

NSM Audio Accessory Board Installation (Icon) 10153_2A

NSM's Audio Accessory Board may be installed in place of the Icon's built-in amplifier system. This accessory provides two stereo (4 mono) variable level outputs which may be used to feed audio to an external sound system. The outputs are controlled by the jukebox volume control. This board also has two RJ45 style connectors which may be used to connect it to a Bose® AcoustiMass® audio system. Additionally, the Audio Accessory Board contains precise AVC circuitry that performs much better than the original circuitry on the MainBoard. Other than eliminating the jukeboxes built-in amplifiers, all music and audio peripheral functions remain the same.

Installation of the board basically consists of removing the Icon's two amplifiers, their power supplies, related harnesses and AVC board, then connecting the audio accessory board to the MainBoard, power and external amplifier(s). See pages 2 and 3 for before and after photos.

Step by Step:

1. TURN OFF JUKEBOX MAIN POWER

2. Remove AVC Board

- Disconnect harnesses.
- Remove AVC Board. Save the mounting hardware as you'll need it to install the Accessory board. Save AVC Board as a spare.

3. Remove Power Supplies

- Disconnect harnesses.
- Remove power supplies. Save power supplies as spares.
- Be sure the AC power harnesses (cables with the brown and blue wires) are "tucked away" so as not to come into contact with any parts, boards or metal.

4. Remove Amplifiers

- Disconnect harnesses.
- Remove amplifiers. Save amplifiers as spares.

5. Remove Speaker Connector Board

- Disconnect harnesses.
- Remove speaker connector board. Save as a spare.
- Remove all loose harnesses except the flat grey ribbon cables and AVC board harnesses. Save the removed harnesses as spares.

6. Install the Accessory Board (In the following steps it may be necessary to re-route some cables or harnesses.)

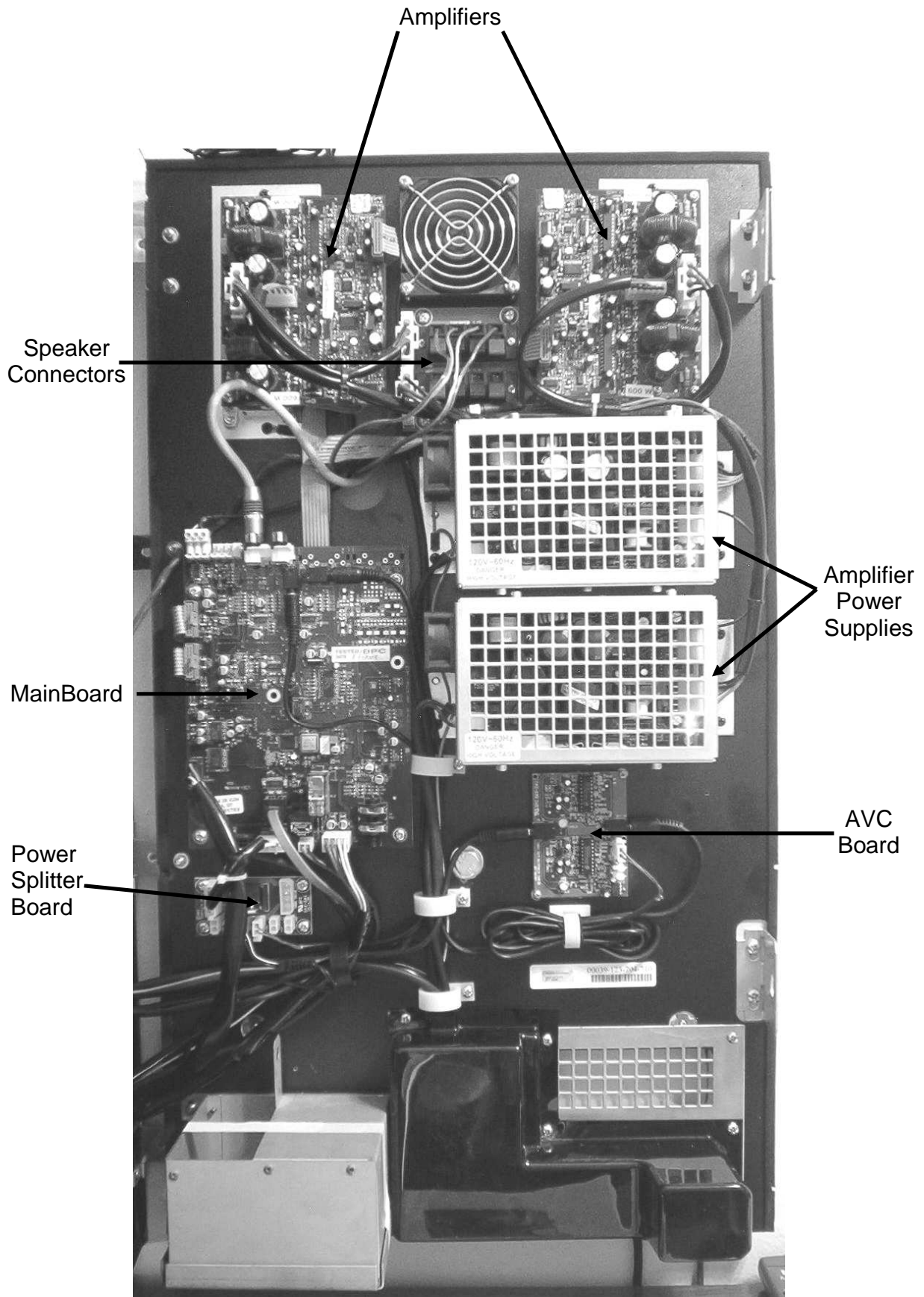
- Using the spacers and screws retained from the AVC board, install the Accessory Board below and to the left of the cabinet fan. (In place of the left amplifier board.) Mount it vertically so that the RCA jacks are at the top right.
- Connect Audio Cable from MoJO Audio Output (Green Plug) to Accessory Board J1 (In).
- Connect Audio Cable from MainBoard J8 (PC Audio) to Accessory Board J2 (Out).
- Connect Power Cable from Power Splitter Board J5 (+12V) to Accessory Board J3 (12V+)
- Connect grey ribbon cable from MainBoard J7 to Accessory Board J5.
- Connect grey ribbon cable from MainBoard J15 to Accessory Board J6.
- Dress any remaining loose cables or wires.

7. Connect Audio Output to an external sound system. (See page 5 for system connection and volume control details.)

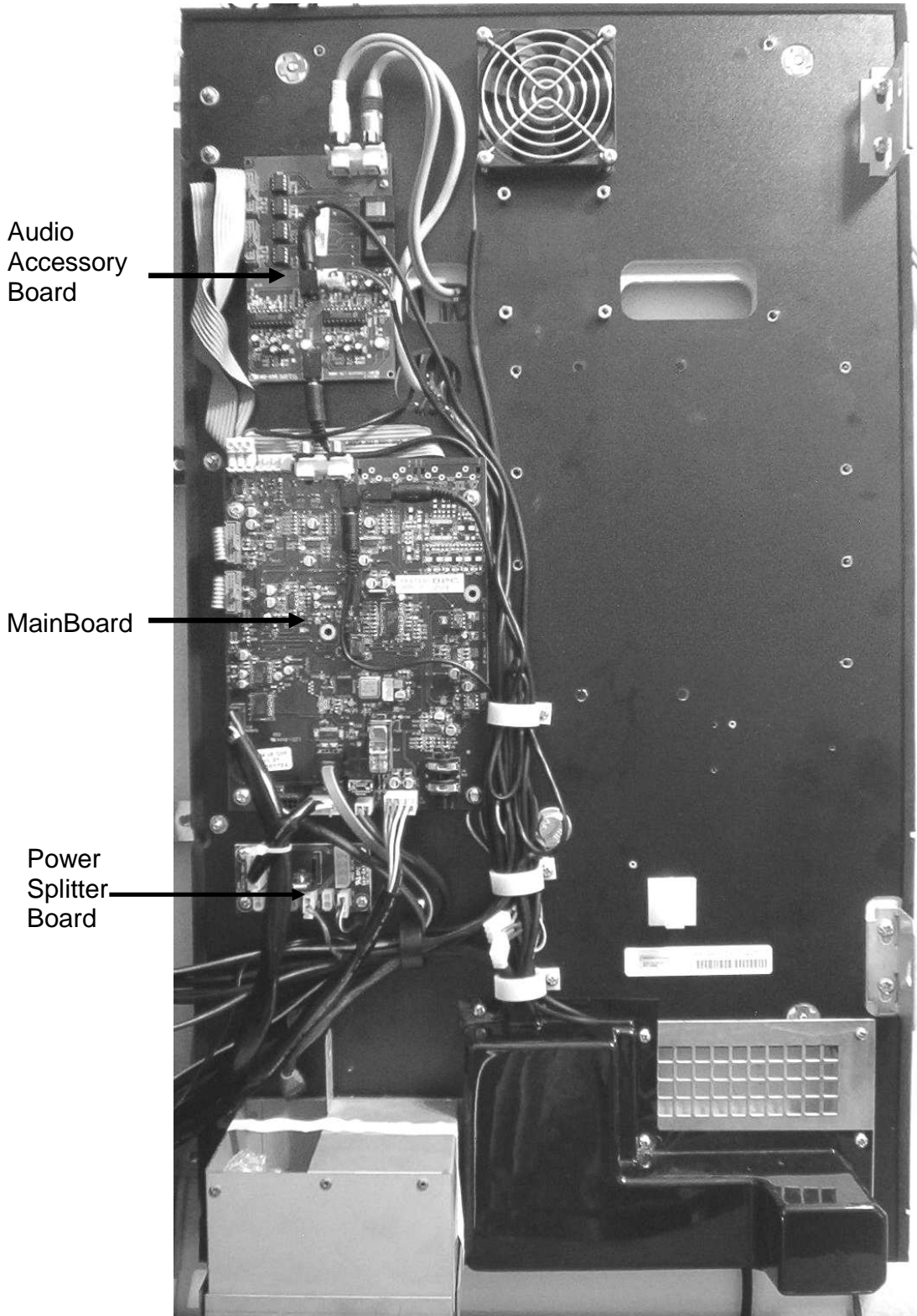
- The 4 RCA Jacks provide variable line level output which is controlled by the jukebox volume control. The left jacks are channels 1 and 2; the rights are channels 3 and 4. Using a high quality audio patch cable or properly terminated coaxial cable, connect to your external sound system. (Using plain hookup wire, speaker wire, shielded speaker wire, Cat 5 cable, volume control wire, etc. will result in unsatisfactory performance.)
- The two RJ-45 style jacks provide output to feed audio to a Bose® AcoustiMass® system. The top jack (nearest the RCA jacks) is controlled by channels 1 and 2 and the bottom is controlled by channels 3 and 4. Using a proper patch cable, connect to your system.

8. Restart jukebox and test. All volume control, microphone and BGM functions should perform as they did before adding the Accessory Board. *After installation, it may be necessary to adjust the boards gain via VR1 and VR2. See page 4.*

NSM ICON before Accessory Board



NSM ICON after Accessory Board



Gain Adjustment.

Even though all NSM circuit boards are tested at the factory, local conditions can vary, possibly making it necessary to adjust the Audio Accessory Boards gain.

If after installing the board you find its output to be fuzzy or distorted, the gain is likely too high. Conversely, if the audio is weak, either the gain is too low or the wire feeding your external system is creating excessive signal loss.

Gain is adjusted with VR1 and VR2. Turning the control clockwise decreases the gain. Counterclockwise increases it.

The controls are very sensitive and a little movement can generate a lot of change. To make the adjustment, be sure music is playing and adjust each control, equally, very little at a time until the desired audio is achieved.

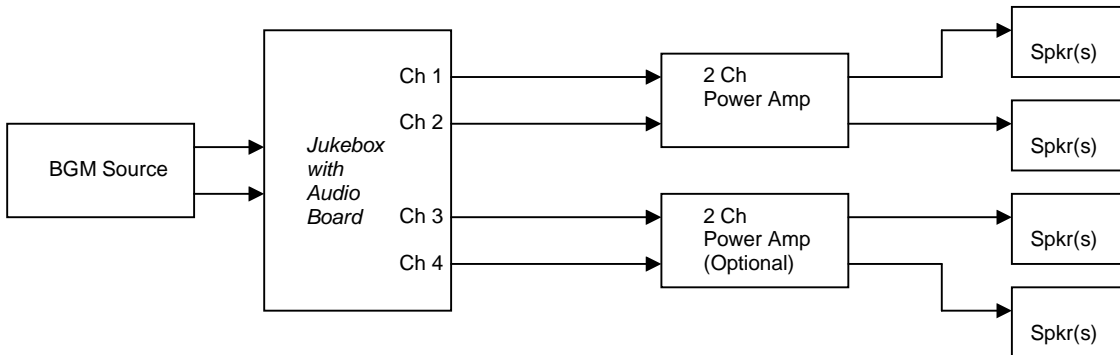
The controls are adjusted properly when you achieve maximum audio output without any fuzziness or distortion.



Connecting to an external system and controlling the volume.

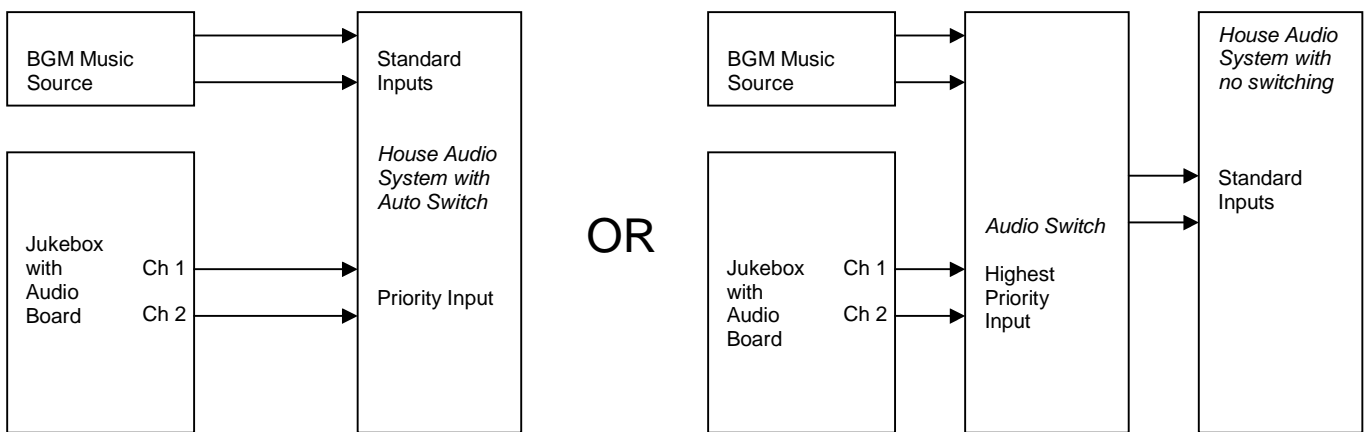
Volume may be controlled in one of two ways. 1. The jukebox controls volume or; 2. The external sound system controls the volume. This page explains how to set up for each.

Jukebox controlling volume: In this scenario, which functions no differently than a stock jukebox, the jukebox will feed a variable level audio signal to an external power amplifier. The gain of the external amplifier will be set to the allowable maximum volume level and then left alone. Use the jukebox volume control to regulate the volume. Background music, (television audio, satellite, cable) if used, remains connected to the BGM inputs on the jukebox MainBoard and functions the same as it did before adding the Audio Accessory Board. No special programming is required. Note; when connecting separate audio components there is a possibility of a ground loop. You'll know you have one if your audio has a loud hum or static. To prevent or cure a ground loop, NSM recommends using a Hum Eliminator or ground loop isolator between components.



External sound system controls volume: In this scenario, the jukebox will feed a fixed level audio signal to an input of the external system. This input may be one on a mixer board or the Aux inputs of an audio receiver. NSM recommends using a mixer or receiver that has “priority inputs” or audio sensing inputs. Reason being, if the location uses background music and their mixer board or receiver does not have sensing / switching inputs, location personnel will have to manually “turn on” the jukebox whenever a song is played. If the house system you’re connecting to lacks auto switching there are automatic switching devices on the market that will do the job. Below are diagrams showing both setups.

When using this scenario it is necessary to “fix” the jukebox volume by accessing the Service Console > System Settings and Diagnostics > Set Paid-Play Volume Level and Limits screen. Set all Min, current and Max volume levels to 85% or higher. Set the Background-Play Levels and Limits the same way.



Note; when connecting separate audio components there is a possibility of a ground loop. You'll know you have one if your audio has a loud hum or static. To prevent or cure a ground loop, NSM recommends using a Hum Eliminator or ground loop isolator between components.

Should you need additional information, please contact NSM Factory Service at (630) 279-2244 or email: EdGlapinski@nsmmusic.com