

Advantech AE Technical Share Document

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Category	■FAQ □SOP	Related OS	N/A
Abstract	How to Troubleshooting When Modbus/TCP Client Cannot Read the Value From WISE-6610v2 Modbus/TCP Server?		
Keyword	WISE, LoRaWAN, vibration, build-in sensor, Modbus data		
Related Product	WISE-2410 series, WISE-4610 series, WISE-6610v2		

■ Problem Description:

User can use the Modbus/TCP Client to query WISE LoRa Node data from WISE-6610v2 Modbus/TCP server. But user cannot read the value or doesn't get the response from Modbus/TCP server sometimes. This document will show how to troubleshooting for this situation step by step.

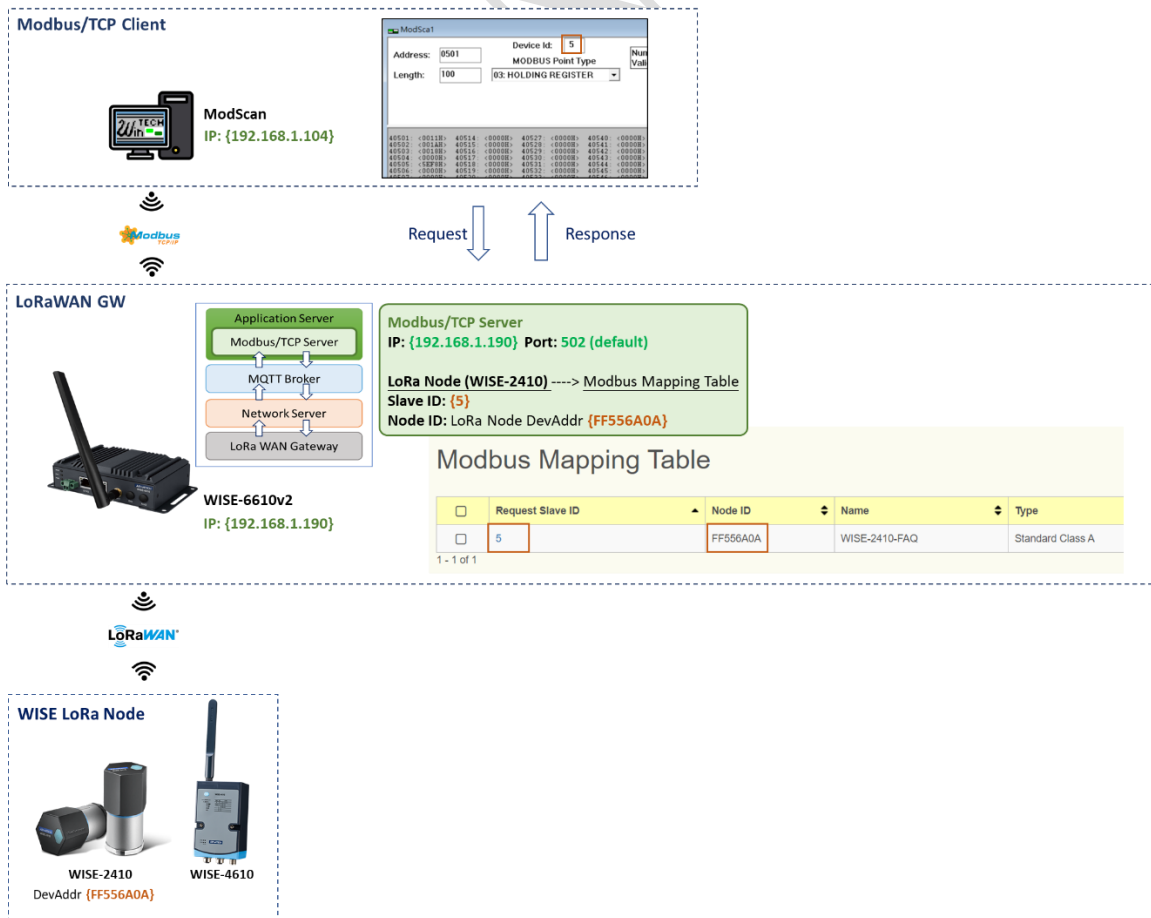


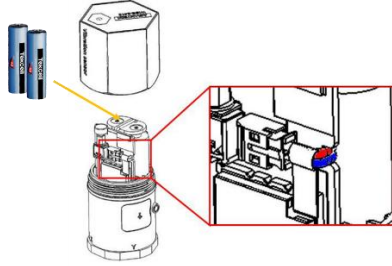
Figure 1. Topology

■ Prerequisite:

- WISE-2410 Firmware Version: A1.13.B03 or later.
- WISE-4610 Firmware Version: A2.03.B05 or later.
- WISE-6610v2 Firmware Version: 1.0.16 or later.
- Modbus/TCP Client Version: 8.A00-10

■ Solution:

1. Please make sure WISE-2410 is powered by batteries or micro USB.



(A) Powered by Batteries.



(B) Powered by micro USB.

2. Make sure the LoRa Node had been created into **WISE-6610v2 Network Server > Device List**. In this case, you can find the WISE-2410 which device address is **“FF556A0A”** is created in WISE-6610v2 Device List page.

Device ID	Protocol	Status	Address	Handler	Model	Uplink	Downlink	Signal	Time	Bandwidth	Power
000443BC	OTAA	ON	000443BC	AS923_WISE6610_Handler	EVA-2510	2	1	28	2024-08-07 13:57:44	SF10 BW125	
000444BA	OTAA	ON	000444BA	AS923_WISE6610_Handler	EVA-2210	6	0	28	2024-08-07 14:02:35	SF10 BW125	0%
000444FB	OTAA	ON	000444FB	AS923_WISE6610_Handler	EVA-2310	70	1	31	2024-08-07 14:37:15	SF10 BW125	15.71%
161651651	OTAA		52525252	AS923_WISE6610_Handler	WISE-2200-M						
74FE48FFFF22F013	OTAA	OFF	FF22F013	AS923_WISE6610_Handler	WISE-2200-M	1106	601	5	2024-08-07 14:40:45	SF7 BW125	45.61%
FF5E8039	OTAA		FF5E8039	AS923_WISE6610_Handler	WISE-2410						
WISE-2200-M-EdgeHub-Test1	OTAA	OFF	FF62571E	AS923_WISE6610_Handler	WISE-2200-M	2865	2743	5	2024-08-07 14:40:00	SF7 BW125	4.25%
WISE-2200-M-EdgeHub-Test2	OTAA	OFF	FF6B0B24	AS923_WISE6610_Handler	WISE-2200-M	5708	5468	6	2024-08-07 14:40:34	SF7 BW125	4.2%
WISE-2410	ABP	OFF	FF5A5B1C	AS923_WISE6610_Handler	WISE-2410	1189	1072	5	2024-08-07 14:40:43	SF7 BW125	9.92%
WISE-2410-FAQ	OTAA	OFF	FF556A0A	AS923_WISE6610_Handler	WISE-2410	119	77	5	2024-08-07 14:40:21	SF7 BW125	35.29%
WISE-4610-S617	OTAA	ON	FF44E0BA	AS923_WISE6610_Handler	WISE-S617	281	271	7	2024-08-01 14:34:16	SF10 BW125	3.57%

3. Enter to WISE-6610v2 Network Server > Devices > Frames Traffic page and make sure the frame packets can be received by gateway. In this case, you can find the WISE-2410 which device address is “FF556A0A” had transmit the data to WISE-6610v2.

Time	Device Name	Type	DevAddr	Gateways	UL RSSI	UL SNR	FCnt	Confirm	ACK	Port	Frequency	MAC Cmd	Data
2024-08-07 16:33:07	WISE-2410-FAQ	Unconfirmed_Down	FF556A0A	0016C001F1E06890			3	✗	✓	N/A	922.4		
2024-08-07 16:33:06	WISE-2410-FAQ	Confirmed_Up	FF556A0A	0016C001F1E06890	-65	10.5	4	✓	✗	1	922.4		810458500807000000A262000054 41E2FF00001A0019001200D7FF5 10008002000700000015001A001 3000000340021000000000000002 6001A001300FBFF6D01F5FF0200 0D000300000000FFD1895C6091 80001000FFD1895C57
2024-08-07 16:32:24	WISE-2410-FAQ	Unconfirmed_Down	FF556A0A	0016C001F1E06890			2	✗	✓	N/A	922.4		
2024-08-07 16:32:23	WISE-2410-FAQ	Confirmed_Up	FF556A0A	0016C001F1E06890	-65	-3.8	2	✓	✗	1	922.4	060005	810258500807000000A262000054 41E2FF00002D0019001200E0FF5 50008002000130000004001A001 3000C0045001C2000202000000 2C001A0013001000BA01FEFF020 0100003000000000CD1895C609 1B00100005D01895C3A
2024-08-07 16:32:18	WISE-2410-FAQ	Unconfirmed_Down	FF556A0A	0016C001F1E06890			1	✗	✓	N/A	923.2	06	
2024-08-07 16:32:17	WISE-2410-FAQ	Confirmed_Up	FF556A0A	0016C001F1E06890	-64	1	1	✓	✗	1	923.2		810107600510CFD1895C44

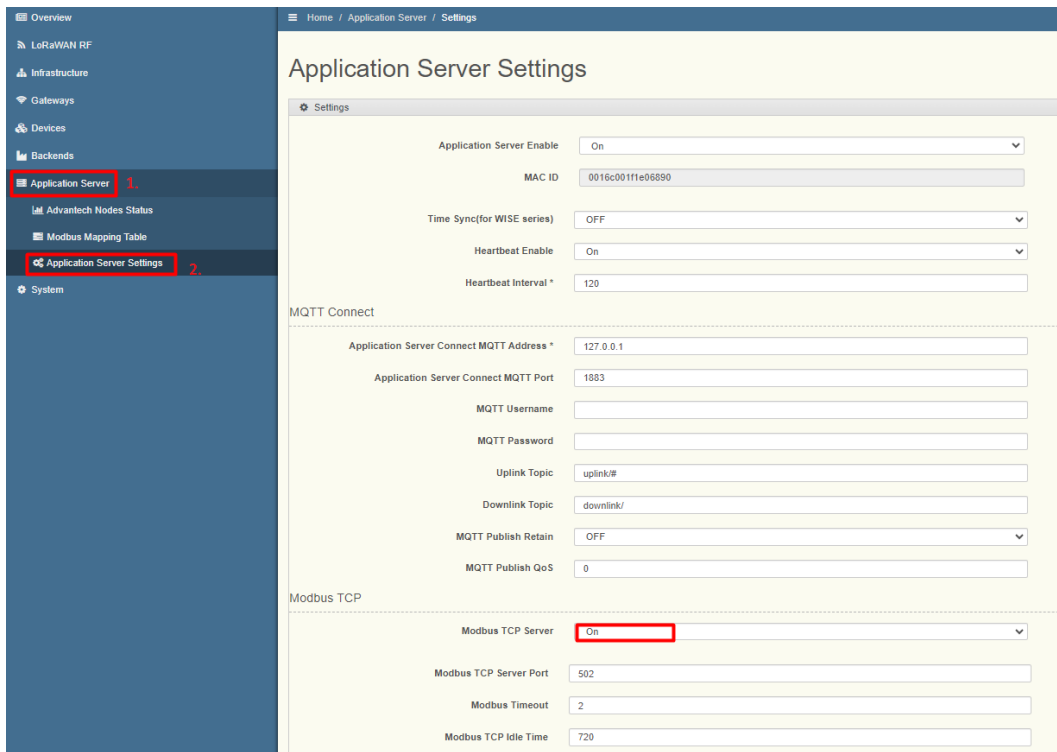
4. Enter to WISE-6610v2 Network Server > Application Server > Advantech Nodes Status page and make sure the gateway WISE-6610v2 can parse the data from the LoRa node.

Sensor	SenEvent	Velocity RMS	Acceleration Peak	Acceleration RMS	Kurtosis	CrestFactor	Skewness	Deviation	Displacement
X-Axis	0	0.19 mm/s	0.025 g	0.018000000000000002 g	-0.49	2.5	0.01	0.02	4 μm
Y-Axis	0	0.27 mm/s	0.025 g	0.018000000000000002 g	0.11	0.05	0.350000000000000003	0.02	9 μm
Z-Axis	0	0.26 mm/s	0.025 g	0.018000000000000002 g	0.09	5.15	-0.05	0.02	7 μm

If cannot, please check whether the “App Arguments” of this device had been set correctly or not.

Name	Mode	ADR	DevAddr	DevEUI	Profile	App Arguments	FCnt Up	FCnt Down	DIL SNR	Last RX	Last Datarate	Packet Loss	Dup. Packet	Bad Signal	Status
WISE-2410-FAQ	OTAA	OFF	FF556A0A	7AFE48FFFF556A0A	ASR23_WISE6610_Handler	WISE-2410	24	18	5	2024-08-07 16:43:02	SF7 BW125	25%	12.5%	0%	●

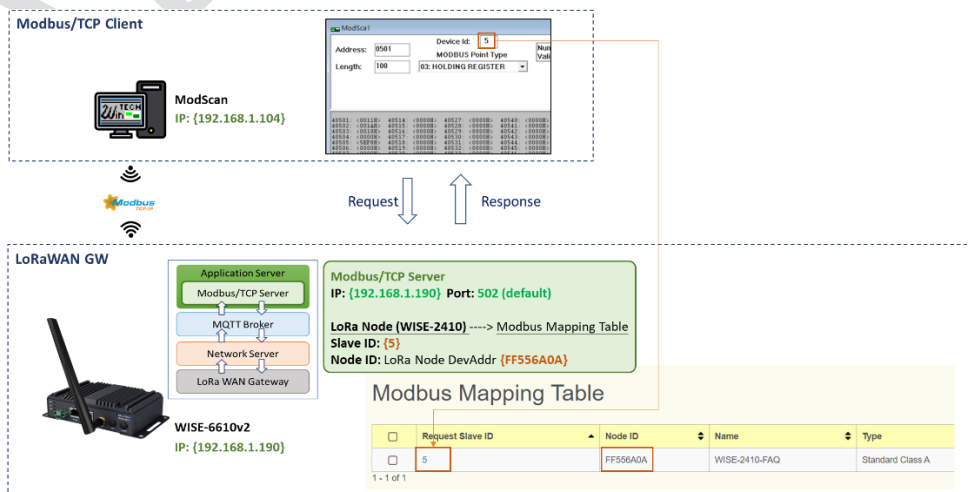
5. Enter to WISE-6610v2 Network Server > Application Server > Application Server Settings page and make sure the Modbus TCP Server is enabled.



6. Enter to WISE-6610v2 Network Server > Application Server > Modbus Mapping Table and make sure the Modbus ID and the Modbus Addresses are correct on Modbus client.

In this case, set the WISE-2410 which device address is “FF556A0A” as Slave ID 5 in WISE-6610v2 Modbus Mapping Table. And using Modbus/TCP Client (ModScan) to query the “Vibration Velocity Value” of WISE-2410.

- Make sure the Device ID setting of Modbus/TCP Client and the Request Slave ID setting of WISE-2410 is consistent. In this case, both of them are setting to “5”.



- Set the Modbus Address 40501 ~ 40503 to query the “Vibration Velocity Value” of WISE-2410.

**Modbus Mapping Address of WISE-2410
in WISE-6610-v2 Modbus/TCP Server**

WISE-2410 (for WISE-6610 LoRaWAN GW)									
Sensor		Temperature	1						
Sensor		Accelerometer	Axis		3				
Address 0X	Ch	Description	Attribute	Address 4X	Ch	Band	Description	Attribute	
				40211			Module Name1	Read	
				40212			Reserved for Module Name	Read	
				40213			Reserved for Module Name	Read	
				40214			Reserved for Module Name	Read	
00231	0 (X)	Accelerometer High Alarm Flag	Read	40501	0 (X)		OA Value of Vibration Velocity (0.01 mm/sec)	Read	
00232	1 (Y)			40502	1 (Y)			Read	
00233	2 (Z)			40503	2 (Z)			Read	
00234	3 (Tempe)	Temperature High Alarm Flag	R/W	40504-40505	3 (Tempe)		Temperature Value	Read	

Modbus/TCP Client (ModScan)

The screenshot shows the ModScan interface with the following configuration:

- Device Id: 5
- Address: 0501
- Length: 100
- MODBUS Point Type: 03: HOLDING REGISTER
- Number of Polls: 499
- Valid Slave Responses: 497
- Reset Ctrs button

The data table below shows the results of the query, with a red arrow pointing to the first three rows (40501-40503) which correspond to the vibration velocity values:

40501:	<0011H>	40514:	<0000H>	40527:	<0000H>	40540:	<0000H>	40553:	<0000H>	40566:	<0000H>	40579:	<0000H>
40502:	<0011H>	40515:	<0000H>	40528:	<0000H>	40541:	<0000H>	40554:	<0000H>	40567:	<0000H>	40580:	<0000H>
40503:	<0011H>	40516:	<0000H>	40529:	<0000H>	40542:	<0000H>	40555:	<0000H>	40568:	<0000H>	40581:	<0000H>
40504:	<0000H>	40517:	<0000H>	40530:	<0000H>	40543:	<0000H>	40556:	<0000H>	40569:	<0000H>	40582:	<0000H>
40505:	<5E3FH>	40518:	<0000H>	40531:	<0000H>	40544:	<0000H>	40557:	<0000H>	40570:	<0000H>	40583:	<0000H>
40506:	<0000H>	40519:	<0000H>	40532:	<0000H>	40545:	<0000H>	40558:	<0000H>	40571:	<0000H>	40584:	<0000H>
40507:	<0000H>	40520:	<0000H>	40533:	<0000H>	40546:	<0000H>	40559:	<0000H>	40572:	<0000H>	40585:	<0000H>
40508:	<0000H>	40521:	<0000H>	40534:	<0000H>	40547:	<0000H>	40560:	<0000H>	40573:	<0000H>	40586:	<0000H>
40509:	<0000H>	40522:	<0000H>	40535:	<0000H>	40548:	<0000H>	40561:	<0000H>	40574:	<0000H>	40587:	<0000H>
40510:	<0000H>	40523:	<0000H>	40536:	<0000H>	40549:	<0000H>	40562:	<0000H>	40575:	<0000H>	40588:	<0000H>
40511:	<0000H>	40524:	<0000H>	40537:	<0000H>	40550:	<0000H>	40563:	<0000H>	40576:	<0000H>	40589:	<0000H>
40512:	<0000H>	40525:	<0000H>	40538:	<0000H>	40551:	<0000H>	40564:	<0000H>	40577:	<0000H>	40590:	<0000H>
40513:	<0000H>	40526:	<0000H>	40539:	<0000H>	40552:	<0000H>	40565:	<0000H>	40578:	<0000H>	40591:	<0000H>

