PWS-872
10" Industrial-Grade Tablet with
7th Generation Intel® Core™ i3/i5/i7/
Celeron® Processor

Features
- 7th generation Intel® Core™ i3/i5/i7/Celeron® processor with integrated Intel® Turbo Boost technology
- 10.1" high-brightness WUXGA LED display with scratch-resistant Corning® Gorilla® Glass 3 panel
- Multi-touch PCAP touchscreen with support for gloved operation
- Rugged design with MIL-STD-810G certification, IP65 rating, and 4-ft. drop tolerance
- 4G LTE, WLAN (802.11 a/b/g/n/ac), Bluetooth 4.1, and GPS modules with BeiDou/GLONASS support
- Built-in front and rear cameras, 1D/2D barcode scanner, and NFC RFID reader
- Hot-swappable battery supports up to 11 hours operation*
- Microsoft® Windows 10 OS
- Optional peripherals include vehicle docking station, desk docking station, and multiple extension modules

Introduction
PWS-872 is an industrial-grade tablet equipped with an Intel® Core™ i3/i5/i7/Celeron® processor, 10.1" WUXGA LED display with multi-touch PCAP control, mSATA SATA III SSD storage, multiple I/O, and Wi-Fi (802.11 a/b/g/n/ac), NFC, 3G/4G LTE, and Bluetooth 4.1 communication technologies. The built-in front (2M) and rear (8M) cameras, 1D/2D barcode scanner, and NFC reader provide convenient data collection tools, and the high-brightness sunlight-readable display supports outdoor applications. For mobile field-service applications, PWS-872 can be integrated with a hot-swappable external battery that supports up to 11 hours operation to enable long-duration use. Designed for harsh environments, PWS-872 is also MIL-STD-810G certified for shock and vibration tolerance, IP65 rated for protection from water and dust ingress, and can withstand drops of up to 4 ft. Moreover, PWS-872 can be integrated with a wide range of peripherals, such as a vehicle docking station, multi-battery charger, universal cover, and various I/O extension modules, to provide application-specific solutions.

Specifications

| Core | CPU & Chipset | Intel® Celeron® 3965U, 2.2 GHz
| | | Intel® Core™ i3-7100U, 2.4 GHz
| | | Intel® Core™ i5-7300U, 2.6 GHz (3.5 GHz Intel® Turbo Boost)
| | | Intel® Core™ i7-7600U, 2.8 GHz (3.9 GHz with Intel® Turbo Boost)
| | Memory | SODIMM DDR4, 2100 MHz (up to 16 GB)
| | Storage | mSATA SATA III SSD (64 GB ~ 1 TB)
| Display | Display | 10.1" WXGA LED LCD with 1280 x 800 resolution, 300-nit brightness, anti-glare surface for sunlight readability, and LED backlight
| | Touch Panel | Multi-touch projected capacitive touchscreen with scratch-resistant Corning® Gorilla® Glass 3 panel and support for gloved operation
| | Sensor | Ambient light, accelerometer (g-sensor), e-compass, gyroscope (0°, 90°, 270° screen rotation)
| System | WLAN/Bluetooth | IEEE 802.11 a/b/g/n/ac, wave 2 + Bluetooth 4.1 EDR
| | WWAN | 4G LTE, HSPA+/UMTS, GSM/GPRS/EDGE (optional)
| | GNSS | Integrated GPS, BeiDou, GLONASS
| | Camera | Front: 2 megapixel CMOS sensor camera with video streaming support
| | | Rear: 8 megapixel CMOS sensor camera with LED flash and auto focus
| | Data Collection | Optional 10 barcode scanner (Honeywell N4313), 2D barcode scanner (Honeywell N3680), and NFC RFID reader (13.56 MHz, supports ISO14443A/B, ISO15693, MIFARE, FeliCa)
| | Security | 1 x Fingerprint scanner (optional), 1 x Trusted Platform Module 1.2, 1 x Kensington Security Slot
| | Audio | 2 x 2W speakers, 1 x microphone
| | Input | Multi-touch projected capacitive touchscreen, 2 x programmable buttons, 5 x programmable capacitive touch sensor inputs, 1 x capacitive stylus, on-screen QWERTY keyboard
| | LED Indicators | Power, battery, RFID
| | | 2 x USB 3.0, 1 x USB 2.0
| | | 1 x HDMI 1.4
| | | 1 x SD card slot (SDHC/SDXC/HS1/HS2)
| | | 1 x Audio combo jack (line-in/line-out)
| | | 1 x DC-in
| | | 1 x SIM slot
| | | 1 x Docking port (32 pin) (USB 3.0, USB 2.0, PCIe 2.0, DisplayPort)
| | Battery | Main battery: 451P 14.4V 2730mAh
| | | Hot-swappable external battery: 452P 14.4V 4860mAh (supports up to 11 hours operation*)
| | Power Input | 19V ± 5%
| | OS | Microsoft® Windows 10 IoT (64 bit), Linux Ubuntu1604
| Environment | Temperature | Operating: -20 ~ 50 °C/-4 ~ 122 °F (0 ~ 40 °C/32 ~ 104 °F when charging to protect the battery)
| | | Storage: -40 ~ 60 °C (-40 ~ 140 °F)
| | Humidity | 5 ~ 95% @ 40 °C/104 °F
| | IP Rating | IP65
| | Drop Tolerance | Up to 4 ft.
| Certification | Vibration/Shock | MIL-STD-810G
| | EMC/RF | CEA/ICC/CCS/54/54*
| | Safety | UL/IEC/ES6006
| | Mobile Device Management | SD card compatible
| Mechanical | Dimensions | 305 x 207 x 25/27 mm (12 x 8.14 x 0.98/1.06 in)
| | Weight | 1.5 Kgs (3.30 Ib)

* The estimated battery life is based on MobileMark® 2014 benchmark. Actual battery performance will vary according to system settings and configuration.
* WIFI certification only; LTE certification by project.
All product specifications are subject to change without notice. Last updated: 25-Jul-2019
Dimensions

Unit: mm

System I/O

PWS-872 Front/Rear View

1. 2M camera
2. Home key (programmable)
3. Function key
4. Speakers
5. Fingerprint scanner
6. Programmable capacitive touch input
7. 8M AF camera with flash
8. Fan
9. NFC reader
10. Capacitive stylus
11. Latch (for external battery)

PWS-872 Right/Left Side View

1. Kensington Security Slot
2. Power button
3. Audio combo jack
4. HDMI connector (1.4)
5. USB 3.0 port
6. DC-in
7. Screw hole for extension modules
8. USB 3.0 port
9. USB 2.0 port
10. SD card slot (SDXC)

Ordering Information

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<thead>
<tr>
<th>Standard SKU</th>
<th>CPU</th>
<th>LCD</th>
<th>Memory</th>
<th>Storage</th>
<th>Front camera</th>
<th>Rear camera</th>
<th>Wi-Fi</th>
<th>BT</th>
<th>GPS</th>
<th>4G</th>
<th>OS</th>
<th>RFID reader</th>
<th>Barcode scanner</th>
<th>Fingerprint scanner</th>
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<td>capacity hot keys)</td>
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<td>DDR4 4GB</td>
<td>SSD 64GB (0 ~ 70 °C)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>PWS-872-7S6W0X200</td>
<td>Core i7 Standard</td>
<td>DDR4 4GB</td>
<td>SSD 64GB (0 ~ 70 °C)</td>
<td>Yes</td>
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<td>LTE-EU</td>
<td>Win 10 IoT</td>
<td>2D</td>
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Packing List

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<th>Part Number</th>
<th>Description</th>
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<tr>
<td>96PSA-A65W19V1-1</td>
<td>1 x 65W adapter</td>
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<tr>
<td>9880015843</td>
<td>1 x Capacitive stylus</td>
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</table>
PWS-870/872

Peripherals

Optional Accessories and Extension Modules for the PWS-870/872 Series

Universal Cover Package

Features
- Material: Plastic, PVC
- Color: Black
- Dimensions: 305 x 254.2 x 88.4 mm (12 x 10 x 3.48 in)
- Weight: 500 g (1.10 lb)
- Package contents: Universal cover with handle, stand, strap, and holster options

Extension Modules

MSR and Smart Card Reader

Features
- Smart Card Reader
  - ISO 7816 PC/SC
  - EMV 4.0 Level 1
  - Supports I2C memory cards (SLE4418, SLE4428, SLE4432, SLE4442, SLE4436, SLE5536, SLE6636, AT88SC1608, AT45D041)
- Magnetic Stripe Reader
  - MagneSafe™ IntelliHead
  - Supports US 7810, ISO 7811/AAMVA
  - Read speed: 6~60 IPS (15.4~12.4 cm)
  - Triple DES encryption
  - DUKPT key management
- Operating temperature: -20 ~ 50 °C (-4 ~ 122 °F)
- Storage temperature: -20 ~ 60 °C (-4 ~ 140 °F)
- Dimensions: 192.2 x 40.2 x 25 mm (7.56 x 1.58 x 0.98 in)
- Weight: 120 g (0.26 lb)

Additional I/O

Features
- Interfaces: 1 x USB 3.0 (type A, 5V/0.9A), 2 x RS-232 (D-sub 9), 1 x 10/100/1000 Ethernet (RJ45)
- Operating temperature: -20 ~ 50 °C (-4 ~ 122 °F)
- Dimensions: 192.2 x 45.2 x 25 mm (7.56 x 1.77 x 0.98 in)
- Weight: 140 g (0.30 lb)

Last updated: 25-Jul-2019
Optional Accessories and Extension Modules for the PWS-870/872 Series

External Battery

- Capacity: 14.8V 4080mAh
- IP rating: IP65
- Dimensions: 141.2 x 106.2 x 17 mm (5.55 x 4.18 x 0.66 in)
- Weight: 385 g (0.84 lb)

Features

Active Pen (for PWS-872)

- Operating frequency: 90 – 250 KHz
- Operating temperature: 0 – 50 °C (32 – 122 °F)
- Buttons: 2 x side buttons (eraser, barrel)
- Battery: 1 x AAAA (replaceable)
- Dimensions: 140 x 9.7 mm (5.51 x 0.38 in)
- Weight: 70 g (0.15 lb)

Multi-Bay Battery Charger

- Supports up to 4 external batteries
- Charging time: 4 hr
- Charge status LED indicators
- Screw holes for secure installation
- Power input: 19.5V/7.7A
- Dimensions: 214.4 x 229.4 x 60 mm (8.44 x 9.03 x 2.36 in)
- Weight: 1.4 kg (3.08 lb)
- Packing material: XAASC-FSP150-RFBN2 (1 x 150w adapter)

Features

Screen Protection Film (for PWS-872)

- 10.1” replacement anti-glare screen protection film

Features

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tr>
<td>PWS-870-UCOVER00E</td>
<td>Universal cover package (for PWS-870/872 series)</td>
</tr>
<tr>
<td>PWS-870-EXT300E</td>
<td>MSR and smart card reader (for PWS-870/872 series)</td>
</tr>
<tr>
<td>PWS-870-EXT100E</td>
<td>I/O extension module (for PWS-870/872 series)</td>
</tr>
<tr>
<td>PWS-870-BAT100E</td>
<td>External battery (for PWS-870/872 series)</td>
</tr>
<tr>
<td>PWS-870-MBC00E</td>
<td>Multi-bay battery charger (for PWS-870/872 series)</td>
</tr>
<tr>
<td>PWS-872-ACTPEN</td>
<td>Active pen (for PWS-872)</td>
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<tr>
<td>PWS-872-PROFILM</td>
<td>10.1&quot; replacement screen protection film (for PWS-872)</td>
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</table>
**Features**

- CAN 2.0 A/B (J1939) and OBDII (ISO 15765) protocol support for vehicle diagnostics
- Anti-theft locking mechanism
- External GPS SMA antenna
- Compatible with 12V/24V vehicle power
- Ignition control
- Rapid device docking and removal
- Provides complete port replication
- Compliant with MIL-STD-810G and SAE J1455 for vibration and shock tolerance
- E-Mark (E13) certified for vehicle safety

**Introduction**

The vehicle docking station supports both the PWS-870 and PWS-872 series. Designed to provide a stable platform for in-vehicle mounting and battery recharging, the vehicle docking station is equipped with a locking mechanism to prevent theft. Replica I/O ports are provided to ensure convenient I/O access for full tablet functionality. Moreover, with the added provision of CAN bus support for vehicle diagnostics, the vehicle docking station provides the ideal in-vehicle solution for diverse automobile applications, including warehouse forklifts and police, fire brigade, and ambulance fleets.

**Specifications**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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<tbody>
<tr>
<td>HDC I/O</td>
<td>1 x HDC connector</td>
</tr>
<tr>
<td>USB</td>
<td>2 x USB 3.0 (locking type)</td>
</tr>
<tr>
<td>Ethernet</td>
<td>1 x 100/1000 LAN (M12)</td>
</tr>
<tr>
<td>SMA for GPS</td>
<td>1 x for external GPS antenna</td>
</tr>
<tr>
<td>DC-In</td>
<td>1 x Power jack (M12) 19V ± 5% (can be paired with a vehicle adapter (PWS-770-CAD1200E/PWS-770-CAD2400E) or DC-in (M12) adapter cable (1700021797-01))</td>
</tr>
<tr>
<td>Environment</td>
<td>IP54 (with tablet docked and all cables connected)</td>
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<tr>
<td>Vibration/Shock</td>
<td>MIL-STD-810G, Method 514.5; SAE J1455</td>
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<tr>
<td>E-mark (E13)</td>
<td>UL, CB</td>
</tr>
<tr>
<td>E-mark (E13)</td>
<td>(when paired with PWS-770-CAD1200E/PWS-770-CAD2400E)</td>
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<tr>
<td>Certifications</td>
<td>VESA (75 x 75 mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>950 g (2.09 lb)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>240.5 x 280.9 x 95.4 mm (9.46 x 11.05 x 3.75 in)</td>
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**Ordering Information**

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<thead>
<tr>
<th>Part Number</th>
<th>Description (for PWS-870/872 series)</th>
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<tbody>
<tr>
<td>PWS-870-VCRADLE00E</td>
<td>Vehicle docking station with LAN cable and M12(M) to 8P/RJ45(F) cable (5 cm)</td>
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<tr>
<td>PWS-870-VCRADLE01E</td>
<td>Charge-only vehicle docking station</td>
</tr>
<tr>
<td>PWS-870-VMOUNT00E</td>
<td>Vehicle docking station without I/O</td>
</tr>
<tr>
<td>PWS-770-CADAP00E*</td>
<td>Vehicle power DC 10 ~ 32V 90W (120cm) to cigarette lighter adapter with M12 connector</td>
</tr>
<tr>
<td>PWS-770-CAD1200E*</td>
<td>Vehicle power DC 10 ~ 32V 90W adapter with 12V relay (120 cm) and M12 connector</td>
</tr>
<tr>
<td>PWS-770-CAD2400E*</td>
<td>Vehicle power DC 10 ~ 32V 90W adapter with 24V relay (120 cm) and M12 connector</td>
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<tr>
<td>1700021797-01</td>
<td>M12 connector to DC-in cable (10 cm)</td>
</tr>
<tr>
<td>PWS-770-C1D000E</td>
<td>Vehicle docking station HDC cable (200 cm), supports 1 x RS-232, 1 x CAN 2,0, 2 x DI, 2 x DO, 1 x line-in, 1 x line-out</td>
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<tr>
<td>PWS-770-SPS200X6E</td>
<td>GPS antenna cable 5.5V 22mA (500 cm)</td>
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<td>RAM-MOUNT-06E</td>
<td>5.625” double socket arm for 1.5&quot; ball base, 3.625” VESA base at both sockets</td>
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<tr>
<td>RAM-MOUNT-07E</td>
<td>5.625” double socket arm for 1.5&quot; ball base, 1 socket with 3.625” VESA base, 1 socket with flat 2.5&quot; diameter base AMPS hole pattern</td>
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<tr>
<td>PWS-870-VDOCK-CBE</td>
<td>Vehicle docking starter cable kit (power cable, HDC cable, and GPS antenna)</td>
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</table>

**Notes:**

1. The PWS-870/872 vehicle docking station includes a LAN cable for M12-to-RJ45 connector. The vehicle adapter is optional. Do not attempt to connect the vehicle adapter M12 plug to the tablet’s DC-in port.
2. Advantech strongly recommends initially purchasing the starter cable kit and power adapter for evaluation (suitable power adapters are marked*).

**Underside I/O**

1. 1 x LAN 100/1000 (M12)
2. 1 x GPS SMA
3. 1 x USB 3.0 (locking type)
4. 1 x HDC: 1 x RS232, 1 x CAN 2.0, 2 x DI, 2 x DO, 1 x line-in, 1 x line-out
5. 1 x DC-in (M12)
Introduction
The desk docking station supports both the PWS-870 and PWS-872 series. Designed to provide a stable platform for positioning the tablet on a desk or countertop, the desk docking station allows data transfers and synchronization and supports battery recharging. Moreover, the provision of replica I/O ports ensures convenient connectivity to peripherals for full tablet functionality.

Specifications

<table>
<thead>
<tr>
<th>No.</th>
<th>Component</th>
<th>Function</th>
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<tbody>
<tr>
<td>1</td>
<td>LAN port</td>
<td>Connect an RJ-45 cable to access LAN connection</td>
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<tr>
<td>2</td>
<td>VGA port</td>
<td>Connect a VGA port to connect to another monitor</td>
</tr>
<tr>
<td>3</td>
<td>Serial port</td>
<td>Connect a serial cable to connect to another PC</td>
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<tr>
<td>4</td>
<td>USB ports</td>
<td>Connect USB connectors to transfer data</td>
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<tr>
<td>5</td>
<td>DC-in</td>
<td>Connect the AC adapter to charge the battery</td>
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</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Component</th>
<th>Function</th>
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<tr>
<td>1</td>
<td>LAN port</td>
<td>Connect an RJ-45 cable to access LAN connection</td>
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<td>VGA port</td>
<td>Connect a VGA port to connect to another monitor</td>
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<td>Serial port</td>
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<td>4</td>
<td>USB ports</td>
<td>Connect USB connectors to transfer data</td>
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<tr>
<td>5</td>
<td>DC-in</td>
<td>Connect the AC adapter to charge the battery</td>
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Note: To prevent damage to the desk docking station, only use the desk docking station with PWS-870/872 tablets.

Dimensions

Unit: mm

Ordering Information

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<thead>
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<th>Part Number</th>
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<td>PWS-870-CRADLE00E</td>
<td>Desk docking station for PWS-870/872</td>
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Note: This product does not include a power adapter. Use the standard tablet power adapter.