Installation and Configuration Manual



Wideband Precision Direction Finder RHOTHETA Elektronik GmbH



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 Antenna Installation Considerations

1.1 General Information

For static bearing applications like e.g. VTS (vessel traffic service), a high bearing accuracy is demanded, with small tolerable bearing errors. For this purpose the antenna unit possibly has to be calibrated in order to compensate minor unbalances in rotation, but especially the antenna position at the installation site has to be chosen properly for bearing purposes.

In case of perturbing site conditions resp. restrictions caused by the building or the environment, the bearing accuracy might be disturbed. This physical effect generally is valid for all bearing systems.

1.2 Installation Recommendation

The quality of the bearing results depends largely on the position of the antenna. So, an antenna position has to be found, where the transmitter's wavefield can reach the bearing antenna as undisturbed as possible.

In order to obtain very good bearing results, no metallic resp. RF-conducting obstacles may be around the antenna unit (in an angle of \pm 45° towards the horizontal). The only exception is a correctly installed Lightning Protection Rod, optional available by RHOTHETA.



Fig. 1 Antenna Mounting

Objects being in the "restricted area" will disturb the arriving wave field. Reflections will arise which might decrease bearing accuracy.

1.3 Line of Sight and Fresnel Zone

There must be a direct line of sight between the transmitter (ship) and the antenna unit. Furthermore the Fresnel Zone (http://en.wikipedia.org/wiki/Fresnel_zone) must be free of any obstacles.



Fig. 2 Line of Sight and Fresnel Zone

In case of obstacles within the Fresnel zone, the direct RF-signal will be weakened and possibly reflections will be more noticeable.

1.4 Reduced Bearing Accuracy Caused by Reflections

Big natural reflectors in the antenna unit's surrounding are especially critical! (e. g. mountains in the back-side of the antenna, sharp rocky coasts or forests) Especially if the directly arriving wave field is very weak due to a remote transmitter, high mountains can cause reflections by receiving the signal better (due to their height) and therefore also causing stronger reflections.



Fig. 3 Illustration of Reflections at fixed locations

1.5 Lightning Protection

When installing the RT-800 (AU) at fixed coastal locations, precautions must be taken regarding lightning protection.

For this reason RHOTHETA Elektronik GmbH offers an optional Lightning Protection Rod (LPR).

The Lightning Protection Rod for precision direction finders is designed to protect direction finders from RHOTHETA against the effects of direct lightning strokes into a direction finder system.

Normal lightning protection rods are simple metallic structures which have a large influence on the direction finding accuracy of a direction finder due to reflecting radio waves, so as any other metallic structure in proximity of the direction finder. The practical limits are in contradiction to the requirements of an efficient lightning protection system.

The RHOTHETA Lightning Protection Rod uses special technologies to reduce those reflections. This reduces the effects of the protection rod to an acceptable level, but will not completely avoid any influence.

For detailed advice on mounting the Lightning Protection Rod please refer to the Installation Manual of Lightning Protection Rod!

1.6 North Alignment

Bearing values of RT-800 are always displayed and output *relatively* to the north marking of the antenna unit.

This implies that the north marking must be aligned to North in order to display absolute, north related values!



Fig. 4 North Marking of Antenna Unit

1.7 Antenna Connection

For details about the connection between the RT-800 DCU and Antenna Unit please look at page 13 (Chapter 2.2.1 Antenna Unit Port (Connecting Cable DCU ⇔ AU))!

2 Interfaces

2.1 Overview



Fig. 5 Overview of Interfaces

Pos.	Designation	Meaning	See page
1	Power Supply	Power supply connector with replacable fuse	16
2	IP-Audio Encoder (Channel-1)	Audio Output for DF and ecoder cofiguration	15
3	Remote Control Channel-1	Ethernet ports for remote control (NMEA / Ethernet) and IP-Audio (AUDIO / Ethernet)	15
4 Devices		Connector ports for AU (antenna unit) and optional GPS-connector for the option "UTC Time Base"; fuse for AU / GPS power supply	13
5	Slave DCU	Ethernet connector for factory use only	
6	Service & Maintenance Ports for optional connections, SW-Update and local NMEA-Output		17
7Option: "2 nd Channel R7Remote Control (Channel-2)Option: "2 nd Channel Rand IP-Audio (AUDIO)		Option: "2 nd Channel Remote Control" Ethernet ports for remote control (NMEA / Ethernet) and IP-Audio (AUDIO / Ethernet)	
8	IP-Audio Encoder (Channel 2)	Option: "2 nd Channel Remote Control" Audio Output for DF and ecoder cofiguration	

2.2 Device Ports

2.2.1 Antenna Unit Port (Connecting Cable DCU ⇔ AU)



Contact / Pin Signal		9876		
3	+24 V			
8	· 24 V DC	Output nouver oupply to Antonno Linit		
5	CND	Output power supply to Antenna Onit		
9	GND			
1	RS485 A	Serial data connection DCU ⇔ AU		
6	RS485 B	(9600 Baud / semi-duplex / receive and transmit)		
2	NF	Input audio signal resp. analog Test/Service		

Connecting cable DCU ⇔ AU



2.2.2 GPS / RS422 Port

This optional (Build-To-Order Option) input is used to connect an external GPS-device to set the internal system clock. This is required for syncronisation of the bearing values if several direction finders are connected together by a command and control center.



Contact / Pin

Pin	Signal
	Orginar

6	RS422 Rx / A	hand of earliel ODD date with DO 400 laws	
1	RS422 Rx / B	Input of serial GPS data with KS422 level	
5	GND	Output power supply for external GPS	
9	+24V _{DC}		

2.2.3 Fuse F3



This protection fuse covers the power supply of antenna unit as well as external GPS.

2.3 Remote Control and IP-Audio Encoder Ports



If the option "2nd Remote Control Channel" is used, so it has the same connectors as the Channel-1

2.4 Power Supply



115-230 V / 1.0-0.5 A / 50-60 Hz Power Fuse F1/F2 IEC60127 / T5A / 250V 5x20mm / slow

Item / Pin Ma

Marking

1	N (Neutral)	IEC 60320 / C14 inlet for use of power cords with IEC 60320	
2	PE (protective earth)	/ C13 plugs.	
3	L (Line)	115-230 Volts / 1.0 – 0.5 Ampere / 50 – 60 Hz	
4	Built-In Fuse (replacable)	Embedded replaceable Fuse of type IEC 60127 / T5A / 250V / 5x20mm / slow	

2.5 Service & Maintenance Ports

2.5.1 Power Supply and Optional Connections



Contact / Pin

Signal

15	+12 V to +30 VDC	No connections required (internally connected)!		
8	GND (Ground)			
7	Permanent Operation	No connections required (internally connected)!		
14	PTT / SBS	Optional input in order to suppress self bearing. When connecting input		
6	GND	PTT/SBS (Self Bearing Suspression) to Ground, self bearing is suppressed		
12	Squelch Out	Optional output for audio connection. When receiving a signal this pin is connected to ground by the means of an Open Collector output.		
4	GND			
1		Optional alarm contact (mechanical relay as NOC, Normal Open Contact)		
9	Alarm Relay	max. 1 A at 30 V_{DC} resp. max. 0.3 A at 125 V_{AC}		
3	Speaker +	No Connection required, because this ports are – connected to the internal speaker!		
11	Speaker -			
13	Audio Line Out	Connection not recommended, because this port is		
5	GND	Audio output (connected to ground with fixed level. Adjustable in menu, from 200 mV _{SS} at 10% to max. 2 V _{SS} at 99%		

2.5.2 NMEA Bus (RS 232)

This is an additional NMEA interface of the DCU. It is recommended to use it only for local tests, because commands sent to the DCU may be interfere with commands sent through NMEA - Ethernet interface!



Contact / Pin	Signal	9876 910 11 12 13 14 15		
2	RS232 Tx	Output of serial data with RS232 level		
3	RS232 Rx	Input of serial data with RS232 level		
5	GND	GND level for RS232 connection		

2.5.3 Test / Program

Port for service or test operation (Software and new firmware upload).



Contact / Pin	Signal	9 8 7 6 9 10 11 12 13 14 15		
2	RS232 Tx	Output serial data with RS232 level		
3	RS232 Rx	Input serial data with RS232 level		
5	GND	GND level for RS232 connection		

3 Configuration

3.1 Configuration Considerations of "Menu – Setup"

Within this manual there are described only a couple of the internal settings of "Menu – Setup" which are related to remote conrol and IP Audio.

For description of the other settings please refer to "Operating and Installation Manual Part I"!

3.1.1 Menu Interface

Menu Interface contains settings related to remote control using NMEA-Sentences.

3.1.1.1 NMEA Talk-Mode

There are basically two operation modes for getting standard bearing data from the RT-800.



Fig. 7 NMEA-Talkmode Settings

- 1. On Request: The RT-800 sends the data only on request.
- 2. Autotalk: The RT-800 sends out the standard bearing data cyclically

Which mode to choose depends on the user supplied software controlling the RT-800!

3.1.1.2 NMEA Internal Baudrate

Internally the control panel of the RT-800 (display with buttons) is connected to a serial-toethernet converter by a serial line.

This implies that the **same** serial configurations must be used in both, the control panel and the serial-to-ethernet converter. Configuration of serial-to-ethernet converter is described on page 23 in chapter 3.2 Configuration of Remote Control over IP!

Standard configuration is: 4800Baud / 8 databits / 1 stopbit / no parity / no flow control

> It is strictly not recommended to change this values



Fig. 8 NMEA-Baudrate Settings

3.1.2 Menu System

3.1.2.1 Audio Line Output

RT-800 control panel audio output consists of two parts:

- 1. The first audio output is connected directly to the internal speaker and its volume can be controlled by the "Volume"-Dialogue of the control panel.
- 2. The second audio output is connected to the input of the IP Audio converter. With the "Audio Line Output"-Setting of control panels "System Menu" the level of this audio signal can be adjusted from 200 mV_{SS} at 10% to max. 2 V_{SS} at 99%.



Fig. 9 System – Audio Line Output Setting

3.1.2.2 Antenna Offset

If a fixed bearing offset is present after mechanical installation of the RT-800 AU (i.e. Antenna Unit is not exactly aligned with North), this offset could be compensated using the "Antenna Offset" setting of control panel's "Menu System".

An offset of 0 – 359° can be entered, what means if you need to correct -5°, you enter 355°!

Fig. 10 System – Antenna Offset Settings

3.2 Configuration of Remote Control over IP

See also >> Example of complete Network Scenario (page 31)

3.2.1 Introduction / Concept

The RT-800 Display Control Unit is already prepared to be connected via the NMEA/Ethernet connector to an IP-based Ethernet LAN, making it possible to access the direction finder located anywhere on a local LAN, or the Internet.

For this, the RT-800 Display Control Unit contains an industrial device server (MOXA NPort 5150) which is internally connected to serial line signals.

Fig. 11 Remote Control LAN connector

The MOXA NPort 5150 device supports several operation modes (TCP, UDP, Pair connection...) and some configurations have to be done in any case by the user for proper operation at custom specific IT environment conditions.

For additional detailed informations, see also <u>www.moxa.com</u> > support > NPort 5150.

The next chapters describe the exact configuration for best performance of this MOXA device using a standard web console.

3.2.2 IP Network settings & Web Console connection to configure the device

To access the direction finder from remote, it is common to use static IP & Port addresses. For this the MOXA device itselve 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 identified by its MAC address to a fixed/static IP address.

- > the RT-800 is preconfigured after delivery to **DHCP mode**
- ➢ if <u>NO DHCP</u> server is available, the initial RT-800 IP address = <u>192.168.127.254</u>

A standard Web Browser/Console is the most user-friendly method available to configure the MOXA NPort 5150 and thus the RT-800 network connectivity . You can use as example Google Chrome or the Microsoft Internet Explorer.

- Connect the RT-800 NMEA/Ethernet port to your local LAN network.
- If a DHCP server is available in your network, the RT-800 will get an initial IP address depending on your DHCP router settings. You can use an IP scanner or just look at your router configuration console or as example windows DHCP server at the new clients table to see the actual RT-800/MOXA IP address.
 - Name of the RT-800/MOXA device = "np5150_ ..."
 - Manufacturer ID = "MOXA"
- If NO DHCP server is available, the RT-800 will use the factory default IP address 192.168.127.254. In this case you have to configure the laptop/computer you use for

this configuration also temporary to a static IP address of the same subnet 192.168.127.xxx

Network configuration:

 Start a standard web browser console and input the actual detected IP address of the RT-800 / MOXA device.

	v	 ✓ Ø NPort Web Console × ↑ ★ © ↑ O X a. C O M 	
🔄 Main Menu	Network Settings		
Overview Basic Settings Network Settings	IP address	192.168.77.230	
 Serial Settings Operating Settings 	Gateway	192.168.77.1	
Accessible IP Settings Auto Warning Settings Monitor	IP configuration C		
Change Password Load Factory Default	DNS server 2	SNMP Setting	
Save/Restart	SNMP Community name	Enable Disable public	
	Contact Location		
	Í	IP Address report	
	Auto report to IP		
	Auto report to UDP port	4002	
	Auto report period	10 seconds	
		Submit	

Actual IP address. Changed/configured only when not working with DHCP.

Gateway information of local network is always necessary if the remote control is done from another network. When DHCP mode is active and available, the gateway values are normally automatically filled. Setting for DHCP or static mode possible. Depends on your network configuration.

MAC address info:

Basic Infos:

(A http://192.168.77.	230/ D = 🗟 C	X A NPort Web Console X	- • • × ×	
	MOXA	www.m	oxa.com		
k	Main Menu Overview Basic Settings	Basic Setting Server name	NP5150_2604 Settings		Name of RT-800 / MOXA
	Serial Settings Operating Settings Accessible IP Settings	Web console Telnet console Reset button protect	 Enable Oisable Enable Oisable No O Yes 		device.
	Auto Warning Settings Monitor Change Password Load Factory Default Save/Restart		Submit		

Internal serial Settings

Operating (TCPIP) settings:

← → Ø http://192.168.77.	230/ 🔎 🗝 🕅	→ C → C → C → C → C → C → C → C → C → C	S
MOX/	vww.n	noxa.com	C(C(
Main Menu Overview Basic Settings Network Settings Operating Settings Accessible IP Settings Monitor Change Password Load Factory Default Save/Restart	Operating Settings Operation mode TCP alive check time Inactivity time Max connection Ignore jammed IP Allow driver control Packing length Delimiter 1 Delimiter 2 Delimiter process Force transmit	Port 1 TCP Server Mode 5 (0 - 99 min) 0 (0 - 65535 ms) 4 ▼ No @ Yes ● No @ Yes ● No @ Yes ● Data Packing 0 (0 - 1024) a (Hex) ♥ Enable 0 (Hex) ● Enable 0 Nothing ▼ (Processed only when Packing length is 0) 0 (0 - 65535 ms)	V N p; U si c
	Local TCP port	TCP Server Mode	Т
	Command port	966	p
		Submit	ļ

Strictly recommended configuration for a TCPIP connection. With this settings, each RT-800 NMEA output sentence will be packed in one Ethernet package. Up to 4 independent simultaneous active TCPIP connections are possible.

TCP Port for RT-800 NMEA protocol data

3.3 Configuration of Audio over IP (streaming into LAN)

See also >> Example of complete Network Scenario (page 31)

3.3.1 Introduction / Concept

The RT-800 Display Control Unit is already prepared to be connected via the AUDIO/Ethernet connector, for streaming the audio signal to the Ethernet LAN (voice over IP).

For this, the RT-800 Display Control Unit contains an industrial audio streaming device / live IP audio encoder (BARIX Instreamer).

Fig. 12 Audio streaming to LAN connector

This BARIX Intreamer device supports a lot of streaming modes also for custom specific conditions. The device is already pre-configured for two simultaneous streaming modes.

 BRTP: Barix extended protocol. The use of this mode is strictly recommended. It offers very fast reaction time even for short voice communication audio signals on VTS/ATC applications.

This protocol can only be used, if at the remote control site a BARIX Exstreamer is used. This optional additional small device is described at the next chapter.

• HTTP as Internet Radio. This stream can be decoded as example directly from the remote application with a VLC player. Because it uses larger streaming buffers, the delay times can increase up to a few seconds, which is mostly unwanted for short signals.

For additional detailed informations, see also <u>www.barix.com</u> (Instreamer, Exstreamer)

3.3.2 IP Network settings & Web Console connection to configure the device

To access the direction finder audio from remote, it is common to use static IP & Port addresses. For this the Barix device itselve 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 audio identified by its MAC address to a fixed/static IP address.

- > the RT-800 Audio/Barix device is preconfigured after delivery to DHCP mode
- if <u>NO DHCP</u> server is available and no static IP mode is configured, it can take up to 4 minutes before the IP address will be announced over rthe speakwer.

The actual RT-800 audio IP address will be announced after Power On of the RT-800 over the headphone connector near the Audio/LAN connector on the back side.

A standard Web Browser/Console is the most user-friendly method available to configure the Barix Instreamer audio device. You can use as example Google Chrome or the Microsoft Internet Explorer.

• Connect the RT-800 NMEA/Ethernet port to your local LAN network.

Network configuration:

 Start a standard web browser console and input the actual detected/static IP address of the RT-800 Audio Barix device.
 At the example shown here, the IP address is assigned by a DHCP server to

At the example shown here, the IP address is assigned by a DHCP server to 192.168.77.232

Actual MAC address for information

Select > Configuration and then > Advanced Settings

http://192.168.77.23	2/	・ 🖓 🖒 🖉 🖉 🖉 Barix Ins	treamer Instreamer 🛛 🕹	↑ ★ 章
HOME CONFIGURATION	STATUS DEFAULTS UP	PDATE REBOOT	Instreamer MAC:	: 00:08:E1:03:6B:7F FW V04.03
STREAMER				BARIX
				THE VOICE OF SIMPOUT Y
sic Settings	NETWORK SETTINGS		Help	
Network	Use SonicIP®	Yes No	NETWORK SETTING	GS
Audio	IP Address	0.0.0	0 Use SeniclD [®]	
Streaming	Netmask	255 , 255 , 255 ,	0 If set to "yes", the de	wice will announce its IP
I/O & Serial Control & SNMP	Gateway IP Address	192 . 168 . 77	Default: "yes"	E
Security	Primary DNS	0 0 0	0 IP Address	
hu Cancal	Alternative DNS	0 0 0	0 Enter the 4 values of address e.g.:	the desired device IP
Calicer	DHCP Host Name		"0.0.0.0" for automat IPzator, AutoIP)	ic discovery (DHCP/Bootp,
	Web Server Port	0	"192.168.0.12" for an Default: "0.0.0.0"	internal LAN
	Turne of Convice/DCCD	0	Notmask	
	Type of Service/DSCP	U	Enter the 4 values of	the desired Static IP e.g.:
			the used IP Address.	i vetmask depending on
			"255.255.255.0" for a Default: "255.255.25	5.0"
			Gateway IP Addres	is
			Enter the 4 values of address e.g.:	the desired Gateway IP
			"0.0.0.0" for no Gate "192 168 0 1" for a G	way sateway in a LAN
			Note: The Gateway I	has to be set only when
			(through a router).	ievices over the vvAN
	•		Default: "0.0.0.0"	

"0.0.0.0" for automatic DHCP mode

or any valid static IP address

Valid Gateway address if routing/streaming to other devices outside the local network.

Audio configuration:

€ → III http://192.168.77.232/) → 🗟 Ĉ × 🔢 Barix Instreamer Instreamer 🛛 ×	
HOME CONFIGURATION STATUS DEFAULTS UPDATE REBOO	Instreamer 1	MAC: 00:08:E1:03:88:8E FW V04:02 B A R X
Basic Settings AUXIO SETTINGS Advanced Settings Input Source Audio Audio Format Audio Audio Format Streaming MPEG bitrate mode ND & Serail MPEG Encoding quality Control & SNMP ADVANCED ENCODER SETTINGS Security ADVANCED ENCODER SETTINGS Apply Cancel AD amplifier gain 3 dependent	Help AUDIO SETTINGS SkHz These settings define the Input source Choose the desired input. the other settings are ster The options available dep The Exstreamer 500 and f Digital circuity, which say selection provides a bett AUD gain is fixed and can Defaut setting is "Line st	e audo parameters. t source. Line mono and MC inpu ereco. Experience in the HW according to the Exstreamer 1000 have external, apport input speeds of 32 and 48k terrorit.

Streaming configuration:

	32/ ク・ E C × B Bank Instreamer Instreamer	×	recommended settings
INSTREAMER		BARIX	oottingo
Basic Settings Advanced Settings Network Audio Streaming UO & Senal Control & SMMP Security Apply Cancel	STREAMING SETTINGS Streaming Mode Buffer Underrun Mode (TCP) Stream Packet Strategy UOP Tx Source Port 0 SHOUTCAST/ICECAST SETTINGS Own Name Instreamer Radio Path icy-genre Shoutcast stream public * STREAMING DESTINATIONS # Conn. type Part Q Intermet Radio * 0 1 1 1 1 1 1 1 1 1 1 1 1	Help STEEAMING SETTINGS These settings adjust the streaming mode, streaming para adjust the streaming mode, streaming para adjust the streaming mode, streaming para adjust the stream depending on the state of the C send on I/O' (only variable on devices with CPI) the devic stream audio depending upon the state of the norminated G and on Level will stream the incoming audio signal is a ringer level For send on CTS, work of the the community of the the comparation of the stream of the streaming before the stream of the stream of the streaming para for send on CTS, work on I/O or send on Level, streaming conductive the stream of the form of the the streaming conductive the streaming mode is 'on Level'. Set to send to between -53 and 0 dB. Default setting is '2-ddB' Perfuger Stream Compare Compare Conductive the amount of time streamed before the actual trigger occurred. This feature is supported with the Streaming mode is 'on level'. Perfuger Stream Design adjuster the adjusted to prevent cut offs when a streamed before the actual trigger occurred. This feature is supported with the Streaming mode is 'on level'. Perfuger Perfuger Default setting is '0' milliseconds. Perfuger Perfuger Design adjuster the adjusted to prevent cut offs when should be sent longer than detected. It defines the amount of time should be sent longer than detected. It defines the amount of the device will continue streaming after the actual trigger h adjust setting is '0' milliseconds. Perfuger Perfuger Designed to prevent cut offs when should be sent longer than detected. It defines the amount of the device will continue streaming after the actual trigger h adjust setting is '10' milliseconds. Perfuger Perfuger Designed to prevent cut offs when should be sent longer than detected. It defines the amount of the device will continue streaming after the actual trigger h adjust setting is '10' milliseconds. Perfuger Perfuger Designed to prevent cut offs when should be sent longer than detected. It defines the amount of the device will contru	Individual port value for BRTP protocol Individual port value for second optional Internet radio (VLC) protocol

3.4 Configuration of Audio Exstreamer (streaming from LAN)

See also >> Example of complete Network Scenario (page 31)

For the remote control site audio generation, this optional additional small stand alone device is the recommended solution and provided by RHOTHETA. This device (Exstreamer) decodes audio streams and play out the received audio signals to amplifiers or speakers. Supporting a large number of protocols, encoding methods and application specific firmware, the products can be used for Broadcast, Internet Radio, as well as VoIP applications.

Fig. 13 BARIX Exstreamer 100

3.4.1 Configuration of Exstreamer at Remote Site

The BARIX Exstreamer device is also configured with any standard web browser/console.

The IP address will be announced after Power On over the headphone connector. This can take up to 4 minutes if no DHCP server is available at the connected LAN network.

HOME COMPAGURATION STATUS	ク・登ぐX 🧭 Barix Streaming C DEFAULTS UPDATE REBOOT Exstreame		The IP address fo this Exstreamer is
Basic Settings Advanced Settings Network Use Sonicl Streaming Audio & Playback Priority Serial & Control Gateway If	SETTINGS p [®] • Yes • No 0 . 0 . 0 . 0 255 . 255 . 255 . 0 P Address 192 . 168 . 77 . 1	Help NETWORK SETTINGS Use SonicIP [®] If set to 'yes", the device will announce its IP address over the audio output. Default: 'yes" ■	preconfigured to DHCP
VO Remote Management Security Apply Cancel ↓ Web Serve HTTP Prox User Agent	IS 0 0 0 0 IDNS 0 0 0 0 Name	IP Addrass Enter the 4 values of the desired device. IP address e.g.: "0.0.0" for automatic discovery (DHCP/Bootp, IP2ator, Aut0P) "192.168.0.12" for an internal LAN Default: "0.0.0" Netmask Enter the 4 values of the desired Static IP e.g.: "0.0.0" for a default Netmask depending on the used IP Address. "255.255.255" offs of a C class network Default: "250" for a C class network Default: "160" for a C dateway IP address e.g.: "0.0.0" for no Cateway "192.168.0.1" for a Gateway in a LAN Note: The Gateway in a LAN	Please input here the Gateway address if the RT-800 is not In this LAN

HOME CONFIGURATION STREAMING CL	3/ status defaults u IENT	,O + IPDATE REBOO	Barix S	treaming Client	× ∩ ★ © 00:00:E1:03:0F:C2 FW VB2.24 B A R I X	*
Basic Settings Advanced Settings Network Streaming Audio & Playback Priority Serial & Control I/O Remote Management Security Apply Cancel	STREAMING SETTINGS 1. URL 2. URL 3. URL Stream Check Period Check Period Limit RTP delay STREAMING OPTIONS USB backup	brtp://192.168.77 1 secon 30 secon 600 ms play complete fi	2324444 ds ds		Hetp STREAMING SETTINGS 1. URL 3. URL Up to three independent audio sources (URLs) can be set. Each may contain a full address of a playlist, file or a stream. The three entries have different priorities, the first one has the lowest priority and the last one has the lowest priority. The Barix Exstreamer processes the sources in a loop and tries to connect to the highest priority source available. Default for 1. URL: "fp://0.0.0.0.4444" Default for 2. URL: "Thitp://www.barix.com/radio.m3u" Default for 3. URL: "playlist.m3u"	
< <u> </u>	Refresh On reconnect play the Playlist fails	1. URL once • same song • if all items fail •	2. URL once • same song • if all items fail •	3. URL once same song if all items fail	URL syntax The general URL syntax is: protocol://user.password@address:port/path. If the protocol is omitted the file:// is assumed. User and password fields are optional and depending on the protocol the port may be specified. Refer to the manual for a full	Ŧ

Please input here the accurate Source IP address of the RT-800 and the used Port.

3.5 Example of complete Network Scenario

At this example a complete network scenario is shown. There is used a public Internet connection with port forwarding.

For professional uses, with as example VPN connection, no port forwarding is necessary because then all devices are working (virtually) in the same network without the use of gateway addresses.

• All IP addresses and port palues are just example values and can be configured.

Fig. 14 Example of complete Network scenario

4 Appendix

4.1 List of abbreviation

Abbreviation	Meaning	Remarks
AU	Antenna Unit	
CP/SS	Cospas-Sarsat	
DCU	Display & Control Unit	
DF	Direction finder	
Deg	Degree (° = 60')	
ELT	Emergency Locator Transmitter	
GND	Ground	
GPS	Global Positoning System	
ID	Identification	
IP	Internet Protocol	
LAN	Local Area Network	
LCD	Liquid Crystal Display	
LED	Light-Emitting Diode	
МОВ	Man-Over-Board	
MSSI	Maritime Mobile Service Identity	Ship's Ident. No.
NF	Audio Frequency	
NMEA (0183)	National Marine Electronics Association	Interface- and data telegram standard
PLB	Personal Locator Beacon	
PS RAM	Averaging Random Access Memory	
PTT/SBS	Push-To-Talk/ Self Bearing Suppression	
RAM	Random Access Memory	
Rx	Receiver	
S/N	Signal to Noise	
SAR	Search And Rescue	
SNR	Signal to Noise-Ratio	
SQL	Squelch	
TFT	Thin Film Transistor (see also LCD)	
Tx	Transmitter	
V	VTS Version	AU-Variant V
VDC	Volts of Direct Current	
VTS	Vessel Traffic Service	