Wireless ePaper Display Solutions
Enable Battery-Powered IoT Display Applications
Advantech Wireless ePaper Display Solutions

Advantech provides hardware and software integrated wireless ePaper display solutions: wireless ePaper modules, routers, gateways, and WISE-PaaS/ESL software to accelerate the implementation in a wide range of applications such as electronic shelf labelling, digital signs in smart warehouses, industrial equipment, and public spaces. The WISE-PaaS/ESL software package enables easy management over the whole system locally or remotely over the internet using the MQTT protocol. System integrators and developers can focus on their own application development with Advantech’s reliable battery powered wireless ePaper display solutions.

Advantech Wireless ePaper Display Solutions

Smart Warehouse

Industrial 4.0

Information Signage

Ultra Low Power
Supports ultra low power design with battery life up to 5 years

Easy Deployment
10,000 ePaper devices can join networks and be updated automatically in 1 hour

Design-in Service
Build your own application with integrated ePaper drivers, wireless, and powered technologies

Centralized Content Management
Advantech WISE-PaaS/ESL provides a visualized user interface for content management and system maintenance
**Application**

**Smart Warehouse**
- Computer aided picking system (CAPS)
  - Picking system
  - Inventory system
  - Electric shelf label

**Industrial 4.0**
- Production line tracking
- Equipment monitoring
- Counter card in reception

**Benefit**
- Fast data transmission
- Accurate information for stock level and expiry date
- Increase productivity

**EPD-023B (2.9”)**
- ARM Cortex-M3 core processor
- Supports IEEE 802.15.4 / 2.4 G networks
- Low power consumption, up to 5 years
- Multiple I/O control with 3 buttons & 3 LED
- Integrated with RTOS, supports OTA

**EPD-053R (5.65”)**
- ARM Cortex-M3 core processor
- Supports IEEE 802.15.4 / 2.4 G networks
- Low power consumption, up to 3 years
- Multiple I/O control with 2 buttons & 1 LED
- Integrated with RTOS, supports OTA

Focused on retail, warehouse, and pharmacy applications using computer assisted picking (CAP) systems, up to 3 pickers can connect to each ePaper device. LEDs for selection, alarm, and cancel expedite the order picking process, and the picker can read updated stock and expiry dates on their products via their ePaper devices.

Focused on equipment, meeting rooms, and factory production management, these big screens show detailed information with ultra-low power consumption in standby mode. End users can easily check all information without other handsets or equipment.

**Item:** Citalopram  
**Note:** 10 mg  
**ID:** A04762410  
**Inventory:** 125000  
**Exp. Date:** 25/12/2018  
**Task:**  
**Person:** Miller Jones  
**Status:** In Progress  
**Inspection Date:** Dec. 20, 2017  
**Etching Process:** A5
Information Signage

- In-vehicle signage
- Vehicle stop signage
- Hospital bedside card
- Meeting room signage
- Billboard signage

Benefit
- Easy installation without power source and internet cable
- Sunlight readable for outdoors
- Selectable power type: DC-in / battery
- No power needed for natural disasters

Large Format Signage

- In-vehicle signage/Vehicle stop signage
- Emergency evacuation signage
- Direction signage in Amusement park
- Signage/National Park Signage
- Gas station for pricing signage

Benefit
- Easy installation without internet cable
- Sunlight readable for outdoors
- Ultra low power for green energy and environment
- No power needed for natural disasters

EPD-132R (13.3"")

Focused on signage in hospital clinics / wards / meeting rooms, the panels display room usage and information in public spaces. They provide superior advantages over traditional signage or posters without the need for additional cables.

- ARM Cortex-M4 core processor
- Supports IEEE 802.11b/g/n + Bluetooth 4.1 standard
- Multiple I/O control with 2 buttons & 1 LED
- Integrated with RTOS, supports OTA

EPD-322G/ 322F (32"")
EPD-422G (42"")

Focused on in-vehicle signage and vehicle parking places, the large format panels are installed in public spaces and display emergency signage and public information as well as directions. No extra power is needed when displaying information in bright sunlight.

- ARM-based processor
- Supports 802.11 ac/b/g/n, Bluetooth 4.1
- Multiple I/O connections
- Supports OTA

Name: David Job
Gender: Male
Date of Admission: 09/11/2017
Date of Surgery: 09/25/2017
ID: 2016084
Physician: Dr. Young
Nurse: Ms. James
Birth Date: 10/08/1943
Division of Cardiology Bed #: 1011
Special instruction: high fall risk, penicillin allergy
Centralized Management Built-in

Advantech’s end-to-end solution includes our WISE-PaaS / ESL server. With ESL server, you can manage all information on ePaper devices in real-time. Remotely control all services to provide your customers with the latest information and have proper interaction with them. We also provide APIs to integrate data with your original management system.

Full centralized control at a glance
- Monitoring functions for low power etc
- Immediate/scheduling information to end user
- Control stock levels in stocktaking mode

Flexible content editor for users
- Creation of templates with simple GUI
- Content previews for system management
- Auto-generated content by system
- Easily check product expiry dates

Superior Wireless Capabilities Built-in

Advantech’s EPD series solution has an ability to communicate bi-directionally from the system to perform tasks. Our reliable communication protocol provides all these advantages:

Self-Networking Modes
- Devices can auto-organize the network group and report their status

Fast Transmission
- 10,000 ePaper devices can join and update data in one hour

2-way Communication
- End devices can report data accuracy, battery level and abnormal status

Data Broadcast
- Update multiple ePaper devices, firmware, or images at the same time

Ultra-low Power
- Each ePaper device has highly efficient power-saving design during sleep mode

AES-128 Security
- AES-128 encryption and data compression

OTA Upgrade
- Regular system patches and updates

Device Association
- Easy association between ePaper devices and end-device applications
## Design-in Services

- Product selection guide
- Node-to-cloud architecture proposal
- Starter kit for POC evaluation with SDK

### Product Selection Guide

<table>
<thead>
<tr>
<th>Hosted Scheme</th>
<th>EPD-023B</th>
<th>EPD-043B</th>
<th>EPD-053B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computing System</td>
<td>MCU</td>
<td>TI MSP430 ARM Cortex M3</td>
<td>TI MN3318 ARM Cortex M0+</td>
</tr>
<tr>
<td>Memory</td>
<td>N/A 32KB</td>
<td>N/A 32KB</td>
<td>32K x 128 bits</td>
</tr>
<tr>
<td>Display</td>
<td>Resolution</td>
<td>320 x 240 pixels</td>
<td>640 x 480 pixels</td>
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<tr>
<td>Storage</td>
<td>Internal Flash: 16MB</td>
<td>Flash: 16MB</td>
<td>Flash: 64MB</td>
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<tr>
<td>Audio</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Network</td>
<td>Standard</td>
<td>IEEE 802.15.4</td>
<td>IEEE 802.15.4</td>
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<tr>
<td>RF Data Rate</td>
<td>800 Kbps</td>
<td>3 Mbps</td>
<td>Up to 54 Mbps</td>
</tr>
<tr>
<td>Interface</td>
<td>Interface</td>
<td>USB x2</td>
<td>FPC Antenna</td>
</tr>
<tr>
<td>Power</td>
<td>Battery</td>
<td>AAA Alkaline battery x2 / CR2450 x2</td>
<td>AAA Alkaline battery x4</td>
</tr>
<tr>
<td>Backemural</td>
<td>Operating Temperature</td>
<td>0 ~ 40 °C</td>
<td>0 ~ 40 °C</td>
</tr>
<tr>
<td>Physical Characteristics</td>
<td>Dimensions (W x H)</td>
<td>76 x 38 x 5mm</td>
<td>105 x 49 x 25mm</td>
</tr>
<tr>
<td>Operating System</td>
<td>Operating System</td>
<td>KRob</td>
<td>KRob</td>
</tr>
<tr>
<td>Certification</td>
<td></td>
<td>CE / FCC / SRRC / NCC</td>
<td>CE / FCC / SRRC / NCC</td>
</tr>
</tbody>
</table>

**Design Guideline Support**
- Multiple I/O extension
- Customized industrial design

**Wireless Conductive Measurement**
- TX power / mask / RF harmonic tuning / RX sensitivity

**Performance fine tuning**
- 5W integration from end-to-end
- Certification pre-scan
- Wireless & safety certification

**Production**
- Worldwide logistics management
- Global repair service & RMA

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www.advantech.com

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