soundtoys

RADIATOR
1567A
MIXER AMPLIFIER

OPERATING
INSTRUCTIONS

Tube Mix Channel

★ MAC AU/RTAS/VST/AUDIOSUITE

★ PC RTAS/VST/AUDIOSUITE

GENERAL DESCRIPTION

Radiator is a dual stage tube amplifier plug-in based on the classic Altec 1567A tube mixer. Unlike the original, it is designed for both mono and stereo operation. Front panel controls include input and output gain, bass and treble boost/cut, source selection, circuit noise ON/OFF and a wet/dry mix control. A VU-style meter, which displays the "HEAT" amount at the output, is also included.

Both Mac and PC formats are supported - Audio Units, Pro Tools RTAS/AudioSuite and VST on Mac as well as Pro Tools RTAS/AudioSuite and VST on PC. Mac OS X 10.4 or Windows XP are the minimum required operating systems.

Radiator is protected with the iLok USB hardware key and a valid authorization is required to utilize the plug-in outside of the 30-day demo mode.

© 2012 SoundToys, Inc. 225 Church St., Burlington, VT

CIRCUIT DESCRIPTION

The audio signal path of Radiator matches that of the original 1567A with a few modern enhancements. The clean signal is fed into the first tube saturation stage with its drive level determined by the INPUT control. From the first stage output, the signal flows into a 2-band EQ section with BASS and TREBLE controls. After the tone stack, the signal reaches the second saturation stage. This is controlled by the front panel OUTPUT knob. Finally, the processed signal is fed into one channel of the wet/dry mixer (described below).

MIX CONTROL

One major addition to Radiator is the MIX control. This allows the unprocessed (dry) signal to be mixed in with the processed (wet) signal. The 0% to 100% range corresponds to the output level percentange of the processed audio. The MIX controls means that parallel processing can occur from directly within Radiator and without the need for additional bussing.

CIRCUIT NOISE

The 1567A has a significant amount of circuit noise even at low saturation levels. It averages -68dBu at the maximum measured settings. This noise was modeled and put into Radiator. The noise level is reduced by 10dB with the LINE source selection and can be completely surpressed using the front panel CLEAN/NOISY switch.

Figures 1 and 2 show a 0dBFS (18dBu) 1kHz sine wave processed through both Radiator (with LINE selected) and the 1567A. The FFT plot shows the 20dB difference in the noise floor as well as the first through the tenth harmonics.

Fig. 1 - Radiator Waveshape and FFT

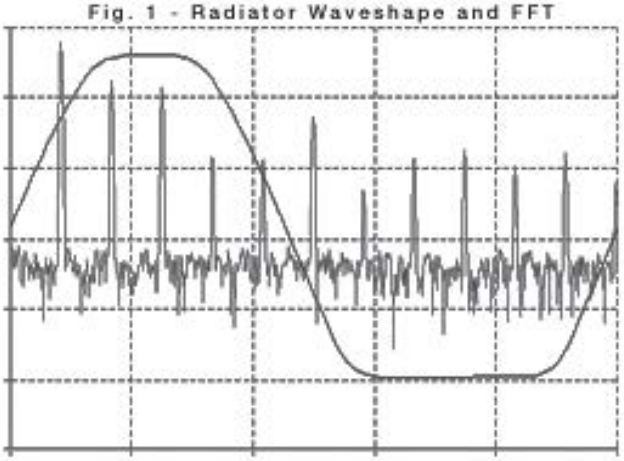
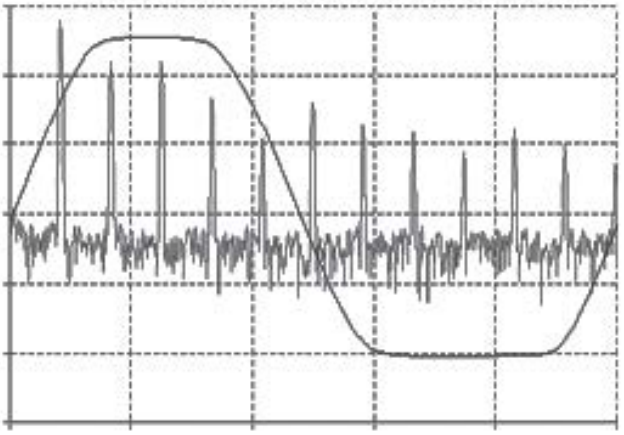


Fig. 2 - Altec 1567A Waveshape and FFT



HEAT METER

The Radiator front panel also includes a specialized VU-style meter which displays the "HEAT" amount. This corresponds to the reading on the 1567A VU meter where both Radiator and the 1567A have the same output level and saturation characteristics.

© 2012 SoundToys, Inc. 225 Church St., Burlington, VT

TONE CONTROLS

Radiator includes a two band EQ section which is post-input stage and pre-output stage. Both the BASS and TREBLE controls allow for a +/-10dB boost/cut.

Figures 3 and 4 show the frequency responses, ranging from 10Hz to 24kHz, for the minimum and maximum gain of the BASS and TREBLE controls.

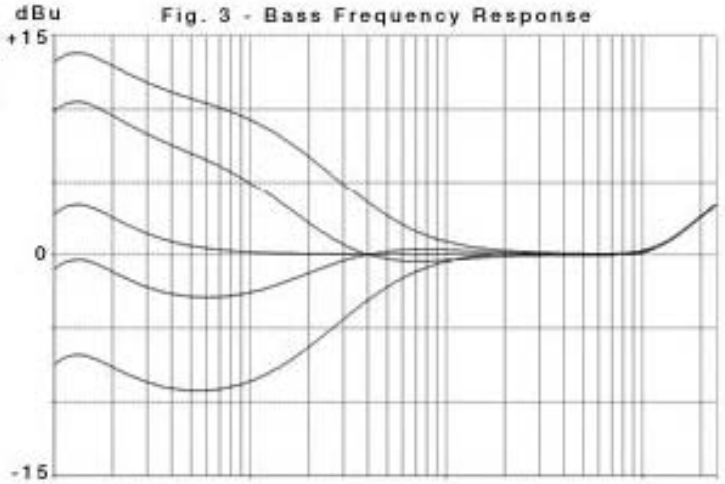


Fig. 3 - Bass Frequency Response

SOURCE SELECTION

A source selection switch, labeled LINE and MIC is included on the front panel. This allows for a change in the overall frequency response to simulate the 1567A's input source impedance dependance.

Figure 5 shows the overall frequency response differences due to source selection.

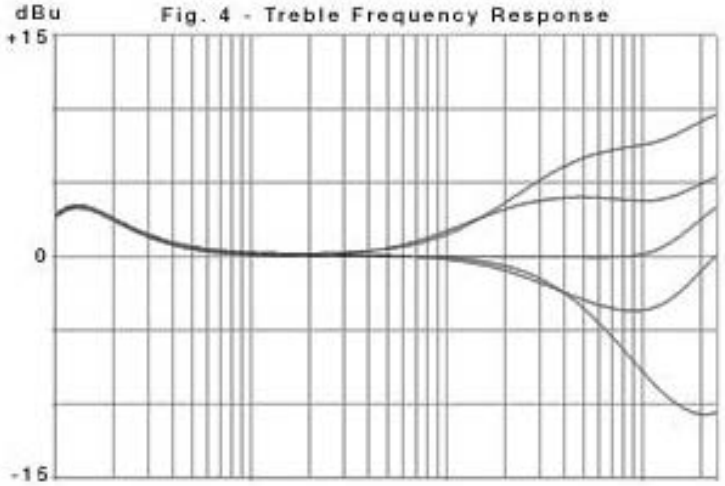


Fig. 4 - Treble Frequency Response

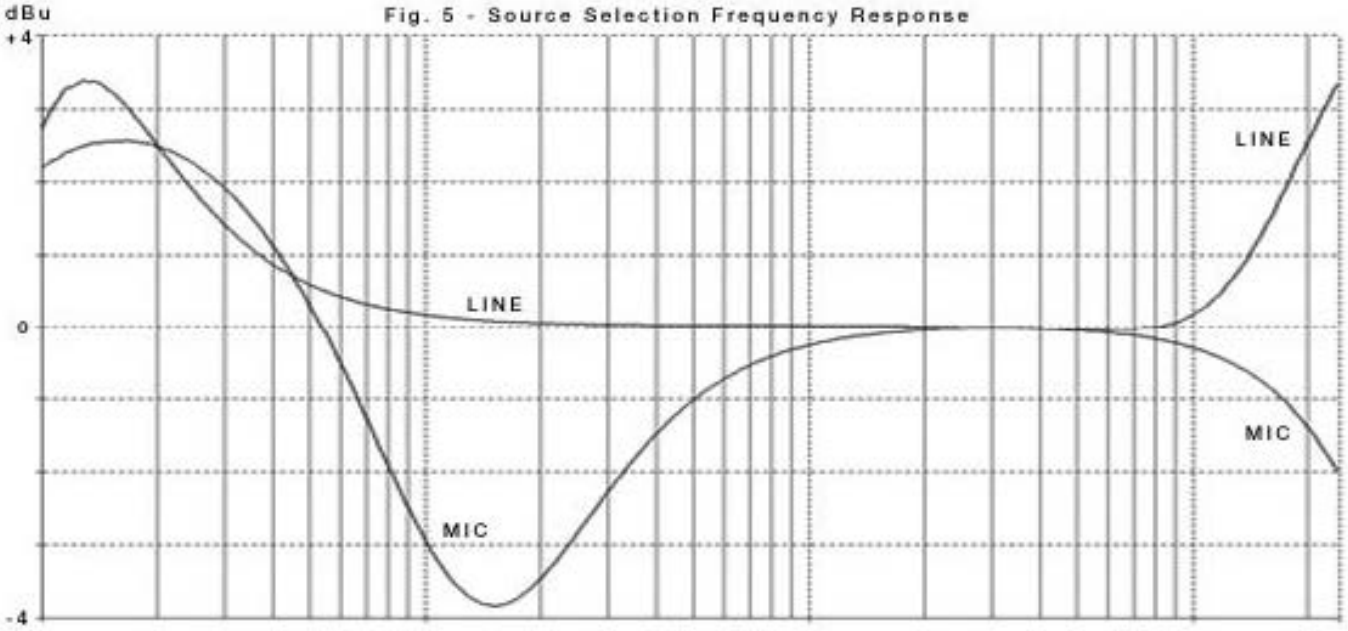


Fig. 5 - Source Selection Frequency Response

© 2012 SoundToys, Inc. 225 Church St., Burlington, VT

ABOUT SOUNDTOYS

Based in Burlington VT, SoundToys (formerly Wave Mechanics) was founded in 1996 by the DSP engineering team that created the legendary H3000 Ultra-Harmonizer and the DSP4000 line of hardware signal processors from Eventide. Today, the company develops world-class, creative signal-processing software for Pro Tools users and computer-based audio recording engineers. SoundToys users include TV on the Radio, Trent Reznor, Herbie Hancock, Yeasayer, Benny Blanco, Alan Moulder and MNDR.

FOR MORE DETAILS

SoundToys offers free technical support for all registered users. We love to hear from you, but if you are having problems, please first try to look in the manual or on the support page of our web site for an answer. If you are still stumped, please e-mail us with the following info:

- The product version and serial number
- The version number of your audio system
- The type of hardware you are using
- Your computer type and operating system version number
- A detailed description of the problem

The e-mail address for support is: support@soundtoys.com

If you don't have e-mail, you can call us at 1-802-951-9700.

SoundToys, Inc.
225 Church St.
Burlington, VT
05401
Phone: 802-951-9700
Fax: 802-951-9799

TRADEMARK INFO

SoundToys, Radiator and their respective logos are all trademarks of SoundToys, Inc.

*All other trademarks are the property of their respective owners, which are in no way associated or affiliated with SoundToys. These trademarks are used only for historical reference or to identify products whose sounds or tone were studied in the development of our plug-ins.

© 2012 SoundToys, Inc. 225 Church St., Burlington, VT