

MAINTENANCE AND OPERATION
INSTRUCTION MANUAL

DB9000-TX

Professional IP Audio Encoder



WEB Server Settings

- Port – this is the TCP port of the WEB Server. Default value is 80.
- Username – user name of the WEB Server. Default value is *user*.
- Password – Password of the WEB Server. Default value is *pass*.

NOTE: You can define Username only, Password only or both of them. If both Username and Password are left blank, NO security is used.

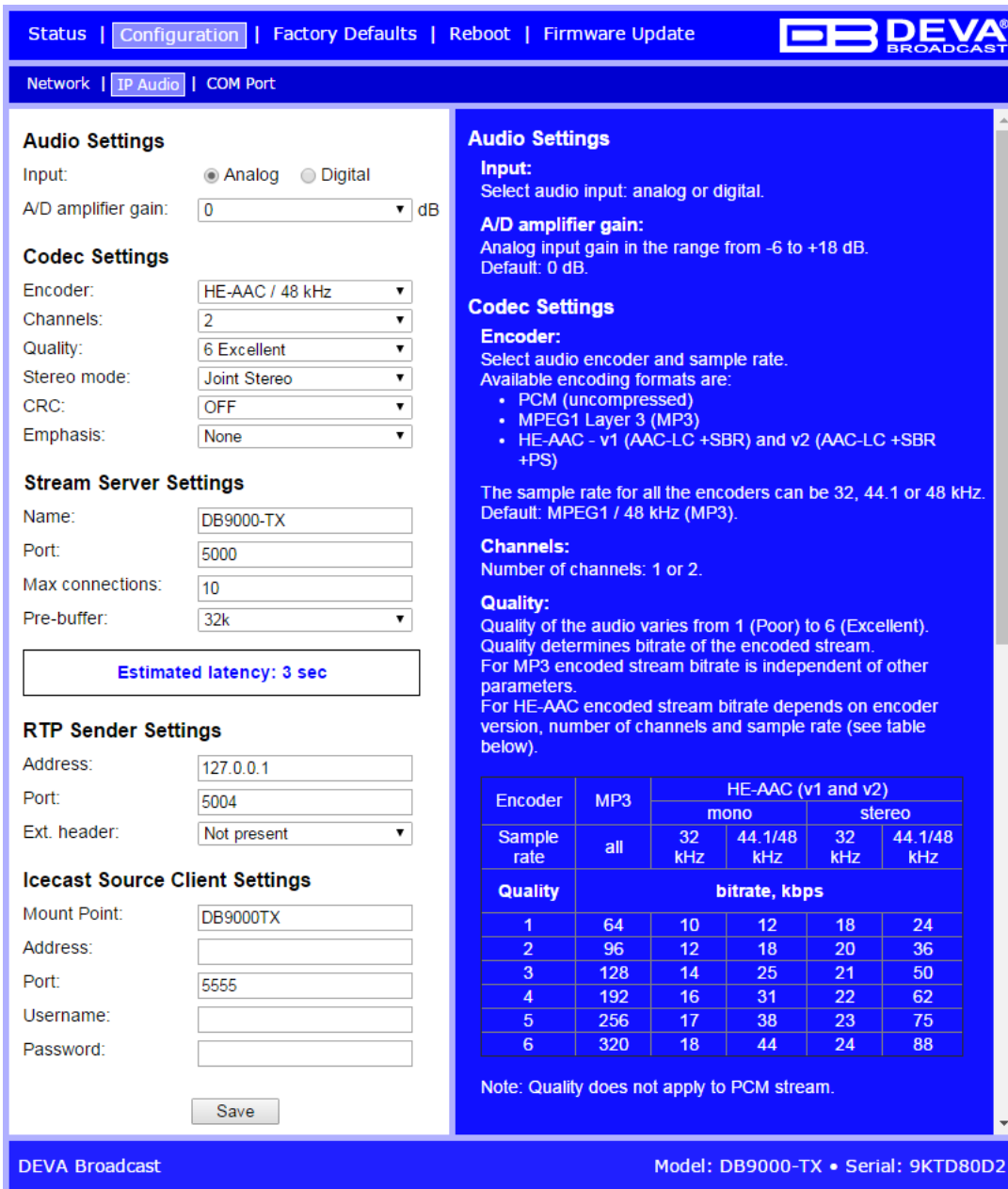
SNMP Settings

SNMP MIB File: Press the Download button to download DB9000-TX SNMP MIB file.

NOTE: The MIB file may change from one firmware revision to another. Downloading this file from the device ensures that you have the latest MIB file available.

Specify Agent ID, Agent Port, Read/Write Communities, Manager IP and Manager Port.

NOTE: Agent ID is used to identify the device among others when a SNMP notification is send.
Agent - enables/disables SNMP Agent.



The screenshot shows the 'Configuration' page for 'IP Audio' settings. The interface is divided into several sections: Audio Settings, Codec Settings, Stream Server Settings, RTP Sender Settings, and Icecast Source Client Settings. A table titled 'HE-AAC (v1 and v2)' provides bitrate information for different sample rates and qualities. A 'Save' button is visible at the bottom of the settings area.

Audio Settings
 Input: Analog Digital
 A/D amplifier gain: 0 dB

Codec Settings
 Encoder: HE-AAC / 48 kHz
 Channels: 2
 Quality: 6 Excellent
 Stereo mode: Joint Stereo
 CRC: OFF
 Emphasis: None

Stream Server Settings
 Name: DB9000-TX
 Port: 5000
 Max connections: 10
 Pre-buffer: 32k

RTP Sender Settings
 Address: 127.0.0.1
 Port: 5004
 Ext. header: Not present

Icecast Source Client Settings
 Mount Point: DB9000TX
 Address:
 Port: 5555
 Username:
 Password:
 Save

HE-AAC (v1 and v2) Bitrate Table:

Encoder	MP3	HE-AAC (v1 and v2)			
		mono		stereo	
Sample rate	all	32 kHz	44.1/48 kHz	32 kHz	44.1/48 kHz
Quality	bitrate, kbps				
1	64	10	12	18	24
2	96	12	18	20	36
3	128	14	25	21	50
4	192	16	31	22	62
5	256	17	38	23	75
6	320	18	44	24	88

Note: Quality does not apply to PCM stream.

Audio Settings

- Input – select analog or digital input to be used.
- A/D Amplifier Gain – Analog input gain in the range from -6 to +18 dB. Default level is 0dB.

Codec Settings

- Encoder + Sample Rate – select audio encoder and sample rate. Available encoding formats are:
 - HE-AAC v1 (AAC-LC +SBR)
 - HE-AAC v2 (AAC-LC +SBR +PS)
 - MPEG1 Layer 3 (MP3)
 - PCM (uncompressed)
- Channels – select number of the input channels (1 or 2). If only one channel is selected, then the Left one is used.
- Quality – Audio quality varies from 1 (Poor) to 6 (Excellent). Quality determines bitrate of the encoded stream. For MP3 encoded stream bitrate is independent of other parameters.

For HE-AAC encoded stream bitrate depends on encoder version, number of channels and sample rate (see table below):

Encoder	MP3	HE-AAC (v1 and v2)			
		mono		stereo	
Sample rate	all	32 kHz	44.1/48 kHz	32 kHz	44.1/48 kHz
Quality	bitrate, kbps				
1	64	10	12	18	24
2	96	12	18	20	36
3	128	14	25	21	50
4	192	16	31	22	62
5	256	17	38	23	75
6	320	18	44	24	88

Please note all rates are in kbps.

NOTE: Quality does not apply to PCM stream. For PCM stream bitrate is calculated by the following equation: (sample rate)*(Number of channels)*16, [bps].

- Stereo mode – selecting stereo mode. Supported modes are Stereo, Joint Stereo or Dual Channels.
- CRC - selecting whether MP3 stream to contain information on error detection.
- Emphasis – selecting the emphasis to be applied. Supported values are 50µs, CCITT J.17 and NO emphasis.

NOTE: These parameters apply only to MP3 stream.

Stream Server Settings

- Name – this is the encoder’s name displayed as name of the stream.
- Port – a field where TCP port of the stream server must be inserted. Default value is 5000.
- Pre-buffer – initial amount of data sent to the client. Large value decreases startup delay caused by buffering on the client side. This also introduces latency in the audio. Latency is bitrate dependent and can be estimated by the formula:

$$\text{Latency} = (\text{PreBuffer} \times 8) / \text{BitRate}, [\text{sec}].$$
 Default value is 96k.
- Max connections – maximum number of simultaneous connected clients. This value can be in the range from 1 to 10. Default value is 2.

RTP Settings

If DB9000-TX is used as a RTP Sender, the decoders’ Server Address and Port should be filled in the respective fields:

- Address – URL or IP Address of the RTP Receiver.
- Port – UDP port of the RTP Receiver.
- Ext. header – RTP Extension header present in stream. Used for compatibility with some RTP receivers. By default the option is set to *Not present*.

Icecast Settings

If DB9000-TX is used as an Icecast Source Mount point, Encoder IP Address and Port should be filled in. The username and password are used to secure the connection. Make sure to enter the same information on both sides of the connection.

- Mount point – specify the Icecast Mount point. The Mount Point should be written without the leading slash. For example - `stream9`, instead of `/steam9`.
- Address – URL or IP Address of the Icecast Receiver. The address should be written without the `http//`, just `stream.vendor.com`
- Port – TCP port of the Icecast Receiver.
- Username – Username for Authentication with Icecast Receiver.
- Password – Password for Authentication with Icecast Receiver.

Status | Configuration | Factory Defaults | Reboot | Firmware Update

Network | IP Audio | COM Port

RS-232 Settings

Baudrate: 9600

Ethernet to RS-232 Redirector

Port: 8001

Password:

Save

RS-232 settings

Baudrate:
RS-232 port baudrate.
Default: 9600.

Ethernet to RS-232 Redirector

Port:
Ethernet to RS-232 redirector TCP port.
Default: 8001.

Password:
Password for the Ethernet to RS-232 redirector. It is used to restrict the access to RS-232 from the network. If Password is left blank no security is used. Up to 15 alpha-numeric characters.
Default: (blank).

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Model: DB9000-TX • Serial: 110307001

RS-232 Settings

- Baudrate - select RS-232 COM port baudrate. Default value is 9600.
- Port - a field where TCP port of the RS-232 Redirector must be inserted. This is the port to which your software should connect to communicate with any external device connected to the RS-232 Com Port. Default value is 8001.
- Password - Password for the RS-232 Redirector. These are the first symbols your software must send to authenticate itself to the Redirector. If left blank, NO security is used. Default value is *pass*. Maximum 15 alpha-numeric characters can be used.

Applying New Settings

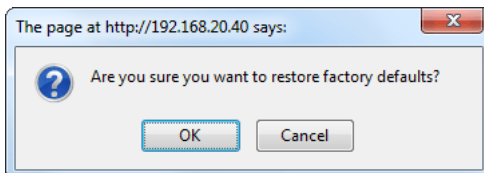
In order new settings to take effect, it is necessary to press the [Save] button. Please keep in mind that some of the new settings can reset DB9000-TX.

FACTORY DEFAULT SETTINGS



Restoring DB9000-TX to its Factory Defaults can be done by following the next steps:

- Press the “Restore” button.
- A new window will appear:



- Confirm that you want to restore factory defaults.
- Wait for the process to complete.

All the settings will be restored to their factory defaults except the Network Settings, which will remain the same.

Upon completion of the process DB9000-TX settings will have the following values:

Audio Default Settings

- Input: analog
- A/D amplifier gain: 0 dB
- Channels: 2
- Encoder + Sample rate: MPEG 1/48 kHz
- Quality: 6 Excellent
- Stereo mode: Stereo
- CRC: ON
- Emphasis: None

Network Default Settings

All General Network Settings will remain unchanged.

WEB Server Default Settings

All WEB Server Settings will remain unchanged.

SNMP Default Settings

- Agent : Disabled
- Agent Port: 161
- Community: DEVA9000
- Manager IP: 0.0.0.0
- Manager Port: 162
- Agent ID: 0

Stream Server Default Settings

- Name: DB9000-TX
- Port: 5000
- Pre-buffer: 96k
- Max connections: 2

RS-232 Default Settings

- Baudrate: 9600
- Port : 8001
- Password: pass

RTP Settings

- Port: 5004

Icecast Settings

- Port: 5555
- Username: source
- Password: pass

HARDWARE RESET

This process will fully restore DB9000-TX to its Factory Defaults, including the Network settings. Hardware Reset can be done by following the next steps:

- Disconnect the power supply cable from the unit.
- Locate the RESET button on Rear panel.
- Press and hold the RESET button.
- Connect the power supply cable to the unit.
- Keep the RESET button pressed until the POWER led starts blinking.
- Release the RESET button.
- Wait for DB9000-TX to reboot with the factory default settings.

Upon completion of the process DB9000-TX settings will have the following values:

Network Default Settings

- DHCP: enabled

WEB Server Default Settings

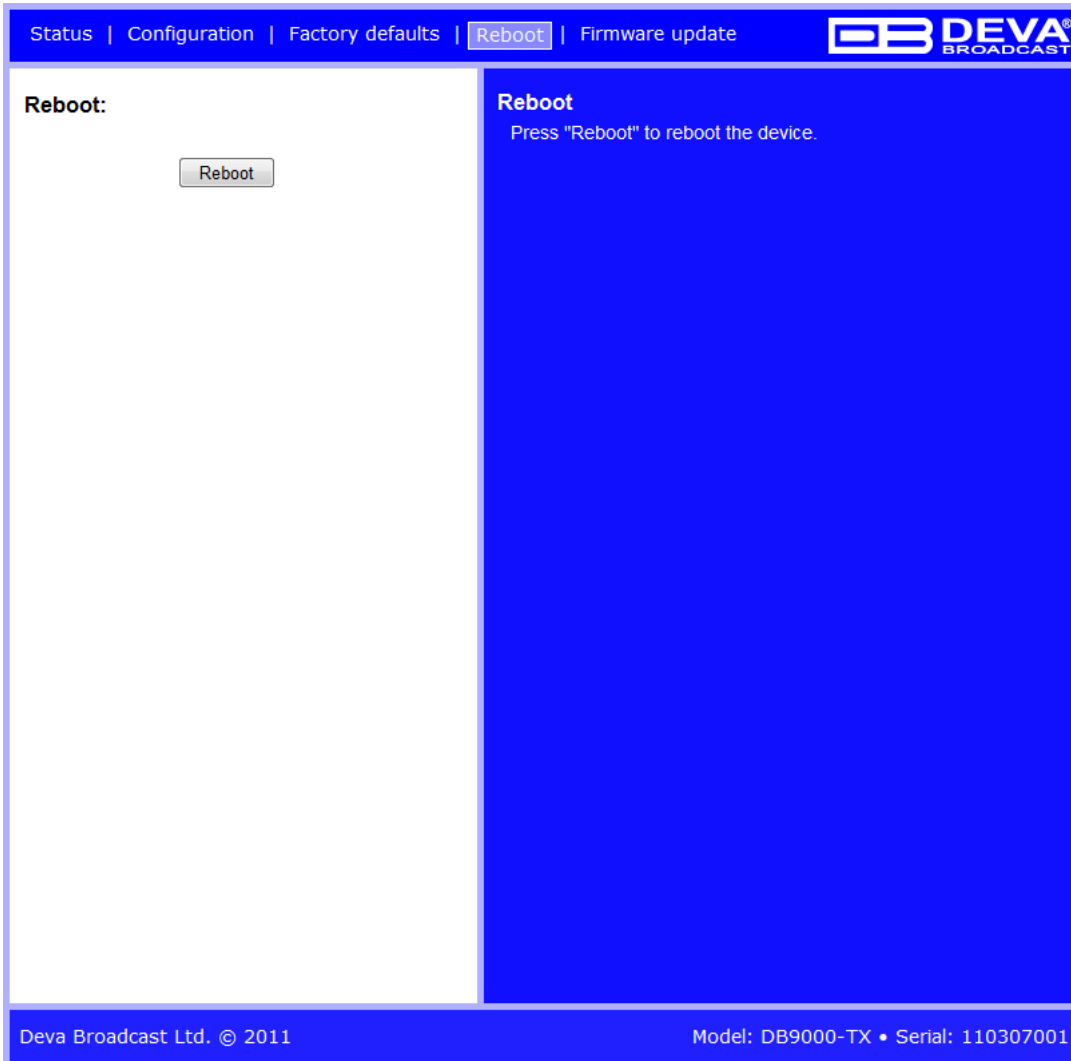
- Port: 80
- Username: user
- Password: pass

All other settings will have the factory default values described in chapter [“Factory Default Settings”](#).

NOTE: Once the process is completed, the DHCP Client will be enabled. The DB9000-TX will obtain IP Address from DHCP server shortly.

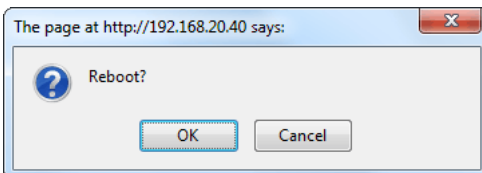
ATTENTION: Please note that the WEB Server’s Port, Username and Password will be changed, so it is possible the page not to be loaded after restoring factory defaults. You may be asked to re-enter the encoder’s address and/or username and password.

REBOOTING



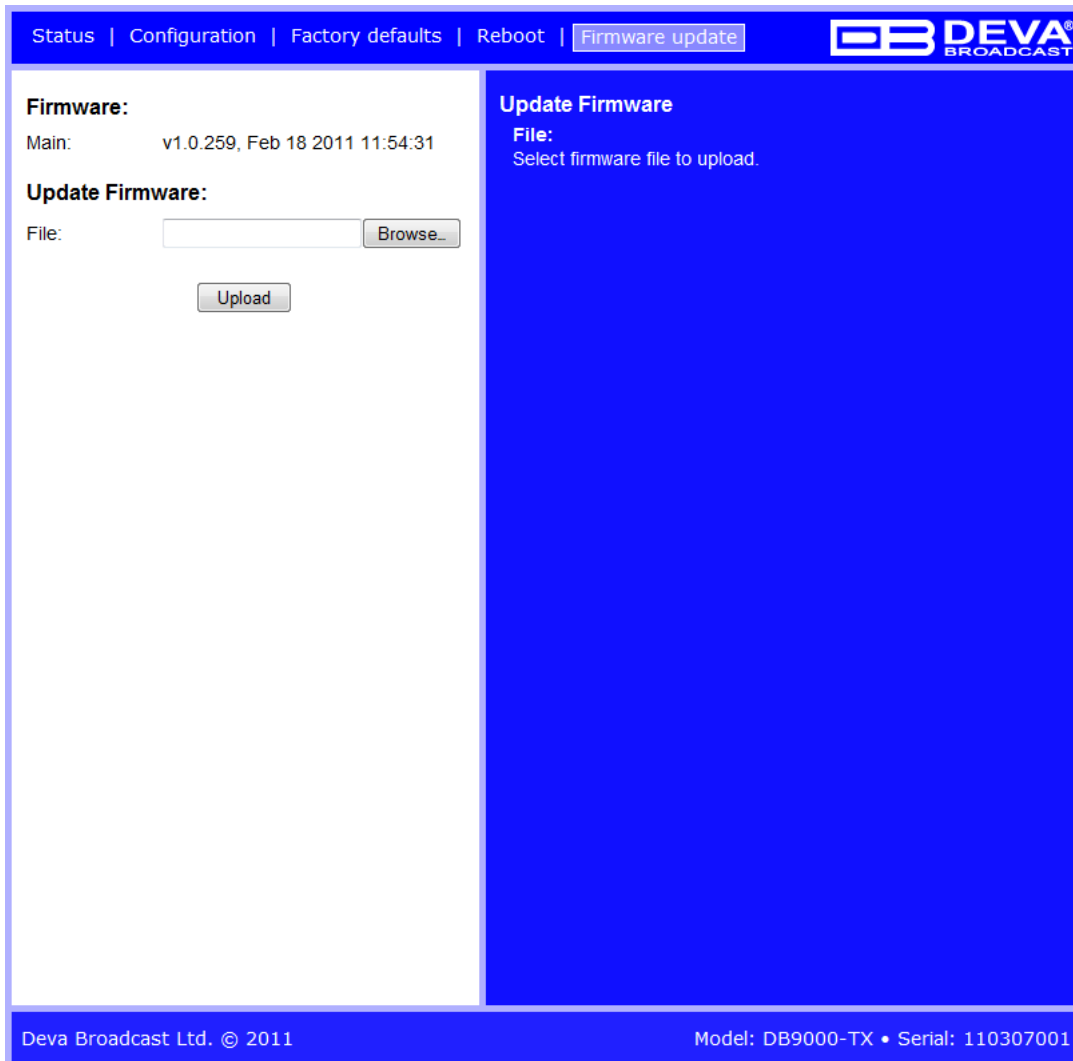
To Reboot the DB9000-TX, follow the steps listed below:

- Press the “Reboot” button.
- The following warning window will appear:



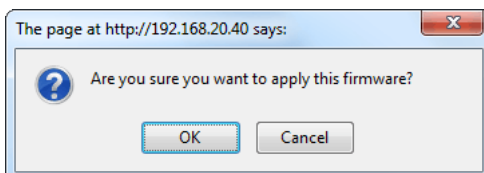
- Confirm that you want to reboot the encoder.
- Wait for the process to complete.

FIRMWARE UPDATE



To update the device firmware, follow the steps listed below:

- Press [Browse] and select the new firmware file.
- After having pressed the [Upload] button, a dialog window will appear.



- Confirm the firmware update and wait for the process to complete.

IMPORTANT NOTE: If the firmware is downloaded from www.devabroadcast.com, the file must be unzipped prior to the upgrade.

CONNECTING TO THE STREAM SERVER

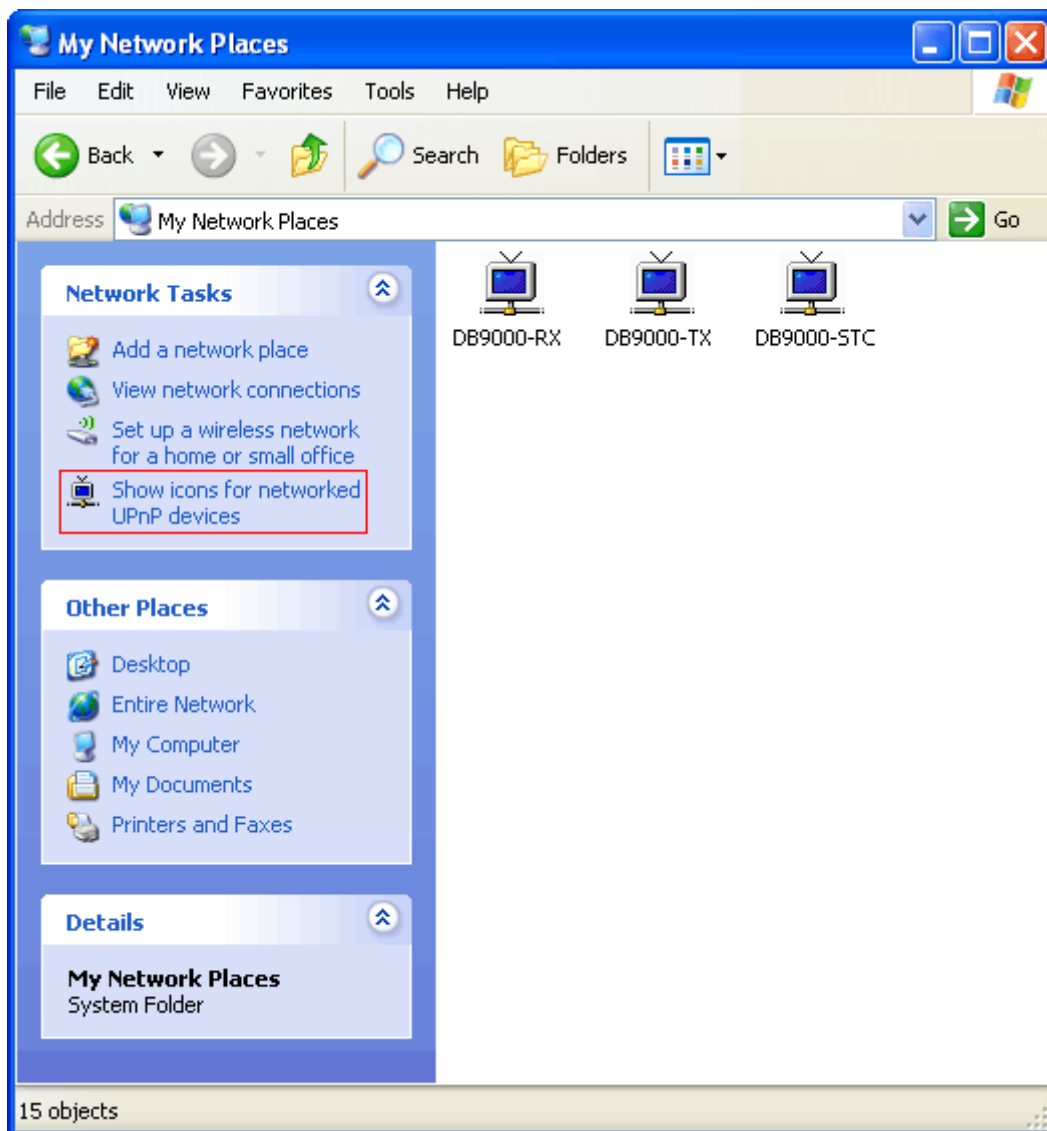
To listen to the stream audio, please follow the next steps:

- Open an audio player supporting streaming audio
- Select “Play URL”
- Insert device’s address and port. For example: `http://192.168.0.2:5000/`
- Wait to be connected

UPnP discovery in Local Networks

DB9000-TX implements UPnP which lets you easily find it in your local network. For this purpose your system should have UPnP enabled ([see “UPnP Activation” on page 39](#)). To discover the device follow the next steps:

- Connect the device to the local network.
- Open “My Network Places” on your computer.
- Find the decoder’s icon.
- Double click it to open the DB9000-TX web interface.

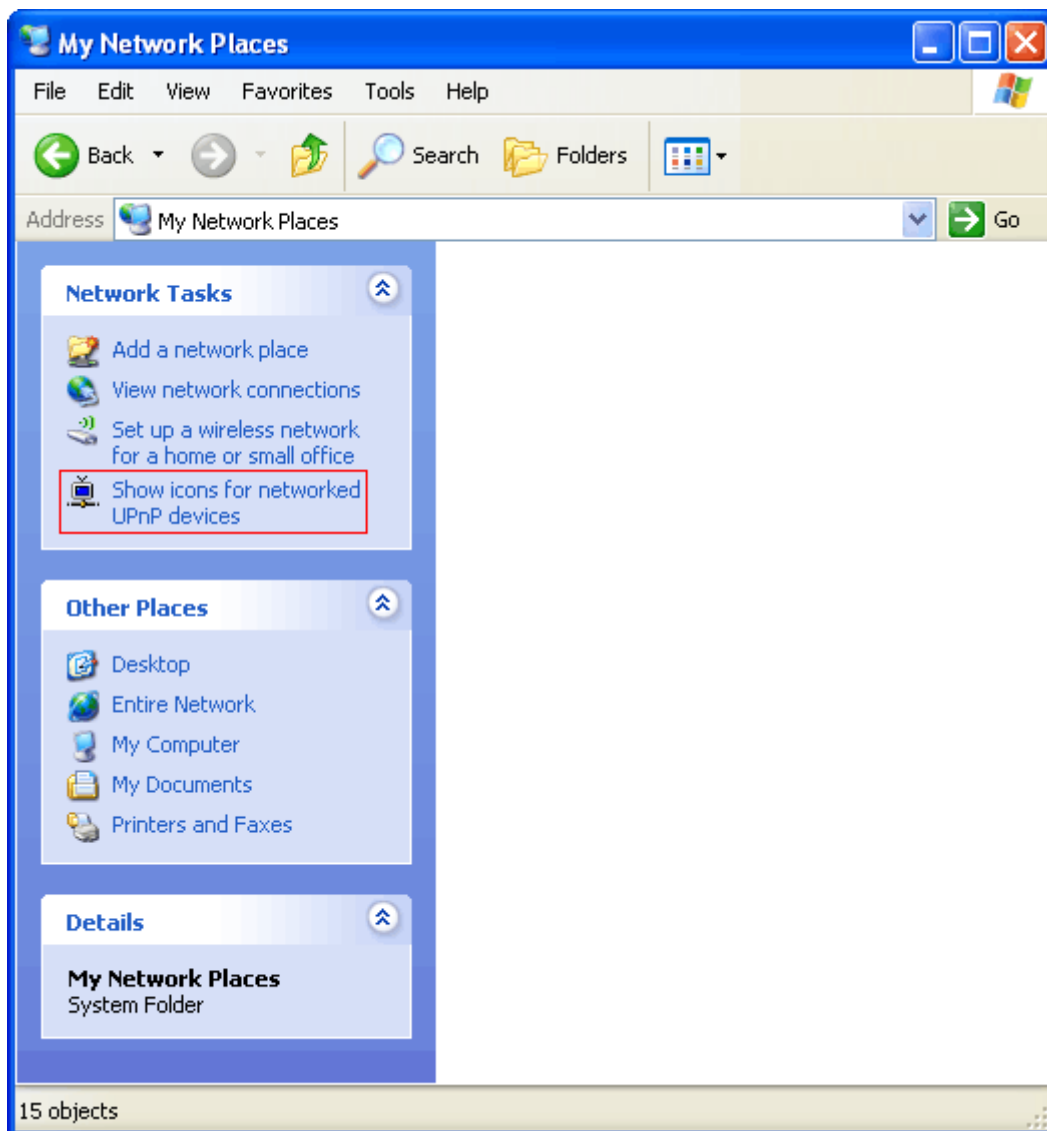


UPnP Activation

NOTE: The following explanations apply to Windows XP SP2 or SP3! If you use another operating system, please contact your system administrator.

Open “My Network Places”. If you have the caption displayed in the picture below, click on it. Then click “Yes” and wait for the process to complete. Now you should see the device. If you still have troubles finding the device, please see

<http://support.microsoft.com/kb/941206> or contact your system administrator.



WARRANTY TERMS AND CONDITIONS

I. TERMS OF SALE: DEVA Broadcast Ltd. products are sold with an understanding of “full satisfaction”; that is, full credit or refund will be issued for products sold as new if returned to the point of purchase within 30 days following their receipt, provided that they are returned complete and in an “as received” condition.

II. CONDITIONS OF WARRANTY: The following terms apply unless amended in writing by DEVA Broadcast Ltd.

A. The Warranty Registration Card supplied with this product must be completed and returned to DEVA Broadcast Ltd. within 10 days of delivery.

B. This Warranty applies only to products sold “as new.” It is extended only to the original end-user and may not be transferred or assigned without prior written approval by DEVA Broadcast Ltd.

C. This Warranty does not apply to damage caused by improper mains settings and/or power supply.

D. This Warranty does not apply to damage caused by misuse, abuse, accident or neglect. This Warranty is voided by unauthorized attempts at repair or modification, or if the serial identification label has been removed or altered.

III. TERMS OF WARRANTY: DEVA Broadcast Ltd. products are warranted to be free from defects in materials and workmanship.

A. Any discrepancies noted within TWO YEARS of the date of delivery will be repaired free of charge, or the equipment will be replaced with a new or remanufactured product at DEVA Broadcast Ltd. option.

B. Parts and labor for factory repair required after the two-year Warranty period will be billed at prevailing prices and rates.

IV. RETURNING GOODS FOR FACTORY REPAIR:

A. Equipment will not be accepted for Warranty or other repair without a Return Material Authorization (RMA) number issued by DEVA Broadcast Ltd. prior to its return. An RMA number may be obtained by calling the factory. The number should be prominently marked on the outside of the shipping carton.

B. Equipment must be shipped prepaid to DEVA Broadcast Ltd. Shipping charges will be reimbursed for valid Warranty claims. Damage sustained as a result of improper packing for return to the factory is not covered under terms of the Warranty and may occasion additional charges.

PRODUCT REGISTRATION CARD

- All fields are required, or warranty registration is invalid and void

Your Company Name _____

Contact _____

Address Line 1 _____

Address Line 2 _____

City _____

State/Province _____ ZIP/Postal Code _____

Country _____

E-mail _____ Phone _____ Fax _____

Which DEVA Broadcast Ltd. product did you purchase? _____

Product Serial # _____

Purchase date ____ / ____ / ____

Installation date ____ / ____ / ____

Your signature*

*Signing this warranty registration form you are stating that all the information provided to DEVA Broadcast Ltd. are truth and correct. DEVA Broadcast Ltd. declines any responsibility for the provided information that could result in an immediate loss of warranty for the above specified product(s).

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