

## Advantech AE Technical Share Document

<b>Date</b>	2020/07/31	<b>SR#</b>	1-4231034491
<b>Category</b>	■FAQ □ SOP	<b>Related OS</b>	N/A
<b>Abstract</b>	IAG_FAQ_WISE-4610_How to send MQTT command to WISE-6610 for controlling WISE-4610 RS-485 Slave devices		
<b>Keyword</b>	WISE-6610, WISE-4610, Downlink Control,		
<b>Related Product</b>	WISE-4610		

### ■ Problem Description:

To realize the downlink control function of WISE-4610, customer need to use WISE-6610 to send the downlink command to control WISE-4610 end node. It is highly suggest to use WISE-6610 GUI to send downlink command to control end node. However, some of the customer want to use MQTT instead of WISE-6610 GUI to send the downlink command.

In this document, we will use WISE-6610 to control the slave device of WISE-4610 as an example to describe what the MQTT topic and command is for sending to WISE-6610.

### ■ Answer:

#### Prerequisite:

- Update WISE-4610 FW to v1.13 B01, (For support downlink function)
- Update WISE-6610 user module to v1.1.7

The downlink control topic for WISE-4610 is **downlink/{devAddr}**, so if you want to control

WISE-4610 with device address FF389578, the downlink control MQTT topic is **downlink/FF389578**

The MQTT downlink packet is in JSON format, which is written in below format

```
{"data": "control raw data for WISE-4610", "port": application port of end node}
```

Since understanding the payload format for WISE-4610 is much more complicated and time consuming compared to use the web GUI on WISE-6610 to generate the control raw data. We will use WISE-6610 to send the downlink control MQTT command to get the control raw data for any MQTT client.

## Steps by steps:

**Step1:** As below picture shows, you can click setting button of the node you want to control

The screenshot shows the 'LoRaWAN Gateway Settings' interface. On the left is a 'Navigation' menu with links: Router, LoRaWAN Radio, Network Server, MQTT, Application Server (selected), Settings, Status, Modbus Mapping Table, Payload Engine, Licenses, and Return to Router. The main content area is titled 'LoRaWAN Gateway Settings' and 'Application Server Status'. It shows 'MQTT Status : Connected' and 'Node number : 5'. Below is a table titled 'Advantech LoRaWAN Node' with columns: Index, DevAddr, Battery, Model, Received, Fcnt, Rssi, and Action. The table lists 5 nodes. Node 5 (FF389578) has a 'Very High' battery level and a 'Setting' button highlighted in yellow. Below the table is an 'Application Log' section with 'Refresh' and 'Clear log' buttons.

Index	DevAddr	Battery	Model	Received	Fcnt	Rssi	Action
1	008FAA27	Unknown	WISE2410	2020-06-10T14:21:27Z	18	-57	Delete Setting Detail
2	C9CC0010	Unknown	WISE2410	2020-06-03T12:51:50Z	610	-69	Delete Setting Detail
3	FE449684	Unknown	WISE2410	2020-06-16T15:14:02Z	772	-46	Delete Setting Detail
4	FF19D13E	Unknown	WISE2410	2020-06-11T11:26:19Z	19	-71	Delete Setting Detail
5	FF389578	Very High	WISE4610-S672	2020-06-03T13:06:49Z	18101	-45	Delete Setting Detail

**Figure1:** The setting button for generating downlink command on WISE-6610 Application Server

**Step2:** Choose the function you want, like DO channel of WISE-4610 or RS-485 coil data.

Below example is for controlling RS-485 slave device's channel 3 logic status to high status, which is mapping to WISE-S672's COM1.

The screenshot shows the 'LoRaWAN Gateway Settings' interface, specifically the 'Information' section. It displays fields for 'Devaddr' (FF389578), 'Time' (Queue on Network Serv), 'Confirmed' (Unconfirmed Data), and 'Function' (RS-485 Coil data). Below this is a section titled 'RS-485 Coil data' with fields for 'COM Port' (1), 'Channel Index' (3), and 'Date(Binary)' (1). There are 'Set' and 'Return' buttons at the bottom.

**Figure2:** The downlink command setting on WISE-6610 Application Server

**Step3:** Go to the Transmission Frames page on network server of WISE-6610 to get the generate control raw data and application port of end node.

The screenshot shows the 'Transmission Frames' page in the 'Server Admin' section. It has a sidebar with links: Infrastructure, Devices, Backends, Received Frames, and Transmission Frames (selected). The main content area is titled 'Transmission Frames' and includes 'Add filter', 'Export', and '+ Cn' buttons. Below is a table with columns: DevAddr, Creation Time, Txdata Port, Txdata Data, confirmed, and Actions. The table shows one entry for DevAddr FF389578, Creation Time 2020-06-16 15:18:21, Txdata Port 1, and Txdata Data 800005700302010159. The 'confirmed' status is 'x' and there is a 'Delete' button in the 'Actions' column.

DevAddr	Creation Time	Txdata Port	Txdata Data	confirmed	Actions
FF389578	2020-06-16 15:18:21	1	800005700302010159	x	Delete

**Figure3:** The downlink command generated by application server

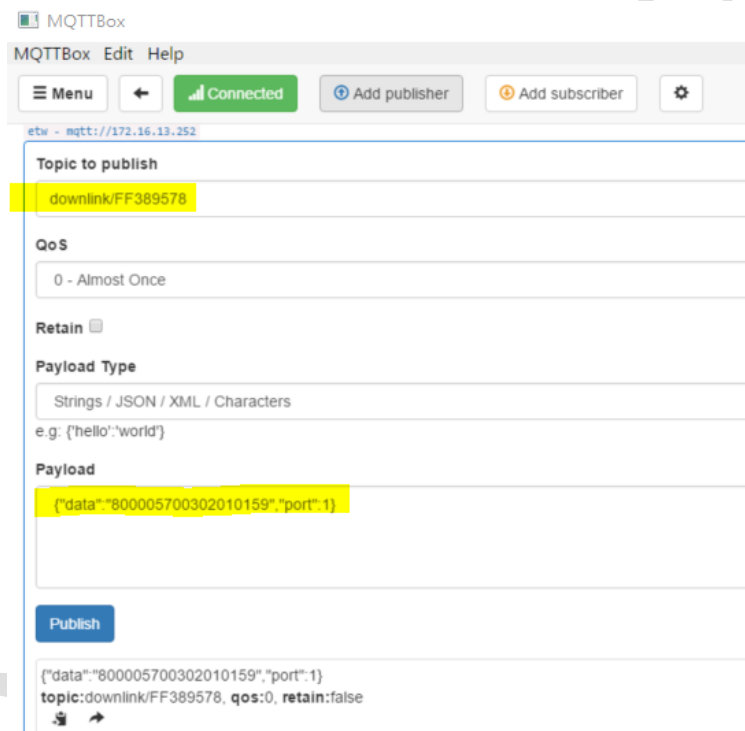
In Txdata Data column, you will see the control raw data for WISE-4610, including the CRC content. WISE-6610 will help you to generate the corresponding data and calculate the CRC based on the setting you set from application server. (picture in Step2). The port number is the same as Txdata port.

**Step4:** Send the MQTT command to downlink topic by any MQTT client.

Since the MQTT downlink packet contains the two parts, data and port number.

```
{"data": "control raw data for WISE-4610", "port": application port of end node}
```

So the MQTT command you send to WISE-6610 will be `{"data": "800005700302010159", "port": 1}`



WISE-4610 RS-485 slave device's channel 3 logic status will be changed to high status after the MQTT command is send to WISE-6610.