



# LRPv2 (BB-WSW) Node Setup Guide



# Before to Start – Download the Tool You Need

BB-WSW2C	x	Q
<a href="#">BB-WSW2C42100</a>		
LoRaWAN Node - 4 AI, 2 DI, 1 DO, IP66, Ext. Antenna , 868/915/923 MHz		
<a href="#">BB-WSW2C00015</a>		
LoRaWAN Node - RS485, Modbus, IP66, Ext. Antenna, 868/915/923 MHz		

Filter by

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<b>Technical Downloads (7)</b>
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Datasheet (1)
Firmware (1)
Manual (2)
<b>Utility (1)</b>

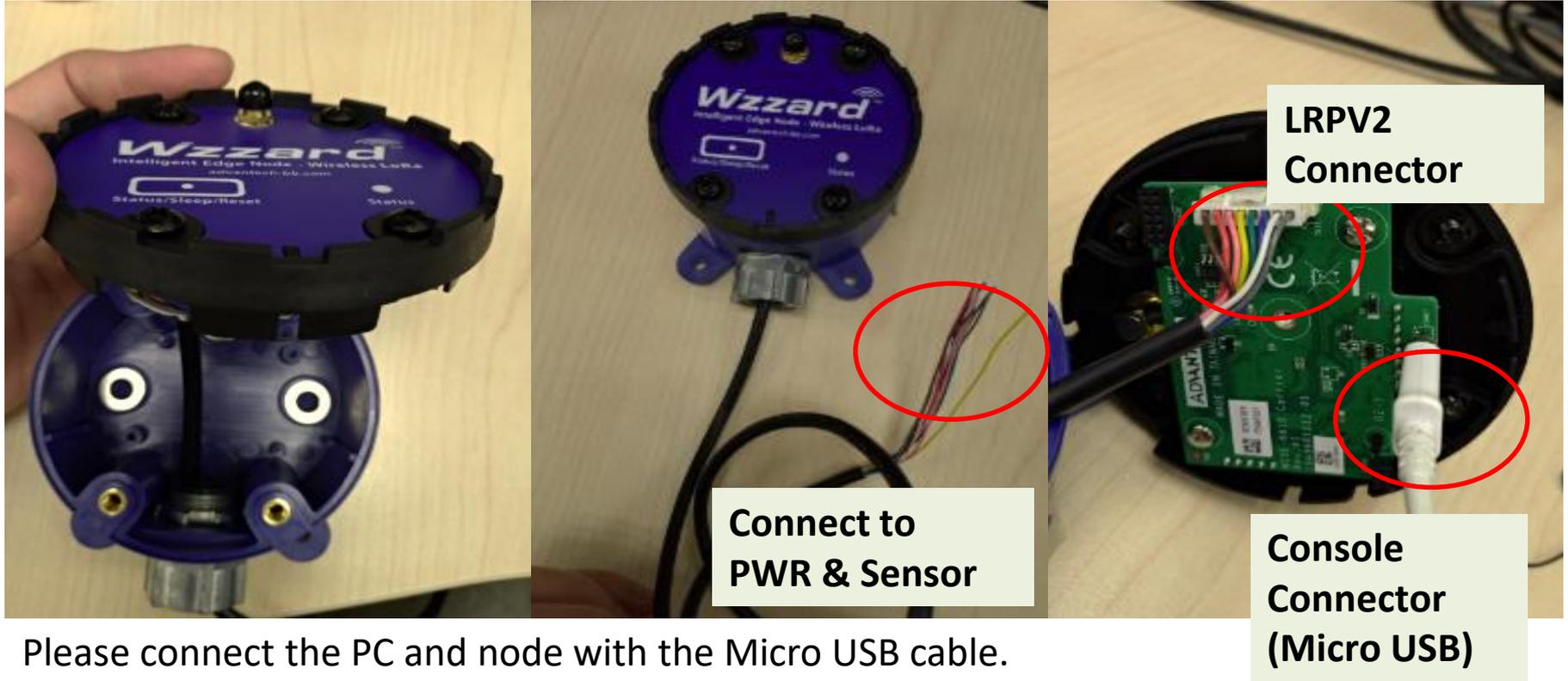
Technical Downloads - Utility

1 matching result(s)

<b>LoRaWAN-Utility</b>
Tags: Utility

1

# Physical Connection Overview



Please connect the PC and node with the Micro USB cable.

The following address direct you to the USB driver if you need it.

<https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers>

# Physical Connection for RS485(Modbus RTU) SKU

Connector							
Brown 8	Red 7	Pink 6	Yellow 5	Green 4	Blue 3	White 2	Gray 1
D-	D+	NC	NC	NC	NC	GND	PWR 9~36VDC



BB-WSW2C00015-1

LoRaWAN node w/RS485, external antenna (915MHz)

BB-WSW2C00015-2

LoRaWAN node w/RS485, external antenna (868MHz)

BB-WSW2C00015-3

LoRaWAN node w/RS485, external antenna (923MHz)

# Physical Connection for AIDIDO SKU 1/2

## Connector 1

Brown8	Red 7	Pink 6	Yellow 5	Green 4	Blue 3	White 2	Gray 1
GND	AI4	GND	AI3	GND	AI2	GND	AI1

## Connector 2

GND	DO	GND	DI2	GND	DI1	V-	V+ 9~36VDC
-----	----	-----	-----	-----	-----	----	------------

BB-WSW2C42100-1 LoRaWAN node

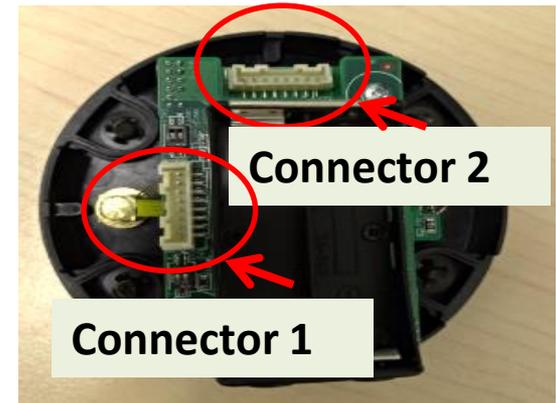
4 x AI, 2 x DI, 1 x DO, conduit, external antenna (915 MHz)

BB-WSW2C42100-2 LoRaWAN node

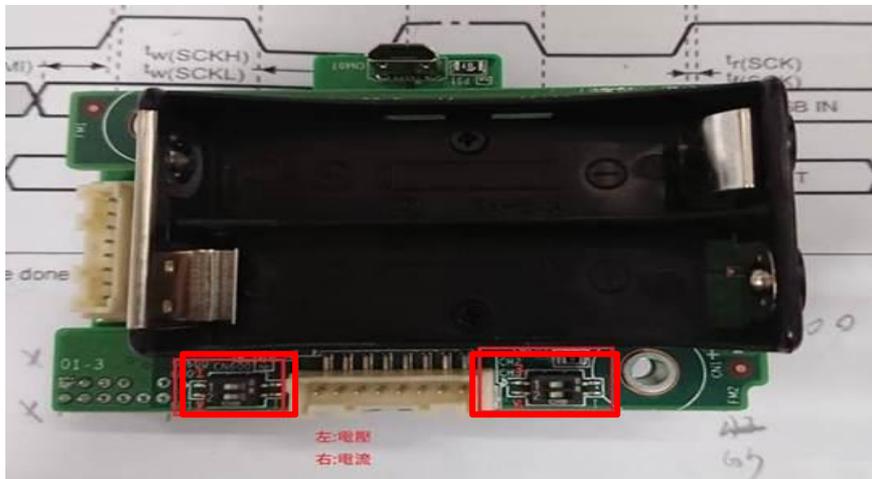
4 x AI, 2 x DI, 1 x DO, conduit, external antenna (868 MHz)

BB-WSW2C42100-3 LoRaWAN node

4 x AI, 2 x DI, 1 x DO, conduit, external antenna (923 MHz)



# Physical Connection for AIDIDO SKU 2/2



There are 4 DIP switch for switching the mode between current and volt  
---switch all DIP to the right(Current)  
---switch all DIP to the left (Volt)

BB-WSW2C42100-1 LoRaWAN node

4 x AI, 2 x DI, 1 x DO, conduit, external antenna (915 MHz)

BB-WSW2C42100-2 LoRaWAN node

4 x AI, 2 x DI, 1 x DO, conduit, external antenna (868 MHz)

BB-WSW2C42100-3 LoRaWAN node

4 x AI, 2 x DI, 1 x DO, conduit, external antenna (923 MHz)

# LoRaWAN Node Utility 1/5



After to connect the computer with the node via the console connector, it's feasible to execute the utility and configure the node. The default login password is “admin”.

LoRa Wzzard Utility

Help | Connect | Setting | About - X

System LoRaWAN Radio Sensor

**Device Information**

Model Name:

Version:

Device Description:

Serial Number:

Battery:

**Device Settings**

Enable Power Saving Mode

Battery Info Update Interval Multiplier:

**Device Location**

Enable Location

Longitude:  Latitude:

# LoRaWAN Node Utility 2/5

LoRa Wzzard Utility Help | Connect | Setting | About - X

System LoRaWAN Radio Modbus

**LoRaWAN Setting**

Join Mode

Device Address

Application Session Key

Network Session Key

ADR  On  Off

Tx Confirm  On  Off

Tx Retry Number

Class

# LoRaWAN Node Utility 3/5

## Radio settings for EU/US SKU

LoRa Wzzard Utility

Help | Connect |

System LoRaWAN Radio Sensor

### Radio Setting

Band

RF Power (dBm)

Data Rate

### Channel Frequency (Hz)

CH3  CH4  CH5

CH6  CH7

### Channel Selection

CH3  CH4  CH5  CH6  CH7

LoRa Wzzard Utility

Help | Connect | Setting | About

System LoRaWAN Radio Modbus

### Radio Setting

Band

RF Power (dBm)

Data Rate

### Channel Selection

CH0  CH1  CH2  CH3  CH4  CH5  CH6  CH7  
 CH8  CH9  CH10  CH11  CH12  CH13  CH14  CH15  
 CH16  CH17  CH18  CH19  CH20  CH21  CH22  CH23  
 CH24  CH25  CH26  CH27  CH28  CH29  CH30  CH31  
 CH32  CH33  CH34  CH35  CH36  CH37  CH38  CH39  
 CH40  CH41  CH42  CH43  CH44  CH45  CH46  CH47  
 CH48  CH49  CH50  CH51  CH52  CH53  CH54  CH55  
 CH56  CH57  CH58  CH59  CH60  CH61  CH62  CH63

# LoRaWAN Node Utility 4/5

Under sensor Page, you can configure the sensor node parameter.  
(AIDIDO SKU)

The screenshot shows the 'LoRa Wizzard Utility' window with the 'Sensor' tab selected. The 'Basic Setting' section has 'Interval of Sync. Sensor Data (sec.)' set to 15. The 'Analog Input' table is as follows:

Index	Mode	Negative	Value
1	10V	<input type="checkbox"/>	0.000000 V
2	10V	<input type="checkbox"/>	0.000000 V
3	20mA	<input type="checkbox"/>	0.000000 mA
4	20mA	<input type="checkbox"/>	0.000000 mA

The 'Digital Input' table is as follows:

Index	Enable	Value
1	<input checked="" type="checkbox"/>	High
2	<input checked="" type="checkbox"/>	High

The 'DI1 Wakeup Trigger' dropdown menu is open, showing options: Disabled, Update Sensor Data (Low->High), and Update Sensor Data (High->Low). A red dashed box highlights the 'Interval of Sync. Sensor Data (sec.)' field, and a red arrow points from it to the 'Update Sensor Data (Low->High)' option in the dropdown.

The DI Wakeup Trigger can setup Low to High or High to Low trigger.

With the LoRa chipset limitation, the minimum uplink interval should be higher than 15 sec

# LoRaWAN Node Utility 5/5

## For RS485 (ModbusRTU SKU)

Help | Connect | Setting | About

### LoRa Wzzard Utility

System LoRaWAN Radio Modbus

System LoRaWAN Radio Modbus

UART Modbus RTU Read Modbus RTU Write

UART Modbus RTU Read Modbus RTU Write

#### UART Setting

Baud Rate: 9600

Parity: None

Data Bits: 8

Stop Bits: 1

#### Modbus RTU

ID	Enable	Slave ID	Function Code	Address	Quantity	Polling Time (ms)	Modbus Timeout (ms)
1	<input checked="" type="checkbox"/>	1	1: Read coils	1	5	10000	5000
2	<input checked="" type="checkbox"/>	1	3: Read holding regis...	1	5	5000	5000
3	<input type="checkbox"/>	1	1: Read coils	1	1	1000	1000
4	<input type="checkbox"/>	1	1: Read coils	1	1	1000	1000
5	<input type="checkbox"/>	1	1: Read coils	1	1	1000	1000
6	<input type="checkbox"/>	1	1: Read coils	1	1	1000	1000

By default setting, it supports 6 read rule.

Each of the rule can read 3 Modbus address(fc:3)

It can read up to 23 address(fc:3) when speeding up the LoRa data rate.

Undo

Apply

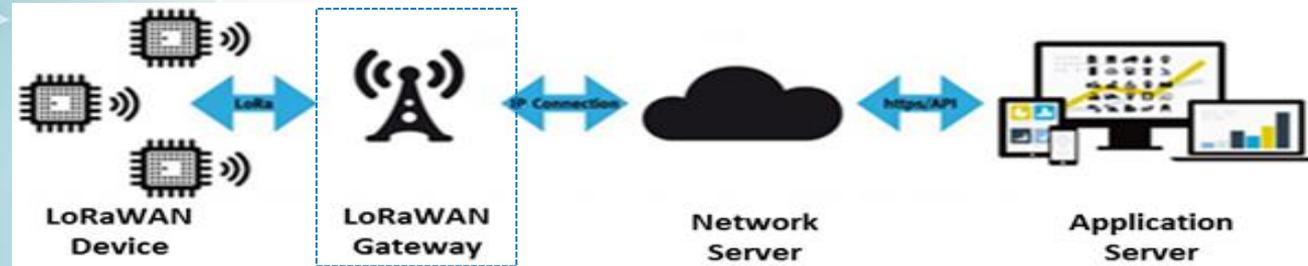
CH

# WISE-6610 Setup Guide



ADVANTECH

# GW Setting



# Physical Connection Guide – WISE-6610

## LoRaWAN gateway Pin Definition

<u>Red</u>	Yellow	<u>Black</u>	Grey
PWR+ 9~36VDC	DI	GND	DO



# WISE-6610 Overview 1) UM Access

### Login

Username

Password

GUI

Default IP is 192.168.1.1

ID/PW: root/root

Menu > Customization > User Module > LoRaWAN

GW

WISE-6610-A100-A

### Status

General  
Network  
DHCP  
IPsec  
DynDNS  
System Log

### Configuration

LAN  
VRRP  
PPPoE  
Backup Routes  
Static Routes  
Firewall  
NAT  
OpenVPN  
IPsec  
GRE  
L2TP  
PPTP  
Services  
Expansion Port  
Scripts  
Automatic Update

### Customization

**User Modules**

### Administration

Users

### User Modules

LoRaWAN Gateway	1.2.4 (20201021T031421Z)	<input type="button" value="Delete"/>
Node-RED	1.0.1 alfa (2017-03-13)	<input type="button" value="Delete"/>

New Module

# WISE-6610 Overview 2) RF Setting

1. Enable radio & Decide the uplink channel
2. No need to input downlink channel. The network server decide the downlink channel based on the uplink packets
3. Feasible to press Quick Setup to choose the channel

**Navigation**

**Router**

- LoRaWAN Radio
- Packet Forward
- LoRaWAN Status
- Network Server
- MQTT
- Application Server
- Licenses
- Return to Router

**LoRaWAN Gateway Settings**

**LoRaWAN Radio Setting**

Model Name: WISE-6610-N100C-A

Radio Enable: On

Flow on MQTT: Off

Radio 0 Main Frequency(KHz): 902700

Radio 1 Main Frequency(KHz): 903400

Channel	Enable	Radio Select	Offset(KHz)
Channel 00	On	Radio 0	-400
Channel 01	On	Radio 0	-200
Channel 02	On	Radio 0	0
Channel 03	On	Radio 0	200
Channel 04	On	Radio 1	-300
Channel 05	On	Radio 1	-100
Channel 06	On	Radio 1	100
Channel 07	On	Radio 1	300

Channel STD	Enable	Radio Select	Bandwidth	SF	Offset(KHz)
Channel STD	On	Radio 0	500Khz	8	300

Channel FSK	Enable	Radio Select	Bandwidth	Datarate (bps)	Offset(KHz)
Channel FSK	Off	Radio 0	125Khz	50000	0

Quick setting LoRaWAN Radio.

# WISE-6610 Overview 3) RF Setting

Choose the channel according to the LoRa node spec

**Navigation**

**Router**

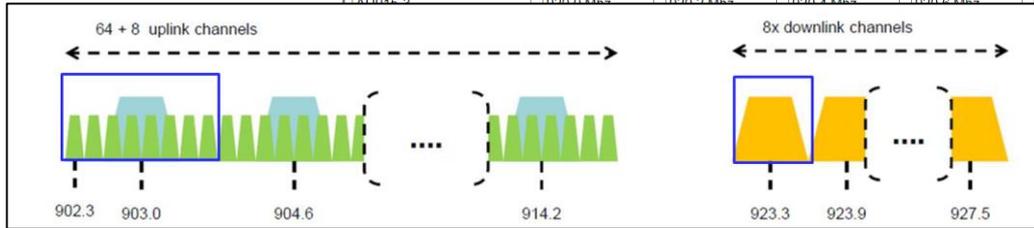
- [LoRaWAN Radio](#)
- [Packet Forward](#)
- [LoRaWAN Status](#)
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- [MQTT](#)
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**LoRaWAN Gateway Settings**

**LoRaWAN Radio Quick Setup**

US902-0(902.3Mhz-902.7Mhz) Select

	Channel 0	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6	Channel 7	Channel STD	Channel FSK
US902-0	902.3 Mhz	902.5 Mhz	902.7 Mhz	902.9 Mhz	903.1 Mhz	903.3 Mhz	903.5 Mhz	903.7 Mhz	903.0 Mhz Band	Disabled
US902-1	903.3 Mhz	903.5 Mhz	903.7 Mhz	903.9 Mhz	904.1 Mhz	904.3 Mhz	904.5 Mhz	904.7 Mhz	904.0 Mhz Band	Disabled
US902-2	905.5 Mhz	905.7 Mhz	905.9 Mhz	906.1 Mhz	906.3 Mhz	906.5 Mhz	906.7 Mhz	906.9 Mhz	906.2 Mhz Band	Disabled
US902-3	907.1 Mhz	907.3 Mhz	907.5 Mhz	907.7 Mhz	907.9 Mhz	908.1 Mhz	908.3 Mhz	908.5 Mhz	907.8 Mhz Band	Disabled
US902-4	908.7 Mhz	908.9 Mhz	909.1 Mhz	909.3 Mhz	909.5 Mhz	909.7 Mhz	909.9 Mhz	910.1 Mhz	909.4 Mhz Band	Disabled
US902-5	910.3 Mhz	910.5 Mhz	910.7 Mhz	910.9 Mhz	911.1 Mhz	911.3 Mhz	911.5 Mhz	911.7 Mhz	911.0 Mhz Band	Disabled
US902-6	911.9 Mhz	912.1 Mhz	912.3 Mhz	912.5 Mhz	912.7 Mhz	912.9 Mhz	913.1 Mhz	913.3 Mhz	912.6 Mhz Band	Disabled
US902-7	913.5 Mhz	913.7 Mhz	913.9 Mhz	914.1 Mhz	914.3 Mhz	914.5 Mhz	914.7 Mhz	914.9 Mhz	914.2 Mhz Band	Disabled
AS923-1	923.2 Mhz	923.4 Mhz	922.2 Mhz	922.4 Mhz	922.6 Mhz	922.8 Mhz	923.0 Mhz	922.0 Mhz	922.1 Mhz Band	921.8 Mhz Band
AS923-2	923.2 Mhz	923.4 Mhz	923.6 Mhz	923.8 Mhz	924.0 Mhz	924.2 Mhz	924.4 Mhz	924.6 Mhz	924.5 Mhz Band	924.8 Mhz Band
AU915-0	915.2 Mhz	915.4 Mhz	915.6 Mhz	915.8 Mhz	916.0 Mhz	916.2 Mhz	916.4 Mhz	916.6 Mhz	915.9 Mhz Band	Disabled
AU915-1	916.8 Mhz	917.0 Mhz	917.2 Mhz	917.4 Mhz	917.6 Mhz	917.8 Mhz	918.0 Mhz	918.2 Mhz	917.5 Mhz Band	Disabled
AU915-2	918.4 Mhz	918.6 Mhz	918.8 Mhz	919.0 Mhz	919.2 Mhz	919.4 Mhz	919.6 Mhz	919.8 Mhz	919.1 Mhz Band	Disabled
AU915-3	920.0 Mhz	920.2 Mhz	920.4 Mhz	920.6 Mhz	920.8 Mhz	921.0 Mhz	921.2 Mhz	921.4 Mhz	920.7 Mhz Band	Disabled
AU915-4	922.4 Mhz	922.6 Mhz	922.8 Mhz	923.0 Mhz	923.2 Mhz	923.4 Mhz	923.6 Mhz	923.8 Mhz	922.3 Mhz Band	Disabled
AU915-5	924.0 Mhz	924.2 Mhz	924.4 Mhz	924.6 Mhz	924.8 Mhz	925.0 Mhz	925.2 Mhz	925.4 Mhz	923.9 Mhz Band	Disabled
AU915-6	925.6 Mhz	925.8 Mhz	926.0 Mhz	926.2 Mhz	926.4 Mhz	926.6 Mhz	926.8 Mhz	927.0 Mhz	925.5 Mhz Band	Disabled
AU915-7	927.2 Mhz	927.4 Mhz	927.6 Mhz	927.8 Mhz	928.0 Mhz	928.2 Mhz	928.4 Mhz	928.6 Mhz	927.1 Mhz Band	Disabled
AU915-8	922.9 Mhz	923.1 Mhz	923.3 Mhz	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled



Channel 0 Channel 1 Channel 2 Channel 3 Channel 4 Channel 5 Channel 6 Channel 7 Channel STD Channel FSK

US902-0 902.3 Mhz 902.5 Mhz 902.7 Mhz 902.9 Mhz 903.1 Mhz 903.3 Mhz 903.5 Mhz 903.7 Mhz 903.0 Mhz Band Disabled

# WISE-6610 Overview 4) Network Server Setting

Channel 04	<input type="text" value="On"/>	<input type="text" value="Radio 1"/>	<input type="text" value="-300"/>	
Channel 05	<input type="text" value="On"/>	<input type="text" value="Radio 1"/>	<input type="text" value="-100"/>	
Channel 06	<input type="text" value="On"/>	<input type="text" value="Radio 1"/>	<input type="text" value="100"/>	
Channel 07	<input type="text" value="On"/>	<input type="text" value="Radio 1"/>	<input type="text" value="300"/>	
Channel STD	Enable <input type="text" value="On"/>	Radio Select <input type="text" value="Radio 0"/>	Bandwidth <input type="text" value="500Khz"/>	SF <input type="text" value="8"/>
Channel FSK	Enable <input type="text" value="Off"/>	Radio Select <input type="text" value="Radio 0"/>	Bandwidth <input type="text" value="125Khz"/>	Datarate (bps) <input type="text" value="50000"/>

Quick setting LoRaWAN Radio

Direct the LoRaWAN GW to a network server

## LoRaWAN Gateway Setting

LoRaWAN Gateway Identifier	<input type="text" value="FE5A72FFFE968CA0"/>		
Network server	IP address <input type="text" value="127.0.0.1"/>	Upstream Port <input type="text" value="1680"/>	Downstream Port <input type="text" value="1680"/>
Backup server	<input type="text" value="127.0.0.1"/>	<input type="text" value="1680"/>	<input type="text" value="1680"/>
Backup Enable	<input type="text" value="Off"/>		
Backup Database Interval	<input type="text" value="5"/>		

Since WISE-6610 supports network server feature, You can direct the data to WISE-6610(127.0.0.1) itself.

# WISE-6610 Overview 5) GW MQTT Setting

Navigation
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<a href="#">Network Server</a>
<a href="#">MQTT</a>
<a href="#">Application Server</a>
<a href="#">Licenses</a>
<a href="#">Return to Router</a>

LoRaWAN Gateway Settings	
<b>MQTT Broker</b>	
<b>MQTT Broker Enable</b>	
<input type="text" value="On"/>	Enable the local MQTT broker.
<b>MQTT Broker Port</b>	
<input type="text" value="1883"/>	The local MQTT broker TCP port number ( 1 - 65535 ).
<b>MQTT Bridge</b>	
<b>MQTT Bridge Enable</b>	
<input type="text" value="Off"/>	Enable bridging to a remote MQTT broker.
<b>MQTT Bridge Port</b>	
<input type="text" value="1883"/>	The remote MQTT broker TCP port number ( 1 - 65535 ).
<b>MQTT Bridge Address</b>	
<input type="text"/>	The remote MQTT broker address.
<b>MQTT Bridge User</b>	
<input type="text"/>	The user name for the remote MQTT broker.
<b>MQTT Bridge Password</b>	
<input type="text"/>	The password for the remote MQTT broker.
<b>MQTT Bridge Client Identifier</b>	
<input type="text"/>	The client identifier for the remote MQTT broker.
<input type="button" value="Save"/>	

WISE-6610 supports MQTT broker to process the data handled by the network server.

# WISE-6610 Overview 6) Status Checking

**Navigation**

**Router**

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- [Packet Forward](#)
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- [Network Server](#)
- [MQTT](#)
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- [Licenses](#)
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**LoRaWAN Gateway Settings**

**Basic Status**

Data Record Time : 2020-08-24T11:01:27Z  
Total Up Stream : 11727804 Bytes  
CRC OK packet : 147976  
CRC Bad packet : 23026  
NO CRC packet : 0

**Channel Status**

Channel	Radio Index	Enabled	Frequency(Hz)	Received(Bytes)
0	0	Enabled	923200000	1099472
1	0	Enabled	923400000	3100135
2	1	Enabled	922200000	634261
3	1	Enabled	922400000	1777192
4	0	Enabled	922600000	1197207
5	0	Enabled	922800000	1221097
6	0	Enabled	923000000	1142409
7	1	Enabled	922000000	1556031
STD	1	Enabled	922100000	0
FSK	1	Enabled	921800000	0

**OpLink Frame**

UTC Time	Type	Devaddr/EUI	Freq	DR	RSSI	Fcnt	Data
2020-08-24T03:00:57.089456Z	Unconfirmed Data Down	FE449684	922.60Mhz	SF7BW125	-97	873	YISWRP4gaQNECULC
2020-08-24T03:00:57.849425Z	Confirmed Data Up	FF45D787	922.00Mhz	SF7BW125	-41	28286	gIFXRf+Afm4BcZ3WlaEX3L828z7y563eUkyTkU/2sLO3R/Zc/YMw5ZqzFv/amAFaG5KsvTzpgD/ImQd/gczZTm
2020-08-24T03:01:05.970092Z	Confirmed Data Up	FE449684	923.40Mhz	SF7BW125	-31	873	gISWRP6AaQMBAnX13aCI7sQ3Ic8n88yuzQPETulqgtF1bK/H9SVw73B89SKifkUT8Z4j6Kt6aDf9u5YDNkVfwor
2020-08-24T03:01:07.013055Z	Unconfirmed Data Down	FE449684	922.60Mhz	SF7BW125	-96	874	YISWRP4gagPK2HPZ
2020-08-24T03:01:07.715030Z	Confirmed Data Up	FF45D787	923.00Mhz	SF7BW125	-21	28287	gIFXRf+Af24Bh7ZVIVmyhStgC3+yUsWH72JM/IC4N45Q9nxL0+3lAgdDCFF77DVwyA1Plf29kFCKY1EnAvY57
2020-08-24T03:01:15.464653Z	Confirmed Data Up	5678D123	923.40Mhz	SF10BW125	-97	42461	gCPReFYA3aUBco+FXjnrjbzPA
2020-08-24T03:01:16.085619Z	Confirmed Data Up	FE449684	923.40Mhz	SF7BW125	-49	874	gISWRP6AagMBVvMCOUnUOJ3YS2zkYs2uku0hzlSBCnMR4qFKiYGoEZ+GF9NwrwH64jd6ApTUK+EwSPJ/cOs
2020-08-	Confirmed	FE45D787	922.60Mhz	SF7BW125	-73	28288	gIFXRf+AcG4RbDTH+KpaawW2lRMeVktHbblEEncz7u1R1kv1h1kN6HRCnRnSnHTfEDDuir/cfksSvOf7Nvys

Raw data is received after to enable the LoRaWAN radio, you can check if wireless functions well in this page.

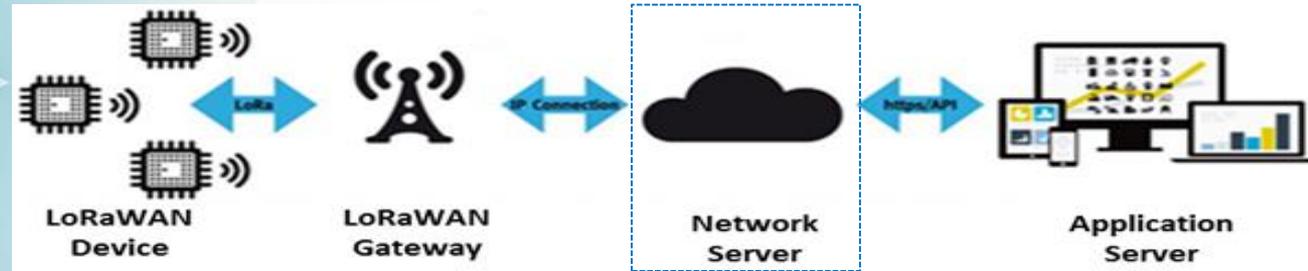
# WISE-6610 Overview 7) Network Server Link

Navigation	
Router	
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• <a href="#">LoRaWAN Status</a>	
<b><a href="#">Network Server</a></b>	
<a href="#">MQTT</a>	
<a href="#">Application Server</a>	
<a href="#">Licenses</a>	
<a href="#">Return to Router</a>	

LoRaWAN Gateway Settings						
<b>Basic Status</b>						
Data Record Time : 2020-08-24T11:01:27Z						
Total Up Stream : 11727804 Bytes						
CRC OK packet : 147976						
CRC Bad packet : 23026						
NO CRC packet : 0						
<b>Channel Status</b>						
Channel	Radio Index	Enabled	Frequency(Hz)	Received(Bytes)		
0	0	Enabled	923200000	1099472		
1	0	Enabled	923400000	3100135		
2	1	Enabled	922200000	634261		
3	1	Enabled	922400000	1777192		
4	0	Enabled	922600000	1197207		
5	0	Enabled	922800000	1221097		
6	0	Enabled	923000000	1142409		
7	1	Enabled	922000000	1556031		
STD	1	Enabled	922100000	0		
FSK	1	Enabled	921800000	0		
<b>Uplink Frame</b>						
UTC Time	Type	Devaddr/EUI Freq	DR	RSSI	Fcnt	Data
2020-08-24T03:00:57.089456Z	Unconfirmed Data Down	FE449684	922.60Mhz SF7BW125	-97	873	YISWRP4gaQNECULC
2020-08-24T03:00:57.849425Z	Confirmed Data Up	FF45D787	922.00Mhz SF7BW125	-41	28286	gIFXRf+Afm4BcZ3WlaEX3L828z7y563eUkyTkU/2sLO3R/Zc/YMw5ZqzFv/amAFaG5KsvTzpgD/imQd/gczTmj
2020-08-24T03:01:05.970092Z	Confirmed Data Up	FE449684	923.40Mhz SF7BW125	-31	873	gISWRP6AaQMBANXi3aCi7sQ3lc8n88yuxQPETulqgtF1bK/H9SVw73B89SkifkuT8Z4j6Kt6aDf9u5YDNkVfwo
2020-08-24T03:01:07.013055Z	Unconfirmed Data Down	FE449684	922.60Mhz SF7BW125	-96	874	YISWRP4gagPK2HPZ
2020-08-24T03:01:07.715030Z	Confirmed Data Up	FF45D787	923.00Mhz SF7BW125	-21	28287	gIFXRf+Af24Bh7VZlvmYhStgC3+yUsWH72JM/IC4N45Q9nxL0+3lAgdCFF77DVwyA1PLf29kFCKY1EnAvY57
2020-08-24T03:01:15.464653Z	Confirmed Data Up	5678D123	923.40Mhz SF10BW125	-97	42461	gCPRfeFYA3uUBco+FXjnrzbpA
2020-08-24T03:01:16.085619Z	Confirmed Data Up	FE449684	923.40Mhz SF7BW125	-49	874	gISWRP6AagMBVwMCOUnUOJ3YS2zkYs2uku0hZlSBCnMR4qFKiYGoEZ+GF9NwrvH64jd6ApTUK+EwSPJ/COs
2020-08-	Confirmed	FF45D787	922.60Mhz SF7BW125	-23	28288	gIFXRf+AgC4BhDTH+lKagwW/URMeVKThblFFGz7vIR3kv1h3lW6H8rC6PnSnHTdFDDur/cfbaSv/Of7NvwS

After configuring the LoRaWAN setting, please go to LoRaWAN server(network server) to create the data processing rule on Network server

# Network Server Setting



# Network Server Configuration – Assign the Gateway

1. Please assign the LoRaWAN GW to network server
2. Please leave the Tx chain as 0 (according to WISE6610's HW spec)

Server Admin

Infrastructure

Gateways

Networks

Multicast Channels

Events

Devices

Backends

Received Frames

Transmission Frames

## Gateways List

Export

Create

<input type="checkbox"/> MAC	Group	Description	IP Address	Dwell [%]	Last Alive	Status
<input type="checkbox"/> FE5A72FFFE9660A0			127.0.0.1	0.000	2018-07-12T11:09:29Z	✓

MAC \* FE5A72FFFE9660A0

Group

TX Chain \* 0

### LoRaWAN Gateway Setting

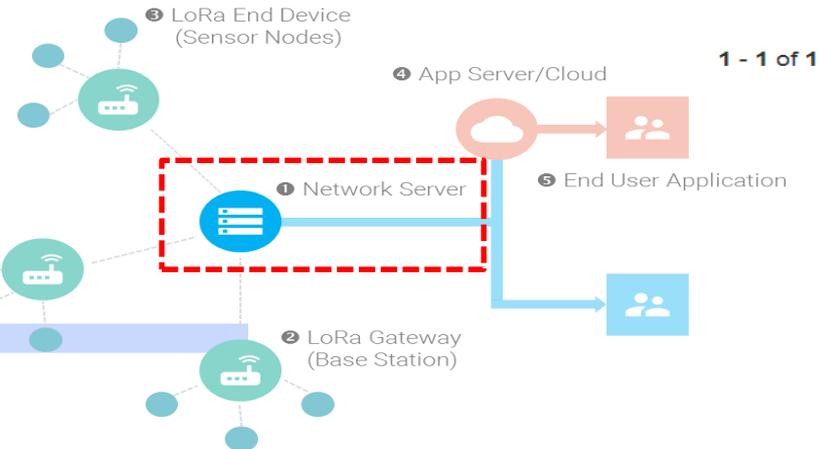
LoRaWAN Gateway Identifier FE5A72FFFE9660A0

IP address	127.0.0.1	Upstream Port	1680	Downstream Port	1680
Network server	127.0.0.1	1680	1680		
Backup server	127.0.0.1	1680	1680		

Backup Enable Off

Backup Database Interval 5

Save



# Network Server Configuration – Assign the Network

Server Admin

Infrastructure

Gateways

Networks

Multicast Channels

Events

Devices

Backends

Received Frames

Transmission Frames

## Networks List

Export

Create

<input type="checkbox"/>	Name	NetID	SubID	Region
<input type="checkbox"/>	EU868	000000		EU868
<input type="checkbox"/>	AU915	000000		AU915
<input type="checkbox"/>	AS923	000000		AS923
<input type="checkbox"/>	US902	000000		US902

1. Define the network frequency for the network server
2. There are 4 setting(EU/AU/AS/US) are pre-configured by default. All the parameter are complying with LoRaWAN regulation.

1 - 4 of 4

# Network Server Configuration – Create the handler

Server Admin

- Infrastructure
- Gateways
- Networks
- Multicast Channels
- Events
- Devices
- Backends
- Handlers**
- Connectors
- Received Frames

## Handlers List

Export Create

Application	Fields	Payload	D/L Expires
<input type="checkbox"/> WISE6610_Handler	devaddr fcnt port data datetime rssi appargs		never

1 - 1 of 1

- > Configure the handler
- > Define what information you want to receive
- > It's a rule for the network server to process data

# Network Server Configuration – Configure the Handler

Server Admin

Infrastructure

Gateways

Networks

Multicast Channels

Events

Devices

Backends

Handlers

Connectors

Received Frames

Transmission Frames

## Edit handler #WISE6610\_Handler

Application \*

WISE6610\_Handler

Uplink Fields

devaddr ✕

fcnt ✕

port ✕

data ✕

datetime ✕

rsssi ✕

appargs ✕

Payload

Filter values

Parse Uplink

Define what information you want to receive

# Network Server Configuration – Setup the Data Connector

Server Admin

- Infrastructure
  - Gateways
  - Networks
  - Multicast Channels
  - Events
- Devices
- Backends
  - Handlers
  - Connectors**
  - Received Frames

## Connectors List

Export Create

Name	Application	URI	Publish Uplinks	Received Topic	Enabled
WISE6610_Broker	WISE6610_Handler	mqtt://127.0.0.1:1883	uplink/{devaddr}	downlink/{devaddr}	✓
WISE6610_Websocket	WISE6610_Handler	ws:	/ws/uplink/{devaddr}		✓

Define how to process the data after to the network server decrypts the data

1 - 2 of 2

Example: Through MQTT

In this example : We save the Topic on localhost's MQTT broker

1. Publish Uplink(MQTT topic) for Rx
2. Receive topic (MQTT topic) for Tx

# Network Server Configuration – Configure the Connector

The screenshot displays the configuration interface for a network server connector. On the left, a sidebar menu lists various infrastructure components, with 'Connectors' highlighted by a red dashed box. The main area is titled 'Edit connector #WISE6610\_Broker' and features two tabs: 'General' and 'Authentication'. The 'General' tab is active, showing a form with the following fields:

- Connector Name \***: WISE6610\_Broker
- Application**: WISE6610\_Handler
- Format \***: JSON
- URI \***: mqtt://127.0.0.1:1883
- Publish Uplinks**: uplink/{devaddr}
- Publish Events**: (empty)
- Subscribe**: downlink/#
- Received Topic**: downlink/{devaddr}
- Enabled \***:

At the bottom of the form, there is a 'Failed' section with a 'Filter values' input field.

# Network Server Configuration – Create Profiles for Nodes

Server Admin

- Infrastructure
- Gateways
- Networks
- Multicast Channels
- Events
- Devices
  - Profiles**
  - Commissioned
  - Activated (Nodes)
  - Ignored
- Backends

## Profiles List

Export Create

<input type="checkbox"/>	Name	Network	Application	App Identifier
<input type="checkbox"/>	US902_WISH6610_Handler	US902	WISE6610_Handler	
<input type="checkbox"/>	AS923_WISH6610_Handler	AS923	WISE6610_Handler	
<input type="checkbox"/>	AU915_WISH6610_Handler	AU915	WISE6610_Handler	
<input type="checkbox"/>	EU868_WISH6610_Handler	EU868	WISE6610_Handler	

1 - 4 of 4

**Here, we are starting to configure the LoRa node setting**  
**The target is to pair the handler with the network frequency for the LoRa node**

# Network Server Configuration – Configure Profiles

Server Admin

- Infrastructure
  - Gateways
  - Networks
  - Multicast Channels
  - Events
- Devices
  - Profiles**
  - Commissioned
  - Activated (Nodes)
  - Ignored
- Backends
  - Handlers

## Edit profile #US902\_WISE6610\_Handler

General

ADR

To configure the nodes, you need to pair the handler with the network frequency through profile setting

Name \*

US902\_WISE6610\_Handler

Network \*

US902

Application \*

WISE6610\_Handler

App Identifier

Can Join?

true

\*Can Join is the option for OTAA setting

FCnt Check

Strict 32-bit

TX Window

Auto

Assign Rx1 or Rx2 for the node to receive Tx  
Generally, we suggest leave it in AUTO

# Network Server Configuration – Create Node's Rule

Server Admin

Infrastructure

- Gateways
- Networks
- Multicast Channels
- Events

Devices

- Profiles
- Commissioned
- Activated (Nodes)**
- Ignored

Backends

Please add(configure) the node according to your node's type

## Nodes List

Add filter ▾ Export Create

DevAddr	Profile	App Arguments	FCnt Up	FCnt Down	Battery	D/L SNR	Last RX	Status
<input type="checkbox"/> FE3E0C51	US902_WISH6610_Handler	Advantech	1	0	254	29	2018-06-12T10:41:28Z	

1 - 1 of 1

For ABP type (Ex: Advantech LRPv2 node default setting), please choose **Activated(Nodes)**

DevAddr \* FE3E0C51

Profile \* US902\_WISH6610\_Handler

App Arguments Advantech

NwkSKey \* 965F6942F29C9EBE5747E25F07DA5114

AppSKey \* A46847D184323C21C992D8F9EF4B7CE9

Please choose the profile and input DevAddr/ NwkSkey/AppSKey

# Network Server Configuration – ABP Nodes

General ADR Status

DevAddr \* FE4E939E

Profile \* US902\_WISE6610\_Handler

App Arguments Advantech

NwkSKey \* 00000000000000000000000000000001

AppSKey \* 00000000000000000000000000000001

FCnt Up 95

FCnt Down \* 2

Last Reset

Last RX 2019-01-24T17:41:36Z

Device

Gateways	MAC	U/L RSSI	U/L SNR
	FE5A72FFFE9660A0	-61	12.5

On these fields, it will record how many packets it receives and sends

Also, it shows which gateway receives the data from this node

# Network Server Configuration – OTAA Nodes

For OTAA nodes, please configure it through Commissioned

Server Admin

- Infrastructure
- Gateways
- Networks
- Multicast Channels
- Events
- Devices
  - Profiles
  - Commissioned OTAA**
  - Activated (Nodes)
  - Ignored
- Backends

## Devices List

▼ Add filter 📄 Export ➕ Create

<input type="checkbox"/>	DevEUI	Profile	App Arguments	Last Join	Node
<input type="checkbox"/>	00000000000000000004	US902_WISH6610_Handler			
<input type="checkbox"/>	000000234000000004	US902_WISH6610_Handler			

1 - 2 of 2

**DevEUI \*** 000000000000000004

**Profile \*** US902\_WISH6610\_Handler

**App Arguments**

**AppEUI** FFFFFFFF12345678

**AppKey \*** 01020304050607080910111213141516

**Last Join**

**Node** ABC12333

Please choose the profile and input DevEUI/ AppEUI/AppSKey

# Network Server Configuration – Check Receiving Frames

You can verify if the LoRaWAN network server functions well. Please check it through “receive frame“

## Received Frames

Add filter

Export

Received	Application	DevAddr	MAC	U/L RSSI	U/L SNR	FCnt	Confirm	Port	Data
2018-06-12T10:41:28Z	WISE6610_Handler	FE3E0C51	FE5A72FFFE9660A0	-61	8	1	✘	15	00112233
2018-06-07T16:12:04Z	WISE6610_Handler	FE3E0C51	FE5A72FFFE9660A0	-71	11.5	569	✘	5	01000162C
2018-06-07T16:12:01Z	WISE6610_Handler	FE3E0C51	FE5A72FFFE9660A0	-71	10.5	568	✘	5	01000162C
2018-06-07T16:11:58Z	WISE6610_Handler	FE3E0C51	FE5A72FFFE9660A0	-64	8.8	567	✘	5	01000162C
2018-06-07T16:11:55Z	WISE6610_Handler	FE3E0C51	FE5A72FFFE9660A0	-66	9	566	✘	5	01000162C
2018-06-	WISE6610_Handler	FE3E0C51	FE5A72FFFE9660A0	-65	8.2	565	✘	5	01000162C

# Send Tx Frames

## Connectors List

Name	Application	URI	Publish Uplinks	Received Topic	Enabled
WISE6610_Broker	WISE6610_Handler	mqtt://127.0.0.1:1883	uplink/{devaddr}	downlink/{devaddr}	✓
WISE6610_Websocket	WISE6610_Handler	ws://127.0.0.1:1883	uplink/{devaddr}	downlink/{devaddr}	✓

send Tx frames to the nodes via the **Web UI**

send Tx frames to the nodes via **MQTT** message

e.g. Class A node {"data":"11","port":13}

e.g. Class C node {"data":"11","time":"immediately","port":13}

Server Admin

- Infrastructure
  - Gateways
  - Networks
  - Multicast Channels
  - Events
- Devices
  - Profiles
  - Commissioned
  - Activated (Nodes)
  - Ignored
- Backends
  - Handlers
  - Connectors
  - Received Frames
  - Transmission Frames**

## Transmission Frames

Add filter ▾ Export ⌵ **Create**

DevAddr ▲ Creation Time Txdata Port Txdata Data confirmed Actions

### Create new txframe

General

**Configure the tx port according to the node**

DevAddr \* FE44F531 ✓

Tx port

Tx data \* e.g. 001122(HEX)

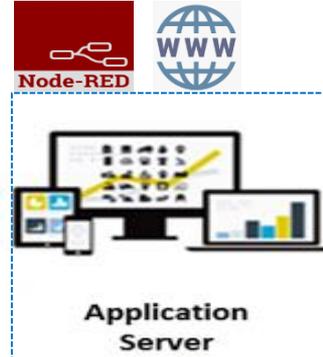
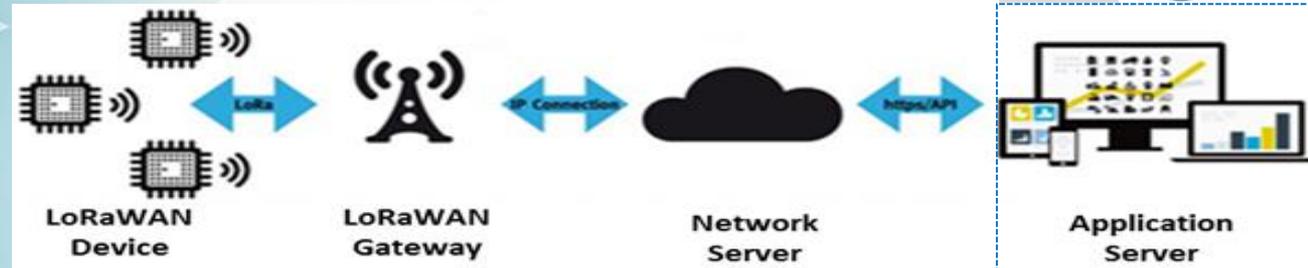
confirmed false ✕ ▾

immediately false ✕ ▾

Submit

**Network server will not resend the message even it's dropped**

# Application Server Setting



# Node-RED Setting 1/4

## WISE-6610-A100-A

Status	User Modules
General	LoRaWAN Gateway 1.2.4 (20201021T031421Z) <input type="button" value="Delete"/>
Network	<b>Node-RED 1.0.1 alfa (2017-03-13) <input type="button" value="Delete"/></b>
DHCP	
IPsec	
DynDNS	
System Log	
<b>Configuration</b>	
LAN	
VRPP	
PPPoE	
Backup Routes	
Static Routes	
Firewall	
NAT	
OpenVPN	
IPsec	
GRE	
L2TP	
PPTP	
Services	
Expansion Port	
Scripts	
Automatic Update	
<b>Customization</b>	
<b>User Modules</b>	
<b>Administration</b>	
Users	

New Module

Since the message are already delivered through MQTT, you can use any MQTT software to receive the node data. Or, going to Node-RED to receive the node data

# Node-RED Setting 2/4

## Node-RED configuration

**Status**

Log

**Configuration**

Node-RED

**Customization**

Return

**Configuration module**

Enable Automatic Start

Port  the port used to serve the editor UI. Default: 1880.

Node-RED will start immediately.

## Enable Node-RED on WISE-6610 1880 port

**Status**

Log

**Configuration**

Node-RED

**Customization**

Return

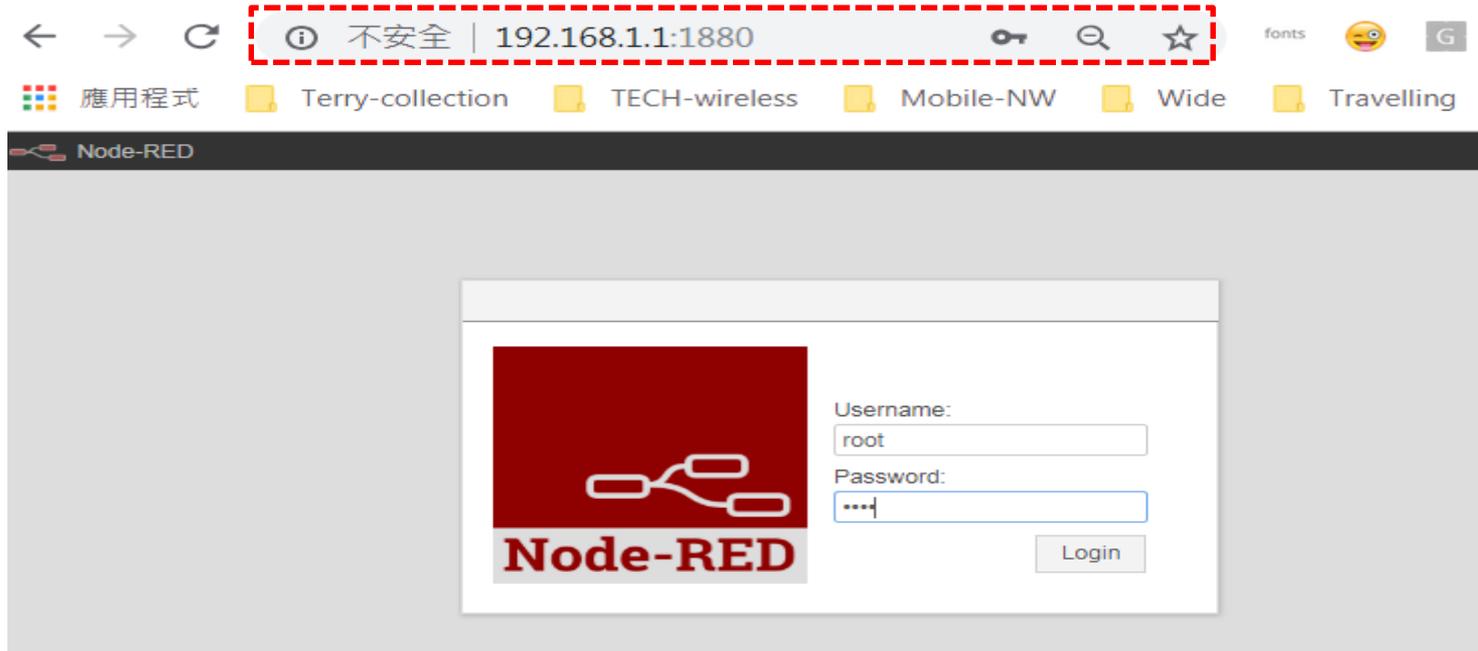
**Log**

Log Messages

```
Node-RED service start: Thu Oct 11 14:48:02 GMT 2018

Welcome to Node-RED
=====
11 Oct 14:48:42 - [info] Node-RED version: v0.15.2
11 Oct 14:48:42 - [info] Node.js version: v4.7.0
11 Oct 14:48:42 - [info] Linux 3.12.10+ arm LE
11 Oct 14:48:43 - [info] Palette editor disabled : npm command not found
11 Oct 14:48:43 - [info] Loading palette nodes
11 Oct 14:49:00 - [info] Dashboard version 2.3.5 started at /ui
11 Oct 14:49:13 - [info] Settings file : /opt/nodered/node-red/settings.js
11 Oct 14:49:13 - [info] User directory : /opt/nodered/node-red
11 Oct 14:49:13 - [info] Flows file : /opt/nodered/node-red/flows_router.js
11 Oct 14:49:13 - [info] Server now running at http://127.0.0.1:1880/
11 Oct 14:49:14 - [info] Starting flows
```

# Node-RED Setting 3/4



Access [http://{WISE-6610\\_IP}:1880](http://192.168.1.1:1880)  
ID/PW: root/root



# Application for Advantech LRPv2 Nodes 1/4

If you have one more App argument setting, you can receive Advantech sensor data which already be classified.

Please ensure the Application server is enabled and go for “App argument“ setting

## Advantech Application Server Setting

### Application Server Enable

Enable the local Application Server.

### Application Server Connect MQTT Address

Application Server remote MQTT broker address.

### Application Server Connect MQTT Port

Application Server remote MQTT broker TCP port number ( 1 - 65535 ).

### MQTT User

The user name for the remote MQTT broker.

### MQTT Password

The password for the remote MQTT broker.

### Uplink Topic

Subscribe topic from MQTT broker.

### Downlink Topic

publish topic to MQTT broker.



# Application for Advantech LRPv2 Nodes 3/4

Server Admin

- Infrastructure
- Gateways
- Networks
- Multicast Channels
- Events
- Devices
- Backends
- Handlers**
- Connectors
- Received Frames

## Handlers List

Export Create

Application	Fields	Payload	D/L Expires
<input type="checkbox"/> WISE6610_Handler	<input type="checkbox"/> devaddr <input type="checkbox"/> fcnt <input type="checkbox"/> port <input type="checkbox"/> data <input type="checkbox"/> datetime <input type="checkbox"/> rssi <input type="checkbox"/> appargs		never

1 - 1 of 1

> Make sure the handler equips the above items, it's the item for filtering Advantech BB-WSW nodes

# Application for Advantech LRPv2 Nodes 4/4

Once the setting is done, the application on the gateway allows you monitor and manage Advantech nodes. It doesn't support other nodes come from other vendor.

**Navigation**

**Router**

- [LoRaWAN Radio](#)
- [Network Server](#)
- [MQTT](#)
- [Application Server](#)
  - [Settings](#)
  - [Status](#)
  - [Modbus Mapping Table](#)
  - [Payload Engine](#)
- [Licenses](#)
- [Return to Router](#)

**LoRaWAN Gateway Settings**

**Application Server Status**

MQTT Status : Connected  
Node number : 1

**Advantech LoRaWAN Node**

Index	DevAddr	Description	Model	Received	Fcnt	Rssi	Action
1	FE42080F		BB-WSW2C00015	2019-02-23T09:55:01Z	301	-64	<input type="button" value="Delete"/> <input type="button" value="Setting"/> <input type="button" value="Detail"/>

**Application Log**

**LoRaWAN Gateway Settings**

**Node Detail Data**

Devaddr  
FE42080F

Transaction	Slave ID	Address	Function	Length	Data
0	1	1	Read Holding Registers (FC=03)	5	[0x000c,0x007a,0x0036,0x01c7,0x01c4,]

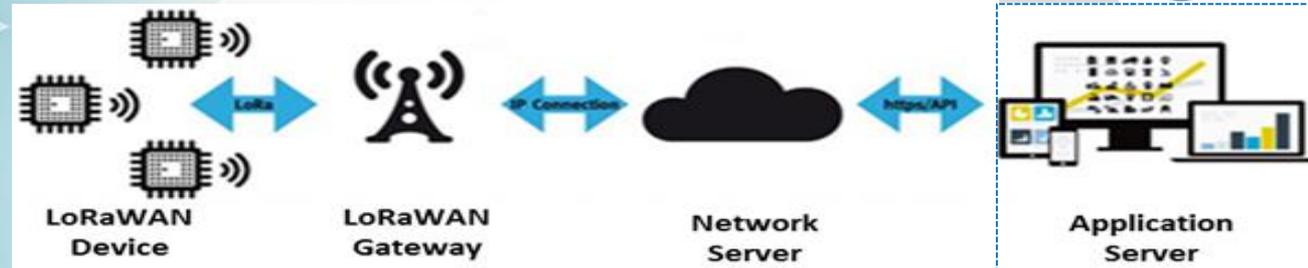
If LoRaWAN node is BB-WSW node, it's feasible to manage and configure it on WISE-6610's application server

# Subscribe the Data which had been Filtered

The image shows a screenshot of an MQTT client interface. On the left, the 'Edit mqtt in node' dialog is open, showing configuration for a server at 127.0.0.1:1883, a topic of 'Advantech/+data', QoS of 2, and a name field. A red dashed box highlights the server and topic fields. On the right, the 'debug' tab shows a message log with two entries. A red dashed box highlights the payload of the second message, which is a JSON object containing device information and a timestamp.

MQTT topic "Advantech/{DevAddr}/data"

# Application Server Modbus TCP



# Modbus TCP Mapping 1/3

If you have Application Server enabled. Also, having App argument setting “Advantech” for BB-WSW node. There is a new ModbusTCP mapping function to bridge the sensor data (RS485/AI/DI/DO) with your SCADA system.

**Navigation**  
**Router**  
[LoRaWAN Radio](#)  
[Network Server](#)  
[MQTT](#)  
[Application Server](#)

- [Settings](#)
- [Status](#)
- [Modbus Mapping Table](#)
- [Payload Engine](#)

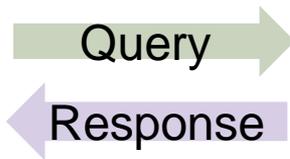
[Licenses](#)  
[Return to Router](#)

**LoRaWAN Gateway Settings**  
**Modbus TCP Mapping Table**

Request Slave ID	Node ID	Type	Action
1	FE4E939E	Class A	Delete
2	FE0D242C	Class A	Delete

Modified/Add      Restart Application

SCADA  
Modbus Master  
IP:192.168.1.1



Modbus Slave  
IP:192.168.1.2

RS485  
AI/DI/DO  
Sensor  
data

# Modbus TCP Mapping 2/3

Please add the node info and map the slave ID to the BB-WSW node. We prepare the Modbus Address Table for mapping with the input on BB-WSW node(see next page).

1. Only Class A type for AI/DI/DO SKU
2. Class A/C was supported on RS485 SKU. If you choose Class C, the Modbus Table will follow the original Modbus address on the sensor. So you can query the sensor directly.

Navigation	LoRaWAN Gateway Settings
<b>Router</b>	<b>Modbus TCP Mapping Setting</b>
<a href="#">LoRaWAN Radio</a>	<b>Request Slave ID</b>
<a href="#">Network Server</a>	<input type="text" value="1"/>
<a href="#">MQTT</a>	<b>Node ID</b>
<a href="#">Application Server</a>	<input type="text" value="FE4E939E"/>
• <a href="#">Settings</a>	<b>Type</b>
• <a href="#">Status</a>	<input type="text" value="Class A"/>
• <a href="#">Modbus Mapping Table</a>	<b>Node Slave ID</b>
• <a href="#">Payload Engine</a>	<input type="text" value="1"/>
<a href="#">Licenses</a>	<small>If type select Class C , must set this value ( 1 - 247 or 255 ).</small>
<a href="#">Return to Router</a>	

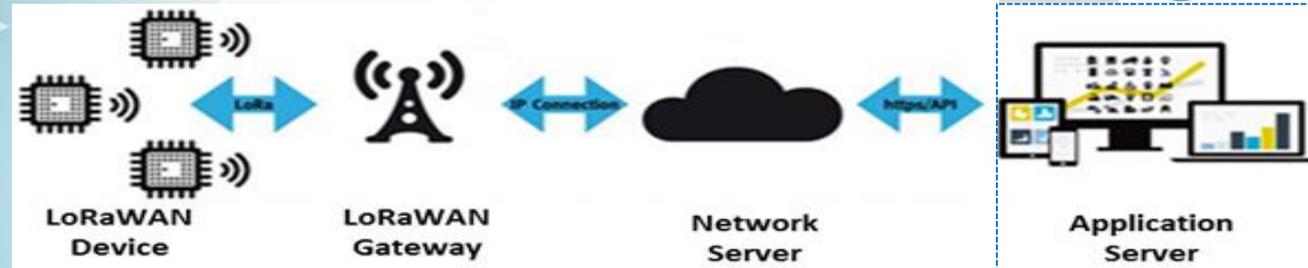
# Modbus TCP Mapping 3/3

Please refer to this FAQ:

What is the Modbus Address definition of BB Wizard on WISE-6610

<https://www.advantech.com/support/details/faq?id=1-21ZCCS1>

# Application Server Payload Engine

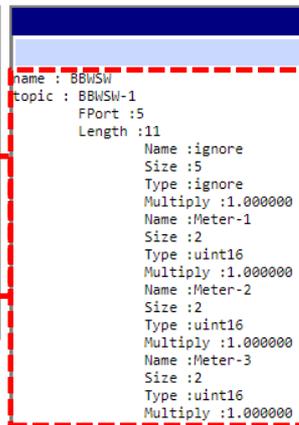
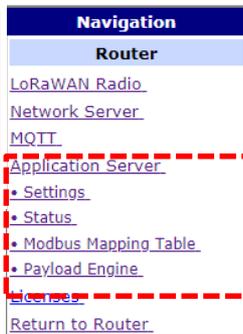


# A Local Decoder in The Edge

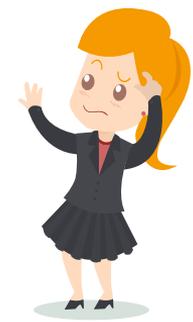
The Answer is “YES”

It's feasible to decode the data payload through “Node-RED” or the “payload engine”

Can WISE-6610 support decoding the LoRaWAN sensor raw data payload ?



BBWSW-1/EE4E030E : msg.payload : string [42]  
{"Meter-1":234,"Meter-2":11,"Meter-3":434}



# Payload Engine Helps You Define The Decoder For Sensors

## Application server > Payload Engine

### Navigation

#### Router

- [LoRaWAN Radio](#)
- [Network Server](#)
- [MQTT](#)
- [Application Server](#)
- [Settings](#)
- [Status](#)
- [Modbus Mapping Table](#)
- [Payload Engine](#)

#### Router

- [LoRaWAN Radio](#)
- [Network Server](#)
- [MQTT](#)
- [Application Server](#)
- [Settings](#)
- [Status](#)
- [Modbus Mapping Table](#)
- [Payload Engine](#)

### LoRaWAN Gateway Settings

#### Payload Engine List

Index	Name	Action
1	BBWSW	<input type="button" value="Detail"/> <input type="button" value="Delete"/>
2	Occupancy	<input type="button" value="Detail"/> <input type="button" value="Delete"/>
3	Temperature	<input type="button" value="Detail"/> <input type="button" value="Delete"/>

### Payload Engine Detail

```
name : BBWSW
topic : BBWSW-1
  FPort : 5
  Length : 11
    Name : ignore
    Size : 5
    Type : ignore
    Multiply : 1.000000
  Name : Meter-1
  Size : 2
  Type : uint16
  Multiply : 1.000000
```

# Target: Readable Payload

The screenshot displays the Node-RED web interface. On the left, the 'input' category is expanded, showing various nodes like inject, catch, status, link, mqtt, and http. The main workspace shows a flow named 'Flow 1' with the following components: an MQTT node (labeled '#') with a 'connected' status, a 'json' node, and two 'msg.payload' nodes. A red arrow points from the 'json' node to the debug console.

The debug console shows the following log entries:

```
2019/6/20 上午11:15:57 aefdfa1.7b0f7
uplink/FE4E939E : msg.payload : string [152]
{"appargs": "BBWSW", "data": "010001620000EA000B01B2", "datetime": "2019-06-20T11:39:57Z", "devaddr": "FE4E939E", "fcnt": 12479, "lsnr": -1.8, "port": 5, "rssi": -117}

2019/6/20 上午11:15:57 3fda4453.233b4c
uplink/FE4E939E : msg.payload : Object
{ "appargs": "BBWSW", "data": "010001620000EA000B01B2", "datetime": "2019-06-20T11:39:57Z", "devaddr": "FE4E939E", "fcnt": 12479, "lsnr": -1.8, "port": 5, "rssi": -117 }

2019/6/20 上午11:15:57 aefdfa1.7b0f7
BBWSW-1/FE4E939E : msg.payload : string [48]
{"Meter-1": 23.400000, "Meter-2": 11, "Meter-3": 434}
```

# Steps of Adding Payload Engine

Please assign/edit different payload engine name for the different sensor type

**Navigation**

- Router
  - LoRaWAN Radio
  - Network Server
  - MQTT
  - Application Server
  - Settings
  - Status
  - Modbus Mapping Table
  - Payload Engine

**LoRaWAN Gateway Settings**

**Payload Engine List**

Index	Name	Action
1	BBWSW	<button>Detail</button> <button>Delete</button>
2	Occupancy	<button>Detail</button> <button>Delete</button>
	Temperature	<button>Detail</button> <button>Delete</button>

**Buttons:** Add Engine Restart Application

**Nodes List**

DevAddr	Profile	App Arguments	FCnt Up	FCnt Down	Battery	D/L SNR	Last RX	Status
FE4E939E	US902_WISE6610_Handler	BBWSW	134	0	254	10	2019-06-19T15:55:49Z	✓

The sensor's App Arguments is the ID which should match with the payload engine name

# Add Payload Engine / Payload Engine Format

## LoRaWAN Gateway Settings

### Payload Engine

```
{  
  "appname": "BBWSW",  
  "out_topic": "BBWSW-1",  
  "devaddr": true,  
  "packet": [{  
    "fport": 5,  
    "value": [{  
      "format": "ignore",  
      "name": "ignore",  
      "length": 5  
    }, {  
      "format": "uint16",  
      "name": "Meter-1",  
      "multiply": 0.1  
    }, {  
      "format": "uint16",  
      "name": "Meter-2"  
    }, {  
      "format": "uint16",  
      "name": "Meter-3"  
    }  
  ]  
}]  
}
```

uplink/FE4E939E : msg.payload : Object Ignore 234 11 434 (Dec)  
{ "appargs": "BBWSW", "data": "010001620d00EA000B01B2", (Hex)  
"datetime": "2019-06-20T11:52:49Z", "devaddr": "FE4E939E",  
"fcnt": 12613, "lsnr": -1.8, "port": 5, "rssi": -114 }

BBWSW-1/FE4E939E : msg.payload : string [48]

{"Meter-1":23.400000,"Meter-2":11,"Meter-3":434}

format	Size(byte)	format	Size(byte)
uint8	1	int8	1
uint16	2	int16	2
uint32	4	int32	4
uint64	8	int64	8
double32	4	double64	8
str	variable	ignore	variable
boolean	1		

# Advanced Payload Engine Format

```
{
  "appname": "NewFeature",
  "out_topic": "NewFeature",
  "devaddr": true,
  "packet":
  [{
    "fport": 1,
    "value": [{
      "format": "uint32",
      "name": "type1",
      "arithmetic": [{
        "action": "additon",
        "value": 2
      }, {
        "action": "substraction",
        "value": 3
      }, {
        "action": "multiply",
        "value": 1.2
      }, {
        "action": "division",
        "value": 1.1
      }
    ]
  }
  ]
}
```

Using “arithmetic” for the complicated calculation.

It will do the calculation in the order of your parameter.

So, it will do +, -, \* then / in this example.

# Appendix



ADVANTECH

# How To Have The Local Time in Received Frames

## 1 Configuration

- LAN
- VRRP
- Mobile WAN
- PPPoE
- Backup Routes
- Static Routes
- Firewall
- NAT
- OpenVPN
- IPsec
- GRE
- L2TP
- PPTP
- Services
  - DynDNS
  - FTP
  - HTTP
  - NTP
  - SNMP

Make sure the UM version is over 1.0.19

Enable local NTP service

Synchronize clock with NTP server

Primary NTP Server

Secondary NTP Server

Timezone

Daylight Saving Time

**Choose the Local Timezone**

## 2 Administration

- Users
- Change Profile
- Change Password
- Set Real Time Clock
- Set SMS Service Center
- Unlock SIM Card

## Set the Local Time

Date

Time

NTP Server Address

3

**Erase the Cookies of the Browser**

4

**Go to Received Frames**

 Received Frames

THANK YOU

