

User Manual

RT-1000 Multichannel Audio Module



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Note

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

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1 General Information

The RT-1000 Multichannel is already prepared to be connected, for streaming the audio signals to the Ethernet LAN (voice over IP).

For this, the RT-1000 Multichannel system requires an optional audio rack. Including an industrial audio streaming devices, a live IP audio encoder (BARIX Instreamer). To use the audio option in the DF Commander software a special Rhotheta firmware is necessary.

1.1 Front View



1.2 Interfaces

Interfaces Audio Rack			
Pos.	Interface	Connector	Description
1	L – Audio – R	RCA	Stereo Input, 4 V _{PP} , 20 Hz – 20 kHz
2	RS-232	DSub 9	9600 Bd, 8N1, DC Power Supply (Pin 4 – 5 V _{DC} , Pin 5 – GND)
3	LAN	RJ45	10/100 Mb/s, Auto Link, Activity LED, Auto IP, DHCP
4	POWER	Micro USB	5 V _{DC} /2W
5	EAR	Kline 3,5 mm	Stereo (Headset)

1.3 Control Elements

Control Elements Audio Rack		
Pos.	Element	Description
1	RESET	Reset verification >10s
2	STATUS	LED Red: Reset, IP Address allocation LED green (Blinking): Data Transmission LED green: Status ready, OK

1.4 Mechanical Dimensions

Dimension	
Parameter	Value
Dimension (B x H x T)	108 x 38 x 78,7 mm

2 Network Configuration

2.1 Introduction / Concept

This BARIX In-Streamer 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 Ex-Streamer 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 information, see also www.barix.com (Instreamer, Exstreamer)

2.2 IP Network settings & Web Console connection to configure the In-Streamer devices

To access the direction finder audio from remote, it is common to use static IP & Port addresses. For this the Audio device itself can be configured to a static IP address.

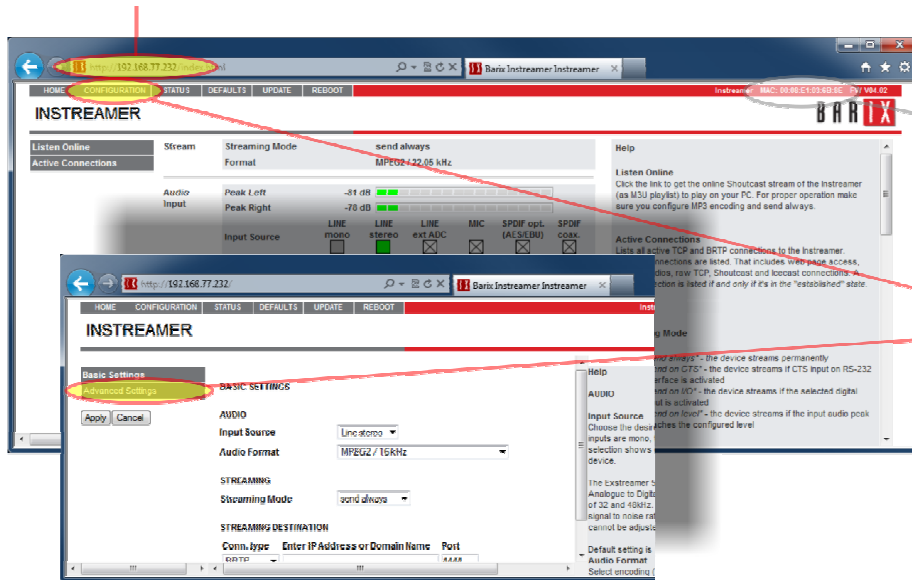
- The RT-1000 Multichannel Audio Rack devices are preconfigured after delivery to **DHCP mode**, or to a fixed IP address in the IP-Address Configuration file.
- If **NO DHCP** server is available and no static IP mode is configured, it can take up to 4 minutes before the IP address will be announced over the speaker.

The actual RT-1000 Multichannel Audio Rack device IP address will be announced after Power On of the Barix In-Streamer over the headphone connector near the status LED on the front side of each audio module.

A standard Web Browser/Console is the most user-friendly method available to configure the audio modules.

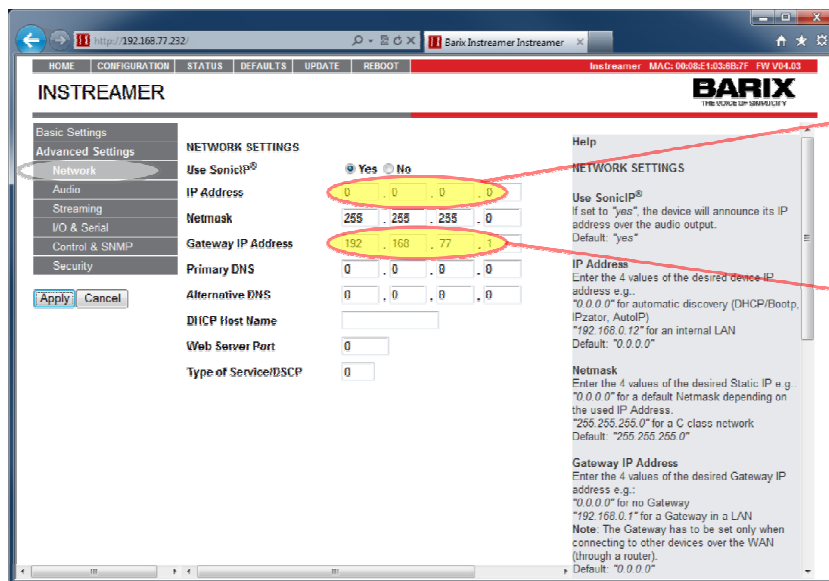
Network configuration:

- Start a standard web browser console and input the actual detected/static IP address of the RT-1000 Audio device.
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"

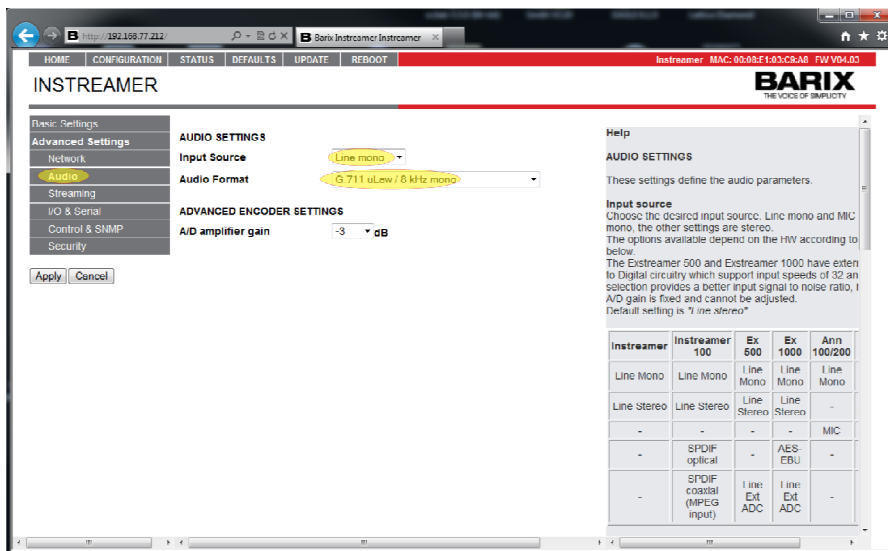


"0.0.0.0" for automatic DHCP mode

or any valid static IP address

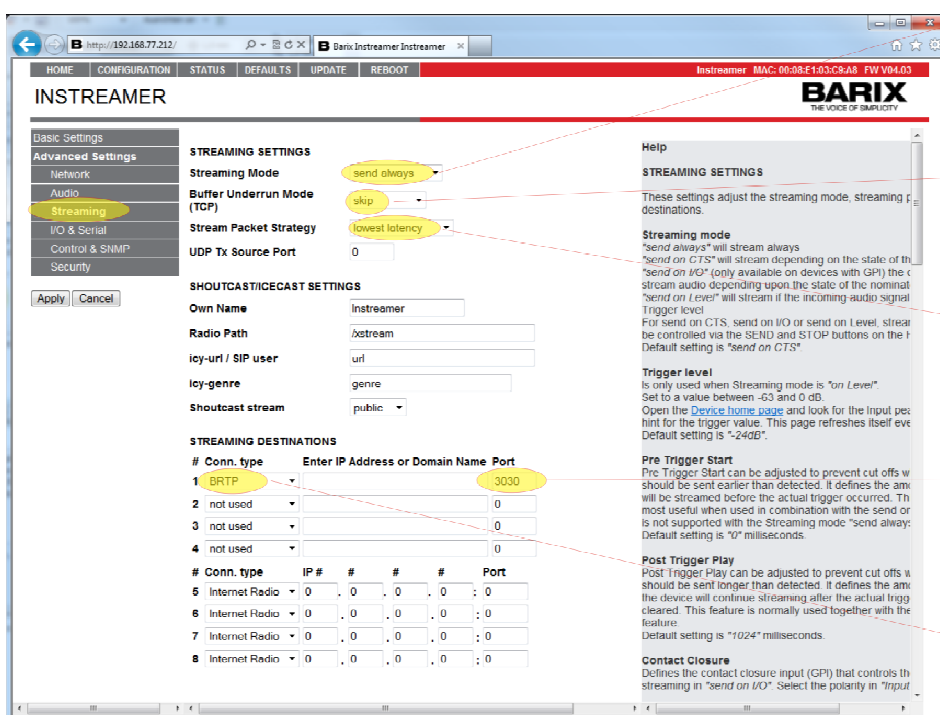
Valid Gateway address if routing/streaming to other devices outside the local network.

Audio configuration:



recommended audio settings

Streaming configuration:



Streaming Mode
"send always"

Buffer Underrun Mode
"skip"

Stream Packet Strategy
"lowest latency"

Conn.type
"BRTMP"

Port
"3030"

I/O & Serial configuration:

The screenshot shows the Barix Instreamer web interface. The left sidebar has a menu with 'I/O & Serial' selected. The main content area is divided into 'IO SETTINGS', 'SERIAL SETTINGS', and 'SERIAL GATEWAY'. The 'IO SETTINGS' section includes 'CTS close command' (set to 'c=91'), 'CTS open command' (set to 'c=84'), and 'SERIAL SETTINGS' (Baud rate: 9600, Data bits: 8, Parity: no, Stop bits: 1, Flow control: none). The 'SERIAL GATEWAY' section includes 'Local port' (12303), 'Destination IP' (0.0.0.0), and 'Destination port' (0). The right sidebar contains a 'Help' section with 'I/O SETTINGS' and 'SERIAL GATEWAY' subsections. Red dashed lines connect the 'CTS close command' field to the 'CTS close command' help text, the 'CTS open command' field to the 'CTS open command' help text, and the 'Local port' field to the 'SERIAL GATEWAY' help text.

Instreamer MAC: 00:08:F1:03:9A:B FW: V04.03

INSTREAMER

Basic Settings
Advanced Settings
Network
Audio
Streaming
I/O & Serial
Control & SNMP
Security

Apply Cancel

IO SETTINGS

CTS close command c=91

CTS open command c=84

SERIAL SETTINGS

Baud rate 9600

Data bits 8

Parity no

Stop bits 1

Flow control none

SERIAL GATEWAY

Local port 12303

Destination IP 0.0.0.0

Destination port 0

Help

I/O SETTINGS

This configures the command issued when the CTS signal on the serial connector is activated.

CTS close command
Configures which command is issued when the CTS signal on the serial connector is activated (see further information below in the command description). Default: "c=91" (activate the sending mode)

CTS open command
Configures which command is issued when the CTS signal on the serial connector is deactivated (see further information below in the command description). Default: "c=84" (deactivate the sending mode)

Commands
Multiple commands can be added using the & character. They will be executed sequentially in the order as they appear in the configuration field.

SENDING MODE
c=84: Deactivates the sending mode. Sets a simulated CTS signal which is or'd with the real CTS. This affects streaming only in the send on I/O mode.
c=91: Activates the sending mode. Sets a simulated CTS signal which is or'd with the real CTS. This affects streaming only in the send on I/O mode.

CTS close command
"c=91"

CTS open command
"c=84"

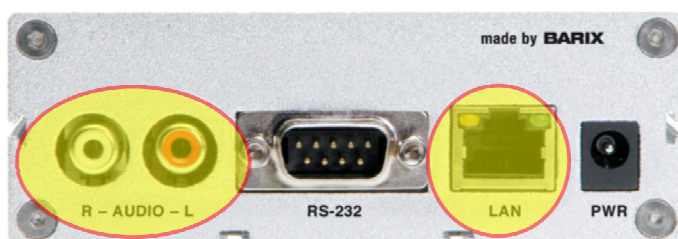
Serial Settings, Serial
Gateway

2.3 IP Network settings & Web Console connection to configure the Ex-Streamer devices

For the remote control site audio generation, this optional additional small standalone device is the recommended solution and provided by RHOTHETA. This device (Ex-Streamer) 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. To use the optional audio mode of the “DF Commander” software a special RHOTHETA firmware for the Ex-Streamer is necessary.



Front side:
Headphone connector



Back side:
Line out for connection
to an amplifier or active
speakers.
LAN connector

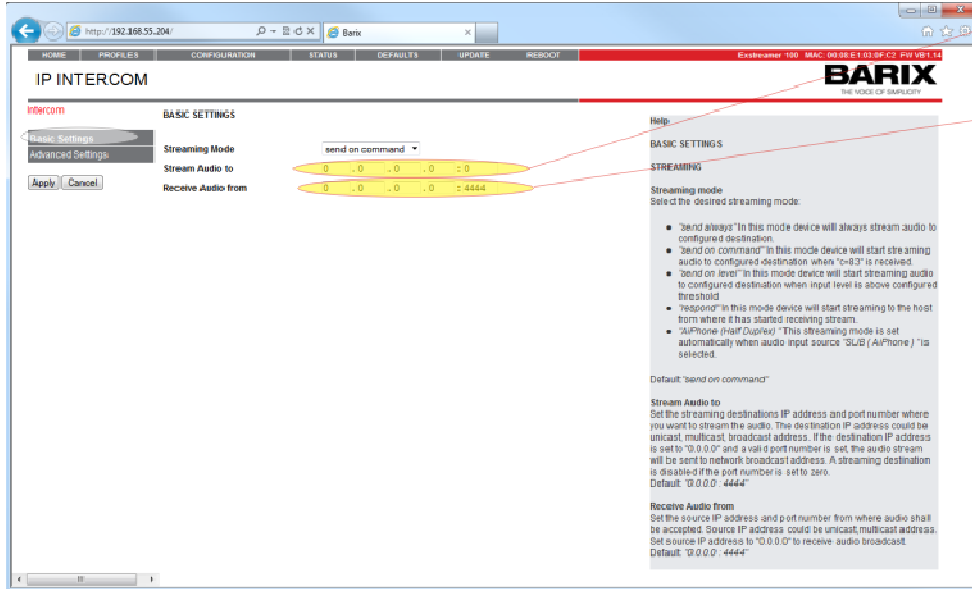
The BARIX Ex-Streamer device is also configured with any standard web browser/console.

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.

You have to “Apply” every setting page.

2.3.1 Settings for Ex-Streamer using RHOTHETA Firmware:

Basic Settings:

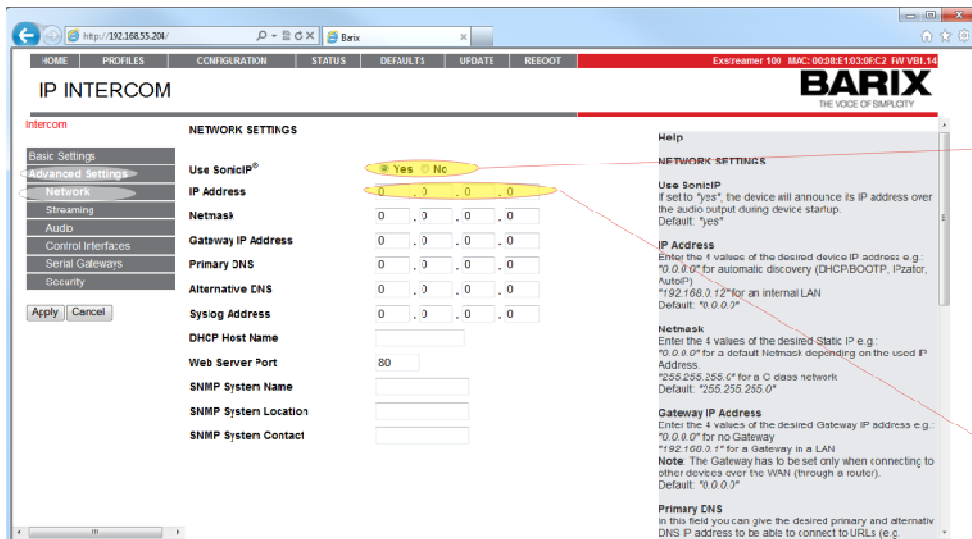


Stream Audio to
"0.0.0.0:0"

Receive Audio from
"0.0.0.0:4444"

For direct
connections In-
Streamer IP address
and port

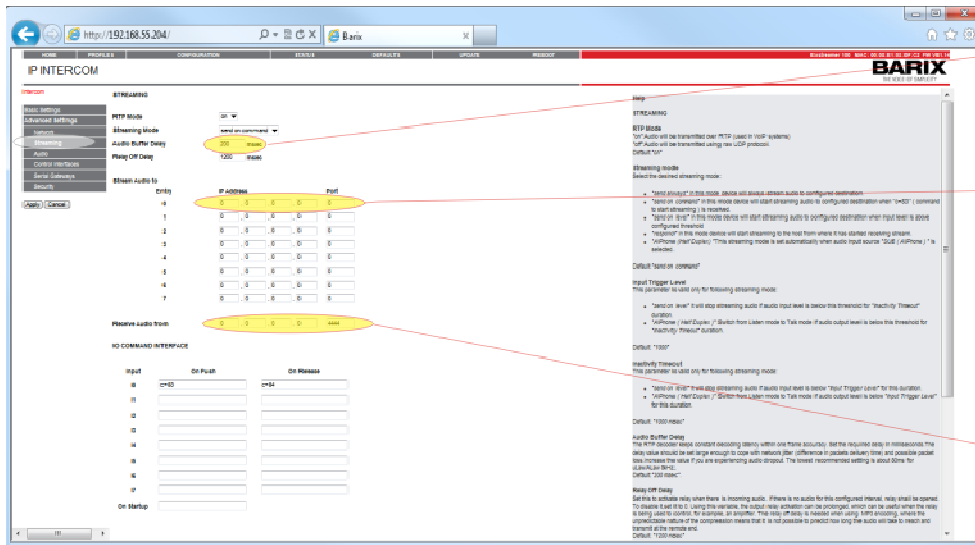
Advanced Settings – Network Settings:



Use Sonic IP
(Radiobutton)
"Yes"

IP-Address
"0.0.0.0"

Advanced Settings – Streaming Settings:

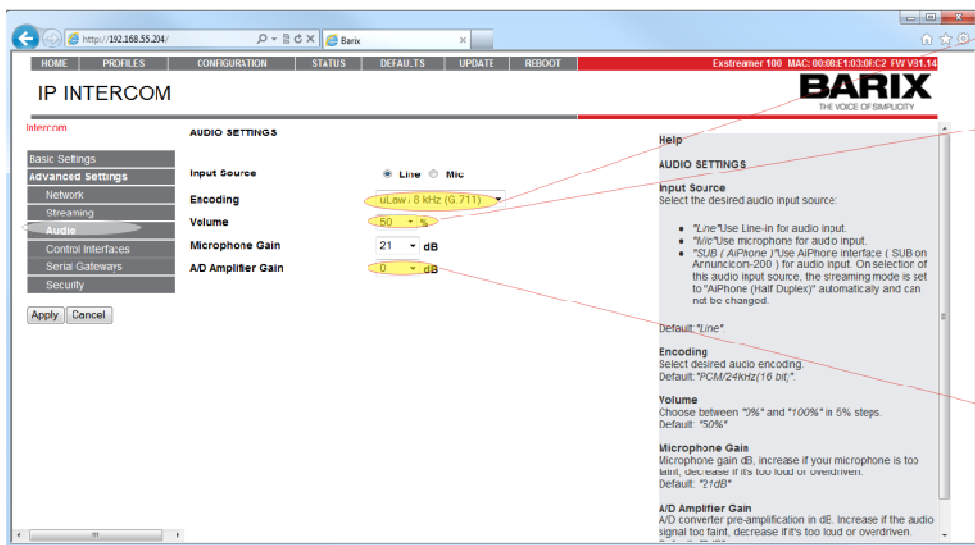


Audio Buffer Delay
"100 msec"

Stream Audio to
"0.0.0.0:0"

Receive Audio from
"0.0.0.0:4444"

Advanced Settings – Audio (Mono):

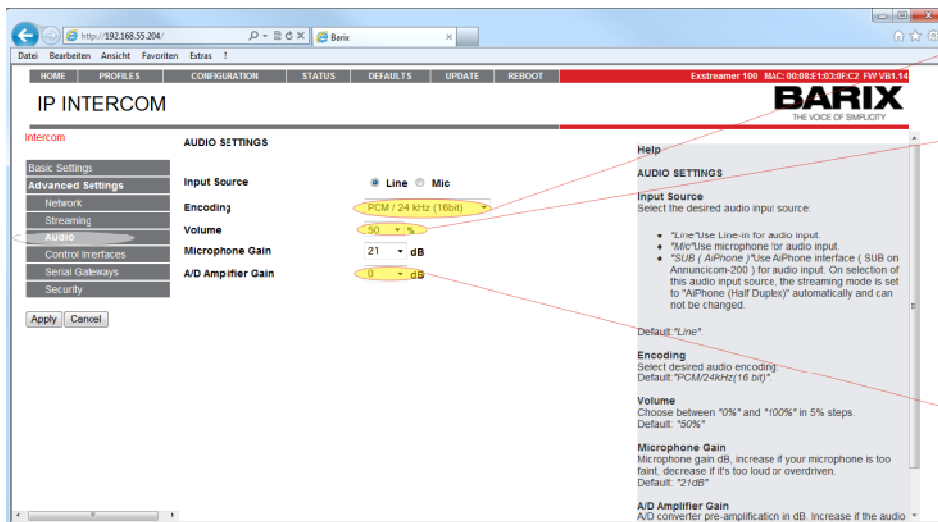


Encoding
"uLaw/8 kHz(G.711)"

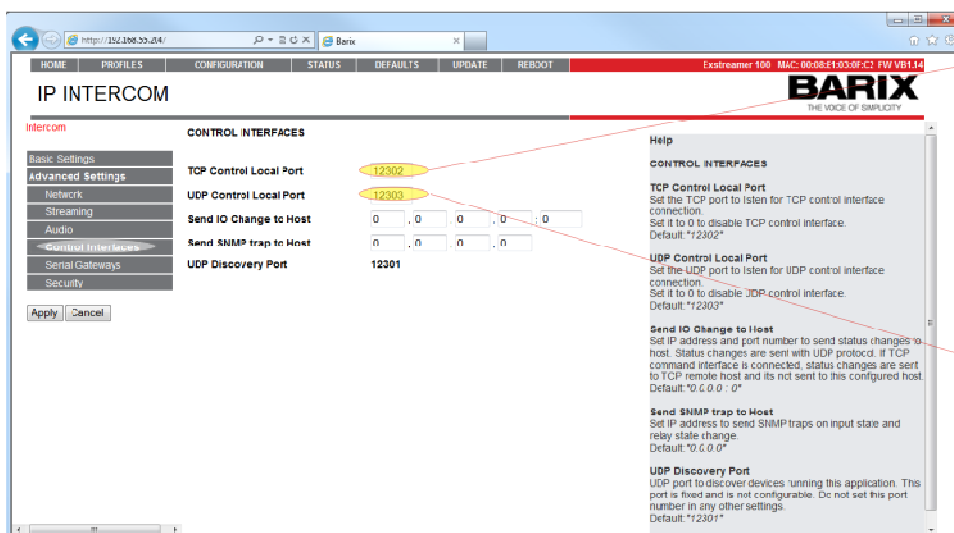
Volume
"50%"

A/D Amplifier Gain
"0" dB

Advanced Settings – Audio (Stereo):



Advanced Settings – Control Interface:



2.3.2 Settings for Ex-Streamer using Standard Firmware

The BARIX Ex-Streamer 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.

You have to “Apply” every Setting page.

The Ex-Streamer will restart after any change; this can take up to 4 minutes.

The screenshot shows the 'STREAMING CLIENT' web interface for the BARIX Ex-Streamer. The 'NETWORK SETTINGS' tab is selected. The 'Use SonicIP' option is set to 'Yes'. The 'IP Address' field is pre-filled with '0.0.0.0'. The 'Gateway IP Address' field is pre-filled with '192.168.77.1'. The 'Netmask' field is pre-filled with '255.255.255.0'. The 'Primary DNS' and 'Alternative DNS' fields are pre-filled with '0.0.0.0'. The 'DHCP Host Name' field is empty. The 'Web Server Port' field is pre-filled with '80'. The 'HTTP Proxy URL' and 'User Agent' fields are empty. The 'Apply' button is visible at the bottom left.

The IP address for this Ex-Streamer is preconfigured to DHCP.

Please input here the Gateway address if the RT-1000 Multichannel is not in the same LAN.

The screenshot shows the 'STREAMING CLIENT' web interface for the BARIX Ex-Streamer. The 'STREAMING SETTINGS' tab is selected. The '1. URL' field is pre-filled with 'http://192.168.77.232:4444'. The '2. URL' and '3. URL' fields are empty. The 'Stream Check Period' is set to '1' seconds. The 'Check Period Limit' is set to '30' seconds. The 'RTP delay' is set to '600' ms. The 'STREAMING OPTIONS' section includes 'USB backup' (set to 'play complete files'), 'Refresh' (set to 'once'), 'On reconnect play the' (set to 'same song'), and 'Playlist fails' (set to 'if all items fail'). The 'Apply' button is visible at the bottom left.

Please input here the accurate source IP address of the RT-1000 Multichannel audio module and the used Port.

3 Notes