Subject: Measurement Technique for Electric Bass
Posted by bgavin on Tue, 18 Oct 2005 16:31:33 GMT
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Wayne,What is a recommended software/technique combination to do spectral analysis of an electric bass guitar?If these basses indeed have little fundamental content as theorized elsewhere, cutting a 31-band EQ below 82 Hz should have little audible effect on the produced sound. Mine don't work this way, and cutting this EQ range cuts the bottom off the sound.I'd like to determine how much fundamental vs secondary harmonic content is present in different bass and string combinations.The results will determine if I need response down to 41 Hz or only 82 Hz in a live performance bass cab/horn.

Subject: Re: Measurement Technique for Electric Bass
Posted by Wayne Parham on Tue, 18 Oct 2005 17:40:47 GMT
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Do you want to know the response the instrument alone or with it connected to an amp and speakers? If the former, you could measure it completely within the electrical domain. Connect the instrument to the microphone input of a good sound card and grab a few samples of each string. If the latter, I'd take it outdoors and meaure it. You can do close microphone measurements too, but I think it's better to do bass measurements in an anechoic environment. Otherwise, indoors, you're really measuring the room more than the signal. It's hard to separate the influence of the room at bass frequencies.

Subject: Re: Measurement Technique for Electric Bass
Posted by bgavin on Tue, 18 Oct 2005 18:50:01 GMT
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I'm interested only in the instrument proper. No external influences such as speakers.I own some high quality Burr-Brown mic preamps (Rane) as well as a Mackie 24.4 VLZ Pro console, to use for inputs. I suspect the Rane is much higher clarity.I'm more concerned about software required to do an accurate comparison of various basses. I have TrueRTA, but have only dinked with it once or twice. Unfortunately, I have no access to an o-scope.All I want to see, is the level of fundamental vs 2nd, 3rd, 4th harmonics when plucking a given note.

Subject: Re: Measurement Technique for Electric Bass
Posted by Wayne Parham on Tue, 18 Oct 2005 20:11:05 GMT

I use Speaker Workshop, which is fine for measuring loudspeaker response but isn't really what you're looking for. Try the Sample Champion software from PureBits.com. There's a limited trial version at the link that may work for you. Let us know how it works out.

Subject: Re: Measurement Technique for Electric Bass
Posted by Paul C. on Thu, 27 Oct 2005 23:18:01 GMT

I have some software that I am working with now. It does exactly what you want. However we (the software writer) and I are not quite ready to market it.It will show both a waveform, which is not that useful, and a bargraph showing the relative level of each overtone.As a saxophonist I was surprised to find that the saxophone's second overtone was nearly as strong, sometimes stronger than the fundamental, yet we still identify the fundamental by ear as "the pitch." We don't confuse it with the the second overtone an octave higher.This software is to be marketed for the analysis of timber, or tone quality... to identify the actual differences in the tones of various instruments, mouthpieces, reeds and players.Feel free to contact me at tenorman1952@yahoo.com