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EQ Filters Explained

The following filters can be found in the Wing EQ. For X/M32 users, some of these filters can be found in the Main L/R, MC and Matrix EQs. I would like to give a big shoutout to [James Payne](#) for correcting some of my information concerning the terminology of the filter names.



Low Bands

Low Band Shelving. On the Behringer WING, Low Band Shelving refers to the *type of EQ curve* used by the low-frequency band of the channel EQ. It defines how the low frequencies are boosted or cut. A low shelf EQ boosts or cuts everything below a selected frequency by the same amount, instead of targeting a narrow range. Think of it like raising or lowering a shelf under the low frequencies. All frequencies *below* the shelf edge move together.

Low Cut. (LC). On the Behringer WING, “LC” on the EQ stands for *Low Cut* (also commonly called a High-Pass Filter). Here’s exactly what that means on the WING and how it’s used. LC removes low frequencies below a selected cutoff point. Everything

below the LC frequency is progressively reduced. Everything above that frequency passes through normally. So even though it's called *Low Cut*, it's technically a high-pass filter.

BW 6 dB/Oct. On the Behringer WING EQ, "BW 6 dB/Oct" refers to the Butterworth slope of a filter. 6 dB/Oct = 6 decibels of level change per octave. This tells you how steep the EQ filter is as frequencies move away from the cutoff or center point. A 6 dB per octave slope means every time the frequency doubles or halves, the signal level changes by 6 dB. This is a very gentle, musical slope.

BW 12 dB/Oct. On the Behringer Wing (and most audio EQs), when you see something like "BW 12 dB/Oct" on an EQ section, it refers to the Butterworth slope of a filter — in other words, how quickly frequencies are reduced past a cutoff point. 12 dB/Octave describes the steepness of a filter's slope. An octave is a doubling (or halving) of frequency. A filter with 12 dB/Oct will reduce (attenuate) the signal by roughly 12 dB for each octave you move past the cutoff frequency.

Example: If you have a low-pass filter set at 1 kHz, a frequency one octave above (2 kHz) will be about 12 dB quieter than at the cutoff. For a high-pass filter at 100 Hz, a frequency one octave below (50 Hz) will be about 12 dB.

BS 12 dB/Oct. On the Behringer WING, "BS = Bessel" and specifically means a 12 dB-per-octave shelving filter. Each EQ band can change *shape*, not just frequency and gain. When you see BS 12 dB/Oct, you're looking at the slope steepness of a shelving or filter-style EQ band. This is a moderate slope and is steeper than 6 dB/Oct which is considered gentle, and less aggressive than 18 or 24 dB/Oct which is considered surgical.

LR 12 dB/Oct. When you see "LR 12 dB/Oct" in the EQ/filter settings, it's referring to the type and slope of the filter being applied, specifically a Linkwitz-Riley filter with a 12 dB per octave slope. A 12 dB/Oct slope is common because it's a second-order filter, steeper and more effective at reducing unwanted frequencies than 6 dB/Oct but not as aggressive as 24 dB/Oct. It's often described as musical and smooth in how it rolls off frequencies.

Linkwitz-Riley (LR) is a specific filter design used for crossovers and EQ filters. In digital consoles and speaker management, Linkwitz-Riley filters are favored because their design yields a smooth frequency response and predictable phase behavior when used in pairs (e.g., high-pass and low-pass). In simple terms, an LR filter combines two Butterworth filters to create a response that doesn't introduce peaks or dips at the crossover point, making it sound smooth and balanced.

BW 18dB/Oct. On the Behringer WING, “BW 18 dB/Oct” on the EQ is telling you how steep the filter slope is for a high-pass (HPF) or low-pass (LPF) filter. BW = Butterworth. A Butterworth filter is designed to be flat in the passband (no ripple), smooth and musical with no resonant peak at the cutoff frequency. This is why it’s commonly used on consoles for HPF/LPF. It sounds natural and predictable.

BW 24dB/Oct. On the Behringer WING EQ (and most parametric EQs in digital mixers), the labels mean the following, BW stands for Butterworth. It controls how wide or narrow a bell-shaped EQ band is. It is measured in octaves and the lower the BW number, the narrower the bell (more surgical cut/boost). The higher the BW number, the wider the bell (more musical/warm curve).

BS 24dB/Oct. On the Behringer WING, “BS 24 dB/Oct” on the EQ means it’s a Bessel Slope at 24 decibels per octave.

LR 24/Oct. On the Behringer WING, “LR 24 dB/Oct” on the EQ refers to the type and steepness of a filter, most commonly seen on high-pass (HPF) or low-pass (LPF) filters. LR = Linkwitz-Riley. Linkwitz-Riley is a specific filter design widely used in professional audio, especially for crossovers.

Some of the key characteristics are it has a very smooth phase response, it has a flat summed response when combined with a matching filter and it does not produce any peaks or dips at the crossover point. This is why it’s trusted for system tuning, speaker management, and clean filtering.

BW 48dB/Oct. On the Behringer WING (and most digital mixers), “BW 48 dB/Oct” refers to Butterworth and the slope of a filter on the EQ section. 48 dB/Oct = Filter Slope. This specifically refers to how steep a high-pass or low-pass filter rolls off frequencies outside the cutoff point.

48 dB/Oct means that for every octave beyond the cutoff frequency, the signal is reduced by 48 decibels. As an example, if a low-pass filter is set at 2 kHz, frequencies at 4 kHz (1 octave above) are reduced by 48 dB. This is considered a very steep filter, giving a sharp cutoff. When you use this filter, you will lose the number 2 eq band.

LR 48 dB/Oct. LR stands for Linkwitz-Riley, which is a type of crossover filter. It is designed so that when you sum the high-pass and low-pass outputs, the total signal remains flat (no boost or dip at the crossover point). Often used in high-pass (HP) and low-pass (LP) filters or crossovers in speaker systems.

48 dB/Oct is the slope of the filter. dB/Oct means decibels per octave and 48 dB/Oct is a very steep slope. For comparison a 12 dB/Oct is gentle, a 24 dB/Oct is moderate and

a 48 dB/Oct is steep — it cuts or boosts frequencies very aggressively past the cutoff point. On the WING, using 48 dB/Oct for a low-cut (HPF) or high-cut (LPF) means frequencies beyond the cutoff point are reduced almost completely. When you use this filter, you will lose the number 2 eq band.

Parametric. Parametric just means you can precisely choose the frequency, how much you adjust it, and how wide that adjustment is, instead of being limited to fixed frequencies like a graphic EQ.

PEQ. On Behringer mixers (and most digital or analog mixers), PEQ stands for Parametric Equalizer. It's a type of EQ that gives you precise control over specific frequencies in your audio signal.

High Bands

The high bands mirror the low bands, except they are geared towards the higher frequency range. It's always best to match these filters with each other to get the best results possible. If you use the **BW 12 dB/Oct** on the low band, then you should use the **BW 12 dB/Oct** on the high band and so on.