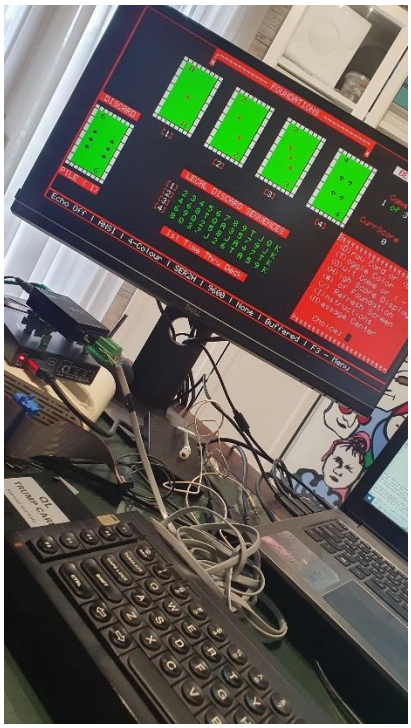
Sinclair QL connected to internet-telnet based BBS using MOXA Nport

GUIDE (how to)



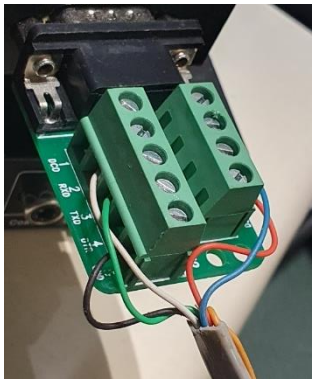
Contents

Prepare Sinclair QL (Cable)

Prepare a cable which supports handshake (TX, RX, RTS, CTS).
I have followed this pin assignment and connected this to SER2:

QL SER2	QL CABLE COLOUR	DIRECTION	PC SIGNAL	PC 9-PIN D
pin 2 TxD	white	-->	RxD	pin 2
pin 3 RxD	green	<--	TxD	pin 3
pin 4 DTR (=RTS)	blue	-->	CTS	pin 8
pin 5 CTS	red	<--	RTS	pin 7
pin 1	black	---	GND	pin 5
N/A	-	-	DSR	pin 6
N/A	-	-	DTR	pin 4

Photo:



I have preferred a DB9 plug with screw inputs for easy testing. Later on these can be soldered to a normal plug.
Note: MOXA has a MALE DB9 socket. So you need a FEMALE DB9 plug.
The other end of cable is connected to QL SER2:

This is all you need regarding the QL cable (QL hardware).

Prepare the MOXA Nport 5150A (Configuration)

a. Connect MOXA to your laptop directly and make sure the IP address of your laptop is in the same IP range with the MOXA default IP (192.168.127.254)

b. Login (admin, moxa) (by default)

c. Check the MOXA running FW and upgrade if necessary (get latest FW from MOXA site)

This is the latest FW for this device at 17/03/2024

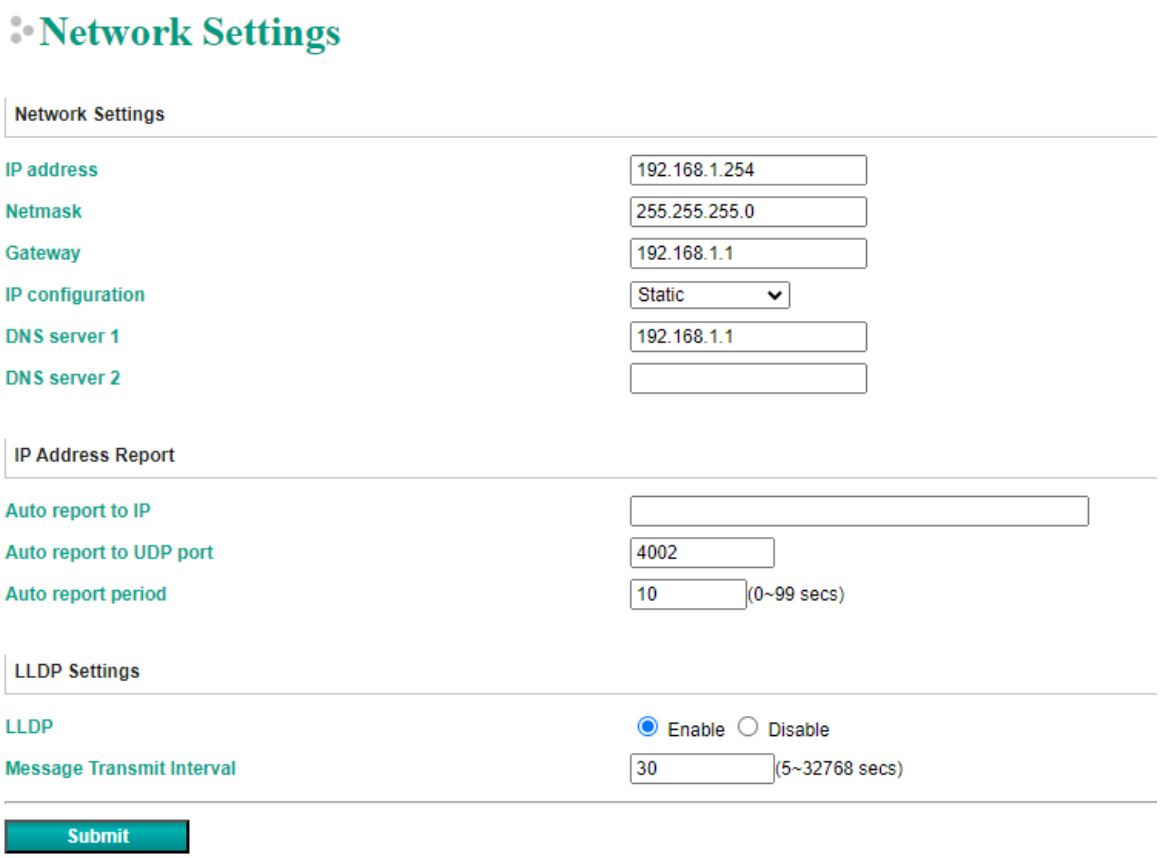
d. After login you reach to this:

Model	NPort 5150A
Name	NP5150A_4938
Serial NO.	4938
Firmware	1.6 Build 20101317
IP	192.168.1.254
Mac Address	00:90:E8:74:DE:13
Up Time	0 days 01h:05m:39s
Serial Port 1	9600,None,8,1

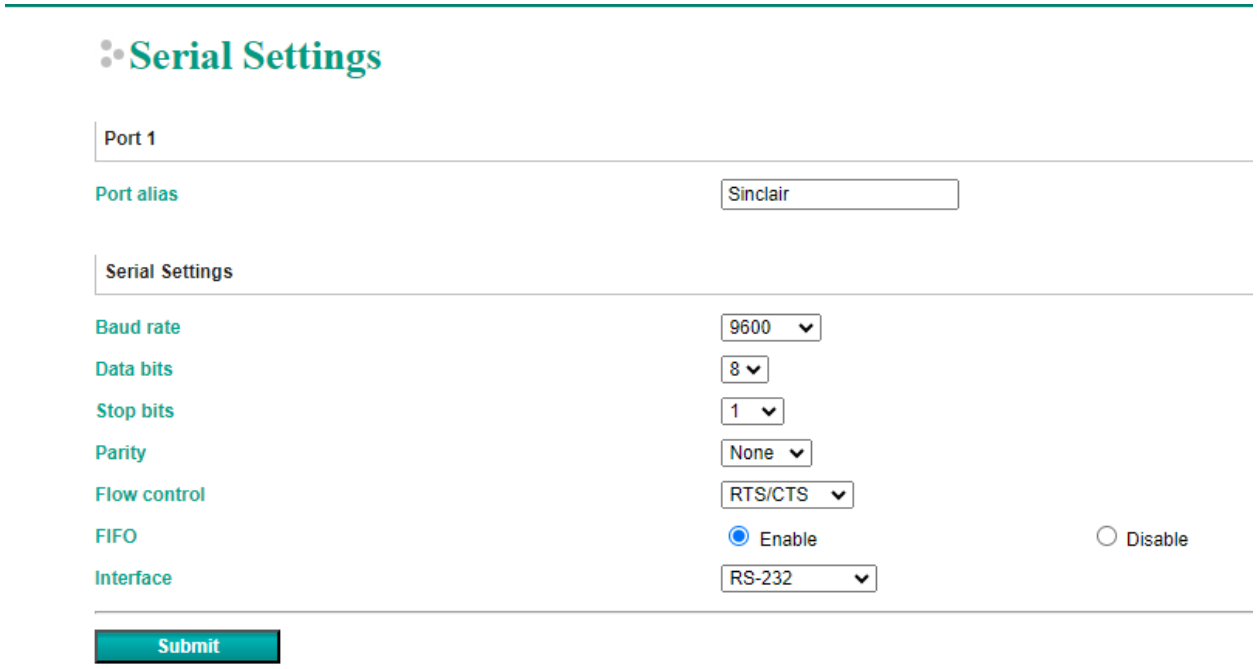
(Similar).

You will need to :

1. SET NETWORK settings
2. Serial Settings
3. Operating Settings.
   Like for example:

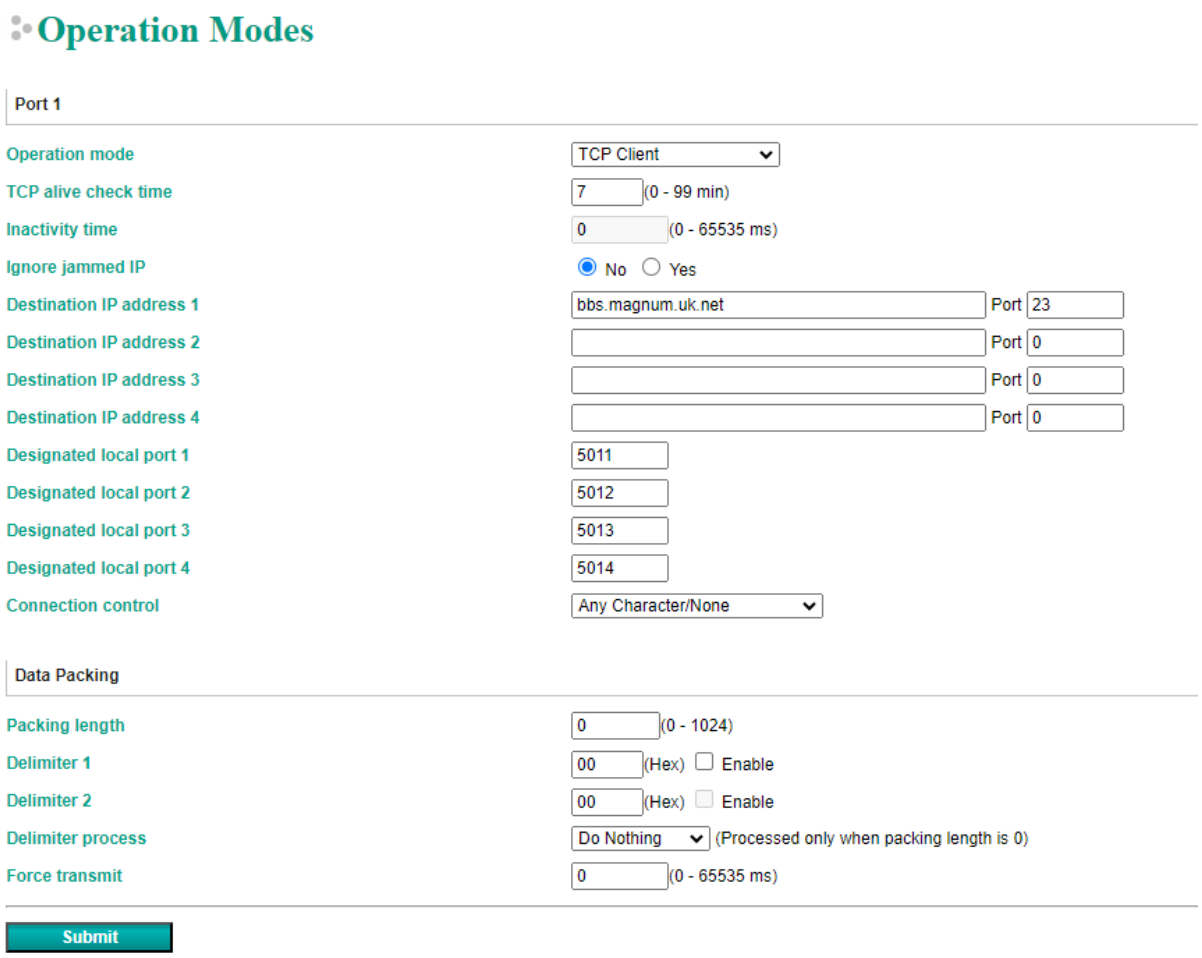


In this example:
LAN IP of MOXA is set to 192.168.1.254
Gateway to 192.168.1.1 (Do not forget this. This is the IP address of our home router)
IP configuration is Static
And DNS server is 192.168.1.1 (our router here)
Remember: By changing the default LAN IP address of MOXA, the laptop will lose it. Connect MOXA and laptop to the same LAN with the home router from now on.



Serial settings are:

1. Baud rate: 9600
2. Data bits: 8
3. Stop bits: 1
4. Parity: None
5. Flow Control: RTS/CTS
6. Interface: RS-232

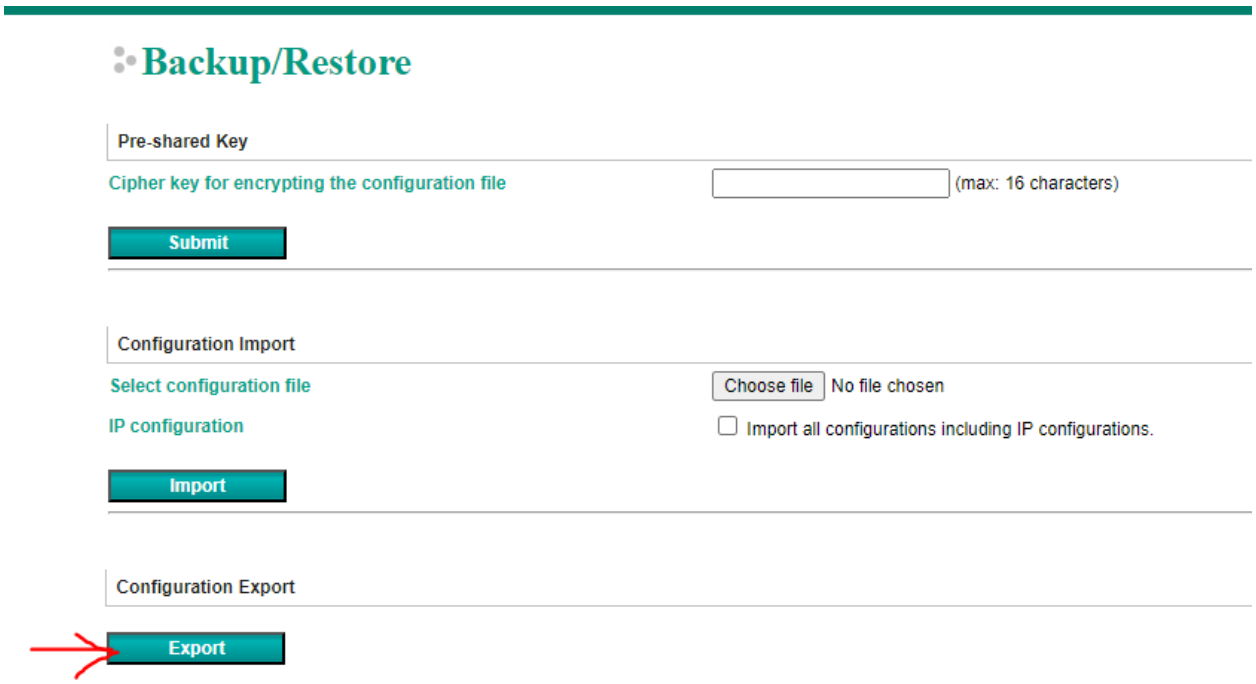


Select Operation Modes settings as above.

Make sure that Operation Mode is: TCP Client

Destination IP address 1: Is the telnet address of the BBS you would like to access. Port is always 23

Connection control: Any Character/None



Save the MOXA configuration from Backup/Restore Menu. Do the same for every different BBS you would like to access. Then with the Import selection you can import the different configurations and change the BBS you would like to connect.

Connect the MOXA to the home network and the QL to the MOXA.

(LAN = One free LAN port of our home router)
(QL = SER2 of Sinclair QL)

Configure the Sinclair QL software and begin!

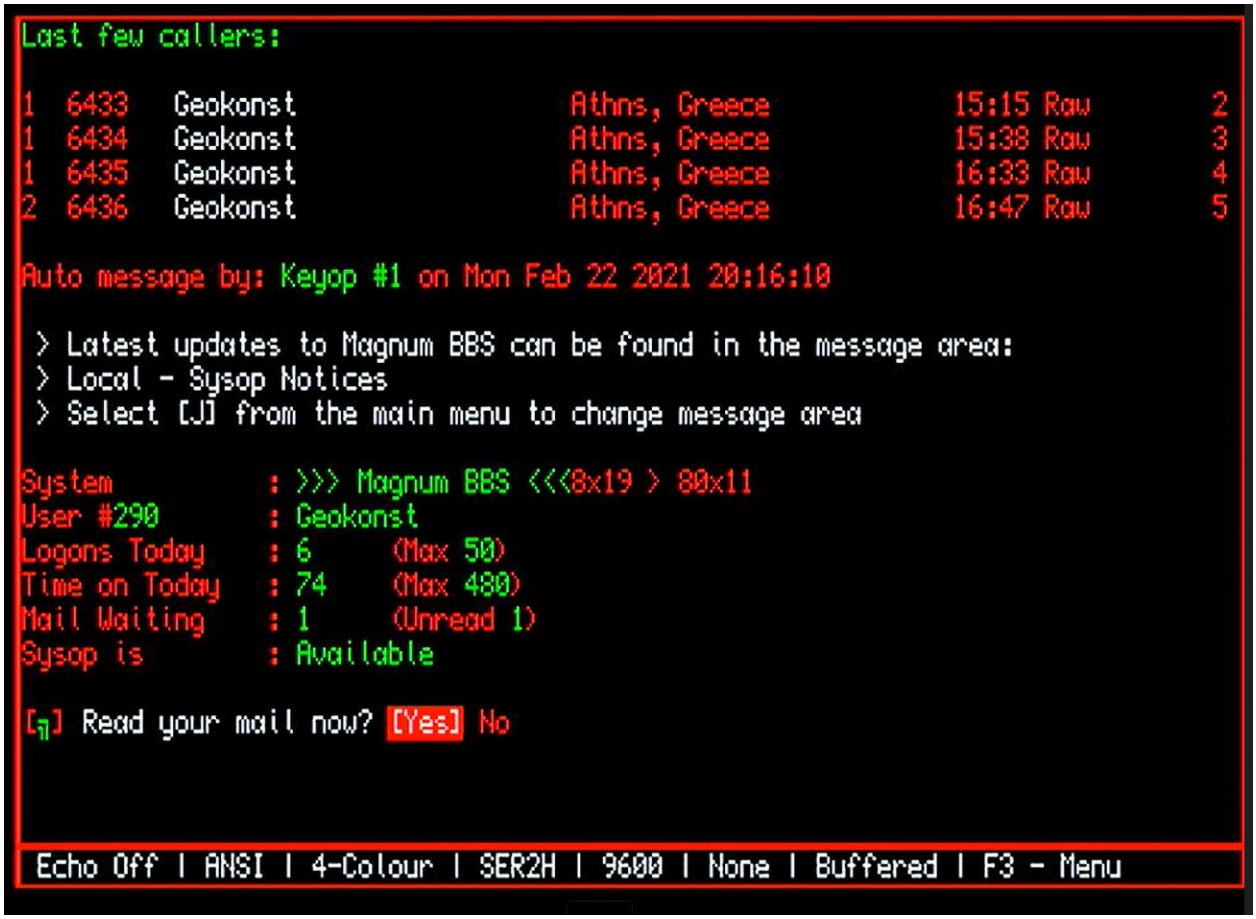
Load Tk2 (not necessary but nice) and execute QLTERM software (by Jan Bredenbeek)
NOTE: QLTERM software v2.35 is the latest one and must be used. Can be found in Dilwyn's page

Press F3 for Menu and "I" for interface and set:

- Echo Off
- Modem Type: Buffered
- Port: SER2H (because we need to use Handshake)
- Baud: 9600 (Same like in MOXA)
- Parity: None (same like in MOXA)
- We keep ANSI, 4-colour

By doing all above and by pressing ENTER several times we are connected to the BBS which requests login credentials (Select New user when connected for the first time)

Communication is smooth. Like this:



And here you are.
Surf and enjoy…

Connect by setting the Nport as Ethernet Mode

You can connect to TELNET based BBSes by another Nport mode also:

Ethernet Modem

Advantages:

- Easier configuration
- You do not need to stay connected to Nport via PC when you need to change the BBS to access

Prepare Cable for this connection

For this operation mode we need one more signal for the Nport. Nport actually needs to get something on its DSR line. And therefore, we will cable pin6 of QL (+12V) to the DSR input of Nport.

This cable is works fine with previous mode also.

Therefore, cable to prepare is:

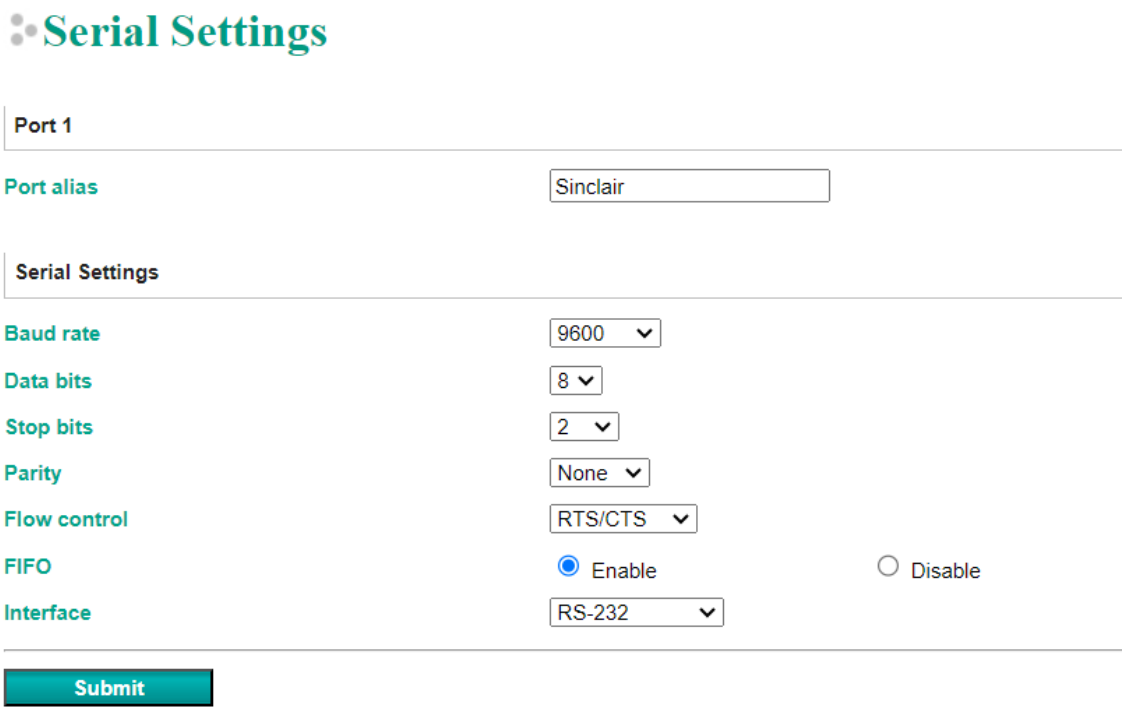
QL SER2	QL CABLE COLOUR	DIRECTION	PC SIGNAL	PC 9-PIN D
pin 2 TxD	white	-->	RxD	pin 2
pin 3 RxD	green	<--	TxD	pin 3
pin 4 DTR (=RTS)	blue	-->	CTS	pin 8
pin 5 CTS	red	<--	RTS	pin 7
pin 1	black	---	GND	pin 5
Pin 6 +12V	yellow	-->	DSR	pin 6
N/A	-	-	DTR	pin 4

(Same cable can be used also for the Nport TCP Client connection)

Nport configuration for Ethernet Modem mode

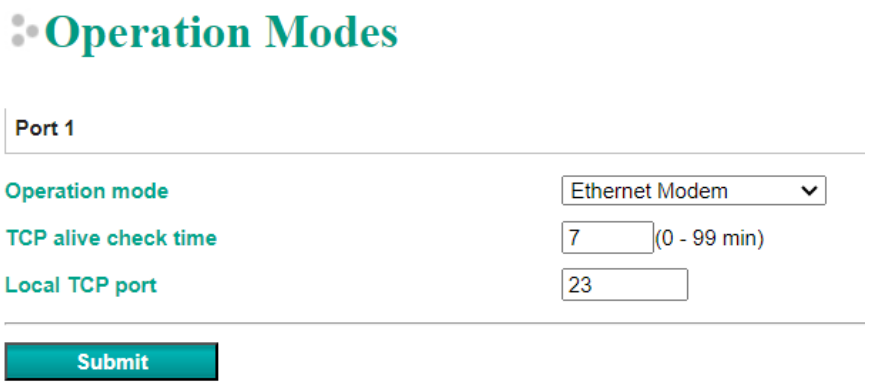
Very easy.

The Serial configuration remains the same.



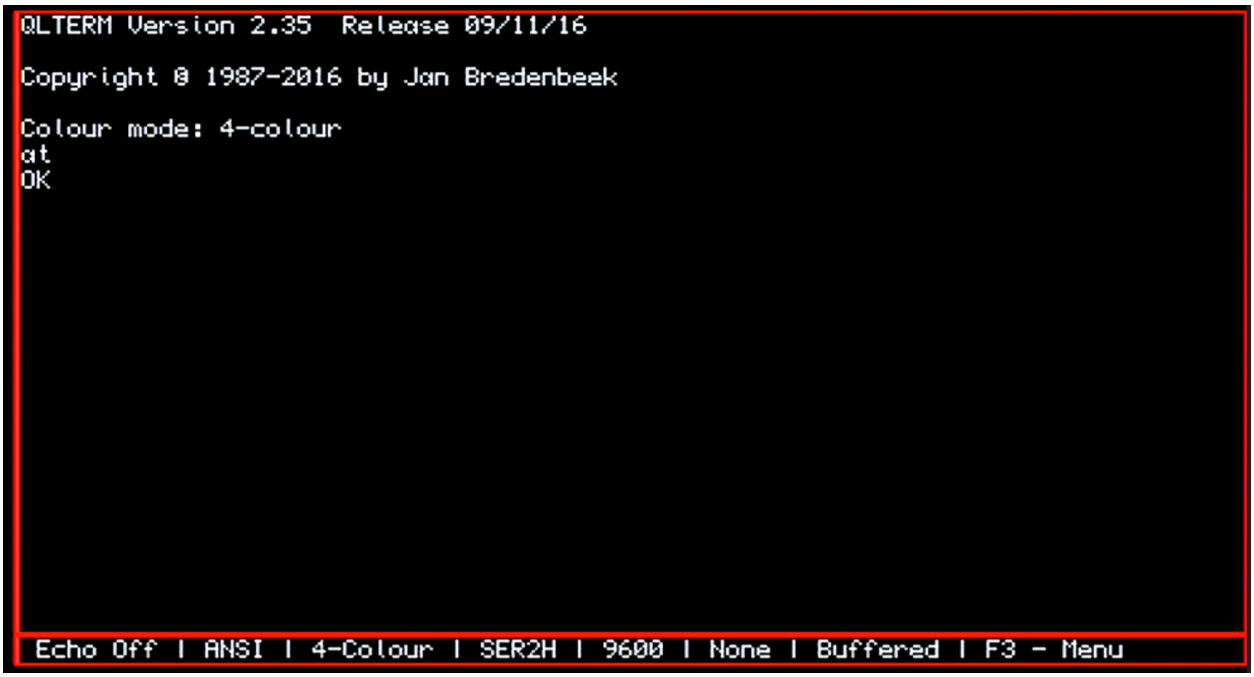
(In this example I set 2 stop bits, but in QL there is no need to setup something differently. It is better to avoid 1 stop bit at 9600 baud because in QLs with the original IPC, 1 stop bit at 9600 baud is not supported)

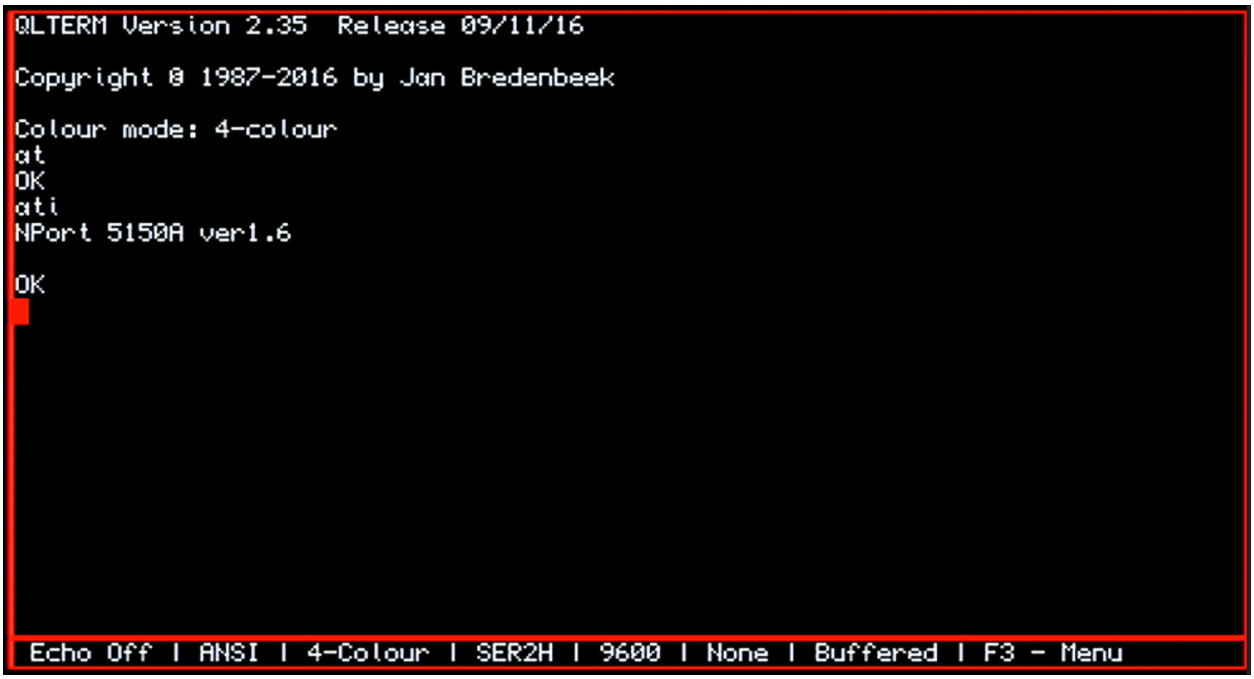
The Operating settings are extremely simple:



Connect to QL software and begin again!

Just start QLTERM software with the same settings as before and you can immediately send AT commands to the NPort Modem:





In order to connect to a BBS you need to know its IP address.

In the list of BBSes that will be presented in next chapter, the IP address is always there.

For example, for QL Dump we see:

The IP address is therefore: 86.12.24.168

In case there in no IP address mentioned, then use a ping command to the url address and get the IP address. Here:

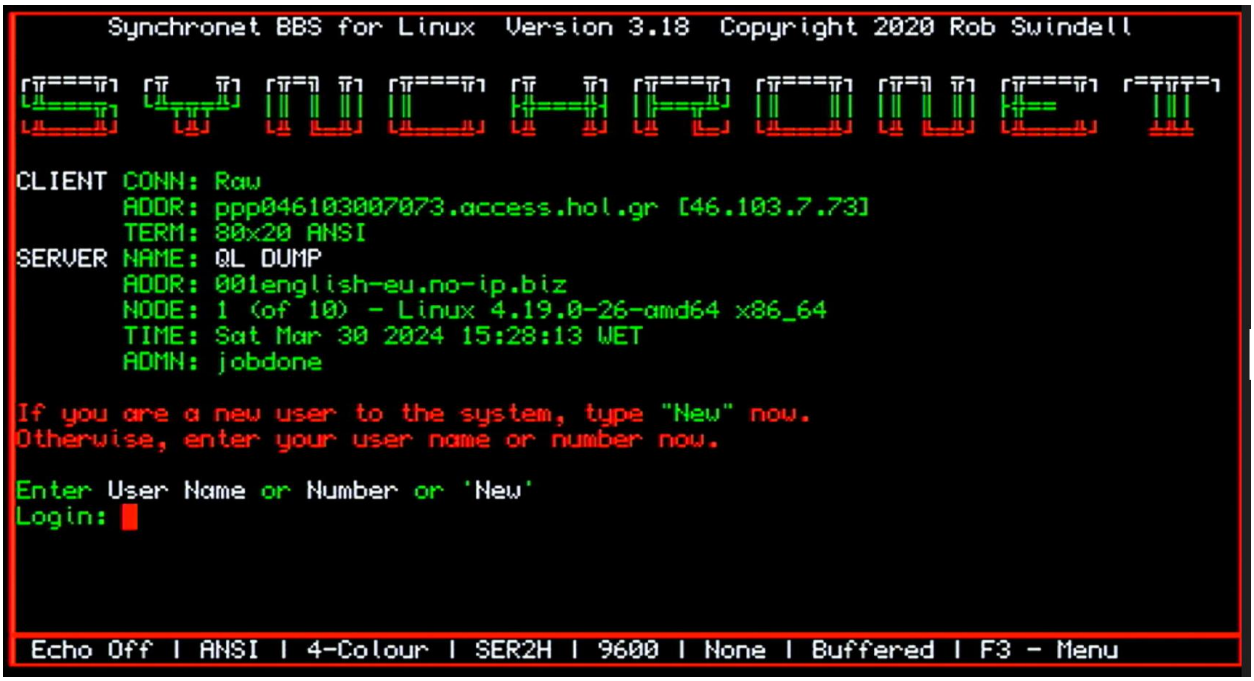
```
C:\Users\gekon>ping bbs.dmine.net

Pinging bbs.dmine.net [70.109.57.175] with 32 bytes of data:
Reply from 70.109.57.175: Destination host unreachable.
Reply from 70.109.57.175: Destination host unreachable.
Reply from 70.109.57.175: Destination host unreachable.
Reply from 70.109.57.175: Destination host unreachable.

Ping statistics for 70.109.57.175:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

IP address is 70.109.57.175 for bbs.dmine.net

And in order to connect with the use of QLTERM we just issue the command:

atd xx.yy.zz.cc:23

Here:



Voila!

Really very easy.

Where can I find BBS to connect?

This is easy. There are a lot of Telnet connection BBS. Follow this link and check:

https://www.telnetbbsguide.com/bbs/list/detail/

In this way you will have Sinclair QL surfing internet-based BBS in 2024.

Thanks for watching!

Take care
Georgios Konstantopoulos.