



Radial Engineering Space Heater

Summing Mixer & Distortion Processor

Could Radial's latest processor add a little vintage sum-thing to your mixes?

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Until the digital mixing console and the DAW opened up the digital domain, all summing and mixing took place in the analogue realm. With the arrival of multi-channel D-A converters came the realisation that summing and mixing in the analogue domain could often sound preferable to the digital equivalent, and this led to the market in analogue summing mixers that we have today. Increasingly, these devices aren't just about summing — several of them also offer some form of subtle (and some not so subtle!) distortion processing, either on the individual input channels or on the stereo mix(es) that emerge from them. Some designs employ valves to this end, others transformers, and others solid-state circuitry, with yet more offering a combination of these.

Canada's Radial Engineering, renowned for their range of high-quality, problem-solving DI's, interfaces, preamps, splitters

and switchers, are the latest manufacturer to create a dedicated summing and 'warming' device like this. In true Radial fashion, their new 1U 19-inch rackmount eight-channel Space Heater comes with a healthy dose of lateral thinking.

In The Box

Based around four twin-triode 12AX7 (ECC83) tubes, the eight +4dB line-level channel inputs — on individual TRS jacks and a 25-way D-sub — are grouped in four stereo L/R pairs, each side feeding one triode of its assigned tube. The Heat switch, common to each pair (ie. one tube), lets you select plate voltages of 35, 70 or 140 V. At the lower voltages, the tube loses headroom, and this results in increased distortion in its output as its input signal level (governed by the individual channel Drive controls) rises. At the Heat's maximum setting, the tube's headroom increases, thus cleaning up its output signal.

From the tube, the signal passes to

a high-impedance buffer amplifier, through a switchable, 40Hz high-pass filter, to the Level control that sets the amount of signal reaching each of the eight individual output transformers. Individual insert I/O points follow the transformer and from there the signal routes to the individual channel's

Radial Space Heater £1999

PROS

- Each channel has a dedicated output as well as insert send and receive sockets.
- Convincing vintage tube-console sound.
- Variable character makes it useful in tracking as well as mixing.
- You can cascade multiple units to add more channels.

CONS

- You may need to watch those output levels!

SUMMARY

A well thought-out design that's as much harmonic distortion processor as it is summing mixer, the Space Heater is functionally versatile and sonically satisfying in equal measure.



Alternatives

There are plenty of summing mixers around these days, but fewer with multiple channels of distortion, even fewer specifically featuring valve distortion, and fewer still with both an input and an output for every channel! Looptrotter's **Satur8**, which employs FET distortion stages rather than tubes, is an obvious competitor but you could also check out the offerings from **Phoenix Audio**, **Thermionic Culture**, **Manley**, **Neve**, **Rupert Neve Designs**, **InnerTube**, **Black Lion**, **Inward Connections** and **SPL**, among others.

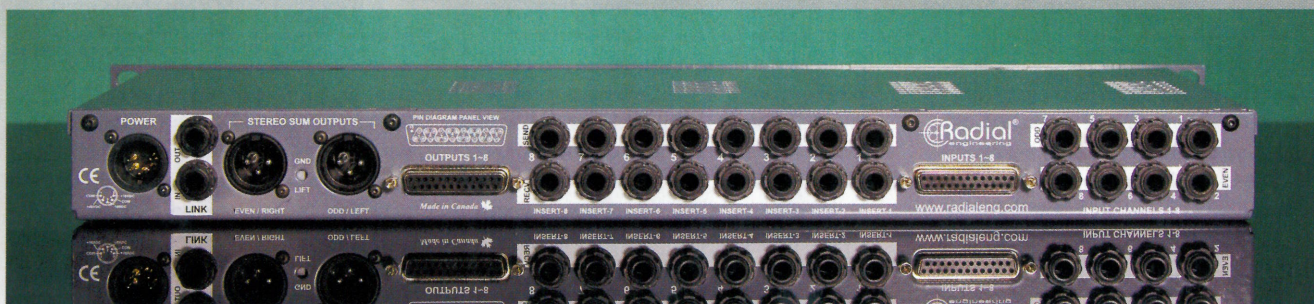
D-sub output and can be simultaneously sent, via the channel pair's Bus switch, to the Space Heater's stereo Mix Bus balanced XLR outputs, odd numbers going left and even numbers right.

The practical result of this flexible routing is that you can route an input to its D-sub output and the Mix Bus through its tube, HPF and transformer, or you can bypass the tube, leaving its HPF and

tube and, depending on the Heat setting and the amount of Drive that you dial in, you'll get different-sounding distortions. My favourite settings were 70V for grit and 140V for a tighter, smoother and more euphonic sort of sound — the sound of the 35V setting, although nicely distorted, was a little too flabby for my taste.

Since there's only one gain stage in a Space Heater channel, you're not getting

folks there couldn't just build a simple tube-based summing mixer — they had to make it more flexible than that, and they succeeded. The Space Heater not only excels as an expandable, eight-channel summing mixer that can add grit and a real vintage tube-console vibe to a final stereo mix, but also gives you the individual outputs that turn it into an eight-channel harmonic distortion effects



transformer in the signal path. Alternatively, you can bypass all the active circuitry. Last but not least, the Link I/O allow you to daisy-chain multiple Space Heaters.

The only monitoring available is via headphones, and is fed from the Space Heater's virtual-earth summing bus at a point post the channel pairs' Bus switches and pre the Mix Bus switch. This allows you to monitor the mix bus without the main outputs being active.

When The Heat Is On

As you'd expect if you have any experience of Radial products, the Space Heater does exactly what it says on the tin. Route a line-level input through its transformer, wind up the level and you'll find the type of sound that is associated with vintage, transformer-balanced consoles. Switch in the

eight overdrive channels in a box, and the distortion is more subtle than that. Also, as both my ears and monitors will testify, you need to beware of the amount of gain that the Space Heater can generate — it can get mighty loud.

Given the interface options — there are eight TRS jacks and a D-sub for inputs, eight individual TS jack Insert I/Os, a D-sub for outputs and two TRS Link I/Os — you will need to think about how you're going to incorporate the Space Heater into your setup and workflow, since it can act as either as an eight-channel summing mixer or as eight hardware effects channels of valve and transformer coloration.

Conclusion

Thankfully, it's typical of the Radial philosophy that Peter Janis and the other

As well as dedicated line-level I/O via D-sub connectors, the Space Heater features balanced insert sends and returns on TRS jacks.

unit that's more than useful at adding character and grit when you're tracking or creating stems.

If you're looking for a super-clean analogue summing mixer then the Space Heater probably isn't for you. But if you're looking for something that's a little bit different you really ought to audition one. I think you'll find that it'll be well worth the effort. **///**

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