

One of the really useful features of the KEF Connect app is the ability to truly integrate LS50WII with a subwoofer. This essentially makes the system sound deeper, larger, and more dynamic, without drawing distracting attention to the subwoofer. Performance of the LS50WII midrange can also be improved, as the internal amplifiers no longer have the strain of reproducing low bass frequencies - there is more headroom for the midrange.

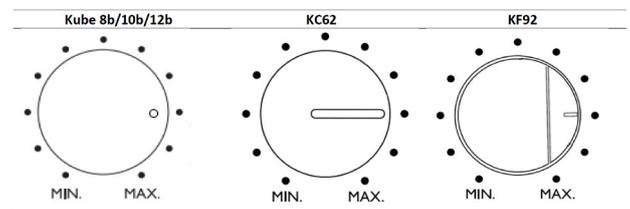
This document will show the recommended STARTING settings for various KEF subwoofers with LS50WII. Note - this does not take into account subwoofer positioning in the room. The final tuning of frequency and volume must be carried out by the individual via ear (or measurements if they are set up to do so).

**Subwoofers covered: Kube 8b/10b/12b, KF92, KC62**

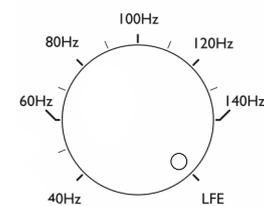
### Setting up the subwoofer

There are two settings on the subwoofer that must be set:

**Volume:** Set to 3 o'clock position



**Crossover (Kube range):** Set to LFE (turn dial clockwise)



**Mode (KF92/KC62):** Set to LFE

MANUAL



LFE

### A Note on LFE

LFE mode is VERY important, as we will be applying a crossover filter in the subwoofer signal path using KEF Connect - we do not want two filters in the path.

LFE mode should also be set if connecting a KEF subwoofer to any A/V receiver or amplifier that uses on-board bass management.

If LFE is not chosen, the signal goes through multiple crossover filters - this may negatively affect output and possibly frequency response. If a subwoofer does NOT have a selectable LFE mode, then the subwoofer's onboard crossover control should be set as high as possible, and the actual desired frequency being selected in the source equipment's bass management.

## Setting up KEF Connect

In Expert mode of KEF Connect, there are three settings we need to adjust:

### High pass frequency

This must be selected in order to show the frequency slider. This setting applies a high pass filter to the LS50WII speaker, dictating what frequencies are played.

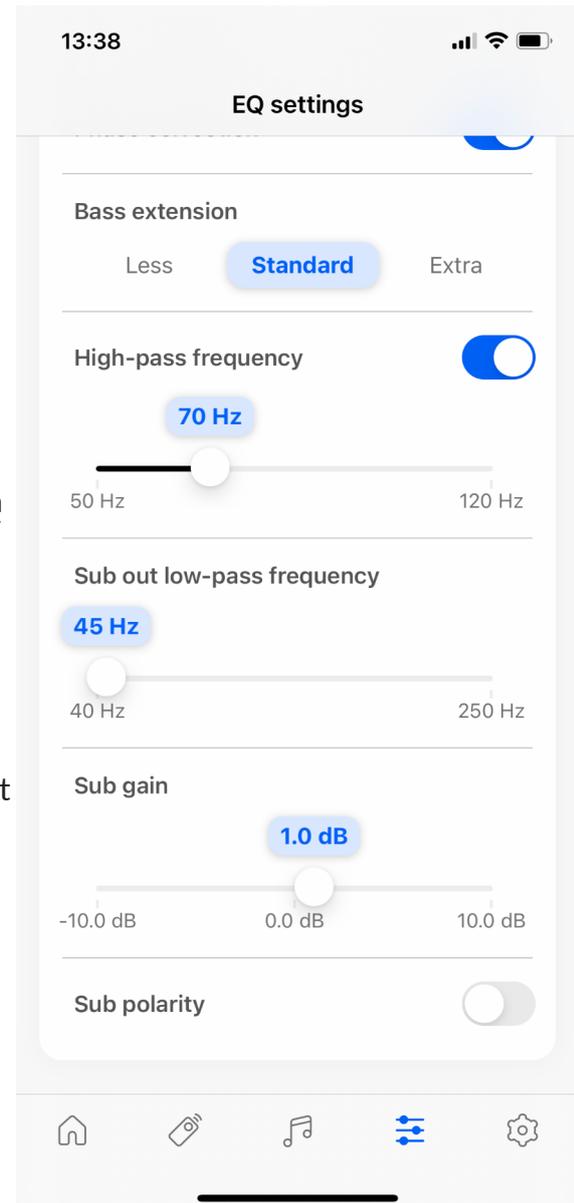
### Sub-out low pass frequency

This filter is the opposite of the high pass frequency. It dictates which frequencies are sent out of the subwoofer output. The signal BELOW the set frequency is sent unchanged, above begins to roll-off.

### Sub gain

This sets the gain of the signal sent from the sub out. If this is set too low, then the auto-wakeup function of a subwoofer may not trigger at low volumes. This is adjusted in conjunction with the subwoofer's own volume control - the idea is to have consistent output between speaker and subwoofer.

Note: If using KW1, ensure the included Y-adaptor is used.



## Setting up KEF Connect

Below are the recommended starting settings for LS50WII with various KEF subwoofers.

Note the difference in gain required for some subwoofers when using the KW1 wireless subwoofer adapter.

Sub-woofer model	Expert Mode: Sub low-pass frequency (Hz)	Expert Mode: High pass frequency (Hz)	Basic Mode: Subwoofer/speaker balance (Slider position)	Basic/Expert Mode: Sub gain (dB)	Basic/Expert Mode: Sub gain (dB) (Using KW1)
Default	55	65	1	0	0
KC62	45	70	Not applicable/NA	0	5
KF92	50	70	NA	-1	1
Kube8b	60	70	NA	3	2
Kube10b	55	70	NA	0	-1
Kube12b	55	70	NA	1	0

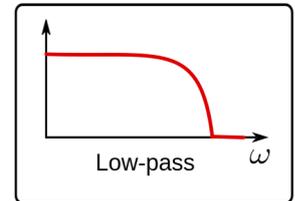
### What is a crossover?

A crossover is a network of filters which adjust which parts of a signal are delivered to the various drivers in a loudspeaker system.

The two main types of filters are LOW PASS filters and HIGH PASS filters.

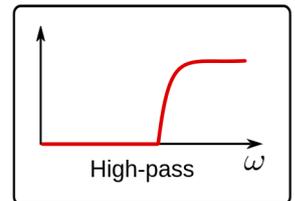
#### Low-pass filter

A low-pass filter allows the signal below the chosen frequency to pass through unaffected. Above this point, the signal begins to be attenuated (reduced in output). This is generally used for subwoofers and the lowest frequency driver in a loudspeaker, as high frequencies played by these drivers can result in distortion.



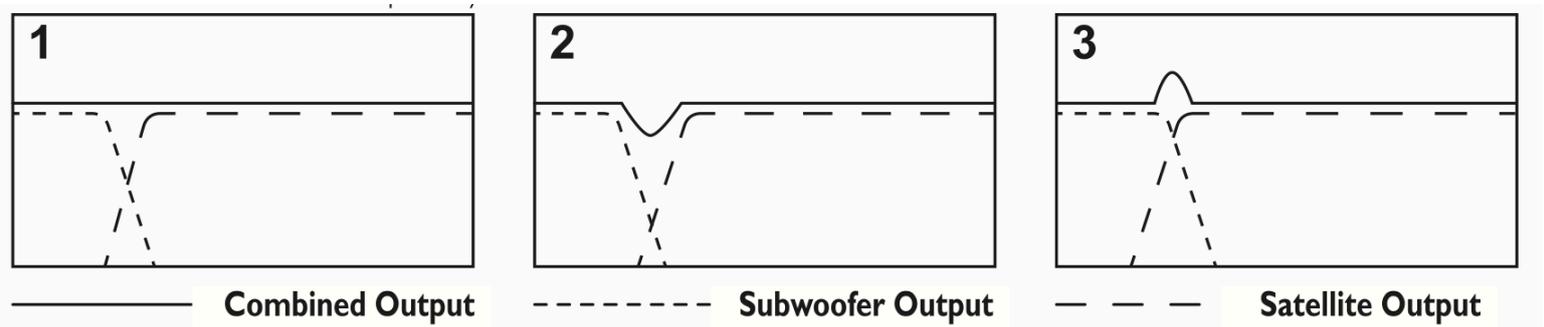
#### High-pass filter

This works in the opposite way to a low-pass filter. Above the chosen frequency, the signal is passed through unaffected. Below this frequency, the signal is attenuated. A high pass filter is useful when we have a driver that we don't want to be exposed to low frequencies (e.g. tweeters)



### Why multiple filters?

In short, to help integrate different drivers together, smoothly. If we look at the following diagram taken from KEF subwoofer manuals:



**Image 1:** This shows the subwoofer's low pass filter (short dash) and the high-pass filter applied to LS50WII (long dash). The black line is the COMBINED output. This is why we have a region where both speaker and subwoofer play the same frequencies (the slopes). In a perfect world, when we add the outputs together, we get a nice, straight line (solid line)

**Image 2/3:** This shows what happens when the filters are not set correctly. In Image 2, the frequencies are too far apart, meaning we get a hole in the output. In Image 3, they are too close together, causing a bump in the bass (which is why you should rarely be setting the two filters at the same frequency).