

ADVANTECH

Embedded
Design-In Forum

ePaper Solution Introduction – EPD-662 Hands on



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Agenda

Outline

Advantech's ePaper Solution

EPD solution Architecture

EPD-662 Network Topology

Hands on

Wireless ePaper Solution Suites



Device Management



EPD Content Delivery



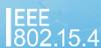
EPD Content Design



Edge Event Feedback



DeviceOn/ePaper



台灣精品
2022

Full sizes of Solution Suites

2.9"

Inventory Management



Smart Factory

5.6"

Production Cart



Clinic Information Board



Smart Hospital

13.3"

Bedside Card



Ubiquitous Interactive Device



Smart Building

5.6"

Scheduling Card



26"

Bus Stop



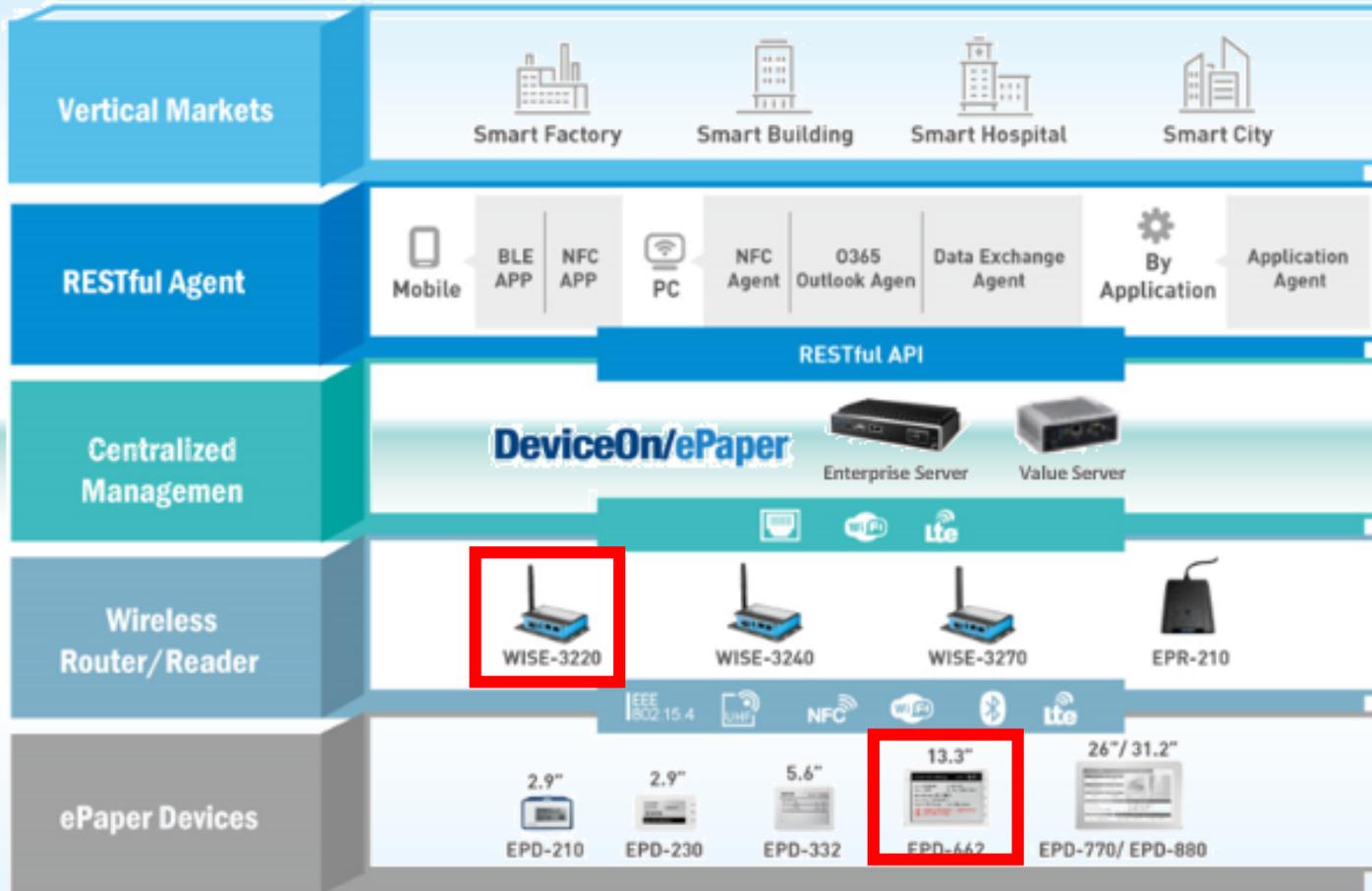
Smart City

31.2"

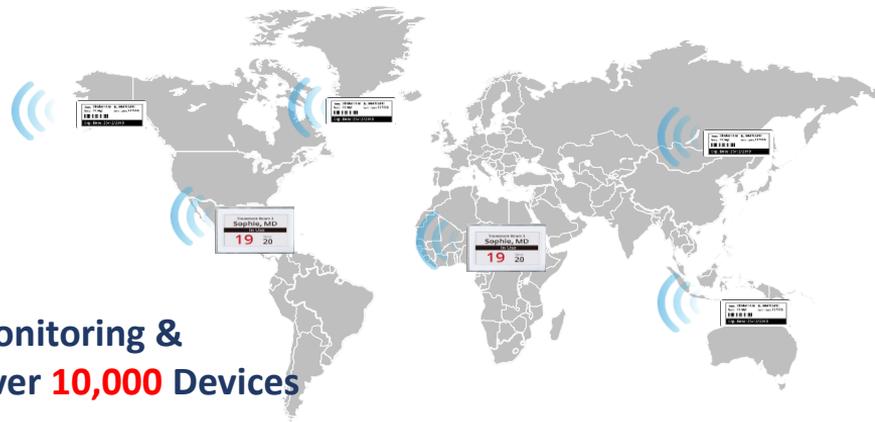
Smart Lighting



EPD Solution Suite Architecture



Content Management Software



Device Management

- Device monitoring
- Tag battery alert
- Tag status report
- Remote control

Image Generator

- Generate image file(full and partial) and preview
- Image file transform to system format and zip
- Provide API for tag image update

Account Management

- Account role
- Permission for account and role/group

Service Management

- FTP: FW/image to device
- Execute action e.g. tag image update: schedule/image generating

EPD-662 Network Topology



“Hands-on for ePaper Manager”



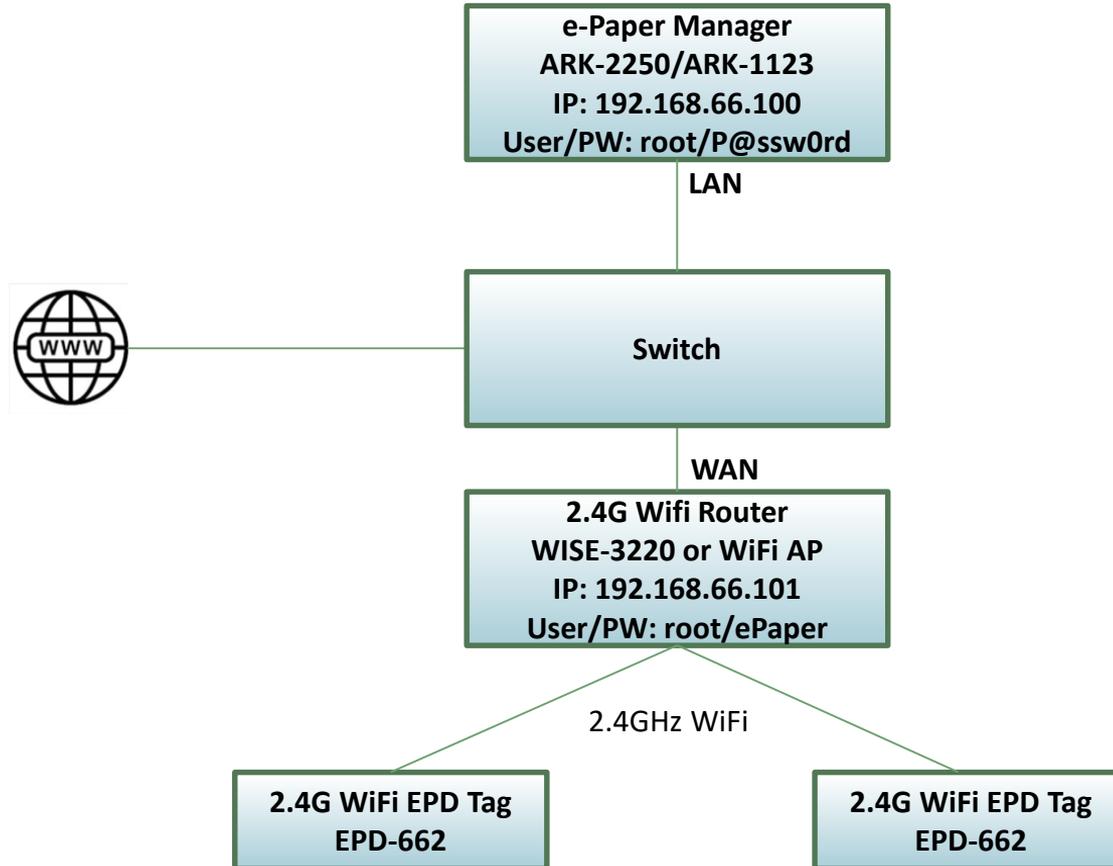
Agenda

- **Preparation**
 - Hardware Equipment
 - Network Architecture
- **Tag Devices Deployment**
 - Add tag devices into ePaper Manager
- **Image Generation**
 - Template generation
 - Data Binding
- **Refresh Tag Devices**
 - Image Refresh /Transmit (Device,Group)
- **Firmware upgrade**
- **Resful API & SampleCode**

Preparation- Hardware Equipment

- EPD-662 x1
- WISE-3220
- ARK-1123H ePaper Manager Server x1
- WiFi Hub x1

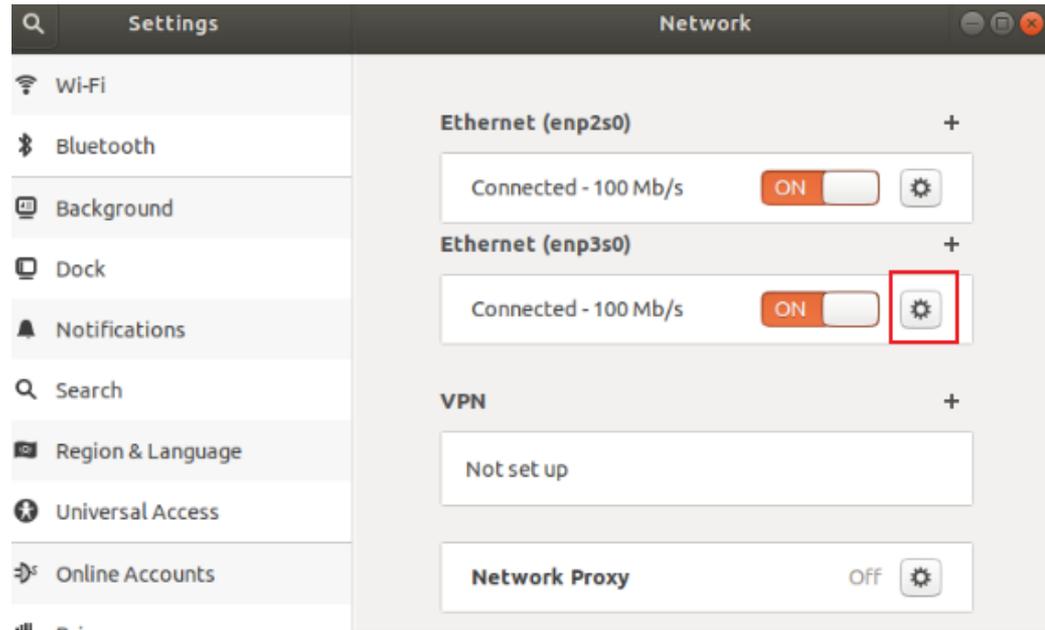
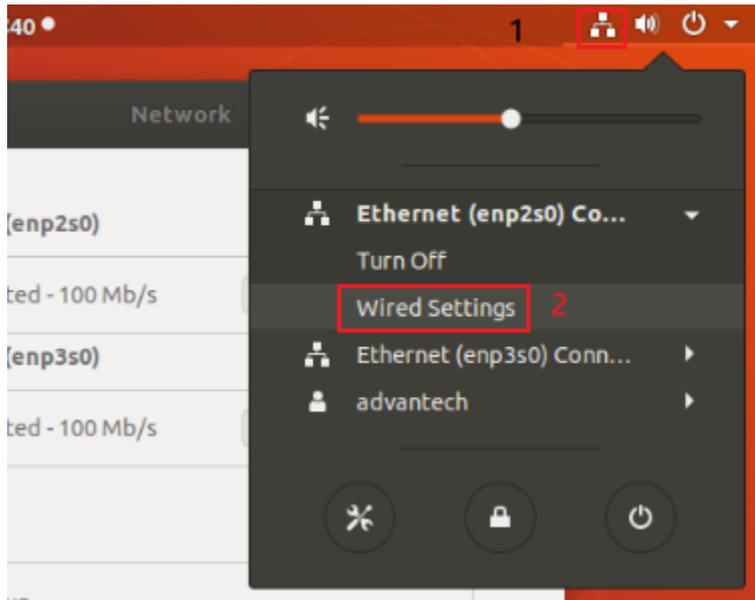
EPD DemoKit's Network Architecture



EPD System setting workflow



EPD system IP setting



EPD system IP setting

The screenshot shows a configuration window titled "Wired" with tabs for "Details", "Identity", "IPv4", "IPv6", and "Security". The "IPv4" tab is selected and highlighted with a red box. Under "IPv4 Method", the "Manual" option is selected with a red radio button. Below, the "Addresses" section contains a table with two rows. The first row is highlighted with a red box and contains the IP address "192.168.66.100" and netmask "255.255.255.0". The "Gateway" column is empty. At the bottom, the "DNS" section has an "Automatic" toggle switch that is turned "ON".

Address	Netmask	Gateway
192.168.66.100	255.255.255.0	

EPD System setting workflow



WISE-3220 setting

ADVANTECH Status System Security Network **1** ePaper Manager Logout

Node Configuration Node Import **2** EPD Deployment

Node deployment lead node connect to server through different WIFI AP router. It's for model of EPD-660, EPD-662.
Users have to set up EPD node's MAC address · WIFI AP's SSID, Password · ePaper Manager's server IP address and port number.

EPD Node

Show 10 entries Search:

#	EPD MAC Address	AP SSID	AP Password	Server IP	Server Port	Action
1	e04f4302dadc	ADV-ePaper	ePaperePaper	172.22.15.114	5853	Edit delete

Showing 1 to 1 of 1 entries Previous **1** Next

3 Add EPD Node

Save & Apply

WISE-3220 setting

EPD MAC address: Please check the back of EPD device

AP SSID: ADV-ePaper

AP Password: ePaperePaper

Server IP: Depends on your server IP address

Server Port: 5853

The screenshot shows the 'EPD660/EPD662 node configuration' page in the ADVANTECH ePaper Manager. The navigation bar at the top includes 'ADVANTECH', 'Status', 'System', 'Security', 'Network', 'ePaper Manager', and 'Logout'. The page title is 'EPD660/EPD662 node configuration'. Under the 'General Settings' section, there are five input fields: 'EPD MAC address' (e04f4302dadc), 'AP SSID' (ADV-ePaper), 'AP Password' (masked with dots), 'Server IP' (172.22.15.114), and 'Server Port' (5853). At the bottom, there are four buttons: 'Back to Overview', 'Save & Apply', 'Save', and 'Reset'.

ADVANTECH Status System Security Network ePaper Manager Logout

EPD660/EPD662 node configuration

General Settings

EPD MAC address

AP SSID

AP Password

Server IP

Server Port

[Back to Overview](#) [Save & Apply](#) [Save](#) [Reset](#)

WISE-3220 setting

When you click “Save & Apply”, please reset EPD-660 and EPD-662 to default.

The screenshot shows the ADVANTECH ePaper Manager web interface. At the top, there is a navigation bar with the ADVANTECH logo and menu items: Status, System, Security, Network, ePaper Manager, and Logout. Below the navigation bar, there are two tabs: Node Configuration (selected) and Node Import. A message states: "This is for EPD-132B, EPD-132R node deployment lead node connect to server through different WIFI AP router. Users have to set up EPD node's MAC address, WIFI AP's SSID, Password, ePaper Manager's server IP address and port number." Below this message is the "EPD Node" section. It includes a "Show" dropdown menu set to "10" entries and a search box. A table displays one EPD node configuration:

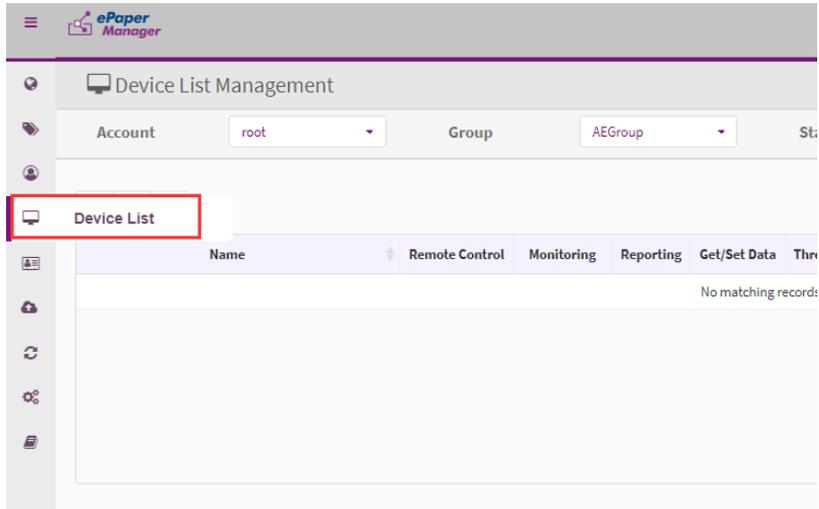
#	EPD MAC Address	AP SSID	AP Password	Server IP	Server Port	Action
1	e04f4302d84c	ADV-ePaper	ePaperePaper	172.22.12.7	5853	Edit delete

Below the table, it says "Showing 1 to 1 of 1 entries" and "Previous 1 Next". At the bottom left, there are two buttons: "Add EPD Node" and "Save & Apply". The "Save & Apply" button is highlighted with a red rectangle.

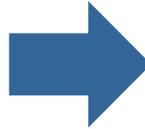
EPD System setting workflow



Tag Devices Deployment- Add tag devices



The screenshot shows the 'ePaper Manager' interface. The main heading is 'Device List Management'. Below it, there are dropdown menus for 'Account' (set to 'root') and 'Group' (set to 'AEGroup'). A 'Device List' tab is highlighted with a red box. Below the tab is a table with columns: 'Name', 'Remote Control', 'Monitoring', 'Reporting', 'Get/Set Data', and 'Thru'. The table is currently empty, with the text 'No matching records:' displayed below it.



This is a close-up view of the 'Add Device' button in the 'Device List Management' interface. The button is located in the top left corner of the table area, next to a plus sign icon, a pencil icon, and a trash can icon. A red arrow points to the plus sign icon. The table header is visible, showing columns: 'Name', 'Remote Control', 'Monitoring', and 'Reporting'.

Add tag devices (EPD-660/EPD-662)

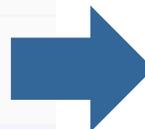
DeviceOn/ePaper

< Back

Add Device - Normal View

<input type="checkbox"/>	Status	Device Name	Ag
<input type="checkbox"/>	●	EPD-Tag-02d9b0	00000001-0000-0000-0000-e04f4302d9b0

Showing 1 to 1 of 1 rows





Success

Add device successfully

Device List

- When the color of device become green, it means you can control the device in the DeviceOn/ePaper

The screenshot shows the 'Device Management' section of the DeviceOn/ePaper interface. It includes a sidebar with navigation icons, a header with the title 'DeviceOn/ePaper', and a main content area with filters and a table.

Device Management

Account: root | Group: OTAtest | Status: All

Actions: +, edit, delete

Device Name	Panel Type	Messages	Children I
 EPD-Tag-02d9b0	EPD-132R	Normal	

Showing 1 to 1 of 1 rows

ADVANTECH

Image Generation- Item Data imported

- Import existed Item Data from CSV file

The screenshot displays the 'DeviceOn/ePaper' application interface. The main heading is 'Item Data Management'. Below this, there are several tabs for different projects: EPD023DEMO, EPD053CAREPD, EPD123DEMO (selected), Warehouse, TestGraphic, Wistron AGV Project, end-210-demo, EPD Page Marker, Demotest, and MeetingRoom. Under the EPD123DEMO tab, there are sub-tabs: WholeDaySchedule_OnSite, Demo1, 2022_Auto_TPE, and + Add. A 'BusDemo.csv' file is being imported, with its content visible in a preview window:

```
1 Stop_ID,Stop_Name,Route1 No,Route1 Name,Route1 Due,Rou
2 Stop0001,Taipei 101,22,Taipei 101,05 min,15 min,5,15,2
3 Stop0002,Taipei 101,22,Taipei 101,01 min,20 min,1,20,2
4 Stop0003,Taipei 101,22,Taipei 101,05 min,20 min,5,20,2
5
```

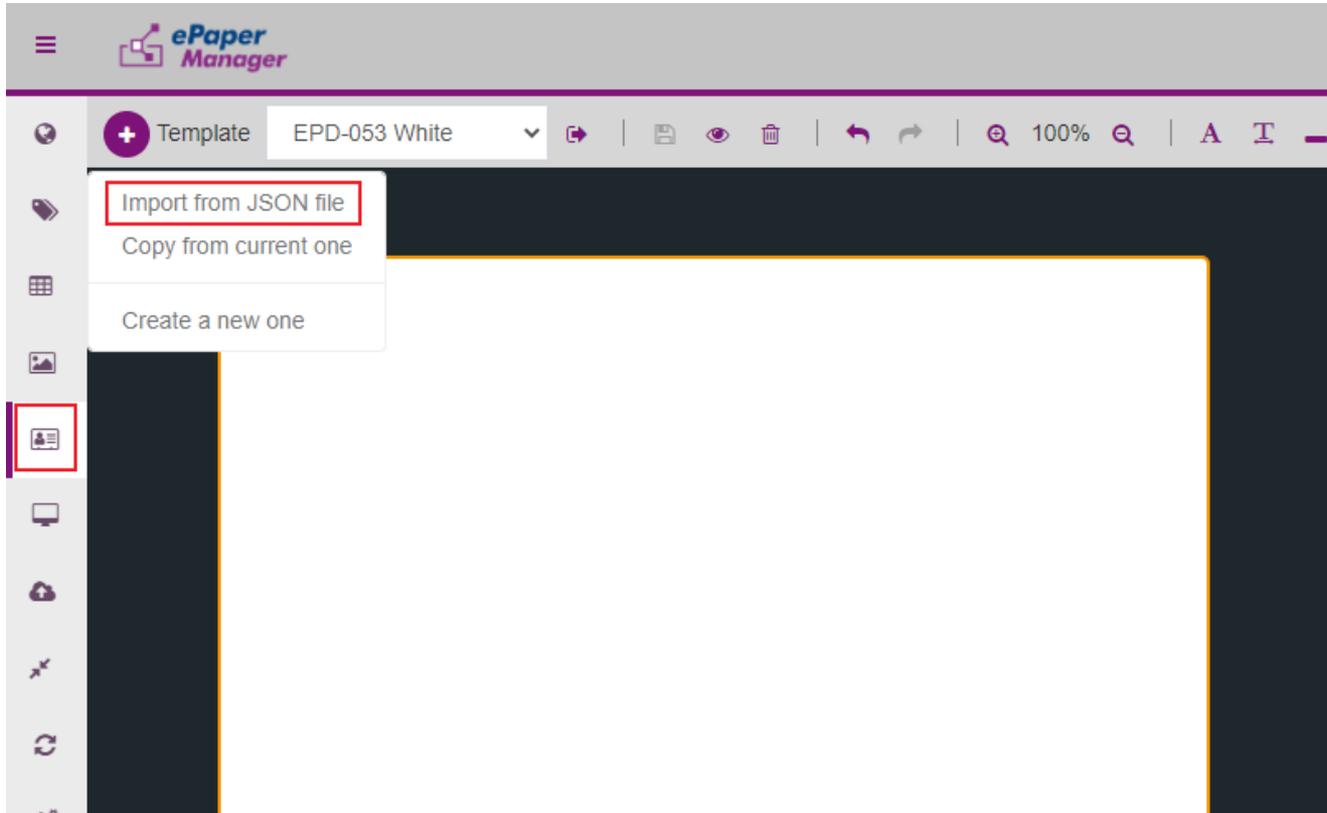
The main data table below has the following columns: Stop ID, Stop_Name, Route1 No, Route1 Name, Route1 Due, Route1 Next, Route1 DueTime, Route1 NextTime, Route2 No, Route2 Name, and Route2 Du. The table contains three rows of data:

Stop ID	Stop_Name	Route1 No	Route1 Name	Route1 Due	Route1 Next	Route1 DueTime	Route1 NextTime	Route2 No	Route2 Name	Route2 Du
Stop0001	Taipei 101	22	Taipei 101	05 min	15 min	5	15	28	Yangmingshan	10 min
Stop0002	Taipei 101	22	Taipei 101	01 min	20 min	1	20	28	Yangmingshan	02 min
Stop0003	Taipei 101	22	Taipei 101	05 min	20 min	5	20	28	Yangmingshan	10 min

The 'Import' button (represented by a red square) is highlighted in the bottom left corner of the interface.

Image Generation- Template Generation

- Import existed template from JSON file



Template Generation

DeviceOn/ePaper

Template EPD-132R BusDemo

3. Save the template

2. Edit template

1.

	<i>Stop_Name</i>		
	<i>Route/Destination</i>	<i>Due</i>	<i>Next</i>
<i>Route1 No</i>	<i>Route1 Name</i>	<i>Route1 Due</i>	<i>Route1 Next</i>
<i>Route2 No</i>	<i>Route2 Name</i>	<i>Route2 Due</i>	<i>Route2 Next</i>
<i>Route3 No</i>	<i>Route3 Name</i>	<i>Route3 Due</i>	<i>Route3 Next</i>

Data Binding

DeviceOn/ePaper

EPD Controlling Management

1 Account: root Group: OTAtest Status: All Mode: Device

2

Status	Power	RSSI	Tag Name	Bind	Action
Success	Normal	-48dBm	EPD-132R EPD-Tag-02d9b0 00000001-0000-0000-0000-e04f4302d9b0	0001 132RPage1	Preview Refresh Transmit Cancel Monitor More

Showing 1 to 1 of 1 rows

Data Binding

DeviceOn/ePaper

EPD Controlling Ma

Account root

Status Power RSSI

Success Normal -48dBm

Showing 1 to 1 of 1 rows

Template EPD-132R BusDemo

Item Data Stop0001

Preview

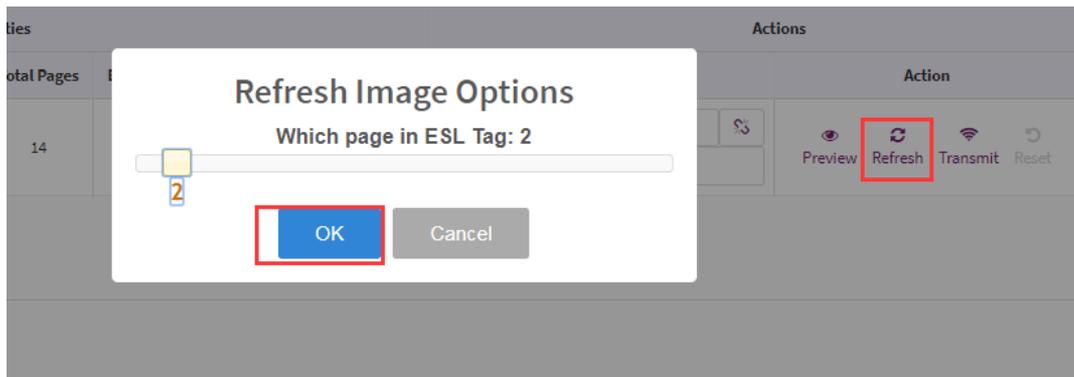
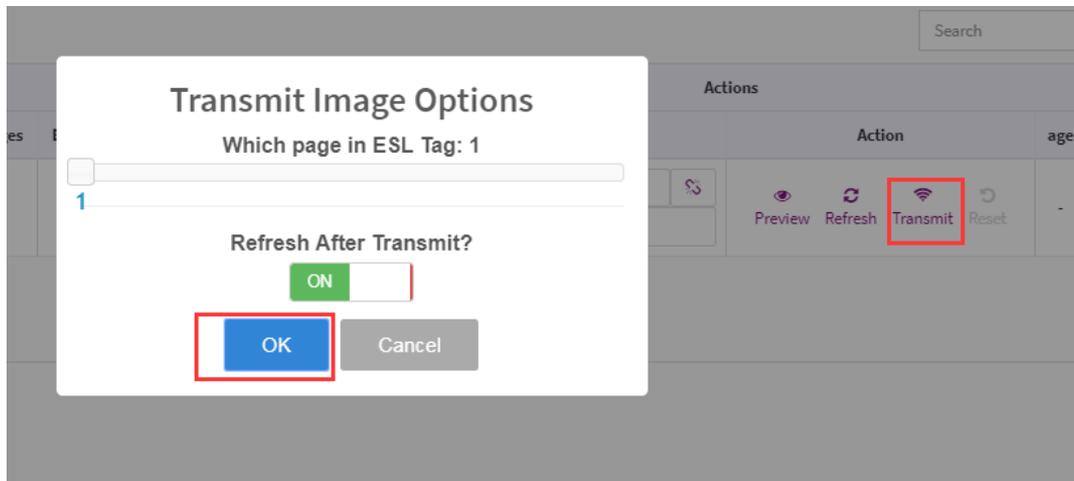
Taipei 101

Router/Destination	Due	Next
Taipei 101		15 min
Yangmingshan		20 min
Shilin Night Market		25 min
Longshan Temple		29 min

 **Rider Alert**
Temporary Bus Stop
Route 2, 26, 906
Effective December 31, 2020

OK Cancel

Refresh Tag Device- Image Refresh & Transmit



Firmware Upgrade- OTA

Upgrade Management

↑ Upgrade Operation

Choose Action

Upgrade Download Deploy

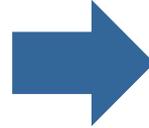
Choose Package

EPD023B						
Version	OS	Arch	Optimized	Storage	Name	
<input checked="" type="radio"/> 0.7.7.0	n/a	n/a	false	OTA	EPD023B-v0.7.7.0-e14d7b9b7dd11e81476d262211cbb176.zip	

EPD053R

Back OK

Total 6 10/page < 1 >



Upgrade Processing Information - EPDGW_023_053

Downloading

Name	Stage	Progress	Cancel
EPD023B-v0.7.7.0-e14d7b9b7dd11e81476d262211cbb176.zip	Downloading	<div style="width: 100%;"><div style="width: 100%;"></div></div> 100%	<input type="button" value="Cancel"/>

Deploying

Name	Stage	Message
There are no ongoing deploy tasks		

Downloading

Name	Stage	Progress	Cancel
There are no ongoing download tasks			

Deploying

Name	Stage	Message
EPD053R-v0.7.3.0-1a31b569527e6a540a2e46f89ba8b8e.zip	Deploying	Deploy task doing

Resful API & SampleCode

Test Parameters

Device Group	AEGroup	▼
Your Device Group (unique ID)		
Agent ID	00000001-0000-0000-0000-e04f4302cb28	▼
Your EPD tag agentid (unique ID)		
Item Code	Stop0001	▼
Your item data code (unique ID)		
Template	ADFDemo2	▼
Your template (unique ID)		
Refresh	1	
1: with refresh action; 0: without refresh action		
Page	0	
Your EPD tag memory available space (from 0 to maxpagesize-1)		

EPD Tag Transmit

Logs 1b83 - stop0001

```
-----  
Sending: {"Route1 Name":"Taipei 101","Route1 Due":"19 min","Route1 DueTime":"19","Route1 Next":"29 min","Route1 NextTime":"29","Route2 Name":"Yangmingshan","Route2  
Due":"04 min","Route2 DueTime":"","Route2 Next":"24 min","Route2 NextTime":"24","Route3 Name":"Shilin Night Market","Route3 Due":"09 min","Route3 DueTime":"","Route3  
Next":"29 min","Route3 NextTime":"29","Route4 Name":"Longshan Temple","Route4 Due":"04 min","Route4 DueTime":"4","Route4 Next":"13 min","Route4 NextTime":"13"}  
Response: Image Successfully Refresh!  
-----
```

Resful API & SampleCode

Step 1. Sign In

Step 2. Single Page Transmit

Step 3. Transmit With LED

Step 4. Transmit Multiple Images

Step 4. Switch Page

Step 5. Update Information

Step 6. Bind Batch Data

Single Tag Transmit

Test API **Source Code**

API URL:

RUN

Method:

Request Parameters:

Device group :

Which EPD device?

Which page?

Refresh or not? Yes No

```
{
  "agentid": "00000001-0000-0000-0012-4b0016562185",
  "page": "0",
  "refresh": 1
}
```

Response:

Status Code :

*Go Together,
We Go Far and Grow Big*

