

SPE Expert 1.3k Amplifier Multiuser Remote Solution

Search for a stable solution – and we found a solution 😊

We were looking for a reliable and stable solution for our remote DX-Station in the Swiss Alps to remotely control our SPE Expert 1.3k power amplifier over the internet.

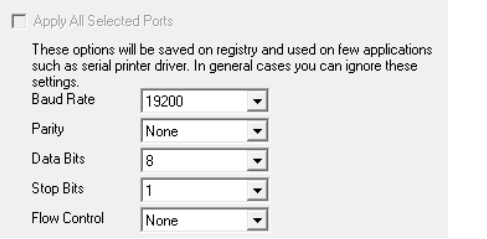
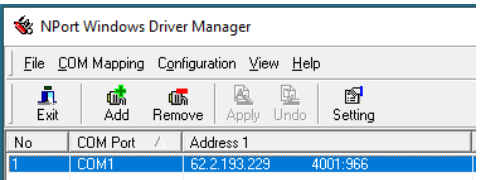
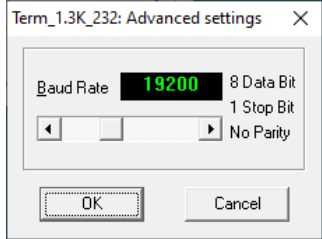
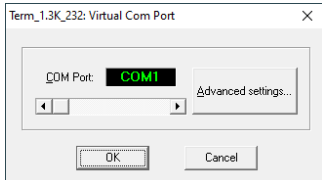
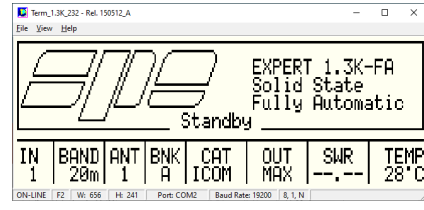
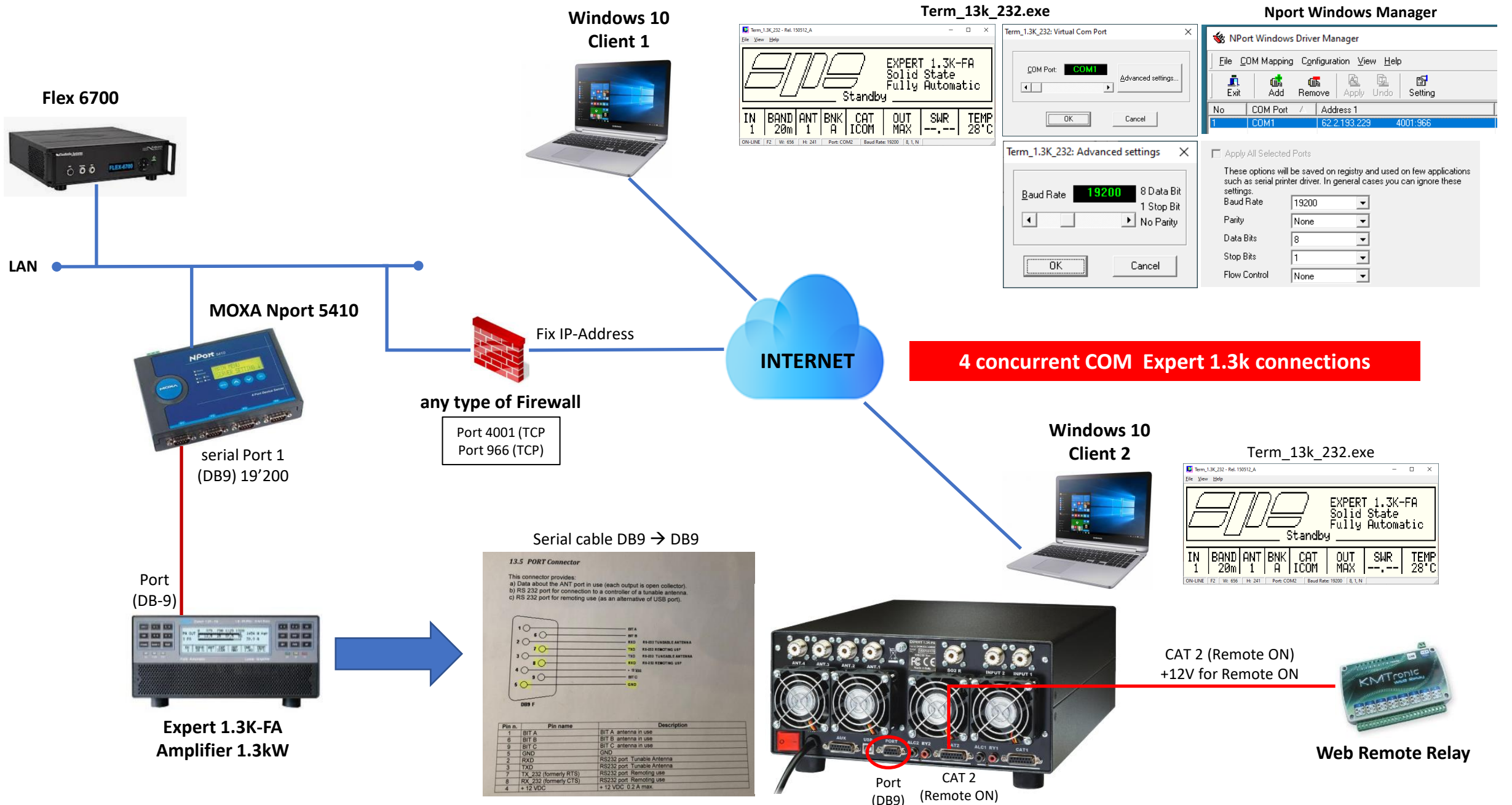
Our requirements were:

- reliable and stable, high availability
- Use of the existing SPE terminal software - Term_13k_232.exe
- provide one virtual serial port for Windows 10
- A solution without the use of a Windows PC at the backend (remote site)
- a robust and weatherproof industrial hardware
- a simple web-based admin console
- up to **4 concurrent connections** possible at the same time
- Display of the SPE Expert 1.3k display in real time
- network-enabled device

MOXA Nport 5410



SPE Expert 1.3k Amplifier Multiuser Remote Solution



13.5 PORT Connector

This connector provides:

- a) Data about the ANT port in use (each output is open collector).
- b) RS 232 port for connection to a controller of a tunable antenna.
- c) RS 232 port for remoting use (as an alternative of USB port).

1	BIT A	BIT A antenna in use
6	BIT B	BIT B antenna in use
9	BIT C	BIT C antenna in use
5	GND	GND
2	RXD	RS232 port Tunable Antenna
3	TXD	RS232 port Tunable Antenna
7	TX_232 (formerly RTS)	RS232 port Remoting use
8	RX_232 (formerly CTS)	RS232 port Remoting use
4	+12 VDC	+12 VDC 0.2 A max.

CAT 2 (Remote ON)
+12V for Remote ON



NPort 5410 – Serial Port Server for SPE Expert 1.3k Amplifier

Installation of the Nport 5410 Box

→ <http://IP-Adress>

MOXA Total Solution for Industrial Device Networking

Model	- NPort 5410	IP	- 192.168.1.212	MAC Address	-
Name	- NP5410_4397	Serial NO.	- 4397	Firmware	-

Welcome to NPort web console

- Overview
- Quick Setup
- Basic Settings
- Network Settings
 - Serial Settings
 - Operating Settings
- Accessible IP Settings
 - Administration
 - Backup/Restore
- System Log Settings
 - Auto Warning Settings
- Upgrade Firmware
 - Monitor
- Change Password
- Load Factory Default
- Save/Restart
- Logout

Model	NPort 5410
Name	NP5410_4397
Serial NO.	4397
Firmware	3.13 Build 19032122
IP	192.168.1.212
Mac Address	00:90:E8:1C:18:C8
Up Time	0 days 00h:26m:16s
Serial Port 1	19200,None,8,1
Serial Port 2	115200,None,8,1
Serial Port 3	115200,None,8,1
Serial Port 4	115200,None,8,1
LCM	Support

Serial Settings

Port 1

Port alias:

Serial Settings

Baud rate:

Data bits:

Stop bits:

Parity:

Flow control:

FIFO: Enable

Interface:

P1

All ports

Apply the above settings to

NPort 5410 – Serial Port Server for SPE Expert 1.3k Amplifier

Installation of the Nport 5410 Box

→ http://IP-Address

Operation Modes

Port 1

Operation mode

TCP Server

TCP alive check time

5 (0 - 99 min)

Inactivity time

0 (0 - 65535 ms)

Max connection

4

Ignore jammed IP

No Yes

Allow driver control

No Yes

Local TCP port

4001

Command port

966

TCP Alive Check Time	0 to 99 min	7 min	0 min: TCP connection is not closed due to an idle TCP connection. 1 to 99 min: The NPort automatically closes the TCP connection if there is no TCP activity for the given time. After the connection is closed, the NPort starts listening for another Real COM driver connection.	Optional
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Data Packing

Packing length

0 (0 - 1024)

Delimiter 1

00 (Hex) Enable

Delimiter 2

00 (Hex) Enable

Delimiter process

Do Nothing (Processed only when packing length is 0)

Force transmit

0 (0 - 65535 ms)

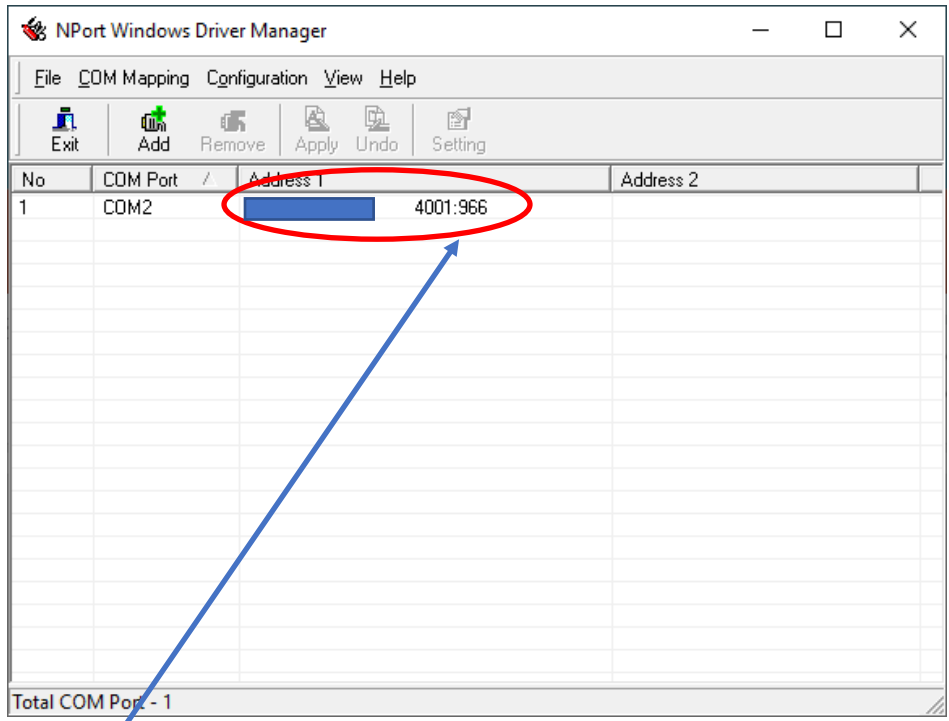
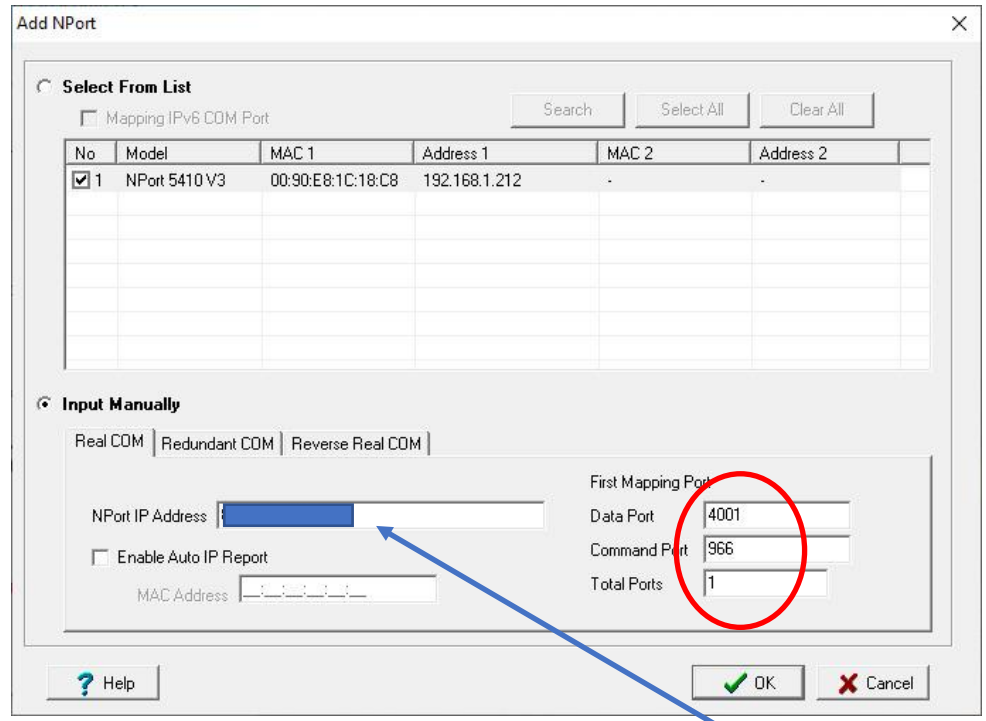
Apply the above settings to

P1

All ports

NPort 5410 – Serial Port Server for SPE Expert 1.3k Amplifier

- 1. Installation Virtual COM-Port drivers → moxa-nport-5400-series-windows-driver-manager-for-windows-7-server-2008-or-later-driver-v3.1.exe
- 2. Configuration of the Virtual Serial Port – in our case Port Nr. 1

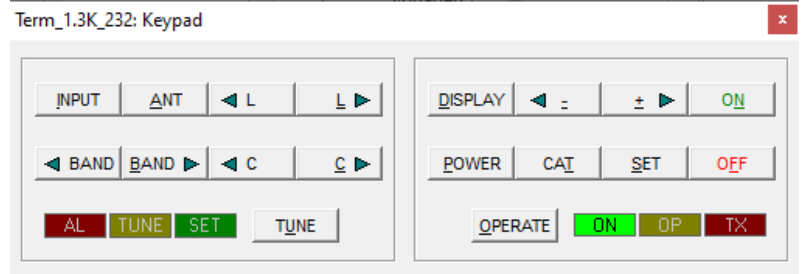
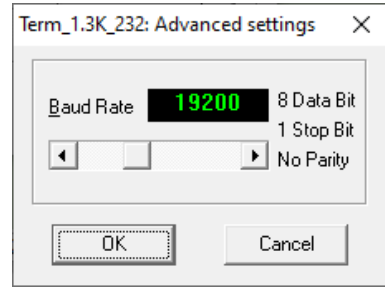
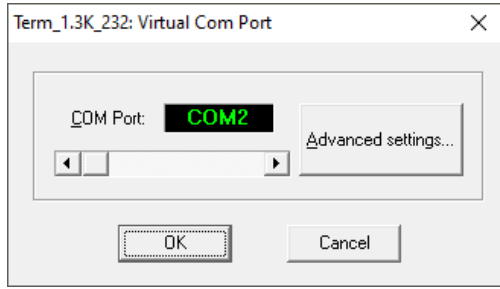
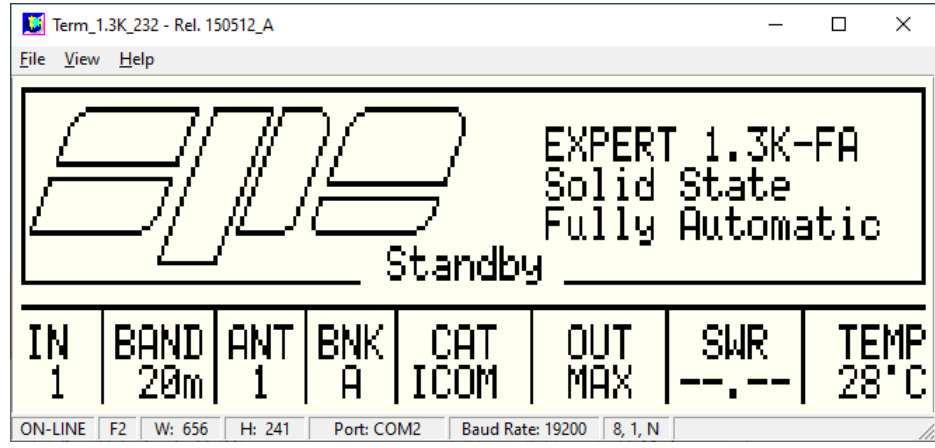


fix IP-Address from the Internet
Data-Port = 4001 (TCP)
Control-Port = 966 (TCP)

NPort 5410 – Serial Port Server for SPE Expert 1.3k Amplifier

SPE Expert Serial Port Software

→ Term_13k_232.exe



Limitation
The PA cannot be switched ON/OFF remotely in this way. This is done with a relay with the "Remote ON" function via CAT interface.



Expert 1.3k DB15 CAT Connector

12. CONNECTIONS

12.1 CAT Connector

The pin outs are shown in the schematic below. The connections are the same for our 1K FA and 2K FA amplifiers.

pin n.	pin name	Description
1	RX 232	Used on KENWOOD and YAESU transceivers for the link with a RS-232 connection.
9	TX 232	Used on KENWOOD and YAESU transceivers for the link with a RS-232 connection.
2	/TX -INH	Open collector normally OFF, it stops transmission when grounded. (ON).
10	RX TTL	Used on Icom, KENWOOD and YAESU transceivers for the CAT 5V TTL connection.
3	TX TTL	Used on Icom, KENWOOD and YAESU transceivers for the CAT 5V TTL connection.
11	KEN TTL	Connect to GND if CAT 5V TTL KENWOOD connection.
4	GND	Signal ground.
12	RELAY	Connected in parallel with the RCA phono RELAY connector.
5	ALC	Connected in parallel with the RCA phono ALC connector.
13	TX - INH	Normally to gnd (550 ohm), it stops transmission when + 12V
6	DATA A	Bit A of Band Data (digital switch of band for YAESU).
14	DATA B	Bit B of Band Data (digital switch of band for YAESU).
7	DATA C	Bit C of Band Data (digital switch of band for YAESU).
15	DATA D	Bit D of Band Data (digital switch of band for YAESU).
8	REMOTE ON	Applying a voltage from 9 to 15 VDC, turns the amplifier ON.

NPort 5410 – Serial Port Server for SPE Expert 1.3k Amplifier

Firewall Settings

→ Fritz!Box 7590

Data-Port	4001	TCP	192.168.1.212
Control-Port	966	TCP	192.168.1.212

PC-192-168-1-212	192.168.1.212	<input checked="" type="checkbox"/> SerialBOX	4001	<input checked="" type="checkbox"/> 0 aktiv
		<input checked="" type="checkbox"/> SerialBox2	966	

Freigabe bearbeiten

Bezeichnung

Protokoll

Port an Gerät bis Port

Port extern gewünscht
(IPv4)

Freigabe aktivieren

OK

Abbrechen