# Configuration Manual

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

for DF-Channel Network Connectivity

RHO
Elektronik GmbH
THETA
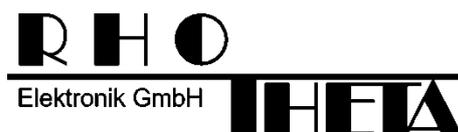
Edited by:

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

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

Internet: www.rhotheta.de
E-Mail: email@rhotheta.de

Note

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

Content

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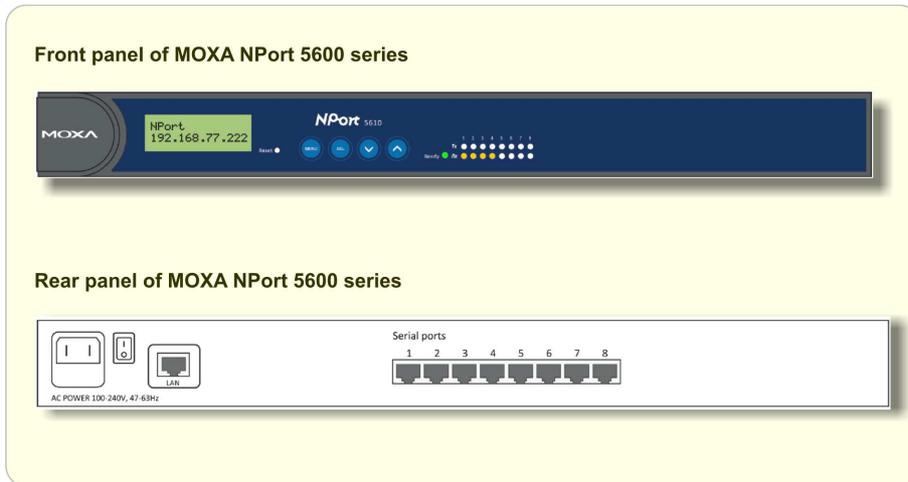
The remote control TCPIP access to one Direction Finder Channel is always defined by the

➢ DF Control System / MOXA NPort **IP address** and the

➢ Local MOXA NPort **TCP port**
(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"
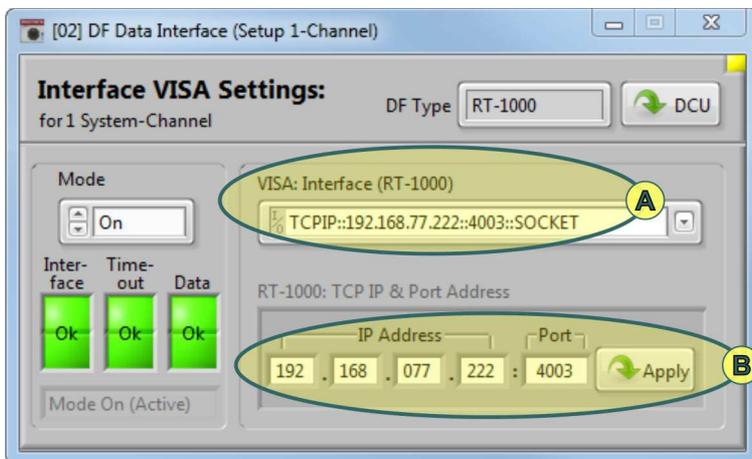
Example of TCPIP connection
with DF-Channel No. 3
of MOXA device 192.168.77.222

see chapter: 3.4
Operating Settings and TCP Port No.

Please contact your network administrator if necessary.
For additional information, see also www.moxa.com 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 "DHCP" 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 < (C) > is blinking, and the IP address is set to the standard default value: 192.168.127.254.

(A)	LCM Display
(B)	Push buttons for manual settings Menu , ▲ , ▼ and SEL
(C)	Status LED

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

➢ Press Menu and ▼ …   Display shows "*Network setting*"
➢ Press SEL and ▼ +▼ …   Display shows "IP config"
➢ Press SEL and ▲ …   Display changes from "DHCP" to "Static"
➢ Press SEL …   to confirm change

➢ Press ▼   Display shows "IP address"
➢ Press SEL …   to edit actual static IP address …
➢ Press ▼ or ▲ to change the blinking digit and SEL to continue with next digit

➢ Press Menu + Menu …   Display shows "Save Change?"
➢ Press ▲ …   Display shows "Yes"
➢ 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

➢ (B)   The device MAC address is indicated

3.2 Network Settings

> **B** = DHCP ▼
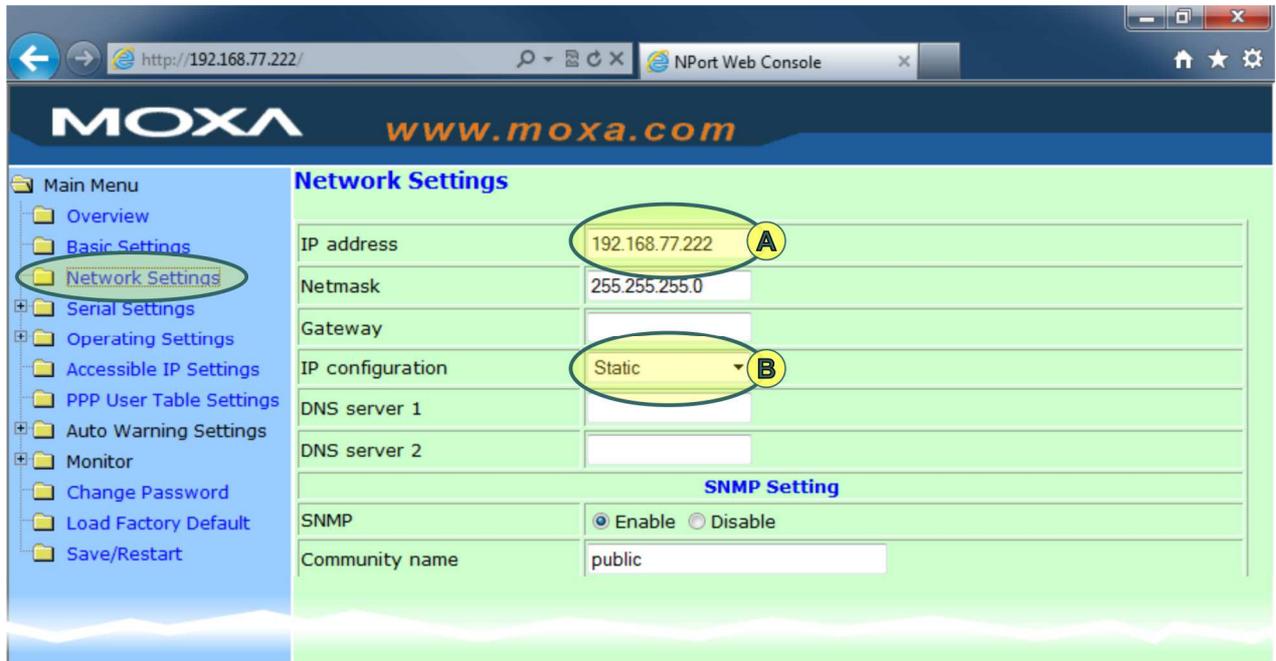
With DHCP configuration, the actual assigned IP address is shown at < **A** >

> **B** = Static ▼

With static configuration, it is possible to change the static IP address at < **A** >

Remark:
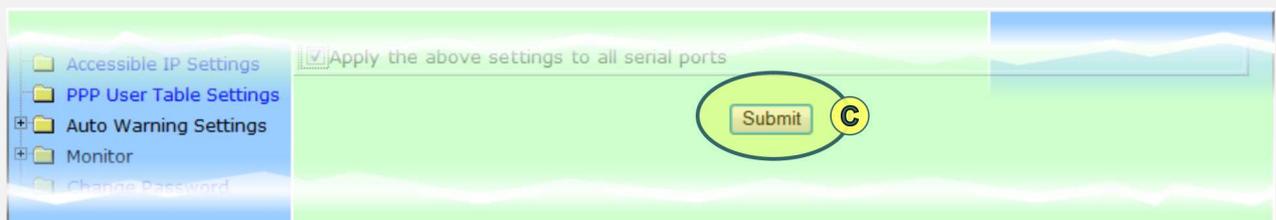
Each change of actual settings has to be confirmed with < **C** >

3.3 Serial Settings
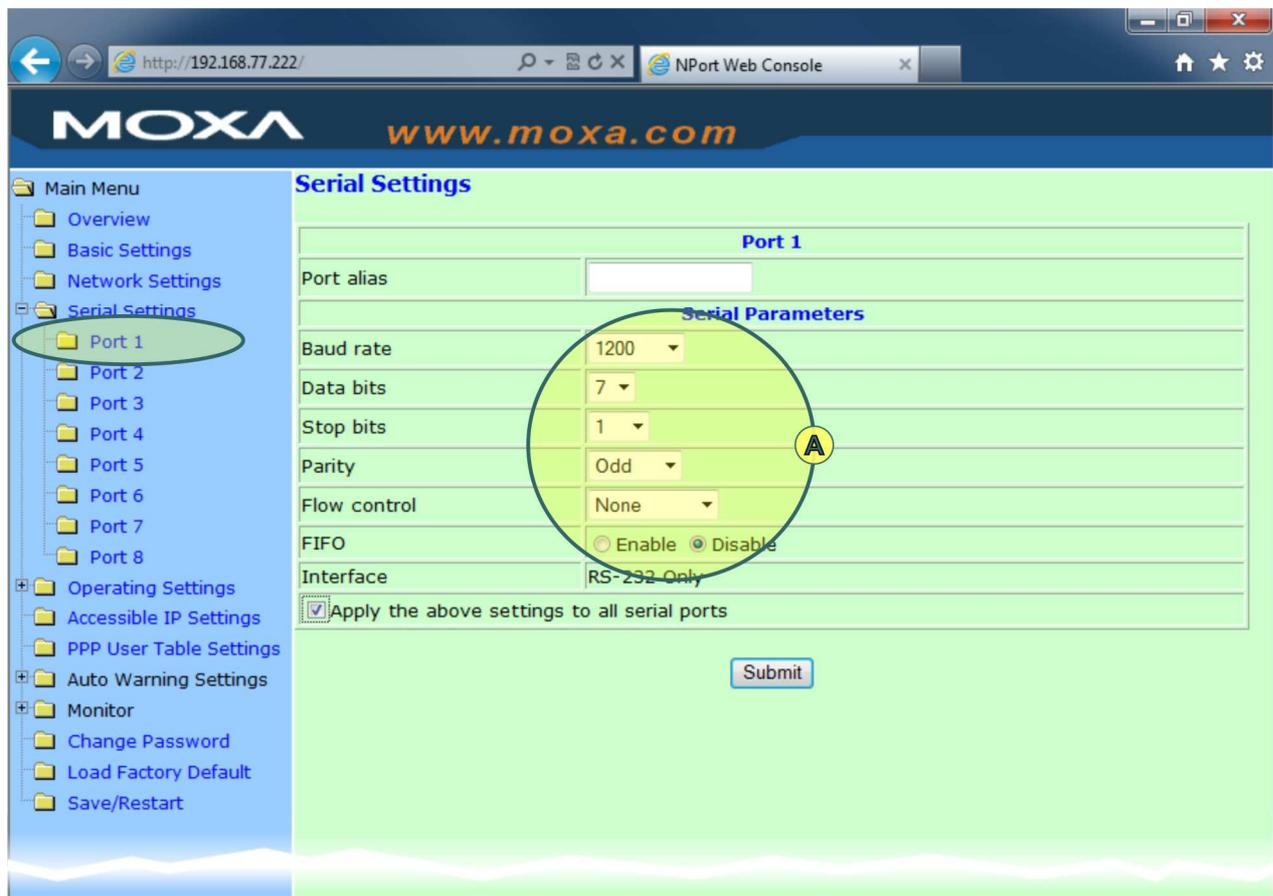
> **(A)**
> - Baud rate   = 1200
> - Data bits   = 7
> - Stop bits   = 1
> - Parity   = Odd
> - Flow control = None
> - FIFO   = Disable

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.
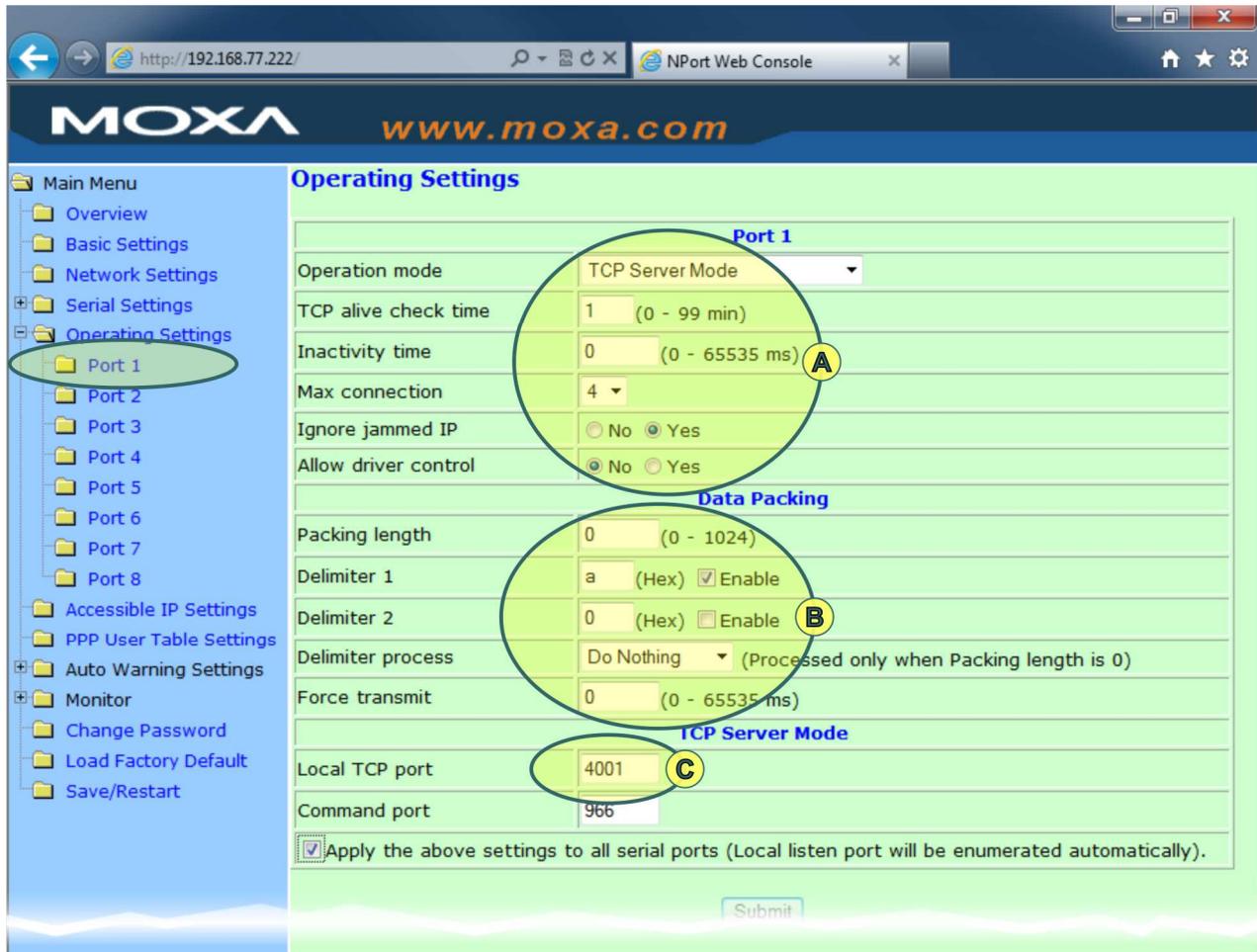
➢ Ⓐ
- Operation Mode = TCP Server Mode
- TCP alive check time = 1 (min)
  If the connected PC software application crashes or the LAN connection is interrupted, then the TCP is closed after 1 min automatically and so on no more "blocking" any new connection.
- Inactivity time = 0 (ms) = Off
  Every DF-Channel (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   = 0
- Delimiter 1   = "a" and ☑
  each DF-Channel data message ends with …[LF] = 0x0a
- Delimiter 2   = Off
- Delimiter process   = Do Nothing
- Force transmit   = 0

  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 … 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, …
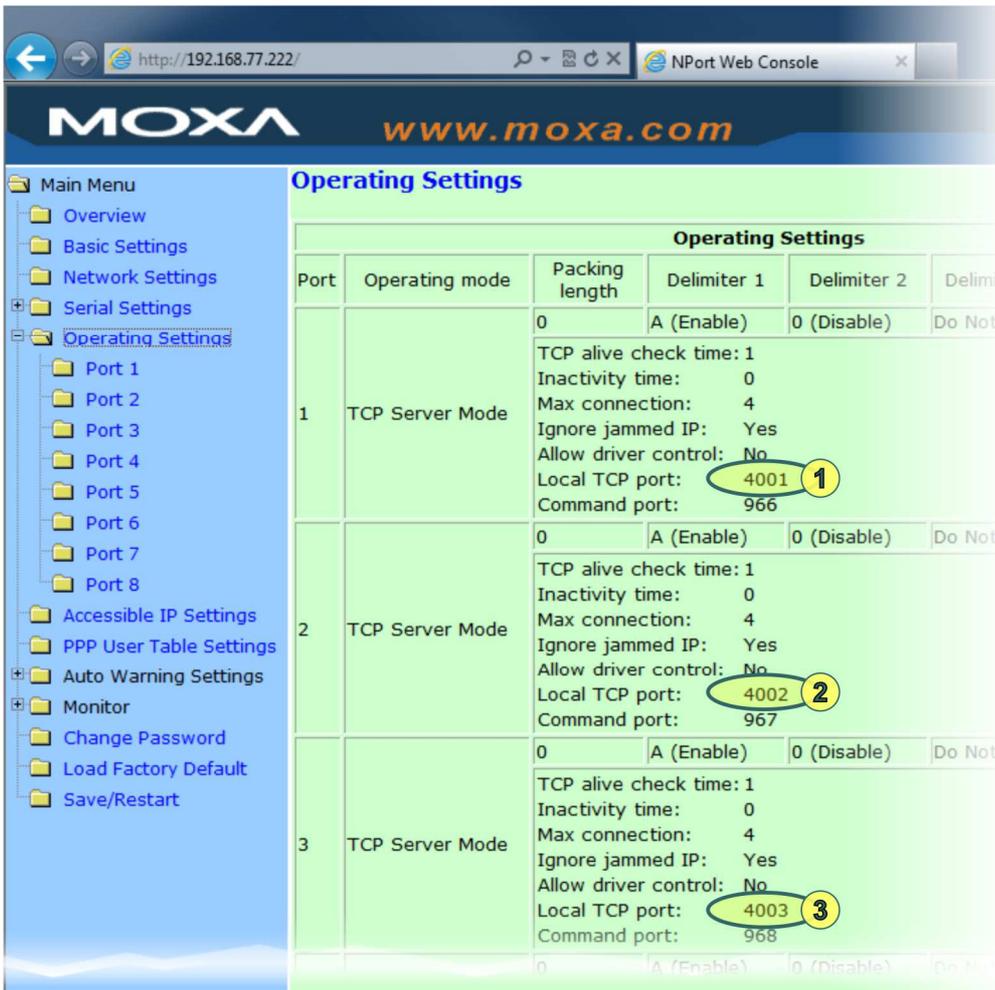
Example:
Access to DF-Channel:

DF-Channel **No. 1**
= **192.168.77.222::4001**

DF-Channel **No. 2**
= **192.168.77.222::4002**

DF-Channel **No. 2**
= **192.168.77.222::4002**

. . .

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.

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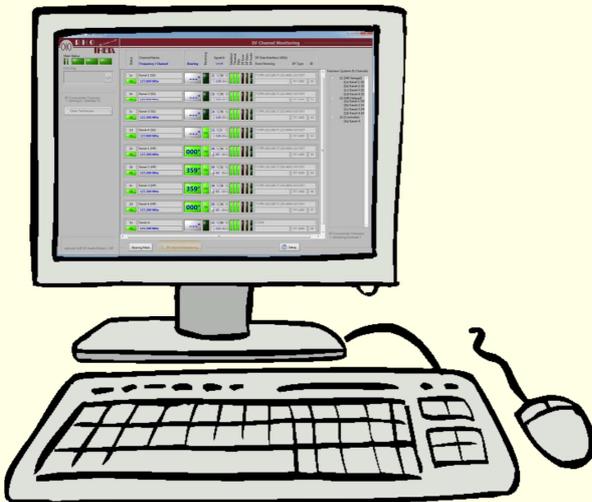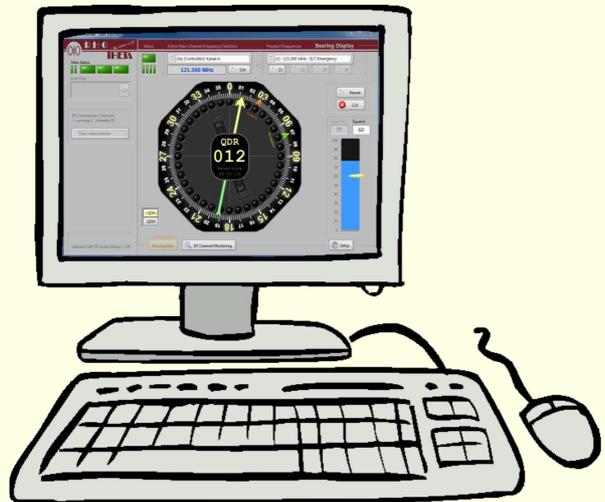
Two remote control sites using RHOTHETA PC application software "DF Commander"

3.5.2 Monitor Async Function

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

> **A**
> 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