For years Paul G4APL has been looking for an easy way to use a Windows PC with the Installed Internet tools. To enable him to drive a TNC2 (Terminal Node Controller) i.e. BSX, PacCom TNC200, Tiny2, PK232. direct in KISS Mode emulating an Ethernet NIC (Network Interface Card).

So as to allow Internet Explorer (IE6), FTP, Telnet, Hyper Terminal, DXTelnet, XChat, Outlook and any other IP enabled program to access the gb7cip.ampr.org server via the 1200 Baud and 9600 Baud radio interfaces.

Paul is now able to report that tests have now been successfully completed and took about 30 minutes to set-up.

So hope that the following is helpful. Look forward to seeing more TCPIP activity over Amateur Radio.

First of all you will need a PC running:-
Windows 98 (early Version), Win98,ME, WinNT, WinXP
With the associated Virtual Ethernet Driver for the Windows Version.

You will need a TNC2 able to be switched in to KISS mode (tests were carried out with a BSX TNC2 + Radio and a Kenwood THD7E with built in TNC. Recommend using a dedicated TNC2 and Radio.

Identify a GB7### TCPIP Hub in your area. GB7CIP is located in Caterham On The Hill Surrey, and has good coverage in North East Surrey. Access also available via the GB7CP IP router.

You also require to be allocated a UK amprnet domain IP address .ampr.org by your local IP Co-ordinator.
By convention your Callsign used will have the SSID -5 to identify a TCPIP System.
Your hostname will be callsign.ampr.org

Make contact with your locate TCPIP Server SysOp as they will be able to assist with testing and setting up the static routing tables. This is best done before the IP address is allocated.

Two program drivers are required to be installed on the windows machine.
The test was carried out using a PC and old windows 98 version, which took 30 minutes to set-up and get working.

Further test was carried out on a laptop running Windows NT4, Which took 15 minutes to get up and running using the experience already gained from the previous installation on win98.

Once the second program is running ax25inet in the background in monitor mode

You can then use HyperTerminal to telnet, IE6 XCHAT DXTelnet to make TCPIP connection over the radio to your local TCPIP server. e.g. gb7cip.ampr.org

Download virtual network adapter drivers (unzip to the separate folder and see ReadMe.txt file for installation instructions):

Windows XP (SP2 compatible)	MixNic6XP.zip	30.10.2004
Windows 98/ME/2000/XP	MixNic6.zip	21.01.2002
Early Windows 98 versions	MixNic6Old.zip	21.01.2002
Windows NT4	MixNic6NT4.zip	28.01.2002

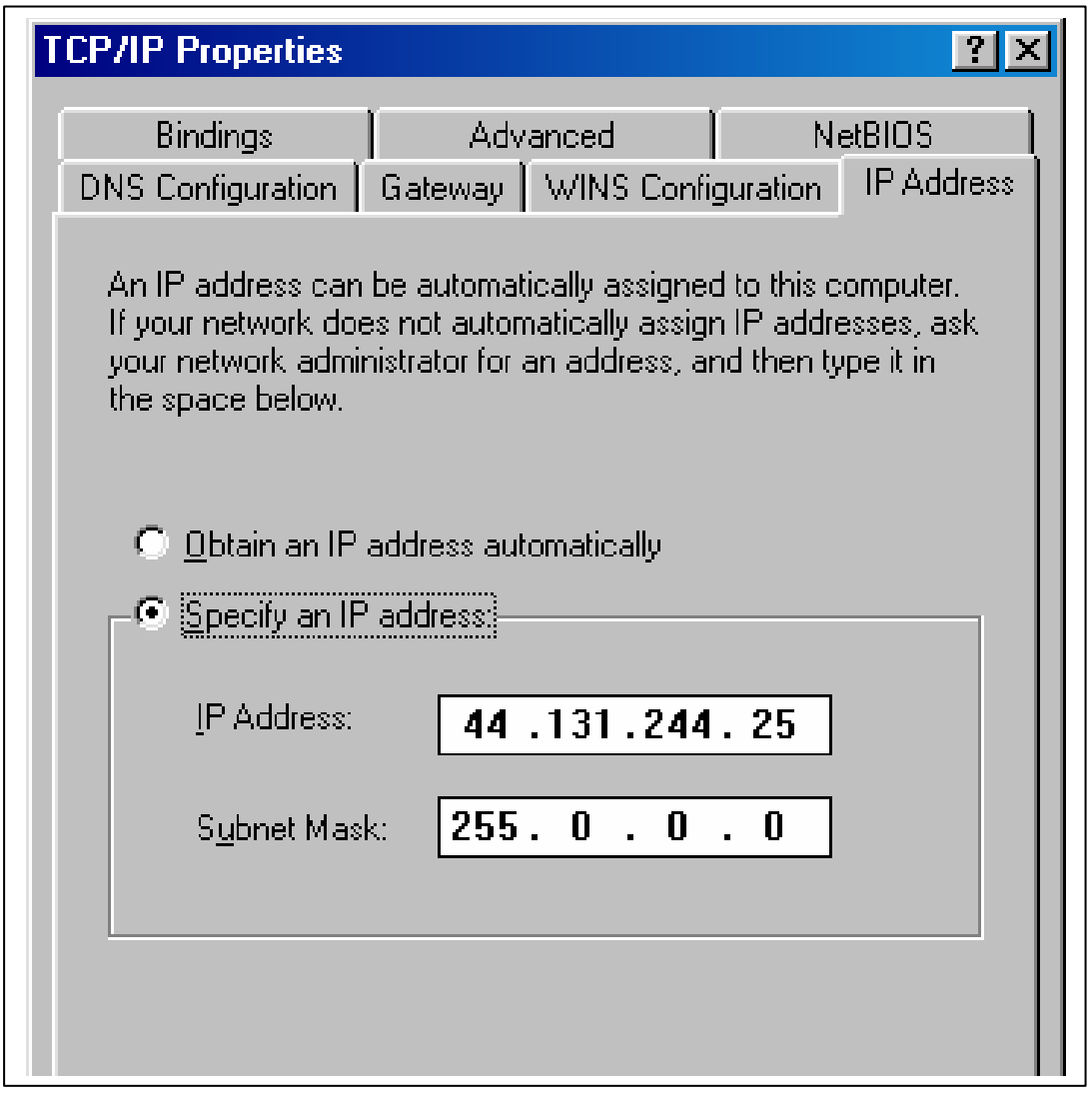
Refer to WEB site http://www.mixw.net/related.htm#tcpip for original documents and program downloads

To use a KISS TNC with these drivers,

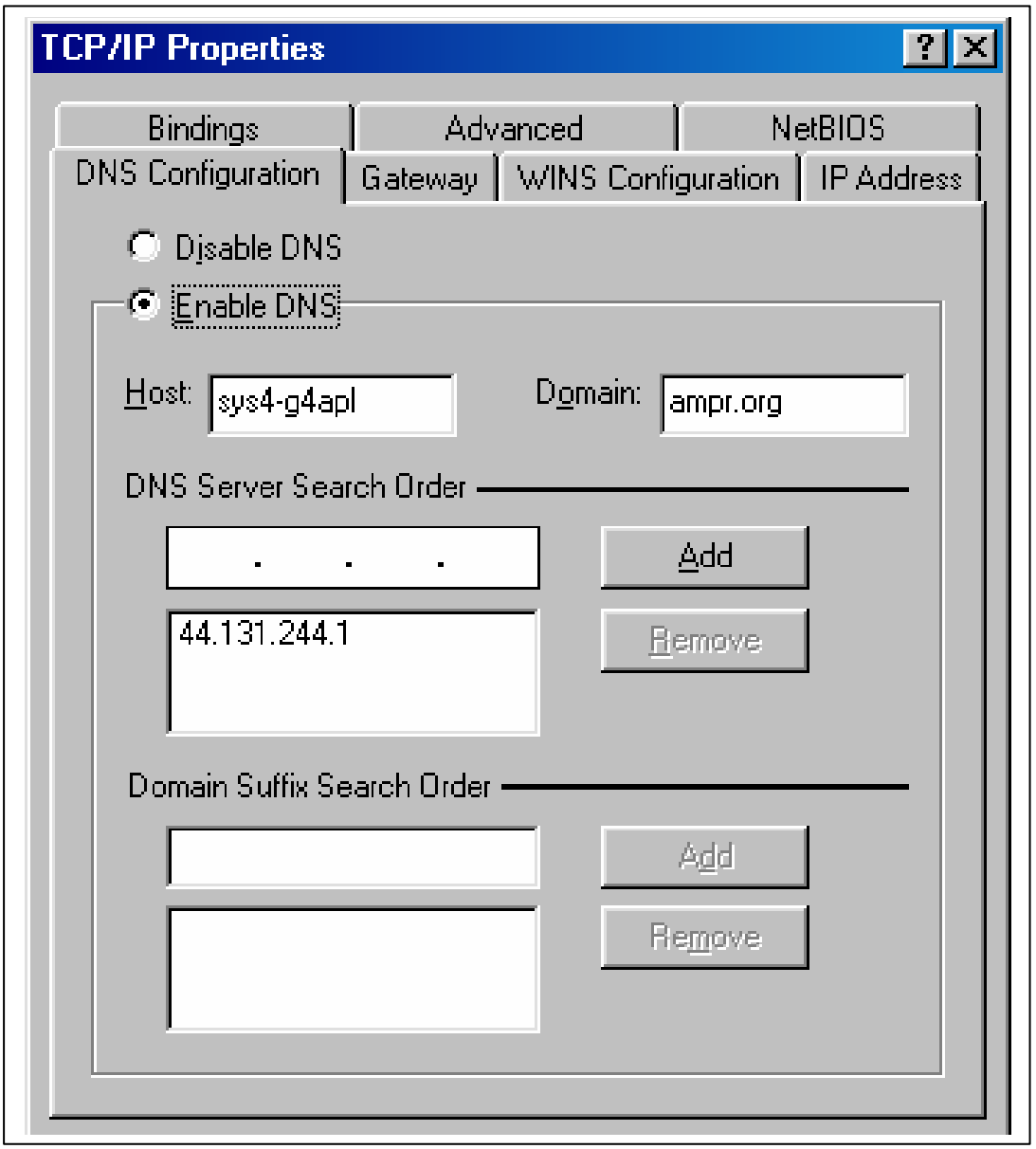
Ax25Inet program (MixW is not needed in this case).

The following are screen shots of the test machine configuration. Please ensure that you use you OWN TCPIP addresses in place of the 44.131.244.25 used for testing

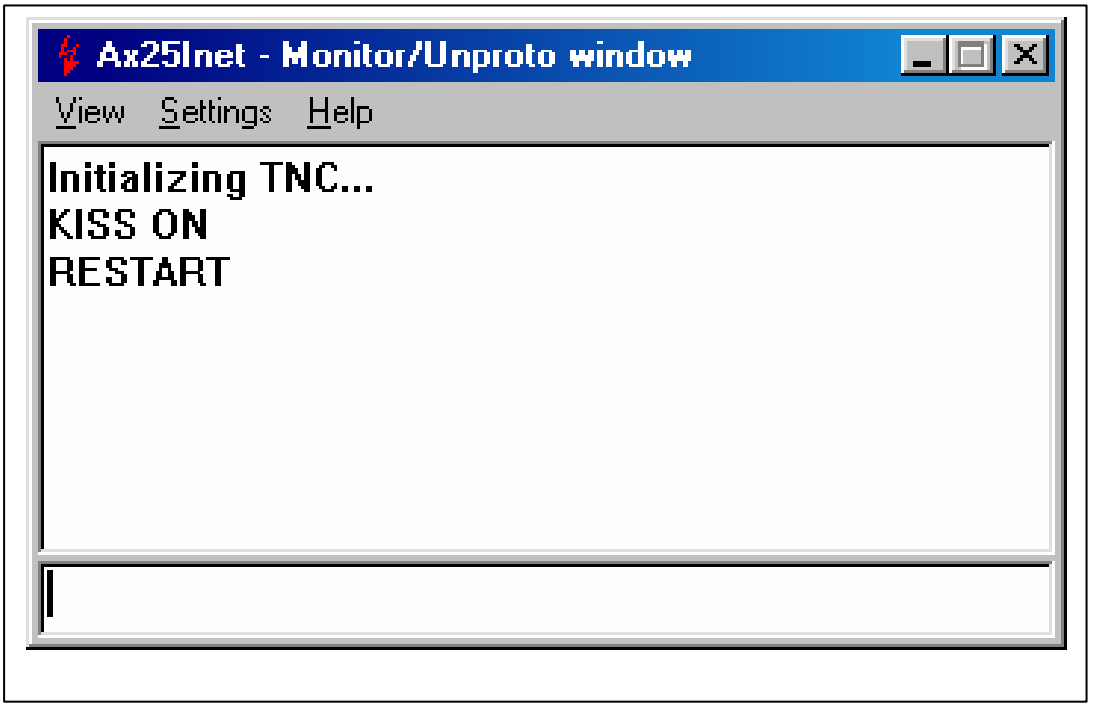
The following shows the configuration of the Ethernet Virtual Driver

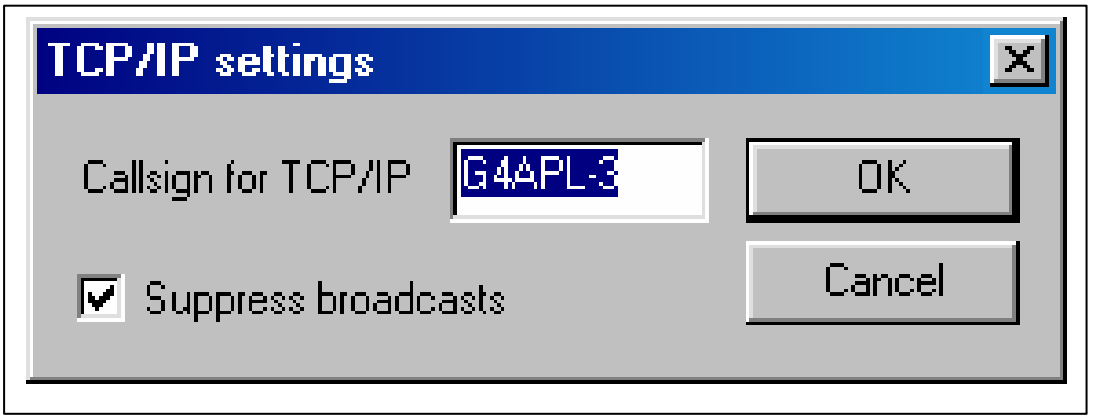


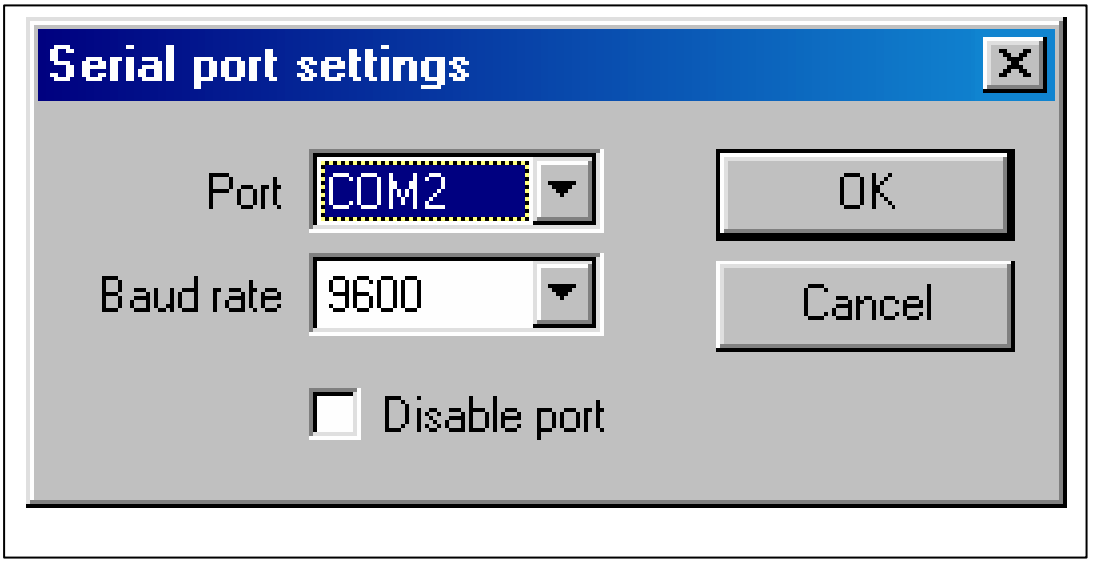
TCP/IP Properties
Bindings
Advanced
NetBIOS
DNS Configuration
Gateway
WINS Configuration
IP Address
The first gateway in the Installed Gateway list will be the default. The address order in the list will be the order in which these machines are used.
New gateway:
Add
Installed gateways:
44.131.244.1
Remove

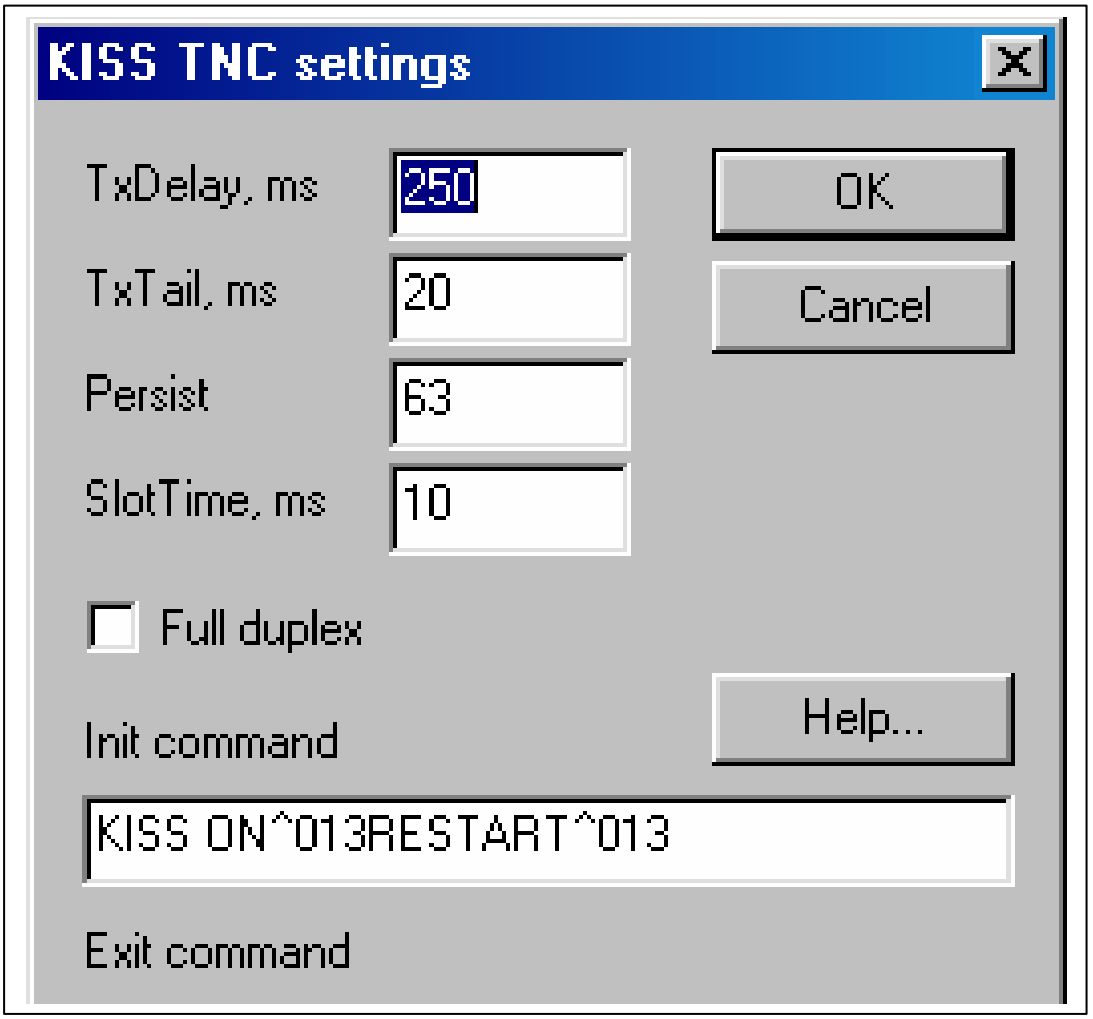

TCP/IP Properties
Bindings
Advanced
NetBIOS
DNS Configuration
Gateway
WINS Configuration
IP Address
Disable DNS
Enable DNS
Host:
sys4-g4apl
Domain:
ampr.org
DNS Server Search Order
Add
44.131.244.1
Remove
Domain Suffix Search Order
Add
Remove

AX25INET Configuration Screen Shots as used in the test. Running Outlook, IE6, DxTelnet and Telnet on 433.625MHz at 1200Baud.






Serial port settings
Port
COM2
Baud rate
9600
Disable port
OK
Cancel


KISS TNC settings
TxDelay, ms
250
TxTail, ms
20
Persist
63
SlotTime, ms
10
Full duplex
Init command
KISS ON^013RESTART^013
Exit command
OK
Cancel
Help...

Readme files using mixw98old
This driver allows using TCP/IP over AX.25 packet radio protocol
under Windows 98.

1. Install the driver
2. Configure the virtual network adapter
3. Run MixW 2 in PACKET mode
   (you will see "MixW virtual network adapter is running" in the status bar)

(For 9600 baud packet, choose soundcard samplerate = 22050.)

Windows 98:
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Installing MixW virtual network adapter driver

1. Open Control Panel
2. Run "Add New Hardware"
3. Click "Next" and "Next"
4. Answer "No" to the "Is the device you want to install listed below?" question and click "Next"
5. Answer "No" to the "Do you want Windows to search for your new hardware?" question and click "Next"
6. From Hardware types list, select "Network adapters" and click "Next"
7. Click "Have Disk"
8. Click "Browse" and locate NetMixNic98Old.inf file, then click "Open"
9. Select "MixW virtual network adapter for Windows 98" and click "OK"
10. Click "Next" at the list of resources screen
11. You may be asked for Windows 98 CD-ROM when Windows copies files
12. Click "Finish"
13. DON'T shutdown your computer when Windows asks (click "No")
14. Wait until the clock cursor disappears

Configuring

1. Open "Network" from Control Panel
2. Select "TCP/IP -> MixW virtual network adapter" and click "Properties"
3. Select "Specify an IP address" and enter your IP address
4. In "Subnet mask" box, enter 255.255.255.0
5. Select "Gateway" tab and add a gateway address (if needed)
6. Select "DNS configuration" tab and and enter the DNS settings (if needed)
7. Click "OK" to close the TCP/IP properties dialog
8. Now close Network dialog (click "OK") and restart the computer

Maximum packet length is stored in the registry (200 bytes by default):
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\Class\Net\xxxx\PacketDataLen

AX25INET ini file as a result of using the GUI set-up
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[Misc]
Language=English
m_bOemTranslation=1

[Dialog]
Left=547
Top=505
CX=352
CY=214
ShowInTray=0

[TCP-IP]
TcpIpMyCall=G4APL-3
SuppressBroadcasts=1

[TNC]
m_iTncPort=2
m_iTncBaudrate=9600
m_bTncDisablePort=0

[KISS]
m_iTxDelay=250
m_iTxTail=20
m_iPersist=63
m_iSlottime=10
m_bFullDup=0
m_sInitTncText=KISS ON^013RESTART^013
m_sExitTncText=^192^255^192

[Monitor]
m_bMonitorI=1
m_bMonitorUI=1
m_bMonitorSABM=1
m_bMonitorRR=1
m_bMonitorHeaders=1

[Unproto]
m_UnprotoSource=G4APL-3
m_UnprotoDest=QST
m_UnprotoDigis=

[Beacon]
m_BeaconSource=G4APL-3
m_BeaconDest=QST
m_BeaconDigis=
m_sBeaconText=
m_iBeaconInterval=20
m_bBeaconEnable=0
```