Neo_N703 WCDMA Module User Guide

Version 1.0





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Thank you for purchasing Neoway N703 WCDMA Module

Note:

This manual briefly describes the preparation, the process for installing and safety precautions for using Neoway N703 WCDMA Module.

You are recommended to read the manual before using the N703.

The signal strength and the transmission rate are affected by the actual environment.

1 Getting to Know the N703

The follow figure shows the appearance of the N703. The actual produce may differ.



They are used to connect antennas.N703 has an external antenna.

The max gain which is allowed of external antenna is:

900M: <2.1dBi 1800M: <2.6dBi 2100M: <4.3dBi 850M: <0dBi

1900M: <2.6dBi



Top view of N703

1.1 N703 Pin Description

N703	pin	descri	ption
11/05	pm	acser	puon

Pin	Name	I/O	Function	Level Feature (V)	Remarks
Power Su	pply and Switch	Interfa	ces		
17/18/19	VABT	Р	Main power supply input		3.5 V to 4.3 V (3.9 V is recommended)
1/16/20/ 27/30/33 /55/57/5 9/60/62	GND	Р	GND		
6	VDD_EXT_1 V8	Р	1.8 V power supply output		Supply power for IO level shifting circuit.
11/29	VDD_EXT_2 V6	Р	2.6 V power supply output		Load capability: <20 mA
37	RESET	DI	Reset input	-0.3V <v<sub>IL<0.6</v<sub>	Low level

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38	PWRKEY	DI	ON/OFF control	$1.2V < V_{IH} < 2.1V$	Low level	
UART In	terface	1				
9	UART_RXD	DI	UART data receive	-0.3V <v<sub>IL<0.6 1.2V<v<sub>IH<2.1V</v<sub></v<sub>	Data	
10	UART_TXD	DO	UART data transmit	1.35V <v<sub>OL<1.8V 0<v<sub>OH<0.45V</v<sub></v<sub>	Data communication	
UIMInter	UIMInterfaces					
22	VUIM	Р	UIM power supply output			
23	UIM_RESET	DO	UIMreset	-0.3V <vil<0.35*vuim< td=""><td></td></vil<0.35*vuim<>		
24	UIM_DATA	DI/O	UIMdata I/O	0.65*VUIM <vih<vuim +0.3V</vih<vuim 	Compatible with	
25	UIM_CLK	DO	UIMclock output	VUIM -0.45 <voh<vuim 0<vol<0.45v< td=""><td>1.8/2.85 V UIM card</td></vol<0.45v<></voh<vuim 	1.8/2.85 V UIM card	
26	UIM_DETECT	DI	UIM detect	-0.3V <vil<0.6 1.2V<vih<2.1v< td=""><td></td></vih<2.1v<></vil<0.6 		
Audio Int	erfaces					
47	REC_N	AO	Negative electrode of receiver output		Class AB differential	
48	REC_P	AO	Positive electrode of receiver output		receiver amplifier	
49	SPK_OUT_P	AO	Positive electrode of speakeroutput		Class Ddifferential	
50	SPK_OUT_N	AO	Negative electrode of speakeroutput		speaker amplifier	
51	MIC2_N	AI	Negative electrode of differential MIC input			
52	MIC2_P	AI	Positive electrode of differential MIC input		MIC higs omhoddod	
53	MIC1_N	AI	Negative electrode of differential MIC input		Mile blas enibedded	
54	MIC1_P	AI	Positive electrode of differential MIC input			
USB Interfaces						
34	USB_DM	DI/O	USB data negative signal		USB2.0, used for firmware download and	



35	USB_DP	DI/O	USB data positive signal		data transmission
36	VBUS	Р	USB voltage test		4.2V~5.5V, typically 5V
SPI Inter	faces				
39	SPI_CLK	DO	SPIclock output		
40	SPI_MOSI	DI/O	SPIdata input	$-0.3V < V_{IL} < 0.6,$ $1.2V < V_{IH} < 2.1V, 0 < V_{O}$ $_{L} < 0.45V$ $1.25V < V_{L} < 1.8V$	TT 1. 1 . 1
41	SPI_MISO	DI/O	SPI data output		Used in nost mode
42	SPI_CS	DO	SPI enabling	1.33 V < V OH < 1.6 V	
ADC					
31	ADC0	AI	ADC0input		12 bit, detectable
32	ADC1	AI	ADC1input		Voltage range: 0 V to 2.1 V
I2C Inter	faces	•			
2	I2C_SCL	DO	I2C clock output	-0.3V <v<sub>IL<0.6,</v<sub>	
3	I2C_SDA	DI/O	I2C data cable	1.2V <v<sub>IH<2.1V, 1.35V<v<sub>OH<1.8V 0<v<sub>OH<0.45V</v<sub></v<sub></v<sub>	Connected to I2C components
Network	LED Indicator				
4	NET_LIGHT	DO	Indicate network status	-0.3V <vol<0.91v 2.15V<voh<2.6v< td=""><td></td></voh<2.6v<></vol<0.91v 	
Sleep Mo	de Controlling				
46	DTR	DI	Sleep mode control	-0.3V <v<sub>IL<0.6, 1.2V<v<sub>IH<2.1V</v<sub></v<sub>	
SMS and	Incoming Call I	Ring		•	
43	RING	DO	SMS and incoming call ring	0 <vol<0.45v, 1.35V<voh<1.8v< td=""><td></td></voh<1.8v<></vol<0.45v, 	
Antenna	Interfaces				
58	ANT	AI/O	2G/3G antenna		50 Ω impedance
NC Interf	NC Interfaces				
5/7/8/21/ 28/44/45 /56	NC		Reserved pins		Leave them not connected.
					Do not pull up or down.
Reserved RF Interfaces					
61	NC				
63	NC				

1.2 N703 PCB Foot Print

LCC packaging is adopted to package the pins of the N703 module. 0 shows the recommended PCB footprint. (Unit: mm)



PCB foot print recommended for N703

1.3 N703 Installation Guid

Welding the N703 onto the Main Board of PC $\$ Mini PCI Board or other Embedded Main Board. For Example, Welding the N703 onto Mini PCI Board.





For Example, Welding the N703 onto Embedded Main Board.





1.4 Requirements for the PC

To use the N703, the PC must meet the following requirements:

- Windows 2000 SP4, Windows Xp SP2, Windows Vista, Windows 7-10 and Linux 2.6.18 or above.
- The hardware of your PC must meet or exceed the recommended system requirements for the installed version of OS.
- Display resolution:800*600 or above.
- At lest one WWAN Mini PCI Express interface or one USB interface .

To use the N703, the MCU must meet the following requirements:

• At lest one USB interface or one Uart interface.

2 Using N703 with Mini PCI Express Board on PC



(1) Screw holes

2 Main antenna

- (3) N703 Module
- (4) Mini PCI Express connector

Installing the N703 Mini PCI Express Board on the Main Board of the PC

- **Step 1** Insert the mini PCI Express connector of the N703 into the WWAN Mini PCI Express interface on the main board of the PC.
- Step 2 Press downward to fic the N703 in the module slot.
- Step 3 Use a screwdriver to fix the N703 onto the main board of the PC with two screws provided in the packing box
- Step 4 Insert the connector of the main antenna into the Main antenna interface of the N703 Mini PCI Board.

3 Using N703 with Embedded Main Board on PC

You can also use N703 Module with your computer to connect to the internet, One N703 Module and a Embedded Main Board (Demo) is needed.

3.1 N703 Embedded Main Board (Demo) description



- (1) Connect USB-to-Serial (PL2303) to a computer.
- ③ Connect to a DC 5V power supply.
- (2) DC 5V power supply switch.
- (4) Insert a GSM or WCDMA SIMcard for Using.
- (5) N703 Module RESET Key.
- (6) N703 Module ON/OFF Key.
- (7) N703 Module antenna interfaces

Then you can Starting the N703 Demo Board with next 4 Step on your computer:

- Step 1 T urn on the DC 5V power supply switch. The LED indicator of the N703 Demo board is on.
- Step 2 Short press on the On/Off button. The N703 demo board is started.
- Step 3 Installing PL2303 Driver Guide on PC
- Step 4 Installing Modulation Modem

3.2 Installing PL2303 Driver Guide on PC

Install the PL2303 driver on the computer.

Step 1 Selectthe correct version of the driver based on your operating system.

名称	修改日期	类型
🛃 PL-2303 Driver Installer.exe	2004/6/4 14:27	应用程序
🛃 PL2303-Driver_XP2K_v204102.exe	2008/10/1 16:03	应用程序





Step 3 ClickNext and then Finish.

The driver is installed successfully.



Step 4 In Device Manager, check the ports. You can see the USB-to-Serial in the list.



3.3 Installing Modulation Modem

Step 1 Click Start > Control Panel.

Step 2In Control Panel, click Phone and Modem.The Phone and Modem dialog box is displayed.



🚱 🕞 🗢 💷 🕨 Control Panel 🕨 All Cor	ntrol Panel Items 🕨	✓ 4 Search Control Panel
Adjust your computer's settings		View by: Small icons 🔻
🏲 Action Center	🔞 Administrative Tools	📑 AutoPlay
🎭 BitLocker Drive Encryption	💶 Color Management	Credential Manager
🖶 Date and Time	😿 Default Programs	📑 Desktop Gadgets
🚔 Device Manager	Devices and Printers	🧧 Display
Sease of Access Center	✓ Flash Player	Folder Options
💦 Fonts	🤣 HomeGroup	🔒 Indexing Options
Manual Intel(R) GMA Driver	🔂 Internet Options	🕮 Keyboard
Mouse	💱 Network and Sharing Center	🛄 Notification Area Icons
Performance Information and Tools	Personalization	Phone and Modem
Power Options	Programs and Features	😂 Realtek HD Audio Manager
🔊 Region and Language	🐻 RemoteApp and Desktop Connections	🛋 Sound
Speech Recognition	🔞 Sync Center	1 System
🔔 Taskbar and Start Menu	Troubleshooting	🍇 User Accounts
📑 Windows CardSpace	🔗 Windows Firewall	🖳 Windows Mobility Center
🚰 Windows Update		

Step 3 On the Modems tab of Phone and Modem, click Add.



Step 4 In the Add Hardware Wizard, select Don't detect my modem; I will select it from a list and click Next.

Add Hardware Wizard				
Install New Modem Do you want Windo	ws to detect your modem?			
	 Windows will now try to detect your modem. Before continuing, you should: 1. If the modem is attached to your computer, make sure it is turned on. 2. Quit any programs that may be using the modem. Click Next when you are ready to continue. Image: The program is a transformed to the program is a transform			
	< Back Next > Cancel			

Step 5 Select the Standard 33600bps Modem and click Next.

Add Hardware Wizard			
Install New Modem			
Select the manufacturer and an installation disk, click Har	l model of your modem. If your modem is not listed, or if you have ve Disk.		
Manufacturer	Models		
(标准调制解调器类型)	标准 19200 bps 调制解调器 标准 28800 bps 调制解调器 标准 33600 bps 调制解调器 标准 56000 bps 调制解调器		
This driver is not digitally signed! Have Disk Have Disk			
	< Back Next > Cancel		

Step 6 ClickSelected ports, select the correct port, and click Next.

Add Hardware Wizard	
Install New Modem Select the port(s) you	want to install the modem on.
	You have selected the following modem: 标准 33600 bps 调制解调器 On which ports do you want to install it? ① All ports ④ Selected ports COM1 COM2 COM3
	< Back Next > Cancel

Step 7 Click Finish.

The modem is installed successfully.

Add Hardware Wizard	- Anna			
Install New Modem Modem installation is finished!				
	Your modem has been set up successfully.			
	If you want to change these settings, double-click the Phone and Modem Options icon in Control Panel, click the Modems tab, select this modem, and then click Properties.			
	< Back Finish Cancel			

Step 8 In the following dialog box, select current port and click Properties.

S Phone and Modem				
Dialing Rules Modems Advanced				
The following modems are installed:				
Modem	Attached To			
🔛 标准 33600 bps 调制解调器	COM3			
Ref Add	Remove Properties			
ОК	Cancel Apply			

Step 9 On the Advanced tab, add at+cgdcont=1,"ip","cmnet" to Extra initialization commands:.

☆ 标准 33600 bps 调制解调器 Properties ★
General Modem Diagnostics Advanced Driver Details
Extra Settings
Extra initialization commands:
at+cgdcont=1,"ip","cmnet"
Initialization commands may lead to the exposure of sensitive information in the modern log. Consult your modem's instruction manual for more details.
Change Default Preferences
OK Cancel

Step 10 Click **Change Default Preferences** and set the **Flow control** to **None**. Click **OK**. The modem setting is completed.

🥪 标准 33600 bps 调制解调器 Default Prefere	? ×
General Advanced	
Call preferences	
Disconnect a call if idle for more than	mins
	secs
Data Connection Preferences Port speed: 115200 Data Protocol: Compression: Flow control: None	
ОК	Cancel

3.4 Setting Up a New Connection

Step 1 Right-clickNetwork and choose Properties from the pop-up menu.



Step 2 In the Network and Sharing Center, click Set up a new connection or network.



Step 3 On the Choose a connection optionpage, select Set up a dial-up connectionand click Next.

Set Up a Connection or Network	
Choose a connection option	
Connect to the Internet Set up a wireless, broadband, or dial-up connection to the Internet.	
Set up a new network Configure a new router or access point.	
Connect to a workplace Set up a dial-up or VPN connection to your workplace.	
Set up a dial-up connection Connect to the Internet using a dial-up connection.	
]
	Next Cancel

Step 4 In the following dialog box, fill information as shown and click Connect.

🚱 🛄 Create a Dial-up Connecti	on	
Type the information f	rom your Internet service provider (ISI	P)
Dial-up phone number:	*99#	Dialing Rules
User name:	neoway]
Password:	[Password your ISP gave you]	
	Show characters Remember this password	
Connection name:	Dial-up Connection	
Allow other people to This option allows and I don't have an ISP	use this connection yone with access to this computer to use this conr	nection.
		Connect Cancel

If the following page is displayed after you click Connect, dial-up connection is set up successfully.

🚱 🔚 Create	a Dial-up Connection	
You are	connected to the Internet	
	i 🥥	
	Browse the Internet now	
	To connect to the Internet next time, left-click the network icon in the taskbar and click the connection you just created.	
		Close

Step 5 On the Set Network Location page, select your location. You can browse the internet now.

		- • ×
🕞 👬 Set Netwo	rk Location	
Select a loc	cation for the 'Dial-up Connection' network	
This compute network settin	r is connected to a network. Windows will automatically apply the correct ngs based on the network's location.	
	Home network f all the computers on this network are at your home, and you recognize then his is a trusted home network. Don't choose this for public places such as coffee shops or airports.	n,
	Nork network f all the computers on this network are at your workplace, and you recognize hem, this is a trusted work network. Don't choose this for public places such coffee shops or airports.	as
F If a n	Public network f you don't recognize all the computers on the network (for example, you're in a coffee shop or airport, or you have mobile broadband), this is a public network and is not trusted.	n
📃 Treat all fut	ture networks that I connect to as public, and don't ask me again.	
Help me choo	ose	
		Cancel

4 Safety Information

Read the safety information carefully to ensure the correct and safe use of your wireless device.

4.1 Interference

Do not use your wireless device if using the device is prohibited or when it causes danger or interference with electric devices.

4.2 Medical Device

- Do not use your wireless device and follow the rules and regulations set forth by the hospitals and health car facilities.
- Some wireless devices may affect the performance of the hearing aids.For any such problems,consult your service provider.
- If you are using an electronic medical device, consult the doctor or device manufacturer to confirm whether the radio wave affects the operation of this device.

4.3 Area with Inflammables and Explosives

To prevent explosions and fires and fires in areas that are stored with inflammable and explosive devices, do not use your wireless device and observe the veles. Areas stored with inflammables and explosives include but are not limited to the following

- Gas station.
- Fuel depot (such as the bunk belw the deck of a ship).
- Container/Vehicle for storing or transporting fuels or chemical products.
- Ares where air contains chemical substances and particles (such as granule,dust,or metal powder).
- Area indicated with the "Explosives" sign.
- Area indicated with the "Power off bi-direction wireless equipment" sign.
- Area where you are generally suggested to stop the engine of a vehicle.

Federal Communications Commission Notice (United States): Before a wireless device model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government-adopted requirement for safe exposure.

FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operate in conjunction with any other antenna or transmitter.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio

frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception,

which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- -- Reorient or relocate the receiving antenna.
- -- Increase the separation between the equipment and receiver.
- -- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- -- Consult the dealer or an experienced radio/TV technician for help.

For PCB Antenna Module:

If the FCC identification number is not visible when the module is installed inside another device,

then the outside of the device into which the module is installed must also display a label

referring to the enclosed module. This exterior label can use wording such as the following:

"Contains Transmitter Module FCC ID: PJ7-1721" or "Contains FCC ID: PJ7-1721"