

N27

EVK User Guide

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Notice

This document provides a guide for users to use N27.

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

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Contents

1 Overview.....	1
2 About N27 EVB.....	2
3 Power and Connection	4
3.1 Power Supply	4
3.2 Communication Connection	4
3.2.1 M5X0-PWR Board.....	4
3.2.2 Micro-USB Cable.....	6
4 Commissioning	7
4.1 Through Serial Port	7
4.2 Through USB Port.....	9

About This Document

Scope

This document is applicable to the N27 series.




Audience

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

Change History

Issue	Date	Change	Changed By
1.0	2019-12	Initial draft	Cenny Xiao

Conventions

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

Related Documents

Neoway_N27_Datasheet

Neoway_N27_Product_Specifications

Neoway_N27_HW_User_Guide

Neoway_N27_AT_Command_Manual

Neoway Confidential

1 Overview

N27 EVB is designed to commission and test the N27 module. It provides one power interface, two UART interfaces, one USB interface, one SIM card interface, two antenna interfaces, and one PWRKEY button. You can connect it to a power supply and a computer through the USB cable or serial-to-USB cable to commission the functions of the module.

N27 EVK provides the following items:

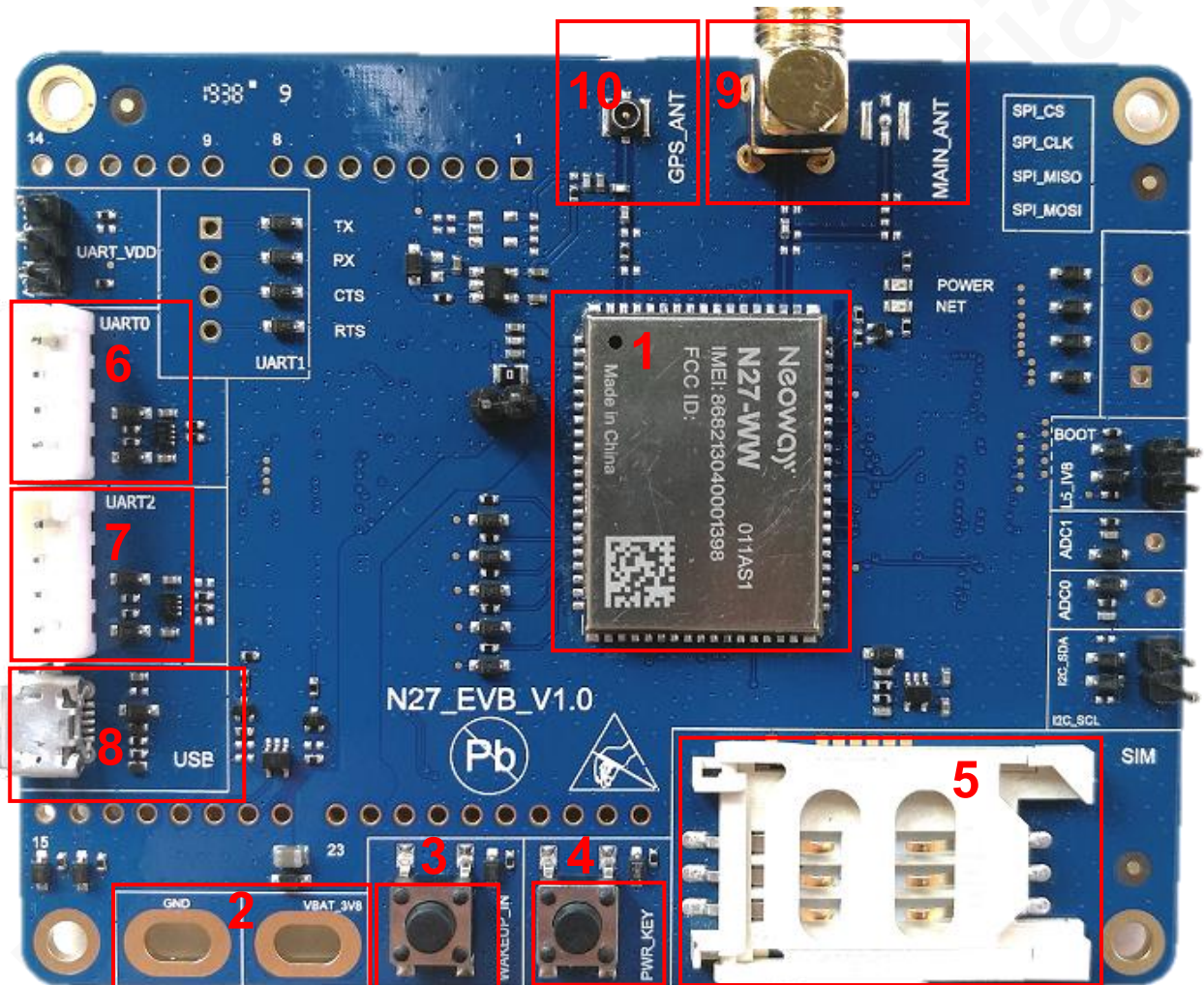
- N27_EVB_V1.0 (including N27 module)
- M5X0-PWR power cable/USB cable
- Others (antenna)

2 About N27 EVB

This chapter describes the hardware layout of the N27 EVB.

Figure 2-1 Top view of N27 EVB

Figure 2-2



In Figure 2-1, each interface and keys of N27 is marked in red rectangles. Read this user guide carefully before using N27 EVB. If necessary, please refer to the schematic diagram and PCB file of the board.

Table 2-1 lists each interface or button and their functions.

Table 2-1 Interfaces and button of N27 EVB

No.	Interface/Button	Description
0	N27_EVB_V1.0	EVB model
1	N27	Cellular module
2	Power pads	Main power supply, 3.1V to 4.3V, 3.6V typically The input current shall be 2A at least.
3	WAKEUP_IN	Reserved
4	PWR_KEY	After supplying power to the module, hold this button for more than 1 second to start the module.
5	SIM connector	SIM card connector
6	UART0	Used to send and receive AT commands
7	UART1	Reserved
8	USB port	Used to download firmware and capture logs
9	MAIN_ANT	Main antenna connector
10	GNSS_ANT	GNSS antenna connector

3 Power and Connection

Power is supplied for the N27 EVB only through external power cables. The N27 EVK provides one M5X0-PWR cable and one Micro-USB cable for data communication.

3.1 Power Supply

The N27 EVB provides solder pads for external power cables, as shown in Figure 3-2. The input voltage ranges from 3.1V to 4.3V and a 3.6V regulated power source is recommended.

Figure 3-1 Power pads

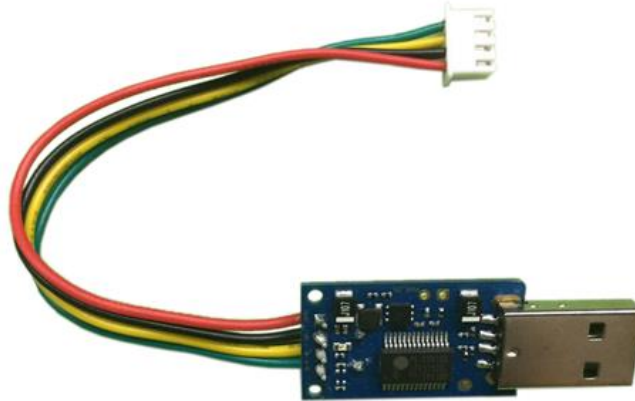


The power source supplies voltage to the module directly in this manner. Do NOT connect the pads reversely or use a power source exceeding the requirements. Otherwise, the module will be burned and cannot be repaired.

3.2 Communication Connection

3.2.1 M5X0-PWR Board

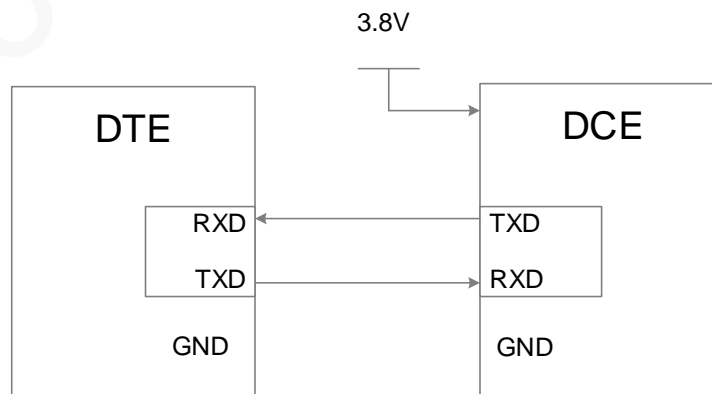
M5X0-PWR board is developed on PL2303 chipset by Neoway and used to convert USB to UART. You can also choose another USB-to-UART cable/board based on FT2232, CP210X, and other chipsets.



M5X0-PWR is connected to the N27 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. Among the 4-pin cables:

- Green
Module TXD, output, CMOS level
- Yellow
Module RXD, input, maximum 3.3 V CMOS level
- Black
Ground
- Red
VBAT, main power input, 3.6V to 4.5V, 3.8 V 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:



3.2.2 Micro-USB Cable

A micro-USB cable is used to connect N27 to a computer for USB or serial communication.

Figure 3-2 USB cable



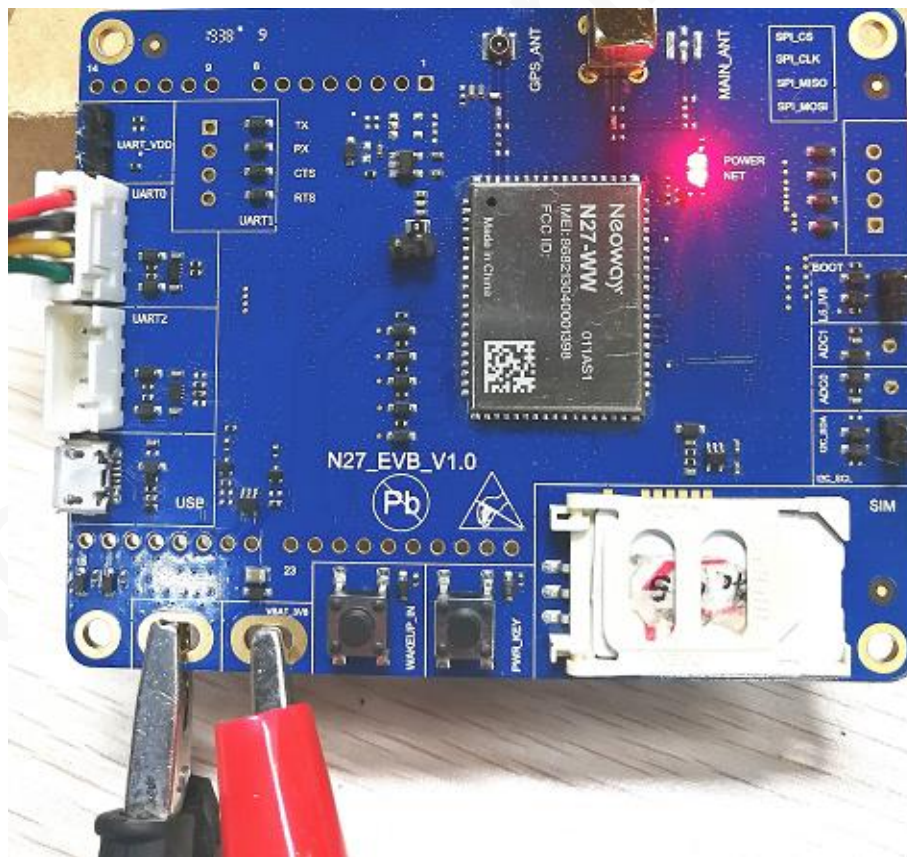
4 Commissioning

N27 can be commissioned either through a serial port or a USB port. This chapter describes how to connect the module and how to implement commissioning through either port.

4.1 Through Serial Port

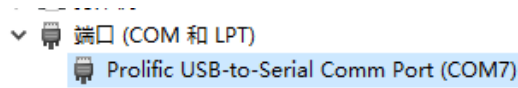
Step 1: Connect the EVB board and start it.

1. Use an external power source to supply power.
2. Connect it to the computer through the M5X0-PWR board.
3. Insert a SIM card and install an antenna onto the EVB board.
4. Hold the PWRKEY_N button for 1 seconds, and the module starts up.

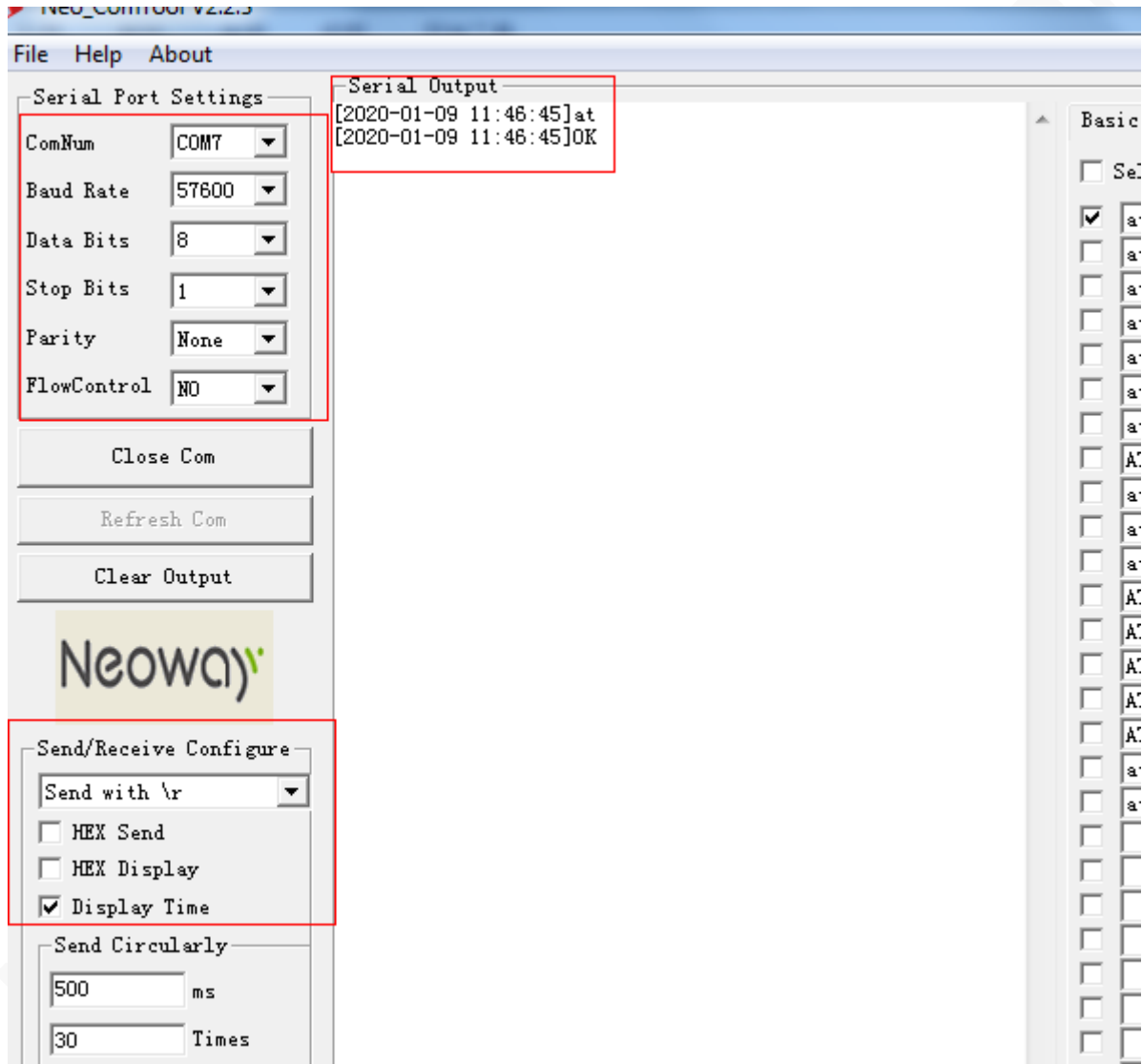


Step 2: Install the PL2303 driver.

Obtain the driver package from Neoway FAE or download it from the Internet if you use the serial-to-USB cable Neoway provided.



Step 3: Start the Neo_ComTool and set the parameters of the serial port and AT.



Step 4: Send an AT command to enable the module to detect the baud rate automatically.

Step 5: Send AT commands to test or commission the module.

4.2 Through USB Port

Perform the following steps to commission N27 through USB port:

Step 1: Connect the EVB board and start it.

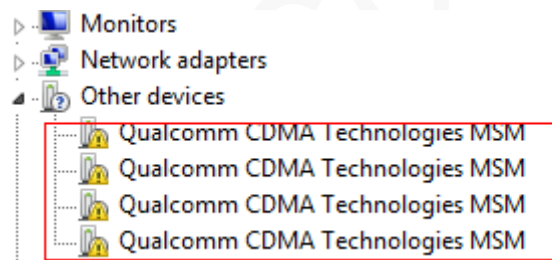
1. Use an external power source to supply power.
2. Connect it to the computer through the USB cable.
3. Insert a SIM card and install an antenna onto the EVB board.
4. Hold the PWRKEY_N button for 1 seconds, and the module starts up.

Step 2: Install the N27 USB drivers on your computer.

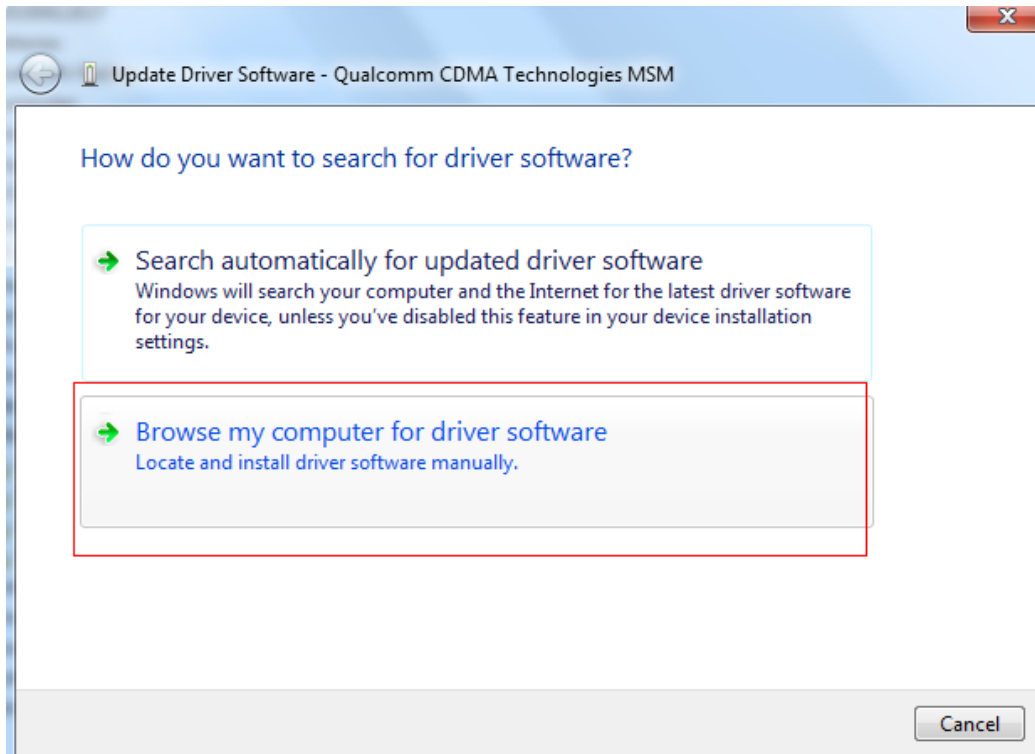
1. If your computer runs a Windows 8.1 or Windows 10 OS, disable the signature enforcement.
2. Decompress the N27 tool package that Neoway provides.



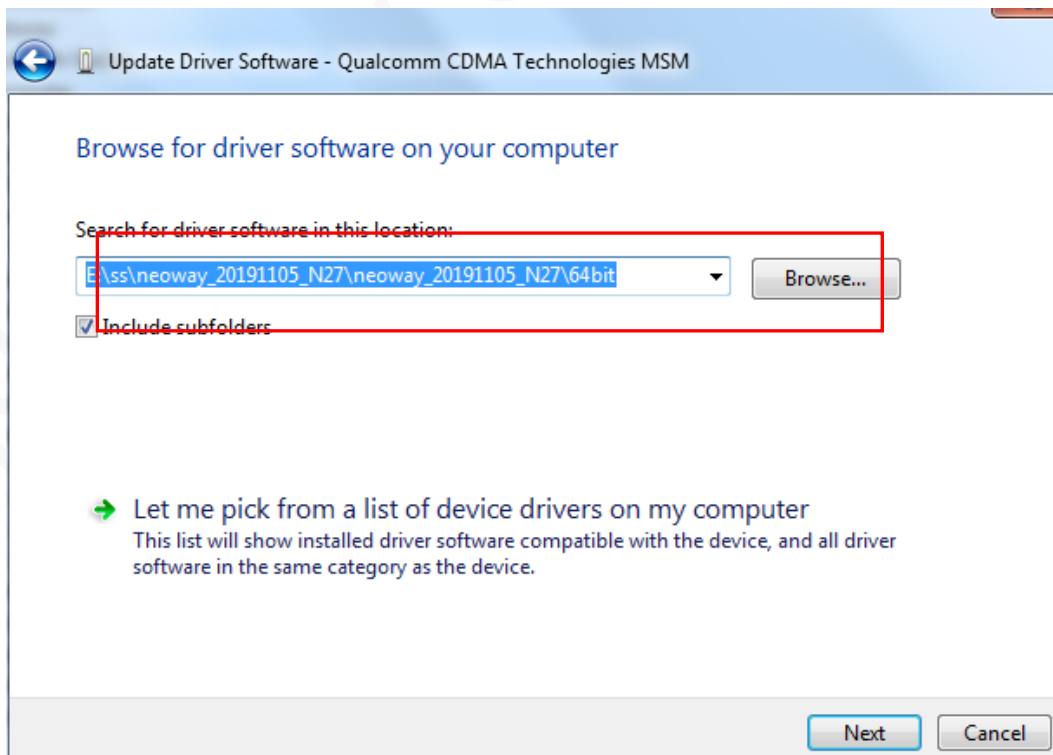
3. In Device Manager, right-click one device and choose **Update Driver Software** from the menu.



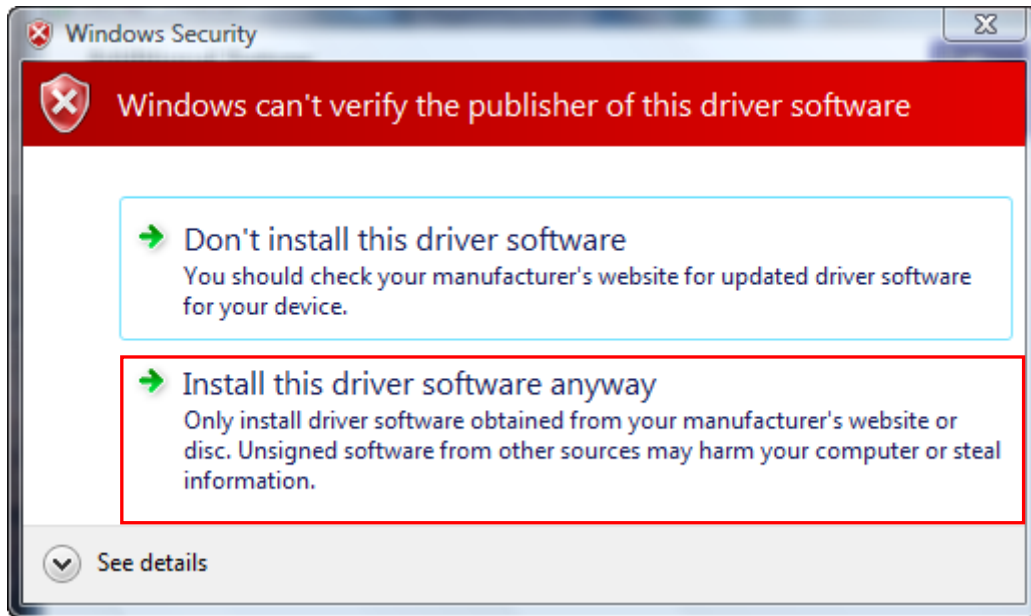
4. In the **Update Driver Software** dialog box, click **Browse my computer for driver software**.



5. In the page of **Browse for driver software on your computer**, click **Browse** and choose the driver software path.
 - For a computer running a 32-bit OS, select **neoway_2019xxxx\32bit**.
 - For a computer running a 64-bit OS, select **neoway_2019xxxx\64bit**.

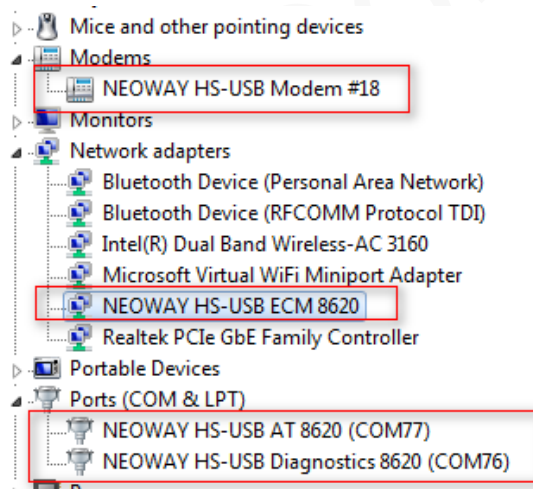


- If the computer displays **Windows Security**, click **Install this driver software anyway**.

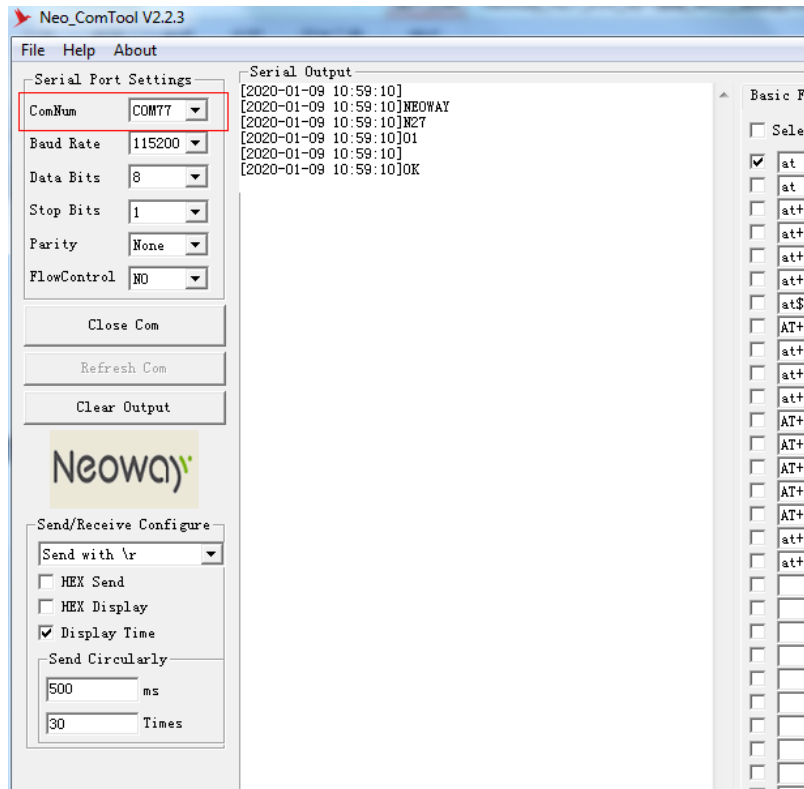


The installation is completed.

- Repeat steps 1 to 4 to install other drivers.



Step 3: Start the Neo_ComTool and set the parameters of the serial port and AT.



Step 4: Send an AT command to enable the module to detect the baud rate automatically.

Step 5: Send AT commands to test or commission the module.



You can also upgrade the firmware of the module and capture logs through the USB port.

The NEOWAY HS-USB Diagnostics 8620 (COM244) will be used for upgrade or log capturing. For details, see other guides.