

Application Notes

Max EQ Five-Band External Equalizer

(p/n 700209-001)

About This Document

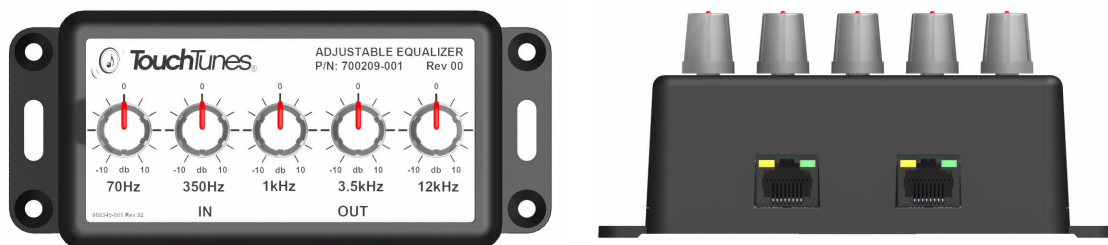
This document is intended for:

- Operators of TouchTunes digital jukeboxes.
- TouchTunes Field Service, Customer Support, and Sales personnel.

It provides information concerning the setup and operation of TouchTunes new Max EQ external five-band graphic equalizer.

Overview

In response to feedback from our Operators, TouchTunes makes available to its operators—individually, and as a companion product to its PerforMax Pro speakers—the Max EQ 5-band graphic equalizer (p/n 700209-001) that can be used with any MJS or JCB-equipped TouchTunes jukebox.



Max EQ Five-Band Equalizer (Top and Side Views)

The Max EQ equalizer offers five bands of EQ ranging from 70Hz to 12kHz, with boost/cut of +/- 10dB per band. This lets you completely control your sound and make dramatic adjustments to the sound output by eliminating unwanted frequencies and enhancing others from the source signal.

The Max EQ equalizer is designed as a versatile solution for optimizing sound quality whether used with TouchTunes sound packages or third-party amplifiers. It can be used on any of your jukebox's audio output zones, and can be mounted internally in your TouchTunes jukeboxes, for example:

- On the service tray (Allegro MX-1 only).
- On the rear metal casting (Ovation, Ovation II, Maestro).
- On the rear or side wall of the enclosure (Allegro).

Disclaimer



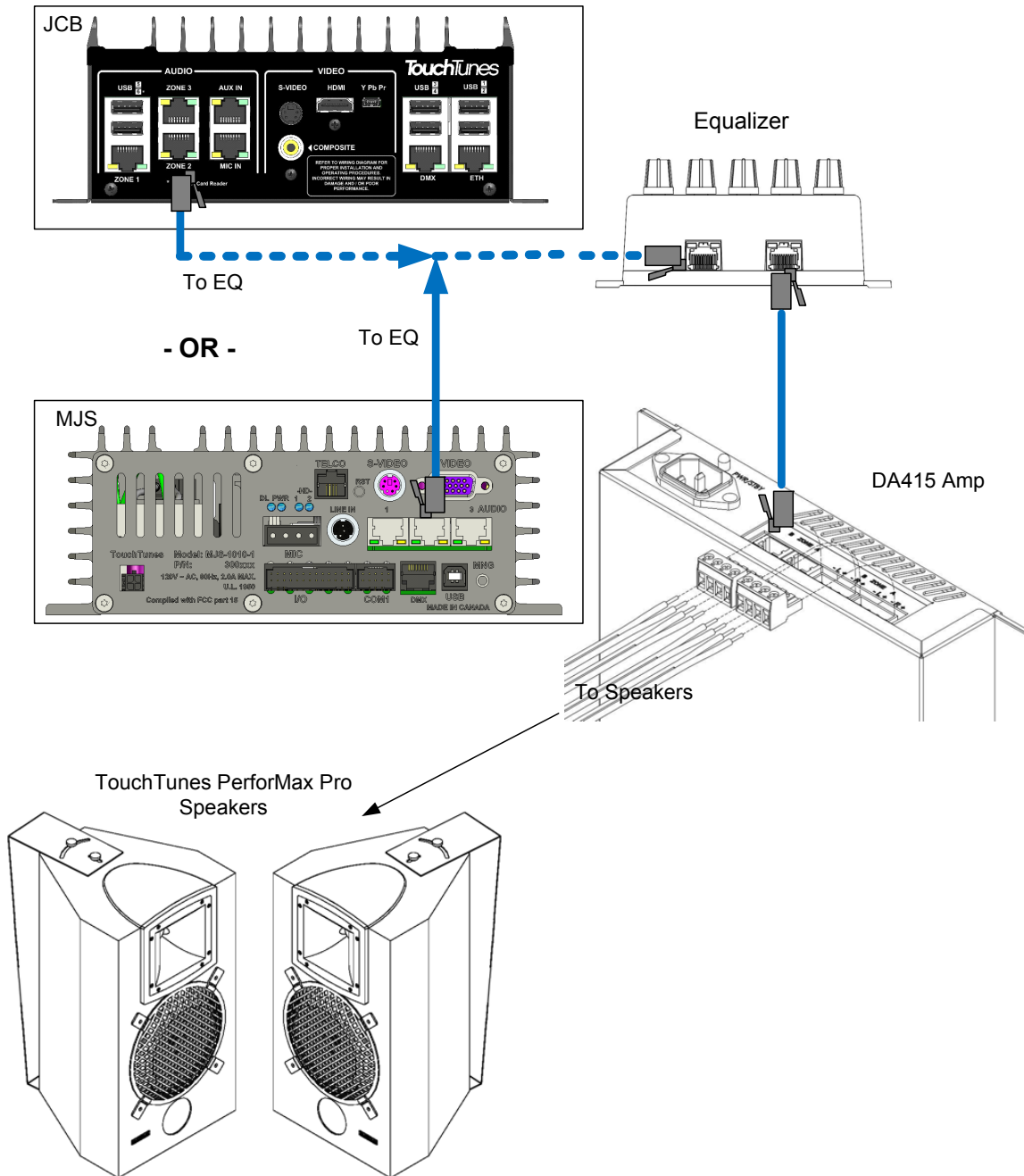
Exercise caution when applying EQ settings—particularly when using third-party amplifiers. The equalizer provides up to 10dB of boost, which may not be appropriate to the sound quality or the safe operation of your amplifier.

Consult the manufacturer's documentation for the input specifications of your amplifier.

TouchTunes is not responsible for equipment damage caused by the improper installation and/or operation of this component.

Connecting the Equalizer

The following figure illustrates how the Max EQ equalizer connects to other jukebox components in a standard installation (MJS or JCB computer) using the jukebox's zone 2 audio output, a DA415 4-channel amplifier and TouchTunes PerformMax Pro speakers.

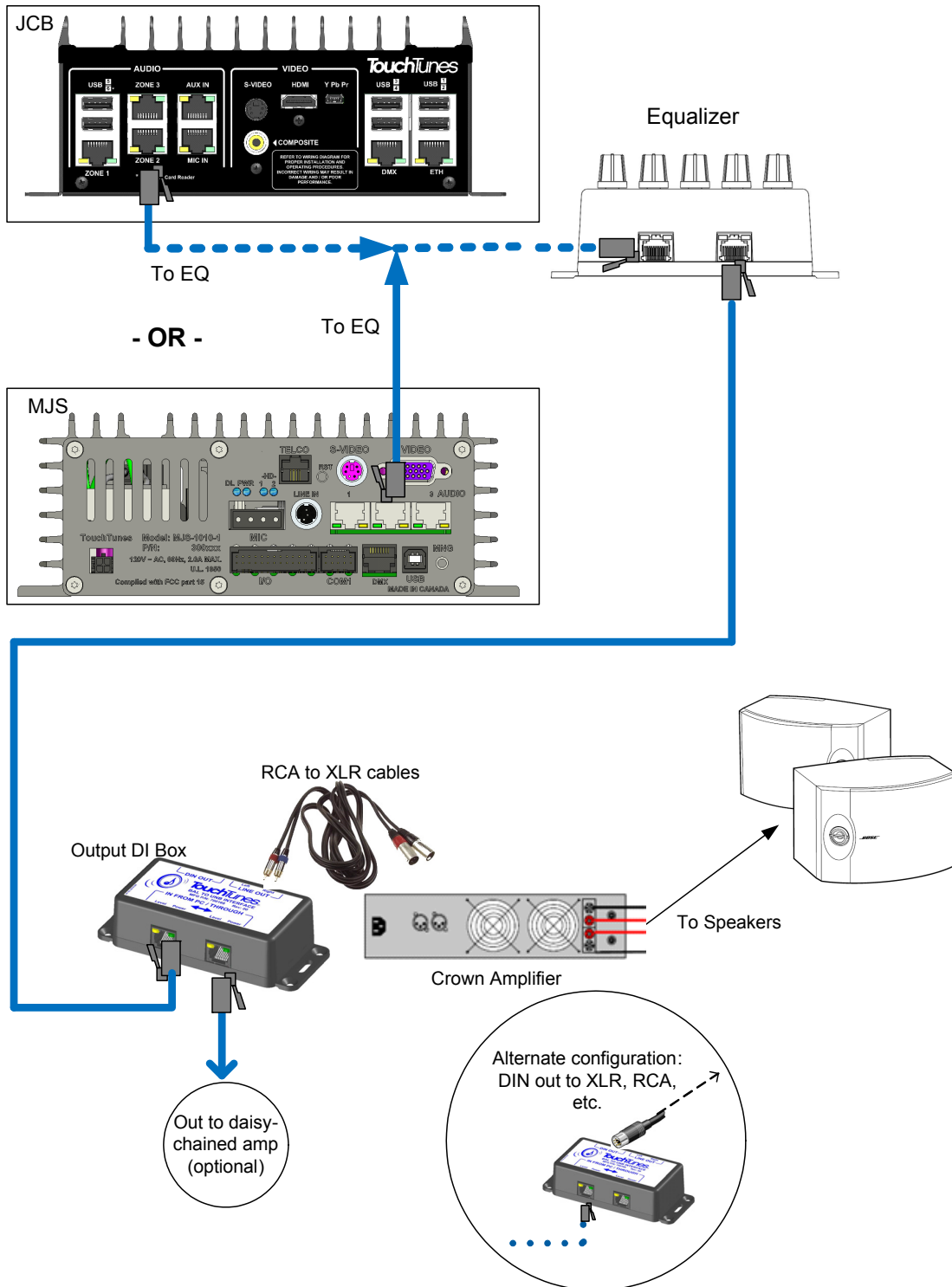


Connecting the Max EQ Five-Band Equalizer Using TouchTunes (DA415) Amplifier

When the equalizer is used in configurations using a third-party amplifier, a line-out DI box (p/n 700168-001) is required if the amplifier is not equipped with RJ45 input connectors.

The output DI box is equipped with an RJ45 input connector, a second RJ45 through connector for daisy-chaining, and provides both RCA and XLR outputs.

The following figure illustrates a configuration using the output DI box and third-party amplification.



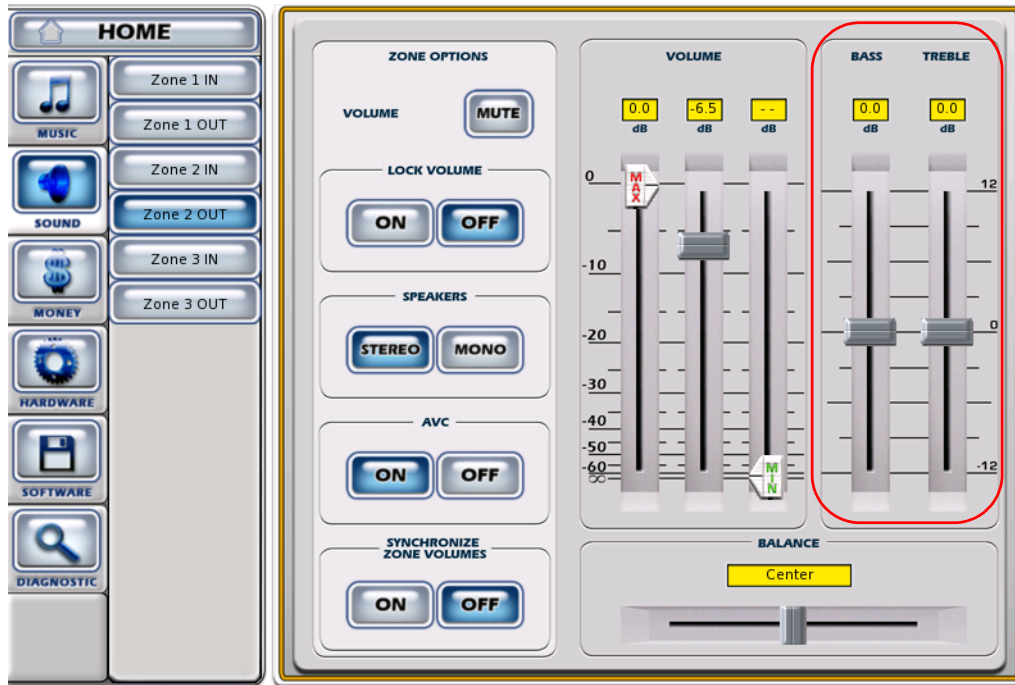
Using the Max EQ Equalizer With Output DI Box and Third-Party Amplifier

Operation

This section provides information and recommendations for the use and operation of the Max EQ equalizer.

Keep the Jukebox Tone Controls Flat

When the equalizer is installed, it is important to keep the jukebox's tone controls (bass and treble) flat. Increasing the bass level may cause the system to saturate at a lower volume.



Jukebox Tone Controls

In some cases where the jukebox is located in the corner of a room, an adjustment on the bass below zero could be required. TouchTunes strongly recommends that you listen to a variety of different music selections and genres, at the lowest and highest volumes you intend to permit for use at your locations, before finalizing these settings.

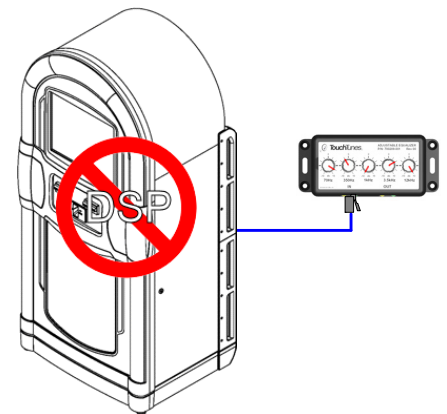


DO NOT DOUBLE-EQUALIZE YOUR AUDIO SIGNAL! (DSP-Edition JCB)

TouchTunes' newest generation JCB computer boasts DSP technology for improved audio quality, equalization, and noise reduction. Designed for TouchTunes' newer jukeboxes (Allegro MX-1, Ovation II), the DSP EQ feature is not intended for use with additional equalizers and is, by default, turned off in the jukebox software.

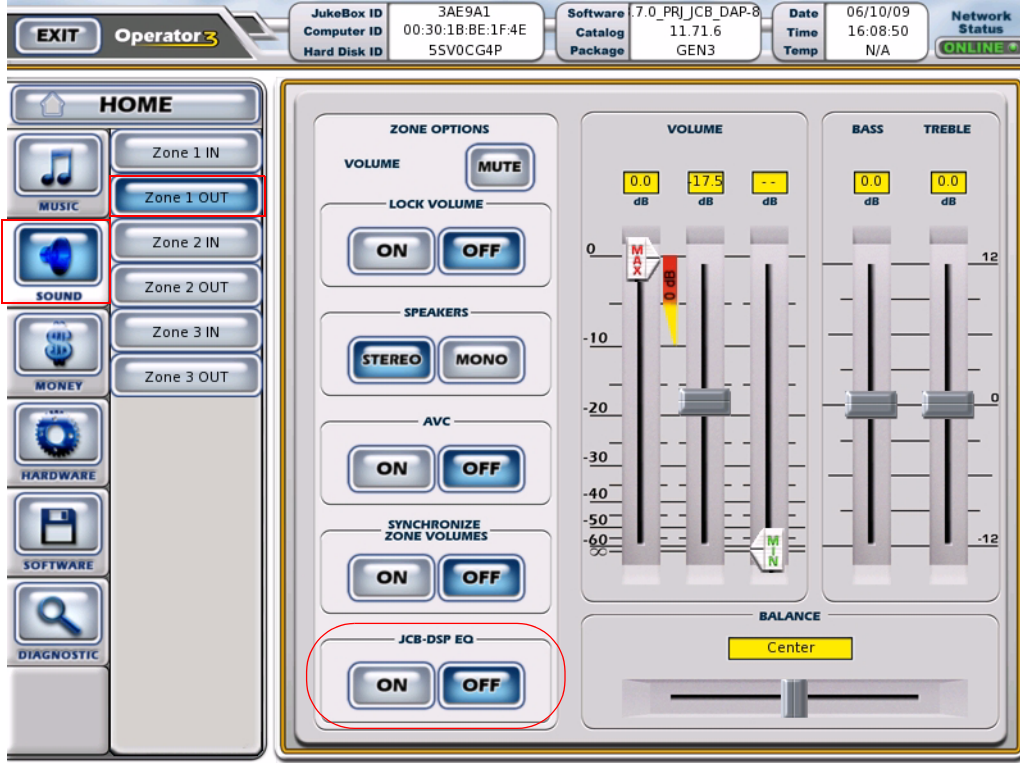
When connecting your equalizer to a jukebox equipped with a DSP-edition JCB computer, TouchTunes recommends that you leave the DSP equalization feature off, as the audio quality resulting from double equalization is unpredictable.

If you are experiencing audio problems with your installation, verify that the DSP equalization feature has not been turned on inadvertently.



To do so:

1. From the main Operator interface, select the **Sound** menu, and then select **Zone 1 Out** (or the zone where your Max EQ equalizer is connected).



Verifying DSP EQ Setting

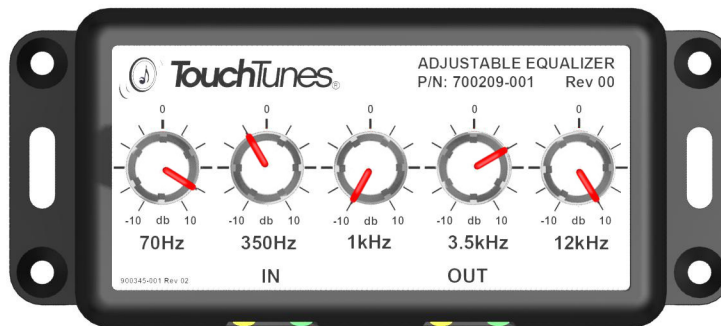
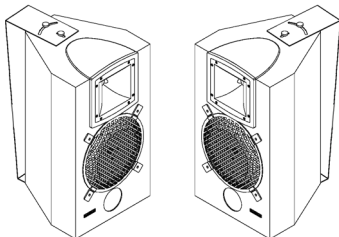
2. In the **JCB DSP EQ** area, verify that the feature is turned **OFF**.

Recommended Settings

The following are some recommended settings for the TouchTunes Max EQ equalizer when used in conjunction with TouchTunes PerforMax sound packages.

Note: The following settings are provided as a starting point and a reference only, and results may vary depending on the size and acoustic properties of the location. Feel free to experiment with your settings until the desired results are achieved.

TouchTunes PerforMax Pro Sound Package



TouchTunes Max EQ Five-Band Equalizer Recommended Settings

When using the equalizer with third-party sound packages:

- Consult your amplifier manufacturer's documentation to determine whether this component is suitable for use with your system. (See "Disclaimer" on page 1.)

- Start with all EQ settings flat (zero) and adjust as required.

Specifications

Specifications of the TouchTunes Max EQ five-band equalizer are provided in the following table.

Nominal Input Level	11V rms
Input Impedance	50K ohms
Nominal Output Level	11V rms
Output Impedance	300 ohms
Variable Range	Equalizer Control: +/- 10 dB
Connectors	RJ45 input jack, RJ45 output jack
Width	134 mm / 5.25 inches
Depth	57.1 mm / 2.25 inches
Height	41.3 mm / 1.625 inches

Contacting TouchTunes Support

If you need help with or have questions about this document, contact TouchTunes by:

- Using the email links on the Contacts page on the TouchTunes Dashboard at <https://operator.touchtunes.com>.
- Calling TouchTunes 24/7 Service Hotline at 847-353-1954.

To help us assist you more effectively with problem reports, the following information may be required when contacting TouchTunes Support:

- Jukebox ID or PlayPorTT ID.
- Jukebox model.
- The serial number of any component you believe to be defective.
- The date/time of the problem.
- Actions performed immediately before the problem occurred.
- Any additional comments.

If you require assistance with this or any other TouchTunes product, please call or email technical support. We value your comments.

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