



HeadRoom's flagship Max amplifier is nothing short of an all-out assault on the world of headphone audio amplification. The Max amp is the gleaming culmination of HeadRoom's 13-year quest to create the finest headphone amp available anywhere. We employ a painstaking high-quality build design that utilizes only the finest audiophile-grade components regardless of cost concerns to produce an intensely liquid, transparent and accurate sound rich in exquisite musical detail and jaw-dropping dynamics. The sense of space around the notes and the hidden nuances of the performance become vivid, expressive entities with the Max amplifier. The Max provides the ultimately refined route to the pure audio resolution that we feel exists only on reference headphones. Let the Max become your personal route to transcendent sonic bliss and get it perfectly right between the ears.

## The Max Amp



## The Max Amp Panel Descriptions

### Front Panel

**1. Headphone Outputs** The headphone out is where you plug in your headphones. The Max Amp is equipped with two 1/4" jacks.

**2. Rear Output Switch** If you want to use your Max amp as a pre-amplifier, a set of RCA connectors on the rear faceplate act as analog outputs for hooking up a power amplifier or powered speakers.

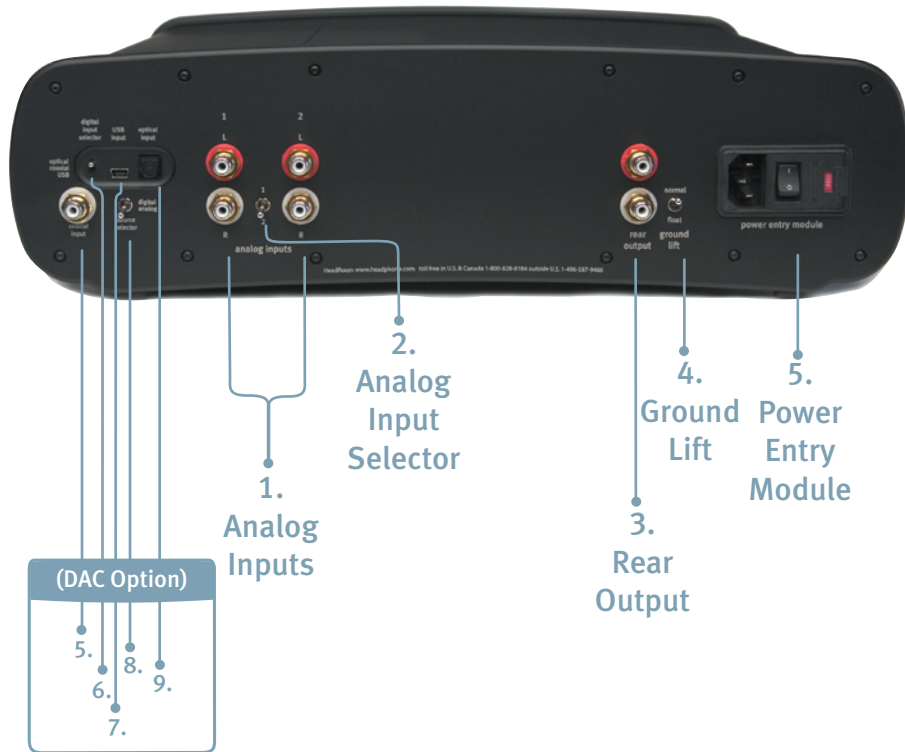
**3. Brightness Switch** The Brightness Switch is used to compensate for the warming action of the processor. In the center position there is no filter in the circuit; generally this is preferred. But if the processor is causing too much bass or blurring of the central image, a mild high frequency boost filter can be turned on. The "filter 1" setting accentuates the highs at about 3 kHz; with the "filter 2" setting the filter starts an octave earlier and catches some of the upper mids. Basically, set it to whatever sounds best to you. You can read more about the Brightness switch on page 7.

**4. Crossfeed Switch** This switch engages the crossfeed circuit. Audio imaging on headphones is often not very good; typically the image is a blob on the left, a blob on the right, and a blob in the middle. The HeadRoom crossfeed provides the natural acoustic cross-feed normally heard at the left and right ear as heard from the left and right speaker. Adding back the normally occurring cross-feed signal gives your brain enough information to build the stable and natural audio image needed to have a quality listening experience. Read more about the crossfeed switch on page 8.

**5. Gain Switch** The 3-position Gain Switch accommodates various headphones' power needs. For instance, the Low Gain setting would be used for in-ear monitors, allowing a larger range on the volume control pot. Experimenting with your headphones and the gain switch may help you to determine which setting you prefer. If have any questions regarding your headphones, feel free to call and ask us.

**6. Volume Control** As you turn the volume control knob clockwise, the volume increases. You never know where the volume control should be set as different headphones often have widely different impedances and efficiencies, so use your ears to choose your listening level, not the level on the dial. (We recommend you choose a moderate level so as not to blow out your ears.) You also need to turn the amp OFF or ALL THE WAY DOWN before plugging in or unplugging your headphones to avoid short-circuiting the amp.

## The Max Amp Rear Panel



**1. Analog Inputs** Two sets of RCA connectors allow for independent connectivity of two separate non-digital (analog) sources like a CD player, tape deck or pre-amp into the Max amp.

**2. Analog Input Selector** You may want to plug more than one analog source into your Desktop Amp. Whether you are using one input or both, you will need to indicate which analog inputs you want to listen to by choosing either '1' or '2' with the analog input selector.

**3. Rear Output** This set of RCA connectors is for pre-amp applications. You can send a signal either to powered speakers or directly to a power amplifier unit.

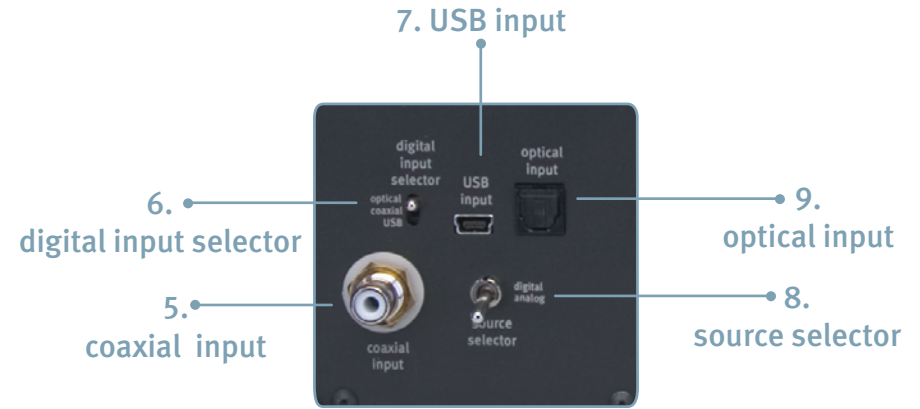
**4. Ground Lift:** Use this handy two-position switch to cancel out electrical hum interference coming from ungrounded or noisy outlets. For most applications, the switch should be set to "normal." If you are hearing some buzzing, try moving the ground lift to "float".

**5. Power Entry Module:** Plug in your AC power cord here. The "zero" position indicates off while the "one" means the unit is on and ready to go.

## The Digital-Analog Convertor Option

When purchasing the Max Amp, you have the option of including a DAC. If you did not purchase the DAC option with your amp initially, you can have this upgrade performed at a later date.

Read more information about the Max DAC on the following page.



**5. Coaxial Input** The coaxial input is your typical coaxial connector. We recommend using a 75 ohm digital cable when using the coaxial input.

**6. Digital Input Selector** When using the DAC, the digital input selector allows you to choose which digital input you would like to listen to.

**7. USB Input** The USB input gets its signal from a computer: laptop or desktop; PC, Mac, or Unix.

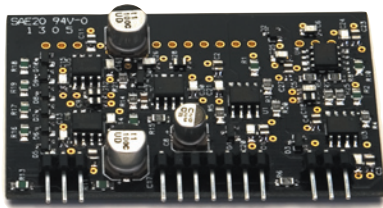
**8. Source Selector** When using the DAC, you will need to choose whether you are using a digital input or an analog input. The source selector switch allows you to have both digital and analog sources connected at the same time, and you may change between the two with a simple flip of this switch.

**9. Optical Input** The optical input is your typical Toslink connector. You get this input signal from the optical output of your player. Not so many portable audio players have optical outputs anymore (call or check our web site for recommendations), but many portable DVD players and some hard disk drive players do. Of course, you can get this signal from many pieces of home equipment.

## Max Electronics Module and Max DAC

### The Max Module

Break out the huge guns, this gold & black board is way bigger than any other HeadRoom module to accommodate the spectacular Burr-Brown hyper-pricey op-amps. Deep class “A” bias, double output buffers, gold plated 2 oz. copper tracing, four layer boards, poly caps throughout...Wow!



Max Module

You can only hear the amazing sound of the Max module at the top of the pricepoint curve but, man, what a spectacular view from up there! Speaking of circuit boards, this is the first time we have had to increase the size of our module boards. Fear not, for it is still pin for pin compatible with older Home and Max amplifier units. But the circuit boards must be mounted on edge for better heat dissipation. The quality of the entire build of this module is completely out of this world and, when coupled with the finest of headphones and the finest of front ends, the results are transcendent musical bliss.

### The Max DAC

The Max DAC is a work of digital upsampling art in gold and black. These four layer gold coated, double copper circuit boards are covered edge to edge with the best parts money can buy, and right in the middle of it an Analog Devices AD1896 192 kHz Stereo Asynchronous Sample Rate Converter. WHAT!? Simply a screaming gizmo that upconverts any digital signal into an ultra high speed, high resolution digital signal without relying on the incoming clock, and then down converts it into the slower 192 kHz word stream while interpolating (to get rid of the “digital” haze) and reclocking (to get rid of jitter) before sending the data off to the DACs. The result?



Max DAC

This DAC is good. Sure, a \$10,000 CD player is better, but just. Tweaky ground plane adjustments are made for stability and speed on that gold coated circuit board we mentioned earlier. Quality components don't end there, though, only metal thin film resistors and polyphenylenesulfide (poly film) capacitors are used in the audio circuits. Three low-noise, ultra-low dropout power supply regulators isolate the various digital, analog, and mixed signal circuits. This DAC is also available in a balanced version for the Max Balanced Amp with two complete converter sections, one for the normal and one for the inverted audio signal.

## About the Filter Switch & Volume Control Upgrades

### Brightness Switch (Filter)

The filter/brightness switch is used to compensate for the slight warming action of the cross-feed circuit. In the center position, there is no filter present in the circuit. This is generally the preferred setting. But if you feel that the cross-feed is causing too much bass response in the source material or a faint blurring of the central soundstage image, a mild high frequency boost can be turned on. The “filter 1” setting accentuates the highs at around 3kHz; with the “filter 2” setting, the filter starts an octave earlier and catches some of the upper mids while providing an additional boost in the amplitude of the frequency range. The best setting is whatever sounds good to you!



### Volume Control Upgrades

Our Max Amp and Max Balanced Amp come standard with a stepped attenuator which sounds absolutely terrific, but some people want finer control of the volume than the steps size of the stepped attenuator. Though it's a mighty expensive upgrade, the ultra-cherry Alps RK50 easily steps in to provide silky smooth, continuously adjustable volume. This outrageously expensive 50 kOhm audio taper pot is a great upgrade from a stepped attenuator, as well it should be at this price; these are simply the best volume controls that money can buy. In fact, Alps tells us we are the only people to ever buy the quad version that is the Max Balanced potentiometer upgrade. You can choose the Alps RK50 upon initial purchase of your Max amp, or have the upgrade performed at a later date. Visit our website or call us at 800-828-8184 for more details.



Alps RK50



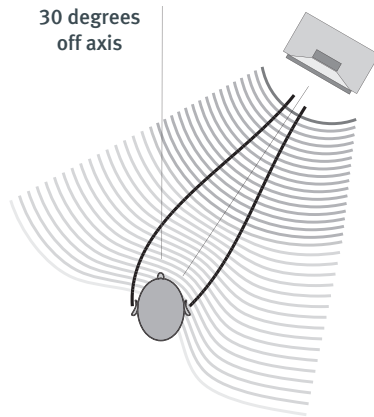
## What is the HeadRoom Crossfeed?

Imagine you are listening to a pair of speakers. If you turn off the left speaker, both ears hear the sound from the right speaker. But because the left ear is slight farther away than the right ear, it hears the speaker's sound slightly after the right ear; about 300 microseconds. This time difference is called the "inter-aural time difference" and it is the main thing your brain listens for in order to tell where to place sound left-to-right.

But in headphones if you turn off the left channel, only the right ear hears the sound. In headphones, if there is any sound that is only in the left channel, or only in the right channel, then only that ear hears the sound. This is not natural, and you brain becomes fatigued trying to figure out where sound is coming from when only one ear is hearing it. This tends to create an audio image that is a blob on the left, blob on the right and a blob in the middle.

HeadRoom amplifiers cure the problem by allowing you to cross-feed a little of the left and right channels across to each other through a short time delay using the processor switch. The usefulness of the circuit varies depending on what type of recording you are listening to; mono and binaural recordings need no processor at all. Old studio recordings that have instruments panned hard left or right, benefit greatly from the processor. Live and classical recordings miked from a distance benefit somewhat less, and can often be listened to without the processor quite comfortably.

The crossfeed switch in HeadRoom amplifiers allow you to cross-feed a little of the left and right channels across to each other through a short time delay.



Far ear hears slight delay. Near ear hears sound first.



Plain Headphones



With HeadRoom

## Hooking Up Your Max Amp

It is a good idea to turn your units off while connecting equipment. ALWAYS turn your units off with the volume all the way down before plugging and unplugging your headphones from the jacks.

### ...Using the Digital-to-Analog Converter Option

#### USB Input

1. Select 'digital' on the digital/analog selector switch on the back of the unit
2. Select 'USB' on the digital selector switch on the back of the unit
3. plug your USB cable into the back of the amplifier
4. plug the other end of your USB cable into any USB jack on your computer or player.



Amplifier DAC, USB



Computer, USB

#### Optical Input

1. Select 'digital' on the digital/analog selector switch on the back of the unit
2. Select 'optical' on the digital selector switch on the back of the unit
3. plug your optical cable into the back of the amplifier.
4. plug the other end of your optical cable into the optical output of your player.



Amplifier DAC, optical input



CD player, optical output

#### Coaxial Input

1. Select 'digital' on the digital/analog selector switch on the back of the unit
2. Select 'coaxial' on the digital selector switch on the back of the unit
3. plug your coaxial cable into the back of the amplifier.
4. plug the other end of your coaxial cable into the coaxial output of your player.



amplifier DAC, coaxial input



CD player, coaxial output

### ...Using the Analog Connections

#### Analog Input

You will need an RCA cable with right and left terminations on both ends.

1. Select 'analog' on the digital/analog selector switch on the back of the amplifier using analog input set '1' or '2'.
3. plug your RCA cables into the back of the amplifier
4. Select the corresponding set number of the analog input select switch
5. plug the other end of your RCA cable into the analog output of your CD player.



RCA analog inputs



CD player, analog outputs

## Exchanging, Returns, & Repairs

### Equipment Exchanges

If you would like to exchange your purchase for another item, you have two options. You can simply purchase the item you want, and send the item you don't want back for refund within 30 days of the original purchase (don't forget to fill out the back of the Return & Exchange card and include it with your return). We will refund your credit card after we receive the item. Or, you can send your product back as an exchange, and indicate the product you would like on the Return card. We will adjust your credit card accordingly and ship you the new item. Replacement products are shipped to you as soon as possible, typically within 3-5 days provided the replacement item is in stock.

### Defective Equipment Exchanges

In the uncommon event of receiving a defective product, contact us and we will ship out a replacement product to you at no cost as soon as possible, typically within 3-5 days provided the replacement item is in stock. You will receive the replacement item along with a return shipping label and a card to include with the defective item to return to HeadRoom. Important: Fill in your name and original invoice number of your order on the card and return the item to HeadRoom within 2 weeks. If we have not received the product after 2 weeks (allowing shipping time) we will charge your credit card the amount of the defective item. Please understand that we enforce this policy as an incentive for customers to get defective equipment back to us as soon as possible.

### Shipping Products back to HeadRoom

Please ship products back in the original shipping box (or another that is comparable); please don't send headphones back in JUST the headphone box, as it's a sure bet that they will no longer be in "as-new" condition when we receive them! We HIGHLY recommend that you ship returns using an insured and "signature required" delivery method—we can't be responsible for lost or damaged packages. Finally, don't forget to include the completed Return & Exchange card and WRITE YOUR NAME on the outside of the box!

#### Return Products to:

HeadRoom  
Attn: Returns  
2020 Gilkerson Drive  
Bozeman, MT 59715

#### Contact Us:

[www.headphone.com](http://www.headphone.com)  
Toll Free: 800-828-8184  
Phone: 406-587-9466  
Fax: 406-586-9484

## Max Amp Warranty

### HeadRoom 30 Day Guaranty

Unless specifically stated otherwise, all HeadRoom purchases come with a 30-day satisfaction guaranty in order to give you the opportunity to evaluate your purchases. We're happy to provide you with the opportunity to refund or exchange your product, but to keep costs down we do have a few conditions.

Products must be returned to us within 30 days of the date you receive the product. So make sure you try your purchase out right away! Products must be in "as-new" condition. This means that they're in pristine cosmetic condition, functioning perfectly, and include ALL materials (plastic bags, warranty cards, tie wraps, etc). In other words, please send products back exactly as you received them. If a product is returned within the 30-day return period, but is not in "as-new" condition, we will charge you a 15% restocking fee plus any labor and materials required to return the product to "as-new" condition. Sorry, but after your 30 day trial, products are no longer exchangeable or refundable.

If you're having trouble with a headphone amp or system, please contact us first to troubleshoot the problem. You can email Sales, ([sales@headphone.com](mailto:sales@headphone.com)) or call 800.828.8184. If we can fix it while you've still got the product, everyone's happy!

### HeadRoom Manufactured Products under Warranty:

The Max Amp is warrantied for five years. If anytime within the first five years of your purchase you have a problem with your Max Amp, you can return it for repairs under the terms of our Warranty. Visit our website for details about warranting your Max Amp, or give us a call at 800.828.8184, and we will trouble shoot the problem, and if necessary authorize a repair.

HeadRoom is the only authorized service center for HeadRoom products, either in or out of warranty. If a unit is under warranty, there is no cost for the repair labor, parts, or shipping from HeadRoom back to you (i.e., You're responsible for paying the shipping charges to get the product to us).

### Out of Warranty Repairs

Non warranty repairs are assessed at an hourly rate of \$50 per hour plus parts, and are only conducted on HeadRoom products. If the cost of the repair is over \$100, we will call you with an estimate. When we receive the equipment, we will initiate repairs and upgrades within 1-2 weeks and return the unit to you. The customer pays for shipping to HeadRoom and we pay for return shipping.



## A Word About Your Hearing

People have a natural tendency to listen to music at much louder levels with headphones than they would with speakers. To avoid permanent hearing damage, it's important to be careful not to listen at extremely loud levels (or to listen for too long at moderately loud levels). Because HeadRoom amps need to be able to drive even the most inefficient dynamic headphones to satisfactory listening levels, they are also able to drive headphones of average or higher efficiencies to extremely high levels. As a result, even though the volume control on your HeadRoom amp may appear to be set to a low level, you may not be listening at a safe level. Generally speaking, when listening to headphones you should only turn up the volume to the point at which the sound isn't too quiet.

As a general rule, sound pressure levels under 80 decibels will not damage hearing, even if experienced continually. On the other hand, anything over 100 decibels may cause permanent damage very quickly. Sustained exposure to sound pressure levels anywhere in between can also be damaging—the louder the sound, the shorter the time required to cause permanent damage.

Just to drive this message home, here's a bit of information about hearing damage. The most common type of damage caused by prolonged or excessively loud sound is called tinnitus. It manifests itself as a sustained buzzing and/or ringing in the ears, and can become a permanent condition.

If you find that your ears are ringing or that there is a sensation of pressure or fatigue, your body is trying to tell you that your ears need a break. Give them a rest for a few days (or until they feel fresh). If you ignore these symptoms, you're risking permanent hearing damage.

In addition, don't fool yourself into thinking that you either have full-blown tinnitus or you don't have it at all—there are different degrees of hearing damage. For example, you might have a mild case where you only notice ringing in your ears in the quiet of your bedroom at night. However, once you have a slight case of tinnitus, your ears are much more susceptible to further damage. So if you do experience mild symptoms, it's important to be much more careful about your exposure to loud sounds.

Sorry to sound so sobering, but a lifetime of musical enjoyment requires ears in tiptop shape. Now that we've told you to be careful, don't blame us if you blow it. If you have any more questions about hearing damage, call a doctor.

### Contacting HeadRoom

Toll Free: 800-828-8184  
Phone: 406-587-9466  
Fax: 406-587-9484

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