



## Recommended DSP settings (rev. 3 11/02/04)

Product	Crossover point	B6 Equalisation point
LM20	933Hz	45Hz
CS1296 System	150Hz	40Hz
Cs1000SB		40Hz
IS23		40Hz
IS26		40Hz
IS30		40Hz
IS36		40Hz
LS150		40Hz
LS180		40Hz
LS300		40Hz

### Notes:

- A B6 alignment is the process of adding a 2<sup>nd</sup> order HPF with a Q=1.93 to a loudspeaker tuned to a maximally flat 4<sup>th</sup> order alignment. Hence B6 or 6<sup>th</sup> order. The net effect is an extension of the bass response by up to an octave below the drivers free air resonance (Fs) without an increase in the cabinet volume and a 36dB/Oct rollout below the tuning frequency. While this may increase cone excursion around the box tuning frequency, the driver does remain loaded below this point with driver excursion greatly reduced. The technique is common in the USA, but not as common in the UK. The advent of ever-cheaper DSP in the last few years has made it a viable option to improve bass performance.
- For B6 equalisation setting, very few DSP units allow a high pass filter with an adjustable width of Q. Therefore the alternative of a high pass filter combined with a parametric EQ is given below.
- Advised LPF for use with bass enclosures is 132Hz. Linkwitz Riley 2<sup>nd</sup> order (12dB/Oct)
- When integrating full range enclosures from the range with bass enclosures a HPF at 70 Hz. Butterworth 2<sup>nd</sup> Order (12dB/Oct) applied to the fullrange enclosures is suggested.
- LM20 crossover filters are Linkwitz Riley 4<sup>th</sup> Order (24dB/Oct)

B6 Equalisation point	DSP Setting
45Hz	HPF @ 45Hz 12dB/Oct Q=1.93 or HPF @ 38.9Hz 12dB/Oct + Parametric @ 43.2Hz, +9dB, Q=1
40Hz	HPF @ 40Hz 12dB/Oct Q=1.93 or HPF @ 34.6Hz 12dB/Oct + Parametric @ 38.4Hz, +9dB, Q=1