

SET-UP INSTRUCTIONS

How can the **DB9009-TX** be used
as an RTP Sender, sending audio to
DB9009-RX decoder used as an RTP Receiver



Contents

General information	4
<i>DB9009-TX and DB9009-RX Set-up.....</i>	<i>4</i>
<i>DB9009-TX RTP Sender set-up.....</i>	<i>4</i>
<i>DB9009-RX RTP Receiver set-up</i>	<i>7</i>
Appendix A	9
Appendix B	13

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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 9](#) and [“Appendix B - DB9009-RX Quick User Guide” on page 13](#).

This configuration is perfect if your setup requires only point-to-point connection. It has a minimum and almost constant delay value (usually less than a second).

DB9009-TX AND DB9009-RX SET-UP

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

- DB9009-TX should be connected to a Network (Internet or LAN).
- DB9009-TX could be set with dynamic IP.
- DB9009-RX configured as RTP receiver with static IP.
- If the DB9009-RX is placed behind a router, you will have to make sure that the RTP Receiver port is properly NAT forwarded.

DB9009-TX RTP SENDER SET-UP

DB9009-TX - Professional IP Audio Encoder Configuration **DB DEVA®** BROADCAST

IN: Digital (Main Digital) GPI: ①②③ 03 Oct 2023 12:14:09 Uptime: 0d 01:27:01 Session: 02:57 Logout

Inputs

Digital	Analog
-10.0	-5.0
-10.0	-6.0
-10.0	-10.0
-10.0	-20.0
-10.0	-30.0
-10.0	-50.0
-10.0	-70.0

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	192.168.1.1:57202	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

Status ①

Input

Encoding

IP Audio

General

Network

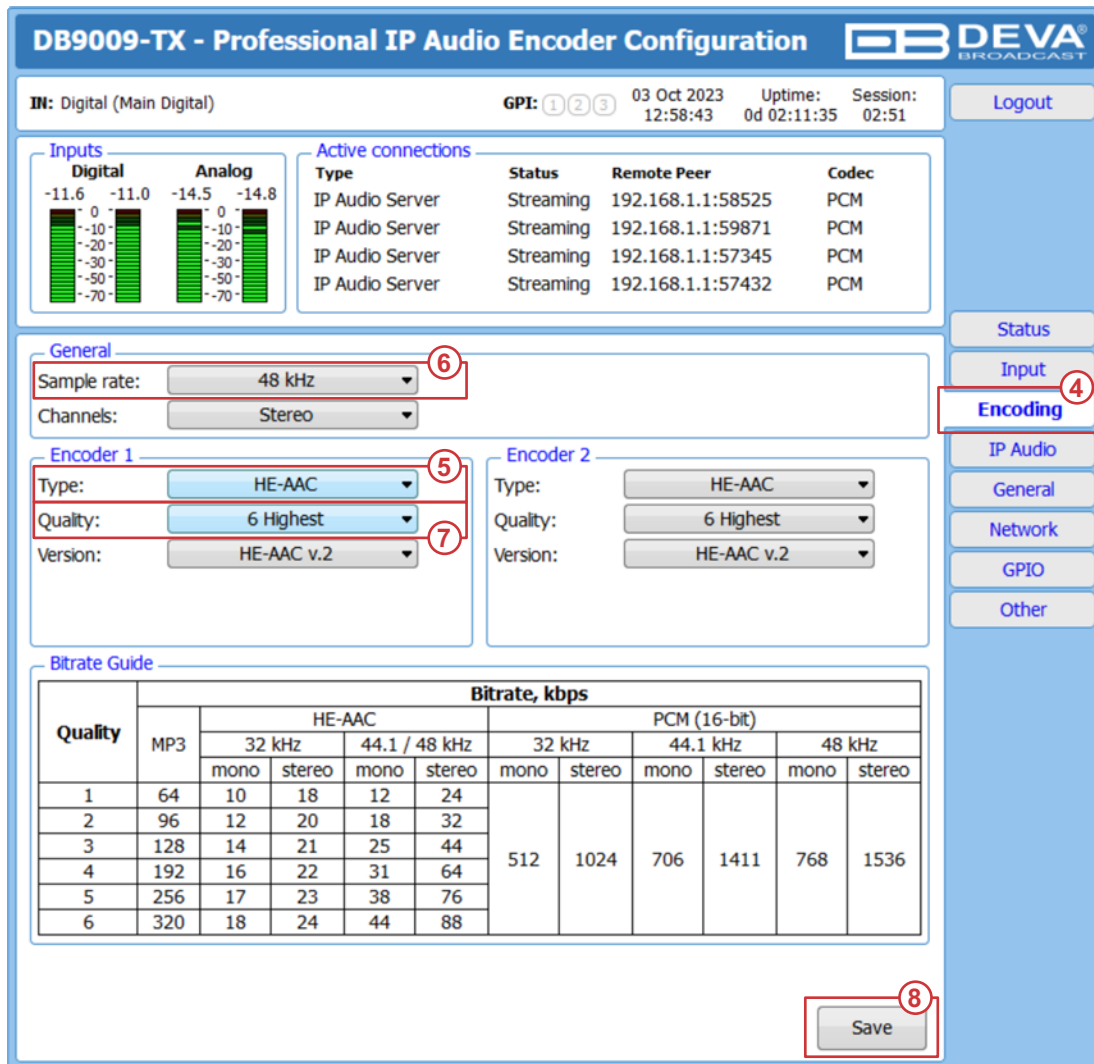
GPIO

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**;

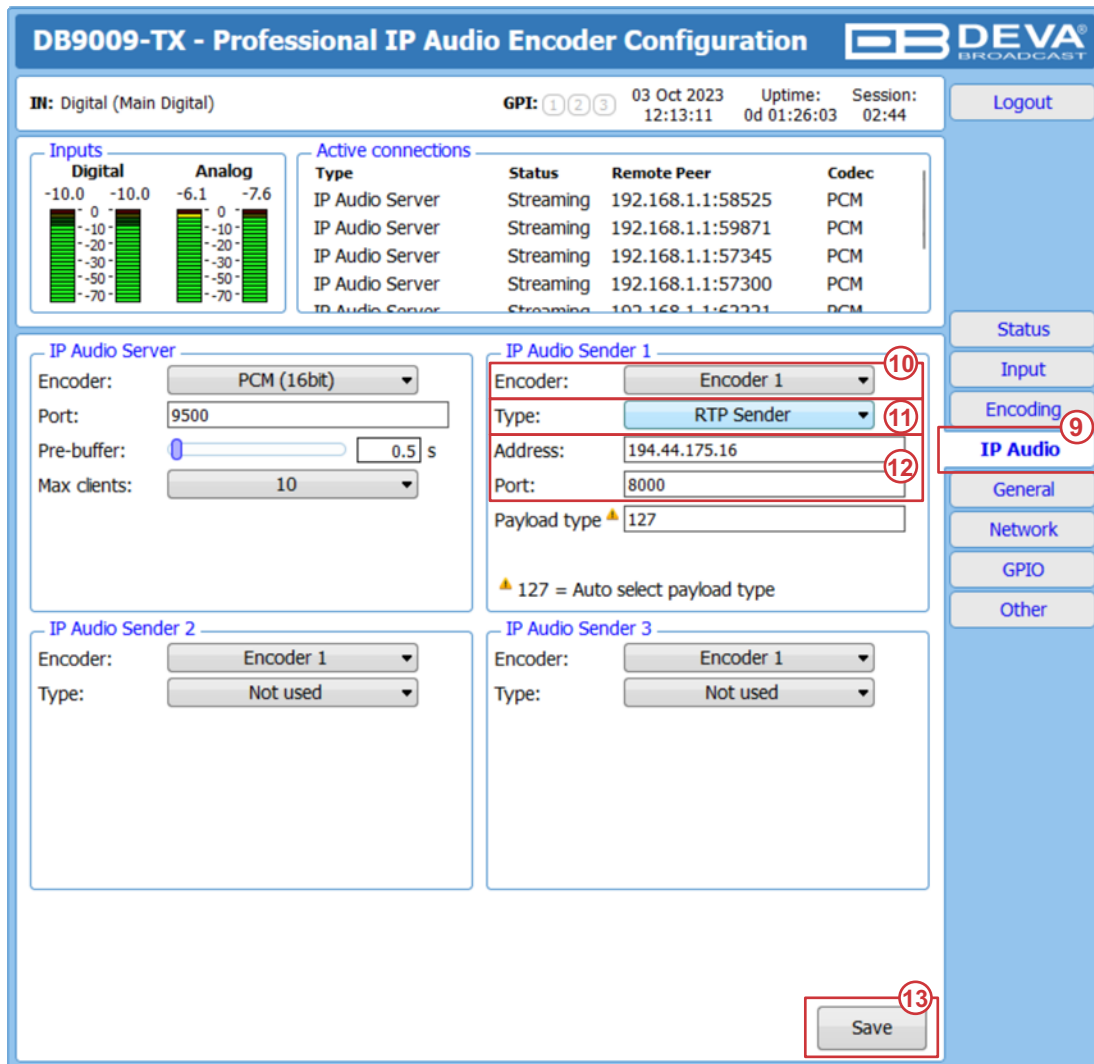
6. Assign **Sample rate**;

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 12:13:11 Uptime: 0d 01:26:03 Session: 02:44 Logout

Inputs

Digital: -10.0 0 -10.0 Analog: -6.1 0 -7.6

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	192.168.1.1:57300	PCM
IP Audio Server	Streaming	192.168.1.1:62331	PCM

IP Audio Server

Encoder: PCM (16bit) Port: 9500 Pre-buffer: 0.5 s Max clients: 10

IP Audio Sender 1

Encoder: Encoder 1 Type: RTP Sender Address: 194.44.175.16 Port: 8000 Payload type: 127

▲ 127 = Auto select payload type

IP Audio Sender 2

Encoder: Encoder 1 Type: Not used

IP Audio Sender 3

Encoder: Encoder 1 Type: Not used

Save

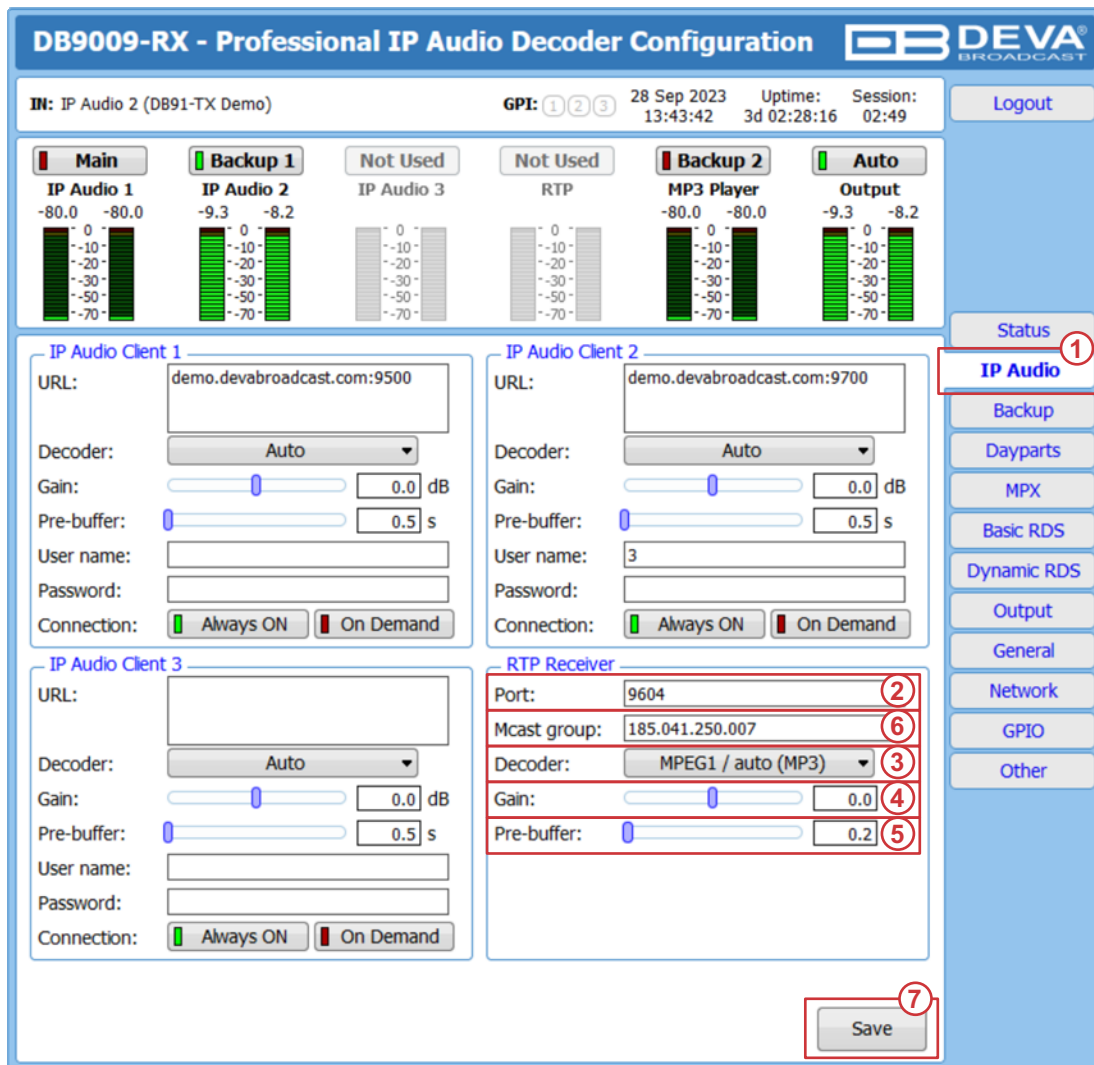
10. Then in **IP Audio Sender 1/2/3** section - specify **Encoder** from the drop-down menu;
11. Select **RTP Sender** from the drop down menu;
12. Specify **URL, IP Address** or Multicast group IP address, and **Port** of the RTP Receiver to be used;
13. Press [Save].

FOR YOUR INFORMATION: A multicast address (Mcast group) is a logical identifier for a group of hosts in a computer network, that are available to process datagrams or frames intended to be multicast for a designated network service.

Multicast works in a local network or any other network that is specially set/configured. For more information as regards how a multicast network could be set, please refer to your network administrator.

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 9](#).

DB9009-RX RTP RECEIVER 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

IP Audio Client 1 IP Audio Client 2

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 On Demand

IP Audio Client 3 RTP Receiver

URL: Port: 9604 ②

Decoder: Auto Mcast group: 185.041.250.007 ⑥

Gain: 0.0 dB Decoder: MPEG1 / auto (MP3) ③

Pre-buffer: 0.5 s Gain: 0.0 ④

Pre-buffer: 0.2 ⑤

Save ⑦

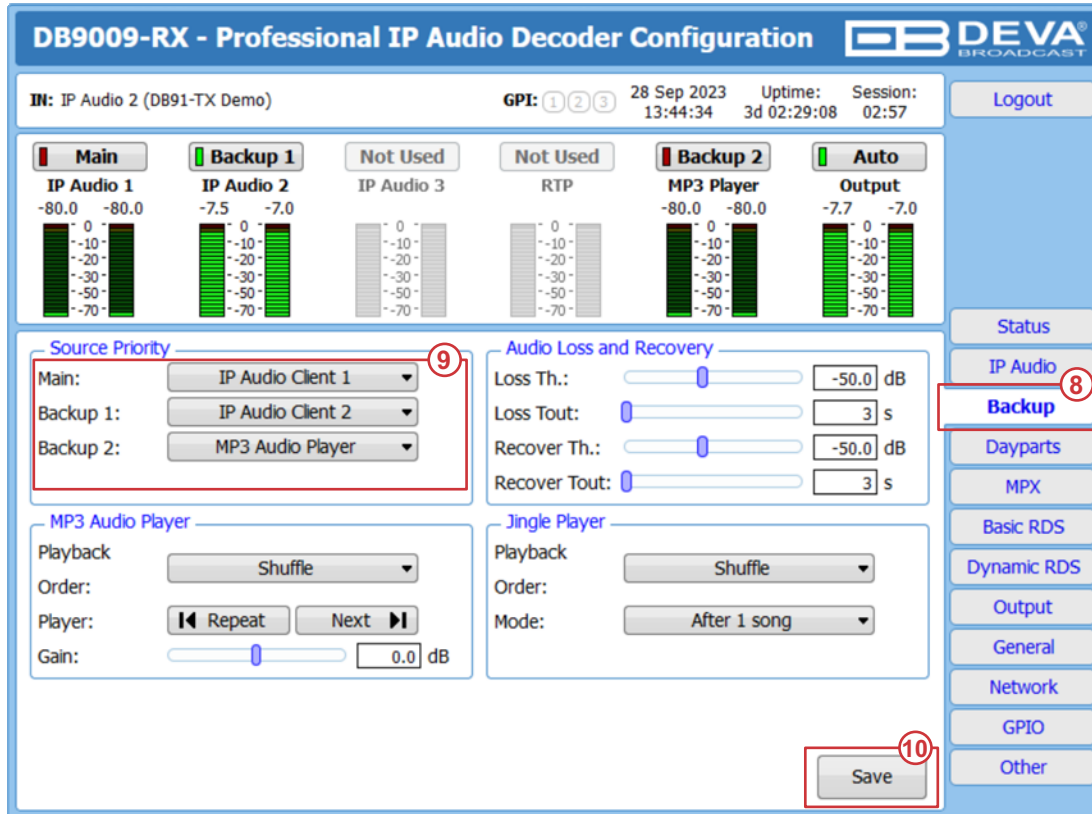
① IP Audio Backup Dayparts MPX Basic RDS Dynamic RDS Output General Network GPIO Other

1. Go to **Settings> IP Audio**;
2. RTP Receiver section - Specify the audio player **Port**;
3. Specify **Decoder** to be used;
4. Set **Gain**;
5. Set **Pre-buffer**;
6. If needed, specify **Multicast group** IP address;
7. Press [Save];

FOR YOUR INFORMATION: A multicast address (Mcast group) is a logical identifier for a group of hosts in a computer network, that are available to process datagrams or frames intended to be multicast for a designated network service.

Multicast works in a local network or any other network that is specially set/configured. For more information as regards how a multicast network could be set, please refer to your network administrator.

8. 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, there's a status bar with 'IN: IP Audio 2 (DB91-TX Demo)', 'GPI: 1 2 3', '28 Sep 2023 13:44:34', 'Uptime: 3d 02:29:08', 'Session: 02:57', and a 'Logout' button. The main area contains several sections: 'Main' with 'IP Audio 1' and 'IP Audio 2' level meters; 'Backup 1' with 'IP Audio 2' level meters; 'Not Used' for 'IP Audio 3' and 'RTP'; 'Backup 2' with 'MP3 Player' level meters; and 'Auto' with 'Output' level meters. Below these are four configuration panels: 'Source Priority' (Main: IP Audio Client 1, Backup 1: IP Audio Client 2, Backup 2: MP3 Audio Player), 'Audio Loss and Recovery' (Loss Th.: -50.0 dB, Loss Tout: 3 s, Recover Th.: -50.0 dB, Recover Tout: 3 s), 'MP3 Audio Player' (Playback: Shuffle, Order: Repeat, Next, Gain: 0.0 dB), and 'Jingle Player' (Playback: Shuffle, Order: After 1 song, Mode: After 1 song). On the right sidebar, there are buttons for 'Status', 'IP Audio', 'Backup', 'Dayparts', 'MPX', 'Basic RDS', 'Dynamic RDS', 'Output', 'General', 'Network', 'GPIO', and 'Other'. The 'Backup' button is highlighted with a red box and the number 8. At the bottom right, there is a 'Save' button highlighted with a red box and the number 10. A red box with the number 9 highlights the 'Source Priority' dropdowns.

9. From the **Source Priority** section set the priority of the **RTP Audio Player**.

10. Press Save[10] to save the changes.

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 13.](#)

Appendix A

Quick User Guide

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 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.**

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.

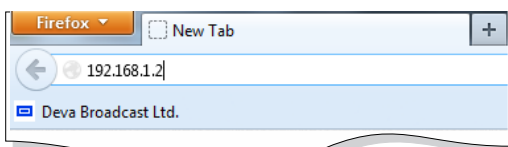
STEP 2**Network Settings**

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

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**

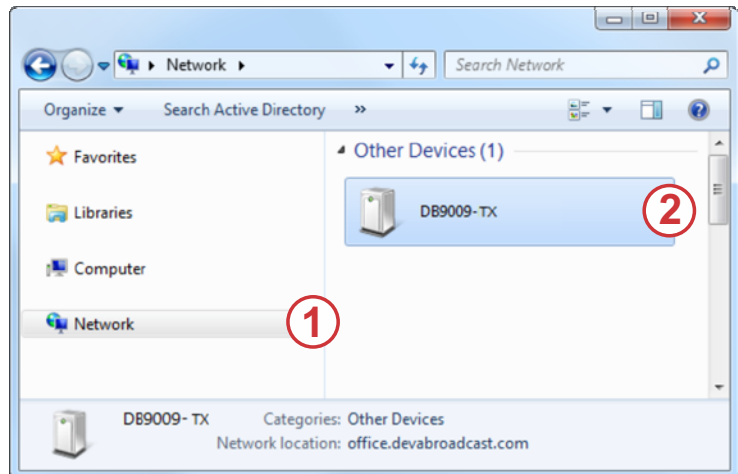
Network discovery is a network setting that defines whether your computer can see (find) other computers and devices on the network and whether other computers on the network can see your computer. By default, Windows Firewall blocks network discovery but you can enable it.

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**.

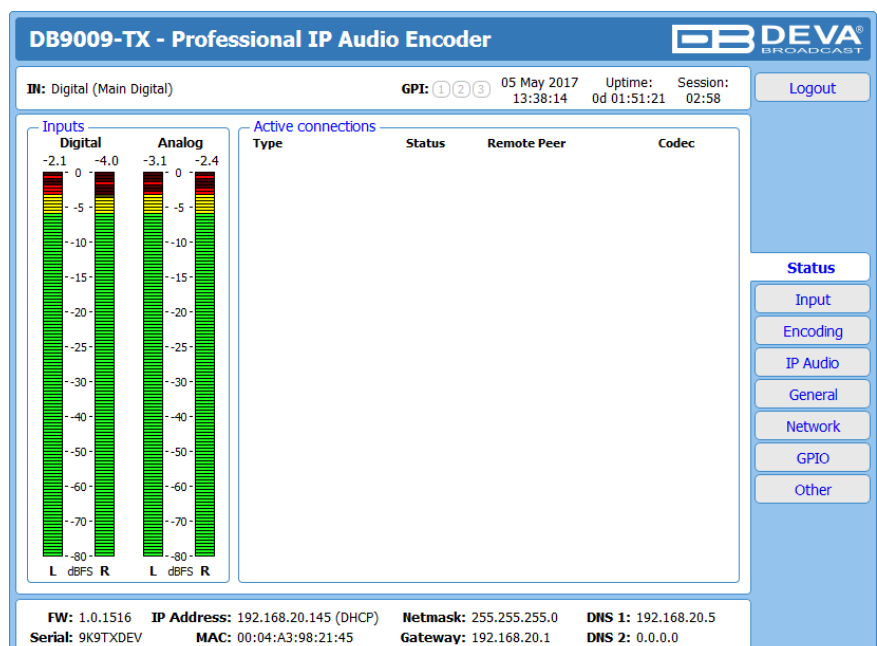
STEP 4**Device Access**

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 located 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, 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

DB9009-RX

Professional IP Audio Decoder

→ **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 for the most recent software and firmware downloads, prior the installation.

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.**

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.;
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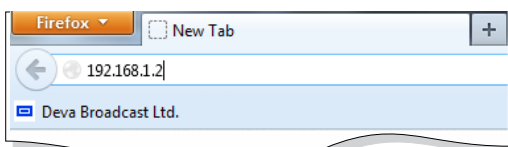
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4. Open a new WEB Browser and enter the device IP address in the address field then press "Enter";
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NOTE: Due to the inability of some WEB Browsers to read the IP address format displayed on the screen 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

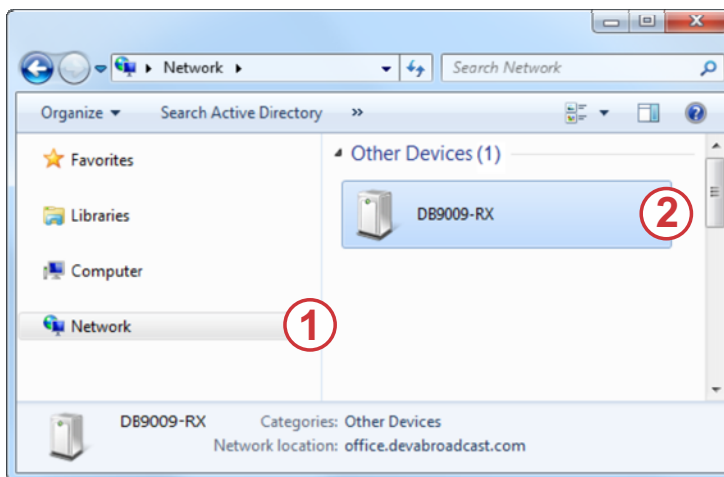
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3. Click **"Turn on network discovery"**, and then click "Save changes". If you're prompted for an administrator password or confirmation, type the password or provide confirmation.

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-RX (2)** will open a new WEB browser window requiring username and password. (For more information refer to **Step 4**).



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STEP 4

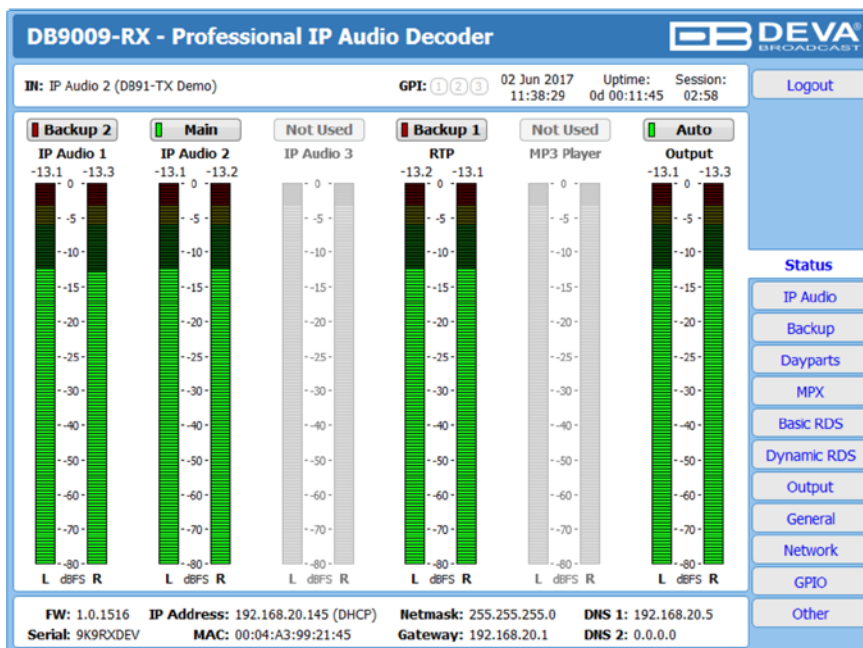
Device Access

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STEP 5**Device Settings**

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

DB9009-RX - Professional IP Audio Decoder Configuration

IN: IP Audio 2 (DB91-TX Demo) GPI: 1 2 3 02 Jun 2017 Uptime: 11:38:57 Session: 0d 00:12:13 02:58 Logout

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

IP Audio 1: -15.0 -14.7
IP Audio 2: -14.1 -15.0
IP Audio 3: -0 -
RTP: -15.4 -15.6
MP3 Player: -0 -
Output: -14.1 -15.0

IP Audio Client 1
URL: demo.devabroadcast.com:9500
Decoder: Auto
Gain: -6.2 dB
Pre-buffer: 1.5 s
User name:
Password:
Connection: ☒ Always ON ☐ On Demand

IP Audio Client 2
URL: demo.devabroadcast.com:9700
Decoder: Auto
Gain: 0.0 dB
Pre-buffer: 2.0 s
User name:
Password:
Connection: ☒ Always ON ☐ On Demand

IP Audio Client 3
URL:
Decoder: Auto
Gain: 2.0 dB
Pre-buffer: 5.0 s
User name:
Password:
Connection: ☒ Always ON ☐ On Demand

RTP Receiver
Port: 4478
Mcast group: 000.000.000.000
Decoder: HE-AAC / auto (AAC)
Gain: 0.0 dB
Pre-buffer: 0.2 s

Save

IP Audio
Backup
Dayparts
MPX
Basic RDS
Dynamic RDS
Output
General
Network
GPIO
Other

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Thank you for choosing DEVA!

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