



Outdoor Semi-outdoor Rugged AIO Touch Panel PCs introduction

2024

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We Commit We Deliver

- ◆ Target applications
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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 not 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



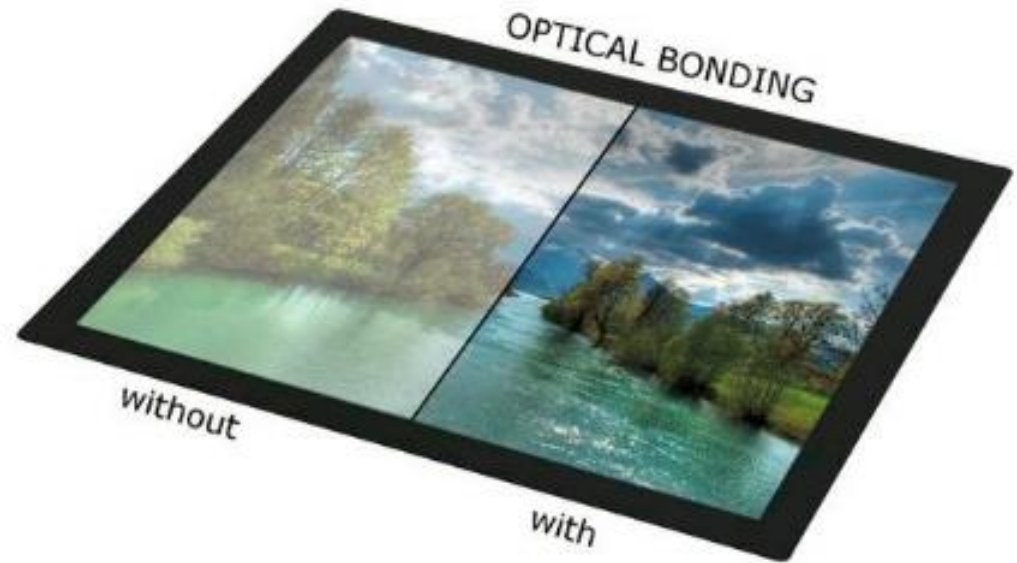
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1. Sunlight readable design to make LCD picture clear under sunlight



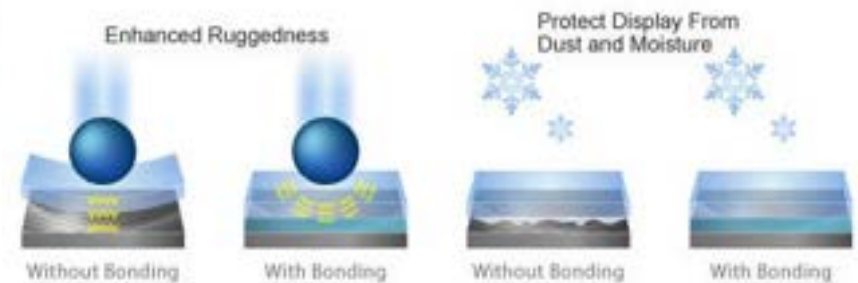
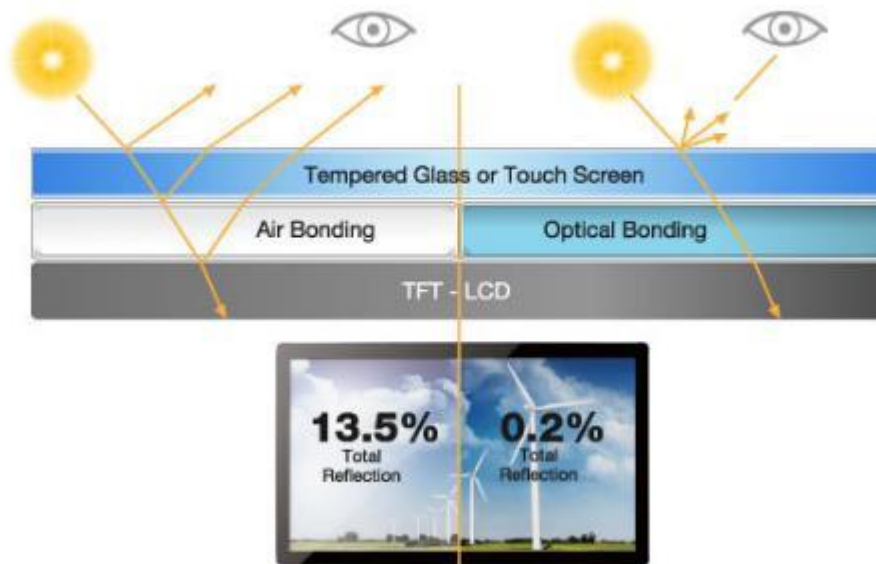
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With 1000 nits high brightness LCD and optical bonding solution, our WLP wide temp series are defaulted with High Brightness display, sunlight readable under direct sunlight. The WTP wide series are ready for you to optional choose to this high brightness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



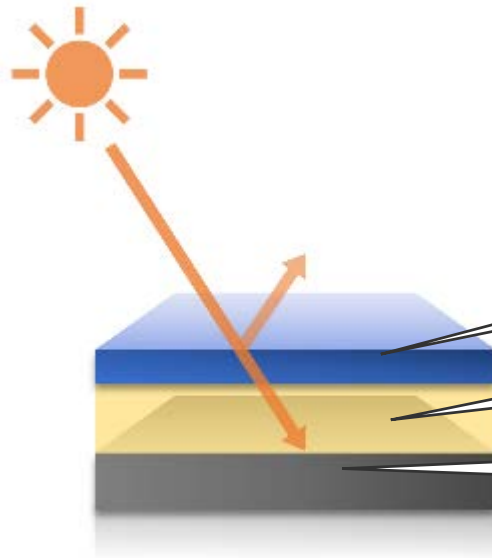
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The UV light within sunlight damages touch screen and LCD easily, touch screen becomes white and PET layer is peeled off.

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.



anti-UV light touch screen

anti-UV optical bonding gel

LCD prevented from UV light

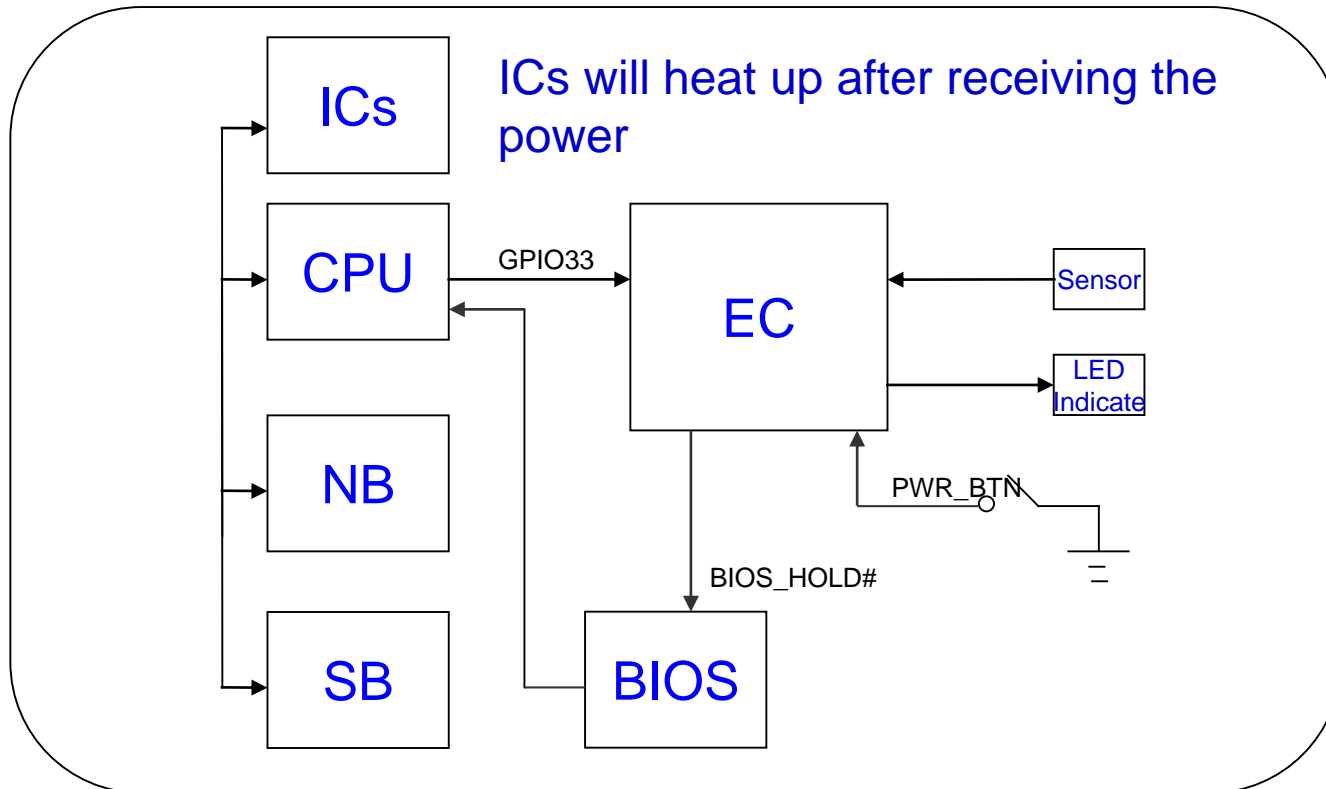
| Application | On LCD with bezel | Between cell, glass, touch |
|------------------------|--|----------------------------|
| Environment | Outdoor, semi-outdoor, indoor | |
| Cover Lens | Glass, touch | Glass, touch |
| LCD Type | LCD with front bezel | Cell |
| Size | Up to 75" | Up to 75" |
| Extended 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 |



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

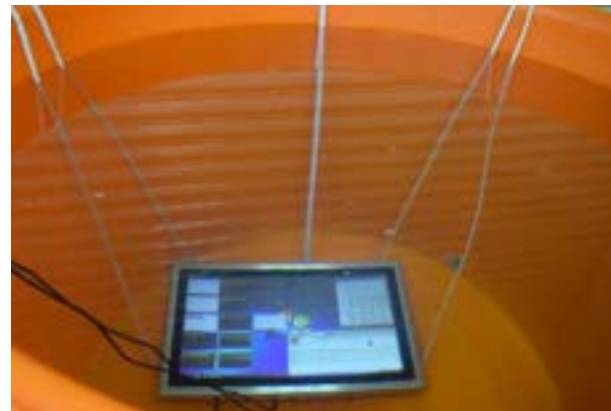


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All products are 100% vacuum pressure verified before delivery, which simulates the same IP grade scenario at end user sides, 100% guarantee no leakage.



IP69K



IP67

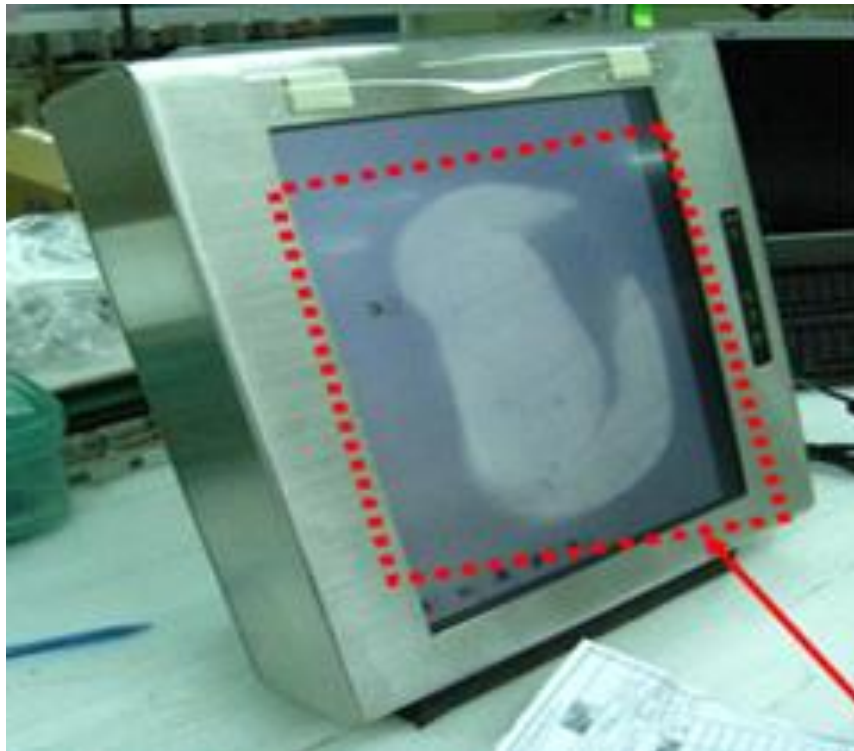
5. Smart ventilation avoids water condensation



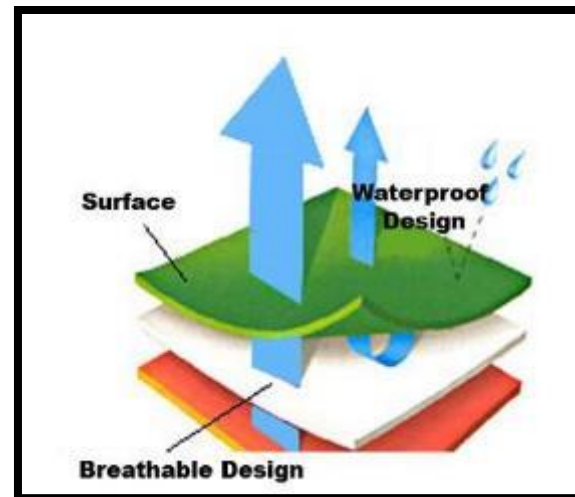
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Under some conditions, if the internal air reached the dew point, there will be water condensation which damages the electronic components and circuits.

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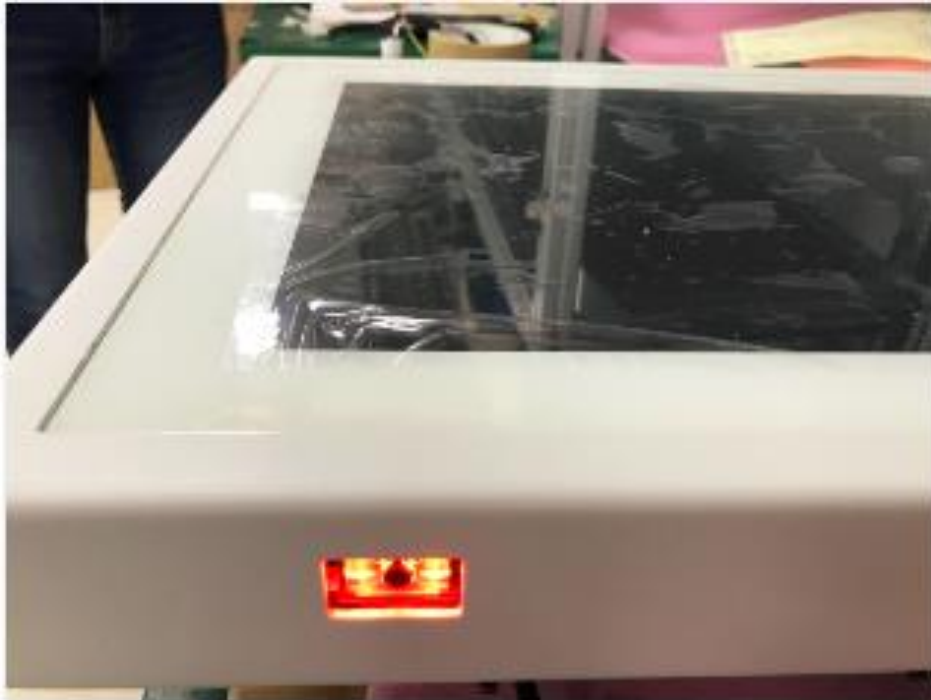
- ◆ In some applications, data are transferred via WiFi or bluetooth.
- ◆ With traditional dipole antenna, end user may damage antenna easily.
- ◆ Wincomm WTP products support wireless solution with PCB type antenna and robust cover which is stronger than dipole type.



- ◆ 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

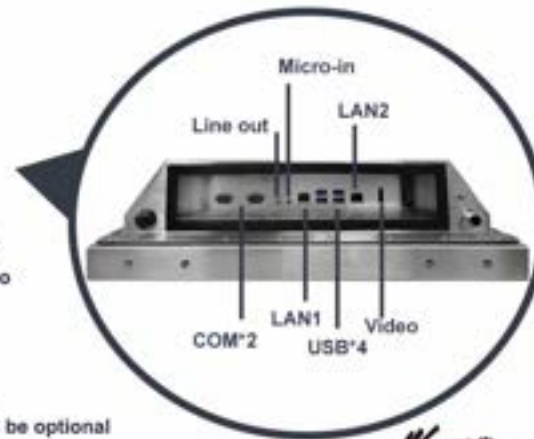
with Optional Cable Gland



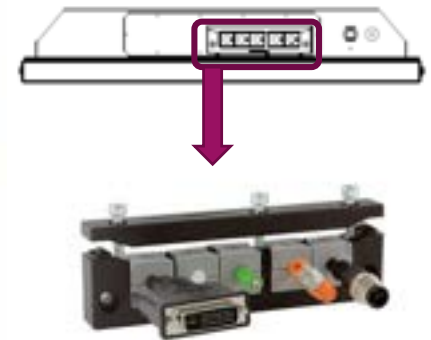
- Cable Gland
IP69K Water Proof
USB*4 / LAN*2 / COM*2 /
Line out / Micro-in / Video



- 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.

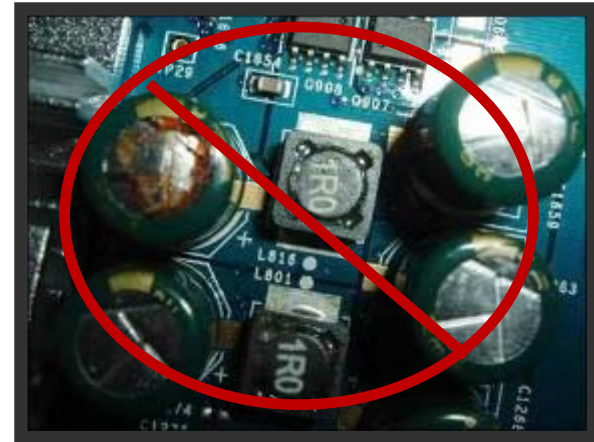


Japanese Os-Con Capacitor



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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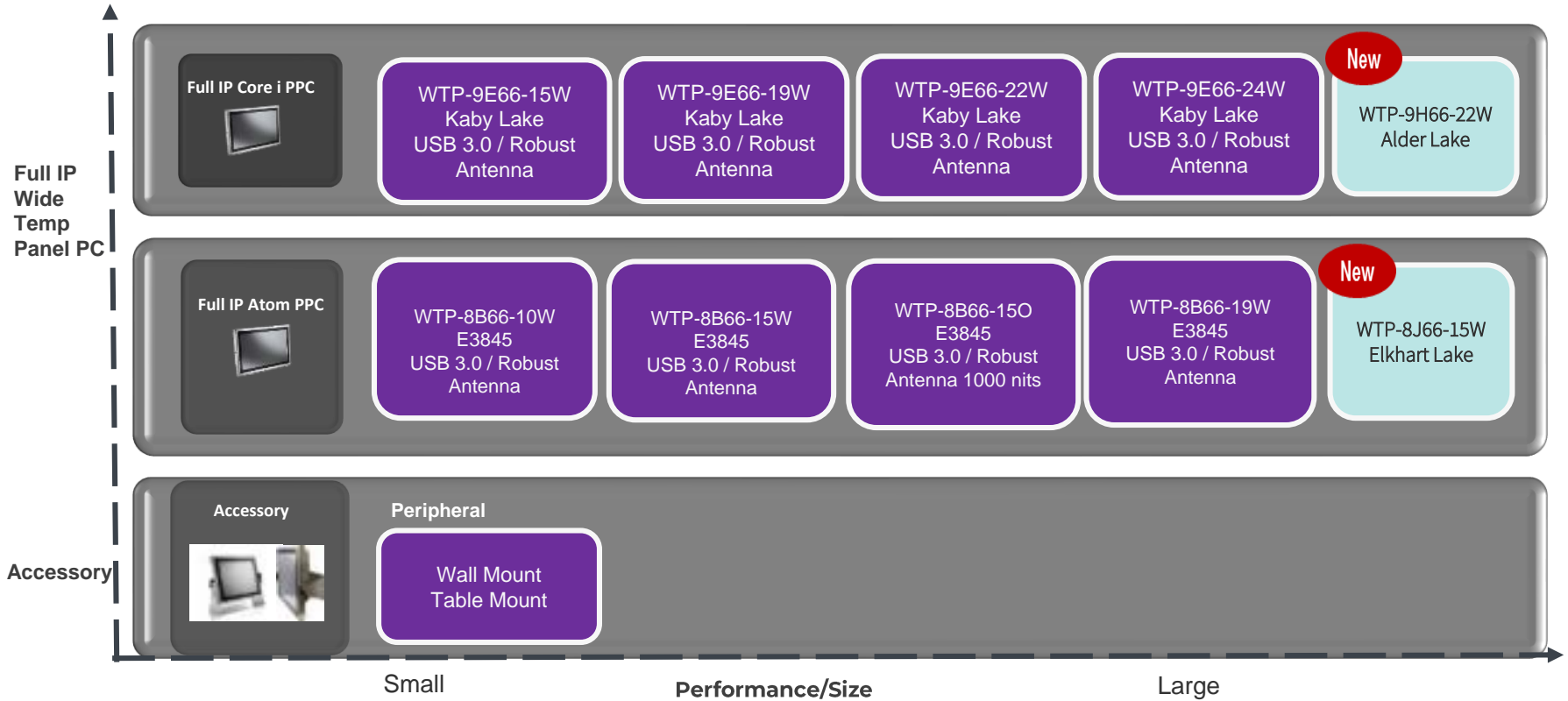
◆ Product Series and Selection Guide

| 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® x6413E | WLP-7J20-15H |
| |  Customization: Chassis Type SECC | | | | Intel® E3845 | WLP-7B20-10H /15H |
| | | | | | Intel® 12 th Core i | WTP-9H66-22W |
| | | | | | 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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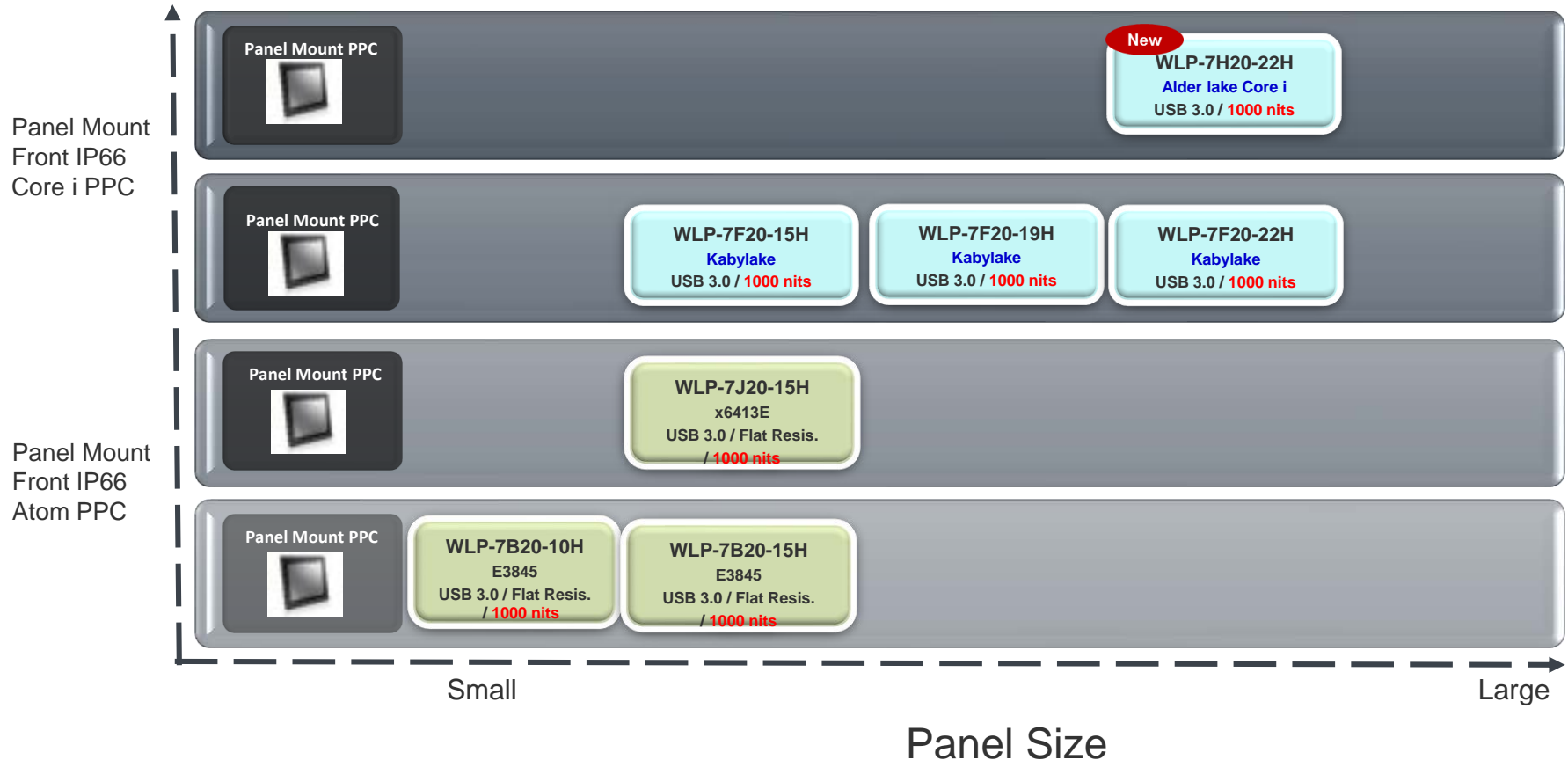


Panel Mount Wide Temp Industrial Panel PC Series Portfolio



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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 Alone)
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 x1
- 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 |

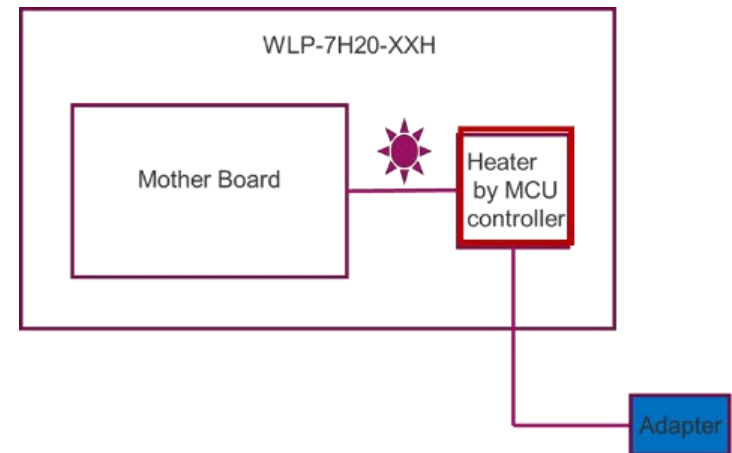


| | WTP-9H66-22W |
|-------------------|--|
| Panel Size | 21.5" (1920 x 1080) |
| CPU | Intel® 12th Gen (Alder Lake-P) Core™ Processors, 15W |
| LAN | 2 x Gigabit LAN |
| 2nd Storage | Option |
| Operation Temp | -20C~60°C(SSD) |
| OS | Windows 11 |
| PCAP touch mode | Glove mode Water mode |
| Floor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



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- ◆ 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!