

Owners Manual

Sensation

M451/ M901

Reference-grade Integrated Amplifier
Manual Version 1.1, September 2010



Purchased from Dealer:

Serial Number:

Purchase Date:

Invoice Number:

Welcome

We started Virtue in 2005 with the dream of bringing the sensory experience of the high-end audio to the masses. Welcome to our family! If you're already an audiophile, you know already that this amplifier is one of the best sounding, highest value audio products ever made. If you simply like listening to good music, we hope to help you appreciate of accurate sound reproduction and museum-caliber build quality. When you do, you'll be an audiophile.

Virtue is a principle-driven company. Here are some of the rules we live by:

- Life is too short for bad audio. Make audio lovers audiophiles.
- If it's not overbuilt, it can be made better. Overbuild.
- Provide a transporting sensory experience through sight, touch, and sound.
- Make a product too attractive to be hidden in a cabinet.
- Build it no bigger than it needs to be, but no smaller.
- Make sure that ten is "loud enough" but go all the way to eleven regardless.
- Establish Virtue as the highest value brand in the industry.
- Provide a completely satisfying buying experience.
- Live up to the Virtue name in every product and every way, every day.

We hope that you get a lifetime of enjoyment from your Virtue Sensation amplifier. Let this guide show you how. We'll cover:

- What's in the box
- Setting up your amplifier
- Tweaks & Tips
- Quirks
- Do's & Don'ts
- Troubleshooting
- Specifications
- Warranty
- Trademarks

If, after reading through this manual, you have any questions whatsoever about the Sensation, please submit feedback on our website. Go to www.virtueaudio.com, click on "Us" and submit your question in the message form. Please be sure to specify "Product Question" or "Product Issue". To contact us directly, you can also send an e-mail to listening@virtueaudio.com or call 1-877-VIRT-YOU (877-847-8968) and leave a message. We'll call you back!

What's in the Box

Inside the box you will find:

1. Remote control (top foam)
2. Sensation amplifier (inside)
3. Power supply and cord (bottom foam)
4. Power supply adapter
5. Volume Knobs



Box: Sensation will arrive double-boxed. Sensation should be nicely cushioned inside.

Remote: The remote control unit will be on the top of the box. The black plastic unit (standard) is shown here.



Power Supply: Below the amplifier, you will find one switching power supply (either the standard 24v or the upgraded 30v, if so ordered).

Power Supply Adapter: 4-pin to bullet adapter to mate with bullet supplies (center pin positive)

Volume Knob: The chrome/steel volume knob is packed separately to avoid damaging either the knob or the potentiometer shaft during shipping

Setting up your amplifier

We carefully box the Sensation to protect it during long-distance shipping. Here are the steps required to get going.

1. Adjust feet and attach the volume knob
2. Connect the signal cables and speakers
3. Plug in unit
4. Turn on!

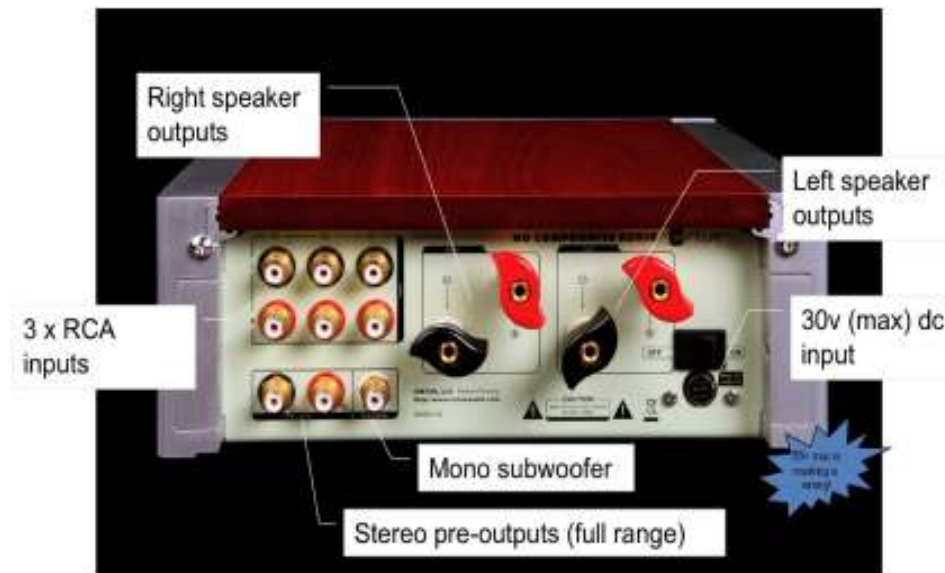
Adjust the feet and attach the volume knob

Rotate the feet to make sure that the unit is level on the installation surface. Simply press the Volume knob onto the potentiometer shaft, aligning the “D” hole in the knob with the slot in the “D” shaft.



Connect signal cables and speakers

Sensation is a full featured integrated amplifier and hook up is like most other units with which you are probably familiar.



RCA Inputs: There are three RCA line level signal inputs for three sources, switchable on the front of the unit or by the included remote. Connect your audio sources (CD/DVD player, DAC, MP3 player, tuner, TV audio, turntable) to the L/R RCA inputs.

Speaker Propeller Post™: Attach your speaker wire to Virtue’s cleverly designed Propeller Post™ binding posts. They support banana plugs, bare wire or spades. Check connections after a week to ensure they remained tight. If snug, they should remain that way.

- Banana plugs, the most convenient option, are inserted in the back of the Propeller Post™
- Spades are slid over the binding post shaft, behind the post collar, and the Propeller Post™ can then be tightened.
- Bare wire can be wrapped around the post or inserted through the rear hole and tightened.

You may connect speakers with an impedance of anywhere from 2 ohms to 16 ohms, without problem. Low impedances may cause the amp to shut down; higher impedances may not have optimum frequency response. But, you'll be fine with the vast majority of speakers on the market. Running the amp without speakers will not harm it.

Mono Subwoofer Out: The mono subwoofer line level output allows you to attach a powered subwoofer amplifier to the Sensation. Use the provided sub output connection instead of connecting the Sensation's high-level speaker outputs to your subwoofer high-level inputs as this will bridge the Sensation's speaker outputs and destroy your amp.

WARNING: Do NOT connect the high-level speaker outputs to your subwoofer inputs and use the subwoofer to crossover the high and low frequencies. With Tripath amps such as this one, there is a decent chance that your subwoofer amplifier will bridge the amp's speaker outputs, blowing up your Virtue amp.

Stereo Pre-outs: Sensation's excellent preamp stage can be used as you would a stand-alone preamp, to drive an external amplifier. Connect the L/R stereo RCA pre-outs, which output a full range signal, to your other amplifier. We don't know why in the world one might do this, but it's possible. If your Sensation is equipped with the optional Dodd Buffer, you might like to know that the buffer is part of the preamp signal path.

Connecting Power Supply and Cables

Sensation is shipped with a standard 24v switching power supply or an upgraded 30v switching power supply. If using another brand power supply, it must not exceed 30v.

Connecting the Power Supply: Make sure the amplifier power switch in the back is in the "off" position.

1. Connect the power brick to its separate power cable
2. Connect the power supply cable to Sensation (use the 4-pin to bullet adapter if needed, depending on supply)
3. Plug the power cable into the wall outlet or your power conditioner outlet

If Connecting Batteries: Make sure the amplifier power switch in the back is "off". Connect your batteries as directed by the manufacturer and then connect the power source to the back of the Sensation. Use the included 4-pin to bullet adapter if necessary. Please see www.virtueaudio.com for recommended battery options. There is a misprint on the enclosure (it says 39v). The max input voltage is 30v on Sensation. Do NOT exceed 30v.

Turning On the Amplifier

Sensation has two power switches: a main, manual rocker switch on the back and; a power button on the front (which can also be controlled by remote).

The way the soft-start is configured, it is best to put the unit into stand-by before shutting it down with the master power switch or unplugging the power supply. If you mess up, just make sure to wait around 90 seconds before trying to power Sensation back on.

Proper Power On Procedure:

1. **Turn on rear power rocker switch on the back of Sensation**
 - a. At this time you will notice the Protection and Standby LEDs will come on, testing the power input to make sure it is safe before the amplifier can be turned on
2. **Wait briefly for the standby circuit to "click" and charge up**

- a. After about 3 seconds, Protection LED will go from yellow, to red, to off and Standby LED will stay on
- 3. Turn on the front power switch on Sensation or by remote**
 - a. Red Standby will go off, Blue "On" LED will come on

Turning Off the Amplifier

In most cases you only need to turn off the front power button in daily use and enjoyment to keep your Sensation in standby mode. This way it will be ready to play when you are ready to listen. However, if you need to fully power down Sensation and the power supply in order to change connections or make any internal adjustments or tube swaps (if you're one of those lucky dogs with the Dodd Buffer) then you **MUST** follow the full power down procedure below.

You should fully power down your Sensation amplifier and the power supply to:

- Take off the top and look inside Sensation to see the Special Sauce
- Change tops, sides or any other exterior structural changes
- Make internal adjustments to the jumpers, caps, tube and other doohickies inside
- Change speakers or inputs
- Switch the Dodd Tube Buffer *on* or *off*
- Switch between power supplies and/or batteries
- Protect Sensation from power outage during storms
- Just don't want the power supply or battery on

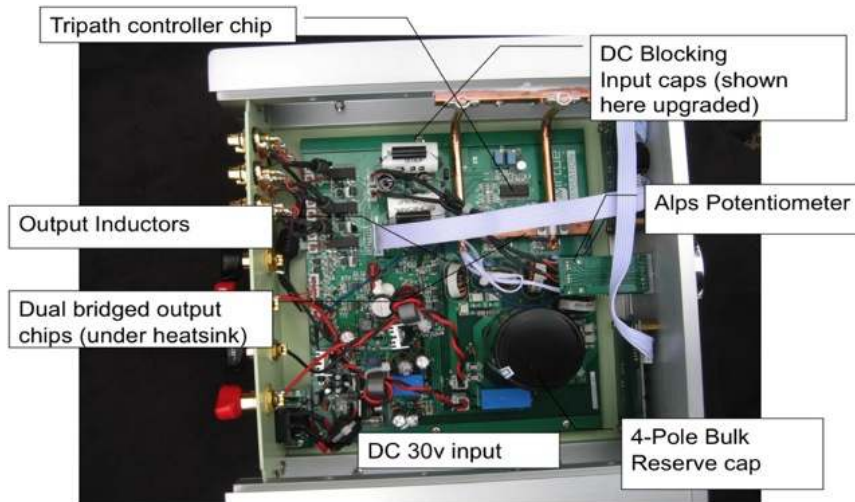
Full Power Down Sequence

1. Turn off front power button (or turn off by remote)
2. Turn off rear power rocker switch
3. Unplug the power supply from the back of Sensation

Please do NOT rapidly turn on and off the unit. If Sensation goes into protection mode, turn off the master power switch and wait 90 seconds for Sensation to reset.

What's Inside

Here is an annotated picture of the inside of Sensation.



Tweaks and Tips

Removing the Top

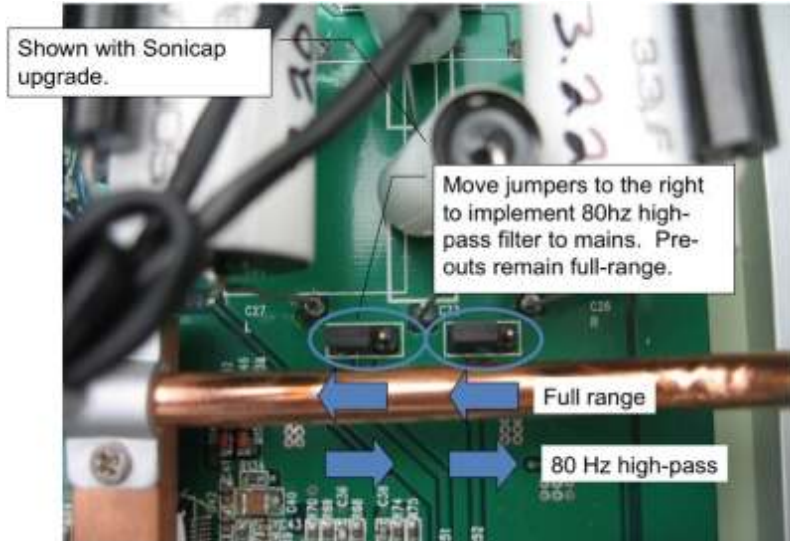
Sensation is easy to open up for customization, tube rolling (with optional Dodd Buffer) or just to peek.

1. Follow full power down sequence to fully turn off Sensation and its power supply
2. Unplug unit
3. With allen wrench, loosen and remove screws on the back holding the rails in place
4. Slide top back



Setting 80hz High-Pass Filter

Sensation outputs a full range signal to your speakers. If you would like to filter the lower frequencies below 80hz, which you might choose to do if running a subwoofer, simply move the jumpers.



Power Supplies & Batteries

Sensation ships with a standard 24v, 65w regulated power supply. It's nice and perfectly serviceable but an upgraded supply will help Sensation show its true colors. Our 30v, 130w regulated supply is a huge upgrade and well worth your consideration.

Many customers rave about battery power supplies with Sensation. With high-sensitivity speakers, a battery power supply easily exceeds the performance of all other power supplies offered for this amp. The noise floor drops to nothing. Detail levels are greatly improved. The vocal region is smoother and more relaxed. Sound stage and imaging are also improved. However, some customers do not prefer the "tightness" of batteries and will prefer an upgraded regulated power supply. Check our website for several regulated and battery power supply options at www.virtueaudio.com.

Cabinet Resonance

Placing 1" hobby magnets on the green, interior parts of the inside of the case may help reduce any cabinet resonances you encounter. Some customers may choose to remove the feet and place the unit on a wooden block or granite. The different materials will reduce resonances.

Charge Batteries

Sensation is so sweet with batteries, but be sure they are charged up. You may experience odd squealing sounds from almost dead battery supplies.

Phase Issues

Sensation is in phase. The main output to the speakers from Sensation is phase correct. The mono subwoofer out is phase inverted.

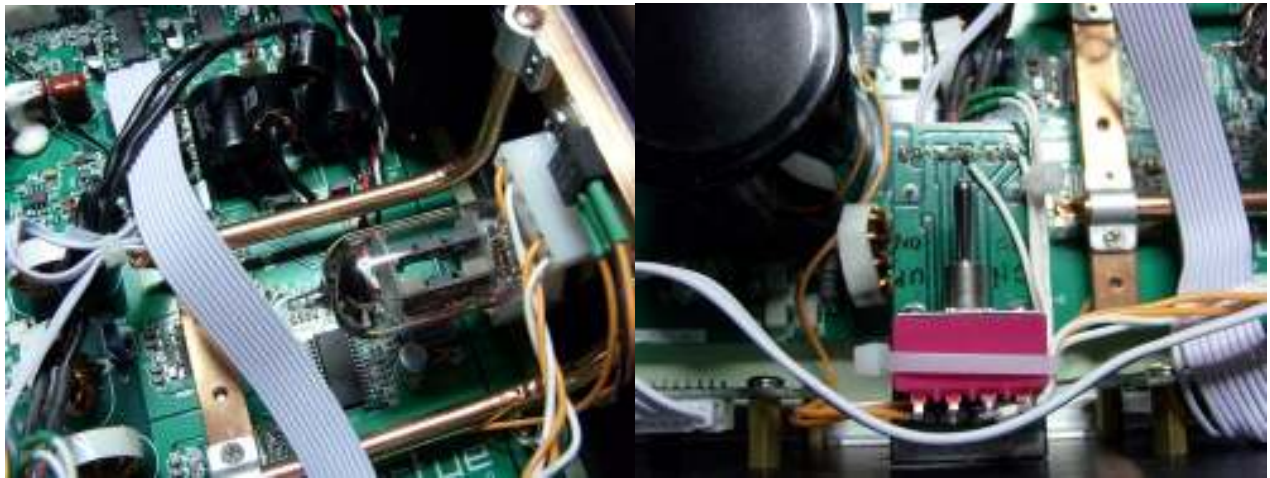
Using as a Power Amplifier

Turning the dial all the way up to maximum volume has the same effect as jumpering out the volume POT. The POT cannot be completely jumpered out on Sensation as it can on the ONE.2 and TWO.2 amplifiers.

Dodd Tube Buffer Option

We are delighted to be able to offer the finest buffer made today as an optional upgrade to the Sensation's preamp stage. This stage "buffers" the impedance from the source to the amplifier so as to present a "friendlier" impedance to the speakers. It essentially sorts out impedance mismatches that prevent the amplifier from efficiently transferring power, which would otherwise degrade the sound. Most folks agree this results in a fuller, more lively sound that is also cleaner. You don't need to crank up the volume to enjoy the benefits of the buffer.

The buffer is a proprietary potted circuit – don't ask what's inside. It is the quietest and most musical that we have ever heard.



The Dodd Buffer in Sensation can be switched on or off from inside the unit (**but only do so when it is fully turned off and unplugged or else you may hear crackles and pops in your speakers**).

The upgrade is shipped with an excellent JJ 12-AXJ tube that sounds perfectly swell to many of us. But, you can roll just about any 12v tube that fits. Here are some of the ones we've tried (no guarantees):

12AX7	5814	6201
5751	5963	6679
7025	6189	CV4024
CV4004	CV4003	E81CC
E83CC	E82CC	ECC81
ECC83	ECC82	ECC801
ECC803	ECC802	
12AU7	12AT7	

There are often lively discussions on our AudioCircle.com forum about which tubes sound better. Join in!

Quirks

Sensation is a marvelous piece of equipment designed and manufactured over the course of several years by a boutique audio company (ours). However, it is not perfect and we know of several quirks that you may find annoying.

“Rustling” sound when changing the volume

There is a strange sound of leaves softly rustling when the volume is changed. We did not catch this issue until recently and it cannot be fixed without a total redesign. This is and remains a “known issue” with Sensation. When the POT is not “in motion” the sound disappears completely. We’re sorry about this!

Heavy volume knob issues

We chose to create a heavy (and expensive) chromed steel volume knob. This knob cannot be shipped with the unit without causing damage, which explains why you must attach it yourself. It is secured with friction only and if you wish to fasten it more tightly please use plumbers tape or a small amount of super-glue (so the seal can be broken if necessary for re-shipment). If your knob falls off and dents or the POT shaft bends, contact us and we will send you replacement parts. In the future, we will make knobs from aluminum not steel.

Do’s and Don’ts

Don’t burn in Sensation with heavy metal music. Sensation is destructible and if you just love playing heavy metal music at full blast, return the amp for a full refund before you blow it up.

Don’t repetitively switch the front or rear power buttons on and off.

Don’t freak out if Sensation goes into protection mode if you accidentally switch it off in the wrong order. Just wait about 90 seconds and restart in proper order.

Do allow 100+ hours for Sensation to fully burn in with use.

Do make sure Sensation is fully off and disconnected from the power supply before changing any input or speaker connections or making any internal changes to the unit.

Do use a phono preamp to use a turntable with Sensation.

Do contact us if you have any questions.

Do join us on our Virtue forum at www.audiocircle.com

Troubleshooting

Issue: “Hum coming through speakers.”

Recommendation: Especially on units with the Dodd Audio tube buffer, humming is caused by transformer interference. If a nearby piece of equipment has a large transformer in it (could be the JT supply or Piano CD-player), consider moving it 6” or more away from Sensation. With Piano, the transformer is on the left side and on Sensation, the Dodd tube buffer is on the right side. Placing Sensation to the right of Piano is sufficient to eliminate hum emanating from the Piano transformer.

Issue: “Hiss coming through speakers.”

Recommendation: The Tripath technology we use does not reject hiss from the power stage and is not completely quiet. Most hiss is related to power supply issues and with the Dodd Tube Buffer, tubes especially new ones. Burning in the unit properly, changing tubes, and using battery supplies are the best strategies for reducing hiss. If you are still unsatisfied, please consider returning your unit within the warranty period.

Issue: “I hear a big “thump” when I switch the tube buffer on and off with the unit on.”

Recommendation: Don’t do that! Sensation should be completely off and unplugged before switching the buffer or swapping out the tube.

Issue: “I understand the tube buffer stays on as long as the main power switch on the back is on. I’m worried the tube will burn out prematurely if I don’t fully turn Sensation off after listening.”

Recommendation: The JJ tube included with the Dodd Tube Buffer option is guaranteed to last 5 years under regular use (and is rather inexpensive to replace). Gary Dodd says we’ll all be petrified before the tube fails in this usage. Just leave it on and enjoy until petrification sets in.

Issue: “Sensation shuts down and the yellow lights come on when I turn it on.”

Recommendation: Use the master rocker switch to shut down Sensation and wait 90 seconds before turning it on again. Then follow the power on sequence explained above.

Issue: “Sensation feels very warm to the touch.”

Recommendation: Virtue amplifiers tend to run warmer than other Tripath-based amps. Our innovative heat sink system includes a heat pipe connected to the substantial metal case, which dissipates heat. If Sensation feels warm to the touch, it means this system is working correctly by transferring the heat away from the chip and onto the metal where it will radiate. On equipped units, the Dodd Tube Buffer does not emit substantial heat.

Issue: “I hear a slight fluttering sound heard when changing volume.”

Recommendation: A few customers have reported a faint “swoosh” or “flutter” sound when the volume knob is in motion, more noticeable with high efficiency speakers. This does not occur when the volume is set and music is playing. This is a known issue that cannot be fixed. Your amplifier is not defective if you hear this sound.

Issue: “When Sensation is on standby (with the front power button off but the rear switch on) I notice the yellow protection light comes on when I turn the volume knob.”

Recommendation: While this is an oddity, it is fully protected while in standby mode and the light does not represent a danger to the amp. Feel free to turn the volume knob down if this occasional light concerns you.

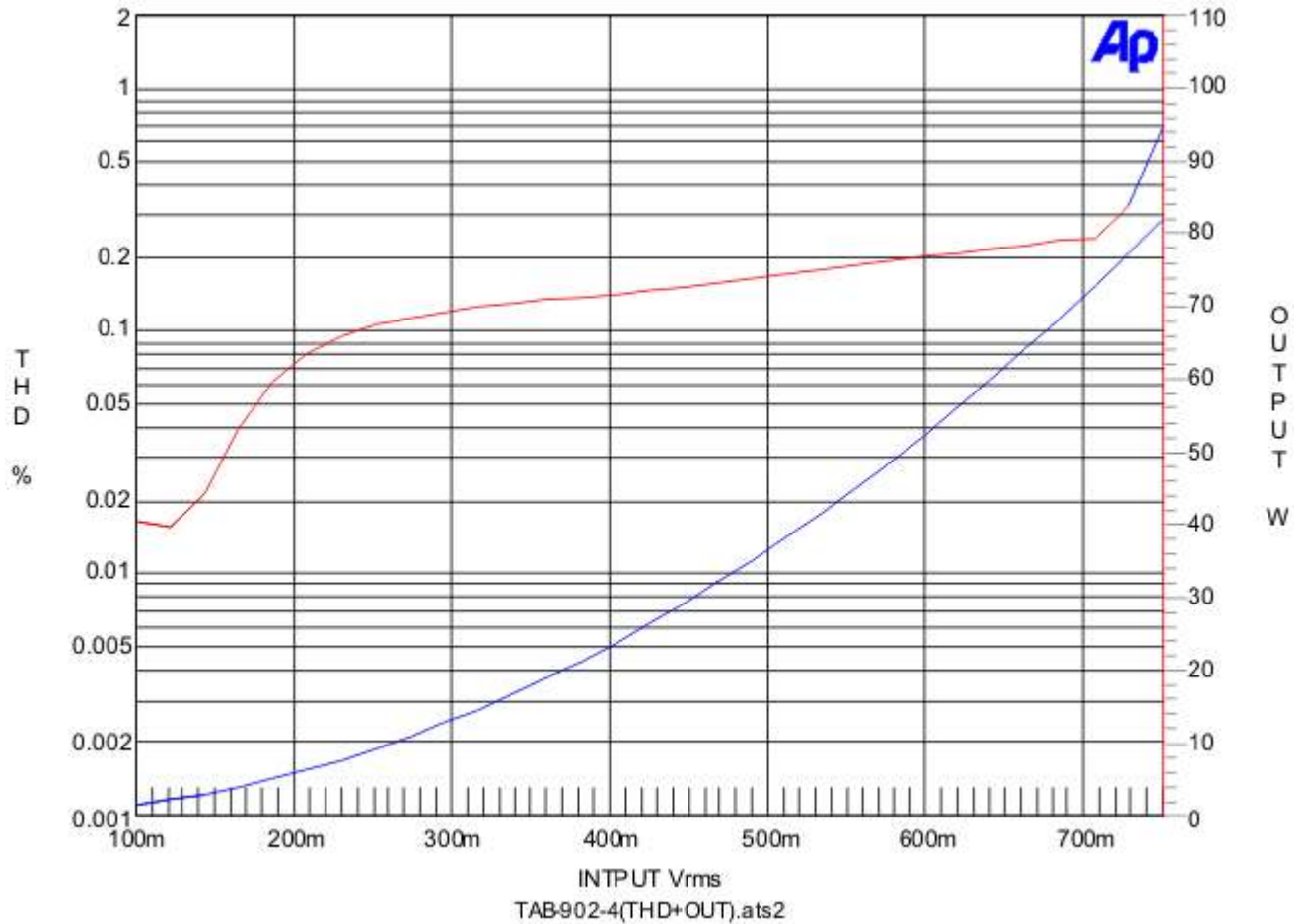
Issue: “Aaaaaeeeeiiiiiii! There’s a horrible high pitched squeal from my battery-powered Sensation!”

Recommendation: Follow proper shut down procedure and recharge the batteries. This can happen when some battery sources are extremely low on power. A full recharge should fix the issue.

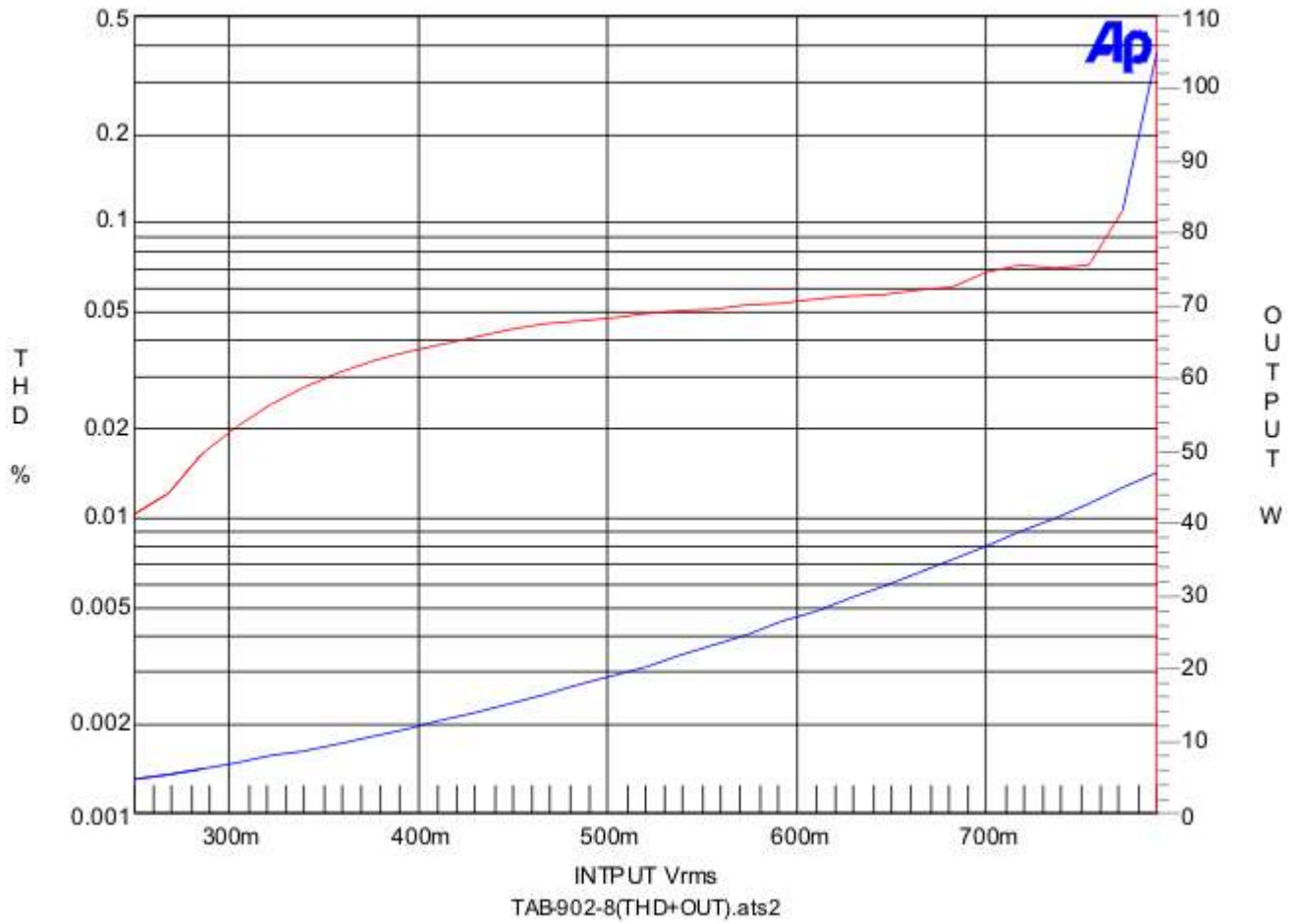
Sensation Specifications

Max DC voltage	30v, 87wpc @ 4ohms
Efficiency	Around 85%
Input impedance	50K ohms
Min speaker impedance	2 ohms
Max speaker impedance	20 ohms
Total harmonic distortion (THD)	<0.1% @ 87wpc
Power consumption	Between 300mA (idle) and 7A (maximum output)
Dimensions (no columns)	270mm (W) x 240.5mm (D) x 103.5mm (H)
Dimensions (with columns)	290mm (W) x 240.5mm (D) x 109.5mm (H)
Weight	Around 15 lbs

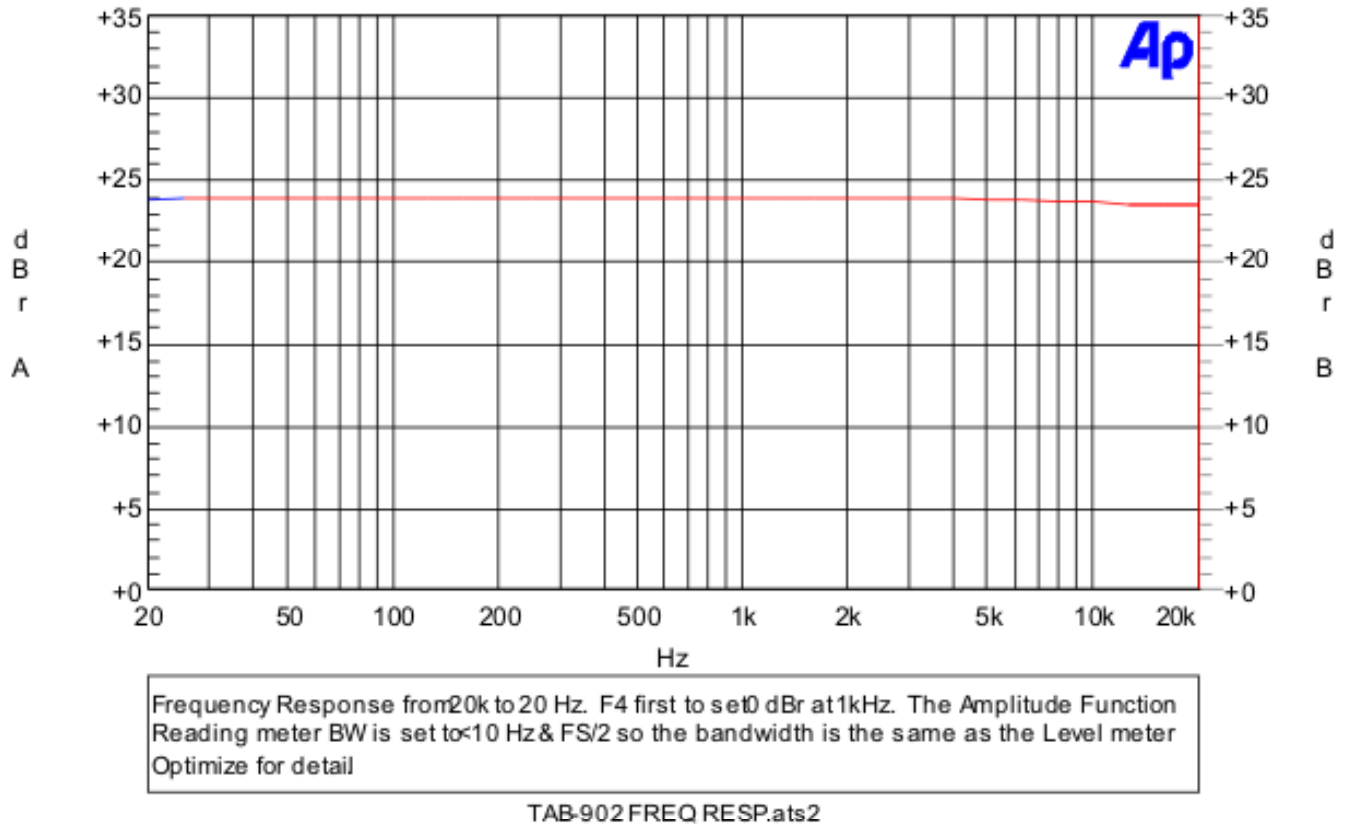
Power vs. Distortion @ 30v, 4 ohms load



Power vs. Distortion @ 30v, 8 ohms load



Frequency Response



Warranty

Virtue Audio products are guaranteed to be free of defects for 2 years from the time of purchase. If you experience what you consider a defect, please visit the “Contact Us” section of the Virtue Audio website and submit a message with the type “Product Issue”. We reply to requests within 24-48 hours. If you did not purchase the product from Virtue Audio directly, you may also contact the seller who may be able to help you faster and easier. Warranties are technically non-transferrable but we do try to live up to our name every day so if you are a second owner and you haven’t mishandled or blow-torched the amp in shipping, we will make every effort to fix problems.

We keep a stock of replacement parts such as blue LEDs, power switches, and volume POTs. In some situations, it may be faster and easier for you the customer to perform the repair than to send your unit back to the dealer or Virtue in the USA. We will discuss opportunities for self-service on a case-by-case basis.

Trademarks

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