

SpeakerMate Model Two by SherlockAudioCanada

Thank you for purchasing this Sherlock Audio product. All Sherlock Audio SpeakerMate products are designed & hand built, one at a time by Gilles R. Grignon in his own shop, in Cornwall, Ontario, Canada. By combining over thirty years of experience in the audio & musical electronics, clever innovative designs along with premium grade components from Europe & North America, Sherlock Audio can offer unique and superior quality gear at reasonable prices.

SpeakerMate was *not* designed to match up power levels between mismatched impedance *pairs* (for example: an 8ohm + a 4ohm spkr cab or an 8ohm + a 16ohm cab) but instead was designed to allow for *multiple* matched imp. pairs as well as several mismatched imp. triple cabinet setups.

SpeakerMate was designed to offer a wide variety of connection “scenarios” so, please take the time to read these instructions thoroughly to fully understand what this specific SpeakerMate model can do for you and *your* individual amplifier & speaker setup. A lot of thought and features were designed into this unit to offer as many hookup options as currently possible, without having to resort to the use of any “mystery” cables, or “jumpers” so choose your required setup from the list below and then...POWER UP!

Model Two came about after countless requests from bassists, PA & DJ operators alike. They wanted to be able to use different combinations of lower powered speaker cabinets that were equipped with traditional ¼” jacks, along with higher powered cabinets, most of which were *solely* equipped with Neutrik Speakon connectors. They needed to be able to do this without having to retrofit connectors into all their cabs, jack panels or jimmy up all sorts of odd cables & adaptors to run back to their poweramps as well.

Housed in the same size enclosure as the Model 5, this new model features a mono (2pole) Speakon amp input, as well as dual ¼” and dual Speakon (2pole) cabinet feeds. Besides performing many of the same functions as a Model 4 and Model 5, we’ve also added a clever “imp-switching” function (user switchable) that offers players more hookup combinations with the use of mixed or matched connectors that can be easily configured into series or parallel pairs and quad setups.

Maximum power handling rating is 1000watt rms down to 4ohms at the “from amp output” jack

All examples possible are described further on in these instructions.

Possible speaker setups with Model Two:

2x16ohms + 1x8ohm	= 4ohm total
4x4ohms	=4ohm total
4x8ohms	=8ohm total
4x8ohms	=2ohm total
2x8ohms	=16ohm total
2x8ohm	=4ohm total
4x16ohm	=16ohm total
4x16ohm	=4ohm total
2x4ohm	=8ohm total
2x8ohm + 1x4ohm	=8ohm total
2x16ohm	=8ohm total
3x16ohm	=6ohm total

Make sure your amp is turned OFF, *BEFORE* making or changing any speaker cable or cabinet connections.

Make ALL connections with regular speaker cables *BEFORE* applying power to your amp, speakers and Speaker Mate.

Make sure that all speaker plugs are fully engaged and “clicked” into the jacks to properly activate the SpeakerMate switching circuitry .

Connect a properly terminated speaker cable from your amp’s power output(aka speaker output)jack to the SpeakerMate “from amp output jack”.

For shortform;we’ll refer to:

SK: for Speakon connector equipped cabinet(these are usually higher power capacity newer production units).

¼”: for phone jack equipped cabinet(these are usually lower power capacity earlier production units).

Spkr : for speaker(as in spkr cable)

Cab : for speaker cabinet unit

“Speakon” is registered branded trademark of Neutrik

2x4ohm cab setup(with matching SK jacks):

Plug one 4ohm cab into "D". Plug the second,4ohm cab into "C". Set the MODE switch in,to HI (I).
Your amp should "see" approx . 7ohms total.

2x4ohm cab setup(with matching ¼" jacks):

Plug one 4ohm cab into "A". Plug the second,4ohm cab into "B".Set the MODE switch in,to HI (I).
Your amp should "see" approx. 7ohms total.

2x8ohm cab setup(with matching SK jacks):

Plug one 8ohm cab into "D".Plug the second,8ohm cab into "C".Set the MODE switch in,to HI (I).
Your amp should "see" approx. 15ohms total.

OR

Set the MODE switch in,to LO (o).Your amp will "see" approx. 4ohms total.

2x8ohm cab setup(with matching ¼" jacks):

Plug one 8ohm cab into "A".Plug the second,8ohm cab into "B".Set the MODE switch in,to HI (I).
Your amp should "see" approx. 15ohms total.

OR

Set the MODE switch in,to LO (o).Your amp will "see" approx. 4ohms total.

2x16ohm cab setup(with matching ¼" jacks):

Plug one 16ohm cab into "A".Plug the second,16ohm cab into "B".Set the MODE switch in,to LO (o).
Your amp should "see" approx. 7ohms total.

2x4ohm cab setup(with mismatched connectors):

Plug one 4ohm(SK)cab into "D".Plug the other,4ohm(1/4") cab into "A". Set the MODE switch in,to HI (I).
Your amp should "see" approx. 7ohms total.

2x8ohm cab setup(with mismatched connectors):

Plug one 8ohm(SK)cab into "D".Plug the other,8ohm(1/4")cab into "A".Set the MODE switch in,to HI (I).
Your amp should "see" approx. 7ohms total.

OR

Set the MODE switch in,to LO (o).Your amp should "see"approx. 4ohms total

Three cab setups including mismatched impedances & mismatched connectors.

Plug one,4ohm(SK) cab into "C"

Plug one,4ohm(SK) cab into "D"

Plug one,8ohm(1/4")cab into "B".Set the MODE switch in,to HI (I).Your amp should "see" approx. 7ohms.

Plug one,8ohm(1/4") cab into "A"

Plug one,8ohm(1/4") cab into "B"

Plug one,8ohm(SK) cab into "D".Set the MODE switch in,to HI (I).Your amp should "see" approx. 10ohms

Plug one,4ohm(SK) cab into "C"

Plug one,4ohm (SK) cab into “D”

Plug one,4ohm(1/4”) cab into “B”.Set the MODE switch in,to HI (I).Your amp should “see” approx. 8ohms.

Plug one,16ohm(1/4”) cab into “A”

Plug one,16ohm(1/4”) cab into “B”

Plug one,16ohm(SK) cab into “C”.Set MODE switch in,to LO (o).Your amp should “see” approx. 5.5ohms

Plug one,16ohm(1/4”) cab into “A”

Plug one,16ohm(1/4”) cab into “B”

Plug one,8ohm(SK) cab into “D”.Set the MODE switch in,to LO (o),Your amp should “see” approx.4 ohms

4 cab setups including matched & mismatched impedance pairs

Set MODE switch in,to HI (I) and,

With 4x8ohm cabs,your amp will “see” approx.7ohms total

With 4x4ohm cabs,your amp will “see” approx. 4.5ohms total

Set MODE switch in,to LO (o) and,

With 4x16ohm cabs,your amp will”see” approx. 15ohms total

With MODE switch set in,to HI (I) and,

Setup#1) :one, 8ohm(SK)cab + one, 8ohm(SK)cab + one,4ohm(1/4”)cab + one 4ohm(1/4”)cab
OR,

Setup#2) :one, 8ohm(1/4”)cab + one,8ohm(1/4”)cab + one,4ohm(SK)cab + one,4ohm(SK) cab
OR

Setup#3) :one,8ohm(1/4”)cab + one,8ohm(SK)cab + one,4ohm(1/4”)cab + one,4ohm(SK) cab

Your amp will “see” approx. 5.5 ohms total with *any* of three setups listed above.

A brief discussion on speaker/cabinet *efficiency*

Even in scenarios with two cabinets having the SAME impedance,it frequently occurs that *one* cabinet still sounds louder than the other.How can this be,if they’re BOTH the same impedance?.They SHOULD both have the same volume level, we assume.This is where speaker *efficiency* comes into play.In a nutshell,efficiency is a given speaker’s ability to take input power(electrical watts) and process/transfer that, into actual (acoustic)watts.

This efficiency is (normally referred to with a test measurement),in db(decibels)with a 1 watt input at 1meter(some manufacturers test at 3feet).Without getting knee-deep in “speaker-math”,we’ll explain the scenario above as to why one cab sounds louder than the other.

For our “imperfect” ears, it takes TEN times the amount of input power for us to notice an increase of TWICE the volume level.

Spkr#1 efficiency : (same impedance as #2)
100db 1watt input at 1metre(actually 39inches)
103db 10watts input
106db 100watts input

Spkr#2 efficiency:
97db 1watt input at 1 metre
100db 10watts input
103db 100watts input

Assuming two quality guitar speakers, we’re pretty much at the maximum input power they’ll take (before “nasty things” happen to them). So, no matter how much input power you want to apply to spkr#2, it will never be any louder than spkr#1.

This is only “part” of the story. Read on.

Now, let’s assume a *mismatched impedance* between two speakers (let’s say an 8ohm and a 16ohm unit). Based *only* on impedance, we’d assume the 8ohm speaker *should* be “louder” than the 16ohm unit (due to its lower impedance).

We’d actually be *wrong*. How can that happen? Let’s take a look. (BTW—we’ve simplified “the numbers & math” here to make it easier to get the point across, so engineers—put your calculators back in their holsters, please.)

Spkr#1, 8ohms, efficiency
97db 1watt input at 1metre
100db 10watts input
103db 100watts input

Spkr#2, 16ohms, efficiency
100db 1watt input at 1metre
103db 10watts input
106db 100watts input

Now, for the sake of explanation let’s power each speaker with its own identical 100watt poweramp and the same input signal going to both amps. At 10watts into 8ohms, spkr#1 is showing up with 100db. Since spkr#2 is getting $\frac{1}{2}$ as much power (5watts) applied to it, because of its 16ohm impedance, you’d think you’d be getting $\frac{1}{2}$ as much actual volume (db) level from it right? Not exactly. Even with 5watts (half of the other speaker’s 10watt input), the “assumed” “lower” volume, 16ohm speaker is still capable of delivering an “easy” 100 (or slightly more) db! Why? Simply because *this* 16ohm speaker is MORE efficient than the lower impedance 8ohm unit. You can now see that impedance isn’t the only thing to consider in a multi-speaker setup.

How does this all apply in the real world? Before dismissing any given setup with *mismatched* impedances (say, 4 + an 8 or an 8 + a 16) connect them and actually *listen*. In many instances, you might be surprised to find there really isn’t much of a difference in volume levels, contrary to what “the math” says.

WARRANTEE INFORMATION

All Sherlock Audio SpeakerMate products are warranted for TWO YEARS parts & labour against manufacturing defects when used for their intended purpose.

THERE ARE NO CONSUMER LEVEL/USER SERVICEABLE PARTS IN THIS UNIT.

SpeakerMate features an integral RF shielding sealing all circuit links in place. In order to maintain

the operational integrity of the circuitry and protect the internal components against environmental elements, and for safety requirements, the lid & enclosure have been welded at time of manufacture. Any user attempt to disassemble/repair/modify unit will break this continuous seal and render the unit unreliable and/or inoperable and VOID ANY WARRANTY or continued performance to the user.

Do not place this unit near strong magnetic or fields as this will possibly damage the operational integrity of the SpeakerMate.

NO other warranties expressed or implied