

## **RNDIS Driver Installation:**

NeoVision uses the RNDIS driver to communicate with the KNG radio. RNDIS is a general-purpose driver, developed by Microsoft and used to connect a wide variety of intelligent devices (such as smartphones) to a Windows-based computer over a USB interface. RNDIS creates a TCP/IP network connection between the computer and the radio and therefore may be affected by firewalls and other network constraints.

Like most plug-and-play devices, the RNDIS driver should install automatically when the KNG radio is attached to an Internet-connected computer and turned on. Since the RNDIS interface is generic, Windows should transparently navigate through the differences in operating system (Windows XP vs. Windows 7) and install the correct version. By default, the user should allow the computer to install the driver automatically.

## **Manual Driver Installation**

In certain cases, the automatic installation might fail, or the computer might be disconnected from the Internet as a policy. In these cases, the user can install the driver manually. To install the RELM RNDIS driver, do the following:

1. With the radio turned on and plugged in open the Device Manager  
Start | Control Panel | Hardware and Sound | Device Manager
2. Under Other Devices right click RNDIS/Ethernet Gadget
3. Choose Update Driver Software
4. Select "Browse my computer for driver software"
5. (64-bit) Point to a folder that has the file RNDIS.Ethernet.x64.inf and select.
6. (32-bit) Point to a folder that has the file RNDIS.Ethernet.x86.inf and select.

## **Problems/FAQs**

### **1. Windows Vista/Windows 7**

"Error reported during network adapter setup: 2147749891".

This issue is related to the Win7 OS User Account Control feature preventing proper IP configuration between NeoVision and the radio. To correct this issue, take the following steps:

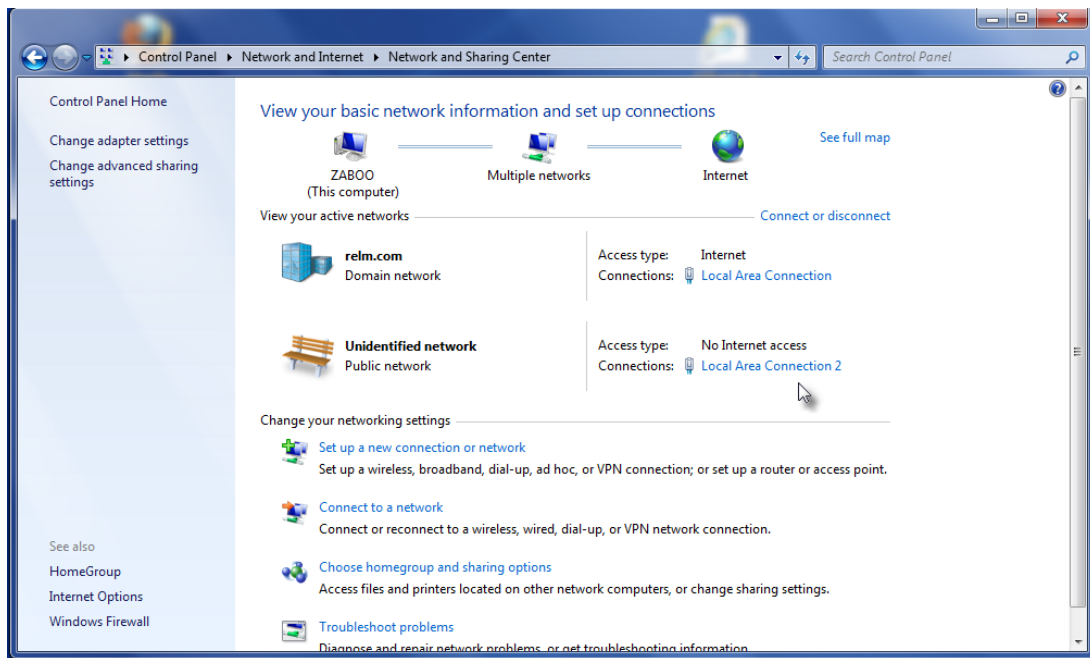
- Locate the NeoVision "exe" file. The default installation directory is: C:\Program Files(x86)\Relm Wireless Corp\NeoVision. The NeoVision exe can also be accessed via the Start menu. (The file type is Application).
- Hold down the "Shift" key and right click on NeoVision.exe.
- Select "Run as administrator" and click Yes when prompted.
- This will only have to be done the first time the software is executed.

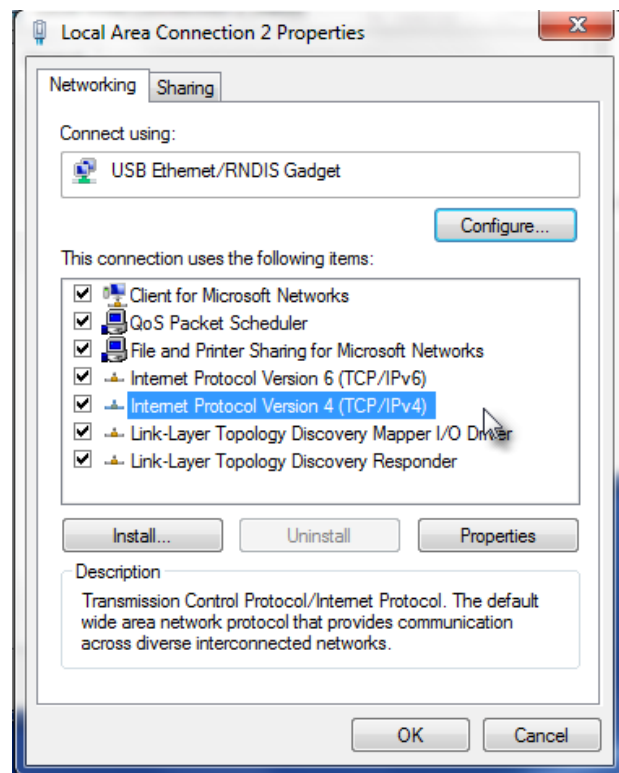
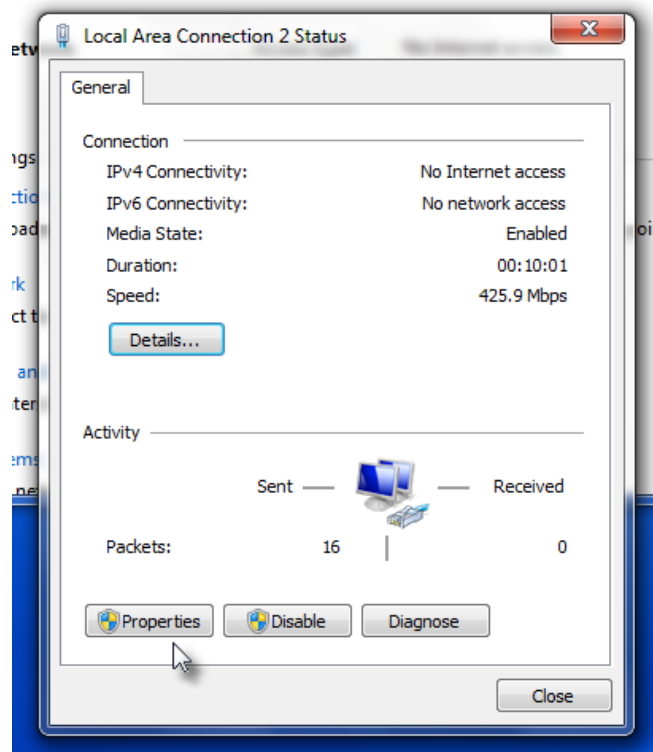
## 2. IP Address Mismatch

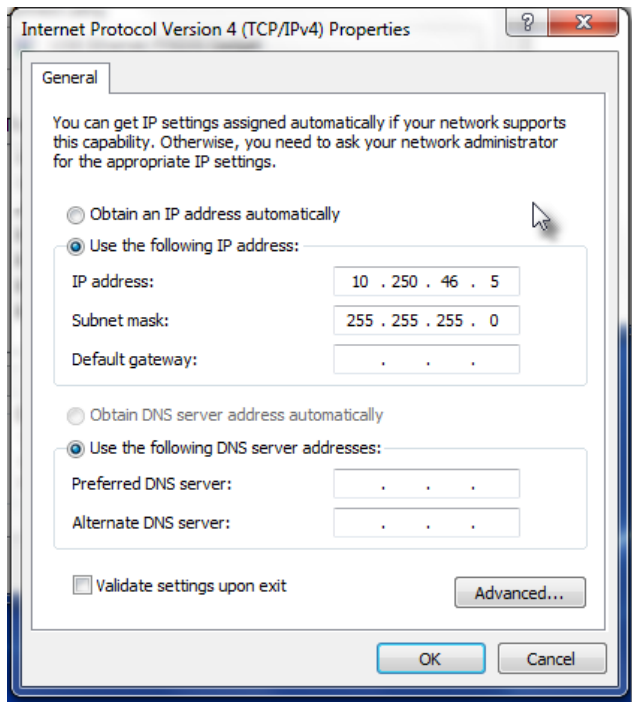
The RNDIS driver sees other devices as network computers, each with its own unique IP address. The KNG radio expects to see the computer hosting NeoVision at IP address 10.250.46.5. During NeoVision installation, this address is loaded into the driver. However, the process occasionally fails, and the user must load the address manually.

Steps:

- Open Control Panel.
- Navigate through: Network and Internet | Network and Sharing Center | View Basic Network Information.
- (In lower-right corner of window), click “Local Area Connection 2”.
- Click “Properties”.
- Click “Internet Protocol Version 4 (IPv4)”.
- Click “Properties”.
- IP Address should be 10.250.46.5. Correct if wrong.
- Subnet Mask should be 255.255.255.0. Correct if wrong.







### 3. Bad Driver Install

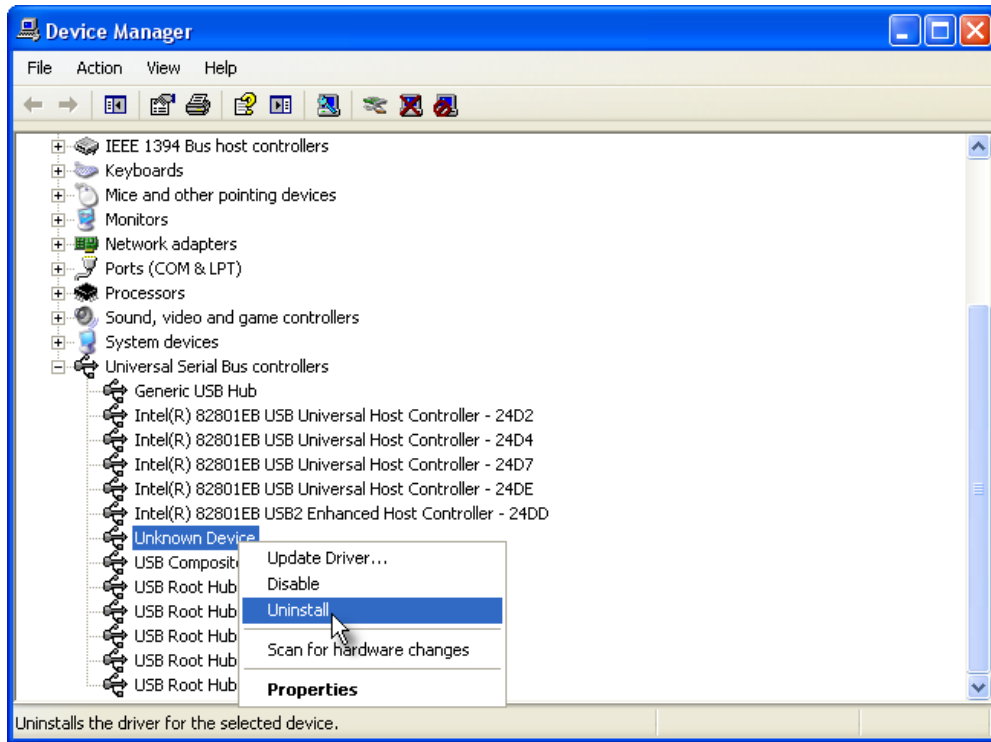
If the NeoVision driver has been improperly installed, you will need to reinstall it with the Internet disconnected:

- Ensure that the proper driver is downloaded or available on the CD.
- Disconnect the PC from the Internet.
- In Control Panel, navigate to Device Manager.
- Connect the radio to the PC and turn the radio on.
- Right-click on the radio driver icon. It will be found either in Network Adaptors as “USB Ethernet/RNDIS Gadget”, or in Universal Serial Bus Controllers as “Unknown Device”. Click “Update Driver” and browse to the proper file location. Click the checkbox “Erase driver software”—this will erase the cached copy of the incorrect driver.

### 4. Other Issues

- Since the KNG radio presents itself to the PC as a network device, some firewalls may interfere with the network connection. If you suspect that the firewall is blocking connectivity, you can disable it temporarily (with other network connections disconnected) and attempt to connect to the radio. Alternatively, you can specifically allow connections to the radio (IP address 10.250.46.5, any port).

- Virtual Private Networks (VPNs) can interfere with RNDIS operation. This is especially true if the VPN has any node with the name “NDIS” embedded in its tables. If you encounter problems with the RNDIS connection, disable all VPNs while debugging.
- Occasionally, the radio may be recognized as an ordinary USB device. In this case, you will see the device “Unknown Device” under “Universal Serial Board controller”. If this occurs, remove the incorrect driver by first disconnecting/turning off the radio, then by right-clicking the driver icon selecting “Uninstall”.



- Finally, since the radio interface appears as an ordinary Windows network, you may need to apply standard Windows network debugging techniques. Your organization’s network manager might be a good starting resource.

## 5. Other Resources

Various resources exist to diagnose and correct general TCP/IP problems on Windows Computers:

- <http://support.microsoft.com/kb/871233>
- <http://support.microsoft.com/kb/314067>
- [http://msdn.microsoft.com/en-us/library/ee482721\(v=winembedded.60\).aspx](http://msdn.microsoft.com/en-us/library/ee482721(v=winembedded.60).aspx)
- [http://msdn.microsoft.com/en-us/library/ee483123\(v=winembedded.60\).aspx](http://msdn.microsoft.com/en-us/library/ee483123(v=winembedded.60).aspx)
- [http://msdn.microsoft.com/en-us/library/ee484414\(v=winembedded.60\).aspx](http://msdn.microsoft.com/en-us/library/ee484414(v=winembedded.60).aspx)
- <http://fencepost.net/2009/11/dns-fails-nslookup-works-fix/>
- <http://modernnomads.info/wiki/index.php?page=Windows+Mobile+Device+Center+Troubleshooting>