Netvox Configuration Tool Operation Manual V1.2

Version number	Date of change	Change Content
V1.0	2019/08/12	1. Release for the first time.
V1.1	2019/08/22	 Combine the gateway configuration tool and the Dongle configuration tool together. Fix the problem of unsuccessful calibration of negative values with LoRa attribute value calibration Add more than 100 LoRa devices to modify the configuration report parameters.
V1.2	2019/09/12	 Add note 3-7 to the GateWay Calibrate method. Adds note 1-5 to the Dongle Calibrate method.

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1. Gateway Calibrate

Note:

1. This tool is only suitable for the M2 version of the gateway.

2. The 206 gateway IPK version must be published as 0.0.0.143 and above.

3. The 207 gateway IPK version must be published as 0.0.0.72 and above.

4. The GateWay mode only supports LoRa proprietary protocol devices and does not support LoRa public devices.

5. When the GateWay mode is calibrated, the device software is required to support the latest functions. Generally, the software is supported in September 2019 and later.6. In the GateWay mode, the calibration data of the device retains the modified value after the device is powered off and powered on. The calibration data will not be restored after it is restored to factory default settings.

7. In the GateWay mode, you can modify the ReportChange, Min, and Max information of the device.

1.1 Connection Tool

1. Firstly, add the LoRa device that needs to be calibrated or modified the report configuration to the gateway through the mobile App . Then use the laptop or wireless network card to connect to the gateway's WIFI; open the NetvoxConfigTool tool; select " gateway Calibrate ", enter the gateway's IP address in ① (factory default is 192.168.15.1), fill in the username in ②: shcadmin, Password: 123456, click ③ connections, you can connect to the tool, default check (consistent with the option in

the Gateway Web page Communication Setting Callback Authorization) in (4), as

shown in the screen shot below:

Note:

1 This tool is only suitable for the M2 version of the gateway.

2 The gateway IPK version must be published as 0.0.0.143 and above.

🔄 Netvox Config Tool For M2 [Ne	tvox Xiaomen-Copy right]	
GateWay Calibrate Dongle	Calibrate	• X
GateWay Addr: 192.168.1.66 ①		Search Current @
UserName: shcadmin	password: 123456 2	Authority
Device IEEE:		4 Search Device
connect status: disconnected! info	D:	.::

2. After the connection tool is successful, enter the IEEE address of the device in the "Device IEEE" address field, 4 digits (letter capital), and click "Search Device" to find the search device. As shown in the screen shot below:

Netvox Config Tool For V2 [Network]	tvox Xiaomen-Copy right]		
GateWay			• X
GateWay Addr: 192.168.1.66	password: 123456	Search	DisConnect
Denies TRR. 1842	Paranta. IEStob	W Ruthority	u al Danian
Device IEEE: 1142		Ses	rch Device
Lora(00137A100000	1F42) [LORA_01_01]		
connect status: connected! info:			

1.2 Configuring the Report Parameter

1. After finding the device, select the device and click the right mouse button, then select "SetReportConfig " from the pop-up menu , as shown in the screen shot below:

😔 Netvox Config Tool For V2 [Netvox Xiaomen-Copy right	it]
GateWay	• X
GateWay Addr: 192.168.1.66	Search
UserName: shcadmin password: 123456	DisConnect
Device IEEE: 1F42	Search Device
Lora (00137A1000001F42) [LOPA of Call	brate
Set	ReportConfig

If the following screen shot is displayed, the device does not currently support the report configuration modification.

Netvox Config Tool For V2 [Netvox Config Tool For V2]	tvox Xiaomen-Copy right]	
GateWay		• X
GateWay Addr: 192.168.1.24 UserName: shcadmin	password: 123456	Search JisConnect V Authority
Device IEEE: 00137A200000088		Search Device
R718A (00137A20000	2019-08-12 11:24:57	

2. Enter the report configuration interface, firstly click the "Read" button to read the current configuration value of the return device. Here, take the R718A temperature and humidity device as an example. After clicking the "Read" button, a send success ! please active the device...

prompt box will pop up, and the command will be issued successfully, users need to press the R718A device button once to activate the device to receive the command. After reading the current configuration value of the R718A device successfully, it returns the following screen shot:

R718A factory default Min=900s, Max=900s, battery_voltageChange=0.1v , temperatureChange=1.00 $^\circ$ C , humidityChange=3.00%

3. The relationship between Min, Max and reportchange is as follows:

When the battery_voltageChange , temperatureChange , and humidityChange of the device do not exceed the preset value, the device always sends a report according to the Max time. When any one or more of the devices battery_voltageChange , temperatureChange , and humidityChange reach the preset value, the device will send a report according to Min time.

The configuration notes for Min, Max, and reportchange are as follows:

Min and Max have preset values in the factory default value. It is not recommended to modify if it is not necessary. It is not recommended to modify the smaller value when the modification is made. The smaller the value, the faster the power consumption of the device. For the specific power consumption, please refer to The following URL:

http://www.netvox.com.cn/electric/electric_calc.html

When one or more of the battery_voltage change, temperature change, and humidity change are set to 0, the device always sends a report according to the Min time regardless of whether the device has reached the amount of change.

To modify the report parameters of the device , for example: Min=60s , Max=300s , battery_voltage change=0.1v , temperature change= $0.50 \circ C$, humidity change=5.00% , as shown in the screen shot below:

Netvox Config Tool For V2 [Net	vox Xiaomen-Copy right]	100 million	
GateWay GateWay Addr: 192, 168, 1, 24			▼ X
UserName: shcadmin	SetReportConfig	B	Authority DisConnect
Device IEEE: 00137A200000088	Report Time Min: 60 (S) Report Change battery_voltageChange temperatureChange humidityChange PayLoadData FFort 07 RecvData Read	Max: 300 + (S) 0.1 + V 0.50 + 0 C 5.00 + % %	Search Device
connect status: connected! info: 2	2019-08-12 13:02:22		

Fill in the parameters to be modified, and finally click the "Set" button to issue the

configuration command. In the pop-up prompt box, the command is sent successfully. Users need to press the R718A device button once to activate the device to receive the command. After the device is configured successfully, all the input boxes on the interface will display 0, as shown in the following screen shot:

Note: When configuring the report parameter, the PayLoadData item is not checked.

😔 Netvox Config Tool For V2 【Ne	etvox Xiaomen-Copy right]		_ • X
GateWay			→ X
GateWay Addr: 192.168.1.24 UserName: shcadmin	SetReportConfig		Search Authority DisConnect
Device IEEE: 00137A200000088	Report Time Min: 0 🚖 (S)	Max: 0 (S)	Search Device
	Report Change battery_voltageChange	0.0 💌 V	
	temperatureChange	0.00 🚖 ° C	
	humi di tyChange	0.00 💉 🗴	
	PayLoadData 010B003C012C0100	03201 F 4	
	FPort 07 RecvData 81080000000000 Read	000000	
connect status: connected! info:	2019-08-12 13:06:20		
connect status: connected! info:	2019-08-12 13:06:20		

At this point, click the "Read" button, press the device button once to activate the device. After reading successfully, return the configured value as shown in the screen shot below:

Netvox Config Tool For V2 [Net	vox Xiaomen-Copy right]	-	- • ×
GateWay			▼ X
GateWay Addr: 192.168.1.24 UserName: shcadmin	etReportConfig		Search DisConnect
Device IEEE: 00137A200000088	Report Time Min: 60 💽 (S)	Max: 300 🔶 (S)	Search Device
	heport Lhange battery_voltageChange	0.1 ×	
	temperatureChange	0.50 🚔 ° C	
	humi di tyChange	5.00 💉 🕺	
	PayLoadData 010B003C012C0100 FFort 07 RecvData 820B003C012C0100 Read	3201F4	
connect status: connected! info: 2	2019-08-12 13:08:45		.:!

4. If you need to send other supported commands in LoRaWAN, users can tick the PayLoadData option, fill in the PayLoadData data content, and then click " Set " to send the configuration, as shown in the screen shot below:

SetReportConfig			B
Report Time Min: O	(S)	Max: 0	(S)
-Report Change	2		
battery.	_voltageChange	0.0	V V
PayLoadData			
FPort	07		
RecvData			
	Read	Set	

Note: Fport : 0x07 the PayLoadData length must be 11 bytes.

SetAckOnOf fReg		0x0F		ACKOnOff(1Byte 1_Ack ON 0 AckOff)	Reserved (8Bytes,Fixed 0x00)
SetAckOnOf fRsp		0x8F		Status 0x00_success)	Reserved (8Bytes,Fixed 0x00)
GetAckOnO ffReq	ALL(0xFF)	0x0E	0xFF	0	Reserved (9Bytes,Fixed 0x00)
GetAckOnO ffRsp		0x8E		ACKOnOff(1Byte 1_Ack	Reserved (8Bytes,Fixed 0x00)

The configuration settings are as follows, click the "Set " button to activate the device. RecvData has the return data that means the configuration is successful, as shown in the screen shot below:

SetReportConfig	B
Report Time Min: O 🚔 (S) Max: O) 💉 (5)
Report Change	
battery_voltageChange 0.0	V V
P J JP (07770100000000000000000000000000000000	
PayLoadData OFFOTODODODODODODODO	
FPort 07	
RecvData 8FFF0000000000000000000000000000000000	
Read	Set

After the configuration is completed, enter the read command PayLoadData: 0EFF00000000000000000000, and after the device is activated, the RecvData is 8EFF01000000000000000 (Ack=01 On), as shown in the screen shot below:

SetReport	Config		8
Report Min:	Time 256 🚔 (S)	Max: 0 🚔 (S)	
Report	Change		
b	attery_voltageChange	0.0 V	
PayLoa	Data 02550000000000000000000000000000000000	00000	
]	Port 07		
RecvD	ata 8EFF0100000000000	00000	
	Read	Set	

1.3 LoRaWan Attribute Value Calibration

The following is an example of the temperature value calibration of the R718A. For the calibration operation of other attributes, refer to the following operation steps, and the description will not be repeated here. After the device attribute value is successfully calibrated, the device's calibration value will be retained after the device is restored to the factory settings. The attribute value reported after the device is connected to the network is the calibrated value.

1. After searching for the device, right click on the "Calibate" option to enter the calibration interface. As shown in the figure below, if the "device is not support" prompt appears when you right-click the "Calibate" option, the device does not support LoRaWan mode calibration. Or the device model calibration tool is not supported at the moment, please contact the after-sales personnel.

Netvox Config Tool For M2 [Netvox Config Tool For M2]	etvox Xiaomen-Copy right]	
GateWay Calibrate Dongle	Calibrate	• X
GateWay Addr: 192.168.1.94 UserName: shcadmin	password: 123456	Search DisConnect Authority
Device IEEE: 2651		Search Device
TemperatureSensor	Calibrate SetReportConfig	1]
connect status: connected! info:		

2. Enter the calibration interface, taking the R718A device temperature value calibration as an example. The current value of the device property is not retrieved, and " --- " is displayed, as shown in the following figure:

🖸 Netvox Config Tool For M2 [Netvox Xiaomen-Copy right]			
GateWay Calibrate Dong	gle Calibrate	• ×	
GateWay Calibrate Dong GateWay Addr: 192.168.1.94 UserName: shcadmin Device IEEE: 2651 TemperatureSens	Calibrate CalibrateForm Temperature Current Value: ° C Dest Value: 0.00 ? ° C Read Set Clear Humidity Current Value: % Dest Value: 0.00 ? % Read Set Clear	V DisConnect ty Search Device	
connect status: connected linfo	× 2019-08-21 09-16-54		
connect status, connected; init		.::	

Note:

For RA07x , R726x , RA07Yx , R718PBx , and R718Rx series, users can view all the calibration attributes supported by such devices in the calibration interface. Please select the corresponding attribute values for calibration according to the attributes supported by the current device. For other unsupported attributes, the operation will be unresponsive, as shown in the figure below for the RA07x device property calibration interface:

😔 Netvox Config Tool For M2 [Netvox Xiaomen-Copy right]	- 0 X
GateWay Calibrate Dongle Calibrate	→ ×
GateWay Addr: 192.166.1.66 Search	DisConnect
UserName: shcadmin CalibrateForm 🗵 🗸 Authority	
Device IEEE: 00137A1C RA07 (00137A Dest Value: 0.00	h Device
Current Value: % Dest Value: 0.00 😴 % Read Set Clear	
Soil_Temperature Current Value: ° C Dest Value: 0.00 - ° C Read Set Clear	
Soil_Humidtiy Current Value: % Dest Value: 0.00 🚖 % Read Set Clear	
EC Current Value: ds/m Dest Value: 0.0 ds/m Read Set Clear	
connect status: connected! info:	

3. Users can press the device button once to wait for the current attribute value of the device to report back. After it is successful, it will be displayed on each corresponding attribute position on the tool, as shown in the following figure:

🔄 Netvox Config Tool For M2 🕻	Netvox Xiaomen-Copy right]		
GateWay Calibrate Dongle Calibrate			
GateWay Calibrate Dong GateWay Addr: 192.168.1.94 UserName: shcadmin Device IEEE: 2651 TemperatureSens	Je Calibrate CalibrateForm Temperature Current Value: 28.35 ° C Dest Value: 0.00 ♀ ° C Read Set Clear Humidity Current Value: 49.28 % Dest Value: 0.00 ♀ % Read Set Clear	<pre> X Search DisConnect Search Device </pre>	
connect status: connected! info	b: 2019-08-21 09:18:28		

4. After the current attribute value of the device returns, if there is a deviation from the standard source detection value, users can fill in the difference in the Dest Value input box (difference = standard source device detection value - current device " " click Set buttons, detection value), and then pop-up send success ! please active the device... prompt box. Press the button to activate the device, as shown below, the device detects the current temperature is 28.35°C, that 28.35°C is not accurate, the detected value of the standard source device is 38°C, then

Dest value should be $+10^{\circ}$ C or so, then the Dest Value input box to be filled in 10° C .

😔 Netvox Config Tool For M2 [Netvox Xiaomen-Copy right]			
GateWay Calibrate Dongle Calibrate			
GateWay Addr: 192.168.1.94	CalibrateForm 🛛	Search DisConnect	
UserName: shcadmin	Temperature	Authority	
Device IEEE: 2651	Current Value: 28.35 ° C	Search Device	
TemperatureSens	Dest Value: 10.00 🚖 ° C Read Set Clear		
	Humidity		
	Current Value: 49.28 %		
	Dest Value: 0.00 🔹 % Read Set Clear		
		1	
connect status: connected! inf	o: 2019-08-21 09:18:28	.::	

After the calibration is successful, Dest Value will display 0. You can click the "Read" button, press the button to activate the device, and read the calibrated Dest Value. At this time, the Current Value returned by the device should be close to the standard source device detection value. The device temperature value is successfully calibrated as shown below:

O Netvox Config Tool For M2 [[Netvox Xiaomen-Copy right]	×	
GateWay Calibrate Dongle Calibrate 🗸 🗸			
GateWay Addr: 192.168.1.94	CalibrateForm I Search DisCo	nnect	
UserName: shcadmin	Temperature Authority		
Device IEEE: 2651	Current Value: 38.16 ° C temperature value increase 10°C Search Devi	ce	
TemperatureSens	Dest Value: 10.00 🚖 ° C Read Set Clear		
	Humidity		
	Current Value: 48.52 %		
	Dest Value: 0.00 🚖 % Read Set Clear		
connect status: connected! info	o: 2019-08-21 09:24:59	:	

5. If the current value of the device is found to be much worse than the standard source detection value after calibration, users can click the "Clear" button. Press the device button once to activate the device, and clear the calibration correction value. After success, the Dest Value value will display 0. Fill in the new difference in the Dest Value input box, as shown below, fill in the value of Dest Value at 15.55 $^\circ$ C , and then click the "Set" button. When the prompt box pops up

send success ! please active the device..., press the button to activate the device.

Netvox Config Tool For M2 ([Netvox Xiaomen-Copy right]		
GateWay Calibrate Dongle Calibrate			
GateWay Addr: 192.168.1.94	CalibrateForm	Search DisConnect	
UserName: shcadmin	Temperature	Authority	
Device IEEE: 2651	Current Value: 27.62 ° C	Search Device	
TemperatureSens	Dest Value: 15.55 🚖 °C Read Set Clear		
	Humi di t <i>y</i>		
	Current Value: 44.14 %		
	Dest Value: 0.00 🚖 % Read Set Clear		
connect status: connected info: 2019-08-21 10:09:23			
connect status. connected: init	0, 2015-00-21 10,05,25	.::	

After the calibration is successful, Dest Value will display 0. You can click the "Read" button, press the button to activate the device, and read the calibrated Dest Value. At this moment, the Current Value returned by the device should be close to the standard source device detection value. The device temperature value is successfully calibrated as shown below:

6. If the difference between the standard source device detection value and the current device detection value is negative, the input value in the Dest Value input box should be filled with a negative value. As shown in the figure below, the temperature value is reduced by 20° C, Dest Value= -20° C. Then click the "Set" button, and when the

prompt box pops up active the device..., press the button to activate the device.

After the calibration is successful, Dest Value will display 0. You can click the "Read" button, press the button to activate the device, and read the calibrated Dest Value. At this time, the Current Value returned by the device should be close to the standard source device detection value. The device temperature value is successfully calibrated as shown below:

🖸 Netvox Config Tool For M2 [Netvox Xiaomen-Copy right]				
GateWay Calibrate Dongle Calibrate				
GateWay Calibrate Dong GateWay Addr: 192.168.1.94 UserName: shcadmin Device IEEE: 2651 TemperatureSens	Image: Set Value: Current Value: 7.45 C Image: Set Value: -20.00 C Read Set Clear Humidity Current Value: 46.23 % Dest Value: Dest Value: 0.00 * Read Set Clear	 X Search DisConnect Authority Search Device 		
connect status: connected! info	: 2019-08-21 10:13:28			

2. Dongle Calibrate

Note:

1. The Dongle mode is suitable for LoRa proprietary devices and LoRa public device calibration, but only if it needs to be used with R103.

2. The Dongle mode requires the device to enter the PQOS project mode. After the operation is completed, please turn off the pc tool and then power off and turn on the device to prevent it from entering the PQOS project mode again.

3. The Dongle method also has requirements for device software, and the old device software may not support.

4. After the device information is modified in the Dongle mode, the device will be powered off and powered on and the modified information will be retained. The calibration data will not be restored after it is restored to factory default settings.5. The Dongle mode cannot modify the ReportChange of the device, only the Min and Max times.

2.1 LoRa Coordinator Driver Installation

1. Users need to purchase the Netvox LoRa Coordinator (R103), as shown

in the Fig. below, and then install the Netvox LoRa Coordinator driver on

your computer, as shown below.

Note: high-frequency equipment needs to be used with a high-frequency LoRa coordinator, and low-frequency equipment is used with a low-frequency LoRa coordinator.





2. After the driver is successfully installed, a com port will be

automatically assigned on the computer. Open the Lora Calibrate calibration software; click the ComSet button; select the port corresponding to the LoRa coordinator and the serial transmission rate defaults to 115200 as shown in below figure, when the connection is successful, the status will show "Connected".

🛛 Netvox Config Tool For M2 [Netvox Xiaomen-Copy right]
GateWay Calibrate Dongle Calibrate ×
Input IEEE Search
ComSet Com Port COM50 Baud Rate 115200 OK Cancel
Status: disconnected

2.2 Power on and Add Devices in Network for Calibration

2.1 Please enter the device IEEE. Click the "Search" button to send calibration tool command to devices which are in [Engineering Test Mode].

Netvox-LORA	Calibrate		×
Input IEEE	00137A1000000238		Search
00137	A100000)238	
SearchWaitFo	rm		8
annce	device, unti	l be fou	nd
	ComSet	Clear	
Status: conn	ectedi	Clear	

2.2. Please refer to the following table to operate the LoRa deviceto enter [Engineering Test Mode] for calibration. If the model is not mentioned in the form or if you have any questions, please contact customer service staff QQ: 4008917178.

	Model	Operation	Remark
1	R211	Press and hold the re-start key and power on the device at the same time.	
2	R311 series R312 R312A RA02A RA02C RB02I	Press and hold any key and power on the device at the same time.	
3	R602A	Press and hold any key and power on the device at the same time.	

Engineering Test Mode Operation:

4	R711	Press and hold any key and power on the device at the	
4	R712	same time.	
		Load batteries; press and hold the function key for 3	
5	R718X series	seconds to turn on. The first five seconds after turning	
		on, the device is in Engineering Test Mode.	
6 F	R809A	Press and hold on/off key and power on the device at	
		the same time.	
7	RB11E	Press and hold both keys and power on the device at	
		the same time.	

2.3 To enter [Engineering Test Mode] :

After the device enters [Engineering Test Mode] successfully, the calibration tool will display the IEEE address code of the current device, as shown in the Fig. below:

Netvox-LORA Calibrate
00137A1000066666
ComSet
Status: connected!

2.3 LoRa Device Attribute Value Calibration

The following three examples illustrate the steps of calibration. For the calibration of other attributes, refer to the following steps, and the description will not be repeated here. After the device attribute value is successfully calibrated, power off / power on/ turn on the device to enter the normal working mode.

After the device is restored to the factory settings, the calibration value of the device will be retained. The attribute value reported after the device is connected to the network is the value after calibration.

2.3.1 Temperature and Humidity Value Calibration

3.1.1 After selecting the IEEE code of the device, right click; in the pop-up function options, select the attribute that you need to calibrate and enter the calibration interface. For example, select the temperature and humidity attribute TempAndHum. Note:

1. If the device supports temperature and humidity values, the user selects "Temperature" for temperature value calibration and then selects "Humidity" for humidity value calibration. This will erase the temperature calibration value when "Humidity" is selected for calibration. So when users want to calibrate the temperature and humidity values at the same time, be sure to select the "TempAndHum" item for calibration.

2. When the device only supports the temperature value, please select "Temperature" for temperature value calibration.

3. When the device only supports the humidity value, please select "Humidity" for humidity value calibration.

4. When the device supports temperature and humidity values, please select "TempAndHum" to calibrate the temperature and humidity values.

5. After the device property calibration value is restored to the factory settings, it will be retained. The attribute value reported after the network access is the value after calibration.

Netvox-LORA Calibrate		
Input IEEE 00137A1000	002F3D Search	
00137A10	Common CN470Channel Temperature Humidity TempAndHum Light SunLight MultiThermocouple BandsConfig NewDefaultChannel NLPPCustomdataConfig	
ComSet	Clear	

3.1.2 Enter the temperature and humidity value calibration interface, click the "read" button to read the temperature and humidity values currently collected by the device, as shown below:

Netvox-LORA Calibrate	×
Input IEEE 00137A1000002F3D Search	
00137A1000002F3D	
TempAndHum	×
temp value(℃) 20.88	
set value(°C) 0.00	
hum value(%) 50.13	_
set value(%) 0.00	
read Cabibrate Cancel	
Status: connected!	

3.1.3 When the user thinks that the temperature and humidity values are incorrect and need to be calibrated, enter the standard temperature value in the temperature calibration input box, and enter the standard humidity value in the humidity calibration input box. For example, enter the temperature value: 30.50, enter 60.80 in humidity value and click "Calibrate" button to write the calibration values as shown below:

Netvox-LORA Calibrate	
Input IEEE 00137A1000002F3D Search	
00137A1000002F3D	
TempAndHum	3]
temp value(°C) 20.88	
set value(°C) 30.50	
hum value(%) 50.13	
set value(%) 60.80 🗼	
read Cabibrate Cancel	
Status: connected!	

3.1.4 During the calibration process, the button will become gray and unavailable. After the calibration is completed, the button color will be restored. Click the "read" button to read the temperature and humidity value after the calibration of the device.

The temperature value after reading the calibration is 30.5; the humidity value is 60.84, which is in accordance with the calibration result. After the device attribute value is successfully calibrated, power off and power on the device to enter the normal mode. As shown below:

Netvox-LORA Calibrate	
Input IEEE 00137A1000002F3D Search	
00137A1000002F3D	
TempAndHum	×
temp value (°C) 20 5	
temp value(C) 50.5	
set value(°C) 30.50	
· · · · · · · · · · · · · · · · · · ·	-
hum value(%) 60.84	
set value(%) 60.80	
set Value (%)	
read Cabibrate Cancel	
Collisat	
Status: connected! .:	

2.3.2 Sunlight Value Calibration

3.2.1 After selecting the IEEE code of the device, right click, in the pop-up function options, select the property to be calibrated and enter the calibration interface. For example, select the Sunlight property to be calibrated, as shown in the Fig. below:

Netvox-LORA Calibrate			
00137A1000006666			
	Temperature		
	Humidity		
	Light		
	SunLight		
ComSet	Clear		
Status: connected!	:		

3.2.2 Enter the sunshine property calibration interface, click the "read" button to get the sunlight value returned by the current sampling device, as shown in the Fig. below:

	Netvox-LORA Calibrate	
	00137A1000006666	
Sur	nLight Calibrate	×
	curr value (lux): 94	
	Cabibrate (IUX): Cancel	
	ComSet Clear Status: connected!	

3.2.3 When the current value returned by the device is not accurate enough compared with the value measured by the standard source, the calibration can be made. For example, if the standard source value indicates that the current sunshine value should be 5000 lux, the dest value input box should be filled in 5000. Then click on the "Calibrate" button to write the calibration value, as shown in the Fig. below:

Netvox-LORA Calibrate	
00137A100006666	
SunLight Calibrate	×
curr value (lux): 94 read dest value (lux): 5000	
Labibrate	
ComSet	
Status: connected!	

3.2.4 After the calibration is completed, click the "read" button again to get the return value after the calibration of the device. As the following Fig. in below, the sunshine value returned after calibration is: 4953 lux, which has been modified to the

standard source close value (within the error range). Then the calibration of the sunshine attribute value is successful. After the device attribute value is successfully calibrated, power off and power on the device to enter the normal working mode.

Netvox-LORA Calibrate	3
00137A1000006666	
SunLight Calibrate	
curr value (lux): 4953 read]
dest value (lux): 5000	
Cabibrate Cancel	
Status: connected!	

2.3.3 Thermocouple Temperature Value Calibration

3.3.1 Right-click the device IEEE and select "MultiThermocouple" to enter the thermocouple temperature calibration interface, as shown in the Fig. below.

Netvox-LORA Calib	rate 📧
Netvox-LORA Calib	rate
Co Status: connected	omSet Clear

3.3.2 After entering the thermocouple calibration interface, firstly select the way to calibrate the thermocouple. Selects "channel1" for the first thermocouple temperature calibration. Select "channel2" for the second thermocouple temperature calibration , and so on.

To read temperature value of the selected channel, as shown below, the current temperature value of the first thermocouple returned is 33° C, when the user thinks that the collected temperature value is not accurate, for example, the standard source temperature value is 80° C. At this time, the dest value temperature value should be written to the standard source temperature value of 80° C, and then click the "Calibrate" button to write the calibration temperature value.

Netvox-LORA Calibrate
00137A100000319
Thermocouple Calibrate
channel
1 💿 channel1 🔿 channel2 🔿 channel3 🔿 channel4
🔿 channel5 🔿 channel6 🔿 channel7 🔿 channel8
curr value (°C): 33 2
dest value (°C): 800 0 3
(4 Cabibrate Cancel
ComSet
Status: connected! .::

3.3.3 After temperature value calibration is successfu, click the "read" button again to re-read the return value after calibration. As shown in the figure below, the read temperature value of the first channel of the thermocouple has been calibrated to the standard source temperature value 80° C and so on.

Netvox-LORA Calibrate
00137A100000319
Thermocouple Calibrate
channel
💿 channel1 🔘 channel2 🔘 channel3 🔘 channel4
🔘 channel5 🔘 channel6 🔘 channel7 🔘 channel8
curr value (°C): 80 read
dest value (°C): 80.0
Cabibrate
ComSet Clear
Status: connected!

The calibration of other channels is the same. The calibration operation of other attributes is the same as the attribute calibration operation of the example. It is not repeated. After the device attribute value is successfully calibrated, power on and power off to enter normal working mode.

After the device calibration value is restored to the factory settings, it will be retained. The attribute value reported after the device is connected to the network is the value after calibration.

2.4 LoRa Low Frequency Device Frequency Point Modification

Right-click the device IEEE, right click and select "CN470Channel" to enter the frequency setting interface, as shown in the Fig. below:

Netvox-LORA	Calibrat	e 💌
Input IEEE	00137A1	000000000 Search
00137	'A1C	Common CN470Channel Temperature Humidity Light SunLight MultiThermocouple BandsConfig NewDefaultChannel NLPPCustomdataConfig
	ComS	Clear
Status: conn	ected!	.:

Set the interface at the frequency point, click the "Read" button, you can read the current frequency information of the device, as shown in the Fig. below:

Netvox-l	ORA Calibrate	x
Input	IEEE 00137A100000000	Search
001	37A100000000	
C	N470Channel	B
	VpChannelCount: 8	
	VpChannelBase : 470300000	нz
	RX1ChannelBase : 500300000	нz
	RX2Channel : 500300000	нz
	Read	
	ComSet	
Status:	connected!	.::

Input device uplink frequency point UpChannelCount, the default value is generally 8 frequency points; input the uplink starting frequency point UpChannelBase; note that the unit here is HZ; input the downlink starting frequency point RX1ChannelBase; input the downlink RX2Channel frequency point, and then click "Set" button to enter the set value. After the setting is successful, there will be an "operate success"

window prompt. After the setting is successful, click the "Read" button to read the value returned after setting, as shown in the following Fig.:

Netvox	r-LORA Ca
	t IEEE 00 137A operate success!
	CN470Cha 确定 🛛
	UpChannelCount: 8
	VpChannelBase : 472300000 HZ
	RX1ChannelBase : 502300000 HZ
	RX2Channel : 505300000 HZ
	Read Set
	ComSet
Status	: connected!

2.5. LoRa High Frequency Device Bands Modified

Note: Bands modification only supports software in the US915 and AU915 bands. After the device is successfully connected to the network, right-click and select the "BandsConfig" option to enter the Band modification interface, as shown in the Fig. below:

Netvox-LORA Calib	rate	
Input IEEE 0013	7A100000082	Search
00137A1	Common CN470Channel Temperature Humidity Light SunLight MultiThermocouple BandsConfig NewDefaultChannel NLPPCustomdataCon	fig
C	OmSet	
Status: connected	!	.::

After entering the Band modification interface, click the "Read" button to read the current Bands information of the return device. The default device shipment is usually band1~band8, as shown in the Fig. below:

Netvox-L	ORA Calibrate		×
Input I	EEE 00137A1000000	082	Search
001	37A10000	00082	
Ba	ndsConfig		
	🔽 bandRatel	📝 bandRate2	
	🔽 bandRate3	📝 bandRate4	
	📝 bandRate5	📝 bandRate6	
	📝 bandRate7	📝 bandRate8	
	Read	Set	
	ComSet	Clear	
Status: (connected!		

Note: The difference between each band is only the uplink frequency point, and the downlink frequency points are the same. Therefore, only the uplink frequency points are marked as follows:

```
US915 Band1 uplink frequency points as below:
902.3MHz, 902.5MHz, 902.7MHz, 902.9MHz, 903.1MHz, 903.3MHz, 903.5MHz,
903.7MHz
           903.0MHz(@BW500
US915 Band2 uplink frequency points as below:
903.9MHz, 904.1MHz, 904.3MHz, 904.5MHz, 904.7MHz, 904.9MHz, 905.1MHz,
905.3MHz
           904.6MHz(@BW500
US915 Band3 uplink frequency points as below:
905.5MHz, 905.7MHz, 905.9MHz, 906.1MHz, 906.3MHz, 906.5MHz, 906.7MHz,
906.9MHz
           906.2MHz(@BW500
US915 Band4 uplink frequency points as below:
907.1MHz, 907.3MHz, 907.5MHz, 907.7MHz, 907.9MHz, 908.1MHz, 908.3MHz,
908.5MHz
           907.8MHz(@BW500
US915 Band5 uplink frequency points as below:
908.7MHz, 908.9MHz, 909.1MHz, 909.3MHz, 909.5MHz, 909.7MHz, 909.9MHz,
910.1MHz
           909.4MHz(@BW500
```

US915 Band6 uplink frequency points as below: 910.3MHz, 910.5MHz, 910.7MHz, 910.9MHz, 911.1MHz, 911.3MHz, 911.5MHz, 911.7MHz 911.0MHz(@BW500

US915 Band7 uplink frequency points as below: 911.9MHz, 912.1MHz, 912.3MHz, 912.5MHz, 912.7MHz, 912.9MHz, 913.1MHz, 913.3MHz 912.6MHz(@BW500

US915 Band8 uplink frequency points as below: 913.5MHz, 913.7MHz, 913.9MHz, 914.1MHz, 914.3MHz, 914.5MHz, 914.7MHz, 914.9MHz 914.2MHz(@BW500

AU915 Band1 uplink frequency points as below: 915.2MHz, 915.4MHz, 915.6MHz, 915.8MHz, 916.0MHz, 916.2MHz, 916.4MHz, 916.6MHz 915.9MHz(@BW500

AU915 Band2 uplink frequency points as below: 916.8MHz, 917.0MHz, 917.2MHz, 917.4MHz, 917.6MHz, 917.8MHz, 918.0MHz, 918.2MHz 917.5MHz(@BW500

AU915 Band3 uplink frequency points as below: 918.4MHz, 918.6MHz, 918.8MHz, 919.0MHz, 919.2MHz, 919.4MHz, 919.6MHz, 919.8MHz 919.1MHz(@BW500

AU915 Band4 uplink frequency points as below: 920.0MHz, 920.2MHz, 920.4MHz, 920.6MHz, 920.8MHz, 921.0MHz, 921.2MHz, 921.4MHz 920.7MHz(@BW500

AU915 Band5 uplink frequency points as below: 921.6MHz, 921.8MHz, 922.0MHz, 922.2MHz, 922.4MHz, 922.6MHz, 922.8MHz, 923.0MHz 922.3MHz(@BW500

AU915 Band6 uplink frequency points as below: 923.2MHz, 923.4MHz, 923.6MHz, 923.8MHz, 924.0MHz, 924.2MHz, 924.4MHz, 924.6MHz 923.9MHz(@BW500

AU915 Band7 uplink frequency points as below: 924.8MHz, 925.0MHz, 925.2MHz, 925.4MHz, 925.6MHz, 925.8MHz, 926.0MHz, 926.2MHz 925.5MHz(@BW500

AU915 Band8 uplink frequency points as below: 926.4MHz, 926.6MHz, 926.8MHz, 927.0MHz, 927.2MHz, 927.4MHz, 927.6MHz,

927.8MHz 927.1MHz(@BW500

Click to select the required Band, click to remove the unwanted Band, and then click the "Set" button to write into the device. After the setting is successful, there will be an "operate success" window prompt. After the setting is successful, click the "Read" button to read information returned after setting, as shown in the Fig. below:

Netvox-LORA Calibrate	×
Input IEEE 001	Search
00137A: operate success!	
BandsCon 确定	B
📝 bandRate1 📄 bandRate2	
📃 bandRate3 🛛 📝 bandRate4	
📝 bandRate5 📄 bandRate6	
📃 bandRate7 🛛 📝 bandRate8	
Read Set	
ComSet	
Status: connected!	.::

2.6 LoRa High Frequency Device Frequency Point

Modification

Note: The frequency point modification only supports the software of AS923, KR920 and IN865 frequency bands.

After the device is successfully connected to the network, right click and select the "NewDefaultChannel" option to enter the frequency setting interface, as shown in the Fig. below:

Netvox-LORA Calib	rate	×
Input IEEE 0013	7A100000082	Search
00137A1	000000082	
0010111	Common	
	CN470Channel	
	Temperature	
	Humidity	
	Light	
	SunLight	
	MultiThermocouple	
	BandsConfig	
	NewDefaultChannel	
	NLPPCustomdataCor	nfig
C	OmSet	
Status: connected	!	.::

For example, to modify the frequency of the AS923 band as an example, the AS923 band must have two frequency points by default, as follows:

AS923 (frequency range 920MHz~928MHz).

The default must have two frequency points: 923200000 Hz and 923400000 Hz. These two frequencies do not need to be set.

Then in the setting interface, select channel1~channel6, input the remaining 6 frequency points; click the "Set" button to complete the setting. After the setting is successful, there will be "operate success" window prompt; then click "Read" button to read information returned after setting as the Fig. below:

Ne	etvox-LORA	Calibrate	000092		8		
	Input IEEE	0013781000	000082		Search		
lewDefault(hannel	1100					[
🔽 char	nel1 92360	0000	нz	🔽 channel2	923800000	нz	
🔽 char	nel3 92400	0000	нz	📝 channel4	924200000	нz	
🔽 char	nel5 92440	0000	нz	🔽 channel6	924600000	нz	
char	ne17		HZ.	Channel8		нz	
📄 char	ne19			channel10	1	нz	
📃 char	nell			channel12		нz	
📄 char	neli ope	erate succes	is!	channel14		НZ	
📄 char	mell			channel16		НZ	
		确	定	Set			
		ComSet		Clear			
St	tatus: conn	ected!			.::		

2.7 LoRa Device CustomData Modification

Note: Different devices have different CustomData definitions. For details, please consult the software developer.

The Cus Data description of the R311A device is as follows:

The 1-2th byte: ACK (reverse write), open as: 0100, off: 0000 (factory default)

The 3-4th byte: ADR (reverse write), open to: 0100 (factory default), off: 0000

5-6th byte: resume (reverse write), save network information: 0100, do not save network information: 0000 (factory default)

7-8th byte: minimum time (reverse write), set value is hexadecimal, for example, 100E means 1 hour (factory default)

9-10th byte: maximum time (reverse write), set value is hexadecimal, for example, 100E means 1 hour (factory default)

11-16th byte: reserved

Note: "Reverse Write" means that the low byte is in the front and the high byte is after. For example, 1 hour (3600 seconds), converted to hexadecimal 0E10, here reversed, it is expressed as 100E.

After the device is successfully connected to the network, right-click and select the NLPPCustomdataConfig option to enter the Customdata modification interface, as shown in the following Fig.:

Netvox-LORA Calibrate				
Input IEEE 00137A10	00137A100000082			
00137A100	Common CN470Channel Temperature			
	Humidity Light SunLight MultiThermocoupl BandsConfig	e		
	NLPPCustomdataC	Config		
ComSe	t			
Status: connected!		.:		

After entering the Customdata modification interface, click the "Read" button to read the current programming value of the device, as shown in the Fig. below:

Netvox-LORA Calibrate	×
Input IEEE 00137A10000718C2 Search	
00137A10000718C2	
NLPPCustomData	×
ACK ADR Resume	ן ר
Min: 900 🚖 (S) Max: 900 🚖 (S)
CustomData: 00000100000084038403001600000000	
Read Set	
ComSet	
Status: connected!	.::

For example, read the factory default Customdata value of the R718CK2 device: 00000100000084038403001600000000

The factory default ACK bit of the device is: off (0x0000, reverse write). ADR bit is on (0x0100, reverse write). Resume saves network bit as off (0x0000, reverse write). Mintime defaults to be 900 seconds (0x8403, reverse write). Maxtime defaults to 900 seconds (0x8403, reverse write).

To change the ACK to on, ADR to off. Save Network to On, report minimum time to 60 seconds, and maximum time to 180 seconds. Customdata settings are as follows:

	Netvox-	ORA Calib	orate					×
	Input	EEE 0013	7A10000718	3C2			Search	
	001	37A1	0000)718	8C2	2		
NLF	PCustom	Data						×
Cu	ıstomData	Min: @	ACK 30 ÷ 01003C00B4 Read	ADR (S)) Max: 0000000	Resum 180 Set	(S)	
	Status:	Connected	omSet		Clea	r		

After selecting the desired setting item, click the "Set" button to write the device. After the setting is successful, there will be "operate success" window prompt, or click the "Read" button to read the information returned after setting, as shown below:

Netvox-LORA Calibrate	X
Input IEEE 00137A1000071	8C2 Search
00137A10000	
Min:	une
Read	Set
ComSet	Clear
Status: connected!	.::

2.8 LoRa Device Screening Information Modification

After the device is successfully connected to the network, right click and select the "Common" option to enter the screening information setting interface, as shown in the Fig. below:

Netvox-LORA Calibrate				
Input IEEE 00137A1	00000082 Search			
00137A1C	Common			
	CN470Channel			
	Temperature			
	Humidity			
	Light			
	SunLight			
	MultiThermocouple			
	BandsConfig			
	NewDefaultChannel			
	NLPPCustomdataConfig			
ComSe	et Clear			
Status: connected!	.:			

After entering the screening information setting interface, click the "Read" button to read the screening mode and screening information of the current device that is being programmed, as shown in the Fig. below:

Netvox-LORA Calibrate	
Input IEEE 00137A100000082 Search	
00137A100000082	
Common	8
Join Mode 💿 OTAA 💿 APB	
APPEVI: 00137A100000000	
APPKEY: 546967426565416C6C69616E63653039	
WWKSKEY :	
APPSKEY :	
DEVADDR:	
Read Set	
ComSet Clear	
Status: connected!	

For example, to modify the device to ABP mode, select ABP mode, enter NWSKEY, APPSKEY, DEVADDR information content, click the "Set" button to complete the setting, after the setting is successful, there will be "operate success" window prompt; then click "Read" button to read information returned after setting, as shown in the Fig. below:

Netvox-LORA Calibrate		
Input IEEE 00137A100000082 Search		
001374100000082		
Common	8	
Join Mode 🔘 OTAA 💿 APB		
APPEUT: 00137A1000000000		
APPKEY: 5A6967426565416C6C69616E63653039		
NWKSKEY: 546967426565416C6C69616E63653039		
APPSKEY: 5A6967426565416C6C69616E63653039		
DEVADDR: 1A2B3C4D]	
Set		
operate success!		
确定 Clear		
Status: connected! .::		