

The bass clipper threshold is the primary means of trading off bass punch against the IM distortion caused by the bass pushing non-bass material into the final clipper. Set it more negative for less punch but less IM distortion. Your manual has more on this topic.

There are two bass equalizer controls — low bass shelf and the bass parametric equalizer. Your Operating Manual has considerable information about these controls (and, indeed, about all of the controls I am discussing). The main thing to remember about these controls is that they are fixed tone controls that apply coloration equally to all program material going into the main dynamics processing section of the 8400. (They do not affect the AGC section, which is located after the dynamics processing section in the signal flow.) Accordingly, the five-band compressor in the 8400 will attempt to undo any coloration added in the equalizer setting and automatically re-equalize the sound to the standard established by the band threshold controls.

Therefore, to get bass to survive the extensive dynamics processing in the 8400, it is usually necessary to apply substantial bass boost to the input by using the equalizer controls. (A small amount of boost will be “automatically re-equalized” away; check the factory presets to see what I mean by “substantial.”) Bear in mind that using large amounts of shelving bass boost (particularly with 12 or 18dB/octave slopes) can cause an effective loss of midbass because the band 2 compressor will be forced into some additional gain reduction.

The final important control affecting bass is the band 1 output mix control. Because this is located after the dynamics processing, the dynamics processing will not fight any adjustments you make to this control. However, the downside is that the bass compressor will not act to prevent excessive drive to the clipping system (and consequent distortion), so be very careful when boosting this control.

The crossover between band 1 and band 2 is approximately 100Hz, so band 1 affects extreme low bass (the kind of bass that’s not reproduced by small clock and portable radios), and band 2 affects the midbass and lower midrange. If you want to affect the midbass independently of the low bass, the best tool to use is the bass parametric equalizer. This feature provides a bell-shaped boost or cut with variable center frequency, bandwidth and amount of boost/cut, so you can use it to surgically shape the midbass to your requirements. You can also adjust the band 2 threshold and output mix controls, but bear in mind that this will affect the lower midrange as well.

To wrap up: Bass is a matter of preference, but the canny broadcast engineer will be aware of the variability of radios out there and will not apply the excessive bass boost that can sound awful on “boom-boxes” and other consumer radios with “built-in” bass boost. It is usually wise to emulate the bass balance of hit CDs, because very experienced people who make these trade-offs every day have mastered the CDs to offer maximum listening pleasure. The OPTIMOD-FM 8400 provides enormous flexibility to get the bass sound you want, but this flexibility requires that you familiarize yourself with the relevant controls and truly understand what you are doing. The 8400 manual is there to help, and I advise that you reserve some time with it if you really want to get the bass sound you want.



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**“Bass is a matter of preference.”**

—Bob Orban

