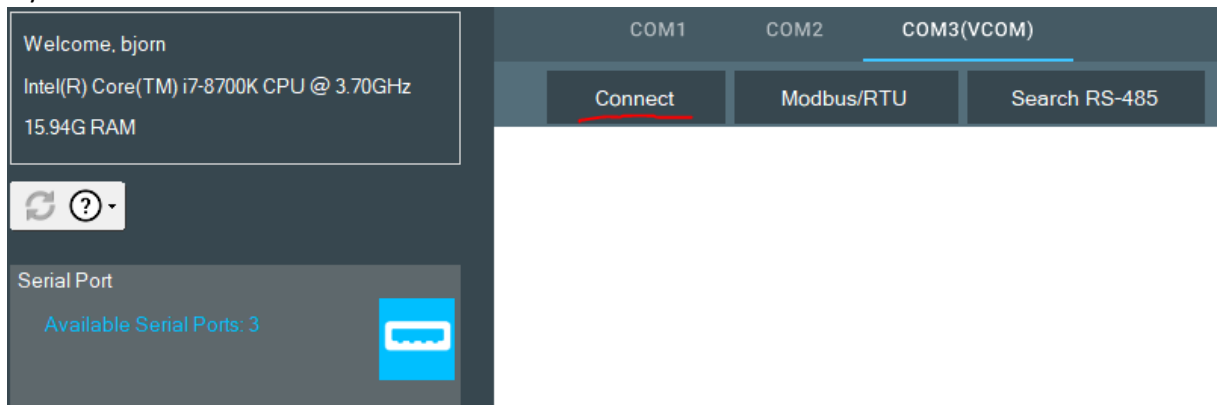
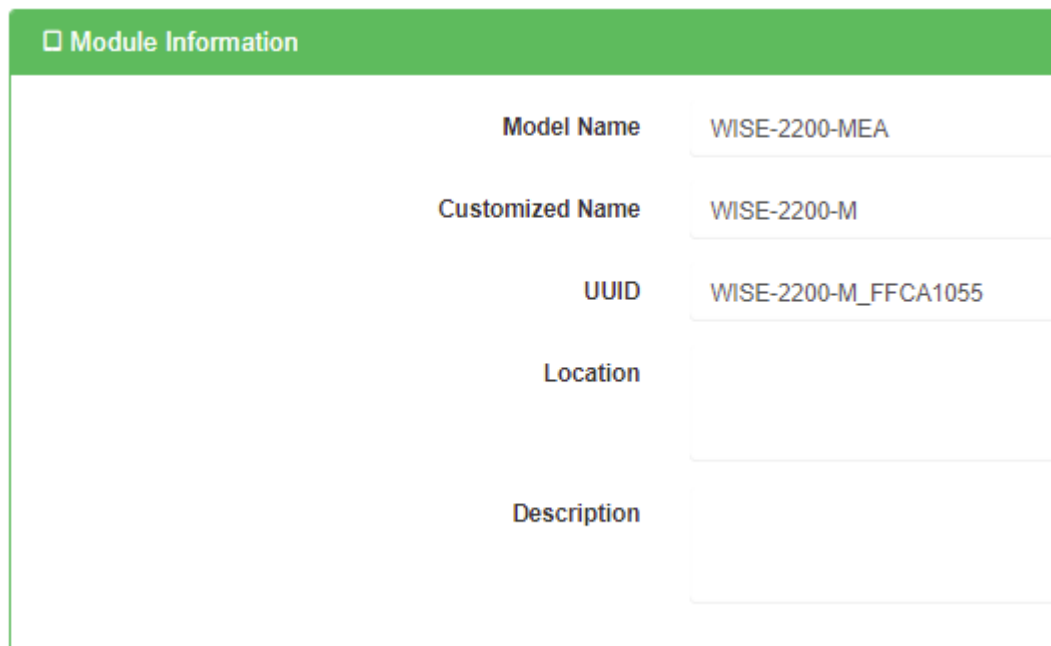


## Oppstartsmanual for WISE-2200-M Modbus-RTU til Lora

1. Tilkoble WISE-2200-M til din PC med en USB kabel
2. Start Advantech WISE Studio
3. Under «Serial Ports» trykk på «Go To Konfigurasjon» og velg serieporten med (VCOM) og trykk Connect



4. Under «module» informasjonsside finner du Model Navn og du kan sjekke modulens FW. Merk «Model Name» Dette kan du bruke som App argument under WISE-6610 for automatisk dekryptering av data streng.



5. Gå til Configuration og så til RF Module.
  - a. Operation Region er EU
  - b. Skriv inn Network Session Key, og Application Session Key

## Configuration

Information

**RF Module**

Data Update

Time & Date

Control

Firmware

### RF Module

Operation Region

ISM Band

RF Operation Mode

Activation Mode

Adaptive Data Rate

Device Address

Device EUI

Network Session Key

### Application Information

Application Session Key

Application Port

Message ACK

Frequency (KHz)

## Oppstartsmanual for WISE-2200-M Modbus-RTU til Lora

- Gå til I/O Status og velg Modbus/RTU Configuration. Sjekk over Common Setting og velg Rule Setting

Common Setting
[Rule Setting](#)

---

**Baud rate** 9600 bps

**Data Bit** 8 bit

**Parity** None

**Stop Bit** 1 bit

**Slave response timeout** 200 ms

**Delay between Polls** 200 ms

CRC Check  Disable  Enable

Her er det satt opp 2 regler som henter inn data fra en modul (Slave ID 1)

Rule	Slave ID	Type	Start Address	Length	R/W	Scan Interval	Mapping Channel	Deviation/COS	Deviation Value	Rule Status
0	1	01 Coil status	1	5	R	10	0	<input checked="" type="checkbox"/>	1	✔
1	1	03 Holding register	1	5	R	10	0	<input type="checkbox"/>	3276	✔
2	1	Disable	1	1	R	60	0	<input type="checkbox"/>	3276	✘

(Slave ID 1)

Name	Value
0	1
1	1
2	0
3	1
4	1

Name	Value
0	2222
1	765
2	34343
3	633
4	6434

Hvis vi går og ser på status så ser vi at data fra modulen stemmer.

Status

Bit Status
[Word Status](#)

Show 16 entries

Channel	Value	Status	Slave ID	Slave Address
0	1	No error	1	1
1	1	No error	1	2
2	0	No error	1	3
3	1	No error	1	4
4	1	No error	1	5

Bit Status
Word Status

Show 16 entries [Edit](#)

Channel	Value	Status	Slave ID	Slave Address
0	2222	No error	1	1
1	765	No error	1	2
2	34343	No error	1	3
3	633	No error	1	4
4	6434	No error	1	5

## Oppstartsmanual for WISE-2200-M Modbus-RTU til Lora

### 7. Konfigurere «Data Update»

Data Update er hvor ofte data skal sendes fra Lora noden WISE-2200-M og til basestasjon. Data sendes i etter et intervall og kan i tillegg sendes som COS (Change of state) For digital er dette endring fra 0 til 1 eller motsatt For analoge er dett en endring større enn en fastsatt verdi COS må også være konfigurert og aktivert under hver regel for at dette skal fungere.

Under sendes det data hvert 60 sekund og regel 1 har aktivert COS

### Configuration

Information RF Module **Data Update** Time & Date Control Firmware

#### Data Update

Data Update Interval (sec)

**Enable following Change of State(COS) items to send data when event occurs**

COM1 COS Rule0  Rule1  Rule2  Rule3  Rule4   
Rule5  Rule6  Rule7  Rule8  Rule9   
Rule10  Rule11  Rule12  Rule13  Rule14   
Rule15  Rule16  Rule17  Rule18  Rule19   
Rule20  Rule21  Rule22  Rule23  Rule24   
Rule25  Rule26  Rule27  Rule28  Rule29

### 8. Legge til WISE-2200-M under WISE-6610

Logge på WISE-6610. Standard IP er 192.168.1.1  
Standard bruker og passord er root:root

Gå til «User Modules» og velg «LoRaWAN Gateway....»  
Velg «Network Server» og så «\*Network Server(https)»  
Logg inn med bruker og passord

Under Server Admin → Events kan du se at WISE-6610 ser en ukjent node.

Events				
Last Occurred	Entity	Eid	Text	Args
2022-08-22 17:31:59	node	FFCA1055	unknown_devaddr	

Received Frames				
Received	Application	DevAddr	MAC	U/L SNR

# Oppstartsmanual for WISE-2200-M Modbus-RTU til Lora

## 9. Legg til ny node under WISE-6610

▼ Add filter ⊕ Export + Create

Gå til Devices → Activated (Nodes) og trykk på + Create

I App Argument skriv inn Model Name (WISE-2200-M)  
Skriv inn Network Session Key og Application Session Key  
Trykk Submit for å lagre.

### Create new node

General

DevAddr \* FFCA1055

Profile \* EU868\_WISE6610\_Handler

App Arguments WISE-2200-M

NwkSKey \* 00000000000000000000000000000011

AppSKey \* 00000000000000000000000000000011

FCnt Up

FCnt Down \* 0

## 10. Teste node.

Under Network Server gå til Devices og til Activated (Nodes)  
Du skal kunne se noden du nettopp la til i listen. Sjekk at status er OK.

### Nodes List

▼ Add filter ⊕ Export + Create

<input type="checkbox"/>	DevAddr	Profile	App Arguments	FCnt Up	FCnt Down	Battery	DIL SNR	Last RX	⌵ Status
<input type="checkbox"/>	FFCA1055	EU868_WISE6610_Handler	WISE-2200-MEA	87	88	0	6	2022-08-23 12:08:47	✓

1 - 1 of 1

Gå til Received Frames, og der skal du se at noden sender inn data.

## Received Frames

<input type="checkbox"/>	⌵ Received	Application	DevAddr	MAC	U/L RSSI	U/L SNR	FCnt	Confirm	Port	Data
<input type="checkbox"/>	2022-08-22 17:38:58	WISE6610_Handler	FFCA1055	74FE48FFFE681930	0	9	1,668	✓	1	01847C
<input type="checkbox"/>	2022-08-22 17:38:53	WISE6610_Handler	FFCA1055	74FE48FFFE681930	-1	9	1,667	✓	1	818330740F04C
<input type="checkbox"/>	2022-08-22 17:38:45	WISE6610_Handler	FFCA1055	74FE48FFFE681930	0	10.2	1,667	✓	1	818330740F04C
<input type="checkbox"/>	2022-08-22 17:38:37	WISE6610_Handler	FFCA1055	74FE48FFFE681930	-1	7.8	1,666	✓	1	01821B

# Oppstartsmanual for WISE-2200-M Modbus-RTU til Lora

## 11. Henta data ut fra MQTT

Sjekk først at lokal MQTT Broker er aktivert. Under LoRaWAN Gateway → MQTT

The screenshot shows the MQTT Broker configuration page. On the left is a navigation menu with links: Wizard, LoRaWAN Radio, Network Server, MQTT, Storage, Application Server, Licenses, and Return to Router. The main content area has three sections: 1. MQTT Broker Enable: A dropdown menu set to 'On' with the text 'Enable the local MQTT broker.' 2. MQTT Broker Port: A text input field containing '1883' with the text 'The local MQTT broker TCP port number ( 1 - 65535 ).' 3. MQTT Bridge Enable: A dropdown menu set to 'Off' with the text 'Enable bridging to a remote MQTT broker.' 4. MQTT Bridge Port: A text input field containing '1883' with the text 'The remote MQTT broker TCP port number ( 1 - 65535 ).'

Og så under Application Server ser du data sendes ut på topic uplink#  
Til denne adressen er det RAW data som sendes ut fra alle tilkoblede noder.

The screenshot shows the Application Server configuration page. It includes: 1. Application Server Enable: A dropdown menu set to 'On' with the text 'Enable the Local Application Server.' 2. Application Server Connect MQTT Address: A text input field containing '127.0.0.1' with the text 'Application Server remote MQTT broker address.' 3. Application Server Connect MQTT Port: A text input field containing '1883' with the text 'Application Server remote MQTT broker TCP port number ( 1 - 65535 ).' 4. MQTT Username: An empty text input field with the text 'The user name for the remote MQTT broker.' 5. MQTT Password: An empty text input field with the text 'The password for the remote MQTT broker.' 6. Uplink Topic: A text input field containing 'uplink#' with the text 'Subscribe topic from MQTT broker.' 7. Downlink Topic: A text input field containing 'downlink/' with the text 'publish topic to MQTT broker.'

Hvis du bruker rett navn i App Argument (WISE-2200-M) vil modulen automatisk komme opp under Application Server → Status. Her vil den ligge under Advantech LoRaWAN Node.

The screenshot shows the 'LoRaWAN Gateway Settings' page. At the top, it says 'MQTT Status : Connected' and 'Node number : 1'. Below this is the 'Application Server Status' section. The main part of the page is the 'Advantech LoRaWAN Node' table:

Index	DevAddr	Battery	Model	Received	Fcnt	Packet Loss	Rssi	Action
1	FFCA1055	Unknown	WISE2200-M	2022-08-25T15:18:18Z	1229	1.95(%) from fcnt 1	3	Delete Setting

Below the table is the 'Application Log' section with 'Refresh' and 'Clear log' buttons.

Dette betyr at RAW data blir automatisk dekryptert og sendt ut på MQTT:  
Topic: Advantech/[ DevAddr]/data

Under Node-Red vil det se slikt ut;  
Eksempel på payload:



Advantech/FFCA1055/data : msg.payload : Object

```
object
  RtuCoil0-0: object
    Status: 0
    Data: 1
  RtuCoil0-1: object
  RtuCoil0-2: object
  RtuCoil0-3: object
  RtuCoil0-4: object
  RtuRegister0-0: object
    Status: 0
    Data: 2222
  RtuRegister0-1: object
  RtuRegister0-2: object
  RtuRegister0-3: object
  RtuRegister0-4: object
  Device: object
```

Oppstartsmanual for WISE-2200-M  
Modbus-RTU til Lora

Lese WISE-2200-M Modbus gjennom WISE-6610 (Modbus TCP)

Sjekk at Modbus er aktiver på WISE-6610  
Application Server → Settings

Navigation	
<b>Router</b>	
<a href="#">Wizard</a>	
<a href="#">LoRaWAN Radio</a>	
<a href="#">Network Server</a>	
<a href="#">MQTT</a>	
<a href="#">Storage</a>	
<a href="#">Application Server</a>	
• <a href="#">Settings</a>	
• <a href="#">Status</a>	
• <a href="#">Modbus Mapping Table</a>	
• <a href="#">Payload Engine</a>	
<a href="#">Licenses</a>	
<a href="#">Return to Router</a>	

<b>Application Server Enable</b>	
<input type="text" value="On"/>	Enable the Local Application Server.
<b>Heartbeat Enable</b>	
<input type="text" value="On"/>	Enable the Heartbeat on Application Server.
<b>Heartbeat Interval</b>	
<input type="text" value="120"/>	10 - 86400 .
<b>Application Server Connect MQTT Address</b>	
<input type="text" value="127.0.0.1"/>	Application Server remote MQTT broker address.
<b>Application Server Connect MQTT Port</b>	
<input type="text" value="1883"/>	Application Server remote MQTT broker TCP port nun
<b>MQTT Username</b>	
<input type="text"/>	The user name for the remote MQTT broker.
<b>MQTT Password</b>	
<input type="text"/>	The password for the remote MQTT broker.
<b>Uplink Topic</b>	
<input type="text" value="uplink/#"/>	Subscribe topic from MQTT broker.
<b>Downlink Topic</b>	
<input type="text" value="downlink/"/>	publish topic to MQTT broker.
<b>MQTT Publish Retain</b>	
<input type="text" value="Off"/>	Enable the MQTT Publish Retain.
<b>MQTT Publish QoS</b>	
<input type="text" value="0"/>	Application Server internal Publish QoS ( 0 - 2 ).
<b>Modbus TCP Server</b>	
<input type="text" value="On"/>	Enable the Modbus TCP Server.
<b>Modbus TCP Server Port</b>	
<input type="text" value="502"/>	The modbus TCP server port number ( 1 - 65535 ).
<b>Modbus Timeout</b>	

Oppstartsmanual for WISE-2200-M  
Modbus-RTU til Lora

Application Server → Modbus Mapping Table

Trykk på Modified/Add

The image shows two parts of a web interface. On the left is a navigation menu with a dark blue header 'Navigation' and a light blue sub-header 'Router'. The menu items are: Wizard, LoRaWAN Radio, Network Server, MQTT, Storage, Application Server, Settings, Status, Modbus Mapping Table (highlighted with a red dot), Payload Engine, Licenses, and Return to Router. On the right is a table with a dark blue header and a light blue sub-header. The table has columns: Request Slave ID, Node ID, Type, Mapping ID, and Action. Below the header are two buttons: 'Modified/Add' (highlighted with a red underline) and 'Restart Application'.

Legg DevAddr\* inn som Node ID

Velg Class C Type

Skriv inn Slave ID og Node Slave ID

Save

The image shows the 'Edit node #FF70D720' configuration page. It has tabs for 'General', 'ADR', and 'Status'. The 'General' tab is active. Fields include: DevAddr\* (FF70D720, with a red arrow pointing to the 'Node ID' field in the table on the right), Profile\* (EU868\_WISE6610\_Handler), and App Arguments (WISE-2200-M). On the right, there is a 'Router' navigation menu and a table with columns: Request Slave ID (1), Node ID (FF70D720), Type (Class C), and Node Slave ID (For WSW2C00015 Class C) (1). The table has 'Save' and 'Return' buttons. A red arrow points from the DevAddr field to the Node ID field in the table.

Modbus konfigurasjon

Request Slave ID	Node ID	Type	Mapping ID	Action
1	FF70D720	Class C	1	Delete
<input type="button" value="Modified/Add"/>		<input type="button" value="Restart Application"/>		



Oppstartsmanual for WISE-2200-M  
Modbus-RTU til Lora

Teste dette fra Modbus TCP

Ut fra WISE-2200-M Modbus dokumentasjon ser vi Holding register starter på 41001 from COM porten. Se dokumentasjon for mere info angående dette.

WISE-2200-M							
				Serial Port	1		
Modbus RTU							
Address 0X	Ch	Description	Attribute	Address 4X	Ch	Description	Attribute
01001 ~ 01128	0~127	COM1 Bit value	R/W	41001 ~ 41128	0~127	COM1 Word value	R/W
				41201 ~ 41327	0~127	COM1 Bit value error code	Read
				41401 ~ 41527	0~127	COM1 Word value error code	Read

Les WISE-2200-M Modbus-RTU verdier gjennom Modbus TCP

Under til venstre ser vi en Modbus-RTU enhet med ID 1 som er tilkoblet WISE-2200-M sin comport En regel er laget under WISE-2200M for å hente verdier fra adresse 40001 til 40010 og vi ser avleste verdier i WISE Studio.

Til høyre ser vi ADAM utility som er tilkoblet WISE-6610 gjennom Modbus TCP og leser verdiene på Modbus-RTU enhet med adresse 1. Holding register starter på **41001** from COM porten

The screenshot shows the WISE Studio interface. On the left, the 'IO Status' window displays a table of bit status for channel 0. On the right, the 'Adam Commander' window shows configuration for a Modbus device with ID 1, connected via TCP port 502. The MODBUS data window shows a list of holding registers starting at address 41001.

Channel	Value	Status	Slave ID
0	12233	No error	1
1	44	No error	1
2	2	No error	1
3	5	No error	1
4	3	No error	1
5	6	No error	1
6	4	No error	1
7	234	No error	1
8	3232	No error	1
9	0	No error	1
10		Unavailable	0
11		Unavailable	0
12		Unavailable	0

Address	Value
41001	12233
41002	44
41003	2
41004	5
41005	3
41006	6
41007	4
41008	234