

“Brilliance boost” for guitar

A TREBLE BOOSTER circuit can be used with a guitar, and other electronic musical instruments, to boost a range of the higher order harmonics and give a more “brilliant” sound. A circuit to achieve this has a fairly flat response at the bass and across most of the middle frequencies while the upper middle and most of the treble frequencies are given a substantial gain boost.

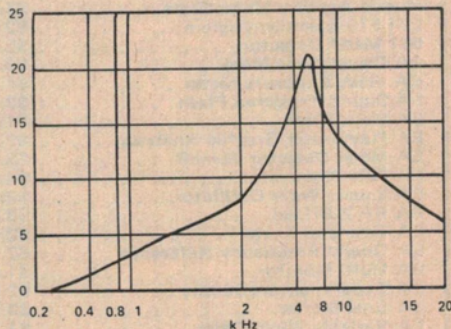
The circuit is basically just an op-amp (IC1) used in the non-inverting amplifier mode. The non-inverting input is biased by R4 and R5 via a decoupling network which is comprised of R3 and C3. C4 and C5 give dc blocking at the input and output respectively. With SW1 open there is virtually 100% negative feedback through R1, R2 and C1, giving the circuit unity gain and a flat response. Closing SW1 brings C2 into circuit, and this decouples some of the feedback through R1 and R2 at frequencies of more than a few hundred Hz, giving the required rising response.

Feedback through C1 at high treble frequencies causes the response to fall away above about 5.5 kHz, and

prevents the very high frequency harmonics from being excessively emphasised.

As the unit has unity gain at frequencies where boost is not applied it can simply be connected between the instrument and the amplifier.

It is normal to give only a modest amount of emphasis to the upper-treble in order to get good stability and a low noise level. This also prevents the output from sounding too harsh. The frequency response of this treble booster is shown in the accompanying graph.



THE FREQUENCY RESPONSE OF THE TREBLE BOOSTER

741C TOP VIEW

