartLED Converters

Our R&D department has developed the SmartLED converter series for an optimized control of modern LED backlights. Of course we can also customize the SmartLED converters to fit your project requirements concerning mechanics, additional features, cost-efficient hardware etc

## General Features

- Control via analog voltage (0..3.3V or 0..5V) or PWM (100 .. 1000Hz)
- Output PWM synchronized to input, sync signal or free-running with programmable frequency
- I<sup>2</sup>C for ambient light sensor and temperature sensor(s)
- Additional GPIOs for local control (pushbuttons, sensor pads or potentiometer) of brightness
- Capability to connect multiple boards in a master-slave setup for high-power applications
- Control input for NVIS mode
- Error flag to detect failure of power stage or LED rail
- Flexible Microcontroller Control
  - On-Board microcontroller handles all input and control signal
  - Features are defined by firmware
- LED brightness control by PWM dimming for stable color temperature;
- optionally, use current control or combined dimming for brightness control
- Control characteristic curve can be adapted upon customer request

Some features require specific firmware support or are mutually exclusive to other features.

Please contact your sales partner to discuss possible options or combinations.

## Special Features

### SmartLED-II

- 11 - 16V input range
- Output: 7 – 10V, 200mA – 2A per channel (rail)
- Max. 2.3A output current (depending on actual rail configuration due to total power limit)
- Efficiency  $\geq$  92%



### SmartLED-III

- 10 - 14.5V input range
- Output: 9 – 40V, 30mA – 260mA per channel (rail), total power limited to approx. 17W+
- Wide dimming range up to 1:15000 (depends on PWM frequency)
- Efficiency  $\geq$  ca. 90%



### SmartLED-IV

- 8 - 28V input range
- Output: 30 – 60V, 30mA – 500mA per channel (rail), total power limited to approx. 45W
- Efficiency  $\geq$  ca. 92%





# Optical Bonding Service

## Cover Glass

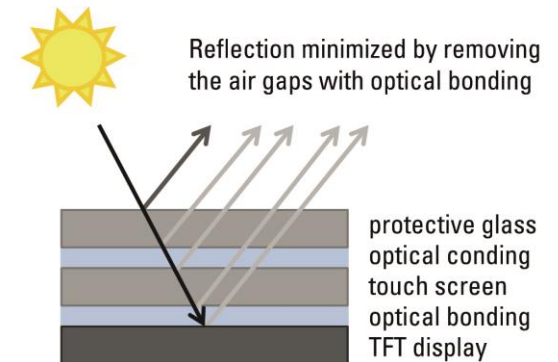
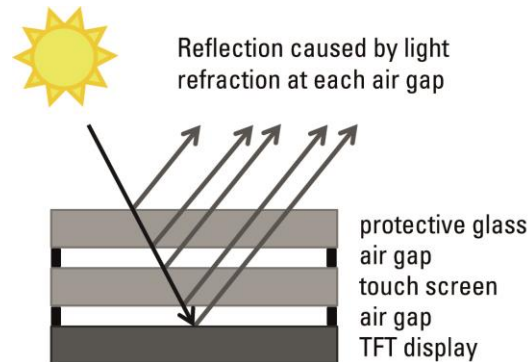
- Schott Xensation (thin & high hardness)
- Toughened Safety Glass  
Ceramic or Organic Silkscreen

## Touch Screen

- Projected Capacitive Touch
- Resistive Touch Glass/Glass
- Resistive Touch Film/Glass
- Analog Matrix Resistive MultiTouch

Professional Bonding  
**VACUBOND**<sup>®</sup>

Economy Bonding  
**VACUBOND**<sup>®</sup>





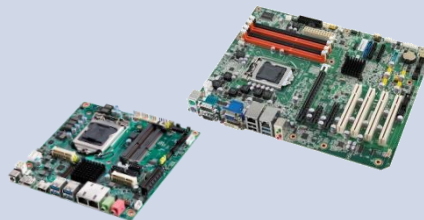
# Embedded

## Embedded Boards



2,5" Pico-ITX™  
3,5" Single Board Computer  
PC/104  
Slot SBC

## Industrial Mainboards



Mini-ITX™  
Micro-ATX  
Flex-ATX  
ATX

## Embedded Systems



Embedded Box PCs  
Embedded Panel PCs  
Embedded Server  
Embedded Desktop PCs  
Digital Signage Player  
Industrial Monitors

## Accessories & IoT



Gateways  
Switches  
Router  
Memory, CPUs  
Cables  
Power Supplies

### Available Features & Options:

Designed for Industrial Applications  
Extended Temperature -40°C...+85°C  
Design-in Support  
Kits (Board with OS, Display & Cables)

Long-term Availability  
Custom Design  
Fixed Bill of Material  
EOL / PCN Handling



For more information please contact:

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