JetWave 4110L

Industrial Lora Gateway

User Manual

V1.1 Oct. 2019

LoRa

📁 Program Tool
📁 USB Driver
📄 Installation Guid.txt

1. Install USB Driver.
　　1.1 CP210xVCPInstaller_x86.exe: For Windows XP、Vista、win7 32bits.
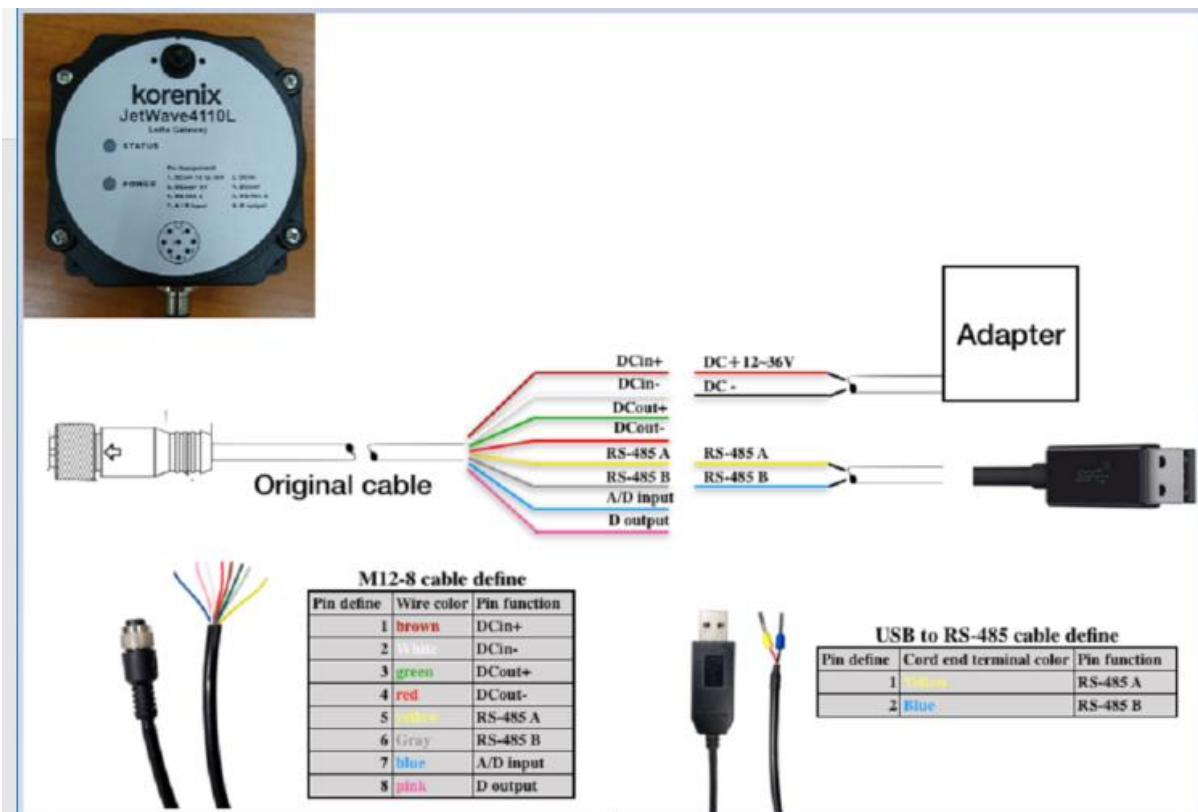　　1.2 CP210xVCPInstaller_x64.exe: For Windows Vista、Win7、Win8 64bits.

2. Copy all files in the "Program Tool" folder in your PC. (WW_BOX_LoRa.exe / SLABHIDDevice.dll / SLABHIDtoUART.dll).

3. Connect the LORA product and execute the Program Tool (WW_BOX_LoRa.exe).
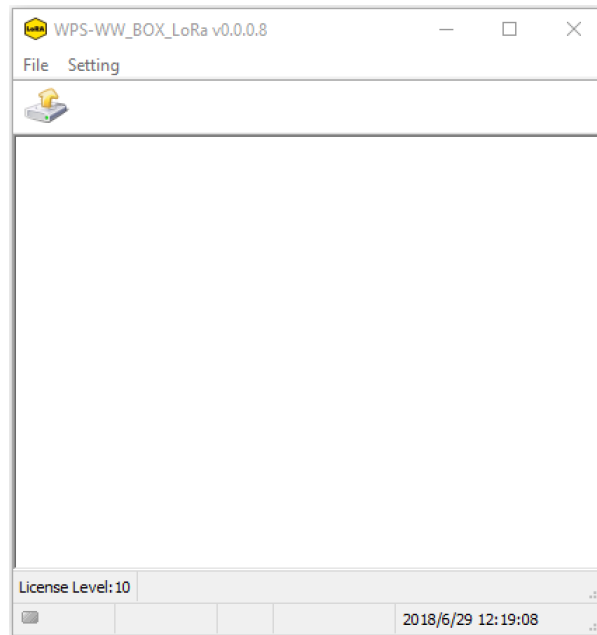
Noted that:
1. Requires operating system: Windows XP / Vista / 7 / 8 / 10.
2. The software supports the Wireless LoRa RS-485 Gateway_WW-3C28.

Connect the PC for settings diagram

M12-8 cable define		
Pin define	Wire color	Pin function
1	brown	DCin+
2	White	DCin-
3	green	DCout+
4	red	DCout-
5	yellow	RS-485 A
6	Gray	RS-485 B
7	blue	A/D input
8	pink	D output

USB to RS-485 cable define		
Pin define	Cord end terminal color	Pin function
1	Yellow	RS-485 A
2	Blue	RS-485 B

Program Tool (WW_BOX_LoRa.exe)

Icon Introduction

Read setting from device
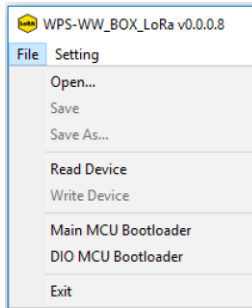
Write setting to device

Back to All setting list

Continuous writing device from setting parameter file(*.par)

MENU Introduction

File Menu

    Open... Open a setting parameter file (*.par)

    Save Save the setting parameter file

    Save As... Save all settings as another parameter file

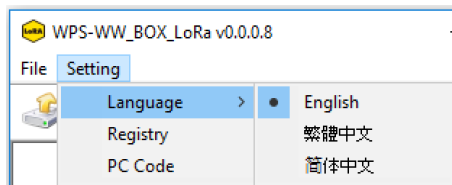   **Read Device** Read setting from device

    Write Device Write all settings to device

    Main MCU Bootloader Main MCU entry to Firmware Update Mode

    DIO MCU Bootloader DIO board MCU entry to Firmware Update Mode

    Exit Exit the program

Setting Menu

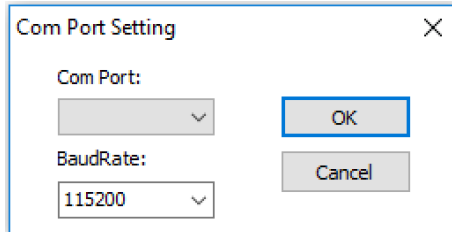   **Language** Select the language, such as English\繁體中文\简体中文

    Registry Factory functions enable registration code
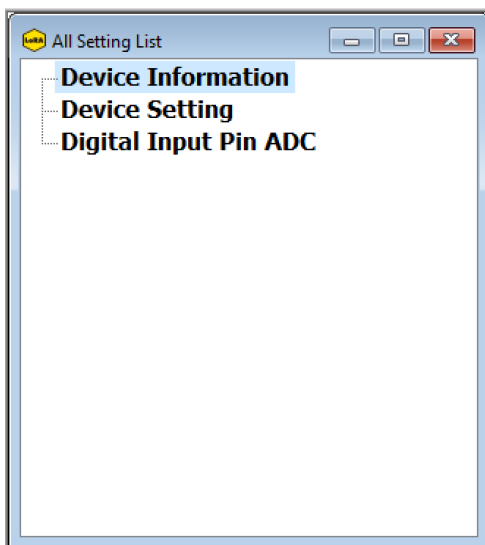
    PC Code Install PC hardware ID

Execute WW_BOX_LoRa.exe

Press ![icon] Read setting from device and select the correct COM port and BaudRate(You can ignore BaudRate and the system will automatically search for you).

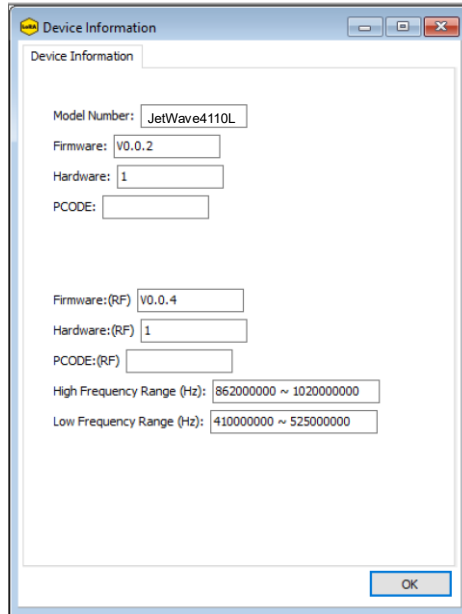1. Read setting list from device as below.

All Setting List

Device Information

All device information is shown on on the Device Information page.

Model Number This item is product model number

Firmware Main Firmware Version

Hardware Main Hardware Version

PCODE Product CODE for factory use
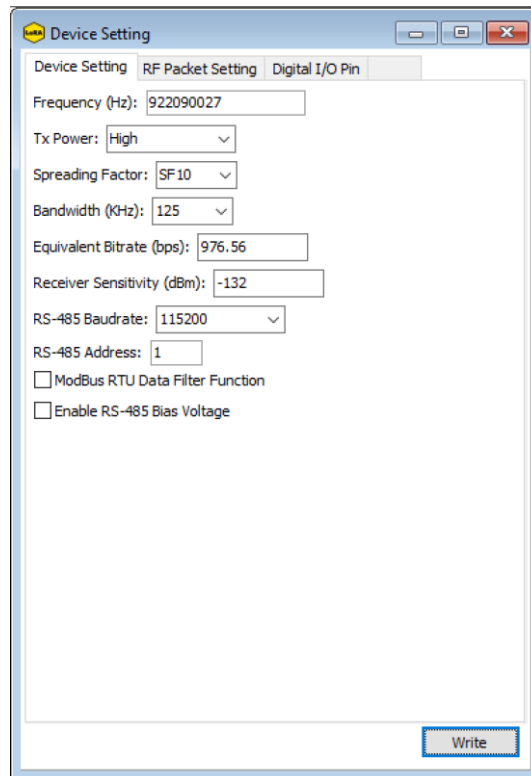
Firmware (RF) RF Firmware Version

Hardware (RF) RF Hardware Version

PCODE (RF) RF Product CODE for factory use

High Frequency Range (Hz) High band range 862~1020MHz*

Low Frequency Range (Hz) Low band range 410~525MHz*

(*): Will be adjusted according to national regulations.

Device Setting

※Noted that:

All devices are identical in the setting of frequency and RF BitRate.

All device settings are shown on as follows.

Frequency (Hz)

Setting transmit and receive frequency, the frequency range is 410MHz to 525MHz / 862MHz to 1020MHz.

Tx Power

Setting transmit power High (2W), Middle (1W), Low (0.5W).

Spreading Factor

Setting spreading factor, the range is 7~12. The smaller the value, the greater the transmission rate. **

Bandwidth (KHz)

Setting bandwidth, the range is 7.8~500 kHz. **

Equivalent Bitrate (bps)

Display equivalent bitrate, for reference only. This value will change according to the Spreading Factor and

Bandwidth.

Receiver Sensitivity (dBm)

Display receiver sensitivity, for reference only. This value will change according to the Spreading Factor

and Bandwidth.

RS-485 / RS-232 Baudrate (bps)

The Baudrate setting from 4800, 9600, 19200, 38400, 57600, 115200, 230400.

RS-485 Address

Setting the RS-485 device address(1~255).

Modbus RTU Data Filter Function

Check the box to enable Modbus RTU data filter function. This function will be checked the RS-485 address and Modbus RTU checksum.

If this function is enabled, the data input from the RF(LoRa)/ RS-485/RS-232 will be compared with RS-485 Address and Modbus RTU Data CheckSum.

Enable RS-485 Bias Voltage

Check the box to enable RS-485 Bias Voltage function. RS-485 bias voltage will provided by WW-3C28.

(**):Adjusting Spreading Factor and Bandwidth will affect Bitrate and Sensitivity. Bitrate range is .018 - 37.5 kbps and Sensitivity range is -111 to -148 dBm.

RF Packet Setting

※Noted that:

All devices are identical in the Sync. word value to link.

Receive Packet Setting

Address base filtering

Broadcast / Node / Group, Broadcast / Node, Broadcast / Group, Node / Group,

Broadcast only, Node only, Group only

Node address 1~255 ※Own Address

Group address 1~255 ※Own Address

Transmit Packet Setting

Target address Type Broadcast, Node, Group

Node address 1~255 ※Node address of the destination (receiver)

Group address 1~255 ※Group address of the destination (receiver)

Pattern association

RX TX	Broadcast	Node	Group
Broadcast / Node / Group	YES	YES	YES
Broadcast / Node	YES	YES	NO
Broadcast / Group	YES	NO	YES
Node / Group	NO	YES	YES
Broadcast only	YES	NO	NO
Node only	NO	YES	NO
Group only	NO	NO	YES

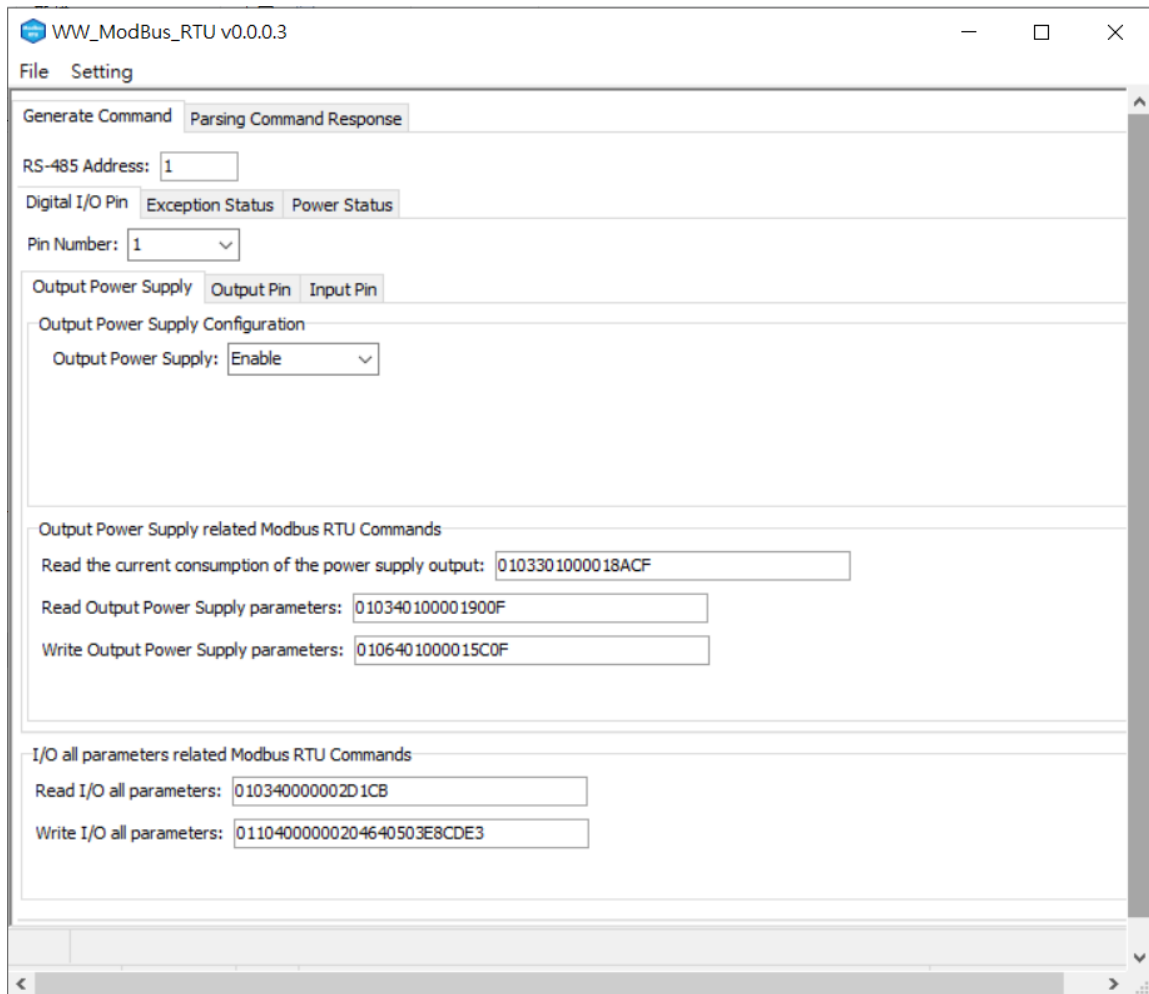【YES】The device receive is available.

【NO】 The device receive is invalid.

Packet verify Code(.Hex)

Set this value to confirm the packet, only packets that match the value will be received.

ModBus RTU setting

Install "WW_ModBus_RTU" tool. For more ModBus setting.

Install "WW_P_CMD_Tool" tool. For more ModBus setting.

Register Address Mappings

Address	Description	Attribute
0x3000	REG_DI_VAL_1: DI(AI) #1 Detection value	R (03H)
0x3001	REG_DI_VAL_2: DI(AI) #1 Detection value	R (03H)
0x3002	REG_DI_VAL_3: DI(AI) #2 Detection value	R (03H)
0x3003	REG_DI_VAL_4: DI(AI) #3 Detection value	R (03H)
0x3004	REG_DI_VAL_5: DI(AI) #4 Detection value	R (03H)
0x3010	REG_VOUT_CUR_VAL_1: Vout Current consumption #1 Detection value	R (03H)
0x3011	REG_ VOUT_CUR _VAL_2: Vout Current consumption #2 Detection value	R (03H)
0x3012	REG_ VOUT_CUR _VAL_3: Vout Current consumption #3 Detection value	R (03H)
0x3013	REG_ VOUT_CUR _VAL_4: Vout Current consumption #4 Detection value	R (03H)
0x3014	REG_ VOUT_CUR _VAL_5: Vout Current consumption #5 Detection value	R (03H)

0x3020	REG_DIO_EXCEP_STATUS: DIO Abnormal state	R (03H)
0x3021	REG_POWER_ELECTRICITY: Main power (mV)	R (03H)
0x4000(~0x4001)	REG_DIO_ALL_PAR_1: DIO#1 All parameter	R/W*** (03H/10H)
0x4002(~0x4003)	REG_DIO_ALL_PAR_2: DIO#2 All parameter	R/W*** (03H/10H)
0x4004(~0x4005)	REG_DIO_ALL_PAR_3: DIO#3 All parameter	R/W*** (03H/10H)
0x4006(~0x4007)	REG_DIO_ALL_PAR_4: DIO#4 All parameter	R/W*** (03H/10H)
0x4008(~0x4009)	REG_DIO_ALL_PAR_5: DIO#5 All parameter	R/W*** (03H/10H)
0x4010	REG_DIO_VOUT_PAR_1: DIO#1 Vout parameter	R/W (03H/06H)
0x4012	REG_DIO_VOUT_PAR_2: DIO#2 Vout parameter	R/W (03H/06H)
0x4014	REG_DIO_VOUT_PAR_3: DIO#3 Vout parameter	R/W (03H/06H)
0x4016	REG_DIO_VOUT_PAR_4: DIO#4 Vout parameter	R/W (03H/06H)
0x4018	REG_DIO_VOUT_PAR_5: DIO#5 Vout parameter	R/W (03H/06H)
0x4020	REG_DIO_DI_PAR_1: DIO#1 DI(AI) parameter	R/W (03H/06H)
0x4022	REG_DIO_ DI _PAR_2:	R/W

	DIO#2 DI(AI) parameter	(03H/06H)
0x4024	REG_DIO_ DI _PAR_3: DIO#3 DI(AI)parameter	R/W (03H/06H)
0x4026	REG_DIO_ DI _PAR_4: DIO#4 DI(AI)parameter	R/W (03H/06H)
0x4028	REG_DIO_ DI _PAR_5: DIO#5 DI(AI)parameter	R/W (03H/06H)
0x4030	REG_DIO_DO_PAR1_1: DIO#1 DO parameter1	R/W (03H/06H)
0x4031	REG_DIO_DO_PAR2_1: DIO#1 DO parameter2	R/W (03H/06H)
0x4032	REG_DIO_DO_PAR1_2: DIO#2 DO parameter1	R/W (03H/06H)
0x4033	REG_DIO_DO_PAR2_2: DIO#2 DO parameter2	R/W (03H/06H)
0x4034	REG_DIO_DO_PAR1_3: DIO#3 DO parameter1	R/W (03H/06H)
0x4035	REG_DIO_DO_PAR2_3: DIO#3 DO parameter2	R/W (03H/06H)
0x4036	REG_DIO_DO_PAR1_4: DIO#4 DO parameter1	R/W (03H/06H)
0x4037	REG_DIO_DO_PAR2_4: DIO#4 DO parameter2	R/W (03H/06H)
0x4038	REG_DIO_DO_PAR1_5: DIO#5 DO parameter1	R/W (03H/06H)
0x4039	REG_DIO_DO_PAR2_5: DIO#5 DO parameter2	R/W (03H/06H)

***：When reading （03H）REG_DIO_ALL_PAR_x，it require 2 data numbers.