

AIW EPD Deploy Guide

Category	EPD	Date	20200527
Keyword	WISE-3610Z、WISE-1810、EPD-023、EPD-053		

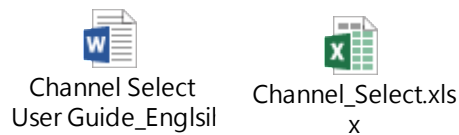
■ Introduction

Because of the wireless signal is invisible, we have to do site survey before deploy the EPD system. There are many factors that affect wireless signals. The major effect is in the different field the occupy frequency is different. All objects made of metal in the field will affect the direction of radio wave reflection. This document will tell you what do you need to do in the site survey.

■ Hardware Requirement:

1. WISE-3610Z or WISE-3240
2. ARK-2250 or ARK-1123
3. More than 6 tags
4. Spectrum Analysis tool

■ Instructurment



Step1. Select the channel frequency

Open “Channel Select User” and follow the step to do configuration. By using RF Explorer tool, you will know which channel is suitable for deployment.

Example:

After you finish the configuration, you will see the analysis result as below. Please select the channel which the “Rank” is green. You can select channel 11,24,25 or 26. Normally a clean channel can deploy two GWs.

Channel	Start Step	End Step	Below -70 dBm	Rank
11	6	9	98.81%	2
13	19	22	88.54%	7
14	25	29	88.54%	7
15	32	35	95.26%	6
20	64	68	85.77%	10
21	71	75	95.65%	5
22	78	81	86.17%	9
23	84	88	82.61%	11
24	91	94	98.42%	3
25	97	101	99.21%	1
26	104	107	98.42%	3

You can change GW transmit frequency by using ePaper Manager. Please follow below steps.

Step 1.1:

The screenshot shows a monitoring interface with a table of devices. A search bar is at the top right. A configuration menu is open on the right side, showing options for Name, Monitoring, Get/Set Data, and Status Message. The 'Get/Set Data' option is checked. Red boxes and numbers 1 through 5 highlight specific UI elements: 1 (device icon), 2 (add/edit/delete buttons), 3 (search bar), 4 (table rows), and 5 (Get/Set button in the table).

Name	Get/Set Data	Status Message
EPD-Tag-2805	Get/Set	Normal
EPD-Tag-2705	Get/Set	Normal
EPD-Router-14a8	Get/Set	Normal
EPDGW_023_053	Get/Set	Normal

Showing 1 to 4 of 4 rows

Step 1.2:

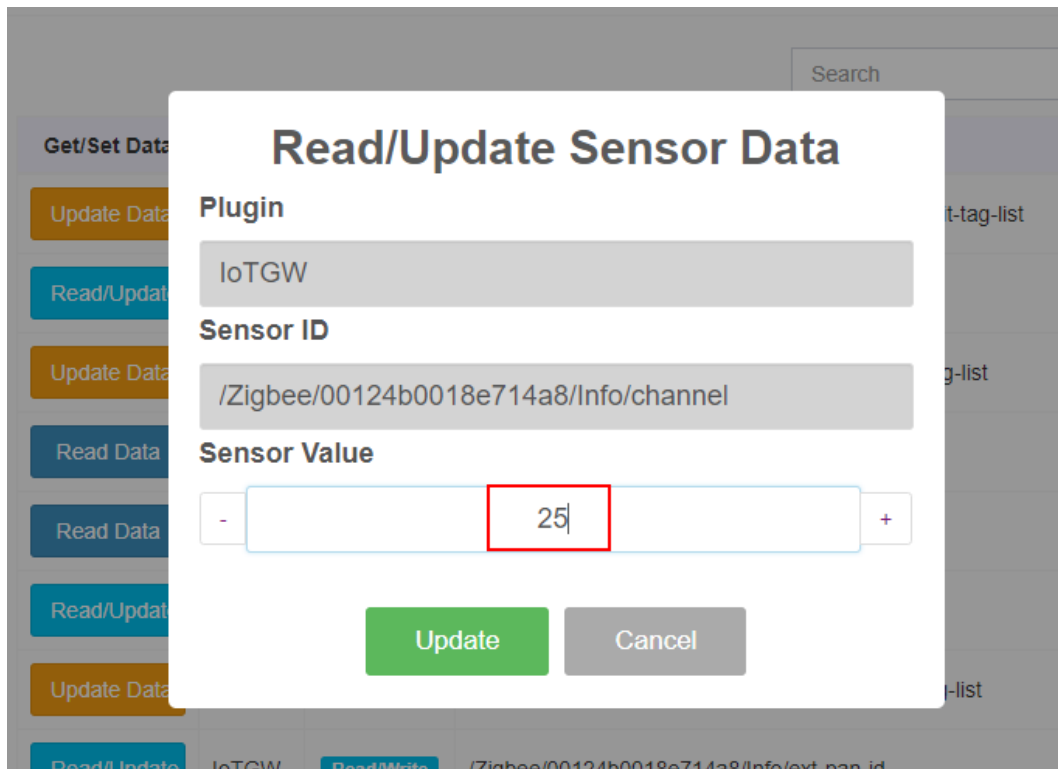
The screenshot shows the 'ePaper Manager' interface. The breadcrumb path is 'Device / Plugins'. The current view is 'Get/Set Sensor Data - EPD-Router-14a8'. A green banner displays the 'IoTGW' plugin name and a 'More info' link. A red box highlights the 'IoTGW' text.

Step 1.3:

The screenshot shows a table of configurations for the EPD-Router-14a8 device. The table has columns for Get/Set Data, Plugin, Privilege, and Sensor ID. A red box highlights the 'Read/Update' button in the first column of the row corresponding to the '/Info/channel' sensor ID.

Get/Set Data	Plugin	Privilege	Sensor ID
Update Data	IoTGW	Write Only	/Zigbee/00124b0018e714a8/Action/remove-permit-tag-list
Read/Update	IoTGW	Read/Write	/Zigbee/00124b0018e714a8/Info/tx-level-r
Update Data	IoTGW	Write Only	/Zigbee/00124b0018e714a8/Action/add-permit-tag-list
Read Data	IoTGW	Read Only	/Zigbee/00124b0018e714a8/Info/FOTA-status
Read Data	IoTGW	Read Only	/Zigbee/00124b0018e714a8/Info/DeviceList
Read/Update	IoTGW	Read/Write	/Zigbee/00124b0018e714a8/Info/channel
Update Data	IoTGW	Write Only	/Zigbee/00124b0018e714a8/Action/get-permit-tag-list
Read/Update	IoTGW	Read/Write	/Zigbee/00124b0018e714a8/Info/ext-pan-id
Update Data	IoTGW	Write Only	/Zigbee/00124b0018e714a8/Action/replace-permit-tag-list

Step 1.4: Change the channel value



Step2. Choose WISE-3610Z or WISE-3240 deploy position.

After tags location are decide, you have to choose WISE-3610Z or WISE-3240 deploy position.

In the different fields, the WISE-3610Z or WISE-3240 position will affect the tag receive the wireless signal. This document will show two samples as below.

Case 1:

Application field:

In the small warehouse, all tags will in the small region. The Shelf material is metal and it will cause serious interference. In the field, we recommend all tags are deployed around GW. Please reference below picture. In this example, a GW connects around 400 tags.



The following picture is in the real field deployment (Floor plan).

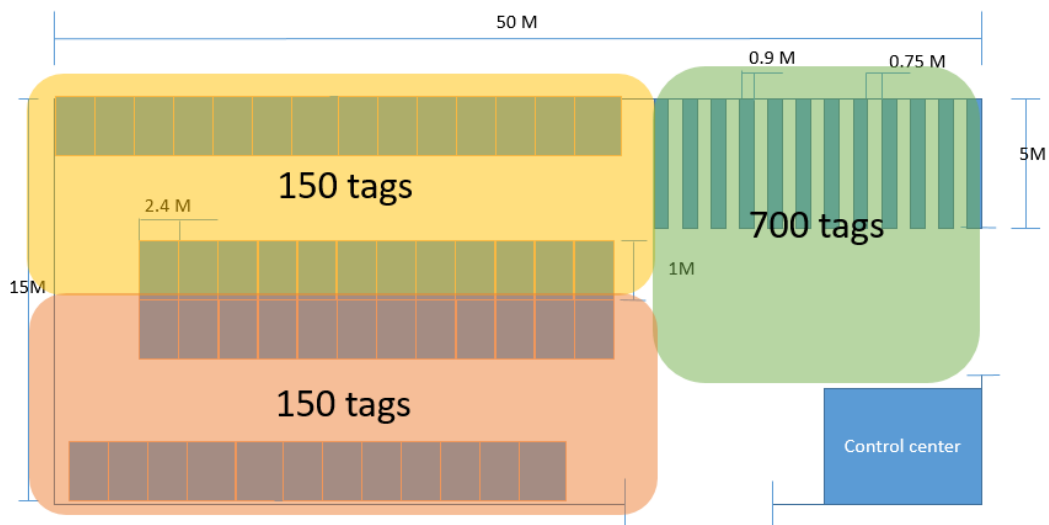


Case 2:

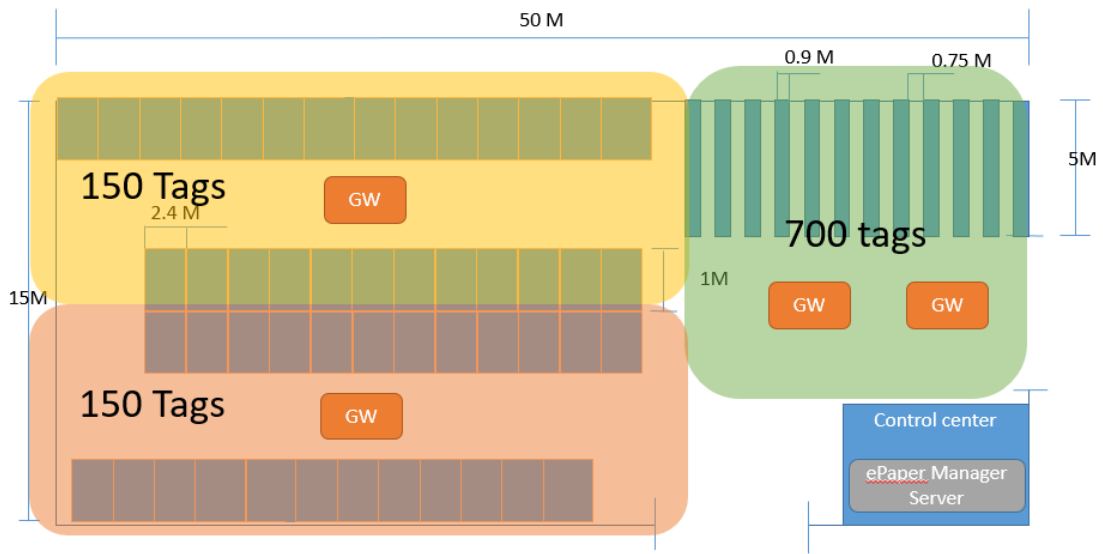
If the warehouse is wide, we have to estimate the number of connection tags and avoid across metal or cement shelters. In the following picture, I will show how to deploy in the wide warehouse.

First, we must determine the area that includes the least shadow deployment and calculate how many tags will be in that area.

In the following picture, I separate three regions and I will estimate how many GWs will deploy in each area.



A WISE-3610Z support 400 tags. If there are less than 400 tags in a field, please deploy WISE-3610 near the center of the field. You can reference yellow and orange region. In the green region, there are 700 tags in the field so we have to deploy two WISE-3610Zs. Because of there are many metal shelters, the GW in the field will be slightly away from the metal shield. If you deploy GW between shelves, the wireless signal will have interference. Please reference below picture.



Step3. Check the tags RSSI and test flash image. If the transition image is successful, we can know the interference is weak. If the transition image is fail, we have to change WISE-3610 deploy position.

Status	Power	RSSI	Tag Name	Item & Template	Action	Schedule	Update Time
Success	91%	-36dBm	EPD-053R EPD-Tag-2805 00000001-0000-0000-0012-4b0016562805	206(EPD-053-DEMO) EPD-053-DEMO	Preview Refresh Transmit Cancel	0 List	2020/5/22 17:47:33

Step4. Check WISE-3610 antenna direction is as below(option).

