Advantech AE Technical Share Document
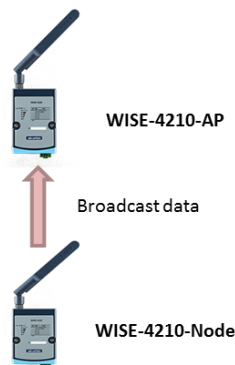
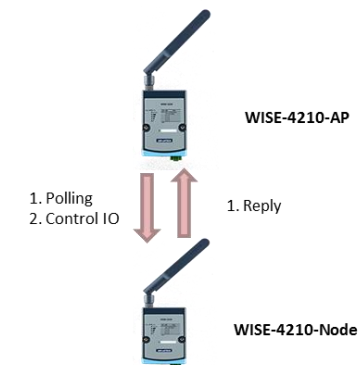| Date	2021/3/25	SR#	1-4483708504
Category	□FAQ ■SOP	Related OS	N/A
Abstract	How to control end notes IO/Modbus through WISE-4210-AP?		
Keyword	WISE, WISE-4210, LPWAN,		
Related Product	WISE-40XX series, WISE-42XX, WISE-44XX		

■ **Problem Description:**

This document shows that how to control end notes IO or the Modbus slave data through WISE-4210-AP.

The default working mode is uplink mode. An end node periodic broadcast data to an AP. Different from push mode, WISE-4210 AP will query WISE-4210 node's IO data periodically in downlink mode.

Uplink mode: Downlink mode:

In addition, it allows user to control node's IO status such as the DO, Modbus Slave value in S250 I/O board which extends the flexibility to the application of customer.

Figure 1. The topology for WISE-4210 series downlink structure.

■ **Brief Solution - Step by Step:**

Condition:
- FW Version:
  – WISE-4210 AP after vA103B08/A103B08
  – WISE-4210 end node after vA103B08
- Utility Version:
  – WISE Studio after V1.01.00 B17
- Notice:
  – Both AP and node need to be set to downlink mode at the same time.
  – In downlink mode, the WISE-4210 node will not enter into power saving mode. Because it needs to keep listening to the command from WISE-4210 AP.
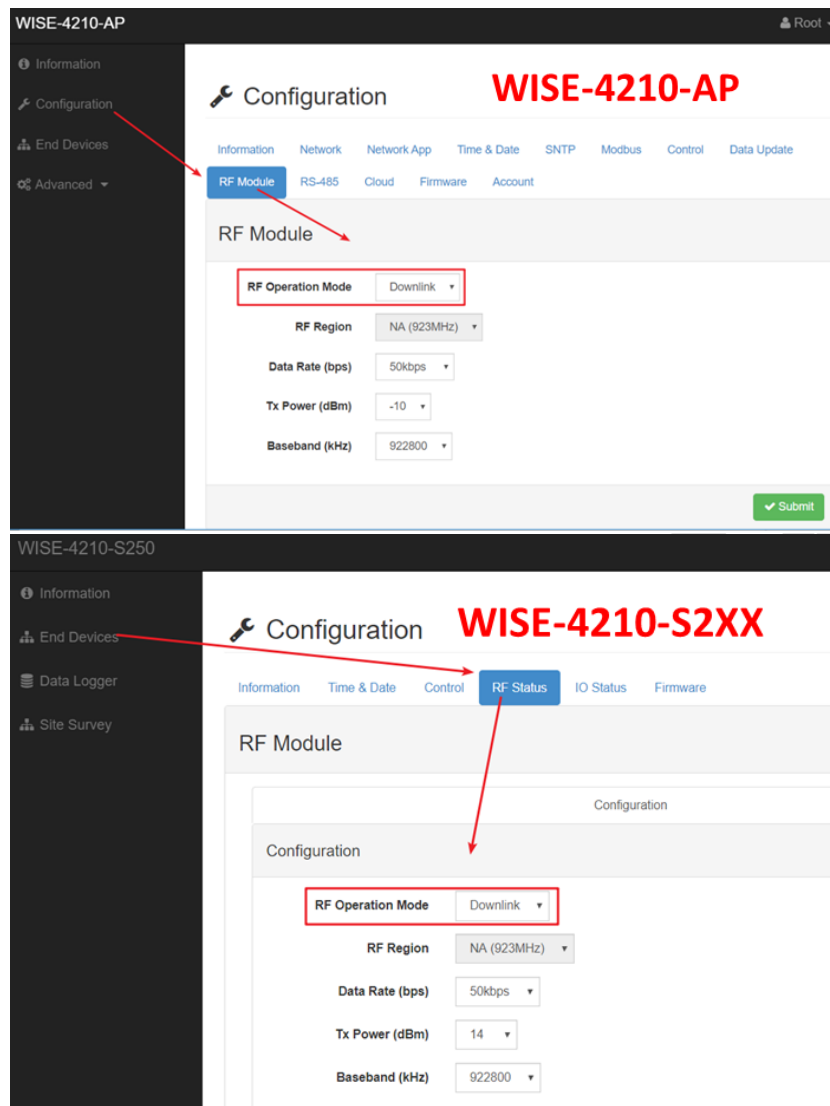

Step 1. Connect WISE-4210-AP with WISE-4210 end nodes.
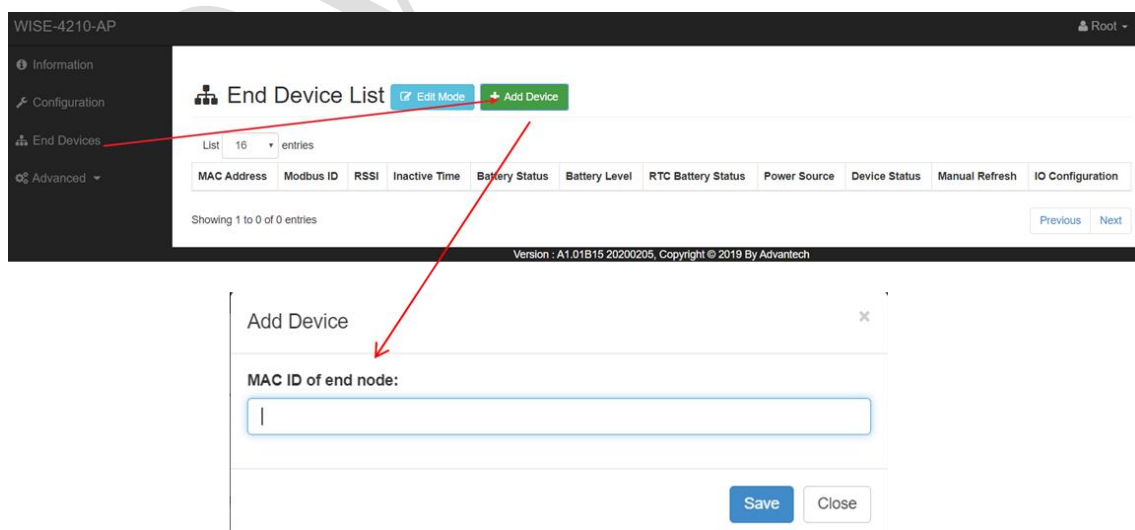   FAQ: How to connect WISE-4210-AP with end notes?
    https://www.advantech.tw/support/details/faq?id=1-1RKUW97
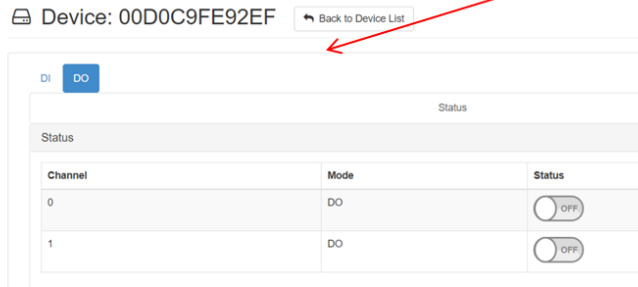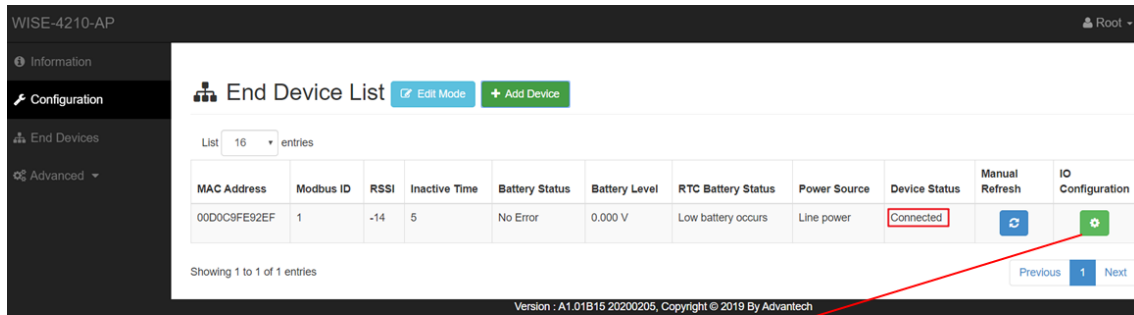   SOP video: https://bit.ly/2TK9ww7

Step 2. Go to "RF module" tab and set up the frequency, data rate, and base band. AP and end nodes need to set up using the same parameters. Both RF operation mode need to be set to downlink mode.

Step 3. The WISE-4210 end node need to be added into the list of AP manually by entering the **MAC address (If the node has 16 digit MAC, please input the last 12 digit)**
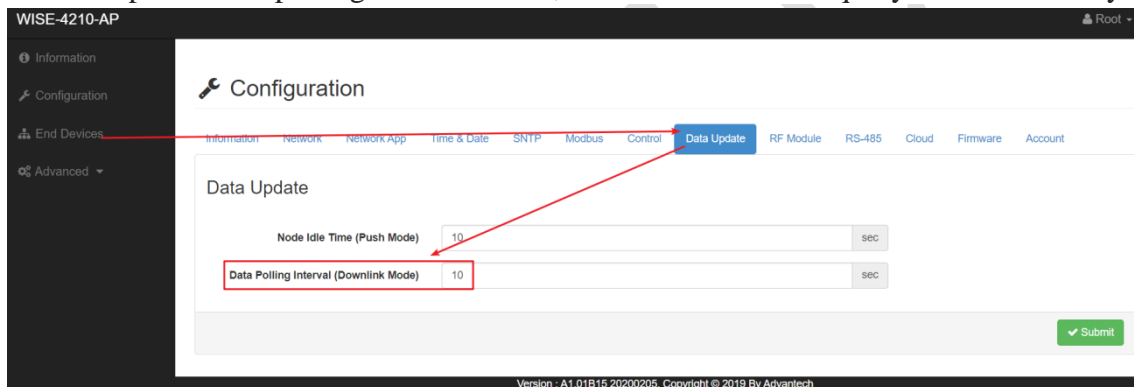

Step 4. If above steps are correct, the user should observe that the inactive time refreshed periodically. In addition, user could **get the IO information** and even **control IO**.
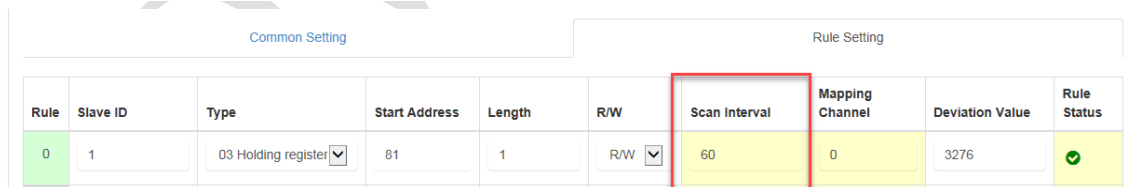
Step 5. WISE-4210 AP will query node's data according to **"Data Polling Interval"** which could be found in the main page of WISE-4210 AP.

For example: If data polling interval is 10s, WISE-4210 AP will query each node every 10s.

Step 6. It writes immediately, but reading takes approx. 60 seconds due to the scan interval parameter setting with 60s as default setting.

Rule	Slave ID	Type	Start Address	Length	R/W	Scan Interval	Mapping Channel	Deviation Value	Rule Status
0	1	03 Holding register	81	1	R/W	60	0	3276	✓

Additional info:

For more information about node status please refer to below FAQ.

IAG_FAQ_WISE-4210 Node Status Indication

https://www.advantech.tw/support/details/faq?id=1-1WXNW3H