Configuration Manual

RT-1000 Multichannel DF Control System "MOXA NPort 5610"

for DF-Channel Network Connectivity



Edited by:

RHOTHETA Elektronik GmbH Kemmelpark Dr.-Ingeborg-Haeckel-Str. 2 82418 Murnau Germany

Tel.: +49 8841 4879 - 0 Fax: +49 8841 4879 - 15

Internet: <u>www.rhotheta.de</u> E-Mail: <u>email@rhotheta.de</u>

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Note

The manufacturer reserve the right to make modifications at any time and without previous information of the here described product.

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1 Description

The DF-Control System converts the serial data from the DF-Channels into Ethernet data for the transmission via LAN. For the RT-1000 Multichannel direction finder system a special configured MOXA NPort 8/16 channel device is in use, to make it possible, to access the Direction Finder Channels anywhere over a local LAN or the Internet.

Front panel of MOXA NPort 5600 series									
Rear panel of MOXA NPort 5600 series									
Serial ports 1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8 AC POWER 100 2409, 47 6Hz									

The remote control TCPIP access to one Direction Finder Channel is always defined by the

- > DF Control System / MOXA NPort IP address and the
- Local MOXA NPort <u>TCP port</u> (see chapter: 3.4 Operating Settings and TCP Port No. and the example below)

Example of one DF-Channel Setup with RHOTHETA DF Remote Control Software "DF Commander"

Interface VISA for 1 System-Channel	Settings: DF Type RT-1000
Mode	VISA: Interface (RT-1000)
face out Data	RT-1000: TCP IP & Port Address IP Address Port 192 , 168 , 077 , 222 : 4003 Apply

Example of TCPIP connection with DF-Channel No. 3 of MOXA device 192.168.77.222

see chapter: 3.4 Operating Settings and TCP Port No.

Please contact your network administrator if necessary. For additional information, see also <u>www.moxa.com</u> and the MOXA user manual.

2 Initial IP Address Configuration

To access the Direction Finder Control System (MOXA NPort) from remote, it is common to use static IP & Port addresses. For this the MOXA device itself can be configured to a static IP address or, which is normally the better solution, to configure the router in the local network with a DHCP reservation to allocate the Direction Finder Control System identified by its MAC address to a fixed/static IP address.

After delivery, the IP configuration of the MOXA NPort device is set to "<u>DHCP</u>" mode or to the fixed IP address given in the "IP-Address Configuration" document. If the RT-1000 Multichannel System is connected to your LAN, the actual assigned (DHCP) IP address is shown after a few seconds at the Front Panel of the MOXA device (small LCM display < A >) and also indicated by the green LED < C >.

If there is no DHCP server available or already no LAN connected, the red LED $< \bigcirc >$ is blinking, and the IP address is set to the standard default value: 192.168.127.254.



If no DHCP server is available, or it is intended to use static IP address, it is recommended using the LCM display < A >and the four push buttons < B > on the MOXA front panel to configure the IP address for the first time.

Manual Configuration of static known IP address

\triangleright	Press Menu and 🔻	Display shows "Network setting"
\triangleright	Press SEL and 🔻 + 🔨	Display shows "IP config"
\triangleright	Press SEL and 🔺	Display changes from "DHCP" to "Static"
\triangleright	Press SEL	to confirm change
\triangleright	Press 🔻	Display shows "IP address"
\triangleright	Press SEL	to edit actual static IP address
\triangleright	Press 🔽 or 🔼 to change the b	blinking digit and SEL to continue with next digit
\triangleright	Press Menu + Menu	Display shows "Save Change?"
\triangleright	Press 🔼	Display shows "Yes"
\triangleright	Press SEL to store the settings	

The device restarts and the new setting (static IP address) is indicated.

Remark: At the "*Network setting*" Menu it is also possible to show the actual device MAC address.

3 Web Console Configuration

A standard Web Browser/Console is the most user-friendly method available to configure and check the actual MOXA NPort device settings and test the RT-1000 network connectivity. You can use as example Google Chrome or the Microsoft Internet Explorer.

With the exception of custom specific IP address, the MOXA NPort 5600 device is already correctly pre-configured by RHOTHETA for the use with the RT-1000 Multichannel direction finder.

... It is strictly not recommended, to change any settings. ...,

The following description is just for information and checking the actual settings.

3.1 Opening Your Browser

- > Open your browser with the cookie function enabled.
- A Type in the MOXA NPort IP address

Ttp://192.108.//.22.		O NPort Web Console	пхж
RACE A			
	www.mo	xa.com	
Main Menu	Welcome to NPo	rt's web console !	
Basic Settings	Model Name	NPort 5610-8	
Network Settings	MAC Address	00:90:E8:4B:87:AD (B)	
🙂 🛄 Serial Settings	Serial No.	9443	
Operating Settings	Firmware Version	3.5 Build 11080114	
Accessible IP Settings	System Uptime	0 days, 00h:42m:50s	
PPP User Table Settings	LCM		
Auto Warning Settings	NPort's web console provide t	he following function groups.	
🖲 🛄 Monitor	······		
Change Password	Basic Settings		
Load Factory Default	Server name, real time	clock, time server IP address, and Web console, Telnet console	
Save/Restart	Enable, Disable function	l.	

The device MAC address is indicated

> (B)

3.2 Network Settings

← → ♦ http://192.168.77.22	2/ 🔎 🛪 🕅	C × Ø NPort Web Console × A the two the two the two the two
MOXA	www.mo	xa.com
 Main Menu Overview Basic Settings Network Settings Serial Settings Operating Settings Accessible IP Settings PPP User Table Settings Auto Warning Settings 	Network Settings	192.168.77.222 255.255.0 Static • B
Monitor Change Password Load Factory Default Save/Restart	DNS server 2 SNMP Community name	SNMP Setting Enable Disable public



With DHCP configuration, the actual assigned IP address is shown at $< \triangle >$



With static configuration, it is possible to change the static IP address at $< \triangle >$

Accessible IP Settings PPP User Table Settings Auto Warning Settings Monitor	Apply the above settings to all serial ports			
Change Password				
Each change of actual	settings has to be confirmed with $< \bigcirc$ >			

3.3 Serial Settings

← → Ø http://192.168.77.22	2/
	www.moxa.com Serial Settings
Overview Basic Settings Network Settings Serial Settings	Port 1 Port alias Secial Parameters
Port 1 Port 2 Port 3 Port 4	Baud rate 1200 Data bits 7 Stop bits 1
- Port 5 - Port 6 - Port 7 - Port 8	Parity Odd Flow control None FIFO Enable © Disable Interface
 Operating Settings Accessible IP Settings PPP User Table Settings Auto Warning Settings 	Apply the above settings to all serial ports Submit
Monitor Change Password Load Factory Default	
Save/Restart	

> 🔺

- Baud rate = 1200
- Data bits = 7
- Stop bits = 1
- Parity = Odd
- Flow control = None
- FIFO = Disable

The settings above are valid and mandatory for all connected DF-Channels.

Remark:

Serial Port 1 is internally connected to DF-Channel No. 1, Serial Port 2 to DF-Channel No. 2, ...

3.4 Operating Settings and TCP Port No.

🗲 🔿 🧭 http://192.168.77.222	2/	🖒 🗙 🏉 NPort Web Console 🛛 🖈 🌣
MOXA	www.mo	xa.com
🔄 Main Menu	Operating Settings	
Overview]
Basic Settings		Port 1
🗀 Network Settings	Operation mode	TCP Server Mode
🗈 🧰 Serial Settings	TCP alive check time	1 (0 - 99 min)
Port 1	Inactivity time	0 (0 - 65535 ms)
Port 2	Max connection	4
Port 3	Ignore jammed IP	O No @ Yes
Port 4	Allow driver control	● No ○ Yes
Port 5		Data Packing
Port 6	Packing length	0 (0 - 1024)
Port 8	Delimiter 1	a (Hex) 🛛 Enable
Accessible IP Settings	Delimiter 2	0 (Hex) Enable
PPP User Table Settings Auto Warning Settings	Delimiter process	Do Nothing (Processed only when Packing length is 0)
• 🗀 Monitor	Force transmit	0 (0 - 65535 ms)
🗀 Change Password		ICP Server Mode
Load Factory Default	Local TCP port	4001 (C)
Save/Restart	Command port	966
	Apply the above settings to	o all serial ports (Local listen port will be enumerated automatically).
		Submit

> (A)

- Operation Mode
- = TCP Server Mode = 1 (min)TCP alive check time

If the connected PC software application crashes or the LAN connection is interrupted, then the TCP is closed after 1 min automatically and so on no more "blocking" any new connection.

 Inactivity time = 0 (ms) = Off

Every DF-Channel (with power on) is producing continuously serial data. If there is no more serial data available, the TCP connection should be hold to show the correct error status (Interface/TCPIP status=Ok, DF timeout status=Error)

- Max connection = 4 Each DF-Channel can be accessed in parallel by max 4 active remote control sites.
- Ignore jammed IP = Yes If one DF-Channel active TCP connection is interrupted, there is no influence to other still active and connected remote sites working on the same channel.
- Allow driver control = No

- > **B**
 - Packing length
 - Delimiter 1 = "a" and ☑ each DF-Channel data message ends with …[LF] = 0x0a

= 0

= Off

= 0

- Delimiter 2
- Delimiter process = Do Nothing
- Force transmit

With the settings above, each RT-1000 DF-Channel serial output data message is packed within one TCPIP data package. (Very useful, as example for logging tools like Wireshark)

> (C)

Local TCP port $= 4001 \dots 40xx$

each DF-Channel is accessed by the MOXA NPort device IP address and the corresponding port no.

The DF-Channel 1 is accessed by default with port no. 4001, DF-Channel 2 with port no. 4002, DF-Channel 3 with port no. 4003, ...



3.5 Additional Information for Service & Maintenance / Troubleshooting

3.5.1 Monitor Line Function

The Monitor Line page shows all actually connected remote control sites for each channel. Please remember, that different sites can be connected to different DF-Channels.

In the example below, one remote control site PC is connected to all 4 existing DF-Channels simultaneously and one other PC is connected to only one DF-Channel.

	2/	P → 🗟 C × 🦉 NPort Web Console ×					
MOXA							
🔁 Main Menu	Monito	or Line					
Overview	_			1.000			
Basic Settings	Death	op Mada	104	Line	100	10.4	
Network Settings	Port	OP Mode	IP1	IP2	IP3	IP4	
🗉 🧰 Serial Settings	1	TCP Server Mode	192.168.77.161	Listen	Listen	Listen	
🗉 🧰 Operating Settings 🛛 <	2	TCP Server Mode	192.168.77.161	192.168.77.131	Alten	Listen	
Accessible IP Settings	3	TCP Server Mode	192.168.77.161	Listen	Listen	Listen	
PPP User Table Settings	4	TCP Server Mode	192.168.77.161	Bten	Listen	Listen	
🗉 🦲 Auto Warning Settings	5	TCP Server Mode	Listen	Listen	Listen	Listen	
	6	TCP Server Mode	Listen	Listen	Listen	Listen	
	7	TCP Server Mode	Listen	Listen	Listen	Listen	
Async	8	TCP Server Mode	Listen	Listen	Listen	Listen	
Async-Setting							
🗀 Change Password							
📄 Load Factory Default							

RT-1000 Multichannel with IP adr. 192.168.77.222 Port No. 1...4 = Port 4001...4004

RT-1000 Multichannel with IP adr. 192.168.77.222 Port No. 2 = Port 4002



Two remote control sites using RHOTHETA PC application software "DF Commander"

3.5.2 Monitor Async Function

								_		
C http://192.168.77.222/			, Ø ▼ 🗟 Ở X 🛛 🥔 NPort Web Console 🛛 🗙						青★垜	
MOXA	<i>ı.</i> m	ioxa.	. c	om						
Main Menu Monitor Async										
Overview										
💼 Basic Settings				\frown		Asyn				
🗀 Network Settings	Port	TxCnt	_/	RxCnt		TxTotalCnt	RxTotalCnt	DSR	CTS	DCD
🗉 🧰 Serial Settings	1	0		36128		0	64769	OFF	OFF	OFF
🗉 🧰 Operating Settings	2	0		0		0	65478	OFF	OFF	OFF
Accessible IP Settings	3	0		30170		0	55166	OFF	OFF	OFF
PPP User Table Settings	4	0		30162		0	57244	OFF	OFF	OFF
🗉 🦲 Auto Warning Settings	5	0		0		0	0	OFF	OFF	OFF
🖻 🔄 Monitor	6	0		0		0	0	OFF	OFF	OFF
Line	7	0		0		0	0	OFF	OFF	OFF
Asynd	8	0		0		0	R	OFF	OFF	OFF
Async-Setting				A			B			
🗀 Change Password										
Load Factory Default										
	-									

When a DF-Channel is connected to a remote control site (active TCPIP connection), then the incoming DF-Channel data are shown.

>

RxCnt counts only incoming DF channel data, if the connected TCPIP port is active, which means if a remote control site is connected to this port / DF-Channel.

> **B**

The counted serial bytes since last MOXA NPort Power On.

4 Note