



Outdoor Semi-outdoor Rugged AIO Touch Panel PCs introduction

2024

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We Commit We Deliver

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- ◆ Product Portfolio and Strategy
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Target applications



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- ◆ The operation stations which need a panel PC working under Outdoor / Semi-outdoor environment, such as KIOSK/ way finder / signage / HMI ...



Issues if outdoor PC is no well designed



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- ◆ The operation stations which need a touch panel PC working under Outdoor or Semi-outdoor environment and system owner may face some pain points such as :
 - ❑ UV light within sunlight damages touch screen
 - ❑ System shut down due to high temperature from sunlight
 - ❑ System cannot be turned on due to cold temperature
 - ❑ Strong sunlight makes LCD screen hard to read
 - ❑ LCD is too bright in the night
 - ❑ High humidity, dust around leads to chassis erosion
 - ❑ Ambient temp. change causes water condensing to damage
 - ❑ System cannot run 24/7/365



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Solutions for outdoor HMI panel PC



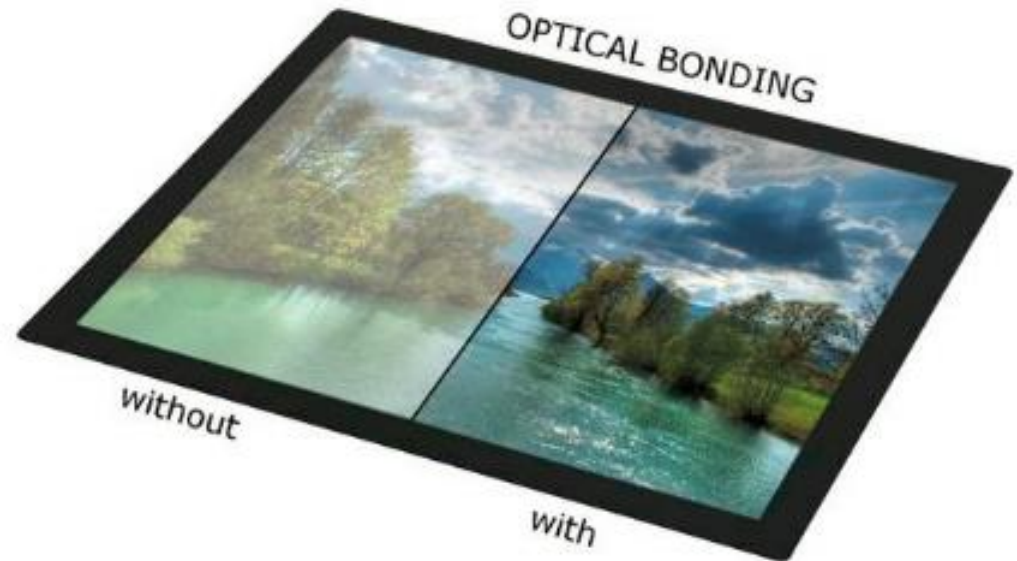
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1. **Sunlight readable** design to make LCD picture clear under sunlight
2. **Anti UV** design to keep touch screen & LCD from sunlight damage
3. **Smart heating** wakes up PC under low temp.
4. **Robust enclosure meets full IP proof**
5. **Smart ventilation** avoids water condensation
6. Options for information exchange
7. **External I/O by cable gland for easy installation**
8. **Vandal proof touch screen available**
9. Warranty and longevity supporting



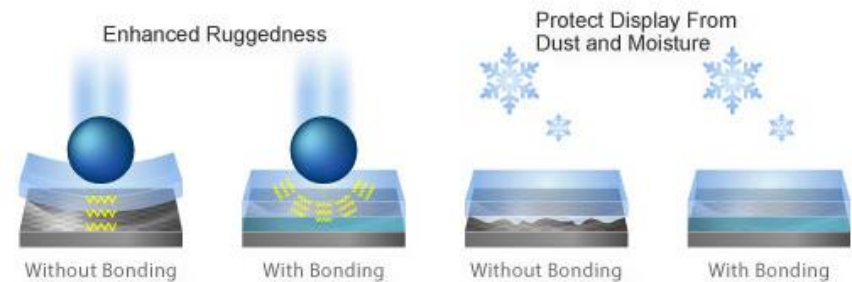
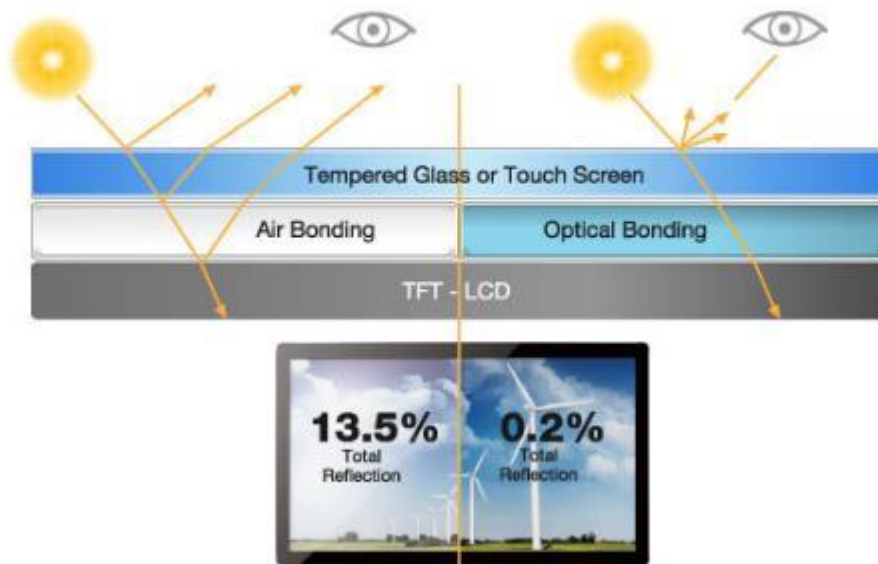
1. Sunlight readable design to make LCD picture clear under sunlight

With 1000 nits high brightness LCD and optical bonding solution, our WLP wide temp series are defaulted with High Brightness display, sunlight readable under direct sunlight. The WTP wide series are ready for you to optional choose to this high brightness versus optical bonding solution.



By optical bonding, the sunlight reflection rate can be reduced from 13.5% to 0.2% which makes the display clear.

Optical bonding also benefits to enhance ruggedness and eliminate water condensation/dust in front of LCD display .



3. Anti UV design to keep touch screen & LCD from sunlight damage



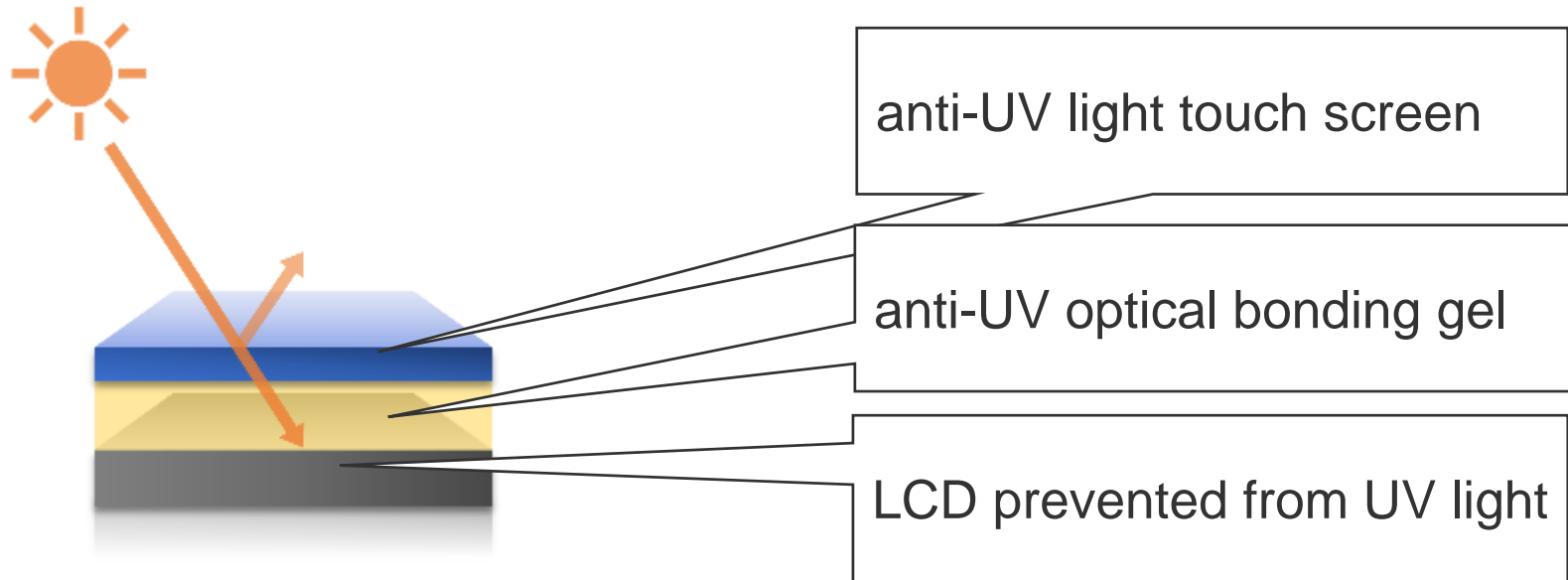
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The UV light within sunlight damages touch screen and LCD easily, touch screen becomes white and PET layer is peeled off.

An example is as below



With selected anti-UV touch screen & optical bonding gel, the LCD picture is always clear because no touch screen and LCD deterioration after long time exposed to sunlight.



Application	On LCD with bezel	Between cell, glass, touch
Environment	Outdoor, semi-outdoor, indoor	
Cover Lens	Glass, touch	Glass, touch
LCD Type	LCD with front bezel	Cell
Size	Up to 75"	Up to 75"
Extended Temp*	-50 ~ 105°C	-50 ~ 105°C
UV Resistance	3,000+ hours (or 10 years of outdoor usage under direct sun)	
UV Protection (UV cut)	YES	YES

DMC DMC Co., Ltd. Innovative Touch Screens

PRODUCTS SUPPORT COMPANY LANGUAGE CONTACT

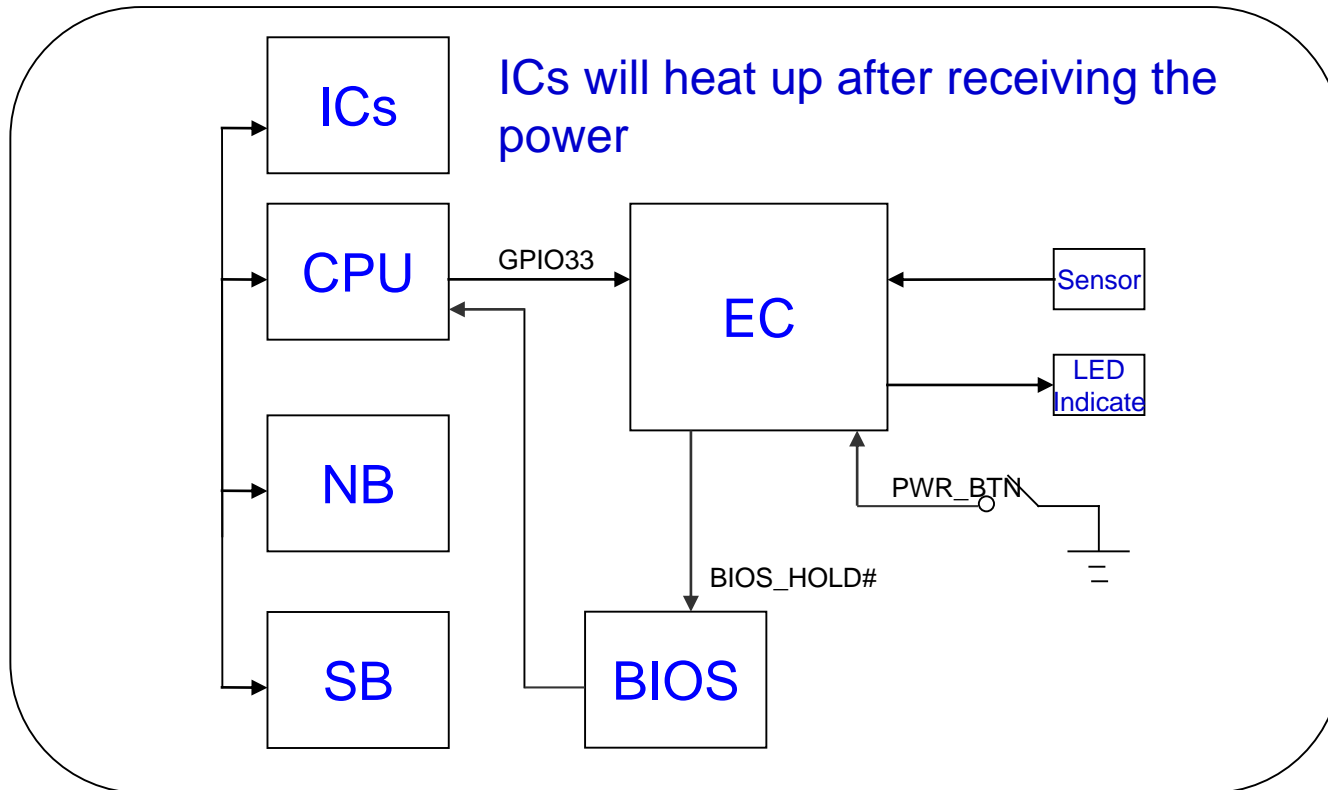
provide highly transmittant and clear images. In the case of installing the signage in the location exposed to afternoon sunlight, DUS touch screens with glass structure is highly recommended because of the strength against ultra violet rays. In the event of placing a digital signage at a public space to be used by many people, the screen may be roughly used. We can offer a thick cover glass to be attached to a projected capacitive touch screen to prevent damages on the screen.



3. Smart heating wakes up PC under -20°C

System becomes no function or unstable under low temperature.

With “pre-heating control system”, MB can be 100% guaranteed to turn on under -20°C within 3 minutes, not by power on/off sorting method.

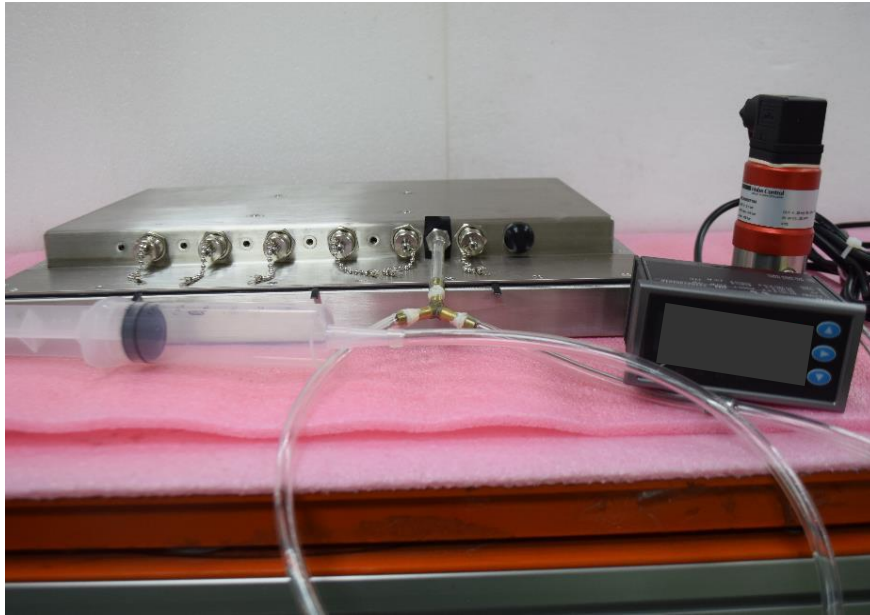


4. Robust enclosure meets full IP proof

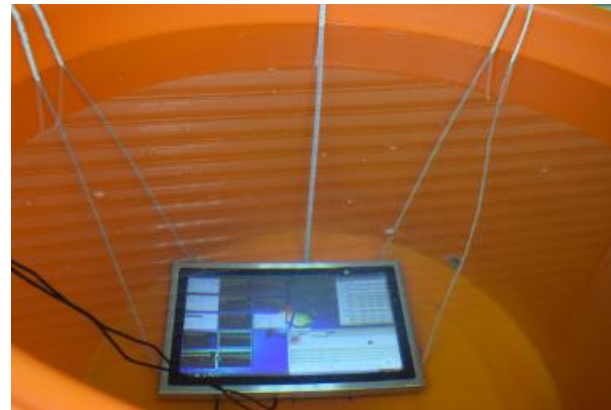


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All products are 100% vacuum pressure verified before delivery, which simulates the same IP grade scenario at end user sides, 100% guarantee no leakage.



IP69K



IP67

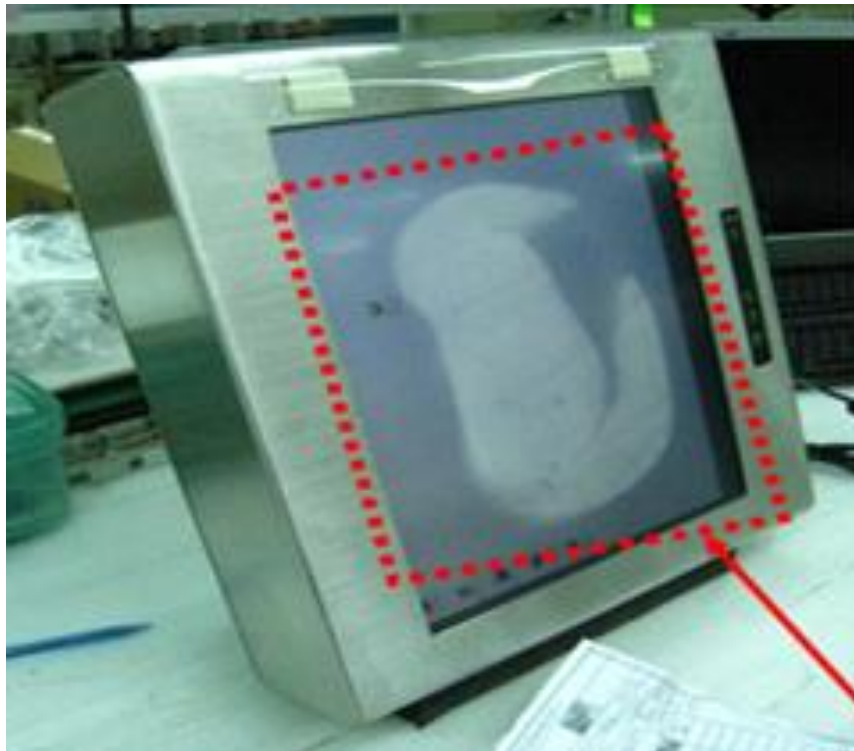
5. Smart ventilation avoids water condensation



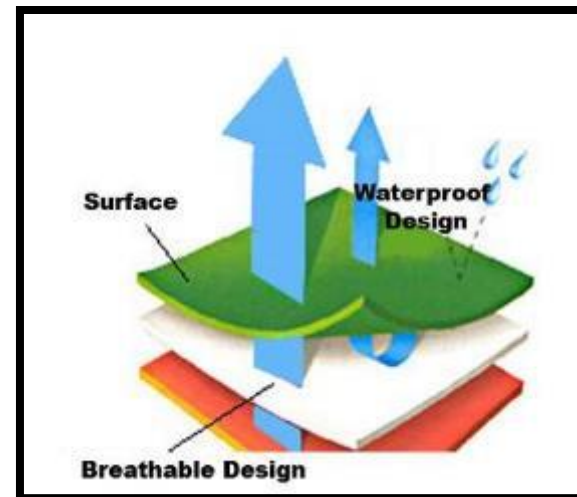
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Under some conditions, if the internal air reached the dew point, there will be water condensation which damages the electronic components and circuits.

An example is as below



Within Our Product series, there is PTFE ventilation film to exhaust humidity to eliminate water condensation.



6. Options for information exchange



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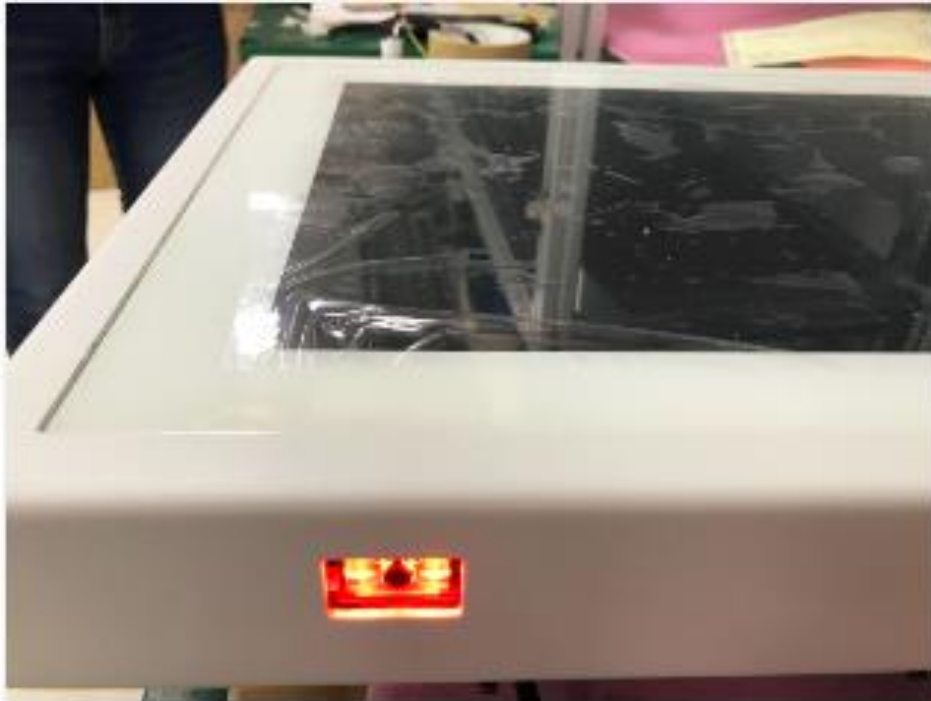
- ◆ In some applications, data are transferred via WiFi or bluetooth.
- ◆ With traditional dipole antenna, end user may damage antenna easily.
- ◆ Wincomm WTP products support wireless solution with PCB type antenna and robust cover which is stronger than dipole type.



- ◆ In some applications, end user may need message in vocal form.
- ◆ Wincomm can integrate 5W speakers and still keep system dust/water proof.



- ◆ In some applications, end user may need input data via barcode.
- ◆ Wincomm can integrate barcode reader and still keep system dust/water proof.



How to prevent “Stainless Steel” product away from corrosion under Sodium Hypochlorite condition?




◆ Analysis from Touch Panel. Silicon Rubber and Stainless Steel Chassis

Avoid Chemicals or Ingredients	Affected Component Parts		
	RES. Touch-PET	Silicone Rubber	Stainless Chassis
Benzoic acid (苯甲酸) Alkyl Benzene Sulfonic Acid (苯磺酸)			X
Hydrogen peroxide (過氧化氫) >10%	X		X
Peroxyacetic acid 過氧乙酸 >10% acetic acid 乙酸>10%	X		X
Sodium hypochlorite (次氯酸 鈉)>5%	X		X
Petroleum (原油)	X	X	
Acetone(丙酮)		X	
Suggested Actions	Change to Pcap Touch	Avoid Petroleum & Acetone	Passivation Method



7. External I/O by cable gland for easy installation

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- ◆ For ensuring data transmission quality of high speed ports, such as USB3.0 and HDMI or DP video interfaces which metal external IO connectors cannot fulfill function requirement, metal external IO connectors can be changed to waterproof cable glands sets. 
- ◆ Except 10" size, the 15", 19", 22", and 24" stainless steel panel PC WTP wide temp series support this optional cable gland.

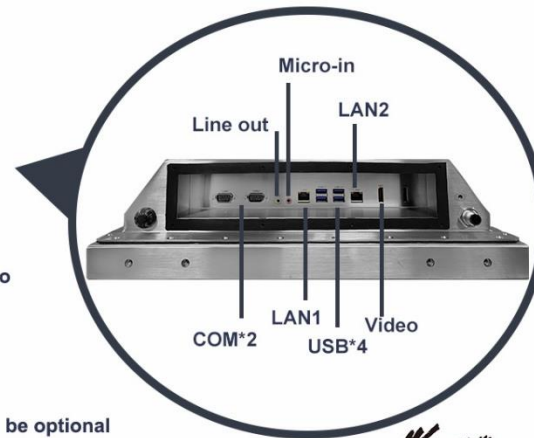
WTP All Series with Optional Cable Gland



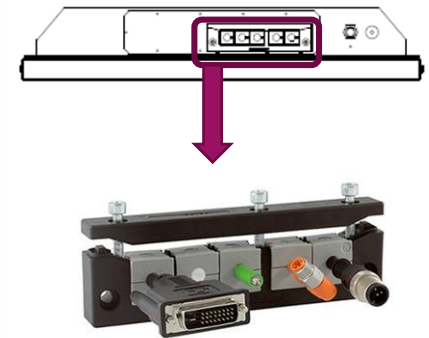
- **Cable Gland**
IP69K Water Proof
USB*4 / LAN*2 / COM*2 /
Line out / Micro-in / Video



- **M12 Connector**
Full IP Water Proof
USB*4 / LAN*1 / COM*2
Other external I.O. could be optional




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8. Vandal proof touch screen available



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- ◆ In some applications (ex. KIOSK or ticket machines), system owner may need system to be vandal proof for minimizing loss of internal high value component damaged after system is rudely treated.
- ◆ Wincomm can customize touch screen with thicker tempered glass and enhance strength by optical bonding between touch screen & LCD module to meet vandal proof (IK08) requirement.



Module	Resistive touch screen	PCT
WLP-10 WTP-10	05	05
WLP-12	05	05
WLP-15 WTP-15	05	05
WLP-16	05	05
WLP-17	05	05
WLP-19 WTP-19	05	05
WLP-22 WTP-22	05	05
WTP-24		05

9. Warranty and longevity supporting



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Only good components could be accepted for Wincomm products

(1) Long Life Cycle Supply Guarantee.

(2) From Crystals, Capacitors to small BIOS Battery are industrial grade.

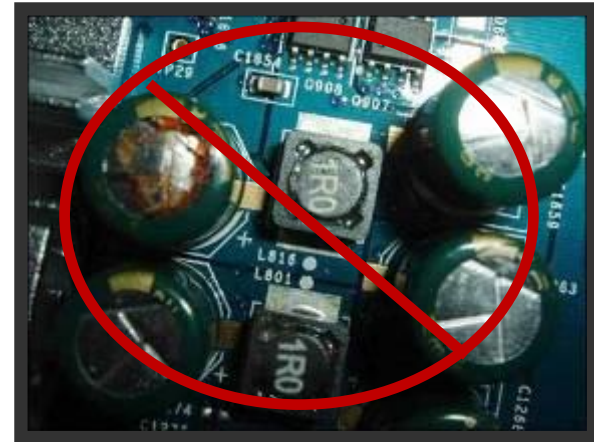


Japanese Os-Con Capacitor



Japanese SP Capacitor

Other main boards: 1~2 Years After



This kind of liquid type capacitor is widely adopted by many main board manufactures. But it is not acceptable for Wincomm products.

1. Embedded line LCD is min. 2 years supporting (by LCD vendor policy).
2. Intel embedded line CPU/PCH is min. 15 years supporting (by Intel policy).
3. No EOL issue is by Wincomm design parts.
4. Product sales period is typically 5~7 years, and Wincomm issues EOL notice 6 months before product stop delivery.
5. Prior to EOL, Wincomm provides solution to keep 5~7 years life time.



Product Portfolio and Strategy











Semi-outdoor and Outdoor Product Selection



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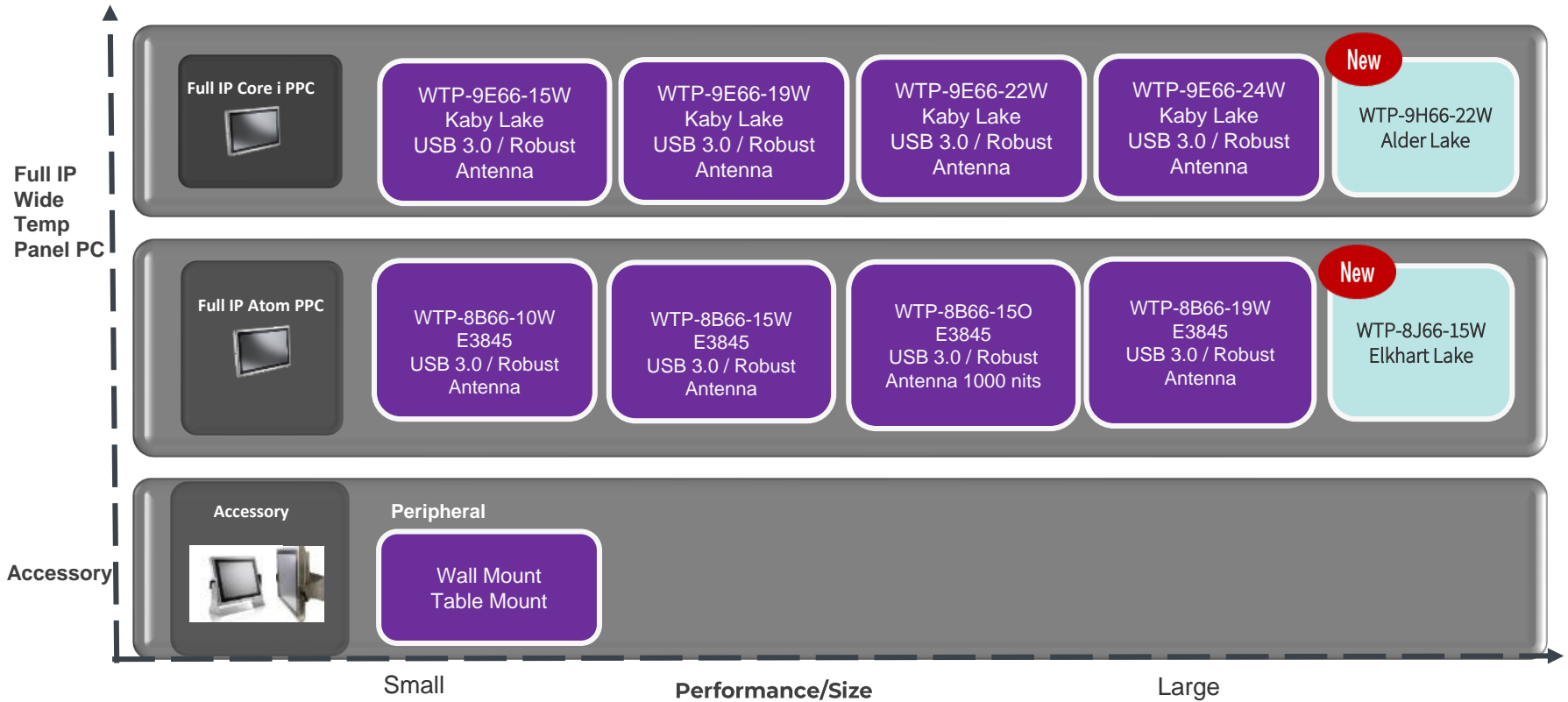
◆ Product Series and Selection Guide

Installation Type	Housing Design	IP Rating	Operation Temp	Sunlight Readable	CPU	Model NO
  Embedded Inside	 Panel Mount	Front IP66	-20~60°C	1. 1000 nits Panel 2. Optional Optical Bonding	Intel® 12 th Core i	WLP-7H20-22H
	 Optional: Open Frame				Intel® 7 th Core i	WLP-7F20-15H /19H /22H
  Stand Alone	 Chassis Type Stainless Steel 6-Sides	Six Sides IP66 to IP69K	-20~60°C	1. Optional 1000 nits Panel 2. Optional Optical Bonding	Intel® 12 th Core i	WTP-9H66-22W
	 Customization: Chassis Type SECC				Intel® 7 th Core i	WTP-9E66-15W/19W/22W
					Intel® x6413E	WTP-8J66-15W
					Intel® E3845	WTP-8B66-10W/15W/19W /22W

Wide Temp Full IP Stainless Steel Panel PC Series Portfolio



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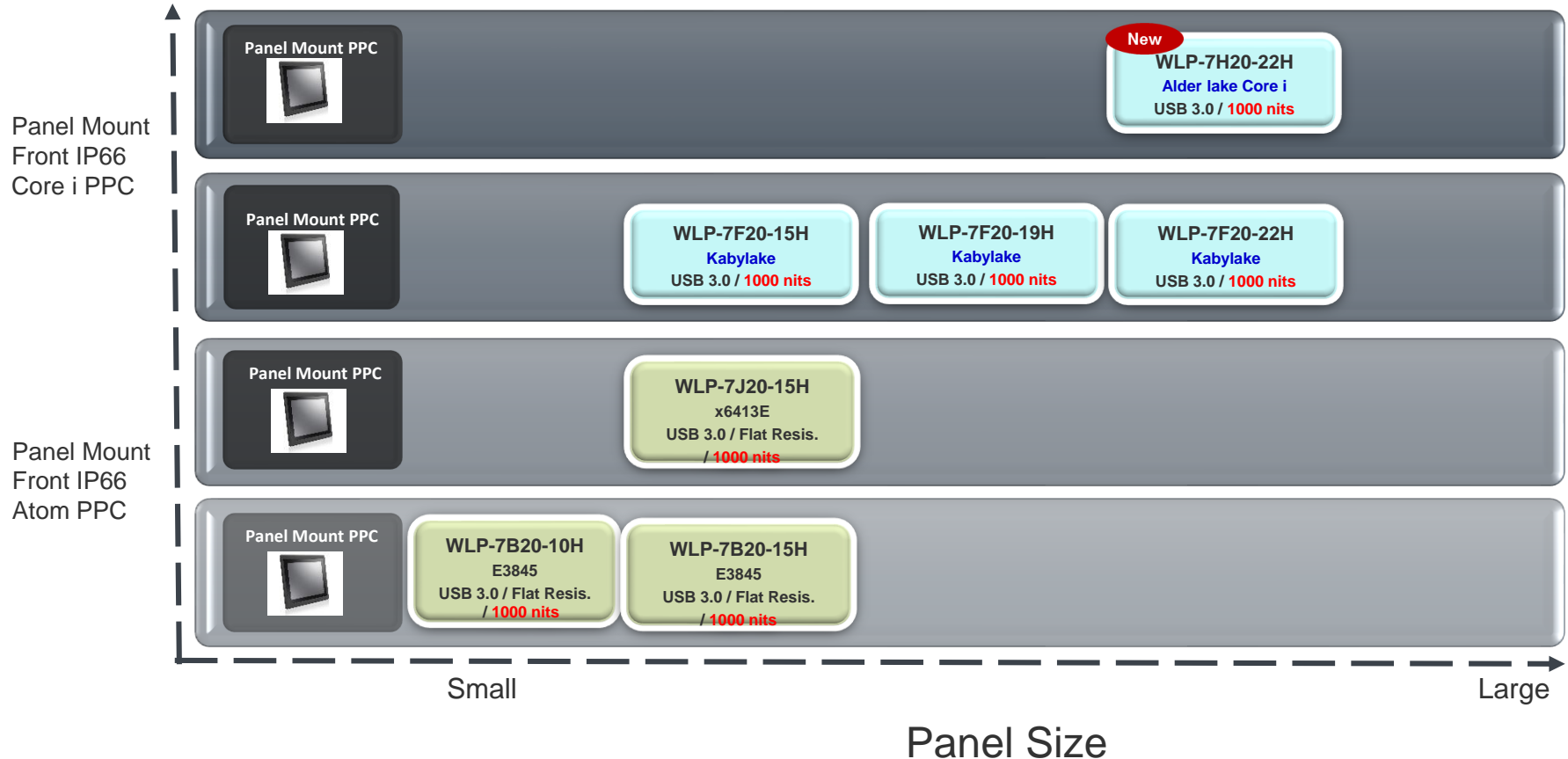


Panel Mount Wide Temp Industrial Panel PC Series Portfolio



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Product Type



Alder Lake Core i Platform



**Wide Temp High Brightness Front IP66
Panel Mount WLP-7H20-22H Series**
Optional: Open Frame



**Suit for Embedded Kiosk
for Outdoor/Semi-outdoor
Solutions**

**Wide Temp Full IP (Six Sides Stand Along)
WTP-9H66-22W Series**
Alder Lake Core i



**Suit for Stand Alone
Outdoor/Semi-outdoor
Solutions**

CORE series : New generation vs old generation comparison



- 1 DC-in x 1
- 2 RS-232/422/485 x 2
- 3 RS-232 x 1
- 4 USB Type-C x 2
- 5 HDMI x 2
- 6 USB 3.2 Gen2 x 2
- 7 LAN x 2
- 8 USB 2.0 x 2
- 9 Line-out
- 10 Microphone-in
- 11 Power on/off

	WLP-7H20-XXH	WLP-7G20
Panel Size	15"/21.5"	15"/21.5"
CPU	Intel® 12th Gen (Alder Lake-P) Core™,15W	Intel® 8th Gen Whiskey Lake-U,15W
Storage	Optional M.2 (KEY M, 2242/2260/2280) with PCIe Gen4 x4 for SSD	Optional M.2 (KEY M, 2242/2260) SSD
Expansion slot	M.2 (Key E, 2230) for Wireless x 1 M.2 (Key B, 3042/3052) with PCIe x1/USB 3.2/USB2.0 and SIMo rf 4G/5G X 1 M.2 (Key M, 2242/2260/2280) with PCIE X4	M.2 (Key E, 2230) for Wireless x 1 M.2 (Key B, 3042) with USB2.0 and SIM for 4G x 1
USB	2 x USB 2.0 2 x USB 3.2 Gen2 2 x USB 3.2 Gen2 (Type-C, Support DP1.4a display output, Power output 5V/3A)	USB 3.1 x4
COM	RS232 x 1, RS232/RS422/RS485 x 2	RS232 x 1, RS232/RS422/RS485 x 2
LAN	2 x 2.5 Gigabit LAN	2 X Gigabit LAN
Video Port	HDMI2.0b x2 , DisplayPort 1.4a x 2	HDMI 2.0a (output) x 1, DP x 1
OS	Windows11	Windows 11
Opating Temp.	0~50°C ; -20C~60°C (for 21.5" model)	0~50°C

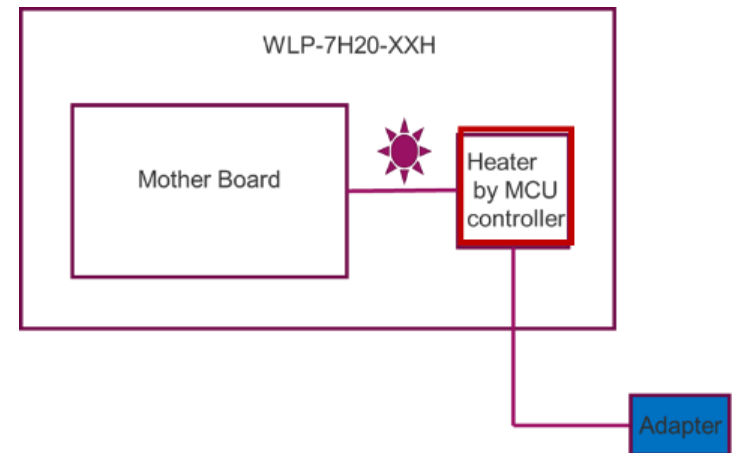


	WTP-9H66-22W
Panel Size	21.5" (1920 x 1080)
CPU	Intel® 12th Gen (Alder Lake-P) Core™ Processors, 15W
LAN	2 x Gigabit LAN
2nd Storage	Option
Operation Temp	-20C~60°C(SSD)
OS	Windows 11
PCAP touch mode	Glove mode Water mode
Floor Stand Kits	Option
RFID	Option
Barcode Reader	
3W Speaker	
Brightness button	Default
USB Type C	Default

◆ Smart Heating Wakes Up PC under **-20°C**

With “**pre-heating control system**”, MB can be **100% guaranteed** to turn on under **-20°C** within 3 minutes, not by power on/off sorting as competitors’ method.

◆ Smart cooling keeps PC from burned down under direct sunlight.



Atom x6413E Platform

**Wide Temp High
Brightness Front IP66
Panel Mount WLP-7J20-15H
Series**
Optional: Open Frame



**Suit for Embedded Kiosk
for Outdoor/Semi-
outdoor Solutions**

**Wide Temp Full IP
Stainless Steel
WTP-8J66-15W**



**Suit for Stand Alone
Outdoor/Semi-outdoor Solutions**

ATOM Series : High Brightness + Wide Temperature

WLP-7J20-xxH vs WLP-7B20-xxH

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WLP-7J20-XXH series		WLP-7B20-XXH series
Panel Size	15" (1024 x 768)	10.4"/15"
CPU	Intel® Elkhart Lake SoC Processors x6413E	Intel® Atom™ Processor E3845
Storage	1X M.2 (KEY M, 2242/2280)	SATA SSD
Expansion slot	1 X M.2 (KEY B,3042/3052) with PCIe x1/USB 3.2/USB2.0 and SIMo rf 4G/5G 1 X SIM socket SIM socket connected to M.2 key B X 1 M.2 (KEY E, 2230)	Mini PCIe x 2
USB	3 x USB 3.2 (Gen2), 1 x USB2.0	1X USB 3.0 , 3 X USB2.0
COM	RS232 x 1, RS232/RS422/RS485 x 2	RS232 x 2, RS232/RS422/RS485 x 1
LAN	2 x 1 Gigabit LAN	2 X Gigabit LAN
Video Port	HDMI x 1, DP x 1	DVI-Ix 1
OS	Windows 11	Windows 10
Operating Temp.	-20C~60C	-20C~60C

WTP-8B66-XXW VS WTP-8J66-XXW Wide Temp Series



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	WTP-8J66-XXW series	WTP-8B66-XXW series
Panel Size	15" (1024 x 768)	10"/15"/19"
CPU	Intel® Elkhart Lake SoC Processors x6413E	Intel® Atom™ Processor E3845
Storage	1X M.2 (KEY M, 2242/2280)	SATA SSD
Expansion slot	1 X M.2 (KEY B,3042/3052) with PCIe x1/USB 3.2/USB2.0 and SIMo rf 4G/5G 1 X SIM socket SIM socket connected to M.2 key B X 1 M.2 (KEY E, 2230)	Mini PCIe x 2
USB	3 x USB 3.2 (Gen2), 1 x USB2.0	1X USB 3.0 , 3 X USB2.0
COM	RS232 x 1, RS232/RS422/RS485 x 2	RS232 x 2, RS232/RS422/RS485 x 1
LAN	2 x LAN 1 Gigabit	2 X Gigabit LAN
Video Port	HDMI x 1, DP x 1	DVI-Ix 1
OS	Windows11	Windows 10
Operating Temp.	-20C~60C	-20C~60C

Successful story - 1



We Commit We Deliver

- ◆ Application: Bus stop signage
- ◆ Field Site: Japan

Selling Points

- ✓ Anti UV design to keep touch screen & LCD from sunlight damage
- ✓ Workable under direct sunlight
- ✓ Sunlight readable
- ✓ Auto-dimming
- ✓ Workable under -20°C



Successful story - 2



We Commit We Deliver

- ◆ Application: Parking access
- ◆ Field Site: USA

Selling Points

- ✓ Anti UV design to keep touch screen & LCD from sunlight damage
- ✓ Workable under direct sunlight
- ✓ Sunlight readable
- ✓ Auto-dimming
- ✓ Workable under -20°C



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Successful story - 3



We Commit We Deliver

- ◆ Application: Parking access
- ◆ Field Site: EU

Selling Points

- ✓ Anti UV design to keep touch screen & LCD from sunlight damage
- ✓ Workable under direct sunlight
- ✓ Sunlight readable
- ✓ Auto-dimming
- ✓ Workable under -20°C



Successful story - 4



We Commit We Deliver

- ◆ Application: Bike-share stations
- ◆ Field Site: USA

Selling Points

- ✓ Anti UV design to keep touch screen & LCD from sunlight damage
- ✓ Workable under direct sunlight
- ✓ Sunlight readable
- ✓ Auto-dimming
- ✓ Workable under -20°C





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Thank You!