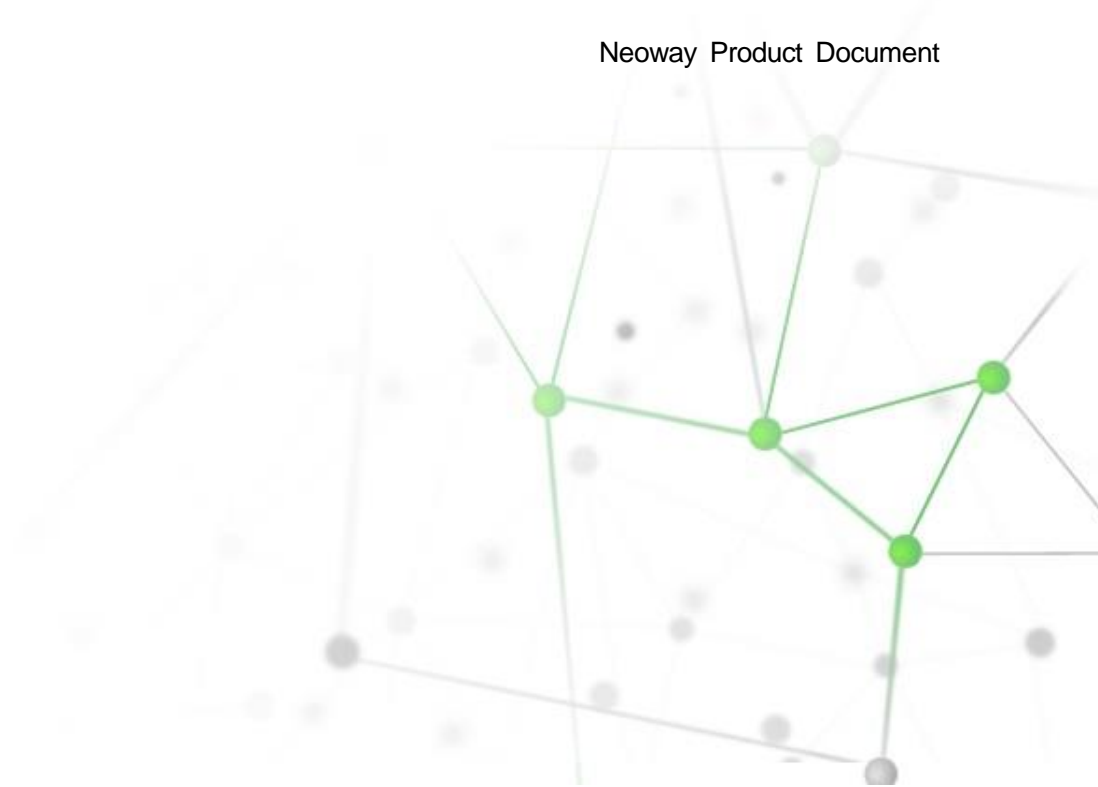


N21 EVK User Guide

Issue 1.0

Date 2018-06-19

Neoway Product Document



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Notice

This document provides guide for users to use N21.

This document is intended for system engineers (SEs), development engineers, and test engineers.

THIS GUIDE PROVIDES INSTRUCTIONS FOR CUSTOMERS TO DESIGN THEIR APPLICATIONS. PLEASE FOLLOW THE RULES AND PARAMETERS IN THIS GUIDE TO DESIGN AND COMMISSION. NEOWAY WILL NOT TAKE ANY RESPONSIBILITY OF BODILY HURT OR ASSET LOSS CAUSED BY IMPROPER OPERATIONS.

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About This Document

Scope

This document is applicable to N21series.




Audience

This document is intended for [system engineers \(SEs\)](#), [development engineers](#), and [test engineers](#).

Change History

Issue	Date	Change	Changed By
1.0	2018-06	Initial draft	CennyXiao

Conventions

Symbol	Indication
 Warning	This warning symbol means danger. You are in a situation that could cause fatal device damage or even bodily damage.
 Caution	Means reader be careful. In this situation, you might perform an action that could result in module or product damages.
 Note	Means note or tips for readers to use the module

Related Documents

Neoway_N21_Datasheet

Neoway_N21_Product_Specifications

Neoway_N21_AT_Command_Mannual

Neoway_N21_Hardware_User_Guide

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1 Overview

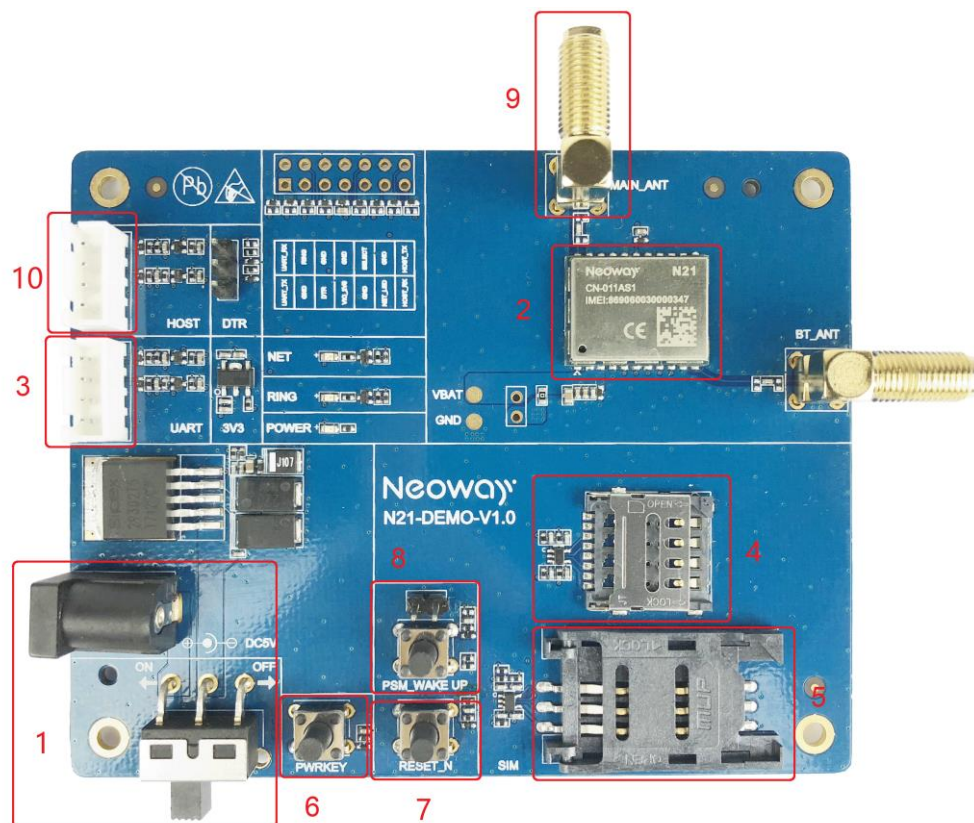
N21 EVB is used for customers to commissioning the hardware and software functions of N21. It provides various peripheral interfaces, including power supply interface, SIM card connector, antenna interface, PWRKEY button, RESET_N button, PSM_WAKE UP button, UART interface, and HOSTinterface.

N21 EVK contains the following components:

- N21 EVB (including module)
- M5X0-PWR cable
- Others (5V/2A adapter, antenna, etc.)

2 EVB Functions

2.1 N21 EVB



1. 5V adapter interface
2. N21 module
3. UART interface
4. SIM card connector 1
5. SIM card connector 2
6. PWRKEY button
7. RESET_N button
8. PSM_WAKE UP button
9. MAIN_ANT antenna interface
10. HOST interface

2.2 Interface and Buttons

N21 EVB provides the following interfaces and buttons:

Interface/Button	Description
5V adapter interface	5V DC power supply, push the switch to ON
VBAT interface	Main power supply input, ranging from 3.3V to 4.2V, 3.8V typically
SIM Card connector	Two SIM card connectors Choose one based on the SIM card type.
UART interface	Communication interface for N21 with a computer or peripherals. N21EVB allows AT command query through UART interface.
HOST interface	Used for function commissioning and program download
Antenna interface	Used for MAIN_ANT antenna only
PWRKEY button	After supplying power to the module, hold this button for around 1 second to start the module
RESET_N button ^[1]	Hold this button for around 1 second to reset the module
PSM_WAKE UP button ^[2]	Hold this button for around 1 second to wake up the module from PSM mode

Remarks:

[1] To enable RESET_N button, you need to transform the EVB

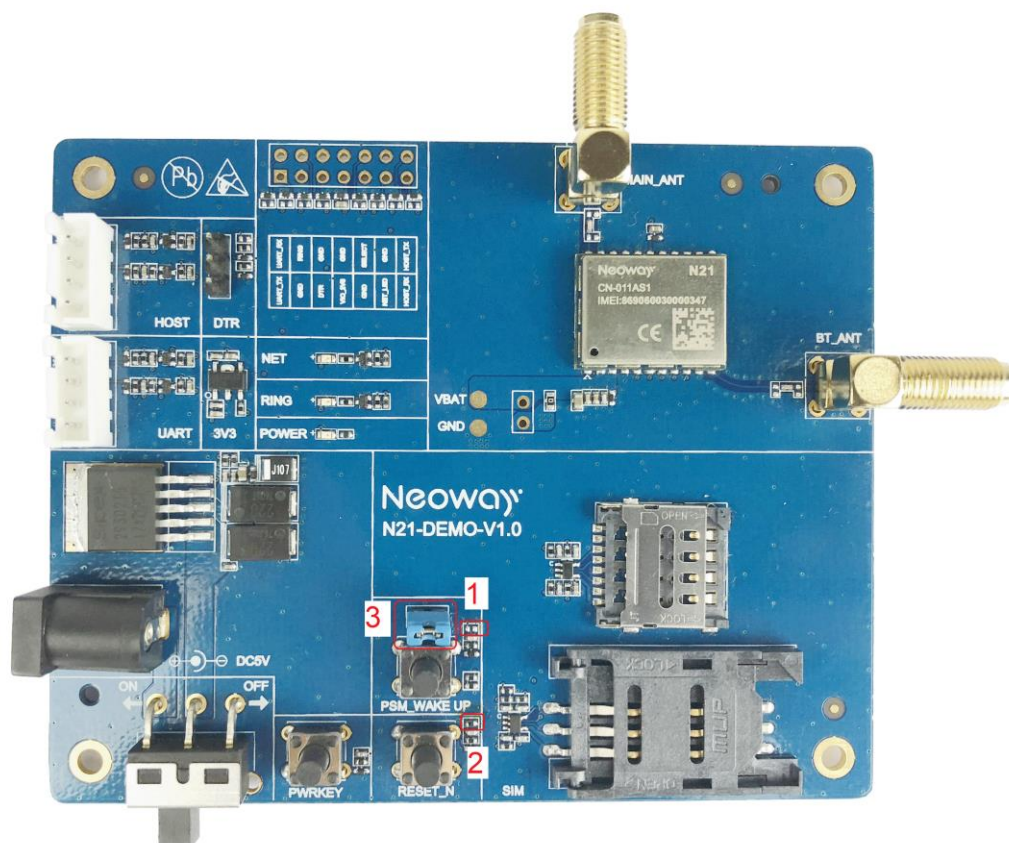
[2] To enable PSM_WAKE UP button, you need to transform the EVB

3 Button Transformation

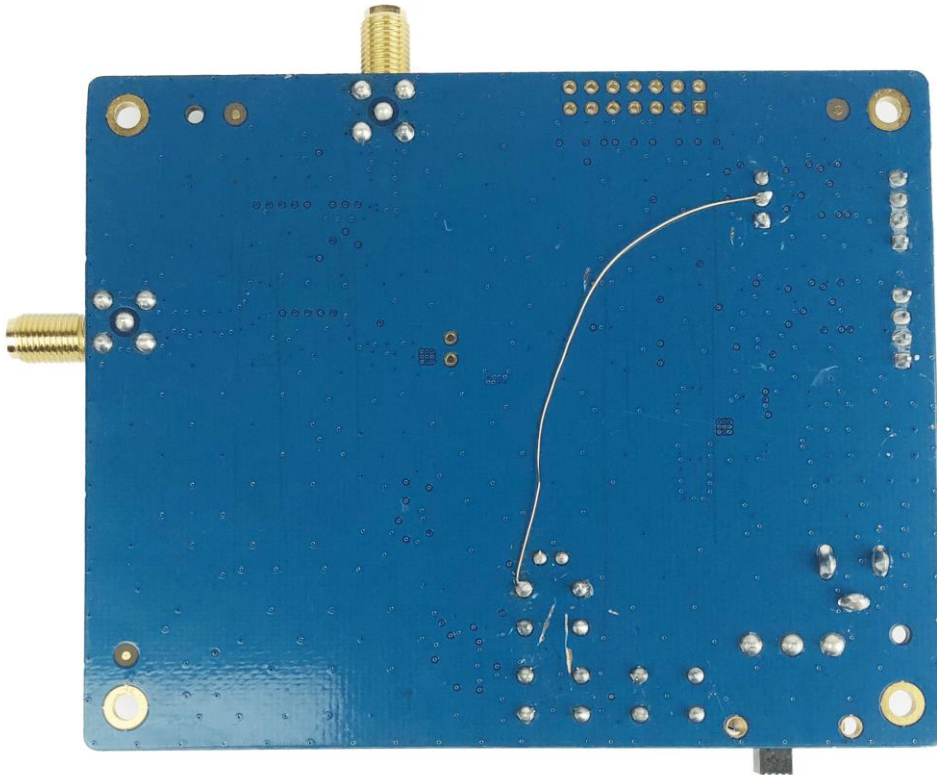
To use the RESET_N button and the PSM_WAKEUP button, transform the EVB by the following way:

Remove the resistor at position 1 and solder it at position 2.

Solder 2 pins at position 3 and add a jumper.



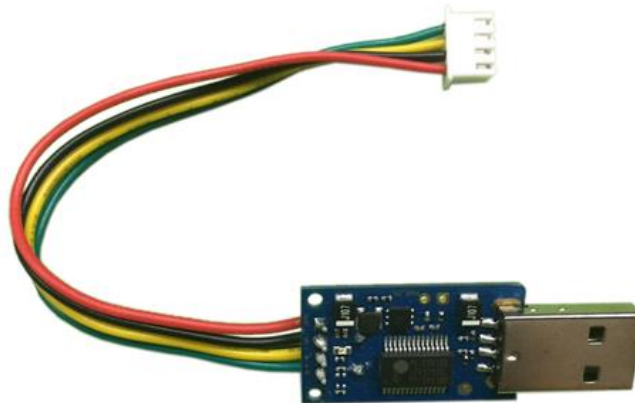
Connect the two positions as shown in the following figure.



N21 EVB supports the following power supply and connections:

-

4.2 M5X0-PWRBoard

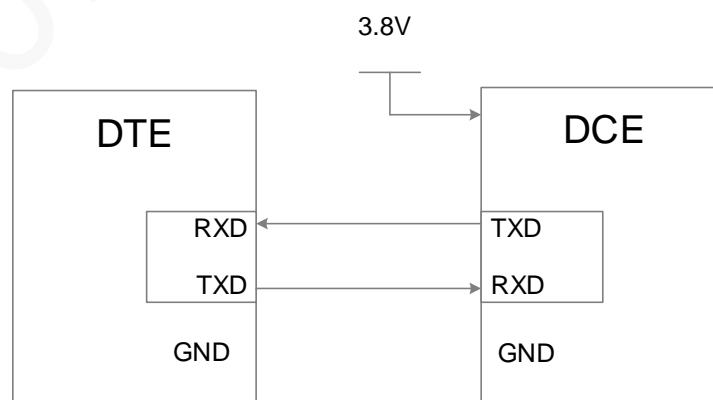


The above figure shows an M5X0-PWR board, which supplies 3.8V/0.6A power for the module and outputs 3.3 V CMOS level TXD and RXD for the communication between the computer and the module. It is connected to the N21 EVB through 4-pin cables, which have been soldered to the power board in a sequence of red, black, yellow, and green at one end and should be inserted into the plug of the EVB at the other end. There are two pins on the power board and they can control the power supply of the module.

Among the 4-pin cables:

- Green: TXD, output, 2.85 V CMOS level
- Yellow: RXD, input, CMOS level, 3.3 V maximum
- Black: Ground
- Red: VBAT, 3.6 V to 4.5 V, 3.8 V is recommended

To use the UART function, install the USB-to-UART driver (PL2303) first. If an MCU is used to control the module, connect the as shown in the following figure:



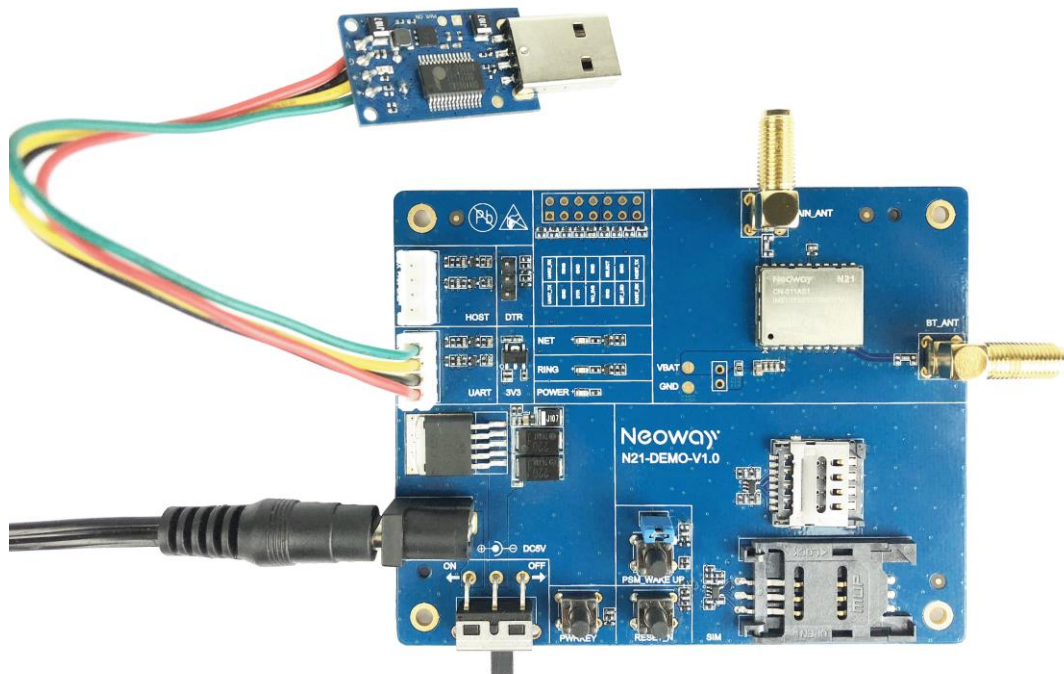
5 Commissioning

N21 is commissioned through UART. Follow the steps below:

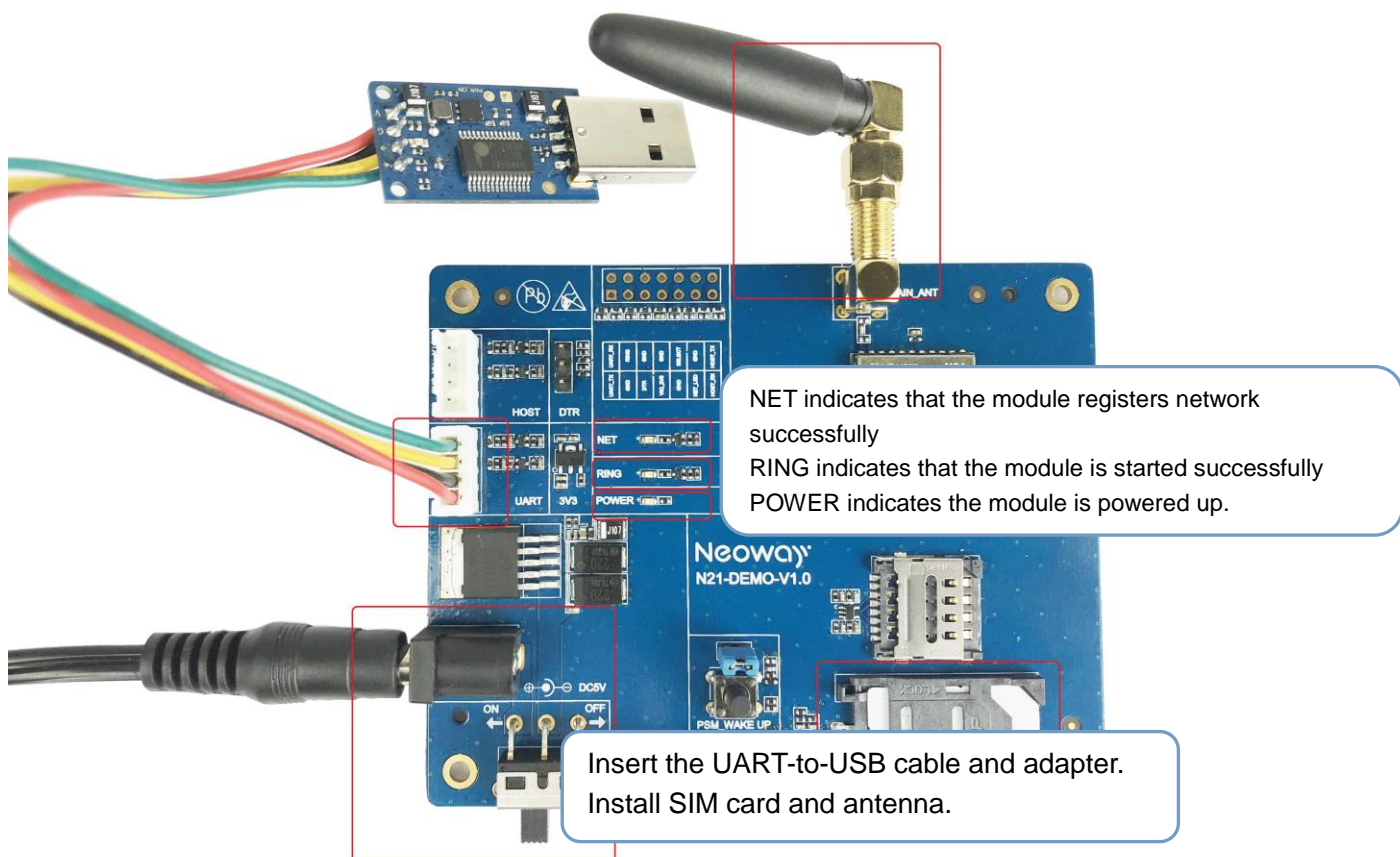
Step 1: Connect the EVB properly.

Insert the 5V/2A adapter and the M5X0-PWR cable into interfaces of the board.

Install the antenna and SIM card.



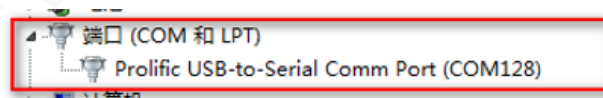
Step 2: Insert the M5X0-PWR cable into the USB port of the computer, switch on the power supply of the board and start the module.



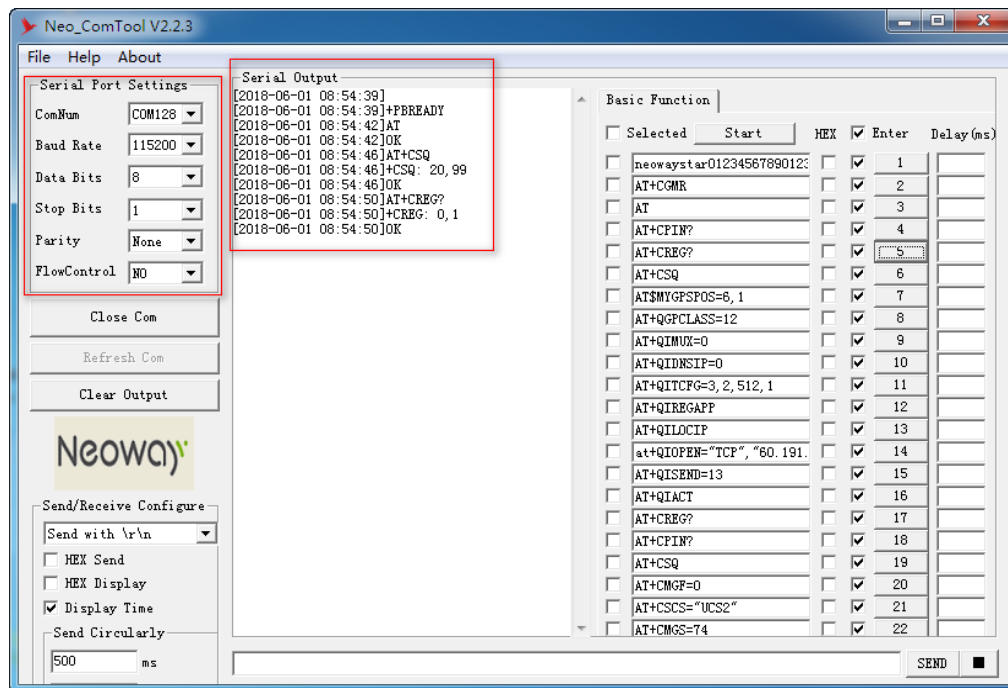
Step 3: Install USB-to-Serial port driver (**pl2303-win7x64.rar**) and ensure that the computer displays the port.

Insert the M5X0-PWRboard, and the computer displays **Prolific USB-to-Serial Comm Port** under the **Port (COM and LPT)** node in Device Manager.

Then you can start the commissioning.



Step 4: Start the commissioning tool and perform commissioning.



6 PSM Test

To test the PSM function of N21, you need to use jump wires to supply power for the module.

- The jump wire soldered to VBAT should be connected to the positive of the power supply and the jump wire soldered to GND should be connected to the negative of the power supply.

The recommended voltage of the DC power supply is 3.8V.

- In the PSM test, remove the jumper cap near PSM_WAKE UP.
- The module should be woke up by external control in PSM mode.

You need to transform the EVB to enable the PSM_WAKE UP button.

Put a jumper cap to the pins.

Hold the PSM_WAKE UP button for one second. The module will wake up from PSM mode.

