

MPX Board
INSTALLATION GUIDE

DB9009-RX

Advanced IP Audio Decoder
with
Stereo & RDS Encoder Module



In order to facilitate the assembling of DB9009-RX with the Stereo and RDS Encoder module we have written these detailed instructions.

The instructions will acquaint you with the assembly of the RDS encoder module. Please read them carefully before you start.

We have illustrated with a photograph each step of the assembling process. If you have any doubts, before the beginning of a step refer to these photos to check the accuracy of the assembly process.

PLEASE NOTE that the device must **NOT** be connected to the electrical network during the assembly. **PLEASE OBSERVE THE SAFETY STANDARDS.**

Basic Assembly Principles

Here are a few tips that would make the assembly of the DB9009-RX Advanced IP Audio Decoder and the Stereo and RDS Encoder Module quick and easy. By using these principles, you can simplify the process and save yourself some extra time and effort.

1. When you are having a trouble placing a bolt between two separate pieces, you can get the bolt holes to line up by gently lifting and slightly gliding one of the pieces, so that it matches the factory holes perfectly.
2. You can make the assembly process faster by gathering the pieces you need for each step, prior to starting the step.
3. As a general rule for all bolts and locknuts - turning toward the right will tighten them, turning toward the left will loosen them.

Tools You Will Need

You will need the following tools to complete the assembly of the DB9009-RX Advanced IP Audio Decoder with the Stereo and RDS Encoder Module. If you don't have these tools, you can find them at any hardware or department store.

- Star shaped screwdriver №PH2

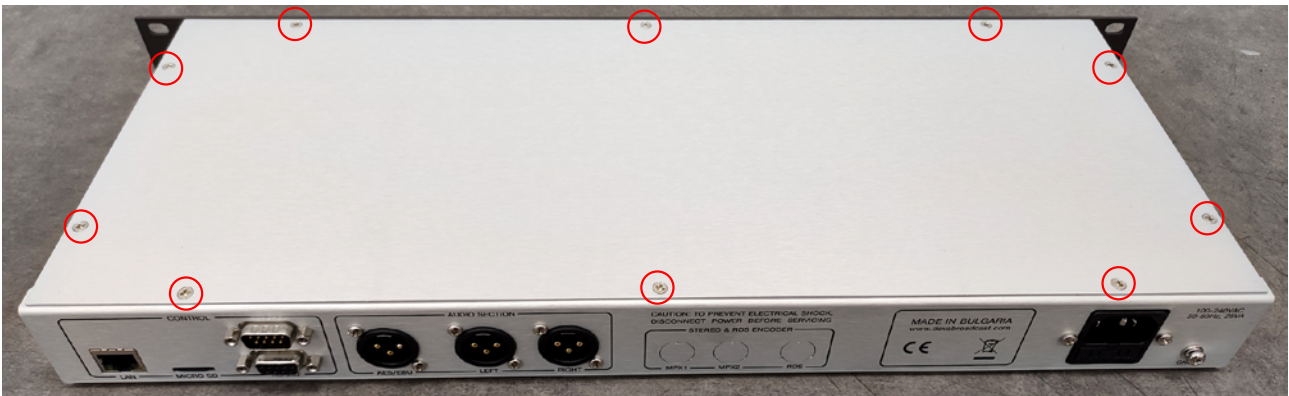
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Step 1 – TopCover

Place the device on a working table with static surface. The rear part of the device must be set against you (**Picture 1** represents the proper position for the device).

Next, using a **star blade screwdriver №PH2** unscrew the three bolts that hold the cover of the device. **Picture 1** displays the position of the bolts. (For your convenience we have circled them in red.)

Place the unscrewed bolts near you so that they can be at hand during the reassembling of DB9009-RX Advanced IP Audio Decoder with Stereo and RDS Encoder Module.



Picture 1

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Step 2 – Rear panel - knockouts

The next step of the process is the removal of the knockouts (circled in red on **Picture 2**). This will ensure space for the cable terminals of the Stereo and RDS Encoder Module.

1. Using a screwdriver (or other suitable instrument), press the knockouts to the inside;
2. Remove the knockouts (**Picture 3**).



Picture 2

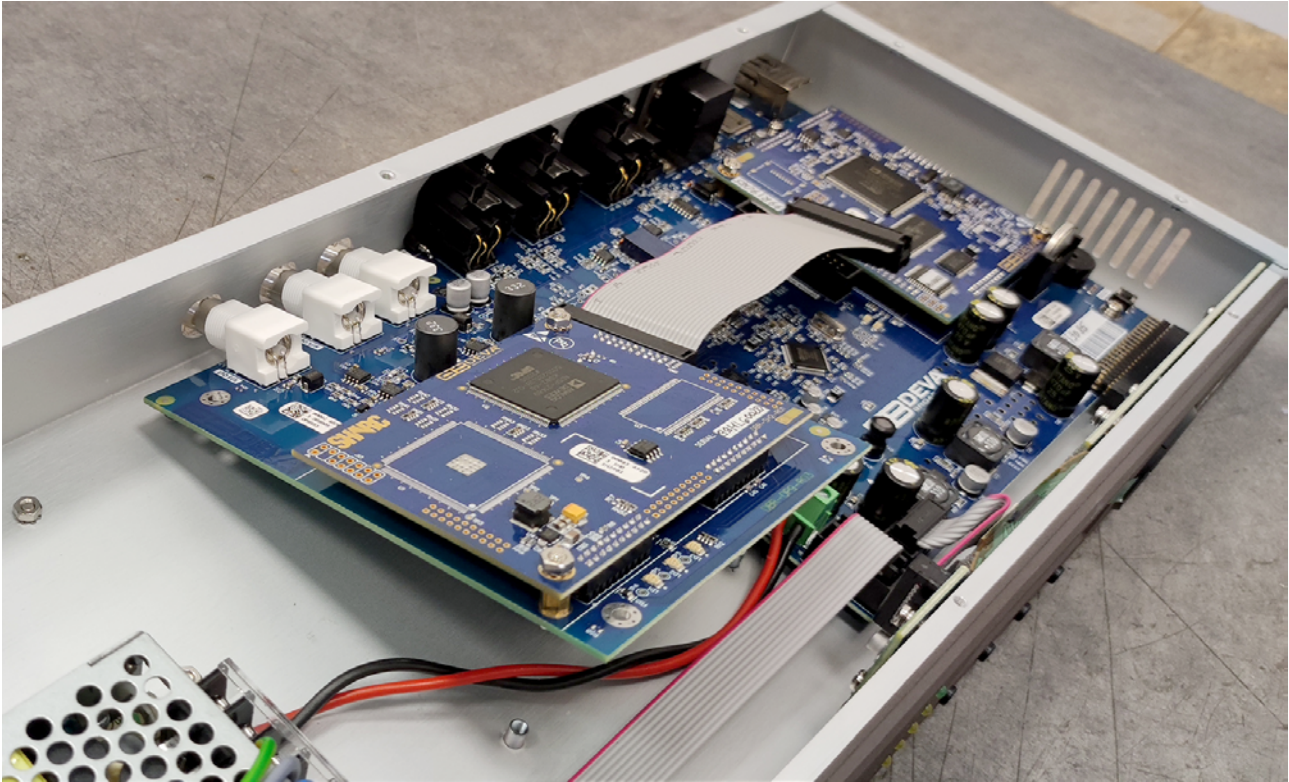


Picture 3

PLEASE NOTE that the device must **NOT** be connected to the electrical network during the assembly. **PLEASE OBSERVE THE SAFETY STANDARDS.**

Step 3 – MPX Module

At an angle (**Picture 4**), carefully slide the MPX motherboard connectors in the respective slots and gently align the two boards.



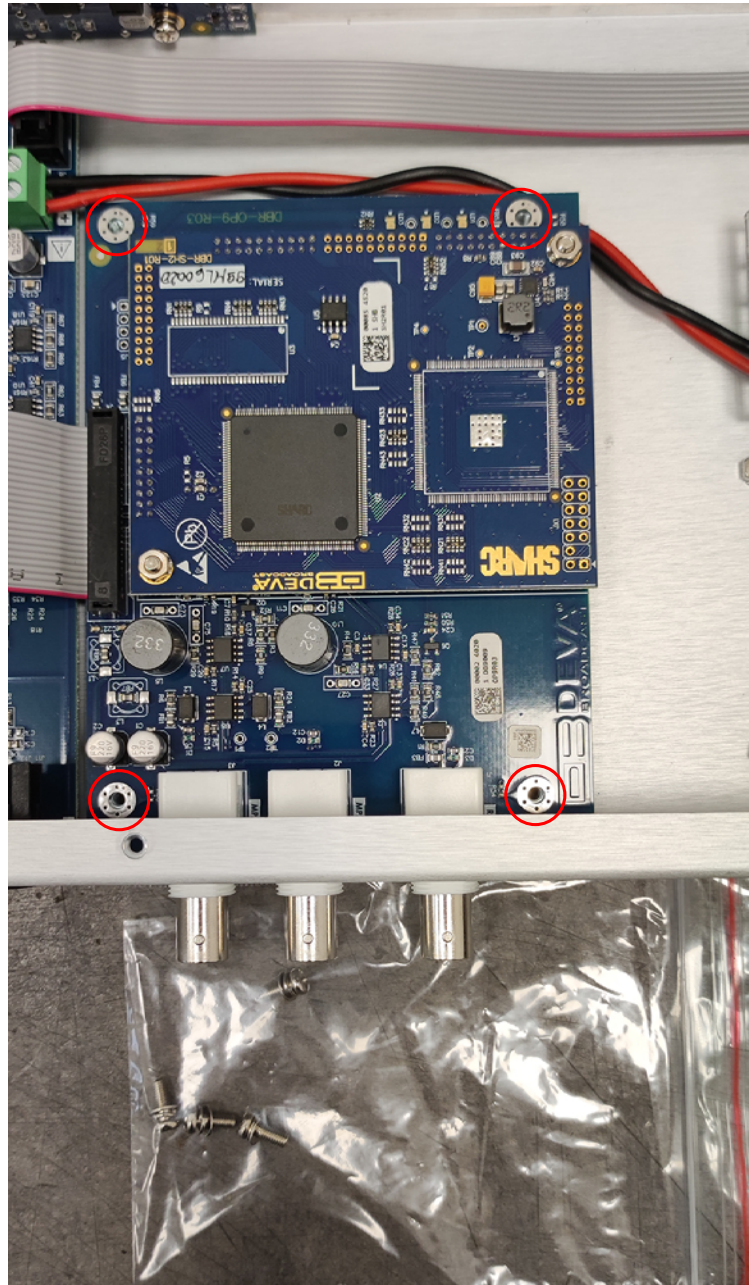
Picture 4

**PLEASE DO NOT REMOVE OR DAMAGE
ANY PARTS OF THE MOTHERBOARD!**

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Step 3.1 – MPX Module

Use a **star blade screwdriver №PH2** and the additional bolts, included in the set, to gently screw in the bolts to the metal bottom of the device as shown on **Picture 5**.



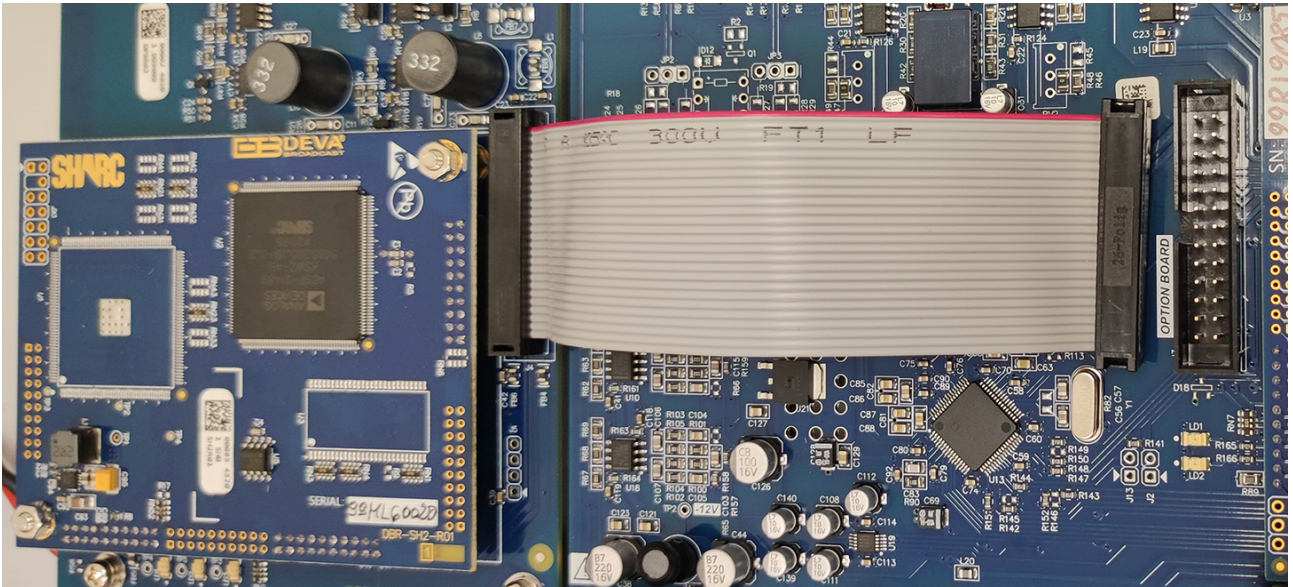
Picture 5

**PLEASE DO NOT REMOVE OR DAMAGE
ANY PARTS OF THE MOTHERBOARD!**

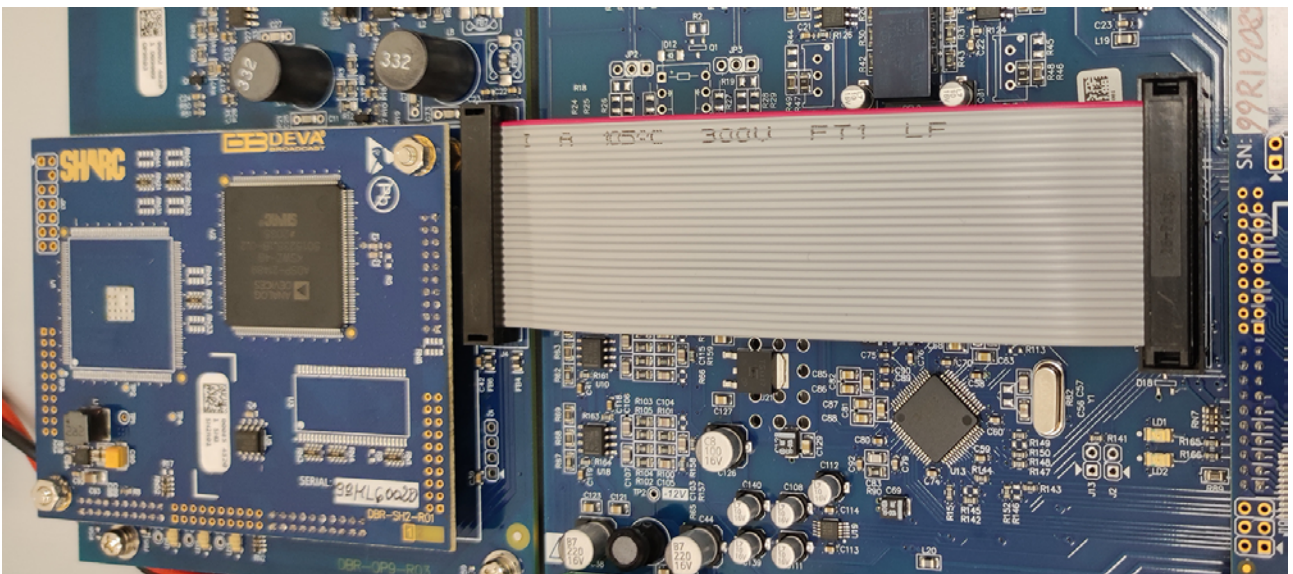
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Step 3.2 – MPX Module

Carefully fit together the plug and socket connectors (**Picture 6a**). Do not displace them to the left or right. Once they fit perfectly, gently press to connect them (**Picture 6b**).



Picture 6a



Picture 6b

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Step 4 – Reassembling

Once the Stereo and RDS Encoder Module is added to DB9009-RX Advanced IP Audio Decoder, the entire unit has to be reassembled following the steps listed above in a reverse order.

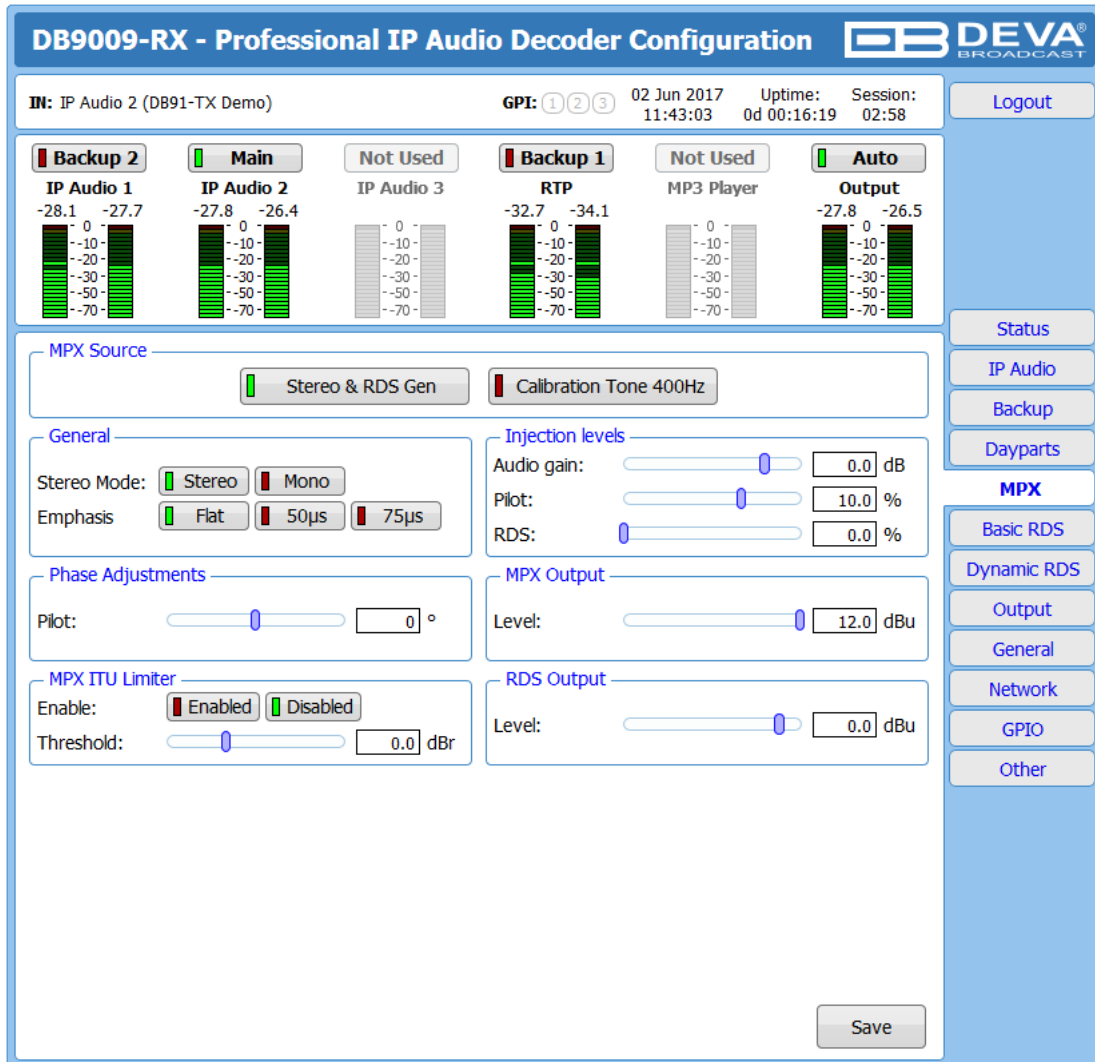
PLEASE OBSERVE THE SAFETY STANDARDS!


**PLEASE DO NOT REMOVE OR DAMAGE
ANY PARTS OF THE MOTHERBOARD!**

**BEFORE YOU CONNECT THE DEVICE TO THE ELECTRICAL NETWORK,
MAKE SURE THAT THE DEVICE IS CLOSED PROPERLY AND THERE ARE NO
FACTORY BOLTS LEFT UNUSED.**

Step 5 – WEB Interface

If the set-up procedure has been completed successfully, there is not a hardware problem, and the boards are communicating properly, upon establishing a connection with the WEB interface, the MPX function should be available (as depicted on the screenshot).



DB9009-RX - Professional IP Audio Decoder Configuration 

IN: IP Audio 2 (DB91-TX Demo) GPI: ① ② ③ 02 Jun 2017 Uptime: Session:
 11:43:03 0d 00:16:19 02:58 [Logout](#)

Backup 2 Main Not Used Backup 1 Not Used Auto

IP Audio 1 **IP Audio 2** **IP Audio 3** **RTP** **MP3 Player** **Output**
 -28.1 -27.7 -27.8 -26.4 -32.7 -34.1 -27.8 -26.5
 [Level meters for each input and output]

MPX Source
 Stereo & RDS Gen Calibration Tone 400Hz

General
 Stereo Mode: Stereo Mono
 Emphasis: Flat 50µs 75µs

Injection levels
 Audio gain: dB
 Pilot: %
 RDS: %

Phase Adjustments
 Pilot: °

MPX Output
 Level: dBu

MPX ITU Limiter
 Enable: Enabled Disabled
 Threshold: dB

RDS Output
 Level: dBu

[Save](#)

Navigation Menu: Status, IP Audio, Backup, Dayparts, **MPX**, Basic RDS, Dynamic RDS, Output, General, Network, GPIO, Other

If a problem during the process of installation has occurred, or the boards are not communicating properly, upon establishing a connection with the WEB interface, when MPX function is selected, the following message will appear (as depicted on the screenshot).

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 is a status bar with the following information: 'IN: IP Audio 1 - SIMPLY RED - SOMETHING GOT ME STAR...', 'GPI: 1 2 3', '19 Sep 2017', 'Uptime: 10:11:29', 'Session: 0d 00:00:46', and '02:42'. A 'Logout' button is located in the top right corner.

The main content area is divided into several sections. At the top, there are six audio processing blocks: 'Main', 'Backup 1', 'Backup 2', 'Not Used', 'Not Used', and 'Auto'. Each block has a level indicator and a frequency response graph. The 'Main' block shows a level of -4.9 dB. The 'Backup 1' block shows a level of -8.2 dB. The 'Backup 2' block shows a level of -5.1 dB. The 'Auto' block shows a level of -4.9 dB.

Below these blocks, there is a 'MPX Source' section with two options: 'Stereo & RDS Gen' (selected) and 'Calibration Tone 400Hz'. The 'General' section includes 'Stereo Mode' (set to 'S'), 'Emphasis' (set to '0.0'), and 'Phase Adjustment' (set to '6.2 dBu'). The 'Injection levels' section includes '0.0 dB', '10.0 %', and '0.0 %'. The 'MPX ITU Limiter' section includes 'Enable' (set to 'Enabled') and 'Threshold' (set to '0.0 dBr'). The 'RDS Output' section includes 'Level' (set to '12.0 dBu').

A yellow error message box is overlaid on the interface, containing the text: 'STEREO ENCODER BOARD IS NOT INSTALLED' and 'Contact us at: sales@devabroadcast.com'. A 'Save' button is located at the bottom right of the interface.

The right sidebar contains a vertical list of navigation buttons: 'Status', 'IP Audio', 'Backup', 'Dayparts', 'MPX', 'Basic RDS', 'Dynamic RDS', 'Output', 'General', 'Network', 'GPIO', and 'Other'. The 'MPX' button is currently selected.

In this case, following strictly the previously described procedure, remove the equipment's lid (Steps 1 & Step 2) and make sure that the MPX board has been properly installed.

PLEASE NOTE that the device must **NOT** be connected to the electrical network during the assembly. **PLEASE OBSERVE THE SAFETY STANDARDS.**

After reassembling the unit, connect the device via the WEB interface. If the message "STEREO ENCODER BOARD IS NOT INSTALLED" appears again, please contact us at support@devabroadcast.com