

Juke Application Note – Using a Third Party Amplifier as an Output

Revision 1.5

Summary

Juke provides outputs that power speakers in each zone. This application note explains how to connect a zone output from Juke to a third-party amplifier. This is handy if you already have a theater room with an amp and you want to integrate that with Juke or if you have larger speakers and want even more volume in a zone!

Introduction

Most amplifiers take input as line-level. Line-level is a weaker signal compared to speaker-level and is intended to communicate audio from one device to another – not to power a speaker. Juke outputs at speaker-level.

Stepping down to line-level

To bring Juke’s outputs down from speaker-level to line-level for communicating with third-party amplifier you will need the following component:

Part Description	Amazon ASIN Number	Amazon Link	Approximate Price
PAC SNI-35 Variable LOC Line Out Converter	B001EAWS3W	Speaker-level to line-level converter	\$9.77

Connect the 4 wires of the PAC in parallel with the speaker wires connected to Juke’s green connector (the correct order from left to right is: white, white with a black stripe, gray, gray with a black stripe) for that zone and connect the RCA jacks to the line-inputs on the third-party device. You can adjust the volume of the PAC with the rotary dials on the end, but most likely the default setting will work well and there is no need to make an adjustment. That’s it!

Playing without a parallel speaker connection

If you wish to stream via Juke to the third-party amplifier but do not want any speakers on the same output, you will need to add a resistor across the positive and negative terminals of Juke’s left and right outputs for that zone.

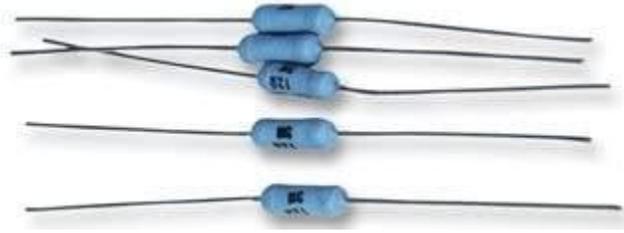
(This makes Juke think that speakers are connected to that zone, otherwise it won’t play.) This requires the following part:

Part Description	Amazon ASIN Number	Amazon Link	Approximate Price
MULTICOMP MC14709 RESISTOR, WIREWOUND, 50 OHM, 5W, 1%	B005T86UNY	Resistors	\$9.88

To do this, insert the wires for a resistor to the positive (+) and negative (-) terminals for Juke's left output terminal (i.e. in parallel with the wires going to the PAC part). Do the same for the right output terminals using a second resistor. Tighten the 4 screws to secure the wires and resistors.

Note: Make sure the metallic parts of the resistors are not in contact with each other, otherwise your system will not be able to output audio properly!

Here is what the resistors look like:



And here is what they look like applied to the terminal block in parallel with the PAC device (the brown wires are for grounding, which can be ignored, so just apply electricians tape to the ends):

