

## **AUX FED SUBS**

*By Don Boomer, Product manager, Sound Reinforcement Div.*

Aux Fed Subs has been the practice of many regional and national sound providers for years now. This technique can provide you with a way to tame the low end mud from your system, give you back some punch and control the clarity of your system.

The idea is to eliminate sending 'plosives from vocal mics and foot fall pickup from stage floors as well as the collective roar that seems to bleed into all of your open mics. Channel low cut filters can reduce some of these problems but do not completely eliminate it from the system. Modern systems are often run with the subs blasting away 10-15 dB hotter than "flat" and so that consolidated, unintentional bag of low frequency garbage ends up being amplified way more compared to the rest of the band. I recently recorded the normal board output that was sent to the subwoofer and was shocked to hear how much unintended sound was sent on to be amplified. Switching over to the Aux Fed hookup and listening again gave me nothing in the subs that I didn't intend to come out of the subs. Control was back in my hands.

In a conventional Bi/Tri amped or passive system every mic input has a route to end up in the subwoofer. With the Aux fed Sub approach ... only those input channels who's aux level is turned up will go to the subwoofer. Basically the practice involves setting up a subwoofer sound system that is separate from the main FOH system and then sending signal from only those sources that need heavy low end reinforcement such as kick drums, bass guitar, keyboard bass and maybe floor tom, drum machines and the like. You might think of that aux send as being a "super bass" EQ control.

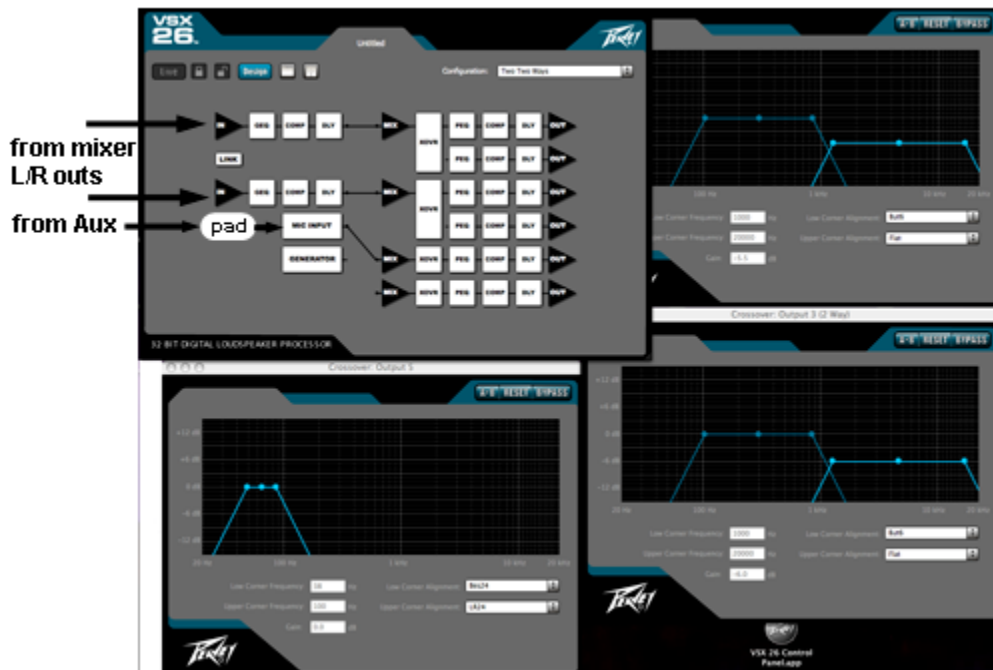
Here's how to set it up ...

Basically think about your bi-amped (or tri-amped) FOH system as it exists now. Just unplug the output from the electronic crossover that is driving the subs and leave it disconnected. Set the low crossover point filter to "crossover" from a point somewhere between 80 and 125 Hz, if it wasn't there already. This will depend on your speakers, the type of filter you employ and how steep the slope of the filter is. You now have a full range system that operates down to the point you just set. Using a bandpass filter (or a spare electronic crossover) set up an independent channel that sets the subsonic filter as the low end (30-40Hz) and somewhere between 80 – 150 Hz on the top side. Your subs will still be reproducing the same range they did with your conventional system but they are no longer fed signal from your mixer's main outputs.

You now need a way to send signal to them. The simplest way to think about this is ... consider it a monitor mix for the subwoofer. The aux you choose can be either a "pre" or "post" aux, depending on your mixing style. If you select a "pre" aux (as most monitor mixes are performed) it will work in just that fashion. If you want to send a source to the subs just turn up whatever amount of it you desire. It will be independent from the fader. On the other hand if you want the signal sent to the subs to "track" your fader movements, chose a "post" aux send. Your initial setting will determine what percentage of the signal will be sent to the subs. If your mixer is calibrated and you set the aux to "unity" then an equal mix of full range and sub bass signal will track your fader movements. If you're going for uber-bass you can set it so many percent higher or if you only want to add a little taste (maybe the guitar from a power trio) you can add only a very little amount.

Remember, we're trying to gain control here, so don't get carried away. There's not much sense in putting anything into the subs that doesn't generate frequencies that are lower than the cutoff point of your main's cutoff point.

Here's a hookup example using a VSX26



So what's the down side ... well it involves hooking up a little more gear and maybe an extra x-over or bandpass filter. Oh yeah ... you DO have to remember to turn up that aux ... otherwise you get very little bass. The other, depending on your mixer, is you may have to remember to turn down the Aux master in addition to the master fader to turn down the entire system. Master volume is easier to do if you have a VCA console or a Mono Master that you can assign to independently from the L/R (like a RQ4300). If not it will take two hands if you do a lot of fade outs.