

## SET-UP INSTRUCTIONS

How can the **DB9009-TX** be set  
to act as a Streaming Audio Server,  
sending audio to **DB9009-RX** decoder/s  
used as an IP Audio Client



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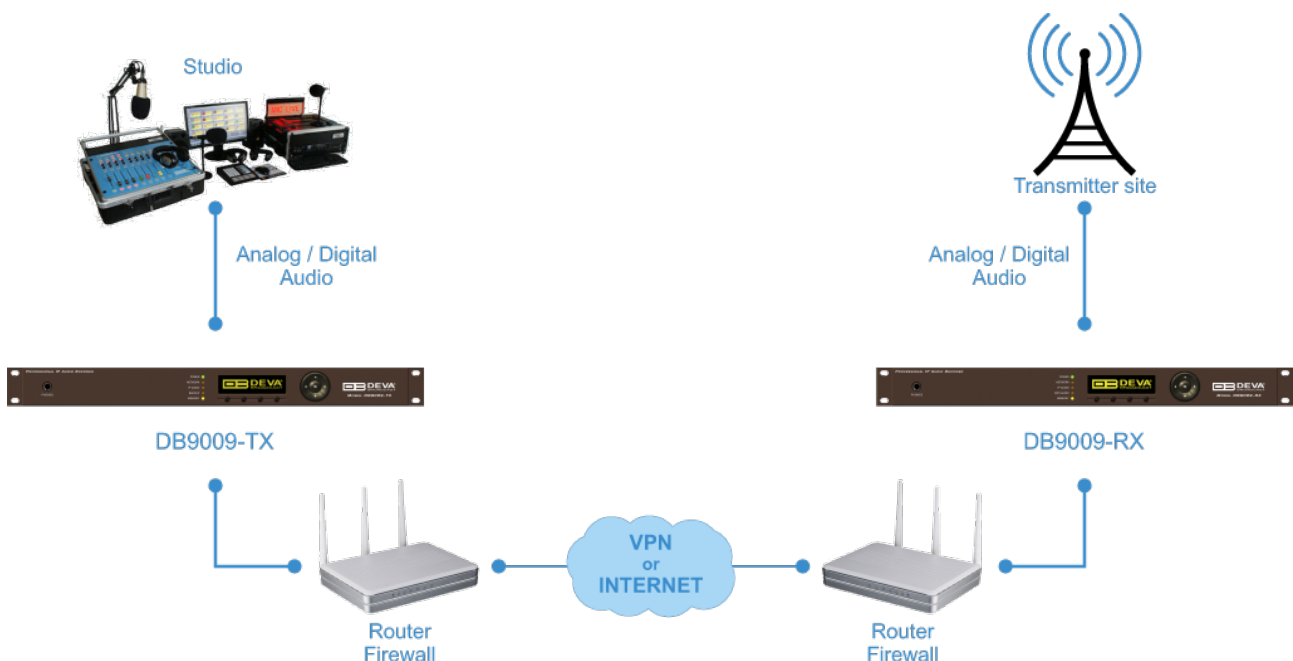
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## General information

The IP Audio encoder and decoder are controlled through a built-in WEB Server and a standard web browser is used to monitor their status or to make some adjustments. To operate the devices you need to know their IP Address. In case you are not aware of the IP Addresses and how to open the WEB interface, please refer to [“Appendix A - DB9009-TX Quick User Guide” on page 11](#) and [“Appendix B - DB9009-RX Quick User Guide” on page 15](#).

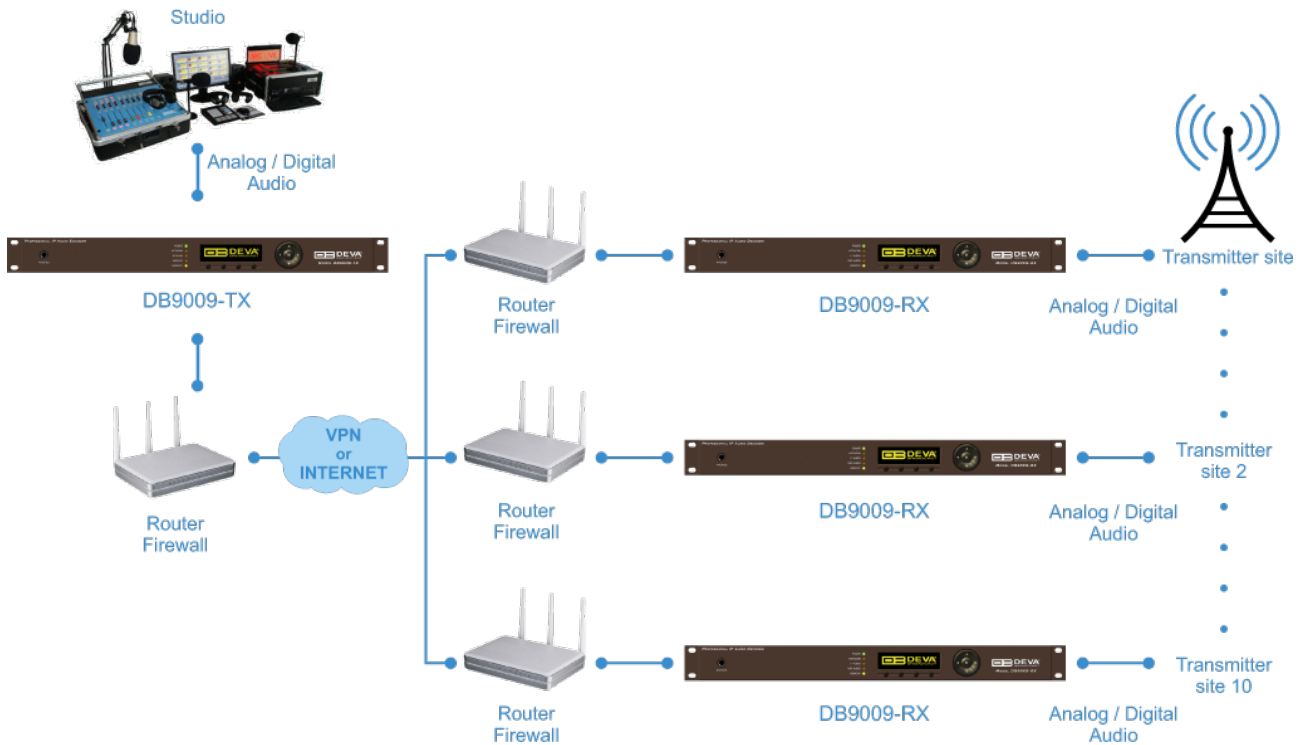
This configuration allows two types of applications:

## POINT-TO-POINT AUDIO TRANSMISSION



## POINT TO MULTI-POINT AUDIO TRANSMISSION

**IMPORTANT NOTE:** One DB9009-TX can send audio to maximum ten DB9009-RXs. However, in order for stable connectivity to be guaranteed, the recommended number of clients is 8.



## DB9009-TX AND DB9009-RX SET-UP

Prior to implementing the below written adjustments, the following requirements should be fulfilled:

- DB900+-TX must have a static IP address;
- If the device is placed behind a router, you will have to make sure that the Stream Server Port is properly NAT forwarded;
- DB9009-RX may have a dynamic IP address;
- DB9009-RX should have access to DB9009-TX over the network (Internet or LAN).

## DB9009-TX STREAMING AUDIO SERVER SET-UP

**DB9009-TX - Professional IP Audio Encoder Configuration** **DB DEVA<sup>®</sup>** BROADCAST

IN: Digital (Main Digital) GPI: ① ② ③ 03 Oct 2023 12:14:09 Uptime: 0d 01:27:01 Session: 02:57 Logout

**Inputs**

Digital: -10.0 0 -10.0  
Analog: -5.0 0 -6.0

**Active connections**

Type	Status	Remote Peer	Codec
IP Audio Server	Streaming	192.168.1.1:58525	PCM
IP Audio Server	Streaming	192.168.1.1:59871	PCM
IP Audio Server	Streaming	192.168.1.1:57345	PCM
IP Audio Server	Streaming	192.168.1.1:62226	PCM
IP Audio Server	Streaming	192.168.1.1:57302	PCM

**Input**

Main: Digital ②  
Backup: Analog  
Digital Gain: 0.0 dB  
Analog Gain: 0.0 dB  
Analog Range: 6 dBu

**Headphones**

Volume: -12.0 dB

**Audio Loss and Recovery**

Loss Th.: -50.0 dB  
Loss Tout: 5 s  
Recover Th.: -50.0 dB  
Recover Tout: 5 s

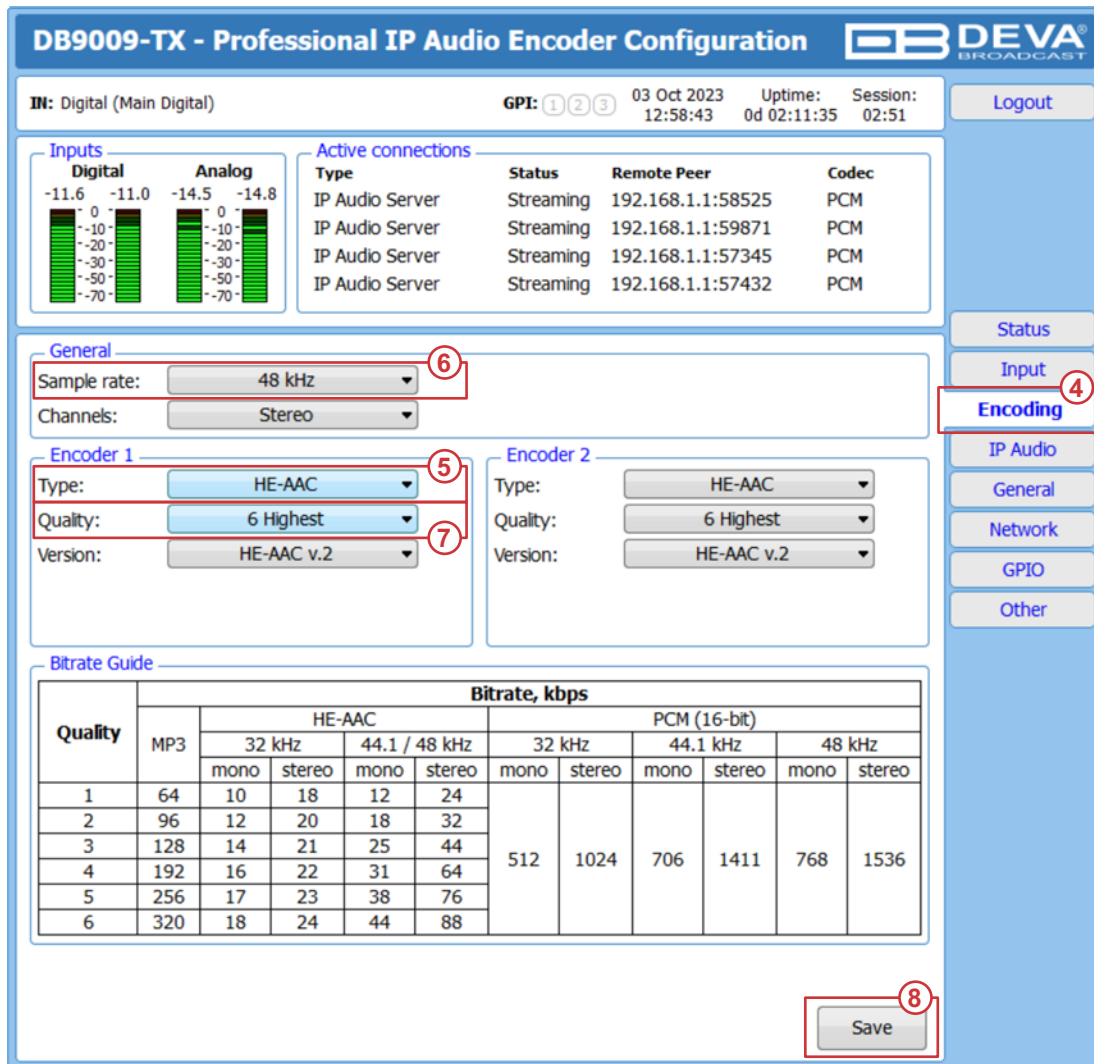
**Settings Menu**

- Status ①
- Input**
- Encoding
- IP Audio
- General
- Network
- GPIO
- Other

**Save** ③

1. Go to **Settings> Input**;
2. Choose the preferred audio **signal input**;
3. Press [Save];

4. Go to **Settings> Encoding**;



**DB9009-TX - Professional IP Audio Encoder Configuration**

IN: Digital (Main Digital) GPI: ① ② ③ 03 Oct 2023 12:58:43 Uptime: 0d 02:11:35 Session: 02:51 Logout

**Inputs**

Digital: -11.6 -11.0 -10 -20 -30 -50 -70

Analog: -14.5 -14.8 -10 -20 -30 -50 -70

**Active connections**

Type	Status	Remote Peer	Codec
IP Audio Server	Streaming	192.168.1.1:58525	PCM
IP Audio Server	Streaming	192.168.1.1:59871	PCM
IP Audio Server	Streaming	192.168.1.1:57345	PCM
IP Audio Server	Streaming	192.168.1.1:57432	PCM

**General**

Sample rate: 48 kHz ⑥

Channels: Stereo

**Encoder 1**

Type: HE-AAC ⑤

Quality: 6 Highest ⑦

Version: HE-AAC v.2

**Encoder 2**

Type: HE-AAC

Quality: 6 Highest

Version: HE-AAC v.2

**Bitrate Guide**

Quality	MP3	Bitrate, kbps									
		HE-AAC				PCM (16-bit)					
		32 kHz		44.1 / 48 kHz		32 kHz		44.1 kHz		48 kHz	
		mono	stereo	mono	stereo	mono	stereo	mono	stereo	mono	stereo
1	64	10	18	12	24	512	1024	706	1411	768	1536
2	96	12	20	18	32						
3	128	14	21	25	44						
4	192	16	22	31	64						
5	256	17	23	38	76						
6	320	18	24	44	88						

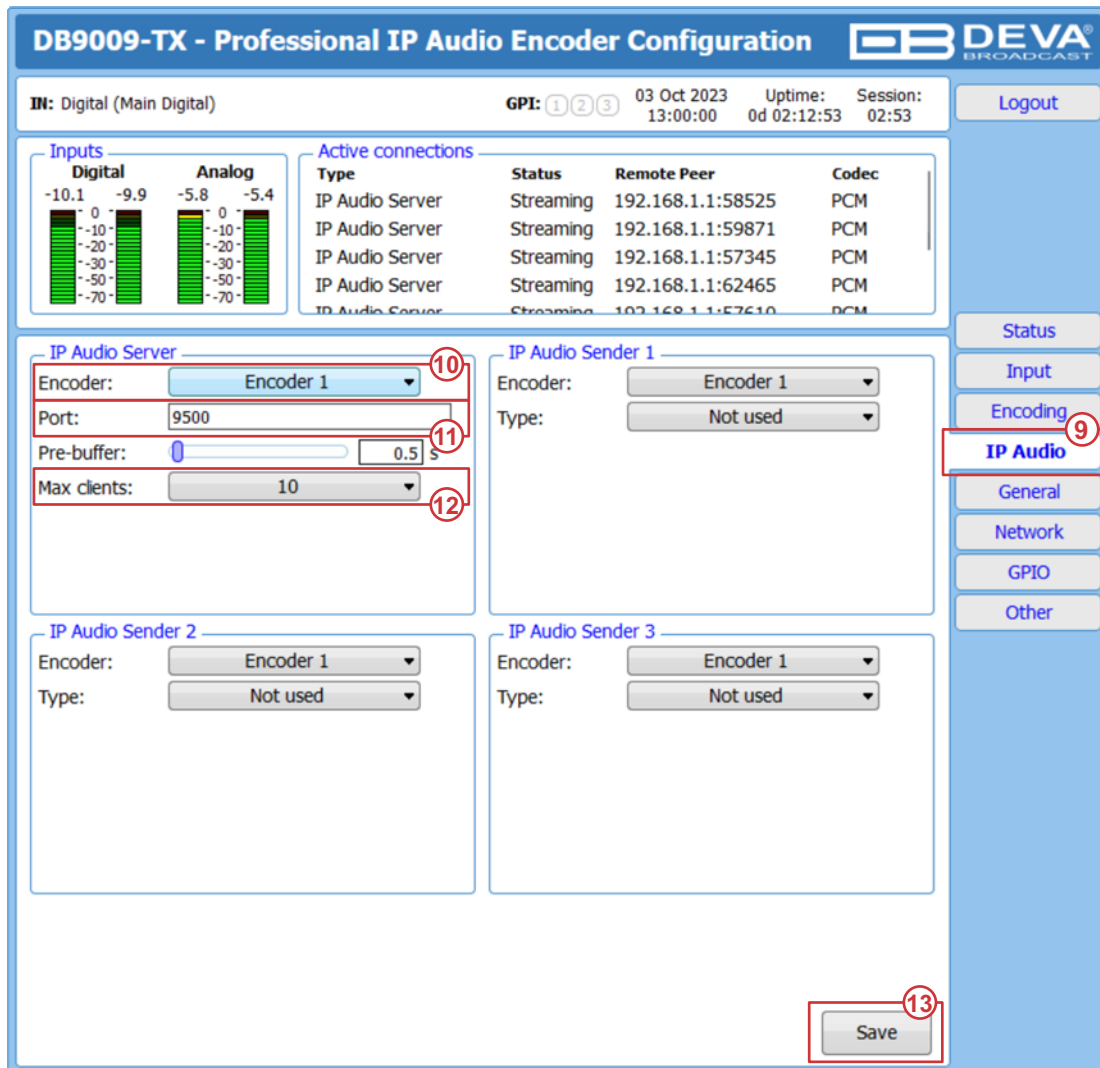
Save ⑧

5. Assign **Encoder type**;
6. Assign **Sample rate**;
7. Assign desired **Signal Quality**.

The combination of these parameters will define the stream bitrate (see **Bitrate Guide** table at the bottom of this screen). The network connection should have enough bandwidth to process all the streams. As a rough estimate, the bandwidth should be at least twice the stream's bitrate, multiplied by the number of simultaneous connections;

8. Press [Save];

9. Go to **Settings> IP Audio**;



**DB9009-TX - Professional IP Audio Encoder Configuration**

IN: Digital (Main Digital)      GPI: ① ② ③      03 Oct 2023      Uptime:      Session:      Logout  
 13:00:00      0d 02:12:53      02:53

**Inputs**

Digital		Analog	
-10.1	-9.9	-5.8	-5.4
0	0	0	0
-10	-10	-10	-10
-20	-20	-20	-20
-30	-30	-30	-30
-50	-50	-50	-50
-70	-70	-70	-70

**Active connections**

Type	Status	Remote Peer	Codec
IP Audio Server	Streaming	192.168.1.1:58525	PCM
IP Audio Server	Streaming	192.168.1.1:59871	PCM
IP Audio Server	Streaming	192.168.1.1:57345	PCM
IP Audio Server	Streaming	192.168.1.1:62465	PCM
IP Audio Server	Streaming	192.168.1.1:57610	PCM

**IP Audio Server**

Encoder: Encoder 1 (10)  
 Port: 9500 (11)  
 Pre-buffer: 0 (0.5 s)  
 Max clients: 10 (12)

**IP Audio Sender 1**

Encoder: Encoder 1  
 Type: Not used

**IP Audio Sender 2**

Encoder: Encoder 1  
 Type: Not used

**IP Audio Sender 3**

Encoder: Encoder 1  
 Type: Not used

Save (13)

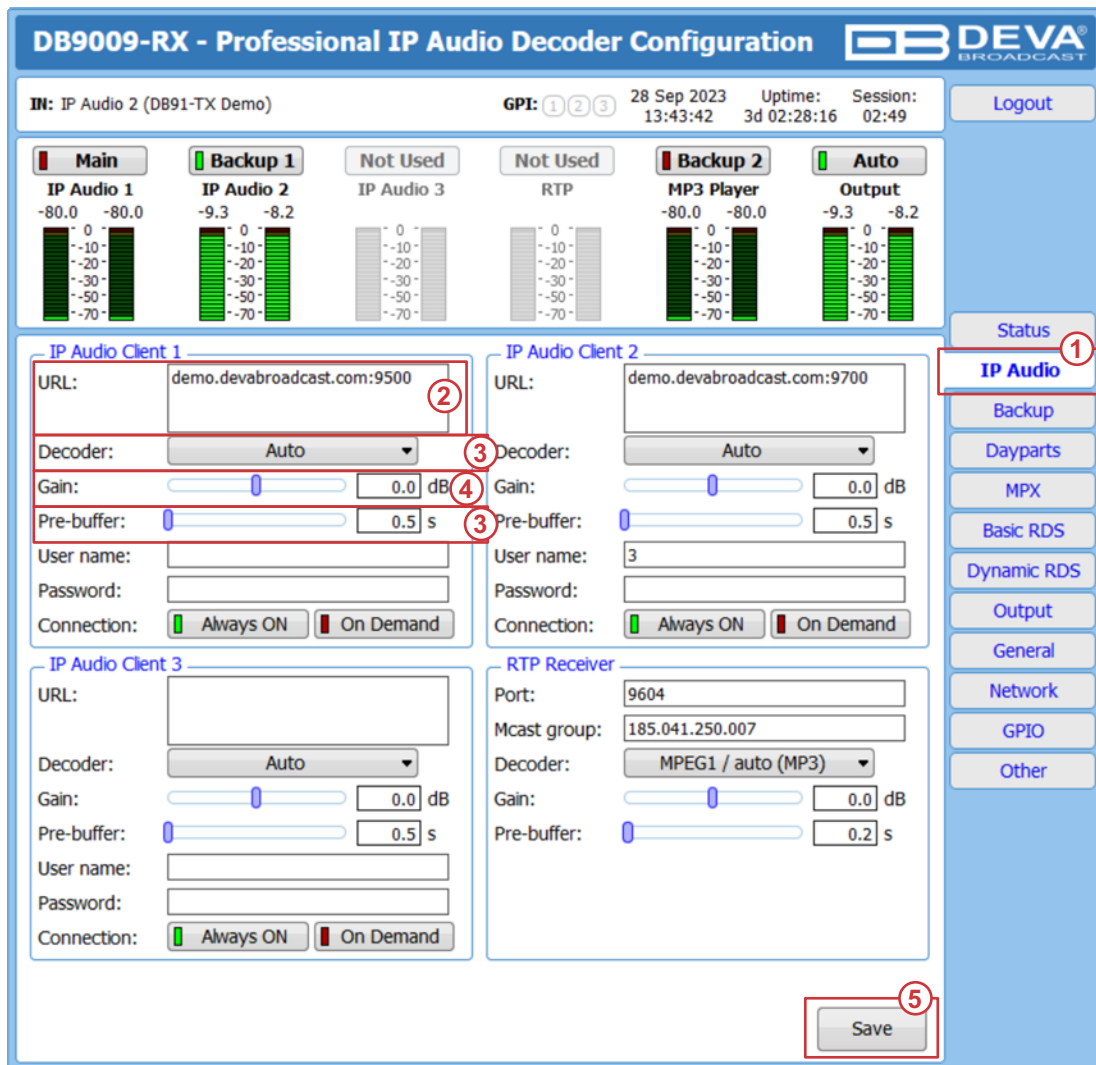
Right sidebar: Status, Input, Encoding (9), IP Audio, General, Network, GPIO, Other

10. Then in **IP Audio Server** section - select **Encoder** from the drop-down menu;
11. Specify **Port** to be used;
12. Specify Maximum supported connections(clients);
13. Press [Save].

For detailed information and instructions on how communication with the DB9009-TX can be established, please refer to [“Appendix A - DB9009-TX Quick User Guide” on page 11](#).



## DB9009-RX IP AUDIO CLIENT SET-UP



**DB9009-RX - Professional IP Audio Decoder Configuration**

III: IP Audio 2 (DB91-TX Demo)    GPI: ① ② ③    28 Sep 2023 13:43:42    Uptime: 3d 02:28:16    Session: 02:49    Logout

**Main**    **Backup 1**    Not Used    Not Used    **Backup 2**    **Auto**

IP Audio 1    IP Audio 2    IP Audio 3    RTP    MP3 Player    Output

URL: demo.devabroadcast.com:9500    URL: demo.devabroadcast.com:9700

Decoder: Auto    Decoder: Auto

Gain: 0.0 dB    Gain: 0.0 dB

Pre-buffer: 0.5 s    Pre-buffer: 0.5 s

User name:    User name: 3

Password:    Password:

Connection: Always ON    Connection: Always ON

IP Audio Client 3    RTP Receiver

URL:    Port: 9604

Decoder: Auto    Mcast group: 185.041.250.007

Gain: 0.0 dB    Decoder: MPEG1 / auto (MP3)

Pre-buffer: 0.5 s    Gain: 0.0 dB

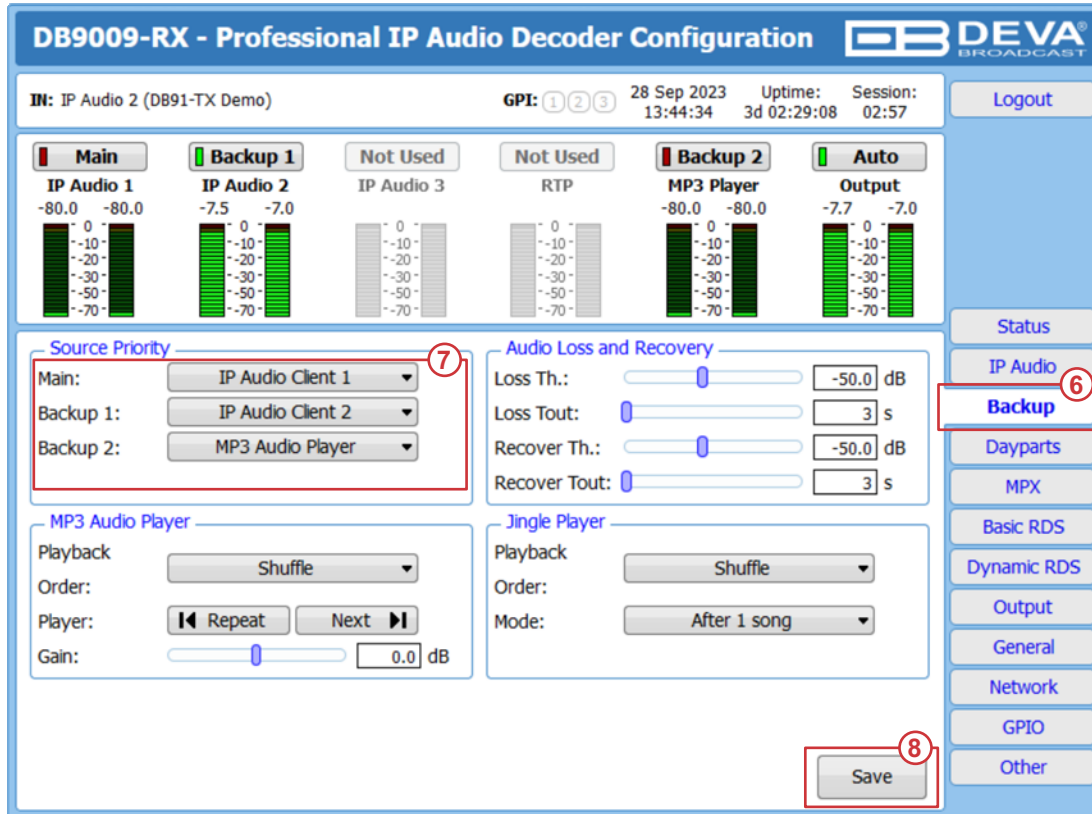
User name:    Pre-buffer: 0.2 s

Password:    Connection: Always ON

Save

1. Go to **Settings> IP Audio**;
2. In **IP Audio Client 1/2 or 3** section – **URL** of the DB9009-TX Server should be specified. The **URL** is a mandatory requisite needed in order for a connection with the server to be established. The **URL** could be compound of DB9009-TX's IP Address and Server Port, ex. 192.168.1.20:5000;
3. Choose the preferred **Decoder** and **Pre-buffer**. The decoder set in the DB9009-RX must match the encoder specified in DB9009-TX;
4. If needed, set new **Gain** adjustment settings;
5. Press [Save];

6. Go to **Settings> Backup**;



The screenshot displays the 'DB9009-RX - Professional IP Audio Decoder Configuration' web interface. At the top, it shows the title and the DEVA BROADCAST logo. Below the title bar, there's a status section with 'IN: IP Audio 2 (DB91-TX Demo)', 'GPI: 1 2 3', and system information like '28 Sep 2023 13:44:34', 'Uptime: 3d 02:29:08', and 'Session: 02:57'. A 'Logout' button is in the top right.

The main configuration area is divided into several sections:

- Source Priority** (highlighted with a red box and number 7): Contains dropdown menus for 'Main' (set to 'IP Audio Client 1'), 'Backup 1' (set to 'IP Audio Client 2'), and 'Backup 2' (set to 'MP3 Audio Player').
- Audio Loss and Recovery**: Includes sliders and input fields for 'Loss Th.' (-50.0 dB), 'Loss Tout' (3 s), 'Recover Th.' (-50.0 dB), and 'Recover Tout' (3 s).
- MP3 Audio Player**: Features a 'Playback' dropdown (set to 'Shuffle'), 'Order' dropdown, 'Player' buttons ('Repeat', 'Next'), and a 'Gain' slider (set to 0.0 dB).
- Jingle Player**: Includes a 'Playback' dropdown (set to 'Shuffle'), 'Order' dropdown, and a 'Mode' dropdown (set to 'After 1 song').

On the right side, there's a vertical sidebar with buttons for 'Status', 'IP Audio' (highlighted with a red box and number 6), 'Backup', 'Dayparts', 'MPX', 'Basic RDS', 'Dynamic RDS', 'Output', 'General', 'Network', 'GPIO', and 'Other'. At the bottom right, a 'Save' button is highlighted with a red box and number 8.

7. From the **Source Priority** Section set the priority of the **IP Audio Client**. Apply the same settings to all IP Audio clients to be used in the configuration;
8. Press [Save];

For detailed information and instructions on how communication with the DB9009-RX can be established, please refer to [“Appendix B - DB9009-RX Quick User Guide”](#) on page 15.

## Appendix A

### *Quick User Guide*

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# DB9009-TX

## Professional IP Audio Encoder

### → **BEFORE YOU USE THIS PRODUCT** ←

In order to be able to enjoy all the benefits of owning your new DEVA product, please verify first that the latest software and firmware release were installed.

Visit [www.devabroadcast.com/downloads](http://www.devabroadcast.com/downloads) for the most recent software and firmware downloads, prior the installation.

This Quick user guide will make the installation of the DB9009-TX quick and easy. Applying these principles, you can simplify the process and save yourself extra time and effort. **For more information about the Safety precautions and the Operating environment recommendations please refer to the complete user manual - [www.devabroadcast.com/downloads](http://www.devabroadcast.com/downloads).**

**STEP 1****Connection**

1. Install the unit on its operation place;
2. Before connecting the AC Power, make sure that the fuse rating is in accordance with the mains supply at your location. DB9009-TX Power Supply Factory Settings are: 100-240 V AC; 1AFuse.;
3. Connect the DB9009-TX to the TCP/IP network using a cable with RJ-45 connector;
4. Optionally, connect the necessary for the configuration - audio cables (analog and/or digital), GPI and etc.

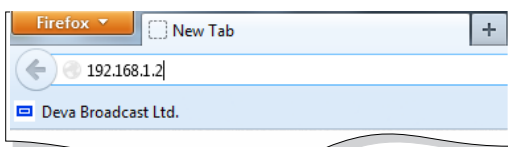
**STEP 2****Network Settings**

DB9009-TX can be operated in two methods. Through the Front panel navigational menu or via a standard WEB Browser.

For more information about the Front panel navigational menu, please refer to the User Manual which can be found on [www.devabroadcast.com/downloads](http://www.devabroadcast.com/downloads)

**STEP 3****WEB Interface**

There are two options for access to the WEB Interface of DB9009-TX IP Audio Decoder. The first one is through manual identification of the IP address of the device, and the second one is through the Network discovery option (For Windows 7 and above users only).

**STEP 3.1****Manual IP Address Identification**

1. Connect the device to a local network or to the Internet by the applied LAN cable. Through the Front panel navigational menu pressing the [OK] button you will enable you to enter the device main menu;
2. Using the [RIGHT] navigational button find the "**Status**" section located at the end of the Menu;
3. Press the [OK] Button to enter the "**Status Section**". Via the Front panel navigational menu press the [DOWN] button. This operation will visualize the screen containing information about the IP Address of the device;
4. Open a new WEB Browser and enter the device IP address in the address field then press "Enter";
5. A window that requires username and password will appear. Default values being - Username: user or admin, Password: pass.

**NOTE:** Due to the inability of some WEB Browsers to read the IP address format displayed on the screen of the device, the numbers included in the IP Address must be written without the leading zeros. For example: **192.168.020.068** must be written as **192.168.20.68**

**STEP 3.2****Network Discovery for Windows 7**

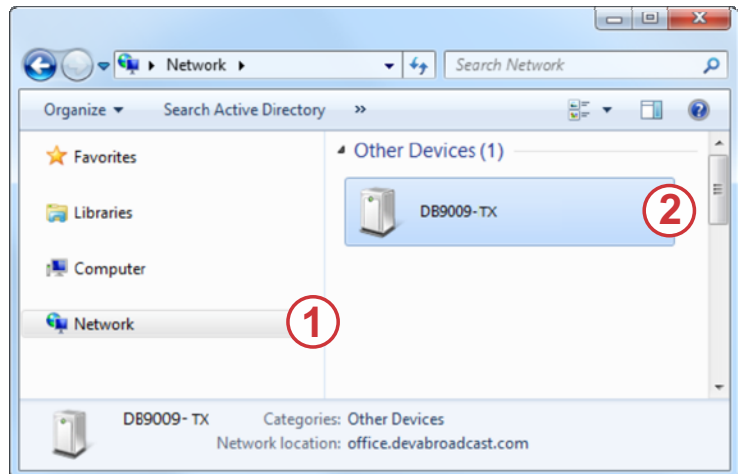
Network discovery is a network setting that defines whether your computer can see (find) other computers and devices on the network and whether other computers on the network can see your computer. By default, Windows Firewall blocks network discovery but you can enable it.

1. Open Advanced sharing settings by clicking the Start button, and then click on "Control Panel". In the search box, type "network", click "Network and Sharing Center", and then, in the left pane click "Change advanced sharing settings".

2. Select your current network profile.

3. Click **"Turn on network discovery"**, and then click "Save changes". If you're prompted for an administrator password or confirmation, type the password or provide confirmation.

4. To access the device, open a new Explorer bar and click on **Network (1)**. If you have successfully enabled the network discovery option, the device will be displayed. Double click on **DB9009-TX (2)** will open a new WEB browser window requiring username and password. (For more information refer to **Step 4**).



**NOTE:** If you have already enabled this function on your computer just open a new Explorer bar and click on **Network (1)**. The device will be displayed. If not, follow the instructions from **Step 3.2**.

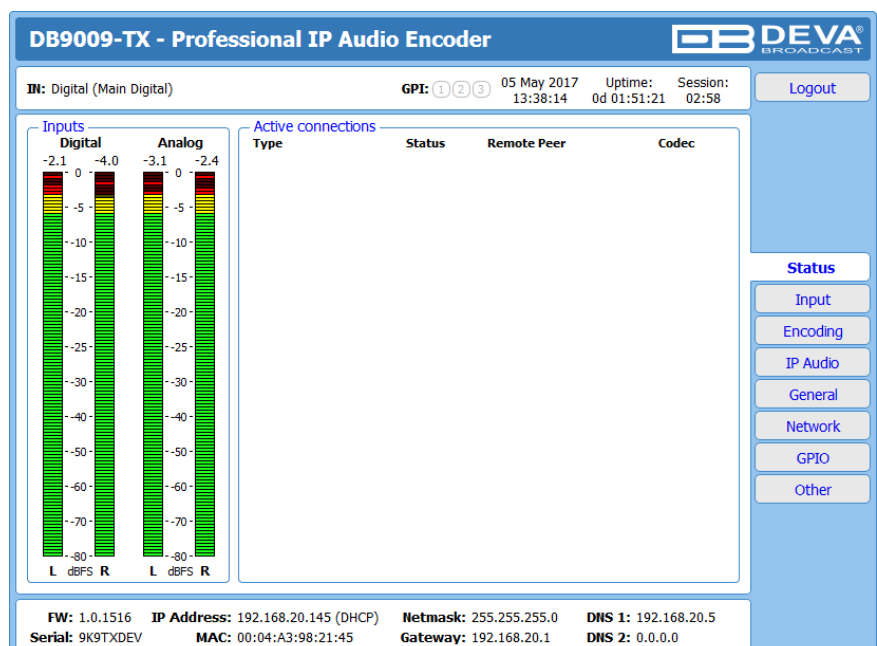
**STEP 4****Device Access**

The DB9009-TX provides you with a protected access to the device settings. You can choose between two types of log in:

1. As an **ADMINISTRATOR** – which will give you full control over the settings (username: admin, password: pass);

2. As a **USER** – this type of log-in will allow you to monitor the device without applying settings (username: user, password: pass).

**In order to make the necessary adjustments to the device, please log in as ADMINISTRATOR.**



*A successful log in the Control Window will look like this*

**STEP 5****Device Settings**

Upon entering the device's settings, you will be able to apply the needed adjustments to the DB9009-TX. In order the applied settings to be used press the [Save] button, placed on the bottom right part of each screen.

The screenshot shows the 'DB9009-TX - Professional IP Audio Encoder Configuration' web interface. At the top, it displays the DEVA logo and system status: 'IN: Digital (Main Digital)', 'GPI: 1 2 3', '05 May 2017 13:38:37', 'Uptime: 0d 01:51:44', and 'Session: 02:58'. A 'Logout' button is in the top right. The main area is divided into several sections: 'Inputs' with digital and analog level meters; 'Active connections' with a table for Type, Status, Remote Peer, and Codec; 'Input' settings for Main (Digital) and Backup (Analog) sources, including gain and range sliders; 'Audio Loss and Recovery' settings for thresholds and timeouts; and 'Headphones' volume control. A 'Save' button is at the bottom right. On the right side, there is a vertical menu with buttons for Status, Input, Encoding, IP Audio, General, Network, GPIO, and Other.

For further information on the available options and features, please refer to the User Manual which can be found on [www.devabroadcast.com/downloads](http://www.devabroadcast.com/downloads), and the accompanying CD.

**Thank you for choosing DEVA!**

***Please refer to the User manual for detailed information on how to configure and explore your device.***

## Appendix B

### *Quick User Guide*

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# DB9009-RX

## Professional IP Audio Decoder

### → **BEFORE YOU USE THIS PRODUCT** ←

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This Quick user guide will make the installation of the DB9009-RX quick and easy. Applying these principles, you can simplify the process and save yourself extra time and effort. **For more information about the Safety precautions and the Operating environment recommendations please refer to the complete user manual - [www.devabroadcast.com/downloads](http://www.devabroadcast.com/downloads).**

**STEP 1****Connection**

1. Install the unit on its operation place;
2. Before connecting the AC Power, make sure that the fuse rating is in accordance with the mains supply at your location. DB9009-RX Power Supply Factory Settings are: 100-240 V AC; 1A Fuse.;
3. Connect the DB9009-RX to the TCP/IP network using a cable with RJ-45 connector;
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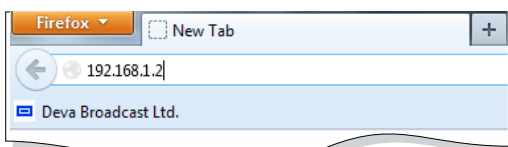
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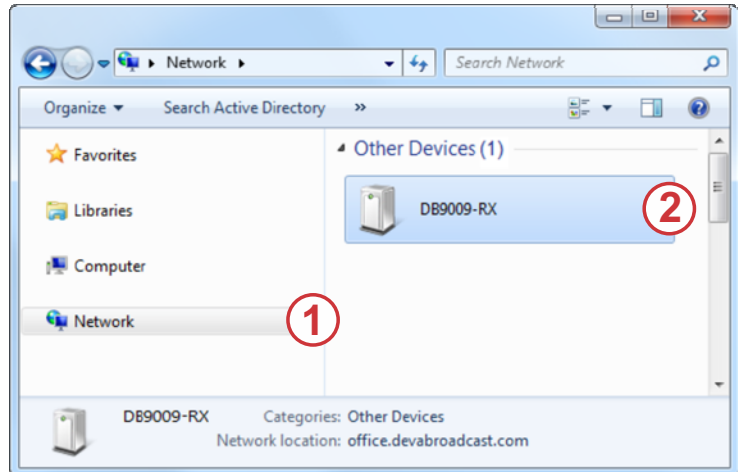
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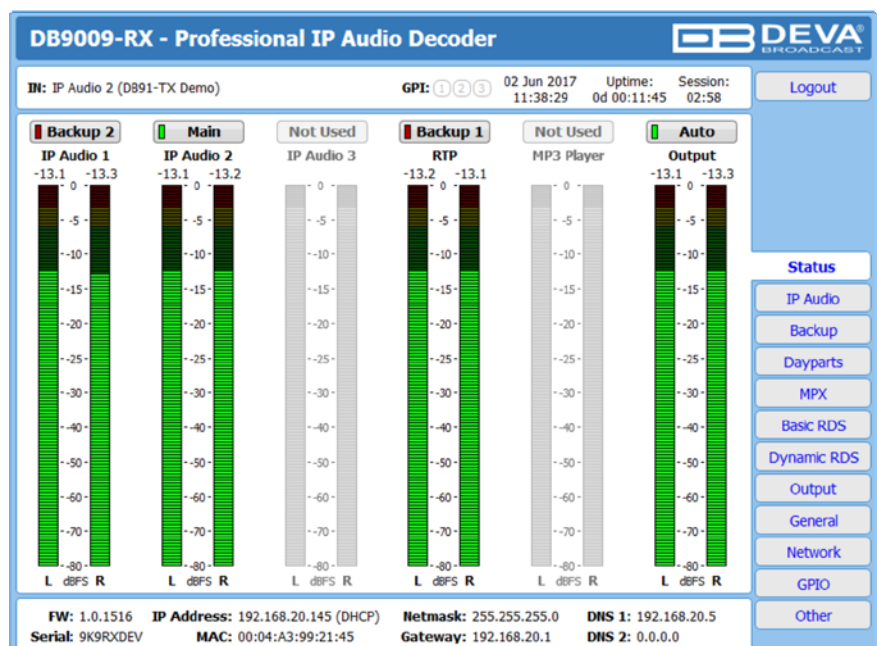
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**STEP 5****Device Settings**

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